



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
3BM-COR1521

Our file - Notre référence
GCDocs#96774623

August 4, 2021

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
sent via e-mail: licensing@nwb-oen.ca

**Re: Crown-Indigenous Relations and Northern Affairs Canada's Review of the
Hamlet of Coral Harbour's Water Licence Renewal Application, Type B Water
Licence No. 3BM-COR1521**

Dear Mr. Dwyer,

Thank you for your June 29, 2021 invitation to review the referenced licence renewal application, submitted by the Hamlet of Coral Harbour, for Type B Water Licence No. 3BM-COR1521.

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.

If there are any questions or concerns, please contact me at (867) 975-4689 or john.onita@canada.ca or Sarah Forte at (867) 975-3876 or sarah.forte@canada.ca

Sincerely,

John Onita,
Regional Water Coordinator



Technical Review Memorandum

Date: August 4, 2021

To: Richard Dwyer, Manager of Licensing, Nunavut Water Board

From: John Onita, Regional Water Coordinator, CIRNAC

**Subject: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC)
Review of the Hamlet of Coral Harbour's Water Licence Renewal
Application, Type B Water Licence No. 3BM-COR1521**

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

"The Hamlet of Coral Harbour has submitted an application to the Nunavut Water Board (NWB) to renew its 3BM-COR1521 Water Licence for a 10-year period that would be valid until 2031. The Hamlet's projected population in 2031 is 1253" (Coral Harbour Water Licence Renewal Application Executive Summary, 2021).

"The Hamlet proposes to continue pumping water from the Post River, through an overland pipe to the rock-blasted reservoir for storage each summer. The quantity of water will not exceed 45,000 cubic meters annually, as in the current licence. The water intake pipe from the reservoir delivers water to the adjacent water treatment plant that was commissioned in 2016. The treatment system entails primary chlorination, cartridge filtration, secondary chlorination and contact time provided in the storage pipe, prior to filling trucks for delivery within the community. No changes to this system are proposed at this time" (Coral Harbour Water Licence Renewal Application Executive Summary, 2021).

"The Hamlet will continue to provide a trucked sewage collection service that deposits wastewater into the Sewage Disposal Facilities 3 km north of the community. This includes a sewage lagoon and wetland treatment area. The effluent is discharged from the lagoon naturally through the exfiltration berm and diversion berms within the wetlands area redirect flow away from the community. Solid waste will continue to be collected from the community and deposited in the solid waste landfill beside the lagoon. The Municipality is in the process of upgrading the fencing around the Solid Waste Facility" (Coral Harbour Water Licence Renewal Application Executive Summary, 2021).

"There are no proposed amendments to the water licence or facilities regulated within" (Coral Harbour Water Licence Renewal Application Executive Summary, 2021).

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	Daily water withdrawals
R-02	Reporting daily waste disposal
R-03	Paper copies of annual reports
R-04	Sewage disposal and sludge management plans
R-05	Engineer inspection of facilities
R-06	Timeline for submission of geotechnical inspection report

B. DOCUMENTS REVIEWED

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

Table 2: Documents Reviewed

Document Title	Author, File No., Rev., Date
210518 2016 Annual Report	Hamlet of Coral Harbour, 2016
210518 Authorization Letter & Application Fee Cheque	Leonie Pameolik, Senior Administrative Officer, Hamlet of Coral Harbour, April 21, 2021
210518 NPC Letter File # 149526 Coral Harbor Water Licence Renewal	Solomon Amuno, Senior Planner, Nunavut Planning Commission, April 16, 2021
210518 Plan for Compliance 2021	Hamlet of Coral Harbour, June 30, 2021
210518 Renewal Cover Letter	Elan Chalmers, Municipal Planning Officer, Government of Nunavut Community and Government Services, May 18, 2021
210518 Summary English	Government of Nunavut Community and Government Services, June 30, 2021
210518 Water Licence Renewal Application	Nunavut Water Board, May 11, 2021
210518 Water Treatment Plant AS-BUILT-ALMIQ	Hamlet of Coral Harbour, June 30, 2021
210526 Applicant Response to NWB-IMLE	Elan Chalmers, Municipal Planning Officer, Government of Nunavut



