

Environmental Protection Operations Directorate
Prairie & Northern Region
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ECCC File: 6200 000 040
NWB File: 3BM-REP1520



October 20, 2020

via email at: licensing@nwb-oen.ca

Karén Kharatyan
Director of Technical Services
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Karén Kharatyan:

RE: 3BM-REP1520 – Kivalliq Region –Hamlet of Naujaat – Water License Amendment and Renewal Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above-noted Water License Amendment and Renewal Application. We appreciate the opportunity to submit these comments to the registry. You will find our comments below.

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*.

ECCC provides the following comments:

1. Solid Waste Facility

Reference(s)

- Executive Summary, Plan for Compliance, 2019 Annual Report

Comment

The Water License Renewal Application states that the current Solid Waste Disposal Facility is over capacity and references that the community is currently investigating potential locations for a new facility; however, no information is available for the new facility at this time. In addition, a Solid Waste Facility Management Plan has not been included in the renewal submission. Given that the current facility is operating over capacity, an updated solid waste management plan should be provided. The updated plan should include information on the



measures being taken to manage the additional volumes of waste in the interim, prior to construction of a new facility.

ECCC Recommendation(s)

ECCC recommends that the Government of Nunavut - Community and Government Services (GN-CGS) develop and submit an abandonment and reclamation plan for the current site for review prior to the current site's closure, and provide an updated Solid Waste Facility Management Plan outlining current measures being taken to manage waste volumes over the capacity of the facility.

2. Sewage Facility Management Plan

Reference(s)

- Sewage Facility Management Plan

Comment

The Water License Renewal Application includes upgrades to the existing Sewage Management Facility, including construction of a retention lagoon to increase pre-treatment and control discharge, prior to effluent entering the wetland system. ECCC notes that no updated Sewage Facility Management Plan has been provided for review as part of the renewal process.

ECCC Recommendation(s)

ECCC recommends that the Government of Nunavut - Community and Government Services (GN-CGS) develop an updated Sewage Facility Management Plan for the upgraded sewage management facility. This should include general operations and maintenance procedures, monitoring requirements and methods, and sludge management.

3. Sewage Treatment Wetland

Reference(s)

- Naujaat Sewage Lagoon Upgrade – Design Document

Comment

The upgrades to the sewage facility will include construction of a pre-treatment retention lagoon but the system will continue to rely on the natural wetland for primary treatment. The Application discusses a 2012 assessment of the state of the natural wetland treatment system and notes that although phytoremediation is occurring, there are indications of an overload of organic material in the wetland. The design update goes on to say that, "*the literature review indicates the potential for removal of up to 90% suspended solids and BOD is achievable within a wetland.*" Given that it was noted that the wetland was overloaded in 2012, it is unclear whether the treatment efficiencies referenced in the literature review should be used in predictions, or whether reduced treatment due to the overload of organics may be expected.

Site monitoring data of sewage influent quality, and quality at the end of the wetland should be assessed to confirm assumptions about treatment ability of the natural wetland.

ECCC Recommendation(s)

ECCC recommends that the Government of Nunavut - Community and Government Services (GN-CGS) complete a comparison of recent sewage influent quality versus quality at the end of the wetland to confirm assumptions about treatment capacity of the existing natural wetland system.

4. Proposed Updates to Effluent Quality Criteria

Reference(s)

- Naujaat Sewage Lagoon Upgrade – Design Document

Comment

With the addition of the new pre-treatment lagoon, the community is also proposing to increase the existing effluent quality criteria for carbonaceous biological oxygen demand (cBOD) to 100 mg/L and total suspended solids (TSS) to 120 mg/L. It is stated that, *“The GN position based on the research completed by Dalhousie University and ongoing discussions with Environment and Climate Change Canada (ECCC) regarding wastewater regulations in the north, is that effluent quality limits for a lagoon/wetland system discharging into a well flushed receiving environment should be 100mg/L cBOD5 and 120mg/L TSS. The Naujaat lagoon and wetlands area will be designed to achieve effluent quality below these limits.”*

ECCC Recommendation(s)

ECCC recommends that the current EQC for cBOD and TSS be retained, as these are regularly being met, noting that the system improvements are expected to improve effluent quality.

5. Effluent Monitoring Locations and Frequency

Reference(s)

- Naujaat Sewage Lagoon Upgrade – Design Document

Comment

In the design update for the Sewage Facility, several additional SNP monitoring locations are proposed, including: at the truck discharge (yearly), at the pump from the lagoon into the wetlands (twice yearly) and at the end of the wetlands (twice yearly).

ECCC Recommendation(s)

ECCC is supportive of the inclusion of additional monitoring stations to characterize influent quality from the truck discharge as well as effluent quality in the lagoon prior to entering the wetlands.

If you need more information, please contact Anna Graham at Anna.Graham2@Canada.ca.

Sincerely,

A handwritten signature in black ink that reads "Anna Graham". The signature is written in a cursive, flowing style.

Anna Graham

Environmental Assessment Coordinator, Environmental Assessment Program

cc: Brian Asher, Acting Head, Environmental Assessment North (NT and NU)
Anne Wilson, Team Lead, Expert Support – Water Quality