Mining Industry Questionnaire to Accompany Water Licence Applications to the Mackenzie Valley Land and Water Board

Mackenzie Valley Land and Water Board
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Regulating the use of land and waters and the deposit of waste, and enabling residents to participate in the management of resources to provide optimum benefit to the residents of the settlement areas and of the Mackenzie Valley and to all Canadians.

October 2003

The purpose of this questionnaire is to solicit supplemental information from an Applicant to support his/her application for a water licence (or renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the Board's having to solicit additional information after an application has already been submitted. This information will also be useful during the pre-screening of your application, which must be undertaken prior to development and approval of a water licence to determine if the project needs to be referred to the Environmental Impact Review Board.

The Applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to his/her operation, the Applicant is requested to indicate "N/A" (Not Applicable).

If any questions arise while completing the questionnaire, the Applicant may wish to contact the Mackenzie Valley Land and Water Board at (867) 669-0506.

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Please Print Or Type Your Responses

NOTES:

If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or an attachment.

A number of sections in the questionnaire solicit information on water quality and waste management which must be provided in accordance with specific policies and guidelines: the Board's *Water and Effluent Quality Management Policy*; the Board's *Guidelines for Developing a Waste Management Plan*; and INAC's *Guidelines for Spill Contingency Planning*. The Board's policies and guidelines are accessible at www.mvlwb.com or by calling the Board. INAC's *Guidelines for Spill Contingency Planning* are available at http://www.ainc-inac.gc.ca/ai/scr/nt/pdf/SCP-EUD-eng.pdf). Please provide separate plans and/or reports to address these information requirements as part of the completed application package. Reference the relevant title(s) of the plans and/or reports in the body of the questionnaire.

Section 1 – General

Date: August 26, 2020

1.1 Applicant ***New Discovery Mines Ltd., 604 818-1400***
(company, corporation, owner) (telephone no.)

1909 108W Cordova St., Vancouver, B.C., V2B 0G5
(postal address)

Property name: ***Mon Property***

Closest community: ***Yellowknife***

Latitude/Longitude: ***62^{o} 53.8' / 114^{o}, 19.6' W***

1.2 Environmental contact: ***Dave R. Webb*** **(name)** ***604 818-1400*** **(telephone no.)**

President
(title)

1.3 Indicate the status of the mine and/or mill on the date of application. (check the appropriate space)

	Mine	Mill
Design		
Under construction		
In operation		
Suspended	*X*	x
Abandoned		

1.4 If a change in the status of the mine or mill is expected, indicate the nature and anticipated date of such change.

The original mill was removed, and an updated mill is in construction off site

1.5 Indicate the present (or proposed) mine/mill operating schedule.

	Mine	Mill
hours per day	*24*	*24*
days per week	*7*	*7*
weeks per year	*40*	*40*
shift periods	*12*	*12*
number of employees	*20*	*6*

1.6 Attach a detailed map, drawn to scale, showing the relative locations of the (proposed) mine, mill, water treatment facilities, sewage and solid waste facilities, and tailings areas. The plan should include the water intake and pumphouse, fuel and chemical storage facilities, any existing and proposed concentrate, ore and waste rock storage piles, any existing and proposed drainage controls, piping distribution systems, gas, electric and water utility route locations, and transportation access routes around the site. The map also should include elevation contours, water bodies, and an indication of drainage patterns for the area.
See Map MapCinfrastructureA.pdf,

1.7 If applicable, provide a brief history of property development which took place be present company gained control of the site. Include shafts, adits, mills (give rated capacity, etc.), waste dumps, chemical storage areas, tailings disposal areas, and effluent discharge locations. Make references to the detailed map.
See attached Addendum 1.7 Property History.pdf

1.8 Give a short description of the proposed or current freshwater intake facility, the type and operating capacity of the pumps used, and the intake screen size.
Initial water load will come from Discovery Lake using approved fish screens, up to 200 m3. Reclaimed water will be used with make-up water will come from mine water supplemented with water from Discovery Lake. No more than 5000 m3 of water per year from Discovery Lake is expected to be used. A 7.5 hp centrifugal pump with 5 mm screens will be used. Water from Prosperous, Bluefish Quayta, Sito and Discovery will be used for flooding winter roads.

1.9 At the rate of intended water usage for operations, explain water balance inputs and outputs in terms of estimated maximum draw down and recharge capability of the river or lake from which fresh water will be drawn.
The mill will require 120 m3 per 24 hour day with 12 to 18 m3 being entrained in dry stack tailings and flotation products. The balance of water, 102 to 108 m3 will be recycled from a settling pond receiving filtered water and mine water as well as recycled water from the thickener. Make up water will come from Discovery Lake (maximum 18 m3). Discovery Lake is fed primarily from drainages from Nelson Lake measured at 2.5 to 4 m3 per minute. Winter roads may be flooded, and some portages may be flooded. Water will be pumped to thicken ice and/or solidify portages to minimize rutting.

10 Will any work be done that penetrates regions of permafrost?

Yes X No

1.11 If "Yes" above, is the permafrost continuous or discontinuous?

Discontinuous permafrost.

1.12 Were (or will) any old workings or water bodies (be) dewatered in order to bring the present property into production?

Yes *X* No _____

*Yes**. See Addendum 8.1***

1.13 If "Yes" above, indicate the name of the water body, the total volume of water to be discharged, and the chemical characteristics of that water.

Note: This is as per MV2014L2-0002 and <u>not</u> as per this application

Water body *swamp draining to unnamed lake at Lat 62^{o} 53' 52", Long. 114^{o} 20' W.*

Total volume *<5* m^3 per day

Receiving watercourse *Unnamed*

Dewatering flow rate into above *<0.00006* m^3/sec

Chemical characteristics of discharge:

T/Pb	*<0.01*	mg/L	Total cyanide	*NA*	mg/L
T/Cu	*<0.10*	mg/L	Total ammonia	*<0.05*	mg/L
T/Al	*<100*	mg/L	Suspended solids	*<10*	mg/L
T/Hg	*<0.01*	mg/L	Specific conductivity	*<300*	uhmo/cm
T/Zn	*<0.01*	mg/L	pH	*6.5-8*	
T/Cd	*<0.01*	mg/L	Oil and grease	*<10*	mg/L
T/As	*<0.01*	mg/L			
T/Ni	*<0.03*	mg/L			
T/Mn	*<0.05*	mg/L			

(Sampling locations should be clearly identified and described on maps and drawings.)

1.14 Was (or will) the above discharge (be) treated chemically?

Yes _____ No X

If "Yes" above, describe the applied treatment.

SECTION 2 -- GEOLOGY AND MINERALOGY

2.1 Physiography: Provide an analysis and interpretation of the geologic and hydrologic environment in the immediate vicinity of the mine or plant. The investigation should extend from ground surface downward to the base of the glacial drift. Include large scale topographic map(s) covering the area where the mine, mill, and waste disposal basin are (or are to be) located. The map(s) should provide information on groundwater patterns and permafrost variations in the area.

See attached Addendum 2.1

2.2 Briefly describe the physical nature of the orebody, including known dimensions and approximate shape.

The mined portion of the orebody was 135 m long and ranged up to 4m wide, generally narrowing on both ends of the quartz vein. The vein is disposed in a moderately south-plunging anticlinal isocline. Fifteen metres of elevation has been mined, and diamond drill data indicates continuity below the previous stopes for 20 to 25 m (open). Laterally continuous geology can be traced for kilometres, suggesting much greater depth potential.

See addendum 2.2

2.3 Briefly describe the country rock in the general vicinity of the ore body (from the surface to the ore body).

The host Burwash Group is an amphibolite-grade greywacke-dominated turbidiite sequence with argillite locally characterized by potassic alteration and silicification. ***Minor gabbro will be encountered*** *Limited to no sulphide* ***alteration is associated with these host rocks.***

2.4 Provide a geological description of the *ore minerals* of the deposit. (If possible include the percentage of metals.)

The A-Zone, target of this program has been mined in the past, most recently between 1989 and 1997. Gold occurs inhomogeneously distributed throughout quartz vein, associated with less than 2% sulphides in declining abundance, pyrite, pyrrhotite, galena, sphalerite, arsenopyrite and chalcopyrite.

2.5 Describe the geochemical tests which have been (or will be) performed on tailings solids and different geological units of ore, country rock, and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (i.e., static, kinetic tests).

*See attached Addendum 2.5****. Note that the only waste product from the mill will be flotation tailings.***

2.6 Estimate the percentage of sulphides in the orebody:

pyrite *0.5*

pyrrhotite *0.5*

pyrite/pyrrhotite mixture _____

arsenopyrite *0.2*

Section 3 -- The Mine

3.1 Indicate the type of mining method to be used on the property.

Open pit _____

Underground *X*

Strip mining _____

Other mining activity? Explain.

Mining is permitted under MV2013C0021 and MV2014L2-0002. ***Prospecting and diamond drilling will occur***

3.2 Outline any possible operational changes and when they might occur (i.e., open pit to underground).
NA

3.3 Describe the type(s) of explosives to be used in mining operations.
anfo
nonel
b-line
forcite

3.4 Indicate the number of shafts or other openings that are presently on the property. Signify whether or not the openings are presently in use: (submit measurements in metres)

Shaft (name or number)	Present depth	Proposed depth
C1	*29m*	*Not in use*

Adit (name or number)	Present depth	Proposed depth
North Adit	*10m (145m length)*	*30m (345 m length)*
Central Adit	flat (37.5m length)	Not in use
South Adit	10m (65m long)	Not in use

Open pit (name) _____

Present surface length _____

Maximum future surface length _____

Present surface width _____

Maximum future surface width _____

Present depth _____

Maximum future Depth _____

Open Pit

Waste rock dump _____
(name)

Area occupied _____ hectares

Height _____

3.5 Are any entrances to shafts, adits, etc. below groundwater level?

No

3.6 Are permafrost conditions expected?

Yes *x* No _____

3.7 Indicate the expected life of the mine.

Unknown, but anticipate more than 5 years. It is planned to develop the A-Zone using geological planning, similar to those used prior to NI 43-101 which dictates all public disclosure of mineral reserves and resources. For example, the Con Mine released a reserve statement for the Con Mine in 1938 disclosing 1 year of reserves. Additionally, Garth Kirkham, P.Geol. has stated for North America Tungsten's reserves. ***This applies equally to the Mon Property****:*

> "The stringent requirements dictated by NI43-101 in formulating such an estimate make it difficult to utilize this estimate for the forecasting of resources and reserves in the medium to long term. This challenge is primarily due to the fact that the location, orientation and dimension of the underground resources and reserves, make it extremely difficult to effectively define substantial tonnages without a great deal of data in the form of drill holes or direct observations. The only way that estimation could be done accurately and effectively, is to excavate and develop an underground exploration drift parallel to and offset from the deposit and use this drift as a platform to drill from. The amount of development that would be required would be very expensive and it is more practical to drift directly into ore and mine it while developing a less ideal indication of the ore's dimension. Although more practical and economically imperative for a company with limited resources, the amount of ore that can be defined is limited by the amount of drilling that can be performed at the end of the current development drift. As the information density is thus too low for the standards set out for NI

43-101 reporting and these factors also make long term forecasts of reserves, and by extension, long-term production estimates, so difficult to quantify. This also means, in my opinion, that the amount of potentially mineable material is severely under-reported under normal, regulatory guidelines."

3.8 Indicate the *present average* rate of production from all ore sources on the property.

0 tonnes ore/day ***Mine on standby.***

3.9 Indicate the *expected maximum* rate of production form all ore sources on the property.

99 tonnes ore/day

3.10 Outline all water usage in the mine, indicating the source and volume of water for each use.

	Source	Use	Volume (m^3/day)
1.	*Recirculate*	*Drill, dust suppression*	*<3 m^3*
2.	*Discovery Lake*	*Make Up water*	*Periodically, <2 m^3*
3.			
4.			

3.11 Indicate the volume of natural groundwater presently gaining access to the mine workings.

None m^3/day

3.12 Outline methods used (planned) underground to decrease mine water flow. (i.e., recycling)

Recycling

3.13 Indicate the average daily volume of water to be discharged *from the mine* during normal operations.

<2 m^3/day

3.14 If a mill will be operating on the property in conjunction with mining, will all mine water (underground, open pit, etc.) be directed to the mill for reuse?

Yes, from year two onward.

3.15 If not, indicate the proposed point and volume of discharge for the mine water.

Point of discharge _____

Volume of discharge _____ m^3/day

3.16 What are the chemical and physical characteristics of the preceding mine water?

T/Cu	*<0.02*	mg/L	Total ammonia	*<0.05*	mg/L
T/Pb	*<0.01*	mg/L	Suspended solids	*<10*	mg/L
T/Zn	*<0.01*	mg/L	Specific conductivity	*<300*	uhmo/cm
T/Ag	*<0.01*	mg/L	pH	*6.5 - 8*	
T/Mn	<0.05	mg/L	Oil and grease	*<10*	mg/L
T/As	*<0.01*	mg/L			
T/Hg	*<0.01*	mg/L	Other		
T/Cr	*<0.01*	mg/L			
T/Cd	*<0.01*	mg/L			
T/Ni	*<0.03*	mg/L			
T/Fe	*<0.10*	mg/L			

3.17 Are there any treatment plans for mine water and will any chemicals be used in such treatment? Explain.

There is no treatment plans for any discharged mine water. It will be used in the mill and any discharge from the mill will be processed as described in that section

Section 4 -- The Mill

4.1 Attach a copy of the (proposed) mill flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

See addendum 4.1

4.2 If milling is in progress on the property at the present time, indicate the rate of milling.

X not applicable (check) OR _____ tonnes/day

4.3 What is the present (or proposed) maximum capacity of the mill?

100 tonnes/day

4.4 List the types and quantities of all reagents used in the mill process (in kg/tonne ore milled).

Reagent	Kg/tonne ore milled
PAX	*0.02*
Aeroflot	*0.02*
$CuSO_4$	*<0.02*
MIBC	*0.02*

4.5 Is the (proposed) milling circuit based on autogenous grinding?

Yes _____ No *X* Partially _____

4.6 Indicate the amount(s) of concentrate(s) produced in the mill.

Gravity, 40 kg/day _____ kg/day

Flotation 2,000 kg/day _____ kg/day

4.7 Will fresh water undergo treatment prior to use in the mill process? Explain.

No

4.8 Indicate all uses of water in the mill. Include the quantity and source of the water for each use.

	Use	Source	Volume (m^3/day)
i.	*Grinding*	*Recycle/Fresh*	*90*
ii.	*Gland water*	*Fresh*	*2*
iii.	*Duplex Jig*	*Recycle/Fresh*	*18*
iv.			
v.			
vi.			
vii.			
viii			
ix.			
x.			

4.9 Indicate the total volume of water discharged from the mill.

20 m^3/day.

*The mill will use 1**0**0 m^3 of water per day. This water will come from mine discharge water (3 m^3), recycled water from the holding tank (85 to 90 m^3 per day) gland water (2 m^3), Jig water (18 m^3) make up water (balance).* ***All water will be recycled except as entrained in the DST.***

4.10 Of the preceding volume, what quantity is (will be) recycled to other areas on the property (mine, mill, etc.)? Indicate location of use and quantity.

Location		
Mine	*as needed, <3*	m^3/day
Mill	***80** to 1**0**0*	m^3/day
		m^3/day

4.11 Based on yearly production, indicate the average quantity of tailings (dry weight) discharged from the mill.

95 tonnes/day

4.12 What is the average liquid solid ratio of tailings leaving the mill?

By weight 15 (liquid) : 85 (solid) By volume 30 (liquid) : 70 (solid)

4.13 If applicable, identify any chemical treatment applied to the liquid phase before being discharged to the tailings area. (Attach flow sheet if available.)

NA

4.14 Based on present production or bench test results, describe the chemical and physical characteristics of liquid mill wastes directed to the tailings area.

T/Cu	*<250*	mg/L	Total ammonia	*<0.05*	mg/L
T/Pb	*<0.01*	mg/L	Suspended solids	*<10*	mg/L
T/Zn	*<0.01*	mg/L	Specific conductivity	*<300*	uhmo/cm
T/Ag	*<0.01*	mg/L	pH	*6.5 to 8*	
T/Mn	*<0.05*	mg/L	Alkalinity	<0.07	$CaCo_3$/L
T/Ni	*<0.03*	mg/L	Hardness		mg/L

T/Fe	*<0.10*	g/L	Total cyanide	*NA*	mg/L
T/Hg	*<0.01*	mg/L	Oil and grease		mg/L
T/As	*<0.01*	mg/L			
T/Cd	*<0.01*	mg/L			
T/Cr	*<0.01*	mg/L			
T/Al	*<0.01*	mg/L			

4.15 Provide a geochemical description of the solid fraction of the tailings.

Cu	*0.090*	mg/g	Al	*1.05*	%
Pb	0.*216*	mg/g	Fe	*1.37*	%
Zn	*0.098*	mg/g	Hg	*<0.01*	mg/g
Ag	*<0.01*	mg/g	Ni	*0.189*	mg/g
Mn	*0.197*	mg/g	As	*0.013*	mg/g
Cr	*0.357*	mg/g	CN	*NA*	mg/g
Cd	*<0.01*	mg/g			

4.16 Identify the current source of power production.

Diesel generated

4.17 Other properties (or will the mill be handling any in the future)?

None

4.18 If so, specify ore characteristics and describe any mill processes which will change as a result.

NA

4.19 If tailings are being recovered in the mill or elsewhere for use as backfill (etc.) in the mine (etc.), indicate the quantity of solid tails (tonnes/day) recovered form the mill process.

After two years, >50% of the tailings may be used in backfill. Tests are to be completed.

4.20 Will exits be bermed to prevent spills from escaping the mill?

Not at this time

4.21 Will all sumps for process tanks have the required 110% holding capacity of the largest tank?

Flotation concentrate loading will have capacity > 110% of bags being loaded.

Section 5 -- The Tailings Area

5.1 Is the tailings containment area (being) designed for total containment?

No. Dry stack will be designed for uncontained storage. Liquids will be decanted and reused and kept at the mill. Both will be monitored and prepared for abandonment.

5.2 Attach detailed scale plan drawings of the proposed (or present) tailings area. The drawings must include the following:

(a) Details of pond size and elevation;

(b) Precise details of all retaining structures (length, width, height, materials of construction, etc.);

(c) Details of the drainage basin, and existing and proposed drainage modifications;

(d) Details of all decant, siphon mechanisms etc, including water treatment plant facilities;

(e) The plan for tailings deposition and final tailings configuration;

(f) Details with regard to the direction and route followed by the flow of wastes and/or waste waters from the area; and

(g) Indications of the distance to nearby major watercourses.

Note: Individual detailed large scale drawings of any facility (dam, decant system, ditch, dike, water treatment plant, etc.) (to be) constructed *must* be attached. Specific details with regard to the methods of construction, materials (to be) used, etc., are required.

See addendum 5.2 and Ancillary Reports\EBA DST Option.pdf

5.3 Explain your choice of location for the tailings pond design by rationalizing rejection of other options. Consider the following criteria in your comparisons: subsurface strata permeability, abandonment of tailings, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

See addendum 5.3 and Ancillary Reports EBS TSF Option.pdf (rejected option)

5.4 The total area for the existing tailings basin is 8.7 ha hectares and for any proposed tailings area is 0.85 ha hectares.

5.5 The *average* depth of the tailings basin is 7.0m metres.

5.6 Indicate the total capacity for the *existing* tailings area by using water balance and stage

volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations).
Existing tailings area is filled, capped and reclaimed. No plans to reactivate this TSF.
Zero input, Zero output.

5.7 Indicate the total capacity for any *proposed* tailings area by using water balance and stage volume calculations and curves. (Attach a description of inputs and outputs along with volume calculations).

Dry stack will occupy 0.85 hectares to a height of 7 m (3.5 m average) to retain 29,000 m^3 or 44,000 tonnes. Solids will be dried by filtration to contain <15% moisture by weight which will be retained in the stack. There is room to expand the stack, however there are no plans for this at this time.

5.8 Will the *present* tailings area contain the entire production from the mine mill complex for the life of the project?

No. The present tailings area is full, reclaimed, and not under consideration.

5.9 If "No" above, or if production output increases tailings volumes, indicate what plans have been made for future tailings disposal on the property.

Current plans and expansion in the future could be accommodated by expanding the planned dry stack laterally within the defined basin.

5.10 Has any land in the immediate area been identified as native or Crown land or withdrawn pending Native Claim Settlement?

The Graham Lake Subsurface withdrawal covers the area on interest. The nearest native withdrawal or withdrawn pending Native Claim Settlement is 12.5 km to the north.

5.11 Do the tailings area and all related treatment facilities lie on company held claims?

Yes

5.12 If not, indicate mine claim boundaries (and owners) on tailings area plan map (see Q.58). Also, attach a copy of all pertinent agreements signed with the owners of the claims not held by the company.

NA

5.13 Will the proposed tailings area engulf or otherwise disturb any existing watercourse?

Yes _____ No X

5.14 If "Yes", attach all pertinent details (name of watercourse, present average flow, direction of flow, proposed diversions, etc.).

5.15 If any natural watercourse will gain access to the proposed tailings area, what methods will be used to decrease the amount of runoff water entering the containment area? Indicate the volume of water which will enter the tailings area from the source(s) in question and attach all pertinent details of proposed diversions.

	Name of source	Volume (m^3/day)
1.	None	
2.		
3.		
4.		

Nature of Diversion(s):

5.16 Indicate on the tailings area plan drawing (see Q.61) all sources of seepage presently encountered in the vicinity of the tailings area, the volume of each seepage flow (m^3/day), and the direction of each flow.

None

5.17 Are the seepage flows from the property presently being treated chemically? If so, describe how.

No

5.18 If not, explain.

No seepage

5.19 Please attach a conceptual Abandonment and Restoration Plan for all tailings areas being developed. Describe the measures that have been (or will be) taken to contain and stabilize the tailings area(s) against leaching and seepage after operations on the property cease.

See Addendum 5.19 A and R Plan.pdf

5.20 Describe the proposed or present operation, maintenance, and monitoring of the tailings area.

There is no present operation. Proposed monitoring is described in Addendum 5.20 Proposed Monitoring and Op.pdf

Section 6 -- Water Treatment

6.1 Describe the methods of chemical treatment that are presently being used and/or will be used to control the quality of the tailings effluent. Attach engineering drawings where applicable and a process flow chart. If a pilot test has been conducted, please attach description of methodology and results.

See Addendum 6.1 Treatment of Tailings.pdf.

6.2 List the names of chemicals to be used in the water treatment process.

None used for water treatment. See section 4.4 for list of chemicals used in Mill.

6.3 What is the proposed or present *average* rate of effluent treatment of the plant (if applicable)?

NA _____ m^3/min

6.4 What is the proposed or present *maximum* effluent treatment capacity of the plant (if applicable)?

NA _____ m^3/min

6.5 Will treated effluent be discharged directly to a natural water body or will polishing or settling ponds be employed? Describe location, control structures, and process of water retention and transfer. Attach any relevant design drawings.

No liquid effluent is planned to be discharged from the mill. Only entrained liquids in solids will be discharged to the DST facility.

6.6 Name the first major watercourse the discharge flow enters after it leaves the area of company operations.

NA

6.7 In terms of rate of effluent release and volume and flushing rate of the receiving watercourse, estimate the extent of the mixing zone within the receiving waters and where background levels of constituents for that watercourse will be attained.

It is expected precipitation will fall on the dry stack and water will be retained within the stack. There is currently no discharge from the basin and none is expected.

6.8 Describe the present (proposed from pilot tests) chemical and physical characteristics of the tailings effluent (decant).

