



REPORT

2023 Annual Facility Performance Review Report

Duck Pond Operations Tailings Management Facility

Submitted to:

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Reference No. 23595269-001-R-Rev0-4100

March 28, 2024



Distribution List

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Executive Summary

This report presents the results of the 2023 annual facility performance review (AFPR) for the Teck Resources Limited (Teck), Duck Pond Mine (DPM), Tailings Management Facility (TMF) structures. This report was prepared based on a site visit carried out by the Engineer of Record, Peter Merry of WSP Canada Inc. (WSP), on 16 August 2023 and a review of the available monitoring and maintenance records.

Description of Facility and Dams

The TMF is located adjacent to the former plant site and consists of two components, the Tailings Management Area (TMA) and the Polishing Pond. The TMA is contained by natural ground and two containment dams (Dams A and B). The Polishing Pond is located about 500 m west of the TMA where containment is provided by Dam C at the western end of the pond.

All three perimeter containment dams around the TMF are zoned earthfill embankments incorporating a thick central core of relatively low permeability glacial till, keyed into the glacial till foundation soils, as a seepage barrier. A filter zone is provided adjacent to the downstream face of the core to prevent internal erosion (piping) of the core material under seepage pressures. The core and filter zones are supported by upstream and downstream shells of compacted, free draining granular materials. Internal drainage systems are designed to promote drainage of the downstream shell. Emergency spillways at Dam B in the TMA and Dam C at the Polishing Pond are designed to protect the dams from overtopping during extreme flood events. The dams were constructed during the initial mine development in 2006 and never raised.

The TMF is currently in a transition period which is the first stage of reclamation and closure. At the time of the inspection, the water level in the TMA was below the minimum operating water level to facilitate placement of mining impacted soils, with potentially elevated metals concentrations, within the TMA as part of reclamation activities. Construction of the internal berms within the TMA was completed in late 2017. The internal berms across the TMA are rockfill embankments designed to reduce the fetch length and required water cover depth to prevent long-term re-suspension of the tailings. The Polishing Pond was fully dewatered at the time of the site visit to facilitate excavation and removal of sludge from the base of the pond as part of planned reclamation activities for the site.

Summary of the Annual Facility Inspection

The TMF dams appeared to be in good condition at the time of the site visit and the facility was performing well. A well-established maintenance program exists on site and there has been significant effort in recent years to close out recommendations from previous annual facility performance reviews. Minor deficiencies noted during the inspection are not considered to be indicative of poor performance. The structures should continue to function as intended, provided they are routinely inspected and maintained.

A summary of the findings and recommendations from the 2023 AFPR is provided in Table E1.

Table E1: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
<i>Diversion Ditches</i>	<i>2018-15</i>	<i>A pipeline crossing was constructed in the winter of 2012/2013 across Diversion Ditch A2 at Sta. 0+350. The pipeline crossing includes a berm and 0.3 m diameter HDPE culvert through the diversion ditch. The culvert is likely too small to convey the design storm flow and appears to be partially blocked with sediment and vegetation.</i>	<i>The pipeline crossing should be remediated by removing the culvert and berm and supporting the pipeline with a steel beam, at least 1 m above the ditch invert.</i>	<i>Closed – culvert and berm crossing were removed from Diversion Ditch A1 in 2023 to restore original conditions.</i>	<i>4</i>
<i>TMF</i>	<i>2019-01</i>	<i>Additional flows will be entering the TMA from Boundary site and the underground workings.</i>	<i>Once the flows from the underground workings and Boundary site are better understood, the TMF water balance should be reviewed and updated for impacts on water levels and discharge rates.</i>	<i>Closed – WSP updated the site wide water balance in GoldSim and calibrated the model with recent site data in 2023.</i>	<i>3</i>
General	2021-04	The OMS Manual was last updated in 2020. The OMS Manual will require a detailed review and update once the mill has been demolished and all mining impacted soils placed within the TMA. This includes updating the Emergency Response Plan included as an appendix to the OMS Manual.	Update the OMS Manual and Emergency Response.	Open – The OMS Manual and Emergency Response Plan are planned to be updated by the end of 2024 following completion of site reclamation activities and transition of the site to Teck Legacy.	4
<i>General</i>	<i>2022-01</i>	<i>Vegetation has been growing on most dams and within the hydraulic flow structures that require routine maintenance.</i>	<i>A round of clearing was completed across the TMF in 2022 and another round of clearing should be planned for 2024.</i>	<i>Closed – A round of clearing was completed across the TMF in 2023.</i>	<i>3</i>
<i>Internal Berms 1 and 3</i>	<i>2022-02</i>	<i>The water treatment pipeline that travels along the crest of Berms 1 and 3 is blocking the spillways.</i>	<i>Teck should raise the pipelines with wooden trestles over the spillways.</i>	<i>Closed – The pipelines were raised over the spillways with concrete blocks and steel supports.</i>	<i>2</i>

Table E1: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
Internal Berm 3	2022-03	Haul traffic crossing Berm 3 at the north abutment has caused about 0.15 m of displacement to the crest.	Teck shall repair the crest once placement of mining impacted soils is complete in the TMA.	Closed – the crest of Berm 3 was repaired with sand and gravel fill to restore the design crest elevation.	3
General	2022-04	Some tailings in the TMA are above the design elevation of 274.2 m required to prevent long term resuspension.	A bathymetric survey will be required once all mining impacted soils have been placed in the TMA to determine the extent of dredging. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and the necessity to maintain the currently proposed 2.65 m of water over the tailings.	Open. A workshop is planned for Q2 2024 to evaluate options for reducing the long-term water cover requirements.	3
General	2023-01	Vegetation has been growing on most dams and within the hydraulic flow structures that require routine maintenance.	A round of clearing was completed across the TMF in 2023 and another round of clearing should be planned for 2024.	New item. To be completed prior to 2024 AFPR site visit. Particular attention should be given to clearing alders greater than 1 m in height at the following locations: <ul style="list-style-type: none"> • Dam C spillway concrete weir. • Diversion Ditch C1 between Sta. 0+750 and 0+850. • Discharge Ditch. • Culverts on Dam B Spillway Channel beneath main site access road. • Culvert on Diversion Ditch C1 beneath main site access road. 	3

Table E1: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
General	2023-02	A water balance calibration study determined a larger watershed is reporting to the TMA than originally planned. The catchment appears to come from a wetland southwest of the former plant site that was thought to have been diverted.	Confirm that EDF storage capacity and IDF routing remain in place under current condition. Review the collecting watershed and determine if more water can be diverted from the TMA, as originally intended.	New item. To be fully implemented by the end of 2024.	2
General	2023-03	The perimeter dams were last classified during the 2016 DSR as Low consequence structures in accordance with CDA (2013).	A more detailed review should be conducted in consideration of the recent technical bulletin issued by CDA: Revision to the Consequences of Failure – Environmental Consequence Classification (CDA 2023).	New item. To be completed in 2024 by WSP as part of GISTM conformance review.	4
Dam B	2023-04	Overgrown vegetation at the downstream toe of Dam B and sediment accumulation in the channel leading towards the Polishing Pond is limiting the ability to monitor seepage and causing ponding at the toe.	Clear the downstream toe area of vegetation and clear the channel towards the Polishing Pond of sediment to provide better observation of seepage conditions.	New item. To be completed before the end of 2025.	3
Dam C	2023-05	During replacement of the discharge weir intake structure in 2022, rip rap on the upstream slope of Dam C was disturbed.	Place additional rip rap on the upstream slope of Dam C adjacent to the intake structure to reinstate original conditions.	New item. To be completed prior to 2024 AFPR site visit.	3
Internal Berm 2	2023-06	Haul traffic crossing Berm 2 at the north abutment in 2022 has caused about 0.15 m of displacement to the crest.	Teck shall repair the crest once placement of mining impacted soils is complete in the TMA.	New item. To be completed prior to 2024 AFPR site visit.	3
Diversion Ditch A1	2023-07	The downstream berm on Diversion Ditch A1 between Sta. 0+400 to 0+500 appears low and unlikely to divert all water from the TMA, particularly in the spring freshet when snow and ice may block the channel.	Raise the downstream berm with local fill to reinstate the minimum 1.0 m of channel depth.	New item. To be completed before the end of 2025.	3

Table E1: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
Pipelines	2023-08	The water treatment pipeline near the south abutment of Berm 3 was observed to be bent and crimped.	The pipeline should be straightened or replaced to maintain flow capacities.	New item. To be completed prior to 2024 AFPR site visit.	3

Legend:

Priority	Description
1	A high probability of actual dam safety issue considered immediately dangerous to life, health, or the environment, or a significant risk of regulatory enforcement.
2	If not corrected, could likely result in a dam safety issue leading to injury, environmental impact or significant regulatory enforcement; or a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences or deficiencies or non-conformances that alone would not be expected to result in a dam safety issue.
4	Best Management Practice – Further improvements are necessary to meet industry best practices or reduce potential risks.

(a) Source: British Columbia Health, Safety and Reclamation Code Guidance document, Section 4.2 (MEM 2016)

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1.0 INTRODUCTION

The Teck Resources Limited (Teck) Duck Pond Mine (DPM) is located approximately 30 km south of the community of Millertown, in west central Newfoundland (see Figure 1). Golder Associates Ltd. (amalgamated under WSP Canada Inc. on January 1, 2023, and herein referred to as WSP) completed detailed engineering for the Tailings Management Facility (TMF) in early 2006 (Golder, 2006) and construction of the facility was completed in late 2006. SGE Acres Limited (SGEA), now a part of the Hatch group of companies, provided construction management and Quality Assurance inspection and testing services during the TMF construction. WSP made periodic site visits during construction and provided engineering support on an as required basis to SGEA. The results of Quality Assurance inspection and testing by SGEA are provided in the as-built report for the TMF (SGEA, 2007). The mine operated between 2007 and 2015 and the TMF is currently in a transition period which is the first stage of reclamation and closure.

WSP was retained by Teck to complete the 2023 annual facility performance review (AFPR) for the TMF at DPM. Prior to 2021, the AFPR was referred as an annual inspection or dam safety inspection. The first AFPR of the TMF was completed in 2007 by WSP and the most recent comprehensive Dam Safety Review (DSR) was completed by GEMTEC Limited in 2016 (GEMTEC, 2017). The primary objectives of the AFPR are to assess the condition of the dams and flow conveyance structures at the TMF, and to review the adequacy of maintenance procedures. In addition to a visual inspection of the facility, the results from monitoring of instrumentation are reviewed for comparison with previous readings.

As outlined in the Operation, Maintenance and Surveillance (OMS) Manual (Golder, 2020b), daily, weekly, and quarterly inspections are to be completed by site personnel to assess changing conditions and identify maintenance requirements throughout the year. A detailed inspection of the facility should be completed annually by the Engineer of Record (EoR) and after any unusual events such as an extreme rainfall or seismic event.

This AFPR report describes the observations made during an inspection of the dams and drainage facilities at the TMF conducted on 16 August 2023. The inspection was carried out by Peter Merry of the WSP Mississauga Ontario office. Mr. Merry is a registered professional engineer and is the EoR for the TMF. The results of the inspection were discussed with site personnel following the site visit.

2.0 FACILITY DESCRIPTION

The TMF is located immediately north of the former plant site area and consists of two components, the Tailings Management Area (TMA) and the Polishing Pond (see Figure 2). The TMA is located in the historic Trout Pond valley, where high ground provides natural containment along the northern and southern perimeters. Two tailings containment dams (Dams A and B) were constructed across the valley to complete the impoundment. The Polishing Pond is located about 500 m west of the TMA where containment is provided by Dam C at the western end of the pond. A decant structure is incorporated in Dam C to manage water levels within the pond. Freshwater diversion ditches around the TMF are designed to reduce surface water inflows into these facilities under normal operations.

The TMF was originally designed to accommodate approximately 2.5 million tonnes (2.5 Mt) of tailings at a nominal production rate of 1,800 tonnes per day (1,800 tpd) over the planned 6.2-year life-of-mine. Processing of ore from the mine started in January 2007 with full operation commencing in June 2007. Mining and milling finished in mid-2015 with a total of approximately 2.7 Mt of tailings deposited in the TMA over the mine life. The additional 0.2 Mt of tailings stored in the TMA above the original design capacity was achievable based on improved deposition efficiencies.

The Potentially Acid Generating (PAG) tailings were transported to the TMA as a slurry and then deposited subaqueously. A minimum 0.4 m deep water cover was provided over the tailings to inhibit oxidation and acid generation during the operating period. Teck has lowered the water level in the TMA frequently since 2017 to facilitate the placement of mining impacted soils, with potentially elevated metals concentration, over the tailings in many areas. The mill was demolished and removed from site in 2022 and mining impacted soils from the plant site area were placed in western side of the TMA (referred to as Cell 4). The internal berms across the TMA are rockfill embankments designed to reduce the fetch length and required water cover depth to prevent the long-term re-suspension of the tailings (Golder, 2015b). Construction of the internal berms was completed in late 2017. A typical section of the internal berms is illustrated on Figure 4. Future reclamation activities will include a dredging program to lower all tailings below the design maximum tailings elevation of 274.2 metres above sea level (masl).

Closure of DPM, including the TMF, is described in the site reclamation and closure plan (WSP, 2023d). The TMF is currently in a transition period which is the first stage of reclamation and closure as defined by the Canadian Dam Association (CDA 2019). This typically includes a period of time after the mine has permanently ceased operations and activities are undertaken to prepare the TMF for the active or passive care closure phases. In its current state, water continues to be treated in the TMA and discharged to the Polishing Pond, prior to final discharge to the environment. As the site has a positive water balance, some treatment and discharge of water is required until it can be demonstrated that the water quality in the TMA meets regulatory criteria for direct discharge to the environment. Based on the current site reclamation and closure plan, the site is expected to remain in the active closure phase through 2039 prior to implementation of final closure in 2040.

The management of storm flows in the TMF, resulting from discrete storm events, is based on two criteria: an Environmental Design Flood (EDF) and an Inflow Design Flood (IDF). The EDF must be stored within the TMF without causing an unscheduled discharge to the environment. A 90-day, 1 in 100-year return period spring runoff event was used to determine the EDF, estimated at 586 mm. Storage requirements associated with the EDF are estimated to be 733,000 m³ for the TMA and 293,000 m³ for the Polishing Pond. The IDF must be safely routed through the TMF without overtopping the dam and was used to design the spillways. The IDF used in the design is the 24-hour Probable Maximum Precipitation (PMP) rainfall event, estimated at 312 mm. For the transition period, the maximum operating water level in the TMA is 276.9 masl to provide 0.8 m of depth to the Dam B spillway, which is sufficient to store the environmental design flood.

To facilitate the internal berm construction and placement of mining impacted soils, the operating water level has been drawn down to approximately 273.0 m every summer since 2017. Once placement of the mining impacted soils is complete, the water level will be increased to at least its minimum operating level of 276.3 masl in order to maintain 0.6 m of water cover over the PAG waste rock placed in the TMA as part of the berm construction and PAG waste rock cover over the mining impacted soils. PAG waste rock used for construction of the internal berms was not placed above the minimum operating water level as this would result in the rock being flushed with changes in water levels. The ultimate required closure water cover depth over the tailings and waste rock is not achieved during the current transition period. There is therefore a risk of the generation of suspended solids during the spring thaw and significant wind events. Similar to the operating phase, this risk is managed by delaying the pumping of water from the TMA to the Polishing Pond until acceptable water quality criteria is achieved.

Results of the water balance modelling for the transition period predict a fluctuation in the TMA water level of 0.6 m for a 100-year wet return period and a minimum operating water level of 276.3 m was proposed. The water balance was run based on the same water management procedures implemented during operations in which water inflows are stored in the TMA for a period of seven months, from the beginning of December through the end of June each

year. Water is planned to be discharged to the Polishing Pond by pumping at a constant rate over a five-month period from July through November.

In 2020, Teck installed a pumping system in the portal to provide the ability to manage water levels in the underground workings with excess water pumped to the TMA. Since 2020, Teck has allowed the water levels in the underground workings to stabilize without pumping to the TMA and some seasonal fluctuations in water levels have been observed. In late 2022, the portal was backfilled for closure and discharge from the ramp area has not been observed and is not anticipated to affect the TMF water balance. Excess water accumulated at the Boundary site is also pumped to the TMA near the south abutment of Dam A and contributes to the net inflow to the TMA.

In recent years, Teck has reported approximately 2.0 - 2.5M-m³ of water was discharged from the Polishing Pond to the environment on an annual basis. While this is more than the discharge rate predicted with the original water balance for the transition period, Teck has been able to manage the increased volumes by extending the discharge periods over 12 months per year, versus the planned 5 months. A study was undertaken by WSP in 2023 to update and calibrate the water balance based on actual climate and flow monitoring data. The study found that the increased discharge volumes are likely a result of an increased catchment area reporting to the TMA from a swamp located southwest of the decommissioned plant site.

Since commissioning the facility in 2007, the water management operating procedures have been modified to allow for batch discharge when required to meet effluent water quality objectives. This has resulted in extending the discharge period, discharging at increased rates, and exceeding the design maximum operating water level in the TMA on occasions. This operating procedure will remain in effect during the transition phase; however, it is less likely to be implemented as a result of less inflow into the TMA than previously occurred from the milling operation. Details are discussed further in the OMS Manual (2020b).

The Polishing Pond will continue to serve as a settling basin for treated effluent from the TMA during the transition phase, prior to its release into the environment. In late summer of 2023, Teck dewatered the Polishing Pond and removed the accumulated sludge on the base of the pond, aligned with the closure plan (WSP 2023d). The excavated material was transported and deposited within Cell 2 of the TMA, similar to the mining impacted soils that have been placed over the past 5+ years in the TMA. The material contained a mixture of the sludge and muskeg from the base of the Polishing Pond as it was not practical to remove only the sludge.

All three containment dams around the TMF are zoned earthfill embankments incorporating a thick central core of relatively low permeability glacial till, keyed into the glacial till foundation soils, as a seepage barrier. A filter zone is provided adjacent to the downstream face of the core to prevent internal erosion (piping) of the core material under seepage pressures. The core and filter zones are supported by upstream and downstream shells of compacted, free draining granular materials. Internal drainage systems are designed to promote drainage of the downstream shell. Emergency spillways at Dam B in the TMA and Dam C at the Polishing Pond are designed to protect the dams from overtopping during extreme flood events.

The downstream shells of the dams are protected from surface runoff and wind erosion by a layer of cobble size stone (rip rap). Armour stone erosion protection comprised of boulder size particles protects the upstream shells from erosion by wave action, as well as surface runoff and fluctuations in pond water levels. Typical cross-sections of the dams are illustrated on Figure 3 and Figure 4.

The dam safety program established in Newfoundland and Labrador requires that dams must be designed, operated, and maintained to meet the requirements of CDA Dam Safety Guidelines. All three perimeter dams were

classified as Low consequence structures during the 2016 DSR conducted by GEMTEC (2017) based on CDA (2013). A review of the classification as part of the 2023 annual facility inspection report indicates the classification is still appropriate as no changes to the dams or downstream environment have occurred, however a more detailed review should be conducted in consideration of the recent technical bulletin issued by CDA: Revision to the Consequences of Failure – Environmental Consequence Classification (CDA 2023). The next DSR is scheduled for 2026.

DPM is located in the Central Uplands of Newfoundland, an area of low seismic risk. The peak horizontal ground acceleration selected for the design in 2005 is more conservative than required based on the classification. A 1 in 2,475-year return period event was selected, and as determined by the Geological Survey of Canada was 0.085g. A more recent review of the seismic hazard potential for the site (Golder 2022d) determined the 1 in 2,475- year return seismic event was 0.046g which indicates the 2005 design overestimates the peak ground acceleration and is therefore conservative.

