October 11, 2016

Resource Management Officer
Nunavut Field Operations
Aboriginal Affairs and Northern Development Canada
Box 100
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Justin Hack Justin.Hack@aandc-aadnc.gc.ca

Manager, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
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Re: Follow-up to Spill #16-338, Reported on September 12, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

On September 12, 2016 at 00:30 HRS, a loader operator discovered that the Sandvik Screen Plant, located within the Milne Port Ore Storage Pad, was leaking hydraulic oil. The operator immediately shut down the equipment and then called his supervisor to investigate. Approximately 200 litres of hydraulic oil was released to the adjacent ground surface on the Ore Storage Pad, an engineered contained area with ditches and a lined settling pond. Investigation determined the cause of the spill to be fitting failure, which was subsequently replaced prior to equipment start-up. The nearest natural water body is >100 m away from both the spill location and storage location and is currently frozen.

Immediate and Follow-Up Action:

The ship loader Supervisor and the Environment Department were notified immediately by the operator upon spill discovery. The immediate clean-up response utilised spill pads to mop up visible free product; the spill pads were placed in a Quatrex Bag. Contaminated ore was removed and placed in the NW corner of Ore Storage Pad.

Recommendations:

Ensure pre-op inspections are completed before use of the Sandvik Screen Plant.

The ditches and settling pond for the Milne Port Ore Storage Pad will be monitored for the presence of free phase product and sheen during the open water season.

Current Status:

The fitting was subsequently replaced and the screener is currently operational. The affected area was cleaned up and the contaminated material placed in a contained location.

Should you require further information or clarification on the above noted spill, please feel free to contact William Bowden or Jim Millard at (647) 253-0596 x6016 or (902) 403-1337.

Prepared By:

Connor Devereaux,

Environmental Coordinator

Reviewed by:

Jim Millard

Environmental Manager

Attach: Photos, Map, NT-NU Spill Report

cc. Anant Minhas, Sylvain Proulx, Sylvain Desrochers, Allan Knight, Jim Millard, Todd Burlingame, Wayne McPhee (Baffinland),
Erik Allain, Scott Burgess Jonathan Mesher (INAC).

Photo 1 – Hydraulic Oil Spill – 200 L

Photo 2– Spill Location after Cleanup

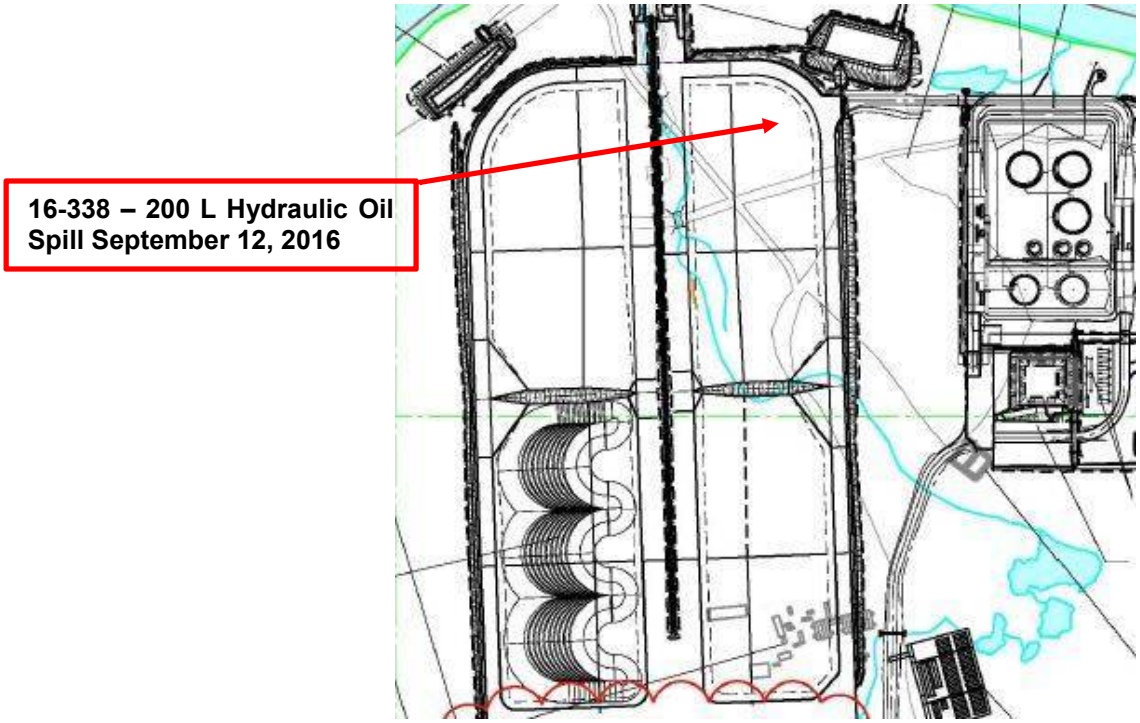

Figure 1 - Spill Location

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

Northwest Territories | Nunavut | Canada

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 09-12-2016	REPORT TIME 17:00 HRS	☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 338
B	OCCURRENCE DATE: MONTH – DAY – YEAR 09-12-2016	OCCURRENCE TIME 00:30 HRS		
C	LAND USE PERMIT NUMBER (IF APPLICABLE) IOL - Commercial Lease No.: Q13C301	WATER LICENCE NUMBER (IF APPLICABLE) 2AM-MRY1325 Type "A"		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION Mary River Project Mine Site, Baffin Island, NU	REGION ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 71 MINUTES 53 SECONDS 11	LONGITUDE DEGREES 80 MINUTES 54 SECONDS 09		
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 Hydraulic Oil	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Approx. 200 L	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 Oil Tank Sandvik Screen Plant	SPILL CAUSE Hose Fitting Failure	AREA OF CONTAMINATION IN SQUARE METRES Approx. 9 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY Lump Iron Ore, Ore Storage Pad	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 September 12, 2016 at 00:30 HRS, loader operator discovered that the Sandvik Screen Plant, located within the Milne Ore Storage Pad, was leaking hydraulic oil. The operator immediately shut down the equipment and then called his supervisor to investigate. Upon initial investigation it was estimated that 200 liters of hydraulic oil was released to the adjacent ground surface. The immediate clean-up response was to use spill pads to mop up observed free product and place in Quatrex bag. The immediate cause of the spill was a fitting failure, which was subsequently replaced prior to equipment start-up. Contaminated ore was removed and placed in the NW corner of Ore Storage Pad. The Ore Storage Pad is an engineered contained area with ditches and lined pond. The ditches and pond will be monitored for the presence of free phase product and sheen. The nearest natural water body is >100 m away from both the spill location and storage location. This spill is being reported as required by the conditions of Type A Water Licence No. 2AM-MRY1325, Part H,item 9 (b).

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 William Bowden	POSITION Env Supervisor	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION Mary River	ALTERNATE TELEPHONE Ext 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 ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ 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			

Figure 2 – NT-NU Spill Report

November 8, 2016

Resource Management Officer
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Aboriginal Affairs and Northern Development Canada
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Justin.Hack@aandc-aadnc.gc.ca

Director, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
Iqaluit, NU X0A 0H0

Re: Follow-up to Spill #16-374, Reported on October 9, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

At 08:00 HRS on October 9, 2016, Environment personnel, on a routine inspection, discovered an overflow originating from the Mine Site accommodation complex kitchen south lift station 19. This lift station only receives grey water from the kitchen. Recoverable released grey water was vacuumed and disposed of in containment. Upon the initial investigation it was determined the float from the lift station failed to actuate the pumps causing the lift station to overflow. Approximately 1 m^3 of grey water was released onto the adjacent ground, affecting an area of approximately 75 m^2.

The volume of the spill was contained on the Mine Site camp pad, migrating underneath the office wing, this area is greater than 100 metres from the closest water body which is currently frozen.

Immediate and Follow-Up Action:

Baffinland Fixed Plant Maintenance was immediately notified of the release. The vacuum truck was used to draw down the grey water level in the lift station, preventing further overflow and collect recoverable greywater that was released. The pumps were shut-off and the float was replaced.

Recommendations:

Routine inspections of the sewage lines, lift stations and pump floats will continue to be completed to ensure all components of the sewage system are functioning as designed.

Current Status:

The lift station pump float was repaired shortly after the spill was reported and the lift station was placed back into service after it was determined that the float was functioning properly.

Should you require further information or clarification on the above noted spill, please feel free to contact Bill Bowden at (647) 253-0596 x6016 or Jim Millard at (902) 403-1337.

Prepared By:

Lea Willemse
Environmental Coordinator

Reviewed by:

Jim Millard
Environmental Manager

Attach: Map, NT-NU Spill Report

cc. Todd Burlingame, Wayne McPhee, Sylvain Proulx, Robert Gagne, Jim Millard (Baffinland), Stephen Bathory (QIA), Erik Allain, Scott Burgess, Sarah Forte (INAC).

