

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6200 000 017/004
NIRB File: 3BM-GRI2025



January 13, 2026

via email at: info@nirb.ca

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

Dear Robert Hunter:

RE: 3BM-GRI2025 – Nunavut Planning Commission (NPC) – Amendment to Municipality of Grise Fiord Water Licence – Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) regarding the above mentioned Application.

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. GRI-4 Effluent Quality

Reference(s)

- 2024 Grise Fiord Annual Report
- Operation & Maintenance Plan for Municipal Water Licence: Sewage Disposal Facilities (December 2025)



Comment

Historical annual reports from 2020 to 2024 have been included as part of the renewal submission and include information on effluent quality for 2021 and 2024 (in other years, samples were not collected or data were not submitted). The most recently available effluent quality data provided for the 2024 season indicate that ammonia concentrations increased through the open-water period, from 38.3 mg/L in July to 69.2 mg/L in October. Based on the pH data provided with the laboratory sheets, these concentrations are elevated to levels with the potential to cause toxicity to aquatic life. During the open-water season, it would be expected that ammonia concentrations would decrease due to increased biological activity during this period. The absence of this trend could indicate insufficient treatment capacity in the lagoon, or that accumulated sewage sludge may be contributing to the release of ammonia. Although the water licence does not prescribe effluent quality limits for these parameters, discharges must comply with Section 36(3) of the *Fisheries Act*.

The Operation and Maintenance Plan describes procedures for sludge management, including monitoring of the sludge blanket as part of the annual discharge procedure, and notes that a study may be undertaken to determine the need and frequency for sludge removal and disposal over the lifetime of the lagoon. ECCC notes that none of the annual reports (2020–2024) provided with the renewal application describe sludge monitoring, and it is therefore unclear how sludge accumulation may be contributing to overall treatment efficacy. Large sludge accumulations will reduce the lagoon's capacity, increasing the likelihood of insufficient treatment, and may result in the need for an emergency decant.

ECCC Recommendation(s)

ECCC recommends the Proponent:

1. Discuss whether sludge monitoring has occurred recently, whether de-sludging of the lagoon has previously been completed, and whether sludge accumulation may be impacting overall treatment efficacy.
2. Identify options to optimize the effluent treatment process to reduce ammonia concentrations in sewage effluent.

2. Water Quality Guidelines

Reference(s)

- Operation & Maintenance Plan for Municipal Water Licence: Sewage Disposal Facilities (December 2025)
- Operation & Maintenance Plan for Municipal Water Licence: Solid Waste Disposal Facilities (December 2025)

Comment

In discussing water quality monitoring, the Operation and Maintenance Plan for both the sewage disposal facility and the solid waste facility states that they will “analyze samples for

parameters of concern and compare the results to the relevant Canadian Water Quality Guidelines.” The specific guidelines that will be used for comparison are not listed. ECCC notes that, in addition to the widely known Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Aquatic Life, the Federal Environmental Quality Guidelines (FEQGs) are another resource for water quality guidelines. FEQGs are developed where there is a federal need for a guideline, but where CCME guidelines for the substances have not yet been developed or are not reasonably expected to be updated in the near future. For parameters where both CCME guidelines and FEQGs exist, the FEQGs should be preferentially used, as they are more recently developed and incorporate the current state of the science.

ECCC Recommendation(s)

ECCC recommends that the Proponent also consider the FEQG for comparison when assessing water quality samples from the solid waste facility and sewage facility.

3. Solid Waste Facility

Reference(s)

- Executive Summary
- Water Licence 3BM-GRI2025 Renewal and Amendment Application: Amendment Justification Summary
- Operation & Maintenance Plan for Municipal Water Licence: Solid Waste Disposal Facilities (December 2025)

Comment

The executive summary for the renewal application states that the municipality intends to perform upgrades to the existing solid waste facility, but that this is not part of the renewal application. The amendment justification summary goes on to state that modifications and upgrades will take place over the next two years. ECCC is supportive of efforts to upgrade the solid waste facility; however, water management remains an ongoing concern, as it is noted that any water accumulated in the solid waste facility flows toward the sewage lagoon, potentially contributing additional contaminants to the lagoon. Efforts should be taken to divert surface water runoff from the solid waste facility so that contaminants do not migrate off-site.

ECCC Recommendation(s)

ECCC recommends that the Proponent implement any interim measures to prevent contact between surface water runoff and the solid waste facility, and prioritize long-term solutions to prevent off-site contaminant migration.

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)