FINAL

2024 Annual Geotechnical Inspection

Sä Dena Hes Mine, Watson Lake, Yukon

Teck Resources Ltd.

SRK Consulting (Canada) Inc. ▪ CAPR003248 ▪ September 2024

srk consulting

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Cover Image(s):
Upper Left: Reclaimed 1408 Portal Waste Rock Dump. Lower Left: South Drainage Channel. Right: Jewelbox Vent Raise near the summit.

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Useful Definitions

This list contains definitions of symbols, units, abbreviations, and terminology that may be unfamiliar to the reader.

DDRP	Detailed Decommissioning & Reclamation Plan
ha	hectares
IDF	Inflow Design Flood
MAP	Mean Annual Precipitation
QML	Quartz Mining License
SDH	Sa Dena Hes
SRS	Sediment Retaining Structure
SWE	snow water equivalent
TMA	Tailings Management Area

1 Introduction

SRK Consulting (Canada) Inc. was retained by Teck Resources Ltd. on behalf of the Sä Dena Hes Operating Corp. to complete the annual geotechnical inspection of the site as required by the Quartz Mining License QML-004 and Yukon Water Board Licence QZ16-051.

- Clause 11.1 of Quartz Mining License QML-004 requires all engineered structures, works and installations located at the site to be conducted by an independent engineer by September 30 of each year.
- Clause 45 of the Water Licence QZ16-051 also requires all earthworks and water retaining structures including, but not limited to, open pits, waste dumps, ditches, dikes, weirs, and appurtenance be inspected by a Professional Engineer as per the Post-Closure Geotechnical Monitoring Plan (SRK 2014). The water licence requires annual inspections through 2026 and every five years thereafter until the expiry of the water licence at the end of 2040.

This report presents the results of the inspection completed on July 9 and 10, 2024 and covers the following engineering structures, work, and installations:

- Main Zone and Jewelbox Ore Zones: Pits, Waste Rock Dumps, and Portals
- Burnick Ore Zone Waste Rock Dumps and Portals
- The South Drainage Channel and Camp Creek Drainage Channel
- The North Creek Channel that was reclaimed following decommissioning of the North Creek Dike and Second Crossing of the North Creek
- The Landfill area.

The purpose of the inspection of these structures was to document the physical conditions based on visual observations and to provide geotechnical assessment, noting potential signs of physical instability such as erosion, differential settlement, sloughing or bulging of material, seepage, etc. The reporting period covered by this report is since the last SRK annual inspection documented in SRK (2023), i.e., June 2023 to July 2024.

Results of the inspection of the Tailings Management Area (TMA) including the North Embankment, Tailings Cover, Sediment Retaining Structure (SRS) and North Drainage Channel are documented separately in the 2024 Annual Facility Performance Report.

The geotechnical inspection was completed by Peter Mikes, P.Eng., and Kyle Howse, of SRK. SRK staff were accompanied by Chris Jeffrey, P.Eng. and Jeff Allen, of Teck. Chris Jeffrey and Jeff Basarich (Site Caretaker) were the primary contacts for information about the site conditions and performance during the past year. Weather during the July 9 and 10, 2024 site inspection was mostly sunny with temperatures ranging between approximately 14°C to 25°C. No precipitation was recorded at the Watson Lake Airport in the previous week leading up to the site inspection. The ground surface was free of snow and mostly dry.

2 Background

2.1 Site History

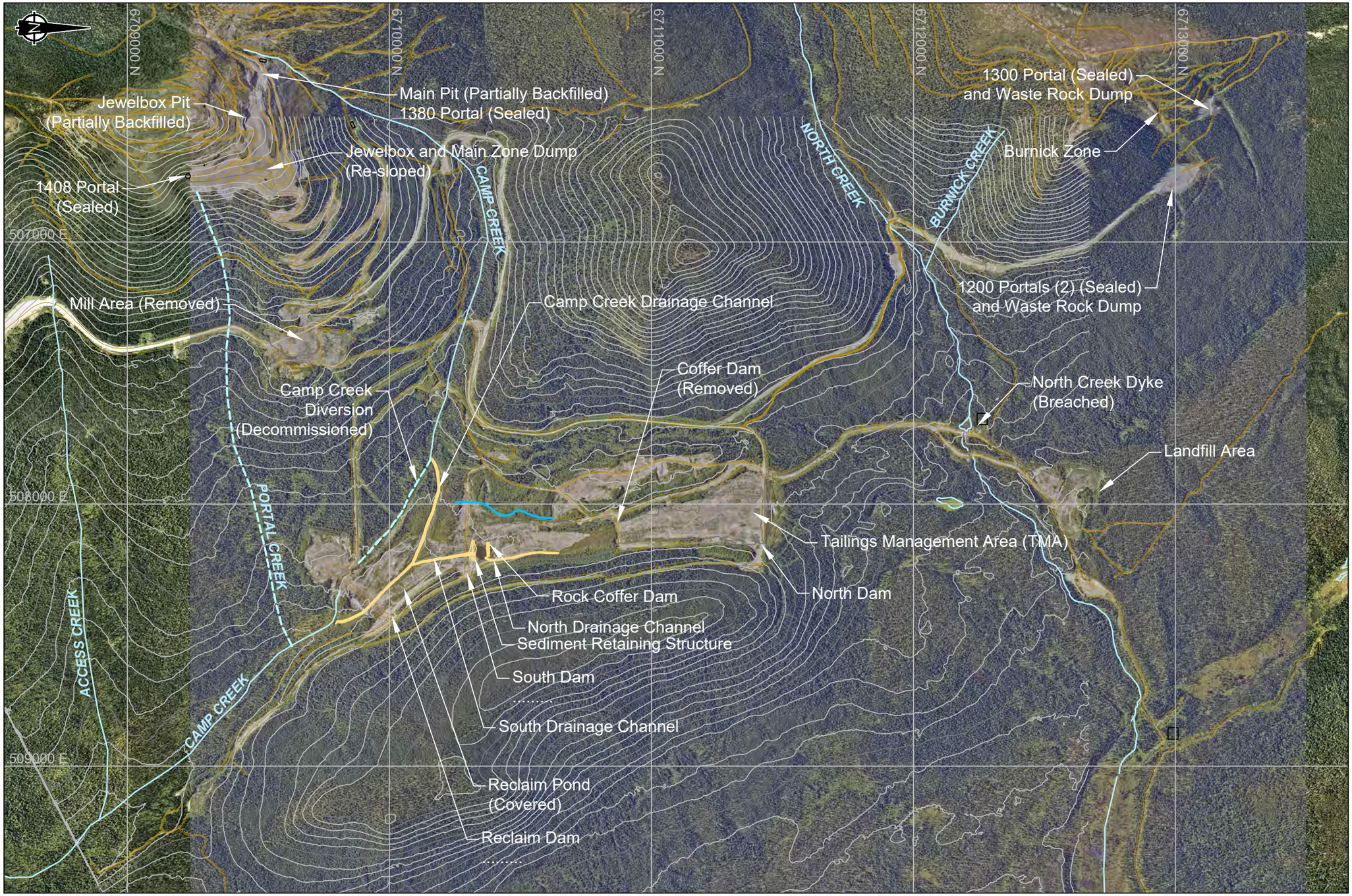
The Sä Dena Hes (SDH) site is a former lead-zinc mining operation that operated from July 1991 to December 1992 at which time operations were suspended indefinitely.

The SDH Detailed Decommissioning and Reclamation Plan (DDRP) (Teck 2015) details the closure plan for the mine that were executed in 2014 and 2015 and documented in AMECFW (2015a and 2015b) and SRK (2015). The key activities associated with the site reclamation were:

- Demolition and disposal of site infrastructure
- Sealing of underground mine workings
- Re-sloping of waste rock dumps
- Removal of the Reclaim and South Dams
- Decommissioning, capping, and reclamation of the TMA
- Capping and revegetation of mine facilities.

2.2 Facility Description

This section presents an overview description of the inspected site facilities with a general arrangement plan provided in Figure 2.1.



LEGEND

Creeks

NOTES

1. Contours are shown at 10.0m intervals.
2. All units are in meters unless otherwise specified.

REFERENCES

1. Coordinate system is UTM NAD 83CSRS zone 9V.
2. 2022 topographic contour data and aerial photos provided by Teck.

0m 10 20 30 40 50 60

srk consulting

SRK JOB NO.: CAPR003248 | REG. NO.:

FILE NAME: CAPR002559 - Vicinity Map.dwg

Teck

Sä Dena Hes

Mine Area Inspection

DRAWING TITLE: Vicinity Map

DATE: August 2024 | APPROVED: PM | FIGURE: 2-1

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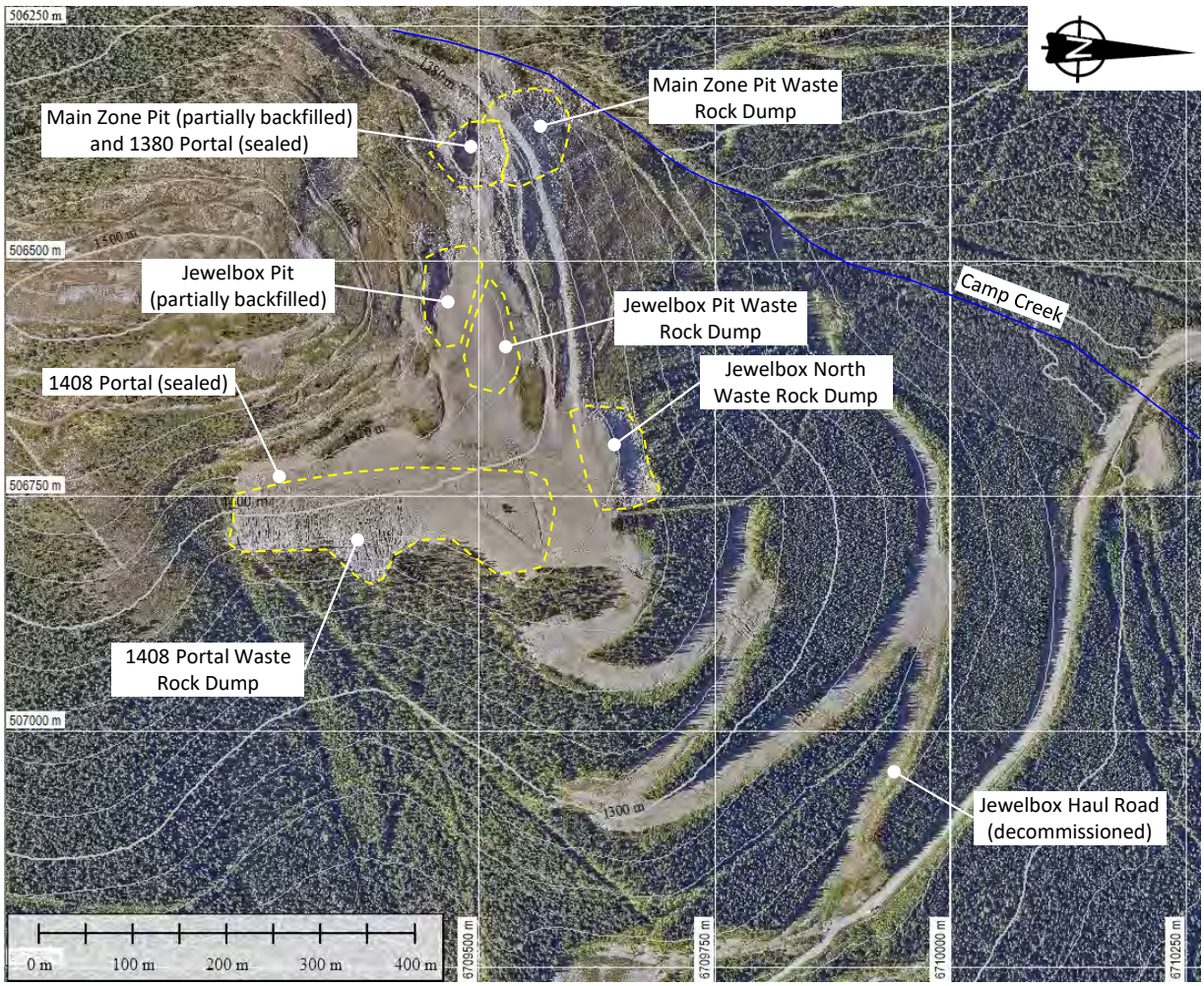
Jewelbox and Main Ore Zone Areas

A site plan of the Jewelbox and Main Ore Zone areas is shown in Figure 2.2. A description of the site features in this area is provided in Table 2.1.

