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ECCC File: 6100 000 012/012
NIRB File: 11MN034



June 1, 2026

via email at: info@nirb.ca

Brittany Hogaluk
Public Registry Coordinator
Nunavut Impact Review Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Brittany Hogaluk:

RE: 11MN034 – Agnico-Eagle Mines Ltd. – Meliadine Gold Mine – 2025 Annual Report

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) by Agnico-Eagle Mines Ltd. (“the Proponent”) regarding 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:



1. Incinerator stack testing results interpretation

References:

- 2025 Meliadine Gold Mine Annual Report (Agnico Eagle Mines Ltd; March 2026)
 - Section 5.2 Incinerator
 - Appendix 14 Stack Resting Report
 - Section 3.26 Discussion of Results
 - Appendix B, Sampling Results - Dioxins and Furans, AEM - Ketek Incinerator

Comment:

ECCC appreciates the Proponent's continued efforts related to stack testing of the incinerators. Section 5.2 of the Annual Report states that stack testing of the Ketek Incinerator shows concentrations slightly exceed on average the applicable standard for dioxins and furans. Within Appendix 14, Appendix B shows details of the three test results for the various parameters (PDF p. 51); however, only an average of the total toxic equivalency for the three tests is provided. The two largest contributors to the total toxic equivalency (2,3,4,7,8-Penta CDF and 2,3,4,6,7,8-Hexa CDF) have variations in concentrations among the three tests of 43.5 to 102 and 136 to 282 pg/m³ respectively. Given the differences in temperatures, oxygen levels, and draft values among the three tests, variations in total toxic equivalency for each test may offer important clues in diagnosing the causes for exceeding the applicable standard.

Recommendation:

ECCC recommends the Proponent provide total toxic equivalencies for dioxins and furans for each of the three tests, as well as any insights into the causes of the exceedances of the applicable standard.

2. Daily average weather data - possible errors in solar radiation values

Reference:

- 2025 Meliadine Gold Mine Annual Report (Agnico Eagle Mines Ltd; March 2026)
 - Appendix 24 2025 Air Quality Monitoring Report
 - Appendix A: Daily Average Weather Data

Comment:

Table 1 of Appendix A shows daily average temperature, average relative humidity, average wind speed, average wind direction, average solar radiation, and total precipitation as measured by the Meliadine onsite weather station. Starting on the second page of the table (PDF p. 54), the solar radiation values at the top row of each page are reported as 0.0 watts/m² (with one exception) while adjacent values are well above zero. This may be a tabulation error.

Recommendation:

ECCC recommends the Proponent review the solar radiation data in Table 1 of Appendix A to either rule out a tabulation error or enter corrected values for solar radiation in the top row of each page.

3. Ongoing work on predictions for ammonia and phosphorus**Reference:**

2025 Meliadine Gold Mine Annual Report (Agnico Eagle Mines Ltd; March 2026)
- Section 3.2.3: CP1 Water Quality

Comment:

As in previous years, the measured concentrations of ammonia and phosphorus in containment pond CP1 were below model predictions. Investigation into the discrepancy between modelled and measured concentrations of these nutrients was initiated in 2023. The assessment concluded that natural attenuation by algal growth played a role, but the mechanism was not fully understood. Further work is reported in the 2025 Annual Report: *“Work to implement a second prediction for ammonia and phosphorous within the WBWQM [Water Balance and Water Quality Model], which will include a limited calibration that will better reflect the natural attenuation process in CP1, is still ongoing.”*

The possible change in the trophic status of Meliadine Lake East Basin due to discharges from CP1 is the topic of much discussion and is continually being assessed. An understanding of the processes affecting ammonia and phosphorus concentrations in CP1 could contribute to a better understanding of the fate of these nutrients in the receiving environment.

Recommendation:

ECCC recommends the Proponent provide a timeline for the second prediction of CP1 ammonia and phosphorus concentrations in the WBWQM.