The freshwater diversion ditches and emergency spillway channels have been formed in the glacial till soils. Rip rap and armour stone erosion protection is provided in locations where high flow velocities are anticipated. At other locations, the ditch and channel inverts are protected against erosion by a vegetative cover. Culverts have been installed beneath access roads that cross the ditch and channel alignments.

A total of 11 standpipe type piezometers were installed in the containment dams in August 2007 to monitor water levels within the dams and foundation soils (Golder, 2008a). The piezometers are illustrated on Figure 3 and Figure 4 and are still monitored to evaluate dam performance. Plots of the historical piezometer readings are provided with the inspection forms for each dam in Appendix A. In addition, four monitoring wells, installed by SGEA during construction in 2006, are being monitored for groundwater quality by Teck.

3.0 INSPECTION PROCEDURES

The AFPR involved a detailed visual inspection of the facility on 16 August 2023, including those structures identified in Table 1. Any deficiencies apparent in the condition of the structures were noted and recommendations for remedial action, if required, were identified.

Table 1: Summary of Structures Inspected

Structure	Description
Dam A	Provides containment along the eastern end of the TMA.
Dam B	Provides containment along the western end of the TMA.
Dam C	Provides containment along the western end of the Polishing Pond and contains the decant structure for final discharge to the environment.
Internal Berms	Reduces fetch length across the TMA during closure.
Dam B Emergency Spillway and Channel	Emergency spillway for the TMA. The Channel also diverts surface water runoff away from the northern side of the Polishing Pond.
Dam C Emergency Spillway	Emergency spillway for the Polishing Pond.
Diversion Ditches A1, A2, B1, C1	Divert surface water runoff away from the TMA and Polishing Pond.
Discharge Ditch	Conveys treated effluent from the TMA to the Polishing Pond.
Pipelines	Pipelines required to convey water and treated effluent around the TMF.
Access Roads	Provide access to all structures around the TMF for monitoring and surveillance purposes.

Details of the inspection are contained in Appendix A. The condition of each structure was recorded on individual inspection sheets (Forms A and B). Measured piezometric water levels recorded on 22 August 2023 by site personnel are provided in plots in Appendix A and illustrated on Figure 3 and Figure 4. Representative photographs are included with each form for clarity. A complete photographic record of the site inspection along with detailed field inspection notes are maintained in the project files in WSP's Mississauga, Ontario office.

4.0 GENERAL COMMENTS AND OBSERVATIONS

The overall condition of the TMF appears to be substantially unchanged since the last site visit in 2022. Some of the recommendations provided in the 2022 annual report have been completed by Teck over the past year. Outstanding items are discussed in the subsections below.

Generally, all structures at the TMF appeared to be in good operating condition. The containment dams show no evidence of instability. No unusual seepage was observed at any of the dam structures, suggesting proper functioning of the dams and internal drainage system.

Vegetation is growing on and around the dams and within the hydraulic flow structures. Ongoing maintenance should include routine clearing of the dams, ditches and spillway channels in order to maintain flow capacities, prevent internal damage to the dams, and permit visual inspection. Some vegetation clearing was carried out in 2023 and another one will likely be required in 2024. It is noted that vegetation within the flow conveyance structures is typically a combination of grass and alders. While the grass is considered acceptable to provide a layer of erosion protection, alders greater than 1 m in height should be removed as they obstructed the ditch from visual inspection and could also reduce its flow conveyance capacity.

Observations made during the inspection are summarized in the following sections, and fully documented in Appendix A. Forms A and B in Appendix A document minor deficiencies that were noted at the time of the inspection. These deficiencies should be addressed as part of the ongoing maintenance program.

4.1 Embankments

4.1.1 Dam A

The dam appeared to be in good overall condition. Vegetation was cleared from the downstream slope and toe area in 2023. The seepage collection ditch was also re-excavated in 2022 along its southern half to promote visual surveillance of seepage conditions.

Ponded water was observed along the toe at some locations and visible seepage was noted. There was no water upwelling or flowing directly out of the toe, and the seepage was noted as slightly more than a trickle. The seepage emanating from the downstream shell and accumulating in the Seepage Collection Sump at Sta 0+550, along with surface runoff from the area, flows through the high-density polyethylene (HDPE) culvert beneath the access road to the environment. The water observed at the toe and discharging through the HDPE culvert was clear (i.e., free of sediment). Although some portion of this water may be seepage from the TMA, it is understood from site personnel that the water quality at the culvert meets discharge criteria. In 2019, Teck started recording the flowrate at the culvert following recommendations in previous years. The flowrate on 01 September 2023 was 3.2 L/s, which is consistent with historical observations. WSP developed a tracking sheet (attached to Form A in Appendix A) that should continue to be used by Teck in the future to identify any trends in seepage flowrates. Following the 2023 site visit, Environment Canada requested that Teck start reporting the seepage from Dam A as a discharge compliance point. Subsequently, Teck upgraded the culvert outlet to make flow monitoring easier, with a calibrated bucket and stopwatch. Going forward, seepage monitoring will occur more frequently (daily to weekly basis) and the results will

be influenced by recent precipitation events with the monitoring data showing spikes in flow rates. As a result, the base or low flow readings will be considered more representative of Dam A seepage.

Three piezometers (P07-01A, P07-02A and P07-02B) and a settlement plate (S18-08) were present on the crest of the dam at its maximum height. The instrumentation appeared in good condition; the concrete around the piezometers was in good condition, with only minor cracking around the edges.

The piezometers are generally responding well to fluctuating water levels in the TMA, indicating the dam is performing as intended. Piezometer P07-02B was reported as full to the dam crest elevation, well above the TMA pond level, in 2018 which prompted the casings on both piezometer nests to be raised in 2019 to prevent the ingress of surface runoff. The new casings are approximately 15 cm above the ground and help prevent surface runoff from entering the piezometers. Since the casings were raised, the piezometers have returned to historical normal levels.

The settlement plate, installed in late 2018, has been surveyed by Landmark Surveys and Engineering Ltd. (formerly Red Indian Surveys Ltd.) annually since 2019. The survey data indicates that since its installation the plate has risen 37 mm. This indicates some movement has occurred but could be a result of frost heave. The settlement plate should continue to be surveyed annually, and the data provided to WSP for review as part of the annual facility performance review.

A new thermistor string was installed in the dam crest in 2023 to monitor frost penetration and potential impact on the till core, following recommendations from the independent tailings review board. The thermistor string is located adjacent to the piezometers at Sta. 0+550. The thermistor appears to be operating correctly with normal readings following its first few months of data collection. The average temperature at 1.25 m depth (~top of till core) was 13 degrees Celsius in October 2023. A few years of data collection is likely required before making conclusions on frost penetration.

4.1.2 Dam B

Dam B appeared to be in good overall condition and vegetation was cleared from the dam and its downstream toe in 2023.

Similar to previous years, a ponded area was observed at the toe near Sta. 0+250, adjacent to the seepage collection sump. The water coming out from the downstream shell accumulates in this pond before discharging between two overburden spoil piles into a channel that flows towards the Polishing Pond. The downstream toe area and pond have become overgrown with vegetation making seepage monitoring difficult, however, it appears the water is clear (i.e., free of sediment) with some signs of iron staining in the small pond. It was also observed that the channel leading towards the Polishing Pond has become partially blocked with vegetation and sediment accumulation. Teck should clear the downstream toe area of vegetation and clear the channel towards the Polishing Pond. The seepage rate, as observed at the access road downstream of Dam B was consistent with observations in previous years and the seepage reports to the Polishing Pond.

Four piezometers (P07-03A, P07-03B, P07-04A and P07-04B) and a settlement plate (S18-02) were present on the crest of the dam at its maximum height. The instrumentation appeared in good condition; the concrete around the piezometers was in good condition with only minor cracking around the edges.

The piezometers on Dam B are generally responding well to fluctuating water levels in the TMA indicating the dam is performing as intended. P07-03A has returned to historical normal levels since the piezometer surface casing was extended in 2019 which stopped surface runoff entering the piezometer.

The settlement plate, installed in late 2018, has been surveyed by Landmark Surveys & Engineering Ltd. annually since 2019. The survey data indicates that since its installation, the plate has risen 10 mm. This indicates negligible movement and is within the accuracy of the survey equipment. The settlement plate should continue to be surveyed annually, and the data provided to WSP for review as part of the annual facility performance review.

A new thermistor string was installed in the dam crest in 2023 to monitor frost penetration and potential impact on the till core. The thermistor string is located adjacent to the piezometers at Sta. 0+225. The thermistor appears to be operating correctly with normal readings following its first few months of data collection. The average temperature at 1.25m depth (~top of till core) was 13 degrees Celsius in October 2023. A few years of data collection is likely required before making conclusions on frost penetration.

The Water Reclaim Well at the pump house appeared to be in good condition. No blockages were observed at the intake screen. Mechanical and electrical inspection of the Water Reclaim Well was not part of the annual facility performance review scope.

4.1.3 Dam C

Dam C appeared to be in good overall condition. Vegetation was cleared from the dam and downstream toe in 2023 as part of routine maintenance. No signs of benching or movement were observed along the upstream slope.

The inlet pipe for the Dam C discharge structure was replaced in 2022 and appears to be performing well in 2023. Following the construction activities, it was noted that the rip rap on the upstream slope of Dam C around the inlet structure was disturbed and requires additional rip rap to reinstate original conditions.

A new access road was constructed at the downstream toe of Dam C in 2023 to provide access to the discharge structure without having to drive on the dam crest. In addition, the seepage collection ditch was reinstated downstream of the access road and a hydro line was installed to provide power to the discharge structure building. The upgrades appear to be performing well and have not visually impacted the performance of the dam. Minor seepage flow was observed in the toe ditch and the water was clear (i.e., free of sediment). The flowrate was negligible and consistent with observations in previous years. Although some portion of this water may be seepage from the Polishing Pond, it is understood from Teck that the water quality meets discharge criteria.

Discharge to the environment via the Decant Structure was not occurring at the time of the site visit. The Polishing Pond had been fully dewatered to facilitate excavation and removal of the accumulated sludge from base of the Polishing Pond. The excavated sludge was being placed in Cell 2 of the TMA for long term closure. This activity was aligned with the closure plan (WSP 2023d), where sludge accumulation was expected during the operating period of the mine and was to be placed in the TMA beneath a permanent pond to prevent oxidation and acidic drainage.

Four piezometers (P07-05A, P07-05B, P07-06A and P07-06B) were present on the crest of the dam and appeared in good condition; the concrete around the piezometers was in good condition with only minor cracking around the edges.

The piezometers on Dam C are generally responding well to fluctuating water levels in the Polishing Pond indicating the dam is performing as intended. P07-6A has returned to historical normal levels since the piezometer surface casing was extended in 2019 which stopped surface runoff entering the piezometer. Piezometer P07-06B is still showing fluctuating water levels above the Polishing Pond level. It is however noted that the most recent reading in November 2023 is lower and consistent with the other piezometers. The piezometers should continue to be monitored for changing conditions.

4.1.4 Internal Berms

Internal berms were constructed across the TMA in 2017 and the water treatment plant discharge pipelines were also installed along Berms 1 and 3.

As part of berm construction in 2017, settlement plates were installed on the crest of all 3 berms (S17-01 on Berm 1, S17-02 on Berm 2, and S17-03 on Berm 3). The settlement plates have been surveyed Landmark Surveys & Engineering Ltd. annually since 2018. The survey data indicates that since their installation, S17-01 has risen 7 mm, S17-02 has settled 2 mm, and S17-03 has risen 17 mm. This indicates negligible movement and is within the accuracy of the survey equipment. The settlement plates should continue to be surveyed annually, and the data provided to WSP for review as part of the annual facility performance review.

A wave or bulge of tailings was observed along the side of most berms from construction. The bulge was caused by the displacement of the tailings following placement of the waste rock used to construct the berms. The tailings bulge was visible above the pond level at the time of the site visit and may need to be dredged and deposited below elevation 274.2 m once placement of the mining impacted soils is completed. A bathymetric survey will be required upon completion of the construction activities to determine the extent of dredging required. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and criteria to maintain the currently proposed 2.65 m of water over the tailings.

The water treatment pipelines that travel along the crest of Berms 1 and 3 were reconfigured in 2023 so that they no longer obstruct spillways on these berms, per recommendations in previous AFPRs. The pipelines were raised over the spillways with concrete blocks and steel supports.

Construction haul traffic crossing Berm 3 at the north abutment caused about 0.15 m of displacement during construction in 2021 and was repaired in 2023 with the placement of additional sand and gravel on the crest. A similar feature was observed on the north abutment of Berm 2 in 2023 that also requires additional fill to restore original conditions, once placement of mining impacted soils is complete within the TMA.

4.1.5 Finger Dykes

Four finger dykes were constructed adjacent to Internal Berm 2 (two on each side) in 2017 to facilitate placement of mining impacted soils. The finger dykes are low structures that no longer serve a purpose.

Mining impacted soils placed between the finger dykes in 2018 were covered with sand and gravel from the Boundary esker borrow source in 2019. The sand and gravel cover meets the design intent whereby wind/wave action during large return period events will prevent the resuspension of the mining impacted soils beneath the sand and gravel.

Finger Dykes 2 and 4 (west of Berm 2) were partially near the north abutments excavated in 2023 to reuse the material for construction of access platforms within Cell 2. The access platforms were required to facilitate placement of sludge from the Polishing Pond.

4.2 Water Management and Flow Control Structures

4.2.1 TMF Water Management

In mid-2015, mining and milling operations ceased, and Teck has lowered the water level in the TMA to facilitate construction of the internal berms and placement of mining impacted soils most summers since 2017. At the time of the site inspection, the water level in the TMA (275.2 m) was approximately 1.1 m below the design minimum operating water level for the transition period (276.3 m). The amount of time that the tailings have been exposed for

placement of the mining impacted soils was minimized to inhibit oxidation and acid generation and affect water quality in the TMA.

A site wide water balance exists for the site and was developed by WSP in GoldSim. A review of the annual discharge volumes from site in recent years shows that typically 2.0 M m^3 – 2.5 M m^3 of water is discharged to the environment annually from Dam C. In 2023, 2.2 M m^3 was discharged while the region received 1,054 mm of precipitation as recorded at the Badger meteorological station (Climate station 5400301), which is only slightly above the average annual precipitation of 1,051mm (Golder 2022c). The volume discharge exceeds the originally predicted volume of 1.0 M m^3 – 1.2 M m^3 under average hydrological conditions (Golder 2015a), however, the discharge volume is aligned with the more recent predications by WSP as part of a water balance update and calibration study (WSP 2023c), where additional inflow from a wetland area southwest of the decommissioned plant site was included. The results of the water balance should be reviewed in terms of operating water levels, storage of the EDF, conveyance of the IDF, and potentially diverting the wetland catchment during the Transition Period, as originally intended.

A review of water levels and freeboard requirements in the TMA and Polishing Pond in 2023 indicated that the ponds have generally been operated within the design water levels. As discussed in the previous sections, the Polishing Pond was fully dewatered and TMA was operated below the minimum operating water level in the summer of 2023 to facilitate removal of sludge from the Polishing Pond and placement of the material in Cell 2 of the TMA. The TMA did not exceed the maximum operating water level at any point in 2023. The Polishing Pond exceeded the maximum operating water level (265.2 m) 43 days throughout the year following large precipitation events but was typically lowered within 3 days, with the exception of an extended period between January 16 and February 3. At its greatest, maximum operating water level was exceeded by 0.15 m. Exceeding the maximum operating water level in the Polishing Pond for short durations is considered to be within the design intent and aligned with the guidance provided in the OMS Manual (Golder 2020b) given the Polishing Pond was designed based on average hydrological conditions and any large precipitation will start to encompass part of the EDF storage volume.

In preparation for long term water treatment, Teck constructed a new water treatment plant building in 2023 south of the TMA.

4.2.2 Dam B Emergency Spillway and Channel

The Dam B Emergency Spillway appeared to be in good operating condition with no evidence of instability, wear, or erosion. The corrugated steel pipe (CSP) culverts within the spillway channel at Sta. 0+700 were partially blocked with debris and vegetation and should be cleared as part of routine maintenance to maintain their flow capacity.

A vegetative cover including a mix of grass and alders has fully established itself in lower reaches of the spillway channel in recent years. The spillway was cleared of vegetation and debris with an excavator in 2023. Ongoing maintenance should include routine clearing in the spillway channel to maintain the design flow capacity and facilitate visual inspections.

4.2.3 Dam C Emergency Spillway and Channel

The Dam C Emergency Spillway appeared to be in good operating condition with no evidence of instability, wear, or erosion. A vegetative cover including a mix of grass and alders has fully established itself along the spillway and channel, including the concrete sill in recent years. The majority of the vegetation and debris was cleared from the spillway in 2023. Ongoing maintenance should include routine clearing in the spillway channel to maintain the design flow capacity and facilitate visual inspections. Another round of clearing is likely required in 2024 and should include

focused clearing around the concrete sill.

4.2.4 Diversion Ditches

The diversion ditches appeared to be functioning well. The channel slopes should continue to be monitored for erosion and repaired as necessary. A vegetative cover including a mix of grass and alders has fully established itself on most of the ditch slopes which should help to reduce further erosion. Large alders and debris that inhibit visual surveillance and reduce flow capacities were cleared from the ditches in 2022 with an excavator. Ongoing maintenance should include routine clearing in the diversion ditches to maintain the design flow capacities and facilitate visual inspections. Another round of clearing is likely required in 2024, particularly in the lower reaches of Diversion Ditch C1 between Sta. 0+750 and 0+850 that was omitted from the 2022 campaign.

A buried pipeline from Boundary site to the TMA was installed during the winter of 2012/2013 and crossed Diversion Ditch A2 at approximately Sta. 0+350. At the ditch crossing, a culvert and berm were constructed. Following recommendations in previous years, the berm and culvert in the diversion ditch were removed in 2023 to reinstate original conditions.

During the next round of routine vegetation clearing with an excavator, the downstream containment berm on Diversion Ditch A1 at approximately Sta. 0+400 to 0+500 should be raised with local fill to reinstate the minimum 1.0 m channel depth. The exact location will need to be determined in the field with survey. The 1.0 m channel depth is required to divert of non-contact runoff water away from the TMA, particularly during the spring freshet when ice build up in the channel may restrict flow.

The culvert beneath the access road on Diversion Ditch C1 at 0+150 was partially blocked at the time of site visit and should be clear of debris from its outlet.

4.2.5 Discharge Ditch

DPM was not discharging from the TMA into the Discharge Ditch at the time of the inspection. The overall condition of the ditch appeared good but alders have begun to grow in the ditch and should be cleared as part of routine maintenance in 2024.

4.2.6 Pipelines

Only the water reclaim pipeline (for water treatment) and discharge pipeline to the Polishing Pond remain functional from the pipelines utilized during operations.

In 2017, two new pipelines were installed from the water treatment plant to Internal Berms 1 and 3 to facilitate more selective lime addition into the TMA during the transition phase. The pipelines appear to be a combination of 10", 12", and 14" HDPE pipelines with a tee valve at the discharge locations on the berms to allow flow into all four cells. Teck reports that the pipelines are functioning as required.

The water treatment pipeline near the south abutment of Berm 3 was observed to be bent and crimped. The pipeline should be straightened to maintain flow capacities.

4.3 OMS Manual

An Operations, Maintenance, and Surveillance (OMS) Manual has been developed for the TMF in accordance with the Mining Association of Canada (MAC) guidance documents. The OMS Manual was originally created in 2007 and has been updated numerous times throughout the life of the TMF. The most current revision was issued in June 2020 (Golder 2020b) and describes the requirements during the current transition period. Also included in the

OMS Manual, as an appendix, is the DPM Emergency Response Plan that was last updated as Version 6, dated April 2020. There have been no significant changes to the facility that require an update to the OMS Manual. However, now that most reclamation activities are complete and the site has transitioned into Teck Legacy with new personal and responsibilities, the OMS Manual and Emergency Response Plan should be updated to reflect current conditions.

