

Kivalliq Inuit Association

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Nunavut Water Board

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VIA COURIER

January 25, 2011

Indian and Northern Affairs Canada – Land Administration PO Box 100 Igaluit, NU X0A 0H0

Nunavut Impact Review Board PO Box 1360 Cambridge Bay, NU X0B 0C0

Government of Nunavut – Department of Environment PO Box 1000 Station 1300 Igaluit, NU XOA 0H0

Dear All:

Re:

2010 Annual Report for the Kiggavik Project

INAC Land Use Permit N2009C0017; KIA Land Use Licence KVL306C02; NWB Water Licence 2BE-KIG0812

Please find enclosed the 2010 AREVA Resources Canada Inc. (AREVA) Annual Report for the Kiggavik Project and accompanying updated operational plans for your review, comment and distribution. A hard copy and CD of the annual report and plans have been sent via courier.

This report fulfills the Nunavut Impact Review Board screening recommendation; Indian and Northern Affairs Canada permit condition No. 5, and Nunavut Water Board Licence Part B, Item 2 for an annual report submitted by January 31 and March 31<sup>st</sup> respectively, which addresses the previous year of operation.

AREVA trusts that this annual report is a concise and useful summary of the activities conducted in 2010. Please do not hesitate to contact Kim Sarauer at 306-343-4043 or <a href="mailto:kim.sarauer@areva.ca">kim.sarauer@areva.ca</a> or myself at 306-343-4631 with any questions or comments.

Yours truly,

Frederic Guerin, Ph.D

General Manager, Kiggavik-Sissons AREVA Resources Canada Inc.

Tel: (306) 343-4631 frederic.guerin@areva.ca

CC

Workers' Safety and Compensation Commission Government of Canada – Department of Fisheries and Oceans ARC Distribution

# AREVA Resources Canada Inc. - Kiggavik Project Field Program

# 2010 Annual Report

# January 2011

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| Environment and<br>Radiation Protection<br>Supervisor | Kim Sarauer, B.Sc | 7/12      |
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- o General Manager, Kiggavik-Sissons, Frédéric Guérin
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- o Environment and Radiation Protection Supervisor, Kim Sarauer
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- Gebauer and Associates Ltd.

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| General Manager,<br>Kiggavik | Frédéric Guérin, Ph.D |           |
| Title                        | Name                  | Signature |

# **History of Revisions**

| Date      | Details of Revision |  |  |
|-----------|---------------------|--|--|
| 25-Jan-11 | Original Release    |  |  |
|           |                     |  |  |

AREVA Resources Canada Inc.

# KIGGAVIK PROJECT FIELD PROGRAM

2010 ANNUAL REPORT

Date of issue: January 2011



# **Executive Summary**

The following Annual Report is a summary of the 2010 field programs conducted at the Kiggavik Project and is required by condition #5 of the Land Use Permit N2009C0017 issued by Indian and Northern Affairs Canada (INAC) and under Part B, Item 2 of Licence no. 2BE-KIG0812 issued by the Nunavut Water Board (NWB).

The 2010 field program of the Kiggavik Project focused on diamond drilling, ore and waste rock sampling and geophysical surveys in order to improve the understanding of known uranium deposits in the Kiggavik and Sissons areas. Diamond drilling was also performed in these areas to further evaluate potential deposits. Drilling Started on June 11 2010 and was completed August 24, 2010. During the drilling period 9175.5 metres was completed on 27 drill holes using NQ sized diamond core equipment. Ore and waste rock samples were collected from core drilled and sent to laboratories for testing. Detailed geotechnical logging was conducted on five holes. Packer tests were performed in two deep holes that extended below the base of expected permafrost. Ground temperature data from the thermistors installed in 2007 and 2009 continued to be collected.

Environmental baseline work in 2010 was focused on aquatic, atmospheric, terrestrial wildlife and hydrological assessments.

All drilling operations were conducted out of the Kiggavik camp and were supported by helicopter services and the Baker Lake office. In 2010, the camp accommodated up to 59 persons. There were no lost time incidents involving AREVA Resources Canada Inc. (AREVA) personnel or contractors. The Wildlife Mitigation and Monitoring Plan was successfully implemented, protecting wildlife by avoiding conflicts and minimizing impacts within the Project area.

Occupational health and safety and radiation protection programs were implemented to ensure work was performed in a safe and responsible manner and that workers were not adversely exposed to radiation from uranium exploration activities.

A community engagement program was carried out to support all aspects of the Kiggavik Project, including the field program.

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# 1 SUMMARY OF ACTIVITIES UNDERTAKEN IN 2010

# 1.1 General

Field activities undertaken by AREVA Resources Canada Inc. (AREVA) and its contractors in 2010 included feasibility work, deposit appraisal and environmental baseline work:

- Deposit appraisal and feasibility work in 2010 focused on diamond drilling in the Kiggavik and Sissons areas for the purposes of ore and waste rock sampling in order to improve the understanding of the known mineral deposits. Activities also included geotechnical logging, packer testing and ground temperature measurements
- Exploration geological work in 2010 focused on diamond drilling at Bong and Andrew Lake as well as a ground geophysical survey in the Bong area.
- Environmental baseline work in 2010 was focused on aquatic, atmospheric, terrestrial wildlife, and hydrological assessments.

Operations were conducted out of the Kiggavik camp and were supported by helicopter services and the Baker Lake office. In 2010 the camp accommodated up to 59 persons. Main Project contributors were as follows:

| Activity                                     | Contributors                        |
|--|-------------------------------------|
| Management                                   | AREVA                               |
| Drilling                                     | Boart Longyear                      |
| Geological logging and probing               | AREVA                               |
| Ore and waste rock sampling                  | AREVA                               |
| Geotechnical logging                         | AREVA                               |
| Packer testing                               | Golder                              |
| Environmental Baseline Work/Aquatic studies  | Golder                              |
| Environmental Baseline Work/Hydrology        | Golder                              |
| Environmental Baseline Work/Wildlife studies | Gebauer                             |
| Wildlife Monitoring                          | AREVA & NPS                         |
| Helicopter                                   | Helicopter Transport Services (HTS) |
| Environment and Radiation Protection         | AREVA                               |
| Health and Safety                            | AREVA & Tangmaarvik Inland Camp     |
|  | Services                            |
| Occupational First Aid & Catering            | 5136 Nunavut                        |
| Camp Operations & Maintenance                | AREVA & NPS                         |
| Fuel and other Overland Transportation       | Peter's Expediting                  |
| Expediting                                   | AREVA & Peter's Expediting          |
| Geotechnical Survey                          | Quantec                             |

# 1.2 Camp Activities

The temporary wooden camp at the Kiggavik site was maintained throughout the 2010 field season. A landing strip was created at the fuel cache esker to accommodate Turbo Otter flights.

During the last week of August, the site was prepared for seasonal abandonment with equipment and supplies that can withstand winter conditions placed in storage, while supplies and equipment requiring heated storage were brought to Baker Lake. The generator was shut down and winterized. Waterlines were drained, flushed, and winterized with antifreeze. All buildings were secured by boarding up all windows and doors for the winter. All personnel vacated the site by August 28, 2010. Figures 1.2-1 and 1.2-2 show the camp during seasonal shutdown.

#### 1.3 Fuel Cache

Two primary fuel cache locations were utilized in 2010:

- Fuel cache at esker:
   64° 25' 37.98" N, 97° 43' 22.07" W
   (14W 561512, 7145240)
- Fuel cache at Kiggavik camp: 64° 26' 25.82" N, 97° 39' 39.05" W (14W 564464, 7146782)

All drums of jet fuel were stored in approved 205 litre steel drums during the first part of the season. Fuel drums were stored within a secondary containment system. Following consumption of remaining steel drums, AREVA later utilized three 50,000 L double walled steel EnviroTanks for jet fuel storage. All diesel fuel was stored in five 50,000 litre double walled Envirotanks. All fuel containers were labelled, identifying the contents and AREVA's name. Figure 1.3-1 shows an aerial photo of the fuel cache and landing strip.

# 1.4 Drilling and Sampling

Drilling started on June 11, 2010 and stopped on August 24, 2010. Diamond drilling was carried out at the Kiggavik Project on six zones in 2010: Andrew Lake, Bong, End Grid, East Zone, Main Zone and Mill Site. During the drilling period, a total of 9175.5 metres was completed on 27 drill holes using NQ sized diamond core equipment. Diamond drilling on the End Grid deposit included fourteen drill holes with a total meterage of 5,559.5 meters, five holes were drilled in the Bong area for 1758 meters, the Kiggavik Main Zone and East Zone included three drill holes for 672 meters, and the Andrew Lake deposit consisted of three drill holes for 1,084 meters. Two shallow drill holes were drilled on the Mill Site with a total meterage of 102 meters.

Average drilling rates were generally good. All drill cores were logged. Ore samples were collected from drill core and sent to the laboratory for testing. Table 1.4-1 includes a summary of the 2010 drilling program.

Table 1.4-1: Summary of 2010 Drill Holes

|            |          |             | DH Location (UTM NAD 83) |                   |               | DH Orient       | ation | Drillin   | g Date    |               |                  |
|------------|----------|-------------|--------------------------|-------------------|---------------|-----------------|-------|-----------|-----------|---------------|------------------|
| Hole ID    | Area     | Zone        | UTM x<br>Easting         | UTM y<br>Northing | Elevation (m) | Azimuth<br>(TN) | Dip   | Start     | Finish    | Length<br>(m) | Core<br>Diameter |
| Bong-045   | Kiggavik | Bong        | 562275                   | 7144150           | 159           | 0               | -90   | 13-Jun-10 | 20-Jun-10 | 405           | NQ               |
| Bong-046   | Kiggavik | Bong        | 562275                   | 1744150           | 159           | 290             | -82   | 20-Jun-10 | 23-Jun-10 | 99            | NQ               |
| Bong-047   | Kiggavik | Bong        | 562337                   | 7144181           | 159           | 0               | -90   | 23-Jun-10 | 27-Jun-10 | 282           | NQ               |
| Bong-048   | Kiggavik | Bong        | 562373                   | 7144395           | 163           | 0               | -90   | 29-Jun-10 | 11-Jun-10 | 471           | NQ               |
| Bong-049   | Kiggavik | Bong        | 561719                   | 7144288           | 173           | 0               | -90   | 12-Jul-10 | 23-Jun-10 | 501           | NQ               |
| EZ-10-03   | Kiggavik | East Zone   | 566461                   | 7147289           | 177           | 0               | -90   | 13-Aug-10 | 17-Aug-10 | 252           | NQ               |
| MZ-10-01   | Kiggavik | Main Zone   | 564974                   | 7146894           | 187           | 0               | -90   | 16-Aug-10 | 20-Aug-10 | 249           | NQ               |
| MZ-10-02   | Kiggavik | Main Zone   | 565001                   | 7146964           | 182           | 160             | -60   | 20-Aug-10 | 24-Aug-10 | 171           | NQ               |
| RMI-10-01  | Kiggavik | Mill        | 564983                   | 7148064           | 212           | 0               | -90   | 20-Aug-10 | 21-Aug-10 | 45            | NQ               |
| RMI-10-02  | Kiggavik | Mill        | 565000                   | 7147500           | 202           | 0               | -90   | 22-Aug-10 | 23-Aug-10 | 57            | NQ               |
| AND-10-01  | Sissions | Andrew Lake | 553420                   | 7134931           | 168           | 198             | -64   | 13-Jul-10 | 22-Jul-10 | 387           | NQ               |
| AND-10-02  | Sissions | Andrew Lake | 553309                   | 7134595           | 166           | 18              | -65   | 23-Jul-10 | 30-Jul-10 | 360           | NQ               |
| AND-10-03  | Sissions | Andrew Lake | 552678                   | 7134733           | 167           | 125             | -60   | 31-Jul-10 | 8-Aug-10  | 337           | NQ               |
| END-10-01  | Sissions | End Grid    | 554504                   | 7135899           | 168           | 170             | -85   | 10-Jun-10 | 20-Jun-10 | 501           | NQ               |
| END-10-02  | Sissions | End Grid    | 554583                   | 7135486           | 163           | 0               | -90   | 15-Jun-10 | 16-Jun-10 | 24.02         | NQ               |
| END-10-02A | Sissions | End Grid    | 554583                   | 7135486           | 163           | 0               | -90   | 17-Jun-10 | 26-Jun-10 | 435           | NQ               |
| END-10-03  | Sissions | End Grid    | 554641                   | 7136014           | 167           | 0               | -90   | 21-Jun-10 | 1-Jul-10  | 420           | NQ               |
| END-10-04  | Sissions | End Grid    | 554610                   | 7135865           | 166           | 150             | -67   | 28-Jun-10 | 12-Jul-10 | 504           | NQ               |
| END-10-05  | Sissions | End Grid    | 554613                   | 7136029           | 168           | 225             | -88   | 01-Jul-10 | 10-Jul-10 | 405           | NQ               |
| END-10-06  | Sissions | End Grid    | 554486                   | 7136104           | 169           | 154             | -60   | 11-Jul-10 | 18-Jul-10 | 402           | NQ               |
| END-10-07  | Sissions | End Grid    | 554543                   | 7135931           | 167           | 320             | -85   | 19-Jul-10 | 25-Jul-10 | 429           | NQ               |
| END-10-08  | Sissions | End Grid    | 554300                   | 7135743           | 171           | 0               | -90   | 26-Jul-10 | 3-Aug-10  | 368           | NQ               |
| END-10-09  | Sissions | End Grid    | 554632                   | 7135984           | 167           | 0               | -90   | 26-Jul-10 | 2-Aug-10  | 348           | NQ               |
| END-10-10  | Sissions | End Grid    | 554563                   | 7136001           | 167           | 0               | -90   | 3-Aug-10  | 10-Aug-10 | 442.5         | NQ               |
| END-10-11  | Sissions | End Grid    | 554498                   | 7135966           | 168           | 0               | -90   | 5-Aug-10  | 12-Aug-10 | 453           | NQ               |
| END-10-12  | Sissions | End Grid    | 554513                   | 7136039           | 169           | 0               | -90   | 11-Aug-10 | 18-Aug-10 | 432           | NQ               |
| END-10-13  | Sissions | End Grid    | 554621                   | 7135948           | 167           | 0               | -90   | 9-Aug-10  | 15-Aug-10 | 396           | NQ               |

# **End Grid**

Twelve out of fourteen holes were drilled to completion. Most of the drilling in 2010 focussed on the North Pod of End Deposit and all of these holes except three were within, or on the edges of this pod. They either confirmed or delineated the known mineralization in the area. One hole END-10-08 was drilled on the South Pod of the deposit, where encouraging results at depth indicate the possibility of additional mineralization below the known existing pod. This hole was lost prematurely however, and did not fully test the promising results. END-10-02 and END-10-02A were drilled below End Grid Lake from the NW to test a gravity low in that location but was unsuccessful in explaining that anomaly. During this field campaign, eleven drill holes were probed to completion; one drillhole was partially probed and two drill holes could not be probed due to the poor ground condition.

This field program appears to support the existing information. The main rock type observed at the End Grid was metasediment with local granite intrusions and quartzite, which are here divided into four general groups: the upper paleo-weathered zone with hematitic alteration, the chlorite cap, the mineralized zone, and the slightly weathered to fresh zone. Mainstructural features include a shallowfoliation, and variably-dipping fractures, shear zones, faults, breccias and vein systems.

Eight drill holes were able to test the continuity of the mineralization known. The majority of those 8 holes intended to validate the upper lens of the ore model. One hole END-10-intersected the mineralization to validate the lower lens of the ore model. END-10-06 and END-10-10 were not able to confirm the persistent mineralization within the upper lens of the ore body in the NW area of the deposit. Based on these results, theresulting interpretation now has the main ore lense splitting into multiple satellite ore units. Two drill holes (END-10-11 and END-10-12) confirmed the limit of the mineralization known to NW of the deposit.

#### Main and East Zones

Two holes were completed at Main Zone and one at East Zone in 2010. All holes were logged to acquire geotechnical parameters. Two holes MZ-10-01 and EZ-1-01 were drilled to facilitate investigation into the hydrogeological conditions. MZ-10-02 was drilled to validate the geological and mineralization model. The major rock types observed at Main Zone included metasediment and a granitic unit. Near surface rock appeared to be slightly to moderately weathered. In general, alteration within the metasedimentary gneiss appears to be dominated by silicifiication while granite was observed to be predominantlybleached. The major lithology at East Zone includs metasediments intruded by syenite sills and dykes. Alteration within the metasediments appears to predominantly consist of hematite and limonite with local argillization and weak-trace chloritization, and bleaching.

The drill holes MZ-10-01 and EZ-10-01 were primarily dedicated to packer testing. MZ-10-01 indicated artesian conditions at the drillhole collar.

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#### **Andrew Lake**

Three holes were completed at the Andrew Lake site. Two holes (AND-10-01 and AND-10-02) were drilled to test mineralization continuity and one hole AND-10-03 was drilled to test a gravity low below Andrew Lake. AND-10-03 was also used to acquire the geotechnical data that may be used for the design criteria of berm/dyke to partially dewater the lake for open pit mining purpose. The principal lithology in AND-10-01 and AND-10-02 consists of paleo-weathered metasediments overprinted by varying degrees of alteration, including weathering, leaching, hematite, chlorite and, seritization, , along with clay replacement, which is usually structurally related. AND-10-01 is mostly composed of strongly paleo-weathered, generally medium-grained granitic gneiss with minor intervals of metasediments.

Structures through AND-10-01 and AND-10-02 include a shallow but strongly folded foliation, breccia, , fault and vein systems.. AND-10-03 contrasts the structural complexity of both AND-10-01 and AND10-02 in that the only significant structural zone is located near the bottom of the hole and can be characterized as a rubble zone with with abundant core loss and strong clay replacement.

AND-10-01 and AND-10-02 were mineralized, whereas AND-10-03 was barren.

#### Mill Site

Two shallow holes were completed at the Mill Site. Both RMI-10-01 and RMI-10-02 were logged to collect geotechnical information of the overburden and rock quality of the bedrock. Approximately 2.7 to 6.5 m of overburden is present, which overlies fine- to medium-grained granitic gneiss in RMI-10-01 and granite. Although adequate overburden recovery could not be achieved, it was sufficient to gather necessary geotechnical parameters.

# Bong

The diamond drilling program in the Bong area was undertaken based on information received both from the most recent airborne gravity survey, as well as a follow-up of positive results obtained during the drilling program in the 2008. Drilling on gravity targets was unsuccessful and the gravity lows were not explained. This resulted in the use of a ground resistivity survey over these targets as well as over the known mineralization at Bong to better understand the area. This short survey was very successful in delineating resistivity lows in areas and showed that some airborne gravity lows require additional geophysics to better understand their significance. The second aspect of the drilling at Bong was a test of the Northwest extension of the known

mineralization centered around BONG-032. This too was unsuccessful as all holes had to be prematurely terminated due either to the presence of artesian flow in the hole, or due to unfavourable ground conditions.

# 1.5 Packer Testing

A total of 2 single well pressure response tests using pneumatic packers were carried out in 2 boreholes drilled at the Kiggavik deposit as part of the hydrogeological testing program in 2010: one in EZ-10-01 at East Zone deposit and one in MZ-10-01 at Main Zone deposit. A single packer wireline tool was used to isolate a section of the borehole below the base of the permafrost to obtain bulk hydraulic parameters for that interval. Results of the tests provided information on the hydraulic conductivity of the aquifer below the permafrost layer, and hydraulic head corresponding with the individual test intervals.

In general, all tests resulted in very low injection inflow and a low estimate of apparent hydraulic conductivity, as expected in the deep bedrock environment. The hydraulic conductivity values obtained from the tests varied from  $7X10^{-8}$  to  $3x10^{-11}$  m/s. A maximum estimated transmissivity for the intervals tested ranged from  $2X10^{-6}$  to  $<1x10^{-9}$  m<sup>2</sup>/s. The pressure response of the interval tested in the Main Zone indicated artesian conditions at the borehole collar. The static hydraulic head was estimated at +17.6m above the borehole collar.

# 1.6 Thermistor Installation and Monitoring

Additional deep thermistors were not installed during this field season. However, monitoring of all existing thermistors and vibrating wire pieozometeres was conducted. Readings were taken from six thermistors/vibrating wire piezometers: one at End Grid, 2 at Andrew Lake and 3 at Kiggavik Main Zone deposits.

The temperature data collected in 2010 at Andrew Lake borehole AND-07-01 was essentially the same as in the past with the exception of some erratic readings / high temperature values recorded locally within the frozen ground. These high temperature values are likely due to faulty thermistors at depths 53.8, 81.0, 108.2, 135.4, 162.6, 217.0 and 244.1 meters below ground surface. However, three thermistors at depths 26.6, 189.8 and 271.3 meters below ground surfaces appear to be recording correct thermal data and were considered to develop the temperature profile and estimate the permafrost depth in this hole.

