

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6100 000 008/021
NWB File: 2AM-WTP1830



August 14, 2020

via email at: licensing@nwb-oen.ca

Richard Dwyer
Manager Licencing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Richard Dwyer

RE: 2AM-WTP1830 Agnico Eagle Mines Ltd. – Whale Tail Pit Updated Management Plans

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board regarding the following updated management plans by Agnico Eagle Mines Ltd (the Proponent):

- 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

ECCC's specialist advice is based on our mandate pursuant to the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

ECCC does not have comments on the QA/QC Plan, and provides the following comments with respect to the other three plans:



Whale Tail Pit Water Management Plan

1. Saline Water Management

Reference(s):

- Section 3.1.4.16
- Appendix B – Water Management Schematic Flowsheets

Comment

The overall site management describes the storage of high salinity groundwater in GSP1 and low salinity groundwater in GSP2. If treatment of low salinity groundwater is required, the brine produced from treating GSP2 saline water would be directed to GSP1, along with the high salinity water from the operations. As per the flowsheets provided in Appendix B, the high salinity water from GSP1 will also be treated and discharged to Whale Tail Lake. However, with the addition of the brine to GSP1, it would be expected that the salinity of GSP1 would increase substantially over time, becoming more concentrated as additional brine from GSP2 treatment is added to the pond. Given that the water in GSP1 is indicated to be discharged to Whale Tail Lake, a discussion on treatment efficiency and discharge quality should be provided.

Recommendation

ECCC recommends that the Proponent provide additional clarity and discussion on management and treatment of saline groundwater, including expected treatment efficiencies.

2. Discharge Locations

Reference(s):

- Section 3.1.4.4

Comment:

The Water Management Plan states that, “*any water requiring treatment will be pumped to the water treatment plant(s) prior to discharge through the diffuser in Mammoth Lake or through a diffuser in Whale Tail Lake (South Basin) or other alternatives.*” The Proponent does not provide an additional description of what “other alternatives” for discharge are being considered.

Recommendation:

ECCC recommends that the Proponent identify what is meant by “other alternatives” and indicate whether any other locations are being considered for discharge.

3. Water Management Activities and Sequence

Reference(s):

- Table 3.3 – Water Management Activities During Construction and Operations
- Appendix B – Water Management Schematic Flowsheets

Comment:

There are inconsistencies regarding the IVR attenuation pond between the summary of water management activities provided in Table 3.3 and the water management flowsheets provided in Appendix B. Specifically, during Year 2-3 (2020-2021), Table 3.3 indicates that the majority of contact water sources are moving towards management through the IVR Attenuation Pond. However, in Appendix B, the IVR Attenuation Pond does not appear on the flowsheets until May 2022. Based in the discrepancies in the documents, it is unclear when IVR Attenuation Pond is to be operational and what implications these discrepancies may have on overall site water management.

Recommendation:

ECCC recommends that the Proponent clarify the timing of commissioning of the IVR Attenuation Pond and any implications that changes to the timing of commissioning may have to overall site water management.

Whale Tail Pit Interim Closure and Reclamation Plan

1. Monitoring and Maintenance Plan

Reference(s):

- Section 1.2 – Monitoring and Maintenance Plans

Comment:

The Proponent states that the “*The post-closure phase could be reduced if water quality becomes acceptable for direct discharge to the environment at an earlier date*”. ECCC notes that as long as Whale Tail mine is subject to the *Metal and Diamond Mine Effluent Regulations* (MDMER), all effluent is to be discharged through a final discharge point (FDP) and monitored as required by s.12 of the MDMER until such time that the mine acquires the recognized closed mine status (RCM) per Part 4, s.32 of MDMER.

Recommendation:

ECCC recommends that the Proponent be aware of the requirements set out in the MDMER.

2. Closure Goals

Reference(s)

- Section 2.4 – Goal of the Closure and Reclamation Plan

Comment:

As one of the goals of closure and reclamation, the Proponent indicated that it will • “*Give preference to closure solutions that do not require subsequent maintenance (i.e., “walk away” solutions) or else solutions that reduce maintenance requirements (example “passive water treatment”).* It is the view of ECCC that a substantial effort be made to select a closure solution that best protects the environment and not just a solution that makes it possible to “walk away” or “reduce maintenance”.

Recommendation:

ECCC recommends that the closure and reclamation plan ensure that environmental protection takes precedence over reduced maintenance or walk away options.