Figure 2.2: Jewelbox and Main Ore Zone Area Plan



Sources: https://srk.sharepoint.com/sites/NACAPR003248/Deliverables/03_MineArea_Geotech_Inspection/040_Figures/SDH_Mine_Area_In-text_Figures.pptx

Notes:
1. 2022 Orthophoto.
2. 20 m contour interval.

Table 2.1: Jewelbox and Main Ore Zone Site Features

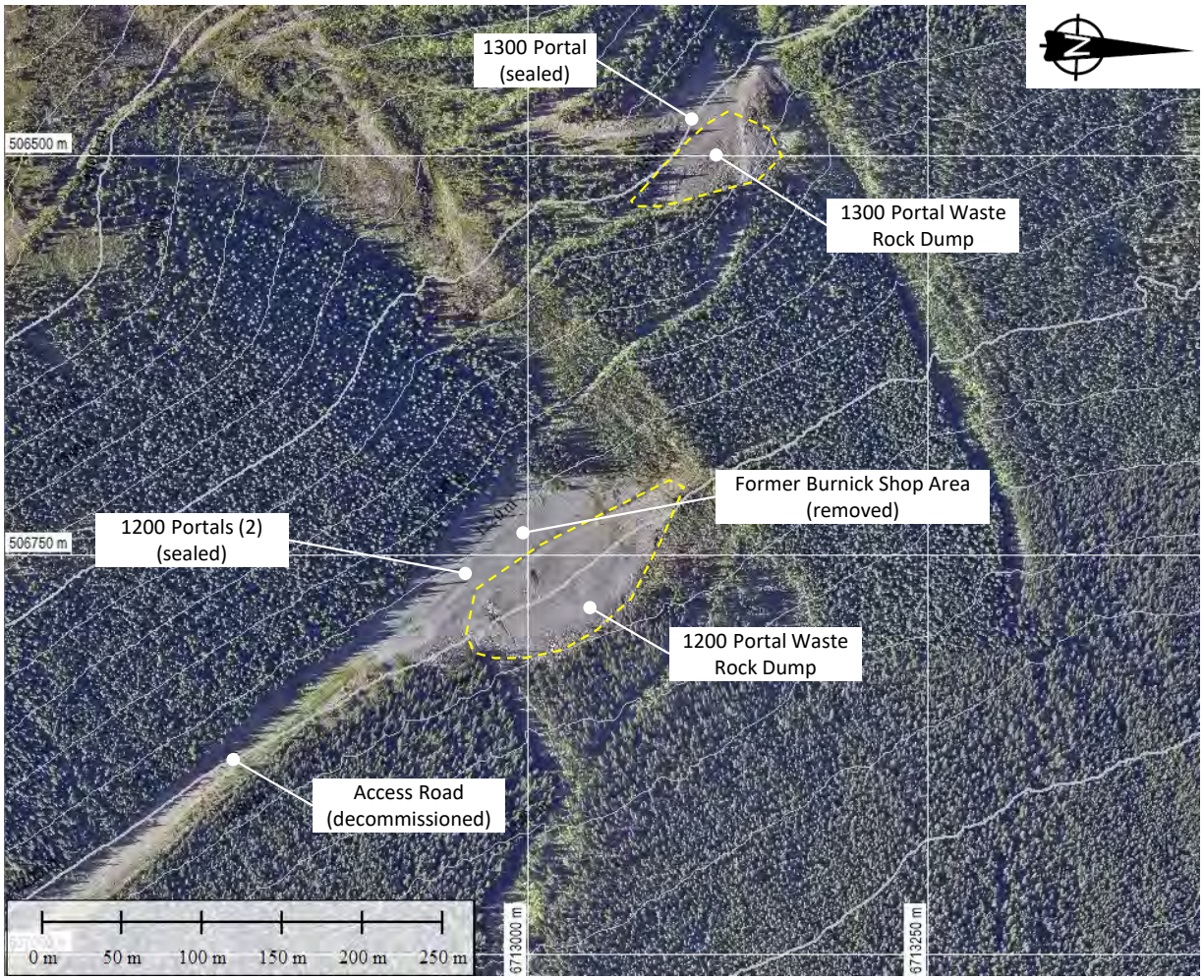
Site Feature	Description
1408 Portal	The Jewelbox 1408 portal is located immediately above the mill site and provided access to the main ramp of the underground workings of the Jewelbox Zone. The portal was roughly 4.5 m by 4.5 m. The portal was sealed off using coarse waste rock to at least 5 m into the portal beyond the entrance. At surface, the waste rock was sloped and contoured to tie into the surrounding terrain. Two 100 mm diameter HDPE pipes were installed to prevent air from pressurizing within the mine and to provide a conduit for mine water drainage if required.
Jewelbox Vent Raises	Two ventilation raises were present in the Jewelbox area: one near the summit of Jewelbox Hill, and the other located immediately upslope from the 1408 Portal. Both raises were sealed with engineered concrete seals with small vent pipes to provide a physical barrier to eliminate public or wildlife access.
Jewelbox Pit	The Jewelbox Pit is located between the 1408 Portal and the Main Zone 1380 Portal. The pit bottom is at elevation 1,400 m and rises steeply to 1,430 m. The pit walls were partially stabilized by re-sloping and hauling in waste rock from adjacent dumps to partially fill the pit and significantly reduce the highwall. Fill at the base of the pit functions like a French Drain to ensure that water continues to have a route to discharge out of the pit.
Jewelbox Waste Rock Dumps – 1408 Portal and Jewelbox North	Waste rock from the Jewelbox underground workings was placed immediately below the 1408 portal and covered an area of 2.6 ha. In the upper section of the dump (1.3 ha), the material was placed in two to three lifts with an overall slope of approximately 2H:1V, while the lower sections were end-dumped on steep slopes at the angle of repose (1.3H:1V). Waste rock from the Jewelbox Pit is located on a ridge immediately east of the pit. The dump was built in two phases and covered an area of 1.9 ha, with side slopes that were generally sloped at 2H:1V. Waste rock was also deposited on steep ground immediately below the upper Jewelbox Pit waste rock dump over an area of 0.4 ha at an angle of repose (1.3H:1V). Hydrocarbon and metal contaminated rock were covered with soil. The crest of the waste dump below 1408 Portal was pulled back and contoured to tie into the surrounding terrain. Some of the waste rock in the Jewelbox Pit dump on the ridge was relocated into the Jewelbox Pit and recontoured as much as practical to provide a slope of 2H:1V. The crest of the Jewelbox North waste dump was also pulled back and used for re-sloping the Main Zone Pit walls. In 2015, most of the waste rock dumps were capped with soil from the Reclaim Dam stockpile and revegetated. A total of 64,500 m^2 of area was capped with a minimum 200 mm of cover material.
Main Zone Pit	The Main Zone Pit is the lower of the two open pits located on the south flank of the Camp Creek catchment. The pit is a side hill excavation with the pit floor at elevation 1,370 m rising to an elevation of approximately 1,400 m. During reclamation, the pit walls were partially stabilized by dozing in waste rock material from adjacent waste rock dumps.
Main Zone 1380 Portal	The 1380 Portal is located within the Main Zone Pit and was approximately 4.5 m by 4.5 m in section. The portal is a relatively short adit that was apparently stopped due to very poor ground conditions and does not connect with any other underground workings. The portal was sealed off using coarse waste rock to at least 5 m into the portal beyond the entrance and was covered by waste rock from the closure of the Main Zone Pit. Two 100 mm diameter HDPE pipes were installed to prevent air from pressurizing within the mine and to provide a conduit for mine water drainage if required.
Main Zone Waste Rock	Waste rock from the Main Zone Pit was end-dumped on hillside slopes below the pit floor and into the adjacent gully. The slope of the dump was about 1.3H:1V and covered an area of about 0.3 ha. During reclamation, the crest of the waste rump was pulled back and rounded for aesthetic purposes and to improve stability.

Sources: Teck (2015), AMECFW (2015a and 2015b)

Burnick Ore Zone Area

The Burnick Ore Zone body is located on the North Hill approximately 4km north of the mill site (Figure 2.1). A site plan of the area is shown in Figure 2.3.

Figure 2.3: Burnick Zone Plan



Sources: https://srk.sharepoint.com/sites/NACAPR003248/Deliverables/03_MineArea_Geotech_Inspection/040_Figures/SDH_Mine_Area_In-text_Figures.pptx

Notes:

1. 2022 Orthophoto.
2. 20 m contour interval.

Table 2.2: Burnick Ore Zone Site Features

Site Feature	Description
1200 Portals	Two portals are located at the 1200 level of the Burnick Ore Zone that are separated by several meters. One is the main access to the ore body and the second is for ventilation. Water from the mine workings drains through the ventilation portal. Both portals were sealed off using coarse waste rock to at least 5 m into each portal beyond their entrance. At surface, the waste rock was sloped and contoured to tie into the surrounding terrain. Two HDPE pipes were installed in the ventilation portal to prevent air from pressurizing within the mine and to provide a conduit for mine water drainage if required.
1200 Portal Waste Rock Dump	The waste rock dump at the 1200 Level covered an area of about 1.4 ha and is located on a steep side hill immediately below the 1200 Portals. At closure, the top of the dump was re-sloped to reduce loading and improve stability, and the surface seeded.
1300 Portal and Waste Rock Dump	The 1300 Portal is accessible via an old exploration road by UTV. The portal is at the highest elevation in the mine and slopes downward connecting to the 1200 Level Portal so that there is no potential for drainage out of the mine workings through the 1300 Level Portal. The associated waste rock dump is small as not much mining work was done in this area. At closure, the portal was sealed off using coarse waste rock to at least 5 m into the portal beyond their entrance. At surface, the waste rock was sloped to 2H:1V and contoured to tie into the surrounding terrain. Two HDPE pipes were installed in the portal to prevent air from pressurizing within the mine.

Sources: Teck (2015), AMEC (2015a and 2015b)

South Drainage Channel

The South Drainage Channel was constructed from the Sediment Retaining Structure (SRS) spillway through the former South Dam and connects with the Camp Creek Drainage Channel. The location of the channel is shown in Figure 2.1 with the as-built channel drawings provided in Appendix A.

The channel length is about 230 m, and it was installed with riprap erosion protection placed on top of a non-woven geotextile. The channel is designed for the 1 in 1000-year, 24-hour Inflow Design Flood (IDF). Upstream and downstream side slopes are 2H:1V. Average grade of the channel is 4%.

Camp Creek Drainage Channel

The Camp Creek Drainage Channel was constructed during the 2014 TMA decommissioning through the former Reclaim Dam and pond area to route Camp Creek flows along its historical alignment. The location of the channel is shown in Figure 2.1 with the as-built channel drawings provided in Appendix A.

The channel length is about 940 m, and it was installed with riprap erosion protection placed on top of a non-woven geotextile. The channel is designed for the 1 in 1000-year, 24-hour IDF. Upstream and downstream side slopes are 2H:1V. Average grade of the channel is 5%.

