



Report on Actions Taken:

**June 7th 2016, Fisheries Act Direction (File number: 4408-2016-05-10-001) and
Response to June 16, 2016, INAC Letter of Non-Compliance
Bi-Weekly Report No. 6 for Period September 2 to September 16, 2016**

September 16, 2016

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Spill Report 16-181- Mine Haul Road to Mary River and Sheardown Lake Tributary.

Spill Report 16-198 - Camp Lake Tributary 1

Spill Report 16-202 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.

Spill Report 16-202 – Update 1 - Milne Inlet Tote Road, Tributaries to Muriel Lake (BG-31) and David Lake (BG-28)

Appendix B - Surface Water Quality and Acute Toxicity Results for Affected Areas

- B.1 - Sample IDs and Locations
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- C.1 - Spill Report 16-158
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- C.6 – Milne and Mine Site Drainage Works
- C.7 – Removal of Impacted Snow: Milne Beach and Tote Road Bridges

Report Basis

The document provided, herein, is the sixth bi-weekly progress report as required under the June 7 Fisheries Direction provided by Environment Canada (page 6, Measures to be Taken, Item 1) and reports on the period September 2nd through September 16th. Specifically, the bi-weekly reports are to provide updates on the actions taken to address sedimentation issues and ongoing actions being taken at the site to address Items 2 and 3 as outlined in the Fisheries Direction. Previous actions, including pre-freshet actions, were reported on in the June 24th, 2016, Report on Actions Taken and subsequent Bi-Weekly Reports Nos. 1 to 5, incl.

1. Unauthorized Releases and Contributing Factors

A number of unauthorized releases of sediment were reported to Environment Canada (EC), Indigenous and Northern Affairs Canada (INAC), and the NT-NU Spill Line during the months of May and June. These included the Spill Report numbers 16-158, 16-176, 16-181, 16-198, 116-202, and 116-202 Update No. 1. Copies of the original Spill Reports are provided in Appendix A. During the current reporting period, there were no further unauthorized sediment releases reported.

During the reporting period, the monitored streams and tributaries continued to run visually clear of sediment. Near the end of this reporting period, sub-zero temperatures have resulted in the freeze up of many of the monitored streams.

Retention of Third Party Expertise

When sediment release events were first observed and reported, third party expertise was retained and these individuals were brought to site. A list of those individuals and support provided was detailed in the June 24th, 2016, Report on Actions Taken. We continue discussions with those various individuals to provide advice as warranted. During the reporting period, the following consultants/contractors provided assistance:

- J In early August, Golder was selected as the key consultant to support Baffinland in the development of the Dust Mitigation Action Plan and the Tote Road and Mine Haul Road Mitigation Action Plans. Action and mitigation plans continued to be developed during this reporting period.
- J In late August and early September, Nuna Logistics was contracted to complete select environmental work for Baffinland. This work included the maintenance and clearing of sediment from the ditching system and sumps upstream of culverts and check dams adjacent to the Mine Haul road. The planned work was completed.

2. Water Quality and Acute Toxicity Sampling Results for Areas of Concern

Spill Reports for sediment releases are provided in Appendix A. Potential receivers for the sediment releases included Sheardown Lake, Sheardown Lake Tributary, Camp Lake, Camp Lake Tributaries, Mary River and Mary River Tributaries, David Lake and David Lake Tributaries, Muriel Lake and Muriel Lake Tributaries.

Available water quality and acute toxicity results for Sheardown Lake, Camp Lake, and Mary River systems are provided in Appendix B. These results include data provided in the previous reports covering the period up to September 5th, 2016, as well as new results that became available during the current reporting period. GPS coordinates and maps are provided to show approximate sample locations as well as the location of structures that were installed to mitigate the sediment concerns.