4. Graphs for concentration of dissolved organic carbon**References:**

Aquatic Effects Monitoring Program 2025 Annual Report, Meliadine Gold Mine (Azimuth Consulting Group Inc.; March 27, 2026)
- Section 2.3.2: Surface Water Quality at Regional Reference Lakes
- Table 2-5: Total phosphorus (TP) and dissolved organic carbon concentrations in Atulik Lake, Peter Lake, and Meliadine Lake reference areas since the late 1990s
- Table C1-12: Meliadine Lake Surface water chemistry results, 2025
- Table C1-13: Atulik Lake and Peter Lake Surface water chemistry results, 2025

Comment:

The Aquatic Effects Monitoring Program (AEMP) Report discusses changes in water quality in Meliadine Lake relative to changes in water quality in other lakes in the region (Peter and Atulik Lakes). The title of Table 2-5 suggests that information on dissolved organic carbon (DOC) concentrations will be included, but DOC data are not presented in the table, nor is there any discussion of DOC results. According to the data presented in Appendix C1, it appears that DOC concentrations were measured during the 2025 monitoring year.

DOC concentration in water is sensitive to permafrost degradation in the catchment basin. Analyzing DOC trends in the study lakes could contribute to a better understanding of regional changes in water quality.

Recommendation:

ECCC recommends the Proponent present a summary of DOC concentrations in Atulik Lake, Peter Lake, and Meliadine Lake reference areas since the late 1990s and discuss the results, or explain why it is not possible to provide the information.

5. Action level for phosphorus concentrations**References:**

Aquatic Effects Monitoring Program 2025 Annual Report, Meliadine Gold Mine (Azimuth Consulting Group Inc.; March 27, 2026)
- Section 3.3.3: Data Analysis

Phosphorus: Canadian Guidance Framework for the Management of Freshwater Systems (Canadian Council of Ministers of the Environment, 2004)

Comment:

An update to the AEMP Action Level for phosphorus is proposed, based on the Canadian Council of Ministers of the Environment (CCME) guidance framework. This approach is reasonable but further clarification is needed to ensure it is properly implemented.

Currently, *“The Normal Range is equal to the upper 90th percentile concentration measured in samples collected throughout Meliadine Lake during the open water period from 1995 to 2013 and samples collected from the reference areas to the end of 2020.”* The CCME framework identifies the trigger range as a 50% increase in baseline concentrations. The Normal Range for phosphorus (0.006 mg/L) is proposed as the baseline concentration, but the measurements or statistics that will be used to assess for change in phosphorus concentration relative to the Normal Range, in the context of the CCME framework, have not been specified. Currently, individual measurements are compared against the Normal Range, but it is unclear if sufficient samples are collected annually from each station to calculate an accurate 90th percentile for comparison to the baseline concentration.

In addition, it is unclear which trigger values will be applied, as the same term is used in different contexts in the AEMP and the CCME framework. Specifically, it is unclear whether the

CCME framework increase in baseline concentrations (50%) will be adopted as the AEMP benchmark and whether the AEMP Low Action Level, typically triggered at 75% of the AEMP benchmark, will include a 37.5% increase in phosphorus concentration.

Recommendation:

ECCC recommends the Proponent clarify how they propose to implement the CCME guidance framework for phosphorous in the AEMP, including what annual values or statistics they will compare with the Normal Range, and the proposed AEMP benchmark and Low Action Level.

6. Arsenic levels in Lake B7

References:

Aquatic Effects Monitoring Program 2025 Annual Report, Meliadine Gold Mine (Azimuth Consulting Group Inc.; March 27, 2026)

- Section 2.2: Key Findings – Source Characterization
- Section 4.4.3: Overview of Natural versus Mining-Related Changes to Water Quality in the Peninsula Lakes
- Figure 4-4: Temporal trends for arsenic ($\mu\text{g/L}$) and sulphate (mg/L) in the Peninsula Lakes since 2015.
- Section 4.5: Conclusions
- Section 6.2: Peninsula Lakes Water Quality Summary

2024 Annual Report Comments Tracking Table (Agnico Eagle Mines Limited-Meliadine Division; March 2026)

- ECCC-14

Water Management Plan, Meliadine Gold Mine V17 (Agnico Eagle; March 2026)

