APPENDIX E.8.7.2

INITIAL AND FOLLOW UP SPILL REPORTS

OTHER

(Part 4)

October 22nd, 2017

Resource Management Officer
Nunavut Field Operations
Indigenous and Northern Affairs Canada
Box 100
Iqaluit, NU X0A 0H0
Jonathan.Mesher@aandc-aadnc.gc.ca

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

Re: Follow-up to Spill #17-360 – Reported on September 22nd, Update No.1 on 25th, 2017
Mary River Project - Water Licence No. 2AM-MRY1325

Summary:

On September 21, 2017 at approximately 17:30, BIM employees responded to a possible break in the effluent water line for the Waste Water Treatment Plant, west of the power house, at Milne Port. After isolating the line and removing the insulation, it was found that the pipe had separated at a coupling and was leaking effluent to the ground in two different locations: at the break and ~20 m upstream from the break, at a union of the line's insulation. Effluent discharge was intermittent; it is estimated that 500 L of treated effluent was released impacting an area of 13 m^2.

On September 24, 2017 at approximately 09:00, Fixed Plant responded to another spill at the same location of the initial break. The previous repair to the line had come apart, and was leaking effluent to the ground in the same two locations as spill reported on September 22: at the break and ~20 m upstream at a union of the line's insulation. It is estimated that an additional 500 L of treated effluent was released to the same area as the initial spill. An estimated total of 1 m^3 of treated effluent was released from the initial and update No. 1 spill. The impacted area was confined to the adjacent pad surface under the break in the WWTP, and did not migrate to the closest natural water body which is non-fish bearing, frozen, and located >100 m away.

Immediate and Follow-Up Action:

The effluent pump was shut down immediately following the discovery of the leak. The break was located, isolated, and repaired. The glue used for the initial repair proved to be inadequate. Consequently, the pipe was welded using heat fusion, providing a more reliable repair.

Recommendations:

WWTP line inspections for breaks and signs of stress during the cold weather. The efficacy on Expansion joints will be evaluated to reduce additional breaks resulting from thermal contraction.

Current Status:

The line is repaired and operational.

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

Prepared By:

B.Widdowson

Ben Widdowson,
Environmental Coordinator

Reviewed by:

Bill Bowden

William Bowden
Environmental Superintendent

Attach: Photos, Map of Spill Location, NT-NU Spill Reports (Original and Update no.1)
cc. Todd Burlingame, Sylvain Proulx, William Bowden, Allan Knight, Gerald Rogers, Tim Sewell, (Baffinland), Stephen Bathroy (QIA), Scott Burgess, Erik Allain, Sarah Forte, Jonathon Mesher (INAC)

Photo 1: Line break on September 22nd.

Photo 2: Line repair on September 22nd.

Photo 3: Line break on September 24th.

Photo 4: Line repair on September 24th.

Figure 1: Map of Spill Location

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 09-23-2017	REPORT TIME 19:00	☒ ORIGINAL SPILL REPORT OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-____
B	OCCURRENCE DATE: MONTH – DAY – YEAR 09-21-2017	OCCURRENCE TIME 17:30		
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 53 SECONDS 05	LONGITUDE DEGREES 80 MINUTES 53 SECONDS 49		
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 Treated WWTP Effluent	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Approx. 500 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 Broken Effluent Line	SPILL CAUSE Thremal Contraction/Expansion	AREA OF CONTAMINATION IN SQUARE METRES approx. 13 m2	
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

On September 21, 2017 at approximately 17:30, Fixed Plant responded to a possible break in the effluent water line for the Waste Water Treatment Plant, west of the power house, for Milne Port. After isolating the line and removing the insulation, it was found that the pipe had come apart and was leaking effluent to the ground in two different locations: one at the break and ~20 M upstream from the break, at a union of the line's insulation. Effluent discharge is intermittent; it is estimated that 500L of treated effluent was released impacting an area of 13 m2. The spill was confined to the pad below the water line. The closest water body is non fish bearing, frozen and located >100m away. The investigation and repairs are 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 Right Tribunal Act, and the GN's Environmental Protection Act para 5.1(a).

L	REPORTED TO SPILL LINE BY Bill Bowden	POSITION Env. Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 416-364-8820
M	ANY ALTERNATE CONTACT Wayne McPhee	POSITION Dir. Sust Development	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION Oakville	ALTERNATE TELEPHONE x6016

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 _____

Figure 2: NT-NU Spill Report (Original)

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 09-25-2017	REPORT TIME 22:00	☐ ORIGINAL SPILL REPORT, OR ☒ UPDATE # 1 TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 17 - 360
B	OCCURRENCE DATE: MONTH – DAY – YEAR 09-24-2017	OCCURRENCE TIME 09:00		
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 53 SECONDS 05	LONGITUDE DEGREES 80 MINUTES 53 SECONDS 49		
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 Treated WWTP Effluent	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Additionally Approx. 500 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 Broken Effluent Line	SPILL CAUSE Thremal Contraction/Expansion	AREA OF CONTAMINATION IN SQUARE METRES approx. 13 m2	
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

