



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
2AM-WTP1826
Our file - Notre référence
CIDM#1287960

August 31, 2020

Richard Dwyer
Manager of Licensing
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 Review of Seven Management Plans for the Whale Tail Project, Water Licence No. 2AM-WTP1826, submitted by Agnico Eagle Mines Ltd.

Dear Mr. Dwyer,

Thank you for your July 17, 2020 email invitation to review and comment on the seven Management Plans for the Whale Tail Project, Water Licence No. 2AM-WTP1826, submitted by Agnico Eagle Mines Ltd. (AEM). The plans submitted included the following:

- Spill Contingency Plan;
- Hazardous Materials: Meadowbank Mine Site, Whale Tail Pit Site, Baker Lake Facilities Management Plan;
- Emergency Response Plan;
- Whale Tail Pit Interim Closure and Reclamation Plan;
- Whale Tail Pit Waste Rock Management Plan;
- Quality Assurance / Quality Control (QA/QC) Plan; and
- Whale Tail Pit Water Management Plan.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed the submission 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*, and would like to provide the following comments to the Nunavut Water Board for consideration.

If you have any questions or require further information with respect to this matter, please contact me at (867) 975-4282 or email Bridget.campbell@canada.ca.



Sincerely,

A handwritten signature in blue ink that reads "Bridget Campbell". The signature is written in a cursive, flowing style.

Bridget Campbell,
Water Resources Coordinator



Technical Review Memorandum

Date: August 31, 2020

To: Robin Ikkutisluuk – Licensing Administrator, Nunavut Water Board

From: Bridget Campbell – Water Resources Coordinator, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada Review of Seven Management Plans for the Whale Tail Project, Water Licence No. 2AM-WTP1826, submitted by Agnico Eagle Mines Ltd.

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

Agnico Eagle Mines Ltd. (AEM) submitted seven management plans to the Nunavut Water Board (NWB) on July 12, 2020 for review and approval. These documents are outlined in Table 2 of Section B.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) reviewed these updated management plans and provides comments and recommendations in the following sections. Overall, CIRNAC found that the updates made to the management plans demonstrate improvements to the quality of information, organization, and implementation measures. The comments provided are presented to further ensure consistency and enhance clarity.

Table 1 outlines the subjects of recommendations. Complete comments can be found in Section C. Further references can be found in Section D.

Table 1: Summary of Recommendations

Recommendation	Subject
R-01	Frequency of Emergency Response Preparedness (ERP) Testing
R-02	Emergency Response Management Personnel
R-03	Restoration of Mined Areas through Re-grading and Revegetation
R-04	Slope Stability Analysis
R-05	Backfill in Areas of Subsidence
R-06	Whale Tail Waste Rock Storage Facility Mitigation Measures
R-07	Adaptive Management
R-08	Fill Level for Sample Bottles
R-09	Relative Percent Difference (RPD)
R-10	Treated Effluent Discharge Period for Lake A16



R-11	Water Infrastructure Performance Issues
R-12	Dike Construction - IVR Dikes
R-13	Landform Water Balance Model Summary of Results
R-14	Whale Tail Dike Seepage

B. DOCUMENTS REVIEWED

The following table (Table 2) provides a summary of the documents reviewed by CIRNAC. Sub-appendices of document attachments are not noted in the table.

Table 2: Documents Reviewed by CIRNAC

Document Title	Author, File No., Date
Spill Contingency Plan	Agnico Eagle Mines Ltd., Ver. 11, July 2020
Hazardous Materials: Meadowbank Mine Site, Whale Tail Pit Site, Baker Lake Facilities Management Plan	Agnico Eagle Mines Ltd., Ver. 6, July 2020
Emergency Response Plan	Agnico Eagle Mines Ltd., Ver. 15, July 2020
Whale Tail Pit Interim Closure and Reclamation Plan	Agnico Eagle Mines Ltd., Ver. 4, July 2020
Whale Tail Pit Waste Rock Management Plan	Agnico Eagle Mines Ltd., Ver. 6, July 2020
Quality Assurance / Quality Control (QA/QC) Plan	Agnico Eagle Mines Ltd., Ver. 6, July 2020
Whale Tail Pit Water Management Plan	Agnico Eagle Mines Ltd., Ver. 5, July 2020



C. RESULTS OF REVIEW

Spill Contingency Plan

CIRNAC has no concerns with the updates provided in the Spill Contingency Plan and considers the new version to be a significant improvement on the previous version.