T/Cu	_____	mg/L	Total ammonia	_____	mg/L
T/Pb	_____	mg/L	Suspended solids	_____	mg/L
T/Zn	_____	mg/L	Specific conductivity	_____	uhmo/cm
T/Ag	_____	mg/L	Alkalinity	_____	$CaCO_3$/L
T/Mn	_____	mg/L	Hardness	_____	mg/L
T/Ni	_____	mg/L	pH	_____	
T/Fe	_____	mg/L	Total cyanide	_____	mg/L
T/Hg	_____	mg/L			
T/Cr	_____	mg/L	**Other**		

T/Cd	_____	mg/L	_____	_____	_____
T/As	_____	mg/L	_____	_____	_____

Section 7 -- Environmental Monitoring Program

7.1 Has any baseline data been collected for the main water bodies in the area prior to development?

Yes X No _____

7.2 If "Yes", include all data gathered on the physical, biotic and chemical characteristics at each sampling location. Identify sampling locations on a map.

See addendum 7.2 Studies completed.pdf

7.3 Provide an inventory of hazardous materials on the property and storage locations. (attach separate map)

See addendum 7.3 Inventory of hazardous mat.pdf

7.4 Attach the present or proposed contingency plan which describes course of action, mitigative measures, and equipment available for use in the event of system failures and spills of hazardous materials.

See addendum 7.4 Contingency Plan.pdf and Spill Contigency Rev8.pdf

7.5 Provide a brief overview of the conceptual abandonment and restoration plan for the site.

See addendum 5.19 A and R Plan.pdf and Interim Closure and Reclamation Plan2020A.pdf

Section 8 – Pre-screening

In addition to providing sufficient technical and related information for licensing to proceed, applicants must provide adequate descriptive information to ensure that an initial pre-screening decision can be made prior to a project's proceeding for regulatory approvals.

Your application and other project details, such as this questionnaire, will be sent out for review by local aboriginal, as well as, territorial and federal government agencies. Their comments (e.g., regarding the significance of project impacts) are considered before a decision is made to allow the project to proceed.

8.1 Has this project ever undergone an initial environmental review, including previous owners?

Yes X By whom/when GerMac Contracting, 1990 No _____
Unknown _

8.2 Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g., wildlife, soils, air quality), in addition to water related information requested in this questionnaire?

Yes X No _____ Unknown _____

8.3 Has any meteorological data been collected at or near the site? (e.g., precipitation, evaporation, snow, wind)

Yes _____ No X_____

8.4 If "Yes", please include data and attach copies of reports or cite titles, authors and dates.

8.5 If "No", are such studies being planned? Briefly describe the proposals.
The site is 40 km from Yellowknife airport where such data is collected.

8.6 Has authorization been obtained or sought form the Department of Fisheries and Oceans for dewatering or using any water bodies for containment of waste?
NA

8.7 Please attach an outline briefly describing any options or alternatives considered or rejected for the various mine components outlined in this questionnaire (e.g., mill site, water supply sources, locations for ore and waste piles).

See addendum 8.7 List of Alternative Plans.pdf

8.8 Has a socio-economic impact assessment or evaluation of this project been undertaken? (This would include a review of any public concerns, land, water and cultural uses of the area, implications of land claims, compensation, local employment opportunities, etc.)

Yes X_____ No _____ Unknown _____

8.9 If "Yes", please describe the proposal briefly.

Community consultations over the past three years have touch on aspects of this development.This is a small operation however it is close to Yellowknife. The civic government supports this development. The Yellowknife Dene First Nation has raised some concerns which we believe we have or will address. These have included;

- Heritage studies
- Employment
- Training
- Contracting
- Renewable resources
- Land claims

Golder and Associates completed a Heritage Study in 2015 and submitted to the MVLWB. We commit to local employment where practical. More to that, we have been in contact with the Mine Training Society to discuss some options. We have been using Yellowknife-based consultants and contractors extensively, and expect to continue to do so. We have talked to and used several native-owned companies.

SECTION 9 -- List of Attachments

Reference to Question #	Title	Number of pages

1.	Question 1.6	MapCinfrastructureA.pdf	1
2.	Question 1.7	Addendum 1.7	5
3.	Question 2.1	Addendum 2.1	3
4.	Question 2.2	Addendum 2.2	2
5.	Question 2.5	Addendum 2.5	7
6.	Question 4.1	Addendum 4.1	2
7.	Question 5.2	Addendum 5.2	6
8.	Question 5.3	Addendum 5.3	3
9.	Question 5.19	Addendum 5.19	3
10.	Question 5.20	Addendum 5.20	1
11.	Question 6.1	Addendum 6.1	3
12.	Question 7.2	Addendum 7.2	12
13.	Question 7.3	Addendum 7.3	3
14.	Question 7.4	Addendum 7.4	18
15.	Question 7.5	Reference to 5.19	3*
16.	Question 8.7	Addendum 8.7	2

Addendum 1.7

Brief history of property development which took place before the present company gained control of the site.

Summary

New Discovery Mines Ltd. and its predecessor acquired the Mon Leases in a purchase/option from Cominco Ltd. in 1988. Work completed prior to this included prospecting and mapping, sampling, trenching, the sinking of a 19.5 m deep shaft (CLT Shaft) in 1937 and 47.5 m of lateral development in 1938. Subsequent drilling in 1947, 1950, 1963 together with geophysical surveys in 1961 lead Cominco to license small scale mining by a Yellowknife prospector who extracted and processed 200 tonnes of material between 1965 and 1975. Diamond drilling in 1986 and 1987 by two companies holding the mining leases were inconclusive. In 1988 Webb, a principal and founder of New Discovery Mines acquired control of the property.

New Discovery Mines Ltd. completed additional diamond drilling in 1988 and 1989, sunk a decline (South Decline) into the A-Zone and extracted a bulk sample for test work. The sample was shipped to a local mill and the results were ambiguous. In 1991 the Central Adit was excavated on the A-Zone and a bulk sample was extracted for test work. The sample was shipped to a custom processing facility and the results were ambiguous. In 1991 a 100 tpd mill was licensed under the NWT Water Board and further test work was completed with positive results. Operations shutdown in 1997 due to low gold prices (<US$350/ounce). In June 2014 New Discovery Mines received Land Use Permits (MV2013C0021) and a Water License (MV2014L2-0002) from the MVLWB (to install a camp and initiate a bulk sample. This current application has been developing in consultation with affected communities since then.

History

A high-grade quartz vein was discovered in 1937 by prospectors working for Cominco during an aerial reconnaissance flight north of Yellowknife. Initial sampling determined that a number of gold-bearing quartz veins occurred on the property, most notably the A-Zone.

The A-Zone was exposed in trenches blasted into the east-side of a north-northwest-striking ridge, yielding positive results

In 1937 Cominco sunk a 19.51 m deep shaft adjacent to the surface showing and in 1938 they completed 47.5 m of lateral development, failing to encounter the interpreted down dip extension of the surface showings.

In 1947 Cominco recognized the similarity to the Discovery Mine and completed three short drillholes totaling 58 metres to trace the A-Zone to depth, and encountered the results showing continuity of the vein dipping more moderately to the west than had been anticipated.

These results led Cominco to estimate the A-Zone to be of interest for further work.

The discovery of the Discovery Mine in similar rocks in a similar setting in 1944 encouraged Cominco to restart exploration and in 1950 they completed 364 metres of diamond drilling to test lineament east of the A-Zone.

In 1961 a detailed magnetometer survey failed to trace the contact between the greywacke and gabbro where the A-Zone was determined to be situated.

A third drill campaign in the 1963 (493.5 meters in ten diamond drillholes) failed to expand the A-Zone. Cominco considered there to be reasonable potential that the A-Zone be similar to the Discovery Mine, where a folded quartz vein (system) was of a similar size and grade.

In 1965 Cominco determined that there was limited potential to expand the A-Zone, and so agreed to allow Jack Stevens, a local prospector who retained an interest on the property to mine the A-Zone. Between 1965 and 1975 Jack extracted approximately 200 tonnes of high-grade material which he crushed, ground, and processed on site.

In 1986 the claims were optioned to Troymin Resources Ltd. and 11 holes were drilled into the A-Zone in January, 1987 totaling 489 meters with mixed results.

Coronado Resources Inc. farmed in on that option in 1987, and completed additional mapping, sampling, and later 886 meters of diamond drilling in 12 holes, all of which confirmed Cominco's work. Additional intercepts of mineralization could not be correlated to the known extent of the A-Zone.

In 1988 the property was optioned by D.R. Webb, who brought Can-Mac Exploration into the agreement later in 1988. Webb determined that the mineralization had short dip extent but raked shallowly to the south as opposed to the steep dip assumed in previous programs. Diamond drilling intersected the mineralization in the A-Zone at shallow depths south of the surface showings and a resource estimate of 3,900 tonnes of material diluted to 33.5 gpt gold was quickly established.

In 1989 an underground program was established involving 49 meters of decline and 15.5 meters of raising. A total of 2,300 tonnes of material was stoped from a vein that outcropped 7 meters southeast of the surface showings. Breast samples were collected during mining every lift and for each breast (2.5 x 3 meters). An average diluted mined grade of 18.3 gpt gold was calculated.

The material was trucked to Yellowknife for custom milling where approximately 2,300 tons of ore at a measured head grade of 5.4 gpt was treated. The discrepancy may be accounted for by dilution during loading and trucking, and potential theft of ore from the stockpile.

In 1990 the property was leased by Can-Mac to Ger Mac Construction Ltd. It was determined that Can-Mac had mined a separate east-dipping vein, not connected to the surface exposure of the A-Zone. A new portal was collared and a crosscut was driven 37 meters to intersect the west-dipping portion of the A-Zone at the 192 meter elevation. The vein was exposed by subdrifting for 77 meters and was sampled every 1.5 meters. A new resource estimate was determined, calculated to be 2,300 tonnes grading 11.83 gpt.

In 1991 a 100 tpd gravity mill was hauled to the property and a Class B Water License (N1L2-1598 was obtained by Ger-Mac Contracting Ltd, PO Box 385, Yellowknife NT., X1A 2N3. A total of 2,450 tonnes were processed at a calculated head grade of 11.93 gpt.

Can-Mac defaulted on lease payments and the property to revert back to Webb.

Between 1991 and 1997 the mine was in operation on a summer only basis, with a total production of 3,100 ounces of gold from 10,000 tons of ore reported for a calculated recovered grade of 10.63 gpt. Documentation of this production is very poor and the operator has reported 85% recoveries during operations. The tailings grade of 3.5 gpt would suggest a head grade of 23 gpt. An additional 2,500 tonnes of production was not well documented.

In summary, the A-Zone is a folded quartz vein of the “Discovery Mine” type, plunging moderately to the south. Two fold limbs joined by a fold nose have been exploited to yield 12,000 to 15,000 tonnes of ore in three separate campaigns to produce between 4,000 and 8,000 troy ounces of gold from 15 m of elevation in two stopes. The East Stope was only partially exploited because topography limited mining to the north.

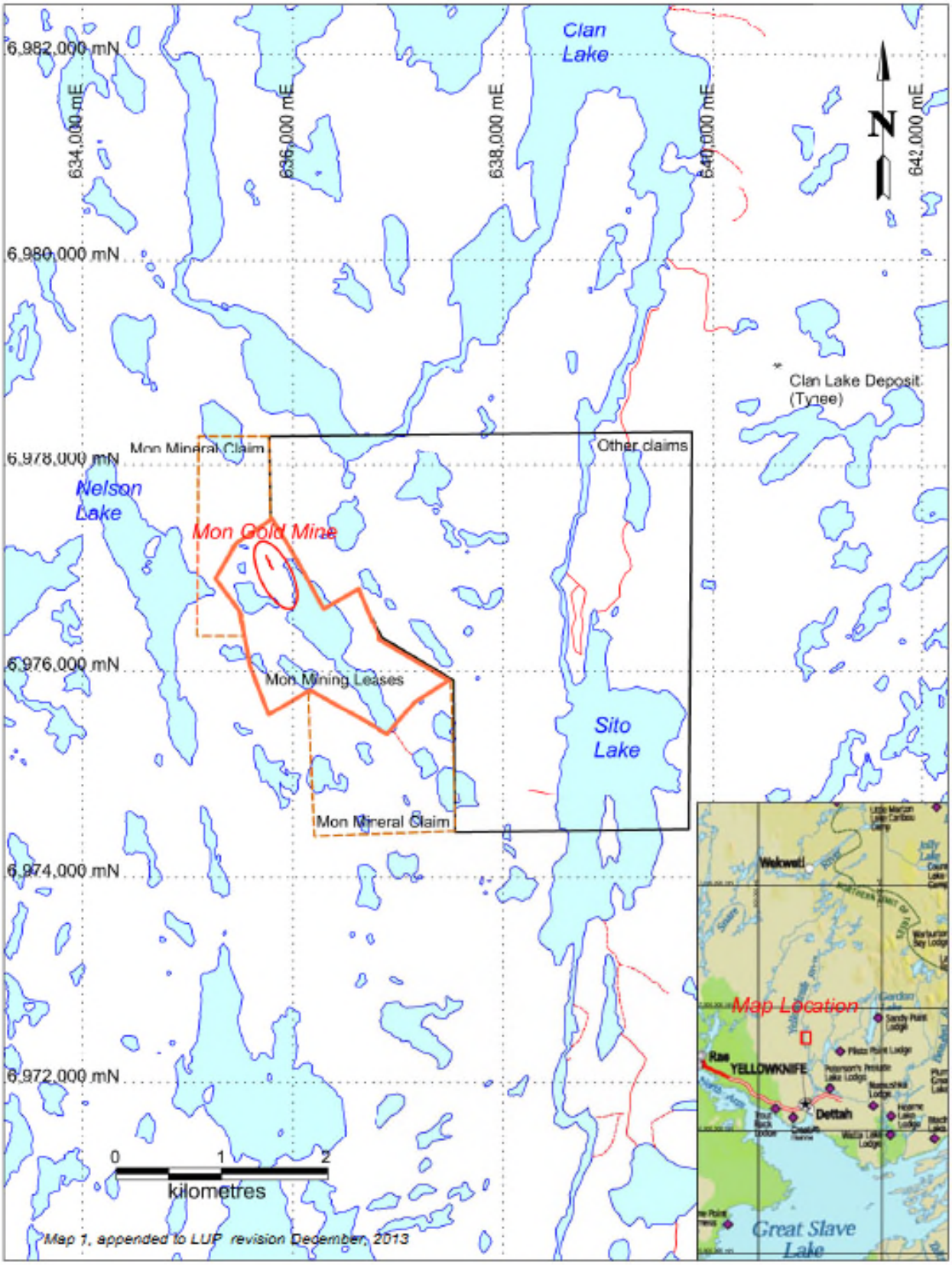


Figure 1. Location of Mon Gold Mine.

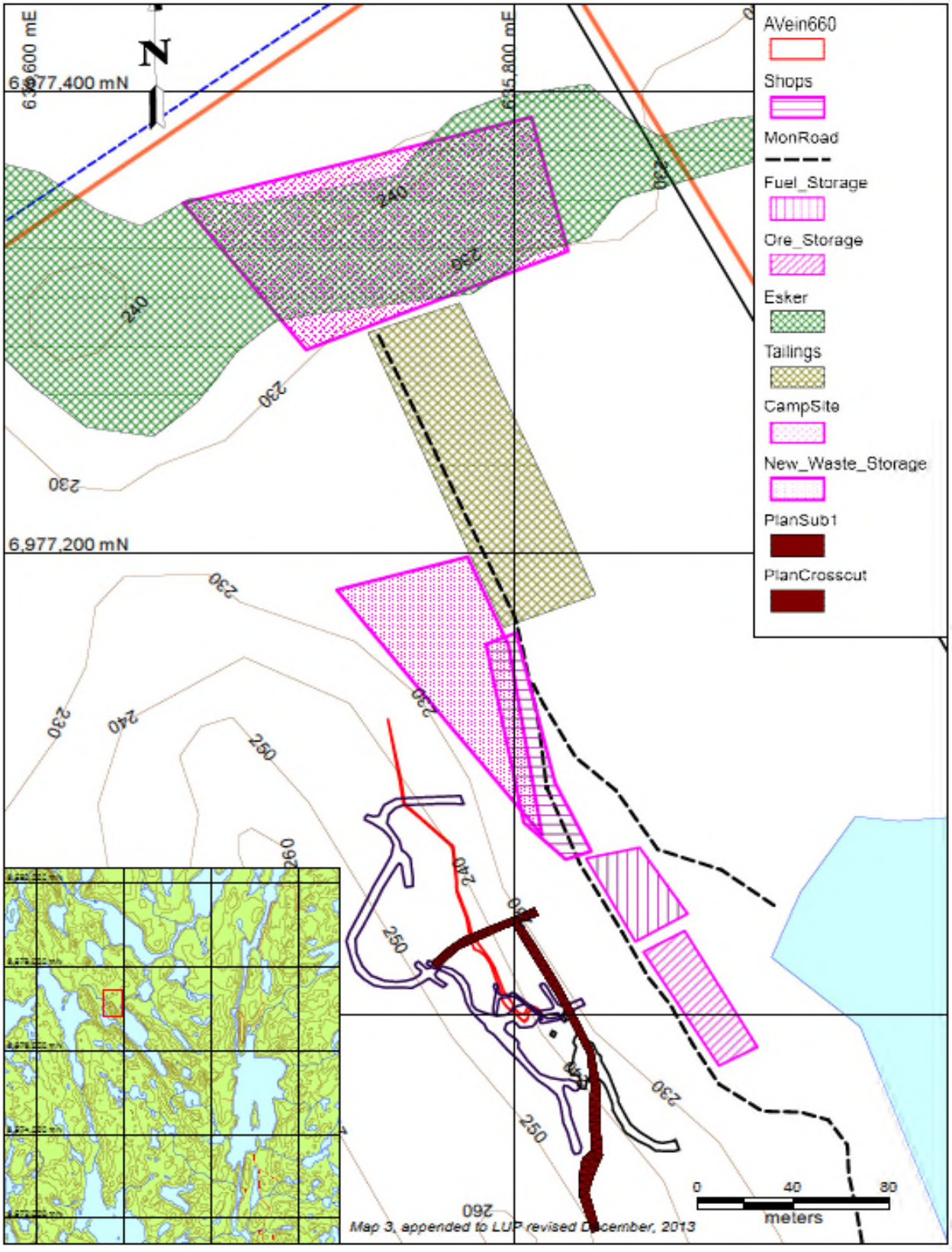


Figure 2. Location of Waste Rock storage locations (Waste Storage, Ore Storage).

Addendum 2.1

Analysis and interpretation of the geologic and hydrologic environment in the immediate vicinity of the mine or plant.

Summary

The Mon Property lies within the Yellowknife Greenstone Belt, and Archean sequence of supracrustal rocks dominated by granitoids, mafic to intermediate volcanic, and metasedimentary rocks. Minor felsic igneous rocks and mafic to ultramafic intrusions occur in the region.

The region is typical terrain of the Canadian Shield within the northern boreal forest. Elongate rounded rocky hills and ridges with abundant outcrop exposures are separated by numerous lakes, ponds, rivers, creeks and swamps. Cliffs and steep bluffs up to a few tens of meters in height commonly occur along the side or end of these hills. Strong linear features several kilometers long defined by depressions between ridges are common. Topographic relief ranges from ~220m +/- at Discovery Lake with local peaks at 260 m +/- to broad flat hills over 257 meters (m) above mean sea level (amsl) near Nelson Lake. Overburden is typically a thin sandy layer of till. Small sandy eskers occur locally. The upland areas are generally moss and lichen-covered rounded rock outcrops with scattered to dense pine, birch, tamarack and spruce trees. The many low-lying areas are covered with a combination of water and muskeg swamp with local spruce trees and deciduous underbrush. Drainages are generally slow moving being clogged with glacial debris and vegetation.

Geology

Archean extrusive igneous rocks are interlaminated with turbidite metasediments in a broadly folded structure with structural grain following the general northwest-southeast topography. Granitoid rocks intrude into this from the west and partially assimilate and interdigitate with the earlier supracrustal rocks.

Gold mineralization occurs within all rock types but specific areas of interest lie within turbidite sequences adjacent to amphibolitic rocks (A-Zone) and within the Amphibolitic rocks (portions of the A-Zone and the V-Zone).

Hydrologic Environment

Major waterbodies include Nelson Lake in the west which is approximately 35 m above Discovery Lake and the adjacent small unnamed lake between Discovery and Nelson Lakes. Drainage from Nelson Lake through a number of locations dominates the hydrology of the local. Waters from Discovery Lake which also receives waters from the south drains northward for 350 m through a broad but slow-moving drainage to a small (12.3 hectare) unnamed lake and from there through a 90 m channel to the Clan Lake, part of the Yellowknife River system.

The area is with patchy permafrost with very poor deep penetration of surface waters. Past mining has been within permafrost and no ground waters have been encountered.

Construction of the existing tailings containment site in a swampy region north of the mine site encountered frozen clays beneath peaty soils. Stunted tree growth indicates permafrost extends throughout most of the swamps in this region.

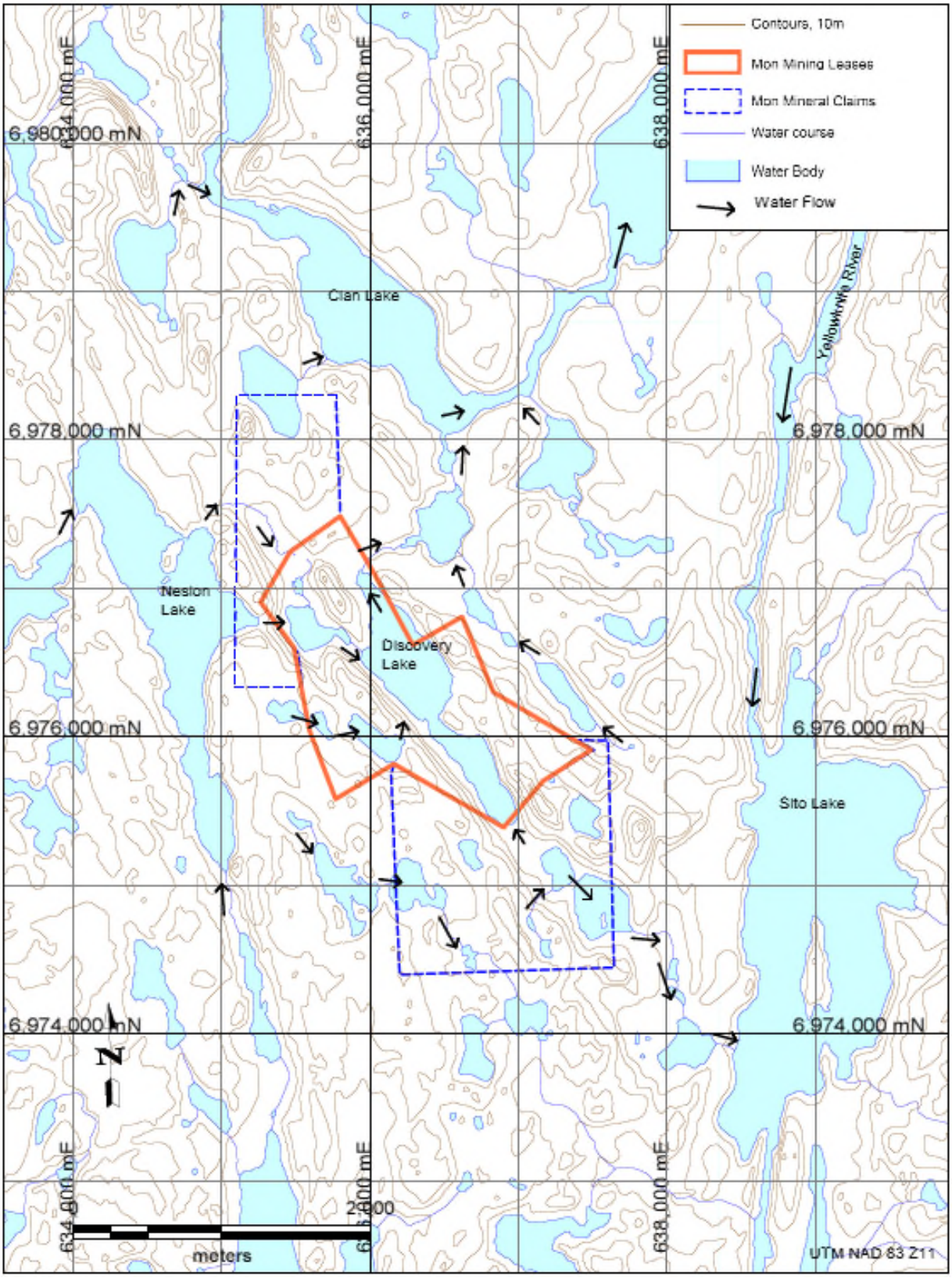


Figure 1. Physiography and hydrology in and around Mon Property.

