



**Nunavut Impact Review Board  
Screening Part 2 Form**

**Project Specific Information Requirements (PSIR)**

**URU Metals Limited: Nueltin Lake Project**

June 2013

## **1.0 GENERAL PROJECT INFORMATION**

### **1.1 Project Location**

The Nueltin Lake project of URU Metals Limited is located in southern Nunavut approximately 4 km north of the Manitoba border. As shown in Figure 1, it is approximately 345 km west-southwest of Arviat, the closest Nunavut community and 185 km northeast of Lac Brochet, Manitoba. The mineral claims and lease are shown in Figure 2 in comparison to the 1:50,000 NTS topography of mapsheets 65B/4 and 65C/1. The southwestern limit is 60°2'16"N, 100°10'50"W and the northeastern limit is 60°13'2"N, 99°49'22"W.

The project proposal covers only mineral exploration on the mineral dispositions, since no camp or other infrastructure will be constructed during the initial phases. Facilities supporting the project are the Kiyuk Lake Camp of Prosperity Goldfields, approximately 40 km to the northwest.

The project consists of 35 dispositions surrounding Sandybeach Lake and lying adjacent to the western shore of Nueltin Lake (total area approximately 27,000 hectares). Numerous small lakes exist on the mineral claims and lease.

The primary contact for the project is: C. Trevor Perkins, Consulting Geologist, Perkins Exploration Consulting, Saskatoon, Saskatchewan; phone: (306) 361-1253; email: [perkins.exploration@sasktel.net](mailto:perkins.exploration@sasktel.net)

### **1.2 Project Information**

The objective of the project is uranium exploration. Cameco staked the original mineral claim in 1998 targeting radioactive boulders with high gold and base metal (Cu, Co, Mo, W, Ni) contents (since converted to mineral lease F56800). This area was previously explored for gold in the 1980s-90s. Past exploration has consisted of prospecting, mapping, and ground and airborne geophysics and the mineralized boulders are generally believed to be locally derived (from the property). Cameco conducted the first diamond drilling activities on the project in 2008 and encountered uranium and gold mineralization in three drill holes. The next exploration step to advance the project is drilling to better define these intersections. Drilling is really the only way of evaluating the mineral potential of the project.

### **1.3 Schedule of Project Activities (dates tentative)**

<b>Activity</b>	<b>Date</b>	<b>Comments</b>
Mobilization	July 31, 2013	Mobilizing crews and equipment to drill site
Diamond Drilling	Aug 1 – 20, 2013	750 – 1000 m diamond drilling, 7-10 holes at 100-150 m depth. Expected 3 weeks.
Geological Prospecting	June 2 – 20, 2013	2 person crew, walking traverses on claims

#### **1.4 Acts, Regulations, and Guidelines**

- NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
- NWB - Interim Rules of Practice and Procedure for Public Hearings
- NWTWB - Guidelines for Contingency Planning
- DFO - Freshwater Intake End of Pipe Fish Screen Guideline
- Fisheries Act – section.35
- RWED - Environment Protection- Spill Contingency Regulations
- Territorial Land Use Act and Regulations
- WCB – Mine Health and Safety Act

#### **1.5 Approvals, Permits, and Licenses Required**

- Land Use Permit: Indian and Northern Affairs, Iqaluit, NU (application submitted January 19, 2008)
- Water License: Nunavut Water Board, Gjoa Haven, NU (application to be submitted in early 2008)
- Nunavut Impact Review Board Screening, Cambridge Bay, NU (this application)
- Conformity Check: Keewatin Regional Land Use Plan - Nunavut Planning Commission, Arviat, NU (conformity check form submitted January, 2008)

#### **1.6 DFO Operational Statement (OS) Conformity**

- Bridge Maintenance: Not applicable
- Clear Span Bridge: Not applicable
- Culvert Maintenance: Not applicable
- Ice Bridge: Not applicable
- Routine Maintenance Dredging: Not applicable
- Installation of Moorings: Not applicable
- DFO OS Conditions for Project Proposal: Not applicable
- DFO OS Conditions Schedule: Not applicable

#### **1.7 Transportation**

Access to the site will be from the Kiyuk Lake camp, operated by Prosperity Goldfields - which will also serve as the camp for the project. All materials, equipment, and crews will be flown in; primarily by helicopter but a floatplane will be used when practical. Figure 1 shows the location of the Kiyuk Lake camp in relation to the project site.

