



Mackenzie Valley Land and Water Board
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Staff Report

Applicant: Department of Indian Affairs and Northern Development – Giant Mine Remediation Project	
Location: Giant Mine, NT	File Number: MV2016S0016
Date Prepared: February 22, 2019	Date of Board Meeting: March 7, 2019
Subject: Land Use Permit - Amendment Application	

1. Purpose

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board):

- a) An Application to amend Land Use Permit (Permit) MV2016S0016 submitted by the Department of Indian Affairs and Northern Development (DIAND) – Giant Mine Remediation Project (GIANT); and
- b) Consider the preliminary screening.

2. Background

- July 21, 2016 – Issuance of Permit MV2016S0016;
- November 7, 2017 – Previous Amendment Application submitted;
- December 18, 2017 – Previous Amendment Approved by the Board;
- January 25, 2019 – Current Amendment Application submitted;
- January 28, 2019 – Amendment Application deemed complete and review commenced;
- February 14, 2019 – Reviewer comments and recommendations due and received;
- February 21, 2019 – Responses received;
- **March 7, 2019 – Amendment Application presented to the Board for decision;**
- July 20, 2021 – Expiration of Permit MV2016S0016, with option of two year extension remaining.

3. Discussion

Project History

Permit MV2016S0016 was issued in July 2016, replacing Permit MV2012S0019. The purpose of these authorizations is to allow the Giant Mine Remediation Team (GMRT) to carry out drilling activities to support and optimize the Giant Mine Remediation Project (i.e. the Freeze Optimization Study, underground stability and backfilling program, geotechnical investigations and contaminated soils testing) and to manage significant risks at the site. The scope of the Permit includes:

- a) Conduct soil investigations;
- b) Conduct drilling;

- c) Conduct test pitting;
- d) Use and storage of fuel; and
- e) Use of machinery.

No changes to the scope of activities are being proposed. However, under-ice drilling activities; winter road construction, use and maintenance; and removal of ice dams on Baker Creek were not included in preliminary screenings previously carried out for this authorization. The equipment required to complete the work has already been included.

The Giant Mine Remediation Project is jointly managed through a Cooperation Agreement with the Government of Canada and the Government of the Northwest Territories. In addition, the Main Construction Manager (Parsons Inc.), is responsible for overall site management. The proposed drilling work will be completed by a private sector contractor who will be required to abide by all existing Board-approved Management Plans.

Description of Amendment Application

On January 25, 2019 DIAND-GIANT submitted an Amendment Application (attached) for Permit MV2016S0016 to include the following activities:

- Under-ice drilling on Baker Pond
 - Under-ice drilling on Baker Pond is being requested so that the GMRT can better delineate the volumes and chemistry of contaminated sediments and tailings within Baker Pond. This will help inform final reclamation activities under Type A Water Licence MV2007L8-0031.
- Under-ice drilling on Yellowknife Bay
 - Under-ice drilling in Yellowknife Bay is being requested to determine submerged rock/sediment conditions along two proposed outfall alignments for the new Water Treatment Plant being proposed under Type A Water Licence MV2007L8-0031.
- Temporary access trail on Yellowknife Bay for equipment relocation
 - A temporary Access Trail on Yellowknife Bay is being proposed to support the transportation of equipment for groundwater testing downstream of the historic tailings spill at Dam 3.
- Removal of potential ice dams on Baker Creek
 - Removal of Potential Ice Dams on Baker Creek are being proposed to avoid the threat of Baker Creek flowing over its banks, across Jo Jo Lake tailings, and down towards Yellowknife Bay (which occurred in 2011).

Mitigation and monitoring for proposed activities include the following:

- Ice thickness surveys, equipment inspections and off-ice storage, refueling a minimum of 100 m from waterbodies, the use of a sample-catcher at the base of the lead sample rod to prevent core from escaping upon extraction, TSS and turbidity monitoring in Yellowknife Bay with identified action levels and responses identified including metals analysis, waste management as previously approved, and emergency spill response measures in place in accordance with the approved Spill Contingency Plan.

Management Plans

The existing Board-approved Waste Management Plan and Spill Contingency Plans were included with the Application. No changes have been proposed as a result of the Amendment Application. Board staff suggest that these Plans meet applicable guidelines and sufficiently reflect the scope of the proposed activities.

Engagement

The existing Site Stabilization Communications Plan and a record of engagement pertaining to the specific Amendment Application was also included with the Application. Pre-Engagement for the Amendment included the entire Giant Mine Remediation Distribution List and consisted of an e-mail on December 19, 2018 with a description of proposed drilling activities, including maps. The engagement did not mention the addition of the access trail on Yellowknife Bay or the ice dam removal on Baker Creek.

