



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
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Your file - Votre référence  
(3BM-GRI2025)  
Our file - Notre référence  
GCDocs#143765570

February 24, 2026

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**Re: Crown-Indigenous Relations and Northern Affairs Canada's Response to Reply on the Comments and Recommendations on the Licence Renewal/Amendment Application for the Hamlet of Grise Fiord Project #3BM-GRI2025, Type B Water Licence**

Dear Robert,

Thank you for the February 17, 2026 invitation to review the reply to the referenced application, submitted by the Government of Nunavut Community of Government Services (GN-CGS) on behalf of the hamlet of Grise Fiord, for Type B Water Licence #3BM-GRI2025.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC's comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at 873-452-2525 or [jordan.beer@rcaanc-cirnac.gc.ca](mailto:jordan.beer@rcaanc-cirnac.gc.ca) or Joyce Demers at [joyce.demers@rcaanc-cirnac.gc.ca](mailto:joyce.demers@rcaanc-cirnac.gc.ca).

Sincerely,

Jordan Beer, M.Sc.,  
Water Management Coordinator



## Technical Review Memorandum

**Date:** February 24, 2026

**To:** Robert Hunter - Licensing Administrator, Nunavut Water Board

**From:** Jordan Beer – Water Management Coordinator, CIRNAC

**Subject:** Crown-Indigenous Relations and Northern Affairs Canada’s Response to Reply on the Comments and Recommendations on the Licence Renewal/Amendment Application for the Hamlet of Grise Fiord Project #3BM-GRI2025, Type B Water Licence

**Region:**     Kitikmeot     Kivalliq     Qikiqtani

### A. SUMMARY OF RECOMMENDATION STATUS

**Table 1: Summary of Recommendations**

Recommendation Number	Subject	Status
R-01	Improved Annual Reporting	Not Resolved
R-02	Lagoon Sample Exceedances	Not Resolved
R-03	Spill Contingency and Fuel Storage	Resolved
R-04	Wetland Treatment Area	Resolved with Comment
R-05	Lagoon Runoff	Resolved
R-06	Lagoon Emergency Discharge	Resolved
R-07	Lagoon Seepage	Resolved with Comment (see previous response)
R-08	Landfill Surface Water Management	Resolved
R-09	Hazardous Waste Storage Berm/Liner Timeline	Resolved with Comment (see previous response)
R-10	Landfill Capacity	Resolved
R-11	Solid Waste Separation	Resolved
R-12	Open Burning Ash Monitoring	Resolved
R-13	Landfill Wind Management	Resolved
R-14	Airport River Flow Rate	Resolved
R-15	Aggregate Quality	Resolved

### B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.



**Table 2: Documents Reviewed and Referenced**

Document Title	Author, File No., Rev., Date
260213 3BM-GRI2025 - Response to Comments and Recommendations 2 - February 2026-ILAE	Applicant (Hamlet of Grise Fiord), February 2026
260213 3BM-GRI2025 2025 Plan for Compliance 3BM-GRI2025 - February 2026-ILAE	Applicant (Hamlet of Grise Fiord), February 2026
260213 3BM-GRI2025 Grise Fiord Environmental Emergency Contingency Plan February 2026 with Appendices-ILAE	Applicant (Hamlet of Grise Fiord), February 2026
260213 3BM-GRI2025 Grise Fiord OM Plan Sewage Disposal Facility February 2026 with Appendices-ILAE	Applicant (Hamlet of Grise Fiord), February 2026
260213 3BM-GRI2025 Grise Fiord OM Plan Solid Waste Disposal Facilities February 2026 with Appendices-ILAE	Applicant (Hamlet of Grise Fiord), February 2026



## C. RESULTS OF REVIEW

### 1. Improved Annual Reporting

#### **Comment:**

The annual reports provided by the hamlet of Grise Fiord between 2021 and 2025 did not meet the requirements listed within water license GRI-2025 (henceforth referred to as “the License”). The document “251216 3BM-GRI2025 2025 Plan for Compliance-ILAE” provides a plan to improve reporting compliance, but does not address all issues from previous years. This is a concern because the Nunavut Water Board cannot adequately evaluate compliance with water usage, waste discharge and other license conditions without accurate reporting. In particular:

- b. The daily quantities in cubic metres of sewage Waste discharged were not reported, as required by Part B-1c and B-2 of the License.
- d. The monthly and yearly effluent discharge quantities were reported as required under Part B-1c and B-2 of the License, but the values were inaccurate. Reports assume total sewage discharge is equal to the total water added to the water reservoir each year, but the inspection reports from 2022 and 2023 note that this does not account for water used for dust suppression and other purposes.

#### **Recommendation:**

(R-01) CIRNAC recommends that the applicant provide an updated plan for compliance that addresses how they will:

- (R-01b) report the daily quantity of sewage Waste discharged.
- (R-01d) improve the accuracy of their sewage discharge reporting to account for water used for dust suppression and other purposes.

#### **Reply from the Hamlet of Grise Fiord:**

R-01): See updated Plan for Compliance. As response to R-01d, please reference the supporting document Solid Waste Generation Estimates for Municipal Water Licences. The provided volumes are the best that can be done to satisfy the water licence requirement until significant changes to the solid waste infrastructure and operations funding are in place.

R-01b) The sewage trucks (gravity flow discharged) and sewage lagoon (outdoor exposed environment) do not have a flowmeter as they would be could not be feasibly maintained. The Board has accepted in the past that sewage disposal volumes be assumed as equal to delivered water volumes, which are available as monthly and yearly volumes.



R-01d) At this time, there are no technologies / methods that can be feasibly implemented to obtain a more accurate estimate of the effluent discharged volumes.

**Response to Reply:**

R-01 – Unresolved. CIRNAC did not find an updated Plan for Compliance attached with submission. CIRNAC recommends that this plan, along with all other updated documents provided in this submission, be submitted to the NWB and posted on the public registry. The following information must still be provided in an updated Plan for Compliance:

R-01b) Unresolved. If the municipality maintains that flowmeters cannot be feasibly maintained, CIRNAC recommends the municipality estimate the volume of daily sewage discharged using operational logs (e.g. “Daily volume = Volume of Truck Tank x Number of Daily Truck Offloads”).

R-01d) Unresolved. If the municipality maintains that flowmeters cannot be feasibly maintained, CIRNAC recommends that the municipality estimate the volume of water used for dust suppression using operational logs (e.g. “Volume of Water Used for Dust Suppression = Truck Tank Volume x Number of Water Tanker Refills x Number of Days”).

**Reply from the hamlet of Grise Fiord:**

R-01 – The updated plan for compliance has been uploaded.

R-01b) The proposed method of using the sewage tank volume multiplied by discharge events would not accurately estimate the total volume of sewage discharge to the sewage lagoon because the sewage truck operators do not wait until the tank is full to discharge sewage depending on their schedule for efficiency and generally discharge their tank at the end of the working day to avoid holding sewage in the tank overnight for risk mitigation – freezing, breakdowns, sludge accumulation, etc.

R-01d) The amount of water used for dust suppression is insignificant compared to the total volume of water that is consumed and which ultimately ends up in the sewage lagoon as wastewater. Using water for dust suppression is an irregular practice by the municipality as the water could freeze leading to dangerous road conditions.

**Response to Reply:**

R-01) Unresolved. CIRNAC’s original comment detailed how many of the license requirements (i.e. B-1a, B-1b, B-1d, B-1e, B-1i, D-2, F-6, F-6b, F-6c, H-1, H-2, and H-8) were not met over the period of 2020-2025, however the updated plan for compliance still lists them as ‘in compliance’. Additionally, the updated plan does not include the short term and long term plans for compliance discussed in these responses. The concern is that this plan will be referenced by the municipality to guide its actions moving forward, and it will not



accurately portray all changes that need to be addressed. CIRNAC recommends that the applicant update the plan for compliance to reflect non-compliances and plans for achieving compliance.

