



Environmental Protection Operations Directorate
Prairie and Northern Region (PNR)
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June 13, 2013

EC file: 4704 001 012

NWB file: 3BC-HIS----

Phyllis Beaulieu, Manager of Licensing
Nunavut Water Board
PO Box 119
Gjoa Haven NU X0B 1J0

via email: licensing@nunavutwaterboard.org

Attention: Ms. Beaulieu

RE: 3BC-HIS---- New Application - Gordon Osinski - Qikiqtani Region

Environment Canada (EC) has reviewed the information supporting the new Water License application submitted to the Nunavut Water Board (NWB). The following specialist advice is provided pursuant to the *Canadian Environmental Protection Act 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Gordon Osinski, of the University of Western Ontario, is applying to the NWB for a new Type B Water License in support of a research project studying the Houghton Impact Structure, specifically the geological, biological, and environmental effects of the impact event. Transportation to the site will be by Twin Otter to a landing strip within the Houghton Impact Structure. While on site, access to scientific sites will be accomplished using All Terrain Vehicles (ATV) and by walking. One day a helicopter will be used to travel to locations not accessible by ATV. A temporary camp will be erected consisting of a Longhouse tent and several small personal tents. Water for camp use (approx. 0.04 m³ per day) and drilling purposes (approx. 0.01 m³ per day) will be collected from the nearby Houghton River. All combustible waste will be incinerated while all non-combustible waste will be returned to Polar Continental Shelf facilities for disposal.

Based on a review of the license application and supporting materials, EC provides the following comments for the NWB's consideration:

General

1. Subsection 36(3) of the *Fisheries Act* specifies that, unless authorized by federal regulation, no person shall deposit or permit the deposit of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water. The definition of a deleterious substance (Subsection 34(1) of the *Fisheries Act*) includes "any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of

degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water." Subsection 36(3) makes no allowance for a mixing or dilution zone at the point of deposit.

2. All mitigation measures identified by the Proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. EC recommends that all field operations staff be made aware of the Proponents' commitments to these mitigation measures and provided with appropriate advice / training on how to implement these measures.
3. EC offers the following comments for fuel transfer operations:
 - Transfer operations should be attended by trained personnel at all times;
 - A dedicated area should be used for refuelling equipment with measures taken to ensure capture and containment of drips and potential spills;
 - The Proponent should not store any materials on the surface ice of lakes or streams; and
 - Secondary containment or a surface liner (drip pans, etc.) should be used when refuelling any equipment on site and should also be used at all fuel drum locations. Secondary containment should be of adequate size and volume to contain and hold fluids for the purpose of preventing spills (the worst-case scenario). An appropriate spill kit with absorbent material should be located at all fuel storage and transfer sites and at drill sites.

Spill Contingency Plan

4. Please note that according to the Aboriginal Affairs and Northern Development Canada's (AANDC) "Guidelines for Spill Contingency Planning" (April 2007), available at <http://www.aadnc-aandc.gc.ca/eng/1100100024236/1100100024253>, all releases of harmful substances, **regardless of quantity** are to be reported to the NWT / NU 24-hour Spill Line, (867) 920-8130 if the release is near or into a water body, is near or into a designated sensitive environment or sensitive wildlife habitat, poses imminent threat to human health or safety, poses imminent threat to a listed species at risk or its critical habitat, or is uncontrollable.
5. The Spill Contingency Plan should be updated to include locations of disposal sites approved to accept spill wastes.

Waste Management

6. Used absorbent materials oily or greasy rags should be safely stored and transported in sealed containers (odour-free to prevent animal attraction) and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.
7. EC notes that the Proponent intends to incinerate organic and solid waste. In principal, EC does not encourage the open burning of combustible waste as a means of disposal, as it can produce pollutants including dioxins and furans. As a best practice, EC recommends the proponent pack supplies with a view to reduce the amount of combustible waste requiring this disposal method. For reference,

below are links to (1) the Nunavut Municipal Open Burning Policy and (2) information from EC regarding open burning:

- <http://www.gov.nu.ca/env/Open%20burning.pdf>
- http://www.ec.gc.ca/qdd-mw/684B44DD-5780-4F73-BC58-A97E31A19EDC/COM1170_Open_Burning_Brochure_e_v6_for%20web.pdf

8. All drilling effluent should be directed to a sump that is properly constructed and adequately sized to ensure there is no runoff and that water bodies downstream of drilling activities are not affected. All efforts shall be made to prevent return water and cuttings from migrating from the drill site.

Wildlife

9. Paragraph 6(a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. If active nests are encountered during project activities, the nesting area should be avoided until nesting is complete (i.e. the young have left the vicinity of the nest). The Proponent should consult the fact sheet "Planning Ahead to Reduce Risks to Migratory Bird Nests" available at: <http://www.ec.gc.ca/paom-itmb/> for further guidance.
10. EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., gasoline) be made inaccessible to wildlife at all times. Such items can attract predators of migratory birds such as foxes, ravens, gulls, and bears. Although these animals may initially be attracted to the novel food sources, they often will also eat eggs and young birds in the area. These predators can have significant negative effects on the local bird populations.
11. Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
12. There are a number of key migratory bird habitat sites on Devon Island (Skrus Point, Cape Vera, Hobhouse Inlet, Cape Liddon, and Eastern Devon Island (Latour et al. 2008, Mallory and Fontaine 2004). In order to reduce aircraft disturbance to migratory birds, EC recommends the following, subject to pilot discretion regarding aircraft and human safety:
 - Fly at times when few birds are present (e.g., early spring, late fall, winter)
 - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat likely to have birds and maintain a minimum flight altitude of 650 m (2100 feet).
 - Minimize flights during periods when birds are particularly sensitive to disturbance such as migration, nesting, and moulting.
 - Plan flight paths to avoid known concentrations of birds (e.g., bird colonies, moulting areas) by a lateral distance of at least 1.5 km. If avoidance is not possible, maintain a minimum flight altitude of 1100 m (3500 feet) over areas where birds are known to concentrate.
 - Avoid the seaward side of seabird colonies and areas used by flocks of migrating waterfowl by 3 km.

