Tailings Storage Facility Disclosure Report

Highland Valley Copper, Bethlehem Tailings Storage Facility

July 2023

Teck

Contents

Contents 1
1. Tailings Facility Description 2
2. Consequences of Failure 4
3. Summary of Risk Assessment Findings 4
4. Summary of Impact Assessments and of Human Exposure and Vulnerability to Tailings Facility Credible Flow Failure Scenarios: 6
5. Description of the Design for all Phases of the Tailings Facility Lifecycle 6
6. Summary of Material Findings of Annual Facility Performance Reviews (AFPR) and Dam Safety Reviews (DSR) 8
7. Summary of Material Findings of the Environmental and Social Monitoring Program 8
8. Summary of the Tailings Facility Emergency Preparedness and Response Plan (EPRP) 9
9. Independent Reviews 10
10. Financial Capacity 10
11. Conformance to the Global Industry Standard on Tailings Management 11

Table 1: Description of Bethlehem TSF 2
Table 2: Structures Comprising Bethlehem TSF 3
Table 3: Bethlehem TSF Design Information Summary 7
Table 4: Categories of Conformance 11

Figure 1: Bethlehem TSF Site Plan 3

1. Tailings Facility Description

The Bethlehem Tailings Storage Facility (TSF) is an inactive storage facility at the Highland Valley Copper Mine (HVC Mine), which is owned and operated by Teck Resources Limited. The HVC Mine is located approximately 45 km southwest of Kamloops, in the interior of British Columbia.

The site is located within the highlands of the Thompson Plateau and is characterized by elevated regions of moderate relief with moderate to gentle slopes, a rounded outline and a large area at or near the summit elevation. 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 TSF by the Dam No. 1 and the Bose Lake Dam. There are two shallow free water ponds in the Bethlehem TSF that have formed in low points of the tailings surface and are present year-round.

The Bethlehem TSF is located approximately 4 km northeast of the operating Highland mill and immediately east of the Trojan TSF. Construction of the Bethlehem TSF began in 1963 with the Dam No. 1. The Bethlehem TSF operated from 1963 to 1989 and stores an estimated 68 Mm^3 of tailings.

A description of the Bethlehem TSF and the structures comprising the Bethlehem TSF are summarized in the tables below.

Table 1: Description of Bethlehem TSF

Design Summary	Description
Status	Closed
Number of tailings dam structures	3 (Dam No.1, Bose Lake Dam, R3 Seepage Pond Dam)
Type of Construction	Dam No.1: Centerline rockfill dam with a glacial till starter dam and upstream cyclone sand beach. Bose Lake Dam: Downstream glacial till dam with a rockfill toe berm. R3 Seepage Pond Dam: Compacted fill dam.
Most recent Annual Facility Performance Review	2022 www.teck.com/tailings
Independent Review Board	Yes

Table 2: Structures Comprising Bethlehem TSF

Structure	Purpose
Dam No.1	Tailings retaining structure
Bose Lake Dam	Water and tailings retaining structure
R3 Seepage Pond Dam	Collects local runoff and seepage from Dam No. 1

