Uranium Exploration Plan

AREVA Resources Canada Inc.

Exploration Department – Kiggavik Project

REQUIRED USERS

Required and other users are responsible for using the current version of the Uranium Exploration Plan as posted on Q:\Exploration\IMS. Users may print copies of this plan, but are ultimately responsible for ensuring they are using a current copy as posted. Users are requested to destroy all previously printed copies of the plan when they are informed of revisions.

HISTORY OF REVISIONS

Version	Revision	Date	Details of Revision
01	00	March 2007	Original submission
02	00	October 2007	Updated to reflect opportunities for improvement
03	00	January 2009	Updated to reflect opportunities for improvement
03	01	May 2011	Updated to reflect personnel titles and grammatical changes.
03	02	May 2012	Updated to reflect personnel changes
03	03	May 2013	Updated to reflect personnel changes and grammatical errors
03	04	May 2014	Updated surface land administration

Original Copy of this Manual:

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Safety Health Environment and Quality Supervisor, Exploration

Approved by:

May 30, 2014

Signature and Date

Approved and Signed by: **Patrick Ledru**

Vice President, Exploration

Approved by:

June 6, 2014

Signature and Date

The original hard copy of this approval page has been signed and is located at the AREVA Resources Canada Inc. Exploration central records.

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1 INTRODUCTION

The AREVA Resources Canada Inc. (ARC) Uranium Exploration Plan applies to the Kiggavik Project located approximately 80 km west of Baker Lake.

1.1 PURPOSE AND SCOPE

The Uranium Exploration Plan is designed to meet the requirements of the Water Use Licence issued by the Nunavut Water Board (NWB), the Saskatchewan Environment Mineral Exploration Guidelines (Best Management Practices), and the Canadian Nuclear Safety Commission (CNSC) Regulations; however CNSC does not regulate exploration activities.

1.2 REVISION TO PLAN

The Uranium Exploration Plan is reviewed on an annual basis and is updated as required to keep the information current and consistent with regulatory and procedural changes. A History of Revisions can be found at the front of this manual.

1.3 RESPONSIBILITIES

The District Geologist, Nunavut is responsible to ensure that this plan is implemented, and the implementation may be completed by:

- Project Geologist
- Safety, Health, Environment, and Quality (SHEQ) Supervisor
- Or designate

The Vice President, Exploration is ultimately responsible for any activity being carried out by Kiggavik Project personnel.

2 SITE INFORMATION

The Kiggavik Project includes two sites, collectively composed of 37 mineral leases covering 45,638.5 acres located in the Kivalliq Region of Nunavut:

- The Kiggavik site is located at approximately 64°26'N and 97°37'W. The property consists of 15 mineral leases totaling 3,753 hectares (ha) (officially 9,267 acres).

- The Sissons site is situated roughly 17 km south-west of Kiggavik at approximately 64°20'N and 97°52'W. The Sissons site consists of 22 mineral leases totaling 14,730 ha (officially 36,372 acres).

The surface rights for 31 mineral leases on Inuit Owned Land (IOL) are administered by the Kivalliq Inuit Association (KIA) while the remaining six mineral leases remain on Crown land. The Crown land covers 3,794 acres of the Jane prospect of the south-west portion of the Project with surface rights administered by Aboriginal Affairs and Northern Development Canada (AANDC).

There is an existing temporary exploration camp at the Kiggavik site which can accommodate approximately 60 people. The Kiggavik camp is located at the following coordinates:

- UTM 14W 564530 E 7146879 N
    - Latitude: 64° 26' 29'' N
    - Longitude: 97° 39' 34'' W

3 SITE OPERATIONS

3.1 TRAINING

ARC provides necessary training to all its employees and contractors to ensure worker safety and protection of the environment during exploration activities. The training programs provided are designed to meet the requirements of the Nunavut Mine Health and Safety Act and Regulations, and the *ISO14001:2004 and OHSAS18001:2007* international standards. Although exploration activities are not regulated by the CNSC, the training programs are designed to meet the requirements of the *Uranium Mines and Mills Regulations.*

New employees, including contractors, receive appropriate radiation protection training prior to beginning work. This includes instruction on the origins of ionizing radiation, types of radiation, health risks, principles of radiation safety and regulatory compliance. Training also includes the safe handling, management and disposition of radioactive materials such as drill muds and cuttings, and radioactive core.

Visitors at the Kiggavik site for more than 72 hours, or who will be left without an escort will receive radiation protection training. Visitors who have not received training must be escorted on site at all times.

Kiggavik project personnel supervising the shipment of radioactive materials must possess a valid TDG certificate in accordance with Transport Canada Transportation of Dangerous Goods Regulations. If radioactive materials are to be transported by aircraft, TDG training is to include the necessary aviation components for Class 7 materials. If contractors for the project have their own training program they must submit evidence of the training program.

ARC field personnel and contractors who handle fuel, lubricants and/or radioactive material require spill response training. If the contractors have their own training program they must submit evidence of the training program. Training for ARC employees is provided in accordance with the *Spill Contingency Plan*. Contractors are given a copy of said plan. If the contractors do not have an acceptable training program in place, AREVA will supply the training material and/or provide the spill response training as required.

