



April 18, 2019

Jonathon Mesher
Water Resources Officer, CIRNAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0

RE: Water Licence 2AM-MRY1325 January 2019 Inspection Report

A Water Licence Inspection was conducted on January 23-24, 2019, at Baffinland's Mary River Project by the Crown-Indigenous Relations Northern Affairs Canada (CIRNAC) Water Resource Officers. During the inspection, some concerns were identified and these concerns are outlined in the attached Inspection Report that was received March 19th, 2019.

The attached Table A.1 provides a summary the Inspector's key observations and concerns along with Baffinland's responses.

Should you require further information, please feel free to contact the undersigned or William Bowden at (647) 253-0596 Ext. 6016

Prepared by:

A handwritten signature in black ink, appearing to read "Connor Devereaux".

Connor Devereaux
Environmental Superintendent

Reviewed by:

A handwritten signature in black ink, appearing to read "Christopher Murray".

Christopher Murray
Environmental & Regulatory Compliance Manager

Attachments:

Attachment 1: 2AM-MRY1325 January 2019 Inspection Report

Attachment 2: Table that summarizes Baffinland's responses

Cc: Karén Kharatyan (NWB)
Jared Ottenhof (QIA)
Justin Hack, Jeremy Fraser (CIRNAC)
Tim Sewell, Grant Goddard, Megan Lorde-Hoyle, William Bowden, Sylvain Proulx, Francois Gaudreau, Gerald Rogers, Lou Kamermans (Baffinland)



Attachment 1: 2AM-MRY1325 January 2019 Inspection Report

WATER LICENCE INSPECTION FORM

☒ Original

☐ Follow-Up Report

Licensee	Licensee Representative
BAFFINLAND IRON MINES CORPORATION	Connor D.
Licence No. / Expiry	Representative's Title
2AM-MRY1325	Environmental Superintendent
Land / Other Authorizations	Land / Other Authorizations
2BE-MRY1421	N2014X0012, N2014Q0016, N2014C0013
Date of Inspection	Inspector
January 23-24, 2019	Jonathan Mesher
Activities Inspected	
<input type="checkbox"/> Camp	<input type="checkbox"/> Drilling
<input type="checkbox"/> Roads/Hauling	<input checked="" type="checkbox"/> Mining
	<input type="checkbox"/> Construction
	<input type="checkbox"/> Reclamation
	<input type="checkbox"/> Fuel Storage
	<input type="checkbox"/> Other:

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	Site Conditions	Condition	Comment	Haz/Mat Management	Condition	Comment
Intake/Screen	A		Water Management Structures	C		Storage	C	
Flow Measure. Device	A		Culverts / Bridges	A		Spills	A	
Source:	A		Drainage	C		Spill Plan	A	
Water Use:	A		Erosion / Sediment	C				
Recirculation (y /n)	N		Mitigation Measures	A		Administrative		
Containment Ditches	U		Reclamation Activities	A		Records	A	
			Materials Storage	A		Reports	Ni	
Waste Disposal			Signage	A		Plans	Ni	
Waste Water	U					Notifications	A	
Solid Waste	A		Monitoring			Other		
Hazardous Waste	C		Sample Collection / Analysis	NI				

*The number in the comments field will correspond with specific comments provided below.

Samples taken by Inspector:

☐ Yes ☒ No

SECTION 1 ☒ Comments (s. __) ☐ Non-Compliance with Act or Licence (s. __) ☐ Action Required (s. __)

Background

An inspection was conducted by Jonathan Mesher and Jeremy Fraser, Water Resource Officers of CIRNAC. At the time of inspection, the Licensee was undertaking activities related to the operation of an open-pit iron ore mine at the Mine Site (Mary River), Milne Port (Milne Inlet), and Tote Road. The site was mostly snow covered and the temperature was steady around -30 degrees Celsius.

Construction activities on site include the construction of the new 800 man camp at Mary River site, increasing the capacity of the West sedimentation pond at Milne Inlet, construction of a ditch on “Milne Hill” in Milne inlet, construction of laydown area’s W10A and W10B at Milne inlet and, construction of a new truck wash shop at the mine site.

The Inspector noted the following concerns listed below and is requesting that the licensee provide a response to the concerns within 30 days of receiving this Inspection Report.

1. Ore Crushing Area and Associated Water Management Structures

a. At the time of the inspection, the majority of the waste and water management structures at this facility were snow covered making it difficult to identify and potential concerns.

b. The licensee is currently in the process of clearing iron ore away from the ditches and is re-installing the required buffer zone between the ditches and the stockpile to allow single lane traffic. The licensee has committed to completing this work prior to May 15, 2019.

c. No other concerns were noted at the time of the inspection.

2. Waste Rock Stockpile and Associated Water Management Structures

a. At the time of the inspection the majority of the waste and water management structures at this facility were snow covered making it difficult to identify and potential concerns.



- b. This facility is one of the Major concerns at Baffinland for CIRNAC and other regulatory agencies; the licensee is currently developing a plan to determine the best way to upgrade the ditches and the containment pond. No plans have been submitted yet but, the licensee informed the inspector that the plan will be complete in less than a month during the time of the inspection.
- c. The licensee has recently installed 6 out of 8 thermistors within the Waste Rock Stockpile, this will better help understand the temperature gradients and help predict/ mitigate the Acid Rock Drainage.
- d. The licensee is currently in the process of covering the West side of the Waste Rock Stockpile with non-acid generating (NAG) waste rock, this will help limit the exposure to the elements. While questioning the licensee on the current stacking strategy of potential acid generating (PAG) and NAG waste rock, the licensee still had no plan cover the East side of the Waste Rock Stockpile with NAG. If the licensee fails to fully encapsulate the PAG there may continue to be Acid Rock Drainage (ARD) issues at this facility. The inspector is requesting a timeline or a plan for when the East side of this facility will be covered by NAG be submitted with the follow up to this report within 30 days of receiving this report.

3. Hazardous Waste Berms (HWB)

- a. At the time of the inspection the majority of the waste and water management structures at this facility were snow covered making it difficult to identify any potential concerns. No concerns were noted.

4. Polishing Waste Stabilization Ponds (PWSP)

- a. At the time of the inspection the majority of the waste and water management structures at this facility were snow covered making it difficult to identify any potential concerns. No concerns were noted.

5. Non-Hazardous Landfill

- a. In previous inspection reports there were concerns noted regarding the deposit of unauthorized waste to this facility. During the August 2018 Inspection, it was noted that the licensee had locked the facility, during the most recent inspection this facility was not locked and the gate was snowed in leading the inspector to believe that they have stopped locking the facility.
- b. If the licensee continues to deposit unauthorized waste into the non-hazardous landfill, future enforcement actions may be required.

6. Ore Stockpile Pad and Related Water Management Structures at Milne Inlet

- a. At the time of the inspection the licensee was in the process of increasing the capacity of the West Sedimentation Pond of the Ore Stockpile.
- b. No concerns were identified at the time of the inspection.

7. Laydown in Milne Inlet (W10A and W10B)

- a. The licensee has constructed Lay Down Pads W10A and W10B at Milne Inlet; the pads are currently storing aggregate for future development. The Pads W10A and W10B are identified in Modification No. 7, HATCH drawing H353004-40000-220-272-0006-0001 dated 15/02/2018.
- b. The snow cover made it difficult to identify the limits of the pad; this site will be inspected in the summer of 2019. No concerns were noted at the time of the inspection.

☐ Comments

☐ Non-Compliance with Act or Licence

☐ Action Required

Click here to enter text.


SECTION 3

☐ Comments

☐ Non-Compliance with Act or Licence

☐ Action Required

Click here to enter text.

Licensee or Representative Connor Devereaux	Inspector's Name Jonathan Mesher
Signature 	Signature 
Date 03/18/2019	Date 1/30/2019

Office Use Only: Follow-up report to be issued by Inspector

☐ Yes ☐ No

CC: Licensing Department, NWB
Justin Hack, Manager of Field Operations, INAC

PHOTO LOG

Date	Camera	Inspector	Authorization
August 22, 2018	Sony Cyber-shot	J.Mesher	2AM-MRY1325

Photo Log

Location Baffinland

Photo 1



Description: Inspector Jeremy FRASER and Chase, Manager of Ore crusher pad, walk parameter of crusher pad. Managers have verbally agreed to have Ditching and single lane traffic road to be constructed prior to May 15 2019.

Photo Log #

Location Baffinland

Photo 2



Description: Snow covered hazardous waste storage facility



Photo Log #

Location Baffinland

Photo 3

N

W



Description: Snow covered facility

Photo Log #

Location: Baffinland

Photo 4

N

W



Description: Snow covered waste management facility.



Attachment 2: Table that summarizes Baffinland's responses

Table A.1 - Response to CIRNAC Water Licence Inspection - January, 2019

ITEM No. ¹	Action Required with Observation or Item of Concern	Baffinland Responses
Section 1		
1.b.	The licensee is currently in the process of clearing iron ore away from the ditches and is re-installing the required buffer zone between the ditches and the stockpile to allow single lane traffic. The licensee has committed to completing this work prior to May 15, 2019. (see photo 1)	Baffinland continues to remove ore stockpiled within 3m of the perimeter ditch and re installing the required buffer zone between the ditch and ore stockpile. Work was carried out following the January 2019 inspection, however due to frozen conditions encountered, work was suspended. This is an ongoing activity as conditions permit, and will be assessed in spring 2019. Baffinland endeavors to reinstate this 3m buffer over the 2019 season once temperatures are favourable.
2.b.	This facility is one of the major concerns at Baffinland for CIRNAC and other regulatory agencies; the licensee is currently developing a plan to determine the best way to upgrade the ditches and the containment pond. No plans have been submitted yet but, the licensee informed the inspector that the plan will be complete in less than a month during the time of the inspection.	IFC drawings for the Waste Rock Facility ditches and water management pond were issued by Golder as part of the waste rock pond expansion project (Modification No. 8) and are planned to be constructed in 2019. A detailed schedule of construction for this work was provided to regulators on April 4, 2019 during the Waste Rock Management Plan teleconference. Section 4.2 of the Interim Waste Rock Management Plan ² details the planned construction approach and water management strategies.
2.c.	The licensee has recently installed 6 out of 8 thermistors within the Waste Rock Stockpile, this will better help understand the temperature gradients and help predict/ mitigate the Acid Rock Drainage.	Baffinland has completed installation of all eight (8) thermistors in December 2018 and February 2019 at the Waste Rock Facility. Preliminary results are outlined in Baffinland's Interim Waste Rock Management Plan ² .
2.d.	The licensee is currently in the process of covering the West side of the Waste Rock Stockpile with non-acid generating (NAG) waste rock, this will help limit the exposure to the elements. While questioning the licensee on the current stacking strategy of potential acid generating (PAG) and NAG waste rock, the licensee still had no plan cover the East side of the Waste Rock Stockpile with NAG. If the licensee fails to fully encapsulate the PAG there may continue to be pH issues at this facility. The inspector is requesting a timeline or a plan for when the East side of this facility will be covered by NAG be submitted with the follow up to this report within 30 days of receiving this report.	Baffinland's waste rock deposition plan for 2019 is outlined in Section 6.4 through 6.6 of the Interim Waste Rock Management Plan ² . This outlines Baffinland's strategy for PAG encapsulation and permafrost aggradation to promote long-term physical and chemical stability. It is expected that permafrost aggradation will provide an effective barrier to acid-forming reactions as absence of oxygen and water supply limits potential for sulphide oxidation and ARD transport. Baffinland will continue to investigate the source of low pH water at the Waste Rock Facility and implement the appropriate mitigation measures.
5.a.	In previous inspection reports there were concerns noted regarding the deposit of unauthorized waste to this facility. During the August 2018 Inspection, it was noted that the licensee had locked the facility, during the most recent inspection this facility was not locked and the gate was snowed in leading the inspector to believe that they have stopped locking the facility.	Baffinland continues to control access to the landfill and ensure proper waste management practices.

Notes:

¹ Item No. as referenced in CIRNAC Water Licence Inspection Report January, 2019

² Interim Waste Rock Management Plan. March 2019. Golder Associates