



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

Your file - Votre référence  
2AM-MEA1526

August 03, 2018

Our file - Notre référence  
CIDM#1224663

Karén Kharatyan  
Director of Technical Services/ Acting Executive Director  
Nunavut Water Board  
Gjoa Haven, NU X0B 1J0

Sent via email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Technical Review Comments of the Proposed Modification to Allow In-Pit  
Tailings Deposition under Agnico Eagle Mines Limited's Type "A" Water  
Licence No. 2AM-MEA1526 for the Meadowbank Gold Mine Project.**

Dear Mr. Kharatyan,

Thank-you for the email notice, received on July 3, 2018, regarding the above mentioned proposed modification request at Meadowbank Gold Mine Project.

CIRNAC reviewed the proponent's proposed modification request involving a: "*change to tailings management at the site to allow for in-pit deposition of tailings in the mined out Goose and Portage pits at the Meadowbank Gold Mine.*"<sup>1</sup> Comments are 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*.

If you have any questions or require further information with respect to this matter, contact me at 867-975-3877 or [michelle.blade@canada.ca](mailto:michelle.blade@canada.ca), or Ian Parsons at 819-953-8988 or [ian.parsons@canada.ca](mailto:ian.parsons@canada.ca).

Regards,  
Michelle Blade  
Regional Coordinator, Water Resource Division

Cc. Spencer Dewar, Director, Resource Management Directorate – CIRNAC, NRO  
Erik Allain, Director of Lands – CIRNAC, NRO

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<sup>1</sup> Letter to Jamie Quesnel and Ryan Vanengen, Agnico Eagle Mines Limited, Re: NWB Request for Technical Review Comments by August 3, 2018 Regarding Proposed Modification to Allow In-Pit Tailings Deposition under Agnico Eagle Mines Limited's Type "A" Water Licence No. 2AM-MEA1525 for the Meadowbank Gold Mine Project from Karén Kharatyan, NWB, dated July 3, 2018.



## **Technical Review Memorandum**

To: Karén Kharatyan, Director of Technical Services/ Acting Executive Director, NWB

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

Date: August 03, 2018

Re: CIRNAC's technical review comments of the Proposed Modification to Allow In-Pit Tailings Deposition, Type "A" Water Licence No. 2AM-MEA1526, Meadowbank Gold Mine Project in response to NWB's letter dated July 3, 2018.

Applicant:	Agnico Eagle Mines Limited
Representatives:	Jamie Quesnel and Ryan Vanengen
Project:	Meadowbank Gold Mine Project
Region:	Kivalliq

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### **A. BACKGROUND**

On July 11, 2018, the Minister of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) approved Agnico Eagle Mines Limited's Meadowbank Gold Mine Project Type 'A' Water Licence No. 2AM-MEA1526 Amendment No. 2, and their Whale Tail Pit Project Type 'A' Water Licence No. 2AM-WTP1826 application. The tailings solids fraction for both the Meadowbank Gold Mine Project and the Whale Tail Pit Project are to be permanently contained within the Tailings Storage Facility. The Tailings Storage Facility in the approved Mine Waste Rock and Tailings Management Plan (March 2017) is described as the North and South Cells at the Meadowbank Gold Mine Project.

On July 3, 2018, the Nunavut Water Board (NWB) distributed Agnico Eagle Mines Limited's proposed modification of Meadowbank Gold Mine Project Type 'A' Water Licence No. 2AM-MEA1526 *"to allow for in-pit deposition of tailings in the mined out Goose and Portage pits at the Meadowbank Gold Mine."*<sup>2</sup> The NWB invited interested parties to conduct a technical review of the proposed modification and the submissions provided to date, and to submit comments relevant to the NWB's consideration of the proposed modification by August 3, 2018.

Prior to July 3, 2018, Agnico Eagle Mines Limited had not provided alternative permanent tailings disposal options for the Meadowbank Gold Mine Project, nor the

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<sup>2</sup> Letter to Jamie Quesnel and Ryan Vanengen, Agnico Eagle Mines Limited, Re: NWB Request for Technical Review Comments by August 3, 2018 Regarding Proposed Modification to Allow In-Pit Tailings Deposition under Agnico Eagle Mines Limited's Type "A" Water Licence No. 2AM-MEA1525 for the Meadowbank Gold Mine Project from Karén Kharatyan, NWB, dated July 3, 2018.



