



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
918 Nunavut Drive  
Iqaluit, NU, X0A 3H0

Your file - Votre référence  
3BM-YRB2126  
Our file - Notre référence  
144132655

March 06, 2026

Robert Hunter  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU, X0B 1J0  
E-mail: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown Indigenous Relations and Northern Affairs Canada's Review of the Licence Renewal Application for the Resolute Bay Airport Sewage Lagoon, Type B Water Licence No. 3BM YRB2126**

Dear Robert,

Thank you for the January 23, 2026 invitation to review the referenced licence renewal application, submitted by the Nunavut Airports Division (Government of Nunavut) for Type B Water Licence No. 3BM YRB2126.

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 technical comments in the attached Technical Review Memorandum.

The applicant shall provide confirmation from the Nunavut Water Board that all outstanding water license fees have been paid in full prior to approval of this application.

If there are any questions or concerns, please contact me at (873) 800-5240 or [Pauline.Firmin@rcaanc-cirnac.gc.ca](mailto:Pauline.Firmin@rcaanc-cirnac.gc.ca) or Andrew Keim at (867) 975-4550 or [Andrew.Keim@rcaanc-cirnac.gc.ca](mailto:Andrew.Keim@rcaanc-cirnac.gc.ca).

Sincerely,

*Pauline Firmin*

Pauline Firmin, M. Sc,  
Water Management Coordinator



## **Technical Review Memorandum**

**Date:** March 06, 2026

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

**From:** Pauline Firmin – Water Management Coordinator, CIRNAC

**Subject: Crown Indigenous Relations and Northern Affairs Canada’s Review of the Licence Renewal Application for the Resolute Bay Airport Sewage Lagoon, Type B Water Licence No. 3BM YRB2126**

**Region:**  Kitikmeot  Kivalliq  Qikiqtani

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### **A. BACKGROUND**

The Resolute Bay Airport Sewage Lagoon is located in the Qikiqtani Region of Nunavut, approximately 4 km north of the airport and 7 km from the Hamlet of Resolute Bay. The airport lies near 74°43’N, 94°58’W, while the lagoon and monitoring points extend downstream through a natural wetland system of roughly 3 km before entering the marine receiving environment. The lagoon, consisting of unlined and non engineered cells constructed in the 1980s, operates under Type B Water Licence 3BM YRB2126, currently set to expire on 21 December 2026.

The Nunavut Airports Division (TIN) is the licence holder and proponent. Wastewater is trucked by ATCO Frontec from approximately 20 airport area facilities and deposited at the lagoon. Winter overflow and exfiltration through lagoon berms have occurred historically, and the lagoon is acknowledged to be “under capacity.” The proponent states that the lagoon will remain operational until a planned municipal wastewater treatment plant is built and commissioned, currently anticipated around 2031, after which the lagoon will be decommissioned. The renewal application seeks a five year extension (2026–2031) with no operational expansion or changes in scope.

CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.

**Table 1: Summary of Recommendations**

Recommendation Number	Subject
R-01	Over-capacity of the Resolute Bay Airport Sewage Lagoon
R-02	Water Source Identification and YRB-1(a) Definition
R-03	Inconsistent Identification and Location of Monitoring Stations
R-04	Inconsistent Sampling Frequency
R-05	Missing Effluent Quality Lab Results and Exceedances At Station YRB-3
R-06	Missing results of the Sludge Monitoring Plan
R-07	Inconsistent Wastewater Volume Estimates and Missing Waste Quantities
R-08	Lack of Defined Actions for Spills in Proximity to Water Bodies
R-09	Lack of Spill Prevention Measures
R-10	Availability of the Material Safety Data Sheets
R-11	Absence of Closure and Reclamation Plan
R-12	Non-Compliance Identified by Applicant for the Disposal of Hazardous Waste, Waste Oil and Non-combustible Waste
R-13	Inconsistencies About the Number of Lagoon Cells

## 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
Application for Renewal – Nunavut Water Board Licence #3BM-YRB 2126	Nunavut Airports Division, 2026
Resolute Bay Airport Sewage Lagoon Environment Monitoring Program (QA/QC Plan)	Nunavut Airports Division, Revised Oct 2025



