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

May 18, 2018

Via email at: info@nirb.ca

Shanley Thompson  
Technical Advisor II  
Nunavut Impact Review Board  
P.O. Box 1360  
Cambridge Bay, NU X0B 0C0

Dear Ms. Thompson:

**RE: 11MN034 – Agnico Eagle Mines Ltd. – Meliadine Gold Mine – 2017 Annual Monitoring Report**

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) regarding the above-mentioned annual report and is submitting comments via email as requested by NIRB. ECCC's specialist advice is provided based on our mandate, in the context of the *Canadian Environmental Protection Act*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

The following comments are provided:

**Effects Monitoring**

Appendix E: Tabular Summary of Water Quality Data

1. Tables (STP-FINAL [MEL-7]) on pdf page 4&5 are missing units. ECCC recommends that Agnico Eagle Mines Ltd. (the Proponent) include the units for all parameters.

Appendix F: Aquatic Effects Monitoring Report

2. ECCC has reviewed the Aquatic Effects Monitoring Report submitted as Appendix F of the Annual Report and will be providing detailed technical review comments in our subsequent review of the 2017 annual report to the Nunavut Water Board. For

the purposes of the NIRB review, the conclusions reached by the Proponent appear to be valid and there are no areas requiring further information.

#### Appendix L: Updated Management Plans

##### Groundwater Management Plan

3. With respect to groundwater and sump contents, the report states that “Water quality results are compared to MMER and SSWQO guidelines and will be compliant prior to discharging to Meliadine Lake.” ECCC recommends that for clarity, the Proponent should note that the water licence limits would be included as criteria that must be met prior to discharge (as well as MMER discharge limits) and that the SSWQO and/or guidelines are to be met at the edge of a mixing zone in Meliadine Lake.

##### Landfarm Management Plan

4. Landfarms are subject to ponding water at the downslope end which typically contains hydrocarbons and other contaminants. Waterbirds may land in this ponded water, especially in spring when open water is limited on the landscape. The Landfarm Management Plan does not include provisions for deterring birds from landing in the landfarm bermed area, as is the common practice in northern mines.

ECCC recommends that the Proponent identify mitigation measures that will be used to deter birds from the landfarm.

##### Water Management Plan, including the Freshet Action Plan

5. The list of figures is provided on page 49, but the actual figures have not been included. ECCC requests that the proponent provide the figures or include a link if they are located in another document on the registry.

#### Appendix M: Compliance Update with Terms and Conditions of Project Certificate

6. Term and Condition #28 states that “The Proponent shall develop and implement a sediment and erosion management plan to prevent or minimize the effects of destabilization and erosion that may occur due to Project activities. The plan should also detail sediment control plans to prevent and/or mitigate sediment loading into surface water within the Project area.”

Term and condition #32 states that “Prior to the commencement of construction, the Proponent shall submit to the NIRB, a Site Drainage and Silt Control Plan.”

In the concordance table, the Proponent refers to the Freshet Action Plan as fulfilling the requirements of both of the required plans. However, there are very

limited direct references to erosion control, such as that in Section 3.5: “If soil erosion or ground surface scouring are observed, the E&I Department will be notified for repairs. Turbidity barriers, silt fences, straw logs or other sediment control methods will be implemented as required.” And similarly in Section 3.7 Itivia and in Appendix A: Freshet Management Procedure.

The Freshet Action Plan includes watching for erosion and limited references to actions to be taken during freshet or heavy rainfall events, but does not cover management of erosion during site construction or activities involving surface disturbances.

ECCC recommends that these gaps be addressed more explicitly in appropriate plans which align with the Project Certificate Term and Conditions 28 and 32.

#### Shipping Management Plan

7. The Marine Mammal and Seabird Observer (MMSO) program is implemented during all routine shipping activities in the Regional Study Area (RSA) and protocols for the MMSO program are described in the Marine Environmental Management Plan (MEMP) following Eastern Canada Seabirds at Sea (ECSAS) standardized protocol for pelagic seabird surveys from moving and stationary platforms. MMSO datasheets are provided in Appendix I.

ECCC notes that datasheets in Appendix I: Marine Mammal and Seabird Observer Logs include instructions to “fill out one sheet per 30 min observation period”. These instructions are inconsistent with standardized protocols in the MEMP and ECSAS (i.e. 5 min observation periods). A 30 min observation period does provide sufficient spatial resolution to the data. If necessary to maintain the MMSO daily schedule of surveys, ECCC recommends that the observer note GPS coordinates every 5 minutes within the 30 min period and indicate in which 5 min period birds are sighted.