The temperature data collected from the thermistors installed in 2009 at End Grid and Andrew Lake shows the base of the permafrost at approximately 235 and 253 meters below ground surface (mbgs), respectively. At Andrew Lake, the permafrost depth was additionally estimated based on the temperature data acquired from the thermistor installed in the borehole AND-07-01 in 2007 and was approximately 256 meters below ground surface. At Kiggavik Main Zone the thermistors installed in 2007 and 2009 field

seasons record the base of the permafrost that ranged from 208 to 225 meters below ground surface. The temperature data collected from the multilevel thermistors indicate a temperature gradient of 0.02 °C/m at the End Grid and the Andrew Lake, and 0.02-0.04 °C/m at the Kiggavik Main Zone. The coldest temperature -9.0 °C was measured at 6.4 meters depth in the borehole MZ-09-04 at Kiggavik Main Zone.

The depth of permafrost was inferred from temperature profiles measured with deep thermistor strings in selected boreholes. In 2010, the estimated average depth to the bottom of permafrost varied between 208 and 225 metres below ground surface at Kiggavik. At Sissons site, the permafrost depth was estimated to be between 235 and 260 meters below ground surface. Table 1.6-1 shows the permafrost depths at multilevel thermistor locations estimated based on the 2010 observations. Figures 1.6-1 to 1.6-6 provide the temperature profiles in the boreholes at End Grid, Andrew Lake and Kiggavik sites.

Latest readings were taken in the vibrating wire piezometers during this field season and the estimated groundwater pressures in the area of Kiggavik Main Zone, Andrew Lake, and End Grid deposits were approximately 24.2m, 8.6m, and 9.1m above the ground surface, respectively.

Table 1.6-1: Estimated permafrost depths at Multi-Level Thermistor Locations

| Hole ID   | Site     | Deposit Zone | Estimated Permafrost (PF) Depth (m bgs) | Drilled Length<br>(m bgs) | Is EOH* below PF<br>Depth? |
|-----------|----------|--------------|---|---------------------------|----------------------------|
| END-09-01 | Sissons  | End Grid     | 235                                     | 432                       | Yes                        |
| MZ-07-01  | Kiggavik | Main Zone    | 220                                     | 238                       | Yes                        |
| MZ-09-02  | Kiggavik | Main Zone    | 208                                     | 260                       | Yes                        |
| MZ-09-04  | Kiggavik | Main Zone    | 225                                     | 270                       | Yes                        |
| AND-07-01 | Sissons  | Andrew Lake  | 260                                     | 331                       | Yes                        |
| AND-09-03 | Sissons  | Andrew Lake  | 253                                     | 327                       | Yes                        |

\*End of Hole

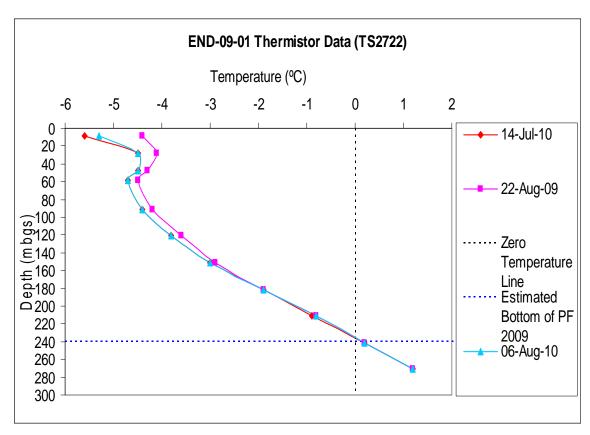


Figure 1.6-1: END-09-01 Temperature Profile

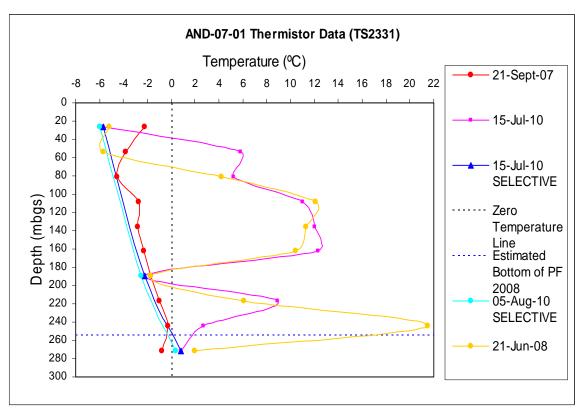


Figure 1.6-2: AND-07-01 Temperature Profile

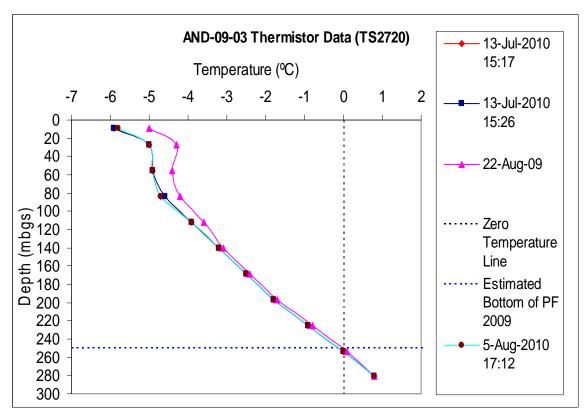


Figure 1.6-3: AND-09-03 Temperature Profile

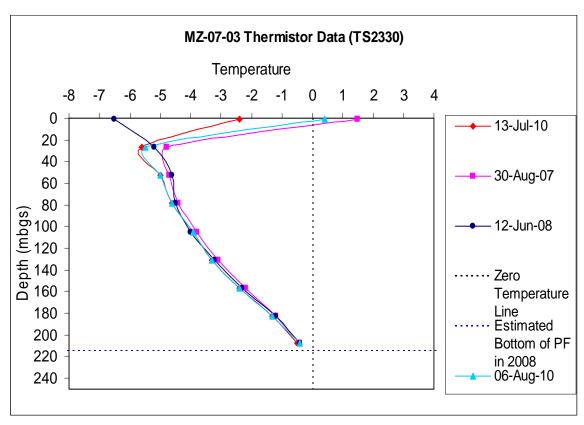


Figure 1.6-4: MZ-07-03 Temperature Profile

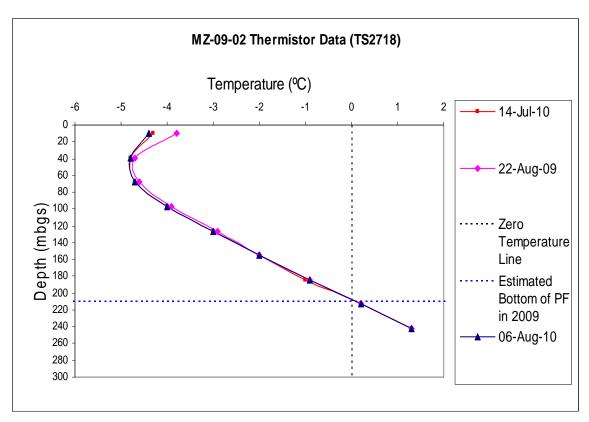


Figure 1.6-5: MZ-09-02 Temperature Profile

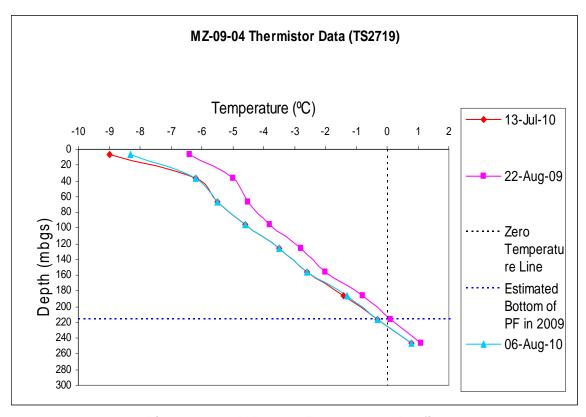


Figure 1.6-6: MZ-09-04 Temperature Profile

# 1.7 Environment, Health and Safety Monitoring

The 2010 Environmental, Health and Safety program was implemented and carried out by AREVA staff along with Tangmaarvik Inland Camp who provided Safety Coordinators for the Kiggavik Project. The wildlife monitoring program involved independent Wildlife Monitors from the Baker Lake community, consulting biologists conducting height-of-land (HOL) surveys and AREVA field staff.

# Wildlife Monitoring

Caribou protection measures were in place throughout the field season and local wildlife monitors were employed. Records were kept of wildlife observed in camp and during flights. Commencing July 18, large herds of caribou were migrating within Project area. The large herds finished their migration through the Kiggavik local study area (LSA) on August 3, 2010. The largest group of caribou was observed on July 31, which required the suspension of drilling activity. Musk ox and wolves were seen near the site on several occasions. During fieldwork, crews also observed several other mammals (hares, arctic fox, and siksiks) and birds (ptarmigan, ducks, geese, cranes and other birds). Further details regarding wildlife monitoring and mitigation measures are provided in section 3.6 of this annual report.

# **Environment Protection**

All drill sites were subject to gamma radiation surveys prior to conducting any drilling activities and again following completion of the hole. If elevated levels of gamma radiation were detected during the post-operational survey, clean-up activities are conducted followed by another gamma survey to ensure remaining gamma radiation readings were below the cleanup criterion of 1  $\mu$ Sv/h.

The Kiggavik Project also maintained its ISO 14001 certification which was originally achieved in 2009. There were no spills during the 2010 season.

# Occupational Health and Safety

There were no lost time accidents in 2010 involving any Kiggavik personnel or contractors.

Two Applied Suicide Intervention Skills Training (ASIST) sessions were held prior to the field season; one in Saskatoon and one in Baker Lake. These sessions were open to Baker Lake residents and AREVA personnel.

#### **Radiation Protection**

A Radiation Protection program was implemented to ensure work activities were performed in a safe and responsible manner and that workers were not adversely exposed to radiation from Project activities.

The Radiation Protection program was conducted using:

- Gamma dosimetry: OLDs (Optically stimulated Luminescent Dosimeter) and DRDs (Direct Reading Dosimeter) for personal dosimetry
- Automess survey instrument for gamma radiation monitoring
- Ludlum 2221 with Trimble GeoExplorer for pre and post gamma surveys
- Ludlum survey Instrument / pancake probe and swipes for contamination monitoring
- Portable TM372 sample counters, SKC air pumps and Ludlum 2929 for radon progeny and long lived radioactive dust (LLRD) monitoring
- Track etch cups for environmental radon monitoring
- 3 Radon Detectors for environmental radon monitoring

No Code of Practice dosimetry action levels were exceeded during the 2010 program. The worker radiation doses observed were well below regulatory dose limits for members of the public (1 mSv/a) or occupational workers (20 mSv/a). During the 2010 program, worker gamma radiation exposures ranged from 0.00 mSv to 0.06 mSv with an average exposure of 0.003 mSv. The highest gamma radiation exposure was received by a geologist.

Worker exposures from radon progeny (RnP) and long-lived radioactive dust (LLRD) were conservatively estimated from workplace monitoring to be less than 0.02 mSv and 0.06 mSv respectively.

#### 1.8 Environmental Baseline Work

# 1.8.1 Hydrology

Golder Associates Ltd. conducted a spring hydrological field program over the period of June 16 - 20, 2010. This program is a continuation of studies carried out in 2007, 2008, and 2009. Stream discharge was measured at eight locations, lake elevation was measured at six locations, and pressure transducers were installed in ten streams and lakes. AREVA collected the continuous water level sensors and took three water level measurements on August 24, 2010.

# 1.8.2 Aquatic - Freshwater

Golder Associates Ltd. collected aquatics baseline data on fish habitat and bathymetry on select water bodies during spring and fall field sessions in 2010. This program is a continuation of studies conducted in 2007, 2008, and 2009.

# 1.8.3 Atmospheric

The two weather stations, one at Kiggavik camp and one near Pointer Lake, which were installed in 2009 continued to provide on-going baseline weather data throughout 2010.

Air quality monitors which monitor TSP, PM-2.5, PM-10, metals and radionuclides were in operation throughout the field season.

# 1.8.4 Terrestrial Wildlife

The 2010 terrestrial program provided baseline data on valued components found in the immediate and regional area around AREVA's Kiggavik and Sissons leases and proposed facilities. A summary of the approach and results from the various field programs conducted in 2010 is presented in Section 4.4.

# 1.8.5 Alpha Emissions

Three site alpha dosimeters were installed in 2010; one in Baker Lake, one at Kiggavik and one at Sissons. These instruments included an air sampler, an electronic flow meter fro the continuous measurement of the sampling volume of air and a head for the integrated measurement of alpha emissions of short life daughter products of radon 222 and 220 and long life products of uranium and thorium. Track etch cups for environmental radon gas measurements were also installed in 26 locations around the Kiggavik and Sissons areas.

# 1.8.6 Archaeology

No field archaeological studies were conducted in 2010.

# 1.8.7 Marine Studies

No field marine studies were conducted in 2010.



Figure 1.2-1: Aerial View Winterized Kiggavik Camp, August 2010



Figure 1.2-2: Winterized Kiggavik Camp, August 2010



Figure 1.3-1: Fuel Cache at Esker, August 2010

# 2 SUMMARY OF PLANNED ACTIVITIES FOR THE 2011 PROGRAM

# 2.1 General

Exploration activities planned for 2011 field program consist primarily of exploration drilling throughout the lease areas to identify potential for additional mineral deposits and further evaluate known deposits. A limited deposit appraisal drilling program is also planned to take place throughout the 2011 field program. The intent is to gather information required to determine whether these deposits can be safely and economically extracted and processed, while protecting the environment.

It is expected that the drilling and environment crews will be mobilized to the site early in June 2011. The program is expected to be shut down and prepared for the winter season by the end of August or beginning of September. All operations will be conducted out of the Kiggavik camp and will be supported by helicopter services and the Baker Lake office. The maximum number of people at the camp is estimated to be a maximum of 59 in 2011.

# 2.2 Camp Expansion

There is no camp expansion planned for 2011. Minor renovations to existing buildings may occur as required.

# 2.3 Fuel Cache

Bulk fuel tank storage systems for both diesel and jet fuel will continue to be used during the 2011 field season.

The bulk fuel tank storage system includes eight double-walled steel EnviroTanks, each with a capacity of 50,000 L. The eight tanks were installed by an approved installer and in accordance with Canadian Council for Ministers of the Environment (CCME) – Environment Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. Three of the tanks are for the storage of Jet-B fuel and five tanks are for the storage of diesel fuel. The tanks are registered with Environment Canada, and are located on an esker within the Kiggavik lease, east of the camp (see Figure 1.3-1).

AREVA complies with Environment Canada's Storage Tank Systems for Petroleum Products and Allied Petroleum Product Regulations and the Canadian Council for Ministers of the Environment (CCME) – Environment Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. Procedures and work instructions for tank operation are under development to support compliance with these regulations.

# 2.4 Geophysics

A ground resistivity survey will be conducted over the Sleek Lake area in 2011. This may be expanded outside this area if deemed necessary.

# 2.5 Drilling, Sampling and Testing

# **Drilling at Kiggavik site**

- The objectives of the drilling campaign will be to collect hydrogeological data and to conduct groundwater monitoring
- Diamond drilling will include a total of 4 to 8 drill holes
- Total meterage is expected to be approximately 2000m
- The drill hole size will be either NQ or HQ
- Holes will be either sub-vertical or vertical
- Hole length is expected to range between 240m and 260m
- Packer tests will be conducted on these holes below the permafrost
- Groundwater samples will be collected

# **Drilling at Mill site**

Shallow geotechnical holes may be drilled at the Mill site. The objectives of the drilling campaign will be to collect geotechnical data including ground-ice content within the overburden and bedrock properties.

# **Exploration Drilling**

- The objectives of the drilling campaign will be to collect resource data
- Diamond drilling will include a total of 15 to 25 drill holes
- Total meterage is expected to be approximately 8,000m
- The drill hole size will be NQ
- Core orientation will be conducted using the Ace core orientation system, or equivalent
- Holes will be inclined (between -90° and -45°)
- Hole length is expected to range between 300m and 500m
- Drilling are likely to take place at or around End Grid, Bong Grid, Granite Grid, Sleek Lake and Andrew Lake. Locations will be picked in the spring of 2011.

# 2.6 Thermistor Installation and Monitoring

Additional deep thermistors may be installed at End Grid site to confirm the 2007, 2008, 2009 and 2010 findings.

# 2.7 Environment and Radiation Protection Monitoring

The 2011 Environment and Radiation Protection (ERP) monitoring program will continue to be conducted by AREVA staff with support provided by contractors if necessary. Wildlife monitoring will involve independent Wildlife Monitors from the Baker Lake community and Kiggavik personnel. The ERP staff will be responsible for the implementation of the following plans: Radiation Protection Plan, Spill Contingency Plan, Waste Management Plan, Noise Abatement Plan, Wildlife Mitigation and Monitoring Plan, and the Abandonment and Restoration Plan. These Plans were designed and implemented to ensure compliance with regulatory conditions and internal AREVA requirements.

# 2.8 Environmental Baseline Work

Environmental baseline studies that may be conducted in 2011 include: hydrology, aquatics, fish habitat, wildlife, soils and vegetation, marine, and archaeology. Studies will focus on supplementing data collected in previous years.

#### 3 OPERATIONAL PLANS

Prior to initiation of the 2010 field season, seven Environmental Management Plans, originally prepared in 2007, were updated and submitted to the regulatory agencies to aid in developing best management practices and procedures to mitigate any potential adverse environmental impacts. These Plans also ensure compliance with regulatory approval conditions and internal AREVA requirements. It is AREVA's intention to operate in accordance with commitments made in the Plans; however, such Plans are living documents and lessons learned during the field season and AREVA's commitment to continual improvement warranted some revision of these Plans prior to the 2011 season. These revised Plans have been included with the submission of this Annual Report (refer to Appendix A).

The seven plans are as follows and are discussed below:

- Spill Contingency
- Radiation Protection
- Waste Management
- Wildlife Mitigation and Monitoring
- Abandonment and Restoration
- Noise Abatement
- Uranium Exploration Plan

# 3.1 Spill Contingency Plan

In accordance with existing legislation and AREVA's Environmental Policy, a Spill Contingency Plan exists for the Kiggavik Project. The objectives of the Plan are to:

- Identify the potential for and the appropriate response to spills at the Project
- Provide procedures for prevention or mitigate adverse environmental effects through effective and efficient response
- Identify personnel and their responsibilities
- Identify emergency contacts
- Describe reporting requirements

To implement the Plan effectively, all site staff and contractors are given orientation upon arrival at the Kiggavik site. This includes the location of Material Safety Data Sheets (MSDS), spill kit locations, and spill response supplies and tools. Site staff are trained to identify potential or existing leaks and spills, where they are most likely to occur, and how to effectively use spill response supplies and tools. Additional training such as mock spills is provided as necessary.

Spill prevention is implemented through use of secondary containment, providing spill kits at locations where hazards exist, conducting daily inspections at all storage locations, and providing MSDS sheets. Spill response is reviewed with all site personnel, and site supervisors or designate are aware of spill reporting procedures. With these prevention methods, the Kiggavik Project had zero reportable spills in 2010.

#### 3.2 Radiation Protection Plan

The Radiation Protection Plan (Plan) is designed to meet the requirements of the applicable Nunavut Occupational Health and Safety Regulations, Saskatchewan Mineral Exploration best practices, the Canadian Nuclear Safety Commission (CNSC) Regulations (although current activities are not regulated by the CNSC), and AREVA's Corporate Integrated Quality Management System (IQMS). The administrative and program elements are as follows:

#### **Administrative Elements**

- Program documentation
- Training
- Designation of Occupational Workers
- Dose limits and dose levels
- Obligations of Occupational Workers
- Pregnant workers

# **Program Elements**

- Exposure as Low as Reasonably Achievable (ALARA)
- Radiological monitoring
- Dosimetry monitoring
- Code of Practice
- Management of radioactive materials
- Shipping of radioactive materials
- Site abandonment and restoration
- Emergency response

All employees and contractors receive appropriate radiation protection training prior to beginning work at the Project site to ensure worker safety and protection of the environment. Personnel involved with the shipment of radioactive materials are required to receive training and certification in Transportation of Dangerous Goods (TDG) Class 7 Radioactive Materials.

The Plan is implemented by the development and implementation of a routine monitoring schedule carried out by the Environment and Radiation Protection (ERP) Group. This includes dosimetry monitoring to determine worker exposure, proper management of

radioisotopes (cesium-137 used for testing the operation of down hole probes), proper shipping and receiving of radioactive material, the proper storage and collection of radioactive materials and the development of a corporate and site specific emergency response plan.

A more detailed description and results of the Plan are discussed in Section 5.

# 3.3 Waste Management Plan

In accordance with AREVA's Environmental Policy, a Waste Management Plan was developed and implemented to ddress any concerns regarding waste and to mitigate any potential adverse environmental impacts. AREVA is committed to ensuring waste generated at the Kiggavik Project site is collected, stored, transported and disposed of in a safe, efficient and compliant manner.

In the development of this Plan, potential waste streams were identified, followed by identification of a treatment strategy and disposal plan. All site staff and contractors review this Plan and are trained in the aspects required to effectively adhere to the Plan (i.e. proper identification of waste, proper storage methods, proper handling and transport methods).