Whale Tail Pit Project, for CIRNAC to assess. On July 16, 2018, CIRNAC sent a letter to the NWB concluding that the modification request is an amendment to, and not a modification of, the Meadowbank Gold Mine Project water licence. The NWB disagreed with CIRNAC and responded on July 20, 2018 that in-pit tailings storage is a modification of the water licence because of: the “*significant process and procedural implications that would arise*”<sup>3</sup> if the request were processed as an amendment instead of a modification; the expectation of “operational flexibility” which dictates that “*changes and updates to already approved management plans may be required*”<sup>4</sup> over the term of the Licence; and the NWB’s discretion to revise the definition of ‘tailings storage area’ within the water licence “*upon consulting and providing written notice to the Licensee and interested parties*”<sup>5</sup>. CIRNAC reiterates that the modification request is an amendment to, and not a modification of, the Meadowbank Gold Mine Project water licence as in-pit tailings storage: is outside the scope and holistic assessment of the recently approved water licence; changes the terms and conditions of the current water licence; and alters the purpose and function of the pits at the Meadowbank Gold Mine Project for permanent tailings storage.

The Meadowbank Gold Mine Project and the Whale Tail Pit Project are both gold deposits located near Baker Lake, Nunavut. Meadowbank Gold Mine Project has been in operation since 2009 and the Whale Tail Pit Project is under construction. The Tailings Storage Facility at the Meadowbank Gold Mine Project is approaching its end of life. During the Winter of 2016/2017, a drilling campaign took place on the North Cell with the intention of studying the Tailings Storage Area closure.

## B. RESULTS OF REVIEW

Comments and recommendations are provided by CIRNAC Water Resources Division, pursuant to the Department’s mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

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<sup>3</sup> Letter to Michelle Blade, CIRNAC, Re: CIRNAC Assessment of Proposed Modification to Allow In-Pit Tailings Deposition under Agnico Eagle Mines Limited’s Type “A” Water Licence No. 2AM-MEA1526, NWB, dated July 20, 2018.

<sup>4</sup> Letter to Michelle Blade, CIRNAC, Re: CIRNAC Assessment of Proposed Modification to Allow In-Pit Tailings Deposition under Agnico Eagle Mines Limited’s Type “A” Water Licence No. 2AM-MEA1526, NWB, dated July 20, 2018.

<sup>5</sup> Letter to Michelle Blade, CIRNAC, Re: CIRNAC Assessment of Proposed Modification to Allow In-Pit Tailings Deposition under Agnico Eagle Mines Limited’s Type “A” Water Licence No. 2AM-MEA1526, NWB, dated July 20, 2018.



## 1 Current tailings disposal

### Reference:

- Letter: RE: Agnico Eagle Mines Meadowbank Mine Type A Water License – 2AM-MEA1525 Modification Request, Agnico Eagle, February 23, 2018.
- Water Licence Inspection Form, INAC, October 25-27, 2017.
- 2016 Mine Waste Rock and Tailings Management Report & Plan Update, Meadowbank Gold Mine, Agnico Eagle, November 2016.

### Comment:

In 2007, Cumberland evaluated alternative options for tailings disposal at the Meadowbank Gold Mine Project outside of the Tailings Storage Facility. During the Winter of 2016/2017, a drilling campaign took place on the North Cell with the intention of studying the Tailings Storage Area closure. The land on the North side of the Tailings Storage Facility North Cell has been re-contoured as part of progressive reclamation of the tailings Storage Facility. Agnico Eagle Mines anticipated deposition of tailings in the Goose and Portage pits starting April 2018 and July 2019, respectively.

### Recommendation:

**(R 1)** CIRNAC requests clarification on where the tailings from both the Meadowbank Gold Mine Project and the Whale Tail Pit Project are currently being deposited pending approval of the proposed modification to allow for in-pit tailings deposition.

## 2 Updated Goose and Portage pit design

### Reference:

- Letter: RE: Agnico Eagle Mines Meadowbank Mine Type A Water License – 2AM-MEA1525 Modification Request, Agnico Eagle, February 23, 2018.
- 2AM-MEA1525 Meadowbank Gold Mine Project Type 'A' Water Licence: Part I, Item 11 & 12.

