



Giant Mine Remediation Project
PO Box 1500
Yellowknife, NT X1A 2R3

January 31, 2018

Tim Morton
Resource Management Officer
Crown-Indigenous Relations and Northern Affairs Canada
4923 52nd Street
Yellowknife, NT X1A 2R3

Re: ICING ISSUES ON BAKER CREEK – GIANT MINE SITE

Dear Mr. Morton:

Crown-Indigenous Relations and Northern Affairs Canada (CINAC) is sending this letter to provide notification of adverse ice formation on Baker Creek. This notification is provided on behalf of the Giant Mine Remediation Project (GMRP). The GMRP team consists of CIRNAC and the Government of the Northwest Territories, and is supported by the federal department of Public Services and Procurement Canada. In addition, the Main Construction Manager (MCM) is responsible for overall site management including emerging risks on site. The MCM role is currently held by Parsons Inc. CIRNAC ultimately retains responsibility for compliance and for liability related to the Giant Mine Site.

The MCM has been conducting routine inspections of the conditions in the on-Site portions of Baker Creek. These inspections identified on-going overflow resulting in excessive ice formation (i.e., blocked culverts, ice dams). The outflow from Lower Martin Lake normally ceases flow once winter freeze up occurs; however, the real-time hydrometric station at the outfall indicates flow is still active. The exact cause for these conditions is not know, but is assumed to be related to natural climate conditions and are not a result of activities on the Giant Mine Site.

On 25 January 2019, CIRNAC submitted an amendment application for the Type B Land Use Permit MV2016S0016 to the Mackenzie Valley Land and Water Board. One aspect of this amendment was authorization to conduct ice-removal work on Baker Creek. The public review comment period ends 14 February 2019, with comment responses from the GMRP Team due by 21 February 2019. It is anticipated that if this amendment application is successful, that authorization to proceed would not be obtained until early to mid-March. The GMRP Team is concerned that removal of ice dams and control of overflow on Baker Creek may be required before then to prevent potential flooding and erosion of contaminated material from the Site..

Similar overflow/ice conditions occurred in 2011, which resulted in Baker Creek flowing outside the channel and over the historic Jo-Jo tailings located adjacent to Baker Pond (i.e., Reach 6 of Baker Creek). This resulted in contaminated soil and tailings being transported downstream to Yellowknife Bay and affecting water quality in that area. Monitoring results



in the bay identified that the impact on the water quality was localized and short-term; however, there was substantial public concern as a result of this overflow event. Subsequently, a cover was installed on the Jo-Jo tailings to prevent further mobilization of tailings from this area in the future. However, risks of mobilization of contaminated soils and potential flooding of areas of the underground mine via the open pits remain a current risk. As such, the GMRP Team would like to proceed now with removal of the ice to mitigate these potential risks.

The intent is to complete this work in accordance with anticipated land use permit and water licence requirements as follows:

- Standard land use permit conditions for working on ice-covered waterbodies would be adhered to (e.g., refueling a minimum of 100 m away from the waterbody, removing all equipment from the ice over night).
- Small pieces of ice would be distributed across the ice surface to allow natural melting during spring, but avoiding further development of ice dams. Large blocks or sheets of ice would be transported to an area of active water management during the open water season (i.e., Northwest Tailings Pond or an open pit). The resulting meltwater would be pumped and treated prior to discharge into Baker Creek during the seasonal discharge period.
- Any additional requirements identified by CIRNAC Inspectors, MVLWB, or DFO would also be followed.

Following set practices and recommendations would be anticipated to mitigate any adverse impacts from the ice removal.

Please contact the undersigned at 867-669-2838 or Natalie.Plato@canada.ca for more information or further clarification.

Sincerely,



Natalie Plato
Deputy Director
Giant Mine Remediation Project

Cc: Devin Penny, CIRNAC, Resource Management Officer
Shannon Allerston, MVLWB, Regulatory Specialist
Don Pittman, DFO, Senior Biologist

Attachment: Baker Creek Winter Inspection Report – 22 January 2019
Baker Creek Winter Inspection Report – 29 January 2019

Temperature: _____ -35_____	www.theweathernetwork.com	Date: <u>Jan. 22, 2019</u>
Wind: _____ 5km_____		Time: <u>9:00AM</u>
Daily - Total Snow (cm): _____ 2cm_____	www.climate.weather.gc.ca	Inspected by: <u>B. Mitchell</u>
Monthly - Total Snow (cm): _____ 20cm in January_____		Reviewed by: _____