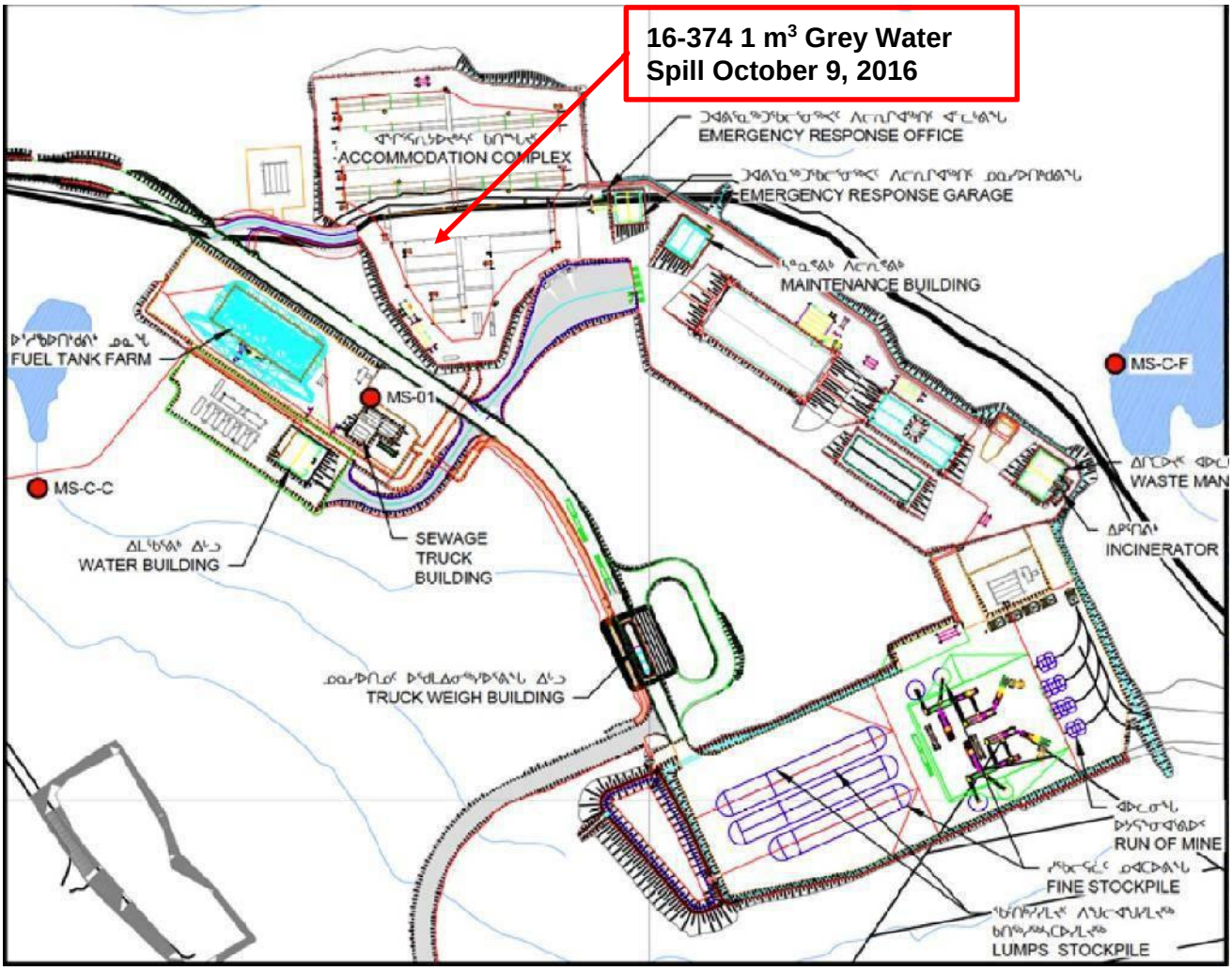

Figure 1 - Spill Location

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

Northwest Territories | Nunavut | Canada

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: 10-09-2016	REPORT TIME: 8:00 HRS	X ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER: 16 374
B	OCCURRENCE DATE: MONTH – DAY – YEAR: 10-09-2016	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: ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE: DEGREES 71 MINUTES 18 SECONDS 52	LONGITUDE: DEGREES 79 MINUTES 17 SECONDS 01		
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: Grey Water	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES: 1.0 cubic meter	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: Lift Station	SPILL CAUSE: float/pump failure	AREA OF CONTAMINATION IN SQUARE METRES: 75 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY: Spill beside/below Infrastructure	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

At 08:00 HRS on October 9, 2016, Environment personal, on inspection, discovered an overflow originating from the MSC Kitchen South Lift Station 19. This lift station only receives grey water from the kitchen. The recoverable released grey water was sucked up and disposed of in containment. Initial investigation determined the float from the lift station failed to actuate the pumps causing the lift station to overflow. Approximately 1 m3 of grey water was released onto the adjacent ground, affecting an area of approximately 75 m2. The location of the spill was on the Mine Site camp pad, migrating underneath the office wing, and is greater than 100 metres from the closest water body which is currently frozen. The investigation is currently ongoing and further details of the incident will be provided in the follow-up report. This spill is being reported as required by the conditions of water licence no. 2AM-MRY1325, Part H , item 9 (b) pursuant to subsection 12(3) of the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
L	William Bowden	Env. Coordinator	Baffinland	647-253-0596	ext. 6016
M	ANY ALTERNATE CONTACT: Jim Millard	POSITION: Env. Manager	EMPLOYER: Baffinland	ALTERNATE CONTACT LOCATION: Off Site	ALTERNATE TELEPHONE: 902-403-1337

REPORT LINE USE ONLY

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

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ LA ☐ INAC ☐ 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			

Figure 2 – NT-NU Spill Report

November 9, 2016

Resource Management Officer
Nunavut Field Operations
Aboriginal Affairs and Northern Development Canada
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Justin.Hack@aandc-aadnc.gc.ca

Director, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
Iqaluit, NU X0A 0H0

Re: Follow-up to Spill #16-377, Reported on October 13, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

At approximately 12:00 on October 12, 2016, Mine Site Services personal discovered a tank overflow originating from the AD Wing of the Mine Site accommodations complex. This lift station is a temporary station/tank that is in use while the original lift station is undergoing repairs. There is no level alarm on this temporary tank and it requires manual pumping. It appeared as though the pumping of this tank was overlooked during shift change. Approximately 300 L was released onto the adjacent ground surface covering an area of snow -covered ground of approximately 20 m^2.

The released sewage was contained on the Mine Site camp pad and is greater than 100 m from the closest water body which is currently frozen.

Immediate and Follow-Up Action:

Baffinland Fixed Plant Maintenance and Environment Department were immediately notified of the release. The vacuum truck was used to draw down the sewage level in the lift station, preventing further overflow. The contaminated snow-cover was excavated and transported for proper disposal.

Recommendations:

Additional monitoring of this lift station, in addition to daily pumping is being completed to prevent further overflows.

Current Status:

Until repairs to the permanent lift station are complete and placed back into commission, the temporary lift station will remain in use. As per the recommendation provided, monitoring of sewage levels and daily pumping will be completed.

Should you require further information or clarification on the above noted spill, please feel free to contact Bill Bowden / Jim Millard at (647) 253-0596 x6016 or Jim Millard at (902) 403-1337.

Prepared By:

Lea Willemse
Environmental Coordinator

Reviewed by:

Jim Millard
Environmental Manager

Attach: Map, NT-NU Spill Report

cc. Todd Burlingame, Wayne McPhee, Sylvain Proulx, Robert Gagne, Jim Millard (Baffinland), Stephen Bathory (QIA), Erik Allain, Scott Burgess, Sarah Forte (INAC).

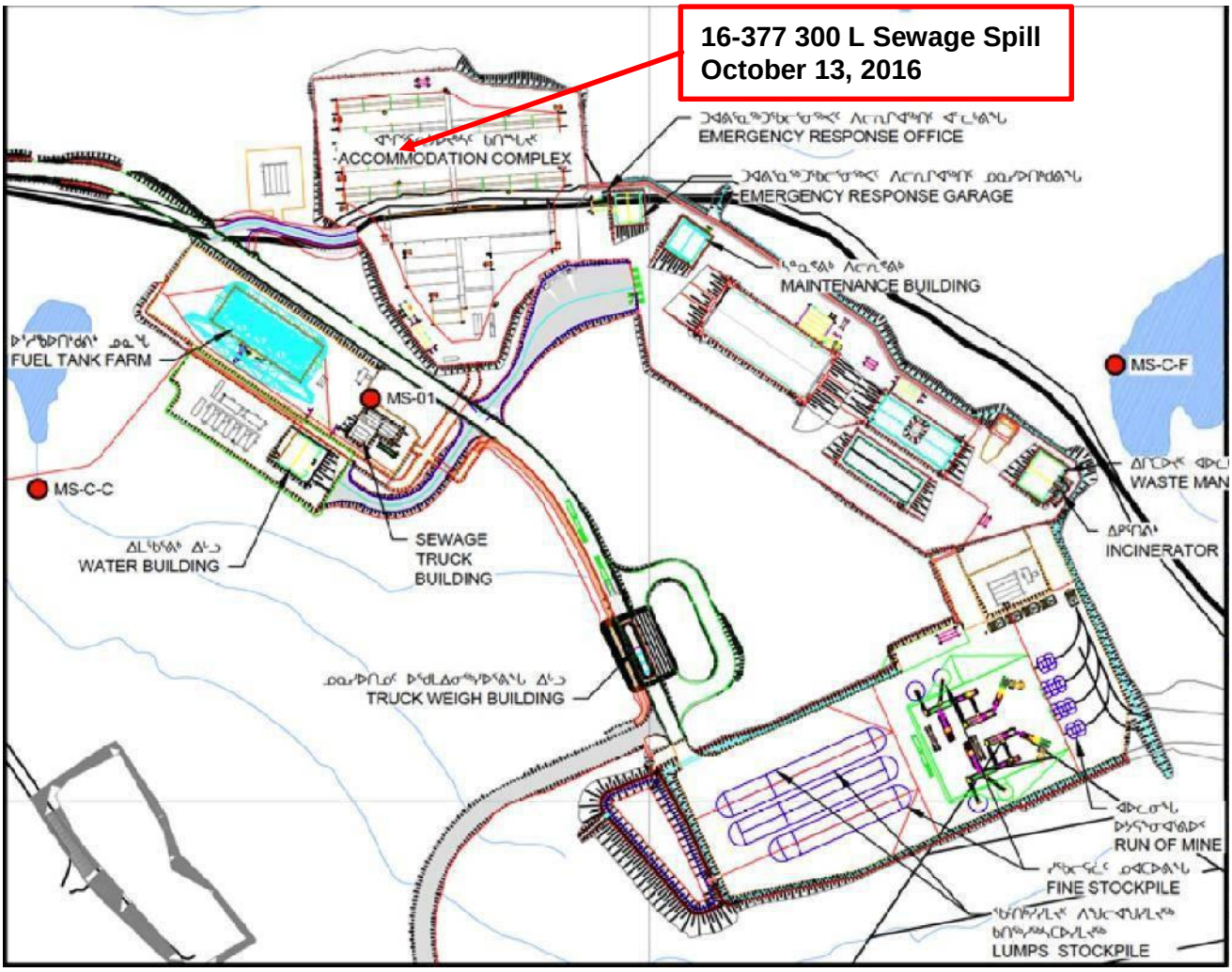

Figure 1 - Spill Location

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

Northwest Territories | Nunavut | Canada

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: 10-13-2016	REPORT TIME: 1200 HRS	X ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER: 16 377
B	OCCURRENCE DATE: MONTH – DAY – YEAR: 10-12-2016	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: ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE: DEGREES 71 MINUTES 18 SECONDS 55	LONGITUDE: DEGREES 79 MINUTES 17 SECONDS 04		
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: Sewage	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES: 300 L	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: Lift Station	SPILL CAUSE: Overflow	AREA OF CONTAMINATION IN SQUARE METRES: 20 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY: Spill beside/below Infrastructure	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

Around noon time on October 12, 2016, Site Services personal discovered a tank overflow originating from the AD Wing of the Mine Site Complex. This lift station is a temporary station/tank that is in use while the original lift station is undergoing repairs. There is no level alarm on this temporary tank and it is manually pumped. It appeared as though the pumping of this tank was overlooked during shift change. Approximately 300 L was released onto the adjacent ground surface covering an area of around 20 m2. . The sewage soaked into the snow, and the snow will be excavated and properly disposed of when resources are available. The location of the spill was on the Mine Site camp pad and is greater than 100 m from the closest water body which is currently frozen. More frequent monitoring of the sewage level in this tank will be completed while the repair is completed. A follow-up report with recommendations will be completed within 30 days. This spill is being reported as required by the conditions of Water Licence no. 2AM-MRY1325, Part H , item 9 (b).