Addendum 2.2

Physical nature of the orebody, including known dimensions and approximate shape.

There is no orebody as defined by National Instrument 43-101. There is mineralization that has been mined in the past, and this application wishes to continue to assess this mineralization. The A-Zone is a folded quartz vein system within Burwash Group argillites adjacent to an amphibolite unit believed to be related to extrusive rocks of the Banting Group. The vein pinches, swells, and is anastomosing attaining widths >4 m in places, generally near the fold nose and pinching to sub metre widths away from the fold.

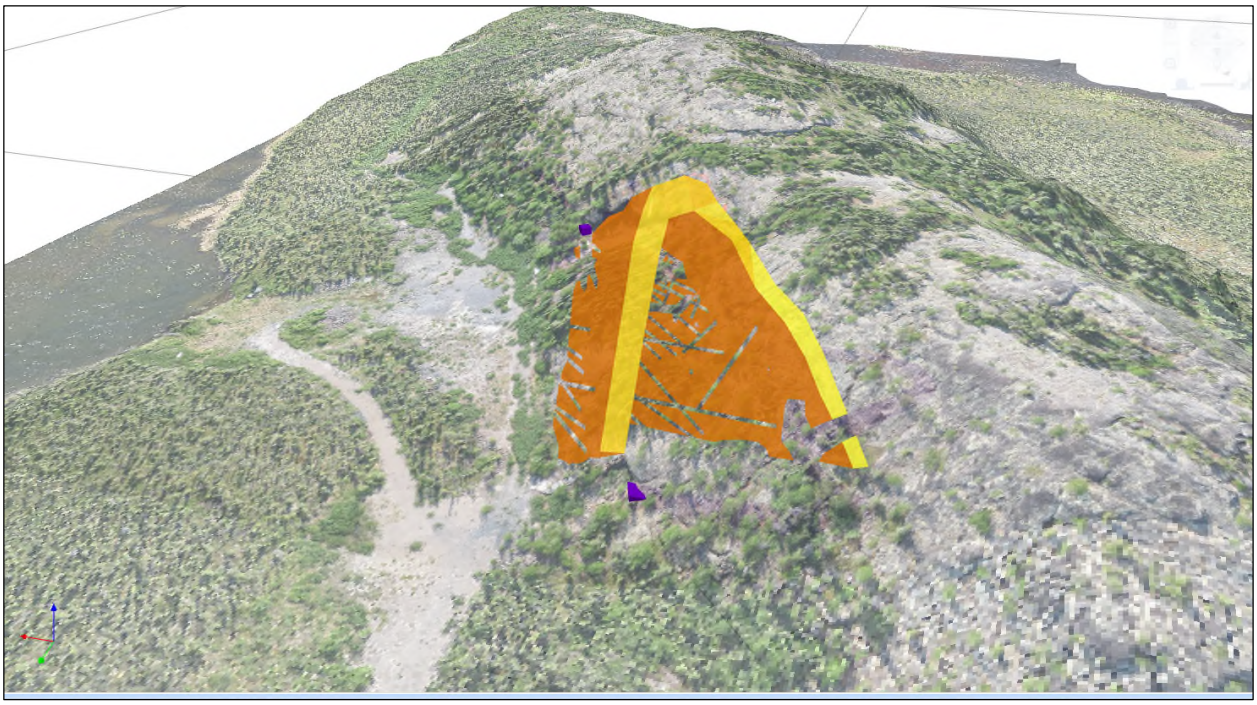
The west limb of the A-Zone quartz vein has been traced discontinuously on surface for 150m at Az. 330, open to the north. The fold nose at the south-end is isoclinal and plunges moderately to the south. The east limb is not well exposed on surface but has been intersected in the Cominco Shaft, the South Decline the Central Adit, and numerous drillholes.

The South Decline intersected the East Limb of the A-Zone and a small length of the vein was extracted producing a bulk sample of 2,300 tonnes. The sill elevation was 219 m and the crown pillar is at elevation 243 m for 14 m of elevation extracted.

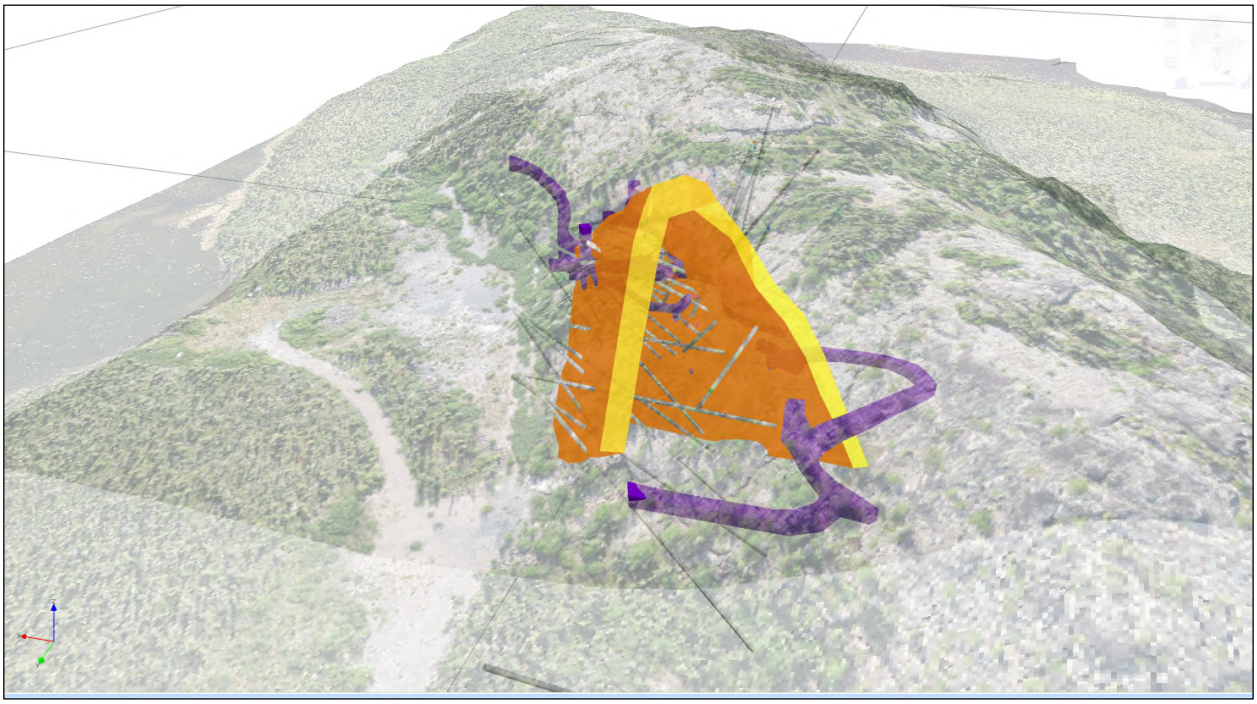
The Central Adit is at elevation 231m and is the base of mining for the west limb which was extracted to surface (243 m) representing 13 m of elevation.

The structure is expected to continue down-plunge below the stopes on the A-Zone, with diamond drilling intersecting the zone to elevation 189 on the East Limb and 177 m on the West Limb.

The quartz vein rarely contains more than 2% sulphides, in variable but declining concentration of pyrite, galena, sphalerite, arsenopyrite, pyrrhotite, and chalcopyrite. Native gold is associated with galena and sphalerite. The adjacent argillite is often albitized and hematized providing a distinctive salmon coloured alteration locally referred to as pink rock.



Photograph 1. 3D model of the A-Zone folded quartz vein (gold) on the hillside at the Mon Property. Discovery Lake is to the east. Viewed to the southeast.



Photograph 2. Same view as above with surface partially transparent. Purple structures are underground workings, drill holes are line traces.

Addendum 2.5

Describe the geochemical tests which have been (or will be) performed on tailings solids and different geological units of ore, country rock, and waste rock to determine their relative acid generation and contaminant leaching potential. Outline methods used (or to be used) and provide test results in an attached report (i.e., static, kinetic tests).

Work completed for the original bulk sample (1989) and production (1990-1997) have been submitted to the NWT Water Board, are in the possession of the MVLWB but are not in the applicant's possession.

SNP testing during this period have been compiled and demonstrate the relative acid generation and contaminant leaching potential over several decades of actual field conditions. This data has been submitted for the existing LUP and WL.

In addition, the applicant has completed metallurgical testing to generate additional test material. One waste rock as well as two waste products were developed on ore samples collected in 2013:

1. Gravity tails. This product is what was produced during previous operations in 1990 to 1997 and can be found in the licensed and reclaimed tailings storage facility on site.

2. Flotation tails. This product is produced by treating the gravity tails through a basic flotation system designed to remove all sulphides. The purpose of this is two fold. One, it significantly reduces the acid-generating potential of the tailings as well as a very significant portion of the base and transition metals and two) it recovers much of the non-gravity recoverable gold. The sulphide concentrate is planned to be trucked to a southern smelter.

3. Greywacke. This is a common rock peripheral to and east of the mineralization. The sample was collected to assist in evaluating potential waste rock characteristics.

The results are presented in reports dated February 11, 2014, but are summarized below.

Ore Characteristics

A 57.9 kg sample of ore was collected by D.R. Webb in 2013 and delivered to Inspectorate Laboratories in Richmond B.C. It was received and tested using fire assay and ICP MS techniques, the results of which are shown below.

Precious Metal Head Assays

Element		Unit	Assays Comp 1
Gold	Au	ppm	122.56
Silver	Ag	ppm	24.60
Sulphur (total)	S	%	1.40

ICP-MS30 Head Assays

Element		Unit	Assays Comp 1	Element		Unit	Assays Comp 1
Aluminum	Al	%	1.11	Manganese	Mn	ppm	175
Antimony	Sb	ppm	<5	Molybdenum	Mo	ppm	5.0
Arsenic	As	ppm	81.0	Nickel	Ni	ppm	25.5
Barium	Ba	ppm	70.0	Phosphorus	P	ppm	59.0
Bismuth	Bi	ppm	9.5	Potassium	K	%	0.30
Cadmium	Cd	ppm	5.7	Scandium	Sc	ppm	4.0
Calcium	Ca	ppm	0.71	Sodium	Na	%	0.36
Chromium	Cr	ppm	235.5	Strontium	Sr	ppm	30.0
Cobalt	Co	ppm	19.0	Titanium	Ti	%	0.1
Copper	Cu	ppm	134.0	Thallium	Tl	ppm	<10
Iron	Fe	ppm	2.53	Tungsten	W	ppm	10.5
Lanthanum	La	ppm	<10	Vanadium	V	ppm	54.0
Lead	Pb	ppm	2284	Zinc	Zn	ppm	1321
Magnesium	Mg	%	0.82	Zirconium	Zr	ppm	8.5

Whole Rock Analysis

Compound	Unit	Assays Comp 1	Compound	Unit	Assays Comp 1
Al_2O_3	%	2.13	MnO	%	0.03
BaO	%	0.01	Na_2O	%	0.49
CaO	%	1.11	P_2O_5	%	0.01
Cr_2O_3	%	0.04	SiO_2	%	85.55
Fe_2O_3	%	3.86	TiO_2	%	0.16
K_2O	%	0.38	LOI	%	1.68
MgO	%	1.41	Total	%	96.78

Gravity tails.

Upon treatment using a centrifugal concentrator, the panned concentrate tails which represent gravity tails were tested.

Table 4. Gravity Test Summary for Au

Products	Weight (g)	Weight (%)	Assay (g/t) Au	Distribution (%) Au
Pan Concentrate 1	2.28	0.1	115099.90	52.8
Pan Concentrate 2	0.83	0.0	5038.13	0.8
Total Pan Concentrates	**3.11**	**0.1**	**85750.09**	**53.6**
Final Tails	3986.00	99.9	57.81	46.4
Calculated Head	**3989.11**	**100.0**	**124.51**	**100.0**
Measured Head			122.56	

ICP-MS Analysis on Gravity Tails

Element		Unit	Assays Comp 1	Element		Unit	Assays Comp 1
Aluminum	Al	%	1.08	Manganese	Mn	ppm	214
Antimony	Sb	ppm	<5	Molybdenum	Mo	ppm	6.0
Arsenic	As	ppm	55.5	Nickel	Ni	ppm	226.5
Barium	Ba	ppm	74.5	Phosphorus	P	ppm	61.0
Bismuth	Bi	ppm	10.0	Potassium	K	%	0.30
Cadmium	Cd	ppm	6.3	Scandium	Sc	ppm	4.0
Calcium	Ca	ppm	0.69	Sodium	Na	%	0.33
Chromium	Cr	ppm	399.5	Strontium	Sr	ppm	25.0
Cobalt	Co	ppm	20.0	Titanium	Ti	%	0.1
Copper	Cu	ppm	134.5	Thallium	Tl	ppm	<10
Iron	Fe	ppm	2.43	Tungsten	W	ppm	13.0
Lanthanum	La	ppm	<10	Vanadium	V	ppm	45.0
Lead	Pb	ppm	2140	Zinc	Zn	ppm	1335
Magnesium	Mg	%	0.75	Zirconium	Zr	ppm	6.5

Whole Rock Analysis on Gravity Tails

Compound	Unit	Assays Comp 1	Compound	Unit	Assays Comp 1
Al_2O_3	%	2.15	MnO	%	0.03
BaO	%	0.01	Na_2O	%	0.56
CaO	%	1.01	P_2O_5	%	<0.01
Cr_2O_3	%	0.06	SiO_2	%	85.94
Fe_2O_3	%	4.23	TiO_2	%	0.15
K_2O	%	0.33	LOI	%	1.47
MgO	%	1.11	Total	%	96.97

It can be seen that the gravity circuit does not materially affect the major elements as one would expect. However, it does reduce the gold and arsenic in the tails while not significantly changing the base metals content. Some of the elements associated with hardened steel (crushing plates and grinding media) such as manganese and nickel increase in the gravity tails.

Flotation Tails

Gravity tails were processed by flotation to extract sulphides, fine-grained gold and to develop a waste stream for environmental test work.

Table 10. Flotation Test Summary for Au

Product	Weight		Assay		Distribution	
			Au	S	Au	S
	(g)	(%)	(g/t)	(%)	(%)	(%)
Rougher Concentrate 1	39.0	2.1	1292.40	8.41	47.4	12.2
Rougher Concentrate 2	43.0	2.3	1055.58	25.51	42.7	40.9
Rougher Concentrate 1+2	**81.9**	**4.4**	**1168.22**	**17.38**	**90.1**	**53.1**
Rougher Concentrate 3	37.7	2.0	190.89	19.97	6.8	28.0
Rougher Concentrate 1+2+3	**119.6**	**6.4**	**860.51**	**18.19**	**96.8**	**81.1**
Rougher Concentrate 4	20.6	1.1	58.91	7.90	1.1	6.1
Total Rougher Concentrate	**140.2**	**7.5**	**742.71**	**16.68**	**98.0**	**87.2**
Flotation Tailings	1721.9	92.5	1.26	0.20	2.0	12.8
Calculated Feed	**1862.0**	**100.0**	**57.08**	**1.44**	**100.0**	**100.0**
Measured Feed			57.81			

ICP-MS Analysis on Flotation Tails

Element		Unit	Assays Comp 1	Element		Unit	Assays Comp 1
Aluminum	Al	%	1.05	Manganese	Mn	ppm	197
Antimony	Sb	ppm	6.0	Molybdenum	Mo	ppm	7.0
Arsenic	As	ppm	13.0	Nickel	Ni	ppm	189.0
Barium	Ba	ppm	75.0	Phosphorus	P	ppm	68.0
Bismuth	Bi	ppm	<2	Potassium	K	%	0.30
Cadmium	Cd	ppm	<0.5	Scandium	Sc	ppm	3.0
Calcium	Ca	ppm	0.76	Sodium	Na	%	0.34
Chromium	Cr	ppm	357.0	Strontium	Sr	ppm	28.0
Cobalt	Co	ppm	7.0	Titanium	Ti	%	0.1
Copper	Cu	ppm	90.0	Thallium	Tl	ppm	<10
Iron	Fe	ppm	1.37	Tungsten	W	ppm	12.0
Lanthanum	La	ppm	<10	Vanadium	V	ppm	46.0
Lead	Pb	ppm	216	Zinc	Zn	ppm	98
Magnesium	Mg	%	0.70	Zirconium	Zr	ppm	7.0

Whole Rock Analysis on Flotation Tails

Compound	Unit	Assays Comp 1	Compound	Unit	Assays Comp 1
Al_2O_3	%	2.08	MnO	%	0.03
BaO	%	0.01	Na_2O	%	0.71
CaO	%	1.04	P_2O_5	%	0.01
Cr_2O_3	%	0.05	SiO_2	%	88.25
Fe_2O_3	%	2.05	TiO_2	%	0.15
K_2O	%	0.38	LOI	%	0.80
MgO	%	1.07	Total	%	96.56

It can be seen from the whole rock data that there is limited modification of the major elements by floating the gravity tailings however there is a material change in the base and transition metal concentration.

Significant changes include:

Element	Head Grade (ppm)	Gravity Tails Grade (ppm)	Reduction (%)	Flotation Tails Grade (ppm)	Reduction (%)
Arsenic	81	55.5	31.5	13	84
Bismuth	9.5	10	-	<2	>80
Copper	134	134.5	-	90	32.8
Lead	2284	2140	6.3	216	90.5
Zinc	1321	1335	-	98	92.6

It can be seen that flotation removes a significant portion of the base and transitional metals shown above.

Static ARD testing following the modified Sobec ABA procedure was run on the gravity tails (after cyanidation), flotation tails and the greywacke sample with the results summarized below:

Table 14. ABA Test Summary on GC-1 Tails

Item	Sample ID	Total Sulfur S, %	Sulfate Sulfur S(SO4), %	Fizz Rating	Paste pH	Acid Potential kg $CaCO_3$/t	Neutralization Potential (NP) Actual NP kg $CaCO_3$/t	NP/AP Ratio	Net kg $CaCO_3$/t
1	GC 1 Residue	1.39	0.07	None	5.6	41.3	12.2	0.3	- 29.1
1	F1 Flotation Tails	0.21	0.05	None	7.6	5.0	9.9	2.0	4.9
3	GWK 1	0.13	<0.01	None	9.6	4.1	11.0	2.7	7.0

The gravity tails show some acid generating potential whereas both the flotation tails and the greywacke samples are quite neutral.

To assess potential leachate from these tails products both a standard SWEP and modified SWEP test was run on the gravity and the flotation tails and the results are summarized below:

15. SWEP Test Leachate Analysis

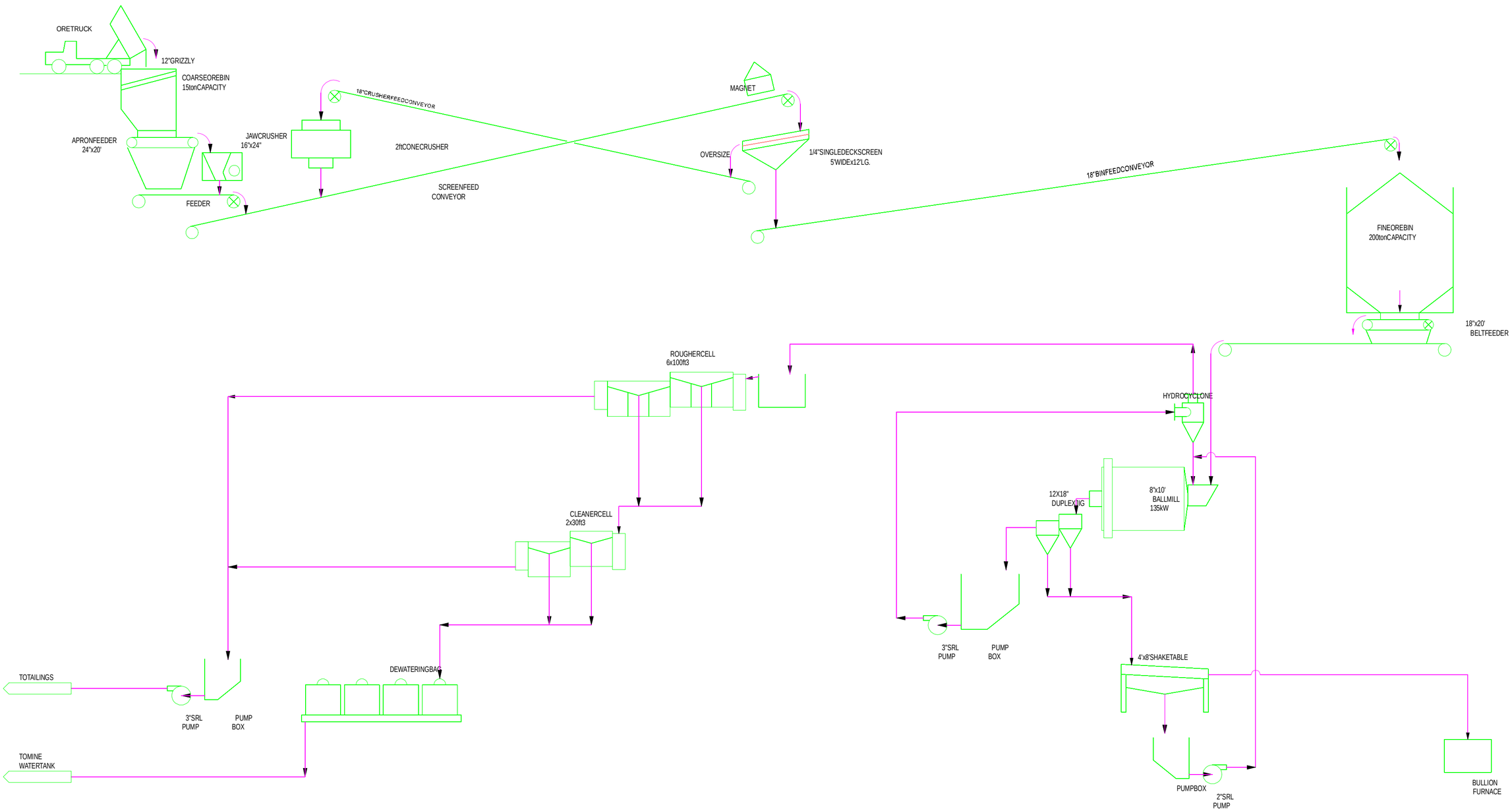
Items	Unit	Sample ID				Method
		SWEP-01 Leachate (GC 1 Residue)	SWEP-02 Leachate (F1 Flotation Tails)	Modified SWEP-01 Leachate (GC 1 Residue)	Modified SWEP-02 Leachate (F1 Flotation Tails)	
pH		5.11	5.16	8.04	8.24	Env
Dissolved						
Ag	mg/L	<0.00006	<0.00006	<0.00006	<0.00006	ICPMS
Al	mg/L	0.07	0.08	0.04	<0.04	ICPMS
As	mg/L	<0.05	<0.05	<0.05	<0.05	ICPMS
B	mg/L	<0.01	<0.01	<0.01	<0.01	ICPMS
Ba	mg/L	0.198	0.079	0.018	0.008	ICPMS
Be	mg/L	<0.005	<0.005	<0.005	<0.005	ICPMS
Bi	mg/L	<0.001	<0.001	<0.001	<0.001	ICPMS
Ca	mg/L	98.54	78.84	18.81	11.12	ICPMS
Cd	mg/L	0.00518	0.00457	<0.00009	<0.00009	ICPMS
Co	mg/L	0.020	0.006	<0.001	<0.001	ICPMS
Cr	mg/L	<0.01	<0.01	0.01	<0.01	ICPMS
Cu	mg/L	<0.01	0.75	<0.01	0.01	ICPMS
Fe	mg/L	0.54	0.91	<0.03	<0.03	ICPMS
Hg	mg/L	<0.0001	0.0003	0.0002	0.0001	ICPMS
K	mg/L	<2	2	<2	<2	ICPMS
Li	mg/L	<0.007	<0.007	<0.007	<0.007	ICPMS
Mg	mg/L	9.2	7.7	0.6	0.7	ICPMS
Mn	mg/L	1.562	1.428	0.049	0.016	ICPMS
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	ICPMS
Na	mg/L	2	<2	2.00	<2	ICPMS
Ni	mg/L	0.05	0.05	<0.03	<0.03	ICPMS
Pb	mg/L	3.71	0.42	<0.07	<0.07	ICPMS
Sb	mg/L	0.0003	0.0013	0.0005	0.0004	ICPMS
Se	mg/L	<0.002	<0.002	0.020	0.005	ICPMS
Sc	mg/L	0.001	0.001	0.001	0.001	ICPMS
Si	mg/L	1.07	1.01	0.26	0.46	ICPMS
Sn	mg/L	<0.002	<0.002	<0.002	<0.002	ICPMS
Sr	mg/L	0.097	0.059	0.042	0.018	ICPMS
Ti	mg/L	<0.01	<0.01	<0.01	<0.01	ICPMS
Tl	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	ICPMS
V	mg/L	0.019	0.019	<0.007	<0.007	ICPMS
Zn	mg/L	0.78	0.39	<0.02	<0.02	ICPMS

As expected, the flotation tails produce better results than those of the gravity tails.

