

Tulsequah Chief Mine

Annual Site Activities Summary - 2024

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1.0 Introduction

Through open dialogue with Taku River Tlingit First Nation (TRTFN) and the Government of British Columbia (BC Government), Teck Resources Limited (Teck) voluntarily undertook field activities at the Tulsequah Chief Mine to further characterize the environmental conditions on site and enable future detailed closure and reclamation planning. The following report summarizes the work completed in the 2024 field season. A discussion of data and results from the 2024 work will be provided in future updates when data and sample analyses are complete.

1.1 History: Tulsequah Chief

Developed and operated by Cominco (a predecessor to Teck) in the 1950s, the Tulsequah Chief Mine has experienced several ownership changes since the 1990s, leading to a series of development and closure plans. The site's most recent owner went into receivership in 2016, after which Teck voluntarily supported remediation efforts for the site. In 2020, the Chief Inspector of Mines for BC engaged SNC-Lavalin and SRK Consulting (Canada) Ltd to prepare a conceptual closure report to better understand the options and estimated costs for site reclamation. Site activities were conducted to upgrade site access, with Teck providing financial support for the work. In 2023, Teck began reviewing the 2020 conceptual closure report to identify data gaps, additional information requirements, and necessary investigative studies to support further evaluation and selection of closure options. Teck is now working with TRTFN and BC regulators to develop a detailed closure and reclamation plan.

2.0 Regulatory and Community Engagement

2.1 Tripartite Agreement & Collaboration

In 2024, TRTFN, BC Government (through the Ministry of Environment and Climate Change Strategy (ENV) and the Ministry of Energy, Mines and Low Carbon Innovation (EMLI)), and Teck collaborated to identify shared priorities in developing a detailed closure and reclamation plan for Tulsequah Chief. These priorities are reflected in a Memorandum of Understanding (MOU) signed on September 17, 2024, by all three parties.

2.2 TRTFN/Teck Engagement

Teck and TRTFN have established both a Steering Committee, with Terms of Reference that outline the shared principles for collaboration and information sharing on a bi-weekly basis, and a Technical Working Group (TWG), with a mandate to align on technical scopes during the closure and reclamation planning. The TWG acts as the accountable mechanism for synthesis of data interpretations to inform future Steering Committee decisions.

In 2024, the Steering Committee and TWG focused on setting priorities for data collection activities, specifically water and aquatic monitoring. Representatives of TRTFN also travelled to site with Teck to complete site inspections.

TRTFN hosted a community engagement session in Atlin on June 15, 2024, to which Teck and BC were invited. The purpose of this meeting was to provide information on 2024 workplans and receive feedback from the community about priorities and concerns related to Tulsequah Chief Mine.

2.3 BC Government/Teck Engagement

Teck, ENV and EMLI continued engagement throughout the year regarding regulatory considerations for site investigations and development of a detailed closure and reclamation plan.

2.4 Alaska

In June 2024, Teck participated in meetings and an open house in Juneau with the BC Government and Alaskan officials, to present the plans for on-site work planned for 2024 and to better understand transboundary interests in the Tulsequah Chief site.

3.0 2024 Field Season

Work plans for the 2024 field season were developed in collaboration between Teck and TRTFN and implemented between May 26 and October 4.

3.1 Safe Access

The Tulsequah Chief site is located approximately 100 km southwest of Atlin, BC, approximately 10 km upstream of the confluence with the Taku River, and approximately 30 km upstream from the border with Alaska. Due to the geography of the area and steep mountainous terrain, the site is currently only accessed by air with twin-engine helicopters. There is a gravel airstrip that would permit landing of small fixed-wing aircraft at the site (Figure 1). Teck deployed a crew to assess the airstrip and helicopter access points. Larger rocks and saplings in the airstrip posed safety risks to fixed wing aircraft and were removed. Due to the steep terrain, temporary designated landing areas will be used to support safe helicopter operations. Helipads were constructed at the upper portals to enable safe access (Figure 2).

All river/creek crossings, including culverts and bridges were inspected in 2024 (Figure 3).

The historic camp at the site near the airstrip will require retrofits and resolution of access issues prior to future use. A temporary 18-bed camp was constructed to support 2024 field activities (Figure 4). The size of this temporary camp limited the number of workers that could be accommodated on site at the same time during the 2024 season.

Teck worked with ATELP (Taku Corp) and Arctic Construction Ltd. (Arctic) to assess on-site equipment owned by Arctic, restoring machinery to a safe operating state.

Additionally, a drone survey was flown over key areas, including the airstrip, the area around portals and outside mine workings, the water treatment plant and ponds and key bridges. These flights provided data that will inform structural design of bridge and airstrip improvements, help determine volume and area of waste rock piles, and locate any unknown openings to surface.