Food, paper and non-treated wood waste are incinerated in an approved incinerator shown in Figure 3.3-1. In 2010 due to the large number of pallets at site they were taken to the Baker Lake dump for disposal. These were made of non-treated wood. Waste oil is shipped to BLCS in Baker Lake for use in used oil generators. Used oil filters, empty aerosol cans, oily rags and empty oil jugs are properly sorted and stored onsite for future handling.

AREVA is committed to the removal of all non-incinerating waste off-site to approved facilities. Due to the limited number of approved facilities for recyclable or hazardous waste dangerous goods in the immediate area, AREVA ensures that all materials are properly sorted, packaged and stored on-site until approved facilities or handlers can be identified and contracted.

Internal Waste Disposal forms have been implemented for any domestic waste requiring transport from site to the Baker Lake landfill. Materials transported during 2010 are shown in Table 3.3-1.

Table 3.3-1: Kiggavik Site Waste Manifest 2010

| Date      | Type of waste                                  | Quantity | Location of Disposal                |
|-----------|--|----------|-------------------------------------|
| 21-Jun-10 | Ash  | 4 drums  | Baker Lake Dump                     |
| 12-Jul-10 | untreated wood (pallets)                       | 1700 lb  | Baker Lake Dump                     |
| 15-Jul-10 | plastics                                       | 200lbs   | Baker Lake Dump                     |
| 26-Jul-10 | untreated wood (pallets)                       | 1500lbs  | Baker Lake Dump                     |
| 26-Jul-10 | plastics and esker debris (rusted metal etc)   | 1500lbs  | Baker Lake Dump                     |
| 14-Aug-10 | Ash  | 2 drums  | Baker Lake Dump                     |
| 16-Aug-10 | Ash  | 2 drums  | Baker Lake Dump                     |
| 16-Aug-10 | rock bag with plastic pails and other plastics | 1500lbs  | Baker Lake Dump                     |
| 25-Aug-10 | Used oil                                       | 3 drums  | BLCS (used in waste oil generators) |
| 25-Aug-10 | Ash  | 4 drums  | Baker Lake Dump                     |
| 25-Aug-10 | Used oil                                       | 3 drums  | BLCS (used in waste oil generators) |

As required, an inventory of all waste and material remaining on site was recorded upon seasonal shutdown and is summarized in Table 3.3-2.

All radiologically contaminated drill cuttings are collected and stored in the radioactive storage area for future handling.

The Waste Management Plan is frequently reviewed and revised upon the identification of new waste streams, new handling methods or requirements and improved logistics.

Table 3.3-2: Kiggavik Site End of Season Inventory 2010

| Type of Waste/Product                                 | Quantity                                  | Storage Method   |
|---|---|--|
| Waste oil and fuel                                    | 1 – 205 litre bung drums                  | Stored outside in secondary containment at site                              |
| Incinerator Ashes                                     | 1 – 205 litre ring top<br>drums from 2009 | Stored as is with top secured beside incinerator                             |
| Diesel Fuel   | 20 – 205 litre drums                      | Stacked and stored outside in secondary containment at site                  |
| Scrap metal   | 4 - Wooden crates 4x4x4<br>with lids      | Located beside incinerator until can be shipped off site for handling        |
| Engine filters Oil and Fuel                           | 4 – 205 litre ring top<br>drum            | Stored inside wooden storage building. Upright in mini berm with top secured |
| Oil cans Empty  | 4 – 205 litre ring top<br>drum            | Stored inside wooden storage building. Upright in mini berm with top secured |
| Oil contaminated rags                                 | 3 – 205 litre ring top<br>drum            | Stored inside wooden storage building. Upright in mini berm with top secured |
| Empty/used paint cans                                 | 1 – 205 litre ring top<br>drum            | Stored inside wooden storage building. Upright in mini berm with top secured |
| Generator Oil   | 3 – 20 litre pails<br>12 – 1 litre jugs   | In secondary containment in generator building                               |
| Diesel contaminated soil and rags from spill clean-up | 1 – overpack drum                         | In sea-can type storage container until can be shipped off site for handling |
| Calcium Chloride                                      | 90 bags CaCl₂                             | In sea-can type storage container for use in 2011                            |

| Type of Waste/Product              | Quantity  | Storage Method  |
|------------------------------------|---|---|
| Jet Fuel at fuel cache             | 11,300 litres   | Stored in the Enviro-tanks for 2011 use.  |
| Diesel Fuel at fuel cache          | 41,600 litres plus 15-450<br>Liter slip tanks   | Stored in the Enviro-tanks for 2011 use.  |
| Gasoline                           | 10 – 20 litre plastic jerry cans  | Stored inside wooden storage building at site in mini berm  |
| Propane                            | 38 – 100 lb bottle  | Upright in a locked fence compound  |
| Aerosol cans – empty and punctured | 1 – 205 litre ring top<br>drum  | Stored inside wooden storage building. Upright in mini berm with top secured                              |
| Boart Longyear Supplies            | Left @ Camp Fall 2010  2 - 20 litre pails Hydraulic Oil 1 - Cases Motor Oil 4 - Cases Gun Grease 0 - Cases Antifreeze 1 - Cases Menthol Hydrate 2 - Cases 2 cycle Oil 0 - 20 litre Transmission Oil 10 - Rod Grease | In sea-can storage container for use in 2011  |
| Boart Longyear Supplies            | Shipped up for 2011  30 pails HYD Oil 50 Cases Motor Oil 20 Cases Gun Grease 15 Cases 2 Cycle Oil 10 Rod Grease 15 Cases Menthol Hydrate 10 Cases Antifreeze  | In sea-can storage container in Baker Lake for use in 2011. To be transported to site during winter haul. |

# 3.4 Abandonment and Restoration Plan

An Abandonment and Restoration Plan has been developed to address conditions of permits, regulations and industry standards throughout the operational season, at seasonal shut-down and at final closure of the site. The 2010 implementation of the Plan is discussed in Section 9. This Plan is frequently reviewed and revised to reflect the expansion of infrastructure, cost estimates, changing field programs and the identification of improved reclamation practices.

The objectives of the Plan are to:

- Protect human health
- Reduce or eliminate environmental effects
- Re-establish conditions which permit the land to return to a similar preexploration land use

Establish physical and chemical stability of disturbed areas

# 3.4.1 Abandonment

As required by the Abandonment and Restoration Plan the following activities were conducted for the seasonal shutdown of the Kiggavik camp:

- All equipment has been stored in secure buildings or containers
- Plywood has been nailed over windows and doors have been secured to prevent inadvertent opening
- Pumps and hoses have been drained and dismantled
- Full inventory of chemicals, products and wastes remaining on site has been conducted
- Final inspection of all storage areas and secondary containment
- Removal of chemicals or storage in secure buildings
- A final inspection of drill sites, including gamma surveys and the removal of any fuel or contaminated soil
- Drill rigs have been dismantled and stored appropriately

Photos of the winterized Kiggavik Camp are shown in Figures 1.2-1 and 1.2-2.

#### 3.4.2 Restoration

AREVA intends to implement progressive restoration practices and incorporate new abandonment and/or reclamation methods and procedures, when applicable. The current Plan has been implemented at all drill sites operated during the field season to establish chemical stability. All drill sites from the current year's field program are inspected for fuel stained soil and undergo a gamma survey for radioactive contamination. Contaminated soil or cuttings are collected in appropriate containers and stored in the radioactive storage compound for future handling, which may include transfer to an operating mine site.

Drill sites must be remediated to the extent that gamma dose at a height of 1 m from surface is less than 1  $\mu$ Sv/h above background, while efforts are made to reduce gamma doses to the greatest extent possible. Radioactive material is collected, appropriately packaged and stored in the radioactive storage compound. Gamma radiation 1 m from the boundary of the core storage area is reduced as much as practicable with a target less than 1  $\mu$ Sv/h and in no instances exceeding 2.5  $\mu$ Sv/h. If necessary, residual radioactive material will be transported to the McClean Lake Operation for storage and disposal.

Challenges surrounding physical reclamation of disturbed surfaces include lack of local knowledge or available information. To minimize the affected footprint and therefore the amount of required physical reclamation there is a focused effort on proper planning of

infrastructure placement and drill sites. It is AREVA's intention to reclaim disturbed sites in an acceptable manner, following availability of adequate information. Proper reclamation techniques are currently being investigated and will be implemented under the direction and approval of experienced consultants, community members and regulatory agencies. Restoration work will be completed prior to the expiry of the land use licence.

#### 3.5 Noise Abatement Plan

A Noise Abatement Plan was developed to mitigate the effects from noise generated during camp set-up, camp operation, winter road use, and drilling activities. Noise controls and abatement serve a combination of environmental and occupational health and safety purposes. The focus of the Plan is the control of environmental noise for the protection of wildlife.

Implementation of the Plan ensures that drill rigs and vehicles are equipped with mufflers and/or silencers and is subject to commitments made in the Wildlife Mitigation and Monitoring Plan regarding minimum required flying altitudes and the take-off and landing of aircraft.

The Plan is reviewed by all site staff, contractors, and head office contract administrators to ensure all contractors operating drill rigs, vehicles or aircraft are aware of the Noise Abatement Plan requirements.

Frequent review allows for revision to occur with the expansion of infrastructure, changing field programs and the identification of improved practices.

## 3.6 Wildlife Mitigation and Monitoring Plan

The Wildlife Mitigation and Monitoring Plan was developed to monitor and reduce disturbance to wildlife, particularly caribou. The Plan is based on recommendations of the Government of Nunavut – Department of Environment (GN-doE), Environment Canada (EC) and the Beverly and Qamanirjuaq Caribou Management Board (BQCMB); permit and lease conditions from NIRB, KIA, INAC and the NWB. The Plan is designed to protect wildlife from Project activities, increase the current understanding of wildlife interactions with human development and aid in determining the effectiveness of mitigation measures. Following the 2010 field season, the Plan underwent contractor, biologist, and ARC review to further detail caribou mitigating actions and the responsibilities of the Independent Wildlife Monitor.

## 3.6.1 Summary of 2010 Monitoring Activities and Results

Independent Ground Based Monitoring

The monitoring program significantly improved during the 2010 season through consistency and improved quality of monitoring. The AREVA staff and Independent Wildlife Monitors provided detailed wildlife information throughout the entire program. A wildlife monitoring procedure and form record was utilized to ensure daily communication between the Wildlife Monitor and the Environment and Radiation Protection (ERP) Supervisor. In addition to monitoring wildlife activity around camp, all operating drills were visited daily by the wildlife monitor. Wildlife Monitors accounted for 283 or 71% of the reported wildlife sightings.

## AREVA Staff and Contractor Wildlife Sightings

In addition to the Independent Wildlife Monitor observations, the ERP Technicians entered all observations from the following methods into a spreadsheet. Sighting details depend on observer, survey protocols and recording method. They vary from detailed records taken according to strict procedures for the Height of Land Surveys to minimal information from incidental observations by contractors not involved in environmental baseline work.

# Height-of-Land (HOL) Surveys

Gebauer & Associates Ltd. Conducted seven HOL surveys in the Mine local study area (LSA) in 2010. The data collected from HOL surveys is primarily used as baseline data in preparation for an environmental review but sightings were regularly provided to AREVA to assist in the implementation of the Wildlife Monitoring and Mitigation Plan as required.

### Aerial Observation:

Wildlife seen during routine helicopter flights were noted by passengers in booklets located in each helicopter. This method resulted in 46 or 12% of sightings throughout the season. Helicopter sightings often occurred during routine flights to drill locations or Baker Lake.

# All other incidental sightings

Wildlife logs were placed in the camp kitchen and office. AREVA employees and contractors were informed of its location and were encouraged during site orientation to report wildlife sightings. Incidental sightings accounted for 7 sightings or 2% of total sightings. Camp observations accounted for 61 or 15% of wildlife sightings. Animals continuously around camp such as ptarmigan, siksik and hare were often not recorded

each day they were observed and are therefore under recorded by this method. A summary of the wildlife sightings are shown in Table 3.6-1 Summary of Wildlife Sightings, Kiggavik 2010.

Table 3.6-1: Summary of Wildlife Sightings, Kiggavik 2010

|                           | # of              | % of      | First Last |          | Observation Method |        |         |      |
|---------------------------|-------------------|-----------|------------|----------|--------------------|--------|---------|------|
| Species                   | # 01<br>Sightings | Sightings | Sighting   | Sighting | HOL                | Aerial | Monitor | Camp |
| American<br>Robin         | 1                 | 0.25      | Jul-5      | Jul-5    |                    |        |         | х    |
| Arctic Fox                | 11                | 3.5       | Jun-2      | Aug-20   |                    |        | х       | Х    |
| Arctic Hare               | 28                | 7         | Jun-5      | Aug-26   |                    |        | х       | Х    |
| Canadian<br>Geese         | 8                 | 2         | Jun-7      | Jul-31   |                    |        | х       | х    |
| Caribou                   | 134               | 34        | May-31     | Aug-26   | Х                  | х      | х       | Х    |
| Duck                      | 4                 | 1         | Jul-3      | Aug-19   |                    |        | х       | х    |
| Eagle                     | 1                 | 0.25      | Aug-21     | Aug-21   |                    |        | х       |      |
| Golden<br>Plover          | 9                 | 2         | Jun-3      | Aug-2    |                    |        | х       | х    |
| Great Gray<br>Owl         | 1                 | 0.25      | Jun-5      | Jun-5    |                    |        | х       |      |
| Ground<br>Squirrel        | 2                 | 1         | Jul-5      | Jul-30   |                    |        | х       |      |
| Horned Lark               | 4                 | 1         | Jun-2      | Jun-9    |                    |        | х       | Х    |
| Lapland<br>Longspur       | 3                 | 1         | Jun-2      | Jul-4    |                    |        | х       | х    |
| Lemming                   | 1                 | 0.25      | Jul-12     | Jul-12   |                    |        | х       |      |
| Longtailed<br>Jaeger      | 13                | 3         | Jun-6      | Aug-21   |                    |        | х       | х    |
| Muskox                    | 74                | 19        | May-28     | Aug-25   | Х                  | х      | х       | Х    |
| Northern<br>Harrien       | 1                 | 0.25      | Jun-6      | Jun-6    |                    |        |         | х    |
| Northern<br>Pintail       | 1                 | 0.25      | Jul-4      | Jul-4    |                    |        |         | х    |
| Parasitic<br>Yaeger       | 3                 | 1         | Aug-5      | Aug-7    |                    |        | х       |      |
| Peregrine<br>Falcon       | 1                 | 0.25      | Jun-3      | Jun-3    |                    |        |         | х    |
| Ptarmigan                 | 19                | 5         | Jun-3      | Jul-19   |                    |        | х       |      |
| Sandhill<br>Crane         | 46                | 12        | Jun-2      | Aug-23   |                    |        | х       | х    |
| Seagull                   | 9                 | 2         | Jul-9      | Aug-23   |                    |        | х       |      |
| Siksik                    | 6                 | 2         | Jun-11     | Aug-9    |                    |        | х       | х    |
| Snow Geese                | 3                 | 1         | Jun-2      | Jun-7    |                    |        | Х       |      |
| Snowy Owl                 | 1                 | 0.25      | Aug-5      | Aug-5    |                    |        |         | Х    |
| White<br>Fronted<br>Goose | 1                 | 0.25      | Jun-5      | Jun-5    |                    |        |         | х    |

| Wolf      | 12 | 3    | Jun-3 | Aug-9 | х | х | Х |
|-----------|----|------|-------|-------|---|---|---|
| Wolverine | 1  | 0.25 | Jul-9 | Jul-9 |   |   | х |

## 3.6.2 Summary of Mitigation Actions

Drilling activity was suspended as required by the Wildlife Mitigation and Monitoring Plan (WMMP) July 28, 31, and August 1 when caribou herds were within 2 km of drilling activity. Drill holes shut down for caribou mitigation were AND-09-02, AND-10-03, END-10-08, and END-10-09. Drilling commenced when herds moved beyond 2 to 3 km. Location of herds greater than 50 or herds with calves present were communicated to AREVA staff and contractors to assist in avoidance. AREVA staff and independent wildlife monitors recorded locations of caribou through ground monitoring and during helicopter flights at altitudes greater than 300 m (1000 ft). High altitude aerial monitoring of caribou movements during normal daylight operations provided adequate warning to drill crews, enabled proper shut-down and informed appropriate re-start times in accordance with the WMMP. Drill shutdown during night shift was initiated by drill crew observance of caribou as helicopter service and therefore opportunistic aerial caribou sightings were not available during the night shift.

Ground geophysical work that included installing 12 km of geophysics line on the tundra was carried out between July 31 and August 1. The crew was prepared to remove the 12 km of wire if caribou approached the area, and aerial surveys above 1000 ft were flown to determine the herd movements. The caribou moved past without any required change in operations. The geophysics ground crew conducted a thorough inventory of equipment and confirmed no broken or damaged cable.

The Independent Wildlife Monitor noted minor disturbances June 11 and July 5 during routine height of land ground monitoring. On June 11, the Wildlife Monitor noted one caribou walking before and after his presence, therefore he avoided venturing closer to avoid further disturbance. A similar occasion occurred on July 5 when the Wildlife Monitor camp upon a muskox in the fog, which then quit eating and began to walk. AREVA staff, contractors and Wildlife Monitors did not report any disturbance to caribou movement at drill sites.

Three potential disturbances were noted on July 21, July 26, and August 3 by AREVA staff and Independent Wildlife Monitor. On July 21 2010, a low level flight (~500 ft) was flown by an AREVA helicopter along the Thelon River as part of the feasibility study for bridge and ferry. During the northbound flight, a herd of caribou was encountered on the west side of the Thelon River. Actions required by the WMMP were taken to avoid flying close to the caribou. The altitude was increased to more than 1000 ft and the helicopter avoided flying directly over the herd. Despite the distance of approximately 2000 ft from the caribou, the animals on the shore were observed climbing the riverbank. During the

southbound flight, the survey was completed opposite the herd and at higher altitude for successful avoidance of the herd.

The second occurred on July 26, the Independent Wildlife Monitor recorded a disturbance when 400 caribou 600 to 700m north of the fuel cache were bedded and began walking when the helicopter landed for fuel. Following notification from the Wildlife Monitor, the pilots were informed to avoid the area until the herd moved on. The pilot later reported to the ERP Supervisor that he did not see any caribou in the area and resumed landing for fuel.

Lastly, the ERP supervisor noted one potential disturbance to caribou movement the evening of August 3 when approximately 1500 caribou approached camp heading west and caribou movement shifted southward following a helicopter flight. The flight was not deemed essential by the ERP supervisor for any safety reasons and the pilot was reminded that any unnecessary flights over caribou concentrations, even at desired altitudes, should be avoided. Collaboration between the pilots, ERP Supervisor, and Independent Wildlife Monitors greatly reduced the potential for disturbances.

All wildlife monitoring and mitigative actions were reported monthly in the Wildlife Reports submitted to the Baker Lake Hunter and Trapper's Organization (HTO), Baker Lake Conservation Officer, Government of Nunavut Department of Environment (GN-DoE) Regional Biologist.

# 3.7 Uranium Exploration Plan

The Uranium Exploration Plan is designed to meet the requirements of the Water Licence issued by the Nunavut Water Board (2BE-KIG0812) the Saskatchewan Environment Mineral Exploration Guidelines and Best Management Practices and the Canadian Nuclear Safety Commission (CNSC) Regulations, although CNSC does not regulate exploration activities.

The Plan discusses activities related to uranium exploration including:

- Training requirements
- Drilling practices
- Core storage and logging
- Radioisotopes
- Spills
- Shipping radioactive material
- Site abandonment and restoration

On July 10, July 31, and August 28, shipments of core samples (low specific activity) were sent via air from Kiggavik to Points North, Saskatchewan and by truck from Points North to Saskatoon where they were shipped to SRC in Saskatoon. Shipper's

Declaration for Dangerous Goods were completed and filed by appropriately trained AREVA staff.

The Uranium Exploration Plan is reviewed on an annual basis and revised if necessary; the current version has been accepted by the Nunavut Water Board via Part F(1) of the licence 2BE-KIG0812 issued May 12, 2008.



Figure 3.3-1: Kiggavik Camp Incinerator

### 4 ENVIRONMENTAL STUDIES

# 4.1 Hydrology Component

Golder Associates Ltd. conducted a spring hydrological field program over the period of June 16 - 20, 2010. This program is a continuation of studies carried out in 2007, 2008, and 2009. Stream discharge was measured at eight locations, lake elevation was measured at six locations, and pressure transducers were installed in ten streams and lakes. AREVA collected the continuous water level sensors and took three water level measurements on August 24, 2010.

The water elevation and discharge data collected for each of the monitored streams and lakes near the Kiggavik site in 2010 are presented in Table 4.1-1. At most sites, 2010 water level and discharge measurements were the highest measured since monitoring began in 2007.