Addendum 4.1

Attach a copy of the (proposed) mill flow sheet. Indicate the points of addition of all the various reagents (chemicals) that are (or will be) used.

See attached mill flow sheet.



No	DESCRIPTION	DATE	BY
	REVISIONS/ISSUES		

ELEC. INSTR. P.P. MECH. STRUCT. CIVIL SERV. PROCESS P.E.M.

No	DESCRIPTION	DATE	BY
	REVISIONS/ISSUES		

ELEC. INSTR. P.P. MECH. STRUCT. CIVIL SERV. PROCESS P.E.M.

No	DESCRIPTION	DATE	BY
	REVISIONS/ISSUES		

SECTION:	
SCALE:	DATE
DESIGNEDBY:	
DRAWNBY:	
CHECKEDBY:	
APPROVEDBY:	

DRWGEOLOGICALCONSULTANTSLTD.

PROJECT: MONGOLDMINE
PROJECTLOCATION: NWT.CANADA

TITLE

NEWDISCOVERYMINESLTD.
100TPDSIMLIFIEDFLOWSHEET
CRUSHING-GRINDING-GRAVITY-FLOAT

PROJECTNo.

DRAWINGNo.

REV.

hh:mm
yy/mm/dd

Addendum 5.2

Attach detailed scale plan drawings of the proposed (or present) tailings area. The drawings must include the following:

- **(a) Details of pond size and elevation;**
- **(b) Precise details of all retaining structures (length, width, height, materials of construction, etc.);**
- **(c) Details of the drainage basin, and existing and proposed drainage modifications;**
- **(d) Details of all decant, siphon mechanisms etc, including water treatment plant facilities;**
- **(e) The plan for tailings deposition and final tailings configuration;**
- **(f) Details with regard to the direction and route followed by the flow of wastes and/or waste waters from the area; and**
- **(g) Indications of the distance to nearby major watercourses.**

With reference to the following drawings:

1. Site overview
2. Detail of dry stack location and access (a, b)
3. Plan of final configuration (c, d, e)
4. Details of drainage system and distances to major water courses (f, g)

Site overview

A dry stack tailings containment is proposed at the location north of the Mon camp, as shown on figure 1. This location is near the height of land in a well constrained drainage basin, upstream of the project location and source of water.

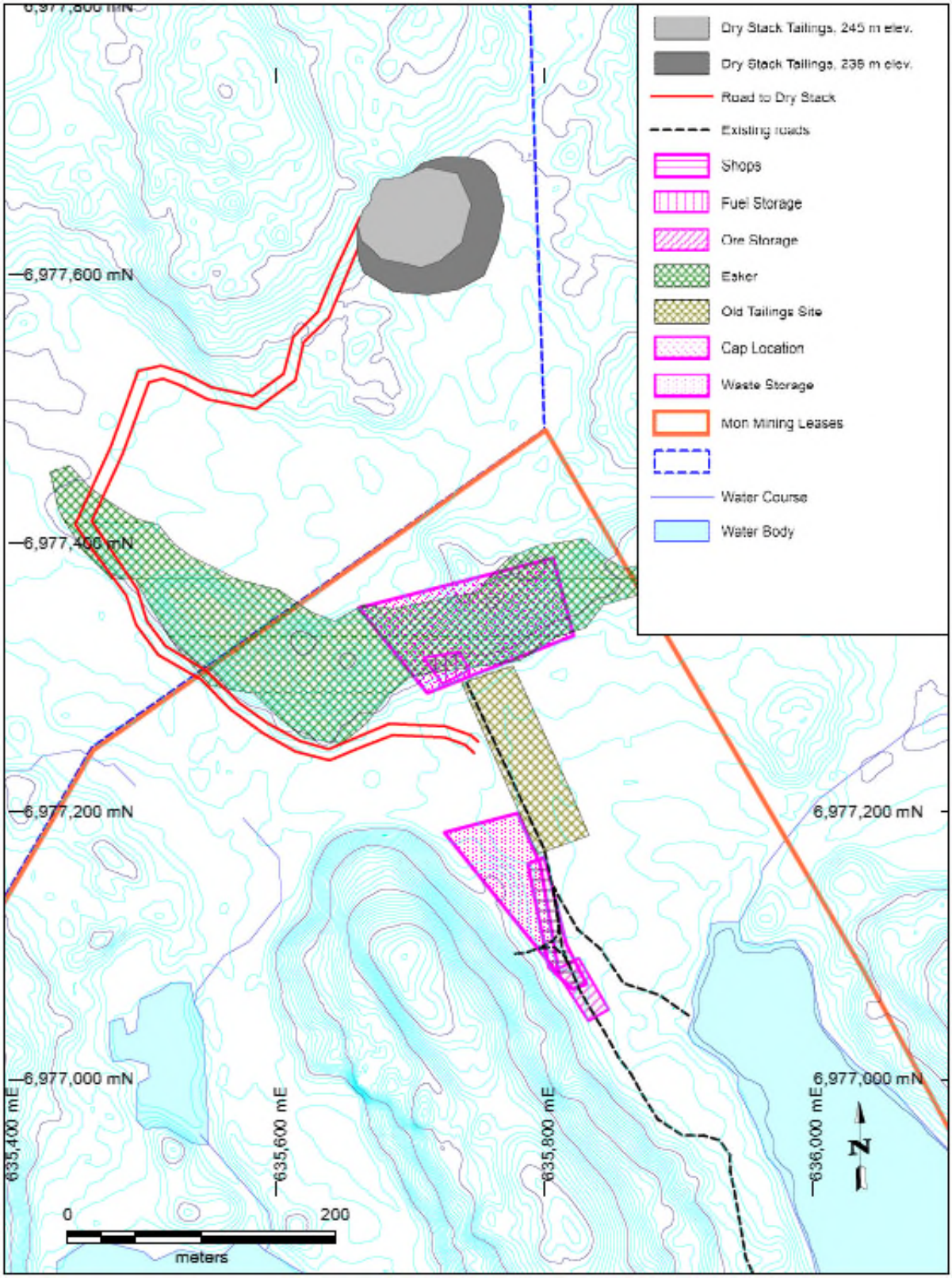


Figure 1. Location of existing and proposed tailings containment areas.

Detail of dry stack location and access

Flotation tailings will be thickened and filtered using a drum or disk filter system to <15% moisture and trucked to the stack location for deposition. The stack site will be prepared by stripping all brush and loose overburden for subsequent cover material. The active stack will be groomed using a small bulldozer to maintain a 1:3 slope. Drainage down slope from the stack will be monitored using local monitoring ditches which will be maintained using NAG mine muck to stabilize the banks.

The 735 m long access road to the dry stack will be constructed using ROM NAG mine muck as a base, and topped with 2 to 4" of -1" crushed NAG mine muck as needed. The access road will be designed for one way traffic at 8 m crown width and 1.5 to 2 m height above mean base elevation. No drainage areas will be crossed, however a single culver will be installed at the low point as a contingency.

Tailings deposition will be reduced after year two when it is planned to use it as backfill in the mine.

Upon completion of operations, the dry stack will be capped by 30 cm of NAG mine muck to stabilize it, followed by the overburden material from the original stripping.

Details of the drainage basin, existing and planned drainage modifications

The small 12.7 hectare drainage basin occupies the upper portion of a larger basin that extends down slope from all activities to intermittent drainages that feed through swamps over 150 m to a more defined drainage that travels another 350 m before reaching a small pond (0.6 hectares). This drains for 100 m through swamps into a more substantial pond (6.8 hectares) which in turn drains through 120 m of swamp and then into Discovery Lake. Discovery Lake drains through 350 m of swamp into a pond (12.4 hectares in size) and then north 90 m further along into Clan Lake, part of the Yellowknife River.

The access road to the dry stack will cross the upper 12.7 hectare portion of the drainage basin and will have a single culver in the lowest point to maintain potential drainage.

No decant or siphon mechanisms or water treatment is planned.

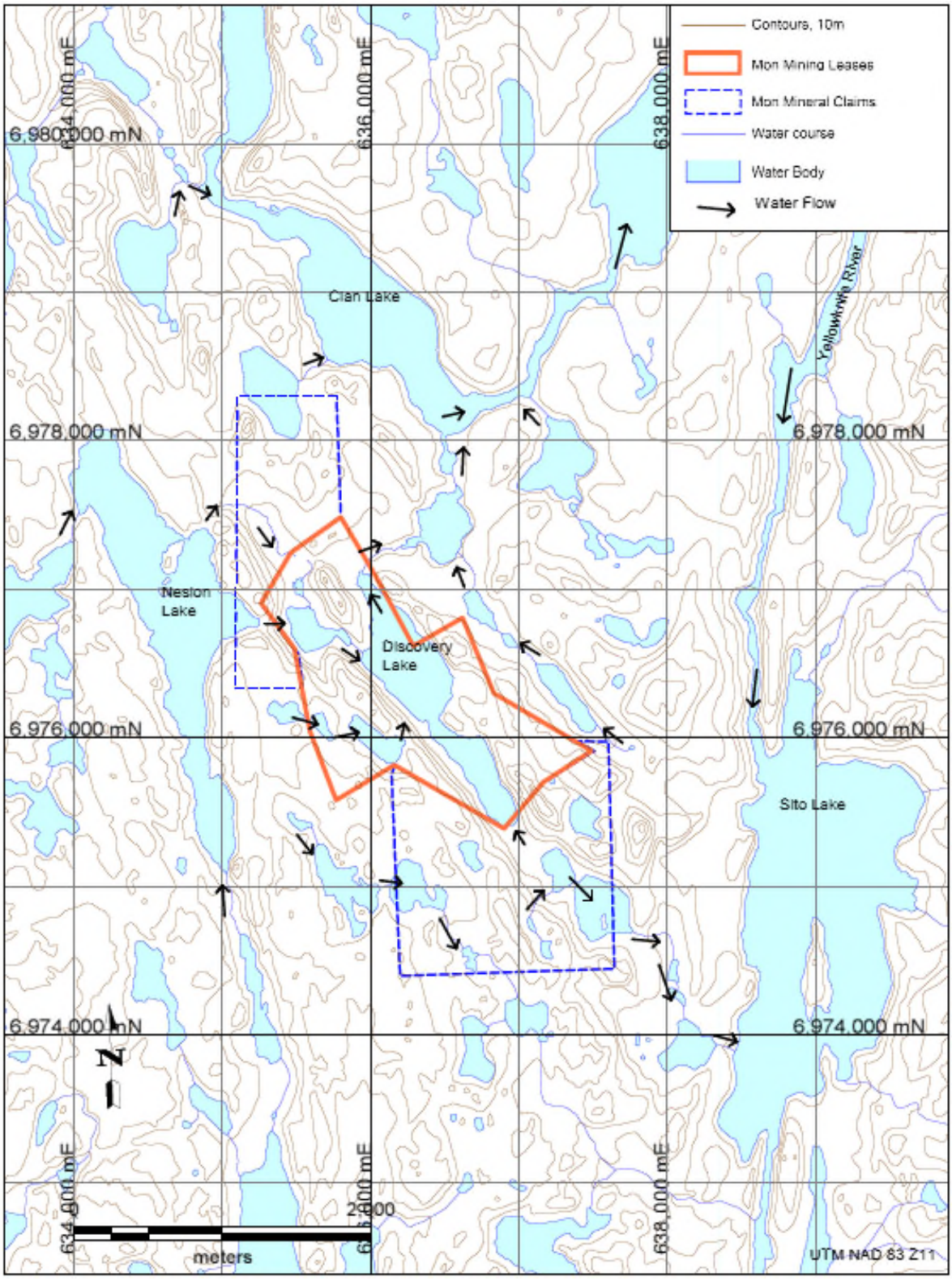


Figure 2. Overview of drainage in the vicinity of the Mon property

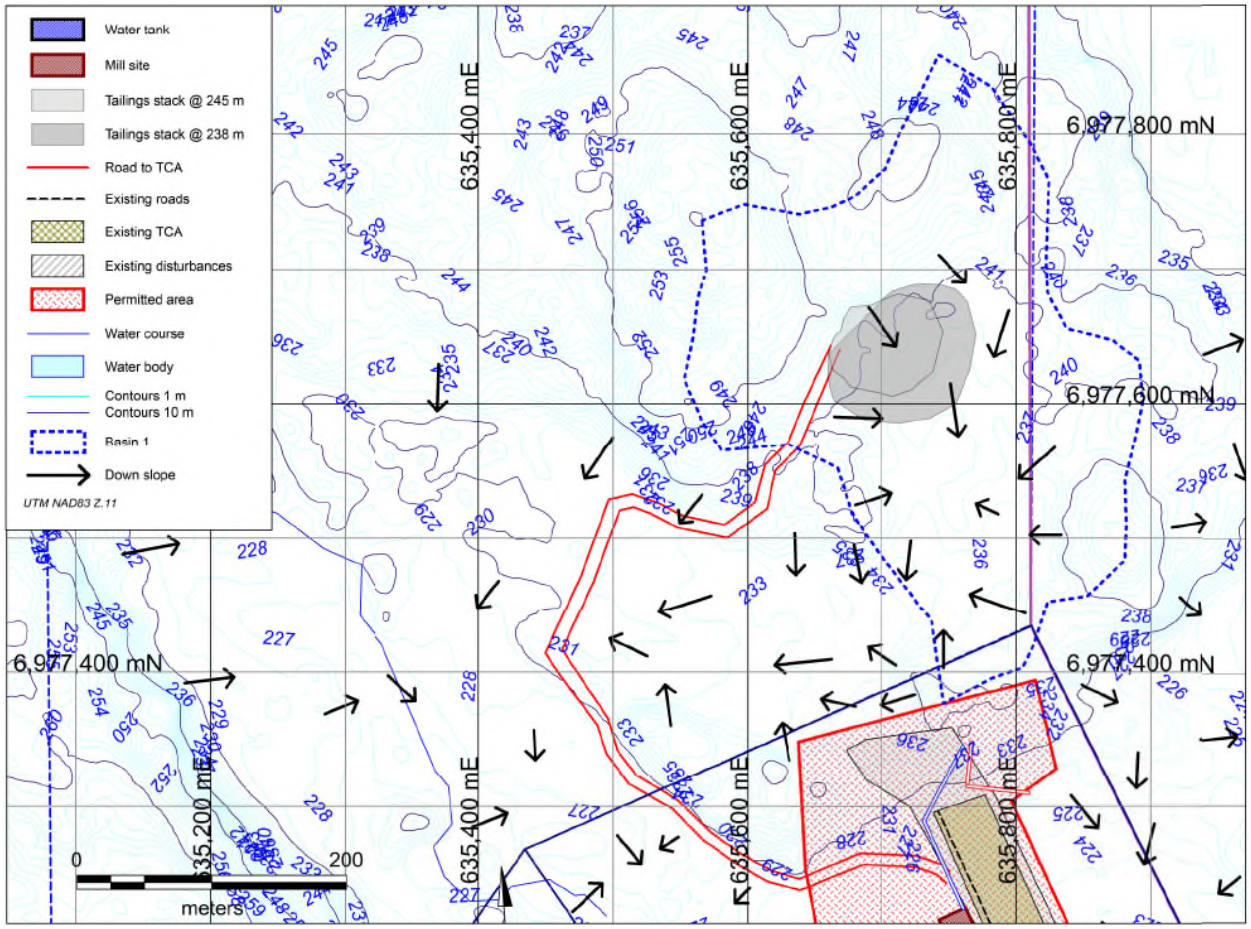


Figure 3. Local drainage patterns in the vicinity of the proposed TCA

The plan for tailings deposition and final tailings configuration

Flotation tailings will be thickened and filtered using a drum or disk filter system to <15% moisture and trucked to the stack location for deposition. The stack site will be prepared by stripping all brush and loose overburden for subsequent cover material. The active stack will be groomed using a small bulldozer to maintain a 1:3 slope. Drainage down slope from the stack will be monitored using local monitoring ditches which will be maintained using NAG mine muck to stabilize the banks.

Upon completion of operations, the dry stack will be capped by 30 cm of NAG mine muck to stabilize it, followed by the overburden material from the original stripping.

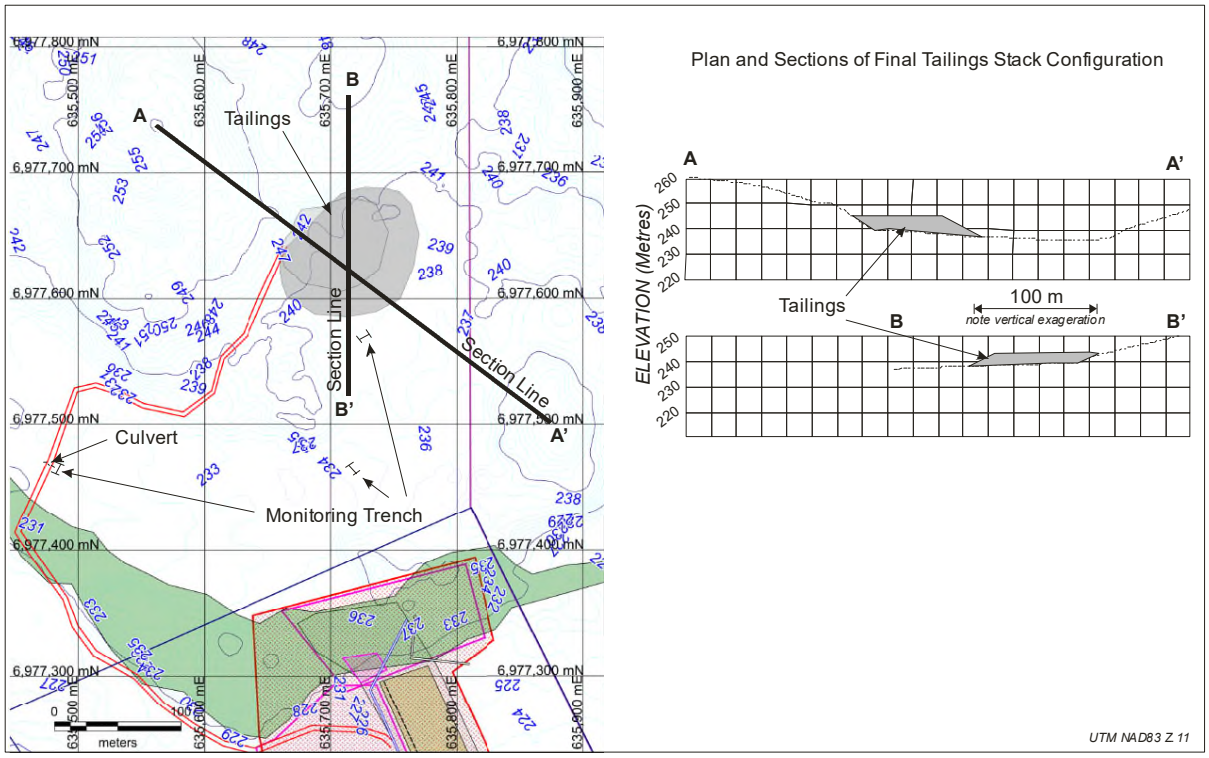


Figure 4. Plan and sections showing final configuration of tailings, monitoring trenches, and infrastructure.

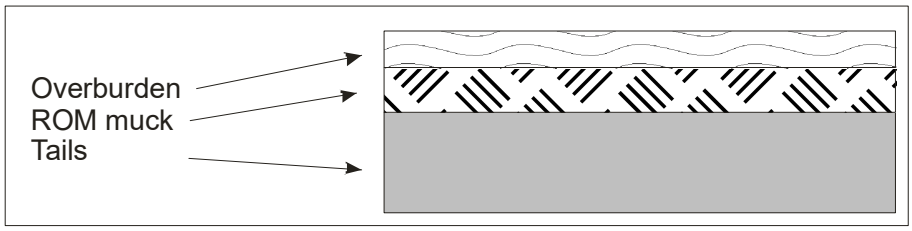


Figure 5. Details of final configuration showing ROM muck (5 to 10 cm) on tails with stripped OB recovered.

All SNP sites will be monitored for a period to be determined after final abandonment, to confirm stabilization of all solids and liquids from the property.

Addendum 5.3

Explain your choice of location for the tailings pond design by rationalizing rejection of other options. Consider the following criteria in your comparisons: subsurface strata permeability, abandonment of tailings, recycling/reclaiming waters, and assessment of runoff into basins. Attach a brief summation.

The tailing containment area considered the following:

1. Reduce the tailings
2. Clean the tailings
3. Contain the tailings

In considering tailings management, New Discovery Mines also considered North American Tungsten's Application to use dry stack technology and their summary is appropriate:

- The use of dry stack deposition allows for a smaller waste footprint and limits the amount of disturbance on the valley over the life of the mine.

- Water will be removed from tailings and then treated through the wastewater treatment plant before discharge, reducing the impacts of process water on surface and ground water quality.

- By transitioning to the dry stack methodology, seepage losses will be dramatically reduced.

- Dry stack facilities are more stable than traditional wet tailings dams: the consequence of failure is less severe.

- Dry stack tailings are more appropriate in cold weather climates because of the challenges and difficulties of moving water in a wet impoundment. Dry stack tailings can be moved, placed, and compacted in cold weather environments. The majority of dry stack facilities currently in use are located either in cold environments or in arid environments needing water conservation. The adoption of dry stack tailings management is the next step to progressive mining as the potential impacts to the environment are reduced from current practices.

- Dry stack tailings management is a proven methodology in northern climates.

- The move to dry stack is environmentally responsible and allows for incremental development without unnecessarily clearing or disturbing land. In contrast, the wet tailings approach requires a much larger initial footprint not only for the dam structure itself but also for the required borrow and fill material that are used to construct the facility.

- A wet tailings dam is also more difficult to close should operations require an early shutdown. The dry stack process allows for progressive construction and subsequent closure so the amount of “open” acreage can always be limited.

The dry stack process is the next logical step in a mining operation that emphasizes environmental stewardship and state of the art management of wastes.

New Discovery Mine Ltd also considered that the dry stack containment would:

1. Reduce the tailings
   The previous process had a single tailings stream which was deposited into a lined containment facility for where it separated by decanting and the liquid portion was recycled.

   The proposal is that the tailings will now be separated into a solid stream and a liquid stream. The liquid stream can be recirculated and recycled. The solid stream can be sent to a dry stack storage facility until there is enough underground development where upon this material can be used for ground support in old stopes.

