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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File: 2AM-MEA1526

October 21, 2019

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Subject: Groundwater Monitoring Plan, Meadowbank Interim Closure and Reclamation Plan, Pore Water Quality Monitoring Program, and Waste Rock and Tailings Management Report & Plan; Type “A” Water Licence 2AM-MEA1526, Meadowbank Gold Mine Project; Agnico Eagle Mines Ltd.

Dear Marie-Pier Marcil, Robin Allard:

On July 26, 2019, the Nunavut Water Board (NWB or Board) acknowledged the receipt of the following documents (Plans) from Agnico Eagle Mines Ltd. (Agnico Eagle or Licensee) as per the requirement of Part B of Water Licence No. 2AM-MEA1526 (Licence):

Name	Status	Dated
<i>Groundwater Monitoring Plan (GWMP)</i>	Update	July 2019
<i>Meadowbank Interim Closure and Reclamation Plan (ICRP)</i>	Update	May 29, 2019
<i>Pore Water Quality Monitoring Program (PWQMP)</i>	New	July 2019
<i>Waste Rock and Tailings Management Report & Plan (WRTMP)</i>	Update	July 2019

The NWB distributed the Plans for public review with a deadline for submissions set for August 26, 2019. Comments were received from Crown-Indigenous Relations and Northern Affairs (CIRNA) and Environment and Climate Change Canada (ECCC)¹. The Licensee responded with additional information², to which the CIRNA and ECCC provided their feedback³. On October 8, 2019, Agnico Eagle provided its latest response.

¹ Crown-Indigenous Relations and Northern Affairs (CIRNA), dated August 23, 2019 and September 5, 2019; Environment and Climate Change Canada (ECCC), dated August 26, 2019.

² Robin Allard and Marie-Pier Marcil (Agnico Eagle) to Richard Dwyer (NWB), Re: Agnico Eagle’s response to Meadowbank (2AM-MEA1526) Ground Water Monitoring Plan, Meadowbank Interim Closure and Reclamation Plan, Pore Water Quality Monitoring Program and Waste Rock-Tailings Management Plan comments, dated September 20, 2019.

³ Crown-Indigenous Relations and Northern Affairs (CIRNA), dated September 30, 2019; Environment and Climate Change Canada (ECCC), dated September 30, 2019.

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-MEA1526%20Agnico/3%20TECH/1%20GENERAL%20\(B\)/13%20PLANS/](ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-MEA1526%20Agnico/3%20TECH/1%20GENERAL%20(B)/13%20PLANS/)

CIRNA expressed its concern with the following:

- Absence of pore water sampling during tailings deposition;
- Clarification of Agnico Eagle's plans for the Tailings Storage Facility and its a progressive closure plan;
- Whether the Licensee had a contingency plan for pit water not meeting criteria after flooding;
- ICRP specify that an assessment of the material deposited to date and pore water monitoring will be completed to inform mitigative measures;
- clarification on where the 3D model breakthrough curves predicted the highest chloride concentrations, and if the existing monitoring wells network intersects each of these; and
- ICRP specify the thresholds for when additional groundwater monitoring well installations are required and the frequency for field data collection, models update, and time until a new groundwater monitoring well is installed after a threshold is exceeded.

ECCC recommended the following:

- Remove the dike seepage stations from the groundwater plan, unless a connection to groundwater quality can be clearly demonstrated;
- Establish the relevance of water samples taken at the bottom of Dogleg Lake to groundwater quality if further deep lake sampling is proposed to be done within the Groundwater Monitoring Plan;
- The handling of QA/QC travel blanks is to mirror samples collected for analysis;
- The pore water behaviour data will be needed in advance of the Final Closure Plan, which will be developed subsequently to the Goose Pit tailings deposition being completed. Agnico Eagle is to revisit the Pore Water Quality Monitoring plan and hold discussions with stakeholders who expressed this as a concern in the licence amendment process;
- A monitoring horizon be anticipated that is in line with current practices (i.e., longer than the 5-10 years indicated in the Interim Closure and Reclamation Plan); and
- Clarify plans to ensure that the top 0.5 m of the tailings within the active layer under cover will remain saturated.