Table 4.1-1: Stream Discharge and Water Elevation at Select Streams, June 2010

| Station<br>ID | Station Name  | Date      | Water Elevation<br>(m) | Discharge<br>(m³/s) | Continuous<br>water level<br>sensor |
|---------------|---|-----------|------------------------|---------------------|-------------------------------------|
| SF2           | Outflow of Unnamed<br>Lake downstream of<br>Cirque Lake | 17-Jun-10 | 99.005                 | 1.24                | No                                  |
| SF3           | Northeast Inflow of Pointer Lake                        | 17-Jun-10 | 99.725                 | 0.245               | No                                  |
| SF5           | Pointer Lake Outflow                                    | 18-Jun-10 | 99.347                 | n/m                 | Yes                                 |
| 01 0          |   | 19-Jun-10 | 99.298                 | 13.9                | 163                                 |
| SF7           | Judge Sissons Lake<br>Outflow                           | 18-Jun-10 | 99.887                 | 49.8                | Yes                                 |
| SF8           | Siamese Lake<br>Outflow                                 | 19-Jun-10 | 99.511                 | 6.30                | Yes                                 |
| SF10          | Tributary to the Northeast Inflow of Pointer Lake       | 17-Jun-10 | 98.910                 | 0.067               | No                                  |
| SF13          | Aniguq River  | 20-Jun-10 | 69.561                 | n/m                 | Yes                                 |
| SF14          | Qinguq Creek  | 20-Jun-10 | 33.153                 | n/m                 | Yes                                 |
| SF15          | Andrew Lake Outflow                                     | 17-Jun-10 | 99.787                 | 5.91                | Yes                                 |
| SF 15         | Andrew Lake Outllow                                     | 19-Jun-10 | 99.664                 | 3.59                | 165                                 |
| SF16          | Mushroom Lake   | 16-Jun-10 | 99.543                 | 0.342               | No                                  |
| 01 10         | Outflow   | 19-Jun-10 | 99.497                 | 0.239               |                                     |
| LE1           | Pointer Lake  | 19-Jun-10 | 99.048                 | n/a                 | No                                  |
| LE2           | Unnamed Lake<br>Downstream of<br>Cirque Lake            | 17-Jun-10 | 99.111                 | n/a                 | No                                  |
| LE3           | Judge Sissons Lake                                      | 18-Jun-10 | 100.055                | n/a                 | Yes                                 |
| LE7           | Siamese Lake  | 19-Jun-10 | 97.421                 | n/a                 | No                                  |
| LE8           | Andrew Lake   | 16-Jun-10 | 99.529                 | n/a                 | Yes                                 |

|            |                  | 19-Jun-10 | 99.411 | n/a |     |
|------------|------------------|-----------|--------|-----|-----|
| LE9 Mushro | Mushroom Lake    | 16-Jun-10 | 99.642 | n/a | Yes |
| LLS        | Wiushilooni Lake | 19-Jun-10 | 99.612 | n/a | No  |

n/m: Not measured

As part of the project fish habitat compensation plan, the potential exists to create fish habitat by providing fish passage to ponds or lakes that would not otherwise be hydraulically connected. The hydrology field crew conducted a visual flyover at several potential locations and documented several ponds that might be of interest for this purpose.

The water level measurements collected in August 2010 are presented in Table 4.1-2.

Table 4.1-2: Stream Elevation Measurements at Select Streams, August 2010

| Station ID | Station Name       | Date      | Water Elevation (m) |
|------------|--------------------|-----------|---------------------|
| SF13       | Aniguq River       | 24-Aug-10 | 67.272              |
| SF7        | Judge Sissons Lake | 24-Aug-10 | 98.057              |
| SF15       | Andrew Lake        | 24-Aug-10 | 99.071              |

# 4.2 Aquatic Component

Golder Associates Ltd. collected aquatics baseline data on select waterbodies during spring and fall field sessions in 2010. The program included detailed habitat and lake bathymetry mapping as well as fish community and health surveys in several small waterbodies and watercourses. This program is a continuation of studies conducted in 2007, 2008, and 2009.

The spring field program included detailed fish habitat assessment, bathymetry mapping and fish presence/absence surveys in several small waterbodies and water courses that may be affected by the proposed infrastructures near Andrew Lake or north of Pointer Lake. The fish sampling consisted if fishing three unnamed streams and nine ponds to determine the presence of fish species (Figures 4.2-1 and 4.2-2). Non-lethal methods used to capture fish included backpack electrofishing, minnow trapping, and angling. Eight slimy sculpin (*Cottus cognatus*) were captured on the Northwest Inflow to Pointer Lake. Measurements taken from each captured fish included length and life stage, as well as sex and maturity when available. Internal health assessments were not performed as there were no incidental mortalities during the field program. Photographs were taken of each fish captured and all fish were released back into the stream from which they were captured. No fish were captured or observed at any of the other study sites.

A summary of the fish captured is provided in Table 4.2-1.

Table 4.2-1: Summary of Fish Captured During the 2010 Spring Field Program

| Waterbody/Watercourse                                     | Coordinates  |              | Slimy | sculpin |
|---|--------------|--------------|-------|---------|
|   | Latitude     | Longitude    | Live  | Dead    |
| Pond 1  | 64°21'03.99" | 97°53'14.92" | 0     | 0       |
| Pond 2  | 64°20'48.58" | 97°53'44.87" | 0     | 0       |
| Pond 3  | 64°20'37.39" | 97°53'49.96" | 0     | 0       |
| Pond 4  | 64°20'31.85" | 97°53'38.44" | 0     | 0       |
| Pond 5  | 64°20'21.67" | 97°53'23.20" | 0     | 0       |
| Pond 6  | 64°20'15.27" | 97°53'01.92" | 0     | 0       |
| Pond 7  | 64°20'06.69" | 97°52'48.14" | 0     | 0       |
| Pond 8  | 64°20'14.50" | 97°53'50.13" | 0     | 0       |
| Northeast Inflow of Pointer Lake                          | 64°25'10.94" | 97°38'19.45" | 0     | 0       |
| Tributary of Northeast Inflow of Pointer Lake             | 64°25'58.74" | 97°38'34.87" | 0     | 0       |
| Northwest Inflow of Pointer Lake (including Pointer Pond) | 64°26'21.25" | 97°39′56.51" | 8     | 0       |

The fall program included a detailed fish habitat assessment and bathymetry survey of a section of the Thelon River at the proposed bridge crossing location.

# 4.3 Atmospheric Component

Atmospheric monitoring results were not available at the time of submission of this report.

# 4.4 Terrestrial Component

The 2010 terrestrial program provided baseline data on valued components found in the immediate and regional area around AREVA's Kiggavik and Sissons leases and proposed facilities. A summary of the approach and results from the various field programs conducted in 2010 is presented below.

### 4.4.1 Ungulates (Caribou and Muskox) and Predatory Mammals

Seven Height-of-Land (HOL) surveys were conducted in the Mine LSA during the 2010 field season. A primary objective of the surveys was to identify wildlife species using the LSA and to report wildlife aggregations, particularly caribou, and predator presence that might have implications for camp or exploration activities. Another objective of the surveys was to collect long-term monitoring data on seasonal wildlife movements and aggregations. The stationary surveys were conducted from 20 stations and consisted of a 15-minute observation period within which wildlife species and numbers, distance and

direction from stations was documented. The focus of the HOL survey was on ungulates, predatory mammals and larger birds and raptors.

Caribou and muskox were regularly observed during HOL surveys in 2010, as were Arctic fox, Arctic hare and wolf. A total of 437 caribou in 39 groups was observed during the surveys, while 28 muskoxen were sighted in three (3) groups. Peregrine falcon and short-eared owl were each observed on one occasion.

## 4.4.2 Caribou Collaring Program

Due to helicopter mechanical problems, collaring of additional caribou was not conducted in 2010. Fifteen (15) collars, of an original 30 deployed in previous years (May 2008 and November 2009) by AEM, AREVA and GN, are currently active and monitored regularly. The satellite collaring program contributes to the caribou collaring programs overseen by the Government of Nunavut and is conducted in collaboration with the Baker Lake Hunter and Trappers Organization. Additional caribou collaring is planned for early 2011.

### 4.4.3 Hunter Harvest Study

Hunter harvest data were collected using a harvest calendar handed out to more than 30 Baker Lake hunters/households at the beginning of the year. Participating households used the harvest calendar to record harvest details for each successful hunt, including species and number of animals, sex and age, and harvest location. Hunter interviews were also conducted quarterly to ensure completeness of harvest data and to maintain relationships. Prizes will be provided to participants in early 2011.

## 4.4.4 Camp Wildlife Log and Exploration Wildlife Monitoring

A wildlife logbook was maintained by AREVA at the exploration camp to track seasonal wildlife presence. As well, independent and experienced Inuit wildlife monitors were onsite to assist with bear deterrence (no issues in 2010), to identify when significant congregations of wildlife were present, and to recommend what exploration activities needed to be adjusted to avoid disturbance to wildlife.

### 4.4.5 Waterbird Nesting Survey of Southern All-Weather Access Road

Waterbird nesting surveys were conducted along the Southern All-Weather Access Road in 2010. Nesting surveys involved a field assessment of nesting waterbirds along all shorelines within 200 m of the proposed road alignment. Twenty (20) waterbird species were observed and nests of seven (7) species were found. The most common species observed along the alignment were long-tailed duck (n=80), Canada goose (n=26), and sandhill crane (n=21).

# 4.4.6 Terrestrial Wildlife Survey of Proposed Southern Winter Road

A terrestrial wildlife survey of the Southern Winter Road was conducted in 2010 to identify critical or unique habitat areas and to document the presence of terrestrial wildlife. Bird, animal and animal sign was recorded, as well as location, sex and age composition, where applicable. Key wildlife observations included a single bull caribou, caribou sign (12 occasions), a bull muskox and one active Arctic fox den. Twenty (20) bird species were observed, of which Canada goose (n=78), sandhill crane (n=39) and tundra swan (n=20) were the most common.

## 4.4.7 Winter Surveys of Proposed Road Alignments

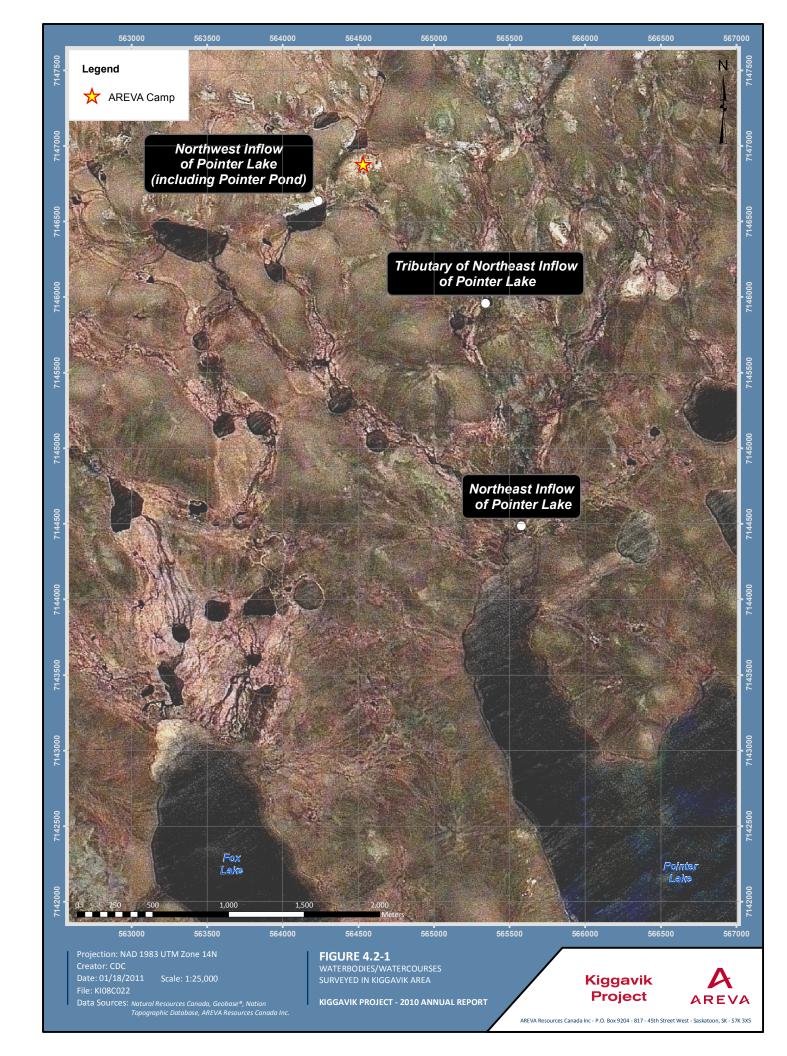
Seven wildlife surveys were conducted along the Northern All-Weather Access Road in April and May 2010 to evaluate wildlife abundance during the winter. A total of 620 caribou was observed in 40 groups and approximately 23% of groups contained yearlings. One herd containing 16 muskoxen and three (3) yearlings was sighted and wolves and wolverines were each observed on three occasions. In December 2010, two surveys were conducted along the Proposed Southern Winter Road but no wildlife was observed, likely due to extremely cold weather and high winds.

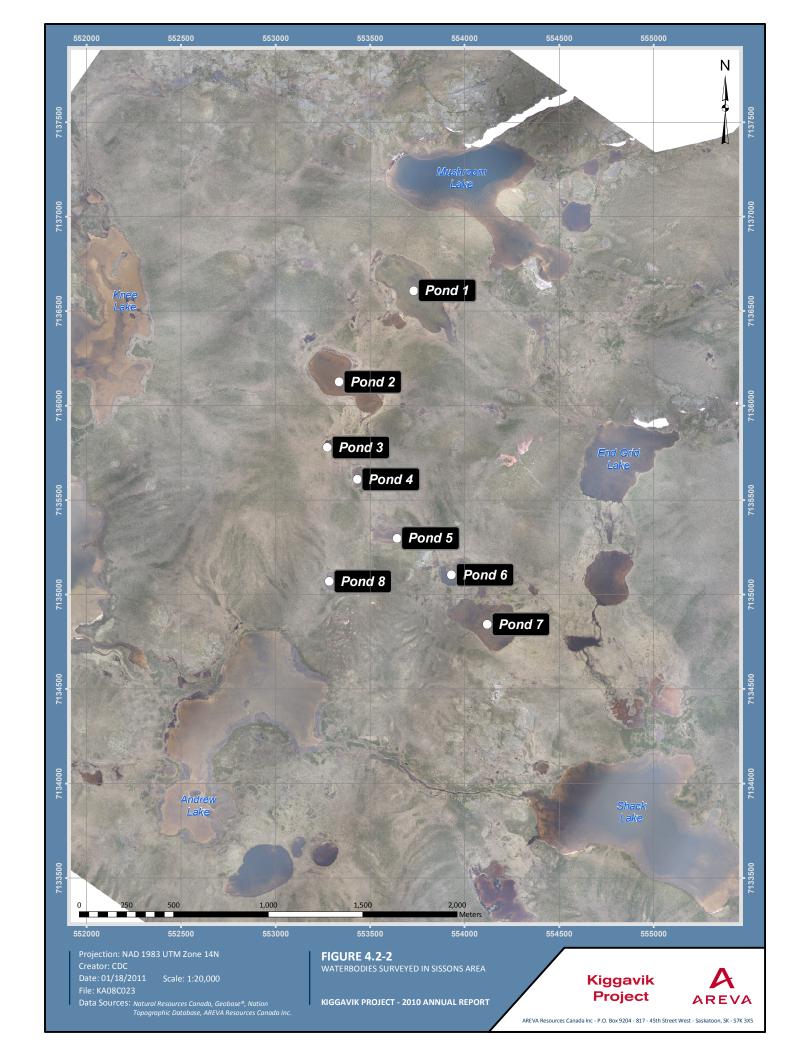
# 4.5 Archaeological Component

No archaeology field studies were conducted in 2010.

## 4.6 Marine Component

No marine field studies were conducted in 2010.





### 5 EFFECTS OF THE PROJECT ON HUMAN HEALTH

AREVA endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of uranium exploration activities. This commitment is reflected in AREVA's health, safety and environmental policies and is supported through a comprehensive Environment, Health and Safety Program for the Kiggavik Project.

Occupational health, safety and radiation protection programs were implemented to ensure work activities are performed in a safe and responsible manner and that workers are not adversely exposed to radiation from uranium exploration activities.

The results of the 2010 monitoring program indicate that the field activities, conducted as part of the Kiggavik Project, did not pose a significant health risk to people working with the Project or living in nearby communities.

# 5.1 Occupational Health and Safety Program

Health and safety activities at the Kiggavik Project are conducted in accordance with Nunavut Mine Health and Safety Regulations, exploration best practices and AREVA requirements.

All employees and contractors working at the Kiggavik site received orientation and appropriate safety training prior to commencing work to ensure worker safety and protection of the environment. Workers filled out 5-Point Safety Cards daily. Supervisors reviewed each card and addressed any safety issues as they appeared. Issues that could not be resolved immediately were documented and tracked by the Safety Coordinator until completion. Employees and contractors were also required to participate in weekly safety meetings (Safety Huddles) to discuss and reinforce safety issues.

The Occupational Health Committee (OHC) consisted of twenty members with equal employer and employee representatives. They held monthly meetings chaired by the Safety Coordinator. The OHC inspected all work areas for deficiencies each month, and concerns were brought forth during the monthly meetings. The meeting minutes and members were forwarded to the Mines Inspector, NU.

The Safety Coordinator enforced occupational health and safety with the help of the ERP Group. The Occupational health and safety program was overseen by the Facility Supervisor.

A summary of work related injuries that occurred during the 2010 program is given in Table 5.1-1.

Table 5.1-1: Work Related Injury Summary for 2010

| Group       | First Aids | Medical Aids | Lost Time Accidents |
|-------------|------------|--------------|---------------------|
| AREVA       | 1          | -            | -                   |
| Contractors | 9          | -            | -                   |

There were no work related medical aids or lost time accidents in 2010 involving AREVA or contractor personnel.

#### 5.2 Radiation Protection

The Radiation Protection Plan for the Kiggavik Project is designed to meet the requirements of the applicable Nunavut Occupational Health and Safety Regulations, Mineral Exploration best practices, the Canadian Nuclear Safety Commission (CNSC) Regulations (although current activities are not regulated by CNSC) and AREVA requirements.

#### 5.2.1 Administrative Elements

Program Documentation:

The Radiation Protection Program for the Kiggavik Project is supported through a comprehensive series of work instructions for worker dosimetry, radiological monitoring, contamination control and the safe handling of radioactive materials.

Training:

All AREVA employees and contractors working at the Kiggavik site received orientation and appropriate radiation protection training prior to beginning work to ensure worker safety and protection of the environment.

Personnel involved with the shipment of radioactive materials received the required training in Transportation of Dangerous Goods (TDG) Class 7 Radioactive Material.

## 5.2.2 Program Elements

Dosimetry Monitoring Program:

Dosimetry monitoring is conducted to determine and document worker exposures to radiological components which include gamma radiation, radon progeny (RnP) and long-lived radioactive dusts (LLRD). A Code of Practice (COP) sets Action and Administrative Levels for each of these components..

No COP dosimetry action levels were exceeded during the 2010 program. The worker radiation doses observed during the 2010 program were well below regulatory dose limits for members of the public (1 mSv/a) or occupational workers (20 mSv/a).

### Gamma Exposures:

The largest component of radiation exposure during uranium exploration activities is expected to come from gamma radiation emitted from mineralized core, rock and drill cuttings.

Worker exposures to external gamma radiation were measured using optically stimulated luminescent dosimeters (OLDs) provided by the licensed dosimetry provider, Landauer. For exposure control, workers handling and logging radioactive drill core and rock samples are also issued direct reading dosimeters (DRDs).

During the 2010 program, worker gamma radiation exposures ranged from 0.00 mSv to 0.06 mSv with an average exposure of 0.003 mSv. The highest gamma radiation exposure was received by a geologist. A frequency distribution of worker gamma radiation exposures is presented in Table 5.2.2-1. As shown, 86% of the exposure results were below the OLD minimal detection limit of 0.01 mSv and 99% of the gamma exposure results were below 0.05 mSv.

Table 5.2.2-1: Worker Gamma Dose Frequency Distribution

| Gamma Radiation Exposure (mSv) | Frequency |
|--------------------------------|-----------|
| 0.00                           | 95        |
| 0.01 – 0.05                    | 14        |
| 0.05 – 0.10                    | 2         |
| > 0.10                         | 0         |

Radon Progeny and Long-Lived Radioactive Dust Exposures:

Worker exposures to radon progeny (RnP) and long-lived radioactive dust (LLRD) are estimated from industry-accepted area monitoring techniques and occupancy time information.

Worker exposures from RnP and LLRD during the 2010 program were conservatively estimated from workplace monitoring to be less than 0.02 mSv and 0.06 mSv respectively.

Total Effective Exposure:

Total effective exposure was estimated for each individual based on OLD, RnP and LLRD results. The maximum dose received by an individual working at Kiggavik in 2010 was 0.120 mSv. The average dose was 0.022 mSv. The maximum dose permitted for an occupational worker is 50 mSv in a given year or an average of 20 mSv/a over 5 years. The maximum annual dose for a member of the public is 1 mSv/a. The estimated individual exposure of all personnel working at the Kiggavik site was therefore below the regulatory limit for members of the public (Figure 5.2.2-1). The total effective dose for the site (all personnel collectively) was 2.65 mSv.