- Table 13: Planned Lakes and Ponds Dewatering Schedule Inventory

Comment:

Mine influence on water quality in the peninsula lakes B7 and A8 has been an ongoing concern, as raised in ECCC's comments on the 2024 Annual Report. The Proponent's response was to *"consider developing Low and Moderation [sic] Action Levels for the Peninsula Lakes and will provide an update in the 2025 AEMP [Aquatic Effects Monitoring Program] Report and next AEMP Design Plan."*

The result of the consideration to develop Low and Moderate Action Levels for the Peninsula Lakes seems to be as follows: *"monitoring will continue as planned, with additional seasonal sampling as needed to track trends and confirm observed changes."* This conclusion was reached because Lake A8 was drained in 2025, chronic toxicity testing results of Lake B7 water in 2025 showed *"overall risk to aquatic life remains low, despite minor reductions of approximately 20% in primary productivity"*, and dewatering Lake B7 is planned for 2027.

In 2025, arsenic concentrations in Lake B7 continued to increase and are now above the site-specific water quality objective in four of the five months sampled. The addition of fall sampling

in 2023 has allowed for a better understanding of the seasonality and annual increase in arsenic concentrations. The annual rate of increase has also increased: the average arsenic concentration increased 26% from 2023 to 2024, and 41% from 2024 to 2025. The AEMP Report concludes “*Year-over-year increases in arsenic suggest the TSF [tailings storage facility] as the primary source, although regional climate-driven processes are likely also a factor based on temporal trends observed at the regional reference lakes.*”

Although Lake B7 will eventually be dewatered, the pathway for migration of arsenic from the TSF will still exist and could impact the aquatic environment further downstream. Initially sediment was proposed as a source of arsenic; however, windblown dust that could settle as sediment seems to be better controlled in 2025: “*Efforts to mitigate off-site migration of dust resulted in a dramatic reduction in TSS in the snowpack south of Tiriganiaq Pit 1 in 2025.*” Mitigating the impacts of the TSF on arsenic levels in Lake B7 would help to ensure that migration mechanisms are understood; mitigation measures could also be continued at closure, if necessary, when lakes adjacent to the TSF will be refilled.

Recommendation:

ECCC recommends the Proponent discuss how the TSF is contributing to increasing concentrations of arsenic in Lake B7 and propose measures to mitigate the source of arsenic.

7. Changes to water management systems

References:

Water Management Plan, Meliadine Gold Mine V17 (Agnico Eagle; March 2026)
- Section 3.1: Water Management Systems

Water Management Plan, Meliadine Gold Mine V16 (Agnico Eagle; June 2025)
- Section 3.1: Water Management Systems

Comment:

The list of water management systems in version 17 of the Water Management Plan has been updated from the list in version 16. The text explains some of the changes, but details would be helpful for the following:

- Water retention dikes: D-B5North and D-B5South were removed from the list and D-DCP1 and D-DCP5 were added. It is unclear whether the names of the dikes have been changed or whether D-B5North and D-B5South are no longer needed.
- Dewatered waterbodies to be managed: B59 was removed from the list and B34 was added. It is unclear whether this change means that B59 will no longer need to be dewatered.

Recommendation:

ECCC recommends the Proponent clarify removal of dikes D-B5North and D-B5South and dewatered waterbody B59 from the list of water management systems.

8. Ammonia treatment at the saline effluent treatment plant

References:

Water Management Plan, Meliadine Gold Mine V17 (Agnico Eagle; March 2026)
- Section 3.10.4.2: Saline Effluent Treatment Plant (SETP)
- Table 12: Completed and Planned Key Water Management Activities

Water Management Plan, Meliadine Gold Mine V16 (Agnico Eagle; June 2025)
- Section 3.10.4.2: Saline Effluent Treatment Plant (SETP)

Comment:

The saline effluent treatment plant (SETP) is scheduled to be commissioned in 2026. Version 16 of the Water Management Plan included the statement “*Agnico Eagle is currently designing a treatment system for ammonia nitrogen to meet the MDMER*”, which is no longer in version 17 of the document.

