Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

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

Your file - Votre référence
2AM-WTP1826

July 18, 2019

Our file - Notre référence
CIDM# 1256704

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 comments on completeness review for the water licence amendment of 2AM-WTP1826 – Whale Tail - Agnico Eagle Mines Limited.

Dear Mr. Dwyer,

Thank you for the June 4, 2019 email notice to interested parties regarding amendment application for Agnico Eagle Mine (AEM) water licence 2AM-WTP1826 – Whale Tail Project, to provide Information Requests upon assessment of completeness.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) has reviewed and provided comments on the completeness of the water licence amendment application 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*.

CIRNAC would be prefer an in-person Technical Meeting / Pre-Hearing Conference for the application, though we default to the Nunavut Water Board to make this decision.

If you have any questions or require further information with respect to this matter, contact me at (867) 975-4550 or godwin.okonkwo@canada.ca or Ian Parsons at (867) 222-9278 or ian.parsons@canada.ca

Sincerely,

Godwin Okonkwo
Manager, Water Resources

1. BACKGROUND

1.1 Proposed Amendment

Agnico Eagle Mine (AEM) has applied to amend their current 2AM-WTP1826 Water License for the Whale Tail Pit Project to include an expansion of the existing site to include a second satellite pit (IVR), as well as possible underground mining. Some facilities currently in place are proposed for expansion, and additional facilities will be constructed. The scope of the amendment to the project include:

- Extension of Life of Mine by additional four years;
- Mining of an additional 15 million tonnes of ore;
- Production of an additional 120 million tonnes of waste rock;
- Widening of the haul road from 9.5 metres wide to 15 metres;
- The expansion of the current open pit;
- Mining of an additional open pit;
- Underground mining (long hole mining) below both open pits;
- Three additional water management ponds;
- An expansion of the current Whale Tail Waste Rock Storage Facilities (WRSF), and the addition of a new WRSF for the IVR Pit; and
- Installation of a larger camp to accommodate 390 persons and expansion of relevant camp infrastructure.

1.2 Completeness Review Scope

The objective of the Completeness Review is to confirm that information required for the licence application and the associated management plans are sufficient. Within this context, the scope of the completeness review include the following topics:

- Land contamination that may affect water;
- Surface water quality;
- Surface water quantity;
- Groundwater;
- Permafrost;
- Waste management;
- Tailings Management; and
- Closure Planning.

Project components, activities, and plans that are associated with CIRNAC's areas of interest include, but are not limited to the following:

- Site water management and treatment (effluent, run-off, active-layer flow management, water balance, spring freshet management);
- Infrastructure and engineering related to mine works (underground mine activity, water diversion structures, dams, tailings impoundments, waste rock storage, quarries, waste disposal sites, airstrips, roads, etc.);
- Transportation and transportation infrastructure;
- Mine tailings and waste rock management (i.e. acid rock drainage / metal leaching);
- Hazardous material management;
- Accidents and malfunctions; and
- Environmental management and protection plans.

2. DOCUMENTS REVIEWED

CIRNAC has performed a completeness review of the documents listed in Table 1.0 to identify information gaps and any associated Information Requests (IR's). Comprehensive technical evaluations of these documents will be conducted during the upcoming "Technical Review" phase of the Nunavut Water Board (NWB) licensing process.

Table 1.0: Documents Reviewed during the Completeness Review

Document	Author	Date
Ammonia Management Plan	Agnico Eagle	April, 2019
Application for Water Licence Amendment	Agnico Eagle	May, 2019
Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan	Agnico Eagle	April, 2019
Compliance Assessment	Agnico Eagle	May, 2019
Conformity Determination	Nunavut Planning Commission	Oct, 2018
Core Receiving Environment Monitoring Program	Azimuth Consulting Group	April, 2019
Emergency Response Plan	Agnico Eagle	May, 2019
Groundwater Management Plan	Agnico Eagle	May, 2019
Haul Road Management Plan	Agnico Eagle	April, 2019
Hazardous Materials Management Plan	Agnico Eagle	May, 2019
Incinerator and Composter Waste Management Plan	Agnico Eagle	April, 2019
Interim Closure and Reclamation Plan	Agnico Eagle	May, 2019
Landfarm Design and Management Plan	Agnico Eagle	April, 2019
Landfill Design and Waste Management Plan	Agnico Eagle	April, 2019
Main Application Document NWB Water Licence 2AMWTP1826	Agnico Eagle	May, 2019
Mine Site and Downstream Receiving Water Quality Predictions	Golder Associates	May, 2019
Operation and Maintenance Manual Sewage Treatment Plant	Agnico Eagle	May, 2019
Operational ARD-ML Sampling and Testing Plan	Agnico Eagle	April, 2019
Quality Assurance / Quality Control Plan	Agnico Eagle	May, 2019
Spill Contingency Plan	Agnico Eagle	April, 2019
Thermal Monitoring Plan	Agnico Eagle	May, 2019
Updated Hydrogeological Assessment	Golder Associates	May, 2019
Waste Rock Management Plan	Agnico Eagle	May, 2019
Water Management Plan	Agnico Eagle	May, 2019
Water Quality and Flow Monitoring Plan	Agnico Eagle	May, 2019
Water Quality Monitoring and Management Plan for Dike Construction and Dewatering	Agnico Eagle	May, 2019
Whale Tail Lake Thermal Assessment	Golder Associates	April, 2019

