



Water Resources Division  
Resource Management Directorate  
Nunavut Regional Office  
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Your file - Votre référence  
3AM-COR2232  
Our file - Notre référence  
GCDOCS# 114928534

June 24, 2023

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

**Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of the 2022 Annual Report for Water Licence 3AM-COR2232 for the Municipality of Coral Harbour in the Kivalliq Region of Nunavut**

Dear Mr. Hunter,

Thank you for the March 30, 2023 invitation to review the referenced Annual Report, submitted by the Government of Nunavut, Department of Community and Government Services on behalf of the Licensee. This annual review is for Coral Harbour's Type A Water Licence No. 3AM-COR2232.

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 comments and recommendations in the attached Technical Memorandum.

It is unclear to CIRNAC which water quality criteria the water quality parameters in Schedule I are being compared to. CIRNAC requests the Nunavut Water Board specify the water quality criteria as a term and condition of the water licence.

If there are any questions or concerns, please contact me at [michelle.blade@rcaanc-cirnac.gc.ca](mailto:michelle.blade@rcaanc-cirnac.gc.ca) or Andrew Keim at 305-501-4047 or [Andrew.Keim@canada.ca](mailto:Andrew.Keim@canada.ca).

Sincerely,

Michelle Blade,  
Regional Water Coordinator



## **Technical Review Memorandum**

**Date:** June 24, 2023

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

**From:** Michelle Blade, Regional Water Coordinator, CIRNAC

**Subject:** Crown-Indigenous Relations and Northern Affairs Canada's Review of the 2022 Annual Report for Water Licence 3AM-COR2232 for the Municipality of Coral Harbour in the Kivalliq Region of Nunavut

**Region:** ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

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### **A. BACKGROUND**

The Hamlet of Coral Harbour is located on the southern shore of Southampton Island, on the northern rim of Hudson Bay. The population of the community was 1035 (2021 Census) and is projected to grow to 1253 by the year 2031. Water is extracted from the Post River, which is the community's water source, and stored in a 2-cell reservoir with a capacity of 49,500 cubic metres (m<sup>3</sup>), assuming 1 meter freeboard is maintained. The reservoir is filled during the open water season when up to 45,000 m<sup>3</sup> of water is extracted from the Post River in approximately 25 days.

In 2020, 39,973 m<sup>3</sup> of water was pumped from the Post River into the reservoir over a 24-day period. The daily rate of water withdrawal from the Post River during the reservoir resupply was approximately 2,000 m<sup>3</sup> per day. Therefore, the daily amount of water used by the Applicant to resupply the reservoir during this part of the year exceeds the 300 m<sup>3</sup> per day threshold for a Type "B" Water Licence as set out in Schedule 2 of the Nunavut Waters Regulations. As a result, the Applicant was required to apply for a new Type "A" Water Licence to authorize the withdrawal of up to 2,000 m<sup>3</sup> of water per day.

The Applicant's original application for the renewal of the Expired Type "B" Licence was received by the NWB on May 18, 2021. Subsequently, following discussions between the NWB and the Applicant, the Applicant submitted an application for a new Type "A" Water Licence to replace the Expired Type "B" Licence on September 29, 2021. Effective April 04, 2022, Type "A" Water Licence No: 3AM-COR2232 was issued for 45,000 m<sup>3</sup> per annum.

CIRNAC provides the following comments and recommendations pertaining to the 2022 annual report. 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**

<b>Recommendation Number</b>	<b>Subject</b>
<b>R-01</b>	<b>Quantity of water used</b>
<b>R-02</b>	<b>Daily water quantity reporting requirements</b>
<b>R-03</b>	<b>Sewage discharge reporting requirements</b>
<b>R-04</b>	<b>Sludge removal reporting</b>
<b>R-05</b>	<b>Water quality monitoring and Sewage Disposal Facility grab samples</b>
<b>R-06</b>	<b>Operation and Maintenance Plan 2021 Update</b>
<b>R-07</b>	<b>Structural integrity of the Sewage Disposal Facility</b>

## **B. DOCUMENTS REVIEWED**

The following table (Table 2) provides a summary of the documents reviewed under the submission.

**Table 2: Documents Reviewed**

<b>Document Title</b>	<b>Author, File No., Rev., Date</b>
3AM-COR2232 2022 Annual Report	Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Municipality of Coral Harbour
TYPE "A" WATER LICENCE NO: 3AM-COR2232	Nunavut Water Board, 04 April 2022
TYPE "A" WATER LICENCE NO: 3AM-COR2232 Reasons for Decision	Nunavut Water Board, 04 April 2022
3BM-COR1521 2021 Annual Report	Government of Nunavut, Community and Government Services (GN-CGS) on behalf of the Hamlet of Coral Harbour
Water Licence Inspection Form	CIRNAC, 16 September 2021
Operation & Maintenance Plan for Coral Harbour Municipal Water Licence: Solid Waste Disposal Facilities 2021	June 30, 2021



## **C. RESULTS OF REVIEW**

### **1. Quantity of water used**

#### **Comment:**

Water licence 3AM-COR2232 allows for 45,000 cubic metres of water per annum to be pumped from the Post River to a water reservoir during open water season in support of community needs. Table 2 of the 2022 Annual Report estimates 28,000 cubic metres of water was transferred from the Post River to the Raw Water Cells between September 14<sup>th</sup>, 2022 and October 29<sup>th</sup>, 2022. Table 1 of the 2022 Annual Report indicates 37,123.237 cubic metres of water is obtained annually from all sources; between 1,246.358 and 3672.794 cubic metres of water is obtained from all sources monthly.

