2022 LYNX TDF DAM SAFETY INSPECTION REPORT

MYRA FALLS MINE LTD.
A TRAFIGURA COMPANY
CAMPBELL RIVER, BC

PROJECT NO.: NX14001B4.3
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EXECUTIVE SUMMARY

The following report presents the 2022 annual Dam Safety Inspection (DSI) for the Lynx Tailings Disposal Facility (TDF) at the Myra Falls Mine. Myra Falls Mine Ltd. (MFM), A Trafigura Company, owns and operates the mine.

This report has been prepared by WSP E&I Canada Limited (WSP)[1] in accordance with requirements of the British Columbia Ministry of Energy, Mines and Low Carbon Innovation (EMLI). The list below provides the information to be included in the executive summary for facilities that impound water or saturated tailings as required by the Health Safety and Reclamation Code Guidance Document (EMLI, 2016).

a) Summary of Facility Description:

The Lynx TDF is classified as a High consequence tailings dam in the Operations phase of its lifecycle. The facility was designed in the early 2000s by Klohn Crippen Berger Ltd. (KCB), and the starter dam was partially constructed when WSP[2] assumed the role of geotechnical consultant. Tailings deposition in the Lynx TDF started in 2008. The Lynx tailings deposition area is bounded by the Upper Lynx Pit walls and waste rock dumps (WRD) to the north and the Lynx Dam to the east, south and west. The south and west sides of the embankment are sloped at 2H:1V, the east side at 4H:1V, and the upstream side at 2H:1V. The Lynx TDF has been raised eight times by centreline methods to a height of 46 m, most recently in 2022 construction where the raise was completed (it was started during 2021 construction) to an elevation of 373.5 meters. The Lynx Dam is a centerline dam in that the upstream section of the dam is partly supported by tailings. The embankment has a relatively wide, horizontal crest, with a total width of 16 m. Internally the dam consists of a 6-meter-wide vertical filter zone along the centerline of the dam crest. The filter zone is constructed of well-graded, fine-grained granular material (Zone J), which provides filter compatibility between the impoundment contents and the downstream shell. The downstream shell is constructed of well-graded, densely compacted, granular rock fill (Zone A). The upstream shell is built of a nominally compacted mixture of course- and fine-grained granular materials and boulders (Zone J or A) which interacts with tailings for overall support of the dam in the upstream direction. The facility design includes a paste beach against the upstream slope which to date has been successfully developed.

Pond level in the facility is controlled by pumping. The facility has the capacity to store the Environmental Design Flood (EDF), a 24-hour storm event with a 1/200 Annual Exceedance Probability (AEP). An operations spillway is constructed near the west abutment. The spillway is designed to safely pass the inflow design flood (IDF). The IDF for Lynx is 1/3 between 1/1000 AEP and Probable Maximum Flood (PMF).

[1] "Effective September 21, 2022, Wood Environment & Infrastructure Solutions Canada Limited is now operating as WSP E&I Canada Limited. No other aspects of our legal entity, contractual terms or capabilities have changed in relation to this report submission."

[2] "Including predecessor companies: AMEC Earth & Environmental from 2006 to 2011 and AMEC Environment & Infrastructure from 2011 to 2014, each respectively a Division of AMEC Americas Limited, and Amec Foster Wheeler Environment and Infrastructure from 2014 to 2017, and Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited from 2018 to 2022."

b) Summary of Key Hazards:

The key hazards to the Lynx TDF, some of which are inherited from legacy designs, are:

- Tailings with high susceptibility to earthquake-induced liquefaction (Lynx Dam upstream, which is partly constructed on tailings).
- High seismic hazard.
- High intensity precipitation or prolonged periods of precipitation. Snowmelt from higher elevations of the catchments area.
- Mountainous terrain above the facilities with associated terrain stability hazards including rock falls and debris flows.
- Waste rock dumps on slopes above the facilities that have been assessed as having factors of safety below recommended targets.
- Sulphide-rich potentially acid-generating (PAG) mine waste and tailings, and associated metal leaching and acid rock drainage impacted surface water and groundwater (not within WSP's scope).
- Potentially unreliable upstream water diversions across steep catchment areas.
- Flooding of the underground mine workings beneath the facility if the tailings facility breaches through the remnants of the crown pillar and underlying sand-filled stopes (not within WSP's scope).

Hazards associated with possible flow through the operations spillway as designed include:

- Spilling of mine-impacted waters to the environment (as intended by design for floods greater than the EDF).
- Moderate to severe erosion of the flow path from the terminus of the spillway towards Myra Creek, including in the mill laydown area, camp area, and Cookhouse Borrow.
- Damage to infrastructure such as the ore conveyor, buried infrastructure, fuelling station, lime silos, sand shed, cookhouse, and camp buildings (necessitating likely evacuation of site accommodations).
- Possible mobilization of potentially acid generating (PAG) mine waste along the flow path with deposition in Myra Creek.
- Possible transport of other contaminants from the mill laydown area such as hydrocarbons from the fuelling station.

The spillway hazards noted above occur at a very low probability. Spillway flow is not anticipated for flood conditions less than 1/200 AEP, and the design assumptions in determining EDF storage volume neglect existing controls such as drawdown in advance of a flood event.

c) Dam Classification:

The Lynx TDF is classified as a High Consequence dam in accordance with Table 2-1 of the Canadian Dam Association (CDA) Dam Safety Guidelines (2013). The classification is primarily because of the potential environmental consequences associated with release of tailings and mine waste into the hypothetical breach inundation area, which were interpreted by others to constitute a "significant loss or deterioration of important fish habitat".

Further details are available in Section 2.4.

d) Summary of Significant Changes:

Dam raise construction work was carried out on Lynx TDF in 2022. A detailed summary of construction work is included in Section 8. A summary is provided below.

- Construction of the Lynx dam upstream shell to elevation 373.5 m;
- Construction of the Lynx dam operations spillway across the newly raised upstream shell;
- Construction of the Lynx dam downstream shell from elevation 346 m to elevation 351.5 m;
- Waste rock removal from Waste Rock Dump 6 (WRD6) to provide materials for dam construction.

e) Significant Changes in Instrumentation and/or Visual monitoring records:

Performance of the Lynx TDF is assessed by monitoring instrumentation and visual inspections. Instrumentation includes piezometers for measuring pore water pressures, survey monuments for monitoring settlement and displacement and slope inclinometers (SIs) for measuring internal deformation as well as deformation in the foundation. The following changes to the instrumentation system occurred in 2022:

- Numerous instruments became non-functioning during (and before) the 2022 reporting period. WSP carried out an instrumentation review in 2022 (WSP, 2023d). Recommendations from the review can be found in the recommendations table in section 10.2.
- One (1) additional surface deformation monument was reinstated on March 2022, on the west arm of the Lynx TDF dam crest. Eleven (11) surface deformation monuments on the crest of the Lynx TDF dam were monitored monthly, throughout 2022.
- SI BH14-08 was obstructed at a depth of about 45 m below the dam crest and the November 2021 monitoring of this SI could not be completed. Analysis of the deformation profile suggests that the casing was damaged by settlement of the upstream dam fills.

A detailed discussion of the instrumentation monitoring results is provided in Section 7.

In 2022, pore pressures within the foundation remained relatively stable except the seasonal spike that occurred in Q3.

The following visual inspections were carried out as part of routine surveillance activities:

- Fifty-two (52) weekly inspections of Lynx TDF were reported to have been carried out by MFM personnel.
- Four (4) quarterly inspections were carried out by the Engineer of Record or delegate (WSP).

  Visual monitoring indicates the Lynx TDF dam continues to perform satisfactorily. Additional details regarding visual inspections are discussed in Section 6.

f) Significant changes to dam stability and/or surface water control:

No changes occurred in 2022 which would change the established surface water flow, infiltration, and discharge patterns for the area. The changes to surface water infiltration and discharge from the 2021 changes are still being observed but at the time are not considered to impact the safety of Lynx TDF.

g) Summary of Review of the Operation, Maintenance and Surveillance (OMS) Manual:

The OMS Manual was updated by MFM in March 2022 and reviewed by WSP in September 2022.

h) Summary of Review of the Emergency Preparedness and Response Plan (EPRP):

A summary of the components of MFM's emergency response program is provided in Appendix E of the OMS Manual. The EPRP section was reviewed and updated in March 2022.

i) Scheduled date for the next formal Dam Safety Review (DSR) in accordance with the Health, Safety and Reclamation Code for Mines in British Columbia (EMLI 2022) and the CDA Dam Safety Guidelines (CDA 2013):

A DSR should be carried out at minimum frequency of every 5 years as per EMLI 2022. The most recent DSR for the tailings facilities was carried out in 2020 by Thurber Engineering Ltd. and was submitted to EMLI in March 2021 to meet regulatory requirements.

Formal DSRs were completed in 2013 by Robertson Geotechnical Consulting Ltd. (RGC) and in June 2016 by Tierra Group International Ltd. (Tierra). These reviews were completed at a higher frequency than the minimum frequency recommended by EMLI (2021) or the CDA guidelines (2013).

j) Summary of recommendations

A summary tracking the status of open recommendations as well as those closed in 2022 is provided in Section 10.1.

Summary of recommendations:

STRUCTURE	TRACKING NUMBER	DEFICIENCY OR NON-CONFORMANCE	REGULATORY REQUIREMENT OR OMS REFERENCE	RECOMMENDED ACTION	PRIORITY [1]	RECOMMENDED DEADLINE/STATUS
Lynx TDF	2022-01	El. 376.5 m dam raise crest tie in to the 10L portal is to be completed.		The 10 L East Portal in the Lynx TDF West abutment shows ongoing drainage flows from the portal. This portal needs to be plugged and sealed before the next dam raise construction to El. 376.5 m which is scheduled to begin in April 2023.	2	2023 Q2
Lynx TDF	2022-02	Unsupported upstream slope in the area of the pump barge is greater than that recommended by WSP.		Relocate the barge and discharge tailings to comply with recommendations for maximum elevation difference between tailings and upstream bench and, to provide support for planned upstream raises.	2	In Progress 2023 Q2
Lynx TDF	2022-03	Slope Inclinometer BH14-08a is obstructed at a depth of about 45 m and cannot be monitored.	HSRC 10.1.12	Assessment for installation of a shape accelerometer array (SAA). was successful and the SAA should be installed prior to placement of additional material on the dam crest. Place downstream shell only until installed.	2	2023 Q2/Q3
Lynx TDF	2022-04	Many VWPs were determined to be non-functioning based on the field review conducted by WSP in 2022. (Lynx TDF 2021-09)	HSRC 10.1.12	Replace non-functioning VWPs and assess requirement for additional VWPs to adequately monitor the performance of the dam.	3	2023 Q4

Priority levels are defined by EMLI (2022) as follows:

Priority Level 1. A high probability or actual dam safety issues considered immediately dangerous to life, health or the environment, or a significant risk of regulatory enforcement.

Priority Level 2. If not corrected, could likely result in dam safety issues leading to injury, environmental impact or significant regulatory enforcement, or a repetitive deficiency that demonstrates a systematic breakdown of procedures.

Priority Level 3. Single occurrences of deficiencies or non-conformances that [alone] would not be expected to result in dam safety issues.

Priority Level 4. Best Management Practice – further improvements are necessary to meet industry best practices or reduce potential risks.

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1 INTRODUCTION

This Dam Safety Inspection report (DSI) summarizes the operations, maintenance, and surveillance of the Lynx Tailings Disposal Facility (TDF) at Myra Falls Mine during 2022. The Lynx TDF is the only active tailing disposal facility at the site. Drawing 010701 shows the location of the Lynx TDF. Myra Falls Mine Ltd. (MFM), A Trafigura Group Company, owns and operates the mine. This report has been prepared by WSP E&I Canada Limited (WSP), in accordance with requirements of Section 10.5.3 of the Health, Safety, and Reclamation Code for Mines in British Columbia (EMLI, 2016).

1.1 SCOPE OF REPORT

Regulatory reporting requirements for annual DSI reports require that the report addresses the calendar year and be submitted no later than 31 March of the following year. The scope of this report addresses the period spanning 1 January through 31 December 2022, which is referred to as the "reporting period". Information presented is based on observations made during site visits, analysis of instrumentation and monitoring data, reviews of construction activities and correspondence. The report generally does not address changes or conditions after the end of the reporting period.

Construction activities undertaken and completed in 2022 with regards to the Lynx TDF for which WSP provided designs and monitoring are documented under separate cover in the 2022 Lynx TDF Construction Record Report (WSP, 2023a). A summary of construction activities related to the TDFs is provided in Section 8.0 of this report.

1.2 ANNUAL REPORTING REQUIREMENTS

This report has been prepared in accordance with requirements of British Columbia Ministry of Energy, Mines and Low Carbon Innovation (EMLI) presented in the November 2022 revision of the "Health Safety and Reclamation Code for Mines in BC" (HSRC) and the July 2016 "Guidance Document – Health, Safety and Reclamation Code (HSRC) for Mines in British Columbia" (HSRC Guidance Document).

The numbered items required for the Annual DSI by Section 4.2 of the HSRC Guidance Document are found in the following sections of this report.

1. Executive Summary – precedes the Table of Contents.
2. Facility Description –Section 2 (also see Section 8 for summary of construction).
3. Identification of Engineer of Record (EOR) and TSF Qualified Person – Section 1.3
4. Updated plan and representative cross sections – drawings appended to the end of the report.
5. Site Photographs – Appendix A.
6. Review of Climate Data – Section 3
7. Water balance review and reconciliation – Section 5.
8. Freeboard and storage availability (in excess of the design flood) – Section 4.
9. Water discharge system, volumes, and quality – Section 5.

10. Seepage occurrence and water quality – Section 5.

11. Surface water control and surface erosion – Section 5.

12. Instrumentation Review – Section 7 and Appendix B1 and B2.

13. Recommendations – Section 10.

1.3 ENGINEER OF RECORD AND TDF QUALIFIED PERSON

Roles and responsibilities of the Engineer of Record (EoR) and TDF Qualified Person for the tailings disposal facilities at the Myra Falls Mine are defined in the HSRC Guidance Document (EMLI, 2022). During 2022, the EoR role was held by Dixie Ann Simon, P.Eng. from January to July 2022 and by Manuel Monroy, Ph.D., P.Eng. from August to December 2022. Dixie Ann Simon is the current EoR.

Table 1-1: Responsible Persons

FUNCTION	NAME	COMPANY	CONTACT INFORMATION
Engineer of Record (EoR)	Dixie Ann Simon, P.Eng.	WSP E&I Canada Ltd.	dixieann.simon@wsp.com 250-643-3410
TDF Qualified Person	Nicole Pesonen	Myra Falls Mine Ltd.	nicole.pesonen@myrafallsmine.com 250-202-9468

2 BACKGROUND AND FACILITY DESIGN

2.1 ELEVATION DATUM AND COORDINATE SYSTEM

The global coordinate system used for surface works at the mine is the North American Datum of 1983 (NAD 83) with coordinates projected to Universal Transverse Mercator (UTM) Zone 10 and the geodetic datum is Canadian Geodetic Vertical Datum (CGVD) 1928 and hybrid geoid model HTv2_0.

Before 2016 a local grid coordinate system (Mine Grid) was used for the site; where older data is referenced it has been converted from Mine Grid to UTM. Mine Grid distances are in meters but bearing and elevations are adjusted. Mine Grid north is on a bearing of approximately 48° relative to true north. Mine datum elevations are adjusted upwards by 3,047.518 m so that all values remain positive to the bottom of the underground mine. Mine datum and geodetic elevations do not overlap. The lowest topographic point near site is the surface of Buttle Lake at approximately geodetic elevation 222.5 m (Mine Grid elevation 3,270 m), whereas the highest point near site is Mt. Myra at geodetic elevation 1,810 m (Mine Grid elevation 4,857.5 m).

2.2 HISTORICAL DEVELOPMENT

The MFM is an underground polymetallic base metal mine, located within Strathcona-Westmin Provincial Park, approximately 60 kilometres southwest of Campbell River, British Columbia. Prospecting began in the early 1900s, with the first industrial mine production in the 1960s and the development of the Lynx open pit. Most surface mining operations terminated around 1975, after which the underground development of the Lynx and H-W ore bodies commenced. During this period, the cyclone segregated sand fraction of the tailings was used as backfill in decommissioned underground workings, and the fine fraction of the tailings was deposited directly in the south end of Buttle Lake. In the early 1980s the provincial government prohibited further tailings deposition to Buttle Lake due to concerns over water quality, resulting in the design and construction of the Old TDF. The Old TDF operated as the primary TDF between 1984 and 2008, with final deposition in 2011.

The Lynx TDF is a tailings deposition area within the former Lynx open pit mine and is the sole active tailings disposal facility at the site. It is bounded by the Lynx open pit walls to the north and Lynx Dam to the east, south and west. The south and west sides of the embankment are sloped at 2H:1V, the east side at 4H:1V, and the upstream side at 2H:1V. The Lynx TDF has been raised eight times by centreline methods, most recently in 2022 to complete the raise to an elevation of 373.5 meters. Drawing 010701 shows the location of the Lynx TDF.

2.3 CONSTRUCTION SUMMARY

The Lynx TDF is retained by a U-shaped, centreline constructed, rockfill embankment dam across the low side of the Lynx open pit with its base at a minimum elevation of about 325.5 m. The dam has been raised eight times, most recently in 2022, as described in Section 8. The current crest is at approximately elevation 373.5 m. The centreline remains at a fixed alignment during each raise and the downstream toe extends further from the centreline. The ultimate design crest height is planned to reach an elevation of 382.5 m, about 9 m above the current crest. The south and west sides of the embankment are sloped at 2H:1V and the east side is at 4H:1V. The upstream buttress is sloped at 2H:1V. The embankment has a relatively wide, horizontal crest, with a total width of

16 m at completion. Internally the dam consists of a 6-meter-wide vertical filter zone that is located along the centreline of the dam crest. The filter zone is constructed of well-graded, fine-grained granular material (Zone J), which provides filter compatibility between the impoundment contents and the downstream shell. The downstream shell is constructed of well-graded, densely compacted, granular rock fill (Zone A).

The upstream shell is built of a nominally compacted mixture of course- and fine-grained granular materials and boulders (Zone J or A). The upstream shell construction is staged based on tailings beach elevation. The facility design includes a paste beach against the upstream slope which to date has been successfully developed along most of the dam's upstream face.

An Operations Spillway was raised in 2021, through the west arm of the dam to discharge the IDF. The design intent of the Operations Spillway is to allow release of water in events more extreme than the EDF (1/200 AEP, 24-hour event). The Operations Spillway was designed to safely convey water from within the impoundment to beyond the facility toe to preserve dam structural integrity with respect to erosion during a release of water event. In 2022 the Operations Spillway was extended across the completed 373.5 m crest.

The most recent the Lynx TDF designs can be found in the 2021 Lynx TDF Ultimate dam detailed design addendum (Wood, 2020g) and the 373.5 m Lynx Dam Raise design (Wood, 2021f).

2.4 DAM CLASSIFICATION

The Lynx TDF is assessed as having a High consequence classification relative to criteria outlined in Table 2-1 of the CDA guidelines (CDA, 2013), based primarily to the potential environmental consequences associated with release of tailings and mine waste into the hypothetical breach inundation area, which is interpreted by MFM to constitute a "significant loss or deterioration of important fish habitat" (CDA, 2013). This consequence classification was confirmed by MFM upon the completion of a dam breach inundation study (Amec Foster Wheeler, 2015a).

2.5 KEY DESIGN CRITERIA

Key design criteria for the Lynx TDF are summarized in Table 2-1 below:

Table 2-1: Lynx TDF Design Criteria

ASPECT	ORIGINAL DESIGN CRITERIA	PREVIOUS CRITERIA	UPDATED CRITERIA[1]
Environmental Design Flood	Based on 24-hour storm event Assume diversion functions	Based on 24-hour storm event Assume diversion functions	Based on 24-hour storm event Assume partial function of the diversion ditches (Wood, 2020a). Separate storage values based on "dry season" and "wet season" climate data (Wood, 2019b)
	1/200 AEP, 24-hour storm event	1/200 AEP, 24-hour storm event: 303,000 m3	1/200 AEP, 24-hour storm event: Wet Season: 226,000 m^3 total volume Dry Season: 91,200 m^3 total volume
Inflow Design Flood	Based on 24-hour storm event	Based on 24-hour storm event	Same as previous criteria

ASPECT	ORIGINAL DESIGN CRITERIA	PREVIOUS CRITERIA	UPDATED CRITERIA[1]
	Assume diversions function effectively Operations and Closure: 1/1000 AEP 78,000 m^3 total volume Closure: PMF	Assume diversions fail Operations, Transition, Closure-Active Care[2]: 1/3 between 1/1000 AEP and PMF Closure-Passive Care: 2/3 between 1/1000 AEP and PMF	
Flood storage and freeboard	Operations: Maximum 1 m water against dam crest in normal conditions Store IDF Minimum 0.5 m freeboard No spillway Closure: Not designed, presumed dry cover and spillway	Operations, Transition: Minimize water against dam crest in normal conditions Store EDF Minimum 1.0 m freeboard Spillway required to route IDF Active and Closure-Passive Care: Minimize storage, clean water spillway	Minimum 1.11 m freeboard at normal water level (Wood, 2019b) Minimum 0.3 m freeboard during passage of IDF (Wood, 2019d)
Dam Stability (static)	Short term or temporary: FoS ≥ 1.3 Long term, steady state: FoS ≥ 1.5	Short term or temporary: FoS ≥ 1.3 Long term, steady state: FoS ≥ 1.5	Same as previous criteria
Dam stability (post-seismic)	Operations and Closure: Based on 100% or the Maximum Credible Earthquake, PGA = 0.60 g M7.5 intraplate earthquake Post-seismic FoS ≥ 1.3	Operations, Transition, Closure-Active Care [2]: 1/2475 AEP, 0.55 g M9.0 subduction earthquake Closure-Passive Care: 1/2 between 1/2475 and 1/10000 AEP, 0.63 g M9.0 subduction earthquake FoS ≥ 1.2, post-earthquake	

Note(s):

1. Updated criteria are derived from the updated CDA Guidelines and Mining Dams Bulletin (CDA, 2013, 2014 and 2019), wind/wave analysis to assess minimum freeboard (Wood 2019c), MOE requirements for the EDF magnitude, and the updated seismic hazard assessment (Amec Foster Wheeler, 2016b).
2. CDA Mining Dams Bulletin (CDA, 2019) recommends that the higher "Closure – Passive Care" standards should be considered where it is anticipated that the "Closure – Active Care" configuration is expected to last decades or centuries if there are not sufficient resources on hand to address emergencies stemming from extreme floods or major earthquakes.
3. Seismic design criteria are to be applied to normal wet-season operating water level conditions, and conversely hydrotechnical design criteria are to be applied in static conditions. The hydrotechnical and seismic design criteria constitute separate extreme loading conditions as defined in Section 5.0 of the CDA geotechnical bulletin (CDA, 2007).

2.6 WASTE ROCK DUMPS

Waste rock dumps (WRD) 1, 2, and 3 are located above and adjacent to Lynx TDF. They are irregularly shaped with benches, over steepened slopes, and crossed by several active and abandoned roads. They were built between 1960s and 2015. Limited dumping plans or records exist. A summary of the WRD's background and future removal plans are described below. Additional information regarding the Waste Rock Dumps for 2022 will be published in the forthcoming "2022 Annual Waste Rock Dump Report" (WSP, 2023b).

WSP completed a preliminary stabilization design for WRD 2, and 3 (Amec Foster Wheeler, 2017f). The stabilization design concluded that WRD 2 and WRD 3 must be removed, and that WRD 3 might contain tailings and therefore to meet stability requirements must also be substantially removed. WRD 3 will generally not be discussed in this report as geotechnical oversight was transferred to Onsite Engineering Ltd. (OEL) in 2018. Monitoring responsibilities were transferred because the ore chute was designed by OEL and built through WRD 3. MFM and WSP received a letter from OEL on 14 May 2018 acknowledging the transfer of professional roles and responsibilities until such time as the ore chute is decommissioned. The ore chute has now been decommissioned and the transfer of responsibility for WRD 3 back to WSP is planned for 2023. MFM completed the planned waste rock removal for WRD 3 in 2022 with no further removal planned until the Lynx 10 level East plug is completed.

WRD 1

WRD 1 is a sidehill fill dump approximately 500 m long, 150 m wide and with a footprint of approximately 18 ha. The maximum exposed height of the dump is approximately 35 m. The valley wall above the dump is sloped at approximately 40° and the natural ground beneath the dump is sloped at approximately 20°. WRD 1 extends from the east edge of the Lynx TDF across the slope to the east, to near the midpoint of the Old TDF. A fine-grained granular filter was built along the west edge of the dump where it contacts Lynx TDF to prevent tailings from migrating into the dump. WSP provided two separate dump removal designs for WRD 1 in 2020:

- WRD 1 Ore Stockpile (Wood, 2020i); and
- WRD 1 (Wood, 2020j).

Work to stabilize the WRD 1 started in 2017 and continues.

WRD 2

WRD 2 is a sidehill fill dump on a moderately steep slope above the northeast side of Lynx TDF, with a footprint of about 12 ha. The crest of the dump is located near 5L Portal at about 580 m elevation. The lower east toe of the dump overlies the west end of WRD 1 at about 373 m elevation. The west toe of the dump is founded on bedrock near the rim of the northeast side of the Lower Lynx Pit. Based on exposures of natural ground and the historic aerial photograph review, the natural ground underlying the dump is inferred to slope between 26° and 32° towards Lynx TDF, with a slightly convex profile. The natural slope above the dump is incised with gullies between 5 and 15 m deep; as such it is interpreted that the natural surface beneath the dump is also gullied. WSP has developed four (4) removal plans for WRD 2 as follows:

- WRD 2 Phase 1 (Amec Foster Wheeler, 2017b).
- WRD 2 Phase 1 (Amec Foster Wheeler, 2017e).
- WRD 2 Phase 2 (Wood, 2018c); and
- WRD 2 Phase 3 (Wood 2021g).

Work to remove material from WRD 2 and stabilize the dump continued in 2020 and 2021 however no material was removed from the historic dumps in 2022.

3 CLIMATE REVIEW

3.1 PRECIPITATION

Monthly precipitation totals and extremes are presented in Table 3-1 and Figure 3-1. Annual precipitation totals are summarized on Figure 3-2. Based on data collected between 1979 and 2022, the site has an average annual precipitation of 2,622 mm. The total annual precipitation recorded in 2022 was less than average with 1,562 mm and was made up of 1,330 mm rain and 232 mm of snow water equivalent. It should be noted that snowfall values are estimated using recorded snow depth, with the assumption that snow density is equal to 10% of water density.

Table 3-1: Monthly and Historical Precipitation

MONTH	MONTHLY TOTAL PRECIPITATION (mm)	
	HISTORICAL AVERAGE [1]	2022
January	368	291
February	261	137
March	251	174
April	155	180
May	96	2
June	63	34
July	43	12
August	57	15
September	124	22
October	337	197
November	477	152
December	391	348
Total	**2622**	**1564**

Note(s):

1. Historical precipitation data was obtained from MFM from the former Powerhouse weather station from 1979 to 2014, from the Paste Plant weather station from 2015 to 2020 and the Camp weather station onwards.
2. Snow depth data was manually checked for erroneous values (large spike in snow depth). When one was observed, the hourly data for the day was calculated after the erroneous value was removed.

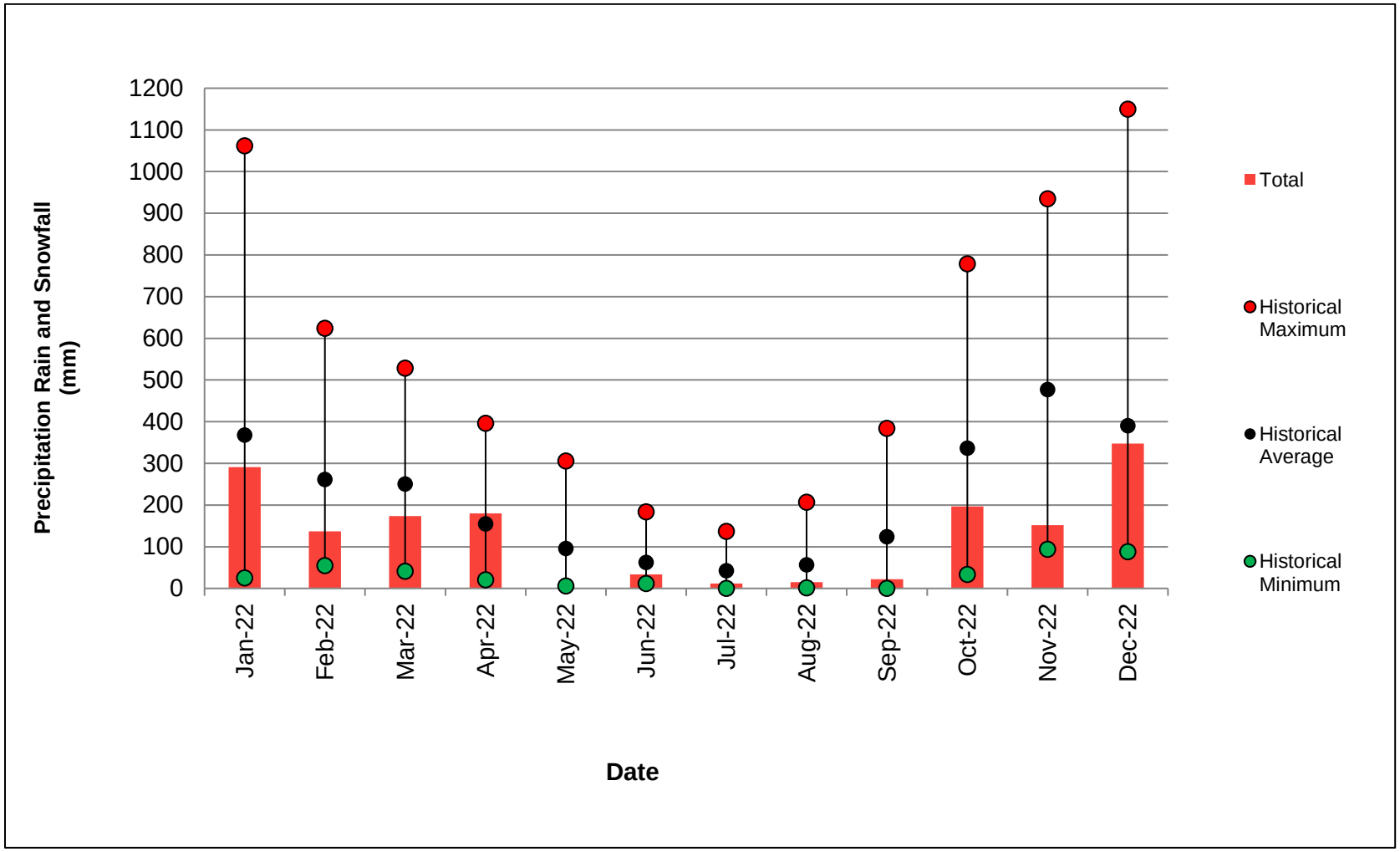

Figure 3-1: Monthly Precipitation Data

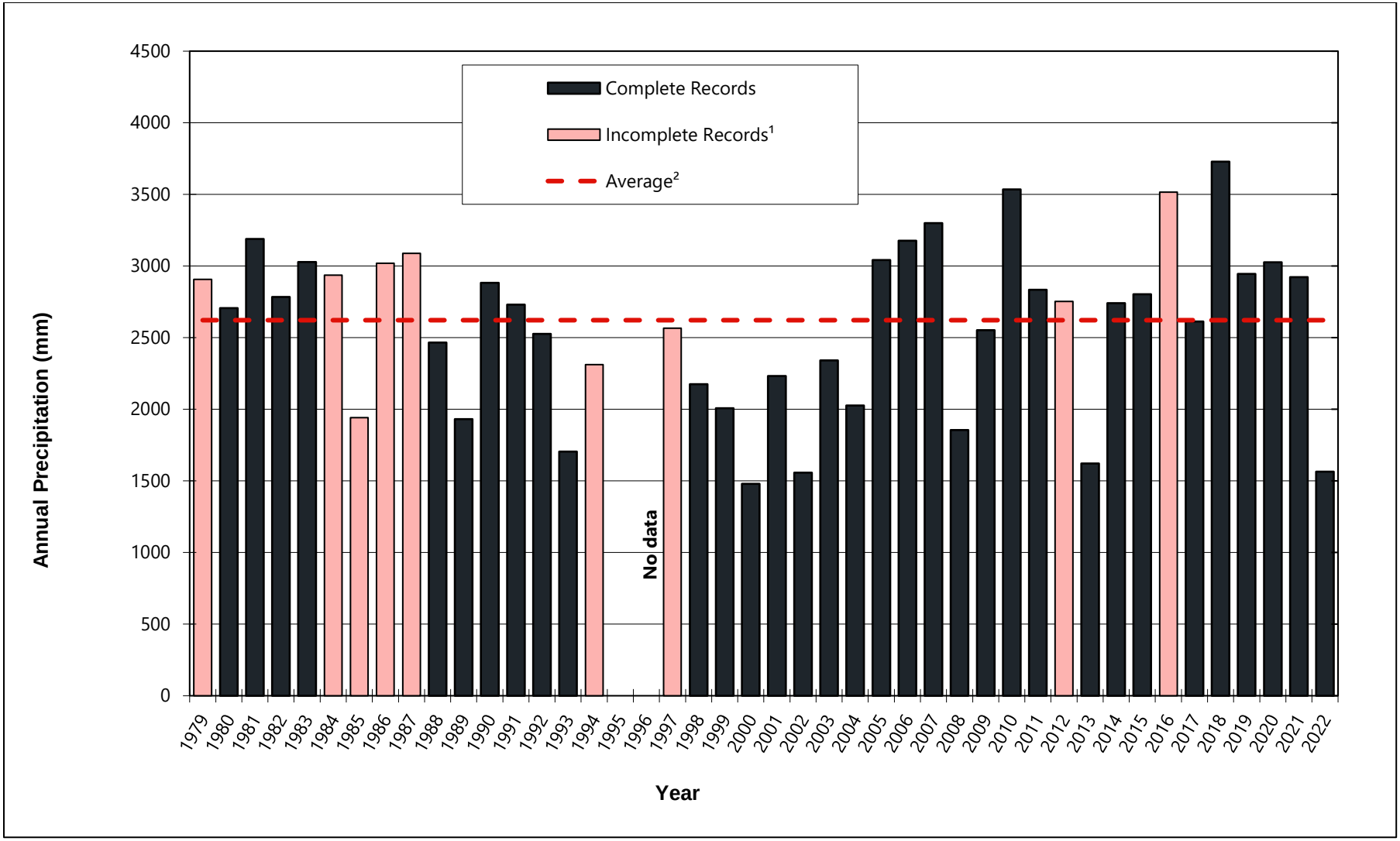

Figure 3-2: Annual Total Precipitation 1979-2022

3.2 TEMPERATURE

Monthly average temperature extremes for 2022 were recorded at the Camp weather station and are compared to the historical data (2012 to 2022) in Table 3-2.

Table 3-2: Monthly Temperatures

MONTH	HISTORICAL AVERAGES (°C) [1]			2022 AVERAGES (°C) [1]		
	DAILY MINIMUM	DAILY AVERAGE	DAILY MAXIMUM	DAILY MINIMUM	DAILY AVERAGE	DAILY MAXIMUM
January	-1.0	0.7	3.1	-2.6	-0.8	1.2
February	-1.2	1.2	5.3	-2.3	0.2	5.0
March	0.2	3.6	8.7	-0.1	3.0	8.3
April	2.4	6.8	12.7	0.0	3.4	8.3
May	6.8	12.5	19.2	3.0	8.0	13.6
June	9.7	15.2	21.6	8.1	13.4	19.6
July	12.8	19.0	26.1	12.4	18.9	26.3
August	13.4	19.3	26.5	14.1	20.6	28.9
September	9.8	14.3	20.5	9.8	15.9	24.3
October	5.4	8.5	13.0	6.7	11.0	18.2
November	1.0	3.0	5.7	-1.5	0.2	2.4
December	-1.7	0.0	2.0	-4.3	-2.4	-0.5

Note(s):

1. Historical temperature data was obtained from MFM from the former Powerhouse weather station from 1979 to 2014, from the Paste Plant weather station from 2015 to 2020 and the Camp weather station onwards.

2. Values shown are averages of the recorded daily average, daily maximum, and daily minimum temperatures.

4 TAILINGS MANAGEMENT

To upgrade various infrastructures on site, MFM went into care and maintenance in June 2015 when milling operations and tailings production discontinued. Tailings deposited prior to 2015 were produced using a hydro cyclone process to separate the mill tailings stream into fine and coarse tailings. The tailings stream was typically separated into approximately 55% coarse tailings and 45% fine tailings by dry mass. The fine tailings were then thickened at the Paste Plant and deposited in the TDFs; coarse tailings were used as underground backfill with the excess stockpiled in the Reclaimed Sand Area (now the site of the Surge Pond) or used for construction. Details on how coarse and fine tailings were processed and stored are available in the 2016 DSI (Amec Foster Wheeler 2017c).

In 2018 MFM restarted mining operations and tailings were produced and deposited in September and December of that year when mill commissioning tests were being conducted. Production started again in 2019 and tailings were produced and deposited. The tailings management process at MFM changed during the upgrades, these changes included a change to the use of unfractionated tailings for underground backfill. Surface tailings deposition strategy was amended as well to use unfractionated tailings paste or cake. The upgraded Paste Plant which facilitated the change is similar in design and function to the prior configuration and includes a gravity thickener, vacuum filters, mix tanks, and positive displacement pumps.

4.1 LYNX TDF TAILINGS MANAGEMENT

Historically Lynx TDF was used to primarily dispose of fine paste tailings. Other material was also deposited in the Lynx TDF but in lesser quantities, including bulk coarse tailings, construction waste, sludge from the water treatment ponds, and fines encountered during sump maintenance.

Lynx TDF's original design contained a central paste deposition point, near the pit highwall which had tailings sloping down towards the dam. With this configuration fine paste tailings were discharged from the Springs Drain platform near the north pit wall at an approximate elevation of 353.5 m. During the final year prior to suspension of mining operations some operation difficulties experienced by the Paste Plant necessitated the deposition of partially thickened tailings from the Paste Plant thickener, as a slurry containing about 50% solids total by mass. The deposition of this slurry filled the lower areas of the paste surface at a nearly level grade.

During the sites care and maintenance period the Lynx TDF was primarily used for storage of "dredgate" or dredge spoils from the site's treatment ponds. The dredgate consists of treatment pond slimes resulting from the processes of the treatment system and of sediment that is conveyed into the treatment ponds from around the site, including tailings eroded from the Amalgamated Paste Area of the Old TDF. The deposition of the dredgate gradually flooded the original paste stack such that the entire impoundment deposition surface in the facility was nearly level.

The single point of discharge explained above was changed in an Amendment of the design in 2015 (Amec Foster Wheeler, 2015c). The Amendment saw the distributed discharge of tailings from the dam crest to form a paste beach. Justification for the Amendment are outlined in the design update reports (Amec Foster Wheeler, 2018a) and (Wood, 2020f) but are principally related to moving the supernatant pond away from the dam fills. The paste beach of the Lynx TDF has since been developed around much of the dam perimeter apart from the northern portion of the west area, near the vicinity of the pumps. MFM is now focusing paste deposition such that a

complete beach develops. Updates on discharge and the paste beach developed in 2022 can be found below in in Section 4.2

4.2 MATERIAL DEPOSITION

Deposition of whole tailings (paste) occurred in 2022 at multiple discharge points from the dam crest. The locations of the discharge points were primarily along the east and south arms of the dam. Paste consistency has improved and as a result, the issues related to a beach surface that was somewhat flatter than planned have been resolved.

During events when the Paste Plant is experiencing a maintenance down time, raw tailings are deposited from the north highwall as per the original design, via a pipe connected to the Paste Plant.

4.3 AS-BUILT STORAGE AND RAISE REQUIREMENTS

The Operation, Maintenance, and Surveillance (OMS) Manual for the Lynx TDF stipulates quarterly tailings surveying and capacity verification, which were suspended in 2018 due to lack of tailings deposition. Quarterly surveys resumed in 2019 with the resumption of tailings deposition. In 2022, four (4) paste surveys were carried out: February, June, August, and October.

Construction work in 2022 completed the Lynx Dam upstream bench to a crest elevation of 373.5 m, with spillway invert at 372.25 m. MFM tracked the reduction in available storage in the TDF by comparing the paste surveys taken throughout 2022.

The estimated volume remaining in the TDF between the October 2022 tailings surface and the lowest point on the 373.5 m raise operations spillway crest (372.25 m) was approximately 326,569 m^3, of which 226,000 m^3 was required for EDF storage leaving 100,569 m^3 for tailings deposition (assuming free water volume remains relatively constant). The volume comparison is approximate as the facility contained a shallow but unknown depth of water at the time of the survey and the survey identified the water surface, rather than the tailings bed.

Under normal operations MFM would project to deposit approximately 20,000 m^3 of tailings into the TDF each month. In 2022 however, to allow 2022 construction of the outstanding 2021 upstream bench of the 373.5 m raise and future dam raises using the centreline dam construction method, the tailings beach elevation has increased, by further deposition in the TDF. The TDF storage capacity appears to be sufficient at the time of this reporting. Ongoing evaluation of the TDF storage will be required to consider potential changes of backfill throughput to the underground.

5 WATER MANAGEMENT

The mine's water management system has two main purposes:

1. Divert non-contact water around the surface workings, waste rock dumps, and tailings facilities and convey the water directly into Myra Creek.
2. Capture contact water including surface runoff and pumped water from mine-affected areas and convey it to the water treatment system for release to Myra Creek.

The water management system consists of a series of diversion ditches located upslope of the mine area, storage areas within the tailings facilities, various pumping systems, decant structures, and a series of treatment ponds. MFM monitors the treated water for water quality.

The following sections provide a brief description on the configuration and performance of the pertinent aspects of the water management system. For a detailed account of water quality monitoring results and objectives, refer to MFM's annual reports: "Myra Falls Mine -2022 Reclamation Report for Mines Act Permit M-26" (RGC, 2023a) and "2022 Surface Water and Groundwater Monitoring Report, Nyrstar Myra Falls" (RGC, 2023b) submitted to MOE.

For a detailed account of site water balance under peak demand, see WSP's previous water management report (AMEC, 2008a). The site-wide water balance was updated in 2020 by RGC as part of the Site-Wide Geochemical Model Update.

5.1 NON-CONTACT WATER

The main diversion ditch system consists of three ditches and is located on the north side of the valley and collects non-contact runoff water from the three primary drainage areas upslope from the mine site. These are highlighted on Drawing 010707. The three ditches which make up the main diversion ditch system are:

1. Arnica Diversion Ditch: flows east to west above the Lynx TDF into Arnica Creek.
2. Upper Lynx Diversion Ditch (ULDD): flows from west to east above the Lynx TDF and into a natural unnamed stream, locally referred to as "Cascade Reach".
3. Lower Lynx Diversion Ditch (LLDD): diverts Cascade Reach and runoff from the hillside above the Old TDF from west to east along the north upstream edge of the Old TDF and into Myra Creek downstream of the Pumphouse 4 Bridge.

Formal inspections of the diversion ditch system are typically carried out on a quarterly basis, and more frequently during and immediately after significant storm events. As required, inspection and maintenance of the LLDD is carried out during MFM's weekly inspections as per the OMS Manuel with any unusual observations, if any, reported to WSP. Typical maintenance activities carried out by MFM for the diversion ditch system have included removal of fallen trees, rocks or debris from the ditches, and minor repairs to the LLDD lining. WSP Inspection reports are included in Appendix C.

Observations for the Lower Lynx Diversion are detailed in the 2022 Old TDF DSI report (WSP, 2023e).

5.1.1 ARNICA DIVERSION

The Upper and Lower Arnica Reach functioning as intended through the reporting period. The upper reach has capacity to convey low flows only. It does not appear that recent maintenance has occurred. WSP also observed several sink areas where flow is lost.