On September 24, 2017 at approximately 09:00, Fixed Plant responded to a further possible break in the effluent water line for the Waste Water Treatment Plant at Milne Port, located at the original spill source. It was found that the previous fix to the line had come apart, and was leaking effluent to the ground in two different locations: again at the break and ~20 M upstream from the break, at a union of the line's insulation. It is estimated an additional 500L of treated effluent was released impacting the previous spill area; 1m3 of treated effluent in total. The spill was confined to the pad below the water line. The closest water body is non fish bearing, frozen and located >100m away.
The investigation and repairs are 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 Right Tribunal Act, and the GN's Environmental Protection Act para 5.1(a).

L	REPORTED TO SPILL LINE BY Bill Bowden	POSITION Env. Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE 416-364-8820
M	ANY ALTERNATE CONTACT Wayne McPhee	POSITION Dir. Sust Development	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION Oakville	ALTERNATE TELEPHONE x6016

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 _____

Figure 3: NT-NU Spill Report (Update no.1)

October 27, 2017

Jonathan Mesher, Resource Management Officer
Nunavut Field Operations
Indigenous and Northern Affairs Canada
Nunavut Field Operations
Box 100
Iqaluit, NU X0A 0H0

Curtis Didham, Enforcement Officer
Environment and Climate Change Canada
933 Mivvik Street
Iqaluit, NU X0A 0H0

Re: Follow-up to the #17-312 update reported on September 27th, 2017
Mary River Project - Water Licence No. 2AM-MRY1325

Summary

On August 23, 2017 during an inspection of the Mine Site Waste Rock Stockpile Sedimentation Pond with Environment and Climate Change Canada (ECCC) and Indigenous and Northern Affairs Canada (INAC), Seepage was observed originating from the central toe of the Sedimentation Pond in approximately four (4) Discrete but closely clustered locations. On August 25th, 2017 an emergency containment ditch was constructed down gradient of the observed flow from the toe of the waste rock sedimentation pond.

On an inspection of the Waste Rock Pond and ditching, it was noticed that there was discolored water down gradient of the emergency containment ditch constructed below the toe of the waste rock sedimentation rock berm, which was reported on September 28th.The source of this discolored water/ice is undetermined. Further investigation will include water samples being taken, and utilizing Rhodamine dye in an attempt to determine the source of the discolored water/ice. The observed discolored water/ice outside the emergency containment ditch is located on a flat tundra plateau which would flow through the camp lake water shed to Camp Lake approximately 5.5 km away. This spill is being reported:1) 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;2) Under the Fisheries Act as required by section 31 of the Metal Mining Effluent regulations.

As per MMER Reporting section 31(2)
this written report contains:

a) The seepage observed from the central toe of the sedimentation pond in approximately four discrete but closely clustered locations as reported in the original spill report is still on going and has attributed to discolored water/ice outside the emergency containment ditch. Samples of the discolored water indicate water quality was compliant with the exception of Nickel and a single grab sample for pH.
b) The estimated quantity of the deposition is unknown.
c) Exceedances of Nickel concentrations and one pH exceedance outside the ditch on October 8, were deposited at the seepage location WRP-ED-S1 as identified below in the attached analytical laboratory results.
d) No deleterious substance were deposited through the Final Discharge Point.
e) Camp Lake would be the ultimate receiving body of water. It is located >5.5km away from the seepage location
f) Acute Toxicity sample was taken on September 28th.Toxicity was non-lethal and the analytical results are provided herein.
g) The lethality of effluent was unknown at the time seepage was first observed.
h) An emergency containment ditch was installed around the perimeter of the toe of the sedimentation pond in order to capture seepage on August 25. Re-grading upstream of the sedimentation pond key in was performed September 15th to reduce pooling water on the inlet. An additional berm was built around emergency ditch on October 20th to further stop and capture seepage.

Time Line of Actions Taken

September 1st - Hatch field engineer arrived on-site. Objective to observe seepage and provide recommendations to mitigate. Field Observations conducted September 1st to 7th.

September 7th - Construction of till blanket at pond key in commenced.

September 15th through to 17th - Containment sump construction commenced with excavation of key-way and placement of gravel/geotextile. Containment sump geo-membrane placed and key-way completed.

September 26th - Environment Department discovered discolored ice and slush down gradient of the emergency containment ditch.

September 28th - Notification of discoloured water was sent to regulators as an update for Spill Report NT-NU 17-312. It states two new areas of seepage were discovered on the north side of the new containment ditch that was meant to capture the seepage from the Waste Rock Pond. The discoloured water/ice was observed freezing in layers, thereby limiting migration. The seepage source was not immediately identified. Water samples taken of the water outside of the emergency ditch showed Nickel and TSS above applicable guidelines; acute toxicity was non-lethal.