North Creek

During operation of the mine, a dike was built over the North Creek as a water storage facility for the mill. The dyke (see Figure 2.1 for location) was decommissioned in 2015 and a riprapped channel was built through the structure to convey the North Creek flow to False Canyon Creek. A similar channel was also built downstream to convey the North Creek flow through a decommissioned access road.

Landfill

An on-site permitted landfill was constructed for the disposal of non-putrescible industrial waste that has no salvage value generated during the closure activities. The landfill is located 1.1 km north of the Tailings Management Area as shown in Figure 2.1.

A total of 14,406 m^3 of loose material was transported to the landfill during closure in 2014 that consisted of:

- Mill rubble including insulation, steel, tin, cladding, wood, and electrical cable
- Materials from the site boneyard (primarily scrap steel)
- Small shacks and structures
- Core boxes and core racks
- Steel water pipeline
- Culverts (steel)
- Concrete from water decant structure from the South Dam
- Pump house rubble from North Creek Dyke, Lower North Creek, and Reclaim Dam access road.

Landfill operations were completed by excavating a deposition cell, placing layers of crushed debris mixed with fill to minimize void space, further crushing and compaction with a dozer, and capping with a minimum of 1 m of cover material. During construction, a drainage channel was contracted through an alignment of the landfill that did not contain debris to manage runoff and promote drainage. In 2015, approximately 50% of the landfill area was subsequently covered with organic material excavated from the Camp Creek Drainage Channel. The entire landfill footprint was scarified, seeded, and planted with alders.

2.3 Surveillance and Maintenance during Reporting Period

Surveillance of the site consists of routine visual inspections and water quality sampling. Routine inspections are completed by the Site Caretaker in the spring and fall, with an additional summer inspection (this report) completed by a Professional Engineer. The Fall 2023 inspection was completed on September 9, 2023, and the Spring 2024 inspection was completed on June 1, 2024. The routine inspection forms are provided in Appendix C.

Water quality sampling is completed bi-monthly with the results reported separately.

Maintenance during the reporting period consisted of pulling back (flattening) steep slopes adjacent to the North Creek Second Crossing to reduce future erosion and riprap placement at the same crossing to allow for continued UTV access to the landfill area and monitoring wells (Figure B-11 in Appendix B).

2.4 Review and Summary of Climate Data

As there is no on-site weather station, data from select local meteorological stations were used to estimate on-site temperatures and precipitation. Regional and regression analyses were carried out by SRK to develop correlations from the available data to the site in absence of any site-specific data (SRK 2023).

Table 2.3 and Figure 2.4 presents a comparison of the estimated climate conditions from June 2023 through May 2024 compared to average values. Mean site temperatures are estimated to be 2 °C cooler than temperatures at the Watson Lake Airport. The evaporation potential was estimated in the Hydrometeorological Characterization Report (SRK 2023b). ERA5-Land climatic gridded model produced by European Centre for Medium-Range Weather Forecasts was used to predict a Mean Annual Precipitation (MAP) for the site of 675 mm.

Table 2.3: Site Climate Data Compared to Climate averages (1980-2021)

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Annual
Normals													
Daily Max. Temp [°C]	16.9	18.6	16.4	10.1	1.4	-10.0	-15.3	-15.7	-10.7	-3.9	3.8	11.1	1.9
Daily Min. Temp [°C]	3.4	5.5	3.6	-0.5	-6.7	-19.6	-25.3	-26.0	-24.0	-19.6	-9.8	-1.7	-10.1
Daily Mean Temp [°C]	10.2	12.1	10.0	4.8	-2.6	-14.8	-20.3	-20.9	-17.3	-11.7	-3.0	4.7	-4.1
Precip. (Site) [mm]	96	98	77	72	61	41	37	38	25	29	37	63	675
Reporting Period (June 2023 through May 2024)													
Mean Temp [°C]	15.6	13.5	6.9	-1.7	-12.6	-17.7	-23.2	-.2	-10.2	-1.1	5.8	12.4	-2.6
Precipitation [mm]	67	58	41	26	44	35	76	17	14	18	63	81	539

Sources: SRK (2023b), https://srk.sharepoint.com/sites/FS261/Internal/Monitoring%20Data/Climate/WatsonLake_Precip_rev01.xlsx?web=1

The Watson Lake A station was used as the reference station for the climate data as it is the most representative station close to the site that is currently active. Total precipitation recorded at Watson Lake Airport (Climate ID: 2101204) from July 2023 through May 2024 was reported as 372 mm. Using the undercatch correction factor of 1.13 (SRK 2018), total corrected annual precipitation at Watson Lake for the same period was 421 mm. A 1.28 ratio was applied to convert the corrected Watson Lake Airport precipitation to a representative site precipitation based on the ERA5-Land regression analysis (SRK 2023b) to result in a total precipitation of 539 mm for the site during the reporting period.

The climate data indicates that precipitation during the reporting period was 20% lower than the average.

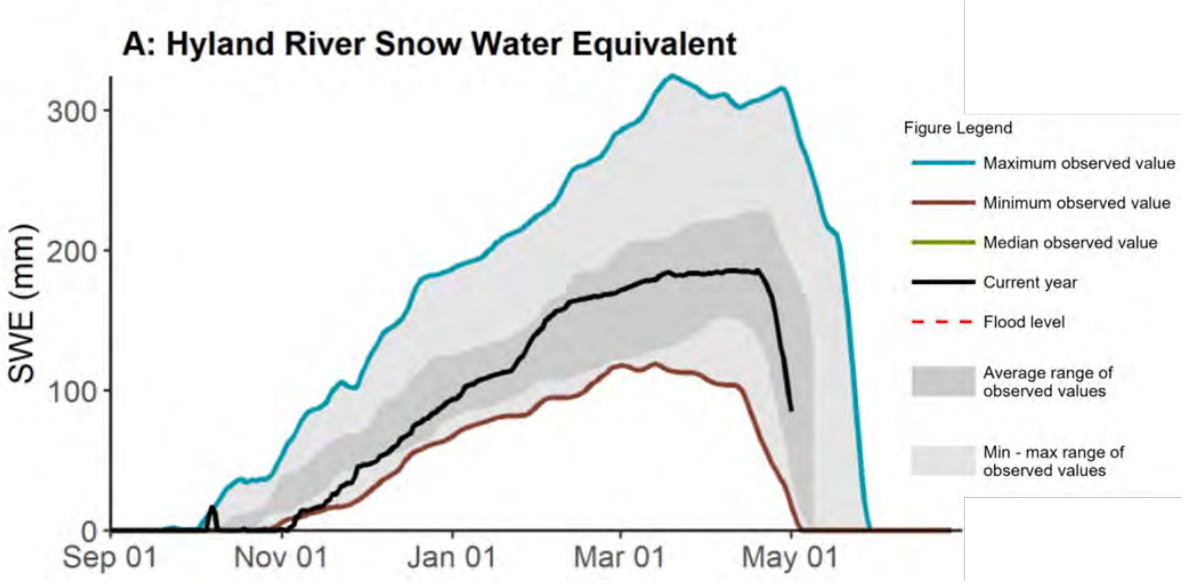
The Yukon Government Department of Environment's Water Resources Branch issues the Yukon Snow Survey Bulletin and Water Supply Forecast three times annually in early March, April, and May

(YG 2024). Data from May 1, 2024, for the Liard River Basin (Hyland Meteorological Station) shows the Liard River basin-average snow water equivalent (SWE) was estimated to be 81% of the historical median with a SWE of 111 mm. A graph of the SWE over the winter of 2022-23 at the Hyland Station is provided in Figure 2.5.

Figure 2.4: Precipitation and Temperature Data

Sources: https://srk.sharepoint.com/sites/FS261/Internal/Monitoring%20Data/Climate/WatsonLake_Precip_rev01.xlsx?web=1

Figure 2.5: Winter 2023-2024 Liard River Basin Snow Water Equivalent Data



Sources: https://yukon.ca/sites/yukon.ca/files/env/env-snow-bulletin-may-2024-en.pdf

3 Site Observations

3.1 Visual Inspections

Weather during the July 9 and 10, 2024 site inspection was mostly sunny with temperatures ranging between approximately 14°C to 25°C. No precipitation was recorded at the Watson Lake Airport in the previous week leading up to the site inspection. The ground surface was free of snow and mostly dry.

Site observations are provided in the following subsections. Select photographs taken during the inspection are provided in Appendix B. The start of Appendix B also includes figures that provide the photograph locations.

3.1.1 Jewelbox and Main Ore Zone Areas

The conditions of the Jewelbox and Main Ore Zone Areas were largely the same as those observed during the 2023 inspection. Table 3.1 provides the inspection observations along with references to corresponding photographs and applicable recommendations.

Table 3.1: Jewelbox and Main Ore Zone Area Observations

Observation	Figure (App. B)	Photo	Associated Recommend-ation
■ At the low point of the waste rock dump, the 2 to 3 m deep erosion gulley that has been monitored over the last few years showed no significant change compared to the June 2023 inspection. The gully has no impact on the dump stability and no action is required.	B-14	WR-05, WR-06	n/a
■ Water that flows through the erosion gulley also crosses the decommissioned access road at three locations further downslope with erosion gullies forming at the crossings. The erosion gullies are up to approximately 0.5 m deep. The extent and depth of the gullies appear to be worse compared to the June 2023 inspection. ■ No action is required at this time; however, maintenance may be needed in the next few years to maintain UTV access. Alternatively, consideration could be made to switching inspection of the Jewelbox, Main Zone, and Burnick Waste Rock Areas to drone inspections.	B-12, B-13	WR-02, WR-03	n/a
■ After a comparison of photographs from previous years inspections, it was determined there is no significant change in the Main Zone Pit Highwall.	B-16	W-10	n/a
■ Surficial sloughing of the soil cover is located downslope of the 1408 Portal. The circular sloughs are typically 0.3 m deep and have resulted in bulges at the slough toe. There is no impact on the overall dump stability and no action is required.	B-15	WR-07	n/a
■ There was no apparent change in condition in the erosion gully observed in the Main Zone Pit backfill above the 1380 Portal. The gully is situated in waste rock and appears to be self-armoring, with no significant catchment that reports to the gully at the upstream end. No remedial action is required.	B-17	WR-11	n/a

Observation	Figure (App. B)	Photo	Associated Recommend -ation
■ All drainpipes and vent pipes are in good condition. No water was observed exiting the drainpipes.	B-15, B-17	WR-08a, WR-08b, WR-12	n/a
■ An exploration hole with a drill rod sticking out of the ground is present approximately 75 m to the east of the vent raise above the Main Zone Pit. The hole has been decommissioned to surface (small rock thrown down the rod to assess depth).			n/a

3.1.2 Burnick Ore Zone Area

The conditions of the waste rock dump and portal areas were largely the same as those observed during the 2023 inspection. Table 3.2 provides the inspection observations along with references to corresponding photographs and applicable recommendations.

Table 3.2: Burnick Ore Zone Area Observations

Observation	Figure (App. B)	Photo	Associated Recommend -ation
■ The reclaimed 1200 and 1300 portals areas were inspected during the site visit.	B18, -B19	WR-13 to WR-16	
■ Minor settlement cracking was observed at the 1200 portal. During the 2023 inspection, the crack was approximately 10 m long, up to 15 cm wide, and up to 10 cm deep. Since the 2023 inspection, the crack does not appear to have increased in size and has partially filled with fine sediment. Horsetail vegetation is present in the crack area and vegetation growth is better in this area compared to the remainder of the waste rock dump area, indicating that there may be groundwater/moisture closer to surface in the location.	B-18	WR-13	n/a
■ All drainpipes appear to be functional and in good condition. Water was observed exiting the lower drainpipe at the 1200 Portal.	B-18, B-19	WR-14, WR-16	n/a

3.1.3 South Drainage and Camp Creek Drainage Channels

Three riprapped drainage channels (North Drainage Channel, South Drainage Channel, and the Camp Creek Drainage Channel) were constructed during the decommissioning in 2014. Table 3.3 provides the inspection observations for the South Drainage and Camp Creek Drainage Channels along with references to corresponding photographs and applicable recommendations. Observations related to the North Drainage Channel are provided in the 2024 Annual Facility Performance Report for the Tailings Management Area.