Water quality results have been compared to the Effluent Quality Discharge Limits for Contact Water (Table 11) provided in the Type "A" Water Licence No. 2AM-MRY1325 for the Mary River Project, which are summarized in the table below:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Suspended Solids (TSS)	15	30
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

Note that in areas where there is or has been active construction, the following effluent discharge limits apply:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Suspended Solids (TSS)	50	100
Oil and Grease	No Visible Sheen	No Visible Sheen
pH	Between 6.0 and 9.5	Between 6.0 and 9.5

During the current September 2nd to September 16th reporting period, low flows at LDFG-OUT resulted in sediment being stirred up during sampling on September 5th, resulting in a TSS of 22 mg/L. Continued low flows and freeze-up shortly after prevented the resampling of LDFG-OUT. Similarly, low flows, winter storms and freeze-up prevented the collection of water samples at the monitored streams (culverts) along the Tote Road. Due to decreasing sub-zero temperatures and freeze up, periodic water quality monitoring has been discontinued for the year.

All other monitored locations showed no exceedances to the Water Licence criteria listed above during the reporting period.

Due to the historically non-lethal water quality results over the reporting period for the areas of concern, further acute toxicity analyses was not performed. Previous acute toxicity analyses have shown non-lethal results from the discharge water samples that were collected and reported previously.

3. Corrective Measures for Reported Spills and Other Concerns

3.1. Immediate actions undertaken to address issues

A number of immediate actions were undertaken to address sediment releases to water bodies that were documented in the Spill Reports submitted to authorities. These actions were presented in previous Reports on Actions Taken.

In the case of the Milne Ore Pad and the Mine Site Ore Pad drainage and collection systems, construction of ditch systems were completed by June 15 and July 15, respectively. As of those dates, the ditching systems were functional and currently performance is under observation and evaluation. Construction Summary Reports (CSRs) for the facilities are currently in preparation and will be submitted to the Nunavut Water Board within three months after the substantial completion of construction.

3.2. Detailed work completed by area of concern

Any new work actions taken during the September 2nd – 16th reporting period for the areas of concern are provided in Appendix C. Actions taken are appended to the overall action list provided in the previous work action lists. In addition, new photos for the current reporting period are provided as warranted. Appendix C is subdivided as follows:

Appendix C.1: Spill Report 16-158 - Sheardown Lake Tributaries and Sheardown Lake.
Appendix C.2: Spill Report 16-176 - Camp Lake Tributaries and Camp Lake.
Appendix C.3: Spill Report 16-181- Mine Haul Road to Mary River and Sheardown Lake Tributary.
Appendix C.4: Spill Report 16-198 - Camp Lake Tributary 1
Appendix C.5: Spill Report 16-202 and Update No. 1 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.
Appendix C.6: Milne Port Ore Stockpile Drainage Collection System.
Appendix C.7: Impacted Snow Removal from Milne Beach and Tote Road Bridges

4. Next Steps

4.1. Bi-weekly update reports

This will be the last biweekly update report (No. 6) before the completion report is submitted by September 30, 2016.

4.2. Completed construction repairs

Construction repairs for the areas of concern including the Milne Port Ore Stockpile Drainage system and the Mine Site Crusher Stockpile Pad have been substantially completed by the established July 17, 2016, deadline.

4.3. Lessons-learned

Baffinland will conduct an extensive review and analyses of lessons- learned with regard to sedimentation issues along the roads and at the camps. Key conclusions and recommendations will be provided in the Completion Report which will be provided to regulators and inspectors. Baffinland will be open to any comments and recommendations received and will make revisions as is appropriate.

4.4. Long-term action plans

Longer term action plans related to dust mitigation and Tote Road work as related to drainage considerations are underway and will be provided by September 30, 2016.

4.5. Completion Report

A completion report that summarizes the results of all work to date and is signed off by the CEO of the company will be provided by September 30, 2016.

Appendix A

NT-NU Spill Reports

Spill Report 16-158 - Sheardown Lake Tributaries and Sheardown Lake.

Spill Report 16-176 - Camp Lake Tributaries and Camp Lake.