Access to the Upper Reach of the Arnica Diversion Ditch has become significantly overgrown. Significant trees and various debris were noted along the access road and within the ditch. Improving access to facilitate maintenance activities is recommended. Several sinks were also noted along the Upper Reach of the ditch and at the transition. Channel lining to reduce groundwater inflow will help reduce impact on MFM operations. Downstream of the transition, the Lower Reach of Arnica Diversion Ditch is in good condition and functioning well.

5.1.2 UPPER LYNX DIVERSION

The ULDD functioned as intended during the 2022 reporting period. Specific concerns were not observed.

The road connection from the South Runaway Lane on WRD 2 to the ULDD access trail was re-established. It had been removed during 2017 construction activities on the dump. The trail forms a secondary access to the ULDD and therefore the trail and connection from WRD 2 should be maintained.

During an April 2019 inspection, erosion was observed in the Upper Lynx Diversion at the transition between Upper Arnica and Lower Arnica ditches which has damaged the geomembrane liner beyond functionality. The ditch would still function to divert peak flows, but low flows are likely to escape via groundwater to the Lynx Upper pit.

The downstream portion of the ULDD is functioning well leading up to the Cascade Reach. Minor obstructions were noted during inspection that can be addressed through regular maintenance. Further upstream, the inlet to culverted section was significantly obstructed by debris/sediment. At this location frequent maintenance is critical to ensure flow is conveyed into the culvert. Upstream of the culvert, minor obstructions from vegetative debris and sediment were noted. WSP is currently working on a scope to design upgrades to the system which mitigate the issues noted above.

5.1.3 LYNX TDF AREA

The Lynx TDF is fully within the contact water portion of the site and as such does not have noncontact water.

5.2 CONTACT WATER

The Lynx TDF operates as an open-ended system with several unquantifiable inputs and outputs and therefore does not have a detailed water balance that is kept current. The facility water management design basis is focussed on management of short duration peak runoff events, and operational water management requires maintenance of a relatively small pond during normal operating conditions.

The Lynx TDF receives water from the four sources listed below:

- Release of water from tailings or waste materials deposited as paste or slurries upon initial deposition (can be significant: from raw tailings, paste plant thickener underflow, or from treatment pond dredgate slurries).
- Additional release of porewater from within the tailings mass during long-term consolidation (insignificant compared to other sources).

- Precipitation on the impoundment and catchment area (potentially the single largest source, and the most variable).
- Groundwater flux into the facilities (potentially significant).

The Lynx TDF dam design is based on the assumption that the dam fill is relatively permeable such that significant porewater pressures do not develop. The design does not include a core, as the tailings are of relatively low permeability and the exposure of the dam is limited to the inundated upstream face if it becomes inundated. A filter zone is provided to prevent tailings migration through the dam. As such the facility should generally be operated with as little water in contact with the dam face as practical. Transient flood storage is within the stated operating rules, with the maximum storage being approximately 226,000 m^3 associated with a 24-hour duration EDF event for the annual/wet season. The EDF storage requirement for the dry season is 91,200 m^3.

Under normal operating circumstances, ponded water either infiltrates around the periphery of the facility (into the pit walls or the dam) or is pumped from the facility and discharged into the treatment system. Pumping capacity varies with the season but is typically provided by one diesel pump with a capacity of 0.08 m^3/s (1,200 gpm). Additional diesel pumps with capacities varying from 0.07 to 0.16 m^3/s (1,200 to 2600 gpm) are deployed if necessary.

The facility is designed with sufficient freeboard to store the full volume of the 24-hour EDF above the maximum normal operating water level before spillway flow would commence. The operating guidance is to consider taking Lynx TDF pumping offline during times when heavy precipitation threatens to cause flows to the treatment system that exceeds the systems capacity. When pumping is offline, this could allow the TDF to store a shorter duration event and possibly reduce the volume available to store the EDF should such an event immediately follow the shorter duration event. The operating guidance provided to MFM is considered a generally accepted practice.

The excess water above the maximum normal operating water level should be pumped to the treatment system as soon as the treatment system can sustain the flow. Maximum Normal Operating Water Level (NOWL) is established with each quarterly UAV survey (subject to tailings production rates and mill shutdowns).

The following sections detail specific water management items for Lynx TDF during the 2022 reporting period.

5.2.1 DAM TOE

A temporary sump was constructed at the toe of Lynx dam near panel 13/14 in 2017. The sump was constructed with the intention for it to collect water that drains from the Panel 15 toe drain and surface runoff from the downstream dam face; however, MFM reported that water has not collect in the sump since it was constructed. The temporary sump was replaced with monitoring well, located outside the footprint of the dam. Water levels in the monitoring well will be monitored and a permanent system installed when the Lynx toe ditch is constructed. The Lynx toe ditch will be constructed after the dam has reached the ultimate design elevation and vegetation has been established on the closure cover.

5.2.2 LYNX SPRINGS DRAIN

A significant bedrock source of groundwater was uncovered in 2011 near elevation 352.5 m on the east side of the Lynx TDF, below WRD2. Capture and conveyance of the spring is essential to the long-term stability of the Lynx TDF surface, particularly during closure conditions (AMEC, 2013). The Lynx Springs Drain is designed to convey the spring water out of the facility by gravity drainage. Construction of a portion of drain up to Sta. 0+263 was carried

out in 2014, 2017 and 2018. Construction of the concrete sump box and 650 mm pipe between the sump box and Manhole 2 were carried out in 2019. The Lynx Springs drain has been essentially complete since 2020. All that remains to be constructed is the sump box outlet channel that will eventually direct Lynx Springs Drain flows to Myra creek (vs Super Pond) should water quality meet direct discharge criteria.

The Lynx Springs Drain functioned as intended during 2022. Two vibrating wire piezometers (VWPs) were installed in the portion of the drain built in 2017. The piezometers were not reporting to a data logger in 2021. WSP carried out an instrumentation review in 2022 and data logger data was manually collected. It was seen that continuous readings between January 1, 2020, and December 17, 2020, were recorded, but not transmitted to Lynx Hub, as the battery was removed after 5:10 pm (Dec 17, 2020). The battery was reinserted on September 19, 2021 (11 am) and the Lynx Hub received the data, however, both VWPs became non-functioning before automated data collection began. The springs drain area currently has no functioning VWP's. WSP has since issued a recommendation for instrumentation upgrades required in 2023 (WSP, 2023d).

5.2.3 SINKHOLES IN THE TAILINGS SURFACE

Multiple sinkholes (also referred to historically as depressions) in the tailings surface have been observed during the Lynx TDF operations between 2008 and 2022. These depressions varied in size and location. Most of the sinkholes/depressions have disappeared during ongoing tailings deposition in the TDF.

One of the sinkholes has repeatedly formed in the paste surface near the north corner of the Lynx TDF. The sinkhole is near the midpoint of the north end of the facility, roughly equidistant from the northeast highwall, the tailings beach against WRD3B, and the west abutment of the Lynx Dam. It was first observed in the spring of 2012 and has been persistent, re-forming after being covered with fresh tailings or pond dredging material. It has been surveyed on several occasions and the diameter ranges from about 10 to 15 m and the horizontal location appears to migrate slightly over time within a consistent general location. The area is observed weekly by MFM and quarterly by WSP, and the presence or absence of this sinkhole is noted, and photographs are taken. The recurring sinkhole was not observed during the latest WSP inspection on Oct 5, 2022. The sinkhole has not apparently changed in location or size. No new depressions or sinkholes on the tailings surface were observed by WSP or reported to WSP in 2022.

Formation of the sinkhole is likely the result of internal erosion of the tailings by downwards groundwater flow, presumably into the underground workings. Current assessment suggests that the erosion is occurring at the base of the tailings from other groundwater sources, and that the overlying tailings are settling into the resulting void space. Drainage from surface through the depression sinkhole is not evident nor suspected as it does not appear to change in response to pond levels and obvious signs of flow towards the sinkhole have not been observed to date.

Groundwater flow paths involved with any sinkhole or depression formation in Lynx TDF are likely complicated and could involve exposed stopes, intercepted drifts, manways, ore passes, mill holes, exploration drill holes, natural joints, or manmade fractures in the pit walls. Survey data and mine records indicate that this sinkhole overlies 12-Level stope, which is directly below the base of the Lynx TDF and was partly exposed during removal of the crown pillar. MFM indicated that entry into the underground mine below the facility for the purposes of investigation of the sinkhole is not safe as the area has not been maintained in decades. MFM reports that the water from this area of the mine is consistently clear with no indication of tailings migration.

This sinkhole is distant from the dam. Risks to dam safety include upstream instability should the tailings suddenly flow into the underground creating the potential for a rapid draw down situation. Internal erosion of the tailings

into the underground presents a potential long-term issue relating to stability of the tailings surface and may influence closure cover designs. Accordingly, WSP has provided preliminary recommendations for mitigation of the sinkhole to be considered at or before closure planning for the final configuration of the impoundment.

MFM and WSP will continue to actively monitor the occurrence and conditions of tailings sinkholes or depressions during routine inspections. Photographs will be taken from key vantage points to document the condition of the tailings surface as well as the presence or absence of the recurring sinkhole at the time of the inspections. MFM will notify WSP of new sinkholes observed during their weekly inspections.

5.3 OTHER CONTACT WATER MANAGEMENT

In other areas of the mine site where runoff, seepage, and other flows are potentially impacted by acid rock drainage (ARD), these flows are collected in various sumps and ditches and directed to the water treatment system. Located within the vicinity of the Lynx TDF, these areas include waste rock dumps, haul roads, and the dam shells. Flows are directed to the treatment system by a combination of ditching, pumping and decants.

5.4 WATER TREATMENT

The water treatment system is based on mitigation of low pH water to reduce the solubility of dissolved metals. Lime is added in mixing tanks at the inlet of the treatment system at the head of the Super Pond which is the primary settling pond on site. From the Super Pond the treated water flows through six additional polishing ponds to improve water clarity. The locations of the Super Pond and the Polishing Ponds are shown on Drawing 010702. The various aspects of the water treatment system are inspected monthly by MFM personnel. The details of the operation and performance of the water treatment system including water management inspection reports by MFM are summarized in MFM's annual reports to EMLI and MOE for 2021 (MFM, 2022) (Robertson GeoConsultants Inc., 2022). This DSI does not report on dam safety conditions for the water treatment system ponds. WSP prepared a 2022 DSI report for the Super Pond and the Polishing Ponds under a separate cover (WSP, 2023c). A dam safety review for the ponds was conducted in 2020. (Wood, 2021e).

6 DAM INSPECTIONS

Dam safety inspections at MFM are carried as per the OMS Manual and is conducted by WSP and MFM throughout the year. This section provides a summary of the dam safety inspections performed during 2022 at MFM.

6.1 INSPECTIONS BY MFM

Visual inspections of the Lynx TDF are carried out as part of ongoing monitoring activities. Inspections are routinely conducted or event-driven, following flooding or an earthquake. Routine TDF inspections were carried out weekly by MFM during most of the year and monthly if the site is covered in snow. The LLDD is inspected weekly with the upper diversions inspected quarterly.

Inspection reports were completed with the inclusion of photographs. With respect to the Lynx TDF and the Lynx diversions, the reviews were based on visual inspection of the following:

- The Lynx TDF for active areas of paste deposition, the location, extent, and clarity of ponded water, and the function of the sump pump.
- The Lynx TDF for surface erosion, settlement, depressions, cracks, bulges, and signs of seepage.
- The diversion ditch for flow rate, obstructions (slumps, fallen trees, etc.), and damage to lined areas.
- Any other anomalies or changes for any of the above structures.

MFM reported fifty-two (52) inspections between 07 January and 30 December 2022. Forty-four (44) of the inspections were documented with a written report and photographs. Five (5) of the inspections were documented with reports only and three (3) were documented with photographs only. MFM inspections are not always completed on weeks when WSP is performing their inspections however, in general, the observations in MFM inspection reports are consistent with those made by WSP during quarterly inspections.

6.2 INSPECTIONS BY WSP

The EOR or designate inspected the Lynx TDF, and diversion ditch systems on a quarterly basis during the reporting period as outlined in the OMS. Conditions are observed in and around the facilities, with emphasis on water management, dam stability, and seepage conditions. WSP personnel met with MFM staff during the inspection site visits to discuss any concerns relating to the facility operation. WSP carried out four (4) inspections in 2022. Dam inspection summaries are presented in Appendix C. Where applicable, the outstanding actions are referenced to the recommendation's summary in Sections 10.1 and 10.2 of this report.

7 INSTRUMENTATION MONITORING RESULTS

Instrumentation for monitoring performance of the Lynx TDF includes piezometers for measuring pore water pressures, deformation monuments for tracking dam deformation and slope inclinometers (SIs) for measuring internal deformation and deformation in the foundation. This section presents a summary of the instrumentation network and the observed data. A summary of the instrumentation status is provided in Appendix B1. Appendix B2 provides a summary of VWP and SI instrumentation data for 2022.

Data is received and reviewed by WSP typically monthly or as needed. Monitoring data includes:

- Rainfall and temperature records (refer to Section 3).
- Vibrating wire piezometer readings.
- Deformation monument surveys.

WSP also carries out surveys of the slope inclinometers three times per year, typically in Q2, Q3 and Q4.

WSP carries out periodic instrumentation data review (on a monthly basis at a minimum) and communicates the findings of the data review with MFM through emails or oral discussions. A summary of the instrumentation data received by WSP in 2022 was processed and reviewed, they are provided in Appendix B.

The piezometers and weather station are connected to an automated network. The automated network records data at frequencies varying between hourly and daily for various piezometers. The maximum readings for each week of the monitoring period are processed for review.

Some individual components of the automated network have occasionally malfunctioned resulting in some of the data recordings not being completed per the schedule outlined in the OMS. The extent of missing data and its causes are summarized within the annual DSI report. Causes of data loss are varied but mainly stem from solar charging and power supply issues. Progressive steps have been implemented to troubleshoot the system, improve its reliability, and reduce the occurrence of missed data records.

In October 2022, WSP conducted an instrumentation review which included a field review of the VWP network. The review identified obstructed line-of-sight communication between the Lynx Hut (L900 RSTAR Hub) and L900 Nodes (DT2055B). In addition to communication line-of-sight issues, WSP identified the following (WSP, 2023d):

- Several of the L900 Nodes data loggers had failed over time because of what appears to be moisture penetration and corrosion. Unfortunately, the data from the failed data loggers could not be retrieved.
- When RST data loggers failed, they were replaced. However, these data loggers had outdated programs and only able to record the data locally.
- Buried VWP wires were not routinely checked for damage outside of previous construction seasons when rerouting was required.

WSP will work with MFM to mitigate the identified issues and improve the VWP network overall.

7.1 PIEZOMETERS

The Lynx TDF piezometer network consists of VWPs along the upstream toe, core, and downstream buttress fill of Lynx Dam. There are also VWP's in the foundation soils with the Lynx Dam ultimate footprint.

Piezometer installation details are found in the reports: 2011 Paste Investigation (AMEC 2012), 2014 Lynx Foundation Investigation (Amec Foster Wheeler 2015b), 2015 Lynx Supplemental Drilling (Amec Foster Wheeler 2016a) and Lynx Starter Dam 2019 Site Investigation (Wood 2019f).

The configuration of the network is shown on Drawing 010702. Cross-sections along Instrumentation Planes D, E and F are provided on Drawings 010703, 010704 and 010706. The Lynx piezometer levels are influenced by seasonal precipitation and generally follow a repeatable trend through the wet and dry season cycle. Pressure levels during the dry season (typically April to September) are typically near zero in the dam fills and shallow foundation and stabilized at the minimum level of the Myra Valley aquifer in the deep foundation. Pressure levels are highly influenced by precipitation trends in the wet season. The sensitivity to precipitation trends varies amongst the piezometer groups depending on their location, with the response in the deep aquifer being the strongest, and the response in the dam fills being only minor amounts of perched groundwater pressure as precipitation percolates through the dam shell. Porewater pressures in the tailings gradually increase over time as the pond surface increases with deposition and shows moderate response relative to precipitation and pond level fluctuations in the wet season.

The monitoring thresholds for Lynx TDF were updated in November 2020. Limit equilibrium stability models were used to assess the effect of increased pore water pressures on calculating target FoS. Static stability analyses were conducted for the downstream slope. The thresholds were prepared based on the current dam geometry at the time (2019 crest elevation of 365.1 m and ongoing 2020 dam raise with a crest elevation of 368.5 m with additional downstream raise at 351 m).

Notification and trigger thresholds for Lynx TDF were developed based on stability modeling and a review of the historic records. The notifications and triggers are intended to flag potentially changed conditions, and piezometer data should be reviewed in detail if a notification or trigger occurs.

A notification level A1 was established at the lower of the pore water pressure S1 which is associated with lowering the FoS below 1.5, or the maximum previous recorded level for the piezometer. A select number of piezometers were also assigned S2 and S3 trigger levels where plausible elevated pore water pressures could lower the FoS below 1.3 and 1.1.

The thresholds should be reviewed after each raise and the OMS revised appropriately. The thresholds should also be reviewed if piezometric data indicates significant changes to the average or maximum measured pressures have occurred.

Pore pressures recorded during the reporting period generally showed similar trends consistent with previous years. In 2022, piezometer readings with the foundation remained relatively stable except the seasonal spike that occurred in Q3. Threshold exceedances occurred in 2022 for piezometers installed within the tailings where historical maximums were exceeded because of rising tailings and pond levels. The readings increased by about 0.2 m and 1.2 m in VW17727 and VW17731, respectively. VW11728 also in the tailings is working but not reporting as identified in WSP's recent site investigation (WSP, 2023d). No S1 to S3 exceedances were recorded in 2022.

Work to repair, review and inspect the instrumentation network was completed throughout the year. This work is summarized in the piezometer status table in Appendix B1.

7.2 DEFORMATION MONUMENTS

Eleven (11) surface deformation monuments along the Lynx Dam crest were monitoring monthly in 2022. After completion of the upstream bench raise to 373.5 m in August 2022, a new baseline was set for the 11 monuments along the crest.

Position data and calculated cumulative displacements in the traverse (i.e., perpendicular to the dam alignment), longitudinal (i.e., parallel to the dam alignment) and vertical directions are presented in Appendix B2-3 in tabulated form.

The maximum recorded cumulative magnitude of movement was 46 mm from April 2022 to August 2022 for monument Lynx21-08. After the post construction re-establishment, the maximum recorded magnitude of movement was 29 mm from August 2022 to December 2022 for monument Lynx21-08. The maximum recorded magnitude of settlement was 35 mm from April 2022 to August 2022 also for monument Lynx20-08. In general, most of the cumulative displacements and settlements between the initial survey and the last, are less than the calculated error of the survey equipment.

7.3 SLOPE INCLINOMETERS

Three slope inclinometer casings are located on the crest of Lynx TDF. One was installed in 2015 in BH14-08A. Two were installed in 2019 in BH19-01 and BH19-04The locations of the inclinometers are shown in plan and cross-section on the attached drawings.

The slope inclinometer casing profile for BH14-08A was surveyed in March and August as part of routine monitoring. The profile in March and August followed historical trends, with maximum cumulative and incremental movement seen at approximately elevation 350 m. During the November reading the SI probe became stuck at an approximate elevation of 350 m. WSP carried out successful retrieval of the SI probe. It is unlikely that readings at this location will be able to continue due to the current condition of the casing. WSP is working with MFM to address this issue and identify alternatives for monitoring dam movement in this area.

The failure of BH14-08A location is interpreted by WSP to be caused by deformation in relation to vertical and horizontal consolidation settlement of the upstream side of the dam. Settlement of this nature is anticipated for a centreline-raised tailings dam and does not pose a concern for the slow rate and relatively minor amount of shearing-type deformation that had been observed in the March and August measurements observed.

The slope inclinometer casings profile for BH19-01 and BH19-4 was surveyed in March, August, and November 2022. No notable zones of shearing-type deformation were observed; however, the apparent general deformation is most likely the result of a depth positioning error.

8 SUMMARY OF CONSTRUCTION

Details of construction activities on site are provided in the 2022 Construction Record Report (WSP, 2023a). An overview of construction activities is provided in the following subsections.

2022 Lynx TDF construction at Myra Falls Mine included completion of the 373.5 m dam raise which was started during the previous construction season in April 2021. Construction specifically included raising the Lynx Dam upstream shell, extending the operations spillway across the newly raised upstream bench, and raising a portion of the downstream dam shell from 346 m to 351.5 m as follows:

- Upstream shell of the Lynx Dam was raised gradually as the tailings beach elevation increased. It was raised to the Stage 8 crest elevation of 373.5 m.
- The operations spillway was previously constructed to an invert elevation of 372.25 m and includes a fully armoured channel extending from the crest of the dam to the toe of the dam. The spillway was extended across the newly completed upstream shell.
- The downstream shell was raised to elevation of 351.5 m.

WSP provided Engineer of Record, Design Engineer and construction monitoring and geotechnical laboratory services. This comprised of preparing construction drawings and specifications, providing field review, monitoring construction, and conducting geotechnical quality control and quality assurance. Construction and construction management along with procurement services were carried out by MFM. Survey control was provided by Mifflin Surveys Ltd. of Campbell River, BC.

WSP personnel were on site full time during construction to perform the following:

- Reviewing and approving subgrades prior to fill placement.
- Monitoring of fill placement for appropriate material gradation, moisture content, and removal of deleterious inclusions.
- Monitoring appropriate lift thickness, compaction, and adequate scarification between lifts.
- Assessing lift compaction by observing proof rolling.
- Collecting/sending samples of fill materials from borrow sources and placed fill for laboratory gradation testing.
- Liaising with site supervisors and operators.
- Preparing weekly reports and assembling photographic records as the work progressed.

8.1 LYNX DAM RAISE

Work on the Lynx dam was completed between 16 July and 30 August 2022. Construction activities are summarized below.

The upstream shell elevation was constructed to its design elevation of 373.5 m starting on 16 July 2022 and was complete by the end of August 2022.
Prior to placement of new material on the upstream shell, the construction monitor observed the condition of the surface, watching how the tracks of a Caterpillar D8 bulldozer or equivalent performed. Following this review, the

surface was scarified, and Zone A material placed and nominally track packed using Caterpillar D8 excavator or equivalent.

The upstream shell construction was completed in stages, which was consistent with the method used during 2021, and dependent on the tailings beach elevation. Until the tailings beach elevation reaches 368 m, the difference between the beach and the upstream bench was limited to 1.0 m. After the tailings reached 368 m, as per the 373.5 m raise design, the bench was progressed in 0.5 m lifts to the 373.5 m without considering the 1 m difference requirement between tailings beach and upstream bench.

Construction activities on the upstream raise were limited to 2 days followed by 3-5 days of no activity to allow for dissipation of porewater pressure as described above. This continued until August 24, after which there was no limit on days worked on the upstream bench since the beach elevation had already reached 368 m.

The final elevation placed on the upstream bench was 373.5 m with a minimum tailings beach elevation of 366 m on the western portion and maximum elevation of 369 m on the eastern portion.

The additional downstream raise, comprised of compacted Zone A material, was constructed to an elevation of 351.5 m instead of the design elevation of 343 m, following approval by WSP. The approval was given in RFI, RFI-LynxTDF2022-2. Crews concentrated on construction of the downstream shell once the upstream shell was completed to its final elevation of 373.5 m. Construction of the downstream shell was mostly completed between August 31 and September 21m 2022. Crews then moved on to completion of the operations spillway for 3 days and returned to complete the additional downstream raise to an elevation of 351.5 m.

8.2 FOUNDATION PREPARATION

The dam foundation zone is divided into 15 panels nominally 50 m wide, with Panel 1 at the west abutment and Panel 15 at the southeast dam corner. Most of the foundation preparation was completed to the extent of ultimate dam toe in June of 2020. Currently, foundation preparation is completed at the abutments as required for raises. Foundation preparation at the abutments for Raise 8 was completed in 2020. No further foundation preparation was required for the completion of Raise 8 in 2022.

8.3 LYNX SPRINGS DRAIN

No construction for the Lynx Springs Drain occurred in 2022. The construction was completed in 2020 (Wood, 2021a).

8.4 LYNX OPERATIONS SPILLWAY

The Lynx operations spillway built in 2021 was extended across the newly raised upstream bench in 2022. Extension of the spillway was completed between 21 September and 24 September 2022 as detailed in the 2022 construction record report (WSP, 2023a). A summary of the 2022 spillway construction is listed below:

- Placement of fine filter material. Fine filter material was placed over the subgrade along the inlet to the spillway crest to protect the underside of liner; and, placed as a single 0.2 m lift and compacted using a vibratory roller.
- Placement and overlapping of geomembrane. Geomembrane was placed over the newly raised upstream bench consisting of nominally compacted Zone A. Overlap was done with the waterflow direction in mind,

with the bottom sheet closest to the downstream. The overlap was approximately 1 m between sheets of geomembrane.

- Placement and overlapping of geotextile. Geotextile was placed over the geomembrane on the inlet. Each piece of geotextile overlapped the adjacent segment by 0.3 m with the upstream section over the downstream section. Geotextile was keyed into the upstream side.
- Placement of Class 25 kg riprap over the geotextile. Class 25kg riprap material was placed n a 0.6 m thick layer over the geotextile on the spillway crest with an excavator. Care was taken to avoid equipment traffic on the geomembrane/geotextile layer during placement.

9 REVIEW OF OPERATION DOCUMENTS

9.1 OPERATION, MAINTENANCE AND SURVEILLANCE (OMS) MANUAL

The OMS Manual was reviewed and updated by MFM in March 2022. WSP provided comments on the update in September 2022. The OMS Manual includes dam safety requirements for the Lynx TDF facilities.

9.2 EMERGENCY PREPAREDNESS AND RESPONSE PLAN (EPRP)

MFM Emergency Procedures indicate that once an emergency has been declared, the site will execute established response practices and procedures. These form the core of the Emergency Management Program, comprised of these separate manuals: the Emergency Preparedness Plan, the Emergency Response Plan, the Emergency Communications Plan, the Environmental Emergency Response Plan, the Tailings Facility Emergency Response Plan and Mine Shutdown Emergency Procedures.

These documents provide the detailed action plans and the notification procedures and should be the primary source of response protocols in the event of an emergency. A summary of the Emergency Management Program and associated plans is provided in Appendix E of the OMS Manual. The EPRP was reviewed and updated by MFM in March 2022. WSP did not review these documents during 2022. However, no changes were made to the Tailings Response plan since it was developed, with the exception of updates to contacts.

9.3 DAM SAFETY REVIEW (DSR)

A DSR should be carried out at minimum frequency of every 5 years as per EMLI 2022. The most recent DSR for the tailings facilities was carried out in 2020 by Thurber Engineering Ltd. and was submitted to EMLI in March 2021 to meet regulatory requirements.

Formal DSRs were completed in 2013 by Robertson Geotechnical Consulting Ltd. (RGC) and in June 2016 by Tierra Group International Ltd. (Tierra). These reviews were completed at a higher frequency than the minimum frequency recommended by EMLI (2021) or the CDA guidelines (2013). A summary tracking the status of open recommendations as well as those closed in 2022 is provided in Section 10.1.

10 SUMMARY OF RECOMMENDATIONS

10.1 PREVIOUS RECOMMENDATIONS

Outstanding DSR and DSI recommendations at the time of the 2021 Dam Safety Inspection Report are provided in Table 10-1. The table indicates what action has been taken with respect to the recommendations and the status of each item in terms of priority from both dam safety and mine management/planning perspectives.

Recommendations that were indicated in the previous report as completed have been omitted from the table. A complete table of recommendations is provided Appendix D.

Table 10-1: Summary of Previous Recommendations

STRUCTURE	Tracking Number	Previous Recommendation	Update	Status/Priority
2013 Lynx TDF DSR (RGC 2014a)				
Lynx TDF	2013-23	Consider relocating the waste rock dumps [above Lynx TDF] as soon as is practical.	Removal of WRD 2 and WRD 3 continued in 2022. Removal of WRD 3 was completed in 2022. Additional work is planned for 2023 and beyond as WRD 2 is used as a material source for dam raise construction.	In Progress Priority 2
2018 DSI Report (Wood, 2019d)				
All	2018-06	1. Carry out detailed review of instrumentation data logger wiring. 2. Create a wiring diagram and operation manual for each instrumentation hut. 3. Prepare updated scripts for all data loggers which are consistent in functionality an appropriate to the hardware.	1. Schematic review completed by WSP and MFM. 2. Incomplete. 3. Incomplete.	In Progress Priority 2
2020 DSR Report (Thurber 2021)				
Lynx TDF	2020-04T	In addition to any internal training initiatives completed by NMF, the EOR should oversee informal "refresher" training sessions with monitoring and surveillance staff every 2 to 3 years to reinforce the objectives of monitoring activities and how they relate to specific failure modes.		Incomplete Priority 4

STRUCTURE	Tracking Number	Previous Recommendation	Update	Status/Priority
Lynx TDF	2020-06T	It is recommended that the AFW 2016 seismic hazard values be reviewed following the release of the 6th Generation GSC seismic hazard model (expected later in 2021). We understand that the GSC model will incorporate updated GMPEs and assumes an increased frequency for CSZ earthquakes. The recurrence rates and GMPEs used in AFW's 2016 seismic assessment were developed prior to 2012 and may require updating based on recent research.	WSP has recommended to MFM that this update to the seismic hazard evaluation be completed in 2023.	Incomplete Priority 4
2021 DSI Report (Wood, 2022a)				
Lynx TDF	2021-06	Backfill 10L portal and complete the 373.5 m raise in this area to the lines and grades shown on the drawings.	10L portal backfill scheduled to be completed prior to and during dam raise construction starting in April 2023.	In Progress Priority 2
Lynx TDF	2021-07	Install a permanent staff gauge, possibly on the rock face opposite the pumping area.	Temporary staff gauges are added as required for pond water level measurements. Permanent staff gauge to be installed after 2023 raise is complete.	In Progress Priority 4

Priority levels are defined by EMLI (2022) as follows:

Priority Level 1. A high probability or actual dam safety issues considered immediately dangerous to life, health or the environment, or a significant risk of regulatory enforcement.

Priority Level 2. If not corrected, could likely result in dam safety issues leading to injury, environmental impact or significant regulatory enforcement, or a repetitive deficiency that demonstrates a systematic breakdown of procedures.

Priority Level 3. Single occurrences of deficiencies or non-conformances that [alone] would not be expected to result in dam safety issues.

Priority Level 4. Best Management Practice – further improvements are necessary to meet industry best practices or reduce potential risk

10.2 NEW RECOMMENDATIONS FROM 2022

Table 10-2 below summarizes WSP's recommendations with respect to the operations, maintenance, and surveillance of the tailings dams and associated structures based on engineering work carried out in 2022.

Priority levels from 1 to 4 are defined by EMLI (2022) as follows:

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

Table 10-2: New Recommendations 2022

STRUCTURE	TRACKING NUMBER	DEFICIENCY OR NON-CONFORMANCE	REGULATORY REQUIREMENT OR OMS REFERENCE	RECOMMENDED ACTION	PRIORITY [1]	RECOMMENDED DEADLINE/STATUS
Lynx TDF	2022-01	El. 376.5 m dam raise crest tie in to the 10L portal is to be completed.		The 10 L East Portal in the Lynx TDF West abutment shows ongoing drainage flows from the portal. This portal needs to be plugged and sealed before the next dam raise construction to El. 376.5 m which is scheduled to begin in April 2023.	2	2023 Q2 Priority 2
Lynx TDF	2022-02	Unsupported upstream slope in the area of the pump barge is greater than that recommended by WSP.		Relocate the barge and discharge tailings to comply with recommendations for maximum elevation difference between tailings and upstream bench and, to provide support for planned upstream raises.	2	In Progress 2023 Q2
Lynx TDF	2022-03	Slope Inclinometer BH14-08A is obstructed at a depth of about 45 m and cannot be monitored.	HSRC 10.1.12	Assessment for installation of a shape accelerometer array (SAA). was successful and the SAA should be installed prior to placement of additional material on the dam crest. Place downstream shell only until installed.	2	2023 Q2/Q3 Priority 2
Lynx TDF	2022-04	Many VWPs were determined to be non-functioning based on the field review conducted by WSP in 2022. (Lynx TDF 2021-09)	HSRC 10.1.12	Replace non-functioning VWPs and assess requirement for additional VWPs to adequately monitor the performance of the dam.	3	2023 Q4 Priority 3

11 CLOSURE

This report is subject to the limitations stated in Section 13.

This report has been prepared for the exclusive use of Myra Falls Mine Ltd., for the specific application described herein. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibility of such third parties. WSP Environment & Infrastructure Solutions accepts no responsibility for damages suffered by any third party as a result of decisions made or actions based on this report.

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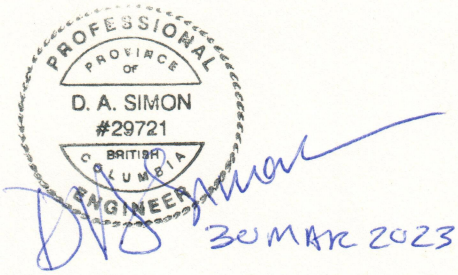

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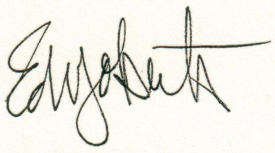
Principal Geotechnical Engineer

Reviewed by:



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EGBC Permit to Practice No. 1004452

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13 LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
   a) The contract between WSP and the Client, including any subsequent written amendment or Change Order duly signed by the parties (hereinafter together referred as the "Contract");
   b) Any and all time, budgetary, access and/or site disturbance, risk management preferences, constraints or restrictions as described in the contract, in this report, or in any subsequent communication sent by WSP to the Client in connection to the Contract; and
   c) The limitations stated herein.
2. **Standard of care:** WSP has prepared this report in a manner consistent with the level of skill and are ordinarily exercised by reputable members of WSP's profession, practicing in the same or similar locality at the time of performance, and subject to the time limits and physical constraints applicable to the scope of work, and terms and conditions for this assignment. No other warranty, guaranty, or representation, expressed or implied, is made or intended in this report, or in any other communication (oral or written) related to this project. The same are specifically disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.
3. **Limited locations:** The information contained in this report is restricted to the site and structures evaluated by WSP and to the topics specifically discussed in it, and is not applicable to any other aspects, areas, or locations.
4. **Information utilized:** The information, conclusions and estimates contained in this report are based exclusively on: i) information available at the time of preparation, ii) the accuracy and completeness of data supplied by the Client or by third parties as instructed by the Client, and iii) the assumptions, conditions, and qualifications/limitations set forth in this report.
5. **Accuracy of information:** No attempt has been made to verify the accuracy of any information provided by the Client or third parties, except as specifically stated in this report (hereinafter "Supplied Data"). WSP cannot be held responsible for any loss or damage, of either contractual or extra-contractual nature, resulting from conclusions that are based upon reliance on the Supplied Data.
6. **Report interpretation:** This report must be read and interpreted in its entirety, as some sections could be inaccurately interpreted when taken individually or out-of-context. The contents of this report are based upon the conditions known and information provided as of the date of preparation. The text of the final version of this report supersedes any other previous versions produced by WSP.
7. **No legal representations:** WSP makes no representations whatsoever concerning the legal significance of its findings, or as to other legal matters touched on in this report, including but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.
8. **Decrease in property value:** WSP shall not be responsible for any decrease, real or perceived, of the property or site's value or failure to complete a transaction, as a consequence of the information contained in this report.
9. **No third-party reliance:** This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or Contract. Any use or reproduction which any third party makes of the report, in whole or in part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. WSP does not represent or warrant the accuracy, completeness, merchantability, fitness for purpose or usefulness of this document, or any information contained in this document, for use or consideration by any third party. WSP accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions

taken or not taken or decisions made in reliance on this report or anything set out therein. including without limitation, any indirect, special, incidental, punitive, or consequential loss, liability or damage of any kind.

10. **Assumptions:** Where design recommendations are given in this report, they apply only if the project contemplated by the Client is constructed substantially in accordance with the details stated in this report. It is the sole responsibility of the Client to provide to WSP changes made in the project, including but not limited to, details in the design, conditions, engineering, or construction that could in any manner whatsoever impact the validity of the recommendations made in the report. WSP shall be entitled to additional compensation from Client to review and assess the effect of such changes to the project.
11. **Time dependence:** If the project contemplated by the Client is not undertaken within a period of 18 months following the submission of this report, or within the time frame understood by WSP to be contemplated by the Client at the commencement of WSP's assignment, and/or, if any changes are made, for example, to the elevation, design or nature of any development on the site, its size and configuration, the location of any development on the site and its orientation, the use of the site, performance criteria and the location of any physical infrastructure, the conclusions and recommendations presented herein should not be considered valid unless the impact of the said changes is evaluated by WSP, and the conclusions of the report are amended or are validated in writing accordingly.

    Advancements in the practice of geotechnical engineering, engineering geology and hydrogeology and changes in applicable regulations, standards, codes or criteria could impact the contents of the report, in which case, a supplementary report may be required. The requirements for such a review remain the sole responsibility of the Client or their agents.

    WSP will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.
12. **Limitations of visual inspections:** Where conclusions and recommendations are given based on a visual inspection conducted by WSP, they relate only to the natural or man-made structures, slopes, etc. inspected at the time the site visit was performed. These conclusions cannot and are not extended to include those portions of the site or structures, which were not reasonably available, in WSP's opinion, for direct observation.
13. **Limitations of site investigations:** Site exploration identifies specific subsurface conditions only at those points from which samples have been taken and only at the time of the site investigation. Site investigation programs are a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions.

    The data derived from the site investigation program and subsequent laboratory testing are interpreted by trained personnel and extrapolated across the site to form an inferred geological representation and an engineering opinion is rendered about overall subsurface conditions and their likely behaviour with regard to the proposed development. Despite this investigation, conditions between and beyond the borehole/test hole locations may differ from those encountered at the borehole/test hole locations and the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

    Final sub-surface/bore/profile logs are developed by geotechnical engineers based upon their interpretation of field logs and laboratory evaluation of field samples. Customarily, only the final bore/profile logs are included in geotechnical engineering reports.

    Bedrock, soil properties and groundwater conditions can be significantly altered by environmental remediation and/or construction activities such as the use of heavy equipment or machinery, excavation, blasting, pile-driving or draining or other activities conducted either directly on site or on adjacent terrain. These properties can also be indirectly affected by exposure to unfavorable natural events or weather conditions, including freezing, drought, precipitation and snowmelt.

During construction, excavation is frequently undertaken which exposes the actual subsurface and groundwater conditions between and beyond the test locations, which may differ from those encountered at the test locations. It is recommended that WSP be retained during construction to confirm that the subsurface conditions throughout the site do not deviate materially from those encountered at the test locations, that construction work has no negative impact on the geotechnical aspects of the design, to adjust recommendations in accordance with conditions as additional site information is gained, and to deal quickly with geotechnical considerations if they arise.

Interpretations and recommendations presented herein may not be valid if an adequate level of review or inspection by WSP is not provided during construction.

14. **Factors that may affect construction methods, costs and scheduling:** The performance of rock and soil materials during construction is greatly influenced by the means and methods of construction. Where comments are made relating to possible methods of construction, construction costs, construction techniques, sequencing, equipment or scheduling, they are intended only for the guidance of the project design professionals, and those responsible for construction monitoring. The number of test holes may not be sufficient to determine the local underground conditions between test locations that may affect construction costs, construction techniques, sequencing, equipment, scheduling, operational planning, etc.

    Any contractors bidding on or undertaking the works should draw their own conclusions as to how the subsurface and groundwater conditions may affect their work, based on their own investigations and interpretations of the factual soil data, groundwater observations, and other factual information.

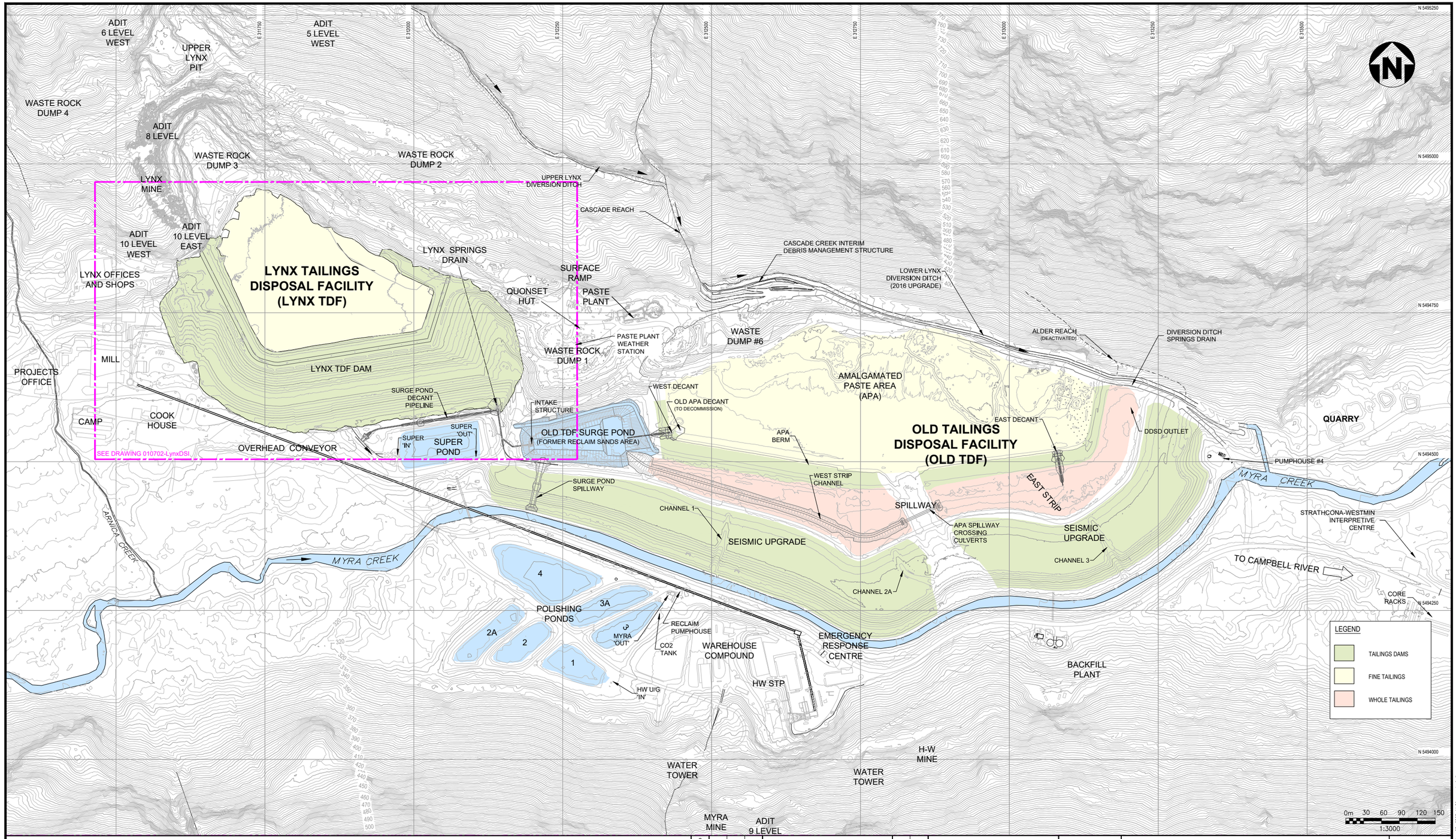
15. **Groundwater and Dewatering:** WSP will accept no responsibility for the effects of drainage and/or dewatering measures if WSP has not been specifically consulted and involved in the design and monitoring of the drainage and/or dewatering system.

16. **Environmental and Hazardous Materials Aspects:** Unless otherwise stated, the information contained in this report in no way reflects on the environmental aspects of this project, since this aspect is beyond the Scope of Work and the Contract. Unless expressly included in the Scope of Work, this report specifically excludes the identification or interpretation of environmental conditions such as contamination, hazardous materials, wild life conditions, rare plants or archeology conditions that may affect use or design at the site. This report specifically excludes the investigation, detection, prevention or assessment of conditions that can contribute to moisture, mould or other microbial contaminant growth and/or other moisture related deterioration, such as corrosion, decay, rot in buildings or their surroundings. Any statements in this report or on the boring logs regarding odours, colours, and unusual or suspicious items or conditions are strictly for informational purposes.