LOCATIONS (See maps attached)	WATER LEVEL (cm)	INSPECTED		PICTURES TAKEN		OBSERVATIONS
		YES	NO	YES	NO	
Reach 0	N/A	X		X		Overflow conditions
Reach 1	N/A	X		X		Overflow conditions
Reach 2 McInnis Bridge measure (m)	160.169m	Yes		Yes		Overflow conditions
Reach 3	N/A	X		X		Overflow conditions
Reach 4 UBC Bridge measure (m)	162.728m	Yes		Yes		Overflow conditions
Reach 5 B Vent Falls measure (m)	163.85m	Yes		Yes		Overflow conditions
Reach 6	N/A	X		X		NO Overflow conditions
Reach 7 (not shown in map)	N/A					
Trapper Lake culvert # 1	N/A	X		X		NO Overflow conditions
Trapper Lake culvert # 2	N/A	X		X		NO Overflow conditions
Trapper Lake culvert # 3	N/A	X		X		NO Overflow conditions
Trapper Lake culvert # 4	N/A	X		X		NO Overflow conditions

<p>Real-Time Hydrometric Data for Baker Creek at Outlet of Lower Martin Lake Hydrometric Station 07SB013</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Today's Primary Water Level (m)</th> <th colspan="2">3 weeks - Monday readings</th> <th colspan="2">Difference (m)</th> </tr> <tr> <td>29.13m</td> <td>Date</td> <td>PWL (m)</td> <td style="text-align: center;">↑</td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td>20190115</td> <td>29.13</td> <td></td> <td></td> </tr> <tr> <td></td> <td>20190122</td> <td>29.296</td> <td></td> <td></td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Today's Discharge (m³/s)</th> <th colspan="2">3 weeks - Monday readings</th> <th colspan="2">Difference (m)</th> </tr> <tr> <td>14,266m³ (0.165m³/s)</td> <td>Date</td> <td>D (m³/s)</td> <td style="text-align: center;">↑</td> <td style="text-align: center;">↓</td> </tr> <tr> <td></td> <td>20190115</td> <td>14256</td> <td></td> <td></td> </tr> <tr> <td></td> <td>20190122</td> <td>15552</td> <td></td> <td></td> </tr> </table>	Today's Primary Water Level (m)	3 weeks - Monday readings		Difference (m)		29.13m	Date	PWL (m)	↑	↓		20190115	29.13				20190122	29.296			Today's Discharge (m ³ /s)	3 weeks - Monday readings		Difference (m)		14,266m ³ (0.165m ³ /s)	Date	D (m ³ /s)	↑	↓		20190115	14256				20190122	15552			<p>Record details of observations for any changes noted during shift. When performing this inspection please look for the presence of:</p> <ul style="list-style-type: none"> • Snowmelt in and around the creek • Beaver dams built or being built in the creek • Increased stream flow • Rising water levels • Ice dams or blockages • Ice building up inside culverts (1/4, 1/2, 3/4) • Soil erosion / Tailings erosion <p>If any of the above observations are identified, please record your observations on this inspection sheet.</p> <p style="background-color: yellow; text-align: center;">If any of the above observations are identified, please REPORT IMMEDIATELY TO YOUR SUPERVISOR AND ENVIRONMENTAL MANAGER (867-688-3352)</p>
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ADDITIONAL OBSERVATIONS

None

INSPECTION PICTURES



Location: REACH 0



Location: REACH 1



Location: REACH 2 - McGinnis Bridge



Location: REACH 3



Location: REACH 4 - UBC Bridge



Location: REACH 5 - B2 DAM



Location: REACH 6



Location: Location: REACH 7



Location: Trapper Cr. Culvert #1



Location: Location: Trapper Cr. Culvert #2



Location: Trapper Cr. Culvert #3



Location: Trapper Cr. Culvert #4

Temperature: _____ -28 _____	www.theweathernetwork.com	Date: <u>Jan. 29, 2019</u>
Wind: _____ 23km _____		Time: <u>9:00AM</u>
Daily - Total Snow (cm): _____ 0cm _____	www.climate.weather.gc.ca	Inspected by: <u>B. Mitchell</u>
Monthly - Total Snow (cm): _____ 24cm in January _____		Reviewed by: _____

LOCATIONS (See maps attached)	WATER LEVEL (cm)	INSPECTED		PICTURES TAKEN		OBSERVATIONS
		YES	NO	YES	NO	
Reach 0	N/A	X		X		Overflow conditions
Reach 1	N/A	X		X		Overflow conditions
Reach 2 McInnis Bridge to Ice	1.201m	Yes		Yes		Overflow conditions
Reach 3	N/A	X		X		Overflow conditions
Reach 4 UBC Bridge to Ice	1.720m	Yes		Yes		Overflow conditions
Reach 5 B Vent Falls measure (m)	163.85m	Yes		Yes		NO Overflow conditions Heavy snow cover
Reach 6	N/A	X		X		NO Overflow conditions
Reach 7 (not shown in map)	N/A	Yes		Yes		NO Overflow conditions
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