3. RESULTS OF REVIEW

Following the completeness review, CIRNAC found that the application was detailed. CIRNAC has only five information requests listed below;

- CIRNAC IR #1 – Revised Thermal Modelling
- CIRNAC IR #2 – Effluent Mixing Zone Delineation
- CIRNAC IR #3 – WRSF Interflow and Temporal Scope of Assessment
- CIRNAC IR #4 – Prior Management Plan Revisions
- CIRNAC IR #5 – Alternative Discharge Locations

Summary of Completeness Review Comments

CIRNAC Information Request #1	
To:	Agnico Eagle Mines
Subject:	WRSF Covers
Reference(s):	Whale Tail Pit Expansion Project: Interim Closure and Reclamation Plan Whale Tail Pit Waste Rock Management Plan Appendix E of the 2019 Mean Annual Water Balance Update for the Whale Tail Pit – Expansion Project
Description of Information Gap:	AEM proposes to use thermal encapsulation of potentially acid generating (PAG) and metal leaching (ML) waste rock as the reclamation strategy for the Whale Tail and IVR WRSF. Based on thermal modelling performed for the Approved Project, it was determined that a cover thickness of 4.7 m would be required to ensure waste rock with elevated PAG/ML potential would remain permanently frozen. Appendix E of the 2019 Mean Annual Water Balance Update for the Whale Tail Pit – Expansion Project indicates that O'Kane Consultants is undertaking revised thermal modelling of the WRSFs.
Information Request:	CIRNAC recommends that AEM provide the report of revised WRSF thermal modelling prepared by O'Kane Consultants.

CIRNAC Information Request #2	
To:	Agnico Eagle Mines
Subject:	Effluent Mixing Zone Delineation
Reference(s):	Whale Tail Pit Water Management Plan (V4-NWB)
Description of Information Gap:	The Whale Tail Pit Water Management Plan (V4-NWB) indicates that active discharges from diffusers in Mammoth Lake and Whale Tail Lake (south basin) will comply with regulatory criteria at the edge of the mixing zone, but the size of that zone is not defined. In addition, the reference document also indicates that passive seepage discharges to Mammoth Lake during the post-closure stage are predicted to meet criteria within 60 m of the discharge point. During the NIRB Technical Sessions for the Expansion Project (Baker Lake: June, 2019) AEM clarified that the modelling noted above was based on discharge of effluent to receivers with water quality at pre-development baseline conditions. This assumption will only apply at project inception and the required dilution will increase over time as loadings of arsenic and phosphorous continue over the subsequent years and decades. On this basis, CIRNAC considers that the modeling requires more information on future effluent discharge scenarios.
Information Request:	CIRNAC recommends that AEM should provide information for effluent modeling calculations for future scenarios of maximum concentrations of arsenic and phosphorous within the applicable receivers. The calculations should be performed for both Mammoth Lake and Whale Tail Lake (south basin). For each receiver and project stage (i.e., operations, closure and post-closure) the revised modeling calculations should define the required size of the mixing zones for active discharges (i.e., via a diffuser) and passive discharges (i.e., post-closure WRSF seepage). CIRNAC notes that AEM has already committed to providing similar (but not identical) information as part of the NIRB process by 13 July 2019. However, the information requested above is also required for consideration during the NWB process and should therefore be filed to the public registry.

