

# Water Stewardship

## 2023 Highlights

**69%** of water reused and recycled on average at mining operations

- ▶ Operationalized the fourth water treatment facility at our steelmaking coal operations, increasing water treatment capacity to **77.5 million litres** per day
- ▶ Ramped up the new QB desalination plant to supply all the water required for operations at the site, up to 3,850 cubic metres per hour (m<sup>3</sup>/h) of desalinated seawater
- ▶ The majority (54%) of the water withdrawn for use at our mining operations in 2023 was from low-quality sources including seawater

## GRI Indicators

2-23, 2-24, 2-27, 3-3, 303-1, 303-2, 303-3, 303-4, 303-5, 306-3

This topic is considered material by our shareholders, employees, local communities, regulators and society in the context of Teck's operations.

## How Does Teck Manage This Topic?

Information about how we steward water, including relevant policies and our management practices and systems is available for [download on our website](#).



### Performance Metrics

**Indicator** Percentage of water reused and recycled at mining operations



**Indicator** Significant<sup>(1)</sup> water-related incidents



(1) Teck uses a risk management consequence matrix to determine incident severity, which includes environmental, safety, community, reputational, legal and financial aspects. "Significant incidents" includes incidents assessed as Level 4 or Level 5 based on our risk matrix and guidance.  
 (2) The fish decline in the Upper Fording River is not classified as a significant water-related incident in accordance with our incident reporting system, as it has not been connected to a specific incident under our control. However, the decline is a significant event that Teck is taking very seriously, and we are fully committed to a thorough and extensive evaluation of cause and implementation of the comprehensive recovery plan.

## Our Performance in Water Stewardship in 2023

**Our Targets and Commitments** Teck is committed to responsible management of water resources, and to protecting water quality and water access where we operate. The following table summarizes our performance against our sustainability strategy and goals for water stewardship.

Sustainability Strategy Goals	Status	Summary of Progress in 2023
Strategic Priority: Transition to seawater or low-quality water sources for all operations in water-scarce regions by 2040		
<b>Goal:</b> By 2025, design all development projects in water-scarce regions with a seawater or low-quality water source.	On track	Initiated an evaluation of water sources, uses, consumption and opportunities to improve water efficiency in our base metals' portfolio.  Began operation of the desalination plant to supply desalinated seawater for Quebrada Blanca Operations in Chile.  Developing a process to integrate water efficiency and source considerations early in project design.
Strategic Priority: Implement innovative water management and water treatment solutions to protect water quality downstream of our operations		
<b>Goal:</b> By 2025, implement new source control or mine design strategies and water treatment systems to further advance efforts to manage water quality at our operations.	On track	Advanced technology development, including monitoring of full-scale suboxic zone pilot study at Cedar North. See the case study on page 41 for more details.

### Global and Industry Context

Water is an essential resource for people, communities and the environment, and a core element of natural capital utilized by many business activities. According to UNESCO, water scarcity is becoming endemic due to the local impact of physical water stress and the accelerating and spreading pollution of fresh water.<sup>17</sup> Water consumption and water quality are critical priorities for mining companies, which may operate in challenging environments such as water-stressed regions.<sup>18</sup>

Teck recognizes the significance of responsible water management for protecting the water for the communities in the watersheds where we operate. Responsible water management includes the protection of water quality downstream of our operations, improving water use efficiency and engaging with communities of interest (COIs) on watershed management.

<sup>17</sup> The United Nations World Water Development Report 2023, UNESCO, 2023.  
<sup>18</sup> The Ongoing Evolution of Sustainable Business - Mining and Metals Supplement. SustainAbility Institute by ERM. 2023.

## Company-Wide Water Balance

We monitor water data and maintain site-wide water balances at all our operations.<sup>19</sup> The company-wide water balance (Figure 18) is the aggregation of all the site-wide water balances. This water balance is complex, due to the variability of natural factors such as rainfall and snowmelt, and the diversity of the climates and geological conditions where our operations are located. Understanding our site-wide and company-wide water balances is key to improving water management practices and enabling better decision-making.