This detailed on-site work to investigate and re-establish safe access to site will enable Teck to plan for more significant on site activities in 2025.



Figure 1: View of the Tulsequah River and air strip looking out from the 5900 portal.



Figure 2: Temporary helicopter landing pad at the 5900 portal.



Figure 3: Bridge 9 deck view from the south.



Figure 4: Overhead view of the temporary camp facilities used on site in 2024.

3.2 Underground Workings

There are a series of mine portals at 5200, 5400, 5900, 6400 and 6500 feet above sea-level. Drones were deployed at site on June 24-25, 2024, to film the inner workings underground at 5900, 6400 and 6500 (Figure 5). These scans were needed to a) assess ground control requirements to enable safe entry and b) map the portals (location and volume) in high resolution to enable closure options analysis.

Drone surveys were not conducted at 5200 and 5400 in 2024 because the portal entrances have closed doors, and opening these doors will require additional fortification and planning to ensure worker safety (Figure 6).



Figure 5: Drone entry into the 6500 portal.



Figure 6: Entrance to the 5400 portal, showing the door at the back and fallen debris blocking access and indicating the need for additional structural fortifications.

3.3 Underground Water Quality & Flow

Discharge water quality and flow data was collected at the 5200, 5400 and 5900 portals which have water flowing out (Figure 7). Additional data was collected at the spillway out of the exfiltration pond comprising water from the lower-level mine workings and surface sources (Figure 8) to evaluate the effectiveness of past measures to keep clean water clean and manage acidity of water moving in the portals. Further surface water quality data was collected at Camp Creek, and groundwater data from around the sludge pond.



Figure7: Discharge sampling being conducted at the 5400 portal.



Figure 8: A sonde installed at a collecting pond for continuous water discharge quality monitoring.

3.4 Water Sampling and Aquatic Monitoring

A water sampling program was conducted with support from TRTFN members, over two campaigns commencing July 20 and September 17, to collect data from 36 locations in the Taku River valley. In addition to water quality sampling, an aquatic effects monitoring program was completed to collect information on sediment, benthic invertebrates, and fish to characterize aquatic populations in the Tulsequah River and tributaries (Figure 9).



Figure 9: Aquatic effects monitoring program (AEMP) kick-net sampling

3.5 Waste Rock

Samples of waste rock from all portal locations and samples of ore outside the workings were collected for geochemical and mineralogical analysis to characterize the material and inform the closure plan.

The surface drone data collected for the Tulsequah Chief Mine site will enable estimates of waste rock volumes.

3.6 Assessment of the Water Treatment Plant

There is an inactive water treatment plant on site that was designed to treat mine-affected water. Past flooding of the plant building damaged the facility, affecting electrical components, potentially affecting mechanical components, and creating black mold (a human health hazard). During 2024, Teck conducted mold abatement and had an electrical engineer assess powered components of the plant including automated valves and pumps (Figure 10). While it is a shared objective of TRTFN, Teck, ENV and EMLI to avoid long-term water treatment, water treatment experts were engaged to evaluate the plant to determine if short-term water treatment could be used to manage discharge from the portals during 2025 underground investigations and/or improve on current conditions until underground flows are controlled as part of closure work.



Figure 10: Mold abatement work conducted inside the water treatment plant.

3.7 Waste Management

As part of the 2024 work, chemicals that were stored within the water treatment plant facilities have been removed, inventoried, and secured using appropriate containment (Figure 11).

In response to concerns raised by TRTFN, chemicals abandoned near the airstrip by previous operators were moved into containment (Figure 12). Initial collection of historic garbage dispersed around the site was undertaken as part of containment efforts, in preparation for future removal and controlled disposal. All waste generated during the 2024 field season has been removed from site.



Figure 11: Water treatment plant facility chemicals in storage adjacent to the treatment plant



Figure 12: Compromised containers of viscosity control chemicals and contaminated gravel from the airstrip area in labelled totes for future removal.

4.0 Next Steps

The 2024 field data will be reviewed by the TWG upon delivery to Teck, and shared with the Steering Committee, ENV and EMLI, and the TRTFN community. As contemplated in the TRTFN, BC Government and Teck MOU, a quarterly meeting will be established to align on priorities for future site work and discuss progress.

In preparation for the 2025 field season, Teck will be conducting integrated planning sessions and collaborating with TRTFN to align on the workplan, contracting requirements, employment opportunities, and training. Additional regulatory engagement and permitting will likely be required for many contemplated activities, including in-stream work to reinforce critical bridges, removal of waste from site, and potentially commissioning of the water treatment plant. Details regarding the regulatory requirements for the proposed Tulsequah Chief Mine Closure Plan will be assessed over the coming months as closure planning continues.