Table 3.3: Drainage Channel Observations

Channel	Observation	Figure (App. B)	Photo	Associated Recommend-ation
South Drainage Channel	■ The channel is functioning as designed with no significant deterioration. ■ Conditions are unchanged from the June 2023 inspection.	B-6 B-7	DC-01, DC-02, DC-04	n/a
	■ Several small shrubs are growing in the channel immediately downstream of the SRS where sediment has accumulated in the channel. No remedial action is required at this time as the vegetation does not significantly reduce the flow capacity.	B-6	DC-01, DC-02	n/a
Camp Creek Channel	■ The channel is functioning as designed with no significant deterioration. ■ Conditions are unchanged from the June 2023 inspection.	B-7, B-8	DC-03, DC-05	n/a
	■ Some longitudinal cracking is present approximately 1 m offset from the creek crests were observed. These cracks are likely caused by frost heave after years of repeated freeze-thaw cycles. The cracks are typically less than 1 cm wide and have no negative impact on the creek performance.			

3.1.4 North Creek

The 2015 site reclamation works included decommissioning of culvert crossings of North Creek at three locations: the access road to the Burnick Zone, the North Creek Dyke, and the access road to the Landfill area (“Second Crossing”). Table 3.4 provides the inspection observations along with references to corresponding photographs and applicable recommendations.

Table 3.4: North Creek Observations

Observation	Figure (App. B)	Photo	Associated Recommend-ation
■ Decommissioned Access Road Crossing to the Burnick Zone: - Erosion has occurred on both the north and south banks, with displacement of the riprap and exposure of the geotextile. - There is no significant change in the erosion extent compared to the June 2023 inspection.	B-9	NC-01, NC-02	n/a
■ Decommissioned North Dyke: - A beaver dam was removed from the inlet of the decommissioned structure in 2022 with no further beaver activity observed. - High flows have eroded the riprap on the downstream end of the crossing. This condition of the channel is similar to those observed during the June 2023 inspection.	B-10	NC-03	n/a

Observation	Figure (App. B)	Photo	Associated Recommend-ation
■ Decommissioned Access Road Crossing to the Landfill Area: - Maintenance was completed at the crossing to scale back the over steepened slopes on both sides of the creek to approximately 3H:1V slopes. Oversized rocks/riprap salvaged from the excavation appear to have been placed in the creek bottom immediately below the UTV crossing. ■ In all cases noted above, it is expected that North Creek will continue to erode the decommissioned access road crossings but are expected to become stable over time. No remedial action is required.	B-11	NC-05, NC-06	n/a

3.1.5 Landfill

Table 3.5 provides the landfill inspection observations along with references to corresponding photographs and applicable recommendations.

Table 3.5: Landfill Observations

Observation	Figure (App. B)	Photo	Associated Recommend-ation
■ Conditions at the landfill are the same as those observed in previous inspections. The cover is in good condition and functioning as intended.	B-20	L-1, L-2	n/a

3.2 Instrumentation Review

No instrumentation is required to monitor physical performance of the engineered structures covered under the scope of this report.

In 2024, Teck undertook a historical InSAR satellite survey study to assess site-wide surface displacements at SDH using satellite imagery during snow-free periods between 2022 and 2024 (3V Geomatics 2024). A previous InSAR study was completed in 2022 that covered the period between 2018 and 2022.

SRK was provided access to 3vGeomatics' web-based platform to review the results of the InSAR analysis. The results are similar to the 2022 study and showed no significant deformation at the site, with some minor settlement in the 1408 Portal Waste Rock Dump area (up to 2 cm over the 2-year period).

3.3 Routine Inspection Forms

Routine inspections of the site are made by the Teck Site Caretaker twice a year in the spring and the fall. No safety concerns were identified during review of the routine inspection forms. The Fall 2023 and Spring 2024 routine inspection form are provided in Appendix C.

4 Recommendations

No actions are currently required for the engineered structures, works, and installations at the areas covered by this inspection.

As noted in Section 3.1.1, future maintenance on the access road to the Jewelbox and Main Ore Zone Areas may be required in the next few years to maintain UTV access across erosion gulleys that have worsened in the last year. Alternatively, consideration could be made to switching the inspection of the waste rock areas (Jewelbox, Main Zone, and Burnick) to drone inspections.

Closure

This report, 2024 Annual Geotechnical Inspection, was prepared by

Kyle Howse, EIT.
Staff Consultant

and reviewed by

PROFESSIONAL ENGINEER YUKON TERRITORY PETER H. MIKES
2024-09-06

Peter Mikes, P.Eng.
Principal Consultant

PERMIT TO PRACTICE
Signature
Date 2024-09-06
PERMIT NUMBER: PP019
Association of Professional Engineers of Yukon

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

References

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[AMECFW] Amec Foster Wheeler Environment & Infrastructure, 2015a. 2014 Reclamation Activities and As-built Report. Prepared for Teck Resources Ltd. Project Number TE133102. March.

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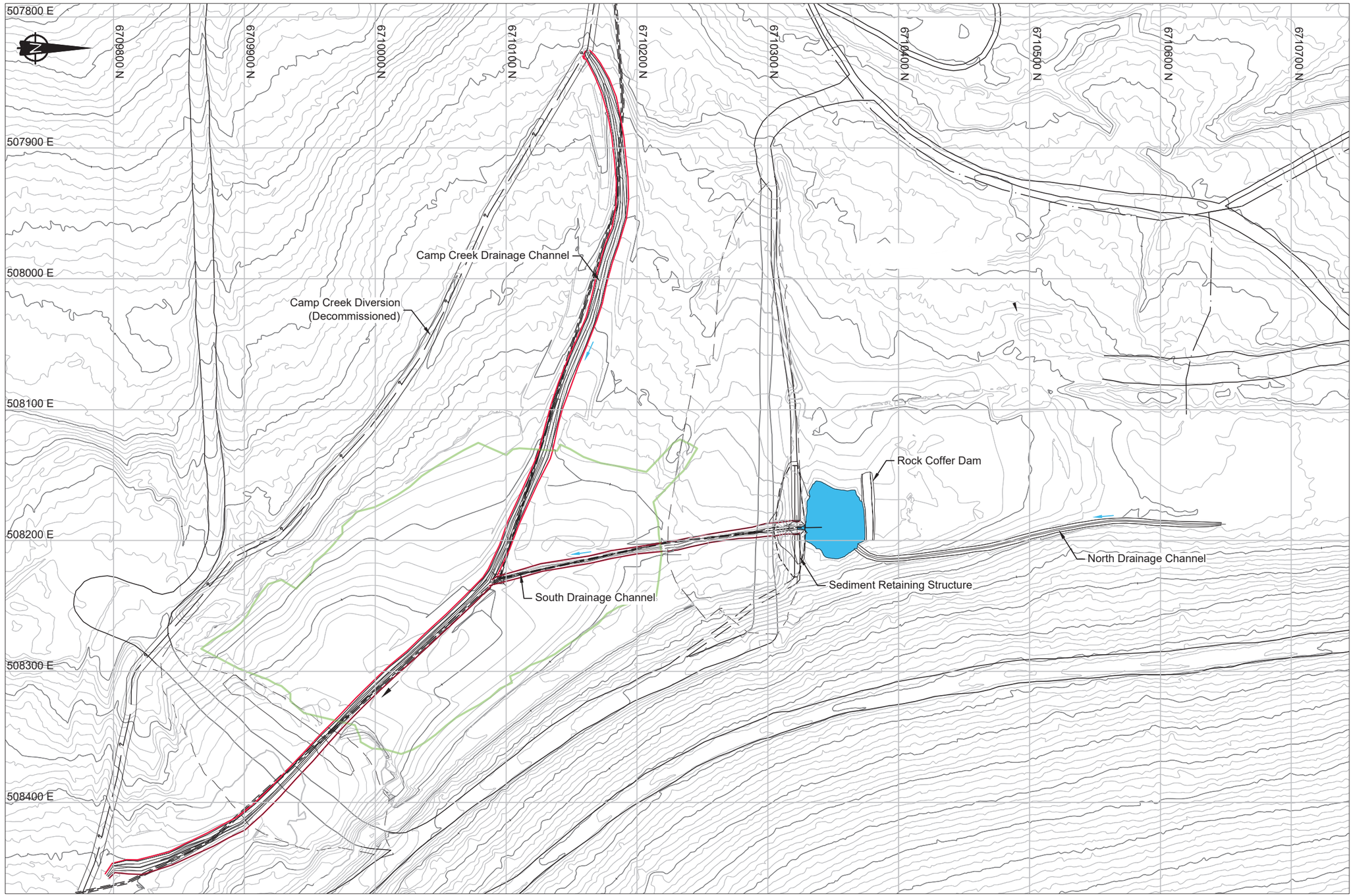
[YG] Yukon Government Department of Environment, Water Resources Branch, 2024. Yukon Snow Survey Bulletin and Water Supply Forecast.

Appendix A Channel Drawings



LEGEND

- Major Contour (5m)
- Minor Contour (1m)
- Dam Crest
- Dam Toe
- Edge of Road
- Direction of Flow
- Sediment Pond

NOTES

1. Contours are shown at 1.0m intervals.
2. All units are in meters unless otherwise specified.
3. As-built Camp Creek Drainage Channel upstream and downstream tie-in locations and North Drainage Channel alignments were modified from the design by Amec foster wheeler, with consultation from SRK and Teck, based on field conditions.

REFERENCES

1. Coordinate system is UTM NAD 83CSRS zone 9V.
2. Topographic contour data and aerial photos were obtained from McElhanney and are based on August 15, 2012 LiDAR survey.