September 29th - Barry Martin inspected the waste rock stockpile sedimentation pond and associated infrastructure. On this date, the flow characteristics were unable to be determined by utilization of tracer dye (Rhodamine) due to unsafe ice conditions.

October 4th - BIM issued a response to INAC Directive: Item 1 addressing concerns of the key-in issues. BIM stated material has been placed at the key-in but is awaiting confirmation that this material will halt the seepage. Le Groupe Desfors Director of Civil Works, Dave Legare, arrived on-site to inspect the pond. The Le Groupe Desfors report concluded “it was impossible to determine if the seepage were still active. The snow cover already in place made it impossible to observe the seepage”. The proposed action plan to be implemented in spring 2018;

i. identification of the origin seepage,
ii. Proposition of solutions to control the leaks downstream of the waste dump.

October 8th - One water sample taken outside the Emergency Ditch showed a low pH result of 5.99.

October 15th - Mine Operations began breaking and cleaning ice from the emergency ditch and its outer perimeter. Ice is piled and stored inside ditch until it can be hauled back to the pond for spring melt.

October 19th - Story Environmental was contacted for recommendations for the utilization of Rhodamine Dye to pond. On their recommendation, 200 mL of Rhodamine dye was added to the output of a hard line Honda Trash Pump. Recirculation of the pond does not occur due to pump failure.

October 20th - Recirculation of the pond commenced. Samples grabbed at the intake of the pump do not show Rhodamine dye has been fully mixed.

October 21st - Construction of new berm beside the outer rim of the emergency ditch commenced.

October 23rd - Woods PLC, formerly AMEC, was sent all seepage results in regards to writing treatment plans for the revision of the Waste Rock Pile Management Plan.

October 24th - Ken DeVos, Principal Geochemist from Golder, and a specialist in ARD with permafrost in the north, on-site to access the waste rock pile.
Environment Climate Change Canada (ECCC) Enforcement Officer on-site to conduct Investigation interviews.

Recommendations and Corrective Actions

- Conduct a detailed hydrologic review to determine the appropriate capacity or required increase in dimensions for the WRSP. Golder Associates Inc. is currently conducting a review.

  Update: Ken DeVos on site October 24 through 26th to conduct pond inspections and report with follow up recommendations.

- Initiate a geochemical review of the waste rock dump layout and materials to develop a better understanding of low pH conditions observed on site and, if necessary, develop supplemental mitigation measures to reduce or eliminate production of acidic water from entering the WRSP.

  Update: Wood PLC, Golder, and Le Groupe Desfors have been retained to investigate.

- Review and amend the Phase 1 Waste Rock Management Plan to provide contingency plans for the treatment of non-compliant water.

  Update: Wood PLC amendment to be submitted by November 15th, 2017.

- Review on-site equipment and consider whether additional equipment could more efficiently treat and discharge water from the WRSP

  Update: A review of required discharge equipment is ongoing winter 2017/2018.

- Review and consider engineered mitigation measures to address water quality and capacity issues once the hydrological and geochemical review is complete.

  Update: Pending hydrological and geochemical reviews.

Should you require further information or clarification on the above noted spill, please feel free to contact William Bowden (647) 253-0596 x6016 or Allan Knight at (647) 253-0596 x6010 or Tim Sewell at (647) 253-0596 x6054.

Prepared By:

Bill Bowden

William Bowden
Environmental Superintendent

Reviewed by:

Timothy Ray Sewell
Head of Health Safety and Environment

Attach: Figure 1: Aerial Map of Sample Locations, Figure 2: Map of MS-08 Sample sites, Figure 3: Analytical Results, Update to NT-NU 17-312 Spill Report, Original NT-NU 17-312 Spill Report, Photos (3)

cc. Todd Burlingame, Sylvain Proulx, Gerald Rogers, William Bowden, Adam Gyorffy, Allan Knight, Tim Sewell (Baffinland), Stephen Bathroy (QIA), Erik Allain, Sarah Forte (INAC)