17. **Sample Disposal:** WSP will dispose of all uncontaminated soil and rock samples after 30 days following the release of the final geotechnical report. Should the Client request that the samples be retained for a longer time, the Client will be billed for such storage at an agreed upon rate. Contaminated samples of soil, rock or groundwater are the property of the Client, and the Client will be responsible for the proper disposal of these samples, unless previously arranged for with WSP or a third party.

WSP E&I Canada Limited

Drawings



NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WOOD ENVIRONMENT & INFRASTRUCTURE REPORT NO. NX14001B4 "2022 DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITY", DATED MARCH 31, 2023.
2. SURFACE SHOWN IS A COMPILATION OF 2015 LIDAR AND TOPOGRAPHY DERIVED FROM UNMANNED AERIAL VEHICLE (UAV) PHOTOGRAMMETRY DATED APRIL 2019, NOVEMBER 2019, OCTOBER 2020, NOVEMBER 2021 AND AS-BUILT SURVEY DATA FROM 2015 TO 2022 PROVIDED BY THE CLIENT.
3. CONTOUR INTERVAL: 10 m.
4. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28.
5. COORDINATES ARE PROJECTED IN UTM ZONE 10.
6. ALL DIMENSIONS ARE IN METRES AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED. ELEVATIONS REPRESENT FINISHED GRADE ELEVATIONS UNLESS OTHERWISE NOTED.
7. FINISHED GROUND TOPOGRAPHY FOR AMALGAMATED PASTE AREA (APA), TDF STRIP AND WASTE ROCK DUMP #6 AREAS REFERS TO AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE REPORT NO. NX14001K.3 "MYRA FALLS MINE OLD TDF CLOSURE COVER PERMIT LEVEL DESIGN" DATED 23 DECEMBER 2016. ADJUSTMENTS WERE MADE TO DRAINAGE CHANNELS 1, 2A AND 3 AND THE EAST STRIP CHANNEL AS PART OF PHASE 1 DETAILED DESIGN. HOWEVER, THE DESIGN OUTSIDE OF PHASE 1 BATTERY LIMITS REMAINS PRELIMINARY AND IS SUBJECT TO CHANGE DURING DETAILED ENGINEERING FOR THE NEXT CLOSURE PHASE(S).

REV	D	M	Y	ISSUE / REVISION DESCRIPTION	ENG.	APPR.
6						
5						
4	28	02	2023	ISSUED FOR DOCUMENTATION	LF	DS
3	28	02	2022	ISSUED FOR DOCUMENTATION	JC	DS
2	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
1	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
A	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine — A Trafigura Group Company

wsp

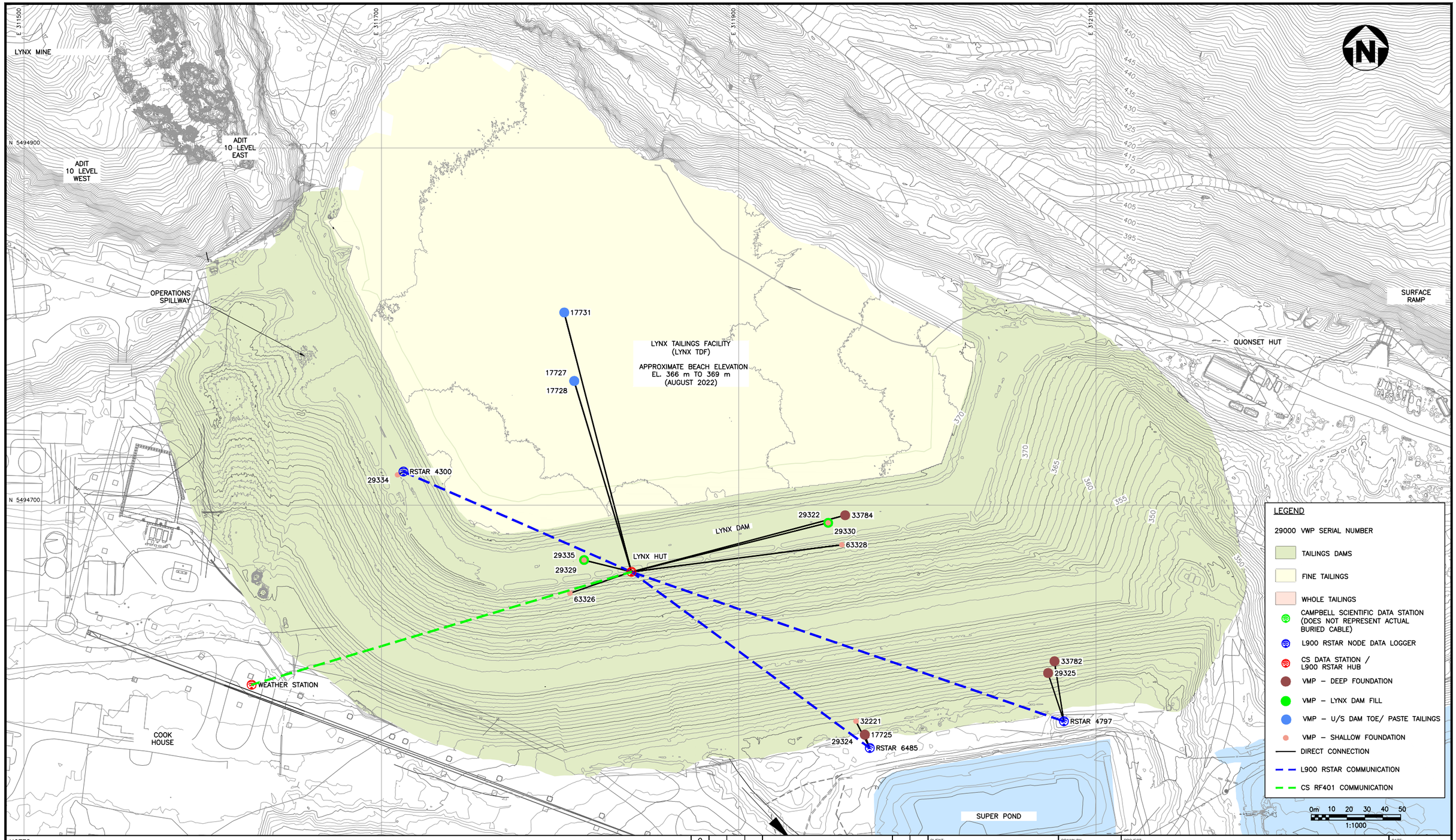
DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY
2022 DAM SAFETY INSPECTION

TITLE: GENERAL SITE ARRANGEMENT PLAN

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010701

P:\CAD\GIS\LynxDSI-010701.dwg – 701 – Mar. 28, 2023 11:09am – kevin.lin



NOTES:
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WOOD ENVIRONMENT & INFRASTRUCTURE REPORT NO. NX14001B4 "2022 DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITIES", DATED MARCH 31, 2023.
2. AS-BUILT SURFACE SHOWN IS TOPOGRAPHY DERIVED FROM UAV PHOTOGRAMMETRY DATED SEPTEMBER 2022, PROVIDED BY THE CLIENT.
3. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28. COORDINATES ARE PROJECTED IN UTM ZONE 10.
4. CONTOUR INTERVAL: 5 m.

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5						
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1	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
0	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine, A Trafigura Group Company

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY
2022 DAM SAFETY INSPECTION

TITLE: LYNX TAILINGS DISPOSAL FACILITY
INSTRUMENTATION
PIEZOMETERS

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010702

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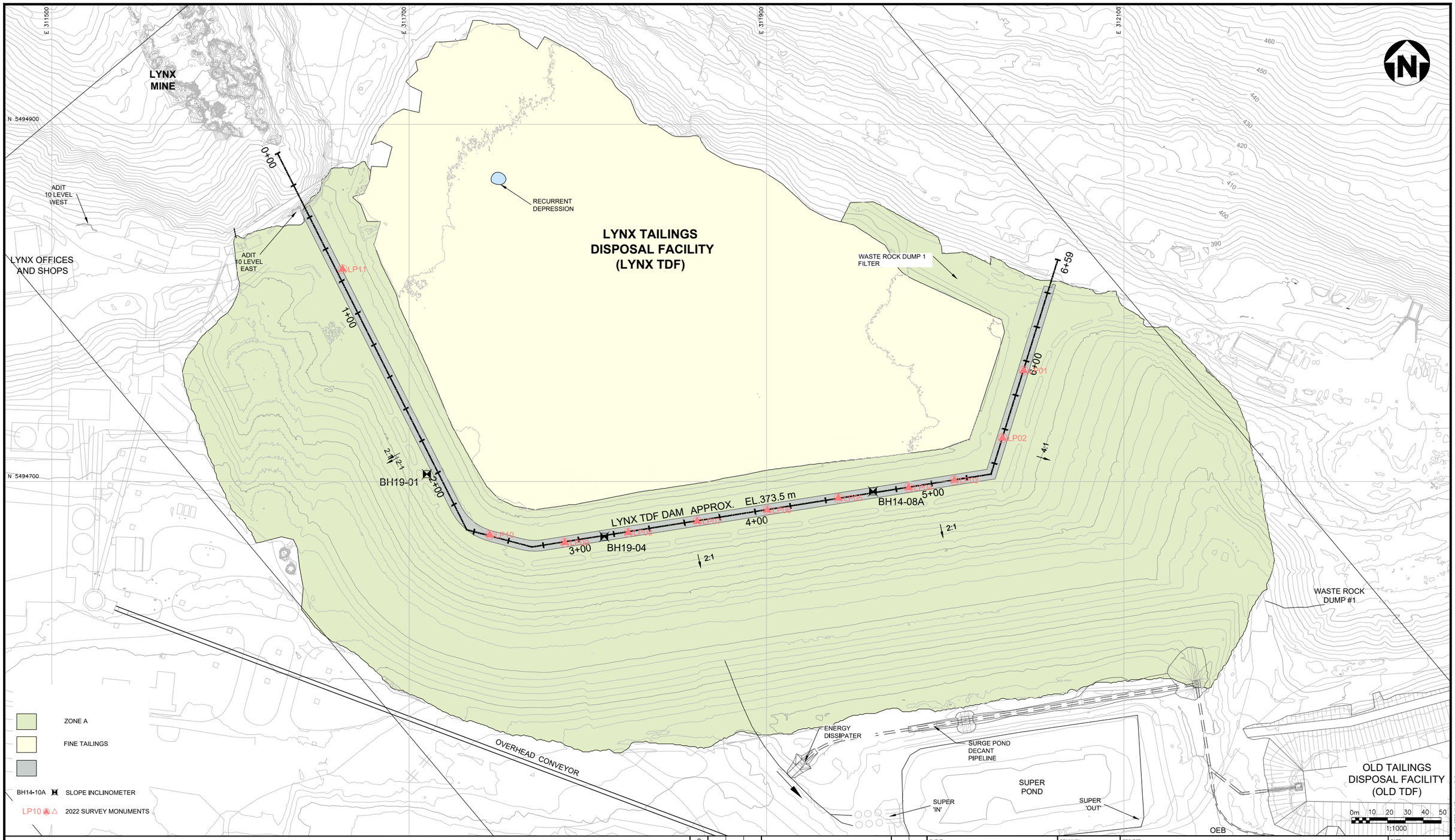

NOTES:
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WOOD ENVIRONMENT & INFRASTRUCTURE REPORT NO. NX14001B4 "2022 DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITIES", DATED MARCH 31, 2023.
2. AS-BUILT SURFACE SHOWN IS TOPOGRAPHY DERIVED FROM UAV PHOTOGRAMMETRY DATED SEPTEMBER 2022, PROVIDED BY THE CLIENT.
3. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28. COORDINATES ARE PROJECTED IN UTM ZONE 10.
4. CONTOUR INTERVAL: 2 m.

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F						
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D	28	02	2022	ISSUED FOR DOCUMENTATION	JC	DS
C	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
B	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
A	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine, A Trafigura Group Company

wsp

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY
2022 DAM SAFETY INSPECTION

TITLE: LYNX TAILINGS DISPOSAL FACILITY
INSTRUMENTATION
MONUMENTS AND INCLINOMETERS

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010703

P:\CAD\GW\LynxDSI-010703.dwg — 703 — Mar. 28, 2023 11:10am — kevin.lin

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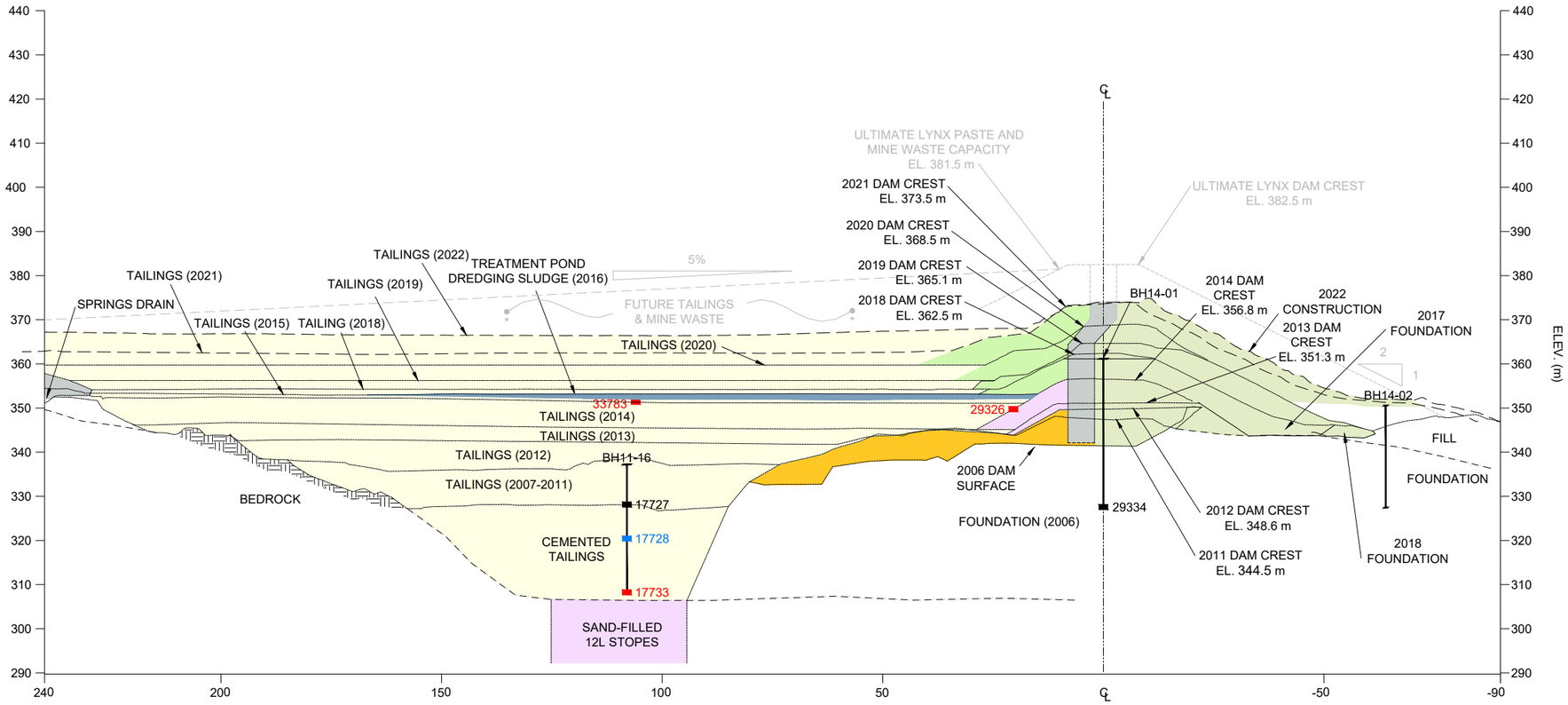

LEGEND:

- COMPACTED ROCKFILL (ZONE A)
- COMPACTED ROCKFILL AND FINES (ZONE J)
- UNCOMPACTED ROCKFILL AND TAILINGS (NOMINALLY ZONE J)
- TREATMENT POND DREDGING SLUDGE
- FINE TAILINGS (PASTE OR THICKENER UNDERFLOW)
- PERMEABLE ROCKFILL (ZONE C1-C4)
- COARSE TAILINGS (CYCLONE UNDERFLOW)
- UPSTREAM ZONE A, ZONE J AND BOULDERS

- BOREHOLE LOCATION
- 17724 PIEZOMETER (DATA NOT AVAILABLE)
- 17724 PIEZOMETER (FUNCTIONAL)
- 17724 PIEZOMETER (REMOVED FROM MONITORING PROGRAM)

SECTION D 709 — INSTRUMENT PLANE D (SCHEMATIC CROSS SECTION)
STA. 1+85

0m 3 6 12 24 30
1:600

NOTES:
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WSP REPORT NO. NX14001B4 "2022 LYNX TDF DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITIES", DATED MARCH 31, 2023.
2. SURFACE SHOWN IS A COMPILATION OF 2015 LIDAR AND TOPOGRAPHY DERIVED FROM UNMANNED AERIAL VEHICLE (UAV) PHOTOGRAMMETRY DATED APRIL 2019, NOVEMBER 2019, OCTOBER 2020, NOVEMBER 2021 AND AS-BUILT SURVEY DATA FROM 2015 TO 2022 PROVIDED BY THE CLIENT. RECENT LYNX TDF TAILINGS SURVEY WAS IN OCTOBER 2022.
3. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28.COORDINATES ARE PROJECTED IN UTM ZONE 10.

REV	D	M	Y	ISSUE / REVISION DESCRIPTION	ENG.	APPR.
6						
5						
4	28	02	2023	ISSUED FOR DOCUMENTATION	LF	DS
3	28	02	2022	ISSUED FOR DOCUMENTATION	JC	DS
2	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
1	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
A	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine — A Trafigura Group Company

wsp

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY
2022 DAM SAFETY INSPECTION

TITLE: LYNX TAILINGS DISPOSAL FACILITY
INSTRUMENT PLANE D
(STA. 1+85)

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010704

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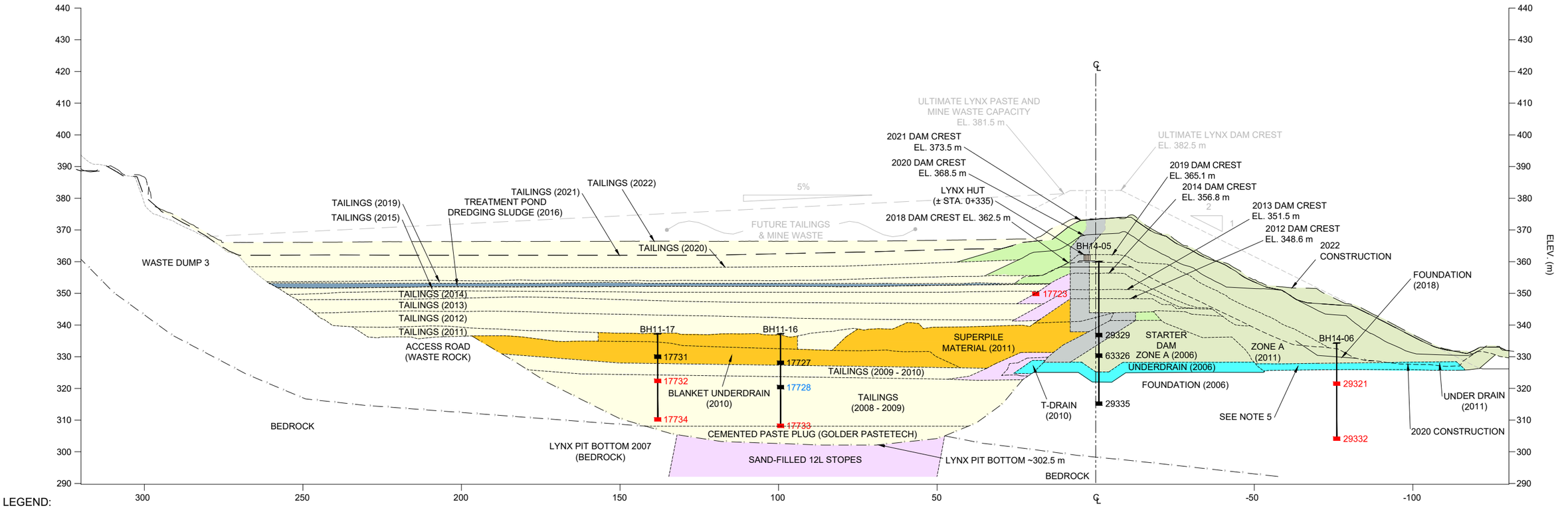

LEGEND:

- Compacted Rockfill (Zone A)
- Compacted Rockfill and Fines (Zone J)
- Uncompacted Rockfill and Tailings (Nominally Zone J)
- Treatment Pond Dredging Sludge
- Fine Tailings (Paste or Thickener Underflow)
- Permeable Rockfill (Zone C1-C4)
- Coarse Tailings (Cyclone Underflow)
- Upstream Zone A, Zone J and Boulders
- BOREHOLE LOCATION
- 17724 PIEZOMETER (DATA NOT AVAILABLE)
- 17724 PIEZOMETER (FUNCTIONAL)
- 17724 PIEZOMETER (REMOVED FROM MONITORING PROGRAM)

SECTION E 709 — INSTRUMENT PLANE E (SCHEMATIC CROSS SECTION)
STA. 3+40

0m 3 6 12 24 30
1:600 (APPROXIMATE)

NOTES:
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WSP REPORT NO. NX14001B4 "2022 LYNX TDF DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITIES", DATED MARCH 31, 2023.
2. SURFACE SHOWN IS A COMPILATION OF 2015 LIDAR AND TOPOGRAPHY DERIVED FROM UNMANNED AERIAL VEHICLE (UAV) PHOTOGRAMMETRY DATED APRIL 2019, NOVEMBER 2019, OCTOBER 2020, NOVEMBER 2021 AND AS-BUILT SURVEY DATA FROM 2015 TO 2022 PROVIDED BY THE CLIENT. RECENT LYNX TDF TAILINGS SURVEY WAS IN OCTOBER 2022.
3. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28.COORDINATES ARE PROJECTED IN UTM ZONE 10.

REV	D	M	Y	ISSUE / REVISION DESCRIPTION	ENG.	APPR
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5						
4	28	02	2023	ISSUED FOR DOCUMENTATION	LF	DS
3	28	02	2022	ISSUED FOR DOCUMENTATION	JC	DS
2	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
1	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
0	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine — A Trafigura Group Company

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY 2022 DAM SAFETY INSPECTION

TITLE: LYNX TAILINGS DISPOSAL FACILITY INSTRUMENT PLANE E (STA. 3+40)

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010705

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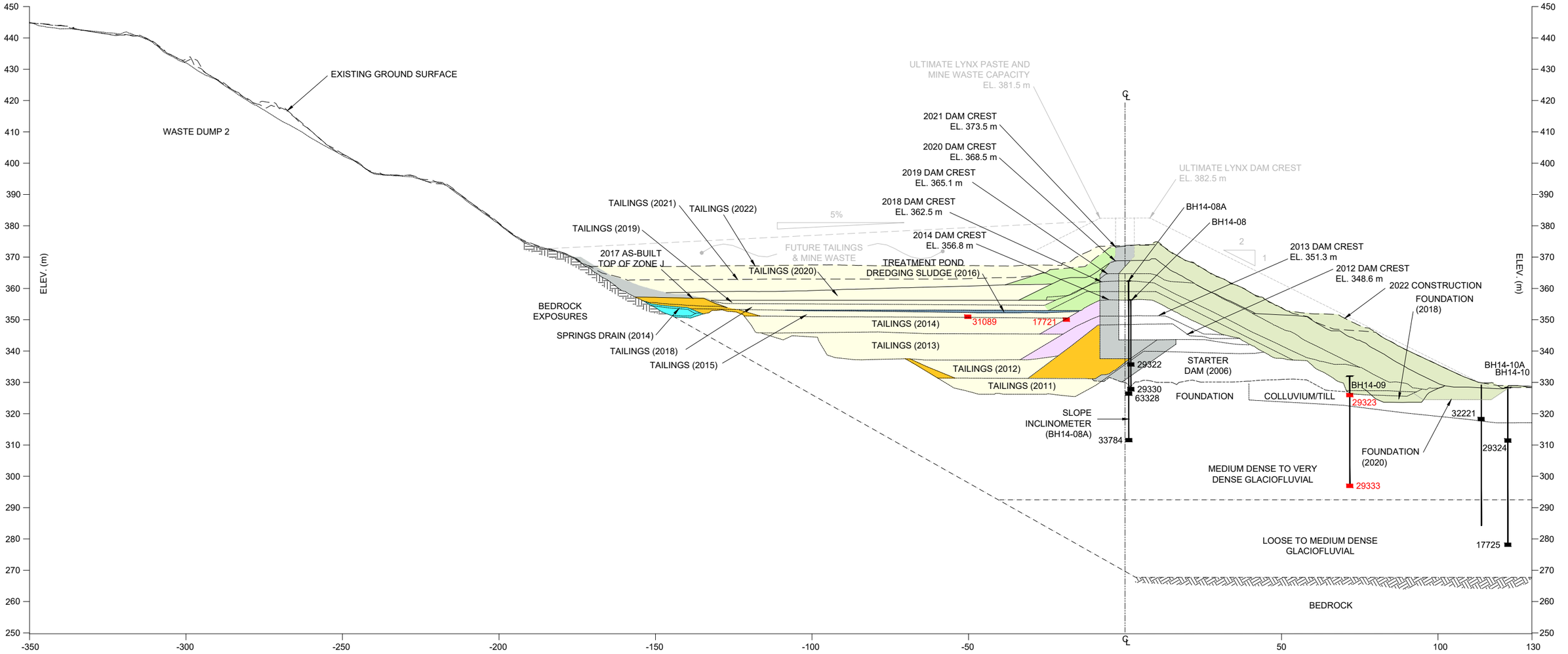

LEGEND:

- Compacted Rockfill (Zone A)
- Compacted Rockfill and Fines (Zone J)
- Uncompacted Rockfill and Tailings (Nominally Zone J)
- Treatment Pond Dredging Sludge
- Fine Tailings (Paste or Thickener Underflow)
- Permeable Rockfill (Zone C1-C4)
- Coarse Tailings (Cyclone Underflow)
- Upstream Zone A, Zone J and Boulders

BOREHOLE LOCATION
17724 PIEZOMETER (DATA NOT AVAILABLE)
17724 PIEZOMETER (FUNCTIONAL)
17724 PIEZOMETER (REMOVED FROM MONITORING PROGRAM)

SECTION F 709 — INSTRUMENT PLANE F (SCHEMATIC CROSS SECTION)
STA. 4+57

NOTES:
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WSP REPORT NO. NX14001B4 "2022 LYNX TDF DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITIES", DATED MARCH 31, 2023.
2. SURFACE SHOWN IS A COMPILATION OF 2015 LIDAR AND TOPOGRAPHY DERIVED FROM UNMANNED AERIAL VEHICLE (UAV) PHOTOGRAMMETRY DATED APRIL 2019, NOVEMBER 2019, OCTOBER 2020, NOVEMBER 2021 AND AS-BUILT SURVEY DATA FROM 2015 TO 2022 PROVIDED BY THE CLIENT. RECENT LYNX TDF TAILINGS SURVEY WAS IN OCTOBER 2022.
3. SURVEY IS REFERENCED TO HORIZONTAL DATUM NAD83(CSRS)3.0.0BC.1.NVI. VERTICAL DATUM IS CGVD28.COORDINATES ARE PROJECTED IN UTM ZONE 10.

REV	D	M	Y	ISSUE / REVISION DESCRIPTION	ENG.	APPR.
G						
F						
E	28	02	2023	ISSUED FOR DOCUMENTATION	LF	DS
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C	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
B	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
A	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine — A Trafigura Group Company

wsp

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY 2022 DAM SAFETY INSPECTION

TITLE: LYNX TAILINGS DISPOSAL FACILITY INSTRUMENT PLANE F (STA. 4+57)

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010706

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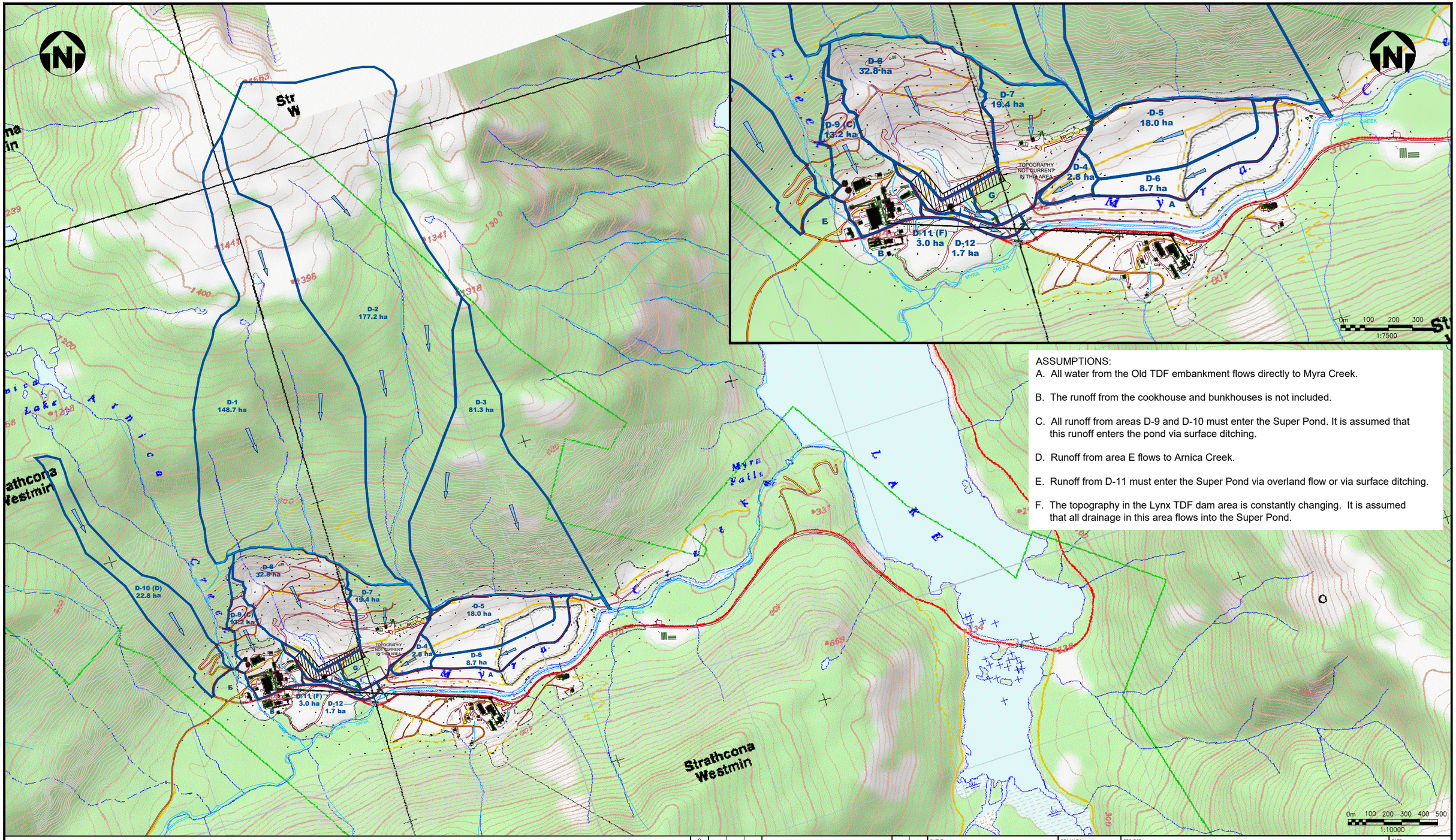

ASSUMPTIONS:

A. All water from the Old TDF embankment flows directly to Myra Creek.

B. The runoff from the cookhouse and bunkhouses is not included.

C. All runoff from areas D-9 and D-10 must enter the Super Pond. It is assumed that this runoff enters the pond via surface ditching.

D. Runoff from area E flows to Arnica Creek.

E. Runoff from D-11 must enter the Super Pond via overland flow or via surface ditching.

F. The topography in the Lynx TDF dam area is constantly changing. It is assumed that all drainage in this area flows into the Super Pond.

NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH WOOD ENVIRONMENT & INFRASTRUCTURE REPORT NO. NX14001B4 "2022 DAM SAFETY INSPECTION REPORT, MYRA FALLS MINE TAILINGS STORAGE FACILITY", DATED MARCH 31, 2023.
2. SURFACE TOPOGRAPHY BASED ON 2006 SURVEY DATA.
3. THIS SURVEY IS REFERENCED TO MINE DATUM (MASL + 3047.5 m).
4. THE IMAGE PROVIDES CONTOUR INFORMATION OUTSIDE OF THE SURVEY DATA. THIS INFORMATION IS ON MASL DATUM. THE IMAGE WAS OBTAINED FROM SPECTRUM DIGITAL IMAGING LTD.

LEGEND

- DRAINAGE BOUNDARY
- FLOW DIRECTION
- D-4 / 2.8 ha — DRAINAGE AREA ID / DRAINAGE AREA (in Hectares)

REV	D	M	Y	ISSUE / REVISION DESCRIPTION	ENG.	APPR.
G						
F						
E	28	02	2023	ISSUED FOR DOCUMENTATION	LF	DS
D	28	02	2022	ISSUED FOR DOCUMENTATION	JC	DS
C	31	03	2021	ISSUED FOR DOCUMENTATION	LF/ET	DS
B	31	03	2020	ISSUED FOR DOCUMENTATION	LF/JC	BEW
A	31	03	2019	ISSUED FOR DOCUMENTATION	AER	DHG

CLIENT: Myra Falls Mine — A Trafigura Group Company

DRAWN BY: KL/BB
CHECKED BY: LF
DATUM: NAD83
PROJECTION: UTM ZONE 10
SCALE: AS SHOWN

PROJECT: MYRA FALLS LYNX TAILINGS DISPOSAL FACILITY
2022 DAM SAFETY INSPECTION

TITLE: DRAINAGE AREA MAP

DATE: FEBRUARY 2023
PROJECT NO: NX14001B4.3.601
REV. NO: E
FIG NO: LynxDSI-010707

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Appendix A - Photographs

Photo 1: Overview of Lynx TDF taken from lookout point in Upper Lynx Pit. (July 26, 2022)

Photo 2: MFM personnel documenting the Lynx TDF reclaim pool conditions during a joint Dam Safety Inspection with WSP. (January 14, 2022)

Photo 3: Lynx TDF south-west portion of downstream 2H:1V shell (January 14, 2022)

Photo 4: Upper Lynx Pit walls at north-west end of Lynx TDF. (March 25, 2022)

Photo 5: Lynx TDF downstream toe which was used for Closure Cover Trials in 2021. Erosion gullies observed in the clean cover for this area. (March 25, 2022)

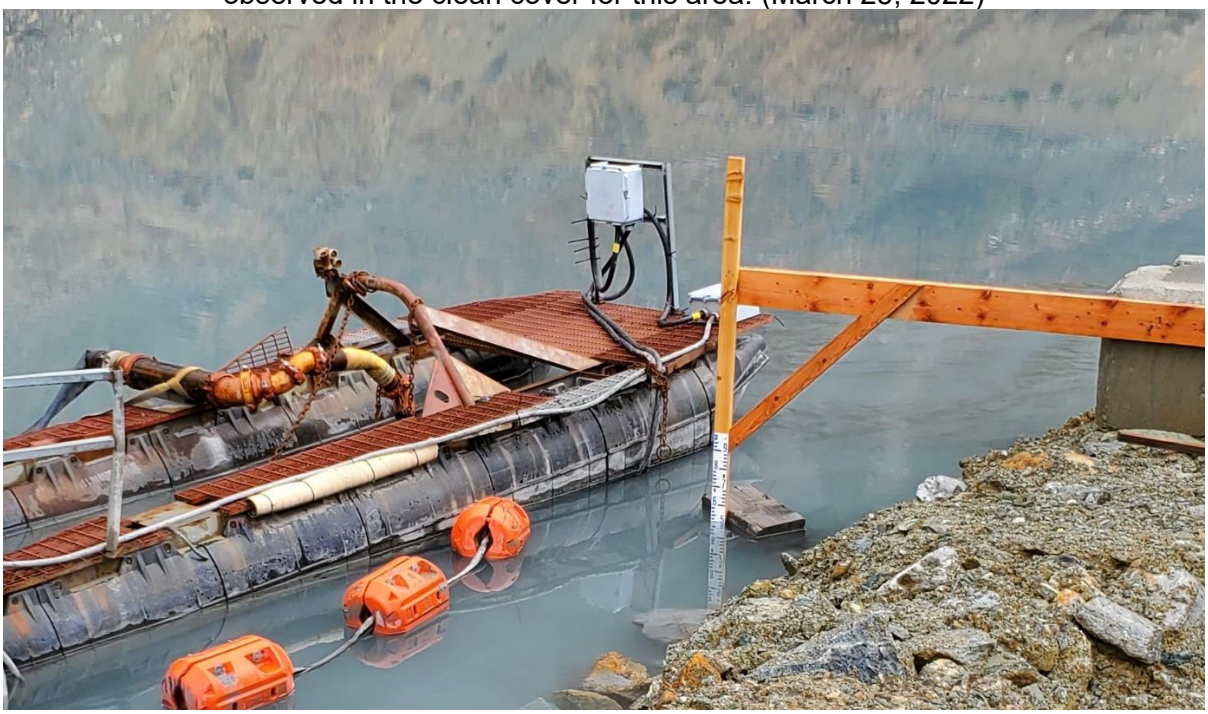


Photo 6: Lynx TDF staff gauge. (March 25, 2022)

Photo 7: Lynx TDF, looking north-east. Standing on the crest. It can be observed that the upstream bench has not yet caught up to the crest elevation of 373.5m. (March 25, 2022)

Photo 8: Lynx TDF dam crest (looking north-west). Shown is the uncompleted portion of the spillway invert which needs to be extended across the upstream bench -photo taken standing upstream bench. (March 25, 2022)

Photo 9: Lynx TDF (looking south-west). (March 25, 2022)

Photo 10: Lynx Springs drain flowing clear with opening to sump box clear of debris. (July 26, 2022)

Photo 11: Lynx TDF 4H:1V sloped Downstream East side portion of dam. Shown also is RSTAR data logger DT2055-6. (July 26, 2022)

Photo 12: Lynx TDF looking East while standing on crest. (October 5, 2022)

Photo 13: Lynx TDF looking northwest. Crest elevation is at 373.5 m. Photo taken from Upstream bench which was under construction to be raised to 373.5m. (October 5, 2022)

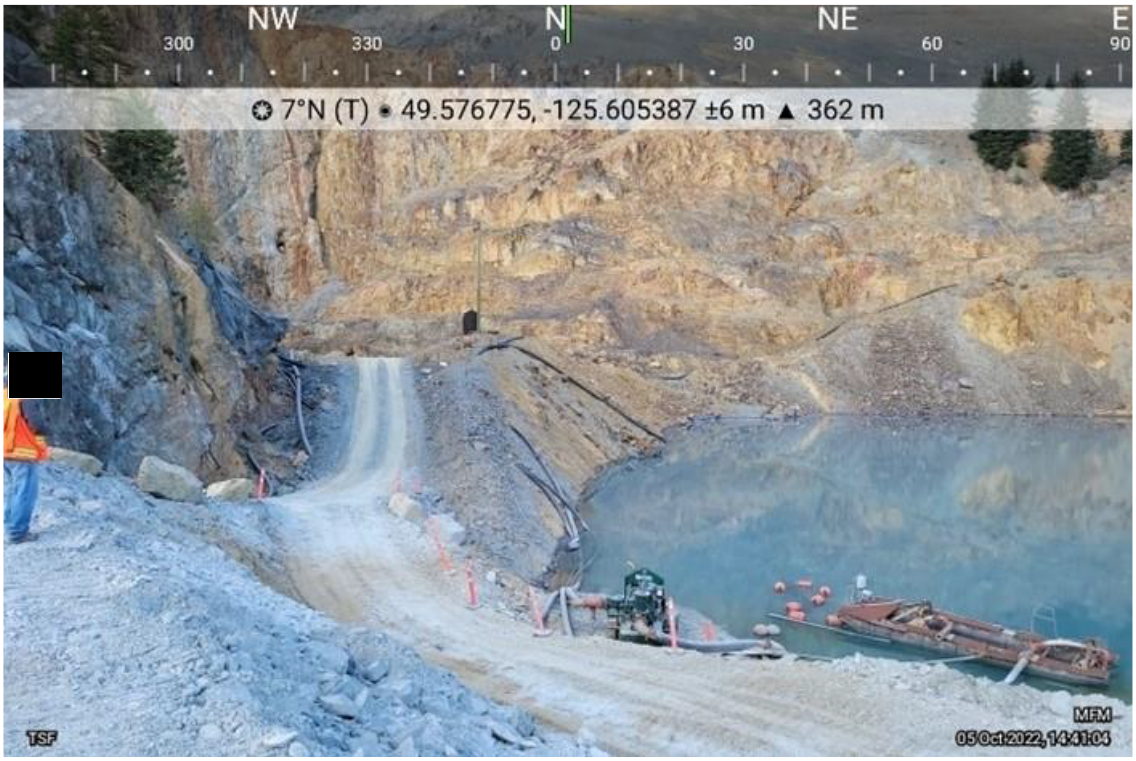


Photo 14: North end of the Lynx TDF where pool and pump were observed. (October 5, 2022)

Photo 15: Lynx TDF looking southeast with the boundary of the tailings pond at the west end of the TDF covering about 2/3 of the tailings surface. (October 5, 2022)

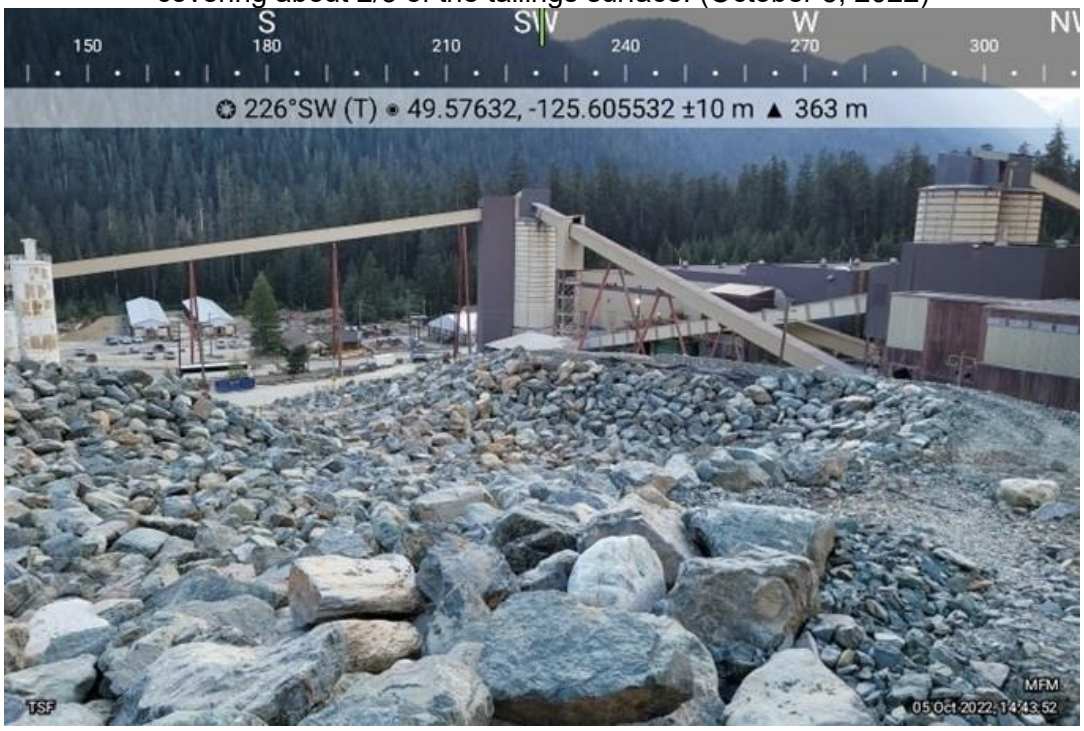


Photo 16: Lynx TDF spillway looking downstream to the mill and camp sites. (October 5, 2022)

Photo 17: Lynx TDF WRD1 Zone J Filter connecting to Crest, looking northwest. (October 5, 2022)