Spill Report 16-181 - Mine Haul Road to Mary River and Sheardown Lake Tributary.

Spill Report 16-198 - Camp Lake Tributary 1

Spill Report 16-202 - Milne Inlet Tote Road, Tributaries to Mary Lake, David Lake, and Muriel Lake.

Spill Report 16-202 – Update 1 - Milne Inlet Tote Road, Tributaries to Muriel Lake (BG-31) and David Lake (BG-28)



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 05-10-2016		REPORT TIME 14:30 HRS		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 158
	OCCURRENCE DATE: MONTH – DAY – YEAR 05-07-2016		OCCURRENCE TIME 19:00 HRS			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease No.: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Project Mine Site, Baffin Island, NU				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Suite 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED sediment / discoloured water		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Melting snow		SPILL CAUSE suspected entrained dust		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
	<p>On Saturday, May 7, 2016, a snowmelt event occurred at the Mine Site. Runoff containing sediments and discoloured water were observed to flow into Sheardown Tributary and Sheardown Lake at around 1900 HRS. The source of the suspected off-spec drainage was dirty snow located downwind of the Crusher Pad. The event resulted in some siltation/discoloured water in two streams flowing from adjacent areas onto and under the ice of Sheardown Lake. In accordance with the Surface Water Management Plan, controls were implemented that included installation of silt fences and the deployment of flocculent and treated jute to settle sediments prior to discharge. Further actions are planned that will reduce the potential impact from the dirty snow source area. Dirty snow removal, check dam/sump construction, and additional flocculation are being considered. Daily monitoring of the water quality and flow is ongoing. Spill report updates will be provided as warranted. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days</p>					
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 902-403-1337	
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT 647-253-0596	ALTERNATE TELEPHONE Ext 6016	
				LOCATION		
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						



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 05-17-2016	REPORT TIME 19:00 hrs	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 176
B	OCCURRENCE DATE: MONTH – DAY – YEAR 05-17-2016	OCCURRENCE TIME 09:00 hrs			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU		REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 71 MINUTES 16 SECONDS 46		LONGITUDE DEGREES 79 MINUTES 22 SECONDS 36		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A	CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time	U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A	U.N. NUMBER N/A		
I	SPILL SOURCE Melt Water	SPILL CAUSE Warming Temps/Rain	AREA OF CONTAMINATION IN SQUARE METRES N/A		
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On Tuesday, May 17, 2016, runoff containing sediments was observed to be flowing into Camp Lake Tributary # 1 and into Camp Lake around 0900 HRS. The source of the off-spec drainage was from an area adjacent to the airstrip. The event resulted in some siltation to the stream flowing into Camp Lake. In accordance with the Surface Water Management Plan, controls were implemented that included installation rip rap (6" aggregate) and the deployment of flocculent and treated jute to settle sediments prior to discharge. Further actions are planned that will reduce the potential impact from the source area. Spill report updates will be provided as warranted. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days				
L	REPORTED TO SPILL LINE BY Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596
M	ANY ALTERNATE CONTACT Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					



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FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-21-2016		REPORT TIME 21:00 hrs		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 181
	OCCURRENCE DATE: MONTH – DAY – YEAR 05-20-2016		OCCURRENCE TIME 19:00 hrs			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Melt Water		SPILL CAUSE Melting of snow on road base		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY Snow covered area, poor access		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On May 20 and 21, 2016, runoff containing sediment was observed to be flowing from the surface of the Mine Haul Road through several breaks (punch outs) on the outer edge of the road. The punch outs were installed to allow contact water on the road surface to be efficiently discharged from the road surface. On the afternoon of May 19, discharges of contact water increased and it became apparent that there was risk to Mary River and Sheardown tributary/Lake. The berm punch outs were sealed and road contact water has been diverted to three selected locations that will minimize potential flows to downstream fish habitat and water bodies. Check dams, silt fences/curtains, flocculants are being utilized to assist with this initial effort. It is expected that the sediment will settle and will be discharged back to the receiving environment. Report updates will be provided with further information in the near future. This incident is being reported as required by the conditions of Water Licence No. 2AM-MRY1325 and as required by subsection 38(4) of the Fisheries Act.					
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596	
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016	
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						