# 5.2.3 Radiological Monitoring Program

# Workplace monitoring:

As part of the Radiation Protection Program, routine radiological monitoring is performed for gamma radiation, radon gas (Rn), radon progeny (RnP), and long-lived radioactive dust (LLRD) in order to detect potentially abnormal radiological conditions, estimate worker doses, and document radiological conditions.

Radiological monitoring was conducted during the program at and around the drilling sites, in the camp and mobile core shacks and the driller dry shacks. A summary of the radiological monitoring results from the 2010 program is given in Table 5.2.3-2.

Table 5.2.3-2: Radiological Monitoring Results for 2010 Program

| Radiation Type                                      | Radiation Type Average |        |
|---|------------------------|--------|
| Gamma (μSv/h)                                       | 0.146                  | 1.774  |
| Radon Gas (Bq/m³)                                   | 154.5                  | 218.3  |
| Radon Progeny (Grab Sampling) (WL)                  | 0.0004                 | 0.002  |
| Long-Lived Radioactive Dust (Grab Sampling) (Bq/m³) | 0.012                  | 0.178* |
| Long-Lived Radioactive Dust (Grab Sampling) (DAC)   | 0.010                  | 0.152  |

<sup>\*</sup>The maximum LLRD reading recorded was while splitting mineralized core in the core shacks.

Gamma dose rate measurements ranged from  $0.00-1.774~\mu Sv/h$  with an average dose rate of  $0.146~\mu Sv/h$ . It is noteworthy that the highest gamma readings recorded during the program were at the radioactive storage compound. Workers contact the ERP Group prior to going in the compound and time is limited. If workers require an extended amount of time in the compound they wear a DRD and sign in and out.

Radon progeny measurements are given in units of Working Level (WL), a measure of the airborne potential alpha energy concentration. Indoor radon progeny levels ranged from 0-0.002 WL with an average radon progeny measurement of 0.0004 WL. Radon progeny levels were typical of natural background indoor levels.

Long-lived radioactive dust concentrations ranged from  $0.00 - 0.178 \text{ Bq/m}^3$  (0.00-0.153 DAC) with an average concentration of 0.012 Bq/m<sup>3</sup> (0.010 DAC). 91% of readings were

below the COP first administration level of 0.03 DAC, 8% were between 0.03 and 0.08 DAC while 1% were above the second administration level of 0.08 DAC. All elevated readings were taken in the geology shacks while mineralized core was being split. During this time LLRD readings were taken on a daily basis and appropriate personal protective equipment and ventilation methods were used.

Three site alpha dosimeters were installed in 2010; one in Baker Lake, one at Kiggavik and one at Sissons. These instruments include an air sampler, an electronic flow meter for the continuous measurement of the sampling volume of air and a head for the integrated measurement of alpha emissions of short life daughter products of radon 222 and 220 and long life products of uranium and thorium. In 2010 the site dosimeter in Baker Lake malfunctioned and did not sample long enough to provide accurate results. The results are shown in Table 5.2.3-3.

Table 5.2.3-3: Site Alpha Dosimeter Results for 2009 and 2010

|            | June 2009<br>(mBq/m³) | July 2009<br>(mBq/m³) | August 2009<br>(mBq/m³) | July 2010<br>(mBq/m³) | August 2010<br>(mBq/m³) |
|------------|-----------------------|-----------------------|-------------------------|-----------------------|-------------------------|
| Baker Lake | ≤ 0.2                 | ≤ 0.2                 | ≤ 0.4                   | 0                     | NA                      |
| Kiggavik   | ≤ 0.2                 | ≤ 0.3                 | ≤ 0.4                   | ≤ 0.2                 | ≤ 0.4                   |
| Scissons   | ≤ 0.2                 | ≤ 0.3                 | ≤ 0.4                   | ≤ 0.5                 | ≤ 0.4                   |

Track etch cups for environmental radon gas measurements were also installed in twenty six locations in the Kiggavik and Sissons areas. At the beginning of the 2010 field season two track etch cups were placed at each location. One was considered to be seasonal and sent to the Landauer laboratory for analysis at the end of the 2010 field season while the one remaining was left in place until the beginning of the 2011 field season. At one location four track etch cups were placed, two seasonal and two annual, for QA/QC purposes.

The results for the seasonal track etch cups range from 136.9 Bq/m³ and 218.3 Bq/m³ with an average of 154.5 Bq/m³. However, these results indicate higher radon concentrations than indicated by the site dosimeters and results from previous years for unexplained reasons. The locations of the track etch cups are shown in figure 5.2.3-1.

### Contamination Monitoring:

Contamination control measures are implemented to minimize the spread of radioactive materials into unintended locations. Routine contamination monitoring using a pancake probe and swipes was performed weekly throughout the site including at the drill site, core shacks and camp facilities. If removable contamination levels exceed 5.0 Bq/cm² for beta/gamma over 300 cm² the affected surface or equipment must be cleaned. Such cleaning was required five times throughout the season, in a core logging shack. The shack was cleaned until readings were below the 5.0 Bq/cm² and proper housekeeping was reviewed with employees working in this area.

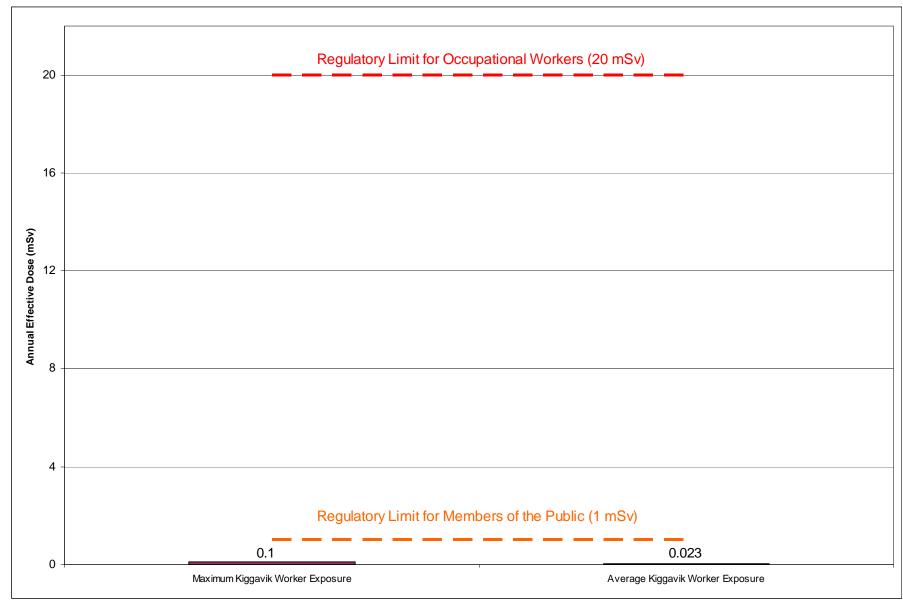
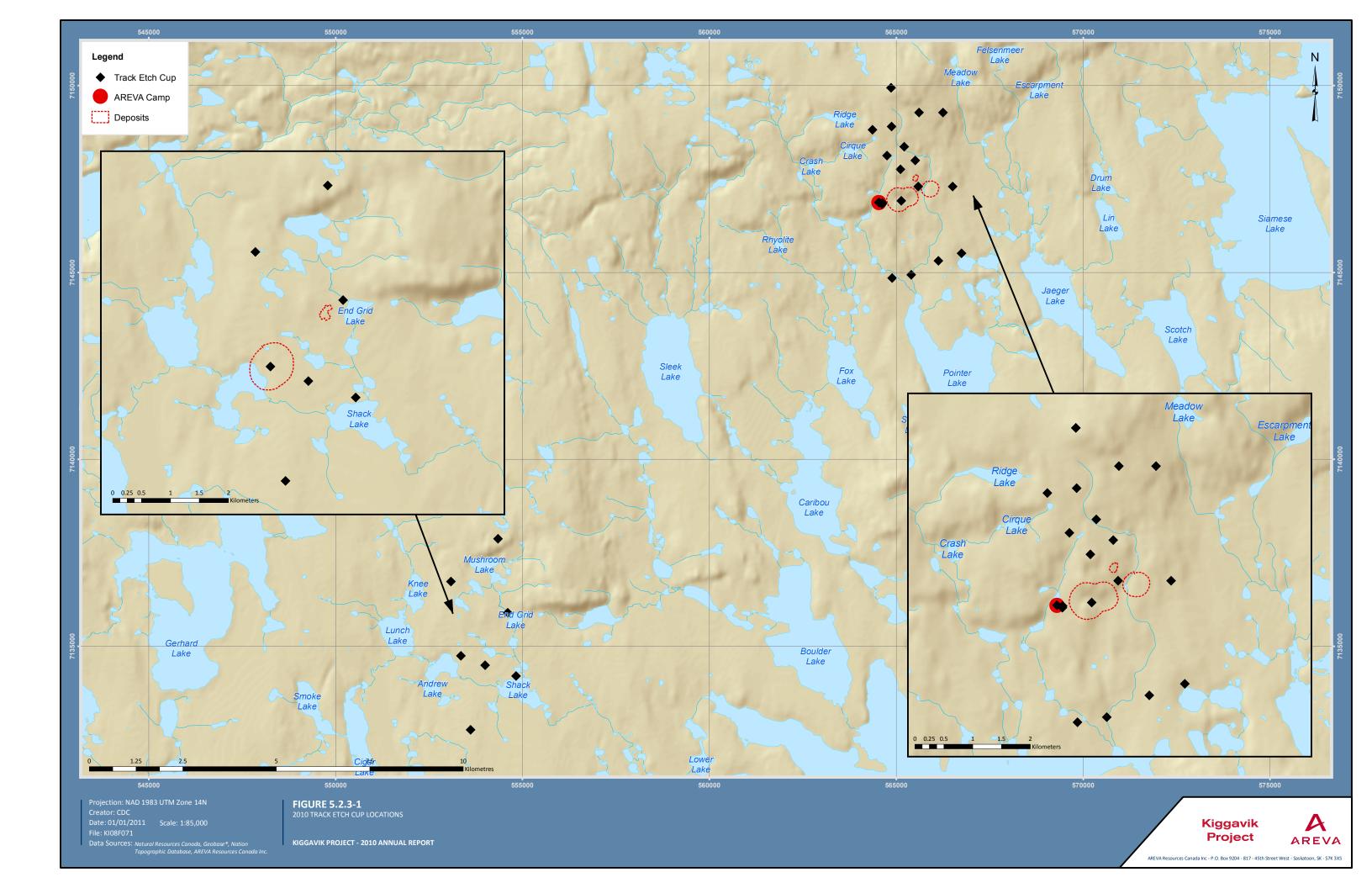


Figure 5.2.2-1: Comparison of Kiggavik Exposures and Regulatory Limits for 2010



### 6 SUMMARY OF LOCAL HIRES AND INITIATIVES

An important aspect of the Kiggavik Project is that it brings employment and business opportunities to local residents. In 2010, local people were hired for work carried out at the Kiggavik camp, in Baker Lake and in the regional study area. Local companies were successful in winning contracts. In addition to providing direct employment and business contracts, AREVA sponsored several events in the Kivallig region in 2010.

# 6.1 Local Employment

The Kiggavik Project provided employment to local people through direct hiring as well as by hiring local companies to supply labour services to the Project. During 2010, the project hired three local people directly – a Community Liaison Officer who worked afternoons throughout the year, a Community Relations Assistant who during the summer, and a Logistics Assistant who worked through the field season from June until September and stayed on as a Community Relations Assistant until the end of the year.

The Project contracted Inuit workers from a Baker Lake company for camp operations and maintenance, wildlife monitoring, logistics, and environmental studies. In addition, consultants contracted local Inuit workers from Baker Lake for environment studies. Table 6.1-1 summarizes the employment provided to local Inuit workers since the field program resumed in 2007.

**Table 6.1-1: Local Employment** 

|                             | 2007             |       | 2008             |        | 2009             |        | 2010             |       |
|-----------------------------|------------------|-------|------------------|--------|------------------|--------|------------------|-------|
|                             | Inuit<br>Workers | Hours | Inuit<br>Workers | Hours  | Inuit<br>Workers | Hours  | Inuit<br>Workers | Hours |
| Local<br>AREVA<br>Employees | 3                | 1731  | 2                | 2,214  | 3                | 2993   | 3                | 3076  |
| Contracted<br>Workers       | 28               | 6730  | 29               | 10,958 | 31               | 10,205 | 27               | 6495  |
| Total                       | 31               | 8461  | 31               | 13,172 | 34               | 13,198 | 30               | 9571  |

In addition to the local employment listed here, the contracted work described in the next section also provided employment to residents of Baker Lake and other Kivalliq communities.

## 6.2 Locally Contracted Work

Many goods and services obtained for the Kiggavik Project in 2010 were contracted to local suppliers. The total value of the local contracts in 2010 was \$2.8 Million. The majority of this work went to companies with offices in Baker Lake. Some work,

including accommodation and meals and translation services, was given to companies in other Kivalliq communities.

Table 6.2-1 summarizes the value of contracts awarded to northern businesses since 2007. The work contracted to local companies in 2010 consists of:

- Diesel and jet fuel
- Expediting and transportation
- Aircraft charters
- Helicopter services
- Groceries
- Meals and accommodations
- Vehicle rental
- Translation services
- Cleaning services
- Labour
- Office utilities

Table 6.2-1 Kiggavik Project Northern Contracts

|                             | 2007    | 2008   | 2009   | 2010   |
|-----------------------------|---------|--------|--------|--------|
| Inuit Owned companies**     | \$1.3M  | \$2.0M | \$1.8M | \$2.2  |
| Other Northern companies*** | \$1.1M  | \$1.5M | \$1.0M | \$0.6  |
| Total                       | \$2.4M* | \$3.5M | \$2.8M | \$2.8M |

<sup>\*</sup>Number differs from the \$1.85M reported in 2007 because the selection criteria have been modified

# 6.3 Sponsorships and Donations

The Kiggavik Project has sponsored community events in Baker Lake and other communities in the Kivalliq since 2006. Sponsorships were given to educational, community, cultural and sports events and celebrations. The list of events sponsored and donations given in 2010 is shown in Table 6.3-1.

Table 6.3-1 Sponsorships and Donations for 2009

| Category  | Organization                        | Activity             | Date     |
|-----------|-------------------------------------|----------------------|----------|
| Community | Innumariit Music Society            | Music Festival       | February |
|           | Baker Lake Hamlet                   | Hamlet Days Feast    | May      |
|           | Chesterfield Inlet 30 <sup>th</sup> | Feast                | May      |
|           | Anniversary                         |                      |          |
|           | Baker Lake RCMP                     | Summer Youth Program | June     |
|           |                                     | Celebrations         |          |
|           | Mianiqsijit, Baker Lake             | Summer Youth Program | July     |
|           | Baker Lake RCMP                     | Christmas Charity    | December |

<sup>\*\*</sup>Companies on the NNI list of Inuit owned companies

<sup>\*\*\*</sup>Companies not on the NNI list but with offices in Nunavut and a significant number of Inuit employees

| Category              | Organization  | Activity                               | Date             |
|-----------------------|---|--|------------------|
|                       | Repulse Bay Food Bank   | Christmas Food Bank                    | December         |
|                       | Coral Harbour Hamlet  | Christmas Events                       | December         |
|                       | Kivalliq Chamber of<br>Commerce   | Run for Charity                        | December         |
| Sports and Recreation | Atoms Hockey Coral<br>Harbour   | Tournament                             | February         |
|                       | Women's Volleyball Baker<br>Lake  | Tournament                             | March            |
|                       | Baker Lake Winter Games   | Winter Games                           | March            |
|                       | NAHC  | Tournament                             | April            |
|                       | Whale Cove  | Fishing Derby                          | May              |
|                       | Chesterfield Inlet  | Fishing Derby                          | May              |
|                       | RA School, Baker Lake   | Playground                             | May              |
|                       | Baker Lake Sports   | Summer Program                         | June             |
|                       | Development   |  |                  |
|                       | Basketball  | Tournament                             | July             |
|                       | Women's Soccer, Coral<br>Harbour  | Tournament                             | November         |
|                       | Rankin Inlet  | Oldtimers Hockey                       | December         |
| Education             | Academy of Learning   | Tuition                                | March            |
|                       | JA High School, baker<br>Lake   | Skills Program                         | March            |
|                       | JA High School, baker<br>Lake   | Cultural Exchange Program              | March            |
|                       | Rankin Inlet Highschool   | Grad trip                              | March            |
|                       | Northern Youth Abroad   | Annual National and International Trip | April            |
|                       | RA School Prizes  | Graduation                             | June             |
|                       | High school graduations in<br>Arviat, Rankin Inlet, Baker<br>Lake, Chesterfield Inlet,<br>Coral Harbour, Repulse<br>Bay | Awards of Excellence                   | August           |
|                       | Canada World Youth Program  | Baker Lake student                     | August           |
|                       | JA School Grad committee  | Graduation                             | August           |
|                       | GEMS Program  | Student job shadowing                  | August           |
|                       | Kivalliq Science Fair   | Annual Camp                            | September        |
|                       | Actua Youth Camps   | Youth Camp                             | December         |
| Culture               | Rainbow Dog Trotters  | Dog races                              | May,<br>December |
|                       | Nunavut Day, Baker Lake   | Dress up contest                       | July             |
|                       | Coral Harbour   | Day on land for Youth                  | July             |
|                       | Repulse Bay Bowhead Whale Committee   | Bowhead Whale hunt                     | August           |



Figure 6.3-1: Bowhead Whale Hunt, Repulse Bay, August 2010

### 7 COMMUNITY ENGAGEMENT

AREVA recognizes that for the Kiggavik Project to be successful, it will need the support of the people in the region. Information sharing and community engagement are requirements of environmental assessment review and one of AREVA's corporate commitments.

# 7.1 Information Sharing

### 7.1.1 Information Office

AREVA has operated an information office in Baker Lake since August of 2006. The office continued to be open to the public throughout 2010 on a daily basis. A bilingual Community Liaison Officer was present each afternoon to speak with visitors. Between June and December, a full time Community Relations Assistant was also working in the Information office. One person carried out the role from June until September and another from September to December.

## 7.1.2 Kiggavik Project Liaison Committees

# **Baker Lake Community Liaison Committee**

The Kiggavik Project established a Community Liaison Committee (CLC) in December 2006 as a means of maintaining community involvement in Baker Lake. Committee members are appointed by their respective organizations and a community member is elected as Chair of the Committee.

The organizations represented on the CLC are:

- Hamlet Council
- Elders Society (male and female representatives)
- Youth Group (male and female representatives)
- District Education Authority
- Hunter and Trappers Organization
- Health Committee
- Justice Committee
- Business Community
- Aberdeen Lake People

During 2010, the Baker Lake CLC met on 7 occasions, nine times for meetings and once for a tour of Kiggavik. The dates are shown in Table 7.1.5-1. Meetings were held at the AREVA Information Office in Baker Lake and were open to the public. Meeting announcements were made on the local radio with the date, time and location. Following the meetings, radio announcements were made to provide Baker Lake residents with a meeting summary. Translation was provided and minutes were kept of

each meeting. Meeting minutes are available at the information office in Baker Lake. Figure 7.1.2-1 shows the Environment and Radiation Protection Supervisor Naomi Stumborg demonstrating radiation measurements at the CLC meeting held on July 27.

The Baker Lake CLC provided community advice to the Kiggavik Project throughout the year. Following is a summary of topics discussed with the CLC:

- updates of Project activities including the field program, environmental baseline work and permits;
- potential bridge locations;
- participation in the Open House;
- demonstrations on radiation measurements and GPS tracking of helicopters;
- discussion with CLC staff; and
- information and updates on local employment opportunities and sponsorships.

The CLC provided advice to AREVA on:

- conducting open houses
- potential bridge locations
- diet study
- effectiveness of communication materials

The CLC visited made its fourth visit to the Kiggavik site on August 22.

## **Regional Liaison Committee**

A Regional Liaison Committee (RLC) was formed in 2007. This committee consists of one representative, appointed by the Hamlet Council, from each Kivalliq community. This committee is a means of ensuring ongoing communication between the Kiggavik Project and Kivalliq communities. Minutes are kept of the meetings.

The RLC did not meet in 2010. The last meeting was February 2009 where a 2 day workshop was held to discuss community engagement and the Inuit Qaujimajatuqangit (IQ) plans for the year.

## 7.1.3 Kiggavik Blog

On June 29, a new communication initiative, the Kiggavik Blog <a href="www.kiggavik,ca">www.kiggavik,ca</a> went live. This website contains project information, a schedule of events and allows for the public to ask questions. Answers are usually posted within one or two days and the questions and answers remain for other visiting the blog to see. Statistics for the Kiggavik Blog are shown in Table 7.1.3-1 and Figure 7.1.3-1 shows the Kiggavik Blog.

