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*via email*

**RE: 2BE-SAN - Western Uranium Corporation –Sand Lake Project – New License**

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*, and the *Species at Risk Act*.

Western Uranium Corporation is proposing to start a diamond drilling project in the Sand Lake area, Keewatin District, Nunavut. The site is approximately 200 km west of Baker Lake. The project will be supported by a remote camp. The camp will be located on the northern end of Sand Lake. It will be designed to house 20 persons in wall tents and Weather Havens.

Both on-ice and land based drilling will occur. Total drilling will be 2,000 meters in approximately 10 holes.

The project is proposed to begin on March 1, 2007 and be completed by February 28, 2009. Yearly activities will be conducted during winter and spring (frozen conditions).

Environment Canada recommends that the following conditions be applied throughout all phases of the project:

- The proponent shall not deposit, nor permit the deposit of any fuel, 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.
- Any sumps created for the disposal of camp sewage and grey water 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.
- Drip pans, or other similar **preventative** measures, should be used when refueling equipment on site and included in section 4.0 *Failure Prevention* of the proponents Spill Contingency Plan.

- The contact information for EC is incorrect and should be up-dated. Jim Noble of Environment Canada should be added to the contact list of the Spill Contingency Plan for direction on how to proceed in the event of a spill (867- 975-4644) or the 24 hour Emergencies Pager (867-920-5131). The contact sheet should be kept on-site and accessible to all employees in the event of a spill.

The proponent has indicated in the Spill Contingency Plan section 5.0 *Procedure for spills on Rocks* that the 24-Hour Spill Line may be contacted depending on the nature and volume of the spill. EC recommends that **all spills** be documented and reported to the 24 hour Spill Line regardless of the nature and volume of the spill.

### **Fuel Storage**

- EC recommends the use of secondary containment, such as self-supporting insta-berms, when storing barreled fuel on location rather than relying on natural depressions. All fuel caches will be stored above the high water mark of any water body.
- EC recommends that any hazardous material left on-site be stored in such a manner as to prevent the release of any hazardous materials into any water bodies. Secondary containment should be used if hazardous materials are to be left unattended and over winter.

### **Drilling**

- Biodegradable mud and non-toxic additives should be used whenever possible. EC would like to inform the proponent that the *Canadian Environmental Protection Act* lists 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 muds 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.
- Land based drilling should not occur within 30 m of the high water mark of any water body.

The proponent has indicated that for drilling 'on ice' all drill cuttings and water will be collected in a slop tank capable of holding the material from a 12 hour shift and the slop tank will be emptied into an on shore depression with no flow to the surrounding environment. EC recommends:

- For 'on-ice' drilling where drill-additives are not being used, any 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., 10 mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100 mg/L). If drill additives are being used, the return water should not be released and should be directed to a properly constructed sump on land.
- The proponent should create a properly constructed sump for the disposal of any drill cuttings instead of relying on natural depressions. Any sumps created for the disposal of wastes and drill cuttings, 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.
- The drill area is to 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.
- If an artesian flow is encountered, the drill hole shall be immediately plugged and permanently sealed.

### **Waste treatment and disposal**

- EC requests more information regarding the 'oil-fired incinerator' the proponent proposes to use including make, model and capacity

Environment Canada recognizes that timely disposal of camp waste - specifically food waste - is of critical importance to minimize safety risks associated with wildlife attraction. Timely disposal is usually achieved through burning. However, burning of waste products releases numerous contaminants to the air, many of them persistent, bioaccumulative and toxic (e.g. polycyclic aromatic hydrocarbons - PAH's - heavy metals, chlorinated organics – dioxins and furans). These contaminants can result in serious impacts to human and wildlife health through direct inhalation and they can also be deposited to land and water, where they bioaccumulate through food chains affecting wildlife and country foods. Therefore, burning should only be considered after all other alternatives for waste disposal have been explored.

A variety of incineration devices are available and selection of the most appropriate will depend on considerations of technical and economical feasibility for each situation. Installation of an incineration device capable of meeting the emission limits established under the Canada-wide Standards (CWS) for Dioxins and Furans and the CWS for Mercury Emissions is required (both the Government of Canada and the Government of the Nunavut are signatories to these Standards and are required to implement them according to their respective jurisdictional responsibility). The proponent should review the incineration options available and provide justification for the selected device to the regulatory authority.

If burning is the only alternative available, the proponent should ensure that the waste is burned in a device that promotes efficient combustion and reduction of emissions, and that the amount of waste burned is reduced as much as possible. The use of appropriate waste incineration technology should be combined with a comprehensive waste management strategy (especially waste segregation) that is designed to reduce and control the volumes of wastes produced, transported, and disposed of.

The Waste Management Plan Waste should consider and include:

- Purchasing policies that focus on reduced packaging,
- On-site diversion and segregation programs (i.e. the separation of non-food waste items suitable for storage and subsequent transport and disposal or recycling).
- If incineration is required, ensure diligent operation and maintenance of the incineration device and ensure appropriate training is provided to the personnel operating and maintaining the incinerator.

The objective should be to ensure that only food waste and food-contaminated waste is burned (the use of paper, cardboard and clean wood as supplementary fuel is acceptable).

- Used absorbent materials, oily or greasy rags, and equipment servicing wastes (such as **used engine oil**, antifreeze, hydraulic oil, lead acid batteries, brake fluid and other lubricants) should be safely stored and transported in sealed containers and safely transported to a facility that is authorized for the treatment and disposal of industrial hazardous wastes.

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, CWS 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, CWS 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.

- CWS 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. Incineration of camp waste is a recommended option.
- 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](http://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) 975-4639 or by email at [cindy.parker@ec.gc.ca](mailto: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)