- Avoid excessive hovering or circling over areas likely to have birds.
- Inform pilots of these recommendations and areas known to have birds.

13. The following comments are pursuant to the *Species at Risk Act* (SARA). Subsection 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, EC suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance and attraction to operations.

Terrestrial Species at Risk potentially within project area ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Red Knot (<i>islandica</i> subspecies)	Special Concern	Schedule 1	EC
Ivory Gull	Endangered	Schedule 1	EC
Ross's Gull	Threatened	Schedule 1	EC
Peary Caribou	Endangered	Schedule 1	Government of Nunavut
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	Schedule 1	Government of Nunavut
Polar Bear	Special Concern	Schedule 1	Government of Nunavut

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² EC has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the *Migratory Birds Convention Act* (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Thus, for species within their responsibility, the Territorial Government is best suited to provide detailed advice and information on potential adverse effects, mitigation measures, and monitoring.

³ The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was assessed by COSEWIC as Special Concern, and was added to Schedule 1 of SARA in July 2012.

- For any Species at Risk that could be encountered or affected by the project, the Proponent should note any potential adverse effects of the project to the species, its habitat, and/or its residence. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the Species at Risk registry at <http://www.sararegistry.gc.ca> for more information on specific species.

- If Peary Caribou or other Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
 - Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the Proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested. For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
 - Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
14. EC notes that the project area is within the range of Peary Caribou. EC recommends that the proponent contact the Government of Nunavut regarding specific mitigation measures and make every effort to minimize disturbance both on the ground and in the air. Observations of Peary Caribou are of particular interest (coordinates, group size, number of calves), and if possible this information should be provided to the Government of Nunavut (Morgan Anderson, manderson@gov.nu.ca)
15. EC notes that the *islandica* subspecies of Red Knot (a shorebird) was added to Schedule 1 of SARA as a Special Concern species in 2012. The Red Knot (*islandica* subspecies) breeding range overlaps with the location of the project area. Although the major threats to Red Knot relate to habitat degradation in the wintering areas and decreases in food resources during spring migration, the proponent should ensure that extra precautions are taken to avoid any disturbance to the Red Knot or its habitat during the breeding season. Red Knots nest on barren habitats (often less than 5% vegetation) such as windswept ridges, slopes or plateaus. Nest sites are usually in dry, south-facing locations, and may be located near wetlands or lake edges, where the young are led after hatching. Nests are simple scrapes on the ground in small patches of vegetation. Nesting will occur in June with hatching in early July. If an active Red Knot nest is encountered during project activities, or observations of Red Knot in the area suggest that a nest could be nearby, the proponent should avoid all activities in the area until nesting is complete (i.e., likely only resume activities in the area until after mid-July).
16. Ivory Gulls are medium-sized gulls that can be identified by their pure white plumage and black legs. Ivory Gulls nest in colonies on windswept plateaus, ice-choked islands, or on steep cliffs of mountains protruding from glaciers. Ivory Gulls nest on the Inglefield Mountains on Ellesmere Island and eastern Devon Island (Sites 1 and 11 in Latour *et al.* 2008), and have recently been discovered to be nesting on the Grinnell Peninsula. It is possible that Ivory Gull colonies exist in the High Arctic that have not been noted. If inland groups of gulls are encountered that could be nesting Ivory Gulls, these areas should be avoided to

prevent disturbance and observations reported to the Canadian Wildlife Service (CWS) of EC.

17. The CWS of EC is interested in observations of birds, especially observations of birds identified as Species at Risk (e.g., Red Knot, Ivory Gulls) or of species occurring outside their known ranges. Proponents are encouraged to submit their observations to eBird Canada (<http://ebird.org/content/canada>). Observations submitted to eBird are immediately available to anyone interested in birds in the north. Observations can also be sent to the NWT/NU Bird Checklist program:

NWT/NU Bird Checklist Survey
Canadian Wildlife Service, Environment Canada
5019 - 52 Street, 4th Floor
P.O. Box 2310
Yellowknife NT, X1A 2P7
Phone: 867.669.4771
Email: NWTChecklist@ec.gc.ca

Please contact the CWS for blank checklist forms

18. Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The Proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

Should you require further information, please do not hesitate to contact me at 867-669-4746 or jane.fitzgerald@ec.gc.ca.

Sincerely,



Jane Fitzgerald
Environmental Assessment (EA) Coordinator

cc: Yonghsu Fan, Senior EA Coordinator, EA-North, Environmental Assessment and Marine Programs(EAMP)-PNR, EC
Lisa Lowman, Acting Head EA-North, EAMP-PNR, EC
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