



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
1BR-IAF----

July 5, 2019

Our file - Notre référence
CIDM#1254626

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

Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on Transport Canada's new application for water licence #1BR-IAF---- – Monitoring Well Installation and Groundwater Sampling at Iqaluit Airport Project

Dear Mr. Dwyer,

Thank you for your June 10, 2019 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 Indian Affairs and Northern Development Act*.

CIRNAC appreciates the opportunity to participate in this review. If there are any questions or concerns, please contact me at (867) 975-3876 or by e-mail at sarah.forte@canada.ca or David Zhong at (867) 975-4555 or david.zhong@canada.ca.

Sincerely,

Sarah Forté
Water Management Specialist

Canada

Technical Review Memorandum

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

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

Date: July 5, 2019

Re: Review of new application for type B water licence 1BR-IAG----

Applicant: Transport Canada
Project: Monitoring Well Installation and Groundwater Sampling at Iqaluit
Airport Project
Region: Qikiqtani

A. BACKGROUND

On June 10, 2019, the Nunavut Water Board provided notification of Transport Canada's submission of an application for Type B water licence 1BR-IAG---- for environmental monitoring at the Iqaluit airport. A follow-up email was received on June 18, 2019 with a revised Spill Contingency Plan.

Transport Canada will drill and install three monitoring wells on the Iqaluit airport property near the southwestern boundary. The wells will be in the presumed downstream direction of the former firefighting training area and be used to sample groundwater for confirm the absence or presence of per- and polyfluoroalkyl substances. This work was proposed in historical assessment and remediation programs that have been completed at the former firefighting training area.

The applicant is requesting a 5 year licence for the use of up to 0.3 m³/day of groundwater from the wells. Wastes will be transferred to other approved facilities for disposal.

B. RESULTS OF REVIEW

Crown-Indigenous and Relations Northern Affairs Canada (CIRNAC) Water Resources has read the documentation included with this application and is providing the following comments and recommendations for the Board's consideration.

1. Water quantity requested

Reference:

- Water Licence Renewal Application, Monitoring Well and Groundwater Sampling at Iqaluit Airport, Transport Canada, May 27, 2019. Box 13

Comment:

Most of the application refers to the use of 0.1 m³/day of groundwater, collected for sampling purposes. However, in one instance an estimate of up to 0.3 m³/day is included.

If it is found that 0.1 m³/day is insufficient, it will be burdensome to amend the authorized amount of water. Requesting for the maximum foreseeable needed quantity is preferable.

Recommendation:

CIRNAC recommends that any water licence grant permission for water use of 0.3 m³/day of groundwater.

2. Soil and water parameters to be tested

Reference:

- Water Licence Renewal Application, Monitoring Well and Groundwater Sampling at Iqaluit Airport, Transport Canada, May 27, 2019. Box 9.
- Environmental Site Assessment at Iqaluit Airport, Waste Management Plan, Stantec Consulting Ltd, March 28, 2019. Section 1.3.
- Project Description – Environmental Drilling at Iqaluit Airport in Iqaluit, Nunavut, Transport Canada, May 27, 2019.

Comment:

When the wells are installed and sampled, waste generated such as drill cuttings and purged groundwater may be contaminated and require specialized disposal. The work description states soil and groundwater will be sampled, analyzed and disposed of according to test results.

No detail is provided on which parameters will be tested, so we cannot evaluate whether these include the most likely potential contaminants.

Recommendation:

The applicant should be required to specify for which parameters they will test drill cuttings and groundwater to determine the appropriate disposal method.

3. Drilling waste management and disposal

Reference:

- Project Description – Environmental Drilling at Iqaluit Airport in Iqaluit, Nunavut, Transport Canada, May 27, 2019.
- Environmental Site Assessment at Iqaluit Airport, Waste Management Plan, Stantec Consulting Ltd, March 28, 2019.

Comment:

The proposed drillings may go through contaminated groundwater and soil/sediment/rock and generate contaminated drilling wastes (e.g., drilling fluids, drilling cuttings, and purge water). To avoid any potential contamination to surface water and soil, these drilling wastes need to be contained and stored safely until they can be treated or disposed of appropriately based on the analytical results of the wastes.

Recommendation:

The applicant should be required to contain all the drilling wastes and store them in a safe manner until they can be treated and/or disposed of appropriately.

4. Groundwater flow direction

Reference:

- Environmental Site Assessment at Iqaluit Airport, Waste Management Plan, Stantec Consulting Ltd, March 28, 2019. Section 1.3.
- Proposed Monitoring Well Location Plan Figure 2. Stantec Consulting Ltd, March 28, 2019.

Comment:

The purpose of the project is to confirm the presence or absence of per- and polyfluoroalkyl substances in the groundwater, that could have originated from the former firefighting training area. The proposed well locations are approximately 500-1200 m to the south of the former firefighting training area, in the direction of assumed groundwater flow.

The project details include submitting samples to an accredited laboratory for per- and polyfluoroalkyl substances analysis. It does not mention any effort to confirm the assumed groundwater flow direction. This is necessary to determine if the wells are in a location where they could allow sampling of groundwater potentially impacted by releases from the former firefighting training area. It is of interest to regulators to know about potentially contaminated groundwater flowing from the airport grounds.

Recommendation:

CIRNAC recommends the applicant determine groundwater flow direction from measurements in their three wells, to confirm that the well positions allow sampling of any potential groundwater plume from the former firefighting training area.

5. Spill contingency plan revision

Reference:

- Spill Contingency Plan Monitoring Well Installation and Groundwater Sampling at Iqaluit Airport, Iqaluit, Nunavut, Transport Canada, June 2019. Section 1) iii).

Comment:

The applicant has updated the Spill Contingency Plan, but specifies “*A final review and updated revisions to the spill contingency plan will be required when a professional environmental consultant is awarded the contract.*”

We note that the plan includes a section describing the revisions. Keeping this section in any future updates will help reduce the effort necessary to review further Spill Contingency Plan updates.

Recommendation:

CIRNAC recommends the applicant continue recording changes made in updated versions of the Spill Contingency Plan.