Tailings Storage Facility Disclosure Report

Highland Valley Copper, Highland Tailings Storage Facility

December 2024

Teck

Contents

1. Tailings Facility Description

The Highland Tailings Storage Facility (TSF) is the primary active storage facility for Highland Valley Copper (HVC) Mine, which is indirectly owned and operated by Teck Resources Limited (Teck). The HVC Mine is located approximately 45 km southwest of Kamloops, in the interior of British Columbia (BC), Canada.

The site is located within the highlands of the Thompson Plateau Physiographical Region and is characterized by elevated regions of moderate relief with moderate to gentle slopes. The vegetation comprises bunchgrass steppes, sagebrush and open forest comprised of pine, fir, aspen and larch. The climate is characterized as semi-arid and is affected by the rain shadow of the Cascade Mountain Range to the west of the Thompson River Valley.

Tailings are retained in the Highland TSF by the L-L Dam and the H-H Dam, which were built across the Highland Valley. There are several seepage and sediment collection ponds associated with the Highland TSF, including the 24 Mile TSF adjacent to the H-H Dam. See Figure 1 for a plan view of the TSF.

The Highland TSF is located approximately 6.5 km northwest of the operating Highland Mill and is approximately 10 km long. Construction of the Highland TSF began in 1971. The Highland TSF began operation in 1971 with the H-H Dam and J-J Starter Dam. The L-L Dam was constructed between 1976 and 1979 and replaced the J-J Dam, which was buried by tailings by 1991. The permitted tailings production rate of the mine is 200,000 tonnes per day (tpd) with approximately 103,000 tpd deposited during 2023. The majority of the tailings are currently transported and deposited as a slurry from the west abutment of the H-H Dam. The tailings beach slopes away from the H-H Dam towards the L-L Dam, with a water pond forming near the west end of the facility. Tailings are also transported to the L-L Dam where they are processed and used to construct the L-L Dam and deposited to maintain a beach between the dam and the pond.

A short description of the Highland TSF, and the structures comprising the Highland TSF are summarized in Table 1 and Table 2 below.

Table 1: Description of Highland TSF

TSF Design Summary	Description
Status	Active
Number of tailings embankment structures	2 (L-L Dam and H-H Dam)
Type of Construction	L-L Dam: Centerline cycloned sand dam with a till core. H-H Dam: Centerline rock and earth fill dam.
Most recent Annual Facility Performance Review	2023 www.teck.com/tailings
Independent Review Board	Yes

Table 2: Structures Comprising Highland TSF

Structure	Purpose
L-L Dam	Tailings and water retaining structure
H-H Dam	Tailings retaining structure
24 Mile TSF	Receives seepage from the H-H Dam and acts as storage for tailings overflow from the H-H Pumphouse.
Seepage Water Reclaim Pond	Primary seepage collection pond downstream of the L-L Dam, from which water is pumped back to the TSF. It also receives water from surface runoff, sediment ponds, and other seepage collection ponds.
Seepage Pond 2	Collects seepage primarily from finger drains under the northern portions of the L-L Dam.
Sediment Pond 1	Partially decommissioned sediment cell. To be used until new sediment pond (Sediment Pond 3) is commissioned, anticipated to be in 2025.
Sediment Pond 2	Collects construction water and sediment from hydraulic sand placement on the downstream side of L-L Dam.
Sediment Pond 4	Collects construction water and sediment from hydraulic sand placement on the downstream side of L-L Dam.

Note: Further details regarding the TSF configuration can be found in our facility inventory at [www.Teck.com/tailings.](www.Teck.com/tailings)