5.0 FINDINGS AND RECOMMENDATIONS

The recommendations identified during the current AFPR, which require attention and/or ongoing monitoring (but are not considered severe enough to mandate urgent action), are outlined in Table 2.

Table 2: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
<i>Diversion Ditches</i>	<i>2018-15</i>	<i>A pipeline crossing was constructed in the winter of 2012/2013 across Diversion Ditch A2 at Sta. 0+350. The pipeline crossing includes a berm and 0.3 m diameter HDPE culvert through the diversion ditch. The culvert is likely too small to convey the design storm flow and appears to be partially blocked with sediment and vegetation.</i>	<i>The pipeline crossing should be remediated by removing the culvert and berm and supporting the pipeline with a steel beam, at least 1 m above the ditch invert.</i>	<i>Closed – culvert and berm crossing were removed from Diversion Ditch A1 in 2023 to restore original conditions.</i>	<i>4</i>
<i>TMF</i>	<i>2019-01</i>	<i>Additional flows will be entering the TMA from Boundary site and the underground workings.</i>	<i>Once the flows from the underground workings and Boundary site are better understood, the TMF water balance should be reviewed and updated for impacts on water levels and discharge rates.</i>	<i>Closed – WSP updated the site wide water balance in GoldSim and calibrated the model with recent site data in 2023.</i>	<i>3</i>
General	2021-04	The OMS Manual was last updated in 2020. The OMS Manual will require a detailed review and update once the mill has been demolished and all mining impacted soils placed within the TMA. This includes updating the Emergency Response Plan included as an appendix to the OMS Manual.	Update the OMS Manual and Emergency Response Plan in late 2022.	Open – The OMS Manual and Emergency Response Plan are planned to be updated by the end of 2024 following completion of site reclamation activities and transition of the site to Teck Legacy.	4
<i>General</i>	<i>2022-01</i>	<i>Vegetation has been growing on most dams and within the hydraulic flow structures that require routine maintenance.</i>	<i>A round of clearing was completed across the TMF in 2022 and another round of clearing should be planned for 2024.</i>	<i>Closed – A round of clearing was completed across the TMF in 2023.</i>	<i>3</i>
<i>Internal Berms 1 and 3</i>	<i>2022-02</i>	<i>The water treatment pipeline that travels along the crest of Berms 1 and 3 is blocking the spillways.</i>	<i>Teck should raise the pipelines with wooden trestles through the spillways.</i>	<i>Closed – The pipelines were raised through the spillways with concrete blocks and steel supports.</i>	<i>2</i>

Table 2: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
Internal Berm 3	2022-03	Haul traffic crossing Berm 3 at the north abutment has caused about 0.15 m of displacement to the crest.	Teck shall repair the crest once placement of mining impacted soils is complete in the TMA.	Closed – the crest of Berm 3 was repaired with sand and gravel fill to restore the design crest elevation.	3
General	2022-04	Some tailings in the TMA are above the design elevation of 274.2 m required to prevent long term resuspension.	A bathymetric survey will be required once all mining impacted soils have been placed in the TMA to determine the extent of dredging. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and necessity to maintain the currently proposed 2.65 m of water over the tailings.	Open. A workshop is planned for Q2 2024 to evaluate options for reducing the long-term water cover requirements.	3
General	2023-01	Vegetation has been growing on most dams and within the hydraulic flow structures that require routine maintenance.	A round of clearing was completed across the TMF in 2023 and another round of clearing should be planned for 2024.	New item. To be completed prior to 2024 AFPR site visit. Particular attention should be given to clearing vegetation at the following locations: <ul style="list-style-type: none"> • Dam C spillway concrete weir. • Diversion Ditch C1 between Sta. 0+750 and 0+850. • Discharge Ditch. • Culverts on Dam B Spillway Channel beneath main site access road. • Culvert on Diversion Ditch C1 beneath main site access road. 	3

Table 2: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
General	2023-02	A water balance calibration study determined a larger watershed is reporting to the TMA than originally planned. The catchment appears to come from a wetland southwest of the former plant site that was thought to have been diverted.	Confirm that EDF storage capacity and IDF routing remain in place under current condition. Review the collecting watershed and determine if more water can be diverted from the TMA, as originally intended.	New item. To be fully implemented by the end of 2024.	2
General	2023-03	The perimeter dams were last classified during the 2016 DSR as Low consequence structures in accordance with CDA (2013).	A more detailed review should be conducted in consideration of the recent technical bulletin issued by CDA: Revision to the Consequences of Failure – Environmental Consequence Classification (CDA 2023).	New item. To be completed in 2024 by WSP as part of GISTM conformance review.	4
Dam B	2023-04	Overgrown vegetation at the downstream toe of Dam B and sediment accumulation in the channel leading towards the Polishing Pond is limiting the ability to monitor seepage and causing ponding at the toe.	Clear the downstream toe area of vegetation and clear the channel towards the Polishing Pond of sediment to provide better observation of seepage conditions.	New item. To be completed before the end of 2025.	3
Dam C	2023-05	During replacement of the discharge weir intake structure in 2022, rip rap on the upstream slope of Dam C was disturbed.	Place additional rip rap on the upstream slope of Dam C adjacent to the intake structure to reinstate original conditions.	New item. To be completed prior to 2024 AFPR site visit.	3
Internal Berm 2	2023-06	Haul traffic crossing Berm 2 at the north abutment in 2022 has caused about 0.15 m of displacement to the crest.	Teck shall repair the crest once placement of mining impacted soils is complete in the TMA.	New item. To be completed prior to 2024 AFPR site visit.	3
Diversion Ditch A1	2023-07	The downstream berm on Diversion Ditch A1 between Sta. 0+400 to 0+500 appears low and unlikely to divert all water from the TMA, particularly in the spring freshet when snow and ice may block the channel.	Raise the downstream berm with local fill to reinstate the minimum 1.0 m of channel depth.	New item. To be completed before the end of 2025.	3

Table 2: Summary of the 2023 Annual Facility performance Review Recommendations

Structure	ID Number	Deficiency or Non-Conformance	Recommended Action	Status	Priority ^(a)
Pipelines	2023-08	The water treatment pipeline near the south abutment of Berm 3 was observed to be bent and crimped.	The pipeline should be straightened or replaced to maintain flow capacities.	New item. To be completed prior to 2024 AFPR site visit.	3

Legend:

Priority	Description
1	A high probability of actual dam safety issue considered immediately dangerous to life, health, or the environment, or a significant risk of regulatory enforcement.
2	If not corrected, could likely result in a dam safety issue leading to injury, environmental impact or significant regulatory enforcement; or a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences or deficiencies or non-conformances that alone would not be expected to result in a dam safety issue.
4	Best Management Practice – Further improvements are necessary to meet industry best practices or reduce potential risks.

(a) Source: British Columbia Health, Safety and Reclamation Code Guidance document, Section 4.2 (MEM 2016)

6.0 CLOSING

Based on the site inspection completed on August 16, 2023 and review of documentation as part of the AFPR, the TMF is performing as intended. All dams appeared to be in a stable condition. Minor deficiencies noted during the inspection are not considered to be indicative of poor performance. Observations and recommendations for improvement are provided in the above sections of the report. The structures should continue to function as intended, provided they are routinely inspected and maintained.

We trust that this report satisfies your immediate requirements. Please feel free to contact us if you require additional information or wish to discuss any aspect of the report.

Signature Page

WSP Canada Inc.



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WPM/AG/sv



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REFERENCES

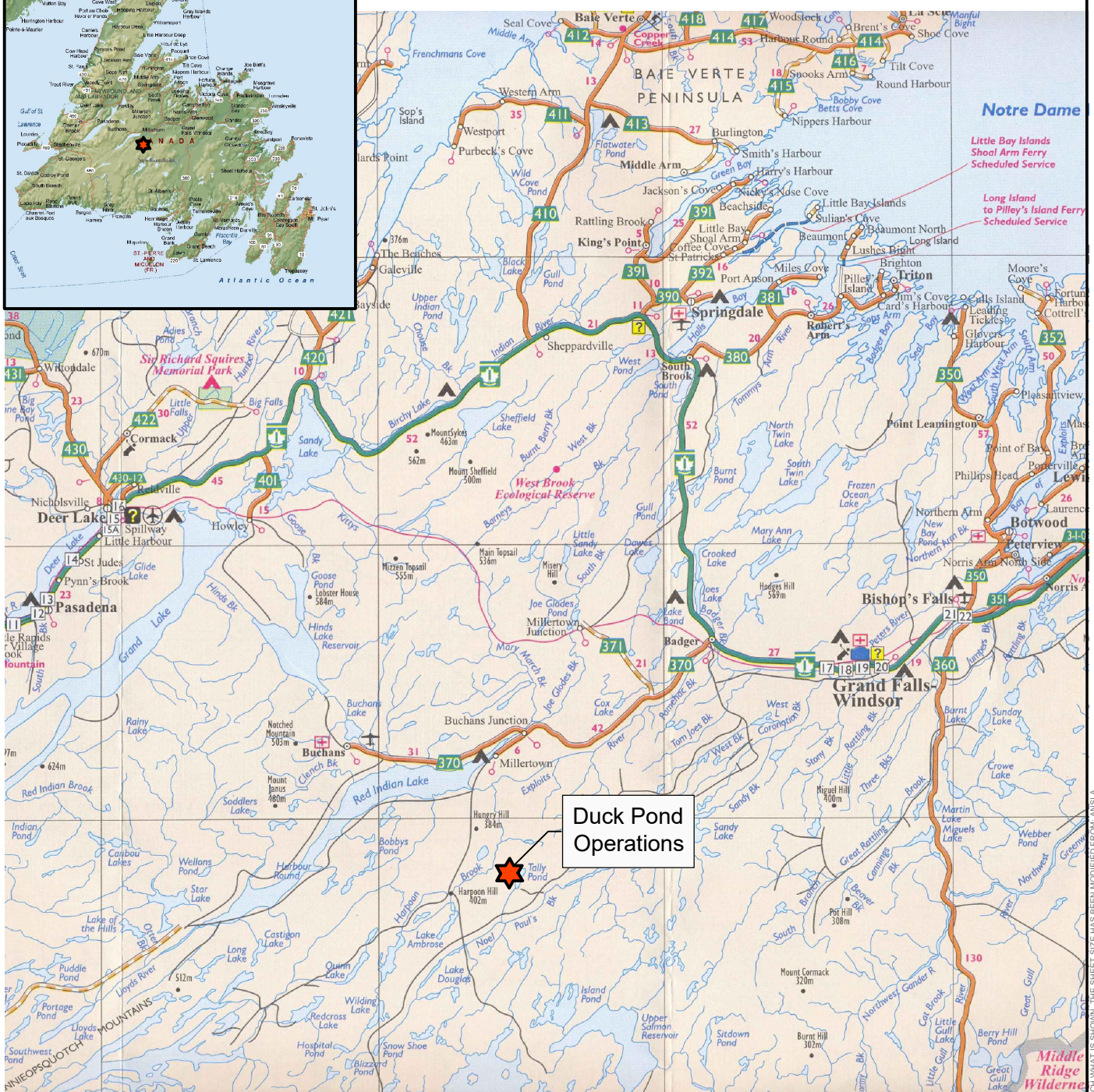
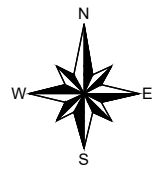
- AMEC (2014). "Teck Resources Limited Rehabilitation and Closure Plan, Duck Pond Copper-Zinc Project, Newfoundland and Labrador". Report dated January 2014 prepared for Teck Resources Limited by AMEC Environment and Infrastructure.
- CDA (2007). "Dam Safety Guidelines 2007". Guidelines prepared by the Canadian Dam Association, issued dated 2007.
- CDA (2013). "Dam Safety Guidelines 2007 (Revised 2013)". Guidelines prepared by the Canadian Dam Association, issued date 2013.
- CDA (2019). "Technical Bulletin: Application of Dam Safety Guidelines to Mining Dams". Guidelines prepared by the Canadian Dam Association, issued date 2019.
- CDA (2023). "Technical Bulletin: Revision to Consequences of Failure – Environmental Consequences Classification". Guidelines prepared by the Canadian Dam Association, issued date 2023.
- GEMTEC (2017). "2016 Dam Safety Review, Duck Pond Operations' Tailings Management Facility, Central Newfoundland". Report dated August 15, 2017 prepared for Teck Duck Pond Operation by GEMTEC Limited. Report No. 80003.01.
- Golder (2006). "Detailed Design Report, Tailings Management Facility, Duck Pond Mine, Newfoundland". Report No. 05-1118-018 (1000) dated March 2006 prepared for Met-Chem Canada Inc. by Golder Associates Ltd.
- Golder (2008a). "Dam Instrumentation As-Built Report, Duck Pond Mine Tailings Management Facility, Newfoundland". Report No. 07-1118-0041 dated January 2008 prepared for Teck Cominco Limited by Golder Associates Ltd.
- Golder (2008b). "2007 Annual Facility Inspection, Duck Pond Mine Tailings Management Facility, Newfoundland". Report No. 07-1118-0078 dated January 14, 2008 prepared for Teck Cominco Limited by Golder Associates Ltd.
- Golder (2010). "Duck Pond Operations Tailings Management Facility, 2009 Annual Facility Inspection". Report No. 09-1118-0027 (5000) dated February 2010 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2011a). "Duck Pond Operations Tailings Management Facility, 2010 Annual Facility Inspection". Report No. 10-1118-0056 (2000) dated February 2011 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2011b). "Duck Pond Operations Tailings Management Facility, 2011 Annual Facility Inspection". Report No. 11-1118-0035 (1000) dated October 2011 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2012). "Duck Pond Operations Tailings Management Facility, 2012 Annual Facility Inspection". Report No. 12-1118-0010 (1000) dated December 2012 prepared for Teck Resources Limited by Golder Associates Ltd.

- Golder (2013a). *"Duck Pond Operations Tailings Management Facility, 2013 Annual Facility Inspection"*. Report No. 13-1118-0003 (1000) dated December 2013 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2014a). *"Current Available Capacity in the Tailings Management Area, Duck Pond Operations, Newfoundland"*. Technical Memorandum dated August 7, 2014 prepared for Teck Resources Limited by Golder Associates Ltd. Project number 14-1164-0011.
- Golder (2014b). *"Duck Pond Operations Tailings Management Facility, 2014 Annual Facility Inspection"*. Report No. 14-1164-0011 (1000) dated October 2014 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2015a). *"Design Report for Construction of Internal Berms at the Tailings Management Facility, Teck Resources Limited, Duck Pond Operations"*. Report No. 14-1164-0011 dated June 2015 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2015b). *"Duck Pond Operations Tailings Management Facility, 2015 Annual Facility Inspection"*. Report No. 1540063 (1000) dated November 4, 2015 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2017). *"Weir Calibration and Certification of Flow Measurement Accuracy, Dam C Discharge Structure, Duck Pond Operations"*. Report No. 1783622 (6000) dated December 12, 2017 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2018a). *"Duck Pond Operations Tailings Management Facility, 2017 Annual Facility Inspection"*. Report No. 1783622 (2000) dated February 26, 2018 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2018b). *"Revision No. 8.0 Operation, Maintenance and Surveillance Manual, Teck Resources Limited Duck Pond Operations Tailings Management Facility"*. Report No. 1783622 (7000) dated June 2018 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2018c). *Weir Calibration and Certification of Flow Measurement Accuracy, Dam C Discharge Structure, Duck Pond Operations*. Report No. 18103800 (3000) dated October 5, 2018 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2020a). *"2019 Annual Dam Safety Inspection, Duck Pond Operations, Tailings Management Facility"*. Report No. 19122976 (1000) dated February 13, 2020 prepared by Golder Associates Ltd. for Teck Resources Limited.
- Golder (2020b). *"Revision No. 9.0 Operation, Maintenance and Surveillance Manual, Teck Resources Limited Duck Pond Operations Tailings Management Facility"*. Report No. 20139279 dated June 22, 2020 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2021a). *"2020 Annual Facility Inspection Report, Duck Pond Operations, Tailings Management Facility"*. Report No. 20139279 (1000) dated April 9, 2021 prepared by Golder Associates Ltd. for Teck Resources Limited.

- Golder (2021b). "*Weir Calibration and Certification of Flow Measurement Accuracy, Dam C Discharge Structure, Duck Pond Operations*". Report No. 20139279 (2000) dated April 9, 2021 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2021c). "*Engineer of Record Services, Duck Pond Operations Tailings Management Facility, Teck Resources Ltd.*" Letter dated September 24, 2021 prepare by Golder Associates Ltd. for Teck Resources Ltd.
- Golder (2022a) "2021 Annual Facility Performance Review Report, Duck Pond Operations, Tailings Management Facility". Report No. 21455283 (1000) dated March 31, 2022 prepared by Golder Associates Ltd. for Teck Resources Limited.
- Golder (2022b). "*Weir Calibration and Certification of Flow Measurement Accuracy, Dam C Discharge Structure, Duck Pond Operations*". Report No. 21455283 (2000) dated March 31, 2022 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2022c). "*Detailed Climate Change Dataset, Duck Pond Operations*". Draft report No. 22513866-001-R-Current dated July 2022 prepared for Teck Resources Limited by Golder Associates Ltd.
- Golder (2022d). "*Peak Ground Acceleration Estimates for Duck Pond Operations Tailings Management Facility*". Report No. 31405189 dated October 22, 2022 prepared for Teck Resources Limited by Golder Associates Inc.
- Golder (2022e). "*Future Climate Projections, Duck Pond Operations*". Draft Report No. 22513866-001-R-Future dated November 2022 prepared for Teck Resources Limited by Golder Associates Ltd.
- Jacques Whitford (2009). "*2008 Dam Safety Review, Duck Pond Operations' Tailings Management Facility, Central Newfoundland*". Report dated January 13, 2009 prepared for Teck Duck Pond Operation by Jacques Whitford Limited. Report No. 1045138.
- SGEA (2007). "*Duck Pond Mine Site, Tailings Management Facility, Construction QA/QC Summary Report*". Report dated June 2007 prepared for Aur Resources Inc. by SGE Acres Limited.
- Wood (2021). "Sediment Sampling Program, Polishing Pond, Duck Pond Operations, Millertown, Newfoundland and Labrador". Report dated June 1, 2021 prepared from Teck Resources Limited by Wood Environment and Infrastructure Solutions.
- WSP (2023a). "*Duck Pond Operations Tailings Management Facility Design Basis Report*". Technical memorandum No. 22513866-2800-TM-Rev0 dated February 7, 2023. Technical memorandum prepared for Teck Resources Limited and prepared by WSP Canada Inc.
- WSP (2023b) "2022 Annual Facility Performance Review Report, Duck Pond Operations, Tailings Management Facility". Report No. 2251386-001-R-Rev0-1100 dated April 17, 2023 prepared by WSP Canada Inc. for Teck Resources Limited.
- WSP (2023c). "*Tailings Management Facility Water Balance Update, Duck Pond Operations*". Draft Report No. 22513833(3500) Rev. A dated June 8, 2023. Report prepared for Teck Resources Limited and prepared by WSP Canada Inc.

WSP (2023d). *“Teck Duck Pond Copper-Zinc Project, Rehabilitation and Closure Plan”*. Report dated November 1, 2023 and prepared for Teck Resources Limited by WSP Canada Inc.

FIGURES



REFERENCES:

MICROSOFT MAPPOINT COPYRIGHT 1988-2001 MICROSOFT CORP. AND/OR ITS SUPPLIERS. ALL RIGHTS RESERVED.

DEPARTMENT OF TOURISM, CULTURE AND RECREATION, GOVERNMENT OF NEWFOUNDLAND, 2005.