Hazardous Materials: Meadowbank Mine Site, Whale Tail Pit Site, Baker Lake Facilities Management Plan

CIRNAC has no concerns with the updates provided in the Hazardous Materials Management Plan and considers the new version to be an improvement on the previous version.

Emergency Response Plan

1. Frequency of Emergency Response Preparedness (ERP) Testing

Reference:

Emergency Response Management Plan, Section 1.1

Comment:

AEM states that Emergency Response trainings are conducted annually. In the Emergency Response Management Plan, Section 1.1, AEM's Policy Statement, the section reads as follows: "ERP will be tested on a periodic basis to ensure its effectiveness." From this statement, the frequency of testing is unclear. It is also not clear if drills are carried out to test the effectiveness of the emergency response programs, and if so, how often they are performed.

Recommendation:

(R-01) CIRNAC recommends that AEM revise this section to clarify the frequency of Emergency Response Preparedness (ERP) testing.

2. Emergency Response Management Personnel

Comment:

AEM appears to have the same emergency response management personnel responsible for the Meadowbank and Whale Tail (AMQ) sites. This arrangement could cause some confusion making the emergency response ineffective and inefficient,



thereby exposing people or the environment to a greater risk. It is not clear how AEM plans to mitigate the risk posed by this arrangement.

Recommendation:

(R-02) CIRNAC recommends that AEM provide the rationale for how they plan for the same personnel to efficiently manage the emergency response for the two different project sites.

Whale Tail Pit Interim Closure and Reclamation Plan

3. Restoration of Mined Areas through Re-grading and Revegetation

Comment:

In the Whale Tail Pit Interim Closure and Reclamation Plan, Section 5.2.3.5: Engineering Work Associated with Selected Closure Activity, AEM mentioned that “All temporary stockpiles areas will be re-graded to suit the surrounding topography to the extent possible. It is anticipated that a succession of native community will naturally revegetate the areas over time.” Under the Section 5.2.5.7: Uncertainties, AEM mentioned “Active vegetation has not been planned at this time as part of the reclamation plan given the cold climate setting of the Project. Additional research on active revegetation may be considered in future iteration of the closure activities.”

It is not clear how AEM plans to re-grade the stockpile areas to promote site drainage and encourage revegetation. Further details would aid in CIRNAC’s understanding of how this will be achieved.

As AEM already mentioned, “Additional research on active revegetation may be considered in future iteration of closure activities”, CIRNAC encourages AEM to make a plan to explore feasibility studies, and test the proposed methods under the progressive reclamation plan in sites where operations have ceased and at other sites at final closure.

Recommendation:

(R-03) CIRNAC recommends that AEM clarify the proposed method for re-grading stockpile areas to encourage site drainage and revegetation.

4. Slope Stability Analysis

Comment:

In the Interim Closure and Reclamation Plan (ICRP) V3 (page 43, paragraph 4), under the section 4.5.3: Waste Rock and Overburden Storage Facilities, AEM mentioned:



...Similar design parameters will be used for the Expansion Project WRSFs including the proposed Whale Tail WRSF expansion. Agnico Eagle may increase overall height of the WRSFs in consideration of engineering optimization for increasing capacity. ***Slope stability analyses for the Expansion Project will be performed and provided 60 days prior to operations consistent with the Approved Project.***

In the latest ICRP (Version 4), AEM omitted the bold section. CIRNAC is of the view that Slope Stability Analysis of the WRSF is important, and it is not clear why this has been removed.

Recommendation:

(R-04) CIRNAC recommends that AEM include the following statement in Version 4 of the ICRP, or provide rationale for its removal:

Slope stability analyses for the Expansion Project will be performed and provided 60 days prior to operations consistent with the Approved Project.