It is also unclear if the stationary surveys conducted in 2017 followed standardized protocols. The stationary surveys should usually only last a few seconds (i.e. using instantaneous counts or snapshots of birds within the area) or else abundance estimates cannot be obtained. Standardized protocols also call for these stationary surveys to be repeated several times over the course of a day.

Both the Shipping Management Plan and the Marine Environmental Management Plan state that the Marine Mammal and Seabird Observer data will be shared with interested parties.

ECCC requests that the Proponent provide a copy of the seabird data recorded during the MMSO surveys conducted in 2017 (Appendix I). If the seabird data has not been entered into a database already, an existing ECCC seabird database is available to assist the Proponent with data entry and facilitate data sharing. The Proponent should contact ECCC at [ec.eenordprnu-eanorthprnu.ec@canada.ca](mailto:ec.eenordprnu-eanorthprnu.ec@canada.ca)

to request a copy of the database and share the seabird data from the MMSO surveys.

8. The Harlequin Duck (Eastern population) is listed as Special Concern under Schedule 1 of the *Species at Risk Act*. The breeding range of this species includes both coasts along Hudson Strait (i.e. southern Baffin Island and northern Quebec/Labrador). During fall migration, it may be encountered during shipping within the marine RSA, but was not listed in Tables B-2 (p.23-28) and B-5 (p.69) or mentioned in Section 1.3.2.2 in relation to species at risk.

ECCC recommends that the Proponent add Harlequin Duck (Eastern population) to species potentially interacting with shipping activities in the marine RSA.

#### Terrestrial Effects Annual Report

9. ECCC should be included in the list of authorities to report incidents and mortalities (Section 3.1) when migratory birds protected under the *Migratory Bird Convention Act* are involved. ECCC recommends that the Proponent send notifications to ECCC at [ec.dalfnord-wednorth.ec@canada.ca](mailto:ec.dalfnord-wednorth.ec@canada.ca) and [ec.eenordrpnnu-eanorthpnrnu.ec@canada.ca](mailto:ec.eenordrpnnu-eanorthpnrnu.ec@canada.ca).
10. ECCC appreciates the Proponent's contribution and further commitment to contributing to the Arctic Program for Regional and International Shorebird Monitoring (PRISM) at per Section 5.3. However, ECCC is concerned with the late timing of surveys for birds conducted on site for both point counts and PRISM in 2017. The Proponent also recently provided ECCC with PRISM data collected for the Project (2008-12). ECCC determined that the 2011 and 2012 data cannot be used for regional monitoring purposes due to the late timing of surveys. Timing of surveys is critical for an accurate characterization of the bird community. The results of late bird surveys are limited to only confirming presence of species. Absence of species, abundance and density cannot be determined from these surveys as changes in bird behavior during the late nesting period creates detection biases.

Spring phenology influences the annual timing of nest initiation in birds. Arctic breeding shorebirds can initiate nesting when local snow cover is at approximately 50%. During an average spring, mid to late June is a more appropriate survey period.

As Section 5.5 of the Terrestrial Effects Annual Report states that "the timing of the field programs should occur earlier in the summer to capture breeding activity", ECCC notes that the Proponent is aware of the late timing of these surveys. ECCC recommends that the Proponent plan future surveys appropriately, as indicated above.

## Compliance Monitoring

No authorizations from ECCC have been issued. An onsite inspection of the Meliadine Project was completed by ECCC Environmental Enforcement on August 2, 2017 to verify compliance under:

- the *Canadian Environmental Protection Act (Interprovincial Movement of Hazardous Waste Regulations, Environmental Emergency Regulations, and National Pollutant Release Inventory)*, and
- the *Fisheries Act (Metal Mining Effluent Regulations and the general prohibitions)*.

There were no samples taken during the inspection as there was no ongoing discharge at the time of inspection. No compliance issues were identified. ECCC also conducted five (5) off-site inspections and reviewed the 2017 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> quarterly reports and the annual report for final discharge. No compliance issues were identified.

Should you require further information, please do not hesitate to contact me at (867) 669-4733 or [Melissa.Pinto@canada.ca](mailto:Melissa.Pinto@canada.ca).

Sincerely,

*[original signed by]*

Melissa Pinto  
Senior Environmental Assessment Coordinator

cc: Georgina Williston, Head, Environmental Assessment North (NT and NU)  
ECCC Review Team  
Richard Dwyer, Licencing Manager, Nunavut Water Board  
Alex Chernoloz, Environmental Compliance Counselor, Agnico Eagle Mines Ltd.