Photo 18: Lynx TDF East Abutment at WRD1, looking southeast. Pipe shown carries tailings from Paste Plant. (October 5, 2022)

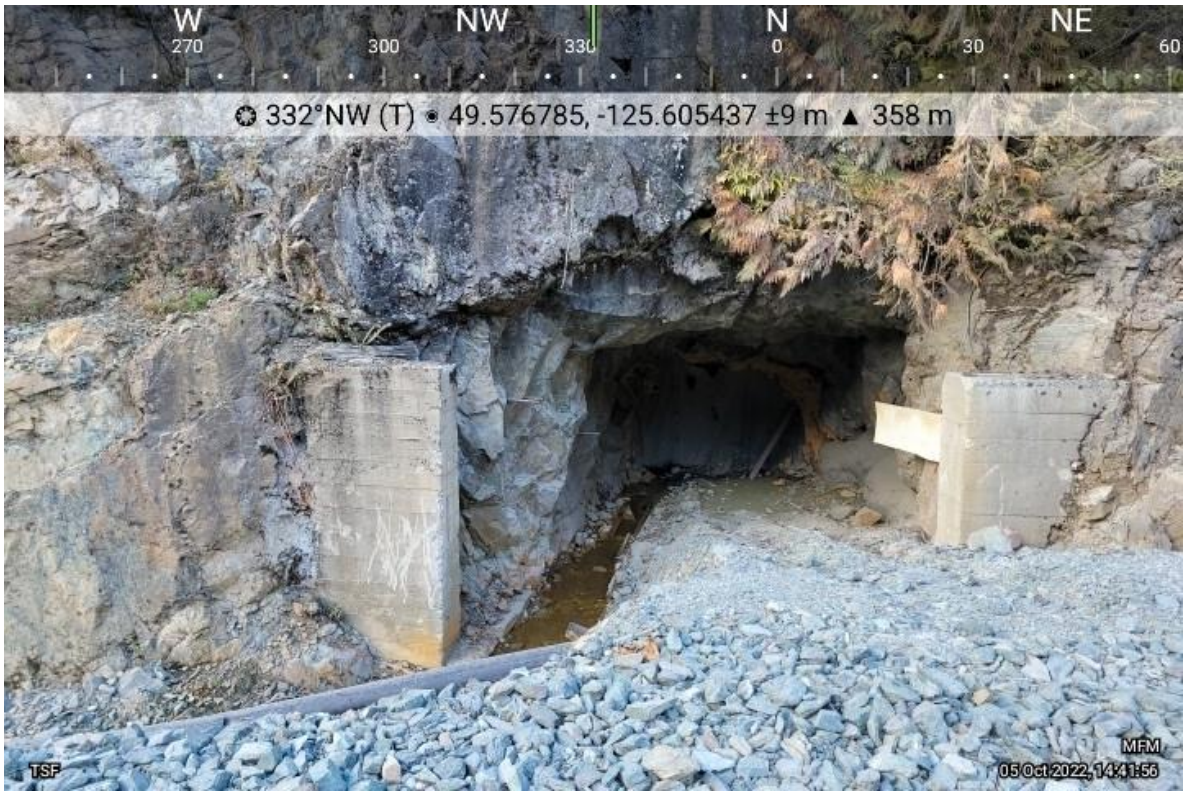


Photo 12: Lynx TDF West Abutment showing 10 Level Portal, looking north. (October 5, 2022)


Photo 20: Lynx TDF 2H:1V Downstream dam shell looking north west October 5, 2022)

Appendix B – Instrumentation Status & Data

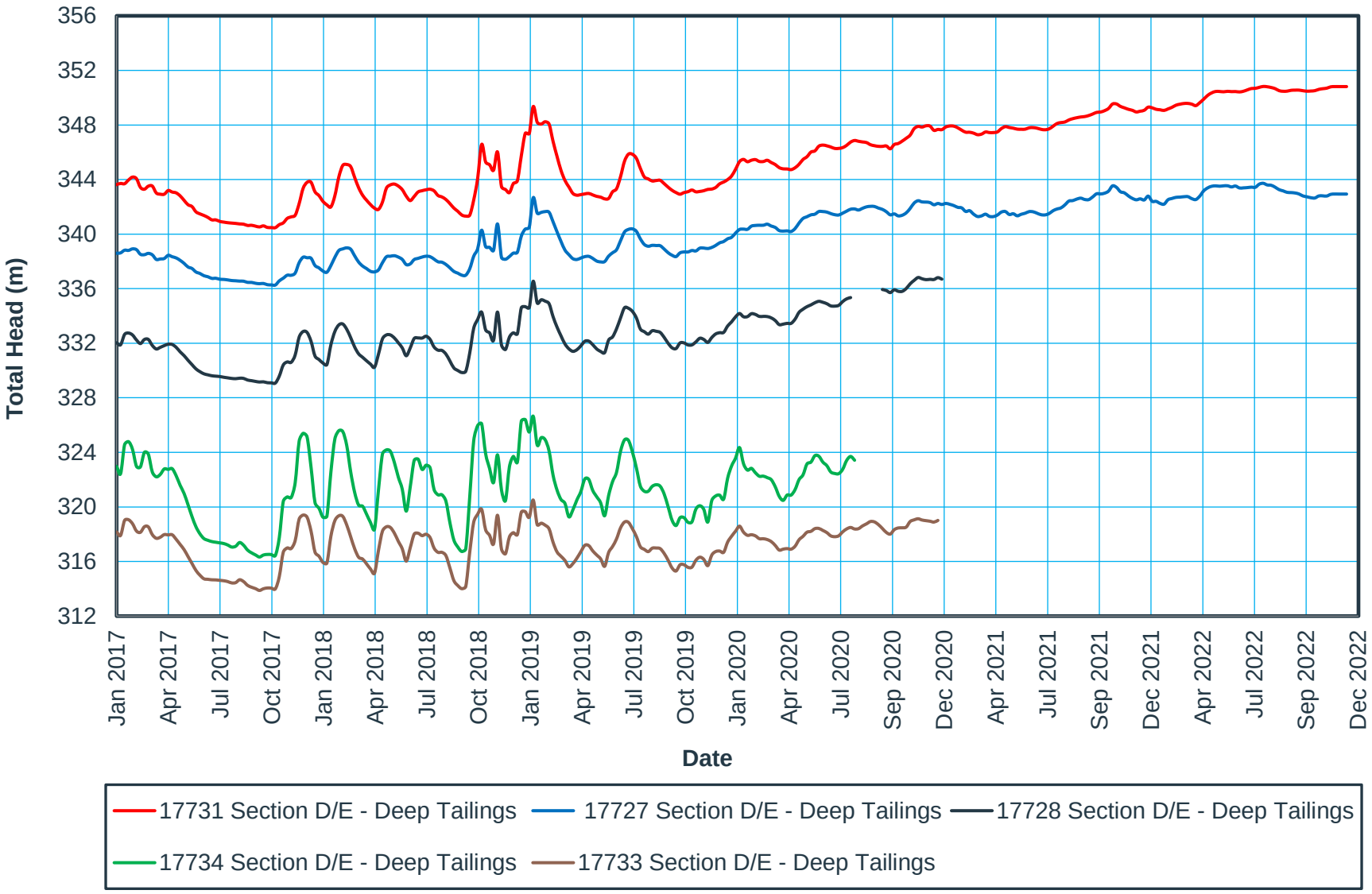
Vibrating Wire Piezometers
Operational Status

Piezometer Number	Tip Elevation Geodetic (m)	Thermistor Status	Transducer Status	Piezometer Status
Lynx TDF - Plane D				
29334	328.4	OK	OK	Functioning as intended.
29326	350.0	-	-	Not functioning - failed on September 27, 2019 (10 pm) and was disconnected.
Lynx TDF - Plane E				
17727	328.3	OK	OK	Functioning as intended.
17728	320.7	-	OK	Partially functioning - Thermistor not functioning, Transducer functioning in 2022.
17731	330.3	OK	OK	Functioning as intended.
17732	322.6	-	-	Not functioning - confirmed duirng October 2022 review.
17733	308.5	-	-	Not functioning - confirmed duirng October 2022 review.
17734	310.5	-	-	Not functioning - confirmed duirng October 2022 review.
29321	322.4	-	-	Not functioning - Failed on June 23, 2021 (9 am).
29329	336.9	OK	OK	Functioning as intended.
29332	305.2	-	-	Not functioning - failed on June 22, 2021 (11 am)
29335	315.9	OK	OK	Functioning as intended.
17723	350.7	-	-	Not functioning since September 2019.
33783	351.6	-	-	Not functioning.
63326	331.3	OK	OK	Functioning as intended.
Lynx TDF - Plane F				
17725	278.3	OK	OK	Functioning as intended.
29322	337.3	OK	OK	Functioning as intended.
29323	326.1	-	-	Not functioning since July 2019.
29324	311.6	OK	OK	Functioning as intended in 2022.
29330	328.4	OK	OK	Functioning as intended.
29333	296.7	-	-	Not functioning - failed on June 19, 2021 (4 pm)
29336	311.1	-	-	Removed from monitoring program March 2017.
31089	351.2	-	-	Not functioning after September 2017. Removed from program May 2018.
17721	350.9	-	-	Not functioning after September 2017. Removed from program May 2018.
32221	318.6	OK	OK	Functioning as intended.
33784	311.8	OK	OK	Functioning as intended.
63328	327.1	OK	OK	Functioning as intended.
Operational Status of Lynx TDF - Other Vibrating Wire Piezometers				
29320	323.5	-	-	Not functioning - failed on August 14, 2021 (10 am)
29325	304.3	OK	OK	Functioning as intended.
29331	306.3	OK	OK	Not functioning - failed (date unknown)
33781	314.4	OK	OK	Not functioning - failed (date unknown)
33782	294.4	OK	OK	Functioning as intended.
33780	Spring Drain	-	-	Not functioning - failed (date unknown)
44968	Spring Drain	-	-	Not functioning - failed (date unknown)

Appendix B2-1

Lynx TDF VWP Data

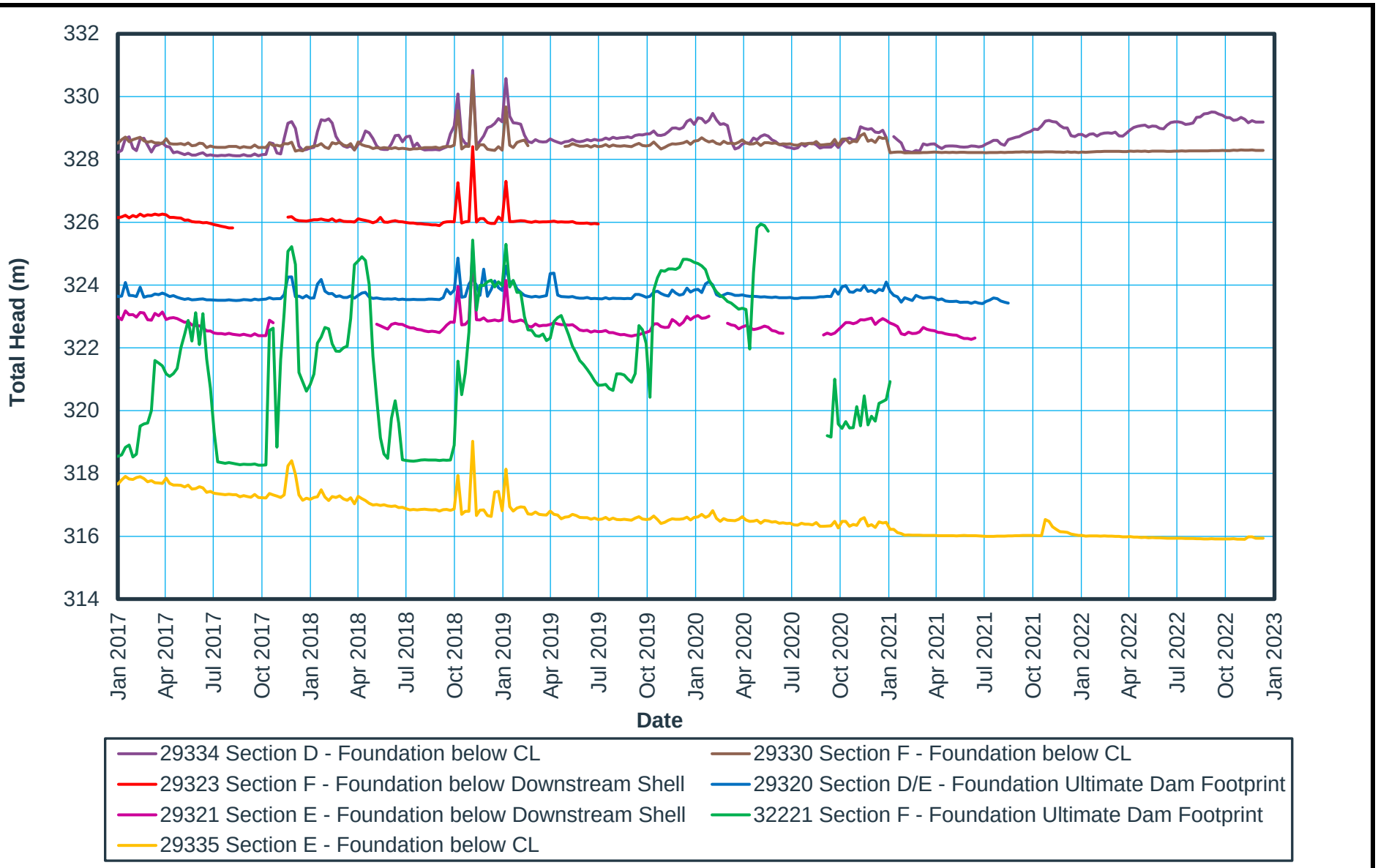
Table/Figure/Drawing No.	Title
Figure 1	Lynx TDF – Tailings Paste VWP Data
Figure 2a	Lynx Dam – Shallow Foundation VWP Data
Figure 2b	Lynx Dam – Shallow Foundation VWP Data
Figure 3	Lynx Dam – Deep Foundation VWP Data
Figure 4	Lynx Dam – Dam Fill VWP Data



wsp

CLIENT: Myra Falls Mine
A Trafigura Group Company

PROJECT: MFM Lynx TDF 2022 DSI Report				
TITLE: Lynx TDF -Tailing Paste VWP Data				
DATE:	JOB No.:	FILE:	FIGURE No.:	REV.
December 2022	NX14001B4	B2-1 Reporting Lynx TDF VWP - 2022_Dec.xlsx	1	0

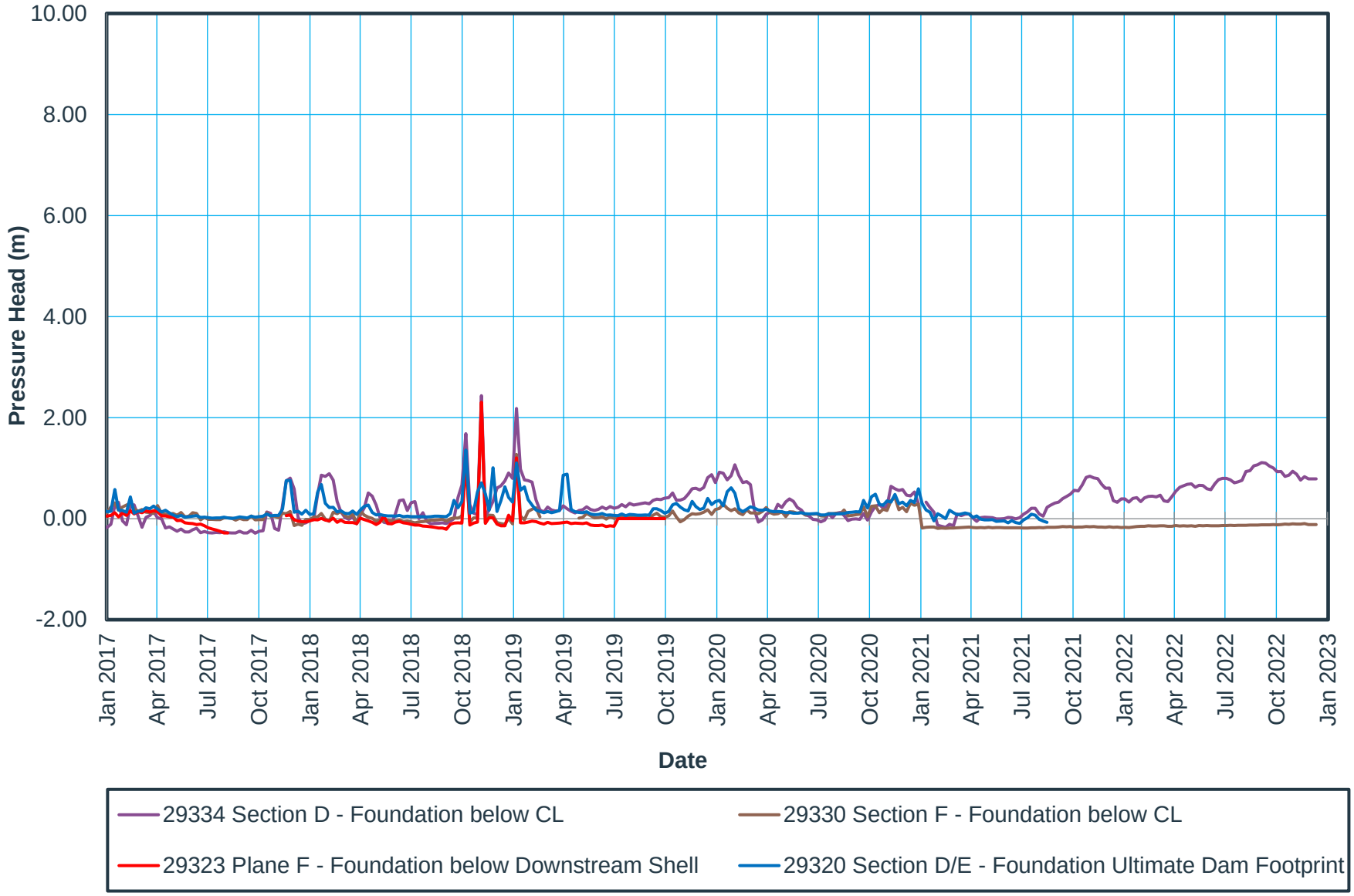


CLIENT: Myra Falls Mine
A Trafigura Group Company

PROJECT: MFM Lynx TDF 2022 DSI Report

TITLE: Lynx TDF - Shallow Foundation VWP Data

DATE:	JOB No.:	FILE:	FIGURE No.:	REV.
December 2022	NX14001B4	B2-1 Reporting Lynx TDF VWP - 2022_Dec.xlsx	2a	0



wsp

CLIENT: Myra Falls Mine
A Trafigura Group Company

PROJECT: **MFM Lynx TDF 2022 DSI Report**

TITLE: **Lynx TDF - Shallow Foundation VWP Data**

DATE:	JOB No.:	FILE:	FIGURE No.:	REV.
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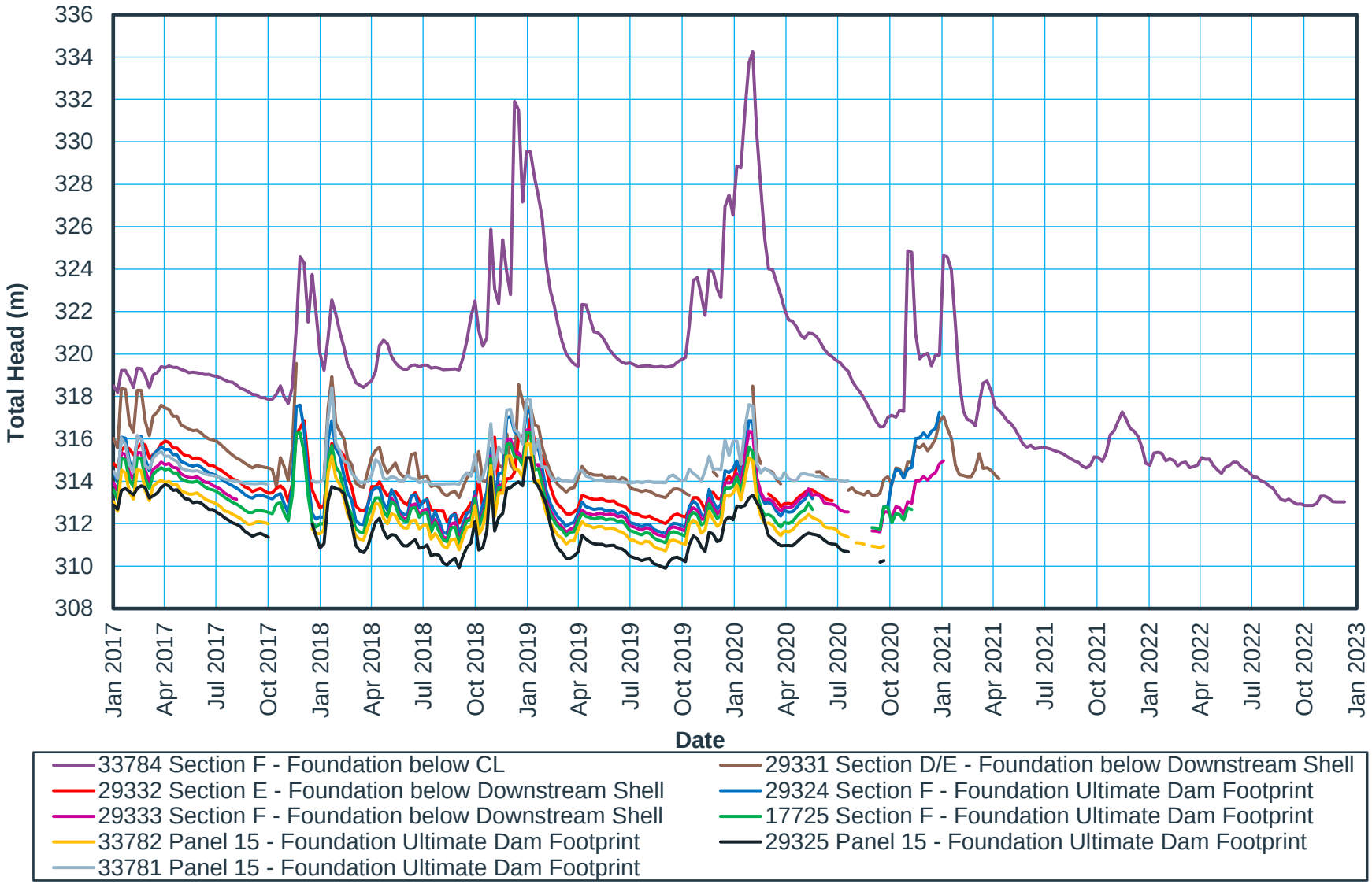
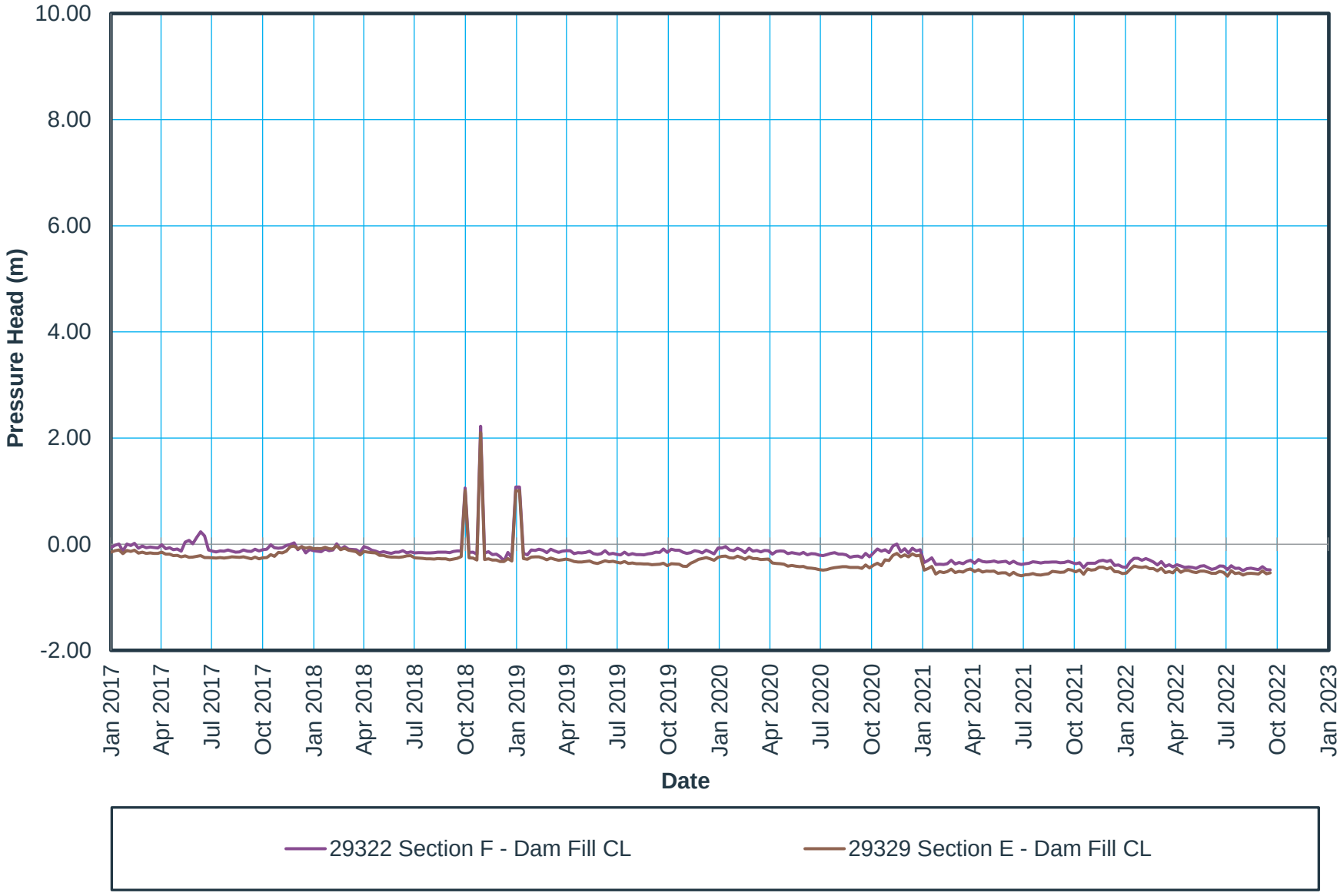


CLIENT: Myra Falls Mine
A Trafigura Group Company

PROJECT: **MFM Lynx TDF 2022 DSI Report**

TITLE: **Lynx TDF - Deep Foundation VWP Data**

DATE:	JOB No.:	FILE:	FIGURE No.:	REV.
December 2022	NX14001B4	B2-1 Reporting Lynx TDF VWP - 2022_Dec.xlsx	3	0



CLIENT: Myra Falls Mine, A Trafigura Group Company	PROJECT: MFM Lynx TDF 2022 DSI Report				
	TITLE: Lynx TDF - Dam Fill VWP Data				
	DATE: December 2022	JOB No.: NX14001B4	FILE: B2-1 Reporting Lynx TDF VWP - 2022_Dec.xlsx	FIGURE No.: 4	REV. 0

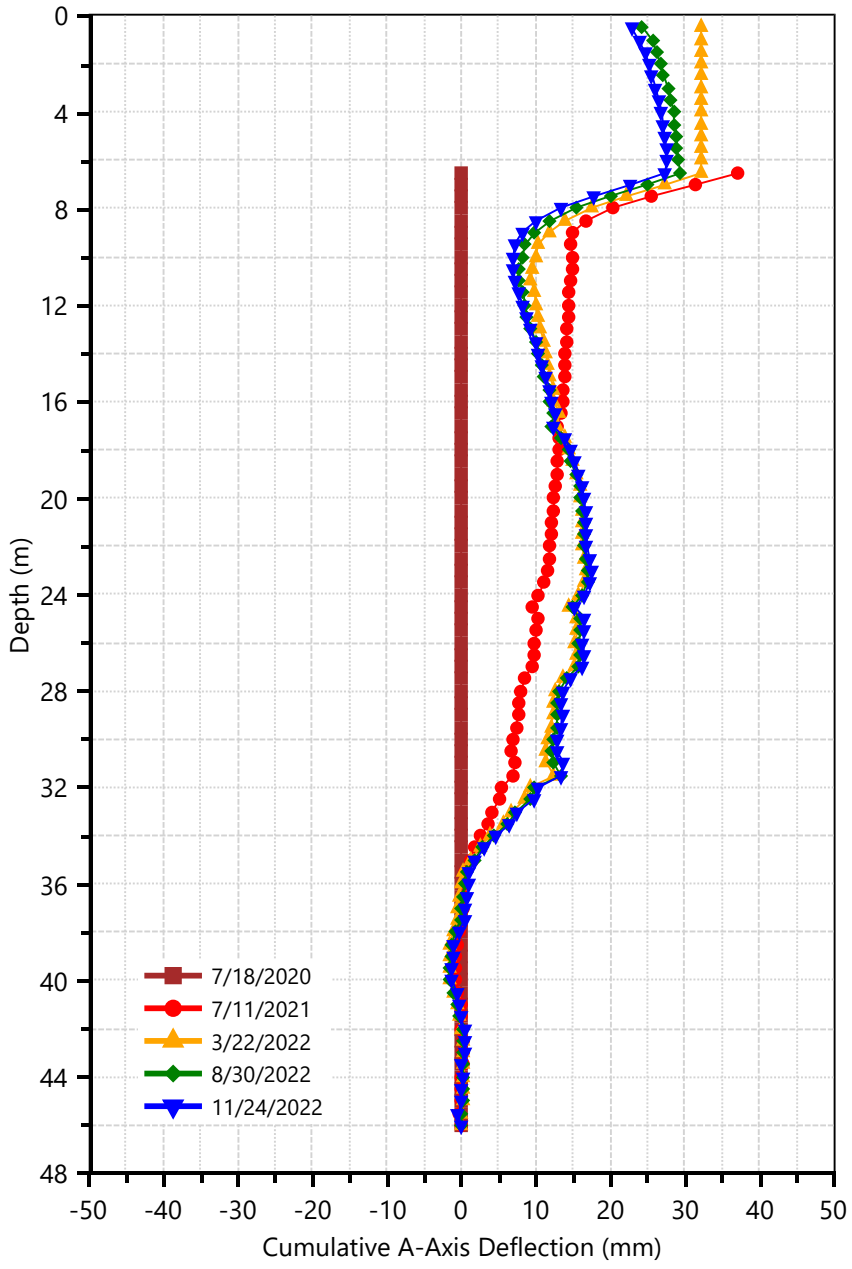
Appendix B2-2

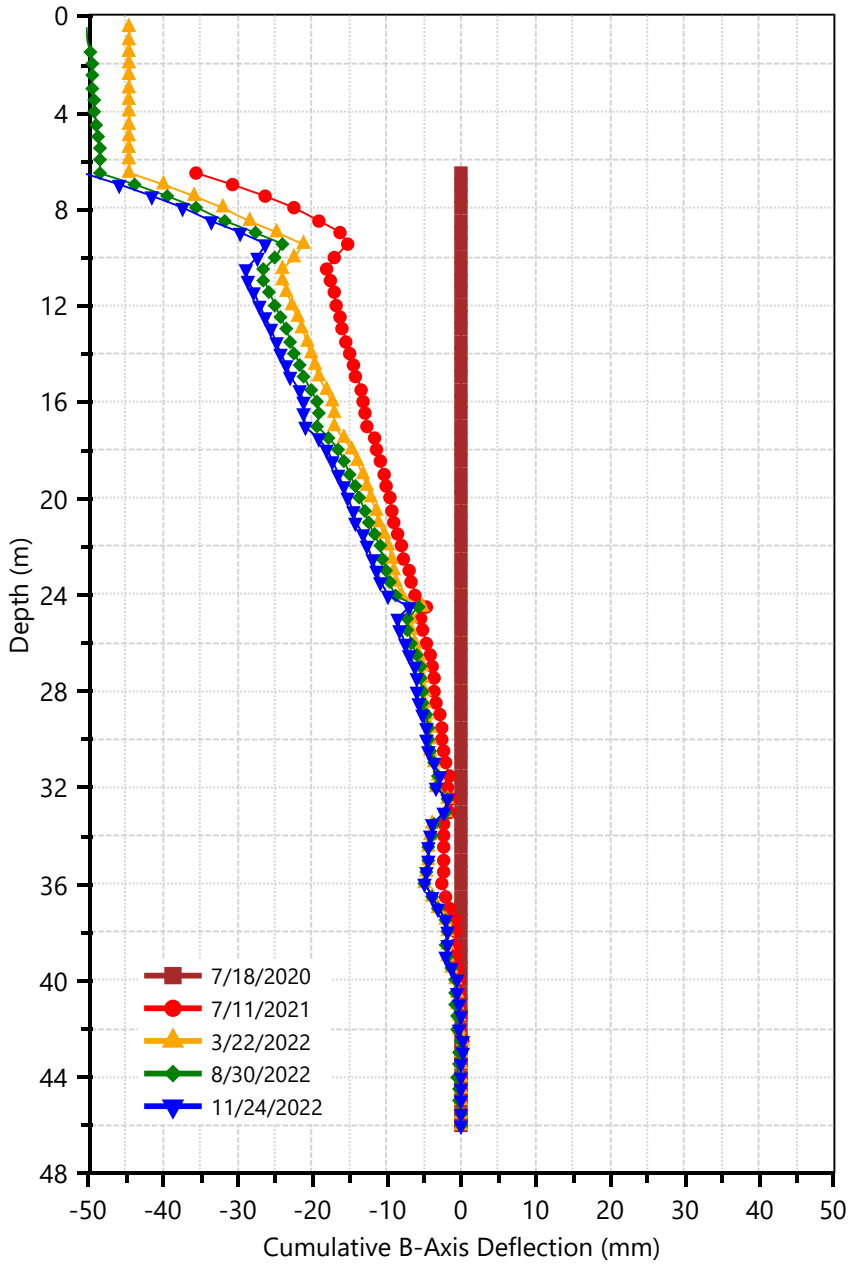
Lynx TDF Slope Inclinometer Data

Figure No.	Title
Figure 1	Cumulative Displacement – BH19-01
Figure 2	Resultant Displacement – BH19-01
Figure 3	Incremental Displacement – BH19-01
Figure 4	Cumulative Displacement – BH19-04
Figure 5	Resultant Displacement – BH19-04
Figure 6	Incremental Displacement – BH19-04
Figure 7	Cumulative Displacement – BH14-08A
Figure 8	Resultant Displacement – BH14-08A
Figure 9	Incremental Displacement – BH14-08A

Initial Reading: 18-Jul-2020
Correction: Bias Shift and Depth Index

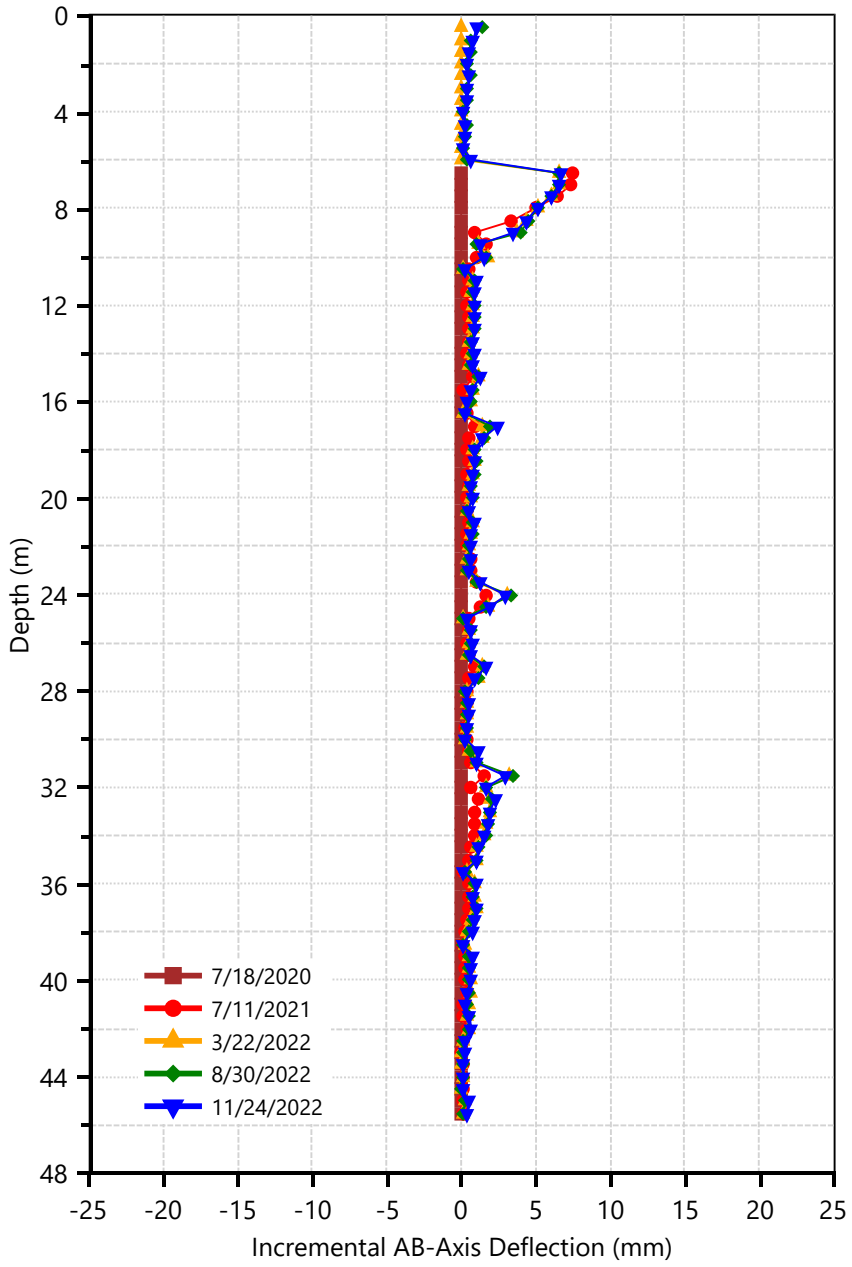
Myra Falls BH19-01
Cumulative Displacement
(July 2020 - November 2022)

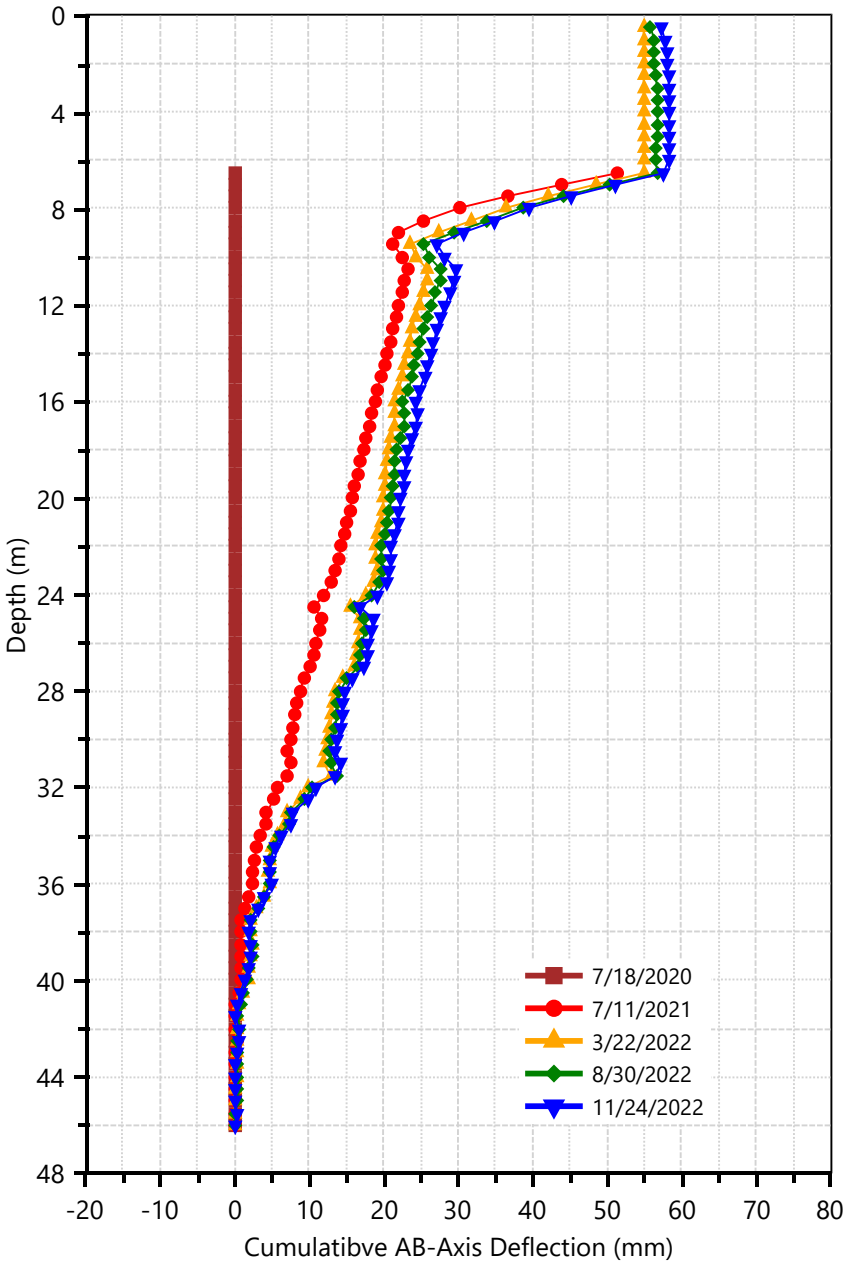




Initial Reading: 18-Jul-2020
Correction: Bias Shift and Depth Index

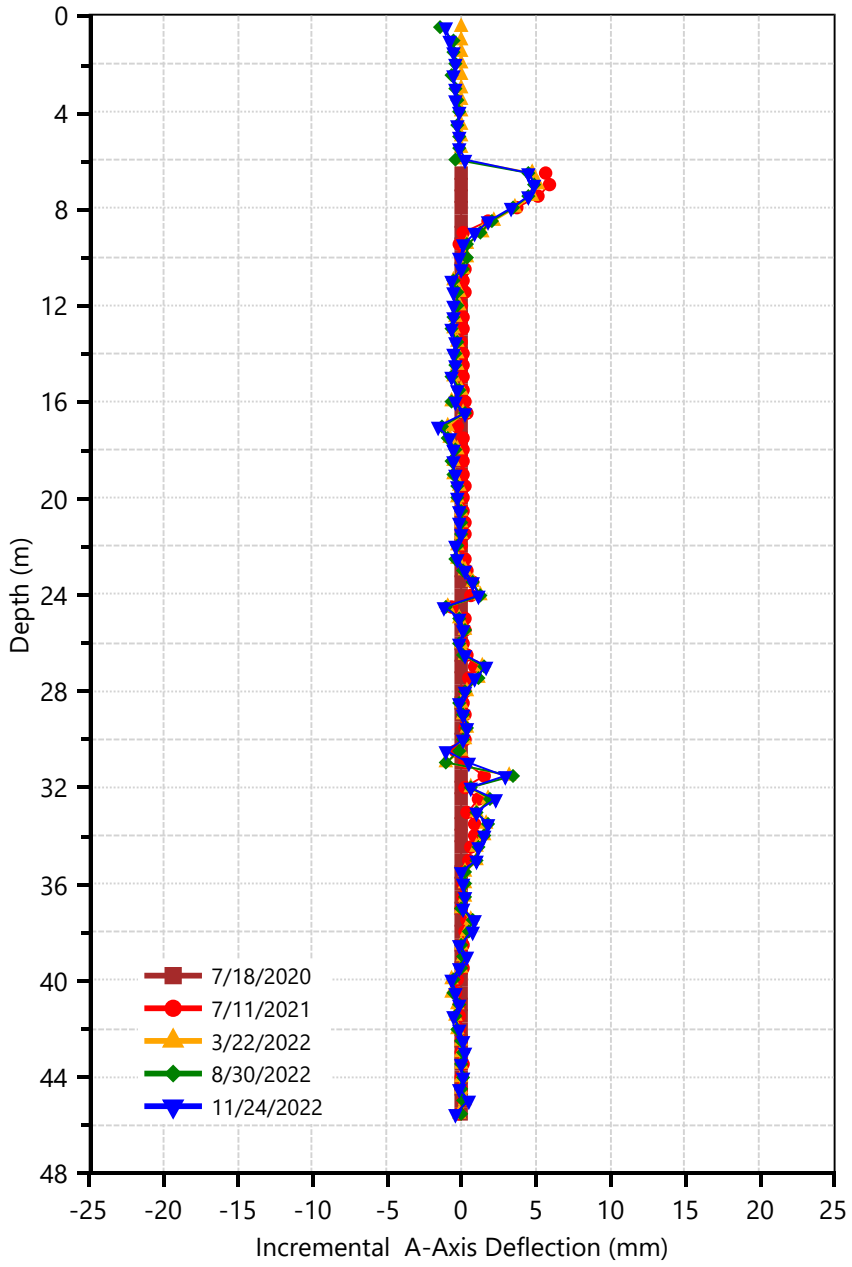
Myra Falls BH19-01
Resultant Displacement
(July 2020 - November 2022)

