

Response to the Government of Nunavut's concerns regarding Natural Resources Canada's "Taliks Mapping and Lake-Groundwater Conceptual Models" project proposal

Concern #1: Wildlife Disturbance – Protocols and Procedures

The Government of Nunavut has the following recommendations for the Proponent:

- 1. Issue a threshold minimum of 100m from observed wildlife for drone usage.*
- 2. Wildlife Monitor should be onsite during the operation of the Project.*
- 3. Human-wildlife interaction protocols should be included in the Proposal.*
- 4. Wildlife mitigation protocols to reduce disturbance should be included in the Proposal.*

We thank you for raising this concern and for your recommendations.

Background:

The general area supports major habitats for caribou (Qamanirjuaq herd), gyrfalcon, peregrine falcon, and polar bear. None of the Rankin Inlet study area is within a caribou-protected area or calving grounds and there are no migratory bird sanctuaries (except near Meliadine Lake). However, Caribou transit through the Rankin Inlet area, and the entire region is a "Critical Wildlife Area" and an "Inuit Harvest Area" and much of the area is within a GN Wildlife Area of Special Interest for falcons. The Meliadine River esker area is an ecological site. The entire region is within the polar bear distribution area, but no denning grounds are nearby. The entire region is short-eared owl habitat. There are no Canada goose or snow goose nesting grounds in the study area.

None of the limited use areas (Nunavut Land Use Plan) restrict any scientific research activities proposed within the Caribou Post-Calving ground for the Qamanirjuaq herd. Still, it states that project proponents must cease all uses between June 23 – July 3.

Our plan and mitigation measures:

We plan on conducting fieldwork in: 1) early- to mid-April; and 2) early September. The estimated duration of fieldwork is between one and two weeks in April and September. Hence, we do not foresee our research activities taking place during the caribou migration or post-calving period.

Further, although this has not been specified in our project proposal, we plan to hire at least one wildlife monitor during each planned fieldwork endeavour. The latter would provide up-to-date knowledge of wildlife activities near or within our proposed sampling and instrumentation sites, and we would plan our field activities accordingly (i.e., to ensure we do not interfere with wildlife).

We also agree that drone mapping and water sampling activities should occur at least at a minimum distance of 100 m from wildlife. Our licensed flight operator will scan the horizon with the onboard camera to detect any nearby wildlife prior to initiating his mapping or water sampling activities.

Considering that we plan on conducting fieldwork activities outside of caribou migration and/or post-calving periods, we do not foresee caribou-human interactions taking place. However, if we do encounter

nearby wildlife, including caribou, polar bears, and migratory birds, we will interrupt our research activities at the specific site and leave its premises until we have confirmation from the wildlife monitor that we are not interfering with this specific wildlife. If such is the case, our party members (who have received wildlife and predator awareness training) will refrain from visiting, sampling, and installing instrumentation in this location until our wildlife monitor permits us to do so.

Commented [LAM1]: Pourquoi le KIA?

High-quality vegetation is important for caribou. A light portable drilling machine for permafrost coring would be used, but minimal vegetation disturbance is foreseen. Disturbance to the surrounding vegetation would be minimized by laying a tarp on the ground (2m x 2m). We would proceed to proper reclamation of permafrost drill sites to avoid tripping hazards for caribou.

Concern #2: Environmental Impacts – Waste and Hazardous Materials

The Government of Nunavut has the following recommendations for the Proponent:

1. Provide a description of the proposed protocols or procedures for the management of waste.
2. Provide a description of the proposed protocols or procedures for the storage, handling, and management of fuel and other potentially hazardous materials.
3. Provide a description of the proposed protocols or procedures in the event of a fuel or hazardous material spill.

We thank you for raising this concern and for your recommendations.

We do not foresee this research activity generating substantial waste. Our research-related wastes can be classified into four categories: 1) Combustible wastes (totalling 50kg each field endeavour); 2) Non-combustible wastes (totalling 50kg each field endeavour); 3) Greywater (totalling 100L per person per day=12600L for each field endeavour); 4) Sewage wastes (100L per person per day=12600L). Considering that field members would stay at a local hotel and that all wastes associated with the project would be carried out from our field sites, those would ultimately be disposed of via Rankin Inlet's municipal water system.