Document Title	Author, File No., Rev., Date
Plan for Compliance of the Resolute Bay Airport Sewage Lagoon – WL #3BM-YRB 2126, Type B Licence	Nunavut Airports Division, Revised 2021/2025
Annual Report 2025 - Resolute Bay Airport Sewage Lagoon	Nunavut Airports Division, 2025
Spill Contingency Plan - Resolute Bay Airport Existing Sewage Lagoon (Revised)	Nunavut Airports Division, Revised 2025
Revised Operation and Maintenance Manual for the Sewage Lagoon of the Resolute Bay Airport	Nunavut Airports Division, Revised Oct 2025
Technical Summary – Resolute Bay Airport Sewage Lagoon (WL #3BM-YRB2126)	Nunavut Airports Division, 2025
Plan for Compliance of the Resolute Bay Airport Sewage Lagoon (Water Licence #3BM-YRB2126)	Nunavut Airports Division, 2021/2025 revisions
Annual Report 2023 - Resolute Bay Airport Sewage Lagoon	Nunavut Airports Division, 2023
Annual Report 2024 - Resolute Bay Airport Sewage Lagoon	Nunavut Airports Division, 2024



## C. RESULTS OF REVIEW

### 1. Over-capacity of the Resolute Bay Airport sewage lagoon

#### **Comment:**

CIRNAC notes that several documents describe the Resolute Bay Airport Sewage Lagoon as consistently operating at above capacity, with an estimated storage capacity of 600 m<sup>3</sup> and an annual sewage volume of approximately 5,500 m<sup>3</sup> (Technical Summary; OM Manual, Section 2.1.1). Both overflow events and sewage exfiltration through the berm have been reported (Technical Summary; 2025 Annual Report). Despite these observations, the renewal application indicates that the lagoon will continue operating under the current approach—limited to routine berm maintenance to sustain structural integrity—until the proposed wastewater treatment plant becomes operational around 2031 (Technical Summary; OM Manual).

Given the length of time the lagoon has been over capacity and the extended timeline before the new treatment plant is anticipated to come online, additional measure such as sludge removal, which could affect available storage volume, could be considered.

#### **Recommendation:**

(R-01) CIRNAC recommends that the applicant provide information on potential interim measures, including the feasibility of sludge removal, that have been evaluated to support continued lagoon operation until the new wastewater treatment plant becomes operational.

### 2. Water Source Identification and YRB-1(a) Definition

#### **Comment:**

CIRNAC notes that the application and supporting documents contain multiple, conflicting references regarding the water source to be sampled under monitoring station YRB-1 / YRB-1(a):

- The Application (Block 13), the water source is referred to as both Strip Lake and Char Lake, although only one source is intended to be sampled.
- The Quality Assurance/Quality Control Plan states that sampling station YRB-1 has been moved to the Signal Hill Water Treatment Plant, with raw water collected from the Char Lake intake.
- The Spill Contingency Plan refers to YRB-1(a) as “Raw sewage from Char Lake.”
- The Plan for Compliance alternately describes YRB-1(a) as a monitoring point at Strip Lake, while also noting that “YRB-1 is relocated at the Signal Hill Water Treatment Plant.”
- The 2025 Annual Report references YRB-1(a) multiple times as a station located at Strip Lake.



These inconsistencies make it unclear which water source is currently monitored, and how the monitoring station YRB-1(a) is formally defined in the context of the existing licence.

**Recommendation:**

(R-02) CIRNAC recommends that the applicant provide updated management plans to clarify the intended water source and to correct the inconsistencies listed above. CIRNAC also recommends using YRB-1(a) consistently across all documents, instead of YRB-1, to avoid confusion with YRB-1(b).

### **3. Inconsistent Identification and Location of Monitoring Stations**

**Comment:**

CIRNAC notes multiple inconsistencies regarding the identification and location of monitoring stations YRB-1(b), YRB-2, YRB-3, and YRB-4 across the submitted documents.

- In the QA/QC Plan (Section 2.2.1) and in the Spill Control Plan (Figure 4), stations YRB-1(b), YRB-2, YRB-3, and YRB-4 are described in a manner consistent with Water Licence 3BM-YRB2126, Part H. However, the accompanying table lists these monitoring stations without GPS coordinates and marks them as “TBD,” leaving their actual locations undefined.
- In QA/QC Plan Appendix D, the descriptions of YRB-2 and YRB-3 contradict the earlier definitions in the same document and those in the water licence, and the appendix does not reference YRB-1(b) or YRB-4.
- In the Revised Operation and Maintenance Manual, the descriptions of YRB-2 and YRB-3 in Table 2 differ from the identifications provided in the QA/QC Plan, the Spill Control Plan, and the water licence. The sampling-stations map immediately below the table also contradicts the table’s information. The table likewise does not mention YRB-1(b) or YRB-4.

These inconsistencies make it unclear which station is located where for effluent monitoring purposes and what is being tested at each stations.