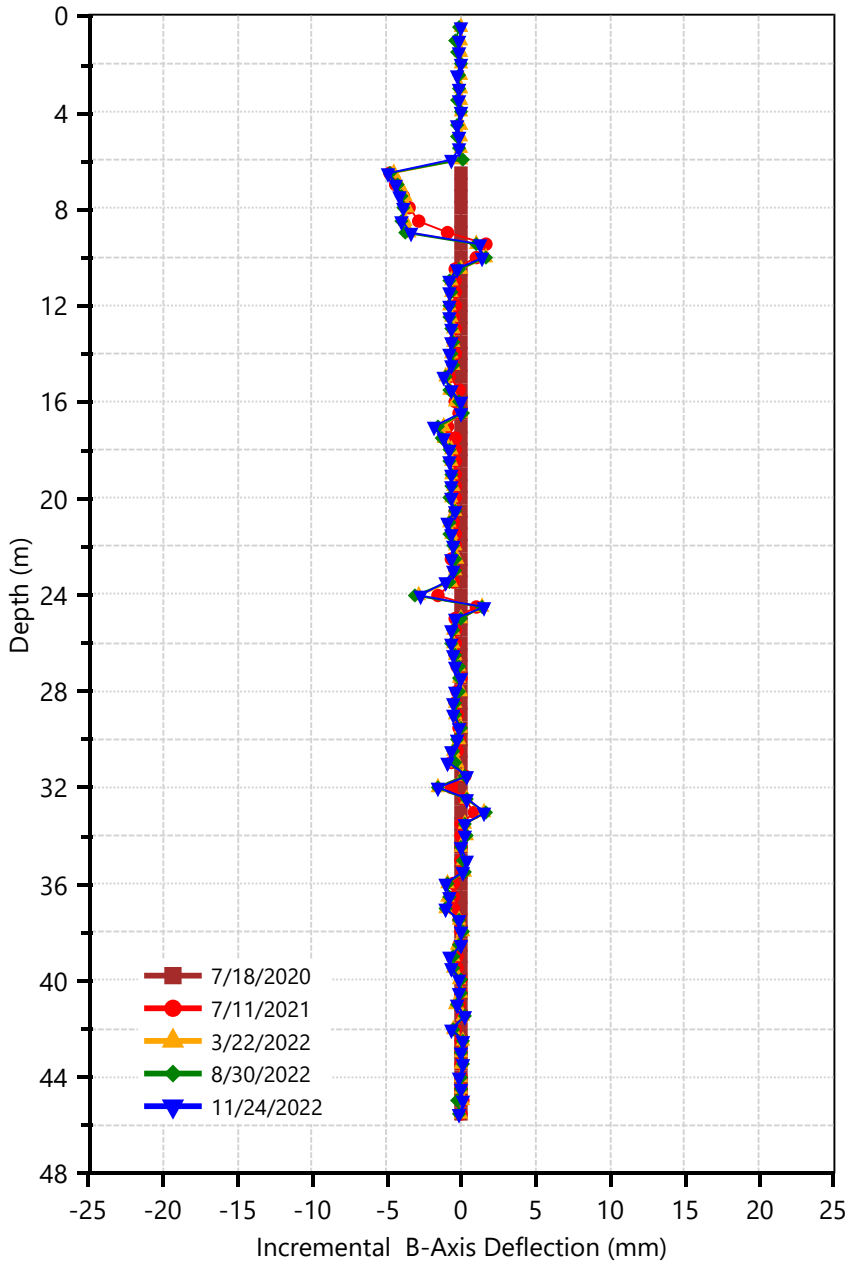




Initial Reading: 18-Jul-2020
Correction: Bias Shift and Depth Index

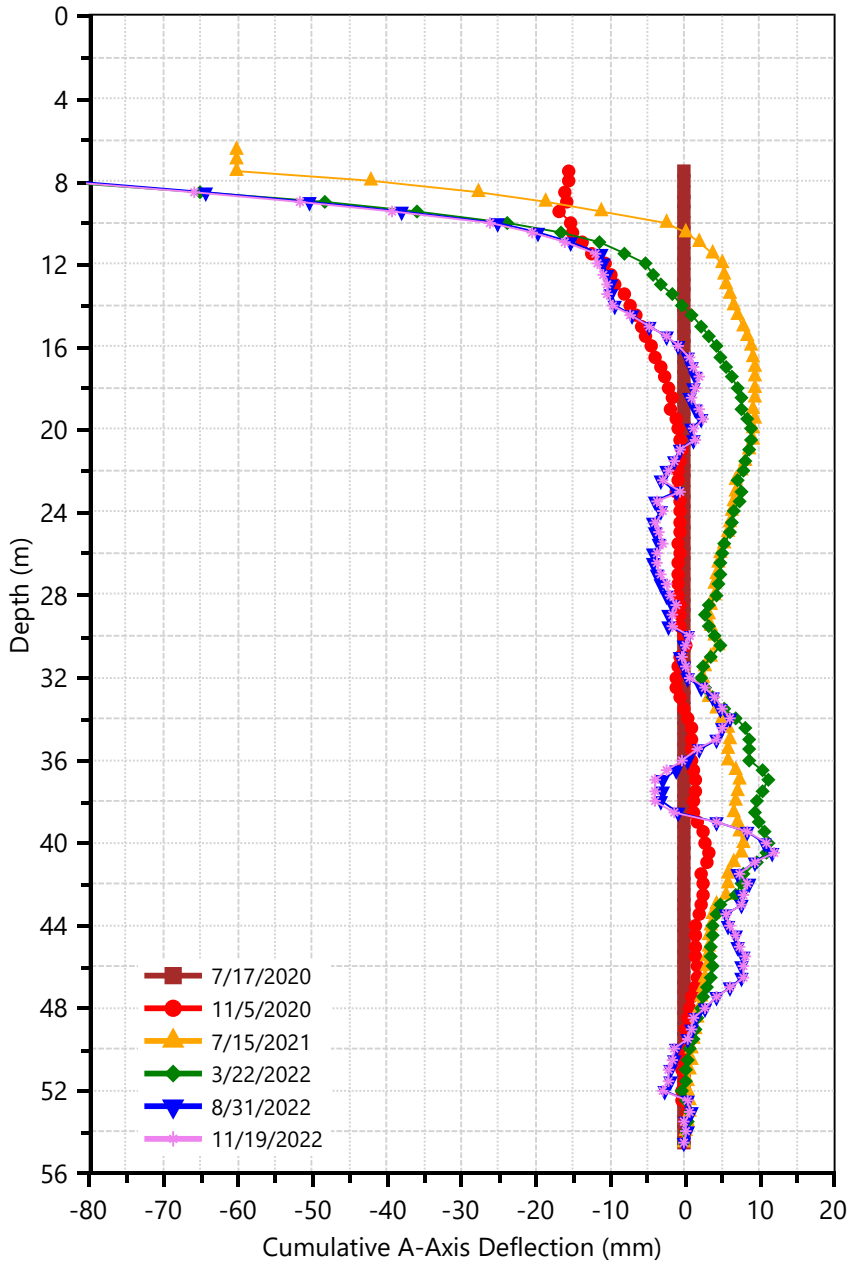
Myra Falls BH19-01
Incremental Displacement
(July 2020 - November 2022)

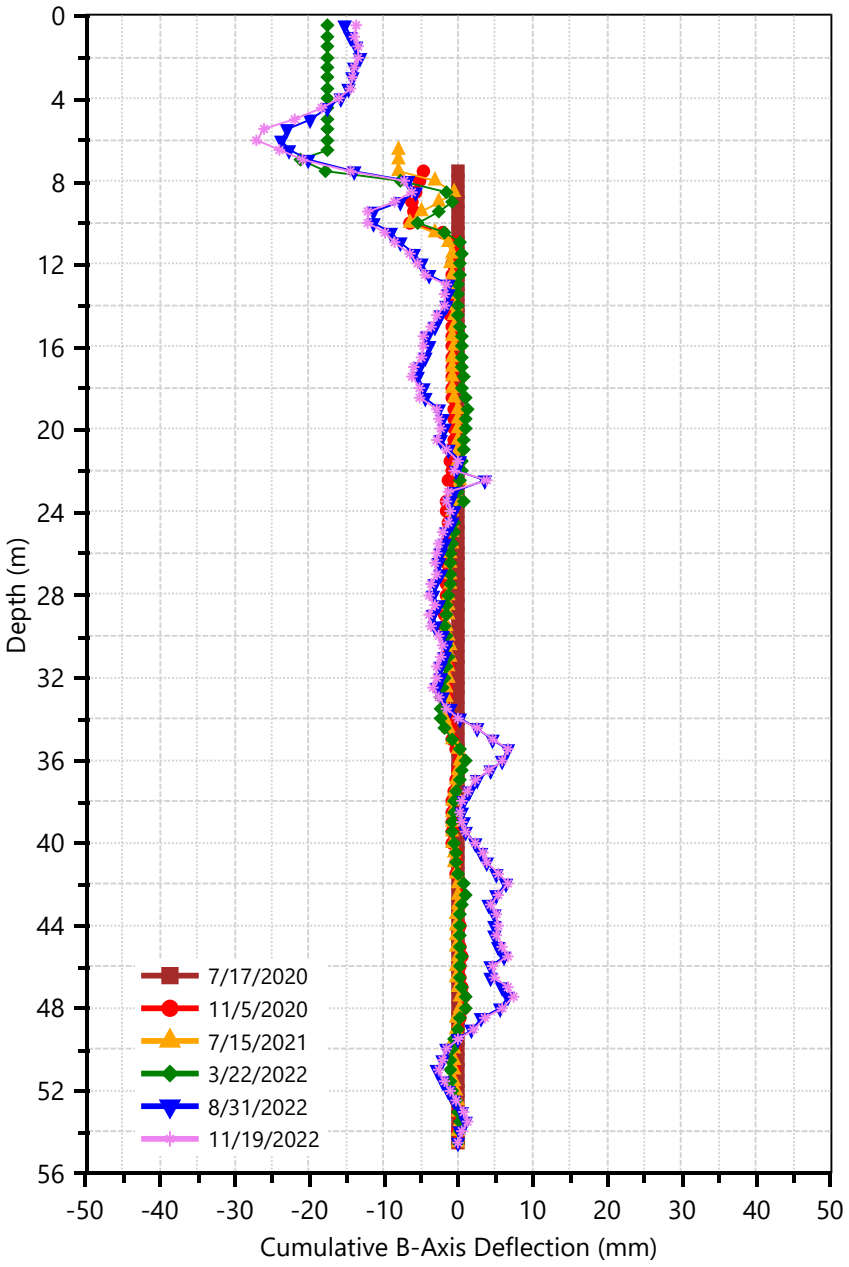




Initial Reading: 17-Jul-2020
Correction: Bias Shift and Depth Index

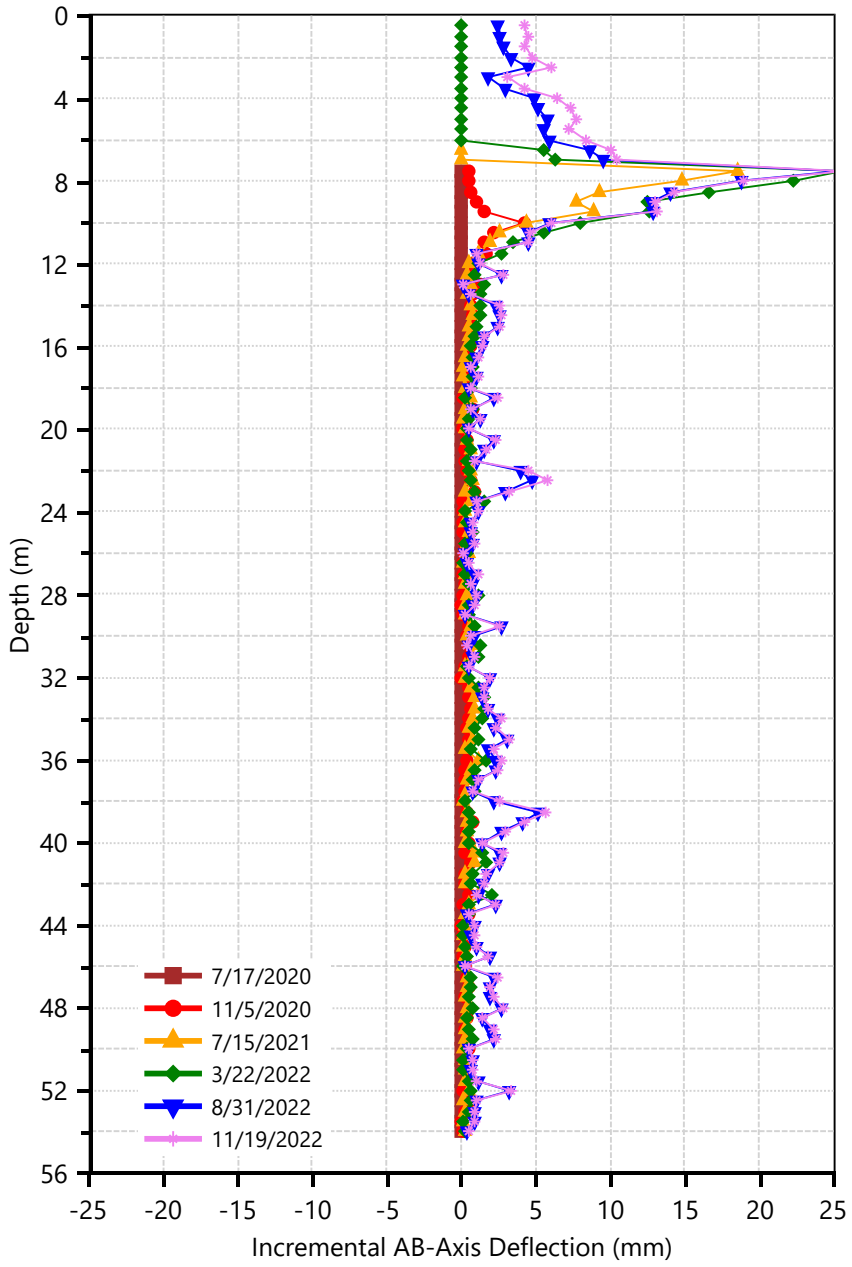
Myra Falls BH19-04
Cumulative Displacement
(July 2020 - November 2022)

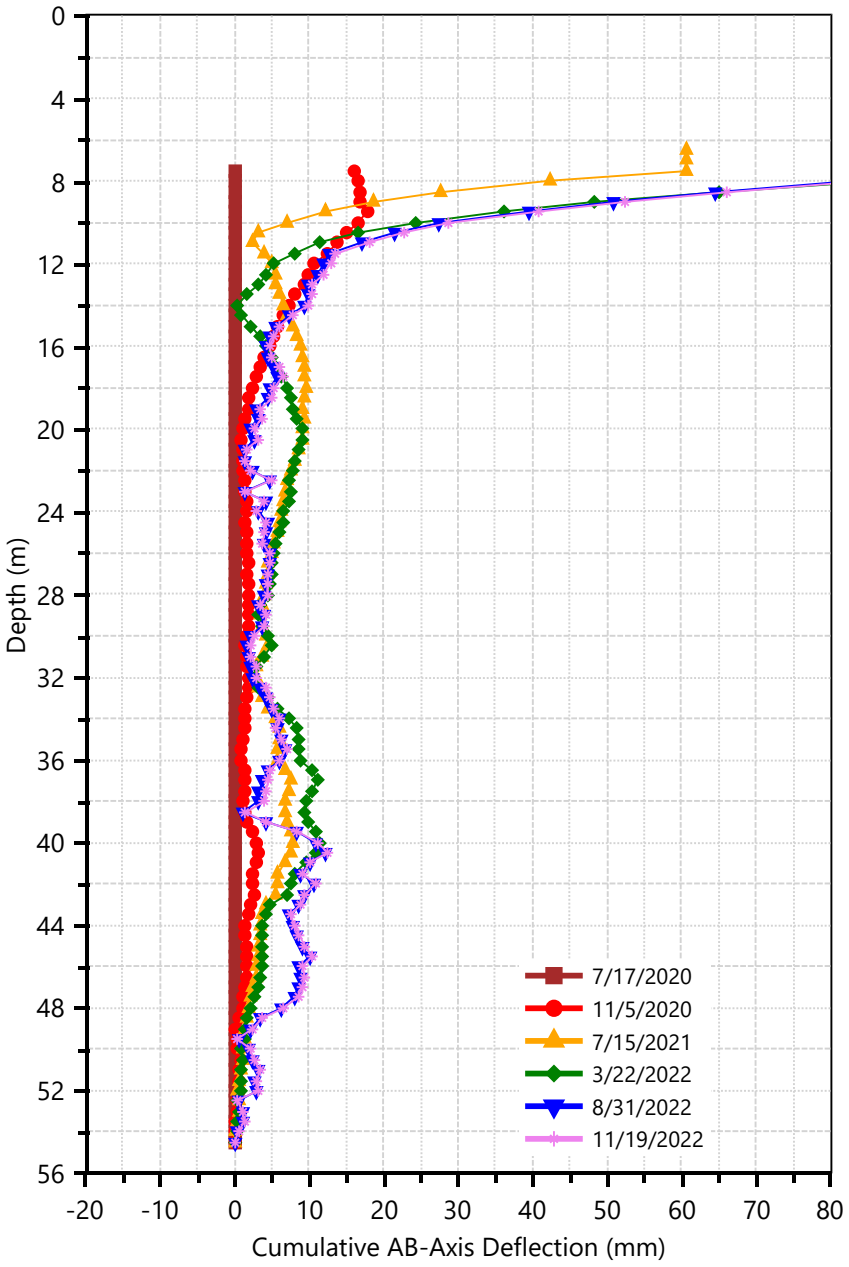




Initial Reading: 17-Jul-2020
Correction: Bias Shift and Depth Index

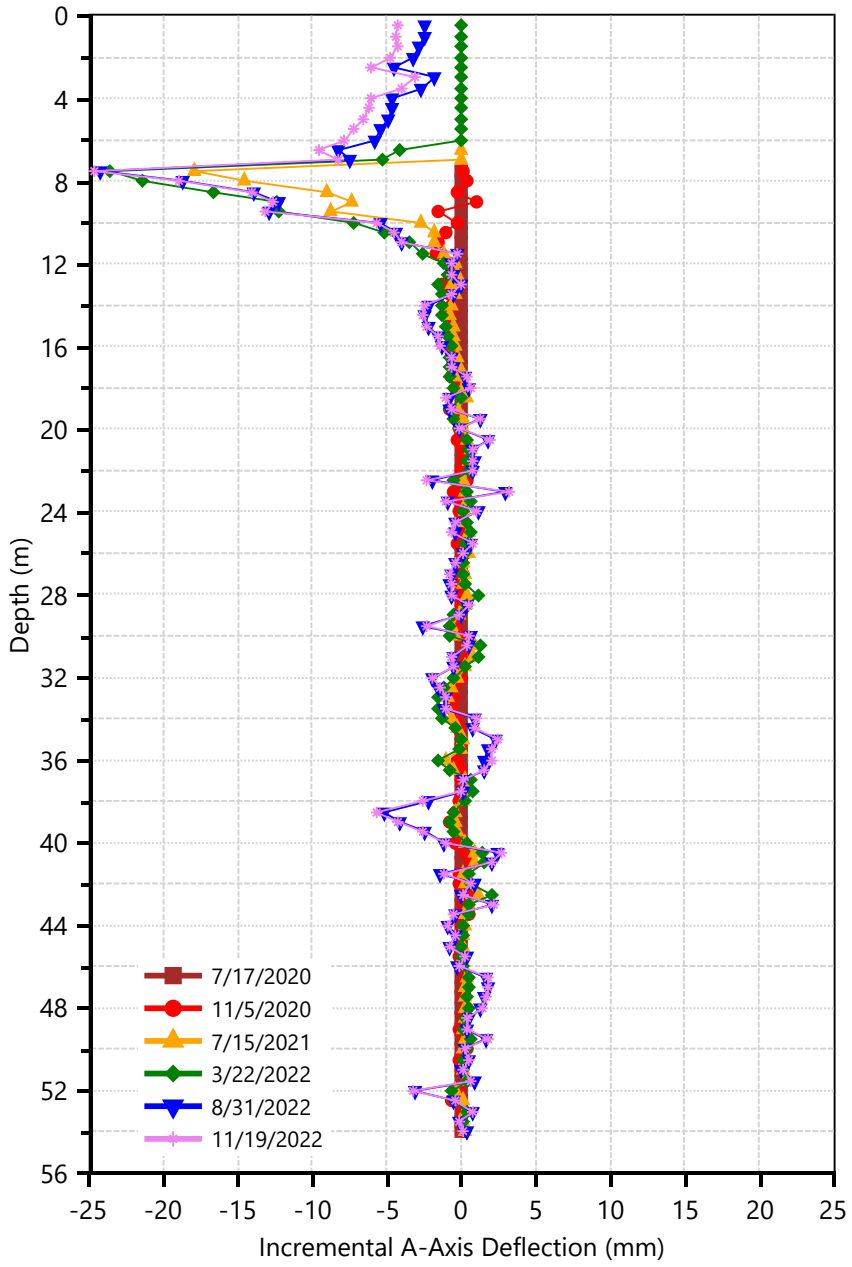
Myra Falls BH19-04
Resultant Displacement
(July 2020 - November 2022)

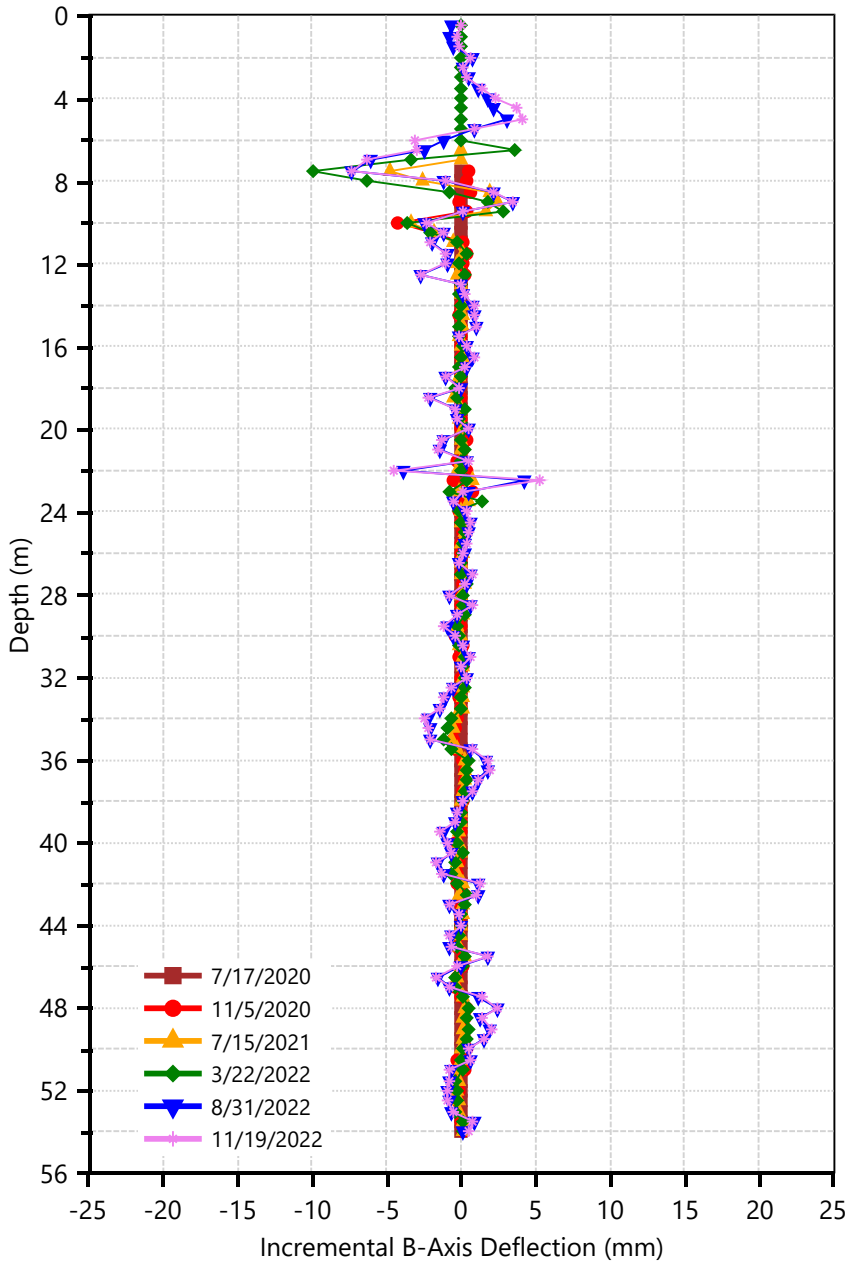




Initial Reading: 17-Jul-2020
Correction: Bias Shift and Depth Index

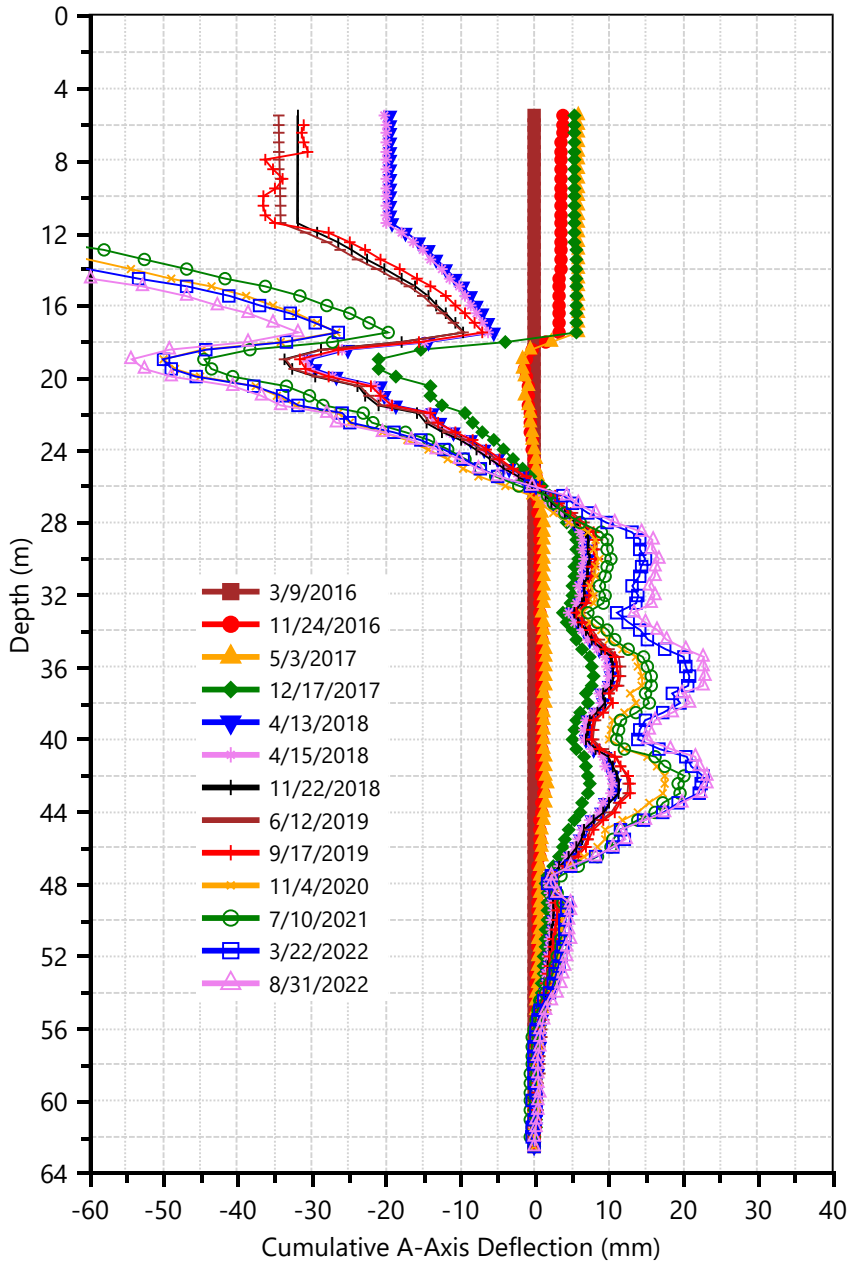
Myra Falls BH19-04
Incremental Displacement
(July 2020 - November 2022)

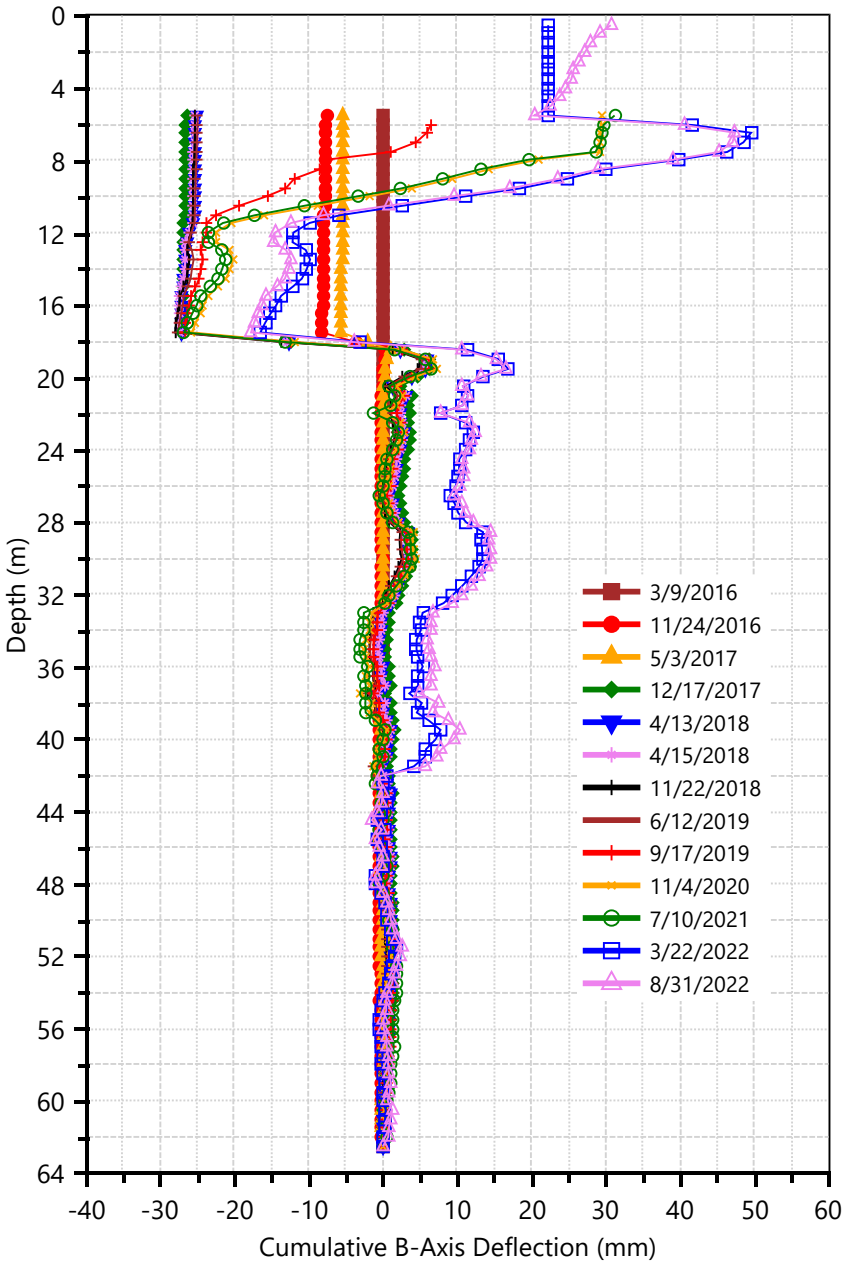




Initial Reading: 3-Mar-2016
Correction: Bias Shift and Depth Index

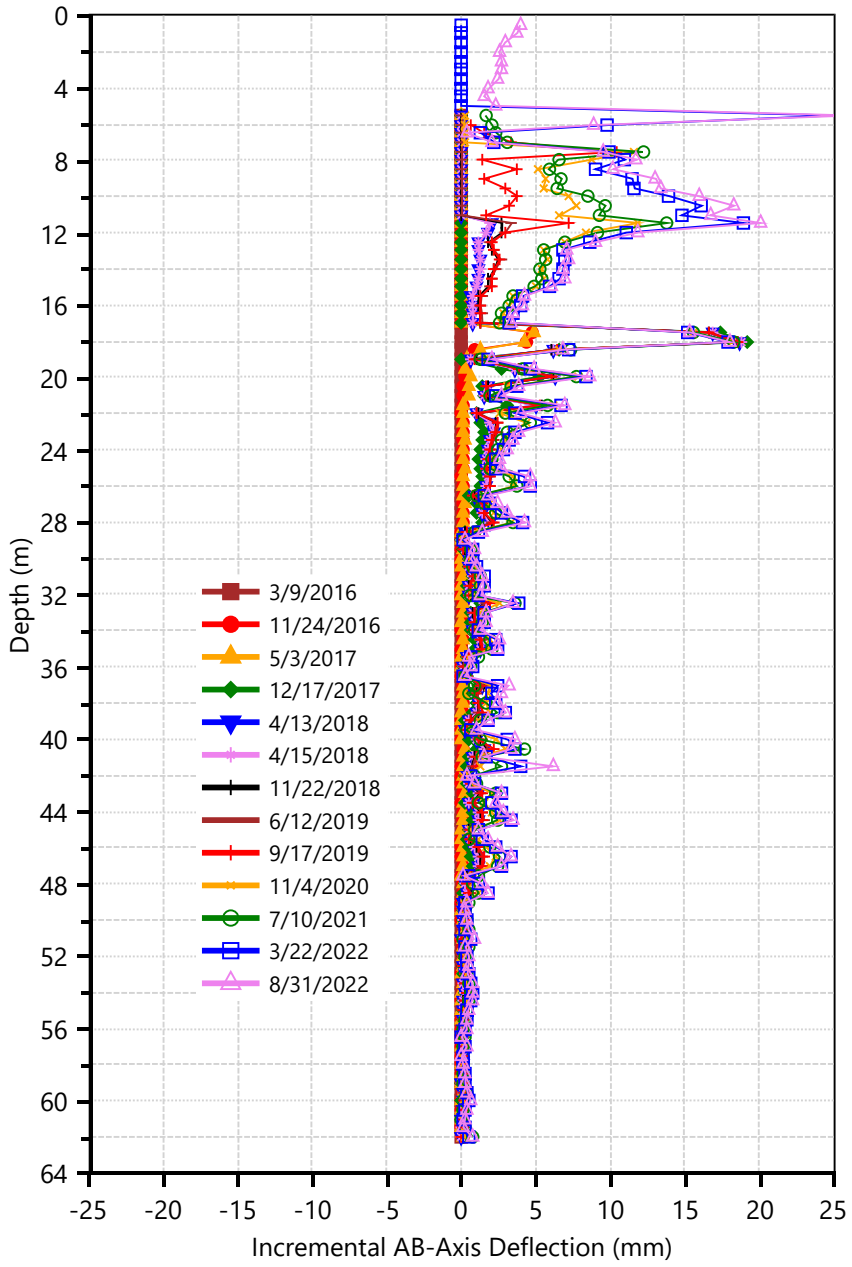
Myra Falls BH14-08A
Cumulative Displacement
(March 2016 - August 2022)

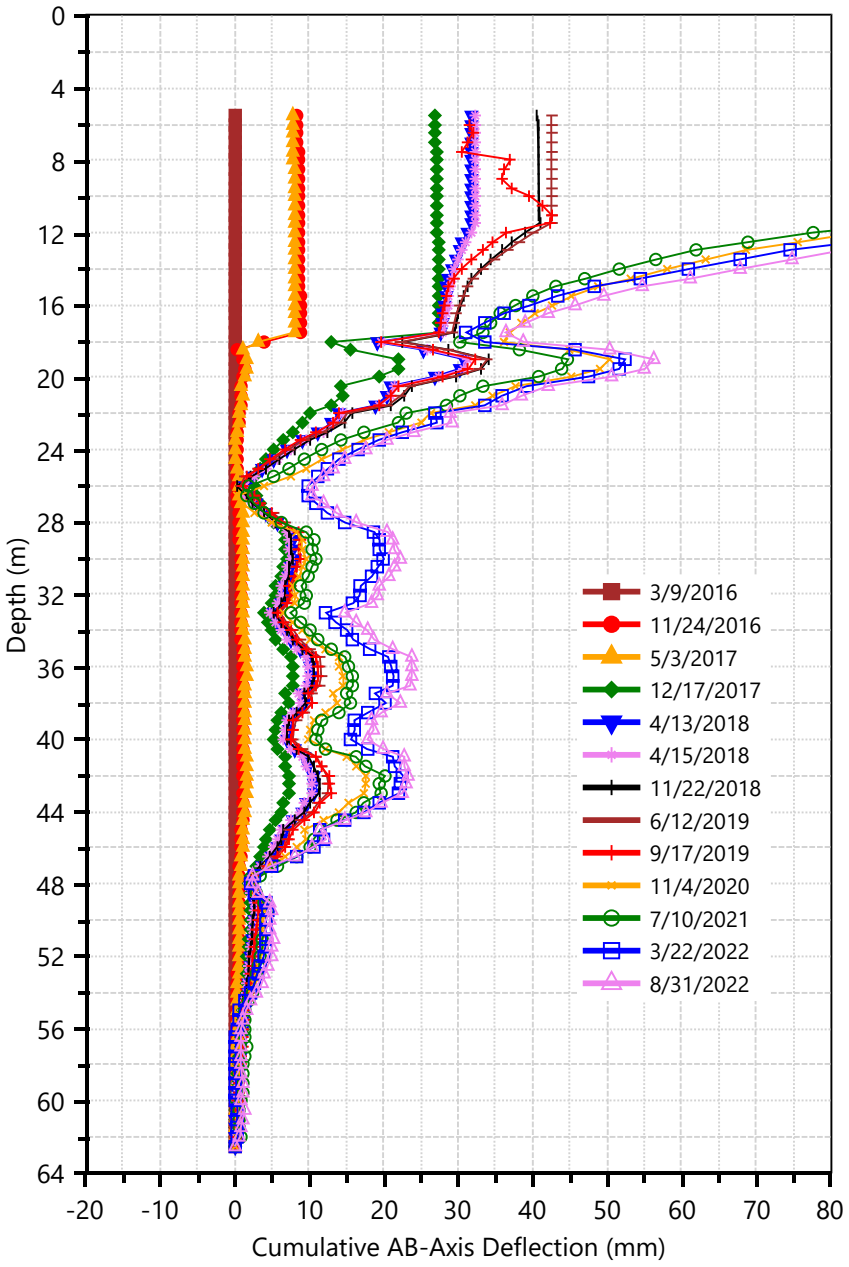




Initial Reading: 3-Mar-2016
Correction: Bias Shift and Depth Index

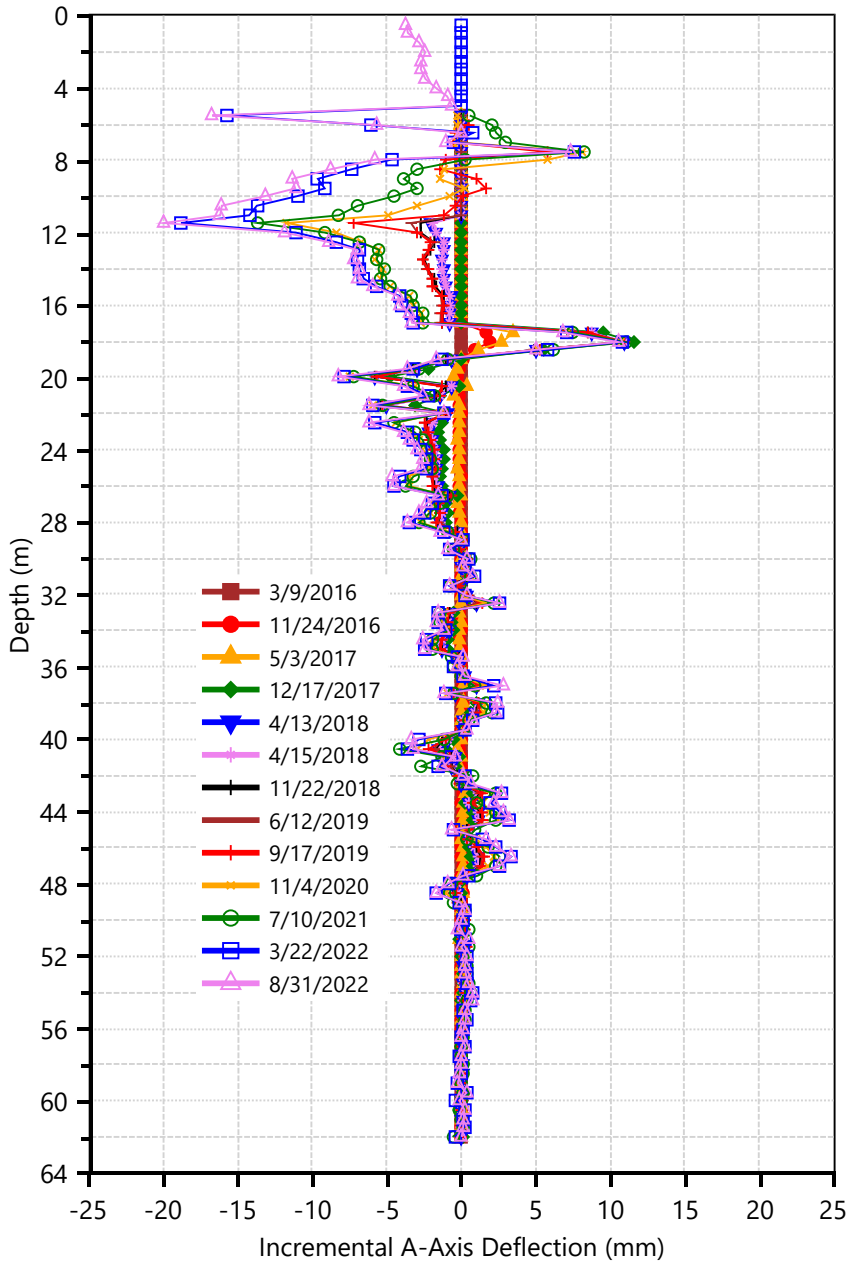
Myra Falls BH14-08A
Resultant Displacement
(March 2016 - August 2022)