Document Title	Author, File No., Rev., Date
	Community and Government Services, May 26, 2021
210628 2021 Coral Harbour Environmental Emergency Spill Contingency Plan	Hamlet of Coral Harbour, April 2021
210628 2021 Coral Harbour QAQC Plan	Hamlet of Coral Harbour, April 2021
210628 OM Plan Sewage Disposal Facility 2021	Hamlet of Coral Harbour, June 30, 2021
210628 OM Plan Solid Waste 2021	Hamlet of Coral Harbour, June 30, 2021
210628 OM Plan Water Supply 2021	Hamlet of Coral Harbour, June 30, 2021

C. RESULTS OF REVIEW

CIRNAC provides the following comments and recommendations for the Board's consideration:

1. Daily water withdrawals

Comment:

The NWB Licence condition B-1-c states, *"The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported, containing the following information: the daily, monthly and annual quantities in cubic metres of freshwater obtained from all sources"*.

The licensee has requested removal of the *daily freshwater intake* monitoring and reporting requirement from the licence terms and conditions unless an average estimate is acceptable. The licensee has confirmed that only monthly and annual quantities are currently being reported from the trucked portable water delivery records, and annual volume records reported from the resupply pump.

CIRNAC notes that section 3.9 of the QA/QC plan indicates that the NWB requires the licensee to *"measure the monthly and the annual volume of water pumped from Post River (COR-1) which can be accomplished by:*

- *Installing a flow meter on the intake pipe*
- *Volume calculations in reservoirs based on water levels"*.

Daily measuring of freshwater quantity obtained from all sources is useful for ensuring that daily withdrawals does not adversely impact aquatic resources and other potential users of the water and that water licence conditions are respected. Ideally, the licensee should install



a flow meter on the intake pipe, but in the interim, the proposed solution of average measurements is acceptable.

According to the 2020 annual report, the reservoir was filled between August 24th and September 16th, during which time 39 973 m³ were pumped from the Post River. Averaged over the 23 days, this is a withdrawal rate of 1 738 m³/day, well above the 299 m³/day authorized by the water licence. According to the “Sustainability of Nunavut Water Sources” study, the Post River is able to sustain these high pumping rates while staying within guidelines found in the “Framework for Assessing the Ecological Flow Requirements for Support Fisheries”.

Recommendation:

(R-01.1) CIRNAC recommends that the licensee apply for a Type A water licence since their withdrawal rates are above what is permissible with a Type B water licence.

(R-01.2) CIRNAC further recommends that the licensee report average daily water withdrawal rates until such time a meter can be installed..

2. Reporting daily waste disposal

Comment:

The NWB Licence condition B-1-d requires the licensee to report the *“daily, monthly and annual quantities in cubic meters of each and all waste discharged; including the hazardous and non-hazardous waste accepted at the Solid Waste Facilities”*.

The licensee acknowledged in its “plan for compliance” report that *“solid waste quantities were not reported in the 2015-2020 annual reports”*, but confirmed that only the *“monthly and annual quantities of sewage waste were reported”*. The licensee suggests that *“it is not practical to report the daily sewage and solid waste quantities in the annual report”*.

The licensee has requested a modification to licence condition B-1-d reporting requirements to *“monthly and annual sewage quantities”* and *“annual solid waste quantities”*. The licensee also requests total removal of the *“daily quantity”* reporting requirement from the licence condition.

Section 2.0, table 1 of the QA/QC plan indicates that the licensee *“Actively”* collected records of sewage volume at the *“Sewage truck release point into the containment cell (Station COR-2)”* between 2015-2020 on a *“daily, monthly and annual”* basis.

Section 1.2, paragraph 2 of the solid waste disposal, operation and maintenance plan indicates that the licensee *“collected waste from community buildings, five (5) times per week with a compactor truck and transported the waste to the solid waste disposal facilities*



(SWDF)”. In section 5.1 (overview) of the solid waste disposal operational and maintenance plan, the licensee acknowledged that the *“municipality does not have a dedicated operator to control who disposes of waste, where, when, what or how much is disposed daily at the SWDF”*. The licensee further acknowledged that the *“foreman manages the site to ensure proper waste segregation as it is imperative to the long-term operation of the facility and to ensure potential human health and environmental hazards are minimized”*.