0m 30 60 90 120

srk consulting

SRK JOB NO.: CAPR003248 | REG. NO.:

FILE NAME: Sheet 9.dwg

Teck

Sä Dena Hes

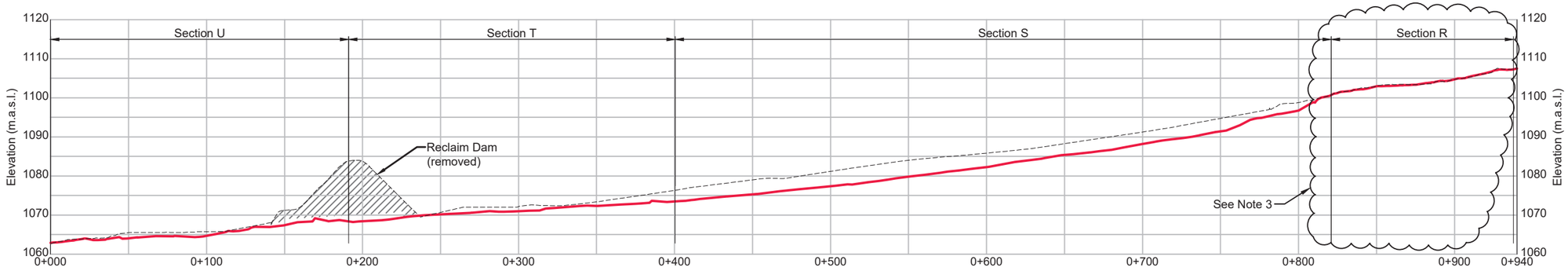
2024 Mine Area Inspection

DRAWING TITLE:

Drainage Channel Plan

DATE: August 2024 | APPROVED: PM | FIGURE: A-01

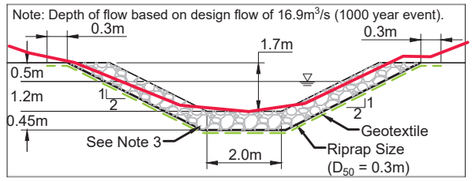
C:\Users\rmadon\SRK Consulting\F S281 Sa Dena Hes - 1040_CAD_GIS\ACAD_C3D\IF\2022 Annual Facility Performance Review\Sheet 9.dwg



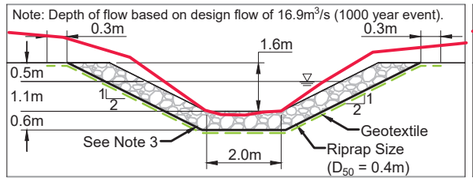
W 09 Profile W - W'
Camp Creek Channel

Horizontal: 0 10 20 30 40 50 Scale in Metres

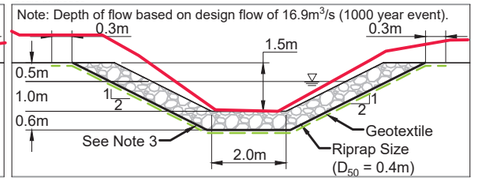
Vertical: 0 5 10 15 20 25 Scale in Metres



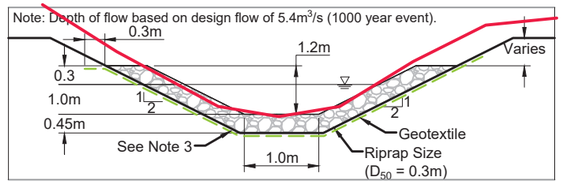
U 09 DESIGN SECTION U- U'
Camp Creek Drainage Channel
N.T.S.



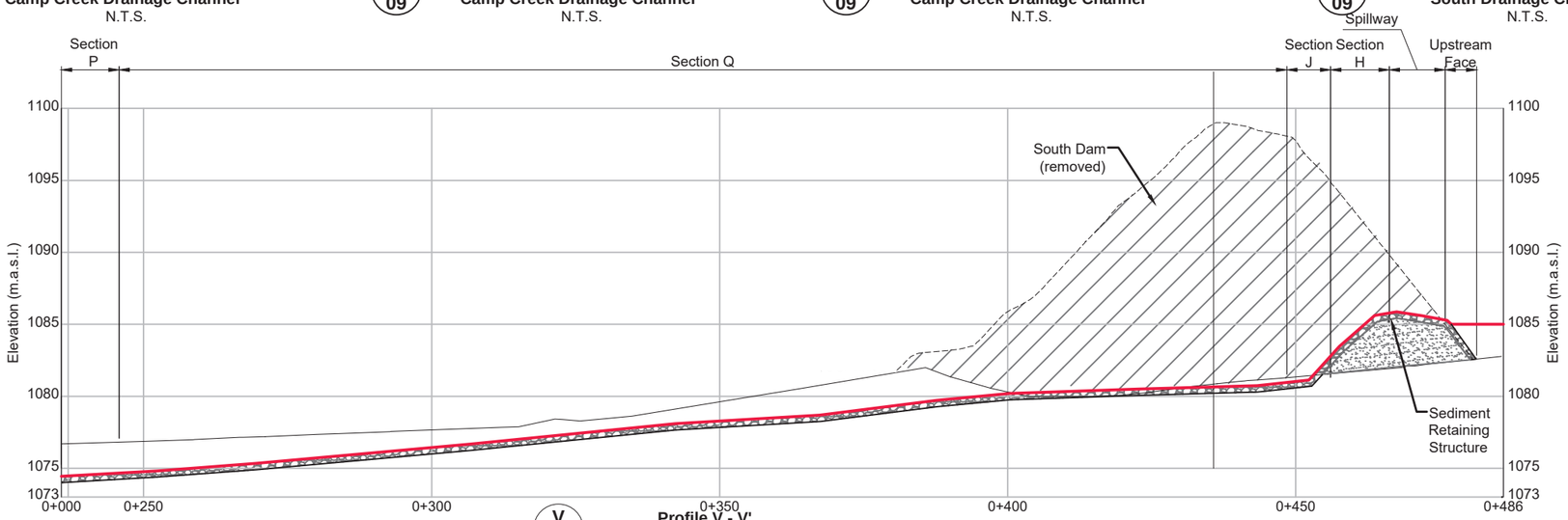
T 09 DESIGN SECTION T- T'
Camp Creek Drainage Channel
N.T.S.



S 09 DESIGN SECTION S - S'
Camp Creek Drainage Channel
N.T.S.



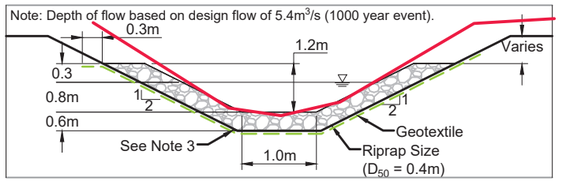
Q 09 DESIGN SECTION Q - Q'
South Drainage Channel
N.T.S.



V 09 Profile V - V'
South Drainage Channel

Horizontal: 0 5 10 15 20 25 Scale in Metres

Vertical: 0 2 4 6 8 10 Scale in Metres



P 09 DESIGN SECTION P - P'
South Dam Drainage Channel
N.T.S.

Design Drainage Channel
Riprap Volume Summary Table

Location	D_{50} (m)	Armoring Depth (m)	Volume (m^3)
Section U	0.3	0.45	993
Section T	0.4	0.6	1409
Section S	0.4	0.6	2875
Section P	0.4	0.6	52

AS-BUILT EXCAVATED RIPRAP QUANTITIES USED FOR CHANNEL CONSTRUCTION

Material	Units	Quantity	Notes
Riprap developed from the Quarry	m^3	5,492	Volume tracked by Amec Foster Wheeler
Riprap salvaged from Toe Buttresses	m^3	3,592	Volume tracked by Amec Foster Wheeler

LEGEND

- Top of Drainage Channel Profile
- Pre-existing Ground
- Pre-Construction Ground
- Sediment Retaining Structure
- Non-woven Geotextile
- Material to be removed
- Rip Rap
- Till (left in place from Original Dam)
- As-built Surface (2015)

NOTES

1. All units are in meters unless otherwise specified.
2. Based on field conditions Section R was removed from the design and the upstream tie-in location was modified.
3. Design extents of rip rap and geotextile, as no as-built survey.

REFERENCES

1. Coordinate system is UTM NAD 83CSRS zone 9V.
2. Topographic contour data and aerial photos were obtained from McElhanney and are based on August 15, 2012 LiDAR survey.

srk consulting

SRK JOB NO.: CAPR003248 | REG. NO.:

FILE NAME: Sheet 10 and 11.dwg

Teck

Sä Dena Hes

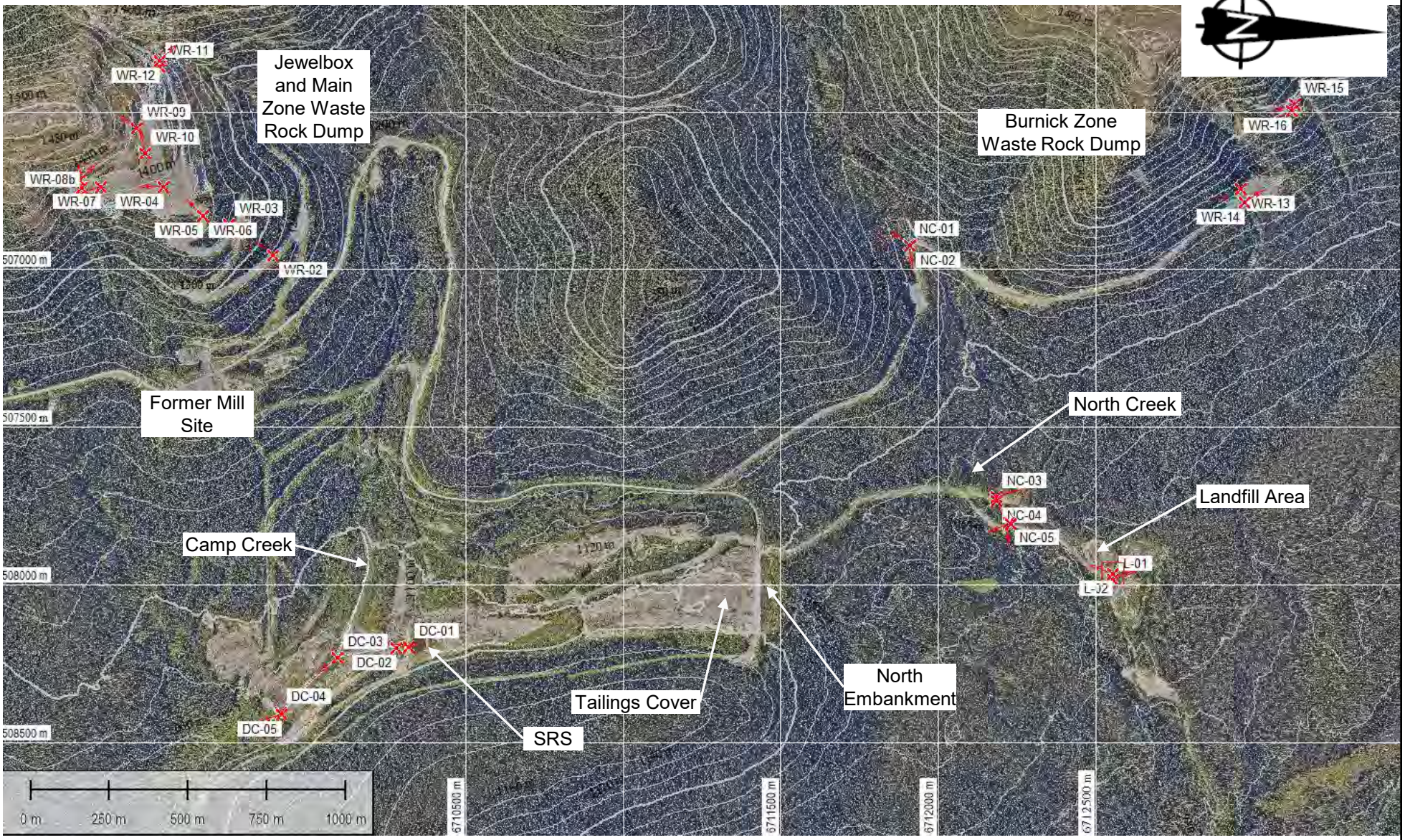
2024 Mine Area Inspection

DRAWING TITLE: Drainage Channel Sections

DATE: August 2024 | APPROVED: PM | FIGURE: A-02

C:\Users\madom\SRK Consulting\FS261 Sa Dena Hes - 1040_CAD_GIS\CAD_C3D\FIS\2022 Annual Facility Performance Review\Sheet 10 and 11.dwg

Appendix B Site Photographs



Notes:
1. 2022 orthographic photo.
2. Coordinate system is UTM NAD83 Zone 9.
3. GlobalMapper file "SaDenaHes_2021.gmw" stored at: C:\Users\pmikes\SRK Consulting\FS261 Sa Dena Hes - Internal\!040_CAD_GIS\GlobalMapper

