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# Structure Description and Construction Plan

## Waste Rock, Ore Storage and Trails

For MV2020L2-0002

June, 2021

## Executive Summary

The Structure Description and Construction Plan summarizes the non-engineered storage of waste rock and ore (non sensu stricto) as well as the road/trail construction on the Mon Gold Project area under MV2020L2-0002. An anticipated 2,400 m<sup>3</sup> of NAG waste is anticipated on an annual basis to be used for construction of mine roads and laydown areas. No PAG or AG waste rock is expected, but as a contingency these rocks could be placed on the NAG laydown areas. Gold-bearing quartz vein material will be temporarily held on the NAG waste laydown areas prior to processing.

All construction will be either on peat covered quaternary aggregate or on bedrock. The peat forms an excellent thermal barrier in summer and when saturated, becomes a thermosiphon in winter. Topography will be followed in all cases. The waste area including roads totals 18,500 m<sup>2</sup> of surface area which can hold all of the waste rock anticipated to a depth of 1 m. The ore stockpile extends over 800 m<sup>2</sup> on the waste pad and can contain 1 month of production for each m of elevation. Mine roads will be up to 1 km of rough trail for mine vehicles only. No other access is permitted nor possible.

Monitoring at existing SNP sites, geochemical monitoring and geochemical characterization are covered in more detail in referenced plans. All drainage off of these piles will be monitored at these existing SNP stations or at additional ones to be proposed should obvious pooling of waters be observed.

There is ample room for all of the waste rock anticipated over the life of the existing permits and no additional disturbances would be required.

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## 1.0 Introduction

This Structure Description and Construction plan describes how the rock is piled and pushed to a stable slope. The details into choosing where the rock is to be placed, and why this was selected is presented. The general setting of the pad and trail is presented, how the storage facility is acceptable for its design purposes, and how we will operate and maintain the storage facility. A brief explanation why it is not needed to have an engineer design storage facility or mine trails is explained. The schedule for placing the waste rock and a list of materials needed for the stockpiles and trails/roads is presented including the sources, quantities, physical and geochemical characteristics of these materials.

The potential effects on the receiving environment are described as well as measures to mitigate these impacts. The monitoring of the construction of the roads and storage facilities, explaining where and how frequently inspections will take place, explaining the rationale in determining this monitoring program as well as linkages to other monitoring programs is presented. A description of how the monitoring will be evaluated and what actions might occur as a result of this.

## 2.0 Facility Description

### Location

The roads and waste rock storage facilities on the property are shown on the attached Site Plan Map. The underlying contours prior to placement are shown. All adjacent to and south of the historical Tailings Storage Facility already exist.

### Background of area

The waste storage and roads are placed on bedrock or unconsolidated Quaternary sediments that are overlying Archean rocks of the Yellowknife Supergroup. The Quaternary sediments are composed of peat overlying minor boulders, gravels and sand on top of clays. This was exposed during construction of the historic tailings storage facility. Existing mine roads (trails) occur on the property.

Excavations for the historical engineered Tailings Storage Facility was completed in 1992 and exposed 10 to 50 cm of peat and humus under the active organic layer followed by quaternary clays approximately 50 cm thick. The entire footprint of the waste rock facility is adjacent to the historical TSF and will be on similar quaternary sediments except where it abuts up to exposed bedrock.

The trail system will extend the existing waste rock trail using identical construction methods.

## Specification

The roads and waste storage facilities have similar specifications. Constructing the roads and pads on relatively undisturbed peat has been used in Alaska and Norway with significant benefits in maintaining ground temperatures in patch permafrost terrains (Reckard et al., 1988). This is a current standard in Saskatchewan (Pers. com., Civil Projects Ltd.) Run of mine muck will be placed by scooptram or mine truck and then leveled by scooptram or bulldozer.

The waste area including roads totals 18,500 m<sup>2</sup> of surface area which can hold all of the waste rock anticipated to a depth of 1 m. The ore stockpile extends over 800 m<sup>2</sup> on the waste pad and can contain 1 month of production for each m of elevation. The maximum height of the waste stockpile will be 3 m and it will be graded to maintain the existing drainage. SNP stations (9 and 10) are designed to collect any surface drainage. Additional SNP sites will be recommended if waters are observed to collect elsewhere.

Roadways will be 3m wide minimum and 4 m wide maximum. Roadway elevation will be 1 to 2 m with all trees and shrubs to be cut and placed flat on the site. Culverts are not needed for this site, but should be considered if ponding is noted. The expanded road system will extend 750m further to the north from the mine site to the Dry Stack Tailings Facility. The side slopes will be the natural angle of repose, expected to be 35 to 45 degrees over the 1 m height.