No airstrip will be used on the site. The airstrip at Nueltin Lake Lodge is an already existing commercial airstrip.

Flight altitudes will be maintained above 300 m to minimize disturbance to wildlife. In the presence of large caribou herds or other large wildlife accumulations, a flight altitude of 600 m will be maintained. Helicopter flights will be frequent (2-6 times daily) between the camp and the project area (direct line). They would likely be more frequent within the claims during drill moves, but these would be very short distances (<500 m).

## **1.8 Camp Site**

There is no camp being constructed on site. The project will be operating out of the Kiyuk Lake camp.

Number of persons in camp at any time will likely be 10-14. The number on the project claims at any given time would be between 2 and 9. One 2 person drill crew (driller plus helper), 1 drill foreman supervising drill moves, 1-2 geologists and/or technicians attending the drilling and probing holes, and two 2 person geological mapping/traversing crews (approximately 1 week).

## **1.9 Equipment**

Equipment used on the project includes:

- Water transfer pump: With 2-inch suction and discharge - pump water from lake to diamond drill.
- Helicopter: Light (MD 500) (or similar) – to mobilize field crews and service diamond drill.
- Diamond drill, LF70 (or similar) – to drill up to 7 to 10 diamond drill holes per season.

Equipment will be moved by helicopter.

## **1.10 Water**

Water for diamond drilling will be sourced from a number of small lakes and ponds close to the drill sites (for the mineral lease see Figure 3). A 2-inch screened suction hose will be used to prevent fish entrapment.

Water consumption for the diamond drill is estimated at between 15 m<sup>3</sup> and 30 m<sup>3</sup>/day depending on the amount of return. Return water will be collected in sumps and reused for drilling.

## **1.11 Waste Management**

- Sewage (black water) – not applicable
- Grey water – not applicable
- Combustible solid waste – approximately 20 kg/week – hauled to Kiyuk Lake camp for incineration or disposal
- Drill cuttings – backfilled into drill holes upon completion
- Non-combustible solid waste: approximately 10 kg/week – transported to Kiyuk Lake camp and subsequently to approved disposal site
- Bulky items/scrap metal – not applicable
- Waste oil/hazardous waste – estimated average 1 L/day from drill engine and pump. Collected and transported to Kiyuk Lake camp – either removed to proper disposal facility or where appropriate, used to incinerate waste materials
- Empty barrels/fuel drums - Will be removed to Kiyuk Lake camp.

### **1.12 Fuel**

A small fuel cache (<4000 L) will be made near the drill site and restocked as necessary either by slinging by helicopter or by floatplane where practical. All fuel will be contained within portable inflatable berms. A spill kit will be located at all fuel storage sites.

- Diesel (P50) – Approximately 4,000 L of diesel fuel will be consumed by the diamond drill and water pump. It will be stored in approximately 19 - 206 L steel drums. (Described in the attached Hazardous Materials Spill Contingency Plan).
- Gasoline - Regular Unleaded – A small amount of gasoline (approximately 100 litres) may be used on site for small power equipment (such as chainsaws, small pumps, or small generators). It will be stored in 20 L jerry cans. (Described in the attached Hazardous Materials Spill Contingency Plan)
- Aviation Fuel - Jet A - Approximately 10,000 L will be consumed this season by the helicopter. Approximately 80 - 206 L steel drums will be used to store the fuel. Small caches (<4000 L) will be made near the drill site and restocked as necessary. (Described in the attached Hazardous Materials Spill Contingency Plan)
- Propane – Approximately 2 - 100 lb steel cylinders of propane may be used at the drill site for heat. (Described in the attached Hazardous Materials Spill Contingency Plan).