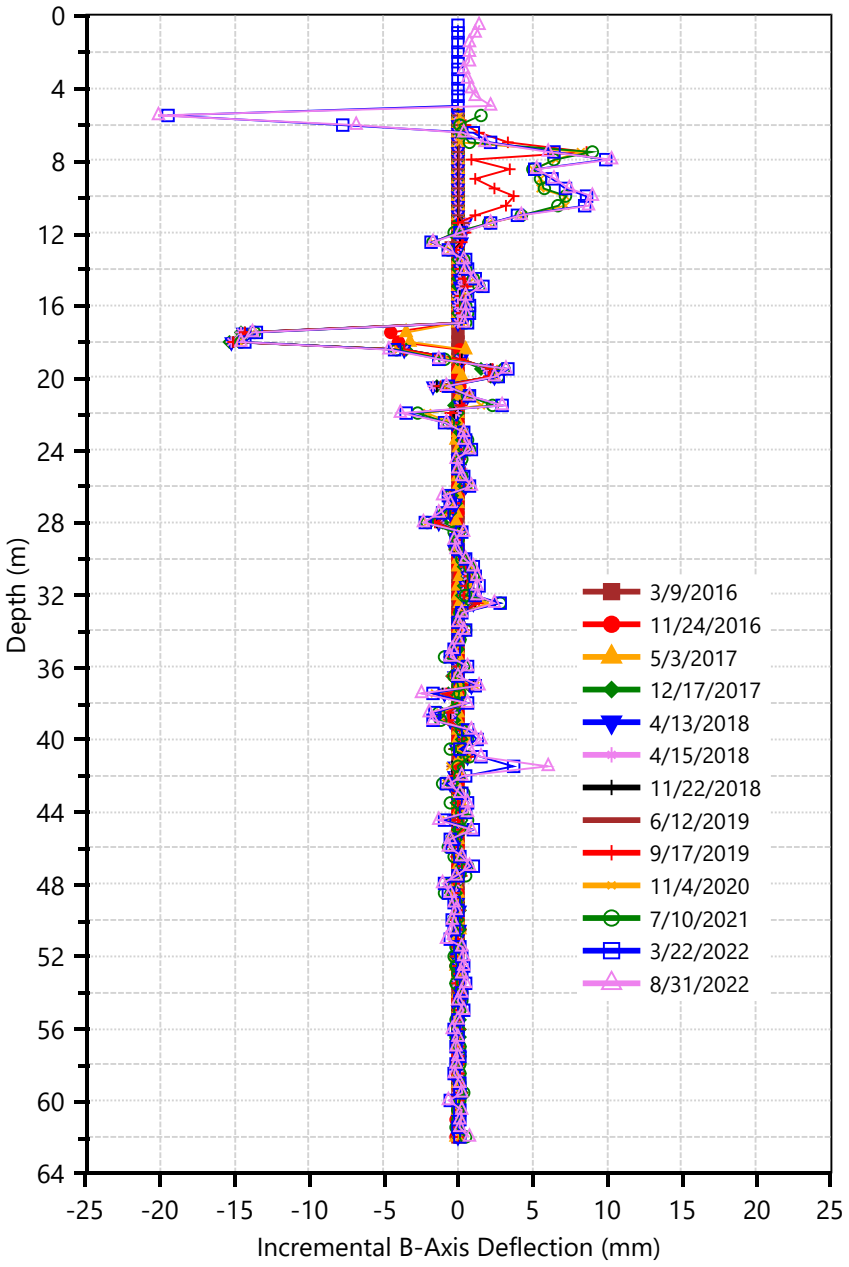




Initial Reading: 3-Mar-2016
Correction: Bias Shift and Depth Index

Myra Falls BH14-08A
Incremental Displacement
(March 2016 - August 2022)





Appendix B2-3

Lynx TDF Deformation Monuments

Table No.	Title
Table D 1	Lynx TDF – Monument Monitoring Summary – Raw Data
Table D 2	Lynx TDF – Monument Monitoring Summary – Cumulative Displacement

Table D-1: Lynx TDF - Monument Monitoring Summary - Raw Data

	Lynx21-01			Lynx21-02			Lynx21-03			Lynx21-04			Lynx21-05		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
16-Sep-20	5494773.746	312042.265	369.676	5494744.013	312034.666	369.599	5494716.694	312026.695	369.681	5494702.535	312000.034	369.691	5494697.698	311961.235	369.730
8-Oct-20	5494773.749	312042.264	369.671	5494744.014	312034.661	369.593	5494716.691	312026.689	369.671	5494702.537	312000.033	369.680	5494697.701	311961.234	369.710
10-Nov-20	5494773.749	312042.262	369.669	5494744.012	312034.658	369.589	5494716.689	312026.687	369.664	5494702.538	312000.033	369.671	5494697.709	311961.229	369.691
6-Dec-20	5494773.748	312042.263	369.662	5494744.010	312034.658	369.580	5494716.688	312026.687	369.652	5494702.540	312000.034	369.660	5494697.712	311961.226	369.670
12-Jan-21	5494773.748	312042.262	369.667	5494744.009	312034.657	369.583	5494716.687	312026.683	369.653	5494702.542	312000.031	369.661	5494697.718	311961.223	369.665
18-Feb-21	5494773.748	312042.262	369.667	5494744.007	312034.652	369.582	5494716.688	312026.674	369.651	5494702.540	312000.029	369.658	5494697.721	311961.222	369.658
18-Apr-21	5494773.764	312042.268	369.718	5494744.023	312034.656	369.632	5494716.702	312026.682	369.700	5494702.564	312000.038	369.707	5494697.738	311961.225	369.703
29-Apr-21	5494773.766	312042.260	369.717	5494744.020	312034.654	369.631	5494716.699	312026.679	369.698	5494702.562	312000.033	369.704	5494697.740	311961.225	369.698
6-May-21	5494773.764	312042.259	369.717	5494744.022	312034.658	369.631	5494716.701	312026.684	369.698	5494702.563	312000.039	369.704	5494697.741	311961.225	369.698
13-May-21	5494773.765	312042.258	369.717	5494744.022	312034.656	369.631	5494716.702	312026.681	369.697	5494702.563	312000.037	369.703	5494697.742	311961.225	369.697
20-May-21	5494773.765	312042.257	369.716	5494744.020	312034.655	369.630	5494716.701	312026.678	369.695	5494702.563	312000.037	369.701	5494697.742	311961.224	369.694
27-May-21	5494773.764	312042.260	369.715	5494744.020	312034.654	369.628	5494716.696	312026.678	369.692	5494702.556	312000.039	369.694	5494697.737	311961.226	369.686
3-Jun-21	5494773.763	312042.258	369.716	5494744.019	312034.655	369.629	5494716.696	312026.677	369.692	5494702.553	312000.037	369.693	5494697.737	311961.224	369.684
19-Jun-21	5494773.763	312042.258	369.716	5494744.016	312034.656	369.626	5494716.690	312026.680	369.685	5494702.551	312000.040	369.687	5494697.736	311961.226	369.678
26-Jun-21	5494773.763	312042.257	369.717	5494744.016	312034.654	369.627	5494716.692	312026.678	369.685	5494702.553	312000.041	369.687	5494697.738	311961.226	369.678
3-Jul-21	5494773.764	312042.259	369.717	5494744.015	312034.656	369.626	5494716.689	312026.678	369.681	5494702.550	312000.042	369.683	5494697.736	311961.226	369.675
10-Jul-21	5494773.764	312042.257	369.716	5494744.015	312034.654	369.624	5494716.691	312026.675	369.679	5494702.552	312000.040	369.681	5494697.746	311961.224	369.670
17-Jul-21	5494773.763	312042.257	369.710	5494744.013	312034.653	369.616	5494716.688	312026.674	369.671	5494702.550	312000.040	369.673	5494697.746	311961.222	369.661
23-Jul-21	5494773.762	312042.258	369.704	5494744.012	312034.653	369.609	5494716.690	312026.674	369.661	5494702.551	312000.042	369.662	5494697.751	311961.222	369.651
29-Jul-21	5494773.761	312042.257	369.705	5494744.013	312034.649	369.609	5494716.689	312026.670	369.661	5494702.551	312000.040	369.663	5494697.757	311961.218	369.650
15-Sep-21	5494762.015	312043.922	374.521	5494724.194	312032.113	374.385	5494700.522	312005.223	374.541	5494696.379	311979.583	374.479	5494690.525	311940.229	374.606
21-Sep-21	5494762.014	312043.922	374.520	5494724.193	312032.114	374.381	5494700.524	312005.222	374.536	5494696.381	311979.583	374.473	5494690.527	311940.227	374.599
29-Sep-21	5494762.013	312043.922	374.516	5494724.193	312032.111	374.375	5494700.525	312005.221	374.528	5494696.384	311979.582	374.467	5494690.531	311940.228	374.592
8-Oct-21	5494762.011	312043.920	374.516	5494724.190	312032.108	374.375	5494700.527	312005.219	374.527	5494696.386	311979.578	374.464	5494690.535	311940.224	374.588
16-Oct-21	5494762.012	312043.920	374.515	5494724.192	312032.107	374.371	5494700.531	312005.218	374.524	5494696.391	311979.579	374.460	5494690.540	311940.226	374.585
27-Oct-21	5494762.013	312043.921	374.513	5494724.192	312032.110	374.369	5494700.532	312005.221	374.518	5494696.396	311979.581	374.454	5494690.544	311940.230	374.580
5-Nov-21	5494762.012	312043.920	374.513	5494724.192	312032.106	374.367	5494700.534	312005.219	374.514	5494696.399	311979.579	374.450	5494690.549	311940.227	374.576
12-Nov-21	5494762.011	312043.917	374.513	5494724.190	312032.102	374.366	5494700.534	312005.217	374.514	5494696.401	311979.577	374.449	5494690.552	311940.227	374.574
30-Nov-21	5494762.012	312043.913	374.510	5494724.191	312032.099	374.358	5494700.539	312005.217	374.505	5494696.408	311979.576	374.441	5494690.561	311940.226	374.564
31-Dec-21	5494762.009	312043.911	374.504	NA	NA	NA	5494700.540	312005.214	374.494	5494696.411	311979.574	374.424	5494690.568	311940.225	374.549
31-Jan-22	5494762.008	312043.910	374.501	NA	NA	NA	5494700.546	312005.215	374.473	5494696.420	311979.572	374.415	5494690.575	311940.223	374.539
28-Feb-22	5494762.008	312043.909	374.498	5494724.190	312032.088	374.334	5494700.551	312005.213	374.468	5494696.424	311979.569	374.414	5494690.582	311940.223	374.540
31-Mar-22	5494762.008	312043.909	374.498	5494724.191	312032.086	374.333	5494700.556	312005.211	374.467	5494696.434	311979.568	374.404	5494690.597	311940.224	374.528
2-Apr-22	5494762.008	312043.909	374.498	5494724.191	312032.086	374.333	5494700.556	312005.211	374.467	5494696.434	311979.568	374.404	5494690.597	311940.224	374.528
30-Apr-22	5494762.010	312043.904	374.496	5494724.191	312032.083	374.328	5494700.558	312005.210	374.459	5494696.436	311979.565	374.396	5494690.614	311940.222	374.519
31-May-22	NA	NA	NA	5494724.193	312032.075	374.325	5494700.562	312005.205	374.456	5494696.441	311979.562	374.393	5494690.620	311940.219	374.513
3-Jul-22	NA	NA	NA	5494724.193	312032.075	374.323	5494700.562	312005.207	374.454	5494696.443	311979.564	374.389	5494690.623	311940.221	374.509
1-Aug-22	5494762.013	312043.882	374.456	5494724.197	312032.068	374.322	5494700.572	312005.204	374.450	5494696.456	311979.562	374.383	5494690.638	311940.225	374.503
31-Aug-22	5494762.011	312043.882	374.453	5494724.194	312032.067	374.315	5494700.571	312005.203	374.445	5494696.458	311979.559	374.375	5494690.638	311940.220	374.496
31-Aug-22	5494762.011	312043.882	374.454	5494724.195	312032.066	374.315	5494700.571	312005.203	374.444	5494696.458	311979.559	374.375	5494690.638	311940.220	374.496
30-Sep-22	5494762.009	312043.880	374.451	5494724.195	312032.058	374.307	5494700.574	312005.199	374.438	5494696.463	311979.559	374.368	5494690.643	311940.220	374.489
31-Oct-22	5494762.010	312043.878	374.450	5494724.196	312032.057	374.305	5494700.577	312005.199	374.437	5494696.467	311979.558	374.365	5494690.647	311940.221	374.489
28-Nov-22	5494762.009	312043.878	374.450	5494724.196	312032.053	374.305	5494700.579	312005.200	374.436	5494696.475	311979.556	374.361	5494690.650	311940.222	374.487
31-Dec-22	5494762.006	312043.880	374.451	NA	NA	NA	5494700.578	312005.199	374.431	NA	NA	NA	5494690.648	311940.220	374.481

	Lynx21-06			Lynx21-07			Lynx21-08			Lynx21-09			Lynx21-10		
	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation	Northing	Easting	Elevation
16-Sep-20	5494694.226	311942.220	369.621	5494689.418	311913.741	369.659	5494685.242	311884.274	369.602	5494679.188	311846.867	369.730	5494677.234	311830.002	369.525
8-Oct-20	5494694.244	311942.221	369.602	5494689.427	311913.743	369.647	5494685.254	311884.272	369.586	5494679.202	311846.860	369.714	5494677.261	311830.007	369.490
10-Nov-20	5494694.269	311942.220	369.584	5494689.432	311913.745	369.636	5494685.265	311884.273	369.572	5494679.209	311846.860	369.701	5494677.268	311830.007	369.473
6-Dec-20	5494694.281	311942.220	369.565	5494689.433	311913.745	369.623	5494685.268	311884.272	369.558	5494679.213	311846.860	369.685	5494677.271	311830.008	369.457
12-Jan-21	5494694.303	311942.222	369.557	5494689.438	311913.746	369.624	5494685.275	311884.272	369.557	5494679.221	311846.857	369.681	5494677.279	311830.005	369.453
18-Feb-21	5494694.306	311942.219	369.551	5494689.438	311913.747	369.621	5494685.278	311884.272	369.554	5494679.224	311846.853	369.679	5494677.281	311830.003	369.447
18-Apr-21	5494694.331	311942.225	369.595	5494689.460	311913.751	369.668	5494685.299	311884.275	369.601	5494679.244	311846.858	369.724	5494677.298	311830.008	369.493
29-Apr-21	5494694.331	311942.222	369.593	5494689.459	311913.752	369.667	5494685.298	311884.274	369.599	5494679.244	311846.858	369.724	5494677.298	311830.007	369.491
6-May-21	5494694.331	311942.227	369.593	5494689.459	311913.754	369.666	5494685.298	311884.273	369.597	5494679.244	311846.856	369.722	5494677.298	311830.005	369.489
13-May-21	5494694.333	311942.225	369.591	5494689.460	311913.752	369.665	5494685.300	311884.274	369.596	5494679.246	311846.856	369.720	5494677.299	311830.005	369.487
20-May-21	5494694.331	311942.226	369.590	5494689.459	311913.752	369.663	5494685.301	311884.272	369.597	5494679.247	311846.855	369.719	5494677.301	311830.003	369.486
27-May-21	5494694.324	311942.229	369.585	5494689.452	311913.755	369.659	5494685.294	311884.274	369.591	5494679.240	311846.856	369.713	5494677.295	311830.006	369.480
3-Jun-21	5494694.324	311942.227	369.582	5494689.453	311913.753	369.659	5494685.296	311884.271	369.591	5494679.243	311846.853	369.712	5494677.297	311830.002	369.479
19-Jun-21	5494694.322	311942.230	369.578	5494689.449	311913.756	369.655	5494685.294	311884.274	369.587	5494679.241	311846.854	369.706	5494677.294	311830.003	369.472
26-Jun-21	5494694.323	311942.231	369.578	5494689.450	311913.757	369.656	5494685.296	311884.276	369.588	5494679.243	311846.857	369.707	5494677.296	311830.006	369.473
3-Jul-21	5494694.321	311942.231	369.575	5494689.447	311913.756	369.653	5494685.294	311884.274	369.586	5494679.241	311846.854	369.703	5494677.295	311830.005	369.469
10-Jul-21	5494694.325	311942.231	369.572	5494689.451	311913.757	369.650	5494685.300	311884.274	369.581	5494679.249	311846.853	369.697	5494677.301	311830.004	369.463
17-Jul-21	5494694.323	311942.232	369.563	5494689.450	311913.756	369.643	5494685.300	311884.273	369.573	5494679.249	311846.853	369.689	5494677.300	311830.004	369.453
23-Jul-21	5494694.324	311942.233	369.554	5494689.449	311913.757	369.634	5494685.302	311884.274	369.563	5494679.254	311846.852	369.676	5494677.305	311830.004	369.439
29-Jul-21	5494694.326	311942.229	369.553	5494689.450	311913.755	369.633	5494685.306	311884.272	369.563	5494679.259	311846.852	369.676	5494677.309	311830.003	369.437
15-Sep-21	5494683.792	311900.382	374.650	5494677.565	311861.215	374.693	5494671.234	311822.629	374.632	5494665.674	311787.101	374.771	5494669.642	311745.276	374.675
21-Sep-21	5494683.794	311900.380	374.644	5494677.569	311861.214	374.687	5494671.235	311822.628	374.626	5494665.675	311787.100	374.765	5494669.642	311745.275	374.668
29-Sep-21	5494683.798	311900.380	374.637	5494677.573	311861.214	374.678	5494671.239	311822.628	374.617	5494665.677	311787.100	374.758	5494669.645	311745.276	374.662
8-Oct-21	5494683.802	311900.377	374.635	5494677.578	311861.213	374.675	5494671.242	311822.627	374.615	5494665.681	311787.099	374.754	5494669.646	311745.277	374.659
16-Oct-21	5494683.806	311900.377	374.630	5494677.581	311861.212	374.672	5494671.247	311822.627	374.612	5494665.686	311787.101	374.752	5494669.651	311745.277	374.656
27-Oct-21	5494683.806	311900.381	374.627	5494677.582	311861.214	374.669	5494671.246	311822.629	374.607	5494665.685	311787.104	374.748	5494669.648	311745.281	374.652
5-Nov-21	5494683.811	311900.378	374.621	5494677.587	311861.211	374.663	5494671.252	311822.629	374.601	5494665.690	311787.103	374.744	5494669.648	311745.281	374.652
12-Nov-21	5494683.817	311900.376	374.620	5494677.593	311861.211	374.662	5494671.257	311822.629	374.601	5494665.695	311787.102	374.744	5494669.656	311745.282	374.649
30-Nov-21	5494683.826	311900.374	374.609	5494677.601	311861.215	374.653	5494671.262	311822.632	374.595	5494665.699	311787.104	374.737	5494669.662	311745.281	374.639
31-Dec-21	5494683.833	311900.373	374.595	NA	NA	NA	NA	NA	NA	5494665.704	311787.103	374.721	5494669.661	311745.285	374.624
31-Jan-22	5494683.838	311900.371	374.590	5494677.614	311861.208	374.632	5494671.274	311822.628	374.568	5494665.709	311787.104	374.716	NA	NA	NA
28-Feb-22	5494683.842	311900.369	374.591	5494677.619	311861.206	374.629	5494671.279	311822.627	374.567	5494665.714	311787.102	374.716	5494669.670	311745.289	374.617
31-Mar-22	5494683.850	311900.370	374.582	5494677.631	311861.204	374.626	5494671.291	311822.627	374.558	5494665.723	311787.104	374.708	5494670.005	311745.091	374.642
2-Apr-22	5494683.850	311900.370	374.582	5494677.631	311861.204	374.626	5494671.291	311822.627	374.558	5494665.723	311787.104	374.708	5494670.005	311745.091	374.642
30-Apr-22	5494683.858	311900.368	374.573	5494677.639	311861.204	374.617	5494671.297	311822.627	374.548	5494665.728	311787.104	374.699	5494670.007	311745.092	374.636
31-May-22	5494683.866	311900.366	374.569	5494677.646	311861.199	374.615	5494671.305	311822.624	374.544	5494665.734	311787.101	374.696	5494670.012	311745.091	374.634
3-Jul-22	5494683.866	311900.368	374.566	5494677.648	311861.202	374.612	5494671.308	311822.625	374.540	5494665.735	311787.104	374.694	5494670.009	311745.095	374.631
1-Aug-22	5494683.878	311900.370	374.562	5494677.655	311861.204	374.610	5494671.325	311822.627	374.534	5494665.746	311787.107	374.693	5494670.020	311745.101	374.632
31-Aug-22	5494683.879	311900.364	374.556	5494677.614	311861.170	374.605	5494671.337	311822.621	374.523	5494665.748	311787.103	374.685	5494670.020	311745.100	374.622
31-Aug-22	5494683.880	311900.364	374.556	5494677.614	311861.170	374.605	5494671.338	311822.621	374.523	5494665.748	311787.103	374.686	5494670.021	311745.100	374.623
30-Sep-22	5494683.881	311900.366	374.552	5494677.613	311861.170	374.602	5494671.348	311822.618	374.516	5494665.749	311787.101	374.681	5494670.022	311745.099	374.617
31-Oct-22	5494683.883	311900.367	374.552	5494677.615	311861.171	374.600	5494671.353	311822.618	374.516	5494665.751	311787.102	374.680	5494670.025	311745.102	374.617
28-Nov-22	5494683.884	311900.365	374.551	5494677.619	311861.171	374.602	5494671.361	311822.619	374.510	5494665.751	311787.102	374.683	5494670.028	311745.105	374.621
31-Dec-22	5494683.886	311900.364	374.546	5494677.624	311861.170	374.599	5494671.367	311822.619	374.502	NA	NA	NA	NA	NA	NA

	Lynx21-11		
	Northing	Easting	Elevation
16-Sep-20	5494668.434	311772.749	369.662
8-Oct-20	5494668.438	311772.748	369.651
10-Nov-20	5494668.452	311772.753	369.639
6-Dec-20	5494668.466	311772.756	369.622
12-Jan-21	5494668.478	311772.758	369.622
18-Feb-21	5494668.483	311772.757	369.620
18-Apr-21	5494668.498	311772.762	369.672
29-Apr-21	5494668.498	311772.761	369.671
6-May-21	5494668.501	311772.759	369.670
13-May-21	5494668.503	311772.757	369.668
20-May-21	5494668.503	311772.757	369.668
27-May-21	5494668.506	311772.755	369.666
3-Jun-21	5494668.500	311772.758	369.662
19-Jun-21	5494668.498	311772.757	369.657
26-Jun-21	5494668.501	311772.760	369.660
3-Jul-21	5494668.499	311772.759	369.656
10-Jul-21	5494668.509	311772.760	369.652
17-Jul-21	5494668.507	311772.760	369.642
23-Jul-21	5494668.517	311772.760	369.631
29-Jul-21	5494668.523	311772.759	369.628
31-Mar-22	5494818.725	311662.712	374.904
2-Apr-22	5494818.725	311662.712	374.904
30-Apr-22	5494818.732	311662.718	374.898
31-May-22	5494818.734	311662.718	374.896
3-Jul-22	5494818.730	311662.720	374.898
1-Aug-22	5494818.738	311662.732	374.895
31-Aug-22	5494818.733	311662.730	374.890
31-Aug-22	5494818.733	311662.730	374.890
30-Sep-22	5494818.682	311662.709	374.883
31-Oct-22	5494818.687	311662.719	374.881
28-Nov-22	5494818.697	311662.723	374.884
31-Dec-22	5494818.689	311662.729	374.880

Notes:

1. Surveys provided by Mifflin Surveys throughout 2022.
2. The combined measurement error (total of instrument, human and network) for the Lynx TDF monument survey is approximately 2 mm and 4 mm for horizontal and vertical displacement, respectively.
3. Values in table are reported in meters.
4. Green shading indicates monument was placed, replaced, or re-set on that date. Displacement after that date is calculated with respect to the survey reading on the replacement date.
5. 'NA' indicates no survey data available for that date.
6. Bold numbers indicate upstream monument location on dam, regular numbers indicate downstream location on dam

Table D-2: Lynx TDF - Monument Monitoring Summary - Cumulative Displacement (Change from Initial Location)

	Lynx21-01					Lynx21-02				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Oct-20	0.3	346.6	-0.2	0.3	-0.5	0.4	281.3	-0.4	0.0	-0.6
10-Nov-20	0.4	327.1	-0.3	0.3	-0.6	0.7	256.6	-0.6	-0.4	-1.0
6-Dec-20	0.3	327.0	-0.2	0.2	-1.3	0.9	246.9	-0.7	-0.6	-1.9
12-Jan-21	0.3	310.5	-0.3	0.1	-0.8	1.0	243.6	-0.7	-0.7	-1.6
18-Feb-21	0.3	310.5	-0.3	0.1	-0.8	1.5	242.8	-1.1	-1.1	-1.7
18-Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.8	284.0	-0.8	-0.1	-0.1	0.4	213.7	-0.1	-0.3	-0.1
6-May-21	0.9	270.0	-0.9	-0.3	-0.1	0.2	116.6	0.2	0.0	-0.1
13-May-21	1.0	275.7	-1.0	-0.2	-0.1	0.1	180.0	0.0	-0.1	-0.1
20-May-21	1.1	275.2	-1.1	-0.2	-0.2	0.3	198.4	0.0	-0.3	-0.2
27-May-21	0.8	270.0	-0.8	-0.2	-0.3	0.4	213.7	-0.1	-0.3	-0.4
3-Jun-21	1.0	264.3	-0.9	-0.4	-0.2	0.4	194.0	0.0	-0.4	-0.3
19-Jun-21	1.0	264.3	-0.9	-0.4	-0.2	0.7	180.0	0.2	-0.7	-0.6
26-Jun-21	1.1	264.8	-1.0	-0.4	-0.1	0.7	195.9	0.0	-0.7	-0.5
3-Jul-21	0.9	270.0	-0.9	-0.3	-0.1	0.8	180.0	0.2	-0.8	-0.6
10-Jul-21	1.1	270.0	-1.0	-0.3	-0.2	0.8	194.0	0.1	-0.8	-0.8
17-Jul-21	1.1	264.8	-1.0	-0.4	-0.8	1.0	196.7	0.0	-1.0	-1.6
23-Jul-21	1.0	258.7	-0.9	-0.5	-1.4	1.1	195.3	0.0	-1.1	-2.3
29-Jul-21	1.1	254.7	-1.0	-0.6	-1.3	1.2	215.0	-0.4	-1.2	-2.3
15-Sep-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-21	0.1	196.7	0.0	-0.1	-0.1	0.1	145.0	0.1	-0.1	-0.4
29-Sep-21	0.2	188.5	0.0	-0.2	-0.5	0.3	246.5	-0.2	-0.2	-1.0
8-Oct-21	0.5	209.9	-0.1	-0.5	-0.5	0.7	233.0	-0.4	-0.5	-1.0
16-Oct-21	0.4	217.5	-0.1	-0.4	-0.6	0.7	252.4	-0.5	-0.4	-1.4
27-Oct-21	0.2	213.0	-0.1	-0.2	-0.8	0.4	238.8	-0.3	-0.3	-1.6
5-Nov-21	0.4	217.5	-0.1	-0.4	-0.8	0.8	254.7	-0.6	-0.4	-1.8
12-Nov-21	0.7	233.0	-0.4	-0.5	-0.8	1.2	250.5	-1.0	-0.7	-1.9
30-Nov-21	1.0	252.1	-0.8	-0.6	-1.1	1.5	258.2	-1.3	-0.7	0.0
31-Dec-21	1.3	242.0	-0.9	-0.9	-1.7	NA	NA	NA	NA	NA
31-Jan-22	1.4	240.4	-1.0	-1.0	-2.0	NA	NA	NA	NA	NA
28-Feb-22	1.5	242.2	-1.1	-1.1	-2.3	2.6	261.0	-2.3	-1.1	-5.1
31-Mar-22	1.5	242.2	-1.1	-1.1	-2.3	2.7	263.7	-2.5	-1.1	-5.2
2-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-22	0.5	286.7	-0.5	0.0	-0.2	0.3	260.5	-0.3	-0.1	-0.6
31-May-22	NA	NA	NA	NA	NA	1.1	280.3	-1.1	-0.1	-0.8
3-Jul-22	NA	NA	NA	NA	NA	1.1	280.3	-1.1	-0.1	-1.0
1-Aug-22	0.0	0.0	0.0	0.0	0.0	1.9	288.4	-1.9	0.0	-1.1
31-Aug-22	2.7	276.3	-2.7	-0.5	-4.5	1.9	279.0	-1.9	-0.3	-1.8
31-Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-22	0.3	216.9	-0.1	-0.2	-0.2	0.8	273.6	-0.8	-0.2	-0.7
31-Oct-22	0.4	254.1	-0.3	-0.2	-0.3	0.9	279.5	-0.9	-0.1	-1.0
28-Nov-22	0.4	240.3	-0.3	-0.3	-0.3	1.3	276.6	-1.3	-0.3	-1.0
31-Dec-22	0.5	196.7	0.0	-0.5	-0.2	NA	NA	NA	NA	NA

	Lynx21-03					Lynx21-04				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Oct-20	0.7	238.1	-0.5	-0.5	-1.0	0.2	346.6	-0.1	0.2	-1.0
10-Nov-20	1.0	235.7	-0.6	-0.8	-1.7	0.4	353.7	-0.1	0.3	-1.9
6-Dec-20	1.0	230.0	-0.5	-0.8	-2.8	0.6	5.0	-0.1	0.6	-3.0
12-Jan-21	1.4	238.1	-0.9	-1.1	-2.8	0.8	343.2	-0.4	0.6	-2.9
18-Feb-21	2.2	251.8	-1.7	-1.3	-3.0	0.7	320.0	-0.6	0.4	-3.2
18-Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.4	225.0	-0.2	-0.4	-0.2	0.5	251.6	-0.4	-0.3	-0.2
6-May-21	0.2	116.6	0.2	0.0	-0.2	0.2	108.4	0.2	0.0	-0.2
13-May-21	0.1	270.0	-0.1	0.0	-0.3	0.1	225.0	0.0	-0.1	-0.4
20-May-21	0.4	256.0	-0.4	-0.2	-0.5	0.1	225.0	0.0	-0.1	-0.5
27-May-21	0.7	213.7	-0.2	-0.7	-0.8	0.8	168.7	0.4	-0.7	-1.2
3-Jun-21	0.8	219.8	-0.3	-0.7	-0.8	1.1	182.7	0.3	-1.0	-1.4
19-Jun-21	1.2	189.5	0.2	-1.2	-1.5	1.3	168.7	0.6	-1.1	-1.9
26-Jun-21	1.1	201.8	-0.1	-1.1	-1.5	1.1	161.6	0.7	-0.9	-1.9
3-Jul-21	1.4	197.1	0.0	-1.4	-1.9	1.4	161.6	0.8	-1.2	-2.4
10-Jul-21	1.3	212.5	-0.3	-1.3	-2.1	1.2	167.7	0.6	-1.0	-2.6
17-Jul-21	1.6	209.7	-0.3	-1.6	-2.9	1.4	169.5	0.6	-1.2	-3.4
23-Jul-21	1.4	213.7	-0.4	-1.4	-3.9	1.3	160.2	0.8	-1.1	-4.5
29-Jul-21	1.8	222.7	-0.7	-1.6	-3.9	1.3	168.7	0.6	-1.1	-4.3
15-Sep-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-21	0.2	340.7	-0.1	0.2	-0.5	0.2	0.0	-0.1	0.2	-0.6
29-Sep-21	0.3	330.5	-0.3	0.2	-1.3	0.5	348.7	-0.2	0.4	-1.2
8-Oct-21	0.6	323.5	-0.5	0.4	-1.4	0.9	324.5	-0.7	0.5	-1.5
16-Oct-21	1.0	332.4	-0.7	0.7	-1.7	1.3	341.6	-0.7	1.0	-1.9
27-Oct-21	1.0	350.4	-0.5	0.9	-2.3	1.7	353.3	-0.7	1.6	-2.5
5-Nov-21	1.3	342.9	-0.7	1.0	-2.7	2.0	348.7	-1.0	1.8	-2.9
12-Nov-21	1.3	334.6	-0.9	1.0	-2.7	2.3	344.7	-1.2	1.9	-3.0
30-Nov-21	1.8	341.5	-1.1	1.4	-3.6	3.0	346.4	-1.5	2.6	-3.8
31-Dec-21	2.0	334.2	-1.4	1.5	-4.7	3.3	344.3	-1.8	2.8	-5.5
31-Jan-22	2.5	342.2	-1.5	2.1	-6.8	4.2	345.0	-2.3	3.6	-6.4
28-Feb-22	3.1	341.5	-1.8	2.5	-7.3	4.7	342.7	-2.7	3.9	-6.5
31-Mar-22	3.6	341.0	-2.1	2.9	-7.4	5.7	344.7	-3.1	4.8	-7.5
2-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-22	0.3	323.1	-0.2	0.1	-0.8	0.4	299.7	-0.4	0.1	-0.9
31-May-22	0.8	315.0	-0.8	0.4	-1.1	0.9	319.4	-0.8	0.5	-1.1
3-Jul-22	0.7	326.3	-0.6	0.5	-1.3	1.0	336.0	-0.7	0.7	-1.5
1-Aug-22	1.7	336.4	-1.2	1.3	-1.7	2.3	344.7	-1.2	1.9	-2.1
31-Aug-22	1.7	331.9	-1.2	1.2	-2.2	2.6	339.4	-1.6	2.0	-2.9
31-Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-22	0.5	310.6	-0.4	0.2	-0.6	0.6	5.2	-0.1	0.5	-0.7
31-Oct-22	0.7	329.7	-0.5	0.5	-0.7	1.0	357.0	-0.3	0.9	-1.0
28-Nov-22	0.8	342.6	-0.5	0.7	-0.8	1.8	351.9	-0.8	1.6	-1.4
31-Dec-22	0.8	333.4	-0.5	0.6	-1.3	NA	NA	NA	NA	NA

Myra Falls Mine
2022 Lynx TDF Monument Data

	Lynx21-05					Lynx21-06				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Oct-20	0.3	341.8	-0.3	0.0	-1.9	1.9	3.9	-1.8	0.4	-1.9
10-Nov-20	1.2	329.9	-1.1	-0.4	-3.9	4.4	359.9	-4.3	0.6	-3.7
6-Dec-20	1.7	326.9	-1.5	-0.7	-5.9	5.6	0.3	-5.5	0.8	-5.6
12-Jan-21	2.3	327.6	-2.1	-0.9	-6.4	7.8	1.1	-7.7	1.3	-6.4
18-Feb-21	2.6	328.9	-2.4	-1.0	-7.2	8.1	359.2	-8.0	1.1	-7.0
18-Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.2	0.0	-0.2	0.0	-0.5	0.3	270.0	0.0	-0.3	-0.2
6-May-21	0.3	0.0	-0.3	0.0	-0.5	0.2	90.0	0.0	0.2	-0.2
13-May-21	0.4	0.0	-0.4	0.1	-0.6	0.2	0.0	-0.2	0.0	-0.4
20-May-21	0.4	346.0	-0.4	0.0	-0.9	0.1	90.0	0.0	0.1	-0.5
27-May-21	0.1	135.0	0.1	0.1	-1.7	0.8	150.3	0.8	0.3	-1.0
3-Jun-21	0.1	225.0	0.1	-0.1	-1.9	0.7	164.1	0.7	0.1	-1.3
19-Jun-21	0.2	153.4	0.2	0.1	-2.5	1.0	150.9	1.0	0.4	-1.7
26-Jun-21	0.1	90.0	0.0	0.1	-2.5	1.0	143.1	0.9	0.5	-1.7
3-Jul-21	0.2	153.4	0.2	0.1	-2.8	1.2	149.0	1.1	0.4	-2.0
10-Jul-21	0.8	352.9	-0.8	0.0	-3.3	0.8	135.0	0.7	0.5	-2.3
17-Jul-21	0.9	339.4	-0.8	-0.2	-4.2	1.1	138.8	0.9	0.6	-3.2
23-Jul-21	1.3	347.0	-1.3	-0.1	-5.2	1.1	131.2	0.8	0.7	-4.1
29-Jul-21	2.0	339.8	-2.0	-0.4	-5.3	0.6	141.3	0.6	0.3	-4.2
15-Sep-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-21	0.3	319.6	-0.2	-0.1	-0.7	0.3	319.6	-0.2	-0.1	-0.6
29-Sep-21	0.6	353.3	-0.6	0.0	-1.4	0.6	344.2	-0.6	-0.1	-1.3
8-Oct-21	1.1	334.8	-1.1	-0.3	-1.8	1.1	334.8	-1.1	-0.3	-1.5
16-Oct-21	1.5	349.8	-1.5	-0.1	-2.1	1.5	341.4	-1.5	-0.3	-2.0
27-Oct-21	1.9	3.9	-1.9	0.4	-2.6	1.4	357.1	-1.4	0.1	-2.3
5-Nov-21	2.4	355.9	-2.4	0.2	-3.0	1.9	349.0	-1.9	-0.1	-2.9
12-Nov-21	2.7	356.4	-2.7	0.2	-3.2	2.6	347.2	-2.6	-0.2	-3.0
30-Nov-21	3.6	355.7	-3.6	0.3	-4.2	3.5	347.2	-3.5	-0.3	-4.1
31-Dec-21	4.3	355.1	-4.3	0.3	-5.7	4.2	348.0	-4.2	-0.3	-5.5
31-Jan-22	5.0	353.5	-5.0	0.2	-6.7	4.7	346.9	-4.7	-0.4	-6.0
28-Feb-22	5.7	354.3	-5.7	0.3	-6.6	5.2	345.7	-5.1	-0.5	-5.9
31-Mar-22	7.2	356.3	-7.2	0.6	-7.8	5.9	348.6	-5.9	-0.3	-6.8
2-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-22	1.7	353.1	-1.7	0.0	-0.9	0.8	341.6	-0.8	-0.1	-1.0
31-May-22	2.4	347.7	-2.3	-0.2	-1.5	1.6	346.0	-1.6	-0.2	-1.3
3-Jul-22	2.6	353.4	-2.6	0.1	-1.9	1.6	352.9	-1.6	0.0	-1.6
1-Aug-22	4.1	1.4	-4.0	0.7	-2.5	2.8	0.0	-2.8	0.4	-2.0
31-Aug-22	4.1	354.4	-4.1	0.2	-3.2	3.0	348.3	-3.0	-0.2	-2.6
31-Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-22	0.5	5.7	-0.5	0.1	-0.7	0.3	53.1	-0.1	0.2	-0.4
31-Oct-22	0.9	9.5	-0.9	0.3	-0.7	0.5	40.6	-0.3	0.3	-0.4
28-Nov-22	1.2	11.8	-1.2	0.4	-0.9	0.5	12.5	-0.4	0.2	-0.5
31-Dec-22	1.0	2.9	-1.0	0.2	-1.5	0.7	0.0	-0.6	0.1	-1.0

	Lynx21-07					Lynx21-08				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Oct-20	1.0	13.5	-0.9	0.4	-1.2	1.2	347.7	-1.2	-0.1	-1.6
10-Nov-20	1.5	18.8	-1.3	0.7	-2.3	2.2	357.7	-2.2	0.2	-3.0
6-Dec-20	1.5	15.6	-1.4	0.6	-3.6	2.5	355.3	-2.5	0.2	-4.4
12-Jan-21	2.0	15.0	-1.9	0.8	-3.5	3.3	356.4	-3.3	0.3	-4.5
18-Feb-21	2.1	16.6	-1.9	0.9	-3.8	3.5	355.7	-3.5	0.2	-4.8
18-Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.1	135.0	0.1	0.1	-0.1	0.1	225.0	0.1	-0.1	-0.2
6-May-21	0.3	108.4	0.1	0.3	-0.2	0.2	243.4	0.1	-0.2	-0.4
13-May-21	0.1	90.0	0.0	0.1	-0.3	0.1	315.0	-0.1	-0.1	-0.5
20-May-21	0.1	135.0	0.1	0.1	-0.5	0.4	303.7	-0.2	-0.3	-0.4
27-May-21	0.9	153.4	0.8	0.3	-0.9	0.5	191.3	0.5	-0.2	-1.0
3-Jun-21	0.7	164.1	0.7	0.1	-0.9	0.5	233.1	0.2	-0.4	-1.0
19-Jun-21	1.2	155.6	1.2	0.3	-1.3	0.5	191.3	0.5	-0.2	-1.4
26-Jun-21	1.2	149.0	1.1	0.4	-1.2	0.3	161.6	0.3	0.1	-1.3
3-Jul-21	1.4	159.0	1.4	0.3	-1.5	0.5	191.3	0.5	-0.2	-1.5
10-Jul-21	1.1	146.3	1.0	0.5	-1.8	0.1	315.0	-0.1	-0.1	-2.0
17-Jul-21	1.1	153.4	1.1	0.4	-2.5	0.2	296.6	-0.1	-0.2	-2.8
23-Jul-21	1.3	151.4	1.2	0.4	-3.4	0.3	341.6	-0.3	-0.1	-3.8
29-Jul-21	1.1	158.2	1.0	0.3	-3.5	0.8	336.8	-0.7	-0.2	-3.8
15-Sep-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-21	0.4	350.1	-0.4	0.0	-0.6	0.1	325.0	-0.1	-0.1	-0.6
29-Sep-21	0.8	355.0	-0.8	0.0	-1.5	0.5	352.0	-0.5	0.0	-1.5
8-Oct-21	1.3	352.5	-1.3	0.0	-1.8	0.8	348.0	-0.8	-0.1	-1.7
16-Oct-21	1.6	350.4	-1.6	0.0	-2.1	1.3	352.5	-1.3	0.0	-2.0
27-Oct-21	1.7	357.6	-1.7	0.2	-2.4	1.2	1.4	-1.2	0.2	-2.5
5-Nov-21	2.2	350.5	-2.2	0.0	-3.0	1.8	1.0	-1.8	0.3	-3.1
12-Nov-21	2.8	352.5	-2.8	0.0	-3.1	2.3	0.7	-2.3	0.4	-3.1
30-Nov-21	3.6	0.5	-3.6	0.5	-4.0	2.8	6.7	-2.7	0.7	-3.7
31-Dec-21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31-Jan-22	4.9	352.2	-4.9	0.0	-6.1	4.0	359.0	-4.0	0.5	-6.4
28-Feb-22	5.5	350.8	-5.5	-0.1	-6.4	4.5	357.8	-4.5	0.5	-6.5
31-Mar-22	6.7	350.8	-6.7	-0.1	-6.7	5.7	358.3	-5.7	0.7	-7.4
2-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-22	0.8	0.0	-0.8	0.1	-1.0	0.5	0.0	-0.5	0.1	-1.0
31-May-22	1.6	341.6	-1.6	-0.3	-1.1	1.4	347.9	-1.4	-0.1	-1.4
3-Jul-22	1.7	353.3	-1.7	0.0	-1.4	1.7	353.3	-1.7	0.0	-1.8
1-Aug-22	2.4	0.0	-2.4	0.3	-1.6	3.4	0.0	-3.4	0.5	-2.4
31-Aug-22	3.8	243.4	1.2	-3.6	-2.1	4.6	352.6	-4.6	0.1	-3.5
31-Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-22	0.1	180.0	0.1	0.0	-0.3	1.1	344.1	-1.1	-0.1	-0.7
31-Oct-22	0.1	45.0	-0.1	0.1	-0.5	1.6	349.0	-1.6	-0.1	-0.7
28-Nov-22	0.5	11.3	-0.5	0.2	-0.3	2.4	355.1	-2.4	0.1	-1.3
31-Dec-22	1.0	0.0	-1.0	0.1	-0.6	3.0	356.1	-2.9	0.2	-2.1