Our water data collection and reporting is aligned with the ICMM’s [A Practical Guide to Consistent Water Reporting](#). Our detailed water data, including site-level data, is provided in our [Sustainability Performance Data](#).

**Figure 18: 2023 Company-Wide Operational Water Balance – Megalitres (ML)**



**Water withdrawal:** All water that enters the operational water system and is used to supply the operational water demands.

**Other managed water:** Water that is actively managed without intent to supply the operational water demands.

**Water discharge:** Water that is released back to the water environment or to a third party.

**Water consumption:** Water that is permanently removed, by evaporation, entrainment (in product or waste) or other losses, and not returned to the water environment or used by a third party.

**Reused and recycled water:** Water that has been used in an operational task and is recovered and used again in an operational task, either without treatment (reuse) or with treatment (recycle).

**Change in water storage:** The net change (positive or negative) in the volume of water stored over the accounting period; a positive number indicates water accumulation, and a negative number indicates water reduction.

### Types of Water

**Surface water:** Water from precipitation and runoff that is not diverted around the operations; includes water inputs from surface waterbodies that may be located within the boundaries of our operations.

**Groundwater:** Water from beneath the earth’s surface that collects or flows in the porous spaces in soil and rock that is not diverted around the operations.

**Third-party sources:** Water supplied by an entity external to the operation, such as from a municipality; we do not use wastewater from other organizations.

**Seawater:** Water obtained from a sea or an ocean.

<sup>19</sup> Site-wide water balances provide an understanding of water withdrawals, consumption, reuse/recycle and discharge volumes at each operation. Water balances are developed using a mix of measurements and modelling computation.

## Improving Water Efficiency

At Teck, we use water primarily for material processing and transport, cooling and dust control. A portion of the water we use is consumed through entrainment in our products and tailings or through evaporative processes. The water we use is typically obtained from where our operations interface with surface water and groundwater systems, and we are transitioning to seawater sources in water-scarce regions such as northern Chile. We manage and discharge a significant amount of water without use (water that is actively managed without intent to supply the operational water demands), and we discharge this water as close as practical to the source location. The water we discharge is monitored and treated where necessary.

In 2023, an average of 70% of water was reused or recycled at our operations. This means that 70% of water used was recovered and used again in an operational task, either without treatment (reuse) or with treatment (recycle). This is a reduction from previous years due to the commissioning of milling and flotation operations at our expanded QB2 Operations; reuse rates are expected to increase as operation of QB2 continues and water storage volumes reach design capacity.

Trail Operations accounts for 51% of our water withdrawals. Almost all the water used at Trail Operations is for cooling purposes, meaning that it does not come into contact with chemicals or reagents, and the only change it undergoes is a slight increase in temperature before being returned to

the environment within regulatory-approved conditions. In 2023, our water withdrawals were 145,770 ML, or 28,443 ML more than in 2022. Our total water consumption in water-stressed areas was 15,475 ML in 2023. Additional water data is provided in our [Sustainability Performance Data](#).

To address risks related to drought, we have a strategic priority to transition to seawater or low-quality<sup>20</sup> water sources for all operations in water-scarce regions by 2040. Drought conditions are also starting to impact our operations in British Columbia, Canada, on a seasonal basis. To address this emerging risk, adaptive management plans for water conservation at our operations and impacted watersheds are being developed.

The desalination plant at our new QB Operations, which ramped up in 2023, supplies water required for operations at the site (up to 3,850 m<sup>3</sup>/h of desalinated water, plus 350 m<sup>3</sup>/h of recovered water from the concentrate filtration process), which replaces the use of fresh water in the water-scarce region of QB. By avoiding the use of groundwater, the plant also allows Teck to transfer the company's water rights back to the state.