3. Waste Rock Storage

Reference(s)

- Section 4.5.3 – Waste Rock and Overburden Storage Facilities

Comment:

The Proponent stated that “*In the unlikely scenario of insufficient NPAG/NML waste rock material available to complete the recommended cover thickness, the design would need to be reassessed with consideration for insertion of a layer of fine material in the WRSF to reduce the active layer thickness and to limit air convection processes.*”

Recommendation:

Should a reassessment be required, ECCC would like the opportunity to evaluate the reassessment.

The following two comments and recommendations were brought forward by ECCC in the Final Written Submission for the Whale Tale Expansion and have not been incorporated into the Interim Closure and Reclamation Plan (ICRP). ECCC recommends that the Proponent indicate how these two recommendations will be addressed in the ICRP.

4. Water Management Facilities – Contingencies

Reference(s)

- Section 5.2.9.9 – Contingencies

Comment:

Section 5.2.9.9 (Contingencies) of the ICRP states that if the results of water quality monitoring indicate that water in the flooded area is not suitable for direct discharge, then in-situ treatment would be considered. The ICRP does not provide sufficient information with respect to contingency measures to manage water quality in the flooded pit lake, including details on in-situ treatment.

Recommendation(s):

ECCC recommends that the ICRP include a discussion of whether and how in-situ treatment of the flooded pit lake would be feasible, and how long in-situ treatment could be provided. ECCC also recommends that the ICRP identify and describe any alternative water management contingency options in the event that water quality monitoring indicates water in the flooded area is not suitable for direct discharge and/or reconnection to surface waters. The discussion should include short, medium and long-term contingency options.

5. Post-Closure Monitoring

Reference(s):

- Table 8.0-1 – Proposed Closure and Post-Closure Main Activities Schedule

Comment:

Table 8.0-1 identifies the duration of pit flooding, which lasts through the closure stage until year 24 (2042). During this time, there will be monitoring of water quality and updating of model predictions. The post-closure monitoring stage is anticipated to be 3 years. ECCC acknowledges that there will be a long period of pit water quality monitoring during flooding, and that the closure stage conditions should be fairly well understood at that time. However, three years of post-closure monitoring may not be sufficient if pit water conditions are not in a steady state.

Recommendation:

ECCC recommends that the post-closure monitoring period be open-ended, defined by conditions rather than a pre-set time period.

Whale Tail Pit Waste Rock Management Plan

1. Waste Rock Properties

Reference(s):

- Section 5.1 – Waste Rock Properties

Comment:

The Proponent states that “*All open pits waste material will be sampled and tested during operations to confirm their ARD and ML potential in support of waste segregation. Based on results to date, a sulphur content of 0.1 wt. % appears to be a suitable threshold to identify PAG material*”. ECCC notes that even at 0.1 wt. % total sulphur, with no neutralization material, the waste may still have the potential to generate acid.

Recommendation:

ECCC recommends that the Proponent ensure that there is sufficient neutralization material is available and that segregation does not solely rely on the percentage of sulphur content.

2. Ore Properties

Reference(s):

- Section 6.1 – Ore Properties

Comment:

The Proponent states “*The delay to onset of ARD from ore is expected to be substantially longer than the seven years LOM.*” ECCC notes that the statement above does not provide sufficient detail on what will cause the delay of the onset of ARD. The Proponent does not clarify whether this delay is caused by presence of neutralization potential, or that there will be no reaction until the stated delayed onset.

Recommendation:

ECCC requests that the Proponent provide additional detail on the anticipated delay to the onset of ARD, including a description of the mechanisms that are likely to lead to this delay.

3. Waste Rock Storage Facilities Design

Reference(s):

- Section 5.3 – Project Waste Rock Storage Facilities Dimensions/
- Section 6.3.2 – Underground Operations

Comment:

The Proponent states that “*the current design and overall sideslope angle of the Project WRSFs is 2.5V:1V, an angle generally considered stable for such a facility (see Figure 5.1 for a typical cross section)*”. The Proponent also states in section 6.3.2 (Underground Operations) that “*The sideslope angle of these ore stockpiles will be 3V:1V, an angle generally considered stable for such facility*” It is not clear to ECCC whether this is a typographical error, and that **2.5H:1V & 3H:1V** was intended instead of 2.5V:1V & 3V:1V.

Recommendation:

ECCC requests that the Proponent clarify the sideslope angle dimensions for the WRSF and ore stockpiles.

If you need more information, please contact Lizanne Meloche at (604) 666-2165 or lizanne.meloche@Canada.ca.

Sincerely,

[original signed by]

Lizanne Meloche
Senior Environmental Assessment Officer

cc: Jody Small, Acting Head, Environmental Assessment North (NT and NU)