Photo location

srk consulting

Teck

Mine Area Inspection

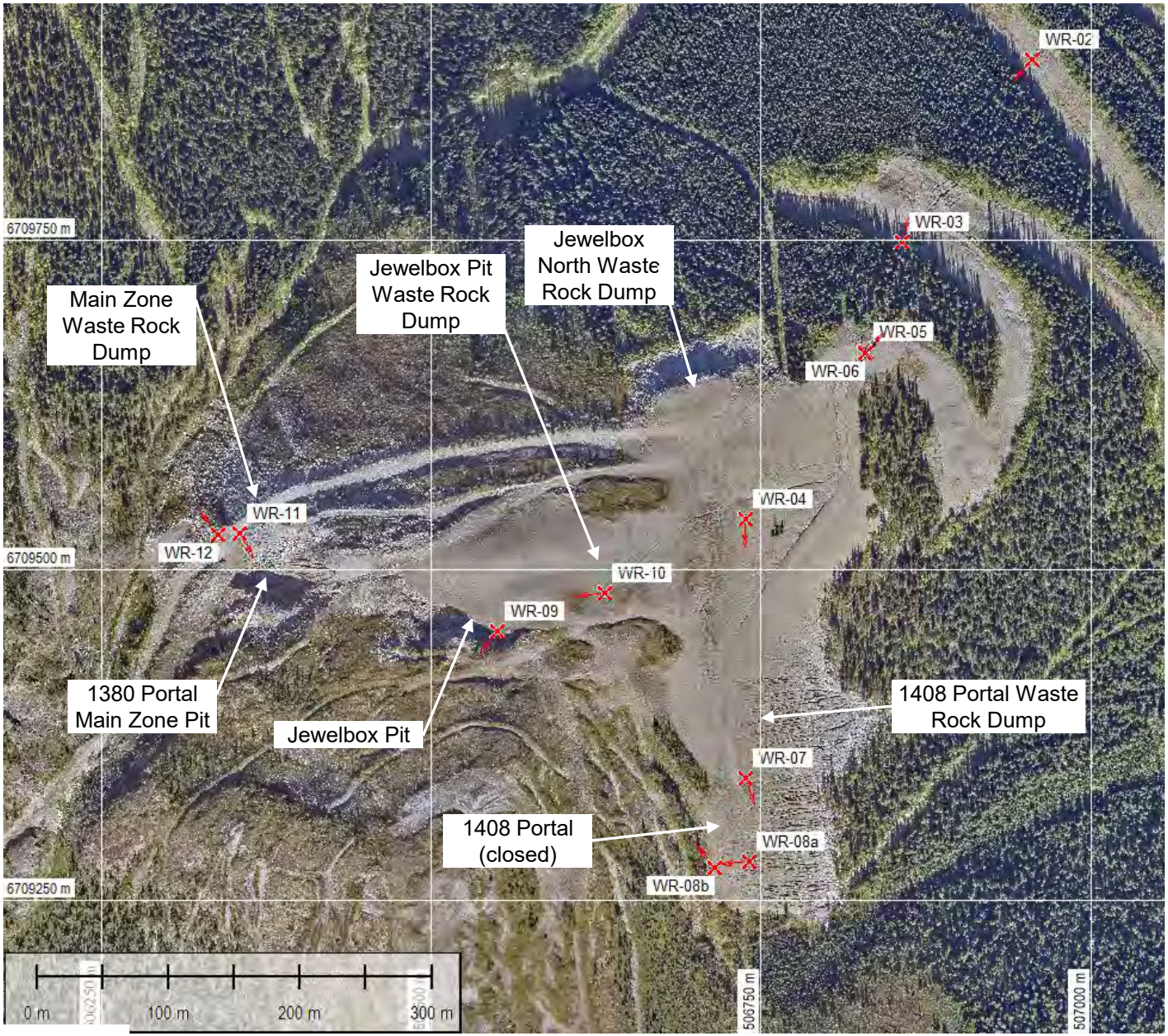
Inspection Areas and Photo Logs

Job No: CAPR003248

Filename: SDH_2024_MineSiteInspect_PhotoLocs.pptx

Sä Dena Hes

Date:	Approved:	Figure:
August 2024	PHM	**B-1**



Notes:
1. 2022 orthographic photo.
2. Coordinate system is UTM NAD83 Zone 9.
3. GlobalMapper file "SaDenaHes_2021.gmw" stored at: C:\Users\pmikes\SRK Consulting\FS261 Sa Dena Hes - Internal\!040_CAD_GIS\GlobalMapper

Photo location

srk consulting

Job No: CAPR003248

Filename: SDH_2024_MineSiteInspect_PhotoLocs.pptx

Teck

Sä Dena Hes

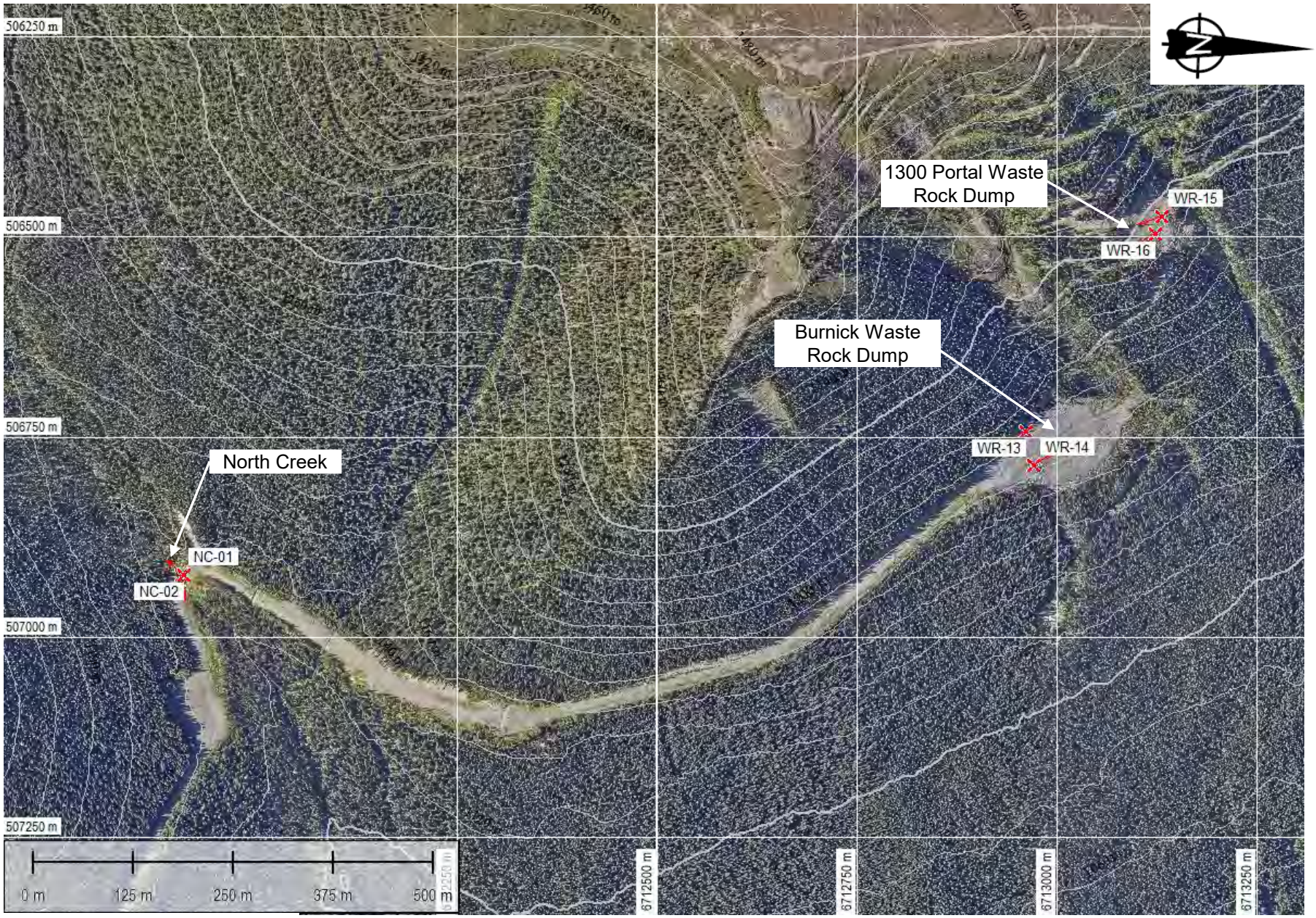
Mine Area Inspection

Main and Jewelbox Zone Waste Rock Dump Photo Locations

Date: August 2024

Approved: PHM

Figure: **B-2**



Notes:
1. 2022 orthographic photo.
2. Coordinate system is UTM NAD83 Zone 9.
3. GlobalMapper file "SaDenaHes_2021.gmw" stored at: C:\Users\pmikes\SRK Consulting\FS261 Sa Dena Hes - Internal\!040_CAD_GIS\GlobalMapper

Photo location

srk consulting

Teck

Mine Area Inspection

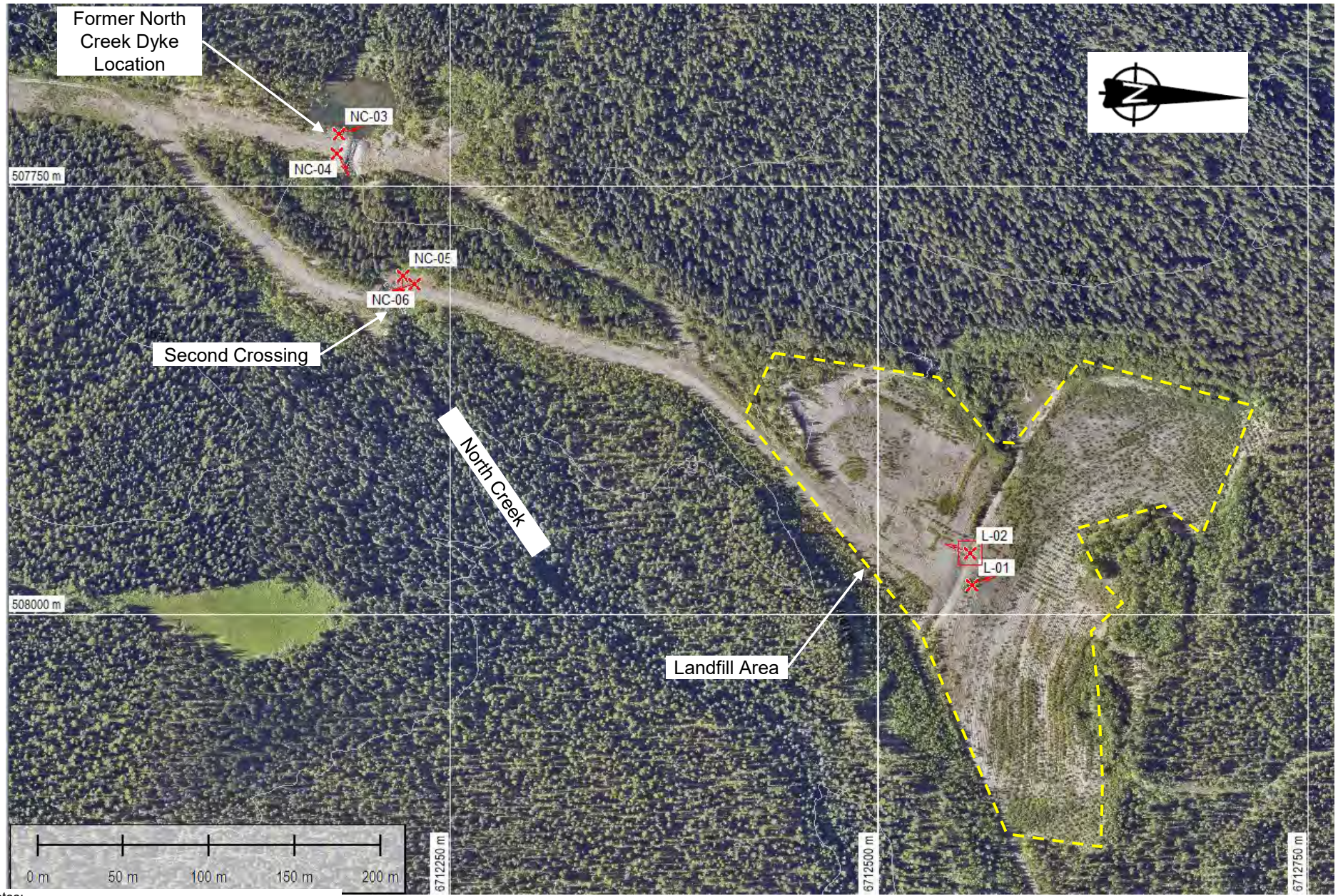
Burnick Zone Waste Rock Dump Photo Locations

