



Indigenous and
Northern Affairs Canada

Affaires autochtones
et du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
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Your file - Votre référence
2AM-MRY1325
Our file - Notre référence
CIDM#1227471

September 20, 2018

Licence Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on Baffinland Iron Mines Corporation's Modification Request No. 10, Landfill Expansion and Effluent Discharge Line, Water Licence 2AM-MRY1325 – Amendment No. 1

Dear Ms. Porter,

Thank you for your September 12, 2018 invitation to review Baffinland Iron Mines Corporation's (Baffinland) above referenced modification request.

The Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application and the results of our review are provided in the enclosed memorandum for the Nunavut Water Board's (NWB) consideration. Comments have been provided pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

CIRNAC appreciates the opportunity to participate in this review. If there are any questions or concerns, please contact either me at bridget.campbell@canada.ca or (867) 975-4282 or Wajid Daouda at wajid.daouda@canada.ca or (867) 975-4657.

Sincerely,

Bridget Campbell
Water Resource Coordinator

Canada



Technical Review Memorandum

To: Ms. Ida Porter, Licence Administrator, Nunavut Water Board

From: Bridget Campbell, Water Resource Coordinator, Water Resources Division, CIRNAC

CC: Spencer Dewar, Director, Resource Management, CIRNAC
Ian Parsons, Manager, Water Resources Division, CIRNAC
Justin Hack, Manager, Field Operations, CIRNAC

Date: September 20, 2018

Re: Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line
(Water Licence 2AM-MRY1325 – Amendment No. 1)

Applicant: Baffinland Iron Mines Corporation
Project: Mary River Iron Mine Project
Region: Qikiqtani

A. BACKGROUND

On September 5, 2018 Baffinland Iron Mines Corporation (Baffinland) submitted the above-noted modification request to the Nunavut Water Board (Board) on Water Licence 2AM-MRY1325 – Amendment No.1 for additional activities related to its 2018 Work Plan Addendum Items No. 2018 - A3, expansion of the mine site landfill, and 2018-A4, installation of an effluent discharge line from the sewage treatment plant servicing the mine site camp to the existing effluent discharge line.

Baffinland conducted a self-assessment of the proposed modification, in accordance with the *Process for Seeking Approval for Modifications to Previously-Approved Projects* (NIRB 2018), the significance criteria presented in *Section 90 of the Nunavut Project Planning and Assessment Act (NuPPAA)*, and *Section 12.8.2 of the Nunavut Agreement and Section 112 of the NuPPAA*, and concluded that the proposed activities were assessed previously, that their effects were not significant, and that a reconsideration of the terms and conditions of the Project Certificate No. 005 was not required.

The details of the proposed modification activities are presented in Attachment 2: Mine Site Landfill Expansion Design Brief and IFC Drawings (by Knight Piésold, 2018) and Attachment 3: Mine Site Mine Effluent and Raw Water Pipeline Overall Layout (by Hatch, 2018) of Baffinland's modification request.



Comment:

CIRNAC notes that the access road from the Mine Site to the landfill ends at Cell 1, allowing access to Cells 1, 2, and 3. However, the road does not reach the southeast side of Cell 2, where work is scheduled to begin. Moreover, if Cells 4 and 5 are to be used after the progressive reclamation of the landfill and addition of operational cover, vehicles will require access to these sites.

CIRNAC is concerned about the lack of access road to Cells 2 – 5. Driving vehicles over berms which are inadequate for the intended traffic can harm the structural integrity of these structures and driving over the overburden could have a harmful effect on the engineered grading of the operational cover and increase the risk of sedimentation of the overburden. This is especially true if large, heavy dump trucks will be required, as they require a more rigorous road design.

Baffinland provided no plans for access roads with the submission of Modification Request No. 10.

Recommendation:

CIRNAC recommends that Baffinland provide the NWB with plans for how machinery and vehicles will attain site access. If roads will be required, CIRNAC recommends Baffinland provide construction drawings and specifications of the road, and that an engineer field checks the designs as they are implemented. CIRNAC also recommends that Baffinland update the water management plans to accommodate any new earthworks that may be required.