CIRNAC notes that measuring the daily, monthly and annual discharge of sewage into wetlands for treatment and waste at the landfill is useful for understanding how these facilities are used and designing future improvements. It is not clear how monthly estimates are made if daily discharges are not recorded. As a first order estimate, the number of truck loads (times the typical load) would be an acceptable estimate for daily discharge.

Recommendation:

(R-02) CIRNAC recommends that the licensee should:

- a) Clarify how they are producing monthly estimates;
- b) Update their solid waste disposal, operation and maintenance plan, and QA/QC plan to incorporate daily discharge monitoring methods which are actionable.

3. Paper copies of annual reports

Comment:

The NWB Licence condition B-13 states, *“The Licensee shall submit one paper copy and electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut”*.

The licensee has requested a modification to licence condition B-13 reporting requirements to include removal of the requirement to submit paper copies/documents to the NWB.

CIRNAC notes that since the outbreak of the Covid-19 pandemic, government at all levels have long adjusted to working electronically. This was a mitigation strategy adopted by various governments to reduce or minimized the spread of Covid-19 in our respective populations. CIRNAC further notes that in situations where there exists an alternative option such as electronic submission of documents, it is no more a sustainable practice to encourage consistent use or consumption of products that exerts severe pressure on primary resources such as forest products of which, print papers are one of its end products. As a custodian of sustainable development, CIRNAC will continue to encourage and support bold steps aimed at enhancing the sustainability of natural resources for future generations.



CIRNAC also notes that the licensee has fulfilled the electronic copy submission condition of the licence and hereby supports the licensee's request that the NWB remove the submission of paper copies / documents as part of the licence conditions.

Recommendation:

(R-03) CIRNAC recommends that the NWB should remove the submission of paper copies / documents as part of the licence conditions.

4. Sewage disposal and sludge management plans

Comment:

The NWB Licence condition F-3 states, *"The Licensee shall submit to the Board for approval in writing within six (6) months of the date of issuance of this Licence, an Operations and Maintenance Plan for the Sewage Disposal Facility, prepared where appropriate, in accordance with the Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories (1996), and the Guidelines for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories (2003). This Manual shall include but not be limited to the following:*

- a. Sewage Disposal Operation and Maintenance Plan;*
- b. Sewage Sludge Management Plan*
- c. Monitoring Program Station descriptions and locations—including GPS"*

The licensee has requested a modification to licence condition F-3 reporting requirements to include a combination of both the sewage disposal plan and the sludge management plan, in one reporting document to the NWB.

CIRNAC notes that section 1.0 through section 8.0(a) of the operation and maintenance plan for the sewage disposal facilities (SDF) submitted as part of the licence renewal application document, provides information on the sewage disposal operation and maintenance plan as required by the NWB licence. Similarly, section 8.0(b) provides information on the sewage sludge management, while section 9.0 provides information on the monitoring program station descriptions and locations with their GPS details.

CIRNAC is satisfied with the level of information provided by the licensee on licence condition F-3 and hereby supports the licensee's request that both the sewage disposal plan and the sludge management plan be combined in one reporting document to the NWB.

Recommendation:

(R-04) CIRNAC recommends that the NWB approve the operation and maintenance plan for the sewage disposal facilities submitted and remove the condition to provide a separate sludge management plan.



5. Engineer inspection of facilities

Comment:

The NWB Licence condition F-5 states, *“An inspection of all engineered facilities related to the management of Water and Waste shall be carried out a minimum of once annually, in July or August, by an Engineer. The Engineer’s report shall be submitted to the Board within sixty (60) days of the inspection, including a cover letter from the Licensee outlining an implementation plan to address each of the Engineer’s recommendations”*.