L	REPORTED TO SPILL LINE BY: William Bowden	POSITION: Env. Coordinator	EMPLOYER: Baffinland	LOCATION CALLING FROM: 647-253-0596	TELEPHONE: ext. 6016
M	ANY ALTERNATE CONTACT: Jim Millard	POSITION: Env. Manager	EMPLOYER: Baffinland	ALTERNATE CONTACT LOCATION: Off Site	ALTERNATE TELEPHONE: 902-403-1337

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 ☐ CCG ☐ GNWT ☐ GN ☐ LA ☐ 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			

Figure 2 – NT-NU Spill Report

December 13, 2016

Resource Management Officer
Nunavut Field Operations
Aboriginal Affairs and Northern Development Canada
Box 100
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Justin.Hack@aandc-aadnc.gc.ca

Director, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
Iqaluit, NU X0A 0H0

Re: Follow-up to Spill #16-403, Reported on November 15, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

At 08:00 HRS on November 14, 2016, a worker conducting a routine inspection discovered that the south lift station servicing the mine site complex kitchen had overflowed. This lift station only receives grey water from the kitchen. Approximately 500 L of grey water was released onto the adjacent ground, affecting an area of approximately 5 m^2. Upon investigation, it was determined the lift station floats failed to activate the lift station pumps, resulting in the overflow.

The location of the spill was on the Mine Site camp pad and is greater than 100 metres from the closest water body which is currently frozen.

Immediate and Follow-Up Action:

Baffinland Fixed Plant Maintenance was immediately notified of the release. The lift station pumps were activated manually to draw down water levels in the lift station and prevent further overflow.

Recommendations:

Routine inspections of the sewage lines, lift stations and pump floats will continue to be completed to ensure all components of the sewage system are functioning as designed.

Current Status:

The lift station floats have been replaced with a new type of float. The lift station is back in service with all components functioning as designed.

Should you require further information or clarification on the above noted spill, please feel free to contact Andrew Vermeer at (647) 253-0596 x6039 or Jim Millard at (902) 403-1337.

Prepared By:

Andrew Vermeer
Environmental Coordinator

Reviewed by:

Jim Millard
Environmental Manager

Attach: Map, NT-NU Spill Report

cc. Todd Burlingame, Wayne McPhee, Sylvain Proulx, Robert Gagne, Jim Millard (Baffinland), Stephen Bathory (QIA), Erik Allain, Scott Burgess, Sarah Forte (INAC).

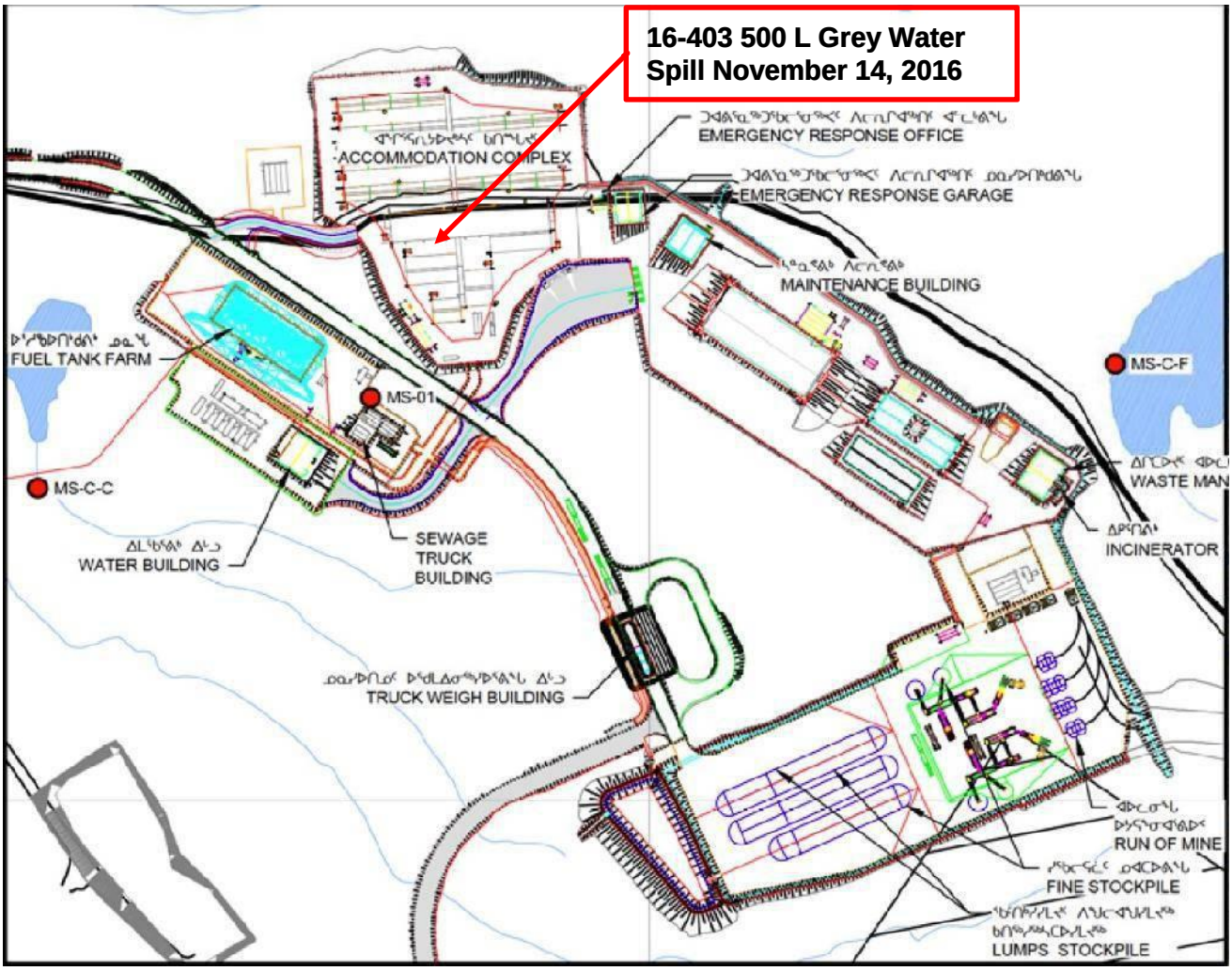


Figure 1 - Spill Location

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

Northwest Territories | Nunavut | Canada

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: 11-14-2016	REPORT TIME: 8:00 HRS	X ORIGINAL SPILL REPORT OR ☐ UPDATE # TO THE ORIGINAL SPILL REPORT	REPORT NUMBER: 16 403
B	OCCURRENCE DATE: MONTH – DAY – YEAR: 11-14-2016	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: ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE: DEGREES 71 MINUTES 18 SECONDS 52	LONGITUDE: DEGREES 79 MINUTES 17 SECONDS 01		
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: Grey Water	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES: 500 L	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: Lift Station	SPILL CAUSE: Pump Malfunction	AREA OF CONTAMINATION IN SQUARE METRES: 5 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY: Spill beside/below Infrastructure	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

At 08:00 HRS on November 14, 2016, a worker, while conducting a routine inspection, discovered that the south lift station servicing the MSC Kitchen had overflowed. This lift station only receives grey water from the kitchen. Approximately 500 L of grey water was released onto the adjacent ground, affecting an area of approximately 5 m2. The location of the spill was on the Mine Site camp pad and is greater than 100 metres from the closest water body which is currently frozen. Accessible contaminated snow and ice will be removed and transported to Mine Site PWSP #1. The initial investigation determined the the lift station pumps did not activate causing the lift station to overflow however the root cause of the overflow is currently being investigated. Further details of the incident will be provided in the follow-up report. This spill is being reported as required by the conditions of Water Licence No. 2AM-MRY1325, Part H , item 9 (b) pursuant to subsection 12(3) of the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

L	REPORTED TO SPILL LINE BY: Andrew Vermeer	POSITION: Env. Coordinator	EMPLOYER: Baffinland	LOCATION CALLING FROM: MR Mine Site	TELEPHONE: Ext. 6039
M	ANY ALTERNATE CONTACT: Jim Millard	POSITION: Env. Manager	EMPLOYER: Baffinland	ALTERNATE CONTACT LOCATION: MR Mine Site	ALTERNATE TELEPHONE: Ext. 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 ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ 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 1

Figure 2 – NT-NU Spill Report

Baffinland

January 2, 2017

Resource Management Officer
Nunavut Field Operations
Aboriginal Affairs and Northern Development Canada
Box 100
Iqaluit, NU X0A 0H0
Justin.Hack@aandc-aadnc.gc.ca

Director, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
Iqaluit, NU X0A 0H0

Re: Follow-up to Spill #16-414, Reported on December 3, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

At 02:00 HRS on December 3, 2016 while clearing the area in preparation to remove the former seacan bridge crossing (CV217B) located at the Tote Road km 80 bridge, an excavator (EXC003) broke through the ice layer covering the water body (river outlet from Muriel Lake) submerging the EXC003 by approximately 75%. CV217B is evaluated as fish habitat, although during the fall/winter season, fish are likely not present due to shallow overwintering conditions. At the time of the incident, the freshly exposed water surrounding the submerged machine was observed for signs of a release of fuel and/or lubricating oils. No release was observed at the time of the incident. Monitoring of this area for evidence of a spill was ongoing until the safe and successful extraction of the excavator from the ice/water body. On December 6, an update to spill report 16-414 was submitted after 1 litre of lubricating oil was released to the top layer of the ice at the EXC003's location; this was promptly recovered and cleaned up. The removal of the seacan bridges are a requirement of Baffinland's Tote Road DFO authorization and at the time of the incident, the excavator was engaged in preparing the site for this reclamation activity.