The Licensee responded by providing the following information:

- Commitment to obtain samples of the tailings pore water at the end of pit deposition;
- Commitment to collect tailings core samples at different depths and locations to evaluate pore water quality in Goose and Portage pits one year after end of deposition;
- Pore water behaviour data will be needed in advance of the Final Closure Plan, which will be developed subsequently to the Goose Pit tailings deposition being completed. Agnico Eagle will revisit the Pore Water Quality Monitoring plan as part of the 2019 Annual Report and commit to organizing a meeting with ECCC and CIRNAC to discuss the sampling methodology prior to the update of the plan;

- Lake reconnection will only happen once the water quality criteria is met. Agnico is required to evaluate on a yearly basis any deviation to the predictions and identify implication of these discrepancies;
- The thawed zone of 0.5 m would be valid for a 2 m cover, however most of the landform is planned to be significantly thicker than 2 m. Modelling with the latest agreed upon climate scenario will serve as the input into the Final Closure Plan for the Tailings Storage Facility; and
- The 3D hydrogeological model was updated (version 4) as per NRCan recommendations, and with their satisfaction.

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 and in accordance with Motion No. 2019-A1-008 and Part B, Item 13 of the Licence, the Board approves the documents entitled *Pore Water Quality Monitoring Program* dated July 2019, *Groundwater Monitoring Plan* dated July 2019, *Meadowbank Interim Closure and Reclamation Plan* dated May 29, 2019, and *Waste Rock and Tailings Management Report & Plan* dated July. The Licensee is advised that the Plans can be implemented upon the issuance of this letter by the Board.

However, the Board finds that additional information is required and advises the Licensee that the following updates to the Plans are to be submitted on or before **March 31, 2020** with the 2019 Annual Report:

Plan to Be Updated	Update
<i>Pore Water Quality Monitoring Program</i>	Reflection of the Licensee's commitment to "revisit the Pore Water Quality Monitoring plan as part of the 2019 Annual Report and commit to organized [sic] a meeting with ECCC and CIRNAC to discuss of the sampling methodology prior to the update of the plan".
<i>Waste Rock and Tailings Management Report & Plan</i>	Remove the references to a 2m cover design. Reflect that "(a)dditional monitoring and analysis are required to verify the performance of the cover against the design intent and inform on the final cover design. The final cover design will be subject to modification depending on the results obtained from the site trials as well as from data from the Thermal Monitoring Program" and "(m)odelling with the latest agreed upon climate scenario will serve as the input into the Final Closure Plan for the Tailings Storage Facility."
<i>Groundwater Monitoring Plan</i>	Reflect that "travel blanks are to accompany the sample bottles throughout the collection, handling, storage and shipping of the samples".
<i>Meadowbank Interim Closure and Reclamation Plan</i>	Reflect that "(t)emperature and piezometric records will be extracted and interpreted each year during operations to assess permafrost and piezometric behaviors in response to in-pit deposition. Considering the expected slow processes and changes of thermal and hydrogeological regimes, Agnico

	<p>consider that these models should be updated only at the end of in-pit deposition operations, unless significant change in thermal regime is observed by existing thermistors... thresholds will be established as part of the Final Closure Plan.”</p> <p>As agreed, include the statement “(t)he assessment of the material deposited to date and pore water monitoring completed during operation, as presented in the Pore water quality monitoring plan and the Water Management Plan and reported as part of the Annual Report, will be used to inform potential mitigative measures, such as an adjustment of the depth of water cover, the implementation of an aggregate cover if deemed required, to comply with flooded pit water quality objectives - and that those mitigative measures are carried out once the Final Closure Plan is implemented.”</p> <p>Reflect the commitment that the final closure and reclamation plan “will reflect the monitoring horizon required for Meadowbank”.</p>
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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