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ECCC File: 6100 000 012/015  
NWB File: 2AM-MEL1631



September 2, 2025

via email at: [richard.dwyer@nwb-oen.ca](mailto:richard.dwyer@nwb-oen.ca)

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

Dear Richard Dwyer:

**RE: 2AM-MEL1631 – Agnico Eagle Mines Ltd. – Meliadine Gold Mine – 2024 Annual Report – ECCC Comments on Proponent Responses**

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) by Agnico-Eagle Mines Ltd. (“the Proponent”) regarding ECCC’s review comments on the above-mentioned annual report.

ECCC provides expert information and knowledge to project assessments on subjects within the department’s mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent’s characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation.

The following comments are provided:

**13. Saline water storage at TIRI02**

References:

- Meliadine Gold Mine 2024 Annual Report
- Section 3.2.2. TIRI02 Water Balance Results
    - Figure 10. TIRI02 observed and predicted volumes from the Operational WBWQM
  - Appendix 4. Water Balance and Water Quality Modeling Tabular Data TIRI02 - Water Balance
  - Appendix 29-18. Meliadine Gold Mine Water Management Plan Version v.15B



### -Section 5.3.2. Discharge to Itivia Harbour

Amended Water Licence No: 2AM-MEL1631 (Nunavut Water Board; October 25, 2024), Part E, Item 13

#### Comment:

ECCC's review of the 2024 Annual Report noted incomplete information regarding saline water storage and management, and recommended the Proponent provide:

- an updated Water Balance and Water Quality Model (WBWQM) that incorporates the new proposed timelines for discharges from pit TIRI02 to Itivia Harbour through the waterline; and
- a discussion of capacity to manage saline water volumes through 2026 and 2027.

The Proponent's discussion of saline water management and storage capacity at TIRI02 does not align with information in various versions of the Water Management Plan and raises further questions. Both V15B of the Water Management Plan (submitted with the 2024 Annual Report) and V16 (included for discussion in the June 2025 modification request) include "SETP-WTC [saline effluent treatment plant – water treatment complex] discharge through waterline" in the planned schedule for 2026 and 2027. The Proponent's response to the Annual Report review includes the statement "Assuming the following forecast criteria; (i) no transfers or discharge of TIRI02 water would be possible in 2026 and 2027". It is not clear why no transfers or discharge would be possible from TIRI02 or what water is planned to be discharged through the SETP-WTC and waterline if none is from TIRI02. The Proponent's response also describes water levels in the pit: "the volume in TIRI02 should be reaching 1,400,000 m<sup>3</sup> at the end of 2026 and reaching the Maximum operating level in TIRI02 (i.e., 1,616,554 m<sup>3</sup>) in the fall 2027." This raises the possibility of exceeding the maximum operating level in spring 2028 due to inflow of surface runoff, which is concerning if transfer or discharge from TIRI02 is still not possible at that time.

The Proponent's response defers updating the WBWQM until March 2026. ECCC acknowledges that the Proponent has submitted a modification request to store saline water in new pits, but the request is still under review, and the outcome is unknown. The Proponent's proposed management strategy for saline water management has evolved throughout operations, which is expected to an extent, but the repeated deferral of treatment and discharge of saline water is concerning because of the accumulation of potentially toxic water on site.

#### ECCC Recommendation:

Given the lack of clarity in how saline water will be managed in the medium term, ECCC recommends the Proponent provide an updated WBWQM as soon as possible. They should clarify why no transfers or discharge from TIRI02 are forecast if the SETP-WTC and waterline will be operational in 2026 and 2027 and outline the plan for saline water management in 2028.

## 14. Response to water quality concerns in Lake B7

### References:

Meliadine Gold Mine 2024 Annual Report

- Section 7.1.2. Peninsula Lakes Study
- Appendix 18. 2024 Aquatic Effects Monitoring Program Report
  - Figure 2-12. Snow core chemistry – total suspended solids, turbidity, and sulphate, 2020–2024
  - Section 4.4.2. Temporal Trends in the Peninsula Lakes
  - Section 12.2. Peninsula Lakes Water Quality Summary

Aquatic Effects Monitoring Program Design Plan (February 7, 2025)

- Section 6.3: Peninsula Lakes Water Quality and Adaptive Management

### Comment:

ECCC's review of the 2024 Annual Report noted exceedance of both the Low Action Level and SSWQO (site-specific water quality objective) for arsenic concentrations in peninsula Lake B7 and recommended the Proponent:

- propose mitigation measures to reverse the increasing trend in arsenic concentrations in the peninsula lakes adjacent to the mine; and
- develop Moderate Action Level for water quality in peninsula lakes.

The Proponent responded they “will consider developing Low and Moderation Action Levels for the Peninsula Lakes and will provide an update in the 2025 AEMP Report and next AEMP Design Plan” while continuing to implement best practices for dust management. They argue that “historical loadings during the early years of operation (2019–2021) are believed to be the primary driver of the observed changes. This conclusion is supported by the temporal trend for arsenic shown in Figures 4-5 and 4-6 of the 2024 AEMP.” ECCC agrees that concentrations of several metals in peninsula lake waters showed a step increase in the early years of operation in Figures 4-5 and 4-6, but Lake B7 concentrations have continued to increase year over year since then. The purpose of AEMP monitoring is to identify when concentrations reach a threshold so actions can be taken to prevent concentrations reaching levels where impacts to aquatic life are likely. Currently applied dust management measures have been insufficient to prevent arsenic concentrations exceeding the SSWQO and concentrations are continuing to increase.

### ECCC Recommendation:

To ECCC's initial recommendation, we add that the mitigation measures and Moderate Action Level should be developed as soon as possible.

If you need more information, please contact Erik Allen at [Erik.Allen@ec.gc.ca](mailto:Erik.Allen@ec.gc.ca).

Sincerely,

Erik Allen  
Senior Environmental Assessment Officer

cc: Orlagh O'Sullivan, A/Head, Environmental Assessment North (NT and NU)