Figure 1: Aerial Map of MS-08 Emergency Ditch and Berm

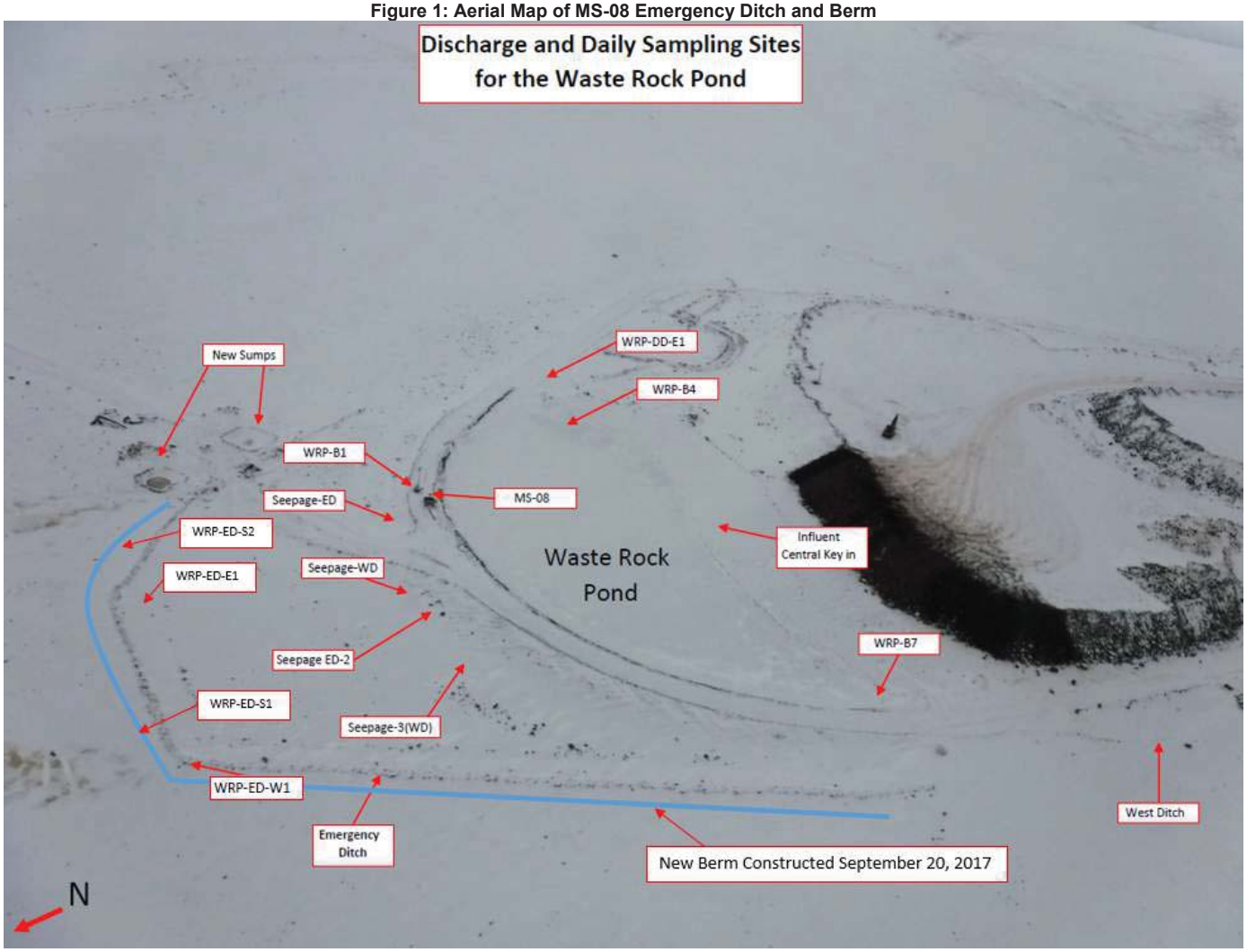

Figure 2: Map of MS-08 Sample Sites

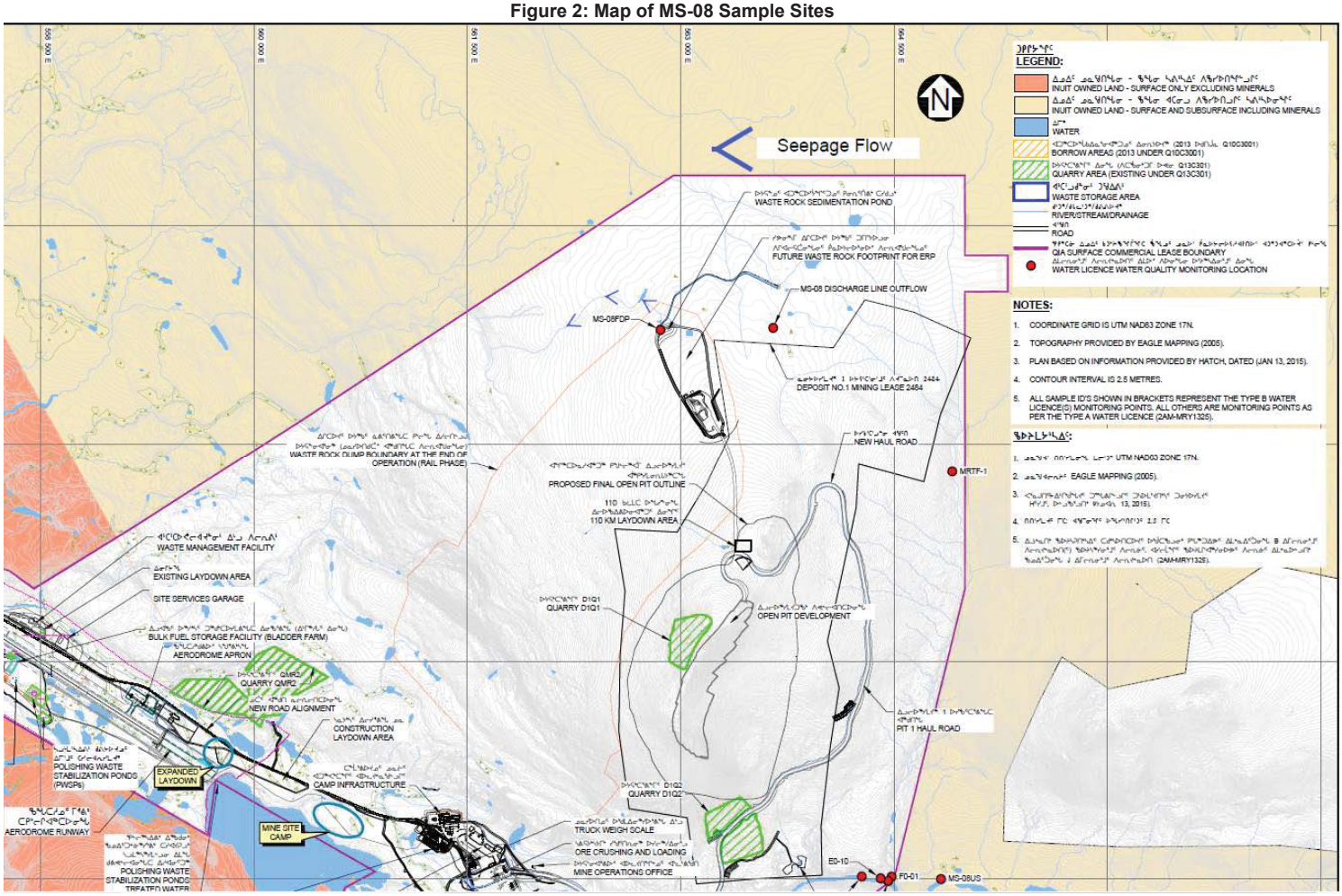

Figure 3: Analytical Results

ALS		Sample	WRP-ED-S1	WRP-ED-S1	WRP-ED-E1
		ALS	L2004615-1	L2004964-1	L2009581-1
Multiple Work Orders		Date	10/8/2017 5:00:00 PM	10/9/2017 3:55:00 PM	10/17/2017 2:00:00 PM
Analyte	Units	LOR	Water	Water	Water
Conductivity	umhos/cm	3	-	-	-
Hardness (as CaCO3)	mg/L	10	-	-	-
pH	pH	0.1	5.99	6.06	5.84
Total Suspended Solids	mg/L	2	15	21.6	10.8
Total Dissolved Solids	mg/L	20	5190	6090	7720
Turbidity	NTU	0.1	15.9	15.7	22.5
Alkalinity, Total (as CaCO3)	mg/L	10	-	-	-
Ammonia, Total (as N)	mg/L	0.1	-	-	-
Chloride (Cl)	mg/L	5	-	-	-
Fluoride (F)	mg/L	0.2	-	-	-
Nitrate (as N)	mg/L	0.2	-	-	-
Total Kjeldahl Nitrogen	mg/L	0.15	-	-	-
Phosphorus, Total	mg/L	0.003	-	-	-
Sulfate (SO4)	mg/L	3	-	-	-
Cyanide, Total	mg/L	0.002	-	-	-
Dissolved Organic Carbon	mg/L	1	-	-	-
Total Organic Carbon	mg/L	1	-	-	-
Acidity (as CaCO3)	mg/L	2	-	-	-
Aluminum (Al)-Total	mg/L	0.05	-	0.106	0.075
Antimony (Sb)-Total	mg/L	0.001	-	<0.0010	<0.0010
Arsenic (As)-Total	mg/L	0.001	-	<0.0010	<0.0010
Barium (Ba)-Total	mg/L	0.002	-	0.0455	0.0426
Beryllium (Be)-Total	mg/L	0.001	-	<0.0010	<0.0010
Bismuth (Bi)-Total	mg/L	0.0005	-	<0.00050	<0.00050
Boron (B)-Total	mg/L	0.1	-	<0.10	<0.10
Cadmium (Cd)-Total	mg/L	0.0001	-	0.00073	0.00091
Calcium (Ca)-Total	mg/L	5	-	199	244
Cesium (Cs)-Total	mg/L	0.0001	-	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	0.005	-	<0.0050	<0.0050
Cobalt (Co)-Total	mg/L	0.001	-	0.586	0.659
Copper (Cu)-Total	mg/L	0.01	-	<0.010	<0.010
Iron (Fe)-Total	mg/L	0.5	-	20.2	22.6