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TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR 05-31-2016	REPORT TIME 11:00 hrs	<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 198
B	OCCURRENCE DATE: MONTH – DAY – YEAR unknown - within last several days	OCCURRENCE TIME unknown			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU	REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN			
E	LATITUDE DEGREES 71 MINUTES 19 SECONDS 46	LONGITUDE DEGREES 79 MINUTES 22 SECONDS 41			
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A	CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time	U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 44m3	U.N. NUMBER N/A		
I	SPILL SOURCE steep sandy stream bank	SPILL CAUSE warming temperatures	AREA OF CONTAMINATION IN SQUARE METRES 110m2		
J	FACTORS AFFECTING SPILL OR RECOVERY poor access	DESCRIBE ANY ASSISTANCE REQUIRED N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS On Sunday, May 29, 2016, during an environmental inspection of Mine Site drainages a deposit of sediments was discovered in Camp Lake Tributary #1 (CLT1), south of the Tote Road. Upon initial investigation, the source of the sediment was from a stream bank failure. The embankment failure may have been caused by water draining from the airstrip. The event resulted in sandy deposit of material that partially encroached on the stream. Once discovered, silt fences were erected around the sediment deposit. A schedule is being developed for the removal of the sediment and stabilization of the stream embankment at that location. The water will be rerouted from this location and redirected to an area that is more stable. The material is coarse sand and does not appear to be mobile in water. A follow-up report documenting the occurrence and providing recommendations will be submitted within 30 days.				
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					



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 06-02-2016		REPORT TIME 0700 HRS		<input checked="" type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT		REPORT NUMBER 16 - 202
B	OCCURRENCE DATE: MONTH – DAY – YEAR 05-31-2016		OCCURRENCE TIME 2100 HRS				
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"			
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS			
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3				
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A				
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A		
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A		
I	SPILL SOURCE Freshet erosion		SPILL CAUSE warming temperatures		AREA OF CONTAMINATION IN SQUARE METRES N/A		
J	FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS During an environmental inspection of the Milne Tote Road on May 31, three locations were observed where there was turbid water and sediment present in culvert outlet locations. These locations were stream crossings CV-223 at km 97, BG-17 at km 90, and BG-29 at km 85. The source of the sediment is erosion from spring freshet. There are no fish present at these locations because flows are very low and fish have not yet started to move into the stream. In the meantime silt fences and in-ditch flocculant have been deployed as appropriate. Sediments in culvert outlet basins will be carefully excavated and removed under the supervision of Environment staff within the next several days. In addition, the embankment areas of these streams are scheduled to receive riprap/geotextile shortly.						
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596		
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 902-403-1337	ALTERNATE TELEPHONE 6016		
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED		
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS			
LEAD AGENCY							
FIRST SUPPORT AGENCY							
SECOND SUPPORT AGENCY							
THIRD SUPPORT AGENCY							



