



NIRB File No.: 08MN053

November 12, 2014

Oliver Curran
Director, Sustainable Development
Baffinland Iron Mines Corporation
2275, Upper Middle Road East
Suite 300
Oakville ON L6H 0C3

Sent via email: oliver.curran@baffinland.com

Re: The Nunavut Impact Review Board's 2013-2014 Annual Monitoring Report for the Mary River Project and Board's Recommendations

Dear Oliver Curran:

The Nunavut Impact Review Board (NIRB or Board) is hereby releasing its *2013-2014 Annual Monitoring Report for Baffinland Iron Mines Corp.'s Mary River Project* (Monitoring Report). The enclosed Monitoring Report is based on the NIRB's monitoring activities pursuant to the Mary River Project Certificate [005] and Sections 12.7.1 and 12.7.2 of the Nunavut Land Claims Agreement. This report provides findings that resulted from monitoring of this Project that took place from September 2013 to September 2014.

By way of a motion carried during its regular meeting held in October 2014, the Board has issued the following recommendations to assist Baffinland Iron Mines Corp. (Baffinland or Proponent) in achieving compliance with the Mary River Project Certificate (PC) and to ensure the NIRB has all information necessary to adequately discharge its mandate with respect to provisions within section 12.7 of the NLCA as such pertain to the Mary River Project.

Dust fall Monitoring – Project Certificate Condition 58

Condition 58 (item c) of the Mary River Project Certificate require that the Proponent report on the measured levels of dust fall on vegetation, and ash content of caribou fecal pellets. While Baffinland had indicated within its Terrestrial Monitoring Report that it collected caribou faecal pellets as a part of its terrestrial monitoring program, results of ash content for the caribou pellets collected have not been provided to the NIRB.

Recommendation 1: The Board requests that Baffinland provide results and analyses of the ash contents of caribou pellets collected for the monitoring period. It is requested that this reporting gap be addressed and incorporated in the Proponent's Terrestrial Monitoring Report and presented in Baffinland's next annual reporting to the NIRB.

Organ Tissue Monitoring – Project Certificate Condition 35

Condition 35 requires that Baffinland undertake monitoring of baseline metal levels in organ tissue from caribou harvested within the local study area, prior to commencing operations. The NIRB noted that Baffinland has not addressed this condition.

Recommendation 2: The Board requests that Baffinland provide information on its monitoring program for baseline metal levels in organ tissue from harvested caribou, with specific notes on its plans to engage the Government of Nunavut (GN) and Qikiqtani Inuit Association on the program. It is requested that this condition be addressed through laboratory analyses of caribou tissue samples, with a discussion of the results. It is requested that this information be provided and incorporated in Baffinland's next annual reporting to the NIRB.

Public Consultation Report – Project Certificate Condition 27

Pursuant to Condition 27, the Proponent is required to include within its public consultation report, information related to the concerns expressed by affected communities about the impacts of the Project on topography and landscape. This information may result in the Proponent's implementation of mitigation measures to ensure that impacts of the Project on topography or landscape are minimized; however the NIRB has yet to receive Baffinland's report on this condition.

Recommendation 3: The Board request that Baffinland provide information related to the concerns expressed by affected communities about the impacts of the Project on topography and landscape as required by Condition 27. It is requested that this information be provided and incorporated in Baffinland's next annual reporting to the NIRB.

Survey and Monitoring of Arctic Char – Project Certificate Condition 48 (a)

In accordance with Condition 48(a), Baffinland is required to provide plans to conduct additional surveys for the presence of arctic char in freshwater bodies and implement ongoing monitoring of arctic char health in areas affected by the Project. Baffinland has not fully complied with this condition as it has not provided the NIRB with the required information.

Recommendation 4: The Board requests that Baffinland provide a plan to survey the population of arctic char in freshwater bodies, and implement monitoring of arctic char health in areas affected by the Project, as well as a discussion as to how this plan was informed through consultation with the Mittimatalik Hunters and Trappers Organization. It is requested that this information as well as any results of monitoring that may be initiated, be provided and incorporated in Baffinland's next annual reporting to the NIRB.

Communication Towers for Bird Deterrence – Project Certificate Condition 68

Condition 68 requires that Baffinland ensure flashing red, red strobe or white strobe lights and guy-wire deterrents are used on communications towers established for the Project. Based on the follow-up of this item from the preceding to the current monitoring period, it was noted that Baffinland has yet to provide updates or information to the Board on how it plans to comply with this condition.

