Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

Your file - Votre référence
2AM-MEL1631

July 25, 2016

Our file - Notre référence
IQALUIT-#1084563

Licensing Department
Nunavut Water Board
GJOA HAVEN, NU X0E 1J0

Sent via email: licensing@nwb-oen.ca

Re: Review of Saline Water Storage/Transfer Pond Final Design and Construction Drawings Submitted by Agnico Eagle Mines Ltd. Pursuant to Part D, Items 1 and 2 of Nunavut Water Board Water Licence No. 2AM-MEL1631

To Whom It May Concern,

Thank you for the Nunavut Water Board's July 13, 2016 request for comments on the above mentioned submission that was made by Agnico Eagle Mines Ltd. to the Nunavut Water Board. A memorandum is provided for the Board's consideration. Comments and recommendations have been provided pursuant to Indigenous and Northern Affairs Canada's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

Please do not hesitate to contact me by telephone at 867-975-4555 or email at David.Abernethy@aandc-aadnc.gc.ca for further information.

Sincerely,

David Abernethy
Regional Coordinator
Water Resources Division
Resource Management Directorate
Indigenous and Northern Affairs Canada
IQALUIT, NU X0A 0H0

Encl.

Cc. Manon Turmel, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.

Canada

Memorandum

To: Licensing Department, Nunavut Water Board

From: Amjad Tariq, Regulatory and Science Advisor, Water Resources Division, Indigenous and Northern Affairs Canada

Cc: Manon Turmel, Agnico Eagle Mines Ltd.
Jamie Quesnel, Agnico Eagle Mines Ltd.

Date: July 25, 2016

Re: Review of Saline Water Storage/Transfer Pond Final Design and Construction Drawings Submitted by Agnico Eagle Mines Ltd. Pursuant to Part D, Items 1 and 2 of Nunavut Water Board Water Licence No. 2AM-MEL1631

Licence: 2AM-MEL1631
Licensee: Agnico Eagle Mines Ltd
Project: Meliadine Gold Mine
Region: Kivalliq

Comments:

A. Background

On July 13, 2016, the Nunavut Water Board (NWB, or Board) requested that interested parties review final design and construction drawings for a Saline Water Storage/Transfer Pond that Agnico Eagle Mines Ltd. (the Licensee) plans to construct at its Meliadine Gold Mine beginning August 10, 2016. This pond will store excess underground saline water from 2016-Q3 to 2017-Q4 before a long-term saline water treatment and disposal plan is finalized. The final design and construction drawings were submitted to the NWB pursuant to Part D, Items 1 and 2 of NWB Water Licence No. 2AM-MEL1631.

Interested parties were asked to provide comments by July 23, 2016. Comments are being provided today because the deadline fell on a weekend.

B. Results of review

On behalf of Indigenous and Northern Affairs Canada's (INAC) Water Resources Division, the following comments and recommendations are provided.

The document referenced below was reviewed:

> Tetra Tech EBA Consulting Engineers & Scientists 2016. *Design Report for Saline Water Storage/Transfer Pond and Berm, Meliadine Project, Nunavut*. File: E14103230-01. Prepared for Agnico Eagle Mines Ltd. July 2016.

1. Construction of Interim Dike Geomembrane Liner System for Saline Water Storage/Transfer Pond

Reference:

- Executive Summary - Page i, pdf page 3

Comment:

The Licensee states that,

> *'To meet a tight construction schedule, a relatively simple design of the berm, without a geomembrane liner system or deep key trench excavation of the berm foundation, is adopted.'*

INAC is concerned that without geomembrane liner system, saline water seepage can contaminate groundwater, soil (ground) and surface water bodies due to possible interconnected paths.

Recommendation:

INAC recommends that the Licensee install a geomembrane liner to prevent saline water seepage.

2. Pond Storage Capacity and Contingency Measures

Reference:

- Pond Storage Capacity and Water Balance
  Table 5: Water Balance Summary for Saline Water Storage/Transfer Pond
  Page 11, pdf page 17

Comment:

The extra storage capacity/contingency of the saline water pond has been reported by the Licensee to be 277 to 2,777 cubic meters.

INAC is concerned that the minimum estimated storage capacity (277 cubic meters) is

inadequate. The Licensee should provide detailed contingency measures that will be implemented if the pond's estimated storage capacity is exceeded.

Recommendation

The Licensee should ensure adequate storage capacity for the saline water pond. Details on contingency measures that will be implemented if the pond's storage capacity is exceeded should be provided to the NWB.

3. Quality Assurance and Quality Control for Construction

Reference:

- Section 6.5 Quality Assurance and Quality Control
  Page 15, pdf page 21

Comment:

Section 6.5 of the report states that,

> *'It is recommended that the rock conditions and its stability be assessed during the saline water storage pond rock excavation by a qualified geotechnical engineer to determine the final rock slope geometry. If required, the rock slope should be flattened to reduce the potential risk of local failure or rock falls.'*

Recommendation

During storage pond rock excavation, final rock slope geometry and stability should be determined by a qualified geotechnical engineer.

4. Monitoring and Reporting During Construction and Operation

Reference:

- Section 7.0 Monitoring, Inspection and Reporting
  Page 17, pdf page 23

Comment:

Section 7.0 of the report recommends that monitoring and inspection of saline water pond during construction and operation essentially includes seepage monitoring, settlement and/or movement monitoring, pore water pressure measurement, pond water level measurement and effluent (seepage) water quality testing, etc.

Recommendation:

In addition to annual reporting, the Licensee should report monitoring and inspection activities associated with the Saline Water Storage/Transfer Pond in monthly monitoring report submissions to the NWB during its construction and operation. Monitoring and inspection activities should include but not be limited to seepage monitoring, settlement and/or movement monitoring, pore water pressure measurement, pond water level measurement, water quality testing and monitoring, etc. Any deviances, problems, or issues with the pond should be immediately reported.

5. Saline Water Management Plan

Reference:

- Section 4.1 Saline Water Storage Requirements and Pond Management Plan
  Page 4, pdf page 10

Comment:

Section 4.1 of the report states that,

> *'Agnico Eagle is evaluating the options for long-term saline water disposal or treatment. If required, a second temporary saline water storage pond can be constructed in 2017 before the long-term saline water disposal or treatment facility is available.'*

INAC is concerned that long-term saline water treatment and disposal plan should be finalized in a timely manner to avoid construction of another temporary saline water storage pond.

Recommendation:

The Licensee should consider long-term saline water disposal or treatment on priority basis. In addition to the environmental protection, this will evade construction of one or more additional saline water storage/ transfer ponds.