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

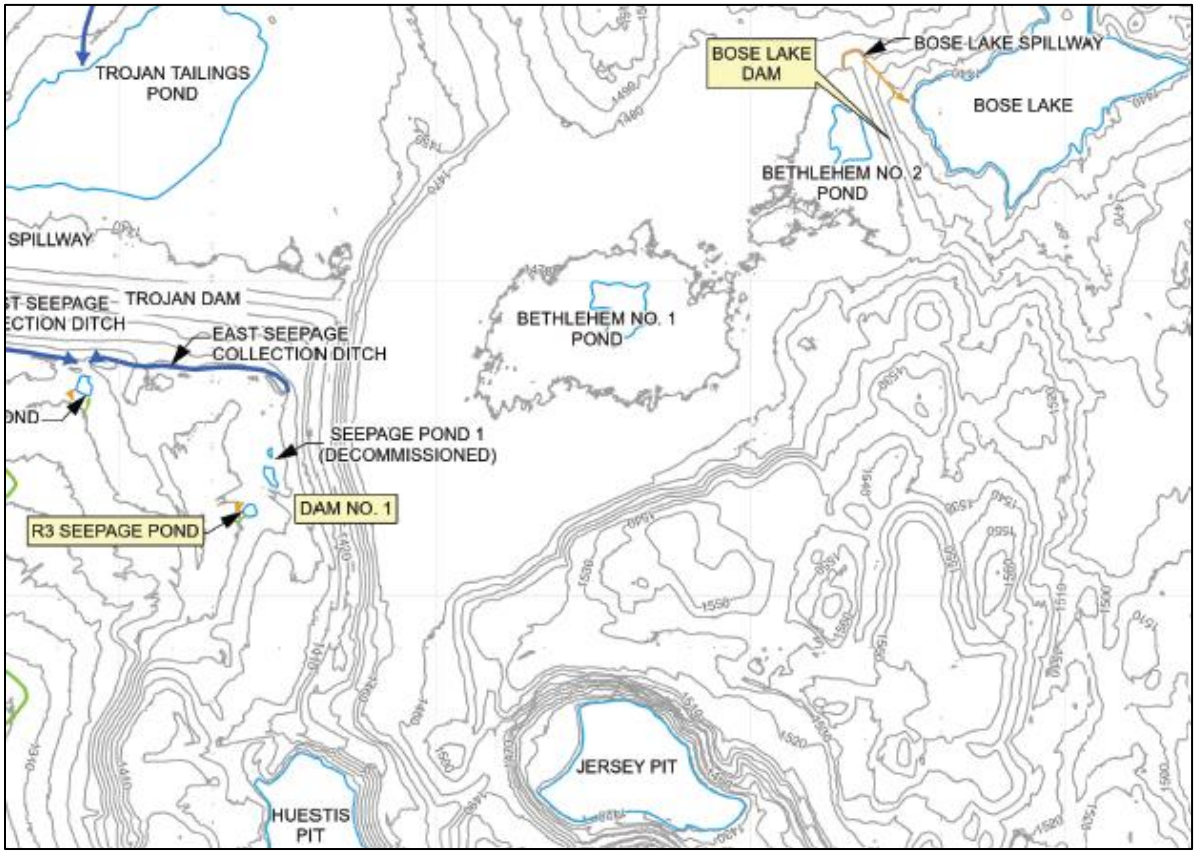

Figure 1: Bethlehem TSF Site Plan

2. Consequences of Failure

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 classifications thus provide an indication of the downstream impacts of an assumed dam failure, regardless of whether such a failure is even credible. 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 Bethlehem Dam No. 1 is classified as a ‘Very High’ consequence facility under both the CDA guidelines and GISTM, while the Bose Lake Dam is classified as ‘High’, and the R3 Seepage Pond Dam is classified as ‘Low’.

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 most recent risk assessment for the Bethlehem TSF was conducted in 2023, assessing potential failure modes for hazards up to and including extreme events (i.e., an event that occurs once in 10,000 years). As part of this assessment, failure modes are deemed as credible or non-credible, considering the greatest combination of events or operational errors, and then the risk of such events are evaluated.

All credible failure modes are sorted according to Teck’s risk matrix, with risk mitigation controls identified and tracked. These risk assessments are prepared with assistance from the Engineer of 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.

The Bethlehem TSF has potentially credible failure modes that are of very low likelihood, and would not result in a flow failure. A summary of the material risks (high or extreme consequences, regardless of likelihood) that are being managed, the existing controls that are in place, and additional risk mitigation measures that are planned are summarized below.

Slope instability of the Rockfill Toe Buttress during an Extreme Earthquake:

What could happen:

- If an extreme earthquake occurred, the shaking could theoretically lead to a slump of the toe buttress of Bethlehem No 1 Dam, but this would not result in a flow failure.

What are we doing or planning to do to control the risk:

- The condition of the facility and the material characterization have been thoroughly investigated and characterized.
- The facility water level is located far from the dam crest and the seepage water levels are maintained low in the upstream beach and dam.
- A surveillance and monitoring program are in place that incorporates real-time instrumentation monitoring.
- A drilling investigation program is planned to further characterize the foundation soils.
- Multiple layers of review are in place, including an external Independent Review Board and regular Dam Safety Reviews.

Internal Erosion of the Tailings:

What could happen:

- If seepage through the Bethlehem No 1 Dam were to somehow increase, and if there was an unknown construction defect in the dam, internal erosion could potentially occur, leading to tailings and pond water migrating through the dam fill or foundation, but would not lead to a flow failure.

What are we doing to control the risk:

- The condition of the facility and the material characterization have been thoroughly investigated, with additional investigations planned.
- The closure configuration of the facility includes a wide beach (over 600 m) against the dam, which reduces seepage through the dam.
- A surveillance and monitoring program are in place that incorporates real-time instrumentation monitoring.

Sabotage of Bose Lake Dam:

What could happen:

- The only credible failure mode for Bose Lake dam is where intentional damage to the dam crest occurs by an individual(s) leading to tailings and pond water release over the downstream slope.

What are we doing to control the risk:

- Water levels are maintained well below the crest elevation, such that there is a large distance from the dam crest down to the water.
- The downstream slope is covered by rockfill and is highly resistant to erosion or damage.
- A surveillance and monitoring program is in place, including instrumentation and routine visual observations.

The above risks, and the results of the 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:

As noted in the section above, the most recent risk assessment for the Bethlehem TSF was conducted in 2023. As part of this assessment, failure modes are deemed as credible or non-credible.

