Air Quality

2023 Highlights

- Implemented initiatives to improve air quality monitoring and to minimize impacts from our activities on communities at all our operations

25+ air quality monitoring stations operated and maintained in the communities surrounding our operations

GRI Indicators

2-23, 2-24, 2-27, 3-3, 305-7

This topic is considered material by our employees, Indigenous Peoples, local communities, government and regulators, and society in the context of all of Teck's sites.

How Does Teck Manage This Topic?

Information about how we manage air quality, including relevant policies, management practices, systems and topic boundaries, is available for download on our website.

Pictured: Highland Valley Copper Operations, Canada.

Performance Metrics

Indicator Sulphur dioxide (SO_2) emissions from stacks, stationary and mobile fossil fuel combustion

2023:	1,932 tonnes
2022:	2,423 tonnes
2021:	3,094 tonnes

Our Performance in Air Quality in 2023

Our Targets and Commitments Our goal is to continuously improve air quality and reduce dust emissions for the benefit of workers, communities and the environment in areas affected by our activities.

Global and Industry Context

Over the last few decades, there have been worldwide efforts to reduce the impacts of air pollution. Mining and mineral processing can impact air quality through the release of particulate and gaseous emissions from activities like drilling, blasting, crushing, collection and storage, and transportation along the value chain. Similarly, metallurgical complexes can also impact air quality.

Improving and managing air quality is a priority for Teck, given that it remains a key concern for our communities of interest. Dust has also been identified as a key issue by local and regional communities at all our operations. We take steps to monitor and respond to these concerns by operating and maintaining a series of meteorological and air quality monitoring stations near our operations and within the local and regional communities. The extended and more severe wildfire seasons, due to record-breaking warm temperatures, continue to impact air quality in local communities and at some of our operations. We continue to explore initiatives to partner with communities across our operations.

Minimizing Emissions to Improve Air Quality

All of our operations have extensive operational control strategies and monitoring programs designed to minimize impacts on the local air quality within the vicinity of our activities. Table 2 highlights the 2023 improvements to these programs.

Table 2: Air Quality Improvements in 2023

Operation	Activities
Trail Operations	In 2023, process optimizations and better sulphur management at Trail Operations resulted in a 20% overall reduction in Teck's SO_2 emissions. Trail has also identified and prioritized projects aimed at further reducing the emission of metals-bearing dust from the site. Additionally, Trail initiated a smelter wheel wash project. This is scheduled for completion in 2024, with the objective of further reducing ambient metals in the air by reducing the potential for the transfer of metal-bearing materials that are located on wheels that can subsequently become airborne.
Highland Valley Copper Operations	In October 2023, a Trigger Action Response Plan (TARP) was established to identify sampling sites within the real-time air monitoring system that exceed the 90th and 95th percentiles for data collected at those locations. Supervisors are notified when thresholds are exceeded, referencing the Fugitive Dust Management Plan for mitigation and/or reporting obligations.
Elk Valley Steelmaking Coal Operations	All four mine sites (Elkview, Greenhills, Line Creek and Fording River operations) are in various phases of piloting a real-time air monitoring system, which is informed by air and weather monitoring data, as well as air dispersion modelling. The system for each site includes several ultrasonic dual dust and air quality monitors strategically placed in and near active mining and processing plant areas, along with particle monitors and weather stations. Trial data is currently under assessment to determine its feasibility in supporting operational decision-making, specifically related to targeted dust management, plan optimization and minimizing off-site impacts.

Monitoring and Reporting

The most material air quality issues at Teck relate to metals and sulphur dioxide (SO_2) at our Trail Operations metallurgical facility, as well as dust at our mining operations. In addition to monitoring these two material indicators, our operations monitor and report on other air emission parameters in accordance with permit and regulatory requirements.

Since 2015, $PM_{2.5}$ and PM_{10} results from our community-based air quality stations have been used as a surrogate for reporting particulate matter emissions. Given that the community-based air quality station results are not representative of our direct site-related particulate matter emissions, and are subject to significant influence from non-mine-related sources (i.e., wildfires, highway road dust, etc.), this criterion was replaced for 2023 reporting with particulate matter results from on-site stationary emission sources (stacks).

Our annual emission for nitrogen oxides, carbon monoxide, volatile organic matter, mercury and particulate matter are reported in our Sustainability Performance Data.[2]

Monitoring and Management of Sulphur Dioxide (SO_2)

In 2022, we updated our internal SO_2 targets in line with permit limits and our internal standards and procedures. Our SO_2 targets for 2023 and 2024 are less than 3,600 tonnes and 2,600 tonnes, respectively.

As shown in Table 3, SO_2 emissions from stacks and fossil fuel emissions in 2023 were approximately 1,932.2 tonnes — a 20% decrease from 2022 due to process optimizations that resulted in better sulphur management and less SO_2 production at Trail Operations in 2023. Trail Operations is the most significant source of SO_2 emissions for Teck and, as a result, all other operations have been aggregated in Table 3. Full results per operation are available in the Sustainability Performance Data.

Table 3: SO_2 Emissions from Stacks, Stationary and Mobile Fossil Fuel Combustion (tonnes) [(1),(2),(3),(4)]

Operations	2023	2022	2021	2020
All other operations	**16.1**	20.1	15.7	28.7
Trail Operations	**1,916.1**	2,402.7	3,078.0	3,783.5
Total	**1,932.2**	2,422.8	3,093.6	3,812.2

(1) Data for all other operations is aggregated due to their insignificant SO_2 emissions as compared to Trail's. See our website for the full set of data.
(2) Information current at time of publication. However, values will be added, confirmed and/or changed once regulatory reporting for the 2023 period is complete. See our website for up-to-date information.
(3) Our Canadian sites report annually to the National Pollutant Release Inventory (NPRI) and American operations report to the Toxics Release Inventory (TRI); NPRI and TRI have different reporting requirements and calculation methods. Information in this table may not reflect exactly the contents of NPRI and/or TRI reports, due to different reporting definitions concerning site boundaries as well as the inclusion of mobile equipment in the above table, which is not required in some regulatory reporting requirements.
(4) 2023 data includes QB2 as of January 1, 2023.

