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Our File: 4703 001 132

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Re: NWB 2BE-MRP - Water Licence Application – IronOne Inc. – Maguse River Proposal – Kivalliq Region.

NIRB 11EN031 – Part 4 Screening - IronOne Inc. – Maguse River Proposal – Kivalliq Region.

Environment Canada's contribution to your request for specialist advice is based on the mandated responsibilities for the enforcement of **Section 36(3)** of the *Fisheries Act*, the *Canadian Environmental Protection Act* (CEPA), the *Migratory Birds Convention Act* (MBCA) *Regulations* and the *Species at Risk Act* (SARA).

IronOne Inc. is proposing to explore for iron ore and gold on their prospecting permits located 60 to 80 kilometres northwest of Arviat, NU near the Maguse River. The project covers Prospecting Permit Nos. 8088 to 8098 inclusive, a camp is proposed at the following co-ordinates: 61° 45' 10" N, 93° 59' 11" W. Activities to include: helicopter supported mapping; diamond drilling and locating and sampling of previously drilled holes and core. The proponent has engaged MPH Consulting to manage and carry out the exploration program.

Environment Canada (EC) supports the mitigation measures outlined in the proponent's application and offers the following comments and recommendations to the Nunavut Water Board and Nunavut Impact Review Board for consideration.

Comments and Recommendations

The proponent shall insure that any chemicals, fuel or wastes associated with the proposed project do not enter waters frequented by fish. It is a requirement of **Section 36(3)** of the *Fisheries Act* that all effluent discharged into water frequented by fish, be non-deleterious.

Incineration

The proponent mentions that they will be using Pacto toilets, with the waste products being incinerated on site. The proponent should ensure that combustible waste is burned in a device that promotes efficient combustion and reduction of emissions and is capable of meeting the emissions limits established under the Canada-wide Standards (CWS) for Dioxins and Furans and the CWS for Mercury Emissions. EC has developed a *Technical Document for Batch Waste Incineration*, which is available at the following web link:

<http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=5F6E5596-1>

The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting. This information should be incorporated into an incineration management plan for the proponent's camp facilities. EC would like the opportunity to review this plan prior to implementation.

Artesian flow

The proponent mentions that if artesian flow is encountered, that they will permanently plug and seal the drill hole. If the proponent encounters artesian flow the following information should be provided to the Nunavut Impact Review Board: co-ordinates of the drill hole; the depth at which flow was encountered; and the means employed to plug and seal the hole.

Drilling Additives

EC assessed inorganic chloride salts and concluded that these salts in high concentrations are harmful to the environment. As a result, the proponent should ensure that when using calcium chloride (CaCl₂) for drilling purposes that return water is contained in a properly constructed sump and located in such a manner as to ensure that the contents do not migrate out from the sump. Please note that the proponent should not rely on permafrost integrity to contain and isolate drilling wastes.

Spill Contingency

The proponent states that they will have a secondary container at the drill sites and fuel caches that is equal or greater quantity of the fullest fuel container. The proponent should insure that the secondary container used is capable of holding one hundred and ten percent (110%) of the largest fuel container at each site.

The proponent has listed on page 7 of their Fuel Spill Contingency Plan the following contact information for Environment Canada, Iqaluit: Phone: (867) 975-4639 and Emergency Pager: (867) 920-5131. Both numbers should be removed, as they are no longer valid. The proponent is not required to notify EC in the event of a spill, as the 24 Hour NT/NU Spill Line is required to contact EC in the event of a spill.

Hazardous Waste

On page 14 of the proponent's Hazardous Waste Plan the Environment Canada address is correct, the fax number is correct, however the phone number is no longer in service and should be changed to (867) 975-4644.

Wildlife

Section 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).

EC recommends that food, domestic wastes, and petroleum-based chemicals (e.g., greases, gasoline, and glycol-based antifreeze) 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.

The following comments are pursuant to the Species at Risk Act (SARA), which came into full effect on June 1, 2004. Section 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, Environment Canada 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.

Terrestrial Species at Risk ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peregrine Falcon (<i>anatum</i> -)	Special Concern	Schedule 1 (<i>anatum</i>)	Government of Nunavut

<i>tundrius</i> complex ³)		Schedule 3 (<i>tundrius</i>)	
Wolverine (Western population)	Special Concern	Pending	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut
Polar Bear	Special Concern	Pending	Government of Nunavut

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

² Environment Canada 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* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was listed by COSEWIC as Special Concern.

Impacts could be disturbance and attraction to operations.

Environment Canada recommends:

- **Species at Risk** that could be encountered or affected by the project should be identified and any potential adverse effects of the project to the species, its habitat, and/or its residence noted. All direct, indirect, and cumulative effects should be considered. Refer to species status reports and other information on the *Species at Risk* registry at www.sararegistry.gc.ca for information on specific species;
- If 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.

In order to reduce aircraft disturbance to migratory birds, Environment Canada recommends the following:

- 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.

The Canadian Wildlife Service of Environment Canada is interested in observations of birds, especially observations of birds identified as *Species at Risk* (e.g. Red Knot). Observations can be reported through 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: 867.669.4773
Email: NWTChecklist@ec.gc.ca

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. Environment Canada recommends that all field staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice/training on how to implement these measures.

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.

EPO should be notified of changes in the proposed or permitted activities associated with this application.

Please do not hesitate to contact me at (867) 669-4744 or ron.bujold@ec.gc.ca with any questions or comments.

Yours truly,



Ron Bujold
Environmental Assessment Technician

cc: Carey Ogilvie (Head, EA-North, EPO)
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