Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

Our reference
File #9545-2-3BC.DRAA
CIDMS #393203

March 24, 2010

Your reference
3BC-DRA----

Ida Porter
Licensing Administrative Assistant
Nunavut Water Board
Gjoa Haven, Nunavut
X0E 1J0

Sent Via Email

Dear Ida,

Subject **Water License #3BC-DRA----, Queen's University, Drake Point Project, Qikiqtani Region, New Application**

Please be advised that on behalf of Indian and Northern Affairs Canada, I have completed a review of the above referenced Queen's University submission to the Nunavut Water Board.

A Technical Review Memorandum (attached) is provided to the Board for consideration.

Should you have any questions regarding this submission, feel free to contact me at 867 975-4555 or david.abernethy@inac-ainc.gc.ca.

Regards,

David W. Abernethy
Water Resources Regional Coordinator
Operations Directorate, Nunavut Regional Office
Indian and Northern Affairs Canada
Iqaluit, Nunavut
X0A 0H0

Attached.

Cc: Lou-Ann Cornacchio, INAC Water Resources Manager
Peter Kusugak, Manager of Field Operations

Canada

TECHNICAL REVIEW MEMORANDUM

Date: Mar. 24/10

To: Ida Porter, Nunavut Water Board

From: David Abernethy, Indian and Northern Affairs Canada

Re: Water License #3BC-DRA----, Queen's University, Drake Point Project, Qikiqtani Region, New Application

A. PROJECT DESCRIPTION

On Feb. 25/10 the Nunavut Water Board (NWB or Board) distributed a water license application that was submitted by Melissa Lafreniere on behalf of Queen's University for their High Arctic Permafrost Landscape Stability and Water Quality Research Project, also referred to as the Drake Point Project for licensing purposes. Interested parties were invited to make representations on or before Mar. 26/10.

Queen's University will conduct field research on Melville Island's Sabine Peninsula during the summers of 2010, 2011, and 2012 with to acquire a better understanding of how landscape can affect water quality. In particular, the impact of natural permafrost and vegetation disturbances on water quality will be assessed. Three (3) rivers will be instrumented with electronic sensors to measure flow, level, temperature, and turbidity. Water samples will be collected from approximately 100 locations.

All river stations will require temporary structures on their banks or shores and one temporary weather station will be installed and secure with flat plates, loaded with local rock and/or metal stakes. All materials will be removed when the work is completed.

A temporary camp capable of accommodating four (4) people will be established nearby a river, stream, or lake that can serve as a potable water source. The camp's location will also be selected based on the surrounding landscape ability to support an airstrip. Queen's University anticipates requiring 30 L of water for domestic purposes on a daily basis in addition to their water quality sampling requirements. All wastewater (sewage and gray water) will be directed to sumps.

B. RESULTS OF REVIEW

On behalf of Indian and Northern Affairs Canada (INAC), I am providing the following comments / recommendations to the Board for consideration,

1. General

- Standard conditions that apply to camp operations should be applied.

2. Water Use

- Queen's University must not cause erosion to the banks of any body of water, including streams and rivers, unless authorized by the Board. This applies to all aspects of their proposed research project, including monitoring stations and stream crossings.
- The daily water consumption limit should take into account both domestic and research requirements. To avoid unnecessary compliance issues, I recommend that the limit be set to no less than 5 m^3 per day.

3. Topographic Map of Project Area

- Once a camp location has been determined, Queen's University should submit a topographic map of their project area (scaled to an appropriate size) that identifies their camp, gray water sump, fuel cache, and potable water source intake point. This map should also allow for an understanding of any watersheds that can be affected by this undertaking.

4. Incineration of Combustible Wastes

- Any incineration of solid waste should be conducted in accordance with Environment Canada's March 2009 "Technical Document for Batch Waste Incineration."

5. Spill Contingency Planning

- Although the submitted Spill Contingency Plan allows for a good understanding of how hazardous material spills will be managed, this plan should be revised to included the following details,
  - A site map that identifies the fuel storage facility and its relationship to other areas that may be affected by a spill. This map should be set to an appropriate scale and include the fuel storage facility's location, other project facilities (i.e., camp, airstrip, etc.), spill response equipment, drainage bodies, and nearby bodies of water;
  - A description of the training provided to project participants on how to respond to a spill;
  - A description of the type and amount of hazardous materials, including fuel, normally stored in the project area; and,

– Disposal procedures for recovered contaminated materials.

6. Fuel Storage

- Fuel storage facilities should be located a minimum of thirty (30) metres from the ordinary high water mark of any water body and if possible, in an area with natural depression and soil with low permeability.
- All fuel storage containers should be situated in a manner that allows for easy access and removal of containers in the event of leaks or spills.

Prepared by David Abernethy

Cc: Lou-Ann Cornacchio, INAC Water Resources Manager
Peter Kusugak, Manager of Field Operations