[2] Information current at time of publication. However, values will be added, confirmed and/or changed once regulatory reporting for the 2023 period is complete. See our website for up-to-date information.

Monitoring and Management of Fugitive Dust

Managing fugitive dust is a priority for Teck, and we aim to continually improve air quality and reduce dust emissions in areas affected by our activities for the benefit of workers, communities and the environment. We take extensive measures to monitor and manage dust at our operations and are working to identify new methods to improve dust management and air quality. More information on how we monitor dust at our steelmaking coal operations in the Elk Valley in particular is available on our website.

Ambient Air Quality Monitoring

Through the air quality program, we regularly monitor ambient air quality in the communities surrounding our operations through community-based ambient air quality monitoring stations. These monitoring stations use standardized equipment, per permit and regulatory requirements, and are located both on our sites and in a number of surrounding community centres. The monitoring data allows our operations to respond and manage dust originating from mining activities on-site. Table 4 on the next page describes our community air monitoring programs and includes links to where this data is available online.

Case Study: Dust Control — Foaming Technology Trial at Elkview Operations

At Teck, managing air quality is critical to people, communities and the environment, and minimizing the impact of dust is a year-round priority for our steelmaking coal operations in the Elk Valley of British Columbia. At Teck's Elkview Operations, a novel concept was developed to adapt the expansion foam normally used in firefighting to support dust mitigation control in hard-to-reach areas like rock piles and highwalls. This method also has the potential to significantly reduce water use, compared to traditional mitigation measures such as mister trucks.

In 2022, Elkview conducted a successful industry-first small-scale trial of four custom-blend foaming products as dust suppressants on pit highwalls and rock piles and is advancing a full-scale trial in 2024. If this trial is successful, this program could be expanded to other operations, contributing to reducing environmental and visual impacts from dust.

Read the full case study at www.teck.com/news/stories.

Pictured: Employees at an air quality monitoring station, Elkview Operations, Canada.

Table 4: Community Air Quality Monitoring Programs

Operation	Community Air Quality Monitoring Program Description
Carmen de Andacollo Operations	Carmen de Andacollo operates and maintains several air quality monitoring stations in the community. Various parameters, including weather parameters, acid aerosols and continuous particulate matter (PM_{10} and $PM_{2.5}$), are measured at either or both the Chepiquilla and Urmeneta stations. Total suspended particulate (TSP) is also measured at these stations as well as at three other locations around the operation. Particulate matter results are publicly available for the Chepiquilla and Urmeneta stations on this Spanish-language website.
Trail Operations	Trail Operations maintains and operates five air quality monitoring stations in the community: at Duncan Flats, Haley Park, Butler Park, Birchbank and Columbia Gardens. The stations monitor an array of parameters, including weather parameters, TSP, PM_{10}, SO_2 and metals. Passive sampling for suspended particulates and metals also occurs at 12 dust fall locations throughout the community. Continuous SO_2 gas and weather parameters are measured and publicly available for four monitoring stations (Birchbank, Haley Park, Butler Park and Columbia Gardens) on this website.
Red Dog Operations	Passive sampling for suspended particulates and metals occurs at several dust fall locations along the road to the port.
Highland Valley Copper Operations	Highland Valley Copper operates and maintains three air quality monitoring stations in the community. TSP is measured at Shula Flats, PM_{10} at the town of Logan Lake, and $PM_{2.5}$ at Rey Creek Ranch (off-site baseline). Passive sampling for suspended particulates also occurs at 20 dust fall locations throughout the community.
Quebrada Blanca Operations	Quebrada Blanca operates and maintains 10 air quality monitoring stations around operations at the following sites: Chicla, Choja, Copaquire, Choja Sur Oriente, Colonia Pintados, Tamentica, Victoria, Cáñamo, Chanavayita and Huatacondo. These 10 stations measure PM_{10} and $PM_{2.5}$.
Elk Valley Steelmaking Coal Operations	The steelmaking coal operations in the Elk Valley have seven ambient air quality stations at the following locations: Hosmer, Michel By-Products Plant, Michel Creek Road Residences, Sparwood Centennial Square, Sparwood Heights, Whispering Winds Trailer Park and Elkford Rocky Mountain Elementary School. Each station measures continuous PM_{10}, $PM_{2.5}$, TSP and meteorological parameters. Monitoring data is publicly available for the Sparwood Centennial Square and Elkford Rocky Mountain Elementary stations (including other parameters such as NOx, SOx, total precipitation and CO — for the Sparwood station) at the following websites: Sparwood Centennial Square and Elkford Rocky Mountain Elementary. Air quality data is also available on Teck's website.

For more information about our emissions to air, such as nitrous oxides, volatile organic compounds, and mercury, visit the National Pollutant Release Inventory for our Canadian operations and the Toxics Release Inventory for our American operations.

Significant Incidents and Non-Compliance Related to Air Quality[3]

We assess the severity of environmental incidents, spills and non-compliances based on potential environmental, safety, community, reputational and financial impacts. Based on our incident severity criteria, there were no significant incidents related to air quality in 2023. There were no significant charges, fines or penalties for non-compliance related to air quality in 2023.

[3] Definition of significant environmental incidents is on page 37.