Lead (Pb)-Total	mg/L	0.0005	-	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.01	-	0.056	0.052
Magnesium (Mg)-Total	mg/L	0.5	-	848	1160
Manganese (Mn)-Total	mg/L	0.005	-	35.9	46.9
Mercury (Hg)-Total	mg/L	0.00001	-	-	-
Molybdenum (Mo)-Total	mg/L	0.0005	-	<0.00050	<0.00050
Nickel (Ni)-Total	mg/L	0.005	-	0.634	0.674
Phosphorus (P)-Total	mg/L	0.5	-	<0.50	<0.50
Potassium (K)-Total	mg/L	0.5	-	6.89	9.55
Rubidium (Rb)-Total	mg/L	0.002	-	0.013	0.0165
Selenium (Se)-Total	mg/L	0.0005	-	0.00866	0.0119
Silicon (Si)-Total	mg/L	1	-	2.4	2.8
Silver (Ag)-Total	mg/L	0.0005	-	<0.00050	<0.00050
Sodium (Na)-Total	mg/L	5	-	81.4	65.9
Strontium (Sr)-Total	mg/L	0.01	-	0.138	0.179
Sulfur (S)-Total	mg/L	5	-	1550	1920
Tellurium (Te)-Total	mg/L	0.002	-	<0.0020	<0.0020
Thallium (Tl)-Total	mg/L	0.0001	-	0.00015	0.00014
Thorium (Th)-Total	mg/L	0.001	-	<0.0010	<0.0010
Tin (Sn)-Total	mg/L	0.001	-	<0.0010	<0.0010
Titanium (Ti)-Total	mg/L	0.003	-	<0.0030	<0.0030
Tungsten (W)-Total	mg/L	0.001	-	<0.0010	<0.0010
Uranium (U)-Total	mg/L	0.0001	-	0.00117	0.00075
Vanadium (V)-Total	mg/L	0.005	-	<0.0050	<0.0050
Zinc (Zn)-Total	mg/L	0.03	-	0.048	0.058
Zirconium (Zr)-Total	mg/L	0.003	-	<0.0030	<0.0030
Dissolved Mercury Filtration Location		n/a	-	-	-
Dissolved Metals Filtration Location		n/a	-	FIELD	FIELD
Aluminum (Al)-Dissolved	mg/L	0.05	-	0.055	<0.050
Antimony (Sb)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Arsenic (As)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Barium (Ba)-Dissolved	mg/L	0.001	-	0.0431	0.041
Beryllium (Be)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Bismuth (Bi)-Dissolved	mg/L	0.0005	-	<0.00050	<0.00050
Boron (B)-Dissolved	mg/L	0.1	-	<0.10	<0.10