The original Spill Report 16-414 (December 3) and Update No. 1 (December 6) were submitted to the NT-NU Spill Line and other applicable stakeholders. These reports including location plan are presented in Attachment A.

Photos of the incident and follow-up actions are provided in Attachment B.

Immediate and Follow-Up Action:

The planning process for the extraction of EXC003 from the CV217B crossing was initiated immediately following the incident. To minimize the risks to worker safety and the environment, it was determined that extraction activities would be completed in the following two phases: recovery of fuel, hydraulic and glycol from EXC003 compartments, followed by the extraction of EXC003 from the ice/water body.

On December 5 and 6, 2016, accessible oil (~25L), diesel (~500L), and glycol (~25L) were recovered from EXC003 compartments. At that time it was observed that lubricating oil was released to the adjacent ice on one side of the excavator cab. Approximately one (1) litre of product was found in two pockets on the surface of the ice, covering an area of approximately 0.25 m^2. The released product and contaminated ice were recovered for proper disposal. Spill response supplies were proactively stockpiled at the location to mitigate any further incident.

A water sample was collected at a location downstream of the submerged EXC003 on December 9 by drilling holes through the ice with an auger. Laboratory results were below analytical detection limits for BTEX, PHC and TOG (refer to Attachment C). At that time a number of holes were augured through the ice downstream of the equipment to detect any stream flows utilizing a flow meter through the augured holes. The water column was minimal and there were no measureable flows, indicating that the incident location was in an isolated and discontinuous pocket of water.

On December 16, 2016, EXC003 was successfully extracted from the CV217B crossing without further incident to worker safety or the environment. The extraction planning process involved careful consideration to minimize potential risks to personnel, equipment and to reduce the risk of the release of any residual hydrocarbons or glycol.

The extraction process was undertaken in the following steps:

- Construction of a ramp to the bank location using clean rip rap and careful breaking of ice near and adjacent to the excavator.
- Probing around the excavator to determine the position of the tracks. Ensured the tracks were oriented in the appropriate direction to approach and pull the excavator from its submerged location.
- An underwater camera was used to locate towing points that could be utilized by heavy equipment to securely extract the excavator.
- Multiple auger holes, were drilled on the ice to measure ice thickness and water column depth in the work area where heavy equipment or personnel would be operating. No hydrocarbons were detected in the adjacent water based on visual or olfactory observations.
- Trash pumps were used to lower the surrounding water level in the non-frozen pocket of the river where the excavator broke through. Rigging was attached to the exposed anchor points and the submerged excavator was slowly removed from the water using heavy equipment.

Following the successful extraction of the excavator from the water body, a second water sample was collected on December 17, 2016, at the location of the submerged EXC003, in the standing pocket of water. Laboratory results were below analytical detection limits for BTEX, PHC, TOG, and glycols (refer to Attachment C).

Basic Cause and Recommendations:

It has been recognized, that the Job Hazard Analysis formulated for the removal of the Tote Road seacan bridge crossings did not account for differences in ice thickness between the three seacan bridge locations scheduled to be removed, nor did it account for timing of removal. The seacan bridges located at km 62 (BG-50A) and km 97 (CV-223) on the Tote Road were safely removed without incident, and were both situated in shallow water (<0.5 m depth) frozen to the bottom. There was an expectation that the water depth at CV217B, would be minimal as well (<1m depth); this was not the case.

In addition, the proper procedure for working on or near ice covered water bodies was not effectively communicated to the seacan bridge removal team and operator performing the removal of CV217B. Operator assumptions may have contributed to the incident. (The operator involved had participated in the original installation of the seacan bridge crossings on the Tote Road in 2007.) An existing working on ice procedure did exist at the time of the incident however this procedure was not formally processed through document control for distribution to all departments.

Recommendations, derived from the incident investigation, developed for implementation into Baffinland's safe operating procedures include the following:

- Prior to completing all future on-ice work, a temporal and geographically site specific JHA will be completed,
- Prior to completing all future on-ice work, augured holes must be drilled to determine ice thickness, this instruction needs to be clearly communicated to all equipment operators working near or on water no matter what the estimated depth of the water column;
- Development of a formal document controlled "working on-ice" procedure to address requirement for ice-thickness measurements to determine suitability for various work activities (personnel and/or equipment), no matter what the assumed ice thickness; and
- Prior to completing all on-ice work, all personnel must be trained in the working-on ice procedure and be aware of risks of the prescribed job and their responsibilities.

Current Status:

Throughout extraction activities, the presence of hydrocarbons were not detected in the open water by visual or olfactory observations; however, confirmatory water samples were collected during two events; at a location 30 m downstream of the submerged excavator on December 9, 2016; and at the location of the submerged excavator on December 17, 2016. Laboratory results for both samples (refer to Attachment C) identify non-detect for BTEX, PHC, TOG, and glycols supporting that there was little to no hydrocarbon or glycol release to the water column from the partial submersion of EXC003.

The disturbed areas of the riverbank have been stabilized with 6" clean riprap to prevent subsequent erosion. Slope stability of the impacted area will be monitored during freshet and if required, additional sedimentation controls will be applied at that time.

After being extracted from the river, EXC 003 is parked near the Km 80 bridge, currently tarped being thawed out on a Tote Road push out greater than 31m from the closest water body. A downstream berm is erected directly below it (as a contingency measure).

The formal document controlled version of a Working On Ice Procedure and associated training is in development.

Should you require further information or clarification on the above noted spill, please feel free to contact William Bowden at (647) 253-0596 x6016 or Jim Millard at (902) 403-1337.

Prepared By:

William Bowden
Environmental Superintendent

Reviewed by:

Jim Millard
Environmental Manager

Attach: A – NT-NU Spill Reports,
B - Photos,
C – Analytical Water Quality Results from ALS Laboratories

cc. Todd Burlingame, Wayne McPhee, Sylvain Proulx, Robert Gagne, Jim Millard Allan Knight (Baffinland), Stephen Bathory (QIA), Erik Allain, Scott Burgess, Sarah Forte, Jonathan Mesher (INAC).

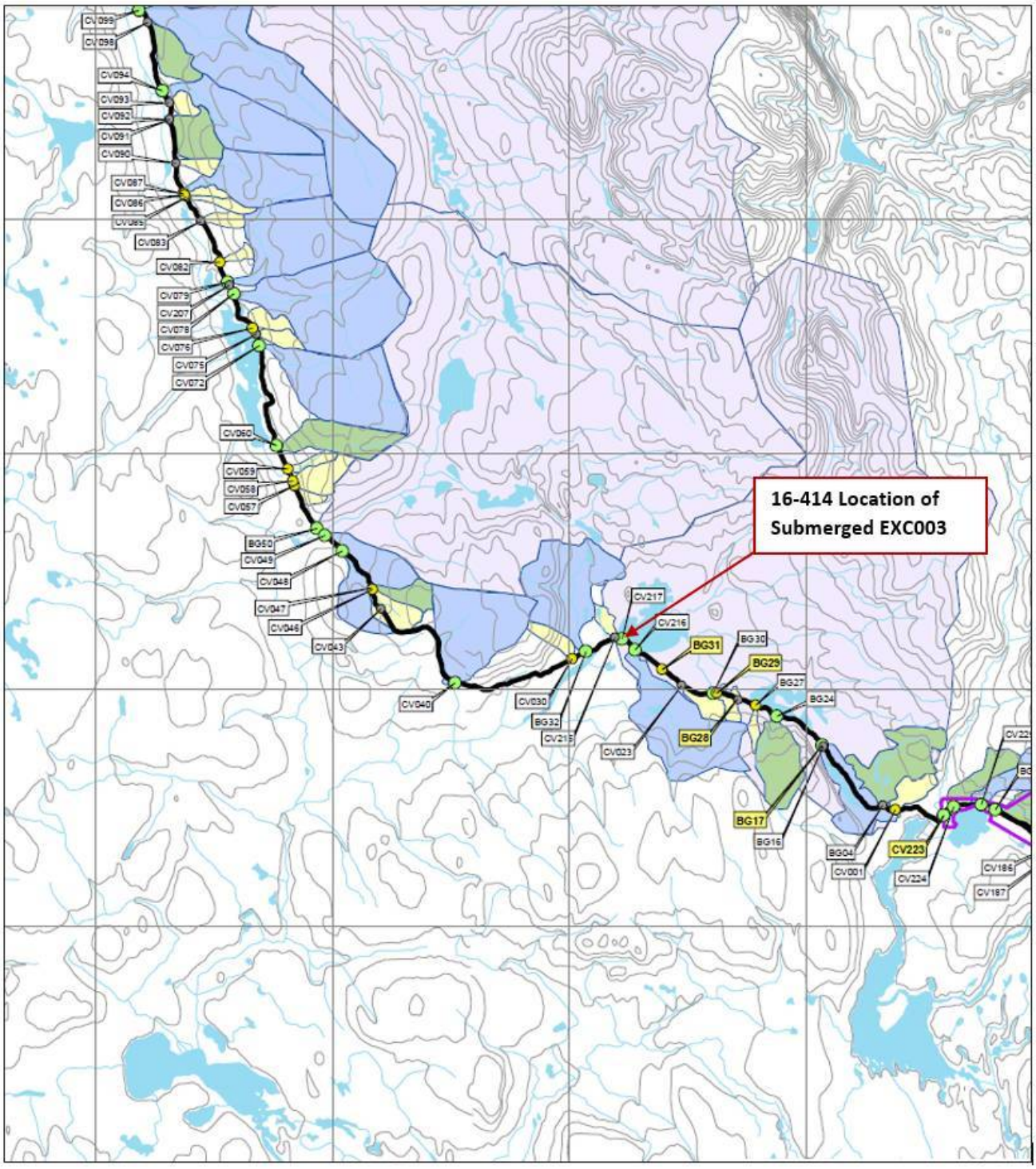


Figure 1 – Location Map

ATTACHMENT A

NT- NU Spill Reports

Baffinland

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: 12-03-2016	REPORT TIME: 02:00 HRS	X ORIGINAL SPILL REPORT, OR ☐ UPDATE # TO THE ORIGINAL SPILL REPORT	REPORT NUMBER: 16 414
B	OCCURRENCE DATE: MONTH – DAY – YEAR: 12-03-2016	OCCURRENCE TIME: 17:00 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: ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE: DEGREES 71 MINUTES 88 SECONDS 46	LONGITUDE: DEGREES 80 MINUTES 88 SECONDS 59		
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: Potential for fuel/oil/grease	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES: TBD (Potential)	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: Potential from fuel/oil tank/grease	SPILL CAUSE: Partial submersion in river	AREA OF CONTAMINATION IN SQUARE METRES: N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY: River ice cover	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

At 02:00 HRS on December 3, 2016 while clearing the area in preparation to remove the former seacan bridge crossing (CV217) located at Tote Road km 80 bridge, an excavator broke through the ice layer covering the water body (river outlet from Muriel Lake)submerging the excavator by approximately 75%. The river at this location is considered to be fish habitat, although during the fall/winter season, fish are not thought to be present due to shallow overwintering conditions. At the time of the incident, the freshly exposed water surrounding the submerged machine was observed for signs of a release of fuel and/or lubricating oils. No release was was observed at this time. Monitoring of this area for evidence of a spill will continue until the safe and successful extraction of the excavator from the ice/water body. If, during ongoing monitoring, there is evidence of a spill, an update to this spill report will be submitted. Additional incident details and results of investigation will be provided in the follow-up report to be submitted within 30 days.

