



Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Your file - Votre référence
2AM-MEA1526

January 17, 2019

Our file - Notre référence
CIDM# 1239104

Richard Dwyer
Manager of Licensing
Nunavut Water Board
Gjoa Haven, NU X0B 1J0

Sent via email: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reply to Nunavut Water Board's (NWB) notice of application and commencement of technical review of an amendment to Type "A" Water Licence No: 2AM-MEA1526 associated with the In-Pit Tailings Disposal Modification Proposal – Meadowbank Gold Mine Project.

Dear Mr. Dwyer,

Thank you for the email notice, received on December 17, 2018, regarding notice of application and commencement of technical review of an amendment to Type "A" Water Licence No: 2AM-MEA1526 associated with the In-Pit Tailings Disposal Modification Proposal at the Meadowbank Gold Mine; Agnico Eagle Mines Limited.

CIRNAC reviewed the amendment to Type "A" Water Licence No: 2AM-MEA1526 associated with the In-Pit Tailings Disposal Modification Proposal at the Meadowbank Gold Mine pursuant to its mandated responsibilities from the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

As of November 30, 2018, CIRNAC had three outstanding concerns in regards to the in-pit tailings disposal.

- 1) **Thermal monitoring and hydrogeological connectivity** – As per the email notice, received on January 15, 2019 from the NWB, CIRNAC will provide comment on the thermal monitoring and hydrogeological connectivity concern by January 24, 2019.
- 2) **Flooding strategy** - CIRNAC considers the flooding strategy concern resolved.
- 3) **Interim Closure and Reclamation Plan (ICRP) and Security** - CIRNAC considers the ICRP concern resolved. The security increase of \$1,100,000 up to \$5,900,000 is described in further detail in the following sections.



BACKGROUND

The Meadowbank Gold Mine is an approved open pit gold mine, owned and operated by Agnico Eagle Mines Limited (AEM), which has been in operation since 2006. It is located in the Nunavut Kivalliq region, approximately 70 km north of the community of Baker Lake. AEM are planning to extend operations at the Meadowbank facility by mining a satellite deposit, Whale Tail Pit, and utilizing the existing mine infrastructure at the Meadowbank Gold Mine. Whale Tail Pit is a separate and distinct project proposal that will rely on some existing components of the original Meadowbank Gold Mine.

AEM intends to process ore from its Whale Tail project at its Meadowbank mill and proposes to place these and future tailings into the existing open pits (Goose, Portage Pit A, and Portage Pit E) at the Meadowbank site. Remaining Meadowbank tailings from the Vault and Portage pits will also be deposited into Goose Pit. According to the Amendment filed by AEM¹, the scope of the amendment includes the following specific undertakings, works or activities:

- Continued use of existing Meadowbank Mine Site components including:
 - Pits and dikes to segregate operations from Third Portage Lake and Second Portage Lake;
 - Reclaim water barge; and
 - Tailings deposition barge;
- Closure reclaim water treatment plant;
- Extension of the slurry (tailings) and reclaim water piping to all three (3) pits;
- Subaqueous disposal of tailings in three (3) pits, Portage Pit A, Portage Pit E, and Goose Pit, commencing at Goose Pit in January 2019; and
- In-pit modification to provide an additional 22 million tonnes of tailings storage for a total tailings storage capacity of 30.3 million tonnes.

COMMENTS

Flooding Strategy

CIRNAC's concerns have been addressed through the additional information that was provided by AEM on the flooding strategy in the memorandum dated December 12, 2018², and the subsequent clarification provided at the January 10, 2019 meeting with CIRNAC and Arcadis where AEM provided general and technical clarification of the flooding strategy. The closure sequence flowchart is useful in visualizing the water levels in Portage and Goose Pit during Operation, Closure, and Post Closure. Based on CIRNAC's review of the available information, we believe that the flooding strategy concern is resolved.

¹ Nunavut Water Board Application for Water Licence Amendment submitted by Agnico Eagle Mines Limited on December 17, 2018.

² Letter to Michelle Blade, CIRNAC, Re: NWB File No. 2AM MEA1526 – In-Pit Disposal: Flooding Strategy, from Jamie Quesnel, AEM, dated December 12, 2018.