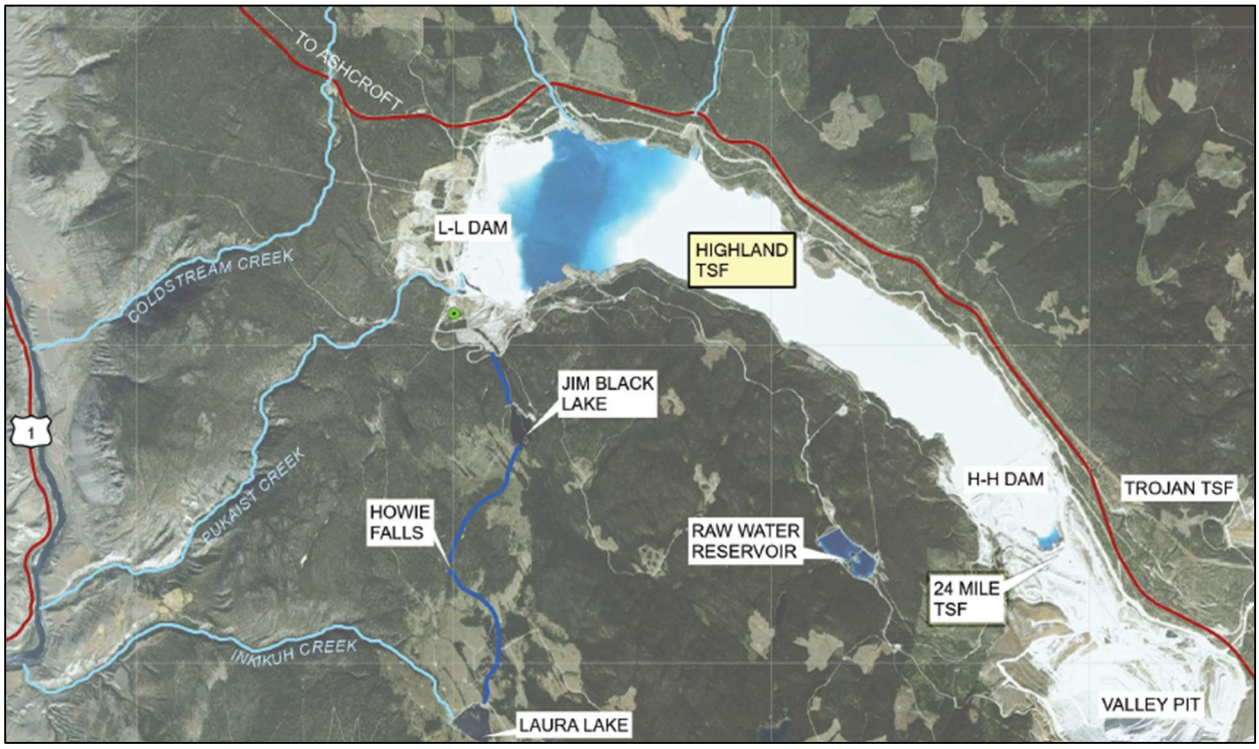

Figure 1: Highland TSF Site Plan

2. Consequence Classification

All Teck tailings facilities are assessed for credible failure modes, and the outcomes from these credible failure scenario assessments inform our risk management activities. For the purposes of assigning a facility consequence classification, the downstream consequences of *potential* failure modes (not considering whether they are credible or not) are used, as per the Canadian Dam Association (CDA) guidelines and the requirements of the jurisdictions in which we operate. The Global Industry Standard on Tailings Management (GISTM) bases consequence classification on credible failure modes only, which may result in a lower stated classification.

Consequence classification should not be confused with risk, as risk also requires the consideration of the likelihood of the event occurring. To better understand the risk that a tailings facility presents, it is necessary to consider both the likelihood of a failure event, and the consequence of the event, which is performed through our risk assessment process described in the next section.

The L-L Dam is classified as ‘Extreme’ consequence under both the CDA guidelines and GISTM, and the H-H Dam is classified as ‘Very High’ under both systems. The seepage ponds, sediment ponds, and 24 Mile TSF are classified as ‘Low’ to ‘Significant’ consequence facilities under the CDA guidelines.

3. Summary of Risk Assessment Findings

Teck applies risk-based design approaches, whereby risk assessments are used to demonstrate the resilience of our facilities to extreme loading criteria, and to inform decisions to manage risks to as low as reasonably practicable (ALARP). This approach focuses our efforts on credible failure modes, reducing risks at our facilities by reducing the likelihood of occurrence and mitigating downstream impacts, regardless of the consequence classification from hypothetical dam failures.

The risk assessment for the Highland TSF was updated in 2024, re-assessing potential failure modes for hazards up to and including extreme events (i.e., an event that occurs once in 10,000 years).