Recommendation 5: The Board requests that Baffinland provide updates on its bird deterrence efforts, and information as to when it intends to engage Transport Canada's

Aerodrome and Air Navigation process for installation of communication towers. It is requested that this information be provided within 45 days' receipt of the Board's recommendations.

Accidents and Malfunctions – Project Certificate Condition 174

Pursuant to Condition 174, Baffinland and the Canadian Coast Guard are required to provide spill response equipment and annual training to Nunavut communities along the shipping route to potentially improve response times in the event of a spill. While Baffinland indicated within its annual reporting to the NIRB that it conducted Marine Spill Response Training from August 5-10, 2013 at Mary River and Milne Inlet, the Canadian Coast Guard did not participate in the exercise, and no indication of meetings held with communities along the shipping route was provided. Similarly, no mention was made of equipment provided to communities along the route.

Recommendation 6: The Board requests that Baffinland and the Canadian Coast Guard provide the NIRB with an update as to plans to provide spill response equipment and annual training to Nunavut communities along the shipping route during the 2015 year. In addition, a discussion should be provided as to how the training and equipment are expected to help improve upon response times in the event of a marine spill. It is requested that this update be provided within 45 days' receipt of these recommendations, and that additional information and evidence of meetings held and materials provided be included within the Proponent's next annual reporting to the NIRB.

Inclusion of Polar Bear in Marine Mammal Monitoring – Project Certificate Conditions 105 and 120

The GN indicated that Baffinland's marine mammal monitoring program has not sufficiently accounted for polar bears as required under term and conditions 105 and 120 of the Project Certificate.

Recommendation 7: The Board requests that Baffinland, in consultation with the Government of Nunavut, work to improve baseline data and refine study design for polar bear monitoring in the Project area, including the northern shipping route. It is requested that this information be provided and incorporated in Baffinland's next annual report to the NIRB.

Air Quality Monitoring – Project Certificate Condition 8

Condition 8 requires that the Proponent demonstrate through monitoring of air quality at the mine site and at the Steensby Inlet and Milne Inlet port sites that SO₂ and NO₂ emissions remain within predicted levels and within regulatory limits. It was noted that the Baffinland has not complied with the requirement of air quality monitoring.

Recommendation 8: The Board requests that Baffinland implement an air quality monitoring program, and account for the measurements of SO₂ and NO₂ emissions around point source locations. It is requested that evidence of monitoring through emission data be provided in Baffinland's next annual report to the NIRB.

Caribou – Project Certificate Conditions 54, 55, 56, 57 and 58

Pursuant to conditions 54 through 58, Baffinland is required to mitigate and monitor Project-related impacts to wildlife. Baffinland had indicated that it adopted techniques such as height-

of-land (HoL) caribou surveys, caribou fecal pellet collection and incidental observations for its terrestrial monitoring program. The GN, however, noted that HoL surveys and incidental observations were insufficient for monitoring impacts on wildlife.

Recommendation 9: The Board requests that Baffinland consider, in consultation with the GN, improvements to the techniques or tools used to monitor interactions of wildlife with the Project. It is suggested that this condition be addressed through the Proponent's consideration of various field techniques and survey methodologies for monitoring wildlife interactions and Project impacts on wildlife. It is requested that this information be provided and incorporated in Baffinland's next annual reporting to the NIRB.

Statistical Analyses – Project Certificate Condition 57

Condition 57 (items e and h) requires that the Proponent provide information on its field methodologies and statistical approaches used to support conclusions drawn. The GN noted that Baffinland had not applied statistically analyzed data of cliff nesting raptors, caribou, and other terrestrial mammals.

Recommendation 10: The Board request that Baffinland integrate the statistical tools necessary to support conclusions on its terrestrial monitoring program. It is recommended that this condition be addressed through the application of statistical analyses for birds, caribou and other wildlife within the Project Development Area. It is requested that evidence of the use of statistical techniques for terrestrial monitoring be incorporated in the Proponent's next annual reporting to the NIRB.

Waste Management (Protection Barriers) – Project Certificate Condition 64

Project Certificate term and condition 64 requires that the Proponent ensure its Environment Protection Plan incorporates waste management provisions to prevent carnivores from being attracted to the Project site. During the NIRB site visit, it was observed that the protective mesh around the landfill was significantly damaged, with some areas not properly enclosed to contain refuse or prevent access by wildlife. At the Milne Inlet site, it was also noted that the landfarm was not enclosed with a fence to prevent discarded synthetic liners or debris from been dispersed offsite by wind action or accessed by wildlife.