Interim Closure Reclamation Plan (ICRP) and Security

CIRNAC recommended that the ICRP be updated to account for changes associated with In Pit Deposition and that security be revisited to ensure AEM is sufficiently bonded for additional tailings disposal in the mined out Goose and Portage pits at the Meadowbank Gold Mine Project.

AEM provided additional information to CIRNAC through a letter to Luis Manzo (KIA) and Ian Parsons (CIRNAC) dated December 12, 2018³ and a memorandum from SNC Lavalin to AEM dated December 12, 2018⁴. The memorandum details changes that were made to the Closure and Reclamation Cost Estimate that was submitted to Indigenous and Northern Affairs Canada (INAC) and the Kivalliq Inuit Association (KIA) on June 29, 2018⁵ to include for the change from tailings disposal in the existing TMF to the proposed tailings in-pit deposition. It is noted that the December 2018 security estimate update did not include funds for potential capping of the in pit tailings surface / water interface with rock materials as may be needed^{6,7}.

CIRNAC prepared two separate scenario RECLAIM security estimates as follows:

1. Evaluation of the Security Estimate as currently envisioned by AEM excluding the capping of the in-pit tailings, and
2. Evaluation of the Security Estimate including the capping of the in-pit tailings as requested by Environment and Climate Change Canada (ECCC) and Department of Fisheries and Oceans (DFO) in their recent review of AEM's application.

Summary findings of the estimate review are as follows:

Scenario 1 – Tailings In-Pit Deposition with No Cover (as currently proposed by AEM)

Upon review of the AEM December 12, 2018, it was determined that there were no costs carried by AEM to deal with a potential 3-year care and maintenance period should it arise. While it is agreed that interim water treatment costs are not applicable

³ Letter to Luis Manzo (KIA) and Ian Parsons (CIRNAC), RE: Tailings In-Pit Deposition Security – Meadowbank Mine, from Jamie Quesnel, AEM, dated December 13, 2018. (reference #181213)

⁴ Memorandum to Michel Groleau, AEM, RE: Meadowbank ICRP 2018 Update Considering Tailings In-Pit Deposition, from Pierre-Yves Gobeil and Philippe Lemieux, SNC-Lavalin, dated December 12, 2018. (reference # 181213)

⁵ SNC-Lavalin. 2018. Meadowbank Interim Closure Reclamation Plan (ICRP) – Update 2018, version 00. Report No. 65769-5000-4EER-0001. July 2018. (not included in NWB file)

⁶ Environment and Climate Change Canada. 2018. Environment and Climate Change Canada's Technical Review Comments to the Nunavut Water Board, Respecting the Meadowbank In-Pit Tailings Disposal Modification Submitted by Agnico Eagle Mines Limited. August 3, 2018. (ECCC#3: Mitigation – Capping of Tailings).

⁷ Fisheries and Oceans Canada. 2018. Fisheries and Oceans Canada, Technical Review Submission to the Nunavut Water Board, Agnico Eagle Mines Limited Meadowbank Gold "In-Pit Tailings Disposal Modification" Project Proposal. August 3, 2018. (DFO#3.1)



during an interim period, the costs associated with maintenance, surveillance, monitoring and inspection would still be required for the site. Given that the rate of \$282,600 per annum had been previously accepted by the Nunavut Water Board, we have used this rate in our evaluation of the ICM costs for the site. The incremental value associated with the ICM costs is estimated to be on the order of \$1.1M.

Scenario 2 – Tailings In-Pit Deposition with Cover (not currently proposed by AEM)

Further to recent comments provided by ECCC and DFO regarding installation of an aggregate cover over the in-pit tailings, CIRNAC completed an evaluation of the additional work and associated security should it be required as part of the site closure and reclamation works. The incremental value of the security associated with such efforts is estimated to be on the order of \$5.9M.

If you have any questions or require further information with respect to this matter, contact me at (867) 975-3877 or email michelle.blade@canada.ca, or Ian Parsons at (867) 222-9278 or email ian.parsons@canada.ca.

Regards,

Michelle Blade
Regional Coordinator, Water Resource Division – CIRNAC, NRO