   Alternatives provide for a greater supply of tailings.

2. Clean the tailings
   The previous process used at the Mon was to crush and grind the ore to -200 mesh and apply gravity flotation techniques (jigs, centrifugal concentrator) with disposal of tailings into a fully lined containment site.

   The proposed alternative is to add a flotation circuit to recover much of the finer metallic component. By removing substantial portion of the sulphides the potential acid generating capacity of the tailings is almost eliminated, yielding a waste product with a sulfur content less than 0.3% and a NP/AP ratio of 2. The addition of a flotation circuit to recover finer-grained gold (in addition to the sulphides) allows for a coarser grind to be used. This makes the tailings product easier to work with (dry, decant).

   The flotation concentrate would be bagged and shipped to a smelter for disposal, recovering the balance of the gold and containing/recovering base and transition metals.

   A cyanidation circuit was considered and although it provides for better economics and gold recoveries, it is believed that there might be greater problems trying to permit the use of cyanide. It also requires finer grinding which would require more robust filtration components separating solids from wastes.

Depositing tailings as a slurry requires a much larger footprint to contain the material, plus the 3 m freeboard required in permafrost terrains.

3. Contain the tails
   The previous process resulted in a lined containment facility that was graded, lined and capped.

   The proposed tailings containment area would involve an unlined dry stack facility that is deposited within a small basin. The basin is dominated by a dry swamp which is similar to the adjacent swamp area that is underlain by permafrost. It is expected that permafrost will climb up into the dry stack as it is built. Alternatively, once the stack is finished it will be covered with overburden from the initial stripping and permafrost will revert to its natural distribution.

   It is proposed that monitoring waters downslope from the dry stack will occur at three locations:
   a. The toe of the dry stack where a trench will be dug to collect any runoff.
   b. The first narrows of the small basin where a trench will be dug to monitor waters, and
   c. The road used to access the dry stack where a culvert will be installed to allow for any periodic drainage that might occur.

Liquids from the separation of the solids will be captured at the mill and directed to a water tank at the mill which will supply water for the mine and mill. Water entrained in the tails (15% by weight) and flotation concentrate (15% by weight) will require make up water to be added to the circuit. This water may come from the mine or Discovery Lake. As the mine is in permafrost terrain and produces no water, it is expected that make up water will come from Discovery Lake.

The deposition of tailings as a slurry would require a much larger footprint, plus post closure monitoring of a PAG or AG material as opposed to the NAG material proposed.

Abandonment and Restoration Plan

1.0 PREAMBLE

This Closure and Restoration Plan relates to processing activities in the Discovery Lake exploration area known as the Mon Gold Mine A mill and dry stack area will be established near coordinates **NAD83 Zone 11 Easting 635,740 m Northing 6,977,330 m, or** Lat 62º 54' 02.05" N, Long -114º 19' 41.99" W. The locations of the project are shown in the figures attached to the LUP Application.

2.0 INTRODUCTION

This Closure and Restoration Plan applies to the processing activities on the Mon Gold Mine operated by New Discovery Mines Ltd. (NDM). A mill and dry stack area will be established out of the exploration camp north of Discovery Lake. The camp and mine are covered by MV2013C0021 and MV2014L2-0002 and the abandonment and restoration plans attached thereto. This abandonment and restoration plans apply to the equipment and facilities referenced in the application submitted with this A&R plan.

3.0 SCHEDULE

The processing plant will be operated year round once it is established. Products include dore bars, gold flotation concentrate, solid tails and liquid tails. In addition, reagent containers, parts (used and new), and grinding media will be on site.

Gold dore will be flown out as produced whereas the flotation concentrate will be stored in superbags contained in shipping containers for seasonal shipping off-site. These will be delivered via winter road to licensed smelters for processing.

Routine or progressive restoration practices will be used wherever possible. This will minimize the scale of the final reclamation. Final restoration will begin upon completion or cessation of exploration activities. No buildings, equipment, or waste will remain beyond the expiration date of the permits unless new permits are being obtained.

4.0 SITE INFRASTRUCTURE

The layout of the mill and dry stack is shown in the attached figures. It consists of the following structures:

1 mill building

3 shipping containers (for flotation concentrate)

1 shipping container (for reagents and parts)

1 lined water tank (make up water)

Miscellaneous equipment, hoses, pipes, cables

Steel drums of grinding media

5.0 ROUTINE AND PROGRESSIVE RESTORATION

5.1 Solid tailings

Flotation tailings will be thickened and filtered using a drum or disk filter system to <15% moisture and trucked to the stack location for deposition. The stack site will be prepared by stripping all brush and loose overburden for subsequent cover material. The active stack will be groomed using a small bulldozer to maintain a 1:3 slope. Drainage down slope from the stack will be monitored using local monitoring ditches which will be maintained using NAG mine muck to stabilize the banks.

Tailings deposition will be reduced after year two when it is planned to use it as backfill in the mine.

5.2 Liquid tailings

Liquid tailing, discharged from the flotation filtration system will be received in a water tank for re-use in the mill.

5.3 Fuel and Chemicals

Empty reagent containers and worn or used parts will be stored in camp and returned to Yellowknife by winter road.

7.0 FINAL ABANDONMENT AND RESTORATION

The following plans are made for final abandonment and restoration of the project once all exploration on the projects ceases and prior to expiration of the land and water use permits.

7.1 Buildings and Contents

All buildings will be removed. All equipment and other building contents will be removed from the site.

Final inspection will be made after restoration of the camp site to ensure that no waste or materials remain. Photos will be taken to record the final condition.

7.2 Reagent containers and packaging

Since containers will be removed throughout the program, final remediation will be minimal. All remaining containers from the camp, fuel caches, and other locations will be removed. Fuel cache sites will be inspected, all debris and berms removed, and final photos will be taken of all sites. Any contaminated soils will be treated as outlined in the Spill Prevention and Response Plan.

7.3 Solids tailings

Upon completion of operations, the dry stack will cover 0.85 hectares, will be capped by 30 cm of NAG mine muck to stabilize it, followed by the overburden material from the original stripping.

7.4 Liquid tailings

Upon completion of operations, all liquids from the filtration process will be discharged into the water tank for final settlement and treatment. It will be allowed to evaporate.

7.5 Re-vegetation

Disturbing of natural vegetation will be minimal, restricted only to drill pads and sumps. These will be left to re-vegetate naturally and will be monitored.

7.6 Contamination Clean-up

All sites will be inspected for contamination and if necessary treated according to the Spill Prevention and Response Plan. Any sites requiring cleanup activities will be documented including GPS locations and photographs. All chemicals will be removed from the site at the end of the project.

7.7 Final Inspection and Documentation

Upon completion of the final abandonment and restoration, photos will be taken and activities documented. This information will be provided in a final report to the appropriate licensing agencies.

Addendum 5.20

Describe the proposed or present operation, maintenance, and monitoring of the tailings area.

The proposed tailing dry stack will be maintained during its life-cycle by active grading and stacking. Monitoring will take place using regular surveys as well as SNP stations as shown on the attached Figure. These three sites would be monitored for water flow. When present these sites would be sampled monthly for standard physical and chemical parameters.

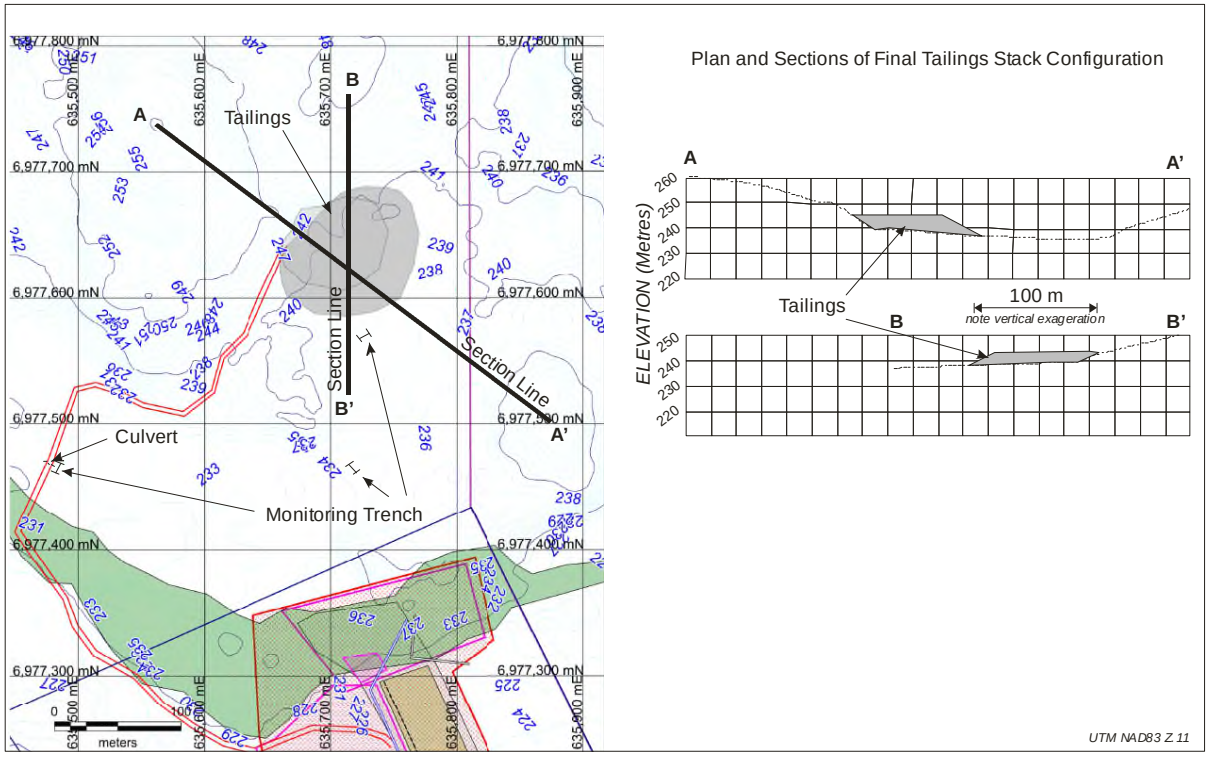


Figure 1. Location of proposed dry stack and three monitoring SNP's (trenches).

Addendum 6.1

Describe the methods of chemical treatment that are presently being used and/or will be used to control the quality of the tailings effluent. Attach engineering drawings where applicable and a process flow chart. If a pilot test has been conducted, please attach description of methodology and results.

A study completed in 2014 entitled "2014 PROJECT REPORT FOR METALLURGICAL TESTING ON SAMPLES FROM THE NEW DISCOVERY PROJECT" by Inspectorate Exploration and Mining Services provided the following flow chart used to produce a gravity concentrate and tails product.

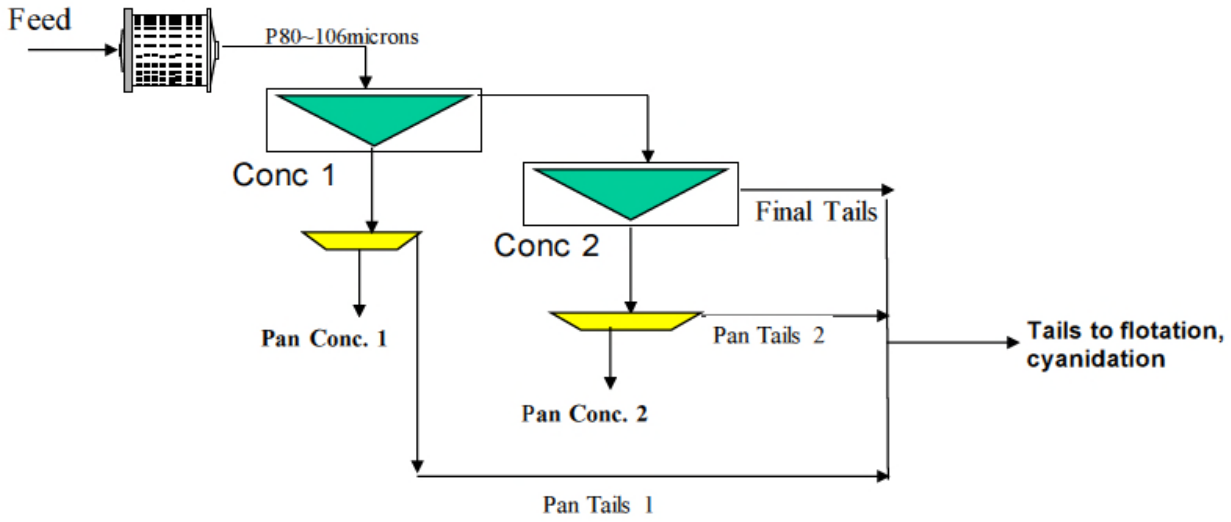


Figure 1. Flow sheet of the metallurgical testing to produce feed to flotation circuit.

The flotation tests produced a flotation concentrate and a flotation tails.

ABA and SWEP tests on the flotation tails was completed to assess potential acid generating capacity of the F1 Flotation Tails.

Sample	Total Sulfur	Sulfate Sulfur	Fizz	Paste	Acid Potential	Neutralization Potential (NP)		
ID	S, %	S(SO4), %	Rating	pH	kg $CaCO_3$/t	Actual NP kg $CaCO_3$/t	NP/AP Ratio	Net kg $CaCO_3$/t
F1 Flotation Tails	0.21	0.05	None	7.6	5.0	9.9	2.0	4.9

Figure 2. ABA testing of the Flotation Tails product.

A Special Waste Extraction Procedure (SWEP) test according to B.C. Reg. 38/88 and modified SWEP tests (Sobek method) were completed on the flotation tails as shown below:

Table 1. SWEP and Modified SWEP tests on flotation tailings, from Inspectorate Metallurgical Inc.

Items	Unit	Sample ID SWEP-02 Leachate (F1 Flotation Tails)	Sample ID Modified SWEP-02 Leachate (F1 Flotation Tails)	Method
pH		5.16	8.24	Env
Dissolved				
Ag	mg/L	<0.00006	<0.00006	ICPMS
Al	mg/L	0.08	<0.04	ICPMS
As	mg/L	<0.05	<0.05	ICPMS
B	mg/L	<0.01	<0.01	ICPMS
Ba	mg/L	0.079	0.008	ICPMS
Be	mg/L	<0.005	<0.005	ICPMS
Bi	mg/L	<0.001	<0.001	ICPMS
Ca	mg/L	78.84	11.12	ICPMS
Cd	mg/L	0.00457	<0.00009	ICPMS
Co	mg/L	0.006	<0.001	ICPMS
Cr	mg/L	<0.01	<0.01	ICPMS
Cu	mg/L	0.75	0.01	ICPMS
Fe	mg/L	0.91	<0.03	ICPMS
Hg	mg/L	0.0003	0.0001	ICPMS
K	mg/L	2	<2	ICPMS
Li	mg/L	<0.007	<0.007	ICPMS
Mg	mg/L	7.7	0.7	ICPMS
Mn	mg/L	1.428	0.016	ICPMS
Mo	mg/L	<0.02	<0.02	ICPMS
Na	mg/L	<2	<2	ICPMS
Ni	mg/L	0.05	<0.03	ICPMS
Pb	mg/L	0.42	<0.07	ICPMS
Sb	mg/L	0.0013	0.0004	ICPMS
Se	mg/L	<0.002	0.005	ICPMS
Sc	mg/L	0.001	0.001	ICPMS
Si	mg/L	1.01	0.46	ICPMS
Sn	mg/L	<0.002	<0.002	ICPMS
Sr	mg/L	0.059	0.018	ICPMS
Ti	mg/L	<0.01	<0.01	ICPMS
Tl	mg/L	<0.0002	<0.0002	ICPMS
V	mg/L	0.019	<0.007	ICPMS
Zn	mg/L	0.39	<0.02	ICPMS

Note:

The flowsheet below describes the operation at the Mon Project.

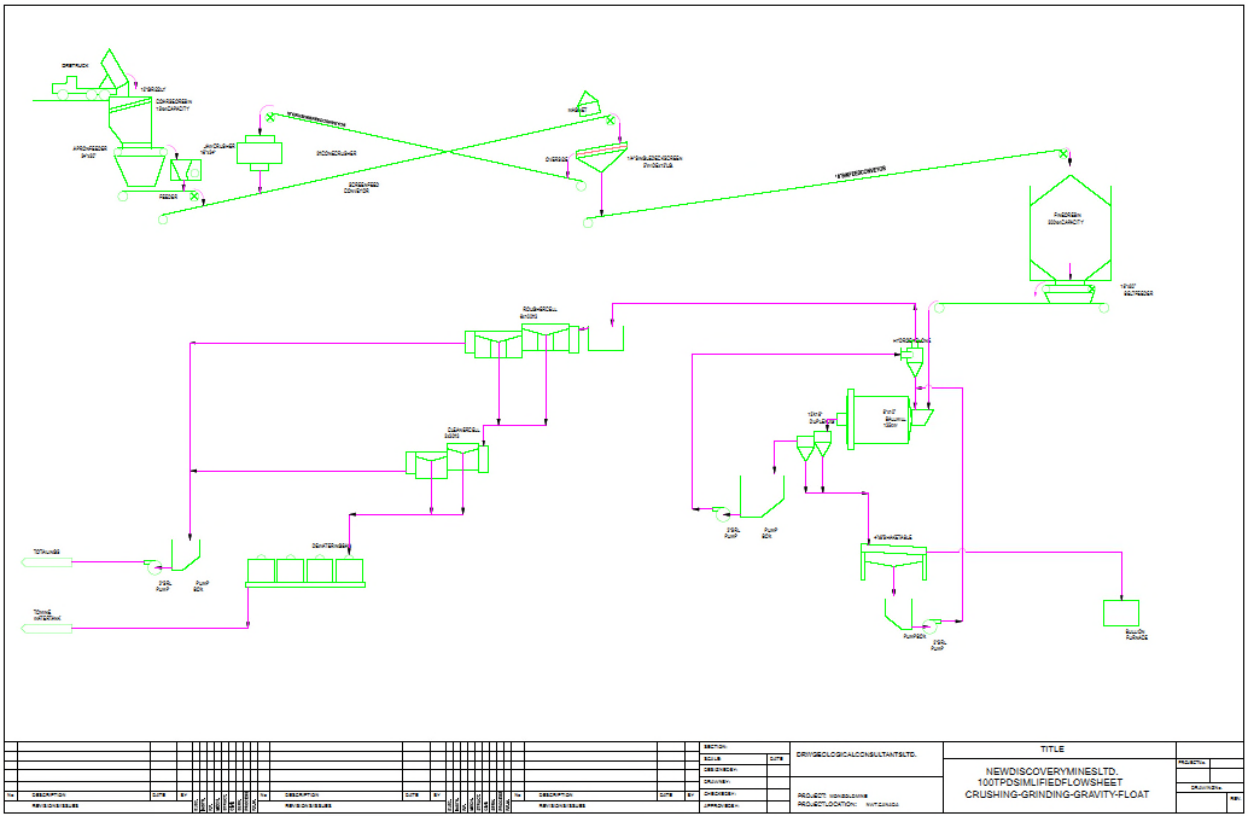


Figure 3. 100 tpd flow sheet for gravity plus flotation recovery of gold ores.

Attachment 4

Studies completed on the Mon Gold Mine.

Summary

A number of studies have been completed on the Mon Gold Mine property at Discovery Lake, and on similar rocks 45 km to the north at the Discovery Mine site on Giauque Lake. The Burwash Group rocks are the dominant rock-type in the Yellowknife Basin and have been used extensively for construction purposes. This is the dominant rock type to be mined at the Mon Gold Mine during this phase of operation. Vein quartz forms the balance of the rock to be mined. The vein quartz will be bulk sampled with the intension to submit an application for processing at a later date. More test work is being conducted on the vein quartz material at this time.

Test work by Ger-Mac at the Mon Gold Mine shows the greywacke host rock to be uncertain to PAG. Operation shutdown in 1997 and sampling up to 2011 shows minor localized acid development in 2005 and an apparent increase in the pH since then. Discovery Lake has not changed materially in pH during the study period.

Work conducted by CARD and Tyhee NWT Corp at the Discovery Mine site at Giauque Lake has shown the greywacke to be uncertain to non-PAG and testing over the past 12 years has shown all material license discharges by both CARD and Tyhee to remain within permitted levels.

There is an equivocal potential for ARD from these rocks so plans should be made to take this into account and sulphide-rich or buffering poor rocks should be avoided where possible.

Introduction

A number of studies have been completed at the Mon Gold Mine, Discovery Lake area, NWT. These have been conducted by others and are not readily available in the public domain, however these were filed with the NWT Water Board under applications and licenses during the 1980's and 1990's generally consolidated under Water License N1L2-1598 – Ger Mac Contracting Ltd.

Periodic exceedances of permitted discharge levels have been documented, primarily related to the tailings containment site, however overall levels do not appear to show any clear negative trends. Some longer term trends of improving water qualities have been noted.

Studies

Studies have been conducted during the permitting process for the initial underground work and water licenses in the late 1980's and early 1990's, however these are not in the applicant's possession.

Subsequent SNP studies through the 1990's were completed, however the pre-2000 results are not in the applicant's possession. Some of the post 2000 samples collected by INAC (now ANDC) have been received and are summarized below.

Additional studies on similar Burwash Group greywacke and argillites have been conducted by Tyhee Gold Corp for their Yellowknife Gold Project, and by the Contaminants and Remediation Directorate (CARD) for the cap rock selected for the reclamation of the Discovery Mine Site. These data are not completely available to the applicant, however some of the data from Tyhee's annual reports are presented.

At Discovery Lake

SNP data from NWT Water License N1L2-1598 are available from the stations below:

SNP 1598-1	North-end of Discovery Lake (discharge end of lake)
SNP 1598-5	Below waste dump, east of Ger-Mac Portal (Central adit)
SNP 1598-8	Southeast corner of tailings containment site

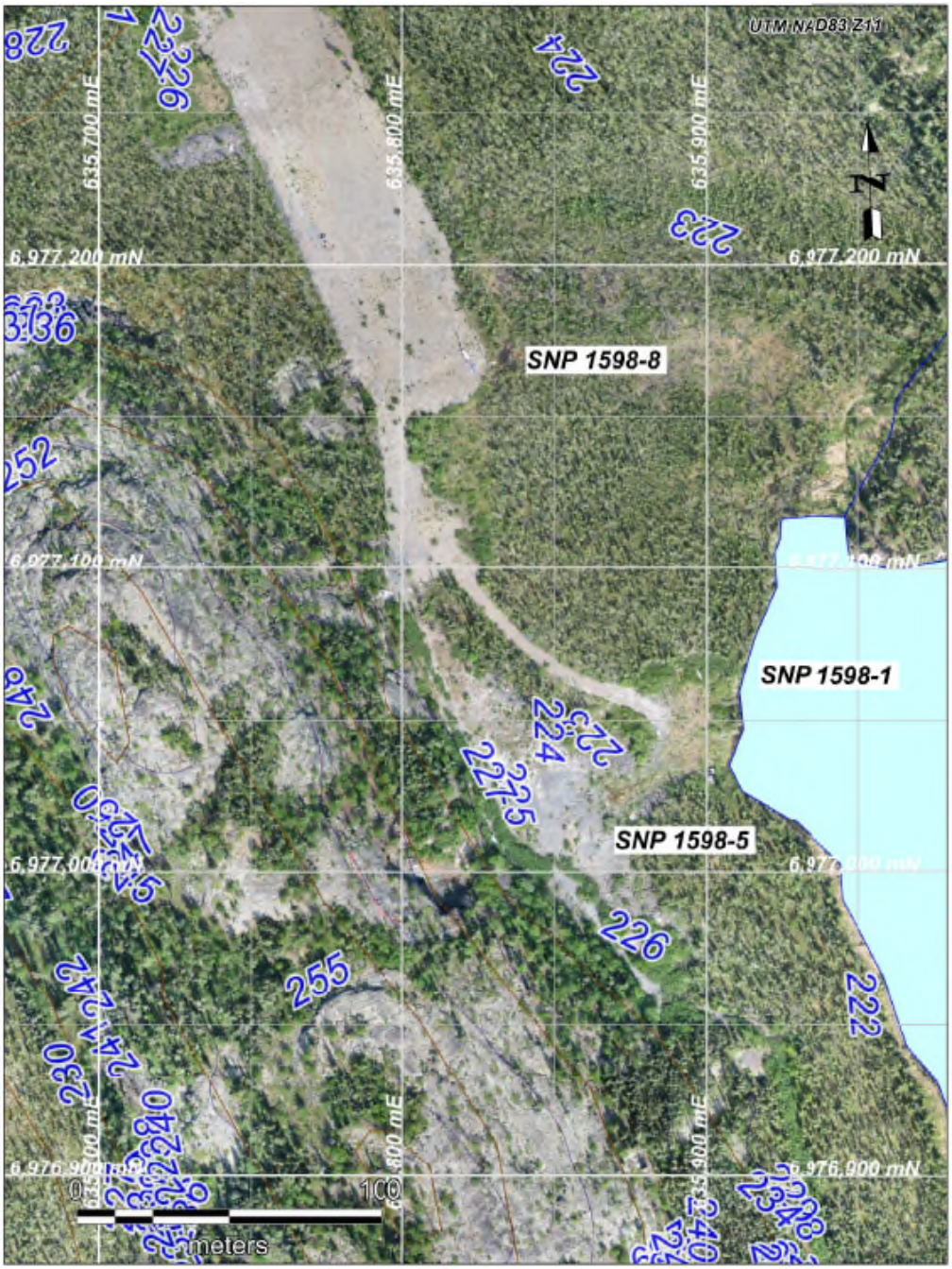


Figure 1. Location of Surveillance Network Protocol (SNP) sample stations.