Recommendation 11: The Board requests that Baffinland provide an explanation for the deteriorated condition of the protective mesh in use at the landfill, and outline its planned corrective measures to be taken to prevent wastes from been dispersed offsite by wind action or to be accessed by wildlife at the landfill and landfarm. It is requested that this information be provided within 45 days' receipt of the Board's recommendations.

Also within the landfarm, it was further observed that synthetic liners had been co-disposed with contaminated snow and soil.

Recommendation 12: The Board requests that Baffinland provide a rationale for the co-disposal of synthetic liners within the landfarm, describe how the landfarm is designed to address the treatment of contaminated synthetic liners, and discuss its plan for long term disposal of these materials. It is requested that this information be provided within 45 days' receipt of the Board's recommendations.

Sewage Sludge Disposal from Membrane Bioreactor (MBR)

During the NIRB site visit, it was observed that sewage sludge from the Membrane Bioreactor (MBR) was contained in what appeared to be non-biodegradable bags and disposed of in an external containment unit without a protective lid or cover. Although there are no specific terms and conditions regarding the regular operation of the MBR or disposal methods, general waste management practices at the Project site are certainly expected to be consistent with best practices.

Recommendation 13: The Board requests that Baffinland consider employing best practices that incorporate the use of containment with protective covers for sludge disposal. It is requested that a plan of action to this effect be provided within 45 days' receipt of the Board's recommendations.

Liquid Waste and Runoff to Drains – Project Certificate Conditions 24 and 46

Conditions 24 and 46 stipulate that Baffinland monitor relevant parameters of on-site effluent generated and ensure that runoff from facilities meets discharge requirements. It was noted during the NIRB's September 2014 site visit that what appeared to be oil contaminated liquid waste was on the floor of the incinerator facility at Milne Port, and that the material was entering the floor drain. While the specific source of the leakage could not be confirmed, there is concern that the containment in use at the facility may not be effective for the management of liquid wastes.

Recommendation 14: The Board requests that Baffinland discuss the source of the liquid waste on the floor of the incinerator facility, and that it confirm the end point for the runoff observed to be entering the drainage system. Further, it is requested that Baffinland provide more information on how such liquid wastes, or the resulting runoff, are sampled and treated prior discharge into the receiving environment. It is requested that this be provided within 45 days' receipt of the Board's recommendations.

Recommendation 15: The Board requests that Baffinland conduct inspections of waste containment units for leakages on a regular basis, and implement appropriate measures to prevent future leakages or runoff of untreated wastes into the drainage system. It is requested that a discussion of Baffinland's plan to implement these measures be provided within 45 days' receipt of the Board's recommendations.

Blasting and Explosives Residue Monitoring – Project Certificate Condition 20

Given the ongoing blasting activities on site, and the likelihood for the occurrence and potential runoff of ammonia nitrate residues from blasted areas, the NIRB was not made aware of any system in place that specifically addresses the monitoring of explosives residue or related by-products.

Recommendation 16: The Board requests that Baffinland provide information on site-specific initiatives being adopted for monitoring the potential effects of explosives residue or related by-products in the Project areas. It is requested that this be provided within 45 days' receipt of the Board's recommendations.

Safety Measures and Language

During the NIRB site visit, it was noted that signage around the Project site did not incorporate Inuktitut to delineate potentially dangerous or hazardous site areas (e.g. blasting zones). This is important in order to ensure all Project employees are aware of safety and other general considerations on site, and is especially important in consideration of Inuit employees and potentially travelers who may be on site.

Recommendation 17: The Board requests that Baffinland provide a plan of action as to its incorporation of Inuktitut for use of all signage and other site-specific and safety documentation and postings. It is requested that Baffinland provide the Board with its plan of action to include Inuktitut within all signage and site-specific and safety documentation and postings within 45 days' receipt of the Board's recommendations.

The Board respectfully requests that for items requiring follow-up action by Baffinland that a response be provided within the timeline as requested for each of the recommendations.

Should you have any questions or require further clarification regarding the Board's 2014 recommendations, or related to the NIRB's monitoring program for the Mary River project, please contact me directly at (867) 983-4603 or samuno@nirb.ca

Sincerely,



Solomon Amuno, PhD
Mary River Project Monitoring Officer
Nunavut Impact Review Board

cc: Erik Madsen, Baffinland Iron Mines Corp.
Mary River Distribution List

Enclosure: The Nunavut Impact Review Board's 2013 – 2014 *Annual Monitoring Report for Baffinland Iron Mines Corp.'s Mary River Project (November 2014)*