CLIENT

TECK RESOURCES LIMITED

CONSULTANT



YYYY-MM-DD 2023-12-01

PREPARED TDR

DESIGN WPM

REVIEW WPM

APPROVED WPM

PROJECT

DUCK POND OPERATIONS
TAILINGS MANAGEMENT FACILITY
MILLERTOWN, NEWFOUNDLAND

TITLE

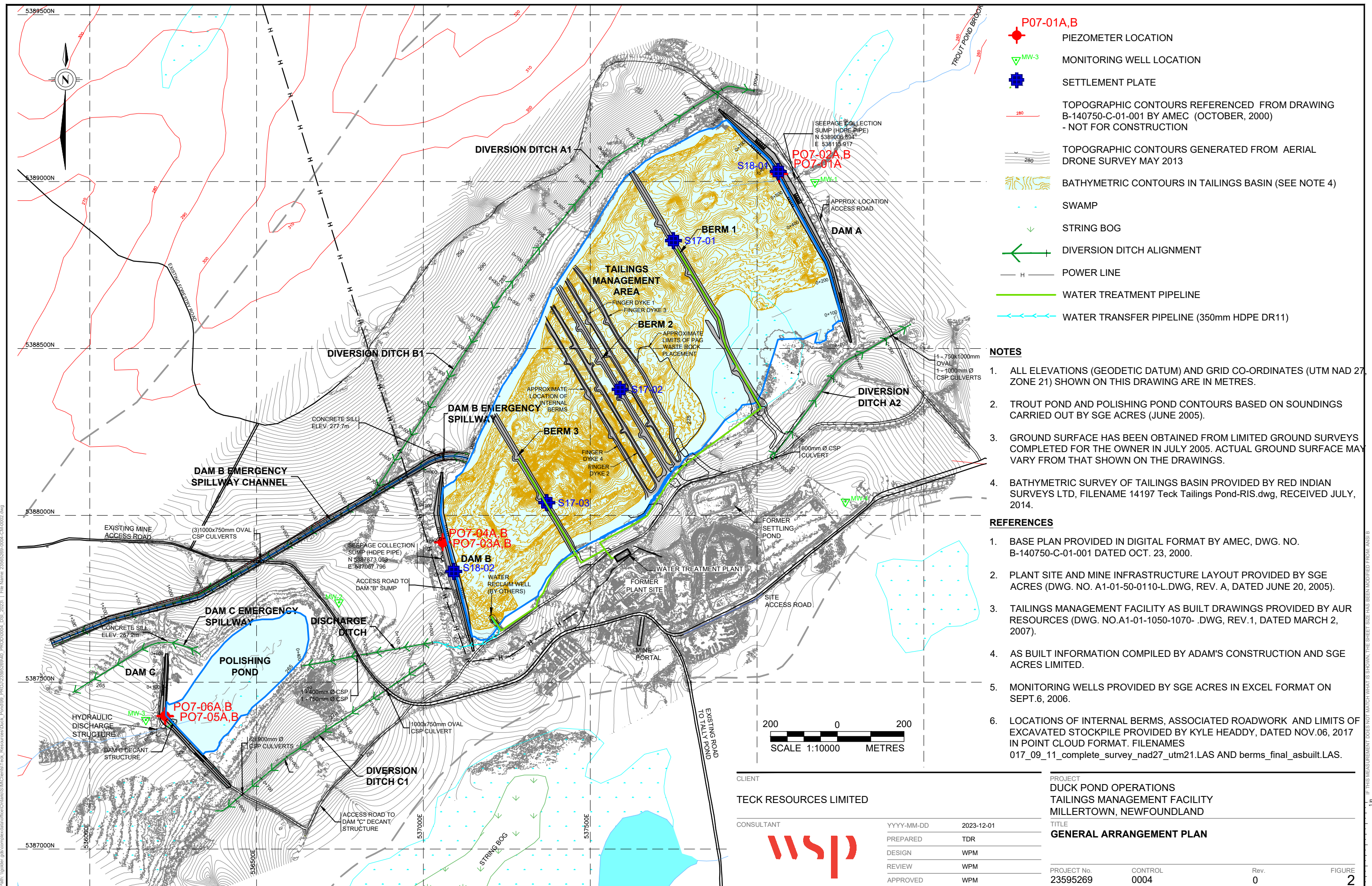
SITE LOCATION PLAN

PROJECT No.
23595269

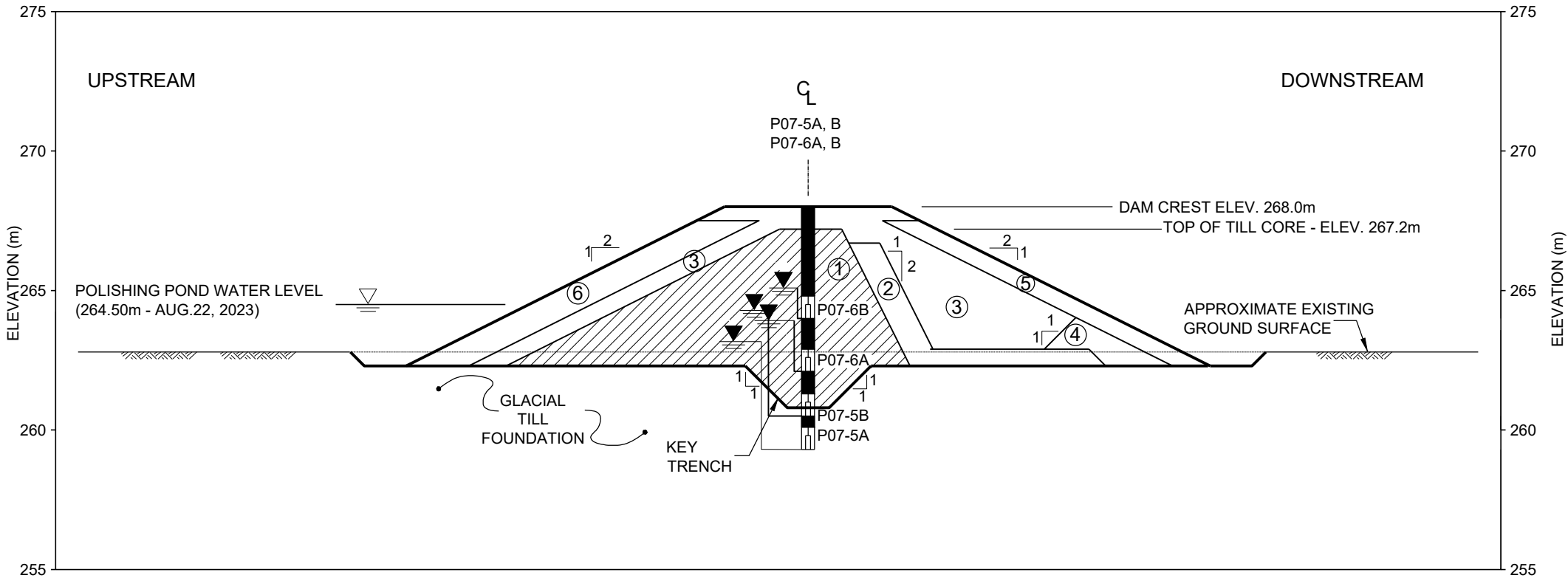
CONTROL
0004

Rev.
0

FIGURE
1



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**INSTRUMENTED DAM CROSS-SECTION
DAM C CH.0+215**

DAM MATERIALS LEGEND

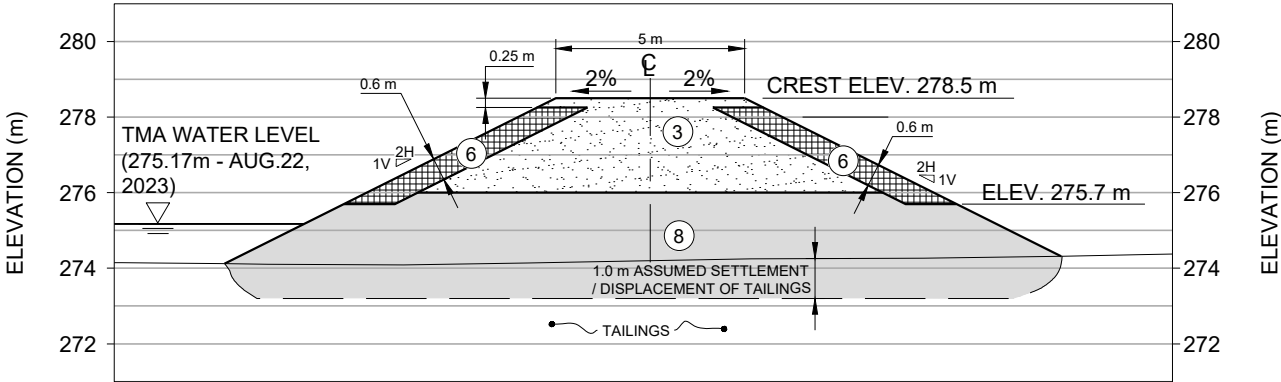
- ① ZONE 1 - GLACIAL TILL (CORE)
- ② ZONE 2 - PROCESSED SAND (FILTER)
- ③ ZONE 3 - PIT-RUN SAND AND GRAVEL (SHELL)
- ④ ZONE 4 - PROCESSED GRAVEL (DRAIN)
- ⑤ ZONE 5 - RIP RAP
- ⑥ ZONE 6 - ARMOUR STONE
- ⑧ ZONE 8 - PAG WASTE ROCK (UPSTREAM SHELL)

NOTES:

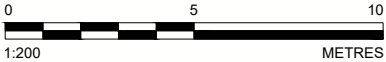
- 1. REFER TO FIGURE 2 FOR SURVEYED PIEZOMETER LOCATIONS .


REFERENCES:

- 1. BASE OF KEY TRENCH ELEVATION PROVIDED IN DIGITAL FORMAT BY SGE ACRES, DAM A CORE TRENCH.DXF AND DAM B CORE TRENCH.DXF.
- 2. REFER TO GOLDER REPORT TITLED "DAM INSTRUMENTATION REPORT" DATED JANUARY 2008 FOR DETAILS ON PIEZOMETERS. REFERENCE NO. 07-1118-0043.



INTERNAL BERMS TYPICAL CROSS-SECTION



CLIENT			PROJECT		
TECK RESOURCES LIMITED			DUCK POND OPERATIONS TAILINGS MANAGEMENT FACILITY MILLERTOWN, NEWFOUNDLAND		
CONSULTANT			TITLE		
			DAM C INTSTRUMENTED CROSS-SECTION AND INTERNAL BERM TYPICAL SECTION		
			PROJECT NO.	CONTROL	REV.
			23595269	0004	0
			DESIGNED	WPM	
			PREPARED	TDR	
			REVIEWED	WPM	
			APPROVED	WPM	
			FIGURE		4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25 mm

APPENDIX A

**Completed Inspection
Report Forms**

DUCK POND TAILINGS MANAGEMENT FACILITY FACILITY INSPECTION SUMMARY REPORT

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 23-1 Inspection Date: 16/08/2023
(DD/MM/YYYY)

WEATHER:

Temperature: 15 degrees Celsius Description: Cloudy
Current Last 3 Days Other Comments: _____
 dry ☒ ☐
 frost ☐ ☐
 rain ☐ ☒ Light rain reported one day prior to the site visit
 snow ☐ ☐

FACILITIES INSPECTED: (A separate report sheet, Form A or Form B, to be prepared for each structure)

Structure	Observed during site visit
DAM A	<input checked="" type="checkbox"/>
DAM B AND WATER RECLAIM WELL	<input checked="" type="checkbox"/>
DAM C AND DECANT / HYDRAULIC DISCHARGE STRUCTURES	<input checked="" type="checkbox"/>
INTERNAL BERMS	<input checked="" type="checkbox"/>
DAM B EMERGENCY SPILLWAY & CHANNEL	<input checked="" type="checkbox"/>
DAM C EMERGENCY SPILLWAY	<input checked="" type="checkbox"/>
DIVERSION DITCHES A1, A2, B1 and C1	<input checked="" type="checkbox"/>
DISCHARGE DITCH	<input checked="" type="checkbox"/>
PIPELINES / ACCESS ROADS	<input checked="" type="checkbox"/>

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

IMMEIDATE ACTION REQUIRED: ☒ none

No additional comments beyond those discussed in the individual inspection forms.

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2023
(DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam A Crest Elevation: 279.0 m Head Pond Elevation 275.2 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	

location 1: No specific location identified from toe of the dam. Overall seepage collects along the length of the dam and discharges away from the dam through a culvert at Sta. 0+550.

rate: ☐ damp ☐ trickle ☒ steady 3.2 (L/s)

clarity: ☒ clear ☐ muddy

sample taken: ☐ yes ☒ no

location 2:

rate ☐ damp ☐ trickle ☐ steady ____ (L/s)

clarity ☐ clear ☐ muddy

sample taken ☐ yes ☐ no

toe vegetation ☐ none ☒ sparse ☐ moderate ☐ heavy

type:

sand boils ☒ none ☐ location(s)

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	wave induced	<input type="checkbox"/>	surface runoff
			location(s):		
			degree	<input type="checkbox"/> minor	<input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>			
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	TMA Pond level drawn down in 2023 for reclamation activities.		

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type:

- | | |
|-----------------------------------|---|
| <input type="checkbox"/> spillway | <input type="checkbox"/> water reclaim well |
| <input type="checkbox"/> decant | <input type="checkbox"/> weir |
| | <input checked="" type="checkbox"/> other |

Water level in TMA controlled by pumping from the water reclaim well near Dam B

Flow: ☐ none ☐ clear ☐ muddy
Rate of discharge (m³/hr) ☐ estimated ☐ measured Gauge Reading _____

Conditions Observed:

<input type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation			
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation			
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope			<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge			

Comments:

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input checked="" type="checkbox"/> piezometers	<input checked="" type="checkbox"/> BH 07-01 & 07-02	<input type="checkbox"/>	<input checked="" type="checkbox"/> monthly by mine personnel
<input checked="" type="checkbox"/> monitoring wells	<input checked="" type="checkbox"/> MW-1	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel
<input checked="" type="checkbox"/> survey monuments	<input checked="" type="checkbox"/> S18-01	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landmark Surveys & Engineering
<input checked="" type="checkbox"/> Thermistors	<input checked="" type="checkbox"/> TH23-01	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel

COMMENTS AND RECOMMENDATIONS:

1. Dam A is in good condition based on the visual assessment.
2. Piezometer data are generally showing consistent trends with historical readings. The surface casings were extended in 2019 to reduce surface inflows and have resulted in more stabilized piezometer readings, as intended.
3. Flows at the outlet of the road culvert at the downstream toe of Dam A near Sta. 0+550 were measured and recorded along with piezometer readings starting 2021. In 2023, seepage reporting was enacted by the regulatory agencies. As a result, Teck upgraded the culvert outlet and the method of flow measurement was formalized (stopwatch and calibrated bucket). The discharge at the time of the inspection was consistent with previous years and reported as 3.2 L/s by Teck personnel in September.
4. Vegetation growth on the dam has been an ongoing issue and requires routine maintenance. Clearing was carried out in 2023 and should continue in the future every couple of years.
5. The settlement plate was surveyed in August 2023 and reportedly rose 37 mm since its installation in 2018 and 28 mm since the last survey in 2022. Overall, this is considered good performance and indicates negligible movement is occurring.
6. A new thermistor string was installed in the dam crest in 2023 to monitor frost penetration and potential impact on the till core. The thermistor string is located adjacent to the piezometers at Sta. 0+550. The thermistor appears to be operating correctly with normal readings following its first few months of data collection. The temperature at 1.25m depth (~top of till core) was 13 degrees Celsius in October.
7. The access road at the downstream toe was upgraded with Granular B fill to improve access in 2022 and appears to be performing well.

<input checked="" type="checkbox"/> Action Required:	<input checked="" type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 – 8			

Reviewer's Name:	<u>Ali Ghirian</u>	Date Reviewed:	<u>02/02/2024</u>
			(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam A

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Dam A downstream shell
looking north from Sta. 0+100.



Photograph 2

Dam A upstream slope and
crest looking south from Sta.
0+800.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam A

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Downstream slope of Dam A at 0+700.



Photograph 4

Discharge from culvert beneath access road downstream of Dam A.

The flowrate was consistent with previous rates.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam A

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Upstream slope of Dam A at Sta. 0+300 looking north.



Photograph 6

Piezometer surface casings (upgraded in 2019) and thermistor datalogger casing (installed in 2023).



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam A

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

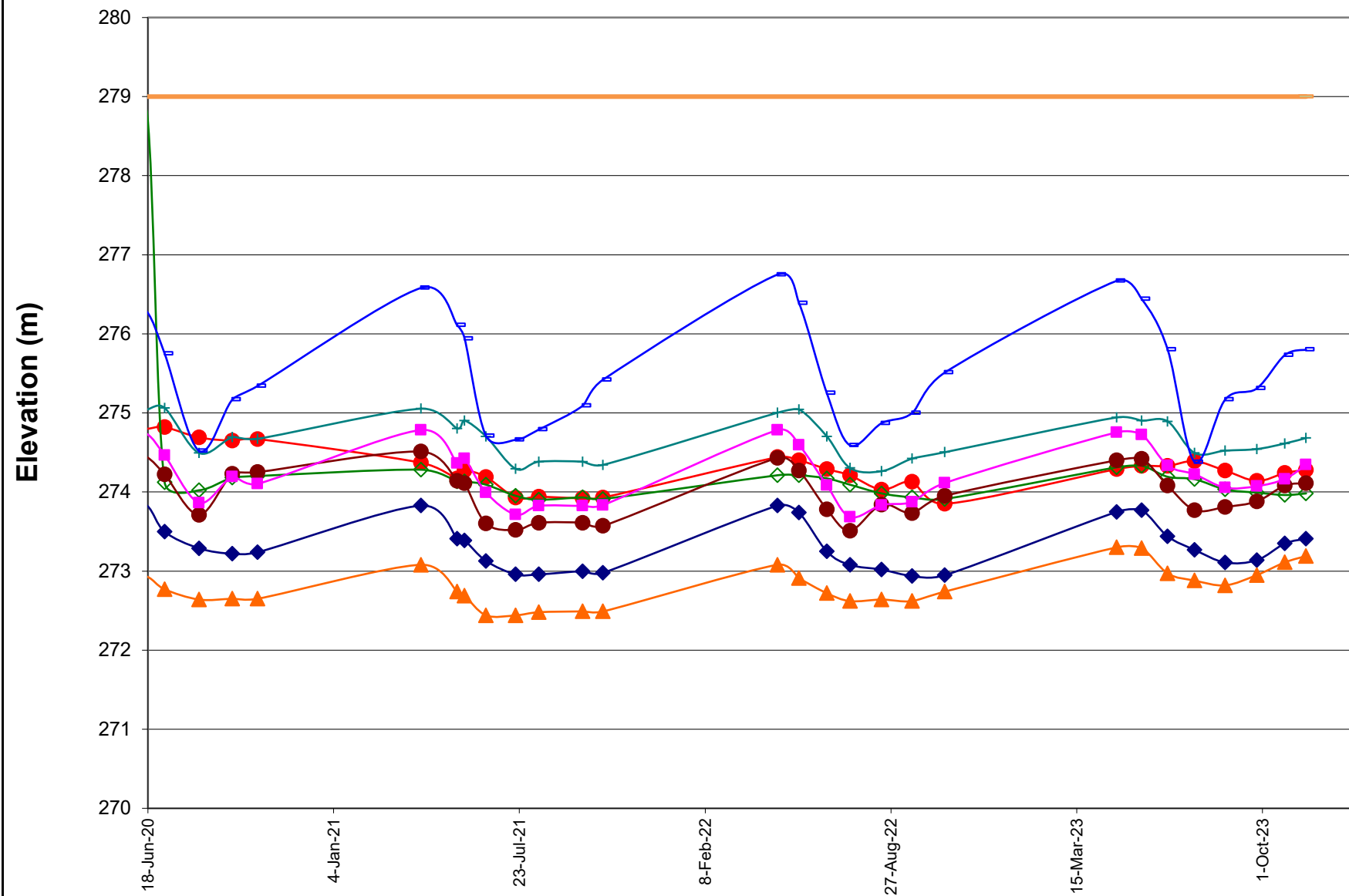
Downstream toe of Dam A at Sta. 0+150. The collection ditch was cleared and the ditch was deepened in 2022 to improve drainage.



