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Department of Environment

Ministère de l'Environnement

March 16, 07

Richard Dwyer
Licensing Trainee
Nunavut Water Board

via Email to: licensingtrainee@nunavutwaterboard.org

RE: NWB FILE # 2BE-KIG – AREVA RESOURCES CANADA INC. – KIGGAVIK & SISSONS URANIUM EXPLORATION PROJECT

Dear Mr. Dwyer:

The Government of Nunavut (GN) has reviewed the water license renewal application for the Kiggavik-Sissons uranium exploration project approximately 80 km west of Baker Lake from AREVA Resources Canada Inc., and has the following comments and recommendations to make.

Wildlife

1. Caribou

A) Time limited Project Approval

This Kiggavik-Sisson project proposed by AREVA Resources Canada Inc. occupies land used by Beverly and Ahiak caribou herds for post-calving and is also on the fall and spring migration corridors for both herds.

There is significant concern about the health of caribou herds across the north and information on the status of the Beverly and Ahiak herds is out of date.

In June 2007 the GN in partnership with the Government of North-West Territories will be undertaking population surveys of the Beverly and Ahiak caribou herds. Following this survey our knowledge on current trends within the herds and our understanding of the impacts of such projects on the herds will be increased.

Based on our lack of knowledge on the population status of caribou herds in the area, the GN requests that NWB renews the water license for a period of **one year only**. This will allow us to review the project in subsequent years with

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improved knowledge of caribou herd population trends and potential impact of exploration activities.

B) Recommendations for current operations

Barren-ground caribou have their calves in June; they then must intensively feed from the times the calves are born until the end of the growing season which would fall between mid and late August. It is during these post calving and late summer periods that the caribou have to nurse calves as well as put on fat for the coming winter. Bulls must put on enough fat to get through the rut as well as the winter. If this feeding/fattening cycle is broken in any way calf mortality will increase and female and male condition will drop effecting future breeding cycles. Any air or ground disturbance that may disrupt caribou behaviour even if it's only a few hours a week could negatively impact caribou condition. Caribou require a continuous feeding cycle that includes feeding, ruminating (chewing their cud), resting, feeding and so on during the growing season in order to maximize their condition before the winter.

Based on these considerations and the sensitivity of the area, the GN recommends that if NWB approves operations in 2007 that the following conditions apply:

During the months of **May** and **August**:

- The proponent must employ fully independent wildlife monitors to determine when caribou cows and calves are in the areas of operation.

- When caribou are present, the proponent shall suspend all blasting, over-flights of aircraft with an altitude of less that 300 metres above ground level and operation of ATV's and snowmobiles and any other ground based or water based mobile equipment.

- During migration of caribou the proponent shall not block or cause any diversion to migration.

- During caribou migration, the proponent shall cease activities likely to interfere with migration such as airborne geophysics surveys or movement of equipment or personnel until the caribou have passed.

- The proponent must not construct a camp, cache fuel, conduct blasting or drilling operations, operate ground, air or water based mobile equipment within 10km of a 'designated caribou crossing'; or conduct drilling within 5km.

During the months of **June** and **July**,

- The proponent, with the independent wildlife monitor, shall undertake daily high altitude (>300m) aerial reconnaissance to determine whether caribou cows and calves are present within a 20km radius of the site, or if caribou are migrating through the site. If caribou are observed the monitor will instruct the proponent to suspend any activities within 10 km of the sightings.

- At the end of each month, the proponent will submit a daily logbook of caribou reconnaissance to GN Department of Environment (DOE), also detailing when and how, these measures have been implemented. The time when caribou are present in the project area can be corroborated with GN caribou satellite collar data.

- During these months GN Conservation Officers will be inspecting this site and others within, or close to caribou calving and post -calving grounds randomly twice a month to ensure compliance with these measures.

2. Human-carnivores conflicts

It is likely that during operations the proponent will encounter grizzly bear, wolverines, wolves and foxes. The proponent is advised to minimize odors that potentially attract carnivores through timely camp housekeeping. Should the proponent experience any interaction with carnivores, they are advised they should contact the local wildlife officer. All camp members should be fully aware and trained in the human-wolf/fox/wolverine encounter avoidance plans especially in avoidance of any feeding of these species. The proponent must discourage food conditioning of all wildlife species, negative reinforcement is encouraged.

The proponent should take all possible measures to avoid wildlife encounters, specifically bears. These measures include use of an alarmed trip wire around the site perimeter and wildlife monitors. GN requests that wildlife monitors working for the proponent carry shot guns and have cracker shells and rubber bullets available to use as deterrents. The applicant should follow procedures outlined in the "Safety in Bear Country Manual", and should contact the Regional/Area Biologist or the Wildlife Manager indicated below for information and advice on measures which should be taken to minimize the possibility of bear-people conflicts.