R-01b) Unresolved. CIRNAC understand that flowmeters would not be feasibly maintained and that the Nunavut Water Board has allowed for sewage disposal volumes to be assumed as equal to delivered water volumes. There values are in monthly and yearly volumes. CIRNAC notes that maintaining accurate and detailed books and records of the quantity of waste, in cubic meters, deposited each day is a legal requirement for water licenses under the Nunavut Water Regulations section 13(a)(ii). This information is also legally required to be submitted within the licensee's annual report, as per the Nunavut Water Regulations section 14(1)(c). CIRNAC recommends that the applicant propose a method for measuring or estimating the daily quantities of sewage deposited, and commit to reporting these values within its annual reports.

R-01d) Resolved. The municipality has sufficiently justified why it is not currently feasible to improve the accuracy of sewage discharge reporting to account for dust suppression activities in Grise Fiord. CIRNAC recommends that the municipality commit to submitting implementation plans that address inspection recommendations, as required by section F-5 of the License, to help prevent similar issues in the future. CIRNAC also recommends that the municipality continue to look into options to improve water quantity reporting as technology advances and funds become available.

## 2. Lagoon Sample Exceedances

### **Comment:**

Water quality results indicate that lagoon water exceeded Canadian Council of Ministers of the Environment (CCME)'s Water Quality Guidelines for the Long Term Protection of Aquatic life for copper, iron, and mercury in 2021 and 2024. This is a concern because the lagoon effluent is decanted directly into a wetland.

### **Recommendation:**

(R-02a) CIRNAC recommends that the applicant provide a plan for how they will bring the lagoon water effluent in compliance with the CCME Water Quality Guidelines before decanting into the wetland.

(R-02b): CIRNAC recommends adding the following maximum thresholds to Part D-3 of the renewed license, regulating discharge water quality at GRI-4:



Parameter:	Maximum Concentration of Any Grab Sample:
Copper	$0.2 * e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$
Iron	300 µg/L
Mercury	0.026 µg/L

(R-02c): CIRNAC recommends adding Dissolved Organic Carbon (DOC) to the sample analysis requirements listed in part H-5 of the License. This will allow regulators to assess whether Zinc concentrations exceed CCME guidelines.

**Reply from the Hamlet of Grise Fiord:**

The wetland is a vegetated filter strip that does not support aquatic life.

**Response to Reply:**

Lagoon effluent discharged into a freshwater body or wetland must be monitored for potential contaminants, since an influx of contaminants can negatively impact water quality downstream. The CCME guidelines are widely accepted as the standard for assessing freshwater contamination. CIRNAC maintains its previous recommendations.

- R-02a) Unresolved. CIRNAC maintains its previous recommendation.
- R-02b) Unresolved. CIRNAC maintains its previous recommendation.
- R-02c) Unresolved. CIRNAC maintains its previous recommendation.

**Reply from the Hamlet of Grise Fiord:**

R-02(a-c) The Licensee maintains the position that the CCME Water Quality Guidelines for the Long-Term Protection of Aquatic Life are not applicable to the vegetated wetland filter strip. It is not a freshwater habitat.

**Response to Reply:**

The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* defines waters as “inland waters, whether in a liquid or solid state, on or below the surface of land”. Water contained within an inland wetland therefore meets this definition.

The *Nunavut Waters and Nunavut Surface Rights Tribunal Act* defines waste as “any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it”.



By this definition, metal concentrations found to be in excess of water quality guidelines are considered waste.

As per the *Nunavut Water and Nunavut Surface Rights Tribunal Act* s.57(a): “The Board may not issue a license unless the applicant satisfies the Board that any waste produced by the appurtenant undertaking will be treated and disposed of in a manner that is appropriate for the maintenance of the water quality standards and effluent standards that are prescribed by the regulations or, in the absence of such regulations, that the Board considers acceptable”. In the absence of prescribed standards within the regulations, the CCME Water Quality Guidelines provide a scientifically defensible threshold for contaminants within freshwater. These CCME guidelines were created to ensure the protection of the environment so that future and present peoples can use the water and land.

