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Our File: 4707 000 001

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Via Email at licensing@nunavutwaterboard.ca

RE: NWB 2BE-HEP - Diamond North Resources Ltd. – Hepburn Lake Project – New Type “B”

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act (the Act)*, the *Species at Risk Act* and the *Migratory Bird Regulations (the Regulations)*.

Diamond North has submitted an application for a Type “B” water license for water use and waste disposal associated with exploratory drilling. The proponent plans to conduct exploration activities over the next two years. Activities include detailed airborne geophysics, ground magnetics, prospecting and diamond drilling to determine if the magnetic features in the project area are sourced by kimberlite and to determine their diamond content. Some of the targets occur within lakes therefore geophysics will be conducted prior to break up. Diamond drilling of ice based targets will occur if the geophysical surveying suggests that the targets remain valid.

Drill equipment and fuel will be moved to a centrally located lake or esker and subsequently moved from site by helicopter. Drill and field crew will be moved by helicopter on a daily basis from a campsite located on Hepburn Lake in the Northwest Territories under the current Land Use Permit W2006C0005. No campsite will be erected within Nunavut.

Environment Canada recommends that the following conditions be applied through all stages of the project:

- The proponent shall not deposit, nor permit the deposit of any fuel, drill cuttings, chemicals, wastes or sediment into any water body. According to the *Fisheries Act*, Section 36(3), the deposition 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, is prohibited.
- The proponent shall ensure that any hazardous materials, including waste oil, receive proper treatment and disposal at an approved facility. Food waste and other combustible garbage should be removed from drill sites on a daily basis.

- All fuel caches shall be located above the high water mark of any water body. Further, EC recommends the use of secondary containment, such as self-supporting insta-berms, when storing barreled fuel on location.
- Secondary containment should be of adequate size and volume to contain and hold fluids for the purpose of preventing spills (the worst-case scenario). Appropriate spill response equipment and clean-up materials (absorbents, containment devices, etc) must be on hand during any transfer of fuel or hazardous substances and at vehicle-maintenance areas.
- Transfer operations should be attended by trained personnel at all times.
- Decanting of snow or water from the berm area should proceed only if the appropriate chemical analysis has determined the contents meet the requirements of Section 36.3 of the *Fisheries Act*.
- Drip pans, or other similar preventative measures, should be used when refuelling equipment on site.
- **All spills** must be documented and reported to the NWT Spill Response Line at (867) 920-8130. The Spill Contingency Plan has the incorrect contact number for Environment Canada. The Plan should be revised to list Jim Noble as the EC contact in the event of a spill. Mr. Noble can be reached at (867) 975-4644. Alternately, EC operates a 24-hour pager monitored by Emergencies and Enforcement personnel, which can be reached at (867) 920-5131.

Drilling

- EC recommends that biodegradable mud and non-toxic additives be used. Environment Canada would like to inform the proponent that the *Canadian Environmental Protection Act* has listed CaCl as a toxic substance. The proponent shall therefore ensure that if CaCl is used as a drill additive, all sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.
- Drilling additives or mud shall not be used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water, or demonstrated to be non-toxic.
- For “on-ice” drilling, where drill additives are not being used, return water released must be non-toxic, and not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers for the Environment Guidelines for the Protection of Freshwater Aquatic Life (i.e. 10mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100mg/L).
- Land based drilling should not occur within 30 m of the high water mark of any water body. Drilling wastes from land based drilling shall be disposed of properly such that the contents do not enter any water body.
- EC recommends that if artesian flow is encountered, the drill holes be immediately plugged and permanently sealed
- Any sumps created for the disposal of drill wastes shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish. Further, all sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.
- Any exposed drill casings should be removed or cut off at or below the surface of the ground.
- All drill areas should be kept orderly and any garbage is to be removed daily from the area to an approved disposal site.
- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.

Abandonment and Restoration Plan

The proponent has indicated that the submitted A & R plan will cover *only* the drilling portion of the program that is proposed within Nunavut. The proponent further states that although located in the NWT the camp abandonment and restoration is included within this plan as it is part of Diamonds North's operating procedures regardless of jurisdiction.

- EC would like to remind the proponent that camp infrastructure is not part of this application and shall not be erected on the Hepburn property.
- All combustible waste is to be backhauled to camp on a daily basis for incineration in an approved incinerator.

The Canadian Wildlife Service (CWS) of Environment Canada has reviewed the above-mentioned submission and makes the following comments and recommendations pursuant to the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations*), and the *Species at Risk Act* (SARA).

Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. Therefore, EC recommends that all activities be conducted outside the migratory bird breeding season, which extends from approximately May 15 to July 31. These dates are approximate, and if active nests (i.e. nests containing eggs or young) are encountered outside of these dates the proponent should avoid the area until nesting is complete (i.e. the young have left the vicinity of the nest).

- If activities are permitted to occur during the breeding season, EC recommends that the proponent confirm there are no active nests (i.e. nests containing eggs or young) in the vicinity of their operations before activities commence. If active nests of migratory birds are discovered, the proponent should halt all activities in the area until nesting is completed (i.e. the young have left the vicinity of the nest).
- In order to reduce disturbance to nesting birds, EC recommends that aircraft used in conducting project activities maintain a flight altitude of at least 610 m during horizontal (point to point) flight.
- In order to reduce disturbance to resting, feeding, or moulting birds, EC recommends that aircraft used in conducting project activities maintain a vertical distance of 1000 m and minimum horizontal distance of 1500 m from any observed concentrations (flocks / groups) of birds.
- Section 35 of the *Migratory Birds Regulations* states that no person shall deposit or permit to be deposited, oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.
- EC recommends that camp waste be made inaccessible to wildlife at all times. Camp waste can attract predators of migratory birds (e.g., foxes and ravens) to an area if not disposed of properly.
- EC recommends that the Safety Manual/Field Guide also indicate that there should be no feeding of wildlife.
- 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.
- Implementation of these measures may help to reduce or eliminate some effects of the project on migratory birds, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act* (the *Act*) and *Migratory Birds Regulations* (the *Regulations*). The proponent must ensure they remain in compliance with the *Act* and *Regulations* during all phases and in all undertakings related to the project.

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, EC asks that species listed on other Schedules of SARA and under consideration for listing also be included in this type of assessment.

Species at Risk that may be encountered	Category of Concern	Schedule of SARA	Government Organization with Expertise on Species
Short-eared Owl	Special Concern	Schedule 3	Government of Nunavut
Peregrine Falcon (subspecies tundrius)	Special Concern	Schedule 3	Government of Nunavut
Wolverine (Western Population)	Special Concern	Pending	Government of Nunavut
Grizzly Bear	Special Concern	Pending	Government of Nunavut

Impacts could be disturbance and attraction to operations.

Environment Canada recommends:

- The proponent should identify potential Species at Risk that could be encountered. Refer to the Species at Risk registry at www.sararegistry.gc.ca for information on specific species.
- If Species at Risk are encountered, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species.
- The proponent should consult with the Government of the Nunavut and appropriate status reports, recovery strategies, action plans, and management plans to identify other appropriate mitigation measures to minimize effects to these species from the project.
- The proponent should record the locations and frequency of any observations of Species at Risk and note any actions taken to avoid contact or disturbance to the species.

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at cindy.parker@ec.gc.ca.

Yours truly,

Original signed by

Cindy Parker
Environmental Assessment Technician

cc: (Colette Spagnuolo, Environmental Assessment & Contaminated Sites Specialist, Environment Canada, Iqaluit)