The ice dam removal on Baker Creek was added to the amendment as recommended by Board staff to provide a method of notification and/or review in the event of an emergency. There was the potential that ice build-up near culverts would have to be addressed so as to avoid another overflow before the processing of this Application. As of February 22, 2019, no emergency measures have yet had to occur.

In response to its pre-application engagement, the GMRT received responses from Health Canada, Alternatives North, and Mr. Bill Slater. Health Canada inquired about the consideration of exposure pathways that could impact human health, Alternatives North had no concerns but expressed an interest in observing the drilling activity, and Mr. Slater supported the proposed activities with the assumption that appropriate mitigation and monitoring efforts would be implemented.

Regulatory Requirements

Amendment Applications require a description of the proposed amendment, reason(s) for the proposed amendment, identification of conditions requiring amendment, updates to any plan affected by the proposed amendment, and appropriate engagement.

Eligibility

The Giant Mine site is within the boundaries of the City of Yellowknife and is situated on Commissioner's Land administered by the GNWT's Department of Municipal and Community Affairs (MACA). MACA established Reserve R662T in favor of DIAND (now Crown-Indigenous Relations and Northern Affairs Canada or CIRNAC) that covers the former Giant Mine lease area (L-3668T) to allow for the implementation of the Giant Mine Remediation Project.

DIAND-GIANT holds Reserve R662T, and is therefore eligible for a permit as per subsection 18(b) of the Mackenzie Valley Land Use Regulations:

18) A person is eligible for a permit who

(b) in any other case, has a right to occupy the land and either contracts to have the land -use operation carried out or is the person who is to carry out the operation.

Type of Area

This Project is located within the boundaries of the City of Yellowknife. A Federal reserve has been established on non-federal lands for the GMRP.

Fees

No application fees are required.

Term

DIAND-GIANT has not applied for any change to the term of the permit. The permit expires on July 20, 2021 with the option for a two year extension remaining.

4. Comments

Triggers

The activities as described trigger a Type A permit as per with paragraph 4(b) of the Mackenzie Valley Land Use Regulations:

- (4) No person shall, without a Type A permit, carry on any activity that involves*
- (b) On land within or outside the boundaries of a local government,*
 - (i) The use of motorized earth-drilling machinery the operating weight of which, excluding the weight of drill rods, stems, bits, pumps and other ancillary equipment, equals or exceeds 2.5 t, for a purpose other than the drilling of holes for building piles or utility poles or the setting of explosives within the boundaries of the local government,*
 - (iii) The establishment of a petroleum fuel storage facility with a capacity equal to or exceeding 80 000 L, or*
 - (iv) The use of a stationary motorized machine, other than a power saw, for hydraulic prospecting, moving earth or clearing land.*

No Licence is required since water use remains beneath 100 m³/day and there are no direct deposits of waste into water.

5. Public Review

By February 14, 2019, comments and recommendations on the Application were received from 4 reviewers:

- Environment and Climate Change Canada (ECCC)
- CIRNAC Inspector (Tim Morton)
- CIRNAC Environment; and
- Board Staff

DIAND-GIANT responded by February 21, 2019. The Review Summary and Attachments (attached) presents the comments identified through this review.

Main Issues Raised during the Review

ECCC and CIRNAC expressed no concerns with the Application so long as best practices for the mitigation of any potential impacts are implemented. No comments on draft permit conditions were provided. Board staff requested information regarding the impacts of drilling activities in Yellowknife Bay with regard to Measures and Commitments from the Giant Mine Remediation Project Report of Environmental Assessment (EA-0809), potential impacts on fish and fish habitat, and confirmation of total water use.

DIAND-GIANT responded appropriately to all comments. Comments and responses are provided in the Review Comment Table (attached).

Preliminary Screening

The draft Preliminary Screening (attached) contains information from the Amendment Application and public review regarding environmental and socio-economic concerns, along with mitigations, and is for the Board's consideration. Portions highlighted in yellow reflect the proposed amendment activities being screened.

Draft Permit

The draft Permit (attached) contains recommended conditions based the standard Permit conditions list and reflects concerns and recommendations raised during the public review. New conditions are highlighted in yellow and were provided to all parties for review, no comments were received. These new conditions have been included to address and mitigate potential impacts associated with the new activities proposed to take place on or near ice.

6. Security

Security is not applicable to this Project as per section 94 of the *Mackenzie Valley Resource Management Act* (MVRMA).

7. Conclusion

The draft Permit conditions are based upon the standard condition list, public review, and Board staff recommendations. Board staff concludes that the conditions contained within this draft Permit should mitigate the potential environmental impacts this development may have on the land and water.

Board staff suggest that there are no outstanding issues or concerns with this Application.