3.2 DRILLING OPERATIONS

As required by the current water use licence issued by the NWB, all drill sites are located at a minimum of 30 m beyond the ordinary high level water mark of any nearby water bodies, unless an exemption to this requirement has been granted.

During drilling activities, drill mud solids or cuttings in non-mineralized zones are deposited on the ground, in a natural low-lying depression. This natural depression must also be located at a minimum of 30 m beyond the ordinary high level water mark of any nearby water bodies, and where direct flow into the water body is not possible. A radiological survey is conducted before and after drilling to verify that radiation levels are not greater than 1 µSv/h above background. Restoration of the natural low-lying depression and drill sites will be carried out as per the Abandonment and Restoration Plan.

When mineralized core is intersected, all drill mud and cuttings are collected in appropriate containers and categorized as radioactive through appropriate radiation measurements.

Drill mud or cuttings with uranium content greater than 0.05% will be collected and stored at the radioactive storage compound with an appropriate containment system in place. Down hole disposal of cuttings is often not practical at Kiggavik.

Any drill hole that encounters mineralization with uranium content greater than 1.0% over a length of > 1.0 m and with a metre-per-cent concentration of > 5.0 is sealed by grouting over the entire length of the mineralization zone and not less than 10 m above or below each mineralization zone.

GPS locations of all drill locations are recorded on the drill log and submitted with the annual report submitted to the regulatory agencies.

3.3 CORE LOGGING AND STORAGE

Logging of core is primarily conducted in core logging tents located a few hundred metres away from the camp facilities. Geotechnical logging of core may also be conducted at the drill site.

Permanent and long-term storage areas of radioactive material, including core and drill cuttings, are located at least 31 m from the main camp and at least 100 m from the high water mark of all water bodies.

Gamma radiation levels at 1 m from the surface of a storage area should be reduced to 1 µSv/h and in no instances exceed 2.5 µSv/h.

Permanent on-site core storage areas are appropriately labelled with radiation warning signs.

If long-term off-site storage is required, ARC intends to transport the material to be stored at an operating uranium mining facility.

3.4 RADIOISOTOPES

Nuclear materials and radiation devices are used for exploration and instrument calibration. The possession, use, storage, and disposal of nuclear materials and radiation devices are carried out in accordance with Canadian Nuclear Safety Commission (CNSC) *Nuclear Substances and Radiation Devices Regulations* and licence conditions.

3.5 SPILLS

Spills of dangerous goods must be responded to and reported as described in the Spill Contingency Plan. The uncontrolled or accidental release of any radioactive materials including drill mud solids and cuttings is considered a spill. All spills of radioactive material are to be appropriately reported and responded to in accordance with the Spill Contingency Plan, which was submitted and approved by authorising authorities with the applications submitted to conduct the field program.

In the event of a spill, radioactive materials are collected and necessary site remediation undertaken to meet the site abandonment criteria of less than 1 μSv/h above background at a height of 1 m. To the greatest extent possible, all spill affected areas are to be decontaminated.

Material collected during the clean-up is stored in appropriate containers and stored in the on-site long-term storage area, for future handling.

3.6 SHIPPING OF RADIOACTIVE MATERIALS

Shipping and receiving radioactive material is carried out in accordance with the CNSC *Packaging and Transport of Nuclear Substances Regulations* and the Transport Canada *Transportation of Dangerous Goods Regulations*.

All personnel responsible for or directly involved with the shipment of radioactive materials must possess a valid transportation of dangerous goods (TDG) certificate which includes the transportation of Class 7 materials. Support personnel providing assistance during the preparation and shipment of radioactive material do not require TDG training as long as they are working under the direct supervision of trained individuals.

3.7 SITE ABANDONMENT AND RESTORATION

Site abandonment and restoration is carried out in accordance with the Abandonment and Restoration Plan.

Gamma radiation surveys are conducted at each site prior to drilling and prior to final abandonment. Contaminated soil or cuttings are collected in appropriate containers and stored in the long-term core storage area for future handling, which may include transfer to an operating mine site. All drill sites are cleaned to ensure that the gamma dose rate at a height of 1 m is less than 1 μSv/h above ambient background.

Materials and equipment leaving the drill site are monitored for contamination in accordance with procedure, *EXP-740, Routine Radiological Monitoring Schedule*. Materials or equipment that cannot be decontaminated to meet unrestricted release criteria are either stored in the long-term core storage area or shipped to a licensed facility such as the McClean Lake Operation in accordance with the CNSC *Packaging and Transport of Nuclear Substances Regulations* and the Transport Canada *Transportation of Dangerous Goods Regulations*.

4 REFERENCES

Abandonment and Restoration Plan

Canadian Nuclear Safety Commission (CNSC) *Uranium Mines and Mills Regulations*

CNSC *Packaging and Transport of Nuclear Substances Regulations*

EXP-740, Routine Radiological Monitoring Schedule

Saskatchewan Environment Mineral Exploration Guidelines (Best Management Practices)

Spill Contingency Plan

Transport Canada *Transportation of Dangerous Goods Regulations*