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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File: 2AM-WTP1830

September 29, 2020

Marie-Pier Marcil
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**Subject: Updated Management Plans; Type “A” Water Licence No: 2AM-WTP1830,
Whale Tail Pit Project; Agnico Eagle Mines Limited**

Dear Marie-Pier Marcil, Jamie Quesnel:

On July 17, 2020, the Nunavut Water Board (NWB or Board) acknowledged the receipt of the following documents (Plans) from Agnico Eagle Mines Limited (Agnico Eagle or Licensee) as per the requirement of Part B of Water Licence No: 2AM-WTP1830 (Licence):

- *Quality Assurance / Quality Control (QA/QC) Plan* dated July 2020;
- *Spill Contingency Plan* dated July 2020;
- *Emergency Response Plan* dated June 2020;
- *Interim Closure and Reclamation Plan* dated July 2020;
- *Hazardous Materials Management Plan* dated July 2020;
- *Water Management Plan* dated July 2020; and
- *Waste Rock Management Plan* dated July 2020.

The NWB distributed the Plans for public review with a deadline for submissions set for August 14, 2020, which later was extended to August 31, 2020 as per the request from the Kivalliq Inuit Association. Comments were received from the Kivalliq Inuit Association (KivIA), Crown-Indigenous Relations and Northern Affairs (CIRNA), and Environment and Climate Change

Canada (ECCC)¹. The Licensee responded with additional information², to which the KivIA, CIRNA and ECCC provided their feedback³.

Copies of all documents received during the review of the Plans can be accessed through the NWB's Public Registry and FTP site using the following links:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-WTP1830%20Agnico/3%20TECH/B%20GENERAL/B15/>

The KivIA stated that the next update of the *Interim Closure and Reclamation Plan* should expand on lessons learned from other projects in permafrost, hydrogeology, hydrology, and the use of community consultation and Inuit Qaujimajatuqangit in project planning, and others. In addition, the KivIA requested that Agnico Eagle clarify how often water balance and water quality modelling be updated especially in regards to arsenic concentration in the downstream environment.

CIRNA recommended:

- In the *Quality Assurance / Quality Control (QA/QC) Plan*:
 - Clarify the actual specific level, to which the sampling bottles will be filled to allow for mixing, preservative addition and thermal expansion;
 - In Section 4.2, *Data Verification*, Relative Percent Difference (RPD) and RDP were used concurrently. Clarify the use of the acronyms;
- In the *Emergency Response Plan*:
 - clarify the frequency of Emergency Response Preparedness testing;
 - efficiency of having only one emergency response team responsible for both Meadowbank Gold Mine and Whale Tail Pit Projects;
- In the *Interim Closure and Reclamation Plan*:
 - Agnico Eagle is recommended to conduct feasibility studies of the restoration of mined areas and test the proposed methods as part of progressive reclamation. The Licensee is to clarify the proposed method for re-grading stockpile areas to encourage site drainage and revegetation;
 - Clarify the removal of the statement regarding providing slope stability analyses for review;
 - Expand the discussion of preparation to address geotechnical investigations in case of subsidence during closure and post-closure;
- In the *Water Management Plan*:
 - Clarify the treated effluent discharge period for Lake A16, and include this information in any future updates;
 - 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. Capture

¹ Kivalliq Inuit Association (KivIA), dated August 31, 2020; Crown-Indigenous Relations and Northern Affairs (CIRNA), dated August 31, 2020; Environment and Climate Change Canada (ECCC), dated August 14, 2020.

² Alexandre Lavallée (Agnico Eagle) to Richard Dwyer (NWB), Re: Agnico Eagle Mines – Responses to Management Plan Update to Water License 2AM-WTP1830 Part B Item 5 [sic], dated September 18, 2020.

³ Kivalliq Inuit Association (KivIA), dated September 29, 2020; Crown-Indigenous Relations and Northern Affairs (CIRNA), dated September 29, 2020; Environment and Climate Change Canada (ECCC), dated September 28, 2020.

the lessons learned related to the design, construction and operation issues and include them in the Adaptive Management Plan and other related management plans;

- Clarify why the description of IVR Dikes has been removed, or where this information is now located;
- 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; and
- Provide the details pertaining to the pumping system that was installed to manage the seepage water at Whale Tail Dike;
- In the *Waste Rock Management Plan*:
 - Include the details pertaining to the water management at the Waste Rock Storage Facilities (WRSF); and
 - Review and update the reference to Section 5, Table 5.1, made in Section 9.4.

ECCC recommended the following:

- In the *Interim Closure and Reclamation Plan*:
 - As long as Whale Tail Pit mine is subject to the *Metal and Diamond Mining Effluent Regulations* (MDMER), all effluent is to be discharged through a final discharge point and monitored as required by s.12 of the MDMER until such time that the mine acquires the recognized closed mine status per Part 4, s.32 of MDMER;
 - Ensure that environmental protection takes precedence over reduced maintenance or walk away options;
 - ECCC intends to participate in the review of solutions for contingent placement of a layer of fine material in the WRSF to reduce the active layer thickness and to limit air convection processes in case non-potentially acid generating and non-metal leaching waste rock material quantity is insufficient;
 - 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. 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;
 - Three years of post-closure monitoring may not be sufficient if pit water conditions are not in a steady state. The post-closure monitoring period should be open-ended, defined by conditions rather than a pre-set time period;
- In the *Water Management Plan*:
 - Provide additional clarity and discussion on management and treatment of saline groundwater, including expected treatment efficiencies;
 - Identify what is meant by “other alternatives” of discharge of treated water and indicate whether any other locations are being considered for discharge;
 - 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;
- In the *Waste Rock Management Plan*:

- Even at 0.1 wt. % total sulphur in waste rock, with no neutralization material, the waste may still have the potential to generate acid. Ensure that there is sufficient neutralization material available and that segregation does not solely rely on the percentage of sulphur content;
- 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; and
- Clarify the sideslope angle dimensions for the WRSF and ore stockpiles.