3. Raw water pipeline

Reference:

- Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line, Mary River Project, Water Licence 2AM-MRY1325 – Amendment No.1. Baffinland Iron Mines Corporation, September 5, 2018
- Attachment 3, Mine Site Mine Effluent and Raw Water Pipeline Overall Layout H353004-10000-240-272-0001-0001, Rev. 2, (Hatch, 2018)

Comment:

The modification request presented by Baffinland proposes the installation of an effluent discharge line. On the drawing presented in Attachment 3, changes are also presented for the raw water line, which are not outlined in the submission for Modification Request No. 10.

Recommendation:

CIRNAC recommends that Baffinland provide drawings, placement instructions and specifications for the new raw water pipeline, and that an engineer field checks the designs as they are implemented.



B. RESULTS OF REVIEW

The Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC) Nunavut Regional Office reviewed the documents associated with Baffinland's Modification Request No. 10 and would like to provide the following comments and recommendations for the Board's consideration.

1. Landfill Cell 5 proximity to water body

Reference:

- Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line, Mary River Project, Water Licence 2AM-MRY1325 – Amendment No.1. Baffinland Iron Mines Corporation, September 5, 2018
- Attachment 2, Mary River Project - Mine Site Landfill Expansion Design Brief and IFC Drawings, Knight Piésold Ltd., 2018
- NWB Water Licence 2AM-MRY1325 - Amendment No. 1, Part D, Item 25

Comment:

CIRNAC notes that in Drawings No. 100 and No. 200, provided in Attachment 2 of Modification Request No. 10, the extents of Cell 5 appear to be within 31m of a water body. According to Type A Water Licence 2AM-MRY1325 MRY1325 - Amendment No. 1, Part D, Item 25, *"The Licensee shall prevent the deposition of debris or sediment from entering into or onto any Water body, with respect to the construction of access roads, site laydown pads and areas or other earthworks. These materials shall be disposed of at a distance of at least thirtyone (31) metres from the ordinary High Water Mark in such a manner that they do not enter the Water."*

CIRNAC is concerned that the earthworks for the berm construction on the southwest side of Cell 5 will increase the risk of sedimentation and elevated suspended sediments in the adjacent water body, which contravenes the water licence.

Recommendation:

CIRNAC recommends constructing the berm on the southwest side of Cell 5 at least 31m from the ordinary high water mark of the adjacent waterbodies.

2. Landfill vehicle access

Reference:

- Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line, Mary River Project, Water Licence 2AM-MRY1325 – Amendment No.1. Baffinland Iron Mines Corporation, September 5, 2018
- Attachment 2, Mary River Project - Mine Site Landfill Expansion Design Brief and IFC Drawings, Knight Piésold Ltd., 2018



4. Culverts

Reference:

- Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line, Mary River Project, Water Licence 2AM-MRY1325 – Amendment No.1. Baffinland Iron Mines Corporation, September 5, 2018
- Attachment 3, Mine Site Mine Effluent and Raw Water Pipeline Overall Layout H353004-10000-240-272-0001-0001, Rev. 2, (Hatch, 2018)

Comment:

Baffinland proposes to build four (4) culverts to accommodate the crossing of the effluent pipeline across roads. However, specifications and installation details for the culverts are not provided in the submission for Modification Request No. 10.

Recommendation:

CIRNAC recommends that Baffinland provide drawings, including specifications showing details (type, material, dimensions, and extensions), for all four culverts, and that an engineer field checks the designs as they are implemented.

5. Pipeline mitigation measures

Reference:

- Modification Request No. 10 – Landfill Expansion and Effluent Discharge Line, Mary River Project, Water Licence 2AM-MRY1325 – Amendment No.1. Baffinland Iron Mines Corporation, September 5, 2018
- Attachment 3, Mine Site Mine Effluent and Raw Water Pipeline Overall Layout H353004-10000-240-272-0001-0001, Rev. 2, (Hatch, 2018)

Comment:

CIRNAC notes that pipelines introduce a risk of breakage and spills, and that Baffinland has plans to implement additional mitigation measures, which are to be incorporated into the Freshwater Supply, Sewage and Wastewater Management Plan. Mitigation measures should be understood prior to construction.

CIRNAC also notes that the pipeline is to be installed in close proximity with existing roads, where snow clearing will be performed, which may increase the risk of pipe breaks.

Recommendation:

CIRNAC recommends reviewing the planned mitigation measures for the pipeline prior to implementation and construction of the pipeline, including plans for pipe protection during snow clearing, such as road signage.