The licensee acknowledged in its “plan for compliance” report that *“an inspection by a Geotechnical engineer has not taken place since 2015 through 2020”*. According to the “plan for compliance”, neither the Licensee, nor the Government of Nunavut, Community and Government Services (GN-CGS) has a Geotechnical engineer or staff to conduct these inspections.

The licensee has requested a modification to licence condition F-5 by asking the NWB to substitute the engineer’s reporting condition for CIRNAC Inspection and Annual reporting requirements.

CIRNAC’s inspection role is independent of the NWB requirements of the licensee to submit an engineer’s report. CIRNAC Inspectors are not Engineers. The requirement for water retaining and diverting structures to be inspected by a professional Engineer is to ensure they respect the Canada Dam Safety Guidelines and are performing as intended.

Recommendation:

(R-05) CIRNAC recommends that the NWB should keep the licence condition requiring annual inspection of engineered facilities by a professional Engineer.

6. Timeline for submission of geotechnical inspection report

Comment:

The NWB Licence condition F-6 states, *“An inspection of all engineered facilities related to the management of Water and Waste shall be conducted by a Geotechnical Engineer in accordance with the Canadian Dam Safety Guidelines, at least one (1) year prior to the expiry of the Licence, during the open Water period (June/July/August). The Geotechnical Engineer’s report shall be submitted to the Board for review within sixty (60) days of the inspection, including a cover letter from the Licensee outlining an implementation plan to address the Engineer’s recommendations”*.



The licensee has requested a modification to licence condition F-6 by asking the NWB to adjust the timeline for submission of the Geotechnical inspection report, by an additional fifteen (15) days after the final report is submitted to the GN-CGS team.

CIRNAC notes that Condition F-6 of the NWB licence is meant to ensure that the structural integrity of the man-made structures such as water and waste-water facilities are maintained.

CIRNAC supports modifying the NWB licence condition F-6 to allow additional 15 days reporting timeline be added to the current 60-day requirement, and encourages the licensee to meet its reporting obligation for this licence condition.

Recommendation:

(R-06) CIRNAC recommends that the NWB accept the request to modify this licence condition.

REFERENCES

2021 Coral Harbour Environmental Emergency Spill Contingency Plan; *Hamlet of Coral Harbour, April 2021*

2020 Coral Harbour QAQC Plan; *Hamlet of Coral Harbour, April 2021*

2016 Annual Report; *Hamlet of Coral Harbour, 2021*

Applicant Response to NWB-IMLE, May 26, 2021; *Elan Chalmers, Municipal Planning Officer, Government of Nunavut Community and Government Services*

Authorization Letter & Application Fee Cheque, April 21, 2021; *Leonie Pameolik, Senior Administrative Officer, Hamlet of Coral Harbour*

Department of Crown-Indigenous Relations and Northern Affairs Act (2000)

Framework for assessing the ecological requirements to support fisheries, May 2013; *Department of Fisheries and Oceans*

Nunavut Waters and Nunavut Surface Rights Tribunal Acts (2016); *Nunavut Water Board*

NPC Letter File # 149526 Coral Harbor Water Licence Renewal, April 16, 2021; *Solomon Amuno, Senior Planner, Nunavut Planning Commission*

OM Plan Sewage Disposal Facility 2021; *Hamlet of Coral Harbour, June 30, 2021*



OM Plan Solid Waste 2021; *Hamlet of Coral Harbour, June 30, 2021*

OM Plan Water Supply 2021; *Hamlet of Coral Harbour, June 30, 2021*

Plan for Compliance 2021; *Hamlet of Coral Harbour, June 30, 2021*

Renewal Cover Letter, May 18, 2021; *Elan Chalmers, Municipal Planning Officer, Government of Nunavut Community and Government Services*

Summary English, June 30, 2021, *Government of Nunavut Community and Government Services*

Sustainability of Nunavut Water Resources, June 2017; *Centre for Water Resources Studies, Dalhousie University*

Water Licence Renewal Application, May 11, 2021; *Nunavut Water Board*

Water Treatment Plant AS-BUILT-ALMIQ, June 30, 2021; *Hamlet of Coral Harbour*