The Licensee responded by providing the following information on September 18, 2020:

- The next update to the *Quality Assurance / Quality Control (QA/QC) Plan* will include proper procedures on filling sampling bottles;
- The next update to the *Quality Assurance / Quality Control (QA/QC) Plan* will include the correct abbreviation for relative percent difference;
- The Emergency Response Preparedness testing is conducted annually. The frequency will be included in the next update of the *Emergency Response Plan*;
- Emergency response is performed by the same team at the Meadowbank Gold Mine and Whale Tail Pit Mine;
- The *Interim Closure and Reclamation Plan* includes provisions to accommodate both “walk-away” and environmental protection;
- Proposed reassessment of the waste rock facility capping strategy will be available within annual reports;
- The next update of the *Interim Closure and Reclamation Plan* will include
... additional information... with respect to contingencies for water quality management in the pit lake as it is being flooded including considerations on potential in-situ treatment options, and water management contingencies in the event that water quality monitoring indicates water in the flooded area is not suitable for reconnection to the downstream receiving environment
- The post-closure period will not begin until closure criteria are met;
- As per the KivIA’s recommendation, the Licensee will endeavour to include lessons learned in proposed areas in the next update of the *Interim Closure and Reclamation Plan*;
- The strategy for re-grading of stockpile areas will be provided for review prior to closure;
- The slope stability analyses for the Waste Rock Storage Facilities are included in the for-construction documentation;
- Agnico Eagle is in the process of revising its saline water management strategy to avoid its treatment and discharge into Whale Tail Lake. Once finalized, the strategy will be included in the next iteration of the *Water Management Plan*;
- “Other alternatives” for treated water discharge as mentioned in the *Water Management Plan* means Lakes D1 and D5;
- The water management flowsheets will be updated in the next iteration of the *Water Management Plan* to reflect the status as per Table 3.3 of the abovementioned plan;
- Water balance and water quality modeling updates are to be provided with an annual report;
- The next iteration of the *Water Management Plan* will include the treated effluent discharge period for Lake A16 (Mammoth Lake);

- 2019 freshet management lessons learned were successfully applied during the 2020 freshet;
- The description of IVR Dikes will be added back into the *Water Management Plan* once the engineering design is finalized;
- The landform water balance model was included in the water balance presented in the *Water Management Plan*;
- The construction report of the dike seepage management pumping system is being developed. The system will be described in the next update of the *Water Management Plan*;
- Agnico Eagle confirmed that it is aware of the requirements in the MDMER;
- Agnico Eagle will conduct “a geotechnical investigation for area where subsidence mechanism are not well understood or where the subsidence could pose a risk to the closure strategy”;
- “The cut-off content to determine PAG and NAG material has been selected to ensure sufficient neutralization potential and thus, it is Agnico Eagle’s intent to continue to operate in compliance with the approved *Operational ARD-ML Sampling and Testing Plan*”
- Kinetic leaching tests, mineral depletion calculations, and consideration of the scale and site differences between laboratory tests and field conditions were performed to estimate the delayed onset of acid-rock drainage at ten years;
- The sideslope angle dimensions for the WRSF are 2.5H:1V, and the sideslope angle dimensions for the ore stockpiles are 3H:1V. The corrections will be included in the next update of the *Waste Rock Management Plan*;
- Water management at the Waste Rock Storage Facilities is indicated in the *Water Management Plan*, and the Licensee can provide the references; and
- Agnico Eagle will correct the reference in Section 9.4 of the *Waste Management Plan*; it should refer to Section 5, Table 5.1 of the *Operational ARD/ML Testing and Sampling Plan*.

In addition, the NWB requested the Licensee to clarify its statement that “(t)he [Adaptive Management Plan] is currently under the NWB approval process”. On September 22, 2020, Agnico Eagle clarified that the statement was included in error.

On September 28, 2020, ECCC confirmed that it had no further questions. On September 29, 2020, KivIA expressed its satisfaction with the Licensee’s responses, and CIRNA noted that its concerns were resolved. In addition, CIRNA recommended:

- Agnico Eagle develop the methodology for re-grading of stockpile areas to be included in the next update of the *Interim Closure and Reclamation Plan* or the *Final Closure and Reclamation Plan*;
- The references to the sections in the *Water Management Plan* dealing with water management at the Waste Rock Storage Facilities be included in the *Waste Rock Management Plan*; and
- The information on the dike seepage management pumping system be included in the *Water Management Plan* as per the commitment.

The NWB fully reviewed the Plans in the context of interveners' comments and recommendations and the Licensee's clarifications and commitments. Therefore, by way of this correspondence, the Board acknowledges that the updated Plans stated above address the requirements of Part B, Item 15 of the Licence. The Licensee is advised that the Plans can be implemented upon the issuance of this letter by the Board.

The Board advises the Licensee that further updates to the Plans are to be submitted on or before **March 31, 2021** with the 2020 Annual Report as per the commitments made by Agnico Eagle during the review of the Plans and as per the recommendations provided by CIRNA on September 28, 2020. To enhance future review process, the Licensee is to include detailed information on any updates into the Document Control part of the Plans.

Should you have any questions, please feel free to contact the undersigned at (867) 360-6338 (ext. 31) or assol.kubeisinova@nwb-oen.ca at your earliest convenience.

Regards,

Assol Kubeisinova
Technical Advisor
Nunavut Water Board

cc: Distribution List – Meadowbank