Secondary containment measures for fuel storage over 4000 L - all fuel drums will be stored in portable berms. Fuel will be transferred using manual and electric fuel transfer pumps.

### **1.13 Chemicals and Hazardous Materials**

Types, quantities, method of storage, method of containment, location of storage, and uses are described in the attached Hazardous Materials Spill Contingency Plan.

Secondary containment measures - Two (2) 206 Litre drum overpack kits (SPC A95) and one (1) spill locker spill kit (SPC SKA-SL) will be on site.

Method of chemical transfer is described in the attached Hazardous Materials Spill Contingency Plan.

### **1.14 Workforce and Human Resources/Socio-Economic Impacts**

URU Metals has a business policy of supporting local businesses, contractors, and suppliers. Exploration programs run by Cameco Corporation at Nueltn Lake in the past have been minimal in duration and therefore socio-economic impact has been minor.

Through Prosperity Goldfields, URU will attempt to hire 1 or 2 technicians from nearby communities for this program. If positive results are obtained from the 2013 exploration program at Nueltn Lake, employment opportunities may increase in the future.

### **1.15 Public Involvement and Traditional Knowledge**

URU Metals plans to undertake community consultations and meetings with governing agencies in several northern communities relating to the Nueltin Lake project. These communities include Arviat and Rankin Inlet, NU and Lac Brochet, MB.

These meetings will discuss URU as a company, the proposed project work, wildlife and water monitoring, and economic development issues in Nunavut. These consultations are meant as only a first step, as the company will return regularly in the future to discuss concerns, opportunities, and exploration progress with Nunavut residents.

Although outside of Nunavut, consultations will also be held in Lac Brochet, Manitoba, as the Northlands Dene have a strong interest in the Nueltin Lake area through an outstanding North of 60 Land Claim. URU has no intention of entering these discussions, however the consultation is viewed as a responsible gesture toward this group with a strong interest in the project area.

The 2013 exploration program will be relatively small and short in duration but URU will attempt to hire some local residents as geo-technicians to assist with the drilling. If the program is successful, future programs may be larger, with a greater demand for additional staff. Where possible URU Metals will attempt to use local contractors.

## **2.0 PROJECT SPECIFIC INFORMATION**

### **2.1 Roads and Trails**

No roads and trails will be constructed (neither all-weather or winter). All access to and on the property will be by helicopter or float plane.

### **2.2 Mineral Exploration, Advanced Exploration, or Development**

#### **2.2.1 Commodity Target**

This is an early stage uranium exploration project with significant gold values in boulders. The exploration activity is exploration drilling and geological mapping/prospecting.

#### **2.2.2 Exploration Activities**

- Land based diamond drilling with LF70 hydraulic drill rig.
- Radiometric probing of drill holes
- On site sample processing – core logging, sampling, magnetic susceptibility, reflectance spectroscopy
- Off site sample processing – geochemical analysis of drill core

#### **2.2.3 Geoscience Activities**

- Downhole radiometric probing of drill holes (total count gamma)
- Prospecting and scintillometer traverses

#### **2.2.4 Diamond Drilling**

Number of holes - approximately 7 - 10 holes will be drilled, ranging from 100 – 150 m maximum depth (750 – 1000 m total).

Additives - specific additives are not currently known (depending on contractor) but all will be non-toxic, NSF (National Sanitary Foundation) grade products.

Drill Cuttings – cuttings will be collected in sumps and backfilled upon completion of the hole. Radioactive cuttings will be collected will be properly disposed of (see attached Exploration Radiation Safety Program Manual document on handling radioactive material).

Drill Water – drill water will be collected in sumps and reused for drilling.

Drill Mobilization – the drill, rods, fuel, and other supplies will be transported between drill sites by helicopter.

Hole Abandonment – casing will be removed or cut off at ground level, and backfilled with cuttings. Mineralized intervals will be cemented. The sites will be reclaimed to their original condition (supported by photographs).

Uranium Exploration Drilling - all procedures stated in the Radiation Safety Program Manual will be strictly adhered to. Radon monitors will be placed in the core examining building and at the drill.