GN DOE Contacts

Manager, Wildlife
-Dan Shewchuck, (867) 857-2828, dshewchuk@gov.nu.ca

Biologist, Kivalliq Region
- Mitch Campbell, (867) 857-2828, mcampbell@gov.nu.ca

3. Recording wildlife observations and den sites

It is probable that within, or close to, the project area there are a number of carnivore den sites. The GN asks the proponent to record all wildlife observations in a 'wildlife log' and map the location of any sensitive wildlife sites such as denning sites. The proponent should ensure that operational activities are managed and modified to avoid impacts on wildlife and sensitive sites, the log and maps will be a useful tool to achieve this. Additionally, the GN requests that wildlife data collected by the proponent be submitted to GN DOE annually as this will provide an important source of wildlife data for the department.

4. Raptor Nesting Areas

Raptor nests occur throughout Nunavut, and most of the prospecting areas likely contain at least a few nest sites. Take care not to disturb nesting raptors from 15 April to 1 September by staying at least 1.5 km away from them when in transit by aircraft, and to avoid approaching them closely while on foot.

The following is a list of general precautions that must be considered when conducting prospecting activities near Peregrine Falcon, Gyrfalcon, and other raptor nests (most of these precautions will also apply to all nesting bird species):

- Disturbance is most harmful early in the nesting period (May and June for Peregrine Falcon and Gyrfalcon, similar for Rough-legged Hawk):Raptors will attempt to maximize their chances of successfully raising young. If they decide early in the breeding period that their nest is at risk, they may abandon it. If nests are disturbed at this stage of nesting, there may not be sufficient time to renest. All disturbances to nests during the early part of the nesting cycle must be avoided (avoid nest sites from late May through to mid-July).

- Individuals show variability in their response to disturbance: Different birds will show different responses to varying levels of disturbance. This may result from the general health of the bird, weather conditions, previous life experiences, and adaptability. Therefore, treat all nest sites with equal precaution, regardless of the response of the bird. Do not disturb raptor nests during conditions of poor weather (rain, snow, high winds).

- Approaching the nest site near the time of fledgling (where chicks fly away from the nest) often leads to premature nest departure: During the last few weeks of nesting, severe disturbance at the nest often causes young raptors to jump out of the nest. This can cause death from exposure,

predation, starvation, or trauma from the fall itself. All activity within 100m of a nest site during the latter part of the nest stage (10-20 August for peregrine falcons in this region) must be avoided.

Further details on raptor nests and disturbance mitigation can be obtained from the Wildlife Officer in communities closest to the area of interest, or from regional biologists

Overland Transportation

- Details regarding the route of the winter road (i.e., a map of the road), and the frequency of transportation should be provided.

- The following transportation precautions should be implemented:

    - Speed on winter roads should not exceed 30 km/hr for fully loaded vehicles, and 50 km/hour for empty vehicles.

    - Trucks should carry at least 10 square metres of polyethylene material (for lining a trench or depression), a spark-proof shovel & oil absorbent blankets or squares.

    - Trucks should carry reliable radio and/or satellite phone communications.

    - Trucks should carry sufficient response equipment for the safe removal of fuel from an overturned tanker (such as hatch cone covers, hoses etc).

    - In general, proponents should be fully prepared to deal with spills resulting from vehicle accidents along the road, in a timely and efficient manner.

Spill Contingency Plan

Based on the GN's *Spill Contingency Planning and Reporting Regulations*, and the *Contingency Planning and Spill Reporting in Nunavut: a Guide to the New Regulations*, the GN recommends the following be implemented:

- The name, job title and 24 hour telephone number for the persons responsible for activating the contingency plan should be provided. This ensures the employee discovering the spill can activate a response and provides a 24 hour point of contact for the authority investigating the spill.

- The GN recommends the new spill form be utilized in the case of spills, and spill information be entered electronically so the information is legible

to authority investigation the spill. The new spill form with instructions can be obtained from the Spill Line at (867) 920-8130.

Abandonment & Restoration Plan

The GN has the following comments and recommendations to make:

- Drilling additives used should be non-toxic and biodegradable, and be accompanied by MSDS sheets. Sumps for drill cuttings should only be used for inert drill cuttings, not any other materials or substances. The sumps should be properly closed out at the end of the project.