**Table 12: Water Withdrawals and Water Reused and Recycled – Megalitres (ML)<sup>(1)</sup>**

All Operations	2023	2022	2021	2020
Water withdrawals (ML)	<b>145,770</b>	117,327	117,262	118,284
Water reused/recycled (ML)	<b>168,358</b>	134,131	138,812	157,641
<b>Mining operations</b>				
Water withdrawals (ML)	<b>72,645</b>	47,701	45,222	47,739
Water reused/recycled (ML)	<b>168,358</b>	134,131	138,812	157,641
Percentage of water reused and recycled (ratio of reused/recycled and withdrawals)	<b>69%</b>	74%	N/A	N/A

(1) 2023 data includes QB2 as of January 1, 2023.

## Metal Leaching and Acid Rock Drainage (ML/ARD)

We design and operate for closure and consider the potential for ML/ARD generation and required mitigation measures at every step of project development. All of these evaluations are contained in publicly available environmental assessment documents submitted to regulatory authorities. See [Our Approach to Water Stewardship](#) for more details.

In 2023, the percentage of mining operations where ARD is predicted to occur, actively mitigated, contained, or under treatment or remediation was 75%.

<sup>20</sup> Low-quality water typically has lower socio-environmental value, as the poorer quality may restrict potential suitability for use by a wide range of other users or receptors, excluding potential industrial uses and adapted ecosystem function.

## Managing Water Quality in the Elk Valley

In 2023, we continued to implement the Elk Valley Water Quality Plan (the Plan), a long-term approach to manage selenium and other substances released by mining activities in the Elk Valley. The Plan was approved in 2014 by the B.C. Minister of Environment and developed in cooperation with governments in Canada and the U.S. as well as with Indigenous groups, communities, independent scientific experts and others. The goal of the Plan is to stabilize and reverse the trend of mine-related substances and to maintain the health of the watershed while allowing for continued sustainable mining in the Elk Valley. The Plan establishes short-, medium- and long-term water quality targets, which are protective of aquatic and human health, for selenium, nitrate, sulphate and cadmium, as well as a plan to manage calcite formation.

In 2023, we continued to implement a range of practices and mitigation projects, as part of the Plan, that are improving water quality. We continued to fully operationalize our 77.5 million litres per day of constructed water treatment capacity, 20.5 million litres per day of which was added in 2023. This is a fourfold increase in our treatment capacity from 2020. With this constructed treatment capacity continuing to ramp up, we are on pace to achieve one of the primary goals of the Plan: stabilizing and reducing the selenium trend in the Elk Valley. Water treatment is effectively removing between 95% and 99% of selenium from treated water, and 2023 monitoring results show that selenium levels are trending down downstream of treatment and stabilizing in the Elk River. We expect further reductions across the watershed and in the Koochanusa Reservoir as additional treatment is completed.

To date, total spend (capital, research and development, operating costs, etc.) related to water treatment in the Elk Valley has been more than \$1.4 billion; in 2024, we plan to invest up to a further \$150 to \$250 million of capital to protect the watershed. The continued investment in water treatment is expected to further increase our constructed water treatment capacity to 150 million litres per day by the

end of 2027. For information on our management of water quality in the Elk Valley, see page 24 of our [2023 Annual Report](#) and [our website](#).

### Monitoring Aquatic Health

Teck conducts ongoing aquatic health studies and monitoring in the Elk Valley and makes these reports public to help advance community knowledge and scientific understanding. Water and sediment quality, habitat conditions and biota (e.g., fish, bugs) are common monitoring endpoints to support the evaluation of aquatic health in a watershed. Water quality sampling is completed routinely at more than 165 locations across the Elk Valley and in the Koochanusa Reservoir.

Our permit sets water quality concentration limits for selenium, nitrate, sulphate and cadmium; since 2015, water quality has met these limits 94% of the time, on average. There are 14 locations with water quality concentration limits downstream from the mine sites. At each of these locations, limits become more stringent over time.

We have prepared our Implementation Plan Adjustment to achieve full compliance as soon as possible. Our timelines consider design, permitting, construction and operating schedules. We expect improved compliance as additional water treatment facilities are constructed and become operational, with full compliance at all locations for selenium by mid-2027 and for nitrate by mid-2028. Our compliance evaluation, which is continuously evolving as mitigation projects progress, will inform future updates to the Implementation Plan Adjustment.