8. Recommendation

Board staff recommend the Board:

- a) **Make a motion to approve the preliminary screening** of the Amendment Application for Land Use Permit MV2016S0016 from Department of Indian Affairs and Northern Development – Giant Mine Remediation Project.
- b) **Make a motion to approve the amendment of Land Use Permit MV2016S0016.**

A draft decision letter is attached.

9. Attachments

- [Amendment Application](#)
 - [Waste Management Plan](#)
 - [Emergency Spill Response Plan](#)
 - [Site Stabilization Communications Plan](#)
- [Pre-Application Engagement](#)
- Review Summary and Attachments
- [2017 Preliminary Screening](#)

- [2016 Preliminary Screening](#)
- [2012 Preliminary Screening](#)
- Draft Updated Preliminary Screening
- Draft Land Use Permit Cover Page
- Draft Land Use Permit Conditions
- Draft Decision Letter from the Board

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'SA', with a long horizontal line extending to the right.

Shannon Allerston
Regulatory Specialist

Review Comment Table

Board:	MVLWB
Review Item:	Giant Mine Remediation Project - Geotechnical Investigations - Amendment Request (MV2016S0016)
File(s):	MV2016S0016
Proponent:	INAC - CARD
Document(s):	Amendment Request (3.22 MB) Waste Management Plan (804.18 KB) SSP Communications Plan (45.22 KB) Most Recent Preliminary Screening (2017) (182.21 KB) Draft Amended LUP Conditions MV2016S0016 (94.92) Emergency Spill Response Plan (2.94 MB)
Item For Review Distributed On:	Jan 28 at 15:31 Distribution List
Reviewer Comments Due By:	Feb 14, 2019
Proponent Responses Due By:	Feb 21, 2019
Item Description:	<p>The Giant Mine Remediation Project (GMRP) Team (CIRNAC and GNWT) has submitted a request to amend Land Use Permit (Permit) MV2016S0016. The GMRP Team is requesting to include the following activities:</p> <ul style="list-style-type: none"> • Under-ice drilling on Baker Pond • Under-ice drilling on Yellowknife Bay • Temporary access trail on Yellowknife Bay for equipment relocation • Removal of potential ice dams on Baker Creek <p>Reviewers are invited to submit comments and recommendations using the Online Review System (ORS) by the review comment deadline specified below. If reviewers seek clarification on the submission, they are encouraged to correspond directly with the proponent prior to submitting comments and recommendations. Reviewers may also wish to consider providing an overarching recommendation regarding whether they are in support of the submission, to provide context for comments and recommendations and to assist the Board with its decision.</p> <p>Please provide comments and recommendations on the:</p> <ul style="list-style-type: none"> • Amendment Request; • Engagement Record; • Engagement Plan; • Waste Management Plan; • Spill Contingency Plan; • Draft Land Use Permit with proposed amended conditions (proposed changes

	<p>highlighted in yellow); and</p> <ul style="list-style-type: none"> • Preliminary Screening (please see below for additional information). <p>Under the Preliminary Screening Requirement Regulations of the Mackenzie Valley Resource Management Act (MVRMA), the Board must conduct a preliminary screening for an amendment request, unless it is exempt from Part 5 of the MVRMA. Reviewers are encouraged to provide comments and recommendations (e.g. on impacts and mitigation measures) to assist with the completion of the preliminary screening. The most recent preliminary screening that was approved by the Board is located under Document(s) below.</p> <p>Please be advised that comments made by reviewers regarding impacts of this proposed amendment to wildlife and wildlife habitat in this preliminary screening will inform the GNWT Minister of Environment and Natural Resources' determination regarding whether a Wildlife Management and Monitoring Plan will be required for this project as per Section 95 of the Wildlife Act.</p> <p>All documents that have been uploaded to this review are also available on our public Registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified below.</p>
General Reviewer Information:	<p>In addition to the email distribution list, the following organization received review materials by fax:</p> <ul style="list-style-type: none"> •NWT Metis Nation: Tim Heron, NWTMN IMA Coordinator: (867) 872-3586.
Contact Information:	<p>Jen Potten 867-766-7468 Kim Murray (867) 766-7458 Shannon Allerston 867-766-7465 Tyree Mullaney 867-766-7464</p>

