

Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

ECCC File: 6100 000 011/010
NIRB File: 2AM-MRY2540



March 17, 2026

via email at: licensing@nwb-oen.ca

Robert Hunter
Nunavut Water Board
29 Mitik Street
P.O. Box 1360
Cambridge Bay, NU X0B 0C0

Dear Robert Hunter:

RE: 2AM-MRY2540 – Baffinland – Mary River – Follow-up on responses to Aquatic Effects Monitoring Program (AEMP)

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above mentioned AEMP.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate and within federal jurisdiction, including greenhouse gas emissions and climate change, air quality, water quality and quantity, migratory birds, species at risk, environmental emergencies preparedness and response, and climate and meteorology. This work includes reviewing proponent's characterization of environmental effects and proposed mitigation measures, and providing information and knowledge to decision-makers on activities needed to mitigate these environmental effects within federal jurisdiction. 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. Threshold for mercury in fish

Reference(s)

1. Re: 2AM-MRY2540 – Baffinland Iron Mines – Mary River Project – Responses to Comments on Baffinland's Aquatic Effects Monitoring Plan, Revision 3 (Baffinland; March 3, 2026)
 - a. Response to comment ECCC-3 (a): Thresholds for Mercury



2. Metal Mining Technical Guidance for Environmental Effects Monitoring (Environment Canada; 2012)
 - a. Section 1.3.2: Biological Monitoring Studies
 - b. Section 8.4.1: Mercury in Fish Tissue
3. Approaches for linking whole-body fish tissue residues of mercury or DDT to biological effects thresholds, in *Environmental Toxicology and Chemistry*, 24(8) 2094-2105 (Beckvar, Dillon and Read; 2005)

Comment

The Trigger, Action and Response Plan medium risk threshold for Metal and Diamond Mining Effluent Regulations (MDMER) fish muscle tissue mean mercury (Hg) concentration was modified to include conditions relating to confirmed effects on fish health and benthic invertebrate community endpoints. The Proponent provided rationale for the additional conditions, stating, "The combined interpretation of BIC [benthic invertebrate community] and fish tissue Hg concentrations strengthens the weight-of-evidence approach and increases the potential for early detection of Hg-related effects to fish (i.e., potentially before effects to fish health endpoints occur)."

As outlined in the Guidance for Environmental Effects Monitoring, biological monitoring studies include "mercury concentration in fish tissue to assess the human usability of the fisheries resources, in terms of fish consumption." The Health Canada tissue mercury concentration for human consumption guideline is 0.5 µg/g (wet weight), which is lower than concentrations protective of fish health (200 µg/g whole body–wet weight; Beckvar et al., 2005). Waiting for Hg-related effects in the benthic invertebrate community or fish health before initiating a response could result in unwanted effects on the human usability of fisheries resources.

ECCC Recommendation(s)

ECCC's recommends that the medium risk threshold for fish muscle tissue mercury concentrations remains unchanged and should not include conditions relating to fish health or benthic community endpoints.

If you need more information, please contact Kelvin Mok at 647-951-8836 or Kelvin.Mok@ec.gc.ca

Sincerely,

Kelvin Mok
Environmental Assessment Officer

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