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 06-19-2016		REPORT TIME 2200 HRS		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input checked="" type="checkbox"/> UPDATE # 1 TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 202
	OCCURRENCE DATE: MONTH – DAY – YEAR 06-18-2016		OCCURRENCE TIME Unknown			
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease: Q13C301			WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Mine Site, Baffin Island, NU				REGION <input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE DEGREES MINUTES SECONDS			LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME Baffinland Iron Mines Corp.		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION 2275 Middle Road East, Sutie 300, Oakville, ON L6H 0C3			
G	ANY CONTRACTOR INVOLVED N/A		CONTRACTOR ADDRESS OR OFFICE LOCATION N/A			
H	PRODUCT SPILLED Sediment		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unquantified at present time		U.N. NUMBER N/A	
	SECOND PRODUCT SPILLED (IF APPLICABLE) N/A		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES N/A		U.N. NUMBER N/A	
I	SPILL SOURCE Freshet melting snowpack		SPILL CAUSE warming temperatures		AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY N/A		DESCRIBE ANY ASSISTANCE REQUIRED N/A		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT N/A	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
	<p>During an environmental inspection of the Milne Tote Road on June 18, two locations were observed where there was turbid water and sediment present near stream crossings, downstream of Tote Road. These locations were BG-31 at km 82 and BG-28 at km 86.3. The sediment appears to be generated by the melting snow pack adjacent to the road. The streams are not expected to be fish habitat, although flow from these locations is to Muriel Lake (BG-31) and David Lake (BG-28). The sediment is being controlled from entering the lakes at these locations by the construction of check dams and silt curtain for stream BG-31 and by silt fence and silt curtain at BG-28. Previous locations where there was sediment and turbid water at stream crossings CV-223 at km 97, BG-17 at km 90, and BG-29 at km 85, are now running clear and sediment at culvert outlets was removed.</p>					
L	REPORTED TO SPILL LINE BY Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 647-253-0596	
M	ANY ALTERNATE CONTACT Allan Knight	POSITION Env. Superintendent	EMPLOYER Baffinland	ALTERNATE CONTACT 902-403-1337	ALTERNATE TELEPHONE 6016	
				LOCATION		
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 <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY	CONTACT NAME		CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