Photograph 8

Downstream slope of Dam A at Sta. 0+600 looking south.





◆ P07-01A ▲ P07-02A ● P07-02B ◇ P07-03A ● P07-03B ■ P07-04A + P07-04B □ TMA W/L — Dam Crest

Client:
Teck Resources Limited

Project:
Duck Pond Operations



Date: Dec-23
 Prep'd: WPM
 Rev'd: WPM

Title:
 TMA Pizometers

Project/Phase No. 23595269

Revision

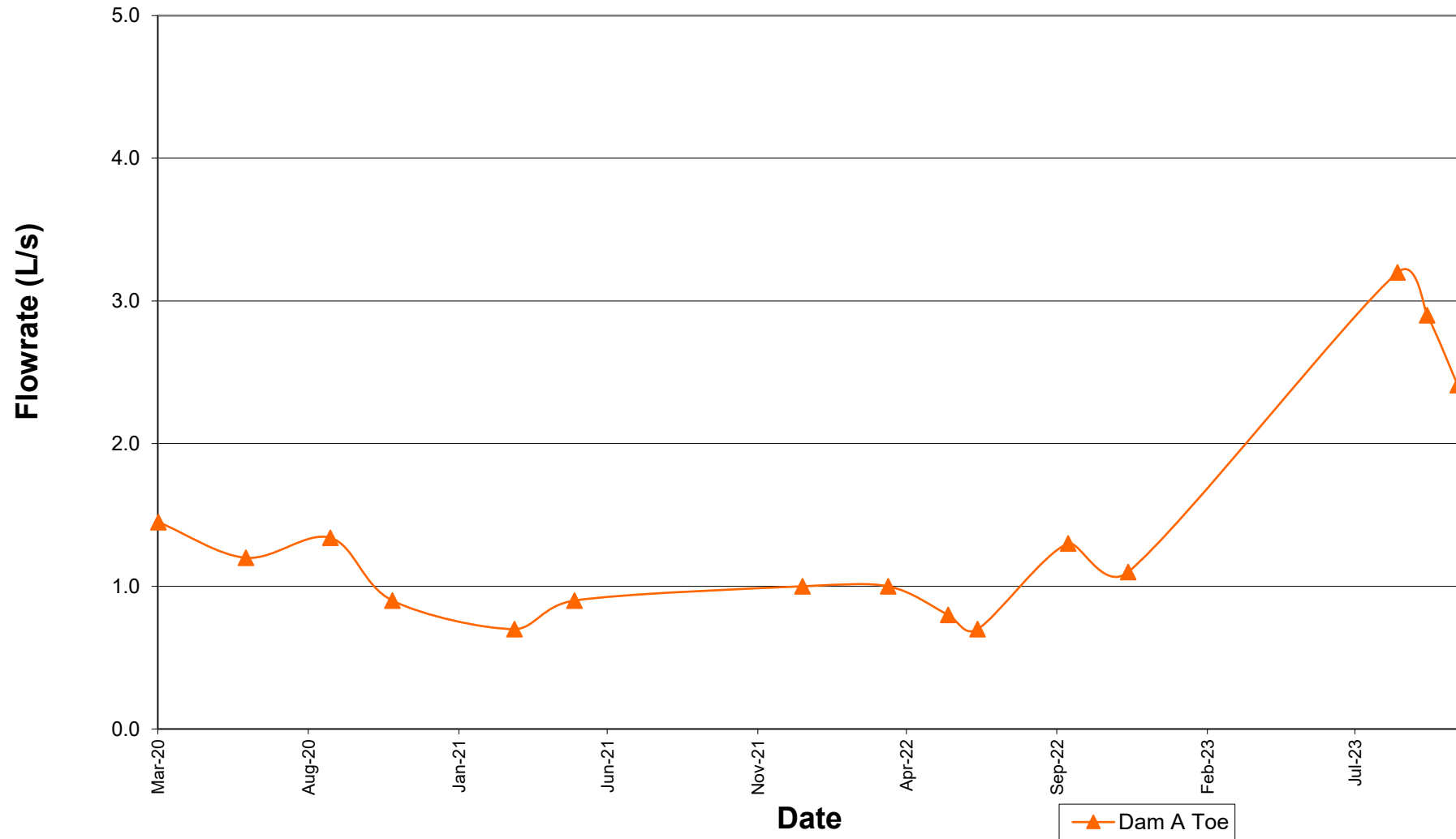
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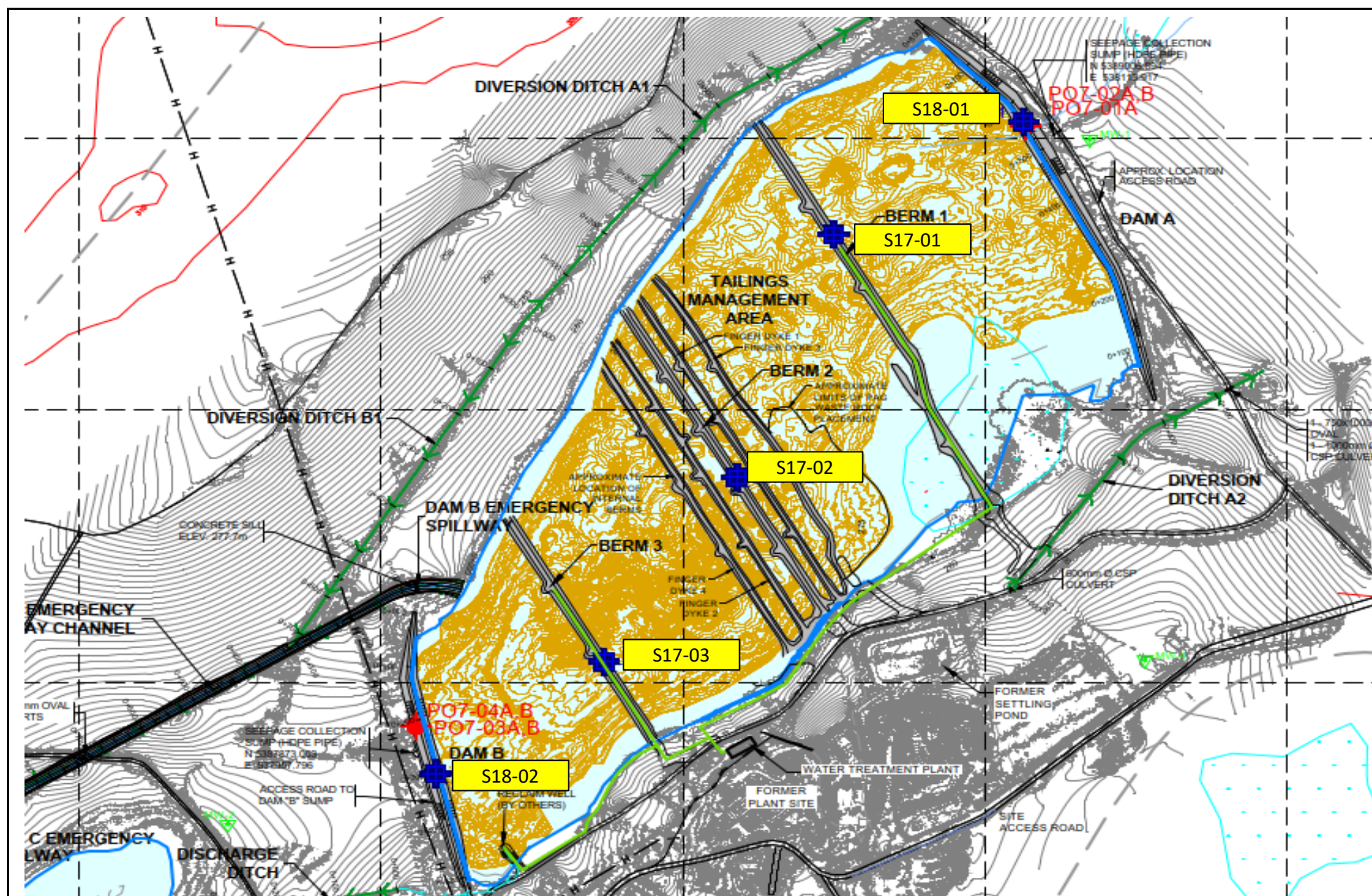
Figure No.

A2

Dam Seepage Plot
Duck Pond TMF

**DUCK POND OPERATIONS
SEEPAGE MONITORING**





Client:
Teck Resources Limited

Project:
Duck Pond Tailings Management Facility



Date: Nov-23
Prep'd: WPM
Rev'd: WPM

Title:
Tailings Management Facility Settlement Plates Plan

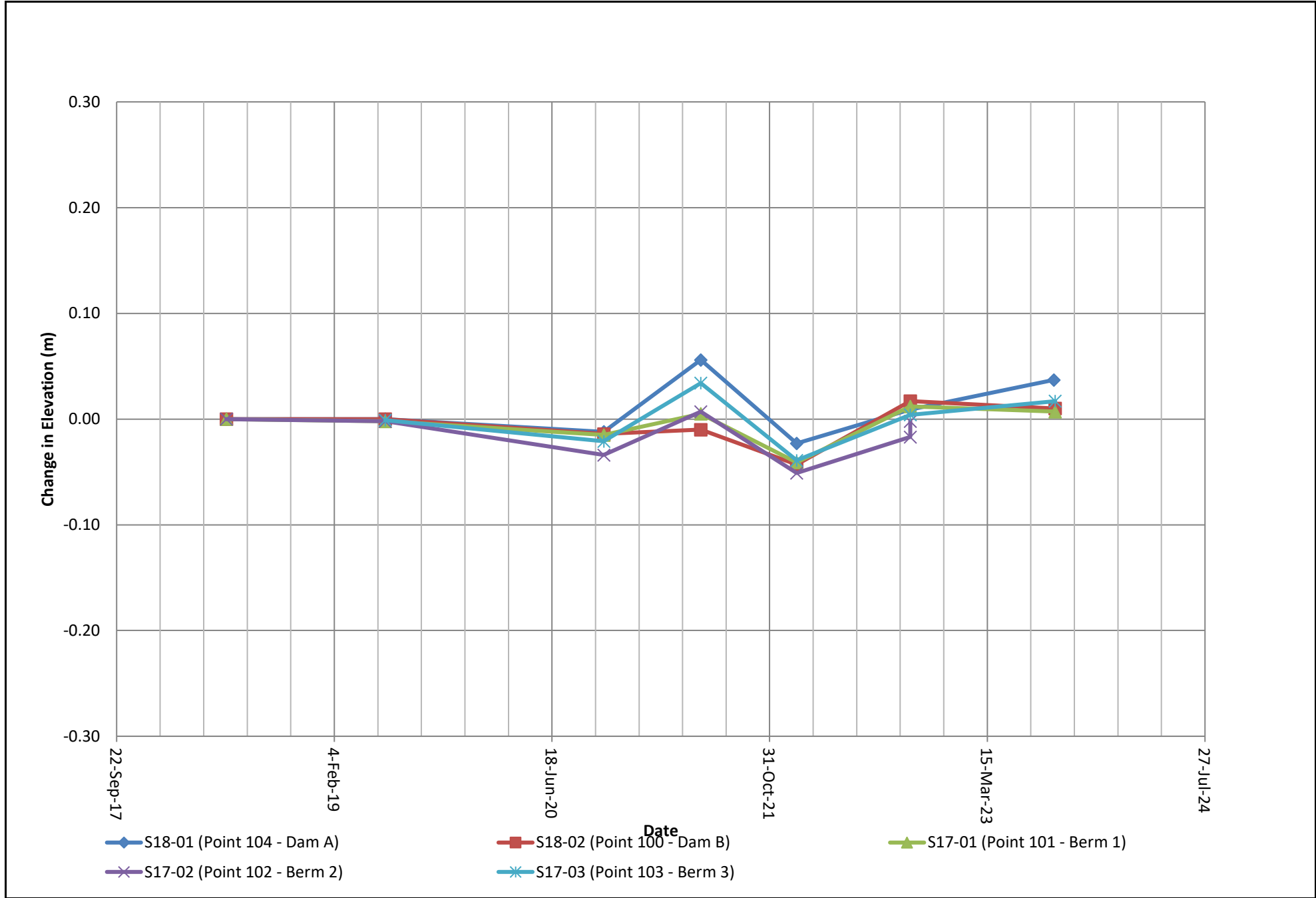
Project/Phase No. 23595269


Revision

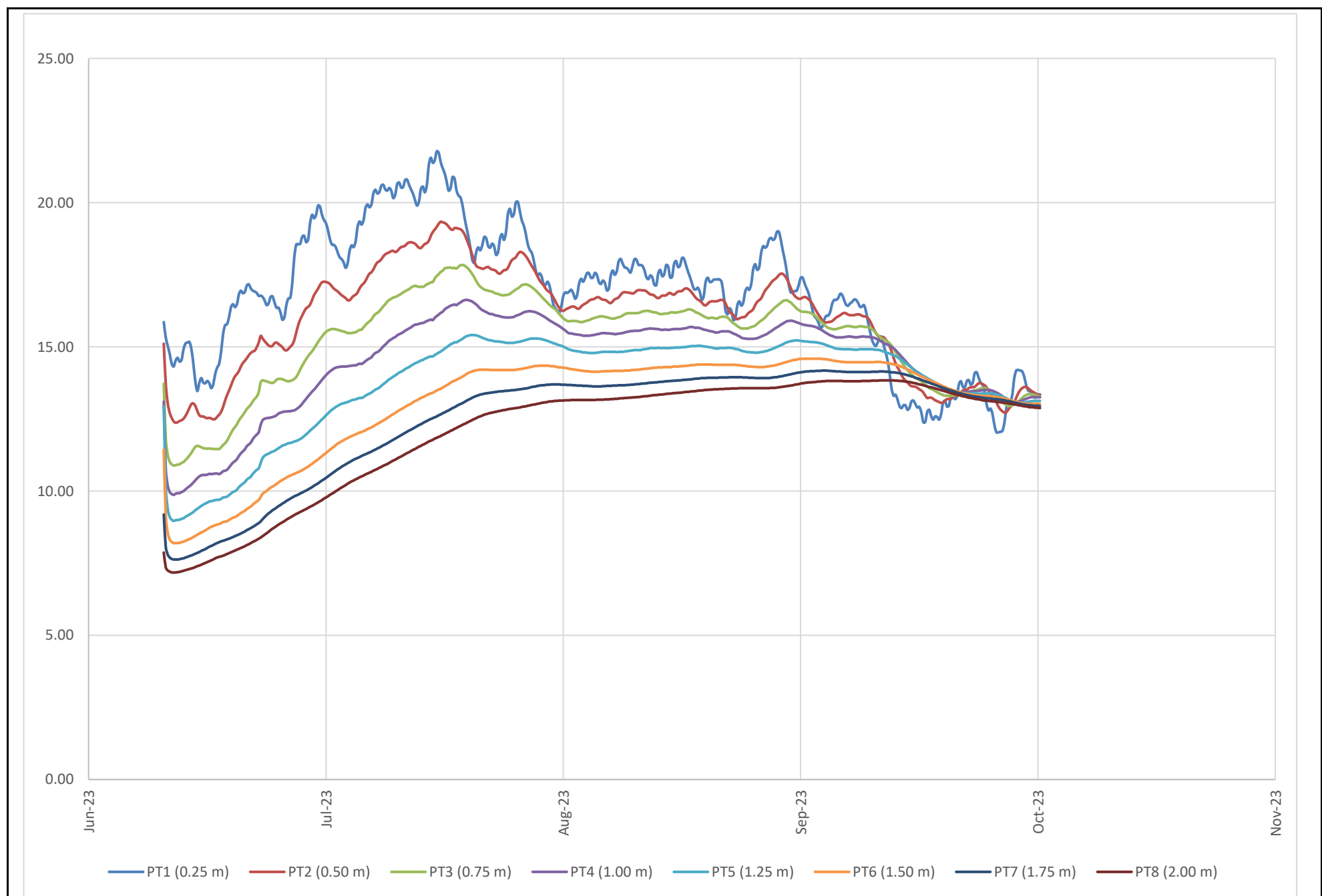
A

Figure No.

A8



Client: Teck Resources Limited		Project: Duck Pond Operations	
	Date:	Dec-23	Title: Settlement Plates Plots
	Prep'd:	WPM	
	Rev'd:	WPM	
Project/Phase No. 23595269		Revision A	Figure No. A9



Client:
Teck Resources Limited



Date: Dec-23
Prep'd: WPM
Rev'd: WPM

Project:
Duck Pond Operations

Title:
Dam A Thermistor Plot - TH23-01

Project/Phase No. 23595269 Revision A Figure No. A6

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2023
(DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam B Crest Elevation: 279.0 m Head Pond Elevation 275.2 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	

location 1: Some ponded water along downstream toe. No visible seepage observed.

rate: ☒ damp ☐ trickle ☐ steady ____ (L/s)

clarity: ☒ clear ☐ muddy

sample taken: ☐ yes ☒ no

location 2: Some areas along the toe have lush plant growth suggesting seepage/water surface close to surface of shell.

rate ☒ damp ☐ trickle ☐ steady ____ (L/s)

clarity ☒ clear ☐ muddy

sample taken ☐ yes ☒ no

toe vegetation ☐ none ☒ sparse ☐ moderate ☐ heavy

type: _____

sand boils ☒ none ☐ location(s) _____

DUCK POND TAILINGS MANAGEMENT FACILITY

FIELD INSPECTION FORM A

DAM INSPECTION REPORT

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	wave induced	<input type="checkbox"/>	surface runoff
			location(s):		
			degree	<input type="checkbox"/> minor	<input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>			
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	Some exposed tailings visible in TMF, as a result of low water level in the basin for reclamation activities.		

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type: Water level in TMA controlled by pumping from the water reclaim well.

<input checked="" type="checkbox"/> spillway	<input checked="" type="checkbox"/> water reclaim well
<input type="checkbox"/> decant	<input type="checkbox"/> weir
	<input type="checkbox"/> other

No flow in discharge ditch to the Polishing Pond; no flow in spillway.

