



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
(2AM-MRY1325)
Our file - Notre référence
GCDOCS#107117735

November 17, 2022

Robert Hunter
Licensing 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 Review of
Baffinland's Mary River Tote Road Culvert Updates for Type 'A' Water Licence
2AM-MRY1325– Amend. No.1**

Dear Mr. Hunter,

Thank you for the October 31, 2022 invitation to review Baffinland's Construction Drawings for the Tote Road Culvert Upgrades, for Type A Water Licence No.2AM-MRY1325.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at (867) 975-3876 or lauren.perrin@rcaanc-cirnac.gc.ca or Andrew Keim at (867) 975-4550 or andrew.keim@rcaanc-cirnac.gc.ca.

Sincerely,

Lauren Perrin,
Water Management Specialist



Technical Review Memorandum

Date: November 17, 2022

To: Robert Hunter – Licensing Administrator, Nunavut Water Board

From: Lauren Perrin – Water Management Specialist, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's Review of Baffinland's Mary River Tote Road Culvert Updates for Type 'A' Water Licence 2AM-MRY1325– Amend. No.1

Region: ☐ Kitikmeot ☐ Kivalliq ☒ Qikiqtani

A. BACKGROUND

The Mary River Project is an operating high-grade iron mine located in the Qikiqtani Region of Nunavut, on northern Baffin Island. The mine is owned and operated by Baffinland Iron Mines Corporation (Baffinland) and includes the Mine Site, the Milne Port site, and a 100 km-long Tote Road connecting the two sites. The current approved project allows iron ore production through open pit mining.

Baffinland has submitted final designs and construction drawings for planned culvert upgrade construction work at the Mary River Project along the Milne Inlet Tote Road in accordance with Part E, Item 23 of Type 'A' Water Licence 2AM-MRY1325 - Amendment No. 1. The purpose of these measures is to improve fish passage and surface water drainage, and to reduce potential erosion and sedimentation. The planned construction of this work is to be completed during the 2022-2023 season which includes upgrades to culverts at twenty (20) locations along the Tote Road. Baffinland has requested expedited review of three (3) culverts; Crossing BG-04 (Km 94), Crossing CV-216 (Km 80.5) and Crossing BG-50 (km 63) by November 18, 2022 in order to maximize the overall culvert upgrade work that can be completed during frozen site conditions.

CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.



Table 1: Summary of Recommendations

Recommendation Number	Subject
R-01	Culvert Flow
R-02	Lack of Information
R-03	Update Management Plans

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
Mary River Project Permanent Crossing Plan- 20 Tote Road Crossings	Knight Piésold Ltd., Oct 28, 2022
Freshet Monitoring program	Baffinland, 2021
Water Licence No. 2AM-MRY1325 Amendment 1	Nunavut Water Board, 2015

C. RESULTS OF REVIEW

1. Culvert flow

Comment:

Baffinland has stated in the Freshet Monitoring Program (2021) that water quality is conducted annually during freshet of several sites along the Tote Road. None of the three sites currently under review (BG-04, CV-216 and BG-50) are locations where water quality is sampled. CIRNAC is concerned that the water flow will be increased and have negative impacts on the sediment and water quality downstream.

Recommendation:

(R-01) CIRNAC recommends that Baffinland conduct a flow study and water quality sampling at these locations, if there is any indication of downstream sediment impacts from the culvert updates along the Tote Road.

2. Lack of information

Comment:

Baffinland states “the purpose of these measures is to improve fish passage and surface water drainage and to reduce potential erosion and sedimentation”. Additionally, repairs to



the culverts along the Tote Road which were damaged by freshet and snow management activities. CIRNAC is concerned about the lack of detail provided to avoid these impacts to the repaired culverts. In the report prepared by Knight Piésold Ltd. under section 3.0 “Crossing Remediation Plan” Baffinland states the embankments will be covered in riprap to reduce the potential for erosion however, no further information could be located.

Recommendation:

(R-02) CIRNAC recommends that Baffinland update the management plans to ensure that proper snow management does not impede the natural water flow during high flow or freshet.

3. Update Management Plans

Comment:

In the report prepared by Knight Piésold Ltd. for Baffinland Mary River on the permanent crossing plan of the 20 tote road crossings it is mentioned that “all crossings require additional permanent erosion and sediment control measures, including riprap armouring of side slopes and ditching approaching the crossings with riprap” (page 5). The additional measures for erosion and sediment control were not expanded on in the report and CIRNAC has not been made aware that the management plans have been updated to reflect the modifications to the culverts and surrounding areas.

Recommendation:

(R-03) CIRNAC recommends that Baffinland provide updated management plans particularly erosion and sediment control and surface water plans outlining the changes along the Tote Road to reflect the upgrades and new mitigation measures.