All failure modes are classified according to Teck’s risk matrix, with risk mitigation controls identified and tracked. These failure modes are also described in the publicly available Annual Facility Performance Reports. These risk assessments are prepared with assistance from the Engineer or Record and are reviewed by the Independent Tailings Review Board. Teck regularly updates these detailed risk assessments, and the key findings from the most recent assessment are described below.

Based on this assessment, the Highland TSF has potentially credible failure modes that are of very low likelihood. A summary of material risks associated with these failure modes and how they are being managed, along with the existing controls that are in place and additional risk mitigation measures that are under implementation, is provided below.

L-L Dam:

The only credible failure mode posing a material risk assumes that there could be a weak soil or rock unit beneath the dam that has escaped detection despite the extensive and ongoing site characterization programs and performance monitoring that have occurred throughout the 40+ years of operation.

What could happen:

- If present, such a unit could theoretically lead to dam instability and deformation during construction loading, a very large earthquake, or through piping/internal erosion. Instability or deformation of the dam could result in loss of water and tailings containment, potentially leading to a dam breach.

It is important to note that there are no indications that such a unit is present, and the likelihood that such a layer has escaped detection is considered extremely low.

What are we doing to control the risk:

- Controls are in place to manage this risk, including site characterization to meet industry best practices, a design to withstand extreme loading events, a stress-deformation model that is frequently calibrated against performance monitoring, and a surveillance program that incorporates a real-time instrumentation monitoring system. All of these controls are subject to external reviews by the Independent Tailings Review Board.
- Additionally, the dam is built and operated with surplus freeboard (>10 m) and a wide tailings beach to further tolerate any unforeseen deformations.

H-H Dam:

The only credible failure mode posing a material risk assumes that the waste rock and earth fill materials that form the downstream shell of the dam could weaken during a large earthquake (≥M6).

What could happen:

- In the event of a very large earthquake, weakening of the downstream fill could theoretically lead to dam instability and deformation, which in turn could allow the downstream slope fill and some tailings to be released from the facility on to the mine site. The tailings would not be expected to mobilize (i.e., move/flow) far from the H-H Dam since there is no water ponded near the H-H Dam. Such an event is considered to be of extremely low likelihood due to the very large earthquake that would be required to potentially trigger weakening of the downstream fill.

What are we doing to control the risk:

In order to further reduce this risk, the waste rock dumps built downstream of the H-H Dam have been raised using rock from mining activities nearby. These waste rock dumps act as a buttress and further increases the stability of the dam. This buttressing has progressed well throughout 2023 and 2024 and is expected to be complete by Q1 2025 with additional buttressing for waste rock storage ongoing through life of mine.

24 Mile TSF and Ancillary Structures:

There are no credible failure modes identified for the 24 Mile TSF that could pose a material risk. The facility is constructed below natural ground and does not have any dams. The other seepage and sediment ponds are retained by relatively small, low consequence water dams for which various risk management measures are in place.

The above risks, and the results of the associated performance monitoring and surveillance program that monitors these risks, are described in more detail in the Annual Facility Performance Report at www.teck.com/tailings.

4. Summary of Impact Assessments and of Human Exposure and Vulnerability to Tailings Facility Credible Flow Failure Scenarios

Formal inundation studies have been conducted for the Highland TSF for both the L-L Dam and H-H Dam to identify potentially impacted communities and waterbodies in the extremely unlikely event of a tailings facility breach. An assessment of human exposure (potential for a person to be located in the inundation area) and vulnerability (existing physical, social, economic and environmental conditions that make people and the environment more susceptible to the impacts) was undertaken for the Highland TSF area of influence to understand the severity of the effects of a tailings dam breach. Results of the assessment are summarized below.

L-L Dam
The potential effects to people and the environment in the highly unlikely scenario of a breach of the L-L Dam may include loss of life and impacts to water supply, public health and safety, community infrastructure, and Indigenous territory. It was identified that severe impacts would occur where a number of vulnerability factors are present, including the location of critical infrastructure, Indigenous Peoples use of land and resources, and livelihoods, resulting in potentially severe disruption to people in the area of influence. The area of influence for the L-L Dam includes the on-site work area downstream of L-L Dam, and communities along the Thompson, Nicola and Fraser Rivers, with effects decreasing along the length of the rivers.