#### **2.2.5 Stripping and Trenching**

Not applicable

#### **2.2.6 Underground Activities**

Not applicable

#### **2.2.7 Waste Rock Storage and Tailings Disposal**

Not applicable

#### **2.2.8 Stockpiles**

Not applicable

#### **2.2.9 Mine Development Activities**

Not applicable

#### **2.2.10 Geology and Mineralogy**

Not applicable since an ore body has not been discovered

#### **2.2.11 Mine**

Not applicable

#### **2.2.12 Mill**

Not applicable

### **2.3 Pits and Quarries**

Not applicable

## **2.4 Offshore Infrastructure**

Not applicable

## **2.5 Seismic Survey**

Not applicable

## **2.6 Site Cleanup and Remediation**

Not applicable since no developments or disturbances currently exist. All drill sites will be cleaned up and reclaimed, and all materials removed upon completion of drilling.

## **2.7 Oil and Gas Exploration Activities**

Not applicable

## **2.8 Marine Based Activities**

Not applicable

## **2.9 Municipal and Industrial Development**

Not applicable

# **3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT**

The Nueltin Lake project is located in southernmost Nunavut directly north of the Manitoba border. It spans the treeline and therefore includes fragile tundra environment. It contains part of the wintering ground for the barrenland caribou.

## **3.1 Physical Environment**

Nueltin Lake and the actual project area spans the treeline, therefore it includes both continuous and discontinuous permafrost. Lying within the subarctic region, the average annual precipitation is about 250-500 mm and the mean annual minimum and maximum temperatures of  $-45^{\circ}\text{C}$  and  $28^{\circ}\text{C}$  respectively. Snow and ice cover persists for about 6-8 months of the year. Mean summer temperatures are about  $11^{\circ}\text{C}$ . Being in a very remote area there are no known water, air or noise quality problems. The area contains many small lakes therefore water is in abundant quantity.

It is part of the Kazan Upland physiographic region with an elevation of approximately 400 m and the terrain consists of gently rolling hills with extensive quaternary cover and only very scarce outcrops. Glacial cover includes early sandy till in streamlined landforms, a later rubble till (Rogan moraine) (both relatively thin), and glaciofluvial sediments in a southwest trending esker system along the shore of Sandybeach Lake. Soils are nonexistent to very poorly developed and sandy, consisting of brunisols and cryosols.

The area of interest lies along the western shore of Nueltin Lake and includes several small lakes and ponds, the largest of which is Sandybeach Lake. It is part of the Thlewiaza watershed that drains into Hudson Bay.



The bedrock geology consists of crystalline rocks of the Hearne Province of the Canadian Shield, including the Enadai and Wollaston Foldbelts. It includes high grade Archean ortho- and paragneiss and possibly Wollaston Group equivalent metasediments (quartzite and calcsilicate). To the northwest, and locally on the project are younger and lower metamorphic grade Hurwitz Group metasediments. These rocks are intruded by two granitic suites; older foliated and nonfoliated Hudsonian granitoids of quartz monzonitic, granitic, and granodioritic composition and younger, post-Hudsonian coarse grained, fluorite bearing quartz monzonite and granite of the Nueltin Granite suite.

### **3.2 Biological Environment**

This area lies at the boundary of the tundra and taiga shield ecozones, spanning the treeline. Vegetation cover in the former consists of moss and lichen with meadows of sedges and grasses, with small shrubs mainly of dwarf birch, willow, Labrador tea, bog cranberry, and various arctic flowers. Vegetation in the taiga consists of sparse, small coniferous trees including black spruce, tamarack, and jack pine with an understory of moss, lichens, and small shrubs.

The area is the home to many wildlife species including canids (wolves and foxes), cervids (moose and woodland caribou), mustelids (weasels, mink, martin, and wolverine), black bears, lynx, snowshoe hare, muskrat, beaver, and various rodents. The area is located within the winter range of the Beverly caribou herd. Many bird species are present, including gulls, the arctic tern, raven, eagle, osprey, sparrow, spruce grouse, and ptarmigan. Waterfowl and other migratory birds nest or pass through the area, including geese, loons, sandhill crane, and ducks. Fish are abundant and support a large fishing lodge and outpost camps. The most important are lake trout, northern pike, and arctic grayling.