Appendix B

Surface Water Quality and Acute Toxicity Results for Affected Areas

Appendix B.1

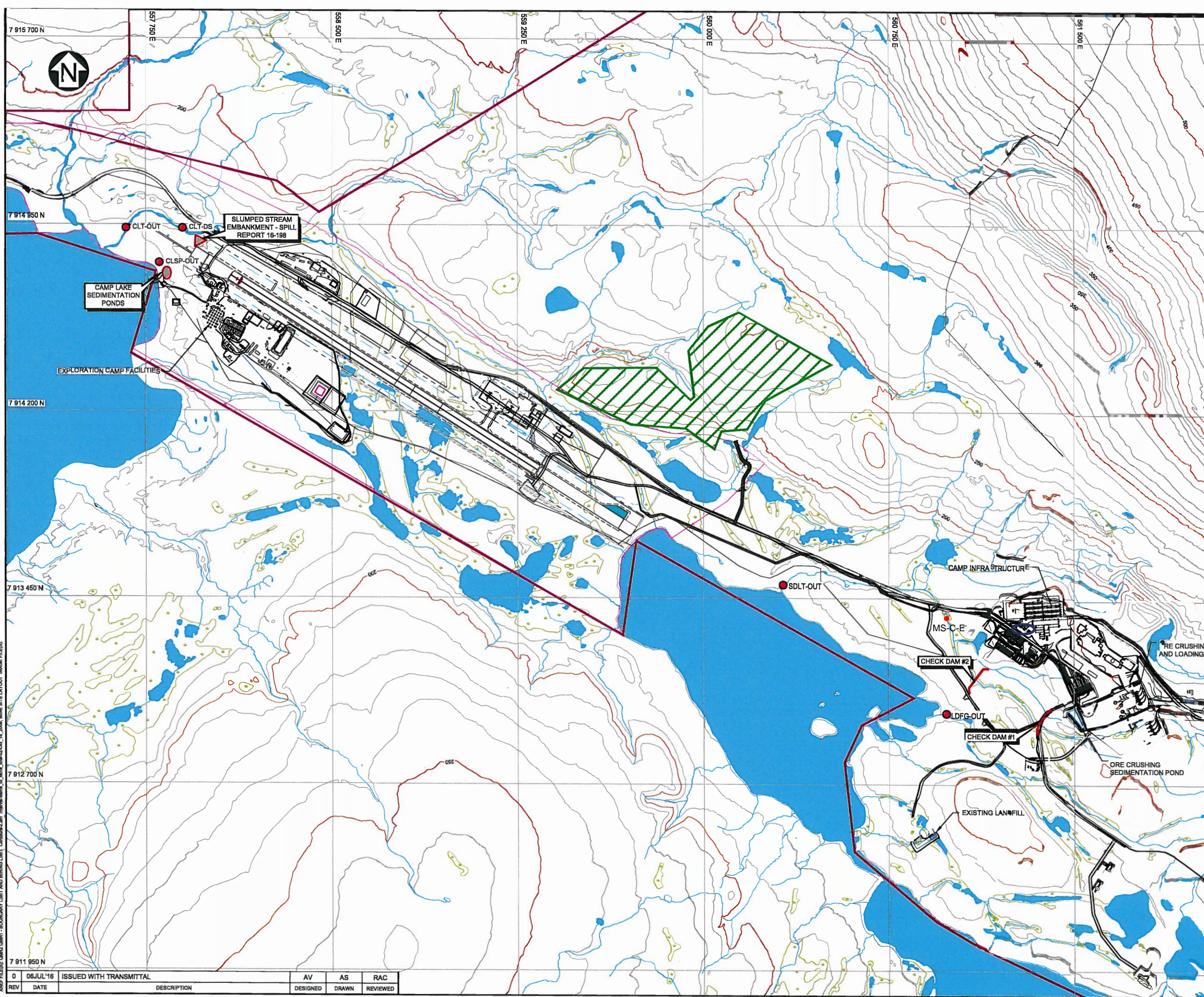
Sample IDs and Locations

Table B.1.1 - Sample IDs and Locations

Sample Location	Description	Coordinates (Lat/Long)
CLSP-OUT	Camp Lake Sedimentation Pond Outlet	N 71 19 42.2 W 79 22 55.4
CLT-OUT	Camp Lake Tributary # 1 (100 m upstream of Camp Lake Outfall)	N 71 19 46.8 W 79 23 08.6
CLT-DS CL-DS	Camp Lake Tributary # 1 (100 m downstream of Airstrip Drainage outfall into Camp Lake Tributary #1)	N 71 19 46.6 W 79 22 45.6
SDLT-OUT	Sheardown Lake Tributary (40 m upstream of Sheardown Lake Outfall)	N 71 18 58.3 W 79 18 45.5
LDFG-OUT	Landfill Gate Tributary (40 m upstream of Sheardown Lake Outfall)	N 71 18 41.0 W 79 17 40.6
CD4-IN	Upstream of Check Dam #4	N 71 18 45.8 W 79 13 01.0
CD4-OUT	Downstream of Check Dam #4	N 71 18 43.2 W 79 12 54.2
CV 194A	Culvert that directs discharge from Check Dam # 4 to Mary River	N 71 18 41.6 W 79 12 55.3
MS-C-E	SNP Monitoring Site (290 m upstream of SDLT Outfall)	N 71 18 53.9 W 79 17 39.7
SVCD1-IN	Sheardown Valley Checkdam # 1	N 71 18 38.5 W 79 15 10.8
SVCD1-T1 & SVCD1-T2	Sheardown Valley Checkdam # 1 (1 meter downstream)	N 71 18 38.5 W 79 15 10.8
MS-08-US	Mary River - Upstream of Deposit 1	N 71 18 37.8 W 79 11 13.4
MS-08-DS	Mary River – Downstream of tributary draining Deposit 1	N 71 18 38.9 W 79 12 09.4
G0-09A	Mary River - Upstream of Deposit 1	N 71 20 51.4 W 79 00 11.8
G0-09	Mary River - Upstream of Deposit 1	N 71 20 18.0 W 78 59 46.8
G0-09B	Mary River - Upstream of Deposit 1	N 71 19 25.6 W 79 00 22.2