The water quality test results from the Grise Fiord sewage lagoon have shown levels of copper, iron and mercury in exceedance of the CCME Water Quality Guidelines for the Long Term Protection of Aquatic Life in Freshwater. The municipality has not provided any plan for how it will treat the contaminants within the lagoon effluent to ensure it maintains water quality standards.

R-02a) Unresolved. CIRNAC continues to recommend that the applicant provide a plan for how they will bring the lagoon water effluent in compliance with the CCME Water Quality Guidelines for the Long Term Protection of Aquatic Life in Freshwater before decanting into the wetland. If the municipality maintains its opposition to the CCME values, then CIRNAC recommends that the municipality undertake site-specific water quality studies using accepted methodology to define acceptable licensing thresholds for copper, iron and mercury prior to issuing a license renewal.

R-02b) Unresolved. CIRNAC continues to recommend adding the following maximum thresholds to Part D-3 of the renewed license, regulating discharge water quality at GRI-4:

Parameter:	Maximum Concentration of Any Grab Sample:
Copper	$0.2 * e^{(0.8545[\ln(\text{hardness})]-1.465)}$
Iron	300 µg/L
Mercury	0.026 µg/L

Alternatively, CIRNAC recommends that the municipality undertake site-specific water quality studies using accepted methodology to define acceptable licensing thresholds for copper, iron and mercury prior to issuing a license renewal.



R-02c) Unresolved. CIRNAC continues to recommend adding Dissolved Organic Carbon (DOC) to the sample analysis requirements listed in part H-5 of the License. This will allow regulators to assess whether Zinc concentrations exceed CCME guidelines. Alternatively, CIRNAC recommends that the municipality undertake site-specific water quality studies using accepted methodology to define acceptable licensing thresholds for Zinc prior to issuing a license renewal.

### **3. Wetland Treatment Area**

#### **Comment:**

The Operation and Maintenance Plan for Sewage Disposal Facilities lacks important information related to the operation, maintenance, and function of the Wetland Treatment Area. Of particular concern:

- b) The retention time of the Wetland Treatment Area is not specified. The concern is that the applicant cannot currently assess whether the retention time is sufficient to treat desired contaminants.

#### **Recommendation:**

(R-04b): CIRNAC recommends that the applicant undertake studies to determine the retention time of the Wetland Treatment Area.

#### **Reply from the Hamlet of Grise Fiord:**

R-04b) The retention time of the wetland treatment area has not been established as the sewage lagoon was designed in the early 1990s and commissioned in 1996 at which that time studies on the hydraulic retention time were not requested.

#### **Response to Reply:**

R-04b) Unresolved. CIRNAC recommends that the applicant commit to undertaking studies to determine the retention time of the Wetland Treatment Area.

#### **Reply from the Hamlet of Grise Fiord:**

R-04b) A study on the wetland treatment area for retention time has not been a regulatory requirement in the procedural history for the wastewater treatment facility, which was commissioned in 1996. The Licensee is committed to achieving the effluent quality limits as per the water licence to minimize environmental impact.

#### **Response to Reply:**

R-04b) Resolved. CIRNAC notes that without information on hydraulic retention time, the efficiency, performance and design of the wetland treatment area cannot be adequately evaluated (Canadian Standards Association, 2019). Until more information is available, CIRNAC recommends treating the wetland treatment area as an environmental conveyance channel rather than a treatment area.



## REFERENCES

- 1) Canadian Standards Association. (2019). Planning, design, operation, and maintenance of wastewater treatment in northern communities using lagoon and wetland systems (CSA W203:19). CSA Group.
- 2) *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, S.C. 2002, c. 10.
- 3) *Nunavut Waters Regulations*, SOR/2013-69