Job No: CAPR003248

Filename: SDH_2024_MineSiteInspect_PhotoLocs.pptx

Sä Dena Hes

Date:	Approved:	Figure:
August 2024	PHM	**B-3**



Notes:
1. 2022 orthographic photo.
2. Coordinate system is UTM NAD83 Zone 9.
3. GlobalMapper file "SaDenaHes_2021.gmw" stored at: C:\Users\pmikes\SRK Consulting\FS261 Sa Dena Hes - Internal\!040_CAD_GIS\GlobalMapper

Photo location

srk consulting

Teck

Mine Area Inspection

North Creek and Landfill Photo Locations

Job No: CAPR003248

Filename: SDH_2024_MineSiteInspect_PhotoLocs.pptx

Sä Dena Hes

Date: August 2024

Approved: PHM

Figure: **B-4**

Notes:
1. 2022 orthographic photo.
2. Coordinate system is UTM NAD83 Zone 9.
3. GlobalMapper file "SaDenaHes_2021.gmw" stored at: C:\Users\pmikes\SRK Consulting\FS261 Sa Dena Hes - Internal\!040_CAD_GIS\GlobalMapper

Photo location

srk consulting

Job No: CAPR003248

Filename: SDH_2024_MineSiteInspect_PhotoLocs.pptx

Teck

Sä Dena Hes

Mine Area Inspection

South Drainage Channel and Camp Creek Drainage Channel Photo Locations

Date:	Approved:	Figure:
August 2024	PHM	**B-5**

Photo DC-01: Upstream end of the South Drainage Channel immediately downstream of the SRS Spillway. Sediments are accumulating in the channel due to erosion at the base of the SRS spillway.

Photo DC-02: Upstream end of the South Drainage Channel looking towards the SRS Spillway.

srk consulting	Teck	2024 Mine Area Inspection **South Diversion Channel and Camp Creek**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-6**

Photo DC-03: Camp Creek looking downstream from the confluence with the South Drainage channel.

Photo DC-04: South Drainage Channel looking upstream from the confluence with the Camp Creek.

srk consulting	Teck	2024 Mine Area Inspection **South Diversion Channel and Camp Creek**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-7**

Photo DC-05: Camp Creek near the former Reclaim Dam area looking downstream.

Photo NC-01: Decommissioned Access Road Crossing to Burnick Zone looking south.

Photo NC-02: Decommissioned Access Road Crossing to Burnick Zone looking upstream.

srk consulting	Teck	2024 Mine Area Inspection		
		North Creek		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-9**

Photo NC-03: Former North Creek Dyke area. Inlet to the decommissioned dyke.

Photo NC-04: Downstream end of the decommissioned North Creek Dyke.

srk consulting	Teck	2024 Mine Area Inspection **North Creek**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-10**

Photo NC-05: North Creek second crossing (to landfill) looking downstream. Maintenance was performed to return the slopes to approximately 3H:1V.

Photo NC-06: North Creek second crossing (to landfill) looking upstream. Maintenance was performed to return the slopes to approximately 3H:1V.

srk consulting	Teck	2024 Mine Area Inspection		
		North Creek		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-11**

Photo WR-01: View of the Jewelbox and Main Zone Area from the Tailings Area.

Photo WR-02: Erosion gulley crossing the decommissioned access road to the Jewelbox and Main Zone.

srk consulting	Teck	2024 Mine Area Inspection		
		Main Zone and Jewelbox Zone Waste Rock Dump Areas		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-12**

Photo WR-03: Erosion gulleys crossing the decommissioned access road to the Jewelbox and Main Zone.

Photo WR-04: 1408 Portal Waste Rock Dump looking south.

srk consulting	Teck	2024 Mine Area Inspection **Main Zone and Jewelbox Zone Waste Rock Dump Areas**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-13**

Photo WR-05: Erosion at the lowest point of the Jewelbox Waste Rock Dumps through the former Jewelbox Haul Road (looking southeast).

Photo WR-06: Erosion at the lowest point of the Jewelbox Waste Rock Dumps through the former Jewelbox Haul Road (looking northwest). Erosion has developed down to bedrock. Extent of erosion is unchanged compared to 2023 inspection.

srk consulting	Teck	2024 Mine Area Inspection **Main Zone and Jewelbox Zone Waste Rock Dump Areas**		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-14**

Photo WR-07: Surficial slumping near the south end of the 1408 Portal Waste Rock Dump.

Photo WR-08a and b: (a) one of the two 1408 Portal drainage pipes; (b) Vent pipe from the 1408 Portal.

srk consulting	Teck	2024 Mine Area Inspection **Main Zone and Jewelbox Zone Waste Rock Dump Areas**		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-15**

Photo WR-09a and b: (a) Jewelbox Pit Wall. (b) Close up of a potential animal burrow in the Jewelbox Pit wall. .

Photo WR-10: Jewelbox Pit Wall and the partially backfilled Jewelbox Pit looking west.

srk consulting	Teck	2024 Mine Area Inspection **Main Zone and Jewelbox Zone Waste Rock Dump Areas**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-16**

Photo WR-11: Backfill at the 1380 Portal below the Main Zone Waste Rock Dump.

Photo WR-12: Two drainage pipes at the 1380 Portal.

srk consulting	Teck	2024 Mine Area Inspection **Main Zone and Jewelbox Zone Waste Rock Dump Areas**		
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024	Approved: PHM	Figure: **B-17**

Photo WR-13: Regraded Burnick Waste Dump at the 1200 Portal. The minor settlement cracking observed during the 2023 inspection has partially filled with fine sediment.

Photo WR-14: Drainage pipe at the Burnick 1200 Portal.

Photo WR-15: Regraded 1300 Portal Waste Rock Dump and 1300 Portal area.

Photo WR-16: 1300 Portal drainpipe.

srk consulting	Teck	2024 Mine Area Inspection **Burnick Zone Waste Rock Dump Areas**
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-19**

Photo L-01: Vegetation established on the Landfill cover.

Photo L-02: Erosion channel that enters the Landfill drainage channel. The condition of the channel is unchanged compared to the 2023 inspection and no signs of debris were observed.

srk consulting	Teck	2024 Mine Area Inspection
		Landfill
Job No: CAPR003248 Filename: SDH_2024_MineSite_Photolog.pptx	Sa Dena Hes	Date: July 2024 | Approved: PHM | Figure: **B-20**

Appendix C Routine Inspection Forms

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

General Information

Inspected By:
Jeff Basarich

Jewel Box

Jewelbox Soil Caps

Date:
15/09/2023

General Appearance
No Issues

Erosion
No Issues

Settlement/Depressions
No Issues

Standing Water
No Issues

Vegetation
Slow growth but grass establishing further Waste Rock Dumps

Cracks/Scarps
No Issues

Susidence
Below 1407 portal area, depth and quantity increased

Erosion
Several new rills and slumping increases near 1407 portal area

Seeps
No Issues

Jewel Box Photo's

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Main zone portal rills & slumps increased over summer		
Rills expanding along Jewelbox waste rock dump and portal access		

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Hole in the wall-no significant change		

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Jewelbox waste rock dump rills increased		
Main zone waste rock dump rills increasing in size & depth		

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Erosion rills and washout increased in size but appears to be to bedrock		

Burnick

Inspection Date:
15/09/2023

Weather:
+5 rain/fog

Burnick 1200 Waste Rock Dump

Cracks/Scarps
No Issues

Subsidence
No Issues

Erosion
No Issues

Seeps
No Issues

Burnick 1300 Waste Rock Dump

Cracks
No Issues

Subsidence
No Issues

Erosion
No Issues

Seeps
No Issues

Burnick Photo's

No.
00010

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1300 portal area, no change, heartbeat sound from portal drain stopped for the season		
1200 portal waste rock dump , West.		

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
1200 portal and drains area. Drainage flow has slowed significantly, 5lpm		

North Creek Dike Breach

Date
15/09/2023

Sideslopes
See riprap note

Riprap
Erosion of riprap continuing, geotextile exposed along downstream 1/2 of channel

Settlement/Depressions
No Issues Found

Debris at Inlet
Small amount of beaver debris at inlet, new beaver recently moved in. A bear had rooted the beaver house in August.

Discharge
No Issues Found

Vegetation
No Issues Found

North Creek Dike Photo's

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Debris at inlet		

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Sideslope erosion		

North Creek Second Crossing

Date:
15/09/2023

Sideslopes
Was severely eroded, repaired crossing in August

Riprap
Washing downstream

Settlement/Depressions
No Issues Found

Debris at Inlet
No Issues Found

Discharge
No Issues Found

Vegetation
No Issues Found

North Creek Dike Second Crossing Photo's

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

16/09/2023

Iron staining starts 500m downstream from SRS

Slideslopes

Minor settlement along edges of channels above riprap, where geotextile ends.

Debris

No Issues

South Drainage Photo's

Photo Discription	Photo	Photo Location
From SRS		Latitude: 60.528454 Longitude: -128.850677

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Start of iron staining		

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Convergence of South Channel and camp Creek		

Camp Creek Drainage Channel

Date:
16/09/2023

Slideslopes
No Issues

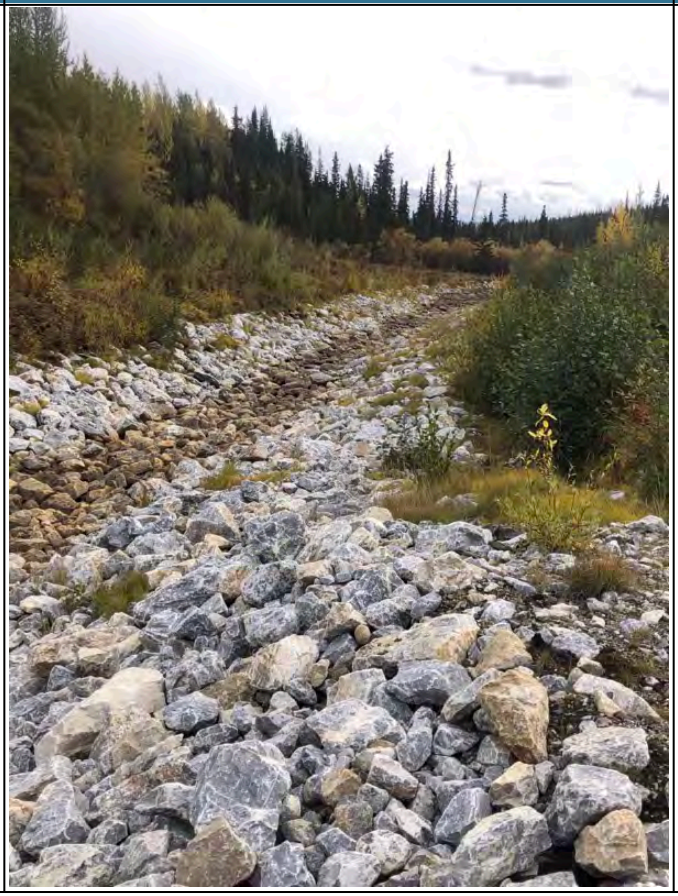
Riprap
No Issues

Debris
No Issues

No.
00010

Sa Dena Hes Mine Site Geotechnical Inspection

Camp Creek Photo's

Photo Discription	Photo	Photo Location
South end of creek		Latitude: 60.525055 Longitude: -128.846848