H-H Dam
The potential effects in the highly unlikely scenario of a breach of the H-H Dam would be primarily contained to the area of the HVC mining operation and associated work areas, and may include loss of life, and disruption of livelihoods. The area of influence for the H-H Dam includes the mining operation work areas directly downstream of the dam, as well as the Valley pit.

What are we doing to control the risk:

- The controls and mitigations that have been implemented to reduce the likelihood and consequences of a potential tailings incident at the Highland TSF are described in Section 3 above. Further, measures have been taken to protect potentially affected people, including sharing of information, assessing capacity of the communities to respond to emergencies, and co-developing emergency response measures with provincial agencies and project-affected people to improve preparedness.

5. Description of the Design for all Phases of the Tailings Facility Lifecycle

General design information regarding the three retaining structures (L-L Dam, H-H Dam and 24 Mile TSF) and those that manage water and sediment downstream of the L-L Dam are summarized in Table 3 below.

A design for closure and mine reclamation has been developed considering Indigenous input and input from communities on land use objectives, alternatives and overall closure design. The closure design for the Highland TSF includes a smaller pond located farther from the L-L Dam, construction of a spillway through the south abutment to route the Probable Maximum Flood (PMF) event, shaping the tailings surface to promote drainage and develop varying landforms for biodiversity, and placement of a reclamation cover and vegetation ranging from grasslands to forest. The seepage and sediment ponds will be removed, and eventually the system will operate passively.

Table 3: Highland TSF Design Information Summary

Structure	Containment or Design Type	Estimated Crest El. (m)	Current Dam Height (m)	Initial Operation	Final Permitted Dam Crest El. (m)	Current Tailings Volume (m^3)	Final Permitted Tailings Capacity (m^3)	Crest Length (m)	Overall Downstream Slope	Design Storm Event	Design Earthquake
L-L Dam	-Centerline cycloned sand dam with a glacial till core. -Construction started in 1976 and has been raised generally annually.	1274.5	169.5	1976	1279	1,700,000,000 (approximate)	2,000,000,000 (approximate)	2,980	2.5V:1H (max) 6.5H:1V (shallowest)	Probable Maximum Flood (PMF) 120-hour	Earthquake Design Ground Motion (EDGM) 10,000-year return interval
H-H Dam	-Centerline rock and earth fill dam with glacial till core or granular filter. -Construction started in 1972 and generally raised annually.	1283.5 to 1291.0	44.0	1972	1292.7			1,800	2H:1V with a waste rock buttress	PMF 120-hour	EDGM 5,000-year return interval
24 Mile TSF	-Natural depression with tailings below existing ground surface.	Min. 1225.0	n/a	1972 (approximate)	n/a	<13,000,000 (approximate)	<13,000,000 (approximate)	n/a	n/a	1/3 between 1,000-year and PMF 72-hour	n/a
Seepage Water Reclaim Pond	-Excavation into natural ground with containment partially provided by an embankment constructed of glacial till with a downstream sand and gravel filter.	1103.2	5.0	1980's	5.0	n/a	n/a	95	3H:1V	100-year, 72-hour	1,000-year return interval
Seepage Pond 2	-Excavated into natural ground with containment partially provided by an embankment constructed of glacial till. Pond is lined with geomembrane.	1116.6	1.8	2012	1.8	n/a	n/a	80	2.5H: 1V	100-year, 24-hour	1,000-year return interval
Sediment Pond 1	-Excavated into natural ground. Containment is provided by a natural ground consisting of glacial till, with internal berms constructed of glacial till. Partially decommissioned and backfilled. -Flood water flows into the Seepage Water Reclaim Pond.	1104.2	2.5	Early 1990's	2.5	< 140,000	n/a	700 (North) 600 (South)	n/a	n/a	n/a
Sediment Pond 2	-Excavated into natural ground on three sides, with an embankment constructed of glacial till. Pond is lined with geomembrane.	1126.9	10.0	2014	10.0	< 50,000	n/a	100	2.5H:1V	100-year, 24-hour	1,000-year return interval
Sediment Pond 4	-Contained by natural ground with containment partially provided by embankments constructed of glacial till. - Flood water flows into the Seepage Water Reclaim Pond.	1104.0	<2.0	2014	<2.0	0	n/a	n/a	n/a	n/a	n/a

6. Summary of Material Findings of Annual Facility Performance Reports (AFPR) and Dam Safety Reviews (DSR)

Annual Facility Performance Reports (AFPRs) are compiled each year by a third-party Engineer of Record to summarize the past year's monitoring and surveillance information into a concise review. Dam Safety Reviews (DSRs) are performed every 5 years by an independent reviewer in order to provide an independent assessment of the design and performance of the tailings facility. These reports document the safe operation, maintenance, and surveillance of the facility and make any recommendations for continual improvement. Recommendations from these reports are tracked in the site tailings management system through to completion.