L	REPORTED TO SPILL LINE BY: Bill Bowden	POSITION: Env. Coordinator	EMPLOYER: Baffinland	LOCATION CALLING FROM: MR Mine Site	TELEPHONE: Ext. 6016
M	ANY ALTERNATE CONTACT: Jim Millard	POSITION: Env. Manager	EMPLOYER: Baffinland	ALTERNATE CONTACT LOCATION: Off-site	ALTERNATE TELEPHONE: 902-403-1337

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 ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ 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 1

Figure 2 – NT-NU Spill Report

Baffinland

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: 12-06-2016	REPORT TIME: 22:00 HRS	☐ ORIGINAL SPILL REPORT, OR X UPDATE # 1 TO THE ORIGINAL SPILL REPORT	REPORT NUMBER: 16 - 414
B	OCCURRENCE DATE: MONTH – DAY – YEAR: 12-03-2016	OCCURRENCE TIME: 17:00 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: ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE: DEGREES 71 MINUTES 88 SECONDS 46	LONGITUDE: DEGREES 80 MINUTES 88 SECONDS 59		
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: Lubricating oil	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES: Approx. 1 Litre	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: unknown	SPILL CAUSE: Partial submersion in river	AREA OF CONTAMINATION IN SQUARE METRES: 0.25	
J	FACTORS AFFECTING SPILL OR RECOVERY: River ice cover	DESCRIBE ANY ASSISTANCE REQUIRED: N/A	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT: Working on ice	

K — ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS

Upon further monitoring of the excavator that broke through the ice on December 3, 2016, located at the former km 80 seacan bridge crossing (CV217), it was identified on December 5, 2016, that lubricating oil was released to the adjacent ice on one side of the excavator cab. The released product resembles unused hydraulic and/or unused engine oil. The specific source location from the excavator is unknown at this time. Approximately one (1) litre of product was found in two pockets on the surface of the ice, covering an area of approximately 0.25 m2. The released product and contaminated ice was recovered for proper disposal. While the spill response team was on the ice, the excavator's diesel, hydraulic oil and coolant tanks were safely evacuated of accessible product, removed from the scene, and securely stored. Currently there is no other evidence of sheen or further release of product from the excavator. Further spill report updates will be provided in the event there is evidence for additional product release.

L	REPORTED TO SPILL LINE BY: Bill Bowden	POSITION: Env. Coordinator	EMPLOYER: Baffinland	LOCATION CALLING FROM: MR Mine Site	TELEPHONE: Ext. 6016
M	ANY ALTERNATE CONTACT: Jim Millard	POSITION: Env. Manager	EMPLOYER: Baffinland	ALTERNATE CONTACT LOCATION: Off-site	ALTERNATE TELEPHONE: 902-403-1337

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 ☐ CCG ☐ GNWT ☐ GN ☐ LA ☐ INAC ☐ 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 1

Figure 3 – NT-NU Spill Report - Update No. 1

ATTACHMENT B

PHOTOS OF SPILL

Photo 1 – Submerged EXC003

Photo 2 – Diesel Fuel Recovery

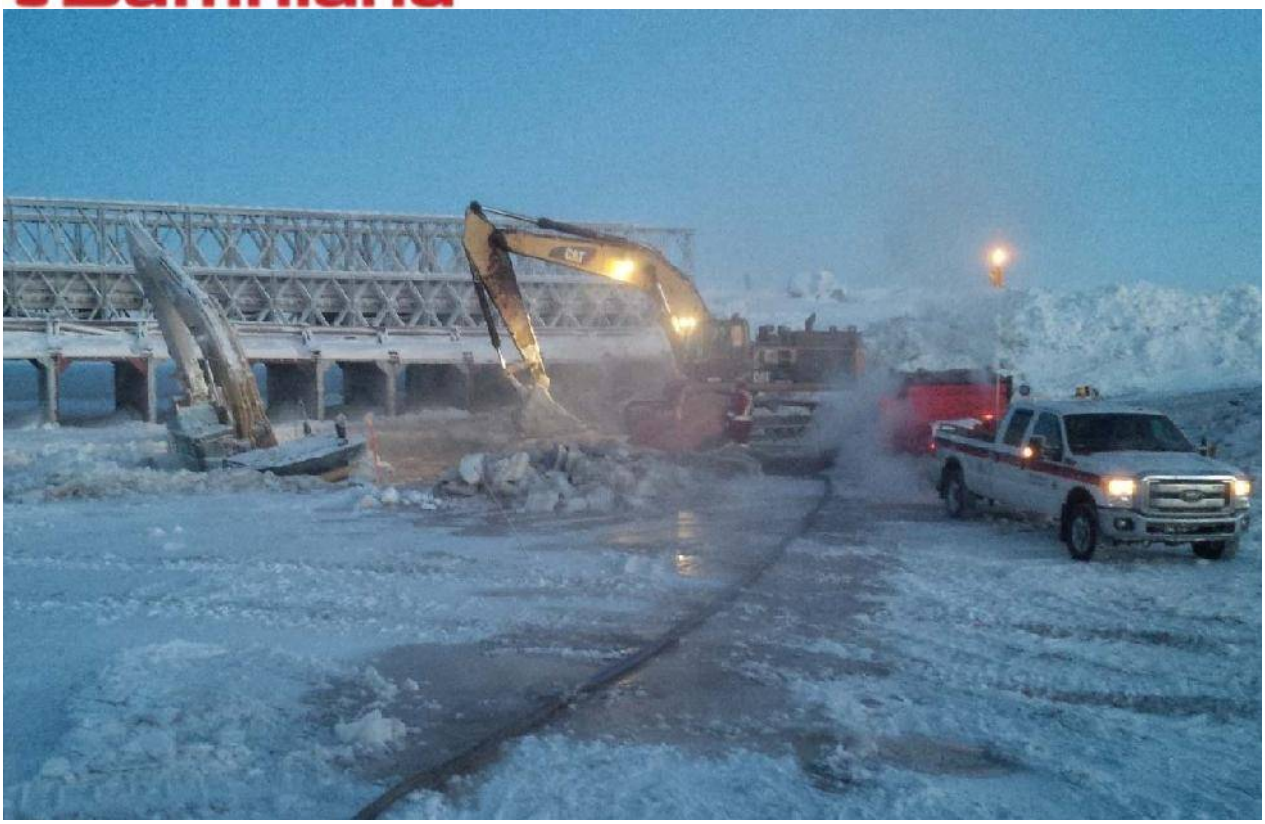


Photo 3 – EXC003 Extraction

Photo 4 – After EXC003 Extraction

ATTACHMENT C

ANALYTICAL WATER QUALITY RESULTS FROM ALS LABORATORIES

Baffinland Iron Mine's Corporation
(Oakville)
ATTN: Jim Millard
2275 Upper Middle Rd. E.
Suite #300
Oakville ON L6H 0C3

Date Received: 16-DEC-16
Report Date: 22-DEC-16 14:28 (MT)
Version: FINAL

Client Phone: 416-364-8820

Certificate of Analysis

Lab Work Order #: L1870980

Project P.O. #: 4500017476
Job Reference: 30 FEET DS OF EXCAVATOR AT KM 80
C of C Numbers:
Legal Site Desc:

Wayne Smith, C.Chem., C.E.T.
Client Services Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1870980-1 EXKM80-30DS Sampled By: DR/AV on 09-DEC-16 @ 15:00 Matrix: WATER							
Aggregate Organics							
Oil and Grease, Total	<2.0		2.0	mg/L	19-DEC-16	19-DEC-16	R3620682
Volatile Organic Compounds							
Benzene	<0.50		0.50	ug/L		19-DEC-16	R3619937
Ethylbenzene	<0.50		0.50	ug/L		19-DEC-16	R3619937
Toluene	<0.50		0.50	ug/L		19-DEC-16	R3619937
o-Xylene	<0.30		0.30	ug/L		19-DEC-16	R3619937
m+p-Xylenes	<0.40		0.40	ug/L		19-DEC-16	R3619937
Xylenes (Total)	<0.50		0.50	ug/L		19-DEC-16	
Surrogate: 4-Bromofluorobenzene	97.0		70-130	%		19-DEC-16	R3619937
Surrogate: 1,4-Difluorobenzene	101.1		70-130	%		19-DEC-16	R3619937
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		19-DEC-16	R3619937
F1-BTEX	<25		25	ug/L		22-DEC-16	
F2 (C10-C16)	<100		100	ug/L	20-DEC-16	21-DEC-16	R3621956
F3 (C16-C34)	<250		250	ug/L	20-DEC-16	21-DEC-16	R3621956
F4 (C34-C50)	<250		250	ug/L	20-DEC-16	21-DEC-16	R3621956
Total Hydrocarbons (C6-C50)	<370		370	ug/L		22-DEC-16	
Chrom. to baseline at nC50	YES				20-DEC-16	21-DEC-16	R3621956
Surrogate: 2-Bromobenzotrifluoride	101.7		60-140	%	20-DEC-16	21-DEC-16	R3621956
Surrogate: 3,4-Dichlorotoluene	94.8		60-140	%		19-DEC-16	R3619937

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Benzene	MS-B	L1870980-1
Matrix Spike	F1 (C6-C10)	MS-B	L1870980-1

Sample Parameter Qualifier key listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)

BTX is determined by analyzing by headspace-GC/MS.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is treated with silica gel to remove polar material and then analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

OGG-TOT-WT	Water	Oil and Grease, Total	APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1870980 Report Date: 22-DEC-16