Flow: ☒ none ☐ clear ☐ muddy

Rate of discharge (m³/hr) ☐ estimated ☐ measured Gauge Reading _____

Conditions Observed: Reclaim Well Intake

<input checked="" type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation		
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam		<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation		
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope		<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge		

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input checked="" type="checkbox"/> piezometers	<input checked="" type="checkbox"/> BH 07-03 & 07-04	<input type="checkbox"/>	<input checked="" type="checkbox"/> monthly by mine personnel
<input checked="" type="checkbox"/> monitoring wells	<input checked="" type="checkbox"/> MW-2	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel
<input checked="" type="checkbox"/> survey monuments	<input checked="" type="checkbox"/> S18-02	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landmark Surveys & Engineering
<input checked="" type="checkbox"/> Thermistors	<input checked="" type="checkbox"/> TH23-01	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel

COMMENTS AND RECOMMENDATIONS:

1. Dam B is in good condition based on the visual assessment.
2. Piezometer levels are within expected levels and responding the changing TMA pond levels.
3. The water level in the TMA was approximately 1.1 m below the minimum operating water level (276.3 m during the transition phase) to facilitate reclamation activities. Mining impacted soils (sludge from the Polishing Pond) placement in the TMA occurred in the summer of 2023 into Cell 2.
4. Exposed tailings were observed above the water level at the time of the inspection near Berm 3 (i.e., >275.2 m). Once placement of the mining impacted soils is completed, a bathymetric survey of the TMA should be conducted to identify those areas of tailings above 274.2 m and the tailings relocated to deeper areas of the pond. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and necessity to maintain currently proposed 2.65 m of water over the tailings.
5. The settlement plate was surveyed in August 2023 and reportedly rose 10 mm since its installation in 2018 and settled 7 mm since the last survey in 2022. Overall, this is considered good performance and indicates negligible movement is occurring.
6. A new thermistor string was installed in the dam crest in 2023 to monitor frost penetration and potential impact on the till core. The thermistor string is located adjacent to the piezometers at Sta. 0+225. The thermistor appears to be operating correctly with normal readings following its first few months of data collection. The temperature at 1.25m depth (~top of till core) is 13 degrees Celsius in October.
7. The downstream toe area was cleared of vegetation in 2023.
8. Seepage accumulates at the downstream toe of the dam near Sta. 0+250. The seepage flows towards the Polishing Pond and passes between two small stockpiles of material that remain from original construction in 2006. The area has become overgrown with vegetation making observing seepage conditions difficult. It is also noted that the ponding water is not able to drain efficiently towards the polishing pond as a result of sediment accumulations in the channel between the two stockpile. Teck should clear the downstream area of vegetation and clear the channel of sediment towards the Polishing Pond to permit better observation of seepage conditions.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 – 8			

Reviewer's Name:	<u>Ali Ghirian</u>	Date Reviewed:	<u>02/02/2024</u>
			(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Dam B upstream slope and crest looking north from Sta. 0+500



Photograph 2

Dam B upstream slope looking south from north abutment.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Dam B crest and downstream slope looking south from Sta. 0+200.



Photograph 4

Downstream toe and Dam B seepage collection sump. Seepage and local runoff accumulate at this location and then migrate through the wetland and channel towards the Polishing Pond.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Piezometer surface casings on Dam B at Sta. 0+225 (raised in 2019) and thermistor data logger casing (installed in 2023).



Photograph 6

Surface casing over the Dam B settlement plate located at Sta. 0+300 on the upstream edge or crest.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

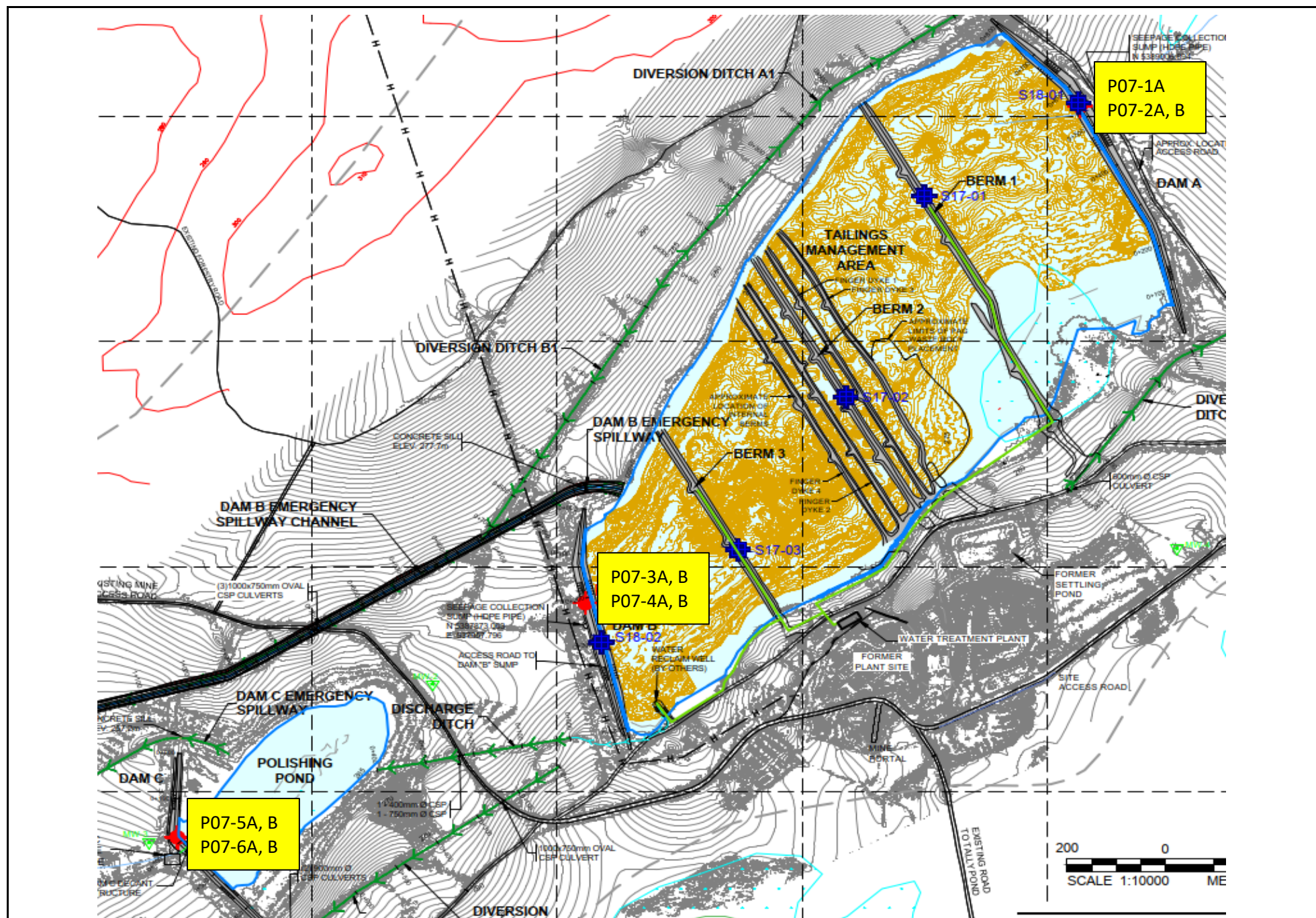
Crest and downstream slope of Dam B looking south from Sta. 0+050.



Photograph 8

Downstream slope of Dam B at Sta. 0+250 looking south.





Client:
Teck Resources Limited

Project:
Duck Pond Tailings Management Facility



Date: Nov-23
Prep'd: WPM
Rev'd: WPM

Title:
Tailings Management Facility Pizometer Location Plan

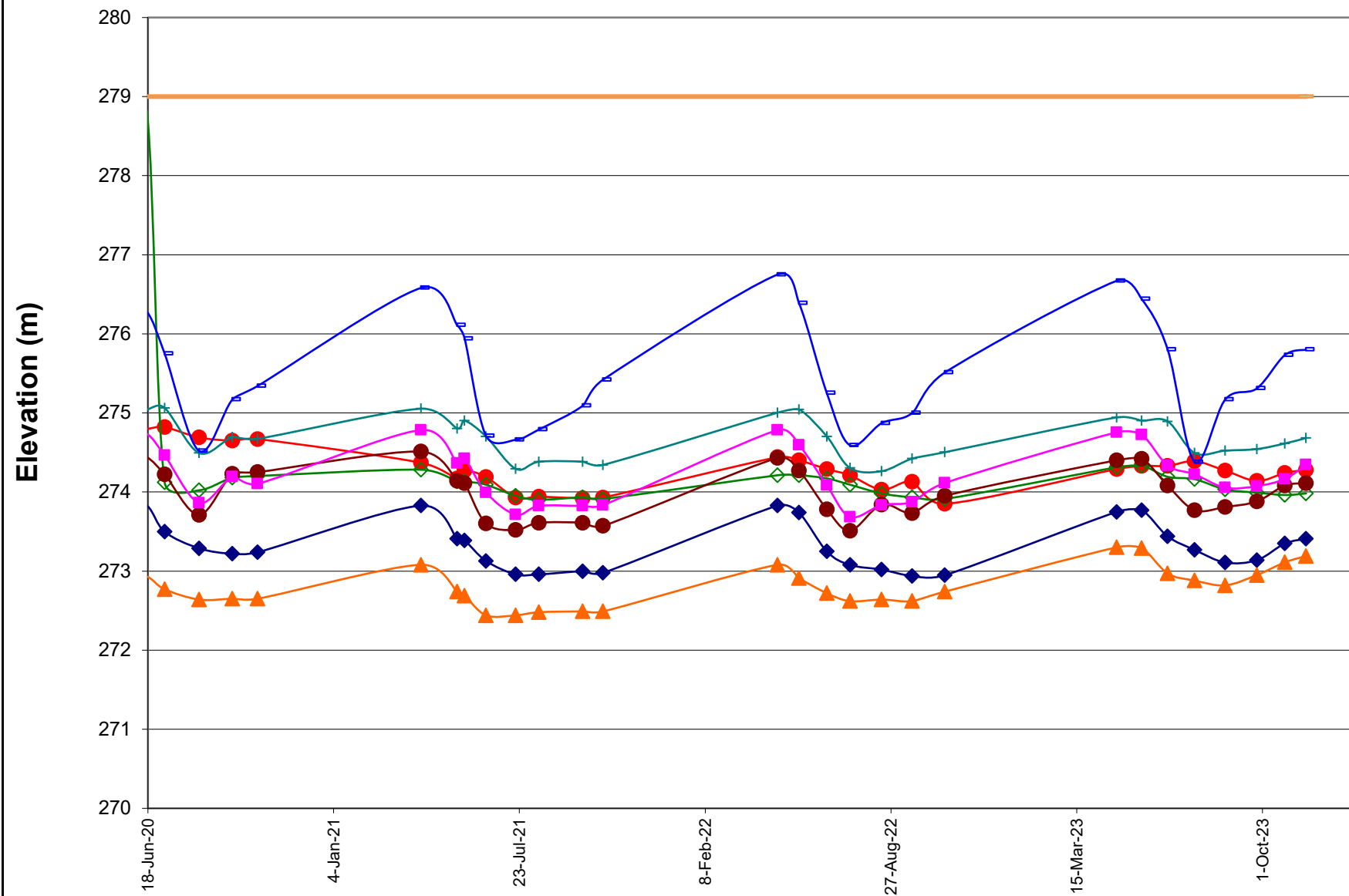
Project/Phase No. 23595269

Revision

A

Figure No.

A1



◆ P07-01A
▲ P07-02A
● P07-02B
◇ P07-03A
● P07-03B
■ P07-04A
+ P07-04B
— TMA W/L
— Dam Crest

Client:
Teck Resources Limited

Project:
Duck Pond Operations



Date: Dec-23
Prep'd: WPM
Rev'd: WPM

Title:
TMA Pizometers

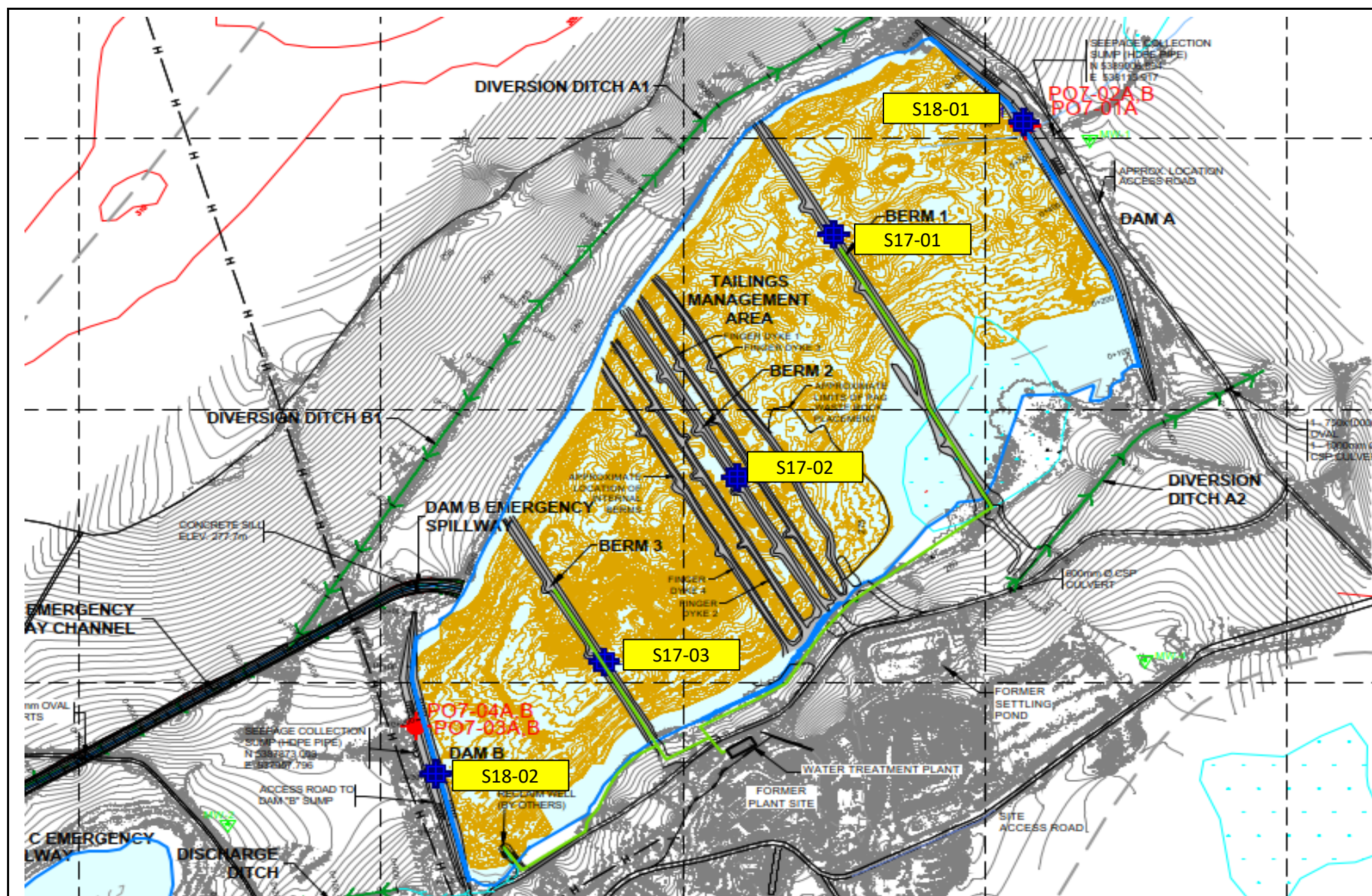
Project/Phase No. 23595269

Revision

A

Figure No.

A2



Client:
Teck Resources Limited

Project:
Duck Pond Tailings Management Facility



Date: Nov-23
Prep'd: WPM
Rev'd: WPM

Title:
Tailings Management Facility Settlement Plates Plan

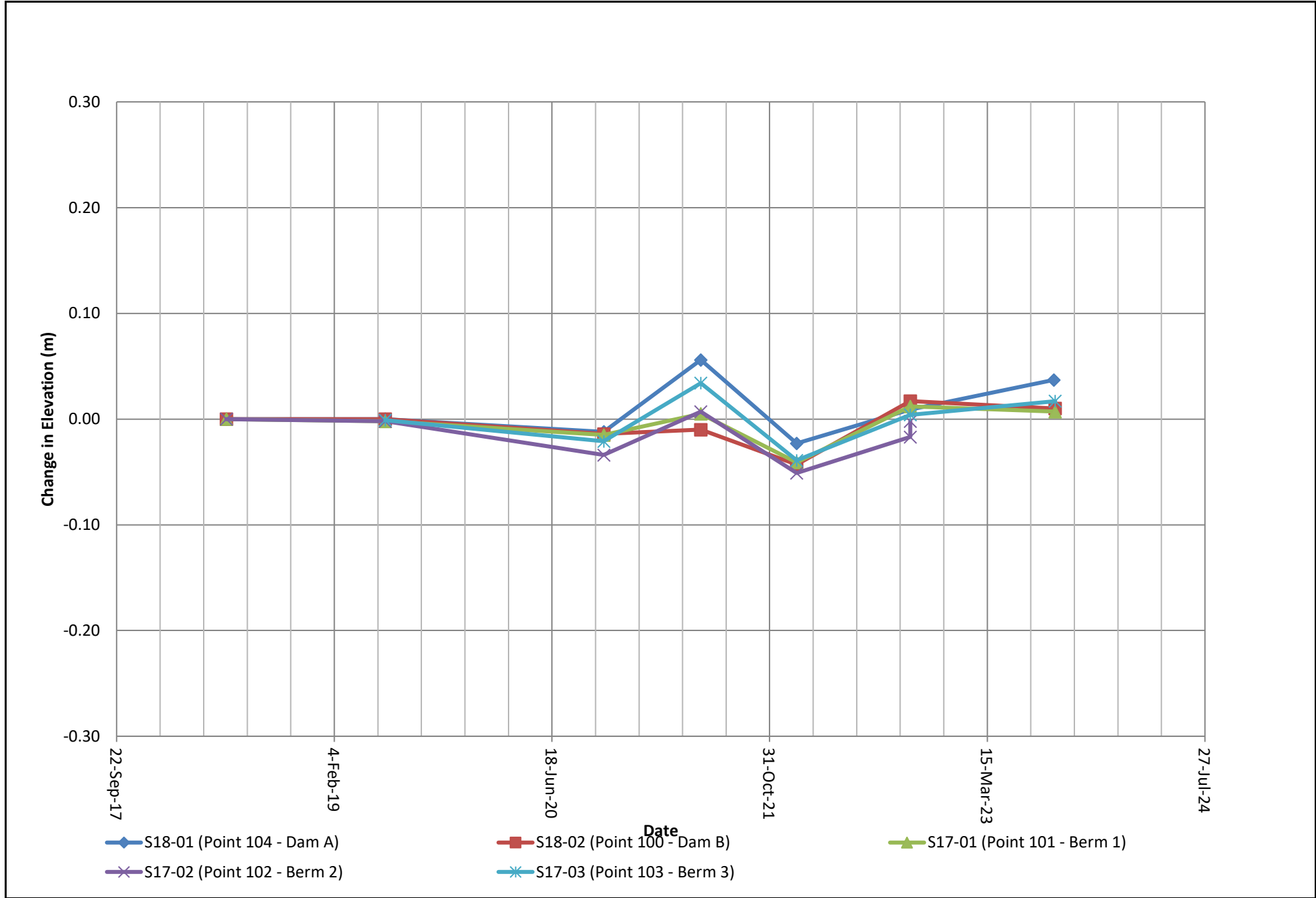
Project/Phase No. 23595269


Revision

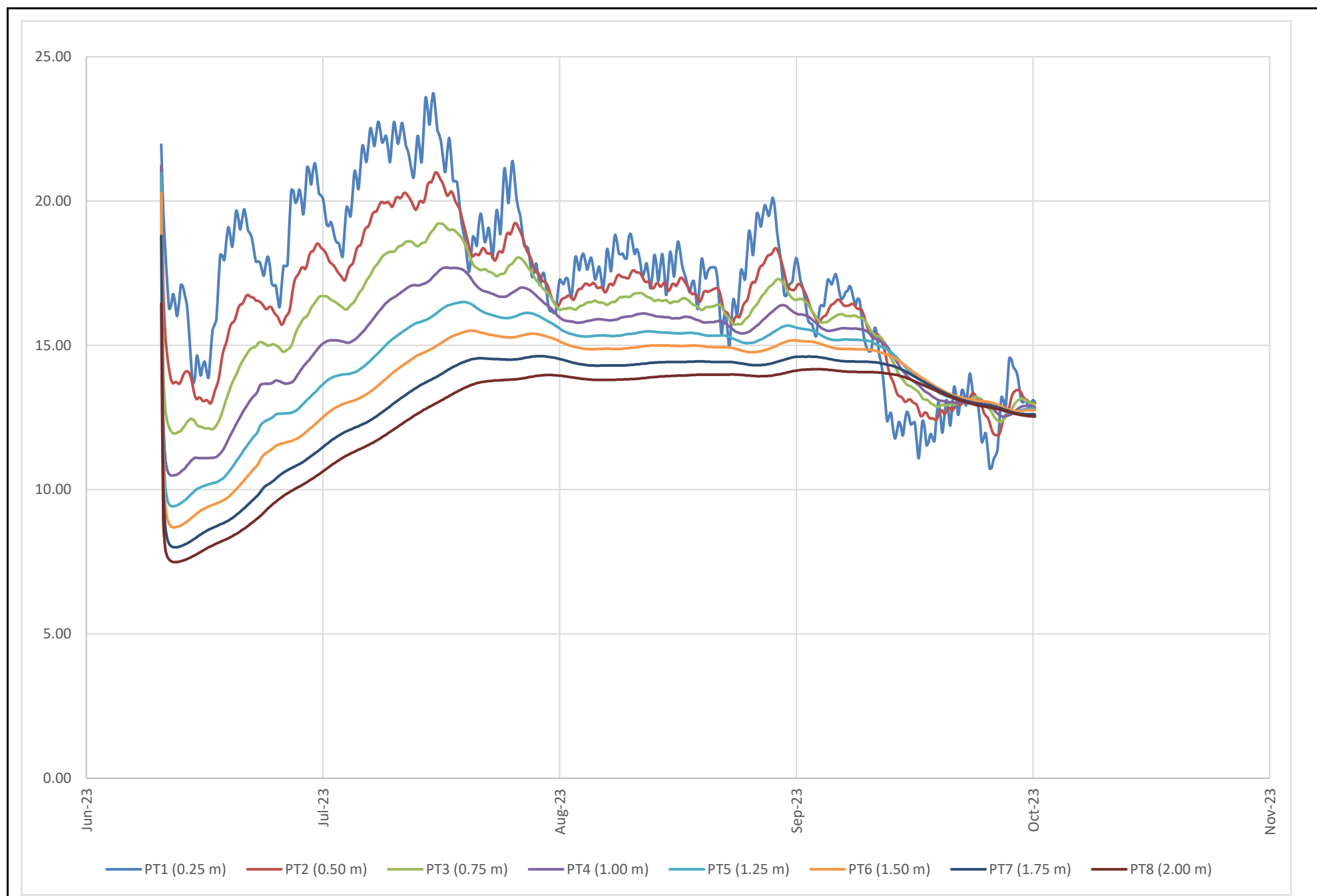
A


Figure No.

