



Your file - Votre référence
3BM-YRB0308

August 26, 2016

Our file - Notre référence
IQALUIT-#1094380

Licensing Department
Nunavut Water Board
P.O. Box 119
GJOA HAVEN, NU, X0B 1J0

Sent via email: licensing@nwb-oen.ca

**Re: Licensee's Response to Indigenous and Northern Affairs Canada's Technical Review of
Amendment and Renewal Application – Hamlet of Resolute Bay Airport Sewage Lagoon
(Water Licence 3BM-YRB0308)**

To Whom It May Concern,

Thank you for the Nunavut Water Board's (NWB) August 23, 2016 notice of the Licensee's response to the Technical Review completed by Indigenous and Northern Affairs Canada (INAC) on the above mentioned Water Licence amendment and renewal application. INAC submitted a Technical Review Memorandum to the NWB on August 19, 2016, pursuant to INAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*. The Government of Nunavut Community and Government Services (Licensee Representative) provided responses and additional information to the Technical Review Memorandum, and these responses were provided to INAC on August 23, 2016. In light of these responses, a memorandum of updated recommendations is provided for the NWB's consideration. Recommendations from INAC's original Technical Review Memorandum not re-visited in this memorandum continue to stand as suggestions.

Please do not hesitate to contact me by telephone at 867-975-3877 or email at Amanda.Winegardner@aandc-aadnc.gc.ca for further information.

Sincerely,

Amanda Winegardner
Water Management Specialist
Water Resources Division
Resource Management
Directorate
Indigenous and Northern Affairs Canada
P.O. Box 100
IQALUIT, NU X0A 0H0

Encl.

Cc. Ian Parsons, A/Manager, Water Resources - INAC, Nunavut Regional Office (NRO)
Andrew Keim, A/Manager, Field Operations – INAC, NRO

Memorandum

To: Licensing Department, Nunavut Water Board

From: Amanda Winegardner, Water Management Specialist, Indigenous and Northern Affairs Canada, Nunavut Regional Office (NRO)

Cc: Ian Parsons (INAC; NRO), Andrew Keim (INAC; NRO)

Date: August 26, 2016

Re: Revised Recommendations for Amendment and Renewal Application for Licence No. 3BM-YRB0308

Applicant: Todd McKay, Government of Nunavut Economic Development and Transportation

Applicant Representative: Bhabesh Roy, Government of Nunavut Community and Government Services

Project: Hamlet of Resolute Bay Airport Sewage Lagoon

Region: Qikiqtani

Comments:

A. Background

Indigenous and Northern Affairs Canada (INAC) submitted a Technical Review Memorandum to the Nunavut Water Board (NWB) on August 19, 2016, regarding the Type 'B' Amendment and Renewal Application for 3BM-YRB0308 submitted by Government of Nunavut Community and Government Services. The current expired Water Licence 3BM-YRB0308 permits water use and waste disposal for the Resolute Bay Airport and surrounding facilities only. The licence renewal is only for sewage disposal activities at the airport sewage lagoon. Water use for the facilities included in this licence is to be obtained for the Hamlet of Resolute Bay.

The Licensee Representative has responded to INAC's initial submission on the above mentioned application, providing additional information on operation and monitoring of the sewage treatment system.

B. Recommendations based on responses from Licensee Representative

1. **Monitoring of Strip Lake**

The Licensee Representative has advised that twice-annual monitoring of Strip Lake has been ongoing (though no evidence of this is available on the public registry) and will continue in order to characterize and track the state of contamination of this former potable water source. INAC notes however that previous use by the Licensee of Strip Lake as a potable water source was not the cause of contamination to the lake; that there is not a clear understanding of the current extent of

contamination of Strip Lake; and that ongoing monitoring may be inconsequential if further remediation of the lake is not planned.

Recommendation 1: INAC recommends that water use provisions be removed from a renewed licence to reflect the fact that Strip Lake is no longer used as a potable water source for the Resolute Bay airport. INAC also recommends that a determination be made as to the extent of Licensee's responsibility for Strip Lake under a renewed Water Licence.

Ans. : The Stipe Lake is excluded under the proposed renewed Water Licence as the Potable water source. But monitoring of the water quality has been initiated by INAC Field inspector only from this summer 2016. The results will be shared and sent them along with the 2016 annual report in 2017 to NWB if needed. This is why no previous Record was shown in the FTP site of NWB. The Stripe Lake is not considered as the part of the proposed renewed water licence. However, we are willing to continue sharing Monitoring results with INAC.

2. Inclusion of wetland in sewage treatment system

The Licensee Representative has indicated that their preferred option for sewage treatment is to utilize the wetland adjacent to the airport sewage lagoon as part of the sewage treatment system. The Licensee Representative has further indicated that effluent from the airport sewage lagoon generally flows continuously from the lagoon into the wetland. INAC notes however, that the sewage lagoon has been shown to frequently overtop in winter months and that this has been documented in inspection reports.

Recommendation 2: INAC recommends that the wetland adjacent to the airport sewage lagoon be considered as part of the sewage treatment system and that monitoring program requirements and effluent criteria reflect this inclusion. INAC recommends that the regulated Final Discharge Point for the system be YRB-3, as the Licensee Representative has indicated that this is the final accessible sampling point in the wetland and that it is at least 300 m from the sewage lagoon. INAC also recommends that a monitoring station be placed at the point where lagoon effluent exfiltrates to the wetland in addition to the station characterizing effluent entering the lagoon. This will allow the Licensee Representative to provide further information on the efficacy of the treatment wetland. INAC notes that at this point, there has been no evidence presented to show that the wetland adjacent to the sewage lagoon provides effective treatment of sewage and wastewater.

Ans.: Yes, this will be implemented once licence is issued.

Recommendation 3: INAC recommends that a renewed licence recognize the continuous exfiltration of effluent from the lagoon to the wetland, and not consider this as an unauthorized discharge during seasons where the wetland is active, *as long as* regulated water quality criteria are met at the chosen Final Discharge Point. Additionally, INAC strongly recommends that the Licensee take measures to prevent overtopping of the lagoon during the winter months when the wetland is frozen and unable to treat sewage and wastewater.

Ans.: The ovetopped sewage will be remained in the wetland as frozen condition during the Winter; this will be melted, diluted and mixed with snow melting water and naturally treated in the wetland during summer prior to entering into the receiving body sea water located more than 2km away from the lagoon.

Recommendation 4: INAC continues to encourage that a formal Wetland Assessment be completed in order to verify wetland efficacy and ensure that waste is not migrating beyond the borders of the adjacent wetland.

Ans.: The recommended field sampling results will show the efficiency of the wetland.

3. Renewal licence term

The Licensee Representative has continually indicated that a Wastewater Treatment Plant will be constructed and commissioned in the community.

Recommendation 5: INAC recommends that any renewed Water Licence include a term of no more than five years. A term of such a length should provide the Licensee Representative an opportunity to bring operations at the airport sewage lagoon into compliance as well as demonstrate the proposed efficacy of the treatment wetland. Additionally, a Wastewater Treatment Plant is expected to be constructed in the community during this time frame. If proper monitoring of the treatment wetland does not produce evidence of effective sewage treatment, it is expected that this would be considered in any future Water Licence renewal process.

Ans.: The wetland monitoring results will be continued to submit to NWB along with the Annual report each year. It is expected that within Five years period, truck sewage might be redirected to the new WWTP. In case, this does not happened, an agreed and appropriate decision is required at that time.