

Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
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Yellowknife, NT X1A 2P7

ECCC File: 6200 000 018
NWB File: 3AM-ARV1016



October 16, 2020

via email at: licensing@nwb-oen.ca

Richard Dwyer
Manager Licencing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Richard Dwyer,

RE: 3AM-ARV1016 Hamlet of Arviat Water Licence Renewal-Amendment Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the renewal-amendment application for water licence 3AM-ARV1016 by the Hamlet of Arviat (the Applicant or Hamlet). As requested by the NWB, ECCC has reviewed the application for completeness based on our initial technical assessment.

ECCC's specialist advice is based on our mandate pursuant to the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

The following comments are provided:

1. Feasibility Studies

Reference(s):

- 2019 Annual Report

Comment:

The 2019 Annual report states that the Government of Nunavut has engaged a consultant to complete two feasibility studies; one for an upgraded Wastewater Treatment Lagoon, and the second for an upgraded Solid Waste Management site, with a scheduled completion date of September 2020. However, these feasibility studies have not been provided as part of the renewal process.



Recommendation(s):

ECCC recommends that the Hamlet provide:

- The feasibility studies for the Solid Waste and Wastewater Lagoon for review and consideration as part of the water licence renewal process.
- A discussion of projected timelines for construction of these new facilities, and proposed plans for decommissioning of the existing facilities

2. Treatment Targets / Current Non-Regulated Parameters

Reference(s):

- 2019 Annual Report

Comment:

In review of the 2019 Annual Report, ECCC identified copper and ammonia as being elevated in sewage effluent, but for which there are currently no Effluent Quality Criteria (EQC). ECCC notes that discharges must be in compliance with Section 36(3) of the *Fisheries Act*. Recognizing that the Proponent is working towards upgrading the Wastewater Treatment Lagoon and Solid Waste Management Site, all discharges must meet the *Fisheries Act* requirement that no deleterious substances are deposited to waters frequented by fish.

Recommendation(s):

ECCC recommends that the Hamlet identify treatment targets for the new wastewater treatment system, and include reduction targets for ammonia and metals.

3. CBOD and TSS Effluent Quality Criteria

Reference(s):

- Plan for Compliance

Comment:

The Plan for Compliance, Section D-2, states that the Hamlet does not currently comply with effluent quality criteria for the sewage disposal facilities. It is stated that lagoon exceeds EQC limits due to emergency decants annually in the spring and that they are therefore requesting to change EQC, increasing the CBOD limit to 100 mg/L and total suspended solids limit to 120 mg/L. These changes to the EQC are based on studies done by Dalhousie University; however, this study is not provided for review as part of the water licence renewal process.

Recommendation(s):

ECCC recommends that the Hamlet provide the Dalhousie Study for which the newly proposed EQC are based for review and consideration as part of the water licence process.

4. Capacity of the Sewage Lagoon

Reference(s):

- Water Licence Renewal Application
- Plan for Compliance

Comment:

The Water Licence Application requests an increase in water use from 86,000 m³ to 235,393 m³ to meet current and future water-use demands. As noted in several reports provided as part of the Renewal, the existing sewage lagoon does not have sufficient capacity and requires emergency discharge every spring to prevent overtopping. Given that the increase in water use will correspond to increased production of greywater and sewage, there is the potential for this increase to enhance the existing capacity issues of the lagoon. No discussion is provided as to how this increased water use will be managed within the lagoon system, or how it may affect the ability to meet effluent quality criteria. Although the Plan for Compliance notes that a future expansion of the lagoon will increase capacity for waste, this does not acknowledge the potential short-term issues of potential overtopping and emergency discharges before a new lagoon is constructed and no options for prevention of overtopping are proposed.

Recommendation(s):

ECCC recommends the Hamlet provide information on:

- lagoon capacity and the ability to contain increased volumes of sewage as per the increased water use request;
- how the increase in effluent reporting to the sewage lagoon may impact retention time and the ability to meet effluent quality criteria; and
- Options for increasing the capacity of the sewage lagoon, and potentially increasing retention time and treatment, such as desludging.

5. Sewage Disposal Facility Report

Reference(s):

- Plan for Compliance

Comment:

The Plan for Compliance, Section D5-a through D5-g, addresses the requirements for a Sewage Disposal Facility Report, which was due to the Board as part of the 2010 water licence process. In response to these requirements, the Hamlet has stated they are in non-compliance and that they will look into finding the documents and submit within one year after the submission of the application. It is unclear based on the response provided in the Plan for Compliance whether this plan was previously submitted as per the 2010 condition, or if it has not been submitted to the Board for approval.

Recommendation(s):

ECCC recommends that the Sewage Disposal Facility Report, including the Sludge Management Plan, be provided for review within the water licence process to improve understanding of the existing facility. This should include updates based on any improvements or alterations that may have occurred since submission of the original plan.

6. Updates to Management Plans

Reference(s):

- N/A

Comment:

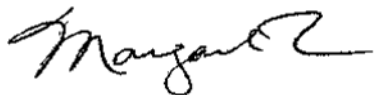
ECCC notes that the only management plan that has been updated and included as part of the water licence renewal is the newly drafted Water Treatment Plant Operations and Maintenance Manual. Given that the Licence has been expired for 4 years, other management plans associated with the Licence may require updating to ensure they are consistent with site conditions.

Recommendation(s):

ECCC recommends the Hamlet provide updated or missing operations and management plans according to changes and improvements that may have occurred during the licence term.

If you need more information, please contact Victoria Shore at Victoria.Shore@canada.ca.

Sincerely,



Margaret Fairbairn, Acting Regional Director
Environmental Protection Operations Directorate, Prairie Northern Region

cc: Brian Asher, Acting Head, Environmental Assessment North (NT and NU)