Sample Location	Description	Coordinates (Lat/Long)
G0-03	Mary River - Upstream of Deposit 1	N 71 18 22.2 W 79 07 15.9
G0-01	Mary River - Upstream of Deposit 1	N 71 18 37.7 W 79 11 50.8
F0-01	Mary River Tributary draining Deposit 1	N 71 18 38.6 W 79 11 48.3
E0-10	Mary River – Downstream of F0-01	N 71 18 38.4 W 79 11 56.2
E0-03	Mary River – Downstream of Deposit 1	N 71 18 22.6 W 79 14 21.7
E0-21	Mary River – Downstream of Mine Site Treated Wastewater Outfall	N 71 17 58.9 W 79 15 17.2
E0-20	Mary River – Downstream of Mine Site Treated Wastewater Outfall	N 71 17 45.0 W 79 16 34.5
C0-10	Mary River – Downstream of Sheardown Lake Outlet	N 71 17 57.6 W 79 18 15.9
C0-05	Mary River – Downstream of Mine Site	N 71 16 40.2 W 79 22 15.6
C0-01	Mary River – Before Mary Lake	N 71 15 28.5 W 79 25 47.2

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XREF FILE: C:\MSOFT\AutoCAD\Mapas\FIGURE14 - 0. 7/8/2016 10:19:58 AM. ASIMPSON PRINTED: 7/8/2016 10:21:42 AM. Layout1. ASIMPSON



LEGEND:

- WATER
- BORROW AREAS (2013 UNDER Q10C3001)
- QUARRY AREA (EXISTING UNDER Q13C301)
- WASTE STORAGE AREA
- RIVER/STREAM/DRAINAGE
- ROAD
- QIA SURFACE COMMERCIAL LEASE BOUNDARY
- SAMPLE LOCATION

NOTES:

1. COORDINATE GRIDS UTM NAD83 ZONE 17N
2. TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005)
3. PLAN BASED ON INFORMATION PROVIDED BY HATCH DATED (JAN 13 2015)
4. CONTOUR INTERVAL IS 2.5 METRES
5. ALL SAMPLE IDS SHOWN IN BRACKETS REPRESENT THE TYPE B WATER LICENCE(S) MONITORING POINTS. ALL OTHERS ARE MONITORING POINTS AS PER THE TYPE A WATER LICENCE (2AM-MRY1325)