A8



Client: Teck Resources Limited		Project: Duck Pond Operations	
	Date:	Dec-23	Title: Settlement Plates Plots
	Prep'd:	WPM	
	Rev'd:	WPM	
Project/Phase No. 23595269		Revision	A
Figure No.		A9	



Client: Teck Resources Limited		Project: Duck Pond Operations			
	Date:	Dec-23	Title: Dam B Thermistor Plot - TH23-02		
	Prep'd:	WPM			
	Rev'd:	WPM	Project/Phase No. 23595269	Revision A	Figure No. A7

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2023
(DD/MM/YYYY)

DAM INFORMATION:

Identification: Dam C Crest Elevation: 268.0 m Head Pond Elevation ~264.5 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
other movement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
crest vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	

B) Downstream Slope and Toe Area

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>	
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	
seepage	<input type="checkbox"/> none	<input checked="" type="checkbox"/>	

location 1: Seepage observed along southern half downstream toe, but mostly coming for adjacent bog.

rate: ☒ damp ☐ trickle ☐ steady ____ (L/s)

clarity: ☒ clear ☐ muddy

sample taken: ☐ yes ☒ no

location 2:

rate ☐ damp ☐ trickle ☐ steady ____ (L/s)

clarity ☐ clear ☐ muddy

sample taken ☐ yes ☐ no

toe vegetation ☐ none ☒ sparse ☐ moderate ☐ heavy

type: _____

sand boils ☒ none ☐ location(s) _____

DUCK POND TAILINGS MANAGEMENT FACILITY

FIELD INSPECTION FORM A

DAM INSPECTION REPORT

Sheet 2 of 3

C) Upstream Slope and Tailings Surface

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	wave induced	<input type="checkbox"/>	surface runoff
			location(s):		
			degree	<input type="checkbox"/> minor	<input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>			
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sludge surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	Pond lowered to facilitate replacement of the decant pipe		

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type: Water level in Polishing Pond controlled by Decant Structure.

<input checked="" type="checkbox"/> spillway	<input type="checkbox"/> water reclaim well
<input checked="" type="checkbox"/> decant	<input checked="" type="checkbox"/> weir (at Hydraulic Discharge Structure)
	<input type="checkbox"/> other

No flow in spillway. Hydraulic discharge structure was not operating

Flow: ☒ none ☐ clear ☐ muddy

Rate of discharge (m³/hr) ☐ estimated ☐ measured Gauge Reading _____

Conditions Observed: Hydraulic Discharge Structure

<input type="checkbox"/> good	<input checked="" type="checkbox"/> blockage of inlet	<input checked="" type="checkbox"/> debris	CSP is rusting	corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input checked="" type="checkbox"/> to follow
		<input type="checkbox"/> siltation			Monitor for deterioration
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> debris		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input type="checkbox"/> to follow
		<input type="checkbox"/> siltation			
	<input type="checkbox"/> erosion	<input type="checkbox"/> channel		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope			<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge			

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input checked="" type="checkbox"/> piezometers	<input checked="" type="checkbox"/> BH 07-05 & 07-06	<input type="checkbox"/>	<input checked="" type="checkbox"/> monthly by mine personnel
<input checked="" type="checkbox"/> monitoring wells	<input checked="" type="checkbox"/> MW-3	<input type="checkbox"/>	<input checked="" type="checkbox"/> by mine personnel
<input type="checkbox"/> survey monuments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS AND RECOMMENDATIONS:

1. Dam C is in good condition based on the visual assessment.
2. Piezometric water levels have fluctuated frequently over the years, as expected due to the changing water levels in the Polishing Pond.
3. Piezometers P07-06B and P07-06A have experienced water levels above the Polishing Pond level in recent years. In 2019, the surface casings were extended to prevent surface runoff from entering the casing. Since the casings were extended in 2019, the water levels in piezometer P07-6A have returned to historical normal levels but piezometer P07-06B is still showing fluctuating water levels above the Polishing Pond level, sometimes a lagging response to lowering the Polishing Pond level. It is noted that the most recent reading in November 2023 is lower and consistent with the other piezometers. The piezometers should continue to be monitored for changing conditions.
4. The water level in the Polishing Pond was fully dewatered (~264.5 m) at the time of the inspection which is 0.7 m below the maximum operating water level of 265.2 m.
5. Excavation of sludge and surficial peat from within the Polishing Pond was occurring at the time of the site visit. The sludge was being placed in the TMA, Cell 2 for long term closure. This activity was aligned with the closure plan, where sludge accumulation was expected during the operating period and was to be placed in the TMA beneath a permanent pond to prevent oxidation and acidic drainage.
6. The inlet pipe for the Dam C discharge structure was replaced in 2022 and appears to be performing well in 2023. Following the construction activities, it was noted that the rip rap on the upstream slope of Dam C around the inlet structure was disturbed and requires additional rip rap to reinstate original conditions.
7. A new access road was constructed at the downstream toe of Dam C to facilitate access to the discharge structure without driving on the dam crest. In addition, the seepage collection ditch was reinstated downstream of the access road and a hydro line was installed to provide power to the discharge structure building. The upgrades appear to be performing well and have not visually impacted the performance of the dam.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 – 8			

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Dam C crest and downstream slope from the north abutment.



Photograph 2

Dam C crest and upstream slope looking north from south abutment.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Dam C decant tower inlet. The tower was replaced in 2022.



Photograph 4

Dam C hydraulic control structure. New stairway installed in 2022 to improve access to the v-notch weir.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Piezometer surface casings on the crest of Dam C at Sta. 0+200 (raised in 2019).



Photograph 6

Downstream slope of Dam C and Sta. 0+450, looking north. New toe access road and hydro line installed in 2023.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

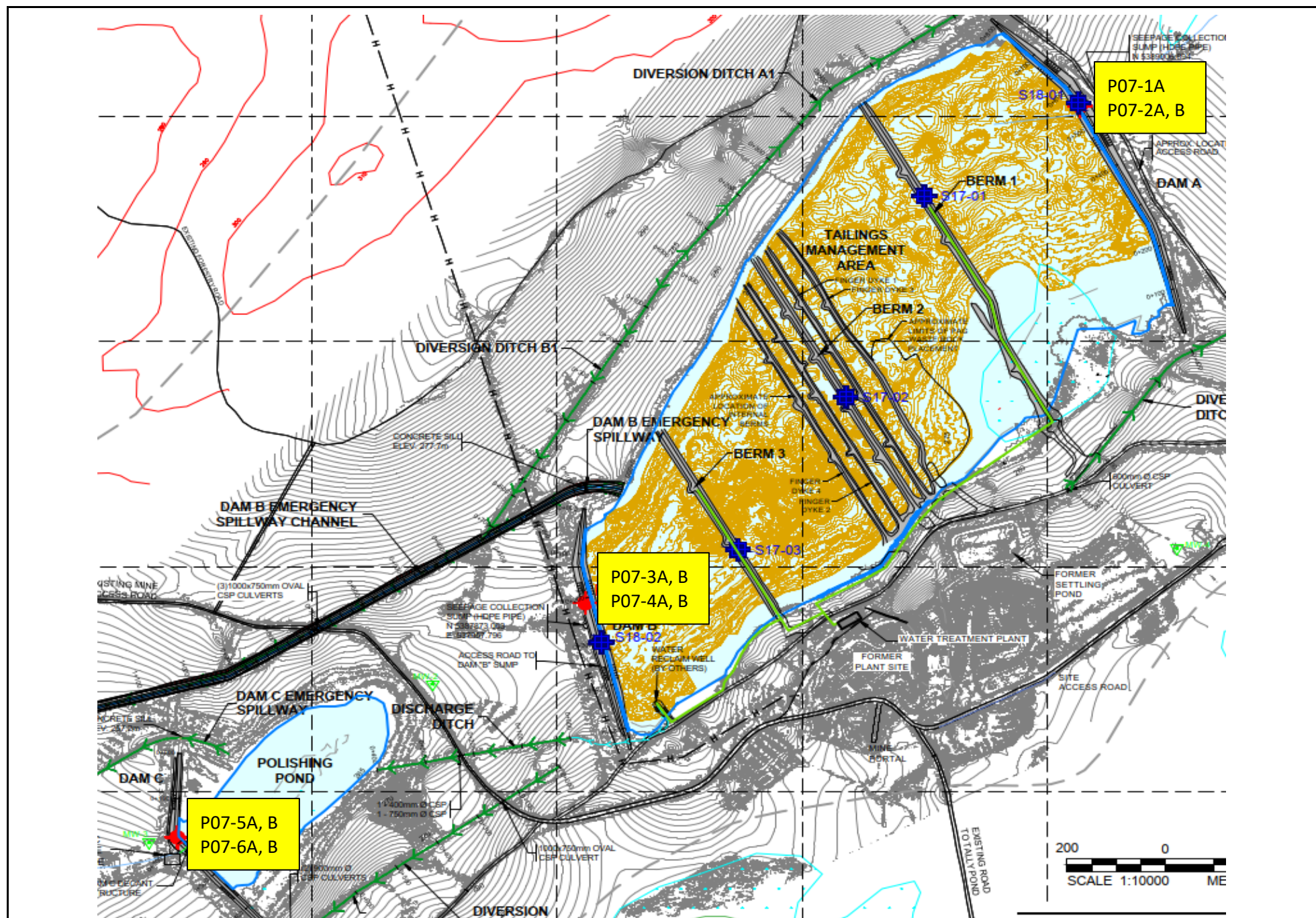
Seepage collection ditch reconstructed at downstream toe of access road in 2023.



Photograph 8

Excavation and removal of sludge from within Polishing Pond.





Client:
Teck Resources Limited

Project:
Duck Pond Tailings Management Facility



Date: Nov-23

Prep'd: WPM

Rev'd: WPM

Title:
Tailings Management Facility Pizometer Location Plan

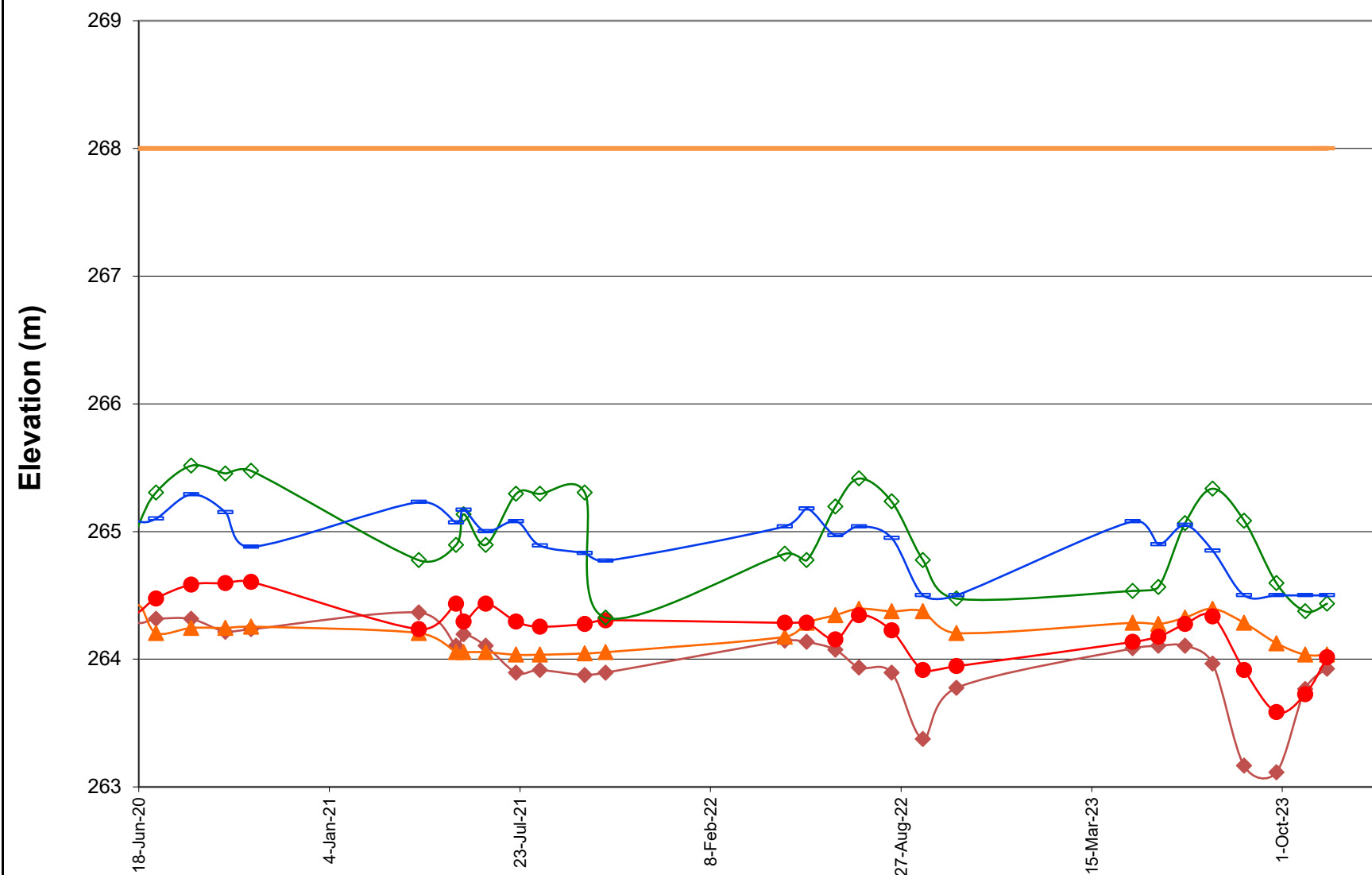
Project/Phase No. 23595269

Revision

A

Figure No.

A1



◆ P07-05A

▲ P07-05B

● P07-06A

◆ P07-06B

— Polishing Pond W/L

■ Dam Crest

Teck Resources Limited

Duck Pond Operations

WSP

Date: Dec-23

Prep'd: WPM

Rev'd: WPM

Title:
Polishing Pond Piezometers

Project/Phase No. 23595269

Revision

A

Figure No.

A3

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 1 of 3

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2023
(DD/MM/YYYY)

DAM INFORMATION:

Identification: TMA Internal Berms Crest Elevation: 278.5 m Head Pond Elevation 275.2 m

DAM INSPECTION

A) Crest

cracking	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
erosion	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
other movement	<input type="checkbox"/>	none	<input checked="" type="checkbox"/>	Truck ruts on Berm 2, at north abutment
crest vegetation	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	

B) West Slope

erosion	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
settlement	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
bulging	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
sloughing	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
slope protection	<input checked="" type="checkbox"/>	good	<input type="checkbox"/>	
slope vegetation	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
animal burrows	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	
seepage	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	location 1:
				rate: <input type="checkbox"/> damp <input type="checkbox"/> trickle <input type="checkbox"/> steady ____ (L/s)
				clarity: <input type="checkbox"/> clear <input type="checkbox"/> muddy
				sample taken: <input type="checkbox"/> yes <input type="checkbox"/> no
				location 2:
				rate <input type="checkbox"/> damp <input type="checkbox"/> trickle <input type="checkbox"/> steady ____ (L/s)
				clarity <input type="checkbox"/> clear <input type="checkbox"/> muddy
				sample taken <input type="checkbox"/> yes <input type="checkbox"/> no
toe vegetation	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	sparse <input type="checkbox"/> moderate <input type="checkbox"/> heavy
				type: Shrubs
sand boils	<input checked="" type="checkbox"/>	none	<input type="checkbox"/>	location(s)

DUCK POND TAILINGS MANAGEMENT FACILITY

FIELD INSPECTION FORM A

DAM INSPECTION REPORT

Sheet 2 of 3

Dam Identification: TMA Internal Berms

C) East Slope

erosion	<input checked="" type="checkbox"/> none	<input type="checkbox"/>	wave induced location(s):	<input type="checkbox"/>	surface runoff
			Degree	<input type="checkbox"/> minor	<input type="checkbox"/> moderate <input type="checkbox"/> severe
settlement	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
bulging	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sloughing	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
slope protection	<input checked="" type="checkbox"/> good	<input type="checkbox"/>			
slope vegetation	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
animal burrows	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
whirlpool	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
sinkholes	<input checked="" type="checkbox"/> none	<input type="checkbox"/>			
tailings surface	<input type="checkbox"/> water covered	<input checked="" type="checkbox"/>	Some exposed tailings in TMA		

SPILLWAY / FLOW CONTROL STRUCTURE INSPECTION

Type:

<input checked="" type="checkbox"/> spillway	<input type="checkbox"/> water reclaim well	
<input type="checkbox"/> decant	<input type="checkbox"/> Weir (at Hydraulic Discharge Structure)	
	<input checked="" type="checkbox"/> other	HDPE culverts present to maintain a consistent water level in TMF.
Flow: <input checked="" type="checkbox"/> none	<input type="checkbox"/> clear	<input type="checkbox"/> muddy
Rate of discharge <u> </u> m ³ /hr	<input type="checkbox"/> estimated	<input type="checkbox"/> measured
		Gauge Reading <u> </u>

Conditions Observed:

<input checked="" type="checkbox"/> good	<input type="checkbox"/> blockage of inlet	<input type="checkbox"/> debris		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input type="checkbox"/> to follow
	<input type="checkbox"/> blockage of outlet	<input type="checkbox"/> siltation			
		<input type="checkbox"/> debris		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> beaver dam			<input type="checkbox"/> to follow
	<input type="checkbox"/> erosion	<input type="checkbox"/> siltation			
		<input type="checkbox"/> channel		corrective action:	<input type="checkbox"/> taken
		<input type="checkbox"/> side slope			<input type="checkbox"/> to follow
		<input type="checkbox"/> at discharge			

Comments:

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM A
DAM INSPECTION REPORT**

Sheet 3 of 3

Dam Identification: TMA Internal Berms

DAM INSTRUMENTATION: (plot any newly installed instrumentation on relevant plans and cross-sections)

	<u>Operational</u>	<u>Damaged</u>	<u>Measurement Taken</u>
<input type="checkbox"/> none			
<input type="checkbox"/> piezometers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> monitoring wells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> survey monuments	<input checked="" type="checkbox"/> S17-01, S17-02, S17-03	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landmark Surveys & Engineering
<input type="checkbox"/> other _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS AND RECOMMENDATIONS:

- Internal Berms are in good condition based on the visual assessment.
- Placement of mining impacted soils between the finger dykes occurred in 2018, 2019, 2020, 2021 and 2022. Placement in 2023 was mostly within Cell 2, between Berms 1 and 2.
- A wave of tailings was observed along the side of most berms from construction. The tailings wave may need to be dredged and deposited below elevation 274.2 m once placement of the mining impacted soils is completed. A bathymetric survey will be required upon completion of the construction activities to determine the extent of dredging. Alternatively, Teck could initiate a study to re-evaluate the closure cover water depth and criteria to maintain the currently proposed 2.65 m of water over the tailings.
- The settlement plates are showing some minor movement is occurring but is in-line with expectations for the berms constructed over loose tailings. The 2023 survey data indicates the following movement since they were originally installed in 2017:
 - Berm 1 – 7 mm of rise
 - Berm 2 – 2 mm of settlement
 - Berm 3 – 17 mm of rise
- The water treatment pipelines that travel along the crest of Berms 1 and 3 were raised over the spillways, following recommendations in previous years (Photo 1).
- Haul traffic crossing the north abutment of Berm 3 in 2021 caused about 0.15m of displacement and was repaired in 2023 with the placement of additional sand and gravel (photo 9).
- Haul traffic crossing Berm 2 at the north abutment in 2023 caused about 0.15m of displacement (Photo 10) and will need to be repaired once placement of sludge from the Polishing Pond is complete.
- Finger Dykes 2 and 4 (west of Berm 2) were partially excavated in 2023 to reuse the material for construction of access platforms within Cell 2. The access platforms were required to facilitate placement of sludge from the Polishing Pond. The Finger Dykes were low structures previously used to facilitate placement of contaminated soils and no longer served a purpose.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 – 10			

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Berm 1 east slope with HDPE culvert and lime addition pipeline passing through the spillway.