### Comment:

Agnico Eagle Mines Limited indicated that in 2016, the Meadowbank Dike Review Board (MDRB) supported the use of early in-pit tailings disposal. In-pit tailings storage alters the purpose or function of the Goose and Portage pits at the Meadowbank Gold Mine Project. Prior to July 3, 2018, Agnico Eagle Mines Limited had not provided alternative permanent tailings disposal options for the Meadowbank Gold Mine Project, nor the Whale Tail Pit Project, for CIRNAC Water Division to assess.

### Recommendation:

**(R 2)** CIRNAC recommends the NWB and CIRNAC be provided with the 2016 MDRB in-pit tailings disposal report and the updated Goose and Portage pit engineering drawings to review, along with the comments from the Independent Geotechnical Expert Review Panel.



### 3 Thermal monitoring and hydrogeological connectivity

**Reference:**

- 2016 Mine Waste Rock and Tailings Management Report & Plan Update, Meadowbank Gold Mine, Agnico Eagle, November 2016.
- 2AM-MEA1525 Meadowbank Gold Mine Project Type 'A' Water Licence: Part I, Item 9.

**Comment:**

Agnico Eagle Mines Limited indicated the talik below the lake is increasing in size, potentially changing the groundwater flow regime. Sections 8.1.1.5 and 8.1.1.6 indicate two thermistors have been installed in each of the Goose and Portage pits to collect background thermal and piezometric data, however no reference is provided to the data collected nor its interpretation.

**Recommendation:**

**(R 3)** CIRNAC recommends the hydrogeological flow models be updated to reflect the changing extent of permafrost, and to examine potential changes in groundwater contaminant transport from the Meadowbank Gold Mine Property – in particular out of the Goose and Portage pits.

### 4 Seeps

**Reference:**

- 2AM-MEA1525 Meadowbank Gold Mine Project Type 'A' Water Licence: Part I, Item 6.

**Comment:**

Seeps and other bedrock fractures are potential locations for water and/or waste transport out of the Goose and Portage pits from tailings deposited within the pits in a sub-aqueous environment.

**Recommendation:**

**(R 4)** CIRNAC recommends the seep locations most likely to leak first be identified, and a plan for early detection and implementation be provided for detecting potential leaks from Goose and Portage pits.

### 5 Flooding strategy

**Reference:**

- 2016 Water Management Report and Plan Update, Meadowbank Gold Mine, Agnico Eagle, November 2017 Version 02.

**Comment:**

Sections 2.3.1 and 2.3.2 of the 2016 Water Management Report and Plan Update



describe the reflooding strategy for the Goose and Portage Pit flooding. Information is provided for target water level elevations, volumes of water to be transferred, and anticipated years of flooding.

**Recommendation:**

**(R 5)** CIRNAC recommends more detail be included in the flooding strategy, such as the predicted rate of flooding.

## 6 Water management report and plan update

**Reference:**

- 2016 Water Management Report and Plan Update, Meadowbank Gold Mine, Agnico Eagle, November 2017 Version 02.

**Comment:**

Section 2.1.1.3 states additional details of the flooding activities are in Section 3.2, and the findings of the water quality forecast completed for the in-pit deposition scenario are in Section 4.0. However, there is no Section 3.2 in the report, and Section 4.0 is the 2016 integrated deposition plan.

**Recommendation:**

**(R 6)** CIRNAC requests clarification on the referencing within the 2016 water management report and plan update.

## 7 Interim Closure and Reclamation Plan and Security

**Reference:**

- 2AM-MEA1525 Meadowbank Gold Mine Project Type 'A' Water Licence: Part C, Item 1.

**Comment:**

Security for the Meadowbank Gold Mine Project was set at \$71,700,000, with the understanding that all tailings would be permanently stored within the North and South Cells of the Tailings Storage Facility. Agnico Eagle Mines Limited is proposing permanent tailings storage in the mined out Goose and Portage pits at the Meadowbank Gold Mine Project, thereby altering the current security assessment and the Interim Closure and Reclamation Plan (ICRP).

**Recommendation:**

**(R 7)** CIRNAC recommends that the ICRP be updated accordingly, and that security be revisited to ensure Agnico Eagle Mines Limited is sufficiently bonded for additional tailings disposal in the mined out Goose and Portage pits at the Meadowbank Gold Mine Project.