Cadmium (Cd)-Dissolved	mg/L	0.0001	-	0.0007	0.00083
Calcium (Ca)-Dissolved	mg/L	0.5	-	186	222
Cesium (Cs)-Dissolved	mg/L	0.0001	-	<0.00010	<0.00010
Chromium (Cr)-Dissolved	mg/L	0.005	-	<0.0050	<0.0050
Cobalt (Co)-Dissolved	mg/L	0.001	-	0.598	0.628
Copper (Cu)-Dissolved	mg/L	0.002	-	0.0067	0.0051
Iron (Fe)-Dissolved	mg/L	0.1	-	19.6	19.2
Lead (Pb)-Dissolved	mg/L	0.0005	-	<0.00050	<0.00050
Lithium (Li)-Dissolved	mg/L	0.01	-	0.044	0.052
Magnesium (Mg)-Dissolved	mg/L	0.5	-	865	988
Manganese (Mn)-Dissolved	mg/L	0.05	-	35.9	41.9
Mercury (Hg)-Dissolved	mg/L	0.00001	-	-	-
Molybdenum (Mo)-Dissolved	mg/L	0.0005	-	<0.00050	<0.00050
Nickel (Ni)-Dissolved	mg/L	0.005	-	0.637	0.675
Phosphorus (P)-Dissolved	mg/L	0.5	-	<0.50	<0.50
Potassium (K)-Dissolved	mg/L	0.5	-	6.68	8.83
Rubidium (Rb)-Dissolved	mg/L	0.002	-	0.013	0.0146
Selenium (Se)-Dissolved	mg/L	0.0005	-	0.0091	0.0107
Silicon (Si)-Dissolved	mg/L	0.5	-	2.15	2.47
Silver (Ag)-Dissolved	mg/L	0.0005	-	<0.00050	<0.00050
Sodium (Na)-Dissolved	mg/L	5	-	81	73.4
Strontium (Sr)-Dissolved	mg/L	0.01	-	0.129	0.156
Sulfur (S)-Dissolved	mg/L	5	-	1480	1760
Tellurium (Te)-Dissolved	mg/L	0.002	-	<0.0020	<0.0020
Thallium (Tl)-Dissolved	mg/L	0.0001	-	0.00015	0.00015
Thorium (Th)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Tin (Sn)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Titanium (Ti)-Dissolved	mg/L	0.003	-	<0.0030	<0.0030
Tungsten (W)-Dissolved	mg/L	0.001	-	<0.0010	<0.0010
Uranium (U)-Dissolved	mg/L	0.0001	-	0.00108	0.0012
Vanadium (V)-Dissolved	mg/L	0.005	-	<0.0050	<0.0050
Zinc (Zn)-Dissolved	mg/L	0.01	-	0.044	0.051
Zirconium (Zr)-Dissolved	mg/L	0.003	-	<0.0030	<0.0030
Ra-226	Bq/L	0.0076	-	-	-