5. Backfill in Areas of Subsidence

Comment:

From CIRNAC review of the Whale Tail Pit Interim Closure and Reclamation Plan, specifically Section 5.2.1.5: Engineering Work Associated with Selected Closure Activity and Section 5.2.1.8: Closure and Post-Closure Monitoring, Maintenance, and Reporting, CIRNAC notes that AEM plans to “Periodically backfill any areas of subsidence, should they occur.”

There is no indication of how AEM will determine the root cause of the collapsing or shifting ground. It is not clear how AEM can successfully backfill areas of subsidence with adequate materials without having previously conducted a thorough assessment to understand the root causes of the given subsidence event. Geotechnical investigations may be required to sufficiently understand the reason for the ground shift.

Recommendation:

(R-05) CIRNAC recommends that AEM further develop the ICRP, Version 4, Section 5.2.1.9: Contingencies to clarify how AEM will prepare for any unforeseen required geotechnical investigations, in case of subsidence.

Whale Tail Pit Waste Rock Management Plan

6. Whale Tail Waste Rock Storage Facility Mitigation Measures



Comment:

The Waste Rock Management Plan, Section 5.2.2.1: Whale Tail Waste Rock Storage Facility (WRSF) indicates the following:

In August 2019, seepage from WRSF Pond reported through the structure towards Mammoth Lake. Immediate actions were undertaken to remediate the situation, including pumping water downstream of the structure, and maintaining the pond dry. Additional actions were taken prior to freshet 2020, to promote permafrost into the dike foundation, as well as the construction of a more robust water collection system. Refer to the Water Management Plan for additional details on water management of the Whale Tail WRSF.

CIRNAC considers construction works and mitigation measures associated with water management at the waste rock structures to be significant to waste rock management, and as such suggests that actions and construction works related to the Whale Tail WRSF, the IV WRSF or the Underground WRSF be available in the Waste Rock Management Plan.

Recommendation:

(R-06) CIRNAC recommends that AEM include the details pertaining to the water management of the Whale Tail WRSF, the IV WRSF and the Underground WRSF in the Waste Rock Management Plan.

7. Adaptive Management

Comment:

In the Waste Rock Management Plan, Section 9.4: Adaptive Management, AEM indicates that the Whale Tail Pit Expansion Adaptive Management Plan is under review, and further; “For more details on the adaptive management actions Agnico Eagle is planning to implement related to the Waste Rock Storage Facilities, please refer to the ARD/ML plan (Section 5, table 5.1).”

CIRNAC notes that it is unclear how the list in Table 5.1: Anticipated ARD/ML Potential of Waste Rock Types at Whale Tail (Golder, 2018b), comprises the details of the adaptive management actions.

Recommendation:

(R-07) CIRNAC recommends that AEM review and update the reference to Section 5, Table 5.1, made in Section 9.4 of the Waste Rock Management Plan.



Quality Assurance / Quality Control (QA/QC) Plan

8. Fill Level for Sample Bottles

Comment:

The Quality Assurance & Quality Control (QA/QC) Plan states in section 2.2.2, “The bottles are filled properly to allow mixing, preservative addition and thermal expansion.” This statement contradicts section 2.2.4 Table 2-1 which indicates the bottles are filled to the top. It is not clear on the actual level to which the bottle will be filled to allow for mixing, preservative addition and thermal expansion.

Recommendation:

(R-08) CIRNAC recommends that AEM clarify the actual specific level to which the bottles will be filled to allow for mixing, preservative addition and thermal expansion.

9. Relative Percent Difference (RPD)

Comment:

In the Quality Assurance & Quality Control (QA/QC) Plan, Section 4.2, Data Verification, Relative Percent Difference (RPD) and RDP were used concurrently. It is not clear whether the two acronyms have the same or different meanings.

Recommendation:

(R-09) CIRNAC recommends that AEM clarify whether there are one or two meanings for the acronym RDP. If the meanings are the same, a consistent acronym should be used. If there are two meanings, a different acronym should be used to ensure consistency.

Whale Tail Pit Water Management Plan

10. Treated Effluent Discharge Period for Lake A16

Comment:

In the Whale Tail Pit Water Management Plan, Section 3.1.3: Waterbody Inventory - Watershed A - Various water management activities, Table 3.1, the treated effluent discharge period is not indicated for Lake A16.