Annual reports about our ongoing monitoring programs, which are prepared by professional scientists, reflect data generated since the Elk Valley Water Quality Plan was approved. The reports have been reviewed by the Environmental Monitoring Committee (EMC), a group that provides science-based and Ktunaxa traditional knowledge advice and input to Teck, and to the B.C. Ministry of Environment and Climate Change Strategy regarding monitoring designs and reports in the Elk Valley. The

EMC includes representatives from the Ministry of Environment and Climate Change Strategy; the Ministry of Energy, Mines and Low Carbon Innovation; the Ktunaxa Nation Council; Interior Health; an independent scientist; and Teck. Read the 2023 EMC Report available on [our website](#).

### Water Treatment Facilities

We increase our treatment capacity through the construction of active water treatment facilities (AWTFs) and through the successful implementation of our innovative saturated rock fill (SRF) technology, a nature-inspired water treatment solution that effectively removes compounds such as selenium and nitrate from water.

By the end of 2023, Teck's water treatment facilities in the Elk Valley included:

- West Line Creek Water Treatment Facility: capacity of 7.5 million litres per day
- Elkview Saturated Rock Fill: capacity of 20 million litres per day
- Fording River South Water Treatment Facility: capacity of 20 million litres per day
- Fording River North Saturated Rock Fill: capacity of 30 million litres per day

### Research and Development

Teck is conducting research and development (R&D) to improve water quality technologies and practices in the short and long term. Examples of this work include:

**Source control:** We are pursuing the use of source control technologies to limit air entry and the corresponding natural reactions in leftover rock piles that generate constituents of interest. In 2023, we initiated construction of a suboxic zone (SOZ) at Swift North and initiated monitoring of the Cedar North SOZ trial, construction of which was completed in 2022 (see the case study on page 41 for more details). See [Our Approach to Water Stewardship](#)

for more information on our source control program.

**In situ water treatment:** In 2023, Teck completed a full-scale trial of a project involving adjusting the pH of a pit lake to remove nickel from the water. In addition, we completed a container-scale trial that was designed to evaluate whether nickel can be removed in a saturated rock fill treatment facility.

**Tank-based water treatment:** Teck piloted a reverse osmosis – high-density sludge process in 2023 to evaluate removal of selenium and nitrate and to assess water recovery.

**Calcite management:** We continue to evaluate methods for remediating calcified streams, both *in situ* and *ex situ*. Teck has installed calcite treatment on eight streams to prevent further formation of calcite. Teck is also advancing a pilot project to remediate calcite-affected areas and to enhance fish habitat.

**Fundamental studies:** In 2023, Teck completed a multi-year study on sources of nitrate in the Elk Valley and the efficacy of nitrate source control approaches.

Capital spending on water treatment (AWTFs and SRFs) and water management (source control, calcite management and tributary management) was \$94 million in 2023. Research and development costs related to water management were \$44 million in 2023.

## Community Engagement on Water

Teck recognizes that access to water is a human right, and that water is essential to our COIs in the watersheds where we operate. Access to clean and sufficient water by users in our areas of influence is important to us and to our COIs. When implementing our water management practices, we consider and engage with other water users in the watersheds where we operate.

In 2023, we continued engaging with local communities and Indigenous Peoples on water management. This included engagement in the proposed Highland Valley Copper 2040 project and work in the Elk Valley on water quality, including the proposed Fording River Extension, and at QB2. We participated in watershed-level discussions

in the Elk Valley concerning the Area Based Management Plan. Examples of engagement on water management in the Elk Valley occurred through the Environmental Monitoring Committee (for water quality established through the Elk Valley Water Quality Plan), review of the water treatment plan (Implementation Plan Adjustment), and through the Elk Valley Fish and Fish Habitat Committee. Collectively, these engagements took place with Indigenous governments and organizations at Highland Valley Copper Operations, with the Mesa Hídrica Elqui Bajo Alfalfares and the Riberas de Alfalfares community organization at Carmen de Andacollo Operations, and with the Siñgagmiut Working Group at our Red Dog Operations.