CIRNAC Information Request #3	
To:	Agnico Eagle Mines
Subject:	Waste Rock Storage Facilities Interflow and Temporal Scope of Assessment
Reference(s):	Mine Site and Downstream Receiving Water Quality Predictions Whale Tail Pit Waste Rock Management Plan Appendix E of the 2019 Mean Annual Water Balance Update for the Whale Tail Pit – Expansion Project
Description of Information Gap:	Water quality modelling for the Whale Tail Pit Expansion Project is based on a revised conceptual water balance for the WRSFs. Under the revised model, approximately 35% of precipitation percolates through the cover and into the underlying waste rock. The infiltrated water subsequently freezes within the sub-zero voids, thereby limiting the potential for infiltrated water to migrate through the WRSF and discharge to downstream surface water receivers. Under the revised model, the void spaces within the WRSF isolate infiltrated water and associated contaminants (e.g., arsenic) within its frozen core. The capacity of voids to sequester infiltrated water is finite; once the voids are filled, water that percolates into unfrozen portions of the WRSF (i.e., the cover) will eventually drain from the WRSF as interflow and be discharged to the receiving environment. According to the Mine Site and Downstream Receiving Water Quality Predictions, this interflow was predicted to occur after 80 years from pile initiation. However, the temporal scope of reported water quality predictions is limited to only 30 years (i.e., up until 2050). As a consequence, the predictions do not extend far enough into the future to determine whether WRSF interflow has the potential to result in adverse water quality impacts to surface water receivers.
Information Request:	CIRNAC recommends that AEM extend the temporal scope of its water quality modeling to ensure that WRSF interflow is included in its predictions of surface water quality. The revised modeling should evaluate the water quality impacts of interflow under two scenarios: Scenario 1: a cover constructed exclusively of waste rock with low metal leaching potential; and Scenario 2: a cover that is “contaminated” with 1% waste rock that has elevated metal leaching potential (e.g., north komatiite formation).[1]

[1] CIRNAC acknowledges and appreciates that AEM has already assessed the impact of 1% cover contamination in response to NIRB Commitment #28 for the Expansion Project. However, the temporal scope of that assessment was insufficient to capture the potential effects of interflow from the WRSFs.

CIRNAC Information Request #4	
To:	Agnico Eagle Mines
Subject:	Prior Management Plan Revisions
Reference(s):	CREMP Addendum Mercury Monitoring Plan; Haul Road Management Plan; Water Quality and Flow Monitoring Plan; Water Management Plan; Waste Rock Management Plan; Operation ARD-ML Sampling and Testing Plan; and Groundwater Monitoring Plan
Description of Information Gap:	During the water licensing phase for the approved Whale Tail project, CIRNAC conducted detailed reviews of selected Management Plans and submitted detailed review comments and recommendations to the Nunavut Water Board. Those plans included: 1. CREMP Addendum Mercury Monitoring Plan; 2. Haul Road Management Plan; 3. Water Quality and Flow Monitoring Plan; 4. Water Management Plan; 5. Waste Rock Management Plan; 6. Operation ARD-ML Sampling and Testing Plan; and 7. Groundwater Monitoring Plan With regard to the Expansion Project, AEM submitted a revised set of Management Plans that are intended to address the requirements of the Expansion Project. The revised documents state that prior input from CIRNAC (and others) has been incorporated into the plans. However, AEM has not clarified specifically how CIRNAC's comments and recommendations have been addressed. As a result, CIRNAC has not been able to verify whether its prior concerns have been addressed.
Information Request:	CIRNAC recommends that AEM provide a table summarizing if and how the Department's October, 2018 input on prior versions of the Management Plans for the Approved Project have been incorporated into the revised submissions. A separate response should be provided for each of CIRNAC's comments and recommendations within the table. This information will be used to confirm the adequacy of the revised Management Plans to mitigate potential environmental impacts associated with the Expansion Project.

CIRNAC Information Request #5	
To:	Agnico Eagle Mines
Subject:	Alternative Discharge Locations
Reference(s):	Whale Tail Pit – Expansion Project: Main Application Document NWB Water Licence 2AMWTP1826 Amendment
Description of Information Gap:	CIRNAC notes that the Main Document for the Expansion Project indicates AEM is requesting that alternative discharge locations such as D1 and D5 lakes be included in the licence in order to provide the option of these alternative discharge locations in the future.
Information Request:	CIRNAC recommends that; 1. AEM should provide information that shows evidence of assessment of the referenced discharge locations. 2. AEM should provide information that demonstrates an assessment of potential impacts to the surface water receivers was conducted