Indigenous and Northern Affairs Canada | Affaires autochtones et du Nord Canada

Your file - Votre référence
8BD-PIH----

November 4, 2016

Our file - Notre référence
IQALUIT-#1110303

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

Sent via email:licensing@nwb-oen.ca

Re: Technical Review of New Water Licence Application (No. 8BD-PIH----) – Geotechnical and Environmental Baseline Studies – Pond Inlet Small Craft Harbour, Marie Cardona, Advisian (on behalf of the Government of Nunavut)

To Whom It May Concern,

Thank you for the Nunavut Water Board's October 5, 2016 notice of the above mentioned water licence application.

A memorandum is provided for the Nunavut Water Board's consideration. Comments and recommendations have been provided pursuant to Indigenous and Northern Affairs Canada's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

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
Indigenous and Northern Affairs Canada
P.O. Box 100
Iqaluit, NU X0A 0H0

Encl.

Cc. Scott Burgess, A/Manager, Water Resources, INAC, Nunavut Regional Office (NRO)
Erik Allain, Manager, Field Operations, INAC, NRO

Canada

Memorandum

To: Licensing Department, Nunavut Water Board

From: Amanda Winegardner, Water Management Specialist, Indigenous and Northern Affairs Canada (INAC)

Cc: Scott Burgess, A/Manager, Water Resources, INAC
Erik Allain, Manager, Field Operations, INAC

Date: November 4, 2016

Re: Technical Review of New Application No. 8BD-PIH---- for Geotechnical and Environmental Baseline Studies – Pond Inlet Small Craft Harbour

Applicant: Marie Cardona, Advisian, on behalf of the Government of Nunavut
Project: Geotechnical and Environmental Baseline Studies – Pond Inlet Small Craft Harbour
Region: Qikiqtani

Comments:

A. Background

The Government of Nunavut has contracted Advisian to conduct environmental baseline and geotechnical studies in support of planning and construction of a small craft harbor in Pond Inlet. Marie Cordona of Advisian (the Applicant) has applied for a Type B Water Licence to support water use and waste disposal activities associated with these studies, scheduled to take place between summer 2016 and summer 2017. The Applicant has requested a two year licence term, from November 2016 to November 2018. The proposed work includes a 'Small Craft Harbour Study Area' which consists of a marine area and associated shoreline within the community of Pond Inlet as well as an inland area designated as a 'Potential Quarry Area'. The project area is reported as 72°41'56"N, 77°58'33"W and 72°41'48"N, 77°58'59"W. All work will take place on Crown and Municipal land. The majority of environmental baseline studies will occur in the marine environment and will include water and sediment quality sampling, benthic invertebrate sampling, fish habitat characterization, collection of surface current data, and observation of migratory and marine birds. Mapping of terrestrial vegetation will occur at both the shoreline of the proposed harbour area and in the potential quarry area.

Geotechnical studies will occur in both the marine environment and inland at the proposed quarry study area. Inland geotechnical studies will be used to determine the potential for acid rock drainage and metal leaching from the proposed quarry area. The Applicant has proposed using a maximum of 2 m^3/day of either seawater or treated freshwater obtained from the Hamlet of Pond Inlet for drilling. The Applicant has advised that they will return m^3/day to the source used but provide no information regarding treating or cleaning drill water post-drilling. Drilling will occur on land (quarry area) as well as over ice and/or from a barge. Drill cuttings and muds (5 m^3/day) will be pumped back down the borehole or recirculated on the seabed. It is unclear whether any drilling waste will be contained in a sump on land. No camp will be built for this project and staff will be

housed within the municipality for the duration of the studies.

Hazardous materials on site will include small quantities of diesel, gasoline, hydraulic and lubricating oils, engine coolants, and sample preservatives. Environmental management plans (i.e., spill prevention, waste management, wildlife mitigation and monitoring, abandonment and restoration) will be implemented to mitigate potential risks to the environment.

B. Results of review

On behalf of INAC's Water Resources Division, the following comments and recommendations are provided for the NWB's consideration:

1. **Water source for drilling**

   Source:

1) 8BD-PIH---- Type B Water Licence Application Signed, Section 13: Quantity and Quality of Water Involved

   Comment: The Water Licence Application has identified two potential sources of water to be used for drilling: seawater and treated freshwater obtained from the Hamlet of Pond Inlet. The Application also states that the source of the water will be confirmed by the contractor. No information is provided as to whether the any freshwater (non-treated) sources of water will be used for drilling. No information is provided regarding water storage at the project areas.

   Recommendation 1: INAC recommends that the Applicant confirm the water source(s) for drilling with the NWB and INAC Inspector once a final decision on water source has been made. INAC also recommends that use of water from different sources be noted in annual report(s). INAC also notes that use of freshwater from the municipality may not require a separate Water Licence for water use.

2. **Quantity of water used for drilling and returned to source**

   Source:

1) 8BD-PIH---- Type B Water Licence Application Signed, Section 13: Quantity and Quality of Water Involved

   Comment: The Water Licence Application states the overall estimated quantity of water to be used as 2 m^3/day; but also states that 2 m^3/day may be used from each of the sources identified (seawater or treated freshwater). The Applicant advises that 2 m^3/day will be returned to the source(s).

   Recommendation 2: INAC recommends that the Applicant clarify whether the two identified sources of water are expected to be used concurrently for a total use of 4 m^3/day (and hence 4 m^3/day returned to source) or if 2 m^3/day is sufficient volume for the undertaking.

3. **Site map and study area**

   Source:

1) Study Area Pond Inlet
2) Pond Inlet Topo

Comment: The Applicant has provided a topographic map and satellite image of the municipality, highlighting the proposed small craft harbour area and the proposed quarry area. The map and image provided do not include detailed information regarding water use, waste disposal, hazardous materials storage or location of spill kits.

Recommendation 3: INAC recommends that the Applicant provide a more detailed map that includes locations of water use, waste disposal, monitoring sites, storage of hazardous materials and spill kits.

4. Drill cuttings disposal

Source:

1) 8BD-PIH---- Type B Water Licence Application Signed, Section 15: Quantity and Quality of Waste Involved

Comment: The Applicant has advised that drill ('environmentally friendly') muds and cuttings will be recirculated to the seafloor after drilling. While this may be reasonable for the drilling that will occur in the marine environment, it does not make sense for disposal of the cuttings from the quarry area.

Recommendation 4: INAC recommends that the Applicant clarify the waste disposal measures for drill cuttings and muds from the quarry area drilling, i.e. will they be contained in an on-land sump where waste may enter a water body? If drill cuttings are to be disposed of on land where waste may enter water, INAC recommends that a Water Licence include standard terms and conditions regarding on land drill cutting disposal; ensuring that drill cuttings are not deleterious in nature.

5. Spill Prevention Plan

Source:

1) 8BD-PIH---- Spill Prevention Plan
2) 8BD-PIH---- Type B Water Licence Application Signed
3) 8BD-PIH---- Non-technical summary Pond Inlet

Comment: The submitted Spill Prevention Plan includes procedures for spills that occur on land and water. Application materials however specify that drilling may occur on ice and that some sampling will occur during the fall season. This means that staff for this project may also encounter snow conditions.

Recommendation 5: INAC recommends that the Applicant submit an updated Spill Prevention Plan that includes response measures to be taken if spills occur on snow or ice.

C. <u>Additional note</u>

The Application is missing some key details regarding disposal of drill cuttings and drill water at the quarry drilling locations. More information would be needed from the Applicant to determine the effect that these activities may pose to freshwater.