



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

Your file - Votre référence
3BM-PON1520

April 17, 2020

Our file - Notre référence
CIDM#1284561

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

Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on the Hamlet of Pond Inlet's renewal application for water licence #3BM-PON1520 for municipal undertakings – Hamlet of Pond Inlet

Dear Mr. Dwyer,

Thank you for your March 19, 2020 invitation for technical review comments on the above referenced application. The Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application and the results of our review are provided in the enclosed memorandum for the Nunavut Water Board's consideration.

Comments have been provided pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. If there are any questions or concerns, please contact me at (867) 975-3876 or by e-mail at sarah.forte@canada.ca.

Sincerely,

Sarah Forté
Water Management Specialist

Technical Review Memorandum

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

From: Sarah Forté, Water Management Specialist, Water Resources Division, CIRNAC

Date: April 17, 2020

Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on the Hamlet of Pond Inlet's renewal application for water licence #3BM-PON1520 for municipal undertakings – Hamlet of Pond Inlet

Region: ☐ Kitikmeot ☐ Kivalliq ☒ Qikiqtani

A. BACKGROUND

On March 19, 2020, the Nunavut Water Board provided notification of the Hamlet of Pond Inlet's submission of a renewal application for their Type B water licence 3BM-PON1520 for the use of water and deposit of waste in the Hamlet of Pond Inlet.

The Hamlet's water source is Water Lake Reservoir, which is filled annually from the Salmon River, which is immediately adjacent. A water treatment plant/truck fill station is located at Water Lake Reservoir, approximately 4 km to the south of the community. Communication from the Government of Nunavut - Community and Government Services in January 2020 notified that the intake was not working and water was being pumped directly from the lake until a new intake could be installed.

The community's sewage is also trucked, and treated in a single cell lagoon approximately 1 km east of the community. The lagoon is decanted once a year. The solid waste facility is co-located with the sewage lagoon and is divided into areas for burn and cap, bulk metals, bulk woods, a bermed landfarm and 3 hazardous waste areas. A consultant is working on a waste audit and feasibility study to improve or replace the current facility.

The hamlet is requesting for a 5-year renewal for an increased volume of water using all the same facilities as are authorized under the present licence.

B. RESULTS OF REVIEW

On behalf of CIRNAC Water Resources, the following comments and recommendations are provided for the consideration of the Nunavut Water Board:

1. Water quantity requested

Comment

The application requests authorization to withdraw 47 622 m³/year in 2019 and 50 474 m³/year in 2025. The current licence authorizes the withdrawal of 67 000 m³/year prior to 2019 and 75 000 m³/year in 2019-2020 from Salmon River and Water Lake reservoir. Annual water use during the 5-year duration of the present licence has increased from approximately 41 000 m³/year to approximately 48 000 m³/year.

CIRNAC was unable to find an explanation of how the volume requested for 2025 was obtained. Given the recent history of regularly increasing demand, we are concerned that 50 474 m³/year may not be sufficient in 2025. Considering the sources were deemed sufficient to supply greater quantities in the current licence, it does not seem necessary to be overly restrictive on water quantity withdrawal.

Box 12 of the renewal application indicates “*Water is extracted from the Simon creek which is the Community’s potable water source*”. This does not match any of the other documentation, which all refer to Salmon River or Salmon Creek as the water source.

Recommendation

CIRNAC recommends a renewed licence authorize withdrawal of at least 67 000 m³/year from the Salmon River and Water Lake Reservoir.

CIRNAC also recommends the applicant clarify the name of the creek/river from which water is extracted.

2. Oil & grease in wastewater, sewage lagoon and landfill leachate

Comment

The concentrations of oil and grease from 2015 to 2019 samples are:

Identification	# samples	Average (mg/L)	Maximum (mg/L)	Minimum (mg/L)	#samples > 15 mg/L	#samples > 5 mg/L
wastewater	4	16.6	21.0	6.3	3 (75%)	4 (100%)
sewage lagoon	5	43.4	100	12.6	4 (80%)	5 (100%)
landfill leachate	6	11.2	20.2	<0.1	3 (50%)	4 (67%)

The licence does not set a maximum concentration for sewage lagoon effluent but specifies “no visible sheen”. Since the licensee is not testing for sheen, it is not possible to evaluate against this criteria, however the oil and grease concentrations are high. The water licence has a maximum oil & grease concentration of 5 mg/L for effluent from

the landfarm. The Government of Nunavut's Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities has a 15 mg/L criteria for non-point source discharge for facilities not covered under a licence, which can be used as a reference though it is not applicable to this facility because it is licensed. Most of the samples do not meet either criteria for oil & grease concentrations.

The lagoon and landfill are co-located. Inspection reports repeatedly document improper segregation of hazardous waste. In 2019: *"waste oil buckets were observed throughout the metals section of the land fill"* and *"In the middle of the hazard waste section titled Hazardous Waste Drums. All the drums surrounding the water body is noncompliance with Part D: Item 2. And Part D: Item 14. The drums appear to be scattered around that area, and form a line up towards the front section of the Hazardous Waste Sea Can 2"*.

With the information provided, it is unclear if improper waste oil storage at the landfill is the source of the high oil and grease concentrations measured in samples labelled as "Waste Water" and "Sewage Lagoon". It is a possibility given the proximity of the facilities.