	Lynx21-09					Lynx21-10				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Oct-20	1.6	334.0	-1.6	-0.5	-1.6	2.7	9.0	-2.6	0.8	-3.5
10-Nov-20	2.3	343.2	-2.3	-0.3	-2.9	3.4	7.0	-3.3	0.9	-5.2
6-Dec-20	2.6	344.6	-2.6	-0.3	-4.5	3.7	7.9	-3.6	1.0	-6.8
12-Jan-21	3.5	343.6	-3.5	-0.5	-4.9	4.4	3.8	-4.3	0.9	-7.2
18-Feb-21	3.9	339.4	-3.8	-0.8	-5.1	4.7	1.2	-4.6	0.8	-7.8
18-Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.0	#DIV/0!	0.0	0.0	0.0	0.1	296.6	-0.1	-0.1	-0.2
6-May-21	0.2	270.0	0.0	-0.2	-0.2	0.3	279.5	-0.1	-0.3	-0.4
13-May-21	0.3	315.0	-0.2	-0.2	-0.4	0.3	296.6	-0.2	-0.3	-0.6
20-May-21	0.4	315.0	-0.3	-0.3	-0.5	0.6	305.0	-0.4	-0.4	-0.7
27-May-21	0.4	206.6	0.4	-0.3	-1.1	0.3	218.7	0.2	-0.2	-1.3
3-Jun-21	0.5	258.7	0.0	-0.5	-1.2	0.6	265.2	0.0	-0.6	-1.4
19-Jun-21	0.5	233.1	0.2	-0.4	-1.8	0.6	235.0	0.3	-0.5	-2.1
26-Jun-21	0.1	225.0	0.1	-0.1	-1.7	0.3	233.1	0.1	-0.2	-2.0
3-Jul-21	0.5	233.1	0.2	-0.4	-2.1	0.4	230.2	0.2	-0.3	-2.4
10-Jul-21	0.7	315.0	-0.6	-0.4	-2.7	0.5	311.2	-0.4	-0.3	-3.0
17-Jul-21	0.7	315.0	-0.6	-0.4	-3.5	0.5	302.0	-0.3	-0.4	-4.0
23-Jul-21	1.2	329.0	-1.1	-0.4	-4.8	0.8	331.9	-0.8	-0.3	-5.4
29-Jul-21	1.6	338.2	-1.6	-0.4	-4.8	1.3	336.5	-1.2	-0.3	-5.6
15-Sep-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21-Sep-21	0.1	325.0	-0.1	-0.1	-0.6	0.1	251.6	0.0	-0.1	-0.7
29-Sep-21	0.3	346.9	-0.3	0.0	-1.3	0.3	0.0	-0.3	0.0	-1.3
8-Oct-21	0.7	346.3	-0.7	-0.1	-1.7	0.4	15.3	-0.3	0.2	-1.6
16-Oct-21	1.2	1.4	-1.2	0.2	-1.9	0.9	6.6	-0.8	0.2	-1.9
27-Oct-21	1.1	16.7	-1.0	0.5	-2.3	0.8	41.4	-0.5	0.6	-2.3
5-Nov-21	1.6	8.2	-1.6	0.5	-2.7	0.8	41.4	-0.5	0.6	-2.3
12-Nov-21	2.1	3.5	-2.1	0.4	-2.7	1.5	23.7	-1.3	0.8	-2.6
30-Nov-21	2.5	7.5	-2.4	0.7	-3.4	2.0	14.3	-1.9	0.8	-3.6
31-Dec-21	3.0	4.4	-2.9	0.7	-5.0	2.1	25.7	-1.7	1.2	-5.1
31-Jan-22	3.5	5.4	-3.4	0.8	-5.5	NA	NA	NA	NA	NA
28-Feb-22	4.0	1.9	-3.9	0.7	-5.5	3.1	25.2	-2.6	1.7	-5.8
31-Mar-22	4.9	3.9	-4.8	1.0	-6.3	40.7	333.0	-38.5	-13.1	-3.3
2-Apr-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Apr-22	0.5	0.0	-0.5	0.1	-0.9	0.2	33.7	-0.1	0.1	-0.6
31-May-22	1.1	344.7	-1.1	-0.1	-1.2	0.7	0.0	-0.7	0.1	-0.8
3-Jul-22	1.2	0.0	-1.2	0.2	-1.4	0.6	45.0	-0.3	0.5	-1.1
1-Aug-22	2.3	7.4	-2.2	0.6	-1.5	1.8	33.7	-1.3	1.2	-1.0
31-Aug-22	2.5	357.7	-2.5	0.3	-2.3	1.7	31.0	-1.4	1.1	-2.0
31-Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-Sep-22	0.2	296.6	-0.1	-0.2	-0.5	0.2	326.3	-0.2	-0.1	-0.5
31-Oct-22	0.3	341.6	-0.3	-0.1	-0.5	0.5	24.0	-0.4	0.3	-0.5
28-Nov-22	0.3	341.6	-0.3	-0.1	-0.2	0.9	33.7	-0.7	0.6	-0.2
31-Dec-22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	Lynx21-11				
	Magnitude (cm)	Direction 2 (deg)	Transverse[3] (cm)	Longitudinal[4] (cm)	Vertical[5] (cm)
16-Sep-20	0.0	0.0	0.0	0.0	0.0
8-Oct-20	0.4	334.0	-0.3	-0.3	-1.1
10-Nov-20	1.8	11.8	-1.8	-0.1	-2.3
6-Dec-20	3.3	12.4	-3.3	-0.2	-4.0
12-Jan-21	4.5	11.3	-4.5	-0.3	-4.0
18-Feb-21	4.9	9.1	-4.9	-0.6	-4.2
18-Apr-21	0.0	0.0	0.0	0.0	0.0
29-Apr-21	0.1	270.0	0.0	-0.1	-0.1
6-May-21	0.4	315.0	-0.2	-0.4	-0.2
13-May-21	0.7	315.0	-0.3	-0.6	-0.4
20-May-21	0.7	315.0	-0.3	-0.6	-0.4
27-May-21	1.1	318.8	-0.6	-0.9	-0.6
3-Jun-21	0.4	296.6	-0.1	-0.4	-1.0
19-Jun-21	0.5	270.0	0.1	-0.5	-1.5
26-Jun-21	0.4	326.3	-0.2	-0.3	-1.2
3-Jul-21	0.3	288.4	0.0	-0.3	-1.6
10-Jul-21	1.1	349.7	-1.0	-0.5	-2.0
17-Jul-21	0.9	347.5	-0.8	-0.4	-3.0
23-Jul-21	1.9	354.0	-1.8	-0.7	-4.1
29-Jul-21	2.5	353.2	-2.3	-1.0	-4.4
31-Mar-22	0.0	0.0	0.0	0.0	0.0
2-Apr-22	0.0	0.0	0.0	0.0	0.0
30-Apr-22	0.9	40.2	-0.8	0.4	-0.6
31-May-22	1.1	33.7	-1.0	0.3	-0.8
3-Jul-22	0.9	58.0	-0.7	0.6	-0.6
1-Aug-22	2.4	57.0	-1.8	1.6	-0.9
31-Aug-22	2.0	66.0	-1.3	1.5	-1.4
31-Aug-22	0.0	0.0	0.0	0.0	0.0
30-Sep-22	5.5	202.4	5.5	-0.6	-0.7
31-Oct-22	4.7	193.4	4.7	0.2	-0.9
28-Nov-22	3.7	191.0	3.7	0.3	-0.6
31-Dec-22	4.4	181.3	4.3	1.1	-1.0

Notes:

1. The combined measurement error (total of instrument, human and network) for the Lynx TDF monument survey is approximately 1.5 cm and 1.0 cm for horizontal and vertical displacement, respectively.
2. Negative values are in the upstream direction, positive values are in the downward direction.
3. Negative values are descending stations along dam centerline and positive values are for ascending stations.
4. Green shading indicates monument was placed, replaced, or re-set on that date. Displacement after that date is calculated with respect to the initial survey reading on the replacement date.
5. 'NA' indicates no survey data available for that date. Displacement values are based on changes from the last available readings.
6. **Bold** numbers indicate upstream monument location on dam, regular numbers indicate downstream location on dam

Appendix C – WSP Inspections

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Myra Falls Mine
Quarterly Site Visit Report

Date of Field Review:	14 January 2022	Date of Memo:	11 March 2022
File No.:	NX14001B4	Client:	Myra Falls Mine Ltd. (MFM)
Engineer:	Eric Thiesburger, P.Eng.	To:	Nicole Pesonen
With:	Josh Fry	Cc:	Dixie Ann Simon, P.Eng.
Weather:	Cold & snowy: wintery conditions.		

Summary

The Old TDF and Lynx TDF are reviewed by Wood Environment & Infrastructure, Wood Canada Limited (Wood) on a regular basis as part of the engineering reconnaissance of the tailing facilities. Wood notes conditions in and around the facilities during the review, with emphasis on water management, dam stability, and seepage conditions. This review was completed to support the regulatory requirement for annual review of the Facilities by the Engineer of Record or their designate.

The action items and recommendations summarized above are highlighted with bold text below. This inspection was carried out on 14 January 2022. The recommendations herein are based on Wood's observation of surface conditions at the time of the field review and are subject to revision upon the availability of new information.

Action items and recommendations from this site visit are:

1. Lynx TDF:
    a. Continue pumping the pond water to a practical minimum in the TSF on a routine basis.
    b. Collect pond water level readings using the staff gauge on a daily basis.
    c. MFM shall make effort to complete the 10L portal plug work as soon as practical and complete the dam construction at the west abutment.
    d. Monitor for erosion of the downstream face resulting from concentrated flows off the crest through the safety berm punch-outs.
2. Surge Pond:
    a. Consider measures to prevent sedimentation such as re-diversion to another area or excavating sediment traps (i.e., bell holes) along the concentrated portion of the flow path from the Paste Plant area.
3. Old TDF
    a. Grating on both decants needs to be replaced due to acidic dissolution of lower portion of the vertical grating.
    b. Although not clearly visible due to snow cover, the erosion of Seismic Upgrade berm cover is a condition that should be prevented from occurring in the future and the eroded material should be reinstated to return the Non-Acid Generating fill type cover to its original design thickness and extents.
4. LLDD:

a. Remove debris (trees and cobble sized rocks) when safe to do so.
b. Numerous anchor bolts are no longer flush to the concrete blankets. Observe for any further deterioration or damage.

5. Water Treatment Ponds:
   a. Enhanced surveillance of the Pond 2A spring seeps: During the weekly inspections, note conditions, such as flow rates, extents, water levels and any signs of turbidity. MFM has had water chemistry testing done to help locate the source. Results pending engineering analysis.
   b. Rip rap on the WTP berm (adjacent to the conveyor): Fir and hemlock trees have begun to establish in some areas of the berm. These should be removed to stop root penetration and proliferation.

Observations

Old TDF

- Erosion of the south side of the West Strip channel; riling and erosion up to several inches in depth is present around the outlet of the channel.
- Instrumentation huts:
  - Hut A was inspected, and no issues noted, inside the hut was dry and all cables legibly marked.
  - Hut B was not located.
  - Hut C is not a hut; rather, the cable box is attached at around 1.5 m above ground to a steel pole. A solar panel attached to a steel pole lying flat on the ground was observed to be partially buried in snow.
- Bubbling to the east of the APA Spillway within the East Strip Channel was observed to be no longer present
- Two LLDD underdrains observed to be flowing very slowly (dripping.)
- DDSS has a low discharge flow
- Ponding observed on a large portion of the easternmost area of the East Strip

The downstream shells of the APA berm and Seismic Upgrade berms showed no signs of solids migration.

Lynx TDF

(Upstream, Crest and Abutment)

- Pumping was ongoing at the time of site visit. MFM has increased to pumping capacity with 12" pipe on a diesel pump locate near west abutment. The pumping appeared to be effective on limiting the pond in the area near west abutment and exposing a large area of tailings beach (~70% of impoundment). The practice pumping the pond water to a practical minimum should continue.
- The staff gauge is located near the pump station near west abutment. The top of staff gauge reads an elevation of 363.68 according to MFM. The pond level was estimated about El. 362.7 m at the time of site visit. Pond water level readings using the staff gauge should be collected on a daily basis.
- The upstream bench is estimated to be 0.5 to 2.5 m above tailings or pond. The bench appeared to be in good condition with minor ponding on the surface following recent rainfall events.
- Tailings discharge was ongoing with a spigot close to east abutment. Tailings beach elevations were higher on the east and south sides of impoundment. MFM should rotate the spigot along the upstream side of the bench to make more even tailings beaches, which will improve storage management and upstream stability during next upstream bench raise construction.

- The crest of Lynx Dam was generally in good condition, with muddy conditions, minor ponding and vehicle rutting on the road surfacing material. MFM indicated the crest had been re-graded a few times to maintain trafficable.
- A safety berm was constructed on the downstream side of crest. Some slots were cut to allow drainage to the downstream side. Local regrading to divert runoff to the slots may be useful to allow efficient discharge.
- Instrumentation including survey prisms and slope inclinometers were observed on the crest during the site visit.
- The WRD1 Zone J filter was raised by 5 m in 2021 and the crest width was estimated between 11 and 14 m. The slope face of the WRD 1 Zone J was in good condition. Minor crest sloughing and cracking was observed at the upstream limit of the crest near the dam, i.e. adjacent to the ramp to upstream bench. This sloughing and cracking should be monitored during routine dam inspections, and may be repaired at the next dam raise construction or if conditions deteriorate.
- The dam was not tied in with the bedrock at the west abutment as the 10L portal has not been plugged and sealed, which was delayed according to MFM. Water was flowing out of the portal and diverted to the downstream side of the dam at the time of the site visit. MFM shall make effort to complete the 10L portal work as soon as practical, and complete the dam tie-in construction at the west abutment.
- The operation spillway was clear and unobstructed.

(Downstream and Additional Downstream Raise)

- Downstream slopes of the Lynx Dam are in good condition. No seepage or wet spots observed on the downstream dam face and toe.
- The downstream additional raise was completed at South Arm and West Arm, to elevations of about 346 to 347 m. Minor ponding and rutting was present at the bench. No signs of instability were observed.

Lynx TDF Closure Cover Trial

- Closure cover trial area was at a portion of additional downstream raise at the South Arm. Runoff erosions were observed on the till cover material. Finer particles were washed downslope and accumulated at the toe area.

Lynx Springs Drain

- Springs drain was flowing clear and culvert to sump box was functioning.

Diversion Ditches

- The Lower Lynx Diversion Ditch was flowing unimpeded.
    - Several cobbles and tree branches noted within the channel. This is common and MFM regularly removes debris.

Surge Pond

- Sediments transported by surface water runoff are depositing in the north-west corner of the Surge Pond. The runoff originates over a substantial (relative to the Surge Pond) sub-catchment, likely extending as far north as the Paste Plant.
- Decant is unimpeded.
- Water has a clear flow path to the decant.

Super Pond

- Overflow discharging normally to the WTPs.

- No signs of instability on crest of downstream shell. No solids migration, deflection, or heave visible in vicinity of the DS toe.
- 25-sump area around collar unflooded, appears functional.

Polishing Ponds

- Artesian conditions were observed along an approximately 8-meter section of the Pond 2A dam downstream toe/Pond 4 shoreline. Numerous spring seeps were located both along the dam toe (sub ariel) and the Pond 4 pond bottom (sub aqueous.)
- Water levels were above the normal operating range (based on observing water level on the staff gauge) in Pond 4, all other Ponds were in the normal operation range.
- Myra Out and decant structures on all of the Ponds appeared to be operating normally.
- Rip rap on the WTP berm (adjacent to the conveyor) was snow covered. The snow was not very deep and individual boulders were apparent. No deterioration or damage was observed.

Photographs

Photo 1a: Old TDF outer embankment

Photo 1b: Old TDF outer embankment

Photo 1c: Old TDF outer embankment

Photo 1d: Old TDF outer embankment

Photo 1e: Old TDF east end of the east strip. Note ponded water and flow from the LLDD underdrain (bottom left)

Photo 1f: Old TDF showing snow covered APA

Photo 2a: LLDD

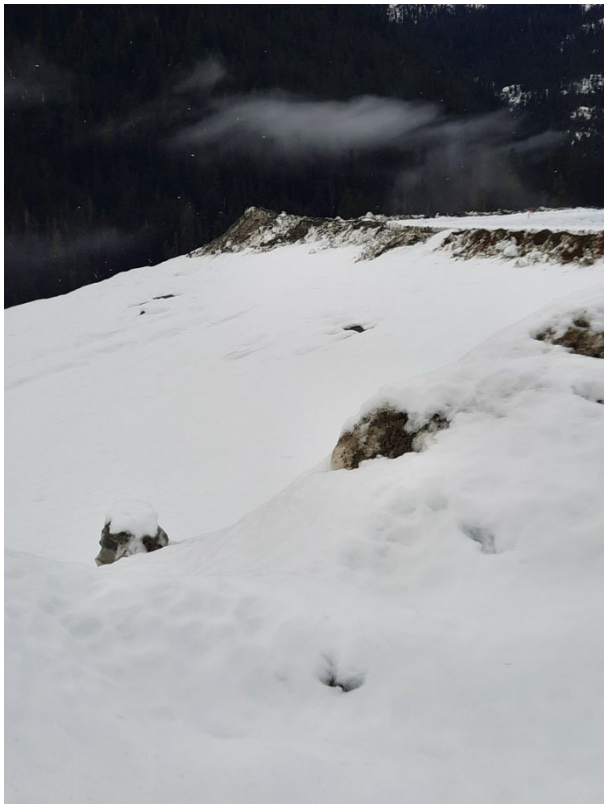

Photo 3a: Lynx TDF 4:1 slope

Photo 3b: Lynx TDF showing WRD1 filter and discharge of raw tails to the west of the filter

Photo 3c: Lynx TDF beach and pool

Photo 3d: Lynx TDF dam crest and upstream bench

Photo 3e: Lynx TDF dam crest showing well maintained running surface with minimal pooling

Photo 3f: Lynx TDF discharge of raw tails

Photo 3g: Lynx TDF reclaim pool

Photo 3h: Lynx TDF south-west portion of downstream dam shell

Photo 4a: WTP 3A, silt curtain installed

Photo 4b: WTP 2A, staff gauge

Photo 4c: Crest between WTPs

Photo 4d: dredge dry-docked S-E corner of WTP2A

Photo 4e: WTP 2 staff gauge

Photo 4f: WTP1

Photo 4g: WTP1 staff gauge

Photo 4h: WTP1

Photo 4i: WTP2A

Photo 4j: WTP 2A

Photo 4k: Crest between WTP2 and WTP2A

Photo 4l: Crest between WTP3 and WTP3A

Photo 4m: WTP 3A

Photo 4n: WTP3A staff gauge

Photo 5a: Super Pond

Photo 5b: Super Pond In

Photo 5c: Super Pond out

Photo 5d: Super Pond crest

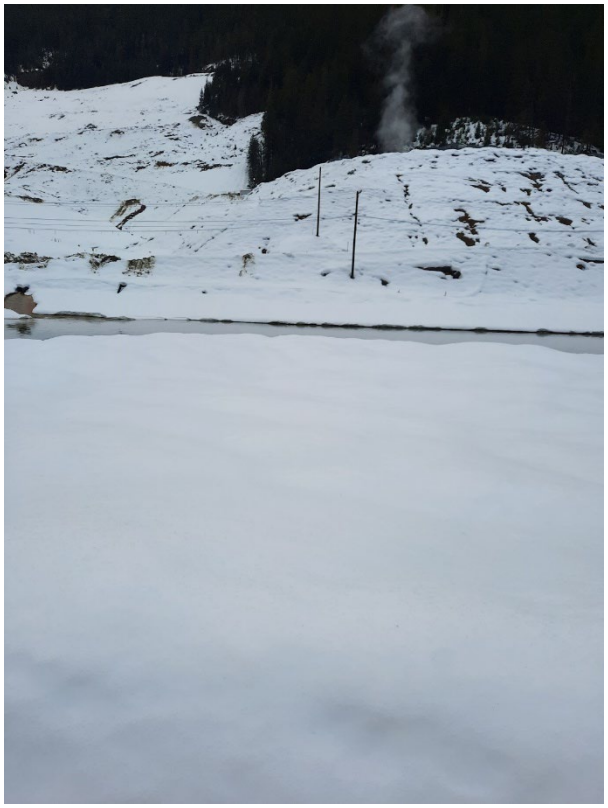

Photo 6a: Surge Pond

Photo 6b: SurgePond west decant

Photo 6c: Old TDF west strip channel

Photo 6d: Old TDF east end of the west strip, APA spillway and WRD6

Photo 6e: Old TDF west end of the east strip, APA berm, APA spillway & APA spillway culvert crossings

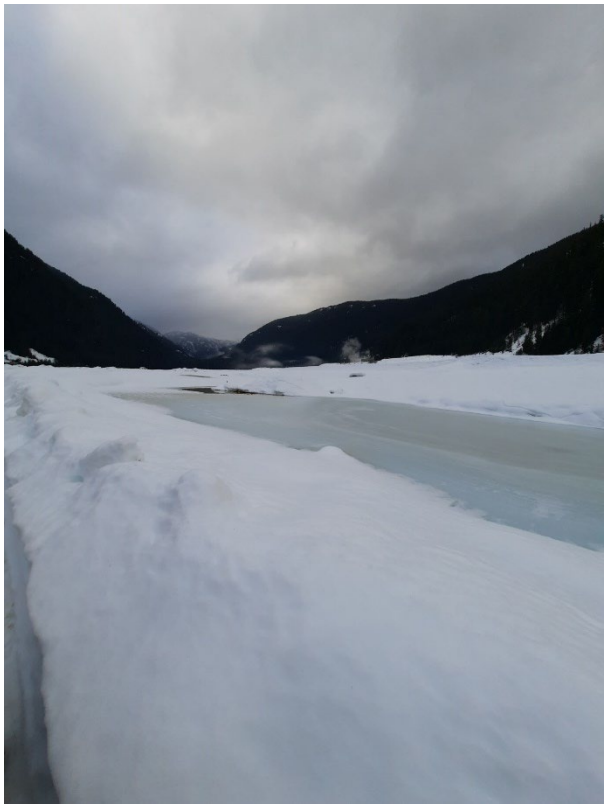

Photo 6f: Old TDF west end of the east strip and APA berm

Photo 6f: Old TDF east strip and APA berm

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Myra Falls Mine
Quarterly Site Visit Report

Date of Site Visit:	22, 23 March 2022	Date of Memo:	25 March 2022
File No.:	NX14001B4	Client:	Myra Falls Mine Ltd. (MFM)
Engineer:	Dixie Ann Simon, P.Eng.	To:	Nicole Pesonen
With:	Joshua Fry	Cc:	
Weather:	Cloudy and rain		

Summary

The Old TDF and Lynx TDF are reviewed by Wood Environment & Infrastructure (Wood) on a quarterly basis as part of the engineering reconnaissance of the tailings facilities. Wood notes conditions in and around the facilities during the reviews, with emphasis on water management, dam stability, and seepage conditions.

This site visit was carried out on 22 and 23 March 2022 and included Lynx and Old TDF and the Water Treatment Ponds including Super Pond and Polishing Ponds. The Lower Lynx Diversion Ditch was observed during this review. The inspection was conducted by Ms. Dixie Ann Simon, P.Eng.

Overall, no evidence of cracks, subsidence, or other indicators of instability of the Old TDF, Lynx TDF and Water Treatment Ponds ponds was observed.

The recommendations herein are based on Wood's observation of surface conditions at the time of the field inspection and are subject to revision upon the availability of new information

Action items and recommendations from this site visit are:

1. Several VWPs installed in Lynx foundation materials are either not reporting or have ceased to function. The VWP data at this time is very limited and insufficient to assess the performance of the structure. The Lynx VWPs was briefly checked during Wood's 19 May CRAB site visit and all connections appeared to be in place. MFM suggested that this was a likely a transmission or upload issue. The VWP coverage should be assessed and additional VWPs installed or nonfunctioning VWPs replaced during the summer/fall of 2022.

Action items remaining from the **January 2022** site visit are:

1. Lynx TDF: MFM shall make effort to complete the 10L portal plug work as soon as practical and complete the dam construction at the west abutment.
2. Surge Pond: Consider measures to prevent sedimentation such as re-diversion to another area or excavating sediment traps (i.e., bell holes) along the concentrated portion of the flow path from the Paste Plant area.
3. Old TDF: Grating on both decants needs to be replaced due to acidic dissolution of lower portion of the vertical grating.

Observations

Old TDF

- Snow cover prevented observation of the majority of the areas on the Seismic Upgrade Berm (SUB) where gully erosion is occurring. Wood understands that the gully erosion will be addressed during 2022 construction season when Phase 1 of the Old TDF closure is completed.
- The visible portions of the SUB appeared to be in satisfactory condition.
- The APA berm also appeared to be in satisfactory condition.
- The East Strip was essentially dammed by sediments near the Zim Pro discharge line.
- The sediments should be removed to allow unobstructed flow from the east abutment to the spillway culverts. This was discussed with MFM at the time of the site visit.
- Wood understands the Zim Pro line will be moved to a flat area to the north of the West Strip.
- The West Strip was in satisfactory condition; however, erosion on the south slope near the Surge Pond is on-going.
- Minor flow was observed from some of the drains along the DD road.
- A sheen was observed on the water below the fuel tanks in the construction equipment/laydown area. This was brought to the attention of MFM staff at the time of the site visit.
- The geotextile/geomembrane over the buried lock blocks in the spillway is damaged, likely by grading or snow clearing activities. This was discussed with MFM at the time of the site visit. The geomembrane should be repaired prior to the onset of the 2022/2023 wet season.
- The tailings were at the level of the decant structures. EDF (1/200 year event) storage is likely adequate as the decants/spillway were designed for the 1/1000 year event. This was mentioned to MFM at the time of the site visit.

Lynx TDF

- The unsupported upstream height near the pumps exceeds the recommended height of less than one meter. We understand that there are safety concerns with respect to rock fall as well as some infrastructure and pond water depth constraints that complicate moving the barge towards the back of the TSF. MFM is aware of this.
- The area of Panel 15 drain was flooded at the time of the site visit. This is the drain where the vertical PVC pipe was installed last year. The purpose of the PVC pipe was to monitor for the presence of water in the drain so that the need to further assess the need for the drain as historical observations indicate that the drain does not produce water. The area around the pipe should be graded so that surface water is directed away from the PVC pipe. We will need to discuss how to better monitor the Panel 15 drain.
- There was little change in the closure cover trials. Some sparse vegetation was observed; however, it was not possible to tell if it was new growth or last year's growth that had not yet turned brown. Dean will be on site towards the middle/end of June to assess the closure cover trials.

Lynx Springs Drain

- Lynx Springs drain discharge was observed to be clear.

Diversion Ditches

- The concrete cloth along the crest of the Lower Lynx Diversion Ditch was observed. The damage is likely the result of grading and/or snow removal in this area. The damage should be repaired, and measure put in place to minimize the potential for further damage.
- Debris was not observed.

Surge Pond

- The Surge Pond is essentially serving as a sedimentation pond for runoff from the Paste Plant area. A large 'delta' has developed in the northwest corner. It extends to the decant structure and the surface of the sediments is near the invert of the decant. The sediment should be removed.
- The replacement valve was observed lying near the decant structure access ramp. Wood understands that the valve will be installed after the end of the wet season.
- Wood understands that the Surge Pond is not operated as designed. It is operated to minimize sediment reaching Super Pond.

Polishing Ponds

- No significant observations; all ponds in Green zone.
- No seepage observed at the Pond 4 seepage area.

Photographs

Photo 1: Overview of the Lynx TDF taken from lookout point in Upper Lynx Pit. (March 22, 2022)

Photo 2: Lynx open pit walls north of Lynx TDF. (March 22, 2022)

Photo 3: West end of Lynx TDF, looking east towards area of pump and staff gauge. (March 22, 2022)

Photo 4: North-west corner of Lynx TDF. (March 22, 2022)

Photo 5: Lynx TDF, looking east with tailings pond covering about 2/3rd of the tailings surface. (March 22, 2022)

Photo 6: Lynx TDF staff gauge. (March 22, 2022)

Photo 7: South-east corner of Lynx TDF, looking west. Crest Elevation at 373.5m. Active tailings deposition was observed from a spigot located at the east end of the TDF. (March 22, 2022)

Photo 8: Lynx TDF Downstream toe area of the Closure Cover Trials. Some erosion observed in the Cover Trial area. (March 23, 2022)

Photo 9: Lower Lynx Diversion Ditch. No unusual performance observed. (March 22, 2022)

Photo 10: Lower Lynx Diversion Ditch damage to concrete cloth observed. (March 22, 2022)

Photo 11: East Strip was essentially dammed by sediments near the Zim Pro discharge line. (March 22, 2022)

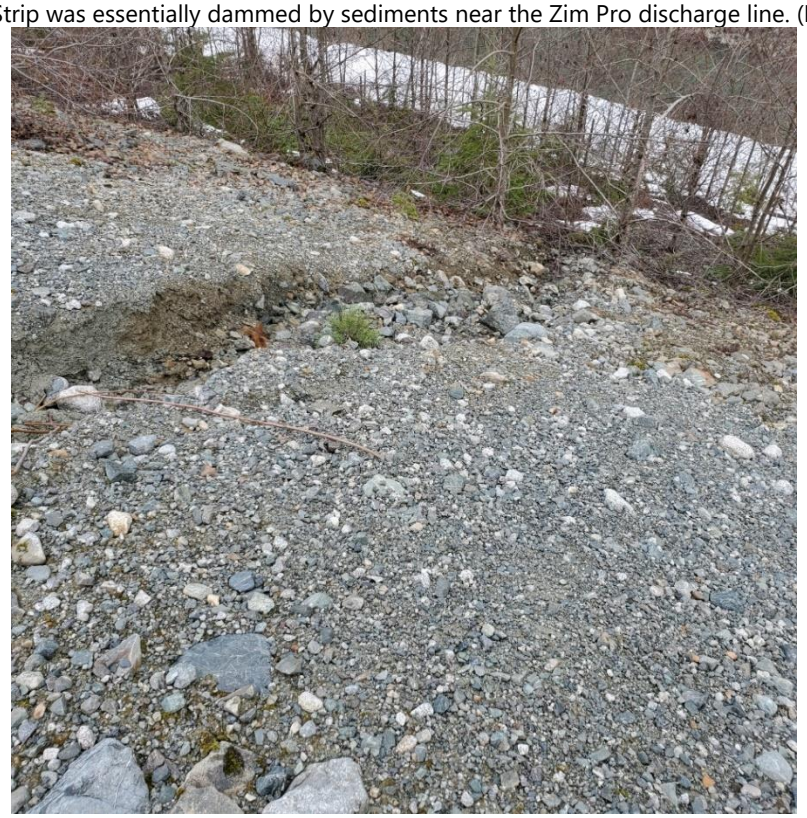

Photo 12: Erosion gullies observed on downstream of SUB to be addressed in 2022 Closure Phase 1 Construction. (March 22, 2022)

Photo 13: West end of the Lower Lynx Diversion Ditch at the location of the interim debris retaining net. (March 22, 2022)

Photo 14: Surge Pond looking east. No unusual performance was observed. (March 23, 2022)

Photo 15: Surge Pond looking north-east. (March 23, 2022)

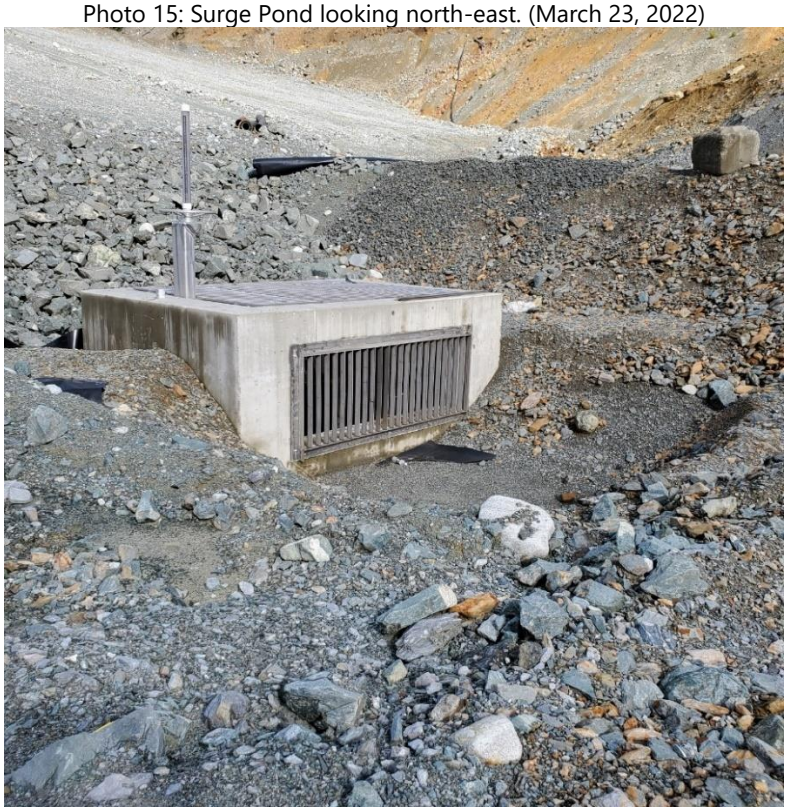

Photo 16: Temporary Lynx Spring Drain Sump. Functioning as intended with discharge observed to be clear. (March 23, 2022)

Photo 17: East Decant structure. Grating decant needs to be replaced due to acidic dissolution of lower portion of the vertical grating. (March 23, 2022)

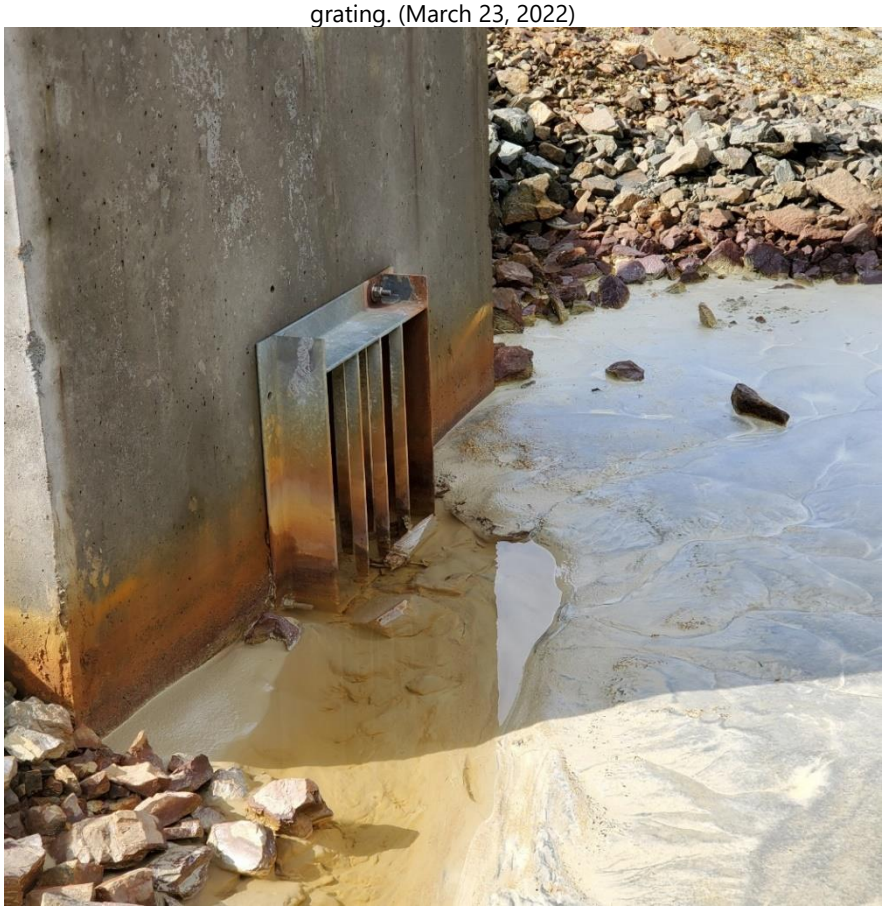

Photo 18: Grating decant needs to be replaced due to acidic dissolution of lower portion of the vertical grating. (March 23, 2022)

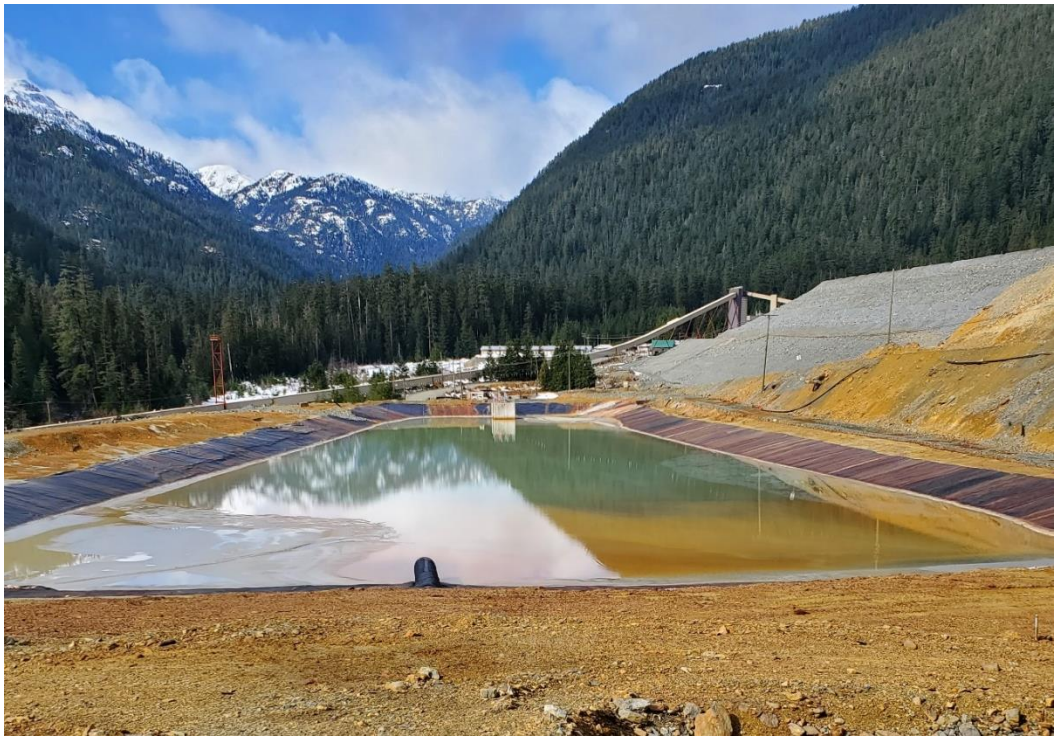

Photo 19: Super Pond at time of site inspection, no unusual performances observed. (March 23, 2022)

Photo 20: Geotextile/geomembrane over the buried lock blocks in the APA spillway observed to be damaged. (March 22, 2022)

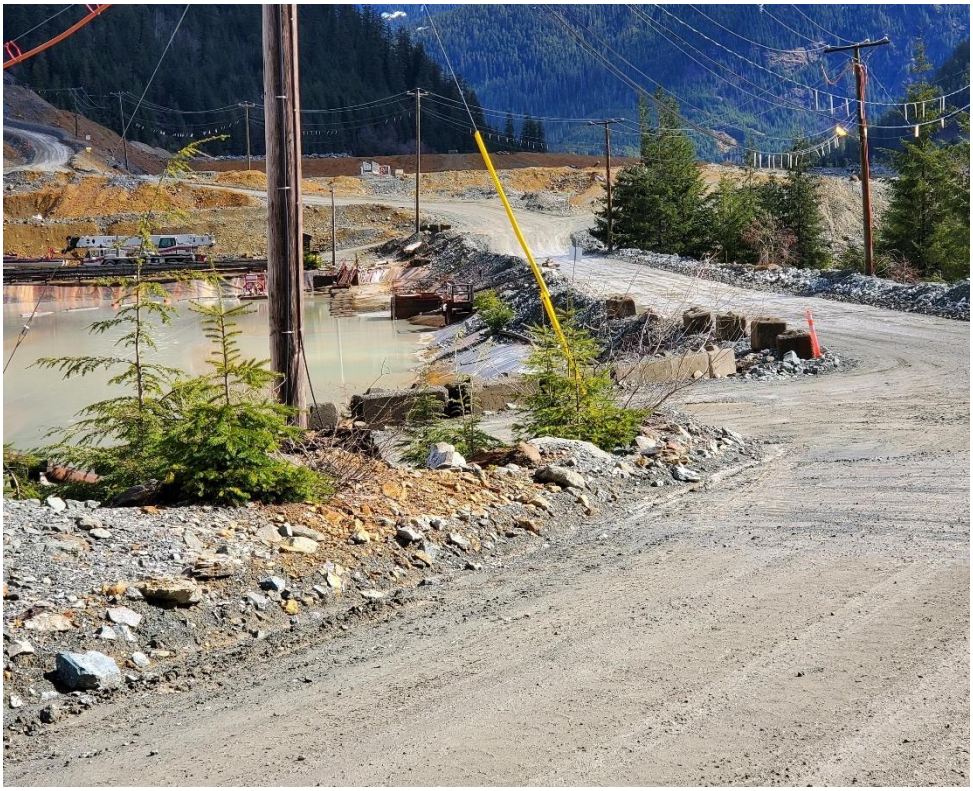

Photo 21: Super Pond Road looking Northeast towards the Old TDF. (March 23, 2022)

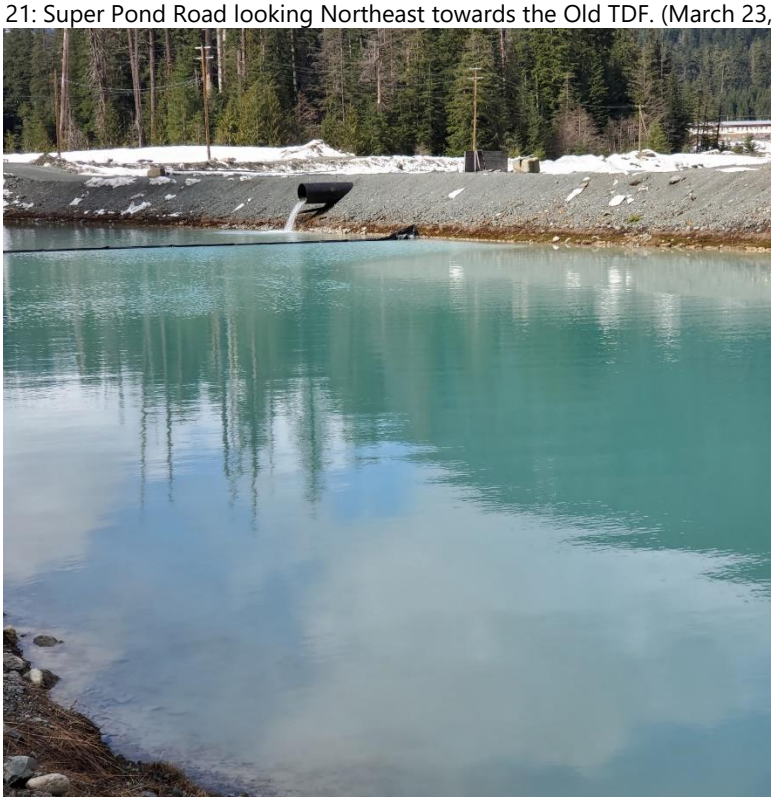

Photo 22: Polishing Pond 3A looking West. No unusual performance observed. (March 23, 2022)

Photo 23: Polishing Pond 3A staff gauge in green zone. (March 23, 2022)

Photo 24: Crest between Polishing Pond 3A and Polishing Pond 4. No unusual performance observed. (March 23, 2022)

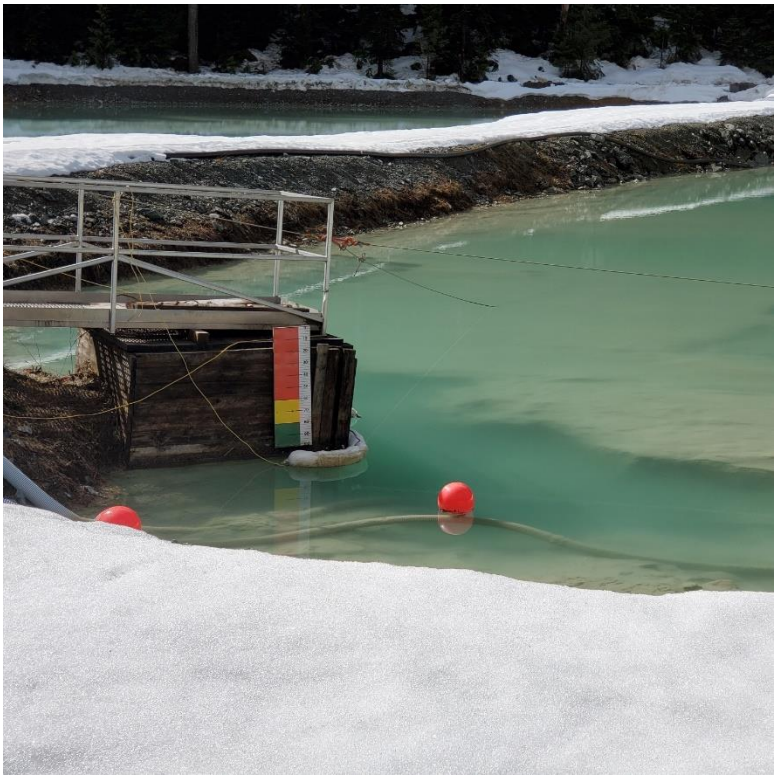

Photo 25: Polishing Pond 2A staff gauge in green zone. (March 23, 2022)

Photo 26: Polishing Pond 2A looking South. No unusual performance observed. (March 23, 2022)

Photo 27: Road between Polishing Pond 4 and Polishing Pond 2 looking East. (March 23, 2022)

Photo 28: Staff gauge of Polishing Pond 2 in green zone. (March 23, 2022)

Photo 29: Polishing Pond 1 looking East. (March 23, 2022)

Photo 30: Staff gauge of Polishing Pond 1. (March 23, 2022)

Photo 31: Polishing Pond 1 looking Southeast. (March 23, 2022)

Photo 32: Polishing Pond 3 observed to be empty with staff gauge in green zone. (March 23, 2022)

Photo 33: Area of the closure cover trials, sparse vegetation observed. (March 23, 2022)

Photo 34: Gully erosion observed on downstream end of Seismic Upgrade Berm of the Old TDF, gully erosion to be addressed during Phase 1 Closure of Old TDF in 2022 construction season (March 23, 2022)

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Myra Falls Mine
Quarterly Site Visit Report

Date of Field Review:	26, 27 July 2022	Date of Memo:	18 August 2022
File No.:	NX14001B4	Client:	Myra Falls Mine Ltd. (MFM)
Engineer:	Dixie Ann Simon, P.Eng.; Manuel Monroy, P.Eng.	To:	Nicole Pesonen
With:	Joshua Fry	Cc:	
Weather:	Sunny and warm		

Summary

The Old TDF and Lynx TDF are inspected by Wood Environment & Infrastructure (Wood) on a quarterly basis as part of the engineering reconnaissance of the tailings facilities. Wood notes conditions in and around the facilities during the reviews, with emphasis on water management, dam stability, and seepage conditions.