The outcome of the assessment of Dam No. 1 is that it does not have any credible failure modes that could lead to flow type failures. As such, an inundation study has not been conducted for Dam No. 1. However, it should be noted that there may be environmental impacts in the downstream areas of Dam No. 1 in the event of a limited release of tailings or water. Further, the Trojan TSF is located adjacent to Dam No. 1. Refer to the Trojan TSF Disclosure document for additional context.

The outcome of the assessment of Bose Lake Dam, is that a credible flow failure mode exists and is related to the occurrence of intentional damage to the dam crest. However, the area of influence for Bose Lake Dam is contained to Bose Lake and to some extent, Axe Creek, thus there exists no impact to human exposure and vulnerability.

The controls and mitigations that have been implemented to reduce the likelihood and consequences of credible tailings facility failure scenarios at Bethlehem 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 two retaining structures and the one that manages water and sediment downstream of the Dam No. 1 are summarized in the table below.

Table 3: Bethlehem TSF Design Information Summary

Structure	Dam No.1	Bose Lake Dam	R3 Seepage Pond Dam
Containment or Design Type	- Centerline rockfill dam with a glacial till starter dam. -Construction started in 1963. A rockfill toe buttress was added in 1970.	- Downstream glacial till dam with a rockfill toe berm. - Construction started in 1972.	- Compacted fill dam.
Estimated Crest El. (m)	1477 (top of sand fill) 1472 (top of rockfill)	1475	1371.8
Current Dam Height (m)	91	31	4
Initial Operation	1963	1972	1964
Final Permitted Dam Height (m)	1477 (top of sand fill) 1472 (top of rockfill)	1475	1371.8
Current Tailings Volume (m^3)	68		n/a
Final Permitted Tailings Capacity (m^3)	68		n/a
Crest Length (m)	2,000	600	60
Overall Downstream Slope	3H:1V (from sandfill crest) 2.2V:1H (from rockfill crest	2H:1V	2.5H:1V
Design Storm Event	Probable Maximum Flood (PMF) 24-hour	Probable Maximum Flood (PMF) 24-hour	100-year, 24-hour
Design Earthquake	½ between 2,475 and 10,000-year return interval	2,475-year return interval	1:100-year return interval

6. Summary of Material Findings of Annual Facility Performance Reviews (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 identify 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 potential 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 October 2021 through September 2022 and the most recent DSR was performed in 2018. There were no material findings in either the 2022 AFPR or 2018 DSR that would indicate any tailings facility safety issues.

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. Key process indicators of interest tracked within the EMS system include:

- Environmental performance
- Water and tailings performance
- Waste management
- On site and downstream water quality
- Compliance obligations
- Emergency preparedness and response
- Community affairs

[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)

An external audit was conducted in 2022 of HVC's EMS to determine the effectiveness of the system. There were no material findings from the environment monitoring program associated with the Bethlehem TSF.

There were no material findings from the 2022 Social Monitoring Program associated with the Bethlehem TSF. HVC recently completed an assessment of human exposure, vulnerability and human rights risks associated with credible failure scenarios. A socio-economic profile was updated in 2023 to ensure the mine has updated knowledge for the area of influence of the Bethlehem TSF and future development related to the HVC 2040 mine extension application. 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 the Teck Sustainability Report.

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

The Bethlehem TSF is included in the site-specific HVC Mine Emergency Preparedness and Response Plan. 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 by working with outside agencies such as, but not limited to, Emergency Management BC, local communities, Indigenous organizations and independent engineering consultants.

The EPRP program is linked to the tailings specific trigger action response plans (TARP), which are associated with the tailings surveillance and monitoring program described 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 EPRP will continue to develop over time in collaboration with project affected people to improve the state of preparedness for emergencies.

9. Independent Reviews

The Independent Tailings Review Board takes place 2–3 times a year. The last meeting was in April 2023, and the next one is scheduled for August 2023.

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 Bethlehem at Highland Valley Copper. 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 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 Bethlehem at HVC, all requirements have been met, or are met with a plan in place, for Principles 1 to 3 and 5 to 15. Ongoing work to meet all requirements in Principle 4 will continue beyond August 5, 2023, and this principle is considered partially met. Importantly, there are no immediate physical safety risks at the facility related to the work in progress. The ongoing work to address the outstanding recommendations is as follows:

- Principle 4: Work is ongoing to demonstrate that risks are as low as reasonably practicable (ALARP), including evaluation of performance against extreme loading criteria. The facility was designed to loading criteria that conforms to the GISTM requirements and has appropriate tailings management and governance systems in place, with established independent reviews and ongoing community engagement. Evaluations of long-term facility performance to inform long term planning are expected to be complete by the end of 2024.