Photograph 2

Berm 1 looking south near north abutment.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Berm 2 north abutment looking south.



Photograph 4

Berm 2 looking north from south abutment. HDPE culvert connecting Cells 2 and 3 is observed through the berm in the background.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Berm 3 east slope looking north with water treatment pipeline along crest and over the spillway



Photograph 6

Berm 3 west slope looking south. Lime addition pipeline and T-valve to control treatment in Cells 3 and 4.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

Remaining portion of Finger Dyke 4, looking south.



Photograph 8

Remaining portion of Finger Dyke 2, looking south.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Internal Berms

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 9

North abutment of Berm 3 that was repaired in 2023 following 0.15 m of displacement from haul trucks.



Photograph 10

North abutment of Berm 2 that was traversed with haul trucks in 2023 and has caused 0.15 m of displacement.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: <u>Peter Merry</u>	Report No.: <u>23-01</u>	Inspection Date: <u>16/08/2023</u> (DD/MM/YYYY)
--------------------------------------	--------------------------	--

DITCHES & CHANNELS:

Identification: <u>Dam B Emergency Spillway and Channel</u>	Inlet Invert Elevation: <u>277.7 m</u>
---	--

Flow Control Structure: <input type="checkbox"/> none	<u>Concrete sill</u>
---	----------------------

A) Inlet Conditions

- | | | |
|--|--|-------------------------------------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> debris |
| | | <input type="checkbox"/> beaver dam |
| | | <input type="checkbox"/> siltation |
| | | <input type="checkbox"/> vegetation |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | |
| | <input type="checkbox"/> to follow | |

B) Outlet Conditions

- | | | |
|--|--|-------------------------------------|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> debris |
| | | <input type="checkbox"/> beaver dam |
| | | <input type="checkbox"/> siltation |
| | | <input type="checkbox"/> vegetation |
| <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | <input type="checkbox"/> failure/instability | |
| corrective action | <input type="checkbox"/> taken | |
| | <input type="checkbox"/> to follow | |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS

Location:	Beneath mine site access road	<input type="checkbox"/> good	<input checked="" type="checkbox"/> blocked	<input type="checkbox"/> damaged	Three CSP culverts, blocked with debris on inlet
Location:	_____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location:	_____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location:	_____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location:	_____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES - None

<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

1. The spillway is in good condition and generally clear of debris.
2. Vegetation in the form of large alders was cleared from the spillway and channel in 2023 to maintain it flow capacity and permit visual surveillance.
3. 3 culverts beneath the main access road at Sta 0+700 are partially blocked with debris and vegetation at the inlet (see photo 6). The culverts should be cleared as part of routine maintenance.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 8			

Reviewer's Name:	<u>Ali Ghirian</u>	Date Reviewed:	<u>02/02/2024</u>
			(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Dam B emergency spillway
concrete sill.



Photograph 2

Dam B Emergency Spillway
inlet channel looking towards
the TMA.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

View of Dam B Spillway channel looking east at 0+200.



Photograph 4

Dam B spillway channel at confluence with Diversion Ditch B1, looking west towards the mine site access road.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Dam B Emergency Spillway Channel looking east from the Mine Site Access Road at Sta 0+700.



Photograph 6

Inlet of culverts beneath the Mine Site Access Road at Sta 0+700.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam B Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

Dam B Emergency Spillway
Channel looking west from Sta.
0+700.



Photograph 8

Dam B Emergency Spillway
Channel at 1+000 looking west
towards its outlet location.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
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Inspector's Name:	<u>Peter Merry</u>	Report No.:	<u>23-01</u>	Inspection Date:	<u>16/08/2023</u> (DD/MM/YYYY)
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DITCHES & CHANNELS:

Identification:	<u>Dam C Emergency Spillway</u>	Inlet Invert Elevation:	<u>267.2 m</u>
-----------------	---------------------------------	-------------------------	----------------

Flow Control Structure:	<input type="checkbox"/> none	<u>Concrete sill</u>
-------------------------	-------------------------------	----------------------

A) Inlet Conditions

<input checked="" type="checkbox"/> good	<input type="checkbox"/> scour & erosion	<input type="checkbox"/> debris	
	<input type="checkbox"/> blockage	<input type="checkbox"/> beaver dam	
		<input type="checkbox"/> siltation	
		<input type="checkbox"/> vegetation	
	<input type="checkbox"/> slope or bank	<input type="checkbox"/> erosion	
		<input type="checkbox"/> failure/instability	
	corrective action	<input type="checkbox"/> taken	
		<input type="checkbox"/> to follow	

B) Outlet Conditions

<input checked="" type="checkbox"/> good	<input type="checkbox"/> scour & erosion	<input type="checkbox"/> debris	
	<input type="checkbox"/> blockage	<input type="checkbox"/> beaver dam	
		<input type="checkbox"/> siltation	
		<input type="checkbox"/> vegetation	
	<input type="checkbox"/> slope or bank	<input type="checkbox"/> erosion	
		<input type="checkbox"/> failure/instability	
	corrective action	<input type="checkbox"/> taken	
		<input type="checkbox"/> to follow	

ACCESS ROADS / SHORELINE:

Location:	<u>N/A</u>	<input type="checkbox"/> vegetation	Location:	<u>N/A</u>	<input type="checkbox"/> vegetation
		<input type="checkbox"/> debris			<input type="checkbox"/> debris
		<input type="checkbox"/> erosion			<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS - None

Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES - None

<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

1. Dam C Spillway is in good condition.
2. Vegetation, in the form of large alders, was cleared from the spillway in 2022 to maintain its flow capacity and permit visual inspection. Another round of clearing is required in 2024, with particular attention to clearing vegetation around the concrete sill to facilitate visual inspection of the structure.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 4			

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Dam C Emergency Spillway inlet channel with the Polishing Pond in the background.



Photograph 2

Dam C Emergency Spillway concrete sill becoming overgrown with vegetation.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Dam C Emergency Spillway and Channel

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Dam C Emergency Spillway channel looking east from Sta 0+200.



Photograph 4

Dam C Emergency Spillway outlet channel, looking downstream from the end of the rip rap lined section.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2022
(DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Diversion Ditches A1, A2, B1, C1 Inlet Invert Elevation: Varies

Flow Control Structure: ☐ none Culverts at road crossings

A) Inlet/Outlet Conditions

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| | <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | | <input type="checkbox"/> failure/instability | |
| | corrective action | <input type="checkbox"/> taken | |
| | | <input type="checkbox"/> to follow | |

B) Channel Conditions

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| | <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | | <input type="checkbox"/> failure/instability | |
| | corrective action | <input type="checkbox"/> taken | |
| | | <input type="checkbox"/> to follow | |

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS

Location: <u>Diversion Ditch A2 0+525</u>	<input checked="" type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	
Location: <u>Diversion Ditch C1 0+150</u>	<input type="checkbox"/> good	<input checked="" type="checkbox"/> blocked	<input type="checkbox"/> damaged	<u>Clear outlet at access road crossing</u>
Location: <u>Diversion Ditch C1 0+680</u>	<input checked="" type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	

PIPELINES - None

Water Treatment Plant Pipelines	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	Pipelines installed on Berms 1 and 3 in 2018
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	

COMMENTS AND RECOMMENDATIONS:

1. Grass is growing on the ditch slopes as intended to limit erosion. Alders are also growing and could limit the flow capacity in the channels. Alder greater than 1.0 m in height were cleared in 2022 with an excavator and the ditches were cleared of debris. On-going maintenance should include routine clearing in the channels to maintain flow capacity and permit visual surveillance. Another round of clearing is likely required in 2024, particularly in the lower reaches of Diversion Ditch C1 between Sta. 0+750 and 0+850 that was not cleared during the 2022 campaign.
2. During the next round of routine vegetation clearing with an excavator, the downstream containment berm on Diversion Ditch A1 at approximately Sta. 0+400 to 0+500 should be raised with local fill to reinstate the minimum 1.0m of channel depth. The exact location will need to be determined in the field with survey. The 1.0m channel depth is required to ensure diversion of runoff water from the TMA, particularly during the spring freshet when ice build up in the channel may restrict flow.
3. A buried pipeline from Boundary site to the TMA was installed during the winter of 2012/2013 and crossed Diversion Ditch A2 at approximately Sta. 0+350. At the ditch crossing a culvert and berm were constructed. Following recommendations in previous years, the berm and culvert in the diversion ditch was removed in 2023 to reinstate its flow capacity.
4. The culvert beneath the access road on Diversion Ditch C1 at 0+150 should be clear of debris from its outlet.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 12			

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Diversion Ditch A1 looking west from Sta. 0+800.



Photograph 2

Diversion Ditch A1 looking west from Sta. 0+400.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Diversion Ditch A2 culvert outlets at the access road crossing.



Photograph 4

Diversion Ditch A2 at Sta. 0+350 looking east. Culvert and berm were removed from this section of the ditch in 2023.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 5

Diversion Ditch A2 looking east from Sta. 0+100.



Photograph 6

Diversion Ditch B1 looking west from Sta. 0+200.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 7

Diversion Ditch B1 looking east from Sta. 0+700 and the intersection with Dam B Emergency Spillway Channel.



Photograph 8

Diversion Ditch C1 looking at HDPE culvert outlet beneath the Site Access Road.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 9

Diversion Ditch C1 looking west from Sta. 0+150 with new hydro line installed in 2023.



Photograph 10

Diversion Ditch C1, looking east from access road crossing at Sta. 0+750.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Diversion Ditches A1, A2, B1, C1

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 11

View of Diversion Ditch C1 culvert (outlet) at the access road crossing at Sta. 0+750.



Photograph 12

Diversion Ditch C1 at Sta. 0+750, looking southwest.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
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Inspector's Name: <u>Peter Merry</u>	Report No.: <u>23-01</u>	Inspection Date: <u>13/08/2023</u> (DD/MM/YYYY)
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DITCHES & CHANNELS:

Identification: <u>Discharge Ditch</u>	Inlet Invert Elevation: <u>Varies</u>
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Flow Control Structure: <input type="checkbox"/> none	<u>HDPE culvert at Mine Access Road crossing</u>
---	--

A) Inlet/Outlet Conditions

<input type="checkbox"/> good	<input type="checkbox"/> scour & erosion	
	<input type="checkbox"/> blockage	<input type="checkbox"/> debris
		<input type="checkbox"/> beaver dam
		<input type="checkbox"/> siltation
		<input checked="" type="checkbox"/> vegetation
	<input type="checkbox"/> slope or bank	<input type="checkbox"/> erosion
		<input type="checkbox"/> failure/instability
	corrective action	<input type="checkbox"/> taken
		<input type="checkbox"/> to follow

B) Channel Conditions

<input type="checkbox"/> good	<input type="checkbox"/> scour & erosion	
	<input type="checkbox"/> blockage	<input type="checkbox"/> debris
		<input type="checkbox"/> beaver dam
		<input type="checkbox"/> siltation
		<input checked="" type="checkbox"/> vegetation
	<input type="checkbox"/> slope or bank	<input type="checkbox"/> erosion
		<input type="checkbox"/> failure/instability
	corrective action	<input type="checkbox"/> taken
		<input type="checkbox"/> to follow

ACCESS ROADS / SHORELINE:

Location: <u>N/A</u>	<input type="checkbox"/> vegetation	Location: <u>N/A</u>	<input type="checkbox"/> vegetation
	<input type="checkbox"/> debris		<input type="checkbox"/> debris
	<input type="checkbox"/> erosion		<input type="checkbox"/> erosion

Form B4 Discharge Ditch

WSP Canada Inc.

**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS

Location: Access road crossing at Sta. 0+225	<input checked="" type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	New culvert installed in 2017
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES – None

<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____
<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

The overall condition of the discharge ditch appeared satisfactory. DPO was not discharging from the TMA into the Discharge Ditch at the time of the inspection to support dewatering of the Polishing Pond for sludge removal.

The culverts beneath the main site access road were replaced in 2017 with a single 900 mm HDPE pipe. A temporary 6" pipeline was observed in the culvert during the site visit to allow dewatering of the polishing pond, which was considered acceptable practice.

Large alders have begun to grow in the ditch and should be cleared as part of routine vegetation clearing in 2024 to permit visual inspection.

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 4			

Reviewer's Name: Ali Ghirian	Date Reviewed: 02/02/2024	(DD/MM/YYYY)
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REVIEW COMMENTS: ☒ none

2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Discharge Ditch

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 1

Discharge Ditch Sta. 0+000 looking downstream towards the Polishing Pond.



Photograph 2

Culvert inlet on Discharge Ditch at Sta. 0+225. The culvert was temporarily sleeving the Polishing Pond Dewatering pipeline.



2023 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Discharge Ditch

Photographed by: P. Merry

Date: August 16, 2023

Drawn By: P. Merry

Photograph 3

Discharge Ditch at Sta. 0+220
looking east.



Photograph 4

Discharge Ditch at Sta. 0+250
looking towards the Polishing
Pond.



**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 1 of 2

All parts of this inspection form should be completed. Adverse conditions should be described and location stated. Additional information and relevant photographs should be attached.
--

Inspector's Name: Peter Merry Report No.: 23-01 Inspection Date: 16/08/2023
(DD/MM/YYYY)

DITCHES & CHANNELS:

Identification: Pipelines and Access Roads Inlet Invert Elevation: N/A

Flow Control Structure: ☒ none

A) Inlet Conditions

- | | | | |
|-------------------------------|--|--|--|
| <input type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| | <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | | <input type="checkbox"/> failure/instability | |
| | corrective action | <input type="checkbox"/> taken | |
| | | <input type="checkbox"/> to follow | |

B) Outlet Conditions

- | | | | |
|-------------------------------|--|--|--|
| <input type="checkbox"/> good | <input type="checkbox"/> scour & erosion | <input type="checkbox"/> debris | |
| | <input type="checkbox"/> blockage | <input type="checkbox"/> beaver dam | |
| | | <input type="checkbox"/> siltation | |
| | | <input type="checkbox"/> vegetation | |
| | <input type="checkbox"/> slope or bank | <input type="checkbox"/> erosion | |
| | | <input type="checkbox"/> failure/instability | |
| | corrective action | <input type="checkbox"/> taken | |
| | | <input type="checkbox"/> to follow | |

ACCESS ROADS / SHORELINE:

Location: <u>General Access Roads</u>	<input type="checkbox"/> vegetation <input type="checkbox"/> debris <input type="checkbox"/> erosion	Location: _____ <input type="checkbox"/> vegetation <input type="checkbox"/> debris <input type="checkbox"/> erosion
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**DUCK POND TAILINGS MANAGEMENT FACILITY
FIELD INSPECTION FORM B
DITCHES, CHANNELS & MISCELLANEOUS ITEMS**

Sheet 2 of 2

CULVERTS

Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____
Location: _____	<input type="checkbox"/> good	<input type="checkbox"/> blocked	<input type="checkbox"/> damaged	_____

PIPELINES

Lime addition pipeline	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
Water reclaim pipeline	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
Discharge pipeline to Polishing Pond	<input checked="" type="checkbox"/> good	<input type="checkbox"/> damaged	_____
	<input type="checkbox"/> good	<input type="checkbox"/> damaged	_____

COMMENTS AND RECOMMENDATIONS:

Only the water reclaim pipeline (for water treatment) and discharge pipeline to the Polishing Pond remain functional from the pipelines utilized during operations.

In 2017 two new pipelines were installed from the water treatment plant to Berms 1 and 3. The pipelines appear to be a combination of 10", 12", and 14" HDPE pipelines with tee valve at the discharge locations to allow flow into all 4 cells (see Photo 4). Teck reports that the pipelines are functioning as required. As the pipelines traverse along the crest of Berms 1 and 3, they were raised above the spillways in 2023 (Photo 5), following recommendations in previous years.

The water treatment pipeline near the south abutment of Berm 3 was observed to be crimped (see Photo 6) and should be straightened to maintain flow capacities.

The water treatment plant building was being replaced with a permanent structure at the time of the site visit (see Photo 3).

<input checked="" type="checkbox"/> Action Required:	<input type="checkbox"/> none	<input type="checkbox"/> further monitoring	<input checked="" type="checkbox"/> maintenance	<input type="checkbox"/> immediate remediation
<input checked="" type="checkbox"/> Plan or Sketch Attached	Figure 2			
<input checked="" type="checkbox"/> Photographs Attached	1 - 6			

Reviewer's Name: Ali Ghirian Date Reviewed: 02/02/2024
(DD/MM/YYYY)

REVIEW COMMENTS: ☒ none

2022 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Pipelines

Photographed by: P. Merry

Date: August 16, 2023

Drawn by: P. Merry

Photograph 1

Water Reclaim Well.



Photograph 2

Pipeline from water treatment plant with T-valve to control flow towards Cells 1 or 2.



2022 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Pipelines

Photographed by: P. Merry

Date: August 16, 2023

Drawn by: P. Merry

Photograph 3

New water treatment plant building on southern shore of TMA under construction.



Photograph 4

Water treatment plant discharge pipeline with valves to control flow towards Berm 1 or 3.



2022 Inspection - Duck Pond Tailings Management Facility

Client: Teck Resources Limited

Project Number: 23595269

Site Location: Pipelines

Photographed by: P. Merry

Date: August 16, 2023

Drawn by: P. Merry

Photograph 5

Water treatment plant discharge pipeline on Berm 1 through spillway. The pipeline was raised in 2023 through the spillway.



Photograph 6

Water treatment pipeline at south abutment of Berm 3 has become pinched and should be straightened to maintain flow capacity.