Additional samples have been collected periodically over the years and are addressed as required.

SNP 1598-1, North-end of Discovery Lake (discharge end of lake)

Table 1 discloses all of the sample results reported to the applicant and the highlighted items bear discussion.

Table 1. SNP 1598-1 results as reported by INAC inspectors.

Item		9/12/2000	9/24/2003	6/2/2005	7/4/2008
Alkalinity	mg/L		37.2	37.9	37.6
Conductivity	uS/cm		120	105	103
pH	pH	7.46	7.52	7.45	7.87
TDS	mg/L				58
TSS	mg/L	5	4	4	8
Ammonia as N	mg/L	0.011	0.024	0.006	0.005
BOD	mg/L		<2		
Organic C	mg/L		10		
Total P	mg/L		0.025		0.04
Ca	mg/L		11.8		13.1
Cl	mg/L		1.1	1.48	1.2
Hardness	mg/L		49.4		55.1
Mg	mg/L		4.82		5.5
K	mg/L		1.93		1.7
Na	mg/L		2.1		2.2
SO4	mg/L		17	11.5	14
Al	ug/L		103	132	34
Sb	ug/L	12.1	1.2	1.3	0.4
As	ug/L	<1	<1	1.1	1.1
Ba	ug/L	12	9.3	8.7	7.3
Be	ug/L	<2	<0.1	<0.1	<0.1
B	ug/L		4.1		
Cd	ug/L	0.7	0.1	<.1	0.2
Ce	ug/L	<.4	<0.1	<.1	<.1
Cr	ug/L	<3	0.5	0.5	0.2
Co	ug/L	<1	0.2	0.1	<.1
Cu	ug/L	<2	5.9	1.6	1.2
Fe	ug/L	630	134	231	71
Pb	ug/L	<1	1.4	0.5	0.3
Li	ug/L	<3	2.8	2.1	9.8
Mn	ug/L	35	28.6	43.9	23.9
Hg	ug/L		0.01		<.01
Mo	ug/L	1	0.7	0.6	0.7
Ni	ug/L	2	2.3	2	1.7
Rb	ug/L	3	2.2	1.8	2.2
Se	ug/L	<10	<1	<1	<.5
Ag	ug/L		<0.1	<.1	<.1
Sr	ug/L	32	30.2	25.5	31.4
Tl	ug/L	<.4	<0.1	<.1	<.1
Sn	ug/L		<0.1		
Ti	ug/L	10	4.2	4.7	1.2

U	ug/L	<.3	0.1	0.2	0.2
V	ug/L	<1	0.2	0.4	0.2
Zn	ug/L	<10	12	<10	<.5

pH has remained constant during the period 2000 to 2008. Aluminum, antimony, iron and titanium have shown systematic declines in concentration over the same period.

Table 2. SNP-1598-5 results as reported by INAC inspectors

Item		9/13/2000	9/24/2003	6/2/2005	7/4/2008	9/18/2009
Alkalinity	mg/L		165	26.2	57.7	49.7
Conductivity	uS/cm		686	428	246	249
pH	pH	7.36	7.65	6.62	6.69	6.71
TDS	mg/L				192	
TSS	mg/L	5	14	4	6	
Ammonia as N	mg/L	0.009	0.005	0.01	<.005	0.01
BOD	mg/L		<2		<2	<2
Organic C	mg/L		34			
Total P	mg/L		0.83	0.03	0.03	
Ca	mg/L		82.4		26.4	26.5
Cl	mg/L		1.1	1.64	<.7	<.7
Hardness	mg/L		326		124	119
Mg	mg/L		29.1		14.1	12.7
K	mg/L		7.47		3.4	3
Na	mg/L		6.4		5.4	3.5
SO4	mg/L		229	170	73	68
Al	ug/L		49	443	752	360
Sb	ug/L		0.6	1.2	1	0.6
As	ug/L	19	19	4.4	8.2	12.8
Ba	ug/L	41	42.3	33.5	26.6	26.9
Be	ug/L	<2	<.1	<.1	<.1	<.1
B	ug/L		8.5			
Cd	ug/L	0.5	0.3	0.1	0.4	0.2
Ce	ug/L		<.1	<.1	<.1	<.1
Cr	ug/L	<3	0.6	0.9	1.2	1.1
Co	ug/L	<1	1.1	1.8	3.9	12.8
Cu	ug/L	7	8.3	36.8	58.1	27.4
Fe	ug/L	320	145	423	623	1300
Pb	ug/L	<1	2.1	1	1.9	2.6
Li	ug/L	7	7.3	1.4	8	1.6
Mn	ug/L	222	24.5	64.2	142	628
Hg	ug/L		<.01		0.01	

Mo	ug/L	<1	0.3	0.4	0.7	1
Ni	ug/L	25	22.9	27.2	24.8	21
Rb	ug/L	6	5.6	1.4	1.8	1.6
Se	ug/L	<10	<1	<1	<.5	<.5
Ag	ug/L	<.3	<.1	<.1	0.2	0.5
Sr	ug/L	226	260	107	84.5	77.9
Tl	ug/L	<.4	<.1	<.1	<.1	<.1
Sn	ug/L		<.1			
Ti	ug/L	4	1.8	7.7	8.7	6.5
U	ug/L	0.4	1.3	1	1.5	1
V	ug/L	<1	0.6	0.6	0.6	1
Zn	ug/L	34	68	42	35	21

The results show a slight decrease in pH, calcium, hardness, magnesium, potassium, sodium, sulphate, barium, and strontium and an increase in cobalt, iron, manganese and possibly copper corresponding to a time when final reclamation was taking place.

Table 3. SNP-1598-8 results as reported by INAC inspectors.

Item	Date	7/13/2001	9/26/2002	9/24/2003
Alkalinity	mg/L		86.2	68.2
Conductivity	uS/cm		284	364
pH	pH	6.6	6.94	6.71
TSS	mg/L	15	8	8
Ammonia as N	mg/L	0.01	0.015	0.005
BOD	mg/L			4
Organic C	mg/L		6.7	29.9
Total P	mg/L		0.065	0.128
Ca	mg/L		16.3	27.3
Cl	mg/L		1.2	1
Hardness	mg/L		83.6	159
Mg	mg/L		10.4	22.1
K	mg/L		4.67	3.91
Na	mg/L		4.86	9.64
SO4	mg/L		60	160
Al	ug/L		610	598
Sb	ug/L		1.3	0.8
As	ug/L	0.01	9.8	12
Ba	ug/L		28	60.1
Be	ug/L		<2	<.1
B	ug/L			7
Cd	ug/L		<.3	0.3
Ce	ug/L		<.4	<.1

Cr	ug/L		3	1.8
Co	ug/L		4	4.5
Cu	ug/L	0.04	38	5.4
Fe	ug/L		1050	1139
Pb	ug/L	0.01	3	5
Li	ug/L		<3	13.4
Mn	ug/L		119	920
Hg	ug/L		<.01	0.01
Mo	ug/L		2	0.1
Ni	ug/L	0.03	17	5.2
Rb	ug/L		2	1.7
Se	ug/L		<10	<1
Ag	ug/L		<.3	<.1
Sr	ug/L		89	116
Tl	ug/L		<.4	<.1
Sn	ug/L			<.1
Ti	ug/L		<3	14.8
U	ug/L		1.2	<.1
V	ug/L		1	1.1
Zn	ug/L	30	34	43

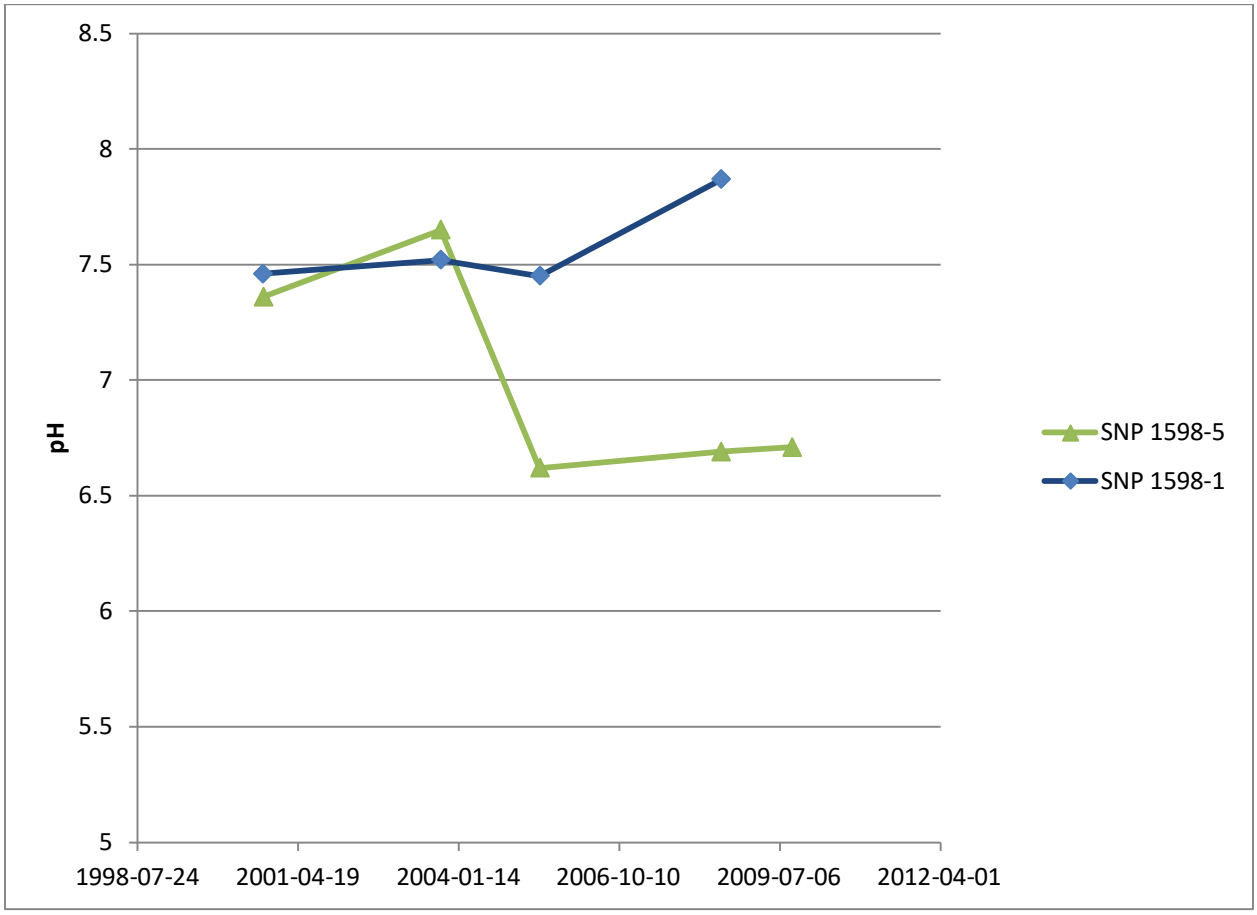
It is difficult to determine variability from trends with two point measurements, however we can see effectively no change in pH, an increase in arsenic, lead, nickel, and zinc over the sampling period.

A letter dated February 26, 2004 from INAC to Ger-Mac Contracting Ltd. references ABA work conducted in 1993 which indicated the mine rock to be acid-generating as determined from ABA work. Further work reported in Ger-Mac's annual report in 2002 confirmed this position (as reported in the dated February 26, 2004 letter from INAC to Ger-Mac Contracting Ltd) and quoted:

MPA (maximum potential of acid) or AP	20.9 kg/ton of $CaCO_3$
NNP (net neutralizing potential)	-7.0 kg/ton of $CaCO_3$
NP (neutralizing potential)	14.0 kg/ton of $CaCO_3$
NPR (neutralizing potential ratio)	0.67
Paste pH	7.9
S % (total sulphide sulphur)	0.67

These rocks would be classified as AG to PAG or acid generating to potentially acid generating under DIAND's Guidelines for Acid Rock Drainage in the North, 1992.

This letter also required post closure monitoring of SNP-1598-1 and SNP-1598-5 to monitor this. Post closure monitoring of SNP-1598-1 and SNP-1598-5 would appear to support the prediction of the ABA testing and demonstrates a slight acid generation in the water below the waste pads outside of the Ger-Mac (central) portal, however this does not appear to be reflected in Discovery Lake. The near constant alkaline and alkaline earth values concomitant with the decline in sulphate suggests that the limited sulphide sulphur (0.67 %) may have been consumed and that the acid generating potential of these rocks has been exhausted.



On Similar Rocks

The rocks hosting the Mon Gold Mine are turbidites of the Burwash Group. The Burwash Group consists of greywacke and argillite disposed as turbidites that are both extensive and lithologically similar within the Yellowknife Supergroup. They form the bulk of the supracrustal rocks within the Yellowknife Basin and as such are commonly quarried for fill and construction purposes.

Giauque Lake, CARD

The Contaminants and Remediation Directorate quarried Burwash Group turbidites to be used for construction, capping, and riparian construction at Giauque Lake. The applicant does not

have all of the relevant test results for these rocks. A report dated September October 2011 is referenced:

> Water licence MV2003L8-0008 was originally approved in August 2003 to complete remediation activities at the abandoned Discovery Gold Mine. The licence expires February 11, 2012. The Surveillance Network Program (SNP) for this licence was recently amended in July 2008 and relates specifically to the seepage of water from the constructed hazardous landfill and discharge of water from the Clay Borrow Pit to the receiving environment. The SNP is complementary to the annual aquatic effects monitoring program that was carried out at the site from 1998 to 2010 by Aboriginal Affairs and Northern Development Canada (AANDC) formerly known as Indian and Northern Affairs (INAC) (Figure 1).
>
> Under the water licence MV2003L8-0008, a water pumping program was carried out to transfer water from the Borrow Pit to Round Lake (2002-2007) in order to maintain low water levels in the borrow pit, thereby preventing uncontrolled overflow to Giauque Lake. SNP sites in the Borrow Pit, Round Lake and Winter Lake were a part of the water licence requirements for the pumping program.
>
> As the pumping program was not a sustainable long term remediation measure, the licence was amended to allow for the Borrow Pit to fill up and naturally discharge to Giauque Lake via an engineered outflow structure, built to minimize sediment loading and erosion. The amended SNP includes three stations which are to be continuously monitored with water quality multi-probes to ensure that natural discharge from the Borrow Pit does not adversely affect Giauque Lake. Real-time continuous monitoring of field parameters (turbidity, temperature, conductivity, pH, and dissolved oxygen) has been carried out in the open water season since 2007 in both the north cell of the Borrow Pit and at near and far field sites in Giauque Lake (Figure 2). Hydrolab multi-probes are suspended by buoys and switched out monthly to ensure reliable calibrated data is collected.
>
> Two years of continuous baseline data was collected on seasonal changes before natural discharge began in 2009. Grab samples are taken during monthly site visits (May/June through October) and analyzed for those water quality parameters required under the SNP (Table 1). An additional grab sample site (G5) was added to program in August 2008 at the request of the AANDC inspector. This site is located in an area where a nearby natural pond intermittently flows into Giauque Lake. This pond has been observed on occasion to have elevated levels of sediment (e.g., spring of 2006, 2009 (Figure 3), and 2011 (Figure 4). The Natural turbid pond and G5 samples are important to differentiate the sources of sediment loading to Giauque Lake when determining if flow from the Borrow Pit is having an effect.

The discharge limits of water licence MV2003L8-0008 specify that any discharge of water from the Borrow Pit shall be between a pH of 6 and 9, levels of total suspended solids will be less than 25 mg/l on average or 50 mg/L as a maximum, and turbidity levels will be less than 15 NTU on average or 30 NTU as a maximum. The compliance point for this licence is at SNP 0008-8 (Giauque Lake Far Field).

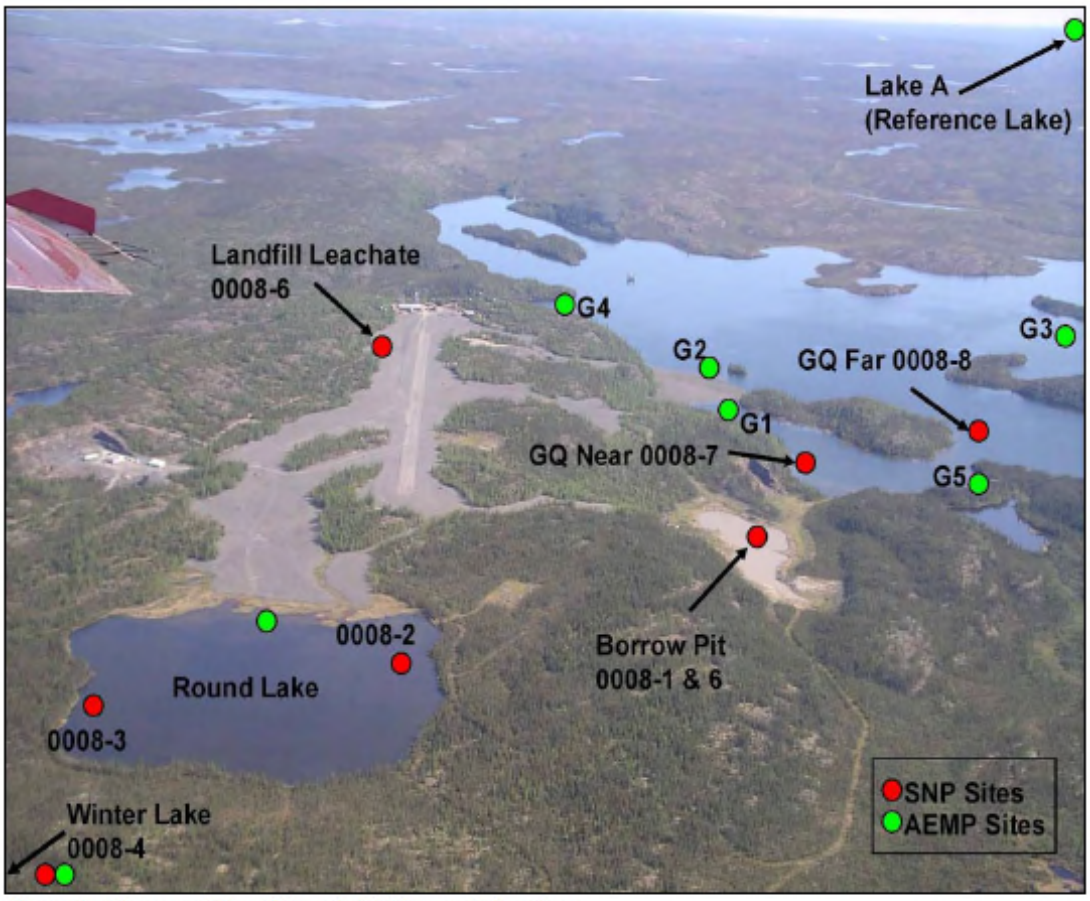


Figure 1: Discovery Mine SNP and AEMP sample locations.

- Note: Background Photo taken in 2004.
- Note: AEMP = Aquatic Effects Monitoring Program (synonymous with water quality monitoring program)

Of note, SNP 0008-1, 2, 3, and 6 sample waters that have run off of the tailings which have been capped by Burwash Group rocks collected from the pit with the camp in it (left).

SNP	pH lab	pH field
0008-1	7.83	7.4
0008-2 / 3	7.93	7.78

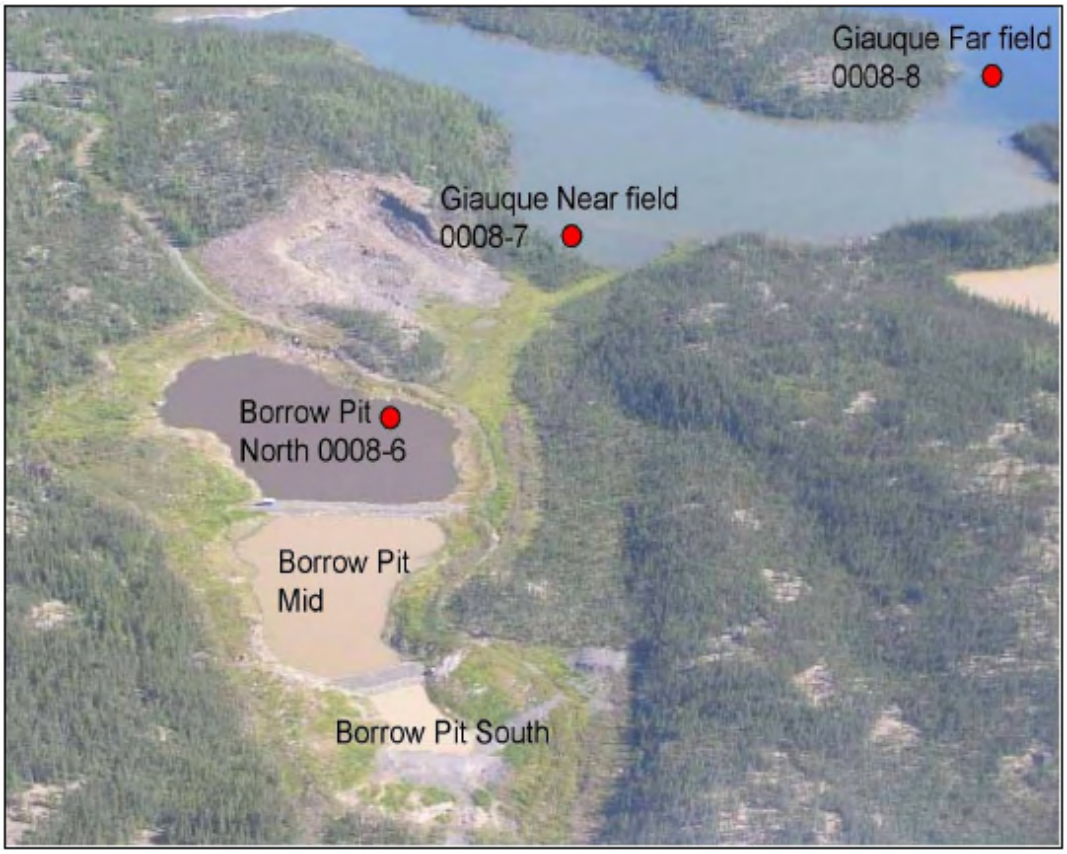


Figure 2: Continuously monitored SNP sites at Discovery Mine (Borrow Pit & Giauque Lake).
*Photo taken in 2006

All other parameters have been reported within license conditions, notably those shown on table 4.