The recommendations from the AFPRs and DSRs are considered 'material[1] findings' when the observation relates to credible failure modes of the facility that could result in a very high or extreme consequence, regardless of the likelihood of such an occurrence. It is important to note that a 'material finding' does not mean a high probability of occurrence. The urgency with which recommendations are to be addressed are defined by the Engineer of Record or independent reviewer by assigning a priority rating, which then informs the timeline to complete the action.

The most recent AFPR for this facility was completed for the period of December 2022 through November 2023 and the most recent DSR was performed in 2022. There were no high priority recommendations identified in either the 2023 AFPR or 2022 DSR that would indicate any tailings facility safety issues. There were no material findings in either the 2023 AFPR or 2022 DSR.

7. Summary of Material Findings of the Environmental and Social Monitoring Program

HVC has implemented an Environmental Management System (EMS) that conforms to the requirements of ISO 14001:2015 and applicable Teck corporate standards for health, safety, environment and community (HSEC) management. The EMS applies to all activities that could impact the environment at HVC and outlines the processes and practices to reduce potential environmental impacts and improve environmental performance. Monitoring and review requirements are defined within a digital EMS application and used to track the overall effectiveness of the EMS in controlling environmental impacts, verifying conformance with operational controls, tracking regulatory compliance status, and progress toward achieving objectives and targets. Audits of the EMS are conducted annually by third parties. Key performance indicators of interest tracked within the EMS system include:

- Environmental performance
- Water and tailings performance
- Waste management
- On site and downstream water quality

[1] Material: Important enough to merit attention or having an effective influence or bearing on the determination in question. For the Standard, the criteria for what is material will be defined by Operator, subject to the provisions of local regulations, and evaluated as part of any audit or external independent assessment that may be conducted on implementation. (GISTM, 2020)

- Compliance obligations
- Emergency preparedness and response
- Community affairs.

There were no material findings from the environmental monitoring program associated with the Highland TSF in 2023. As part of ongoing efforts to continuously improve our environmental management, HVC is undertaking work to improve understanding of hydrogeology, groundwater flows, chemistry and surface water interactions. HVC also continues to work towards a collaborative resolution with Indigenous Governments and Organizations on the execution of the sulphate adaptive management plan (SAMP) program and concurrent broader water management initiatives. Community incident status is reviewed quarterly by HVC.

As of October 2024, there is one open community grievance related to dust emissions from the L-L Dam. HVC has a program in place to reduce dust emissions from the dam.

As part of ongoing efforts to continuously improve our social performance, HVC recently completed an assessment of human exposure, vulnerability and human rights risks associated with credible failure scenarios. Further, the socio-economic profile of the communities of interest was updated in 2023 to ensure the mine has current knowledge of the area of influence of the HVC TSFs and future development related to the mine life extension application. A comprehensive Global Industry Standard on Tailings Management (GISTM) Engagement Plan was also created and is in the process of being implemented. This plan outlines the activities that will be undertaken to continue to expand the existing mechanisms already in place for meaningful engagement with project affected people and other stakeholders including local emergency response organizations.

All community feedback is tracked and continually updated within the HVC Knowledge Base. Material findings from social monitoring across the site in general can be found in Teck's annual Sustainability Report.

8. Summary of the Tailings Facility Emergency Preparedness and Response Plan (EPRP)

The Highland TSF has an Emergency Preparedness and Response Plan (EPRP) which is included in the site-specific HVC Mine Emergency Response Plan (MERP). This plan identifies hazards associated with credible flow failure scenarios and describes actions to prepare for and respond to emergencies arising from those hazards. The plan describes roles and responsibilities of site personnel and of provincial emergency response organizations, alert and notification procedures including off-site contacts, an inventory of response equipment, and training requirements for site personnel. The plan is developed and continuously improved upon by working with outside agencies such as, but not limited to, Ministry of Emergency Management and Climate Readiness (EMCR) BC, local communities, Indigenous organizations and independent engineering consultants.