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Water**							
Batch R3619937								
WG2452788-4 DUP		**WG2452788-3**						
Benzene		10800	10900		ug/L	1.6	30	20-DEC-16
Ethylbenzene		2.25	2.12		ug/L	5.9	30	19-DEC-16
m+p-Xylenes		8.64	8.20		ug/L	5.2	30	19-DEC-16
o-Xylene		4.87	4.74		ug/L	2.7	30	19-DEC-16
Toluene		9.17	8.75		ug/L	4.7	30	19-DEC-16
WG2452788-1 LCS								
Benzene			108.7		%		70-130	19-DEC-16
Ethylbenzene			107.2		%		70-130	19-DEC-16
m+p-Xylenes			107.2		%		70-130	19-DEC-16
o-Xylene			106.9		%		70-130	19-DEC-16
Toluene			104.9		%		70-130	19-DEC-16
WG2452788-2 MB								
Benzene			<0.50		ug/L		0.5	16-DEC-16
Ethylbenzene			<0.50		ug/L		0.5	16-DEC-16
m+p-Xylenes			<0.40		ug/L		0.4	16-DEC-16
o-Xylene			<0.30		ug/L		0.3	16-DEC-16
Toluene			<0.50		ug/L		0.5	16-DEC-16
Surrogate: 1,4-Difluorobenzene			102.3		%		70-130	16-DEC-16
Surrogate: 4-Bromofluorobenzene			97.3		%		70-130	16-DEC-16
WG2452788-5 MS		**WG2452788-3**						
Benzene			N/A	MS-B	%		-	19-DEC-16
Ethylbenzene			115.8		%		50-140	19-DEC-16
m+p-Xylenes			115.3		%		50-140	19-DEC-16
o-Xylene			113.4		%		50-140	19-DEC-16
Toluene			111.4		%		50-140	19-DEC-16
F1-HS-511-WT	**Water**							
Batch R3619937								
WG2452788-4 DUP		**WG2452788-3**						
F1 (C6-C10)		10500	10700		ug/L	2.2	30	20-DEC-16
WG2452788-1 LCS								
F1 (C6-C10)			85.0		%		80-120	19-DEC-16
WG2452788-2 MB								
F1 (C6-C10)			<25		ug/L		25	16-DEC-16
Surrogate: 3,4-Dichlorotoluene			100.3		%		60-140	16-DEC-16
WG2452788-5 MS		**WG2452788-3**						

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3619937								
WG2452788-5 MS		**WG2452788-3**						
F1 (C6-C10)			N/A	MS-B	%		-	19-DEC-16
F2-F4-511-WT	**Water**							
Batch R3621956								
WG2454630-2 LCS								
F2 (C10-C16)			116.2		%		70-130	21-DEC-16
F3 (C16-C34)			115.9		%		70-130	21-DEC-16
F4 (C34-C50)			110.4		%		70-130	21-DEC-16
WG2454630-3 LCSD		**WG2454630-2**						
F2 (C10-C16)		116.2	116.0		%	0.2	50	21-DEC-16
F3 (C16-C34)		115.9	119.3		%	2.8	50	21-DEC-16
F4 (C34-C50)		110.4	117.8		%	6.5	50	21-DEC-16
WG2454630-1 MB								
F2 (C10-C16)			<100		ug/L		100	21-DEC-16
F3 (C16-C34)			<250		ug/L		250	21-DEC-16
F4 (C34-C50)			<250		ug/L		250	21-DEC-16
Surrogate: 2-Bromobenzotrifluoride			97.9		%		60-140	21-DEC-16
OGG-TOT-WT	**Water**							
Batch R3620682								
WG2454023-2 LCS								
Oil and Grease, Total			90.8		%		70-130	19-DEC-16
WG2454023-3 LCSD		**WG2454023-2**						
Oil and Grease, Total		90.8	94.1		%	3.6	40	19-DEC-16
WG2454023-1 MB								
Oil and Grease, Total			<2.0		mg/L		2	19-DEC-16

Quality Control Report

Workorder: L1870980 Report Date: 22-DEC-16

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

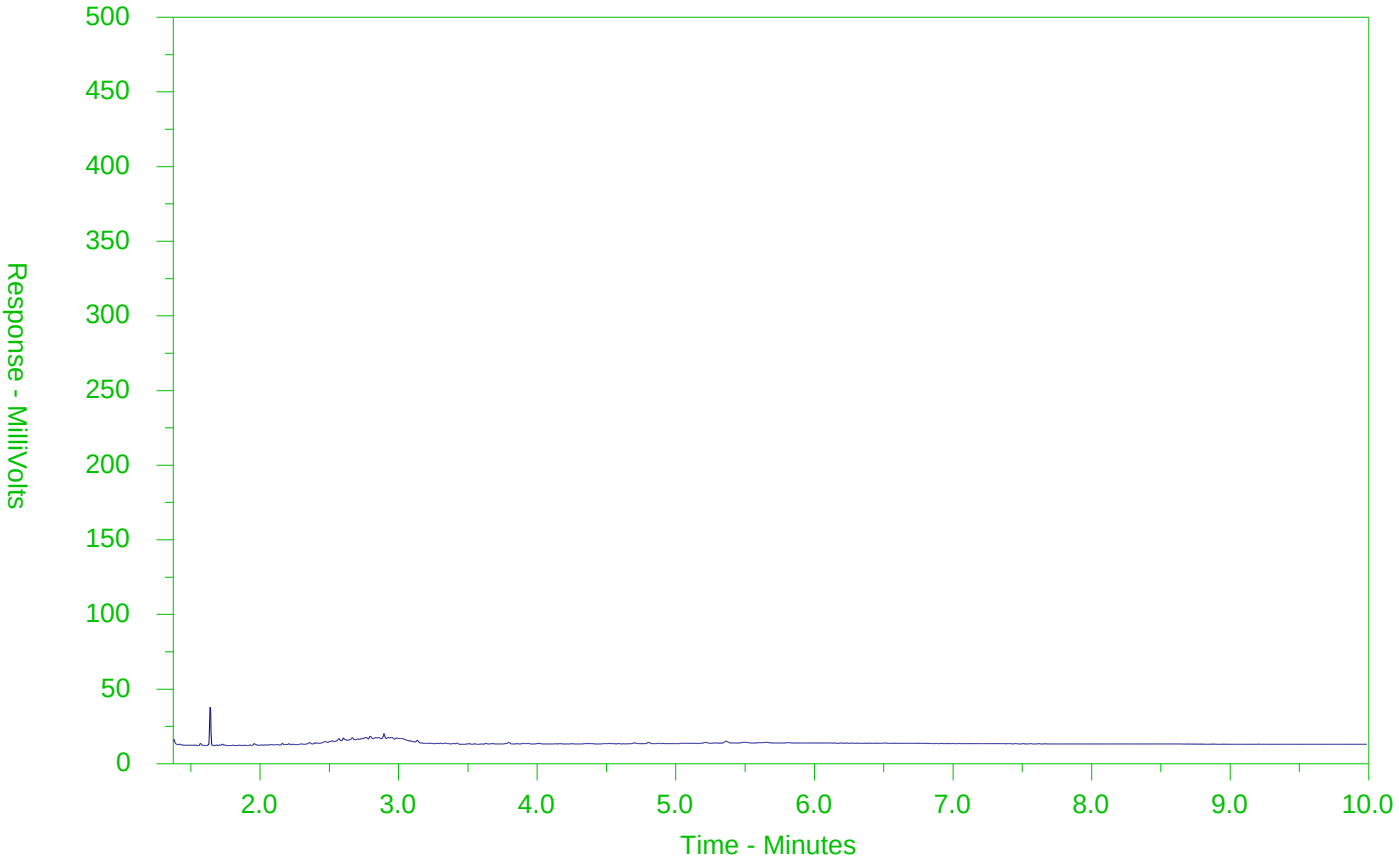
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1870980-1
Client Sample ID: EXKM80-30DS



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1870980-COFC

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Baffinland Iron Mines Corp. - ALS ENV Account 23642	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Jim Millard, Allan Knight	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2275 Upper Middle Rd. E., Suite #300 Oakville, ON, L6H 0C3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	647-253-0596 EXT 6016	Email 1 or Fax bimcore@alsglobal.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To		Invoice Distribution	Analysis Request
	Same as Report To ☑ Yes ☐ No		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☑ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:		Email 1 or Fax ap@baffinland.com	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)			
ALS Quote #:	Q42455	Approver ID:		Cost Center:	
Job #:	30 feet DS of Excavator at Km 80	GL Account:		Routing Code:	
PO / AFE:	4500017476	Activity Code:			
LSD:		Location:			

ALS Lab Work Order # (lab use only): Dec16A L1870980 aj

ALS Contact: Wayne Smith | Sampler: DR/AV

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTEX/PHCs/O&G	Number of Containers
	EXKM80-30DS	9-Dec-16	15:00	Water	R	7

Drinking Water (DW) Samples[1] (client use)	Sample from Actual Waste Rock Pond.
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	Site Specific Criteria - Account Manager to update as required.
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
				1.6	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Andrew Vermeer	Date:2016-12-14	Time: 17:30	Received by:	Date:	Time:	Received by: aj	Date: 16/12/16	Time: 9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

v4r-FM-0326e v09 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Baffinland Iron Mine's Corporation
(Oakville)
ATTN: Jim Millard,Allan Knight
2275 Upper Middle Rd. E.
Suite #300
Oakville ON L6H 0C3

Date Received: 23-DEC-16
Report Date: 30-DEC-16 11:43 (MT)
Version: FINAL

Client Phone: 416-364-8820

Certificate of Analysis

Lab Work Order #: L1872424

Project P.O. #: 4500017476
Job Reference: EXKM80
C of C Numbers:
Legal Site Desc: EXKM80