No.
00010

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Settlement cracking along the lengths of all channels at end of geotextile		Latitude: 60.525177 Longitude: -128.847015
Alder trees along Camp creek		Latitude: 60.527561 Longitude: -128.853500

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Upper end of riprap		Latitude: 60.527725 Longitude: -128.856354

Reclaim Pond Soil Cap

Date:
16/09/2023

General Appearance
Good , tree growth sparse in some areas

Settlement/Depressions
No Issues

Standing Water
Minimal pooling in low spots, substantial seepage

Drainage Swale
No Issues

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Erosion
Rills along South west hillside

from West hillside

Vegetation
South west end lacking tree growth and grasses

Reclaim Pond Photo's

Photo Discription	Photo	Photo Location
West hillside seepage substantial		Latitude: 60.525642 Longitude: -128.849167
Soil cap		Latitude: 60.525463 Longitude: -128.847672

No.
00010

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
From South west end.		Latitude: 60.524586 Longitude: -128.848816

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Rilling along west hillside		Latitude: 60.524391 Longitude: -128.848694

Teck

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00010

Photo Discription	Photo	Photo Location
Erosion gulleys along drainage ditch below borrow area		Latitude: 60.524361 Longitude: -128.848999

Sign:

Sa Dena Hes Mine Site Geotechnical Inspection

No.
00011

General Information

Inspected By:
Jeff Basarich

Jewel Box

Jewelbox Soil Caps

Date:
01/06/2024

General Appearance
No Issues

Erosion
Rills along 1407 portal waste rock and hillside slopes continue to develop and deepen.

Settlement/Depressions
New slumps and increases in previous slumps below 1407 portal area.

Standing Water
No Issues

Vegetation
Grasses are increasing along slope below 1407 portal slopes to the access road entrance.
Waste Rock Dumps

Cracks/Scarps
No Issues

Susidence
No Issues

Erosion
Rills and erosion gulley near access increased slightly. Erosion gulley & rills North East of the main zone pit along lower edge of waste rock deepening

Seeps
No Issues

Jewel Box Photo's

No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Erosion at entrance to Jewelbox		Latitude: 60.522850 Longitude: -128.875824

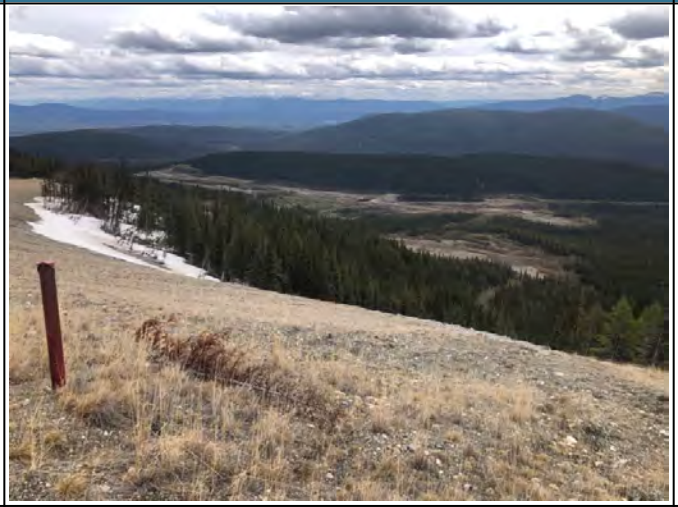
No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Entering Jewelbox		Latitude: 60.522858 Longitude: -128.875702
1407 portal area. Rills, slumps slight increases		Latitude: 60.521225 Longitude: -128.877045

No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Mw13-03 looking N/E slumps relatively unchanged , approx 1.4 m deep		Latitude: 60.520012 Longitude: -128.877319
Newer slumps approx. 5x10 m 1.5m deep South east of piezometer well		Latitude: 60.519817 Longitude: -128.877304

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Slumps increasing below portal area and south east on waste rock fill		Latitude: 60.519249 Longitude: -128.877655
Slumps - looking downslope south of portal area		

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1407 Portal area		Latitude: 60.519615 Longitude: -128.877563

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Hole in the wall still snow covered		

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Jewelbox portal access		

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Jewelbox 1380 portal , erosion.		

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1380 portal drains		

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Waste rock dump		
Main zone waste rock dump		

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Rills and increased erosion on upper end of main zone waste rock		
Oncreased depth of main zone cap		

Sa Dena Hes Mine Site Geotechnical Inspection

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Photo Discription	Photo	Photo Location
Slumping along waste rock dump		

Burnick

Inspection Date:
25/05/2024

Weather:
12 cloudy, light wind

Burnick 1200 Waste Rock Dump

Cracks/Scarps
Cracking above old portal area. Will likely silt in over summer. Previously observed and will likely silt in over summer.

Subsidence
No Issues

Erosion
No Issues

Seeps
Portal drain approximately 40-50 lpm. No flow from raised portal drains this day. On June 3 there was a trickle flowing from 1st portal drain west of MH-22.

Burnick 1300 Waste Rock Dump

Cracks
No Issues

Subsidence
No Issues

Erosion
No Issues

Seeps
No Issues

Burnick Photo's

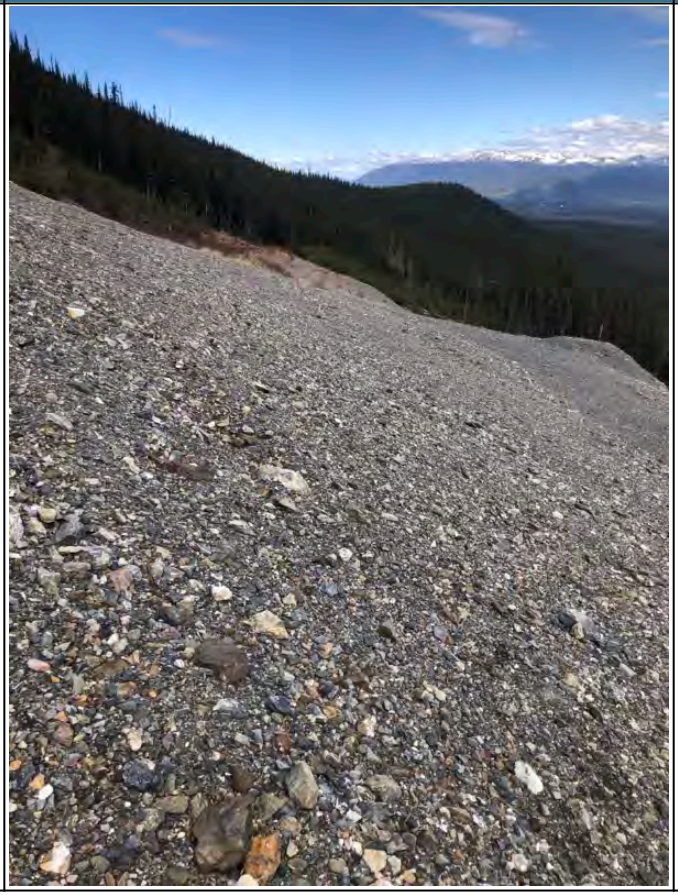
No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Crack above 1200 portal		Latitude: 60.552460 Longitude: -128.876755

No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1200 portal area		Latitude: 60.552578 Longitude: -128.876816

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00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1200 waste rock dump		Latitude: 60.552971 Longitude: -128.876755
1200 waste rock dump looking east		Latitude: 60.552971 Longitude: -128.876740

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1200 portal drains		Latitude: 60.552837 Longitude: -128.876617

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1300 portal area, no changes		Latitude: 60.554176 Longitude: -128.882172

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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
1300 portal drains, no seepage, heartbeat sound from right pipe.		Latitude: 60.554054 Longitude: -128.881851

Sa Dena Hes Mine Site Geotechnical Inspection

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Photo Discription	Photo	Photo Location
June 3, 3024-Seepage from raised portal drain west of MH-22		

North Creek Dike Breach

Date
25/05/2024

Sideslopes
Additional erosion and sloughing midway of

Settlement/Depressions
Settlement along upper banks of discharge end

Debris at Inlet
Small amount of debris at inlet, few leaves & small

Vegetation
No Issues Found

Sa Dena Hes Mine Site Geotechnical Inspection

channel to outlet discharge, exposing geotextile.

Riprap

Continuing to slough, erode & settle.

sticks.

Discharge

Cracking and sloughing

North Creek Dike Photo's

Photo Discription	Photo	Photo Location
Inlet of breach		Latitude: 60.545712 Longitude: -128.859283
Ponded area upstream of breach		Latitude: 60.545650 Longitude: -128.859238

Sa Dena Hes Mine Site Geotechnical Inspection

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Photo Discription	Photo	Photo Location
Cracking, settlement, sloughing, at discharge. Exposed geotextile		Latitude: 60.545647 Longitude: -128.859131

North Creek Second Crossing

Date:
25/05/2024

Sideslopes
Slumping on north bank. Granular material is very clean fine gravel that will likely continue to erode until self armouring takes place or by laying jute and grass seed it may significantly enhance vegetation growth and limit slumps & erosion.

Riprap
Riprap has been washed downstream with a self armouring layer on bottom of the channel.

Settlement/Depressions
No Issues Found

Debris at Inlet
Few leaves and small sticks slowing flow, cleaned out.

Discharge
Flow is making it’s own channel.

Vegetation
No Issues Found

North Creek Dike Second Crossing Photo's

No.
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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Slumping on north bank of channel		Latitude: 60.545803 Longitude: -128.857651

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Riprap trail intact		Latitude: 60.545803 Longitude: -128.857651

Sa Dena Hes Mine Site Geotechnical Inspection

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26/05/2024

No Issues

Slideslopes

Few cracks along upper banks above riprap

Debris

No Issues

South Drainage Photo's

Photo Discription	Photo	Photo Location
South channel looking south from SRS		
Iron staining in south channel, looking south.		

Sa Dena Hes Mine Site Geotechnical Inspection

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Camp Creek Drainage Channel

Date:
26/05/2024

Slideslopes
Cracking along length of channel upper banks where riprap ends.

Riprap
Minor settlement of riprap

Debris
Fine clean sediments building up along channel bottom at start of Camp cr. Channel.

Camp Creek Photo's

Photo Discription	Photo	Photo Location
Convergence of Camp & South channels		

No.
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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Camp Creek channel looking south		

No.
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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Midway along downstream Camp creek channel		

No.
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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
South end Camp creek Channel		

No.
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Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Cracks along southern end of Camp creek channel		

No.
00011

Sa Dena Hes Mine Site Geotechnical Inspection

Photo Discription	Photo	Photo Location
Camp Cr. Upstream of confluence. Cracking and riprap settlement		

Sa Dena Hes Mine Site Geotechnical Inspection

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Photo Discription	Photo	Photo Location
Fine sediments present in upper Camp creek channel. Likely from the heavy rains washing downstream from Jewelbox over past years.		

Reclaim Pond Soil Cap

Date:
26/05/2024

General Appearance
No Issues

Settlement/Depressions
No Issues

Standing Water
Hillside seeps creating shallow ponded areas and

Drainage Swale
No Issues

Sa Dena Hes Mine Site Geotechnical Inspection

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00011

Erosion
No Issues

wetland along west side.

Vegetation
No Issues

Reclaim Pond Photo's

Photo Discription	Photo	Photo Location
Reclaim cap to osprey nest		
Reclaim soil cap		

Teck

Sa Dena Hes Mine Site Geotechnical Inspection

No.
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Sign: