



September 7, 2020

Assol Kubeisnova
Technical Advisor, NWB
P.O. Box 119
Gjoa Haven, NU X0B 1J0

RE: Submission of 2020 Geotechnical Inspection Report No. 1 (July 2020)

Under Part D, Item 18 of Baffinland Iron Mines Corporation's (Baffinland) Type "A" Water Licence 2AM-MRY1325 Amendment No. 1 (Water Licence), Baffinland is required to conduct biannual geotechnical inspections of specified Mary River Project (the 'Project') infrastructure. Part D, Item 18, of the Water Licence states that:

"The Licensee shall conduct inspections of the earthworks and geological and hydrological regimes of the Project biannually during the summer or as otherwise approved by the Board in writing. The inspection shall be conducted by a Geotechnical Engineer and the inspection report shall be submitted to the Board within sixty (60) days of the inspection, including a cover letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations."

The first biannual geotechnical field inspection for 2020 was conducted by Laszlo Bodi, M.Sc., P.Eng., Principal Civil/Geotechnical Engineer with Wood Environment and Infrastructure Solutions. The focus of the inspection was on the Water Licence related infrastructure located at the Mary River Mine Site and Milne Port, as well as select water crossings along the Milne Inlet Tote Road. The attached report covers the first inspection that was conducted between June 26 and July 7, 2020.

During the July 2019 inspection, the following site facilities were inspected:

Mary River Mine Site

- Polishing/Wastewater Stabilization Ponds (3)
- Hazardous waste disposal cells (HWB-1 to HWB-7)
- MS-06 and MS-08 surface water collection/settling ponds and ditches
- Genset pond (i.e., located adjacent to the generators)
- Fuel Storage Farms (3) – Aerodrome jet-fuel storage, MS-03 and MS-03B diesel fuel farms
- Solid-waste disposal site (non-hazardous landfill)
- CLSP silt sedimentation check dams and berms, adjacent to the water intake
- Water (effluent) discharge area
- Deposit 1 pit walls
- QMR2, D1Q1 and D1Q2 rock quarries

Milne Inlet Port Site

- Hazardous waste disposal cells - (HWB-1 through to HWB-4)
- MP-01A, pond
- MP-03 fuel tank farm

- MP-04 landfarm and MP-04A contaminated snow pond
- MP-05, MP-06 and Settling Pond #3 surface water settling ponds and drainage ditches
- Q01 rock quarry
- Surface water collection ditches (P-SWD-3, -5, -6, -7, W3/W14, 380M pad and PSC ditches)
- Tote road culverts (conveying surface water from the quarry area)

Milne Inlet Tote Road

- Bridges (4)
- Culverts (12)

The attached report (refer to Attachment 1) presents the findings of the July 2020 inspection and recommendations for the aforementioned structures. The following subsections of this letter summarize Baffinland's plan for implementing recommendations.

Recommendations for the Mary River Mine Site Infrastructure

Polishing/Waste Stabilization Ponds (3 PWS ponds)

Some minor damage (i.e. "sinkhole") was visible on the crest of Pond #3, shown in Figure 10. It appears that the finer sand particles migrated down into the larger voids within the rock fill. Furthermore, large timbers and miscellaneous other elements (e.g., used tires etc.) are utilized as weight to secure the liner in-place at the berm's crest.

Baffinland Action: Baffinland commits to having the minor damage to the liner repaired as part of the regular maintenance program. Baffinland will continue to monitor the PWSPs and initiate cleanup of this area to remove excess materials.

Mine Site Hazardous Waste Disposal Areas

HWB-3, HWB-4 and HWB-5

Some minor foot traffic had caused some disturbance on the slopes and crests of the berms and that should be avoided.

Baffinland Action: Foot and truck traffic on the slopes and the crest of the berm should be prohibited with controlled / ramped access points (preferably one) provided for the skid-steers to dispose designated materials in the cell, if required.

MS-06 – Surface Water Collection Pond Adjacent to the Crusher Pad

Some damage was noted at a culvert located near the southeast inlet to the pond. Additional minor damage was noted at the culvert located beneath the Tote Road, adjacent to the northeast corner of the pond.

Baffinland Action: Baffinland commits to repairing and cleaning the culverts identified during the inspection. The collected excess silt will be deposited at an appropriate disposal location onsite.

MS-08 – Surface Water Collection Pond Adjacent to the Waste Rock Facility

There was a small area on the MS-08 pond berm where the finer soil from the berm's crest has migrated down into the larger voids within the rock fill.

Baffinland Action: Baffinland commits to placing granular fill into the cavity in this area, followed by the reestablishment of the geotextile and geomembrane to match undisturbed arrangement elsewhere on the berm.

Generator Fuel Berm (Genset Pond)

Disturbance by foot-traffic, exposed geotextile and liner were visible along some locations on the berm's crest and minor sloughing of the upstream slope of the berm is also visible along the southern section of the berm.

Baffinland Action: Baffinland commits to bringing granular fill to this location to re-fill the slope and regrade the area. In addition to the repair work on the slope, the southern, lower section of the berm will be reconstructed to its original geometry.

Water (Effluent) Discharge Area

Minor surface erosion was noted adjacent to the rock fill slope, within the native material.

Baffinland Action: Baffinland commits to recovering the eroded slope with rock fill to prevent any regressive erosion in the future.

QMR2 Quarry

Additional measures for surface water management (excavation/formation of drainage ditches at strategic locations) within the quarry was recommended. In order to maintain traffic safety along the access road, immediate repair of the road was recommended.

Baffinland Action: The damaged road section was repaired during the inspection. Baffinland commits to further improving of surface water control in the quarry through excavation/formation of additional drainage ditches at strategic locations.

D1Q2 Quarry

Improvement to the surface water control processes is recommended in the area. This includes improvements and establishment of ditching along the access road and relocation of culverts.

Baffinland Action: Baffinland commits to improving the surface drainage in the area by constructing ditches with proper sloping, relocation of culverts to the lowermost point along the access road.

Recommendations for Milne Port Infrastructure

Milne Port Hazardous Waste Disposal Areas

HWB-1

Ripped geotextile and exposed liner were noted at a few locations at higher elevations along the berm.

Baffinland Action: Baffinland commits as part of the onsite maintenance program, that the disturbed areas of the berm on the slopes and crest be regraded. In areas where the liner is exposed, Baffinland commits to covering the area with a protective layer of soil (clean sand and gravel).

HWB-2

Exposed geotextile and liner were noted at a few locations on the internal slopes of the otherwise stable berms.

Baffinland Action: Baffinland commits to addressing the exposed liner areas with a protective layer of soil (clean sand and gravel) during cell maintenance.

HWB-3 and HWB-4

The liner within the ponds are intact; however, they are exposed at a few locations on the crest and downstream slopes of the berms.

Baffinland Action: Baffinland commits to regrading and covering areas where liner is exposed with a protective granular fill (clean sand and gravel).

MP-04 and 04A Landfarm and Contaminated Snow Disposal Cells

Exposed liner was visible on the downstream slope of sections of the berm for MP-04 and MP-04A, particularly along the north berm.

Baffinland Action: Baffinland commits to regrading and covering areas where liner is exposed with a protective granular fill (clean sand and gravel).

MP-05

Minor liner damage was noted on the slope of the southern intake channel to the pond. Some erosion on the slope of the drainage ditch to the MP-05 was noted.

Baffinland Action: Baffinland commits to addressing the minor liner and erosion damage observed.

Surface Water Collection Ditches

Sloughing of the sides of ditch P-SWD-3, adjacent to the LP2 laydown area, is visible at several locations along the ditch. The riprap appeared to be missing at a small section of the P-SWD-5 ditch. Minor sloughing of the riprap was also observed in the 380M ditch. It is recommended that the culvert should be shortened at the PSC drainage ditch under construction to facilitate uninterrupted flow of water within the ditch.

Baffinland Action: Baffinland commits further assessing the sloughing observed on the sides of ditch P-SWD-3 and the 380M ditch. Baffinland will replace the missing riprap observed in the P-SWD-5 ditch and further assess the culvert installation at the PSC ditch.

Tote Road between Mary River and Milne Inlet - Bridges and Culverts

Bridge 17

There are two historic abutments, located immediately adjacent to the “new” ones. The metal front and wing walls of both “old” abutments have suffered damages in the past, particularly the south abutment.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 63

There are two historic abutments, located immediately adjacent to the “new” ones and damage to the metal front and wing walls of both abutments are visible.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 80

There are two historic abutments, located immediately adjacent to the “new” ones, providing support to the new abutments and road embankment. Therefore, removal of these structures is not recommended.

Baffinland Action: To maintain the stability of the currently used bridge abutments, Baffinland will keep the two old abutments in place since they provide support to the adjacent new structures.

Bridge 97

At this location the old abutments are located somewhat away from the new ones and they appear to be structurally stable. Since no access is provided to them from the road they shall be left in place.

Baffinland Action: Baffinland will not be removing the old abutments identified at Bridge 97 during the inspection.

Culvert – 083

The outlet of this culvert appears to be short. It should be extended by about 1.5 m and the adjacent road embankment shall be upgraded to a more stable slope with the placement of crushed stone.

Baffinland Action: Baffinland commits to placing crushed rock fill adjacent to the culvert at its inlet. This will further prevent erosion of the road embankment by the flowing water in the creek.

Culvert – 107

Both ends of this culvert are short, particularly at the inlet side.

Baffinland Action: Baffinland commits to further inspecting this culvert and will determine if replacement with a longer, larger pipe is required.

Culvert – 112D

The outlet end of one of the culverts at this location appears to be short and no crushed rock riprap was placed around that particular culvert.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with a longer, larger pipe is required. Baffinland will place additional riprap the outlet end of the pipe to prevent slope erosion and embankment failure.

Culvert – 114D

Both ends of this double-barrel culvert are damaged and too short, particularly at the outlet end.

Baffinland Action: Baffinland commits to further inspecting this culvert to determine if replacement with a longer, larger pipe is required. If replaced, both pipes will be repaired and extended. Once the pipes are repaired and extended, the road embankment may be widened.

We trust that this submittal meets the requirements for geotechnical inspections as outlined in the Water Licence. Should you have any questions, please do not hesitate to contact the undersigned or Aaron MacDonell.

Regards,

A handwritten signature in black ink, appearing to read "A. MacDonell", written in a cursive style.

Aaron MacDonell
Environmental Superintendent

Attachments:

Attachment 1: 2020 Geotechnical Inspection Report No. 1

Cc: Karén Kharatyan (NWB)
Chris Spencer, Jared Ottenhof (QIA)
Bridget Campbell, Godwin Okonkwo, Jonathan Mesher, Justin Hack (CIRNAC)
Tim Sewell, Shawn Stevens, Megan Lorde-Hoyle, Lou Kamermans, Christopher Murray, Sylvain Proulx, Francois Gaudreau, Connor Devereaux, Amanda McKenzie (Baffinland)

Attachment 1

2020 Geotechnical Inspection Report No. 1