Wayne Smith, C.Chem., C.E.T.
Client Services Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1872424-1 EXKM80 Sampled By: CR/AV on 17-DEC-16 @ 11:00 Matrix: WATER							
Aggregate Organics							
Oil and Grease, Total	<2.0		2.0	mg/L	23-DEC-16	23-DEC-16	R3625017
Volatile Organic Compounds							
Benzene	<0.50		0.50	ug/L		28-DEC-16	R3624116
Ethylbenzene	<0.50		0.50	ug/L		28-DEC-16	R3624116
Toluene	<0.50		0.50	ug/L		28-DEC-16	R3624116
o-Xylene	<0.30		0.30	ug/L		28-DEC-16	R3624116
m+p-Xylenes	<0.40		0.40	ug/L		28-DEC-16	R3624116
Xylenes (Total)	<0.50		0.50	ug/L		28-DEC-16	
Surrogate: 4-Bromofluorobenzene	94.8		70-130	%		28-DEC-16	R3624116
Surrogate: 1,4-Difluorobenzene	99.9		70-130	%		28-DEC-16	R3624116
Hydrocarbons							
F1 (C6-C10)	<25		25	ug/L		28-DEC-16	R3624116
F1-BTEX	<25		25	ug/L		30-DEC-16	
F2 (C10-C16)	<100		100	ug/L	29-DEC-16	30-DEC-16	R3625560
F3 (C16-C34)	<250		250	ug/L	29-DEC-16	30-DEC-16	R3625560
F4 (C34-C50)	<250		250	ug/L	29-DEC-16	30-DEC-16	R3625560
Total Hydrocarbons (C6-C50)	<370		370	ug/L		30-DEC-16	
Chrom. to baseline at nC50	YES				29-DEC-16	30-DEC-16	R3625560
Surrogate: 2-Bromobenzotrifluoride	93.8		60-140	%	29-DEC-16	30-DEC-16	R3625560
Surrogate: 3,4-Dichlorotoluene	104.0		60-140	%		28-DEC-16	R3624116
Glycols							
Diethylene Glycol	<5.0		5.0	mg/L		23-DEC-16	R3624355
Ethylene Glycol	<5.0		5.0	mg/L		23-DEC-16	R3624355
1,3-Propanediol	<5.0		5.0	mg/L		23-DEC-16	R3624355
1,2-Propanediol	<5.0		5.0	mg/L		23-DEC-16	R3624355
Triethylene Glycol	<5.0		5.0	mg/L		23-DEC-16	R3624355

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)

BTX is determined by analyzing by headspace-GC/MS.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	MOE DECPH-E3398/CCME TIER 1

Fractions F2, F3 and F4 are determined by liquid/liquid extraction with a solvent. The solvent recovered from the extracted sample is treated with silica gel to remove polar material and then analyzed by GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

GLYCOL-1-WT	Water	Glycol List 1	EPA 8000A

Water samples are analyzed by direct injection using GC/FID.

OGG-TOT-WT	Water	Oil and Grease, Total	APHA 5520 B

The procedure involves an extraction of the entire water sample with hexane. This extract is then evaporated to dryness, and the residue weighed to determine Oil and Grease.

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L1872424 Report Date: 30-DEC-16

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard,Allan Knight

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Water**							
Batch R3624116								
WG2455460-4 DUP		**WG2455460-3**						
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-DEC-16
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-DEC-16
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-DEC-16
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-DEC-16
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-DEC-16
WG2455460-1 LCS								
Benzene			99.7		%		70-130	23-DEC-16
Ethylbenzene			93.5		%		70-130	23-DEC-16
m+p-Xylenes			94.2		%		70-130	23-DEC-16
o-Xylene			95.1		%		70-130	23-DEC-16
Toluene			95.9		%		70-130	23-DEC-16
WG2455460-2 MB								
Benzene			<0.50		ug/L		0.5	28-DEC-16
Ethylbenzene			<0.50		ug/L		0.5	28-DEC-16
m+p-Xylenes			<0.40		ug/L		0.4	28-DEC-16
o-Xylene			<0.30		ug/L		0.3	28-DEC-16
Toluene			<0.50		ug/L		0.5	28-DEC-16
Surrogate: 1,4-Difluorobenzene			98.9		%		70-130	28-DEC-16
Surrogate: 4-Bromofluorobenzene			96.3		%		70-130	28-DEC-16
WG2455460-5 MS		**WG2455460-3**						
Benzene			99.9		%		50-140	28-DEC-16
Ethylbenzene			91.3		%		50-140	28-DEC-16
m+p-Xylenes			92.7		%		50-140	28-DEC-16
o-Xylene			93.1		%		50-140	28-DEC-16
Toluene			95.0		%		50-140	28-DEC-16
F1-HS-511-WT	**Water**							
Batch R3624116								
WG2455460-4 DUP		**WG2455460-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-DEC-16
WG2455460-1 LCS								
F1 (C6-C10)			88.5		%		80-120	23-DEC-16
WG2455460-2 MB								
F1 (C6-C10)			<25		ug/L		25	28-DEC-16
Surrogate: 3,4-Dichlorotoluene			100.1		%		60-140	28-DEC-16
WG2455460-5 MS		**WG2455460-3**						

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard,Allan Knight

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3624116								
WG2455460-5 MS		**WG2455460-3**						
F1 (C6-C10)			82.2		%		60-140	28-DEC-16
F2-F4-511-WT	**Water**							
Batch R3625560								
WG2457959-2 LCS								
F2 (C10-C16)			104.2		%		70-130	30-DEC-16
F3 (C16-C34)			109.0		%		70-130	30-DEC-16
F4 (C34-C50)			109.4		%		70-130	30-DEC-16
WG2457959-3 LCSD		**WG2457959-2**						
F2 (C10-C16)		104.2	105.2		%	1.0	50	30-DEC-16
F3 (C16-C34)		109.0	108.7		%	0.3	50	30-DEC-16
F4 (C34-C50)		109.4	106.3		%	2.9	50	30-DEC-16
WG2457959-1 MB								
F2 (C10-C16)			<100		ug/L		100	30-DEC-16
F3 (C16-C34)			<250		ug/L		250	30-DEC-16
F4 (C34-C50)			<250		ug/L		250	30-DEC-16
Surrogate: 2-Bromobenzotrifluoride			99.8		%		60-140	30-DEC-16
GLYCOL-1-WT	**Water**							
Batch R3624355								
WG2456974-4 DUP		**L1872424-1**						
Ethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	23-DEC-16
Diethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	23-DEC-16
1,2-Propanediol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	23-DEC-16
1,3-Propanediol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	23-DEC-16
Triethylene Glycol		<5.0	<5.0	RPD-NA	mg/L	N/A	30	23-DEC-16
WG2456974-2 LCS								
Ethylene Glycol			100.2		%		70-130	23-DEC-16
Diethylene Glycol			97.8		%		70-130	23-DEC-16
1,2-Propanediol			102.8		%		70-130	23-DEC-16
1,3-Propanediol			99.8		%		70-130	23-DEC-16
Triethylene Glycol			96.2		%		70-130	23-DEC-16
WG2456974-3 MB								
Ethylene Glycol			<5.0		mg/L		5	23-DEC-16
Diethylene Glycol			<5.0		mg/L		5	23-DEC-16
1,2-Propanediol			<5.0		mg/L		5	23-DEC-16

Quality Control Report

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard,Allan Knight

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
GLYCOL-1-WT	**Water**							
Batch R3624355								
WG2456974-3 MB								
1,3-Propanediol			<5.0		mg/L		5	23-DEC-16
Triethylene Glycol			<5.0		mg/L		5	23-DEC-16
WG2456974-5 MS		**L1872424-1**						
Ethylene Glycol			101.1		%		50-150	23-DEC-16
Diethylene Glycol			97.8		%		50-150	23-DEC-16
1,2-Propanediol			104.8		%		50-150	23-DEC-16
1,3-Propanediol			102.6		%		50-150	23-DEC-16
Triethylene Glycol			96.2		%		50-150	23-DEC-16
OGG-TOT-WT	**Water**							
Batch R3625017								
WG2456965-2 LCS								
Oil and Grease, Total			97.9		%		70-130	23-DEC-16
WG2456965-3 LCSD		**WG2456965-2**						
Oil and Grease, Total		97.9	94.1		%	4.0	40	23-DEC-16
WG2456965-1 MB								
Oil and Grease, Total			<2.0		mg/L		2	23-DEC-16

Quality Control Report

Workorder: L1872424 Report Date: 30-DEC-16

Client: Baffinland Iron Mine's Corporation (Oakville)
2275 Upper Middle Rd. E. Suite #300
Oakville ON L6H 0C3
Contact: Jim Millard,Allan Knight

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

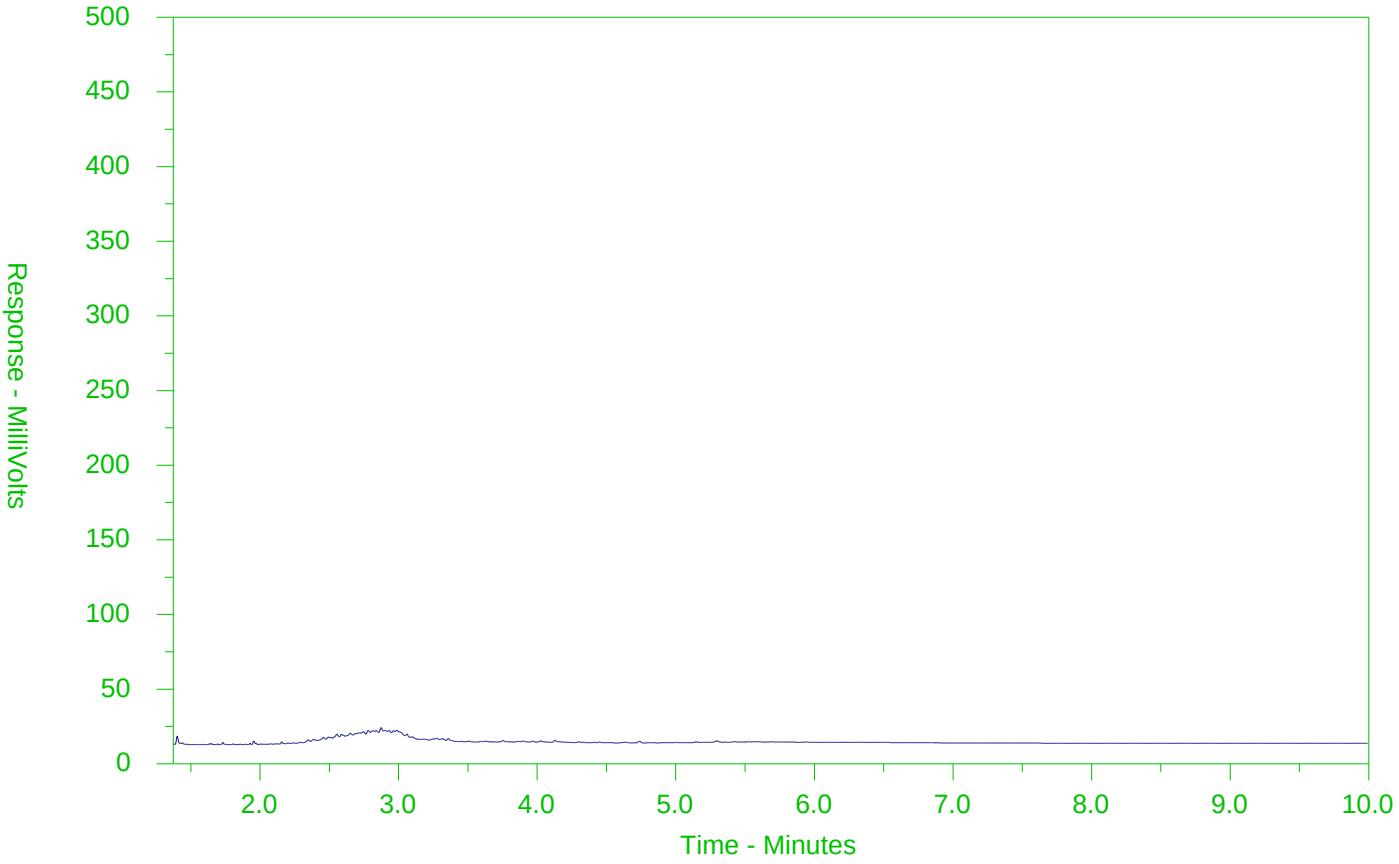
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L1872424-1
Client Sample ID: EXKM80