Recommendation:

(R-10) CIRNAC recommends that AEM clarify the treated effluent discharge period for Lake A16, and include this information in any future updates of the Whale Tail Pit Water Management Plan.

11. Water Infrastructure Performance Issues

Comment:

In the Water Management Plan, Section 3.1.4.2: Dike Construction - Northeast Dike, AEM states that during summer 2019, the water natural flow was impeded by the natural topography. This resulted in issues with the planned overflow conveyance system which needed to be changed with the addition of a pumping system.

In Section 3.1.4.18: Non-Contact Water Management, AEM states that in order to adequately manage non-contact water, some passive flows have been substituted with a pumping alternative that complies with the original intent of the approved water balance and Water Licence 2AM-WTP1830 (same origin and same destination). AEM adds that those systems were proposed as adaptive management methods in response to the encountered site conditions during open water season and the high volume of precipitation received, resulting in additional volume of water to manage.

Although AEM states that “the water quality is not considered at risk as this is non-contact water from the NE Pond” there are impacts on water management structures as described above, and there may be subsequent potential for transformation of non-contact water (Lake A49 overflow) into contact water (pit water), and problems with Total Suspended Solids (TSS) related requirements under Water Licence 2AM-WTP1830, Part F (Item 7).

Recommendation:

(R-11) CIRNAC recommends that AEM continue to identify and assess the water infrastructure performance issues and monitor the adequacy of the conveyance system put in place to allow for a more efficient water management, and subsequently avoid emergency situations. In addition, AEM would benefit from capturing the lessons learned related to the design, construction and operation issues and include them in the Water Adaptive Management Plan and other related management plans.

12. Dike Construction - IVR Dikes

Comment:

A short description of the IVR Dikes, including details regarding their design, typical section and role, is presented in the 2019 Water Management Plan, Section 3.1.4.2: 2 Dike Construction - IVR Dikes. This section has been removed from the 2020 version



(Version 5) of the Water Management Plan. It is not clear why these details have been removed.

Recommendation:

(R-12) CIRNAC recommends that AEM clarify why the description of IVR Dikes has been removed, or where this information is now located.

13. Landform Water Balance Model Summary of Results

Comment:

Section 3.1.4.5 of the 2019 Water Management Plan states:

O’Kane Consultants developed a landform water balance model in April 2019. The objective of the landform water balance was to estimate the runoff, interflow, and basal seepage rates for different slopes and aspects of the Whale Tail and IVR WRSFs (OKC, 2019).

A summary and a discussion of results were included under this section in the 2019 version of Water Management Plan. It is not clear why the results have been removed from the 2020 version (Version 5) of the Water Management Plan, as this section pertains to estimated landforms runoff inflows into various attenuation ponds and potential basal seepage from landforms, and the reference to the O’Kane Consultants document is given under Section 3.1.4.7 – Water Management in Whale Tail Waste Rock Storage Facility.

Recommendation:

(R-13) CIRNAC recommends that AEM clarify why the results of the landform water balance model, developed by O’Kane Consultants, have been removed, or where this information is now located.

14. Whale Tail Dike Seepage

Comment:

In the Whale Tail Water Management Plan, Section 3.1.4.2: Dike Construction, Whale Tail Dike Seepage, AEM states that in July 2019 a seepage flow was identified and reported, and the seepage flow rate was higher than the rate anticipated. AEM reports that a detailed investigation took place to better understand the situation and “A pumping system was installed to manage the seepage water, as presented in Section 3.1.4.15 of this report” referring to the same plan.

Section 3.1.4.15: Water Management for Landfill does not present details of the pumping system for managing seepage water. It is not clear where these details are provided.



Recommendation:

(R-14) CIRNAC recommends that AEM provide the details pertaining to the pumping system that was installed to manage the seepage water referenced in Section 3.1.4.2, or clarify where these details are now located.

D. REFERENCES

Works Cited

Agnico Eagle Mines Ltd. *Whale Tail Pit Interim Closure and Reclamation Plan*, Version 3, December 2019.

Agnico Eagle Mines Ltd. *Whale Tail Water Management Plan*, Version 4, May 2019.