Table 4. Selected parameters reported from CARD SNP data at Giauque Lake.

Parameter ug/l	SNP 0008-1	SNP 0008-2/3
Sulphate	132	265
Aluminum	51	169
Arsenic	2.1	5.9
Copper	4.9	5.7
Iron	95	300
Lead	<0.1	1.2
Molybdenum	1	0.4
Nickel	6.6	35.9
Zinc	2.9	15

Tyhee NWT, Ormsby Zone

Tyhee NWT Corp has tested a number of rocks, including Burwash Group greywackes and argillites in support of their water license at the Ormsby Zone. It should be noted that the

argillite sampled by Tyhee is not the common argillite found through-out the Burwash formation, rather it is a much rarer graphitic and pyritic unit peculiar to the Ormsby Zone among others.

Tyhee has determined the Burwash Group greywackes at the Ormsby Zone to be similar to what CARD has shown at Giauque Lake, as well as Ger-Mac's results at the Mon Property.

Tyhee (April 2011) reports on four Burwash Greywacke as being of neither PAG or AG but uncertain as it has a S content of 0.26 and a bulk NPR of 1.6, summarized as:

> All (4) samples of **Burwash greywacke** have an uncertain ARD potential (bulk NPR of 1.6). The sulphide content of the Burwash greywacke samples is generally low, it range from 0.22% - 0.33% and exhibit a range of NPR values from 1.3 to 2.0. The NP for the Burwash greywacke is low with an average of 13 t CaCO3/1000 t.

Further, they noted that the Ormsby samples of the Burwash greywacke exceeded five times the crustal abundance in As, Cd, S, and U.

Tyhee conducted field barrel testing on the Burwash greywacke and found that it was either uncertain (-2mm material) or non-PAG (+2mm material) after 22 months of testing. Elevated Al, As, Cd, Cr, Cu, Fe, Pb, Ni, Se, and Zn, relative to CEQG for aquatic life was determined in the leachate.

Tyhee concluded "***Burwash greywacke:*** *Few samples of this rock type have been tested to date and only for static tests. Results show the four samples tested have an excess of buffering capacity but not sufficiently elevated to rule out the possibility of eventual ARD. The ARD potential of these samples is uncertain. Additional sampling and further test work are required to better define the long-term weathering characteristics of this rock type."*

Addendum 7.3

Provide an inventory of hazardous materials on the property and storage locations. (attach separate map)

There are currently no hazardous materials on the property, nor are there any storage locations. The map below displays where hazardous materials will be stored.

List of hazardous materials on-site

There are two fuel storage areas on site. The fuel storage area near the mine site is for storing diesel, oils, and gasoline. The second fuel storage area near the camp site contains only diesel and propane. Table 1 presents a list of hazardous materials on-site, the type of storage container, the average and maximum quantities stored and their storage location.

Table 1: List of hazardous materials stored on-site, type of storage container, the normal and maximum storage quantities, and storage locations

Material	Storage Container	Normally On-site	Maximum On-site	Storage Location (see Figure 1) and Uses
Diesel Fuel	200 L drums	12,000 L (60 drums)	100,000 L (500 drums)	Two fuel storage areas. Used to heat communal buildings by oil stoves and used for mine equipment.
Diesel Fuel (*)	20,000 L mobile tank		20,000 L	Mobile tanker truck if permitted, CSA 602 standards
Jet B Fuel	200 L drums	400 L (2 drums)	800 L (4 drums)	Fuel storage area near mine site. Used to power helicopters and twin otter aircraft.
Gasoline	200 L drums	600 L (3 drums)	1,000 L (4 drums)	Two fuel storage areas. Used for quads, boats, chainsaws, PU trucks.
Propane	45kg cylinders	135 kg (3 cylinders)	450 kg (5 cylinders)	Fuel storage area near camp. Used for kitchen stove and fridge.
Lubricating Oil	200 L drums	400 L (2 drums)	600 L (3 drums)	Lubrication of air tools
Flotation Extender (A208)	200 L drums	200 L (1 drum)	400 L (2 drums)	Flotation reagent
Flotation Frother (MIBC)	200 L drums	200 L (1 drum)	400 L (2 drums)	Flotation reagent
Flotation Collector (PAX)	50 kg bags	500 kg	500 kg	Flotation reagent
Copper Sulphate	50 kg bags	500 kg	500 kg	Flotation reagent

*Note: Either CSA 602 mobile tankers or 200 L drums for diesel fuel, NOT BOTH

Waste oil is stored in empty 200 L drums in either of the fuel storage areas, and shipped out by plane or truck for off-site disposal at an appropriate waste facility.

Other hazardous materials found on-site in very small quantities are in a storage building and/or the kitchen. These include lubricants/oil/grease for maintenance of motorized equipment and general cleaning products for kitchen/bathroom/office use.

Motorized equipment on site includes one all-terrain vehicles, a scoop tram, drill jumbo, loader diamond drill, two pick-up trucks, a boat (for emergency response; eg. airplane accident) and three fuel transfer hoses with pumps.

All buildings containing hazardous materials are over 100 m from any water body.

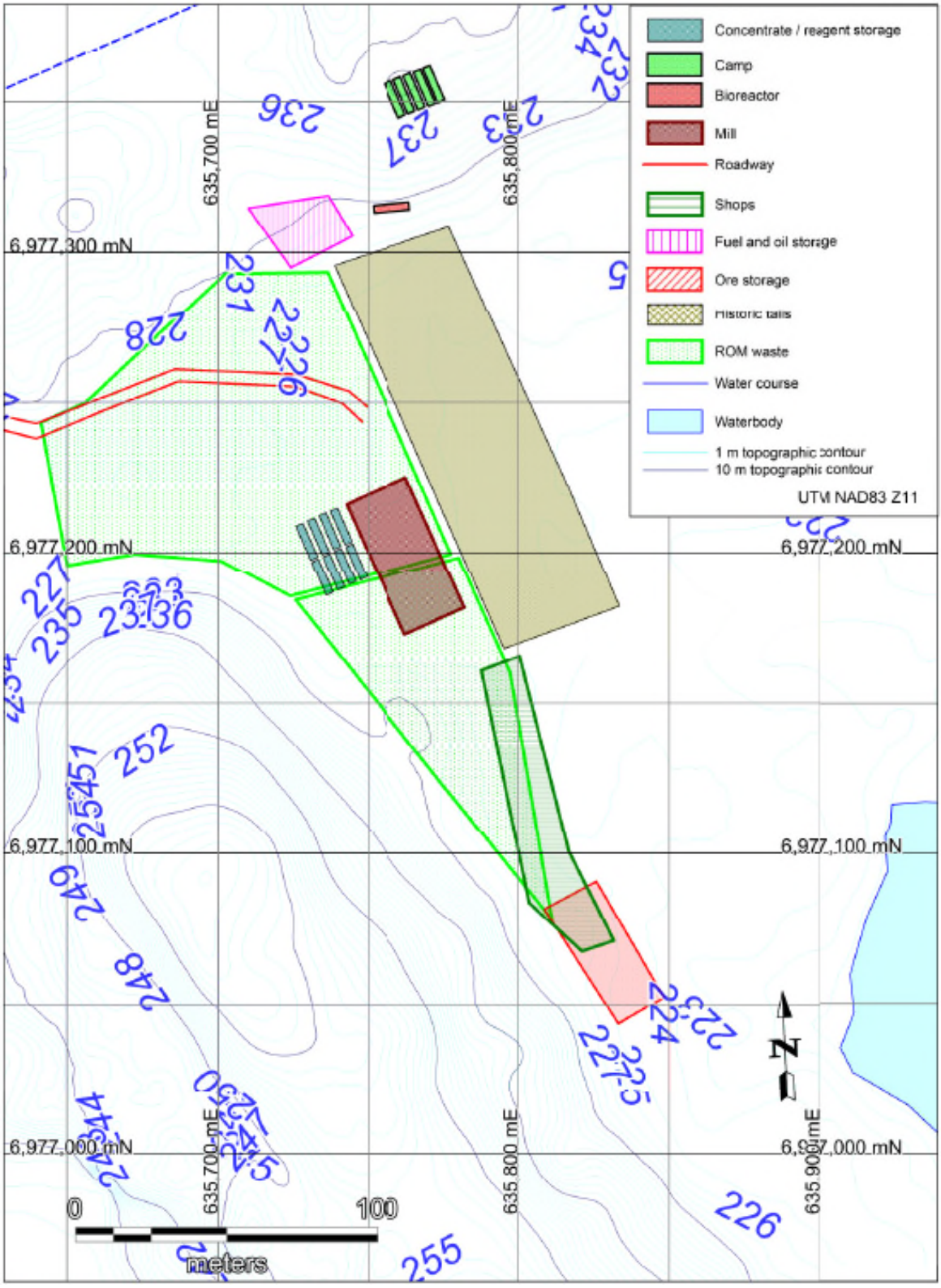


Figure 1. Location of hazardous product/waste storage

Addendum 7.4

Attach the present or proposed contingency plan which describes course of action, mitigative measures, and equipment available for use in the event of system failures and spills of hazardous materials.

Existing preventative measures as relating to existing Licenses and Permits:

Planning for an emergency situation is imperative, due to the nature of the materials stored on site as well as the remoteness of the site. Along with the preventative measures outlined below, adequate training of staff and contractors is paramount.

All hazardous materials arrive by air as needed throughout the year. They are unloaded by truck, airplane and helicopter pilots and New Discovery Mines Ltd. staff and carefully placed in the fuel storage areas. Protective clothing, steel toe boots, and gloves are worn while unloading the fuel drums.

The storage areas for diesel fuel, Jet B fuel, gasoline and propane are on a prepared rock pad. In addition the fuel drums used for the oil stoves heating common areas are in secondary containers that are leak proof and are placed on a drip tray.

Spill kits are located wherever fuel is stored or used (see Figure 2). See Section 4.i. for details on spill kit contents. Portable drip trays and appropriately sized fuel transfer hoses with pumps are used when refuelling aircraft, ATVs, or other motorized equipment, to avoid any leaks/drips onto the land.

The camp manager or designated fuel monitor conducts daily visual inspections to check for leaks or damage to the fuel storage containers, as well as for stained or discoloured soils around the fuel storage areas and adjacent motorized equipment. For example, lids/caps are checked for tight seals. A checklist is used to ensure no areas have been missed and results of the inspections are recorded in the company database. Regular maintenance and oil checks of all motorized equipment are also undertaken to avoid preventable leaks.

Gray water is piped to a transfer sump and then pumped at least 100 m from the kitchen, office and sleeping quarters. The sump and pipe are inspected regularly for leaks or overflow.

Additional copies:

Several copies of the plan are kept on-site at all times at the two fuel storage areas, in the office and in the kitchen building. A copy is also held at the company's main office/headquarters in Yellowknife, Northwest Territories and with the Land and Water Board. Additional copies of the plan can be obtained by contacting the company directly at the phone number, fax or email presented in section 1i).

Process for staff response to media and public inquiries:

The company has established procedures for dealing with media and public inquiries. All inquiries are to be directed to the president at the headquarters office in Vancouver. If the president is not available, there will be another staff member available to act in this position. No reporter or member of the public is allowed on site without approvals (MIS- regulations).

The camp manager should always keep the president informed of any news or updates of potential interest to the media or general public, such that the company is prepared to deal with inquiries any time.

If a spill has occurred and a NWT Spill Report needs to be filled out (see Appendix B-2). This information is available for the public to view upon request by contacting the NWT Spill Line or by viewing the GNWT Hazardous Materials Spills Database online

Response Organization

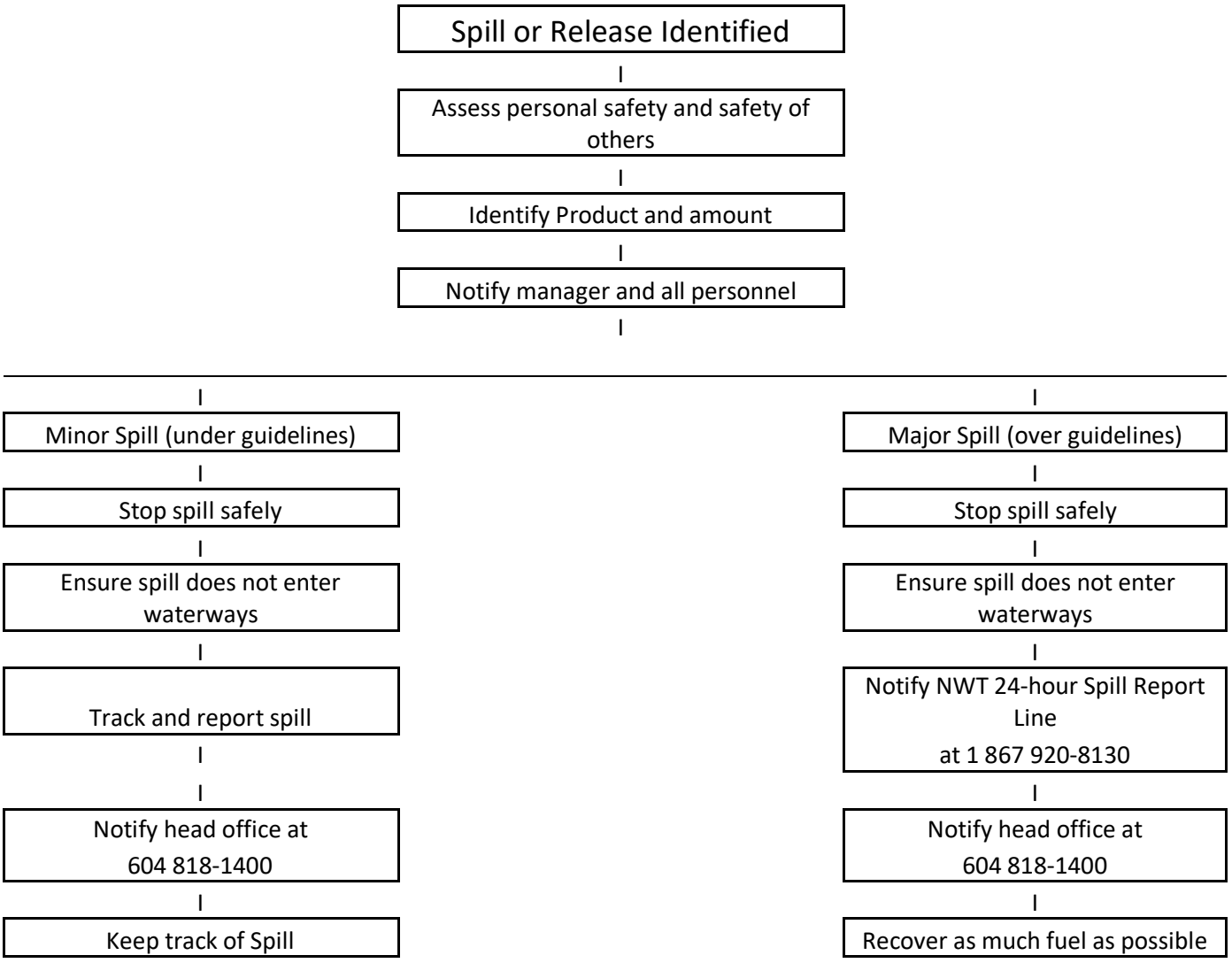
The flow chart depicted in Figure 3 identifies the response organization and when applicable their alternates, as well as the chain of command for responding to a spill or release. The duties of various response personnel are summarized, contact information is provided including 24-hour phone numbers for responsible people and the location of communications equipment on site is discussed.

An immediately reportable spill is defined as a release of a substance that is likely to be an imminent environmental or human health hazard or meets or exceeds the volumes outlined in Appendix B-3. It must be reported to the NWT 24-Hour Spill Report Line at 867-920-8130. Any spills less than these quantities do not need to be reported immediately to the spill reporting line. Rather, these minor spills will be tracked and documented by the company and submitted to the appropriate authority either immediately upon request or at a pre-determined reporting interval. If there is any doubt that the quantity spilled exceeds reportable levels, the spill will be reported to the NWT 24-Hour Spill Report Line.

Emergency satellite phones are located in the office. In the event of a spill involving danger to human life these phones will be used to contact emergency response personnel in Yellowknife. In addition, all employees and contractors carry two-way radios for communication with the camp manager and other staff on site.

Following reporting of the spill to the camp manager, he/she will report spills to the NWT 24-Hour Spill Line as necessary. The camp manager will also inform the head office for tracking spills in company databases and notify the head office in the event of media inquiries. The 24-hour emergency head office number is 604 818-1400.

Figure 3: Flow chart of response organization (details of each step will be provided in the procedures for initial actions under Section 3 Action Plan)



Action Plan

Potential spill sizes and sources for each hazardous material on site

In Table 2, a list of potential discharge events, with associated discharge volumes and directions is presented for the primary hazardous materials stored on site. The most likely discharge volume is indicated and the spill clean-up procedures will focus on spills of this quantity. A worst case scenario is also presented. Specific discharge rates are not indicated for each fuel type as these would vary from a few minutes to several hours, based on the source of leak or puncture.

Table 2: List of hazardous materials, potential discharge events, potential discharge volumes (worst case scenario in brackets) and direction of potential discharge

Material (sources)	Potential Discharge Event	Discharge Volume (worst case)	Direction of Potential Discharge
Diesel Fuel (vehicles, oil stoves)	1. Over pumping of fuel from drum into vehicle. 2. Leaking from vehicle. 3. Minor leaking fuel drum in/outside fuel storage area. 4. Large puncture, fast leaking drum in/outside fuel storage area. 5. From drum connection to stoves in communal buildings. 6. All drums punctured and leaking at once (very unlikely). 7. Leaking tanker, large or small holes, or faulty valves	Likely under 200 L/1 drum (max 12,000 L/ 60 drums) Potential from tanker up to 30,000 liters	Toward stream from drill site or fuel storage area near drill site. In camp on flat ground, from fuel storage area or communal buildings with potential underground seepage to Lake Invisible and/or stream.
Jet B Fuel (twin otter, helicopter)	1. Over filling of aircraft. 2. Leak from drum or hose while filling aircraft. 3. Minor leaking fuel drum in/out side fuel storage area. 4. Large puncture, fast leaking drum in/outside fuel storage area. 5. All drums punctured and leaking at once (very unlikely).	Likely under 200 L/1 drum (max 800 L/ 4 drums)	In camp on flat ground, from fuel storage area or helicopter pad with potential underground seepage to Discovery Lake and/ or stream. In Discovery Lake while refueling aircraft.
Gasoline (ATVs, trucks)	1. Over filling of ATVs or snow machines (small spill) 2. Leak from drum or hose while filing ATVs or snow machines. 3. Minor leaking fuel drum in/outside fuel storage area. 4. Large puncture, fast	Likely under 200 L/1 drum (max 1,000 L/ 5 drums)	In camp on flat ground, from fuel storage area with potential underground seepage to Discovery Lake and/or stream. Toward stream from fuel storage area near mine site.

	leaking drum in/outside fuel storage area. 5. All drums punctured and leaking at once (very unlikely)		
Propane (kitchen stove and fridge)	1. Leak while connected to kitchen stove or fridge. 2. Minor leaking cylinder in or outside fuel storage area. 3. Large puncture, fast leaking cylinder in/outside fuel storage area. 4. All cylinders punctured and leaking at once (very unlikely).	Likely under 45 kg/ 1 cylinder (max 450 kg/ 5 cylinders)	In camp on flat ground, from fuel storage area or communal buildings with no potential underground seepage to Discovery Lake and/or stream.

Waste oil stored in empty 200 L drums, could potentially leak. The quantity of waste oil drums would be quite limited as they would be shipped out by plane as they are filled up. The risk of a spill from a waste oil drum impacting the environment is very low as waste oil is stored in a bermed site designated for certain wastes.

Potential environmental impacts of spill (include worst case scenario)

Overall for all hazardous materials discussed below, impacts are lower during winter as snow is a natural sorbent and ice forms a barrier limiting or eliminating soil or water contamination, thus spills can be more readily recovered when identified and reported.

Gasoline

Environmental impacts: Gasoline may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Gasoline is quick to volatize. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

Diesel Fuel

Environmental impacts: Diesel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Diesel burns slowly and thus risk to the environment is reduced during recovery as burn can be more readily contained compared with volatile fuels. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. If a transport tanker is utilized, potentially 30,000 liters could be leaked. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

Jet B Fuel

Environmental impacts: Jet B fuel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Jet B fuel volatizes relatively quickly. Runoff into water bodies must be avoided.

Worst case scenario: All fuel drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

Propane

Environmental impacts: Propane may be harmful to wildlife and the surrounding environment. It has the potential to accumulate in the environment. Propane is extremely volatile and is the most flammable material stored on site, thus immediate impacts to the surrounding environment are a concern.

Worst case scenario: All cylinders were punctured or failed simultaneously and contents leaked into the surrounding environment and ignited leading to an explosion. This could cause serious environmental impacts in the immediate surroundings. Safety during emergency response to a propane spill is of the utmost concern.

Waste Oil and Miscellaneous Oils/Grease

Environmental impacts: Waste oils may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Runoff into water bodies must be avoided.

Worst case scenario: All storage drums were punctured or open simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

Procedures:

A. Procedures for initial actions

- Ensure safety of all personnel
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if safely possible e.g. shut of pump, replace cap, tip drum upward, patch leaking hole. Use the contents of the nearest spill kit to aid in stopping the spill if it is safe to do so. Gloves are located in the spill kit and should be worm immediately if there is any risk of being in contact with fuel. Transfer the remaining

material in the defective or leaky container into a suitable secure container.

- No matter what the volume is, notify camp manager.
- Contain the spill – use contents of spill kits to place sorbent materials on the spill, or use shovel to dig dike to contain spill. Methods will vary depending on the nature of the spill. See Section C for more details.

B. Spill reporting procedures

Report spill immediately to camp manager, who will determine if spill is to be reported to the NWT 24-Hour Spill Line at 867-920-8130.

Each spill kit, as well as the office and camp manager, will have copies of the NWT Spill Report form to be filled out (see Appendix B-2). Fill out and fax or email the Spill Report to the staff of the NWT 24-Hour spill line. Also fax or email the report to the head office.

NWT 24-Hour Spill Line Phone: (867) 920-8130

NWT 24-Hour Spill Line Fax: (867) 873-6924

NWT 24-Hour Spill Line Email: spills@gov.nt.ca

Head office, New Discovery Mines Ltd. Phone: (867) 123-1111

Head office, New Discovery Mines Ltd. Fax: (867) 123-2222

Head office, 24 hr phone line Phone: (867) 123-3333

C. Procedures for containing and controlling the spill (e.g. on land, water, snow. etc.)

- Initiate spill containment by first determining what will be affected by the spill.
- Assess speed and direction of spill and cause of movement (water, wind and slope).
- Determine best location for containing spill, avoiding any water bodies.
- Have a contingency plan ready in case spill worsens beyond control or if the weather or topography impedes containment.

Specific spill containment methods for land, water, ice and snow are outlined below.

1) Containment of Spills on Land

Spills on land include spills on rock, gravel, soil and/or vegetation. It is important to note that soil is a natural sorbent, thus spills on soil are generally less serious than spills on water as

contaminated soil can be more easily recovered. Generally spills on land occur during the late spring, summer or fall when snow cover is at a minimum. It is important that all measures be undertaken to avoid spills reaching open water bodies.

Dykes

Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled fuel. A dyke needs to be built up to a size that will ensure containment of the maximum quantity of fuel that may reach it. A plastic tarp can be placed on and at the base of the dyke such that fuel can pool up and subsequently be removed with sorbent materials or by pump into barrels or bags. If the spill is migrating very slowly a dyke may not be necessary and sorbents can be used to soak up fuels before they migrate away from the source of the spill.

Trenches

Trenches can be dug out to contain spills as long as the top layer of soil is thawed. Shovels, pick axes or a loader can be used depending on the size of trench required. It is recommended that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials.