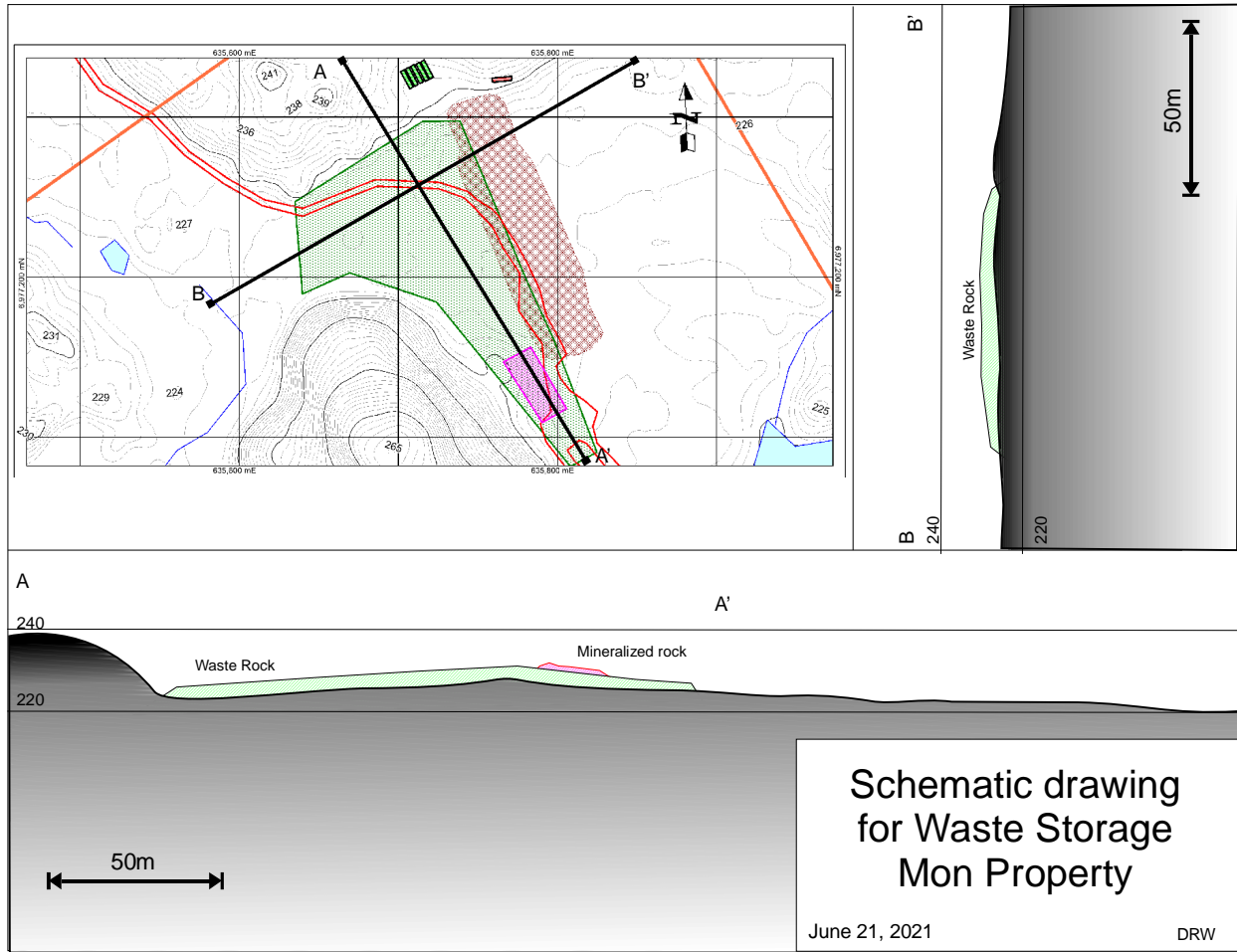


Figure 1. Schematic drawing for Waste Storage

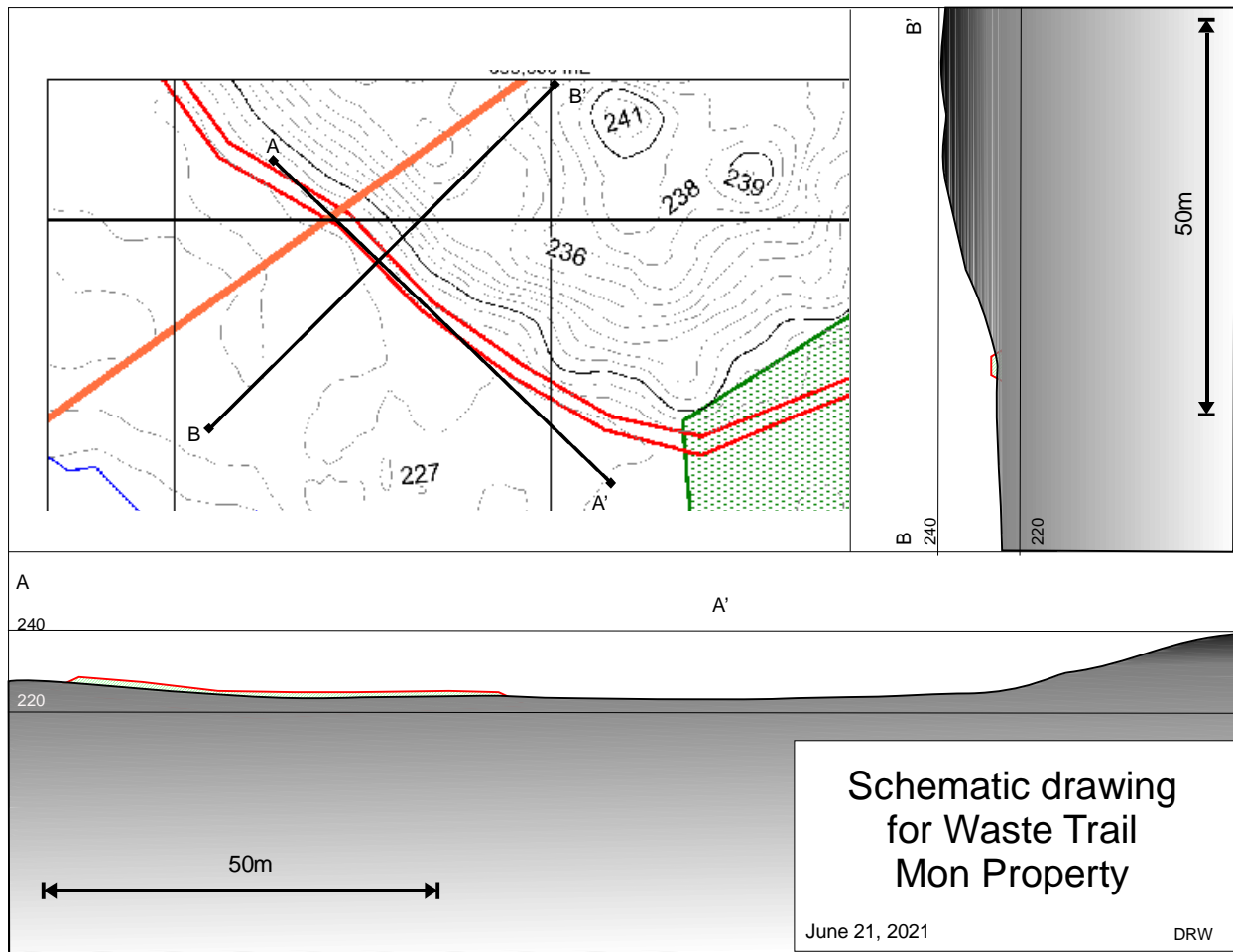


Figure 2. Schematic drawing for trail (roads).

### Operations

The road will be the highest priority and will be pushed laterally to the DST site. The waste pad will be expanded from the south to the north, with the existing Tailings Facility forming the eastern limit. A maximum elevation of 3 m above existing surface is planned, primarily in the southern portion of the laydown area. No erosion or sedimentation measures will be required as identified during past activities.

Wildlife consisting of bears, moose and caribou plus smaller mammals have been observed on the existing waste pads and roads and we expect that this will continue into the future.

### Engineering

It is believed that the roadway and waste storage facilities need not be designed by an engineer due to its small size, limited options, and minimal operations requirements. Failure may result in mass slumping or diversion/ponding of waters. The low height, coarse nature and innocuous chemical nature of the waste rock, its NAG characteristics, low sulphide, and very low SWEP-test

results as well as the historic results from previous storage of these rocks at this site since 1937 suggest minimal potential impacts.

### Construction Schedule

Construction will commence once approved, and continue annually over the course of operations when waste rock is generated in the Mine.