Comment Summary

Environment and Climate Change Canada: Russell Wykes				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	ECCC comments	Comment ECCC has reviewed this file in accordance with our mandate, and has no comments at this time. Recommendation N/A	Feb 21: Acknowledged.	Feb 21: N/A
INAC - NWT Inspectors: Tim Morton				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	Inspectors Comments	Comment The Inspector has no comments at this time; The Permittee is required to use all best practices to mitigate any potential environmental impacts and report all spills on ice to the Inspector at (867) 669-2442. Recommendation See above comment.	Feb 21: Acknowledged. Best practices will be implemented to mitigate potential impacts on ice. Should a spill occur, it will be reported as required.	Feb 21: N/A
INAC - Yellowknife: Dinah Elliott				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	Amendment Request (MV2016S0016)	Comment CINAC Environment has reviewed the submission and does not have any comments at this time. Recommendation N/A	Feb 21: Acknowledged.	Feb 21: N/A
MVLWB: Shannon Allerston				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	EA Measures and Commitments	Comment Measure 15: d) There is no increase in arsenic levels in Yellowknife Bay water or sediments beyond 200 metres of the outfall. Measure 16: Before construction, the Developer will model re-suspension of arsenic from sediments and	Feb 21: The geotechnical investigations will support the Project in meeting Measure 15 as the investigations will inform a design of the outfall that prevents re-suspension of contaminated sediment. The drilling itself is not considered	Feb 21: If TSS/Turbidity values hit thresholds identified in the application, water samples will be collected for metals analysis. If

		<p>resulting bioavailability in the vicinity of the outfall. If the modelling results indicate that the outfall may re-suspend arsenic from sediments, the Developer will modify the outfall design until operation does not cause resuspension of arsenic from sediment. Commitment 6: An engineering study of alternative on-land and offshore outfall and diffuser installation methods will be completed. The detailed designs for the outfall and diffuser will be based on the findings of this study.</p> <p>Recommendation Can GMRT address the measures and commitments identified above and how the activities associated with investigations for the diffuser address the requirements identified?</p>	<p>construction, but rather is part of the investigation to support the design of the outfall. Feb 21: The risk of resuspension of sediments is considered low due to the type of drill rig being used for this work. The diameter of the drill is small so the volume of sediment that could be resuspended would be minimal and localized. If field turbidity values become elevated, TSS and metal samples will be collected; these samples will be submitted for analysis only if the stop work threshold is triggered. These data would be used to verify TSS and arsenic concentrations related to the high turbidity and can help to quantify potential risk in the area.</p>	<p>levels continue to rise, or hit the stop work threshold, samples will be analyzed to categorize any associated risk for arsenic resuspension. The purpose of these investigations is to develop plans that meet the measures and commitment of the EA for the upcoming Type A Water Licence. Any impacts should be minimal and localized, as described. Monitoring and mitigations proposed seem appropriate.</p>
2	Impacts on Fish	<p>Comment Is the area for proposed drilling activities in YK Bay known fish spawning habitat? Are there any anticipated or potential impacts to fish or fish habitat as a result of the proposed drilling activities in YK Bay?</p> <p>Recommendation Please provide a discussion on any potential impacts and mitigation measures to address impacts on fish or fish habitat in YK Bay.</p>	<p>Feb 21: Fish habitat in the general area of the proposed drilling activities in Yellowknife Bay includes potential spawning habitat for Slimy Sculpin, occurring in the shallow gravel areas at the shoreline, as well as rearing and foraging habitat for a variety of other resident species throughout the bay. These habitats are neither limiting nor critical in Yellowknife Bay. Slimy Sculpin typically spawn in late April and May. Timing of the proposed drill program mitigates effects to spawning habitat: the drill program is scheduled to occur in March when the shallow gravel areas will be frozen; the</p>	<p>Feb 21: Impacts and mitigation identified added to the preliminary screening. DFO did not identify any issues with regard to impacts on fish or fish habitat during the course of the review.</p>

			<p>substrate is less susceptible to disturbance when frozen and covered with landfast ice. Timing of the proposed drilling program also mitigates effects to sculpin spawning: the drill program is scheduled to occur in March prior to the typical commencement of spawning, and during a time when the habitat is inaccessible due to ice and frozen conditions. The short duration and localized area of the proposed drilling program mitigate effects to fish use of the area. Fish frequenting nearby deeper areas for foraging or rearing can easily move away from the temporary disturbance of the drill to carry out these functions elsewhere in Yellowknife Bay. The type and size of the equipment to be used for the proposed drilling program is such that water is not required for drilling and the drill hole diameter is small, thus mitigating potential effects to fish habitat in unfrozen areas. While the sediment will be temporarily disturbed in the immediate footprint of the drill hole itself, the disturbance is considered marginal considering the nature of the habitat in Yellowknife Bay being accessible and non-limiting. Potential effects to fish and fish habitat are considered negative and mitigable.</p>	
3	Water Use	Comment Can the GMRT confirm that water use for all drilling activities (and ice trail	Feb 21: The Project does not expect any water use is	Feb 21: N/A

		access if required); will remain below the trigger for requiring a Water Licence (Less than 100 m ³ /day). Recommendation What is the maximum amount of water expected to be required (including source); for all activities per day?	required to support the drilling activities.	
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