2) Containment of Spills on Water

Spills on water such as rivers, streams or lakes are the most serious types of spills as they can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water.

Booms

Booms are commonly used to recover fuel floating on the surface of lakes or slow moving streams. They are released from the shore of a water body to create a circle around the spill. If the spill is away from the shoreline a boat will need to be used to reach the spill, then the boom can be set out. More than one boom may be used at once. Booms may also be used in streams and should be set out at an angle to the current. Booms are designed to float and have sorbent materials built into them to absorb fuels at the edge of the boom. Fuel contained within the circle of the boom will need to be recovered using sorbent materials or pumps and placed into barrels or bags for disposal.

Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water can still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

Barriers

In some situations barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled fuel. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through. This is very similar to the weir option discussed above.

Note that in some cases, it may be appropriate to burn fuel or to let volatile fuels such as gasoline evaporate after containment on the water surface. This should only be undertaken in consultation with, and after approval from the INAC or lead agency Inspector.

3) Containment of Spills on Ice

Spills on ice are generally the easiest spills to contain due to the predominantly impermeable nature of the ice. For small spills, sorbent materials are used to soak up spilled fuel. Remaining contaminated ice/ slush can be scraped and shoveled into a plastic bag or barrel. However, all possible attempts should be made to prevent spills from entering ice covered waters as no easy method exists for containment and recovery of spills if they seep under ice.

Dykes

Dykes can be used to contain fuel spills on ice. By collecting surrounding snow, compacting it and mounding it to form a dyke down slope of the spill, a barrier is created thus helping to contain the spill. If the quantity of spill is fairly large, a plastic tarp can be placed over the dyke such that the spill pools at the base of the dyke. The collected fuel can then be pumped into barrels or collected with sorbent materials.

Trenches

For significant spills on ice, trenches can be cut into the ice surrounding and/or down slope of the spill such that fuel is allowed to pool in the trench. It can then be removed via pump into barrels, collected with sorbent materials, or mixed with snow and shovelled into barrels or bags.

Burning

Burning should only be considered if other approaches are not feasible, and is only to be undertaken with the permission of the INAC or lead agency Inspector.

4) Containment of Spills on Snow

Snow is a natural sorbent, thus as with spills on soil, spilled fuel can be more easily recovered. Generally, small spills on snow can be easily cleaned up by raking and shovelling the contaminated snow into plastic bags or empty barrels, and storing these at an approved location.

Dykes

Dykes can be used to contain fuel spills on snow. By compacting snow down slope from the spill, and mounding it to form a dyke, a barrier or berm is created thus helping to contain the spill. If the quantity of spill is fairly large, a plastic tarp can be placed over the dyke such that the spill pools at the base of the dyke. The collected fuel/snow mixture can then be shoveled into barrels or bags, or collected with sorbent materials.

5) Worst Case Scenarios

Dealing with spilled fuel which exceeds the freeboard of a dyke or barrier would present a possible worst case scenario for New Discovery Mines Ltd. site. To contain the overflow, a trench or collection pit would have to be created downstream of the spill to contain the overflow.

Another worst case scenario would be an excessive spill on water may be difficult to contain with the booms present at the site. In this case, an emergency response mobile unit would have to be called in to deal with the spill using appropriate equipment.

D. Procedures for transferring, storing, and managing spill related wastes.

In most cases, spill cleanups are initiated at the far end of the spill and contained moving toward the centre of the spill. Sorbent socks and pads are generally used for small spill clean-up. A pump with attached fuel transfer hose can suction spills from leaking containers or large accumulations on land or ice, and direct these larger quantities into empty drums. Hand tools such as cans, shovels, and rakes are also very effective for small spills or hard to reach areas. Heavy equipment can be used if deemed necessary, and given space and time constraints.

Used sorbent materials are to be placed in plastic bags for future disposal. All materials mentioned in this section are available in the spill kits located at Camp Unknown. Following clean up, any tools or equipment used will be properly washed and decontaminated, or replaced if this is not possible.

For most of the containment procedures outlined in Section C, spilled petroleum products and materials used for containment will be placed into empty waste oil containers and sealed for proper disposal at an approved disposal facility.

E. Procedures for restoring affected areas

Once a spill of reportable size has been contained, New Discovery Mines Ltd. will consult with the INAC or lead agency Inspector assigned to the file to determine the level of cleanup required. The Inspector may require a site specific study to ensure appropriate clean up levels are met. Criteria that may be considered include natural biodegradation of oil, replacement of soil and revegetation.

Resource Inventory

On-site resources

Spill kits are located throughout the sites at the locations indicated in Figure 2. The contents are described below. In addition, earth moving and other equipment located at the proposed camp is also listed below.

Contents of Spill Kits

4 pairs of chemical master gloves

10 large bags with ties for temporary use

2 oil only booms (5” x 10')

50 oil only mats (16” x 20”)

5 sorbent socks

10 sorbent pads

2 large tarps

1 roll duct tape

1 utility knife

1 field notebook and pencil

1 rake

1 pick axe

3 aluminium scoop shovels

1 instruction binder

Earth moving and other equipment

1 scoop tram

1 all-terrain vehicles

1 boat

1 chain saw

3 fuel transfer hoses with pumps tool kit including hack saw, hammer, screwdrivers, etc.

Off-site resources

All the contacts listed below could reach the site in 2 hours at a minimum. However, realistically government officials would not be able to reach the site until the next business day, depending on the severity of the spill.

New Discovery Mines Ltd., 24-hour emergency line
(604) 818-1400

NWT 24-Hour spill line
(867) 920-8130

Aboriginal Affairs and Northern Development Canada (AANDC) Inspector
(867) 669-2794

Environment Canada (Emergency) Yellowknife
(867) 669-4725

GNWT Environmental Protection Division
(867) 873-7654

GNWT Environmental Health Office
(867) 669-8979

RCMP (Yellowknife)
(867) 669-1111

Medivac (Yellowknife)
(867) 669-4115

Great Slave Helicopters (Yellowknife)
(867) 873-2081

Air Tindi (Yellowknife)
(867) 669-8218 or 669-8200

Arctic Sunwest (Yellowknife)
(867) 873-4464

As planning for an emergency situation is imperative due to the materials stored on-site and the remoteness of the site, an employee and contractor training program has been prepared. It is outlined below.

Training Program

Outline of training program

The employee and contractor training program was developed by the manager of environmental health and safety, and has been disseminated by the camp manager. The following are key steps in the program:

- all individuals entering the site are required to participate in an orientation session
- during this session, all locations of the spill plan and spill kits are provided on a map in hard copy
- an overview of the plan is provided by the camp manager leading the orientation session
- specific training sessions, including mock spill exercises, are scheduled for individuals directly involved in handling hazardous materials to ensure they know all steps to be undertaken in handling these materials, as well as the steps involved in the event of a spill, including the proper use of spill kits
- all employees and contractors are required to have their basic first aid training, as well as WHMIS training, before working on the site
- supervisors are required to have advanced level first aid training, as well as transport of dangerous goods training

Training schedule and record keeping

A spreadsheet is kept by the camp manager and head office indicating the training undertaken, and expire dates of specific training e.g. first aid. It is regularly updated.

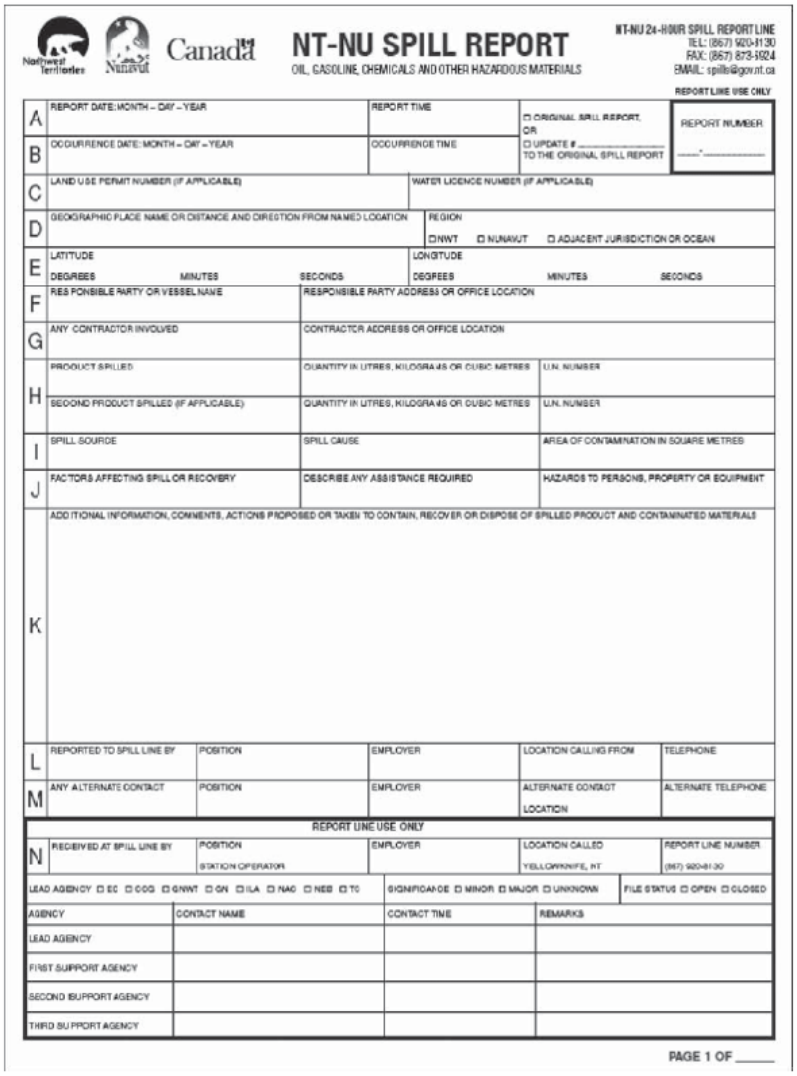
- diesel
- jet B
- gasoline
- propane

Appendix B-1:Material Safety Data Sheets (MSDS) for hazardous materials stored on site

The formats of Material Safety Data Sheets vary greatly. Examples can be found on the internet and from Spill Contingency Plans in place for various Water Licences in the NWT (see Land and/or Water Board public registries).

Appendix B-2:

NT-NU Spill Report Form



Northwest Territories | Nunavut | Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER ____-____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM / TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION / ALTERNATE TELEPHONE

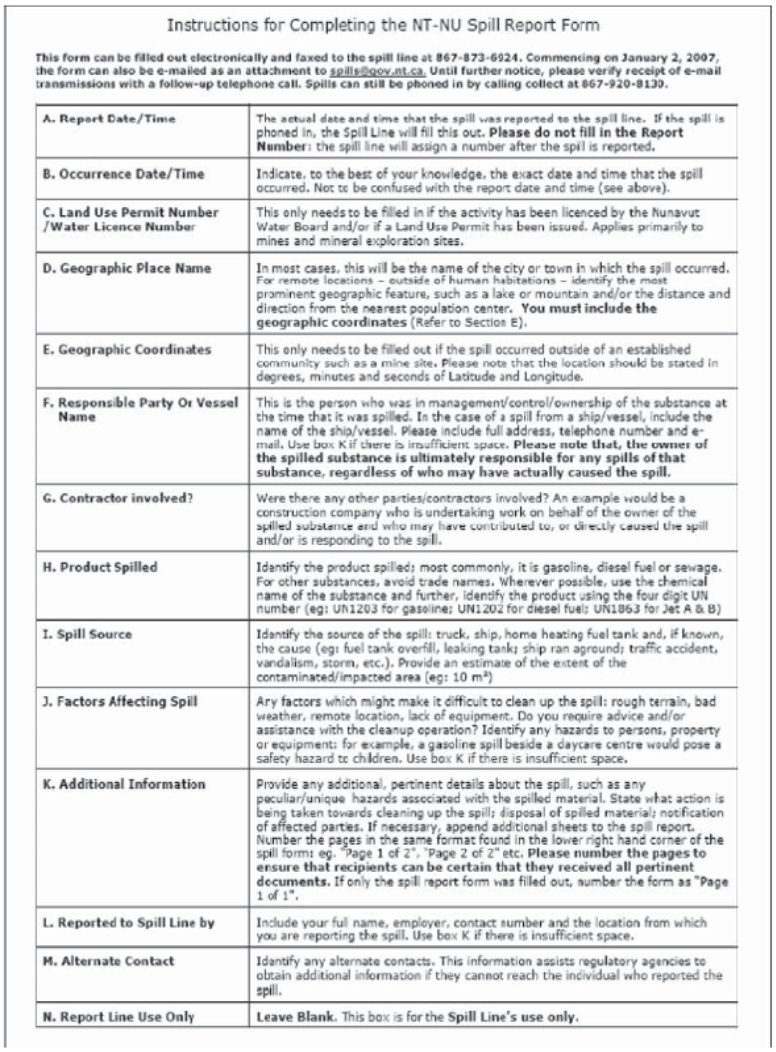
REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION: STATION OPERATOR	EMPLOYER	LOCATION CALLED: YELLOWKNIFE, NT / REPORT LINE NUMBER: (867) 920-8130

LEAD AGENCY ☐ EC ☐ COG ☐ GNWT ☐ GN ☐ ILA ☐ NAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

PAGE 1 OF ____



Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and faxed to the spill line at 867-873-6924. Commencing on January 2, 2007, the form can also be e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number:** the spill line will assign a number after the spil is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Are factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or equipment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your ful name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank.** This box is for the **Spill Line's use only.**

Appendix B-3: Immediately Reportable Spill Quantities

TDG Class	Substance for NWT 24 Hour Spill Line	Immediately Reportable Quantities
1 2.3 2.4 6.2 7 None	Explosives Compressed gas (toxic) Compressed gas (corrosive) Infectious substances Radioactive Unknown substance	Any amount
2.1 2.2	Compressed gas (flammable) Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
3.1 3.2 3.3	Flammable liquids	> 100 L

4.1 4.2 4.3	Flammable solids Spontaneously combustible solids Water reactant	> 25 kg
5.1 9.1	Oxidizing substances Miscellaneous products or substances excluding PCB mixtures	> 50 L or 50 kg
5.2 9.2	Organic peroxides Environmentally hazardous	> 1 L or 1 kg
6.1 8 9.3	Poisonous substances Corrosive substances Dangerous wastes	> 5 L or 5 kg
9.1	PCB mixtures of 5 or more ppm	> 0.5 L or 0.5 kg
None	Other contaminants (e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, waste water, etc.)	> 100 L or 100 kg
None	Sour natural gas (i.e. contains H2S) Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more

In addition, all releases of harmful substances, regardless of quantity, are to be reported to the NWT spill line if the release is near or into a water body, is near or into a designated sensitive environment or sensitive wildlife habitat, poses imminent threat to human health or safety, poses imminent threat to a listed species at risk or its critical habitat, or is uncontrollable.

Additional Hazardous Materials

Material (sources)	Potential Discharge Event	Discharge Volume (worst case)	Direction of Potential Discharge
Potassium Amyl Xanthate (PAX)	1. Damaged or spilled container 2. Poorly maintained feeder in mill	Likely 50 kg (one package) Potential up to 500 kg (all on site)	Toward stream from storage container From Mill building
Aeroflot	1. Damaged or tipped/spilled drum 2. Poorly maintained feeder in mill	Likely 200 L (one drum) Potential up to 400 L (all on site)	Toward stream from storage container From Mill building
Methyl Isobutyl Carbinol (MIBC)	1. Damaged or tipped/spilled drum 2. Poorly maintained	Likely 200 L (one drum) Potential up to 400 L	Toward stream from storage container From Mill building

	feeder in mill	(all on site)	
Copper Sulphate	1. Damaged or spilled container 2. Poorly maintained feeder in mill	Likely 50 kg (one package) Potential up to 500 kg (all on site)	Toward stream from storage container From Mill building

Flotation reagents may be toxic in high concentrations.

Flotation reagents

Environmental impacts:

PAX may be harmful to wildlife and aquatic life. May be fatal if swallowed. Harmful if inhaled. Causes skin and eye irritation. Dust is irritating to respiratory tract. See "Other Health Effects" Section. Heating of solid xanthate or aging or heating of solutions will cause formation of Carbon Bisulfide. Upon exposure of solid xanthates to moisture and/or heat, decomposition results and spontaneous combustion can occur. Contact of solid xanthate with moist air has resulted in ignition. (4) Emits a flammable gas upon contact with water or water vapour. Can decompose at high temperatures forming toxic gases. Powdered material may form explosive dust/air mixtures. Contents may develop pressure on prolonged exposure to heat.

MIBC Anesthetic effects can be expected at high vapor concentrations. Vapor concentrations of 50 ppm for 15 minutes are irritating to the eyes, nose and throat. The ACGIH TLV-TWA for MIBC is 25 ppm (104 mg/m3) and the TLV-STEL is 40 ppm (167 mg/m3). The 4-hour LC50 for MIBC was > 16 mg/L (3776 ppm).

MIBC has minimal acute toxicity by oral and dermal routes of exposure. The acute oral and dermal LD50 values for MIBC are 2260 – 2970 mg/kg and 2870 mg/kg, respectively. There are no known sensitization or cancer hazards. MIBC can enter the environment as emissions from its manufacture and use as a frother. 94% is biodegraded within 20 days.

Areoflot are a class of reagents used to enhance collection of sulphides in flotation. The acute oral (rat) LD50 and dermal (rabbit) LD50 values are 4060 mg/kg and >5000 mg/kg respectively. Marked irritation and skin corrosion were produced during primary irritation studies with rabbits. Contact with acid may cause liberation of hydrogen sulphide.

kyz r v zr z t r zwzvu r ur xv w yv v z v 4 kyz r v zr z vruz sz uvx rurs v4

Copper sulphate is a metal salt used to enhance the collection of sulphide minerals in froth flotation systems. Severe exposure or chronic exposure by ingestion or inhalation of copper sulphate may induce severe gastroenteric distress (vomiting, gastroenteric pain, local corrosion, and hemorrhages), a metallic taste in the mouth, prostration, anuria, hematuria, anemia, an increase in white blood cells, coma, respiration difficulties, and circulatory problems. The product is toxic to fish.

Runoff into water bodies must be avoided.

Worst case scenario: All reagent drums and packages are punctured or spilt simultaneously and contents seeped into surrounding soil and water bodies. This could cause illness or death to aquatic life and indirectly affect wildlife feeding from the land and water.

Small amounts of water may have flown in from surface run-off, and would freeze near the portal. This surface ice may have to be removed to gain access to the decline. It should be noted that the first 10 m of the decline has been drive at an uphill inclination so surface water will flow out and not into the portal.

Any water in the decline will be surface water as the decline is in permafrost. The only access to the decline would be from the portal, and given that water flows downhill, and it does limited flowing when frozen, it is expected that any water accessing the decline would freeze at the portal.

There are three likely scenarios considered, all affecting only the first 10 m +/- of the decline at the Portal.

Scenario	Best case	Worst case
1. No ice	Zero discharge	Zero discharge
2. Part ice	Note 1	Note 1a
3. Full ice	Note 2	Note 2a

Note 1 It is possible that some surface water entered the portal due to the establishment of ice dams. The surface water chemistry is expected to be the same as the surface water in the area as determined at SNP 1598-1 from NWT Water License N1L2-1598. The total volume would be 15 m^3 (3m x 0.5m x 10m).

Note 1a The water may have come into equilibrium with broken rock and established a chemistry similar to that found near broken rock in the past, as determined at SNP 1598-5 from NWT Water License N1L2-1598. The total volume would be 15 m^3 (3m x 0.5m x 10m).

Note 2 It is possible that some surface water entered the portal due to the establishment of ice dams. The surface water chemistry is expected to be the same as the surface water in the area as determined at SNP 1598-1 from NWT Water License N1L2-1598. The total volume would be 75 m^3 (3m x 2.5m x 10m).

Note 2a The water may have come into equilibrium with broken rock and established a chemistry similar to that found near broken rock in the past, as determined at SNP 1598-5 from NWT Water License N1L2-1598. The total volume would be 75 m^3 (3m x 2.5m x 10m).

Disposal of Dewatering Material

The water (ice) will be scrapped up using a 2 yard scoop tram and will most likely have entrained rock. This will be deposited in the waste muck pile and allowed to melt and drain naturally. Mining should commence immediately after this access is opened up so the ice will be buried in the ensuing muck. Given the area of the waste muck pile as applied for covers 4,000 m^2, the addition of 15 m^3 of ice will be the equivalent of an additional 3.75 cm of ice, or 3.4 cm of water over this area. It will be deposited on the upslope of the currently disturbed area so its ability to directly access any waterbody is reduced As ice, it is not likely to flow quickly, and once buried,

its conversion to liquid will be slowed. In any event, previous activity and sampling (NWT Water License N1L2-1598) has determined that this rock has become weakly acidic after 8 years, and then become less acid subsequent to this. Sampling by DIAND inspectors during this time has shown no significant metals leaching over the subsequent except for iron, and manganese. The iron at 1.3 mg/L is within the 1.0 to 1.7 mg/L range recommended by the B.C. Government in their 2008 study Ambient Aquatic Life Guidelines for Iron. The manganese level of 0.628 mg/L is below the lowest level recommended by the B.C. Government in their 2008 study Ambient Aquatic Life Guidelines for Manganese of 0.7 to 3.0 mg/L. All other metals never attained any levels of concern. It is our belief that we should obtain the same results as has previously been obtained when mining the same rocks in the same manner as previous operators.

Contingencies plans will be to stop mining if we exceed our expectations for the volume or quality of water.

Addendum 8.7

Please attach an outline briefly describing any options or alternatives considered or rejected for the various mine components outlined in this questionnaire (e.g., mill site, water supply sources, locations for ore and waste piles).

Mill site

The mill site first considered was the site of the original mill installed on this site. It is close to the mine, camp, water source. Alternative locations would be;

a) Closer to Discovery Lake, or
b) Closer to the esker / camp

The mill site proposed had previously been used for a mill of the same size operating in the 1990's.

Water supply

Water will be discharged from the mine under MV2014L2-0002. It is believed that by reusing this water in the mill, and then recycling as much as possible would be the responsible thing to do. The 15% water retained in the tailings solids, amounting to roughly 15 m^3 per day would need to be made up. Drawing any additional waters required from Discovery Lake would be using water down-stream from our discharge.

Ore pile location

The ore pile should be close to the mill and the mine. Alternatives would either be;

a) Farther from the mine, or
b) Closer to Discovery Lake.

Waste pile location

An underground mine produces limited waste rock and all of it will be needed for laydown areas, pads, roads, and tailings stabilization. There will be no excess waste rock.

Tailings Options

The Mon Property had previously been permitted for a contained tailings pond to receive liquid and solid streams from a gravity mill. Only the gold had been recovered from the ores. A number of alternative processes were reviewed, and although bulk ore cyanidation produces better recoveries, the tailings products would essentially be identical to that of the gravity mill. Only the gold would be recovered from the ore.

A flotation circuit can recover much of the sulphides (and gold), and if it is treating tailings from a gravity circuit it can be very effective at recovering gold, as well as producing a minimally environmental tails product. The sulphides collected in the flotation concentrate would also contain much of the base and transition metals once might be concerned about in a tailings

stream. As well, the flotation reagents used also tend to follow the sulphides. The added benefit is that the ore does not need to be ground as fine, providing a more physically stable tailings product.

Containment becomes less of an issue if the material to be contained does not represent a threat to the environment physically or chemically.

Impervious membranes are useful in containing liquids, however they may fail. They may also channel liquids that are outside of the containment facility. It is believed by removing the impervious membrane and relying on natural barriers that are present in the environment today (permafrost, rip rap, natural vegetation) on may stabilize a non-toxic material better.

A dry stack disposal system is proposed as an improvement on the established tailings containment site on the property. At some point in the future, classified material can be returned to the stopes underground for ground support, and more permanent disposal.

If functional and operating as planned, it may also be possible to excavate the old tailings and process them through the new mill, to extract the sulphides that can be recovered.