Table 7.1.3-1: Statistics for Kiggavik Blog

|              | Site Visits | Page views | Unique visitors | Ave Pages viewed per visit |
|--------------|-------------|------------|-----------------|----------------------------|
| November     | 1410        | 2671       | 1131            | 1.9                        |
| October      | 1301        | 2343       | 1086            | 1.8                        |
| September    | 993         | 2010       | 832             | 2.0                        |
| August       | 765         | 1731       | 572             | 2.3                        |
| July         | 1179        | 3147       | 757             | 2.7                        |
| Year to Date | 6259        | 13040      | 4644            | 2.1                        |

## 7.1.4 Information Sessions

There were three information tours of Kivalliq communities in 2010. The Kivalliq Inuit Association (KIA) carried out Kiggavik information sessions in the 7 communities between January 25 and 29 and between February 23 and 26. The Nunavut Impact Review Board (NIRB) carried out scoping session in each of the seven communities between April 25 and May 10. The report of the NIRB scoping sessions has been released. The report of the KIA consultations is pending.

The Kiggavik team carried out the 2010 Open House/ Information Sessions Tour in the seven Kivalliq Communities from November 1 to November 15.

The format was an open house from 2 until 9 PM each day with occasional short presentations as the audience changed. There was a demonstration of radiation and radiation protection, a demonstration of the Kiggavik blog, project videos of Nunavut people and an interactive poster for valued components. The team consisted of from 8 to 12 people from the Executive, the Kiggavik Project, Regulatory Affairs and Legal, SHEQ and Communications. The events were advertized in 2 newspapers, announced over television and radio and posters were placed on bulletin boards in the communities. Figure 7.1.4-1 shows the ERP Supervisor Kim Sarauer giving a demonstration on Radiation protection measures at the Open House in Coral Harbour.

A total of 534 signatures were signed in the guest book. The tour was well received with many positive comments on the overall format and the new radiation protection demonstration. Valuable comments were documented for inclusion in the Environmental Impact Statement.

Side meetings were held with several organizations including the Baker Lake and Repulse Bay Elders groups; highschools in Baker Lake and Coral Harbour; Hunters and Trappers Organizations in Rankin Inlet, Coral Harbour and Arviat; Mayor and Councillors in Repulse Bay and Arviat; and, made a presentation to Arctic College Pre Trades and Introduction to Mining Classes in Arviat.

# 7.1.5 Summary of Meetings and Events

AREVA has engaged in a series of initiatives to inform, consult with and involve the community in the Kiggavik Project since 2005. The initiatives and events carried out in 2009 are detailed in this section and are listed in Table 7.1.5-1. The various activities are discussed in the remainder of the section.

Table 7.1.5-1: Community Information, Involvement and Consultation Activities 2010

| Community    | Group             | Date      | Purpose/ Topic  |
|--------------|-------------------|-----------|---|
|              |                   | Feb 3     | Regular Meeting   |
|              |                   | Mar 17    | Regular meeting   |
|              |                   | Apr 23    | Regular meeting   |
|              | Community Liaison | Jun 1     | Regular meeting   |
|              | Committee         | Jun 3     | Visit to proposed river crossing                          |
|              |                   | Jul 27    | Regular meeting   |
|              |                   | Aug 22    | Visit to Kiggavik and the proposed bridge location – 8    |
|              |                   | Oct 26    | Regular meeting   |
|              |                   | Jan 18    | Meeting with Hamlet representatives in Vancouver          |
|              | Hamlet            | Mar 9     | Meeting with Hamlet representatives in Toronto            |
|              | Паппес            | Aug 25    | The Mayor visited the Kiggavik site with a group of       |
|              |                   | 7 tug 20  | other visitors.   |
|              | Elders            | Aug 25    | Visit to Kiggavik – 7                                     |
|              | Lidoro            | Nov 1     | Dinner Meeting and IQ Map review with Elders Group        |
| Baker Lake   | Hunters and       | July 23   | Meeting with HTO Manager re caribou protection            |
| Banor Lano   | Trappers          | Aug 24    | Visit to Kiggavik – 3 plus 2 more with CLC on Aug 22      |
|              | Organization      | Oct 27    | Meeting with HTO - Request for topical meetings           |
|              | High school       | Aug 27    | Presentation of Award of Excellence at Highschool         |
|              | r light school    | Nov 2     | Discussion with grades 9-12                               |
|              |                   | Feb 26    | KIA Open Consultation on Kiggavik                         |
|              | Community         | Apr 25-27 | NIRB Scoping Session on Kiggavik Project                  |
|              | Community         | Nov 1-2   | AREVA Open House & public meeting on the Project Proposal |
|              |                   | July 20   | Visit to Kiggavik with 3 ask a question winners.          |
|              |                   |           | Visit to Schultz Lake and Kiggavik with 3 community       |
|              |                   | Jul 25    | people.   |
|              | Community         | Aug 7     | Visit to Kiggavik with 3 community people                 |
|              | residents         | Aug 25    | Visit to Kiggavik by 4 ask a question people              |
|              |                   | Aug 28    | Homeland Visit to Ferguson Lake with 4                    |
|              |                   | Aug 29    | Homeland Visit to Aberdeen Lake with 4                    |
|              |                   | May 5     | Meeting with Mayor  |
|              | Hamlet            | Nov 15    | Meeting with Mayor and Council                            |
|              | HTO               | Nov 15    | Project Update presentation & discussion                  |
|              | Highschool        | Aug 28    | Presentation of Award of Excellence                       |
| Arviat       | Arctic College    | Nov 15    | Presentation to Pre trades and Intro to Mining classes    |
|              |                   | Jan 28-29 | KIA Open Consultation on Kiggavik                         |
|              | .,                | Apr 4-5   | NIRB Scoping Session on Kiggavik Project                  |
|              | Community         | Nov 14-15 | AREVA Open House & public meeting on the Project Proposal |
| Chesterfield | Hamlet            | May 3     | Meetings with Mayor and SAO                               |
| Jilosterneta | Taillet           | IVIUY U   | Widelings with Mayor and OAO                              |

| Inlet         | High school                  | Aug 21            | Presentation of award of excellence                          |
|---------------|------------------------------|-------------------|--|
|               | -                            | Feb 25            | KIA Open Consultation on Kiggavik                            |
|               |                              | May 2-3           | NIRB Scoping Session on Kiggavik Project                     |
|               | Community                    | May 25            | 30 Year celebration and feast                                |
|               |                              | Nov 5-6           | AREVA Open House & public meeting on the Project Proposal    |
|               | HTO                          | Nov 5             | Meeting with HTO   |
|               | Highschool                   | Aug 20            | Presentation of Award of excellence                          |
| Rankin Inlet  |                              | Jan 25-26         | KIA Open Consultation on Kiggavik                            |
| Kankin iniet  | Community                    | May 9-10          | NIRB Scoping Session on Kiggavik Project                     |
|               | Community                    | Nov 4             | AREVA Open House & public meeting on the Project<br>Proposal |
|               | Hamlet                       | May 7             | Meeting with Mayor and EDO                                   |
|               | HTO                          | May 7             | Meeting with President of HTO                                |
| Whale Cove    |                              | Jan 27-28         | KIA Open Consultation on Kiggavik                            |
| vviiale Cove  | Community                    | May 6-7           | NIRB Scoping Session on Kiggavik Project                     |
|               | Community                    | Nov 12-13         | AREVA Open House & public meeting on the Project<br>Proposal |
| Coral Harbour | HTO                          | Nov 9             | Project Update presentation & discussion with HTO            |
|               | Lligh ashaal                 | Aug 27            | Presentation of Award of Excellence                          |
|               | High school                  | Nov 9             | Presentations to grades 10-12                                |
|               | Arctic College               | Feb 25            | Presentation to Pre-trades                                   |
|               | Community                    | Feb 24-25         | KIA Open Consultation on Kiggavik                            |
|               |                              | Apr 30 -<br>May 1 | NIRB Scoping Session on Kiggavik Project                     |
|               |                              | Nov 8-9           | AREVA Open House & public meeting on the Project Proposal    |
|               |                              | Apr 29            | Meeting with Mayor and SAO                                   |
|               | Hamlet                       | Nov 10            | Meeting with Mayor, SAO and some Councillors                 |
|               | Elders                       | Nov 10            | Meeting about IQ Maps with Elders                            |
|               | HTO                          | Apr 30            | Project Update presentation & discussion with HTO            |
| D 1 D         | High school                  | Aug 27            | Presentation of award of excellence                          |
| Repulse Bay   | 3                            | Feb 23-24         | KIA Open Consultation on Kiggavik                            |
|               | Community                    | Apr 28 -<br>29    | NIRB Scoping Session on Kiggavik Project                     |
|               |                              | Nov 10-11         | AREVA Open House & public meeting on the Project<br>Proposal |
|               | KIA                          | Jan 19            | Luncheon meeting with staff and President in Vancouver       |
|               | KIA                          | Aug 26            | KIA Lands Department Presentation                            |
|               |                              | Oct 12            | Project Update presentation at AGM                           |
|               | NTI                          | Jan 19            | Meeting with staff in Vancouver                              |
|               | Kivalliq Wildlife<br>Board   | June 1            | Project Wildlife Update in Baker Lake                        |
|               | BQCMB                        | Oct 24            | Project Wildlife Update in Winnipeg                          |
|               | Kivalliq Chamber of Commerce | Mar 16            | Project Update at Annual General Meeting in Rankin Inlet     |
|               | Kivalliq Mayors              | Oct 14            | Project update at Mayors meeting in Rankin Inlet             |

| Minister of Economic Development & transportation | Mar 3 | Project Briefing in Iqaluit |
|---|-------|-----------------------------|
|---|-------|-----------------------------|

In addition to the information sessions and high school award presentations, project staff met with several groups in several communities to provide information about the Kiggavik project and to solicit comments. The list of events for 2010 is shown in Table 7.1.5-1 and is summarized here.

#### **Hamlet Councils**

Kiggavik team members met with the mayor or the mayor and council of Kivalliq Communities during the tours and briefed them of the status of the project. In addition, meetings were held with hamlet representatives from Baker Lake in Vancouver and Toronto during mining conferences.

## **Hunters and Trappers Organizations**

Meetings were held with the HTO's in Baker Lake, Rankin Inlet, Arviat, Repulse Bay and Coral Harbour during 2010. Meetings were held with the president of the Whale Cove HTO and the manager of the Baker Lake HTO. No meeting was held with the Chesterfield Inlet HTO. The Baker Lake HTO visited the Kiggavik site on August 24. In addition to the tour, the visit also included the location of the proposed Thelon crossing and demonstrations from the ground and the air of the altitudes flown by helicopters for caribou protection.

AREVA met with the Kivalliq Wildlife Management Board on June 1 for an annual project update meeting.

### **Elders**

In 2010, AREVA hosted the elders group to a tour of the Kiggavik camp and core area on August 25. A demonstration of altitude restrictions was given from the ground and from the air. On November 1, a dinner and meeting was held with the elders in Baker Lake. Draft IQ maps were discussed and left for review.

### Beverly and Qaminirjuaq Caribou Management Board

AREVA has been providing updates to the BQCMB since 2006. AREVA presented a project update focussing on caribou protections measures and environmental studies at the October 24 meeting in Winnipeg.

#### Other events

Other events included a presentation to the Kivalliq Mayors, a presentation to the Kivalliq Chamber of Commerce and a presentation to the KIA Annual General Meeting.

# 7.2 Kivalliq Community Involvement

Community Involvement for the Kiggavik project began in 2006. Kiggavik Project staff visited communities throughout the Kivalliq region during 2009 and made presentations to various organizations. Community involvement activities are described in the following sections

## 7.2.1 High School Visits and Awards

The Kiggavik project has been speaking with high school students in the Kivalliq region since 2006. In 2010, each high school with the exception of Whale Cove was visited at least once for a presentation of an Award of Excellence. The Award of Excellence is presented to the graduating high school student showing proficiency in math, science and Inuktitut. It has been awarded to a Baker Lake high school student each year since 2006. In 2009, it was awarded to a high school student in each of the seven Kivalliq communities. The award was presented by AREVA staff. Figure 7.2.1-1 shows award winner Harry Niatkrok of Rankin Inlet receiving his award from the Manager, Nunavut Affairs Barry McCallum.

In addition to the visits to present awards, the Baker Lake high school was visited on November 2 and the Coral Harbour high school was visited on November 9 during the tour of communities for a general project update and discussion with students. The Arviat high school students visited the open house as a group on November 15.

## 7.2.2 Homeland Visits

An initiative for people with close ties to the area where the Kiggavik Project is located began in 2006 and continues. Participants visit both the Project site and their traditional homeland. Since the start, 71 people have participated in 16 homeland visits. Each visit consists of one or more lnuk, who was born on the land, along with family members traveling by helicopter and visiting a location where they lived on the land. The AREVA Community Liaison Officer normally accompanies the group on the visit.

Two visits of four people each took place in 2010. On August 28, a group visited Ferguson Lake and on August 29 a group visited Aberdeen Lake as shown in Figure 7.2.2-1. AREVA's Community Liaison Officer accompanied each group. The Aberdeen Lake group also visited the Kiggavik camp. A summary of AREVA's Homeland visits since 2006 is provided in Table 7.2.2-1.

Table 7.2.2-1: Homeland Visits

| Date  |         | Location                       | Community Participants |
|-------|---------|--------------------------------|------------------------|
| 2006  | Jul 27  | Aberdeen Lake and Beverly Lake | 12                     |
|       | Jul 28  | Aberdeen Lake and Beverly Lake | 3                      |
|       | Aug 24  | Aberdeen Lake                  | 3                      |
| 2007  | Aug 17  | Schultz Lake and Aberdeen Lake | 4                      |
| 2008  | Aug 21  | Schultz Lake                   | 4                      |
|       | Aug 21  | Judge Sissons Lake             | 5                      |
|       | Sep 5   | Mallory Lake                   | 4                      |
|       | Sep 6   | Schultz Lake                   | 4                      |
|       | Sep 7   | Herman River                   | 4                      |
| 2009  | Aug 11  | Garry Lake                     | 4                      |
|       | Aug 12  | Aberdeen Lake and Beverly Lake | 4                      |
|       | Aug 13  | Aberdeen Lake                  | 4                      |
|       | Sept 9  | Shultz Lake and Aberdeen Lake  | 4                      |
|       | Sept 10 | Sand Lake                      | 4                      |
| 2010  | Aug 28  | Ferguson Lake                  | 4                      |
|       | Aug 29  | Aberdeen Lake                  | 4                      |
| Total | •       | 16 Homeland visits             | 71 Participants        |

## 7.3 Site Tours

Since 2005, community and other stakeholder groups have taken tours of uranium mines in Saskatchewan and the Kiggavik site.

## 7.3.1 Saskatchewan Minesite Tours

No Saskatchewan Mine tours were carried out in 2010. During Since 2005, AREVA has hosted nine tours of Saskatchewan minesites with 126 participants. A list of tours carried out since 2005 is provided in Table 7.3-1. Minesite tours will continue.

Table 7.3-1: Tours of Saskatchewan Mines

| Date |           |    | Group  | Tour and meetings   |
|------|-----------|----|--|---|
| 2005 | Sep 13-15 | 14 | Governments and co-<br>management boards<br>32 from NTI, the three RIA's and<br>the mayor of Baker Lake. | Toured McArthur River and McClean Lake and held meetings in Saskatoon with Saskatchewan Environment, CNSC and Environmental Quality Committee members |
| 2003 | Sep 19-21 | 32 | NTI, the three RIA's and the mayor of Baker Lake.  | Toured McArthur River and McClean Lake and met with Saskatchewan northerners who have worked with uranium mines.                                      |
|      | Oct       | 11 | Councillors, elders, students,<br>hunter/trappers and business<br>people from Baker Lake                 | Toured McArthur River and McClean<br>Lake   |
| 2007 | Sep 11-13 | 12 | NPC Commissioners and Staff  | Toured McArthur River, McClean Lake<br>and Cluff Lake and met with EQC reps in<br>LaRonge   |

|       | May 24 22 | 8   | Regional Committee members    | Toured McClean Lake and Cluff Lake and    |
|-------|-----------|-----|-------------------------------|---|
|       | May 21-22 | 1   | Arctic College representative | met with the McClean Lake Elder           |
|       |           |     | Staff members from            |   |
|       | Jun 21-22 | 7   | Government of Nunavut         | Toured McClean Lake and Cluff Lake        |
|       |           |     | Departments                   |   |
|       |           |     |                               | Toured McClean Lake and Cluff Lake and    |
| 2008  | Jul 15-17 | 12  | KIA Board Members and Staff   | met with AREVA and CAMECO                 |
| 2000  |           |     |                               | representatives in Saskatoon              |
|       |           | 11  | Kivalliq Wildlife Management  |   |
|       |           |     | Board                         | Toured McClean Lake and Cluff Lake and    |
|       | Oct 6-7   | 9   | CLC                           | met with McClean Lake elder and AREVA     |
|       | Oct 6-7   | 5   | Minerals Class from JA High   | staff from the northern affairs office in |
|       |           |     | School                        | LaRonge.                                  |
|       |           | 2   | Regional Committee            |   |
| 2009  | July 14   | 2   | INAC representatives          | Toured McClean Lake                       |
| Total | 9 tours   | 126 | Visitors                      |   |

# 7.3.2 Kiggavik Site Tours and Visits

Community people have been visiting the Kiggavik site since 2005. In 2010, 36 community people visited Kiggavik on seven days. The groups consisted of two blog contest groups, a homeland visit group, the community liaison committee and the elders group. The tours included a visit to the camp and to the core logging and storage area as shown in Figures 7.3.2-1 and 7.3.2-2. Staff members explained the various aspects of the Project. A list of the stakeholder and community visits to Kiggavik since 2005 is provided in Table 7.3-2.

Table 7.3-2: Site Visits to Kiggavik

| Date |         |    | Group                       | Visit   |
|------|---------|----|-----------------------------|---|
| 2005 | Aug 23  | 4  | Baker Lake elders           | Visit after 2003 and 2004 cleanup             |
|      | Jul 27  | 12 | Homeland visitors           | Visit Kiggavik site during homeland visit     |
| 2006 | Jul 28  | 3  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Aug 24  | 3  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
| 2007 | Aug 12  | 10 | CLC & community members     | Tour of camp, core area and drilling          |
| 2007 | Aug 17  | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Jun 12  | 7  | Premier, Mayor and group    | Tour of camp, core area and drilling          |
|      | Aug 21  | 8  | CLC                         | Tour of camp, core area and drilling          |
| 2008 | Aug 27  | 5  | Regional Liaison Committee  | Tour of camp, core area and drilling          |
|      | Sep 5   | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Sep 6   | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Aug 11  | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Aug 12  | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
| 2009 | Aug 13  | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
| 2009 | Aug 19  | 12 | CLC and DEA reps            | Tour of camp and core area                    |
|      | Sept 9  | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
|      | Sept 10 | 4  | Homeland visitors           | Visit Kiggavik site during homeland visit     |
| 2010 | July 20 | 3  | Blog Question Contest Group | Tour of camp and core area                    |
|      | July 25 | 3  | Shultz lake group           | Visited Kiggavik following a visit to Schultz |

|   |        |     |                             | Lake                                      |
|---|--------|-----|-----------------------------|---|
|   | Aug 7  | 3   | Community members           | Tour camp and core area                   |
|   | Aug 22 | 8   | CLC                         | Tour of camp and core area                |
|   | Aug 24 | 3   | НТО                         | Tour of camp and core area                |
|   | Aug 25 | 7   | Elders                      | Tour of camp and core area                |
|   | Aug 25 | 3   | Blog question Contest Group | Tour of camp and core area                |
|   | Aug 25 | 2   | Mayor and one other         | Tour of camp and core area                |
|   | Aug 29 | 4   | Homeland Visitors           | Visit Kiggavik site during homeland visit |
| Т | otals  | 132 | Visitors                    |   |



Figure 7.1.2-1: ERP Supervisor Naomi Stumborg at July 27, 2010 CLC Meeting



Figure 7.1.3-1: Kiggavik Blog



Figure 7.1.4-1: ERP Supervisor Kim Sarauer at the Open House in Coral Harbour



Figure 7.2.1-1: Award of Excellence Winner Harry Niatkrok of Rankin Inlet



Figure 7.2.2-1: Members of the Quinangnaq family at a homeland visit to Aberdeen Lake



Figure 7.3.2-1: Geologist Dwayne Morrison shows core sample to Baker Lake HTO



Figure 7.3.2-2: Members of the Kiggavik CLC observe a helicopter flying past at the desired altitude of 2000 ft for long range flights during a tour of Kiggavik

#### 8 INSPECTIONS

Land Use Inspectors visited the Kiggavik Project site twice in 2010, on July 17 and September 19. The Mines Inspector (WSCC) also conducted an inspection on June 26<sup>th</sup>.