Further, below are our proposed protocols or procedures for storing, handling, and managing fuel (including protocols or procedures in the event of a fuel or hazardous material spill):

Risk assessment and mitigation of risk:

Fuel containers: Leaks or ruptures could affect plastic jerry containers holding gasoline at fueling locations. Fueling will be performed at commercial filling stations whenever possible.

Responding to failures and spills:

Spill response training will be provided to all field members, particularly those who regularly handle fuel. The training will include a presentation, mock spill, review of spill kit contents and their use, and reporting.

Spill response contact list

24-hour Spill Report Line

(867) 920-8130

gov.nu.ca/environment

AANDC Water Resources Inspector

Iqaluit, NU

(867) 975-4295

Environment Canada

Iqaluit, NU

(867) 975-4644

24-hour pager (867) 766-3737

Government of Nunavut – Department of Environment

(867) 975-7700

Manager of Pollution Control and Air Quality

(867) 975-7748

Kivalliq Inuit Association

Lands Department

P.O. Box 340

Rankin Inlet, NU X0C 0G0

Phone: (867) 645-5725

Fax: (867) 645-2348

Basic steps – Spill Procedure

In the case of any spill or other environmental emergency, it is necessary to react in the most immediate, safest, and environmentally responsible manner. No spill or incident is so minor that it can be ignored, and every spill must be reported.

The basic steps of the spill response plan are as follows:

1. Always ensure the safety of all persons at all times.
2. Identify the spill substance and its source, and, if possible, stop the process or shut off the source of the flow.
3. Inform the on-site coordinator or his /her designate at once so that he/she may take the appropriate actions. Appropriate action includes the notification of the spill to the 24-hour Spill line and AANDC Water Resource Officer.
4. Contain the spill or environmental hazard, as per its nature and as per the advice of the Spill Line and the AANDC Water Resource Officer as required.
5. Implement any necessary cleanup and/or remedial action.

Basic Steps – Chain of Command

1. Immediately notify and report to the 24-hour Spill Line at (867) 920-8130, the Water Resource Officer at (867) 975-4295, Environment Canada personnel at (867) 766- 3737, Kivalliq Inuit Association Land Use Inspector at (867) 645-5735

2. A Spill Report Form (Addendum 1) is filled out as completely as possible before or after contacting the 24-hour Spill Line.

Other contacts for spill response/assistance and further reporting

Nunavut Water Board..... (867) 360-6338
Fisheries and Oceans Canada, Habitat Impact Biologist..... (867) 979-8007
Government of Nunavut, Department of Environment..... (867) 975-5910
Kivalliq Inuit Association, Land Use Inspector..... (867) 645-5735

Taking action:

Spill Response Actions for Gasoline and Jet B Aviation Fuel: Act only if safety permits. Stop the source flow if safe to do so and eliminate all ignition sources. Never smoke when dealing with these types of spills.

On Land: Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated. Remove the spill using absorbent pads or excavating the soil, gravel or snow. Remove spill splashed on vegetation using particulate absorbent material. Contact regulatory agencies for approval before commencing with the removal of any soil, gravel or vegetation.

On Muskeg: Do not deploy personnel and equipment on marsh and vegetation. Remove pooled gasoline or Jet B with absorbent pads and/or skimmer. Flush with low-pressure water to herd oil to a collection point. On advice from regulatory agencies, burn only in localized areas e.g., trenches, piles or windrows. Do not burn if root systems can be damaged (low water table). Minimize damage caused by equipment and excavation.

On Water: Contain spill as close to the release point as possible. Use containment boom to capture spill for recovery after vapours have dissipated. Use absorbent pads to capture smaller spills. Use a skimmer for larger spills.

On Snow and Ice: Use snow to build a containment berm around the spill. Remove the spill using absorbent pads or particulate absorbent material. The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, or polypropylene bags.

Storage and Transfer:

All contaminated water, ice, snow, soil, and clean-up supplies will be stored in closed, labelled containers. All containers will be stored in a well-ventilated area away from incompatible materials.

Disposal:

Any contaminated material will be shipped to an appropriate and approved facility. The Department of Environment monitors the movement of hazardous wastes from generators and carriers to receivers through a tracking document (Waste Manifest). A waste manifest will accompany all movements.

Spill Equipment:

Spill kits will be on-site at all designated refuelling stations. Spill kits consist of:

- particulate absorbent
- petroleum absorbent pads
- 2 pairs of pvc gloves
- 2 pairs of safety goggles
- disposable bags
- 1 shovel