1. Trees and shrubs will be cut and laid flat.
2. Waste rock will be placed on the ground within the surface area shown on the appended Site Plan Map.
3. Surface contours of the road and waste stockpiles will be gentle to the sides, comparable to the underlying topography.

The road construction is planned to be completed in the summer of 2022 and the waste stockpiles will continue throughout the life of the mine when waste is generated. Waste will be deposited starting in the south and placed towards the north in a strip along the historic TSF, and from the east to west. No compaction is necessary nor planned.

### Materials required

Waste rock will be provided exclusively from the Mon Mine. A total of 2,400 m<sup>3</sup> of waste rock is expected to be generated annually. This material will be run of mine development muck, angular 80% -30 cm diameter blocks, unsorted mafic igneous rock with minor intercalated metasedimentary rock. The mafic igneous rock has an NPR >4 and the intercalated metasedimentary rock has an NPR of 2.7 (see Waste Rock Management and Geochemical Characterization Plan). None of these rocks are expected to generate acid.

### Potential Effects on the Receiving Environment

The waste rock and roads have a direct foot print of 18,500 m<sup>2</sup>.

- The sides of the stockpiles may slump, as such it is recommended to monitor the slope of the sides of the waste piles.
- Drainage from these piles may be outside of the normal chemistries of waters and as such these should be monitored. It is recommended that SNP-09 and SNP-10 standards apply for any such samples with similar action plans.

### Monitoring of the Construction

The Mine Manager or his designate will monitor the excavation of waste rock and placement of this rock. Samples defined in the Waste Rock Management and Geochemical Characterization Plan will be implemented.

Records confirming:

- Source of the rock.



- What samples were collected, and what the results of any tests completed.
- Dimensions of monthly updates on:
  - The disturbed area
  - The roads and storage facility
- Number of inspections (frequencies)
- Any observations, recommendations and conclusions

All measurements at SNP-09 and SNP-10 plus any other SNP to be established will also note the construction details. This is documented and linked to the Waste Rock Monitoring and Geochemical Characterization Plan and the Groundwater and Water Monitoring Plan.

### Maintenance

Ongoing waste rock production will be placed on the active face of the waste rock stockpile and be used to maintain a stable slope should any instabilities be observed. The low height of the waste rock stockpiles, ore stockpile, and roads/trail system precludes any significant instability being developed.

### Linkages to other Monitoring Programs

This Structure and Design Plan is required under Schedule 3 of MV2020L2-0002 and affects the following plans:

- A. Groundwater and Water Monitoring Plan
- B. Waste Rock Monitoring and Geochemical Characterization Plan
- C. Waste Management Plan
- D. Spill Contingency Plan
- E. Explosives Management Plan
- F. Hydrocarbon-Stained Soil Operations and Management Plan

### Evaluation of Monitoring

The Construction of the waste and ore storage facilities, and road construction described in this Structure Description and Construction Plan, once approved will be conducted during mining operations and the generation of waste rocks. Monitoring of the road and storage facilities under this plan requires confirmation the mitigation measures are effective.

The EQC on the stockpiles and roads are the same as those described in the Waste Rock Monitoring and Geochemical characterization Plan.