An inspection, focusing on water use, was conducted by INAC on July 17, 2010. The Kiggavik camp along with all drill locations were visited. The following are the recommendations and/or concerns noted in the Water Use Inspection Report and the associated actions taken:

| RECOMMENDATIONS/CONCERNS  | ACTION TAKEN   |
|---|--|
| Grease trap and screens are not adequate to efficiently remove grease and food particulate before discharge to the sump. AREVA needs to engineer an adequate grease trap and food particulate separator or purchase a commercially available model and have trained staff on site to maintain it. | AREVA has had communication with the Water Resource Inspector to discuss possible solutions for food particle removal prior to discharge.  AREVA will ensure proper installation of such devices and will work closely with catering staff to ensure both the grease trap and food particulate removal system are properly maintained. |
| AREVA also is responsible to ensure all of their wastes are disposed of in an environmental manner and at an approved waste disposal site.  | AREVA is committed to finding an alternative waste disposal site and will continue communication with the appropriate regulatory agencies to find an acceptable alternative for 2011.  |

A second inspection was conducted by the Kivalliq Inuit Association (KIA) on September 19, 2010. At the time of this inspection, drilling activities had been completed and the campsite was shut down for the season. The KIA Land Use Inspector did not note any concerns or recommendations during his visit.

The Mines Inspector for Workers' Safety & Compensation Commission (WSCC) conducted an inspection on June 26. The findings of the inspections by the Mines Inspector for WSCC on June 26 were as follows:

| RECOMMENDATIONS/CONCERNS   | ACTION TAKEN   |
|--|--|
| Please install a handrail or provide suitable fall protection on the roof to prevent a person falling from it. | Contractors are required to tie off before getting on top of the drill roof for suitable fall protection whenever above 1.5 m. |

#### 9 PROGRESSIVE RECLAMATION

As discussed in the Abandonment and Restoration Plan, it is AREVA's intention to establish chemical and physical stability at all sites impacted by exploration activities, to the greatest extent practical. However, due to challenges surrounding physical reclamation of surface disturbance the primary focus is currently on chemical stability. All drill sites from the current year's field program are inspected for fuel stained soil and undergo a gamma survey for radioactive contamination. Radiologically or chemically contaminated soil or cuttings are collected in appropriate containers and stored in the long-term core storage area for future handling.

Drill sites must be cleaned to the extent that gamma radiation at a height of 1 metre from surface is as close to pre drilling conditions as is practical and is less than 1  $\mu$ Sv/h. Radioactive material is collected, appropriately packaged and stored in the existing core storage areas. Gamma radiation levels at 1 m from the perimeter of the core storage area should be reduced to 1  $\mu$ Sv/h and in no instances exceed 2.5  $\mu$ Sv/h. If necessary, residual radioactive material will be transported to the McClean Lake Operation for storage and disposal.

# 9.1 Chemical and Radiological Restoration

All drill sites are subject to gamma surveys prior to conducting any drilling activities and following the completion of the hole. If elevated levels of gamma radiation are detected in the post-drilling survey, clean-up activities are conducted followed by another gamma survey to ensure levels have been reduced and are below 1 µSv/h.

Gamma radiation surveys were conducted around each borehole and along the discharge route of the drilling water. Readings with the Ludlum 2221 and Trimble GeoExplorer were made at one meter above ground with 1 second intervals. Post gamma surveys were conducted at drill holes END-10-13 and EZ-10-01 however the radiation data from the Trimble instrument did not log properly. Therefore, these post gamma surveys must be redone during the 2011 field program.

A summary of the 2010 gamma survey data by drilling location is presented in Table 9.1-1: Gamma Survey Data from 2010 Drill Locations. Drill locations are presented in Figure 9.1-1.

Table 9.1-1: Gamma Survey Data from 2010 Drill Locations

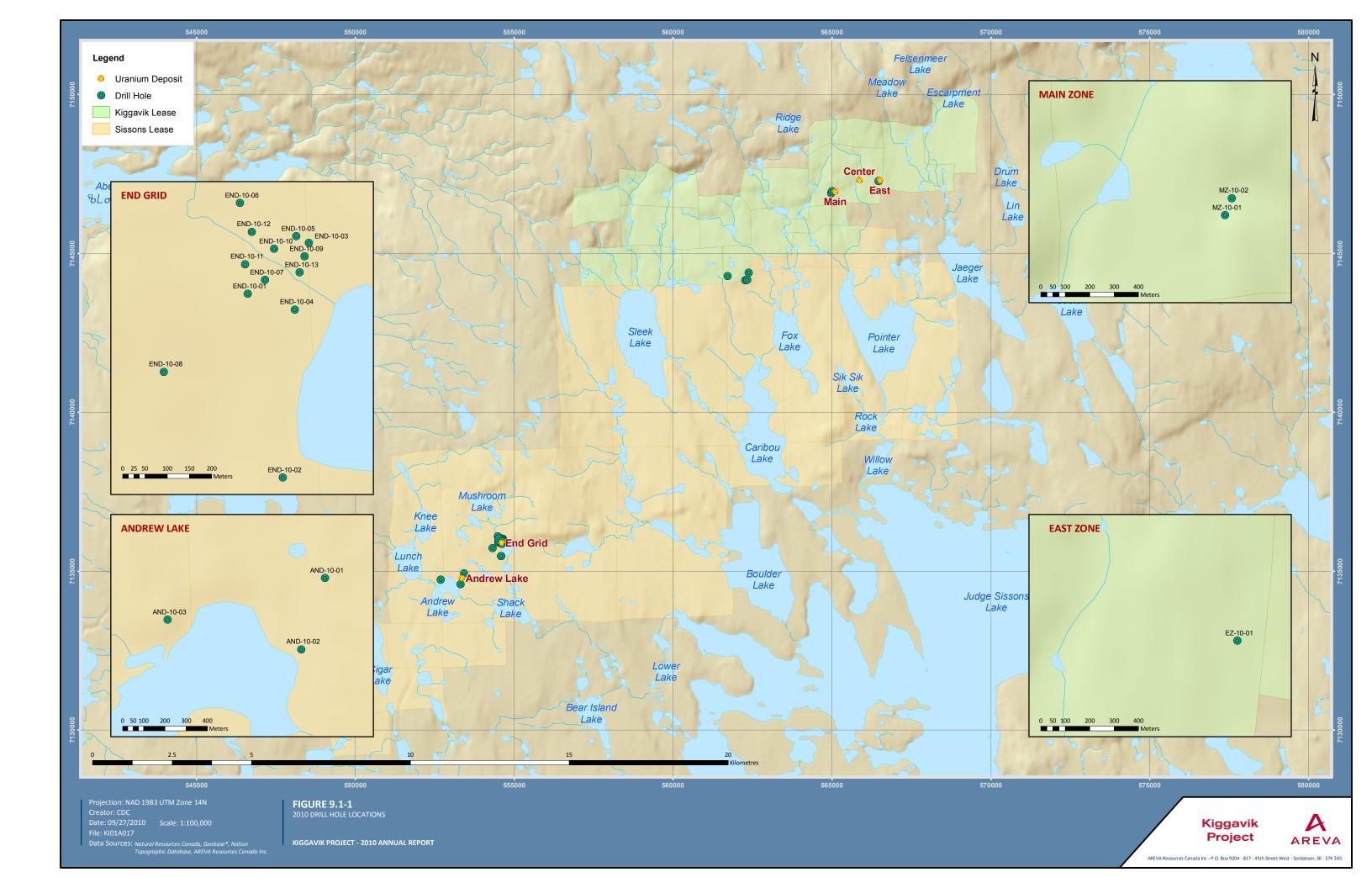
|                       | Pre Gamma | Post Gamma |
|-----------------------|-----------|------------|
| Drill Hole            | Date      | Date       |
| AND-10-01             | July 10   | August 14  |
| AND-10-02             | July 21   | August 14  |
| AND-10-03             | July 28   | August 14  |
| BONG-45               | June 5    | August 10  |
| BONG-46_47            | June 23   | July 18    |
| BONG-48               | June 28   | July 18    |
| BONG-49               | July 11   | August 10  |
| END-10-01             | June 8    | June 23    |
| END-10-02, END-10-02A | June 11   | June 30    |
| END-10-03             | June 20   | July 14    |
| END-10-04             | June 24   | July 14    |
| END-10-05             | June 30   | July 14    |
| END-10-06             | July 13   | August 11  |
| END-10-07             | July 13   | July 28    |
| END-10-08             | July 23   | August 14  |
| END-10-09             | July 25   | August 11  |
| END-10-10             | August 2  | August 11  |
| END-10-11             | August 4  | August 13  |
| END-10-12             | August 4  | August 23  |
| END-10-13             | August 8  | August 23* |
| EZ-10-01              | August 10 | August 26* |
| MZ-10-01              | August 8  | August 26  |
| MZ-10-02              | August 8  | August 26  |
| RMI-10-01             | August 18 | August 26  |
| RMI-10-02             | August 20 | August 26  |

<sup>\*</sup> Post-gamma survey data was lost due to technical error and will have to be redone during the 2011 field season

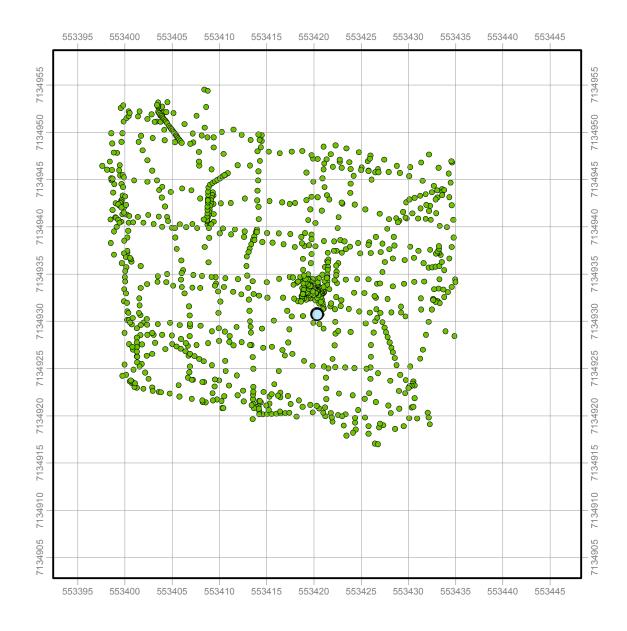
All measured dose rates during the 2010 field season were below 1 µSv/h.

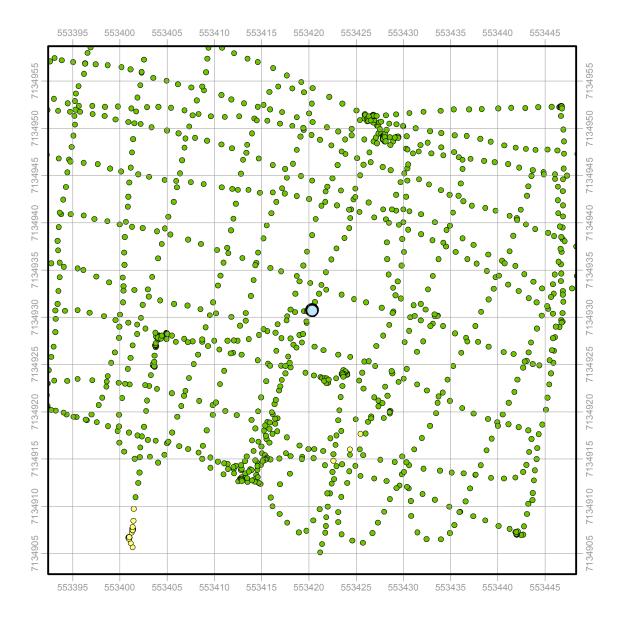
# 9.2 Physical Reclamation

As discussed in the Abandonment and Restoration Plan, it is AREVA's intention to reclaim surface disturbed sites in an acceptable manner. Reclamation methods are currently being investigated and will be implemented under the direction and approval of experienced consultants, community members and regulatory agencies. Restoration work will be completed prior to the expiry of the Land Use Licence.



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





AND-10-01 **Pre Gamma Survey** 

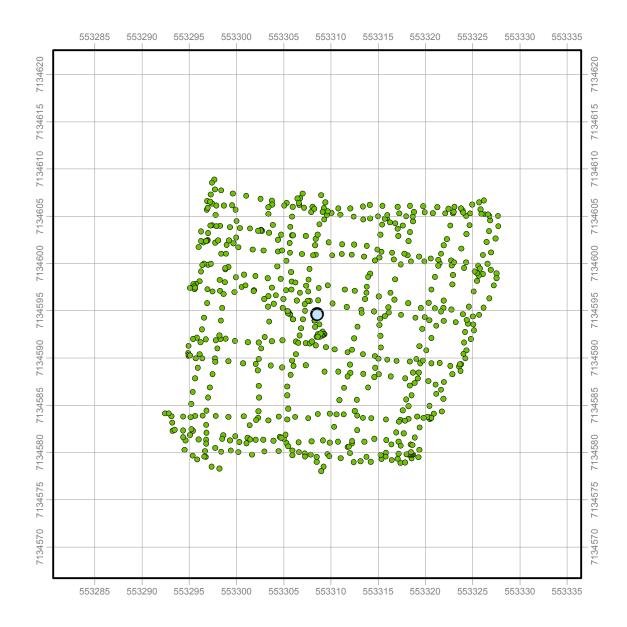
Point Count: 965 Min-Max: 0.000 - 0.212 μSv

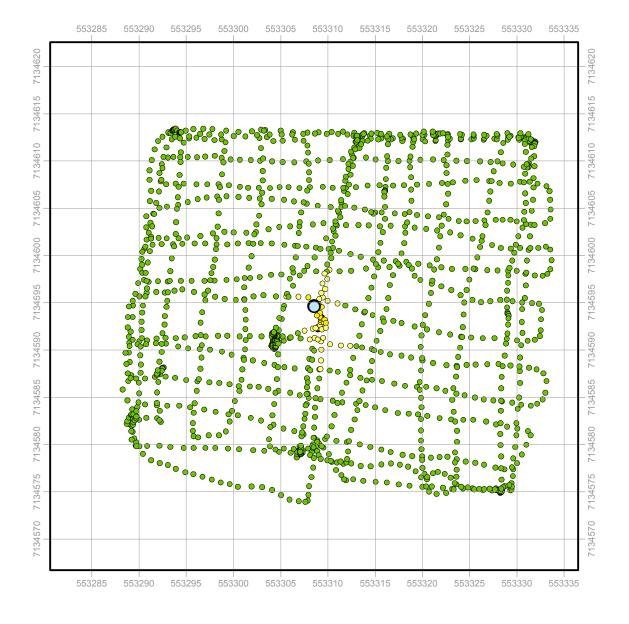
AND-10-01 **Post Gamma Survey** 

Point Count: 1276 Min-Max: 0.000 - 0.427 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





AND-10-02 **Pre Gamma Survey** 

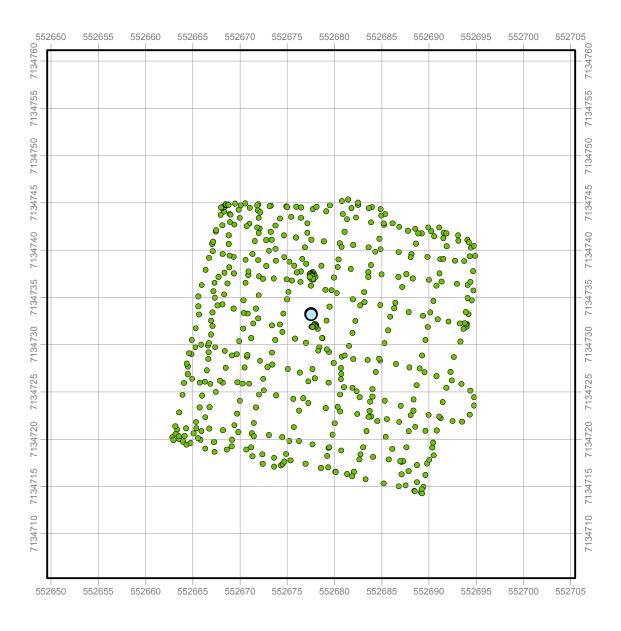
**Point Count: 624** Min-Max: 0.078 - 0.218 μSv

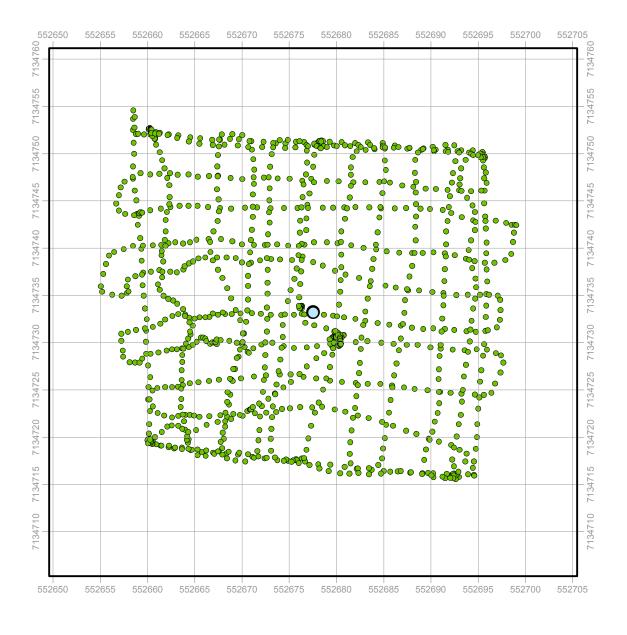
AND-10-02 **Post Gamma Survey** 

Point Count: 1457 Min-Max: 0.065 - 0.746 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





AND-10-03 **Pre Gamma Survey** 

Point Count: 503 Min-Max: 0.000 - 0.161 μSv

AND-10-03 **Post Gamma Survey** 

Point Count: 1210 Min-Max: 0.069 - 0.159 μSv

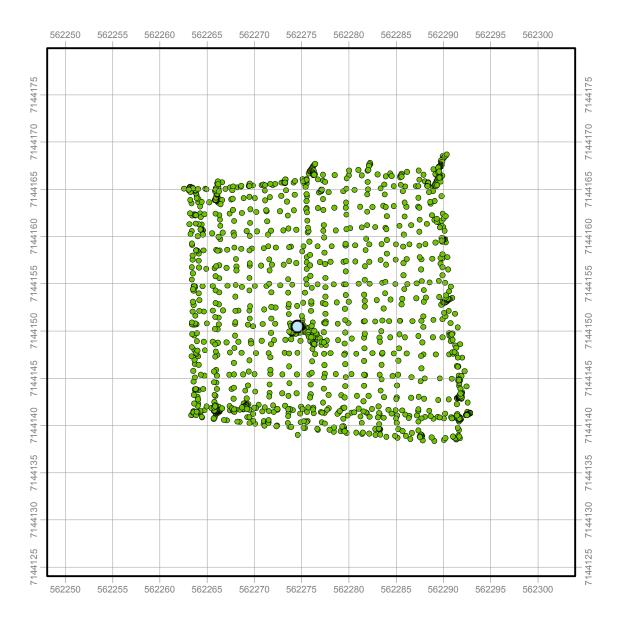
Creator: CDC
Date: 01/01/2011 Scale: 5m x 5m Grid

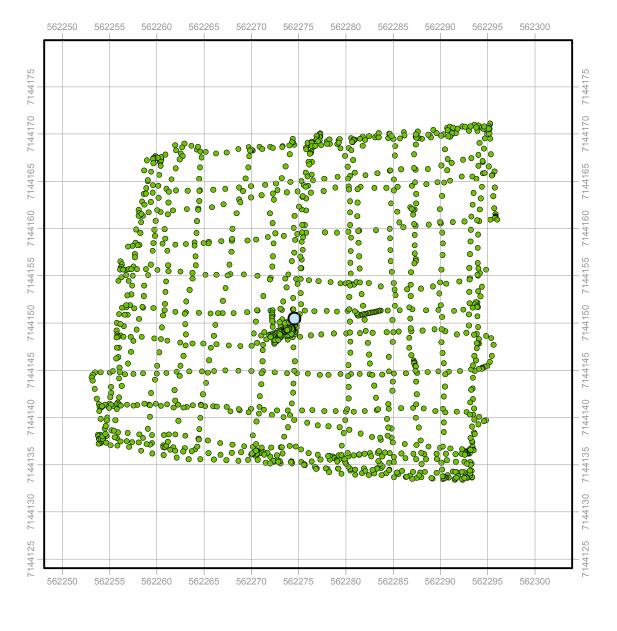
**FIGURE 9.1-4** 

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- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





**BONG-045 Pre Gamma Survey** 

Point Count: 1440 Min-Max: 0.000 - 0.025 μSv

**BONG-045 Post Gamma Survey** 

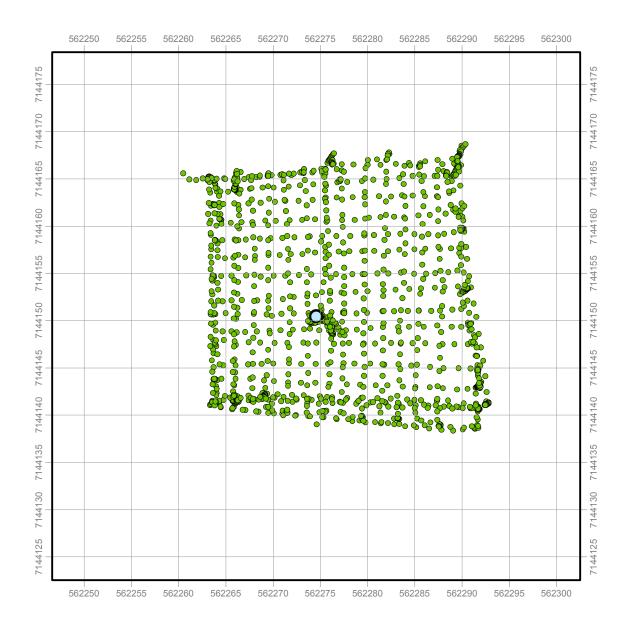
Point Count: 1479 Min-Max: 0.000 - 0.147 μSv