**Recommendation:**

(R-03) CIRNAC recommends the applicant provide GPS coordinates and a single, consistent set of definitions for stations YRB-1(b), YRB-2, YRB-3, and YRB-4, and ensure that all monitoring-related documents reference these stations in a uniform manner consistent with the water licence and to insure that all relevant parameters are being tested for at each station.



#### 4. Inconsistent Sampling frequency

##### **Comment:**

CIRNAC notes several inconsistencies in how sampling frequencies are described for the monitoring stations across the submitted documents:

- In the Operation and Maintenance Manual, Section 3.4.4 states that YRB-2 and YRB-3 are sampled three times per summer, with no mention of sampling at YRB-1(a), YRB-1(b), or YRB-4.
- In the QA/QC Plan, Section 2.2.3.1 indicates that YRB-1, YRB-2, and YRB-3 are sampled monthly from May to August, while Appendix D of the same plan refers only to sampling at YRB-2 and YRB-3.
- In the 2025 Annual Report, Section v notes that sampling was conducted at stations 1b, 2, 3, and 4 during the summer and also during winter overflow conditions.

These differing descriptions make it unclear which sampling frequencies reflect the current monitoring program and if sampling during winter overflow is taking place.

##### **Recommendation:**

(R-04) CIRNAC recommends that the applicant clarify the current sampling frequencies for each monitoring station and consolidate these into a single, consistent schedule that aligns with the requirements of the water licence part H section 1, to insure that all monitoring and testing stations are in compliance, and is reflected consistently across all documents.

#### 5. Missing Effluent Quality Lab Results and Exceedances At Station YRB-3

##### **Comment:**

The 2025 Annual Report includes analytical results for stations YRB-3 and YRB-4, which have effluent quality limits identified under the previously issued Water Licence 3BM-YRB2126. The September 2025 dataset shows that effluent at monitoring station YRB-3 exceeded effluent quality limits for Total Suspended Solids (TSS), and that not all required parameters, specifically Fecal Coliforms and Oil and Grease were reported for either YRB-3 or YRB-4, limiting the ability to evaluate effluent quality and potential risks. There was also no mention of if a spill report was filed following the exceedance of effluent quality limits at station YRB-3.

CIRNAC also observes that the present submission do not include monitoring results for other sampling events in 2025. According to water licence 3BM-YRB2126 YRB-1(b) and YRB-2 part H-1 YRB-1(b) and YRB-2 should be tested monthly during period of flow. The monitoring results for 2023 and 2024 are indicated as “not available” in the 2023 and 2024



annual reports. All data and information required by the monitoring program should be included in the annual reports, as indicated in the water licence 3BM-YRB2126 part H-10.

**Recommendation:**

(R-05) CIRNAC recommends that the applicant outline any measures that have been implemented or are planned in response to the effluent exceedances observed at YRB-3, including filling a spill report to the 24-Hour Spill Line and incomplete parameter reporting for YRB-3 and YRB-4.

CIRNAC recommends that any sampling and monitoring data at sampling stations YRB-1(a), YRB-1(b), YRB-2, YRB-3 and YRB-4 not included in the present application or the 2024 and 2023 annual reports be provided and outline whether any steps that have been taken to improve the consistency of annual sampling and reporting.

## **6. Missing results of the Sludge Monitoring Plan**

**Comment:**

CIRNAC notes that the Sludge Monitoring Plan, in the Operation and Maintenance Manual (Section 3.4.5), states that the sludge blanket is to be monitored annually, including sampling and analysis of the sludge, and that a sludge study may be conducted at ten-year interval, or sooner if BOD or TSS exceedances occur.

CIRNAC could not find any indication sludge monitoring was carried out as planned, as no sludge analysis results were made available in the annual report. CIRNAC could not find if a sludge study was initiated in response to the exceedances reported at YRB-3 in the 2025 Annual Report or if the removal of sludge had been considered as a temporary measure to increase capacity of the lagoon.

**Recommendation:**

(R-06) CIRNAC recommends that the applicant confirm whether the Sludge Monitoring Plan has been conducted as outline in the Operation and Maintenance Manual and clarify whether a sludge study has been initiated or is planned. CIRNAC recommends that any sludge analysis results be provided in this application and the annual report.