- In Point 22 of the *NIRB Screening Part 2 Form*, the Proponent indicates "Drill water will be directed to a sump and a series of settling tanks prior to being recirculated for drilling. Radioactive sediment (>1µSv/h at 1 m) will be collected in drums and/or buckets and stored on-site in a designated area (currently a fenced-in area at Kiggavik camp site)." It is not clear how and where the drums/buckets will be disposed of ultimately. This information needs to be included in the proposal.

- Drill holes that encounter uranium mineralization with a content greater than 1.0% over a length of more than 1 meter with a meter-percent concentration greater than 5% should be sealed by cementing over the entire mineralization zone; this should be at least 10 meters above and below each mineralization zone.

- Drill holes should be sealed by cementing the upper 30 meters of the bedrock or the entire depth of the holes; whichever is less.

- Core storage areas should be located at least 100 meters from the high waterline of all water bodies.

- Gamma radiation levels of a long-term core storage area should not be greater than 1.0 µSv, and should never exceed 2.5 µSv. Instruments that measure radiation in counts per second should be converted to µs.

Air Quality

The Government of Nunavut is a signatory to *Canada-wide Standard* (CWS) for dioxins and furans and the CWS for mercury. The GN therefore recommends the following be implemented to ensure CWS compliance.

For camps of 10 to 50 people, the proponent shall apply appropriate technologies to ensure complete combustion of wastes, and the use of a dual chamber, forced-air incinerator is recommended. Burning of wastes in a burn barrel as indicated in the project proposal is unacceptable. The proponent shall make determined efforts to achieve compliance with the CWS. Efforts should include the implementation of a comprehensive waste management strategy (especially

waste segregation) that is designed to reduce and control the volumes of wastes produced, transported, and disposed of.

Waste wood treated with preservatives such as creosote, pentachlorophenol or heavy metal solutions should not be burned. Additionally, plastics, electrical wire, asbestos and building demolition wastes (except clean wood) are wastes likely to produce dioxins and furans when burned and should be excluded from incineration. The proponent indicates in Point 39 (f) of the *NIRB Screening Part 2 Form* that "waste oil/hazardous waste – minimal quantity of this type of waste is expected to be generated. Waste of this nature will be removed from site for proper disposal or used to incinerate waste materials." Hazardous wastes managed through burning or incineration is not recommended, and should comply with CWS if this were to be carried out.

The Canadian Heritage Rivers System

The project area is located in close proximity to the Thelon Canadian Heritage River, and GN asks the proponent incorporates the following comments into the project proposal.

During the summer months the Thelon River is frequented by recreational Canoeists providing much needed tourism dollars to Nunavut communities. Please note that the Canadian Heritage Rivers System (CHRS) is Canada's national program for freshwater conservation. In Nunavut (as elsewhere in Canada), it is a cooperative program between the governments of Canada and the Government of Nunavut (other provincial and territorial governments for the rest of Canada). The objectives of the program are to give national recognition to Canada's outstanding rivers and to ensure long-term management that will conserve their natural, cultural and recreational values for the benefit and enjoyment of Canadians, now and in the future.

In Nunavut, three rivers have been designated (Soper, Kazan and Thelon), meaning that management plans detailing how their heritage values will be protected have been lodged with the CHR Board, and one has been nominated (Coppermine). Therefore, we ask that if NIRB approves the project proposal within the management areas of the Heritage Rivers that it insures, via conditions within the permits, that the proponent respects the values of the Heritage Rivers and not to engage in any activity that would interfere or other wise detract from the experience of tourists and Nunavummiut using the Heritage Rivers now and in the future. The Management Plan for the Thelon River can be obtained at http://www.nunavutparks.ca/bulletin_board/publications_docs/Thelon%20River%20Mgmt%2E%20Plan%20%2811%2D40%2D12%29%2Epdf.

Land Use Planning

There is a concern that the issuing of permits relating to exploration for uranium may lead to an expectation that further development of these projects will be

permitted. The GN is aware that Nunavut Planning Commission has determined low level exploration for Uranium to be in conformity with the Keewatin Regional Land Use Plan but believes the proponent should be aware of the following provisions in the plan:

3.5 - Uranium development shall not take place until NPC, NIRB, NWB and the NWMB have reviewed all of the issues relevant to uranium exploration and mining. Any review of uranium exploration and mining shall pay particular attention to questions concerning health and environmental protection. (A) (CR)

3.6 – Any future proposal to mine uranium must be approved by the people of the region.

The GN thanks NWB for the opportunity to provide comments on the Kiggavik-Sissons water license renewal application. Please contact us if you have further questions.

Yours sincerely,

Original signed by

Mike Atkinson
Manager Environmental Assessment and Land Use
Environmental Protection Service
Department of Environment