Figure 3: September 28th Update Submitted

Baffinland

Sept. 28th 2017

RE: Baffinland Iron Mines Update to Spills Report #17-312

The purpose of this letter is to provide an update on the status of Mary River Project Mine Site Waste Rock Stockpile (Waste Rock Stockpile) and associated water management infrastructure. As an additional update to the spills report submitted Sept 27th of August for the Waste Rock Pond, we would like to include the below information as a continuation of the original report.

Background: On August 16, 2017, Baffinland notified regulators and stakeholders that the water quality of surface water runoff originating from the Waste Rock Stockpile is not meeting discharge requirements and there was limited remaining capacity in the Sedimentation Pond. On August 23, 2017 during an inspection of the Mine Site Waste Rock Stockpile Sedimentation Pond with Environment and Climate Change Canada (ECCC) and Indigenous and Northern Affairs Canada (INAC), seepage was observed originating from the central toe of the Sedimentation Pond in approximately four (4) discrete but closely clustered locations. It is still uncertain at this time as to the exact cause of the observed flows however initial inspections indicate that surface water runoff is potentially infiltrating below the liner inlet key in. An emergency containment ditch was completed shortly after on August 25, 2017 to contain the observed seepage.

Baffinland then implemented an Action Plan submitted to stakeholders August 31st. This plan was executed and completed on Sept 16th. These actions included re-grading the upstream area of the pond, including the east collection ditch and pond liner key. Retained experts to assess the seepage and design of the pond and offer option for mitigation measures. An interim emergency ditch was created around the base of the pond to act as secondary containment. There was also two large sumps lined with HDPE liner to collect the water from the ditches. This water was to be pumped back into the pond. Upon completion of these action item, the winter season seemed to start freezing all waters.

During a routine inspection of the Waste Rock Pond and ditching yesterday morning, it was noticed that there were noticeable new wet areas within the frozen snow covered tundra downstream of the Waste Rock Pond. It was discovered on the north side of the new containment ditch that was meant to capture the seepage from the Waste Rock Pond. Upon further inspection of the 2 new areas that were identified, there is evidence of flowing water and thus freezing in layers. The water is not able to flow very far into the environment as it continues to freeze thus there is no risk to any surrounding waterbodies.

At this time we do not know where the water is coming from and the volume is still undetermined. We will continue to monitor and sample the situation. Further investigation is required and pending expert advice we will have more information in the follow up report. The incident occurred on Inuit owned land and located > 3 km from the Mary River, the nearest fish bearing water. There is no evidence that this water is entering any water body at this time.

2275 Upper Middle Road East, Suite 300 | Oakville, ON, Canada L6H 0C3
Main: 416.364.8820 | Fax: 416.364.0193 | www.baffinland.com

We trust that this letter addresses the recent happenings within our site at the Waste Rock Pond.

Please do not hesitate to contact the undersigned, or Tim Sewell at Timothy.Sewell@baffinland.com or Ex 5054.

Best Regards,

Laura Taylor
Environmental Superintendent

Figure 3: NT-NU Spill Report

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 08-26-2017	REPORT TIME 10:30HRS	[X] ORIGINAL SPILL REPORT, OR [ ] UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER 17 - 312
B	OCCURRENCE DATE: MONTH – DAY – YEAR Unknown	OCCURRENCE TIME Unknown		
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, Mary Site, Baffin Island, NU	REGION [ ] NWT [X] NUNAVUT [ ] ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES 71 MINUTES 20 SECONDS 42	LONGITUDE DEGREES 79 MINUTES 14 SECONDS 21		
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 Surface Water	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES Unknown	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 Waste Rock Stockpile	SPILL CAUSE Integrity of Pond or Inlet Key In	AREA OF CONTAMINATION IN SQUARE METRES N/A	
J	FACTORS AFFECTING SPILL OR RECOVERY drainage to tundra/ spillway ditch	DESCRIBE ANY ASSISTANCE REQUIRED Heavy Equipment	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 August 23rd, 2017, at approx 14:00, on an inspection of the Mine Site Waste Rock Stockpile Pond with Environment and Climate Change Canada and Indigenous and Northern Affairs Canada it was identified that flow was coming from the central toe of the containment pond berm in approx 4 discrete but closely clustered locations. Upon initial inspection, field measurements of the seepages yielded pHs of approx 5.96 however samples taken during the inspection yielded results of approx 6.3. Follow up samples are currently being processed. It is uncertain at this time, as to the exact cause of the flow of water coming from the toe of the containment pond. An emergency containment ditch was completed to contain the seepages August 25. The seepage occurred on IOL located> 3km from Mary River, the nearest fish bearing waters. Water quality monitoring and corrective actions will be presented in the follow-up report. This spill is being reported as required by the conditions of water license no. 2AM-MRY1325, Part H, item 9 (b), Sec. 31 of MMER, and the GN EPA para. 5.1a.