The EPRP program is linked to the tailings specific Trigger Action Response Plan (TARP), which are associated with the tailings surveillance and monitoring program mentioned in Section 3. The objectives of the EPRP are:

- Establish procedures for emergency preparation, including escalating levels of response,
- Respond to developing, imminent or actual dam failure scenarios in a way that reduces potential consequences; and,
- Identify training and testing requirements for effective implementation of the EPRP.

In the highly unlikely event of an imminent tailings dam failure, response actions would be taken to save human lives and reduce the potential downstream consequences. The actions identified in the EPRP generally include:

- Immediate physical actions that could potentially be taken in response to an unexpected triggering event to prevent further deterioration of the situation or condition toward dam failure.
- Emergency call out procedures to establish internal and external communication lines. These contact lists are verified annually to confirm accurate contact information. The groups that would be contacted include, but are not limited to:
    - Emergency Management BC
    - Indigenous Government Organizations
    - Local governments of potentially affected downstream communities
    - Teck Corporate Crisis Response Team
    - The Engineer of Record
- Procedures for coordination with Emergency Management BC in order to conduct an evacuation of downstream potentially affected areas. For this purpose, evacuation maps have been prepared.

In preparation for emergencies, emergency simulations and training exercises are conducted annually, and include participation by emergency preparedness agencies and representatives of the downstream project affected people. During these exercises, HVC requests input on the capability and capacity of emergency response services of downstream communities and project affected people to respond in an evacuation situation. As part of our commitment to continuous improvement, HVC's EPRPs will continue to develop over time in collaboration with project affected people to improve the state of preparedness for emergencies.

9. Independent Reviews

The most recent independent Dam Safety Review (DSR) was in 2022. The next DSR is scheduled for 2027.

10. Financial Capacity

Teck confirms that it has adequate financial capacity to cover estimated costs of planned closure, early closure, reclamation, and post-closure of the Highland TSF and its appurtenant structures. These costs are disclosed annually in aggregate form in our annual financial statements contained within our Annual Report. These cost estimates are based on the tailings facility closure designs described in Section 5.

Further, Teck maintains insurance for our tailings facilities to the extent commercially available.

11. Conformance to the Global Industry Standard on Tailings Management

Teck has performed a self-assessment of conformance to the Global Industry Standard on Tailings Management (GISTM) for the Highland TSF. This self-assessment has been performed in accordance with the ICMM Conformance Protocols issued in May 2021.

Categories of conformance for individual Requirements in the GISTM are set out below. These take into account guidance from ICMM. Where some requirements represent ongoing community engagement or other ongoing activities, and the systems and/or practices are substantively implemented such that the intended outcome is functionally achieved, and there is no physical risk to tailings facility safety, then these requirements can be considered in conformance with the GISTM.

Table 4: Categories of Conformance

Conformance Level	Description
Meets	Systems and/or practices related to the Requirement have been implemented and there is sufficient evidence that the Requirement is being met.
Meets with plans in place	Where an Operator is required to undertake engineering work or other measures to conform to some Requirements (e.g., for Requirements 4.7 or 5.7, which might include remedial engineering measures for existing facilities), the expectation is that these shall be carried out as soon as reasonably practicable. It is not necessary for such measures to be complete by the implementation deadlines for an Operator to be in conformance, but both the measures and associated timelines should be clearly documented by an Accountable Executive.
Partially meets	Systems and/or practices related to meeting the Requirement have been only partially implemented. Gaps or weaknesses persist that may contribute to an inability to meet the Requirement, or insufficient verifiable evidence has been provided to demonstrate that the activity is aligned to the Requirement.
Does not meet	Systems and/or practices required to support implementation of the Requirement are not in place, are not being implemented or cannot be evidenced.
Not applicable	The specific Requirement is not applicable to the context of the asset.

For Highland TSF at HVC, all requirements have been met, or are met with a plan in place, for Principles 1 through 15. The facility was designed to meet extreme loading criteria. Further, appropriate tailings management and governance systems are in place, with established independent reviews and ongoing community engagement.