#### **Recommendation:**

(R-01) CIRNAC recommends the Government of Nunavut provide the name and/or origin of all the undefined sources of water tabulated in Table 1, and clarify why the annual total of water obtained from all sources in Table 1 is more than the total of water removed from Post River in Table 2.

### **2. Daily water quantity reporting requirements**

#### **Comment:**

Water licence 3AM-COR2232 requires reporting of the daily, monthly and annual quantities in cubic metres of fresh water withdrawn from the Post River at Monitoring Station COR-1. Pumping at a daily rate of up to 2,000 m<sup>3</sup> from the Post River to the water reservoir during open water season is not to be exceeded. Table 1 and 2 of the 2022 Annual Report only include the monthly and annual quantities of water withdrawn.

#### **Recommendation:**

(R-02) CIRNAC recommends that in the 2022 Annual Report, the Government of Nunavut include the daily quantities of water withdrawn from the Post River, and specify if any daily rates exceeded 2,000 m<sup>3</sup>.

### **3. Sewage discharge reporting requirements**

#### **Comment:**

Water licence 3AM-COR2232 requires reporting of daily, monthly and annual quantities, in cubic metres, of any sewage discharged into the Sewage Containment Cell at Monitoring Station COR-2. The 2022 Annual Report states no meter exists to measure the sewage



discharge volumes, therefore sewage discharge volumes are considered to be equal to the water consumption volumes of 37,123.237 cubic metres reported annually.

**Recommendation:**

(R-03) CIRNAC recommends the Government of Nunavut devise a reporting system for measuring the quantity of sewage discharged into the Sewage Containment Cell.

#### **4. Sludge removal reporting**

**Comment:**

Water licence 3AM-COR2232 requires annual reporting, in cubic metres, of the quantities of sludge removed from the Sewage Disposal Facility. CIRNAC was unable to locate the sludge removal values in the 2022 Annual Report.

**Recommendation:**

(R-04) CIRNAC recommends the Government of Nunavut specify where the 2022 sludge removal quantities are reported.

#### **5. Water quality monitoring and Sewage Disposal Facility grab samples**

**Comment:**

Water licence 3AM-COR2232 requires water quality monitoring at 7 stations (COR-1 to COR-7). All effluent discharged from the Sewage Disposal Facility at Monitoring Program Station COR-5 shall not exceed the effluent quality limits of Part E item 2. The 2022 Annual Report provides no analytical results for water quality monitoring stations nor grab samples. According to the water licence inspection on September 16<sup>th</sup>, 2021, monitoring station COR-5 failed to meet discharge criteria due to effluent leaching out of the sewage lagoon. CIRNAC has read through the email chain included in the 2022 Annual Report regarding sample bottle ordering and shipping.

**Recommendation:**

(R-05) CIRNAC recommends the Government of Nunavut submit the analytical results of the water quality monitoring station and grab samples in the 2022 Annual Report or specify that none were collected in 2022. CIRNAC recommends the Government of Nunavut provide a summary report for Station ID COR-5 and all grab samples compared to effluent quality limits in the 2022 Annual Report, and specify if there were any exceedances.



## **6. Operation and Maintenance Plan 2021 Update**

### **Comment:**

Appendix B of the 2022 Annual Report entitled “Operation and Maintenance Plan 2021 Updated” was submitted with the 2022 Annual Report. The Operation and Maintenance Plan is dated June 30, 2021.

### **Recommendation:**

(R-06) CIRNAC recommends that the updated Operation and Maintenance plan be submitted with the 2022 Annual Report. CIRNAC recommends that the Government of Nunavut add a page at the front of the plan that records updates and lists in chronological order: what sections were updated, when they were updated and for what reason, and by whom. This would allow for plan users to more readily note the changes that have been made.

## **7. Structural integrity of the Sewage Disposal Facility**

### **Comment:**

According to the water licence inspection on September 16<sup>th</sup>, 2021, there are concerns related to the structural integrity of the Sewage Disposal Facility. The water licence inspection stated “the Licensee shall submit, no later than January 1<sup>st</sup>, 2022, a letter to the Inspector summarizing the improvements to be made to the Sewage Disposal Facility to improve effluent qualities at monitoring station no. COR-5. This letter will include but not be limited to; how the facility will be improved, when the work will be completed and how this information will be reported to the Inspector once completed.” Part G item 8 states “an inspection of all engineered facilities associated with this Licence shall be carried out at least once annually, during open water season, by an Engineer (Civil, Municipal or Geotechnical). The Engineer’s report shall be submitted to the Board along with the Annual Report, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer’s recommendations.” No Engineer’s report was submitted with the 2022 Annual Report.

### **Recommendation:**

(R-7) CIRNAC recommends the Government of Nunavut submit the 2022 Engineer’s report for the structural integrity of the Sewage Disposal Facility with the 2022 Annual Report, as well as a status update on the stated requirements enumerated within the September 16<sup>th</sup>, 2021 water licence inspection.