Recommendation

CIRNAC recommends the licensee describe measures they will take to reduce oil and grease concentrations in the sewage lagoon waste water and landfill leachate, as well as actions planned to segregate hazardous waste in a timely manner.

3. Monitoring

Comment

Monitoring allows us to evaluate the performance of waste management measures and is an important part of operations. Water quality sample results are included with the last annual reports available. However, sampling identification is not consistent with the licence, so it is not always possible to determine which stations the samples correspond to. CIRNAC appreciates that the Hamlet makes significant effort to collecting samples, ship them, pay for analysis and report the results. The effectiveness of these efforts is limited because the uncertainty in where samples were collected makes their interpretation difficult.

Specifically, there is no clarity whether 2015-2019 samples labelled "Waste Water", "Jonah" and "Sewage Lagoon" are all from the same location. It appears this might be the case because there are no dates with samples from more than one of these labels.

CIRNAC was unable to identify samples that might potentially be from PON-6 (Monitoring well located up-gradient of the Landfarm Facility), PON-7 (Monitoring well located down-gradient of the Landfarm Facility) or PON-8 (Discharge from the Landfarm Facility at the controlled point of release) in the annual reports since 2015.

Recommendation

CIRNAC recommends the licensee:

- properly identify their samples so the results can be evaluated; and
- at minimum, request analyses of the parameters which have specified criteria in the water licence so the effectiveness of treatment can be evaluated and parameters required in the monitoring section of the licence.

Tabular summaries should be presented in the annual reports.

CIRNAC also recommends the proponent provide explanations for the lack of samples from PON-6, PON-7 and PON-8. An update on the state of monitoring wells PON-6 and PON-7 would allow consideration of their removal from the required monitoring locations if they are no longer operable.

4. Landfarm

Comment

It is not clear if the landfarm is still in operation. The 2015 inspection reports that “*the facility does not appear to be actively used and tracked vehicles marks appear on the side walls.*” No mention of landfarm operations were found in the 2015-2019 annual reports or in the application’s executive summary. The latest Landfarm Operation and Maintenance (O&M) Manual CIRNAC able to find is from 2009.

An update on the current status of the landfarm could help inform its continued integration in a renewed water licence.

Recommendation

CIRNAC recommends the proponent provide an update on the current status of the landfarm, including if it is in operation, what quantity of soils are stored, and if the soils are treated or are still undergoing treatment.

5. Temporary sewage disposal facility

Comment

It is not clear if and how the temporary sewage disposal facility is used. CIRNAC could not find any reference to its operation in the 2005 O&M Manual. It is CIRNAC’s understanding that this is the old sewage lagoon and a technical summary submitted in 2014 indicates: “*The old lagoon is not used and not decommissioned yet.*” The current water licence (Part D Item 1) only allows disposal of sewage in the Sewage Disposal Facility. No mention of temporary sewage disposal facility operations were found in the 2015-2019 annual reports or in the application’s executive summary.

An update on the current status of the temporary sewage disposal facility could help inform its continued integration in a renewed water licence, including the necessity of keeping sampling station PON-5. It would also identify whether the site needs to be reclaimed or is being kept for emergencies.

Recommendation

CIRNAC recommends the proponent provide an update on the current status of the temporary sewage disposal facility, including if it is being used, and if any of the reported samples were from PON-5.

6. Spill contingency plan

Comment

The most recent spill contingency plan CIRNAC was able to find is from 2010. It requires an update with addition of local contact names or phone numbers. Presently there is only the hamlet office phone number, and the office may be closed when there is an emergency. As well, a site plan on a topographical map with the main infrastructure, water bodies and spill kit locations should be included, as detailed in the Guidelines for Spill Contingency Planning.

Recommendation

CIRNAC recommends the proponent provide an updated spill contingency plan.

C. REFERENCES

2014-2019 Annual Report for the Hamlet of Pond Inlet, Government of Nunavut – Community and Government Services, March 2015-2020.

2014-2016, 2018-2019 Water Licence Inspection Forms, Crown-Indigenous Relations and Northern Affairs Canada, 2014-2016, 2018-2020

Application for the Municipality of Pond Inlet Water Licence #3BM-PON1520 Type-B Renewal, Government of Nunavut – Community and Government Services, March 2020.

Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut – Department of Environment, April 2011.

Executive Summary of the Hamlet of Pond Inlet Water Licence # 3BM-PON1520, Type-B, Government of Nunavut – Community and Government Services, March 2020.

Guideline for Spill Contingency Planning, Indian and Northern Affairs Canada, April 2007.

Hamlet of Pond Inlet Operations and Maintenance Manual, Sewage Lagoon Facility, Dillon Consulting Limited, March 2005.

Landfarm Operations & Maintenance (O&M) Manual, Landfarm, Pond Inlet, Nunavut, Dillon Consulting Limited, January 2009.

NWB Amendment Renewal Licence No. 3BM-PON1520, Nunavut Water Board, June 30, 2015

RE: Acceptance Letter for Modification to the Intake of the Water Truck Filling station, Nunavut Water Board, February 3, 2020.

Spill Contingency Plan, Hamlet of Pond Inlet, 2010.

Technical Summary of the Environmental Facilities of the Hamlet of Pond Inlet, Government of Nunavut – Community and Government Services, August 2014.