### Case Study: The Cedar North Suboxic Zone Trial in the Elk Valley

A key part of Teck's water stewardship work is the evaluation and implementation of innovative water management and treatment solutions at our operations. The Cedar North Suboxic Zone Trial in the Elk Valley is part of that commitment.

Source control focuses on alternatives that prevent unwanted compounds from entering the watershed. The Cedar North Trial explores purpose-built suboxic zones (SOZ) within mine rock stockpiles, where oxygen concentrations are intentionally lower than atmospheric levels. By decreasing the oxygen concentration, the rock will react less and release less of substances such as selenium. The development of SOZs also allows for purpose-built fine-grained layers within the rock stockpiles. These layers support microbial communities

that can remove selenium and nitrate from water. By lowering the reactivity of the rock and having an internal process to remove any constituents that do get released, these modified stockpiles have the potential to significantly improve water quality.

Changing how we build mine rock facilities to create suboxic zones could be an important step to minimize water quality impacts in the industry. The construction of the full-scale Cedar North SOZ trial was completed in October 2022 at Elk Valley Operations, and performance monitoring of the trial is underway.

Read the full case study at [www.teck.com/news/stories](http://www.teck.com/news/stories).

## Water-Related Compliance

### Non-Compliances and Significant Water-Related Incidents

We assess the severity of environmental incidents based on the potential environmental, safety, community, reputational and financial impacts. Based on our incident severity criteria, there were no significant water-related incidents in 2023.

### Litigation

Teck continues studies under the 2006 settlement agreement with the U.S. Environmental Protection Agency (EPA) to conduct a remedial investigation on the Upper Columbia River in Washington state. The Lake Roosevelt litigation involving Teck in the Federal District Court for the Eastern District of Washington continues. In December 2012, on the basis of stipulated facts agreed between Teck and the plaintiffs, the Court found in favour of the plaintiffs in phase one of the case, issuing a declaratory judgment that Teck is liable under the *Comprehensive Environmental Response, Compensation, and Liability Act* for response costs, the amount of which will be determined in later phases of the case. A hearing with respect to claims for natural resource damages and assessment costs is expected to occur in late 2024 or in 2025.

For more information, see pages 107-109 of our [2023 Annual Information Form](#).

### Charges, Fines and Penalties

In 2023, Teck received administrative penalties amounting to \$16.56 million from the B.C. Ministry of Environment and Climate Change Strategy for selenium and nitrate exceedances, and for delays in completing the Fording River Active Water Treatment Facility. The largest penalty of \$15.48 million was associated with alleged delays in the completion of the Fording River Active Water Treatment Facility. The delay was the result of impacts on the construction schedule due to the COVID-19 pandemic, and time needed to incorporate a necessary improvement to the technology. The Fording River Active Water Treatment Facility is now operating as planned and achieving near-complete removal of selenium from treated water. Teck has appealed the quantum of the penalties.

In 2023, we resolved charges in relation to the release of low pH solution at an outfall at our Trail Operations that occurred on February 25 and 26, 2019. Teck paid an agreed-on penalty of \$2.12 million for violations of the *Fisheries Act* and the *Environmental Management Act* and paid \$80,000 to the Habitat Conservation Trust Foundation for fish and fish habitat conservation projects. A third-party independent environmental impact assessment has determined the incident did not have any long-term impact on fish or the environment, given the duration of the incident and the nature of the discharge.

In the fourth quarter of 2023, Teck was notified of charges by the Superintendent of the Environment (SMA) for breaches of our Carmen de Andacollo mine permit. We have developed a compliance plan in response to the authority's requirements, including addressing the gaps and intensifying monitoring and studies. Our ongoing investigations have shown that, so far, there is no impact on the receiving environment, and we are completing construction of the seepage catchment system at Carmen de Andacollo Operations to protect against any future potential non-compliances.