150 75 0 250 500 750 m
SCALE A

BAFFINLAND IRON MINES CORPORATION

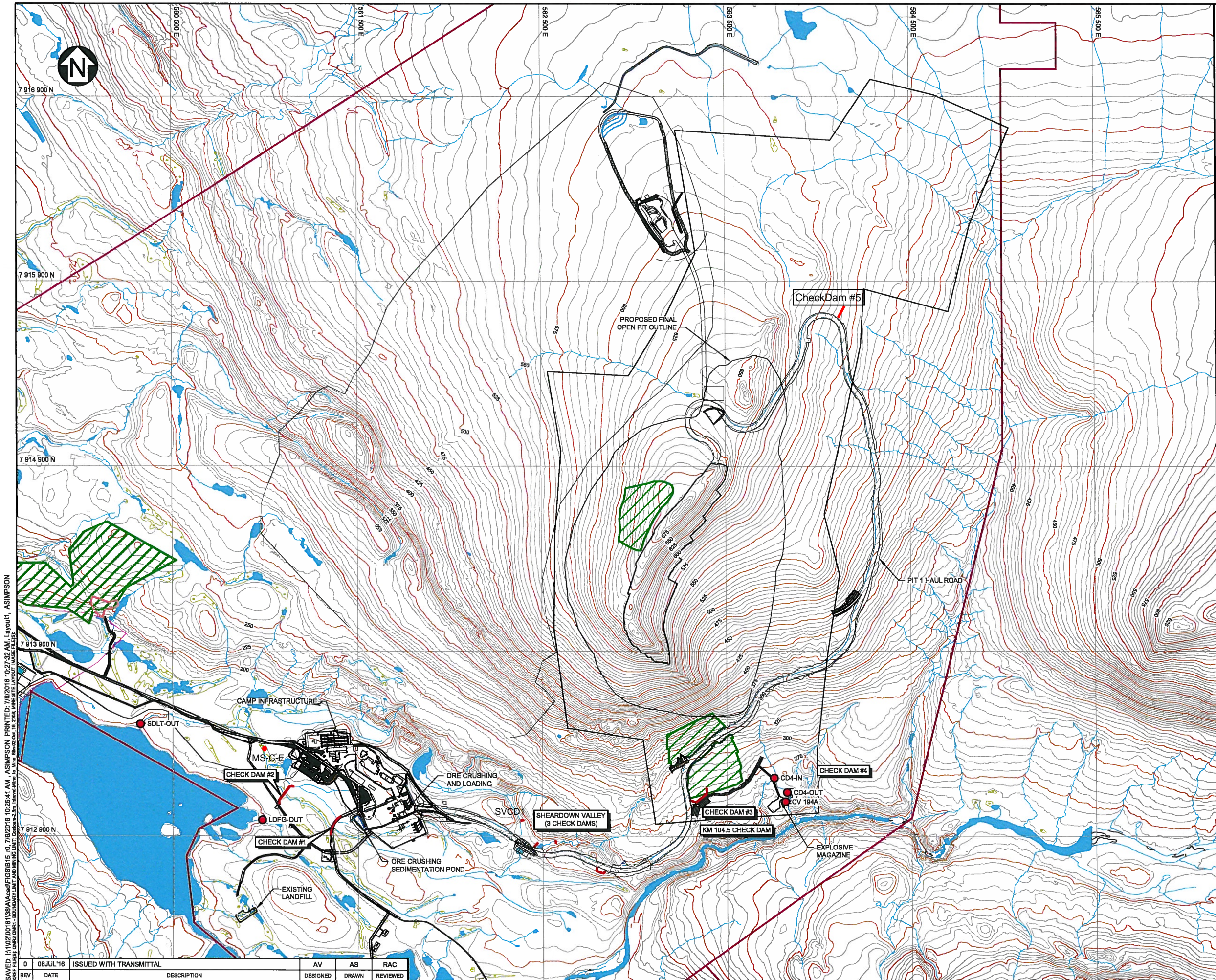
MARY RIVER PROJECT

MINE SITE
CAMP LAKE AND SHEARDOWN LAKE
SAMPLE LOCATIONS

Knight Piésold
CONSULTING

PIA NO.
NB102-181/38
REF NO.
NB16-00385
REV
0
FIGURE 1

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	06JUL'16	ISSUED WITH TRANSMITTAL	AV	AS	RAC



LEGEND:

- WATER
- BORROW AREAS (2013 UNDER Q10C3001)
- QUARRY AREA (EXISTING UNDER Q13C301)
- WASTE STORAGE AREA
- RIVER/STREAM/DRAINAGE
- ROAD
- QIA SURFACE COMMERCIAL LEASE BOUNDARY
- SAMPLE LOCATION

NOTES:

- COORDINATE GRID IS UTM NAD83 ZONE 17N.
- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- PLAN BASED ON INFORMATION PROVIDED BY HATCH, DATED (JAN 13, 2015).
- CONTOUR INTERVAL IS 2.5 METRES.
- SAMPLE LOCATIONS PROVIDED BY BAFFINLAND IRON MINES CORPORATION, DATED (JUNE 21, 2016).

150 75 0 250 500 750 m
SCALE A

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

MINE SITE
HAUL ROAD
SAMPLE LOCATIONS

Knight Piésold
CONSULTING

P/A NO.
NB102-181/38

REF NO.
NB16-00385

REV
0

FIGURE 2

SAVED: 11/02/2016 11:39:00 AM, ASIMPSON PRINTED: 7/8/2016 10:27:32 AM, Layout1, ASIMPSON
REV 0 06JUL'16 ISSUED WITH TRANSMITTAL AV AS RAC
DESIGNED DRAWN REVIEWED