This site visit was carried out on 26 and 27 July 2022 and included Lynx and Old TDF and the Water Treatment Ponds including Super Pond and Polishing Ponds. The Lower Lynx Diversion Ditch was observed during this review. The inspection was conducted by Ms. Dixie Ann Simon, P.Eng. and Dr. Manuel Monroy, P.Eng. The site visit was partly undertaken with members of the Independent Review Board (ITRB) as part of the 2022 ITRB meeting held on site. The purpose of the site visit was to observe the tailings deposition operation and the condition of the tailings storage facilities (Old TDF, Lynx TDF and associated ponds). The site visit was also used to introduce Dr. Monroy to the Myra Falls tailings operation team, the ITRB members and to announce the change of EOR for the tailings facility from Ms. Simon to Dr. Monroy. The retirement and partial involvement in the project of Ms. Simon was also announced.

Overall, no evidence of cracks, subsidences or other indicators of instability of the Old TDF, Lynx TDF and seepage ponds was observed.

Action items and recommendations from this site visit are:

1. Rusted amalgamated paste area (APA) decant grates:
    a. West decant: the bottom 2-3 cm of the vertical grating bars has been dissolved leaving a 2-3 cm gap at the bottom of the decant inlet.
    b. East decant: the grate has degraded in a similar manner with approximately half of the bottom 2 cm's of the vertical grating bars being dissolved.
2. Periodic cleaning and grading are recommended in the vicinity of the orifices of the East and West Decant Pipe Drop structures.

Action items remaining from the **March 2022** site visit are:

1. The East Strip is full of sediments from the discharge of the ZimPro line. The sediments prevent the free flow of water from the east abutment. The sediments should be removed prior the start of the 2022/2023 wet season.

2. Sediments in the Surge Pond should be removed prior to the 2022/2023 wet season. The geotextile/geomembrane over the buried lock blocks in the spillway is damaged, likely by grading or snow clearing activities. The geomembrane should be repaired prior to the onset of the 2022/2023 wet season.
3. The VWP coverage should be assessed and additional VWPs installed or nonfunctioning VWPs replaced during the summer/fall of 2022.

Observations

Old TDF

- Approximately 1 to 1.5 m (height above the APA surface) of mine rock stockpile east of WRD6 remains on the northern portion of the APA.
- The APA was mostly dry and gullied on the exposed portion.
- No flows into the west decant and east decant were observable.
- No signs of instability observed at APA berm and outer embankment berm.
- The Surge Pond water is flowing clear into Super Pond In.
- No sign of piping around spillway.
- The East Strip was essentially dammed by sediments near the Zim Pro discharge line. The sediments should be removed to allow unobstructed flow from the east abutment to the spillway culverts. This was discussed with MFM at the time of the site visit. Wood understands the Zim Pro line will be moved to a flat area to the north of the West Strip.
- The West Strip was in satisfactory condition; however, erosion on the south slope near the Surge Pond is on-going.

Lynx TDF

- The staff gauge is submerged and, the pond covers approximately 1/4 of the TSF.
- Sinkhole is not visible.
- Slurry tailings deposition was occurring at the time of the inspection at the back of the TSF or from the north end of the TSF.
- No seepage or wet spots observed along the downstream dam face.
- No dam raise construction activities during the site visit.
- Spillway was clear and unimpeded.

Lynx Springs Drain

- Lynx Springs drain flowing clear and culvert to sump box functioning.

Diversion Ditches

- LLDD is flowing at low levels, water is clear.
- Did not observe any new damage to the concrete cloth liner.
- ULDD not inspected.

Super Pond

- No unusual performance was observed for the Super Pond

Polishing Ponds

- Water level was below caution level on the staff gauges in all six ponds.
- Decant inlets are all clear.
- Water discharge at Myra Out flowing clean.

The recommendations herein are based on Wood's observation of surface conditions at the time of the field inspection and are subject to revision upon the availability of new information.

This report has been prepared for the exclusive use of Myra Falls Mine Ltd. for specific application to the area described within this report. Any use which a third party makes of this report or any reliance on or decisions made based on it are the responsibility of such third parties. Wood accepts no responsibility for damages suffered by any third party as a result of decisions made or actions based on this report. It has been prepared in accordance with generally accepted engineering practices. No other warranty, express or implied, is made.

Photographs

Photo 1: Lynx TDF

Photo 2: Waste Rock dump area in the northeast corner of the Lynx TDF

Photo 3: Super Pond at time of site inspection.

Photo 4: Waste rock stockpile at the back end of Old TDF

Photo 5: Storage area at the back end of Old TDF

Photo 6: Geomembrane and geotextile liner along the spillway of Old TDF

Photo 7: Liner system of the Old TDF spillway

Photo 8: Polishing ponds under normal operating conditions

Photo 9: Polishing ponds under normal operating conditions

Photo 10: East Strip of the Old TDF filled with tailings from Zim Pro line

Photo 11: East corner of Old TDF with a small pond and tailings inside the East Strip

Photo 12: East Strip looking towards the west

Photo 13: East decant structure with approximately half of the bottom 2 cm's of the vertical grating bars being dissolved.

MEMO

TO:	Nicole Pesonen (Environment & Community Engagement Manager)
COMPANY:	Myra Falls Mine Ltd. (MFM)
FROM:	Manuel Monroy, Ph.D, P.Eng., Jason Chen, P.Eng.
DATE:	18 November 2022
CC:	
PROJECT NO.:	NX14001B4
SUBJECT:	Dam Safety Inspection Report - Oct 5, 2022

1 INTRODUCTION

On October 5th, 2022 a dam safety inspection was carried by WSP E&I Canada Limited (WSP)[1] that included review of the Lynx Tailings Disposal Facility (TDF), the Old TDF and the Water Treatment Ponds including Super Pond and Polishing Ponds. The Lower Lynx Diversion Ditch was also inspected during this review. The inspection was conducted by Dr. Manuel Monroy, P.Eng and Mr. Jason Chen of the Vancouver WSP office. The inspection is part of a series of quarterly site visits carried out on a yearly basis as part of the engineering reconnaissance of the tailings facilities at the Myra Falls Mine. The weather during the inspection was sunny and warm.

WSP conducts visual inspections of the locations of key components of the tailings facilities systems to the extend possible given the natural conditions of the terrain. Emphasis is given during the site inspections on aspects such as water management, dam stability, and seepage conditions and controls.

Overall, no evidence of cracks, daylighting seepage, subsidence or other indicators of local or global instability of the Old TDF, Lynx TDF and Water Treatment Ponds were observed during the dam safety inspections. Beach was present along the upstream dam face covering about 50% of the Lynx TDF impoundment.

This technical memorandum presents a series of actions items and recommendations to MFM that arose during the October 2022 inspection. An annotated photographic record is also included for additional reference.

2 FINDINGS AND RECOMMENDATIONS FROM THE DAM SAFETY INSPECTION

Lynx TDF

The Lynx TDF is a centreline constructed, rockfill embankment dam. The dam was raised seven times, most recently in 2021 and 2022. The current crest is at approximately elevation 373.5 m. The ultimate design crest height is planned to be elevation 382.5 m, about 9 m above the current crest. The TDF has a U-shaped, where the south and west sides of the embankment are sloped at 2H:1V and the east side is at 4H:1V. The upstream buttress is sloped at 2H:1V.

Photographs 1 to 8 show the state of the Lynx TDF during the October 2022 site inspection. The following was noted during the October 2022 site inspection:

- The historical sinkhole observed since 2012 in the paste surface near the north corner of the Lynx TDF was not visible.

[1] **"Effective September 21, 2022, Wood Environment & Infrastructure Solutions Canada Limited is operating as WSP E&I Canada Limited. No other aspects of our legal entity, contractual terms or capabilities have changed in relation to this report submission."**

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- Tailings deposition was occurring at the time of the inspection at the back of the TSF or from the north end of the TSF.
- No seepage or wet spots observed along the downstream dam face.
- No dam-raise construction activities during the site visit.
- Spillway was clear and unimpeded.

Lynx Springs Drain

- Lynx Springs drain flowing clear and culvert to sump box functioning.

Action items and recommendations from this inspection (Lynx TDF and Lynx Springs Drain) are:

The 10 Level East Portal in the Lynx TDF West Abutment shows ongoing drainage flows from the portal. This portal needs to be plugged and sealed before next dam raise construction to El. 376.5 m. See Photo 8.

Old TDF

Photographs 9 to 14 show the condition of the Old TDF during the October 2022 site inspection.

- Similar to previous inspection, the Amalgamated Paste Area (APA) was mostly dry and gullied on the exposed portion.
- No flows into the west decant and east decant were observable at the time of the inspection.
- No signs of instability observed at APA berm and outer embankment berm.
- No sign of piping around spillway.

Action items and recommendations from this inspection (Old TDF) are:

- Rusted amalgamated paste area (APA) decant grates:

    a. West decant: the bottom 2-3 cm of the vertical grating bars has been dissolved leaving a 2-3 cm gap at the bottom of the decant inlet.

    b. East decant: the grate has degraded in a similar manner with approximately half of the bottom 2 cm's of the vertical grating bars being dissolved.

- Periodic cleaning and grading are recommended in the vicinity of the orifices of the East and West Decant Pipe Drop structures.
- The East Strip continues to be obstructed by tailings. The tailings should be removed to allow unobstructed flow from the east abutment to the spillway culverts. This was discussed with MFM at the time of the site visit. See Photographs 11, 12 and 13.
- The West Strip of the Old TDF was filled with tailings obstructing the flow capacity of the spillway culvert pipes. See Photographs 11, 12 and 13.

Surge Pond

- The Surge Pond water was flowing clear into Super Pond In.
- No unusual performance was observed for the Surge Pond

Photographs 15 to 16 show the state of the Surge Pond during the October 2022 site inspection.

Super Pond

- No unusual performance was observed for the Super Pond

Photographs 17 to 21 show the condition of the Super Pond during the October 2022 site inspection.

Diversion Ditches

- Lower Lynx Diversion Ditch (LLDD) was flowing at low levels, water was clear.
- No observed damage to the concrete cloth liner.
- Upper Lynx Diversion Ditch (ULDD) not inspected.

Photographs 22 to 23 show the condition of the LLDD during the October 2022 site inspection.

Polishing Ponds

Photographs 24 to 37 show the condition of the polishing ponds during the October 2022 site inspection.

- Water level was below caution level on the staff gauges in all six ponds,
- Decant inlets are all clear.
- Water discharge at Myra Out was clean.

Action items and recommendations from this inspection (Ponds and Diversion Ditches) are:

- No unusual performance was observed. The lateral containment of the south end of the Polishing Pond 1 needs to be assessed against design flows. See Photograph 30.

3 CLOSURE

The recommendations herein are based on WSP's observation of surface conditions at the time of the field inspection and are subject to revision upon the availability of new information.

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Photographs

Photo 1: Lynx TDF looking East. Active tailings deposition was observed from a spigot located at the east end of the TDF

Photo 2: Lynx TDF looking northwest. Crest elevation is at 373.5 m.

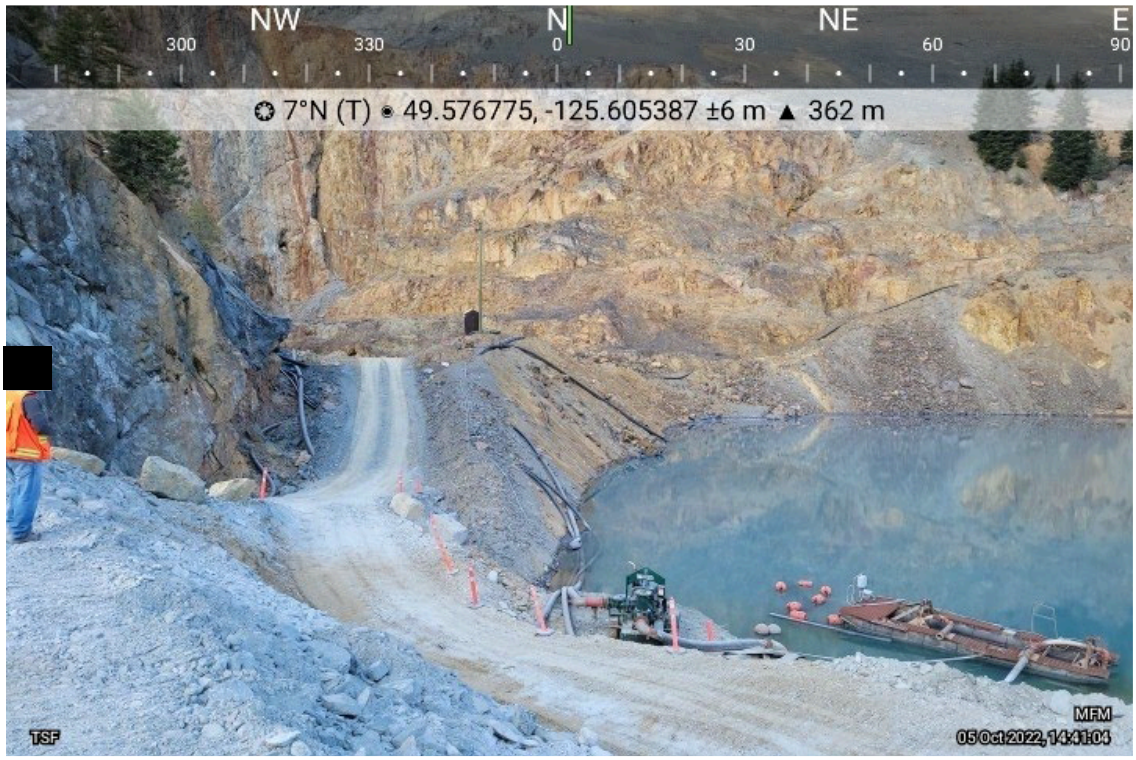

Photo 3: Tailings pond at the north end (back) of the Lynx TDF.

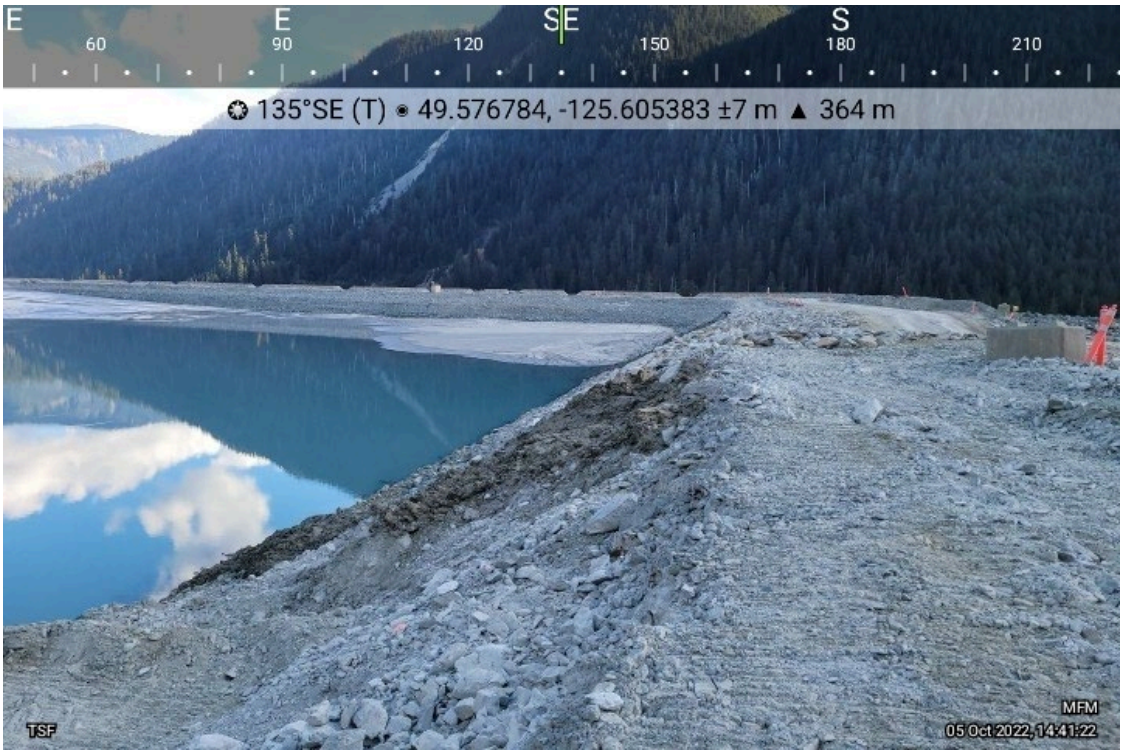

Photo 4: Lynx TDF looking southeast with the boundary of the tailings pond at the west end of the TDF covering about 2/3 of the tailings surface.

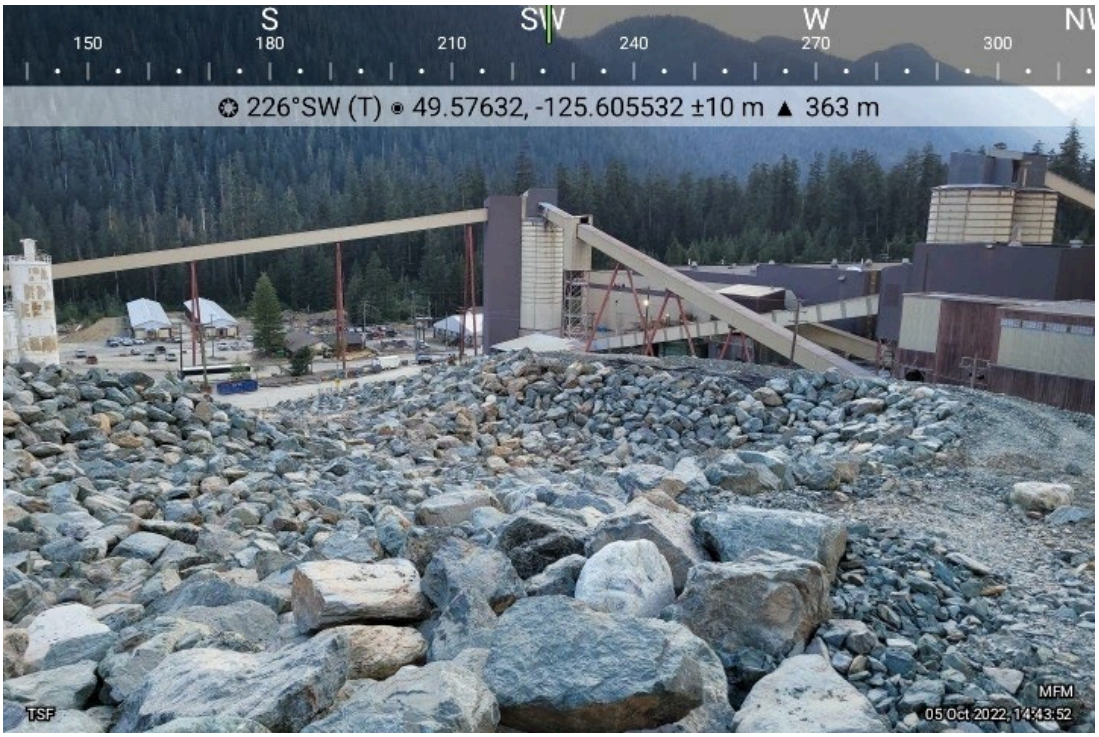

Photo 5: Lynx TDF spillway looking downstream to the mill and camp sites. Riprap was stable with no evidence of deterioration or segregation of sizes. Riprap stones are angular to subangular.

Photo 6: Lynx TDF WRD1 J Zone Crest, looking northwest.

Photo 7: Lynx TDF East Abutment at WRD1, looking southeast.

Photo 8: Lynx TDF West Abutment showing 10 Level East Portal, looking north. Ongoing drainage flows from the portal. The portal is to be plugged and sealed before next dam raise construction.

Photo 9: Old TDF looking southeast.

Photo 10: Hydroseeding was recently implemented along the berms of the Old TDF. This photo is looking towards the southwest.

Photo 11: East Strip of the Old TDF continues to be filled with tailings. This conduit needs removal of tailings before the wintertime.

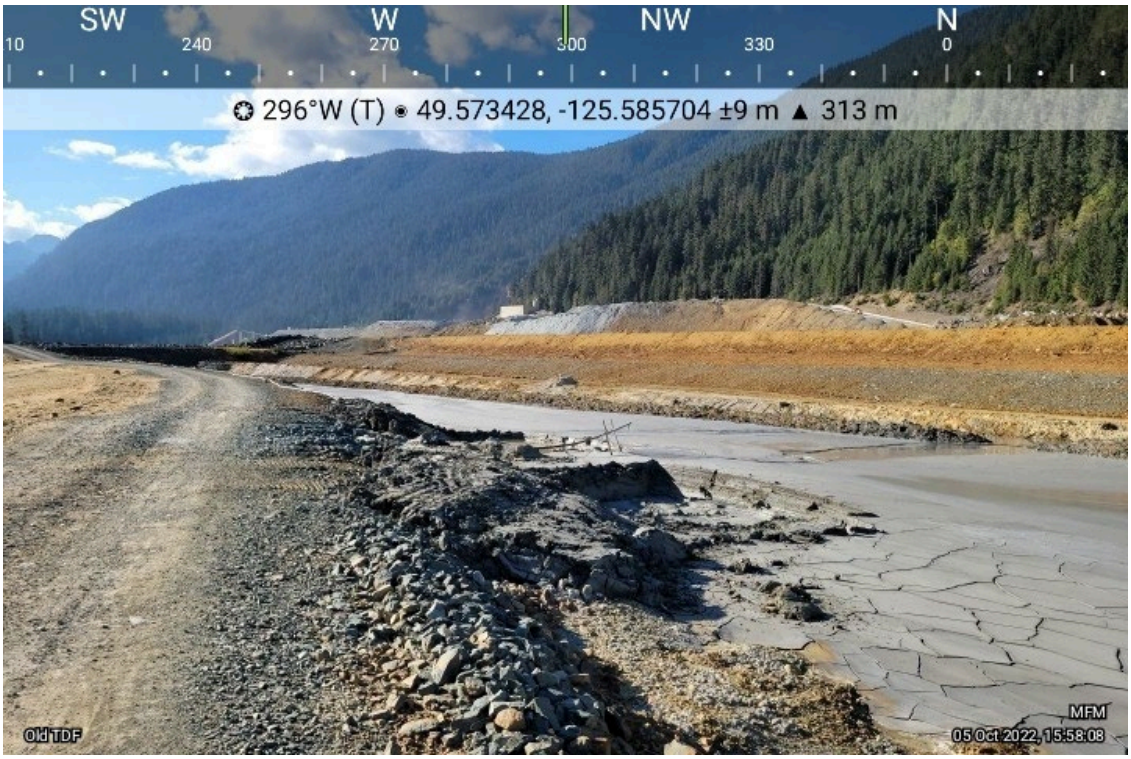

Photo 12: East Strip of the Old TDF continues to be filled with tailings. This conduit needs removal of tailings before the wintertime.

Photo 13: The West Strip of the Old TDF was filled with tailings obstructing the flow capacity of the spillway culvert pipes. This condition needs immediate attention before the wintertime.

Photo 14: Old TDF Channel 1 looking downstream. The riprap is stable and in good condition.

Photo 15: Surge Pond looking northeast. No unusual performance was observed.

Photo 16: Surge Pond looking northwest. No unusual performance was observed.

Photo 17: Super Pond looking northeast. No unusual performance was observed.

Photo 18: Super Pond looking northwest. No unusual performance was observed.

Photo 19: Super Pond looking at the downstream slope and the crest of the south retention berm of Super Pond. No unusual performance was observed.

Photo 20: Super Pond looking upstream to the top of the pond and the berm that separates Super Pond from the downstream toe of Lynx TDF. No unusual performance was observed.

Photo 21: Super Pond looking downstream from the downstream bench (El. 343 m) of Lynx TDF

Photo 22: West end of the Lower Lynx Diversion Ditch at the location of the interim debris retaining net

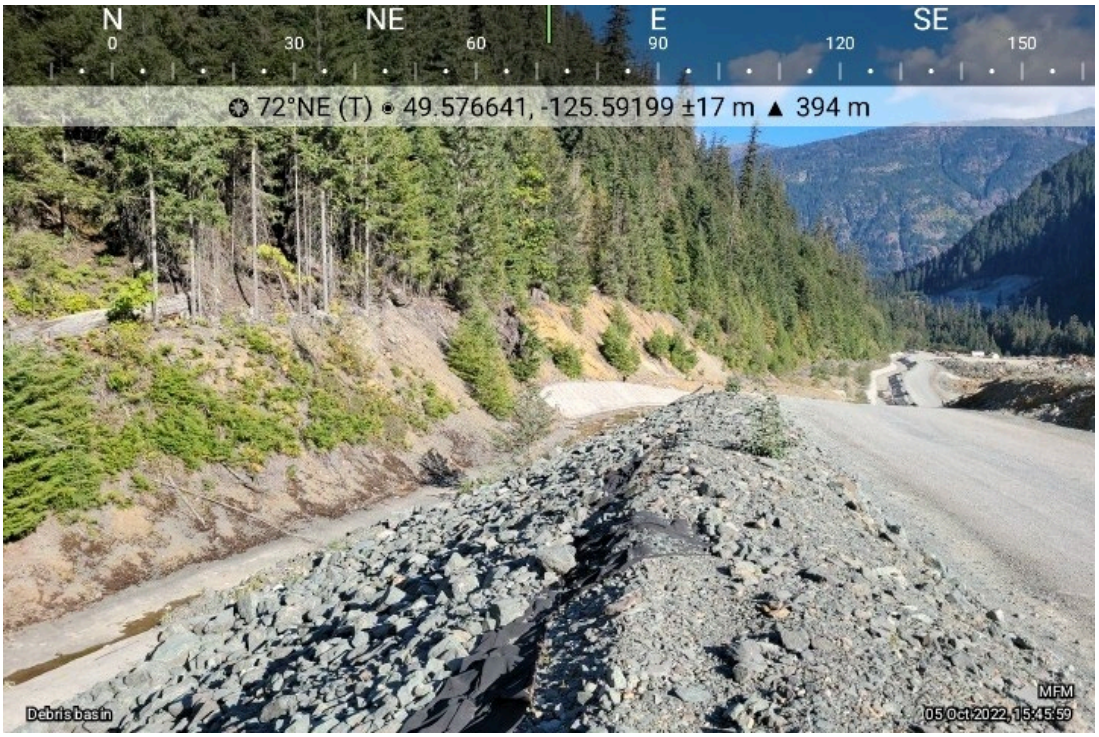

Photo 23: Lower Lynx Diversion Ditch with minimal flow. No unusual performance was observed.

Photo 24: Polishing Pond 4. No unusual performance was observed.

Photo 25: Polishing Pond 4. No unusual performance was observed.

Photo 26: Crossing between Polishing Pond 4 and Polishing Pond 2. No unusual performance was observed.

Photo 27: Polishing Pond 2A looking South. No unusual performance was observed.

Photo 28: Polishing Pond 2A looking West. No unusual performance was observed.

Photo 29: Polishing Pond 2 looking East. No unusual performance was observed.

Photo 30: Polishing Pond 1 looking East. No unusual performance was observed. The lateral containment of the south end needs to be assessed against design flows.

Photo 31: Middle berm between Polishing Pond 2 and 1 looking Southwest. No unusual performance was observed.

Photo 32: Polishing Pond 1 inflow looking East. No unusual performance was observed.

Photo 33: Polishing Pond 3A looking North. No unusual performance was observed.

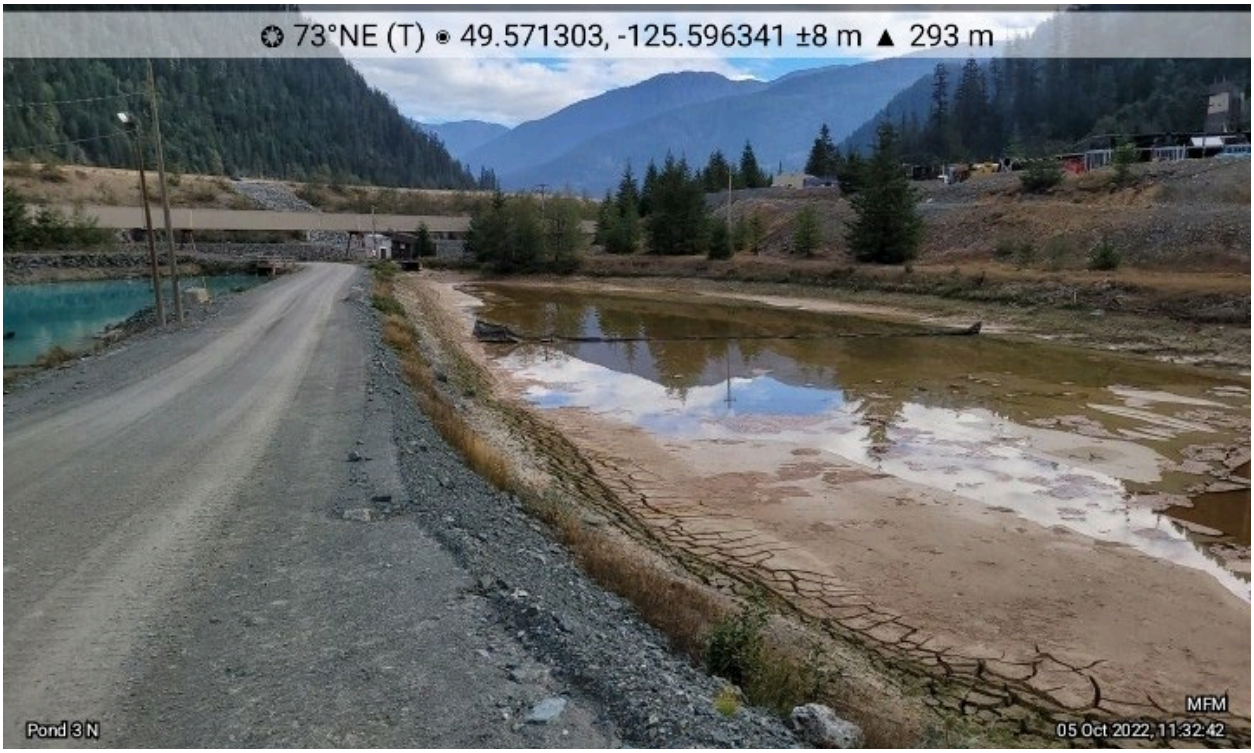

Photo 34: Polishing Pond 3 looking North. Observed to be empty

Photo 35: Polishing Pond 3 looking South. Observed to be empty.

Photo 36: Polishing Pond 4 looking West. No unusual performance was observed.

Photo 37: Middle berm between Polishing Ponds 4 and 3 looking Southwest. No unusual performance was observed.

Appendix D – All Recommendations

All Lynx TDF DSI Recommendations

Structure	Tracking Number	Previous Recommendation	Update	Status/Priority
2013 Lynx TDF DSR (RGC 2014a)				
Lynx TDF	2013-23	Consider relocating the waste rock dumps [above Lynx TDF] as soon as is practical.	Removal of WRD2 and WRD3 continued in 2022. Removal of WRD3 was completed in 2022. Additional work is planned for 2023 and beyond as WRD 2 is used as material source for dam raise construction.	In Progress Priority 2
Lynx TDF	2014-09	Investigate options for dewatering of dredge material prior to deposition in Lynx TDF.	Dewatering is not a feasible option.	Complete Priority 4
Old TDF & Lynx TDF	2014-11	Connect all piezometers to an automated logging system. Implement real-time networking and internet access to the system to improve the timely availability and use of data.	Instrumentation is connected to an automated logging system. Internet access via Environmental Team's SharePoint is in real-time and has been available for about a year.	Complete Priority 2
2015 DSI Report (Amec Foster Wheeler 2016d)				
Old TDF & Lynx TDF	2015-01	Where possible, adopt updated design criteria derived from CDA guidelines and EMPR/MOE requirements.	Completed for Lynx TDF and for Old TDF upslope and internal water management. Outstanding for Myra Creek at the toe of the Old TDF (see Recommendation 2016-10).	Complete Priority 2
2016 DSI Report (Amec Foster Wheeler 2017c)				
All	2016-01	Some OMS Manual Holders do not have a current registered hard copy of the document.	The OMS manual was updated in March 2019 and April 2020 and distributed electronically to manual holders. Hard copies were distributed to manual holders on site.	Complete Priority 3
All	2016-02	Data loggers run out of battery power in the winter, resulting in loss of critical weather and/or piezometer monitoring information.	Work to improve the battery reliability in Lynx Hut and the Weather Station was completed in May 2018 by an external contractor. This work did not follow manufacturer's set up instructions and resulted in additional loss of data from Lynx Hut and the Weather Station. Repairs were made by Wood in Q1-2019 and the system is being monitored for performance. The weather station was relocated in 2020 and is now connected to the site electrical grid, with solar batteries installed for back-up power use only.	Complete Priority 3
All	2016-05	Lynx TDF does not currently have a defined piezometer threshold framework or instrumentation-based alarm system.	Thresholds were created for the Lynx TDF Piezometers. A memorandum documenting this work and the new thresholds is provided in Appendix E.	Complete Priority 3

All Lynx TDF DSI Recommendations

Structure	Tracking Number	Previous Recommendation	Update	Status/Priority
2016 DSR Report (Tierra Group, 2017)				
Lynx TDF	2016-13	Nyrstar to address this minor issue [sinkhole] prior to closure if the feature does not stabilize naturally.	Mitigation of the persistent depression in Lynx TDF to be addressed at or prior to closure planning. Recommendations for monitoring and mitigation are provided by Wood in 2015 (Amec Foster Wheeler 2015c) and Nyrstar has included them in their Mine Plan.	Complete In current mine plan Priority 4
2017 DSI Report (Amec Foster Wheeler, 2018b)				
All	2017-02	Assess piezometers for functionality. EOR to evaluate spatial piezometer coverage. Replace or repair broken piezometers that are missing from essential monitoring areas.	Three VWP were installed at the Lynx starter dam foundation through the downstream shell during the 2019 site investigation. (Tracking number 2017-05)	Complete Priority 3
Lynx TDF	2017-03	Replace survey monuments and complete a baseline survey.	Survey monuments need to be replaced and re-surveyed after each dam raise.	Complete for 368.5m raise Priority 2
Lynx TDF	2017-04	Tailings samples collected semi-annually for lab testing. Tailings surface surveys carried out quarterly to assess dry density and consolidation. Detailed investigation of whole tailings every 5 m of placement.	Tailings samples are collected and tested on a monthly basis for grain size and moisture content and analyzed for ABA & metals externally. Sampling recommendations to be added to the 2021 OMS update. Wood completed a detailed site investigation of the tailings in 2020 (Wood 2020h). Tailings surface surveys are carried out quarterly.	Complete Priority 2
Lynx TDF	2017-05	Geotechnical and geophysical investigation of original starter dam. Install vibrating wires and slope inclinometers outlined in proposed investigation plan.	Starter dam investigation was completed in December 2019.	Complete Priority 2
Lynx TDF	2017-07	Construct an Operations Spillway to discharge the IDF.	A spillway was constructed through the dam crest and on the downstream dam shell for the 365.1 m dam raise in 2019, which can discharge the IDF.	Complete Priority 2
2018 DSI Report (Wood, 2019d)				
Lynx TDF	2018-01	Water levels in Lynx TDF should be measured relative to a geodetic reference and recorded daily as part of routine facility surveillance. Update the OMS to reflect this requirement.	A staff gauge was installed during March 2019 and pond levels recorded during weekly inspections.	Complete Priority 1
Lynx TDF	2018-02	Install markers around the perimeter of the impoundment that clearly identify maximum normal operating water level. Expedite pumping of Lynx TDF to the limit of the treatment system capacity when the NOWL markers are exceeded.	Markers were not installed around the perimeter of the impoundment, but the water level was brought down to the maximum operating level in April 2019 and has been maintained as low as practical. Following 2020 lift, staff gauge was re-assessed for levels and is used to ensrue pumping is completed.	Complete Priority 1
Lynx TDF	2018-03	Document a risk assessment with respect to the condition of the spillway between now and the construction period, when it would normally be removed for dam raising.		Complete/ Obsolete Priority 2

All Lynx TDF DSI Recommendations

Structure	Tracking Number	Previous Recommendation	Update	Status/Priority
LLDD	2018-04	Carry out a detailed condition assessment and comprehensive repair program in the concrete cloth section of the Lower Lynx Diversion Ditch. Repairs must be completed prior to the next wet season.	Repairs were completed in 2019 and conditions are being monitored with repairs implemented as needed.	Complete Priority 2
All	2018-06	1. Carry out detailed review of instrumentation data logger wiring. 2. Create a wiring diagram and operation manual for each instrumentation hut. 3. Prepare updated scripts for all data loggers which are consistent in functionality an appropriate to the hardware.	1. Schematic review complete by WSP and MFM. 2. Not complete. 3. Not complete.	In progress Priority 2
All	2018-07	Assess flood impacts to infrastructure adjacent to Myra Creek including buildings and bridges. Update Emergency Response Plan.	Complete	Complete Priority 2
Lynx TDF	2018-13	Add an R-Star data logger for the Lynx Springs Drain VWPs.	Complete	Complete
2019 DSI Report (Wood 2020e)				
Lynx TDF	2019-01	Pond levels in Lynx TDF were not regularly measured accurately throughout 2019.	Water levels in Lynx TDF were measured relative to a geodetic reference and recorded as part of routine facility surveillance. OMS updated in 2020 to reflect this requirement.	Complete Priority 1
LLDD	2019-02	Delamination between the shingles of the Lower Lynx Diversion Drain concrete cloth liner have periodically been observed and repaired.	Carry out a detailed condition assessment yearly after the freshet. Repairs must be completed prior to the next wet season. Completed and added to 2020 OMS update.	Complete Priority 2
2020 DSR Report (Thurber 2021)				
Lynx TDF	2020-01T	Although the observed cracking along the upstream edge of the crest is not unexpected, it should be evaluated and remediated under the direction of the EoR prior to the placement of any new dam fill on the crest.	Cracking along the crest has been assessed by the EoR and remediated during 2021 construction activities. The conditions of the crest will continue to be monitored during MFM weekly inspections and WSP quarterly inspections.	Complete Priority 2
Lynx TDF	2020-02T	The location of the newest camp buildings should be reviewed to check whether their presence could justify an increase in the downstream consequence classification for the Lynx TDF. Similarly, NMF should evaluate whether changes in haul road traffic patterns since 2015 could result in a larger number of workers being in the inundation area during a potential dam breach situation.	A dam breach assessment was completed by WSP in Nov 2022. The consequence classification was confirmed as high with consideration to operation controls and contingency measures included in the dam design.	Complete Priority 1

All Lynx TDF DSI Recommendations

Structure	Tracking Number	Previous Recommendation	Update	Status/Priority
Lynx TDF	2020-03T	Minor updates/revisions to the OMS Manual are recommended, including: • Provide consistent information in the OMS Manual and the Field Manual. • Emergency contact information needs to be updated. • Photos in Appendix C should be reviewed and updated as necessary. • The list of supporting documents list in Appendix F needs updating.	Updates to the OMS manual were completed by MFM and reviewed by WSP in both 2021 and 2022.	Complete Priority 4
Lynx TDF	2020-04T	In addition to any internal training initiatives completed by NMF, the EOR should oversee informal "refresher" training sessions with monitoring and surveillance staff every 2 to 3 years to reinforce the objectives of monitoring activities and how they relate to specific failure modes.		In Progress Priority 4
Lynx TDF	2020-05T	With respect to the risk assessment completed in 2020, clarification should be provided regarding the justification for reducing consequence ratings for some of the "current risk" scenarios, compared to the corresponding "inherent risk" scenarios.		Complete Priority 4
Lynx TDF	2020-06T	It is recommended that the AFW 2016 seismic hazard values be reviewed following the release of the 6th Generation GSC seismic hazard model (expected later in 2021). We understand that the GSC model will incorporate updated GMPEs and assumes an increased frequency for CSZ earthquakes. The recurrence rates and GMPEs used in AFW's 2016 seismic assessment were developed prior to 2012 and may require updating based on recent research.	WSP has recommended to MFM that this update to the seismic hazard evaluation be completed in 2023.	Incomplete Priority 4
2020 DSI Report (Wood 2021d)				
General	2020-05	OMS Manual not updated after 368.5 m raise 2020. OMS Manual should be updated yearly.	MFM updated the manual in March 2022.	Complete
2021 DSI Report (Wood 2022)				
Lynx TDF	2021-06	Backfill 10L portal and complete the 373.5 m raise in this area to the lines and grades shown on the drawings.	10L portal backfill scheduled to be completed prior to and during dam raise construction starting in April 2023.	In Progress Q2 2022
Lynx TDF	2021-07	Suitable, permanent staff gauge not yet installed to measure pond levels.	Install a permanent staff gauge possibly on the rock face opposite the pumping area.	Incomplete Priority 4
Lynx TDF	2021-08	Ponding of water near Panel 15 drain standpipe.	Grade the toe area of the Lynx dam such that water does not pond in and around the standpipe intended to monitor water levels in the Panel 15 Drain.	Complete
Lynx TDF	2021-09	Lynx instrument upgrades and data gaps.	Assess existing operational instrumentation on Lynx given dam raises and instrument losses over the years. Field review of VWP's completed by WSP in 2022.	Complete Priority 4

All Lynx TDF DSI Recommendations

Structure	Tracking Number	Previous Recommendation	Update	Status/Priority
2022 DSI Report				
Lynx TDF	2022-01	El. 376.5 m dam raise crest tie in to the 10L portal is to be completed.	The 10 L East Portal in the Lynx TDF West abutment shows ongoing drainage flows from the portal. This portal needs to be plugged and sealed before the next dam raise construction to El. 376.5 m which is scheduled to begin in April 2023.	2023 Q2 Priority 2
Lynx TDF	2022-02	Unsupported upstream slope in the area of the pump barge is greater than that recommended by WSP.	Relocate the barge and discharge tailings to comply with recommendations for maximum elevation difference between tailings and upstream bench and, to provide support for planned upstream raises.	2023 Q2 In Progress
Lynx TDF	2022-03	Slope Inclinometer BH14-08a is obstructed at a depth of about 45 m and cannot be monitored.	Assessment for installation of a shape accelerometer array. If unsuccessful, replace SI. Install a second SI on the current downstream bench prior to the start of Raise 9.	2023 Q2/Q3 Priority 2
Lynx TDF	2022-04	Many VWPs were determined to be non-function based on the field review conducted by WSP in 2022 (Lynx TDF 2021-09)	Replace non-functioning VWPs and assess requirement for additional VWPs to adequately monitor the performance of the dam.	2023 Q4 Priority 3