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1872424-COFC

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	Baffinland Iron Mines Corp. - ALS ENV Account 23642	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Jim Millard, Allan Knight	Quality Control (QC) Report with Report ☑ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2275 Upper Middle Rd. E., Suite #300 Oakville, ON, L6H 0C3	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	647-253-0596 EXT 6016	Email 1 or Fax bimcore@alsglobal.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To		Invoice Distribution	Analysis Request
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☐ Yes ☑ No		
Company:		Email 1 or Fax ap@baffinland.com	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q42455	Approver ID:	Cost Center:
Job #:	EXKM80	GL Account:	Routing Code:
PO / AFE:	4500017476	Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): Dec23H L1872424

ALS Contact: Wayne Smith | Sampler: DR/AV

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BTEX/PHCs/O&G	Glycol	Number of Containers
\	EXKM80	17-Dec-16	11:00	Water	R	R	9

Drinking Water (DW) Samples[1] (client use)	Sample from Actual Waste Rock Pond.
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	Site Specific Criteria - Account Manager to update as required.
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice packs	Yes ☐	No ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
		5.9	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Andrew Vermeer	Date: 2016-12-20	Time: 19:30	Received by:	Date:	Time:	Received by:	Date: 23/12/16	Time: 9:20

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

8

Baffinland

January 26, 2017

Resource Management Officer
Nunavut Field Operations
Aboriginal Affairs and Northern Development Canada
Box 100
Iqaluit, NU X0A 0H0
Justin.Hack@aandc-aadnc.gc.ca

Director, Major Projects
Qikiqtani Inuit Association
P.O. Box 219
Iqaluit, NU X0A 0H0

Re: Follow-up to Spill #16-434, Reported on December 27, 2016
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

At 5:45 am Baffinland's vacuum truck operator was off loading raw sewage from the vacuum truck into the waste water treatment plant (WWTP). During the transfer, the operator noticed sewage coming out of the WWTP west door. The operators then turned off the vacuum truck pump. Upon investigation, the spill source was determined to be a 1/2" valve left in an improper position inside the WWTP on the influent line. Approximately 150L of raw sewage was released to the adjacent WWTP pad. An additional 150L recovered from inside the WWTP, which did not impact the receiving environment, was reintroduced back into the sewage treatment system. The closest water body is approximately 100 m to the southwest and is currently frozen.

Immediate and Follow-Up Action:

The operator turned off the vacuum truck pump and notified the Surface Works supervisor who reported the incident. The accessible contaminated snow was shoveled into Quatrex bags and disposed of in the Mine Site Polishing Waste Stabilisation Pond 1 (PWSP 1), a lined engineered containment pond.

Recommendations:

Supervisors need to ensure all operators receive proper training and fully understand their task. Operator must check valve settings every time before offloading sewage from the vacuum truck into the WWTP.

Current Status:

The WWTP is currently fully operational and vacuum truck operators have received training on the offloading procedure.

Should you require further information or clarification on the above noted spill, please feel free to contact William Bowden at (647) 253-0596 x6016, Laura Taylor (647) 253- 0596 x6016 or Allan Knight at (647) 253-0596 x6010.

Prepared By:

Connor Devereaux,
Environmental Coordinator

Reviewed by:

William Bowden,
Environmental Superintendent

Attach: Photos, Map, NT-NU Spill Report

cc. Todd Burlingame, Wayne McPhee, Sylvain Proulx, Robert Gagne, Anant Minhas, Laura Taylor (Baffinland), Stephen Bathory (QIA), Scott Burgess, Erik Allain, Sarah Forte, Jonathan Mesher (INAC).

Photo 1 – WWTP Raw Sewage Spill

Photo 2 – WWTP Spill Post Clean Up

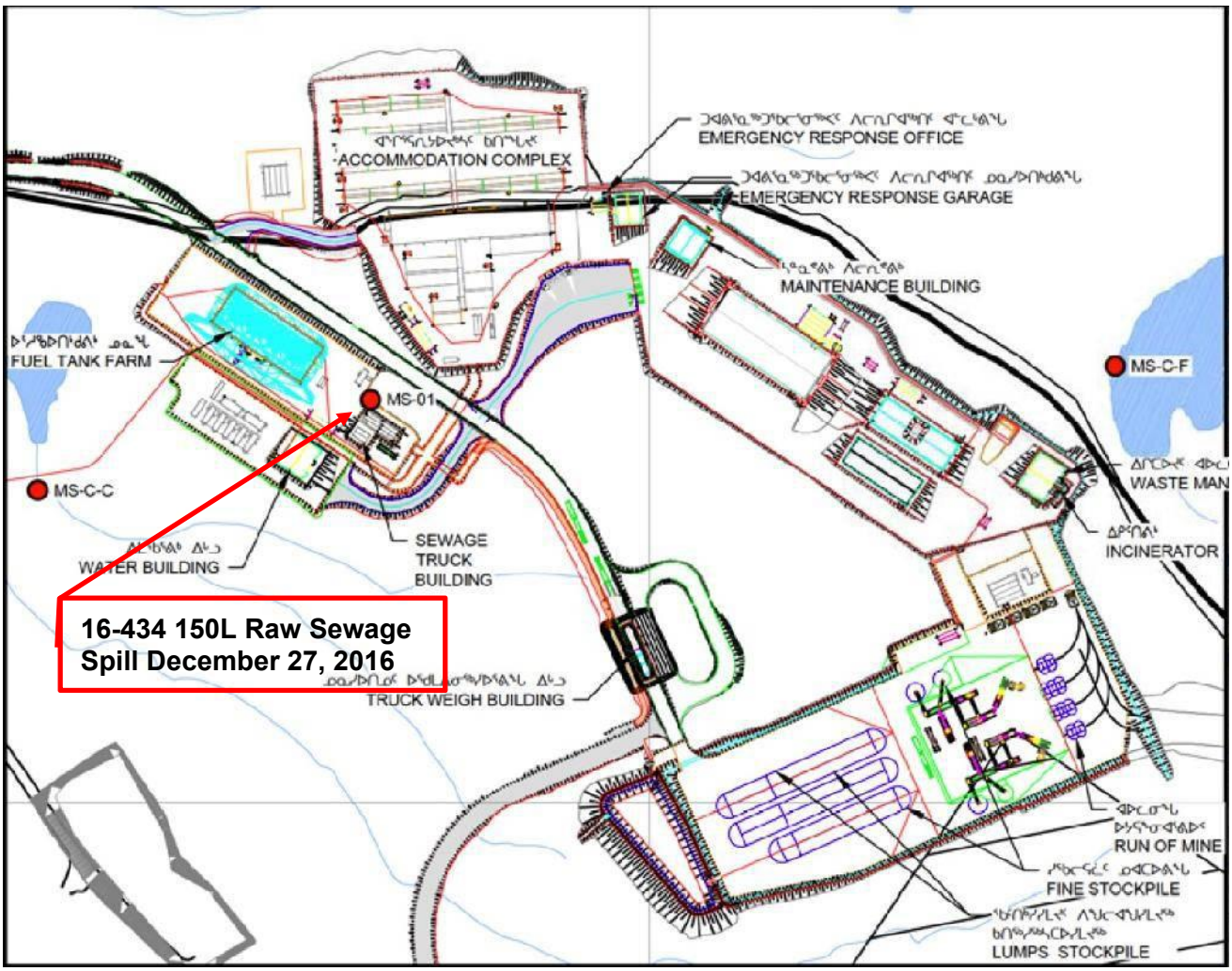


Figure 1 - Spill Location

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 12-27-2016	REPORT TIME 06:00	☒ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 16 - 434
B	OCCURRENCE DATE: MONTH – DAY – YEAR 12-27-2016	OCCURRENCE TIME 05:45		
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 ☐ NWT ☒ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 71 MINUTES 18 SECONDS 49	LONGITUDE DEGREES 79 MINUTES 17 SECONDS 06		
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 Raw Sewage	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 150 Litres	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 Vacuum Truck	SPILL CAUSE 1/2" valve inside WWTP	AREA OF CONTAMINATION IN SQUARE METRES 15 m2	
J	FACTORS AFFECTING SPILL OR RECOVERY Spill inside and beside WWTP	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

At 5:45 am Baffinland's vacuum truck operator was off loading raw sewage from the vacuum truck into the waste water treatment plant (WWTP). During the transfer, the operator noticed sewage coming out of the WWTP west door. The operator immediately turned off the vacuum truck pump and notified his supervisor, who reported the incident. Upon initial investigation, the spill source was determined to be a 1/2" valve inside the WWTP on the influent line. Approximately 150L of raw sewage was released to the adjacent WWTP pad, impacting an area of 15m2. An additional 150L recovered from inside the WWTP, which did not impact the receiving environment, was reintroduced back into the sewage treatment system. The closest water body is approximately 100 m to the southwest and is currently frozen; the spill was confined to the WWTP pad. This spill is being reported as required by the conditions of water license no. 2AM-MRY1325, Part H , item 9 (b) pursuant to subsection 12(3) of the Nunavut Waters and Nunavut Surface Rights Tribunal Act.

L	REPORTED TO SPILL LINE BY William Bowden	POSITION Env. Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM 647-253-0596	TELEPHONE ext. 6016
M	ANY ALTERNATE CONTACT Jim Millard	POSITION Env. Manager	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION Off Site	ALTERNATE TELEPHONE 902-403-1337

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 ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ 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 1

Figure 2 – NT-NU Spill Report