To the best of our knowledge there are no Valued Ecosystem Components (VEC) or protected areas in the region. There are also no known areas of critical habitat for species at risk.

### **3.3 Socio-Economic Environment**

The project area is far removed from communities, the closest being Arviat in Nunavut (325 km east-northeast) and 175 km northeast of Lac Brochet, Manitoba. There are no known archeological or culturally significant sites in the region. The bedrock geology, being entirely Precambrian metamorphic, has no paleontological significance.

The project area lies within the traditional hunting and trapping grounds of the Northlands Dene of northern Manitoba and is important for subsistence harvesting (hunting, fishing, and trapping). It is within the area affected by the North of 60 Land Claim. The area contains several small cabins. Lying on the shore of Nueltin Lake, the area has great importance for sport fishing (tourism) and guiding through Nueltin Lake Lodge and its outpost camps.

## **4.0 IDENTIFICATION OF IMPACTS**

### **4.1 Fuel Caching**

1. Noise impact from helicopter and float plane
2. Impact on ground cover from fuel drums and berm
3. Contamination from any fuel spillage

### **4.2 Aircraft**

1. Noise generated from transport, drop-off, and pick-up of drill and field crews
2. Encounters with fishermen (tourism)
3. Disturbing wildlife during landings and low flights
4. Economic benefit to local area businesses and their employment

### **4.3 Drilling**

1. Noise generated from drill and crews
2. Disturbing of vegetation and soil at the drill site
3. Drill cuttings
4. Drilling additives
5. Drill water return
6. Potential of intersecting radioactivity
7. Employment building pads and assisting with drilling and logging

### **4.4 Water Pumping (for Drilling)**

1. Noise from pump
2. Extraction of water from nearby water sources (water consumption and quality effects)

### **4.5 Geological Mapping, Prospecting, and Sampling**

1. Ground encounters with wildlife
2. Interaction with tourists (fishermen)

## **5.0 MITIGATION OF IMPACTS**

### **5.1 Fuel Caching**

1. Haul fuel in full loads to reduce the number of flights required
2. Use fewer, smaller fuel caches, restocked more frequently to reduce the size of the area affected
3. Use secondary containment (berms) to minimize spillage
4. Use transfer pumps to minimize spillage

### **5.2 Aircraft**

1. Schedule flights to maximize loads, reducing the number of flights required
2. Where possible use landing sites away from tourist activities
3. To minimize disturbances to wildlife during flight, a flight altitude of 300 m will be maintained unless flying over large concentrations where a flight altitude of 610 m

will be maintained

4. Before drop offs of field personnel (geology or drilling), the drop off sites will be pre-screened to mitigate disturbances to wildlife.

### **5.3 Drilling**

1. If concentrations of caribou come within 1 km of the drill site, the drill will temporarily be shut down if possible and will resume once the wildlife have moved on.
2. Drill additives will be nontoxic, NSF (National Sanitary Foundation) certified products and drill water will be recycled. If radioactive core is intersected, additional precautions will be taken (polydrill system for cuttings) and the mineralized zone will be cemented.
3. URU Metals contractors and employees will wear radiation-monitoring badges/equipment on their person, in the logging shacks and on the drill site. If higher levels of radioactivity are encountered protective clothing will be worn. These regulations are outlined in Radiation Exposure and Protection Measures at the end of this document.
4. Once drilling is complete the hole will be backfilled with cuttings, the equipment will be dismantled, moved, and the site cleaned up accordingly.
5. Hiring local residents to assist with the drilling program (as technicians) will provide a positive impact on the local economy.

### **5.4 Water Pumping (for Drilling)**

1. Water pumping sites will be selected to minimize environmental disturbance and maintaining water quality.
2. Use screened suction intake hoses to prevent intake of fish and other aquatic life.
3. Recycle drilling water and collect water return in sumps to minimize silt contamination of surface water.