L	REPORTED TO SPILL LINE BY William Bowden	POSITION Env Superintendent	EMPLOYER Baffinland	LOCATION CALLING FROM Mary River	TELEPHONE ext. 6016
M	ANY ALTERNATE CONTACT Wayne Mcphee	POSITION Dir. Sust Development	EMPLOYER Baffinland	ALTERNATE CONTACT LOCATION 647-253-0596	ALTERNATE TELEPHONE Ext 5088

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

Photo 1: Frozen Water Inside and Outside of Emergency Ditch

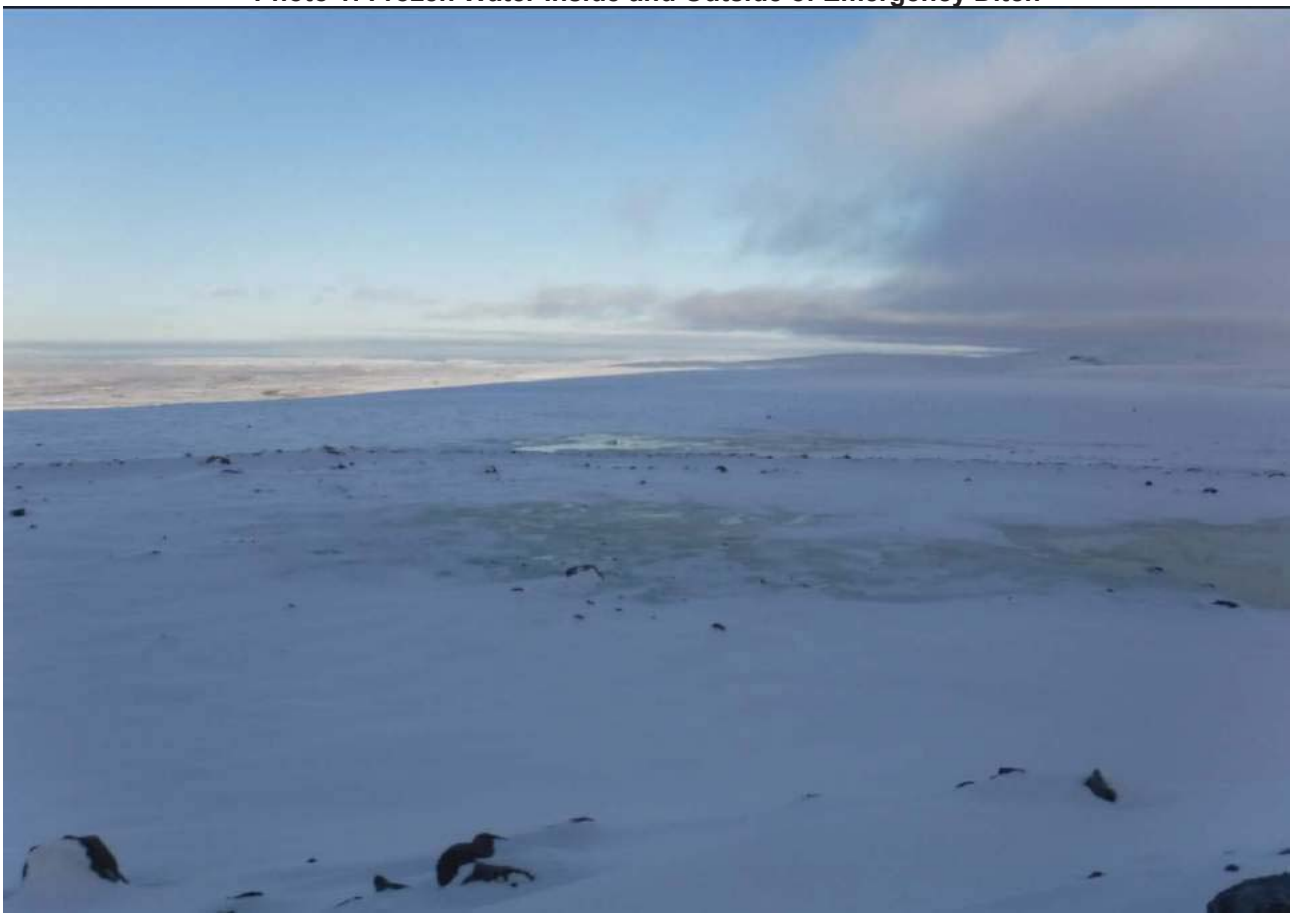

Photo 2: New Berm Being Constructed beside Existing Emergency Ditch

Photo 3: Recirculating Pond after Addition of Rhodamine Dye