## **7. Inconsistent Wastewater Volume Estimates and Missing Waste Quantities**

**Comment:**

CIRNAC notes that the Operation and Maintenance Manual (Section 2.2) estimates wastewater production at roughly 5M litres, without indicating a time measure. The 2025 Annual Report (page 1) reports an estimate of 6,427,533 litres of sewage for that year, using an approximation based on the volume of freshwater consumed. As per water licence 3BM-YRB2126, section B-4, the waste produced must be measured using a “*flow meters or other*”



*such devices, or implement suitable methods required for the measuring of Waste discharged”.*

CIRNAC also notes that Block 15 of the application does not include sewage or sludge quantities, as is needed for compliance with the current water licence. According to the 3BM-YRB2126, section H-8, *“The Licensee shall measure and record in cubic metres the monthly and annual quantities of Effluent discharged at Monitoring Program Station Number YRB-4 into the receiving environment.”* and section H-9, *“The Licensee shall measure and record in cubic metres, the annual quantities of Sewage solids removed from the Sewage Disposal Facility.”*

**Recommendation:**

(R-07) CIRNAC recommends that the applicant clarify which wastewater figures represent current operating conditions and report that data in cubic meters in a consistent manner across documentation. CIRNAC recommends that the applicant provide precise quantity of sewage and sludge produced omitted from Block 15, to ensure compliance with the current water licence.

**8. Lack of Defined Actions for Spills in Proximity to Water Bodies**

**Comment:**

CIRNAC notes that the Spill Contingency Plan (Section 6.5) provides only a brief statement on how to respond to spills “in close proximity to a water body,” without outlining clear, actionable steps. Instead, the plan references the containment procedures in “Section 4.9.2,” but no such section exists in the document.

Similarly, the Spill Contingency Plan (Section 7.3) and the Operation and Maintenance Manual (Section 5.2) reference section 3 of the Spill Contingency Plan to access the procedures in place to contain spills. Section 3 of the Spill Contingency Plan contains the community environmental policies and not procedure to contain spills.

**Recommendation:**

(R-08) CIRNAC recommends that the applicant provide explicit, actionable procedures for responding to spills in proximity to waterbodies and insure that the referenced sections correspond to existing sections of the within the documentation.

**9. Lack of Spill Prevention Measures**

**Comment:**

CIRNAC notes that the Spill Contingency Plan (Section 6.6) states that no formal preventative measures are in place to reduce spill risks.

**Recommendation:**

(R-09) CIRNAC recommends that the applicant outline any spill-prevention practices currently used on site and incorporate them into the Spill Contingency Plan to better describe how spill risks are proactively managed.

**10. Availability of the Material Safety Data Sheet****Comment:**

CIRNAC notes that the Spill Contingency Plan does not include Material Safety Data Sheets (MSDS), and does not indicate whether MSDS are printed and stored alongside the Spill Contingency Plan copies kept in the GN-ED&T Regional Airport Manager's Office or the Hamlet Office, as referenced in Section 6.7 of the plan.

**Recommendation:**

(R-10) CIRNAC recommends that the applicant confirm whether MSDS are kept with the printed Spill Contingency Plan for use during spill response.

**11. Absence of Closure and Reclamation Plan****Comment:**

CIRNAC notes that the current renewal application does not include a Closure and Reclamation Plan for the Resolute Airport sewage lagoon. This had been raised by CIRNAC during the previous licence renewal process and the applicant indicated that the Closure and Reclamation Plan for the lagoon would be developed concurrently with the design of the new wastewater treatment plant, anticipated for 2022–2023. However, no updated information or plan has been provided in the present application.

**Recommendation:**

(R-11) CIRNAC recommends that the applicant provide an update on the status and anticipated completion timeline of the Closure and Reclamation Plan for the existing sewage lagoon.

**12. Non-Compliance Identified by Applicant for the Disposal of Hazardous Waste, Waste Oil and Non-combustible Waste****Comment:**

CIRNAC notes that in the Plan for Compliance (Section D-7), the applicant identifies being in non-compliance with requirements for the disposal of hazardous waste, waste oil, and non-combustible waste, and indicates that these materials will be backhauled to the south in the future. However, no timeline is provided for when this backhauling is expected to



begin, and there is no information describing current practices for managing these wastes in the interim.

**Recommendation:**

(R-12) CIRNAC recommend that the applicant provide clarification on the current measures in place for handling hazardous waste, waste oil, and non-combustible waste, as well as any anticipated timelines for implementing the planned backhauling described in the Plan for Compliance.

**13. Inconsistencies About the Number of Lagoon Cells**

**Comment:**

CIRNAC notes that the 2025 Annual Report indicates that the Airport Sewage lagoon is a two-cell lagoon (Section V). However, the Spill Contingency Plan (section 4), the Operation and Maintenance Manual (section 4.5) and the QA/QC Plan (appendix A) indicate that the Airport Sewage lagoon is composed of four cells.

**Recommendation:**

(R-13) CIRNAC recommends that the applicant confirm the size and composition of the lagoon and ensure that it is indicated in a consistent manner across all documentation.