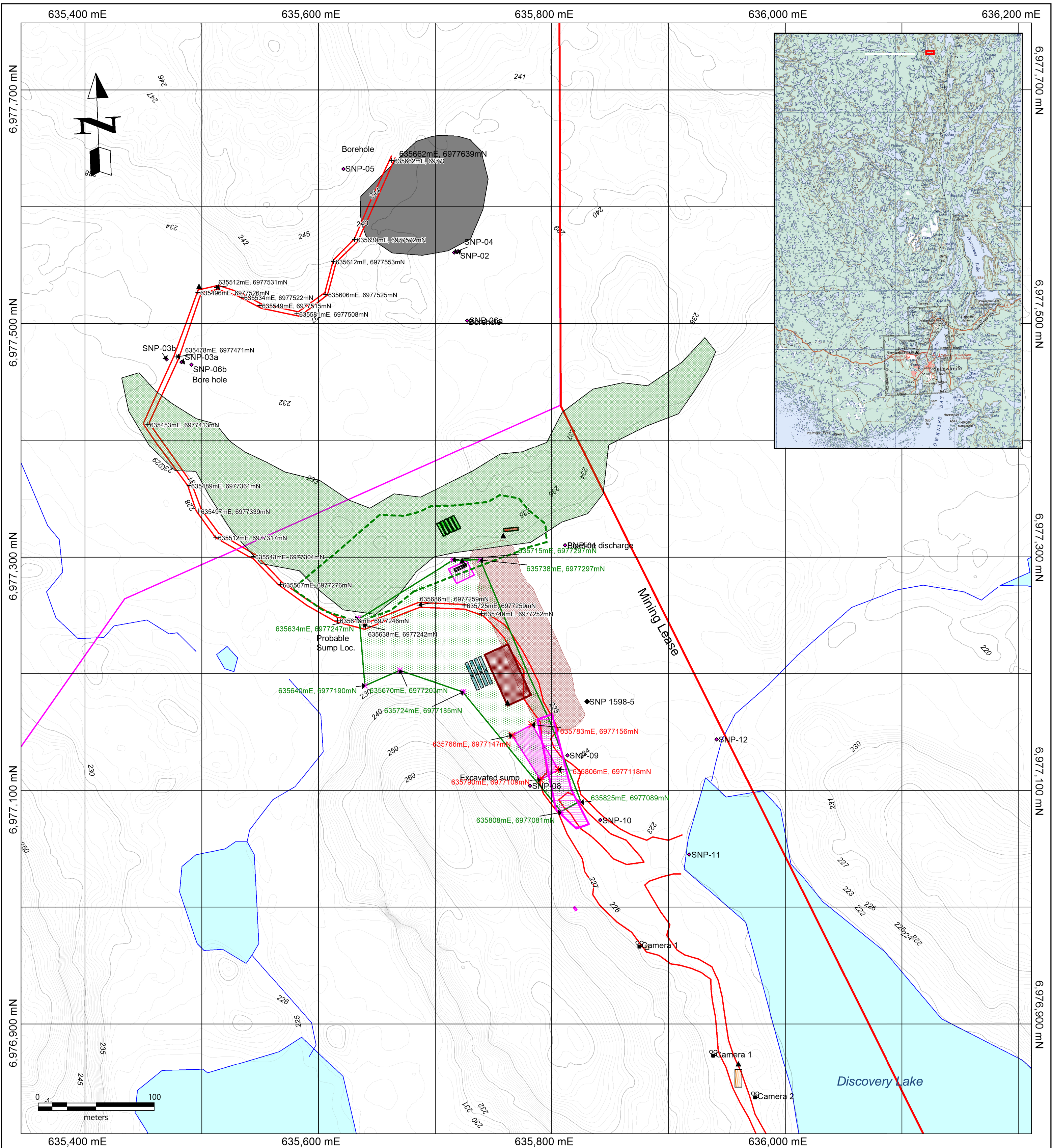
This will be reviewed monthly in reports from the Mine Manager to head office and will be annexed to the annual water license report.

## References

Rekard, M., Esch, D., and McHattie, R., 1988. Peat used as Roadway Insulation over Permafrost. Results from Canyon Creek Site.

# Appendixes

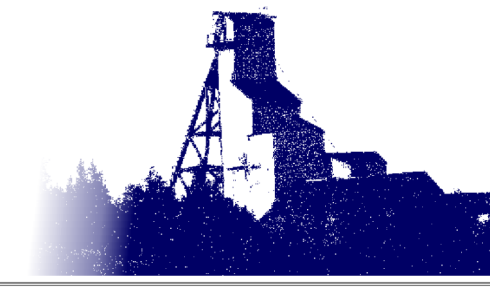
Site Map



**Legend**

<ul style="list-style-type: none"> <li>1 m Contours</li> <li>10 m Contours</li> <li>Roads</li> <li>WaterCourse</li> <li>WaterBody</li> <li>Tailings Storage</li> <li>Mineral Claims</li> </ul>	<ul style="list-style-type: none"> <li>Fuel Storage</li> <li>Shops</li> <li>75k Storage Tank</li> <li>Bioreactor</li> <li>Camp Trailers</li> <li>SNP Stations</li> <li>Historic Tailings</li> </ul>	<ul style="list-style-type: none"> <li>Ore Storage</li> <li>Gravel Quarry</li> <li>Esker</li> <li>Mine Shaft</li> <li>ANFO</li> <li>Waste Rock Storage</li> </ul>	<ul style="list-style-type: none"> <li>SpillKit</li> <li>Concentrate Storage</li> <li>Shops</li> <li>Mill Site</li> <li>Portal North Adit</li> <li>Underground, Ramp</li> </ul>
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**Site Plan**  
**As Placed May 24, 2021**

Date: June 2021	
Author: DRW	
Office: Vancouver, B.C.	
Scale: as shown	
Projection: UTM Nad 83, Zone 11	