Recommendation:

ECCC recommends the Proponent provide an update on the methods chosen to treat ammonia at the saline effluent treatment plan.

9. Compliance Monitoring

Reference:

Aquatic Effects Monitoring Program 2025 Annual Report, Meliadine Gold Mine (Azimuth Consulting Group Inc.; March 27, 2026)

Comment:

Applicable Legislation

The Meliadine Project is subject to the following federal legislation:

- a. Fisheries Act (FA):
 - Pollution Prevention Provisions (e.g., subsection 36(3))
 - *Metal and Diamond Mining Effluent Regulations* (MDMER)
- b. Canadian Environmental Protection Act (CEPA):
 - Environmental Emergency Regulations
 - Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations
 - Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
 - National Pollutant Release Inventory (NPRI)
- c. Greenhouse Gas Pollution Pricing Act (GGPPA):

- Output-Based Pricing System Regulations

Planned Compliance Inspection

A multi-regulation inspection was conducted from July 28 to 29, 2025, to verify compliance under the *FA*, *CEPA*, and *GGPPA*. At the time of the inspection, Final Discharge Point MEL-14 was discharging. The following samples were collected:

- Multi-concentration *Daphnia magna* bioassay (LC50)
- Multi-concentration rainbow trout bioassay (LC50)
- Suspended solids and pH
- Total metals, hardness, and major ions
- Radium-226
- Cyanide

Laboratory analysis confirmed that effluent discharged at MEL-14 met the applicable criteria under the MDMER. No other instances of non-compliance were identified under the *FA* or *CEPA* during the inspection.

MDMER Overview

The Project is regulated under the MDMER. These regulations authorize the deposit of certain deleterious substances into water frequented by fish, provided that effluent quality criteria and monitoring requirements are met. To maintain compliance, effluent sampling must be conducted at designated Final Discharge Points and reported in accordance with regulatory requirements. The current FDPs are as follows:

1. FDP MEL-14 – Containment Pond 1 (CP-1), discharging into Meliadine Lake
2. FDP MEL-26 – Saline Pond, discharging into Melvin Bay (Arctic Ocean)

Reporting Requirements

MDMER reports are submitted through ECCC's Mine Effluent Reporting System (MERS) and reviewed quarterly by an Enforcement Officer.

Administrative verification ensures that:

- Sampling is conducted in accordance with the MDMER; and
- Reports are submitted within 45 days following the end of each quarter:
 - Q1 – Due May 15
 - Q2 – Due August 14
 - Q3 – Due November 14
 - Q4 – Due February 14

Additional reporting requirements include:

- Annual Effluent Monitoring Summary Report (due March 31)
- Environmental Effects Monitoring Report (due March 31)

2025 MDMER Reporting Summary

Agnico Eagle Mines Ltd. (AEM) submitted all required MDMER reports for 2025. A summary of compliance is provided below:

Q1 (2025):

- Report submitted on time
- No effluent discharge at MEL-14 or MEL-26
- No non-compliance identified

Q2 (2025):

- Report submitted late
- Effluent discharged at MEL-14; no non-compliance identified
- No effluent discharge at MEL-26

Q3 (2025):

- Report submitted late
- Effluent discharged at MEL-14; no non-compliance identified
- No effluent discharge at MEL-26

Q4 (2025):

- Report submitted on time
- Effluent discharged at MEL-14; no non-compliance identified
- No effluent discharge at MEL-26

Annual Effluent Monitoring Report:

- Submitted on time

Environmental Effects Monitoring (EEM) Report:

- Submitted on time

Conclusion

- Effluent quality at MEL-14 met MDMER requirements during all discharge periods in 2025.
- No instances of non-compliance were identified under the *Fisheries Act* or *CEPA*.
- Administrative non-compliance was identified for incomplete submission of Q2 and Q3 MDMER reports, but no enforcement action was necessary as the non-compliance was corrected immediately.

Recommendation:

n/a

If you need more information, please contact Erik Allen at Erik.Allen@ec.gc.ca.

Sincerely,

Erik Allen
Senior Environmental Assessment Officer

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)