### **5.5 Geological Mapping, Prospecting, and Sampling**

1. Minimize impacts to wildlife encountered by not interfering and avoiding getting too close to them.
2. Maintain an altitude of 300 m when flying and minimize pickups and landings near tourist activities.
3. Our program will have a positive impact on the economy of southern Nunavut and northern Manitoba since our intention is to re-supply our camp from local businesses and to employ local residents as geological technicians. By providing employment we hope to encourage them to improve their standard of living and pursue advanced education for either themselves or their children.

## **6.0 CUMULATIVE EFFECTS**

The cumulative effects of this exploration program on the physical, biological, and socio-economic activity are largely unknown and difficult to predict for several reasons including: 1) there is currently very little development in the region, 2) the effects have not been previously studied in the area, 3) past exploration programs on the property have been short in duration and low impact activities, 4) other future activities in the area which could contribute to the

cumulative impacts of this program are highly uncertain and unpredictable. The following are some possible impacts over time.

### **6.1 Wildlife**

Increased exploration activity, in terms of duration, areal extent, and, intensity may affect wildlife habits and habitat. The small size of the project should limit this impact, especially because it does not lie in any known VEC or Species at Risk known locations. The area lies within the winter range of the Beverly barren-ground caribou herd. The short-term impact should be minimal since exploration activities will not take place when the herds are in the region. The effects of a large, development project (if an economic mineral deposit were discovered) are unknown and would require study. All efforts will be made to minimize the impact of the exploration work on the natural environment.

### **6.2 Noise Generation**

Increased noise from aircraft, drilling, and ground-based exploration may affect wildlife over time, changing the areas where they frequent, depending on the species' aversion or adaptability in living near development. Shy animals such as wolverines and wolves may move to other areas while others that are highly adaptable to living near civilization, such as foxes, rodents, and black bears, may increase use of the area. In the exploration stage these effects should be minimal because of the short duration of the program, its small footprint, and the lack of a camp in the area.

Increased noise related to longer term development may also affect human activities in the area, either subsistence hunting and trapping or tourism (sport fishing and hunting), as it may lessen the wilderness experience. This effect will likely be small because the area sees relatively little use and because the key stakeholder related to tourism (Nueltin Lake Lodge) willingly provides services to mineral exploration companies.

### **6.3 Radiation Levels**

If exploration is successful and significant uranium mineralization is intersected, there will be risk of increasing the background radioactivity of the area. The cumulative effect will be minimized by taking all precautions to minimize all contamination with the physical, biological or social environment in our project and adjacent areas.

### **6.4 Combined Effects with Other Exploration and Development Activities**

Cumulative effect assessment must consider both how this project will affect the environment, social, and economic state but also the combined effect it will have with the other exploration and development projects in the region. We plan to minimize negative impacts on the environment and social-economic state by taking all the precautions necessary to explore safely and responsibly. We are making efforts to work with other long-term companies in our project area (both other exploration companies and services) to share services and facilities and thus, to minimize the total activity in the area.

## **7.0 SUPPORTING DOCUMENTS**

### **7.1 Abandonment and Decommissioning Plan**

The exploration program will require minimal decommissioning since no camp is being constructed. Site disturbance will be limited to drilling sites and fuel caches. When drill holes are completed, the holes will be backfilled and cemented where elevated radioactivity is intersected. Casing will be either removed or cut off at ground level. The sumps will be removed and all garbage removed from the sites. Drill core will be moved to Nueltin Lake Lodge or stored in a core rack at the site. All empty fuel drums will be removed and where used, fuel berms will be removed.

### **7.2 Digital Photos**

(2 Attached – LF70 diamond drill, MD 500 helicopter)

### **7.3 Digital Claim Map**

(Shapefile in lat/long, WGS84 attached)

### **7.4 Maps**

(Attached – 1. regional location map, 2. property map, 3. water intake location map for drilling)

### **7.5 Hazardous Materials Spill Contingency Plan**

(Attached)

### **7.6 Exploration Radiation Safety Program Manual**

(Attached)