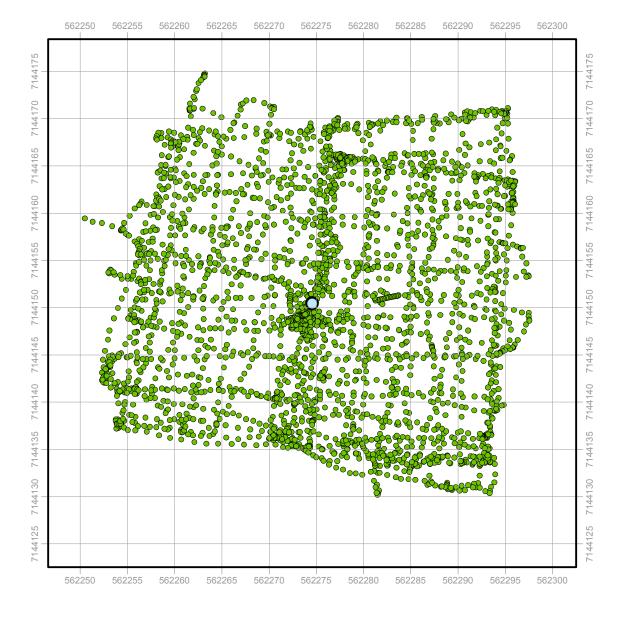
**FIGURE 9.1-5** 

KIGGAVIK PROJECT - 2010 ANNUAL REPORT



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





**BONG-046 Pre Gamma Survey** 

Point Count: 1444 Min-Max: 0.000 - 0.025 μSv

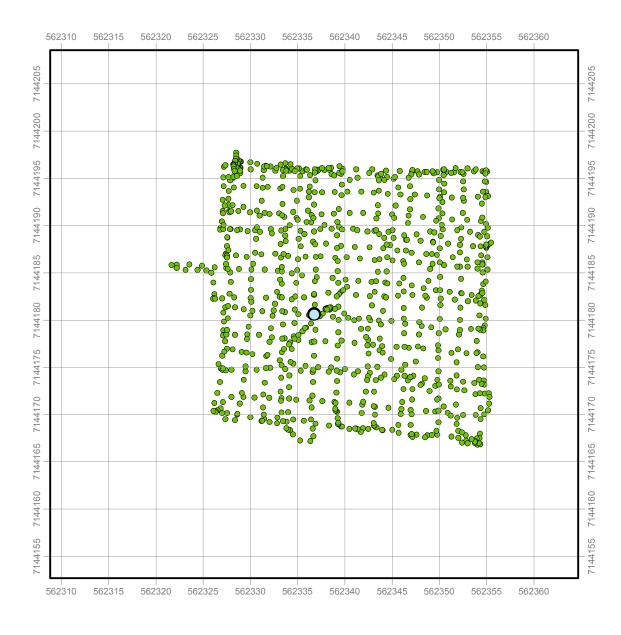
BONG-046 **Post Gamma Survey** 

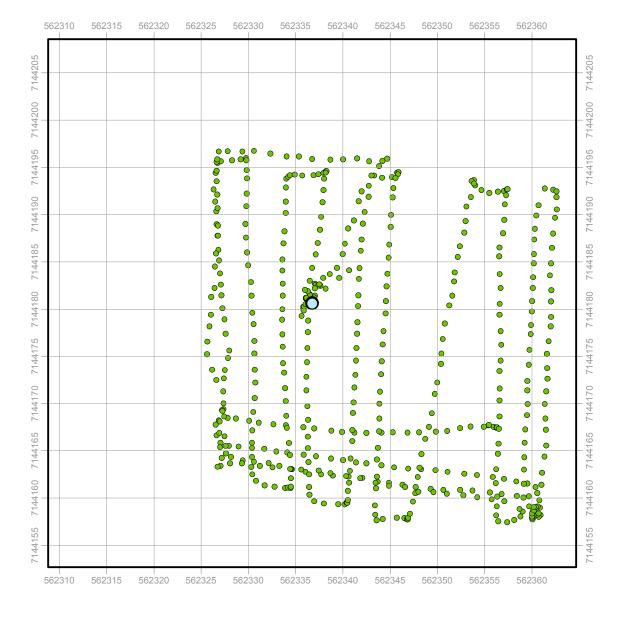
Point Count: 3280 Min-Max: 0.000 - 0.147 μSv





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





**BONG-047 Pre Gamma Survey** 

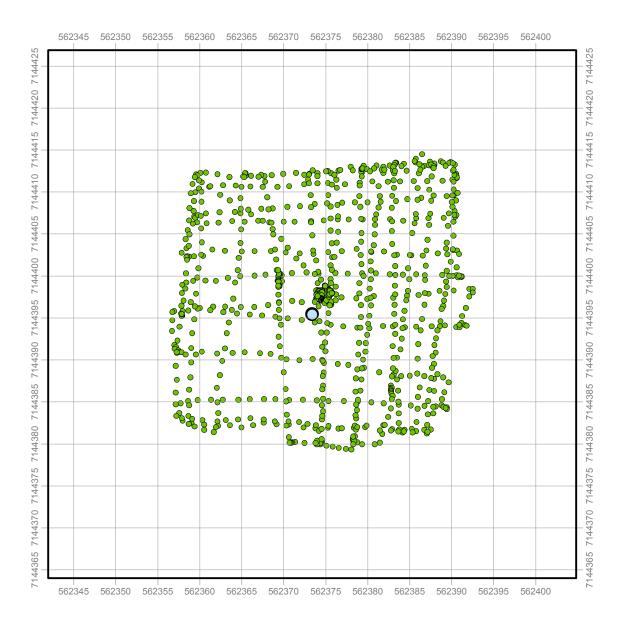
Point Count: 1876 Min-Max: 0.000 - 0.106 μSv

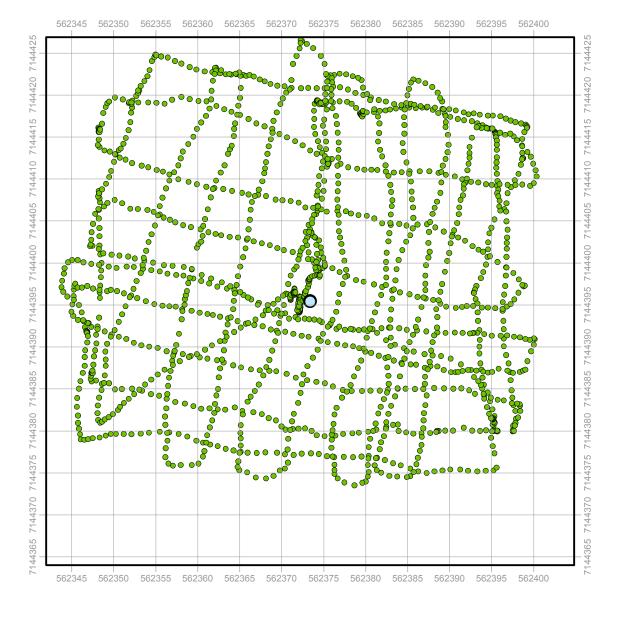
**BONG-047 Post Gamma Survey** 

**Point Count: 877** Min-Max: 0.000 - 0.095 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- 0.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





BONG-048 Pre Gamma Survey

Point Count: 1064 Min-Max: 0.000 - 0.131 μSv BONG-048 Post Gamma Survey

Point Count: 1599 Min-Max: 0.071 - 0.130 μSv

Projection: NAD 1983 UTM Zone 14N

File: KI08F051

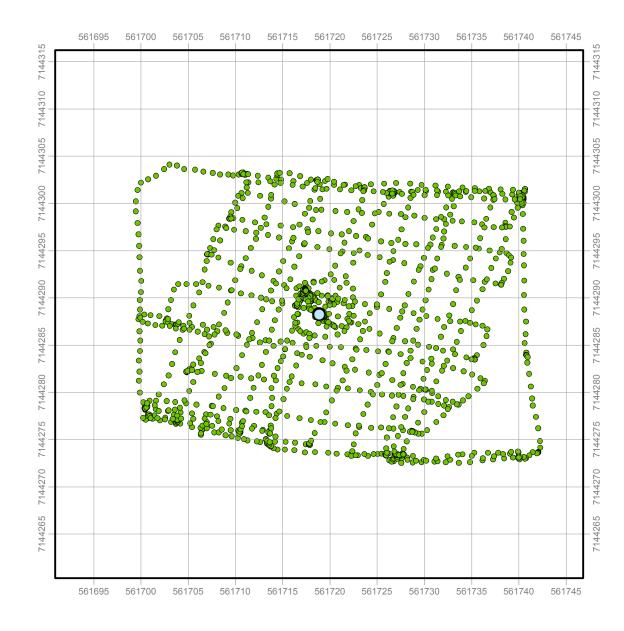
Data Sources: AREVA Resources Canada II

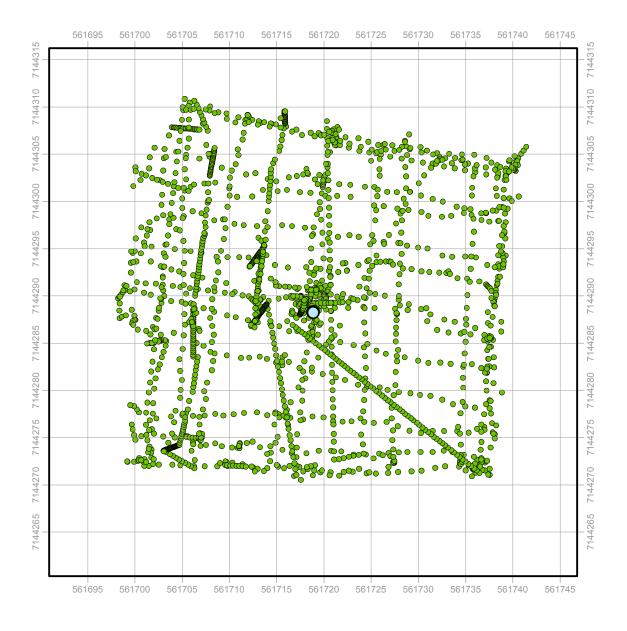
FIGURE 9.1-8
PRE AND POST GAMMA SURVEY
DRILL HOLE BONG-048





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- 0.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





BONG-049 Pre Gamma Survey

Point Count: 1293 Min-Max: 0.049 - 0.093 μSv BONG-049 Post Gamma Survey

Point Count: 1865 Min-Max: 0.000 - 0.096 μSv

Projection: NAD 1983 UTM Zone 14N Creator: CDC

File: KI08F052

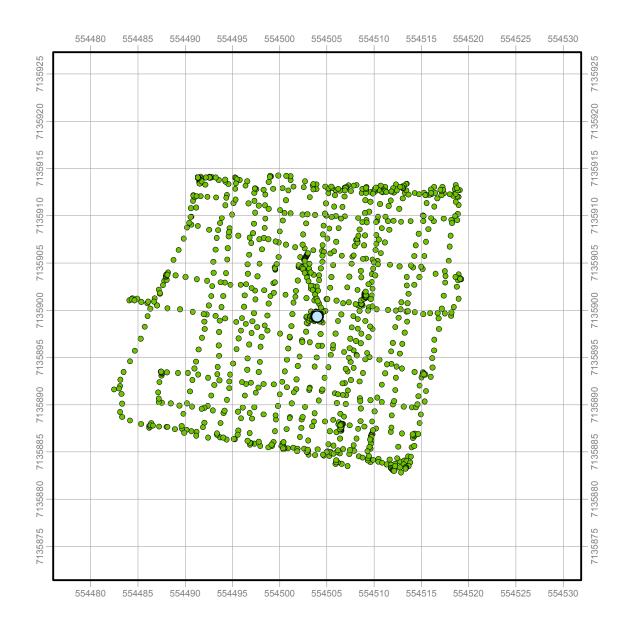
Data Sources: AREVA Resources Canada Inc.

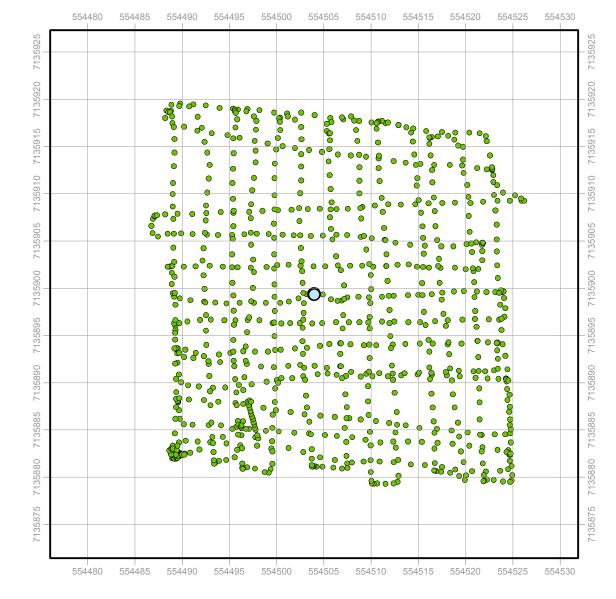
FIGURE 9.1-9
PRE AND POST GAMMA SURVEY
DRILL HOLE BONG-049





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- 0.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-01 Pre Gamma Survey

Point Count: 1171 Min-Max: 0.000 - 0.068 μSv END-10-01 Post Gamma Survey

Point Count: 952 Min-Max: 0.000 - 0.106 μSv

Projection: NAD 1983 UTM Zone 14N Creator: CDC

File: KI08F053

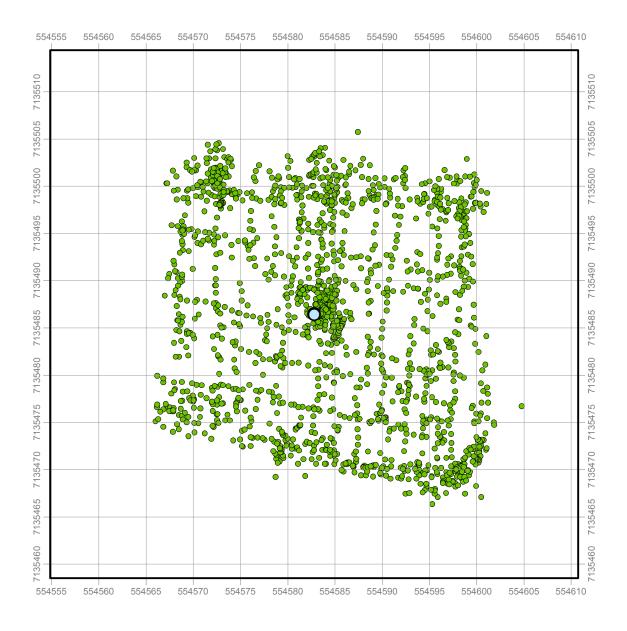
Data Sources: AREVA Resources Canada Inc.

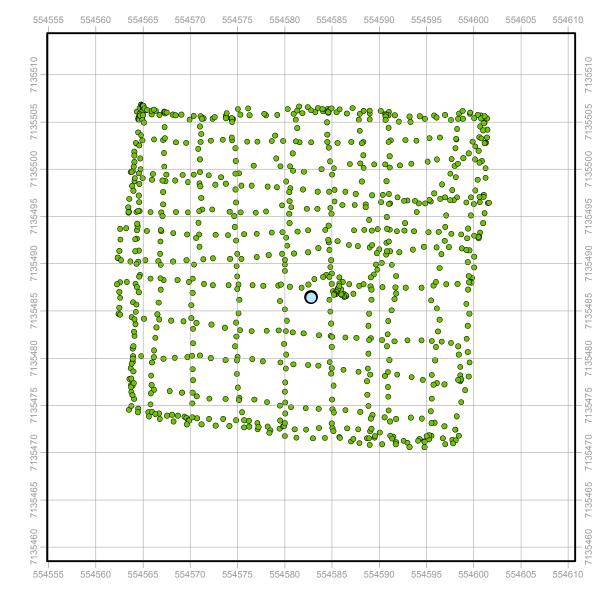
FIGURE 9.1-10 PRE AND POST GAMMA SURVEY DRILL HOLE END-10-01

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- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-02 **Pre Gamma Survey** 

Point Count: 1741 Min-Max: 0.000 - 0.037 μSv

END-10-02 **Post Gamma Survey** 

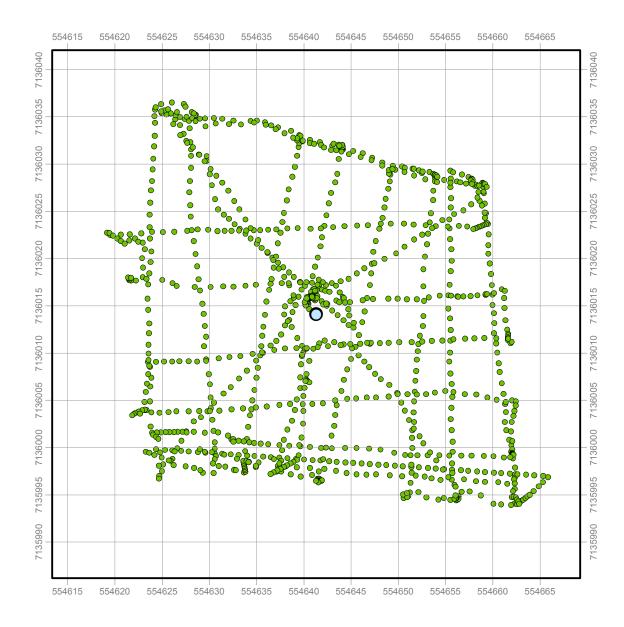
Point Count: 871 Min-Max: 0.000 - 0.084 μSv

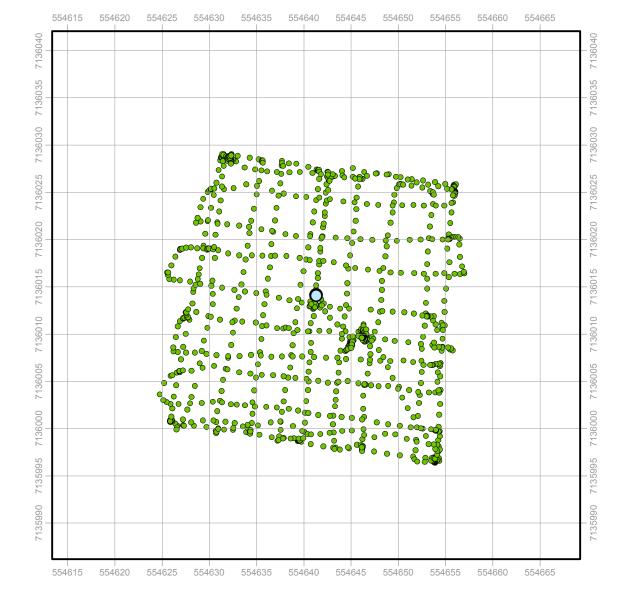
FIGURE 9.1-11 DRILL HOLE END-10-02

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- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-03 **Pre Gamma Survey** 

Point Count: 1147 Min-Max: 0.043 - 0.098 μSv

END-10-03 **Post Gamma Survey** 

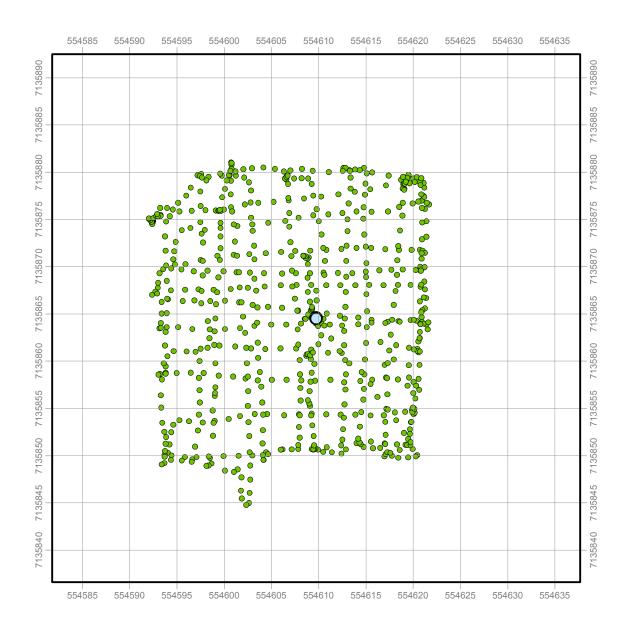
Point Count: 1118 Min-Max: 0.000 - 0.083 μSv

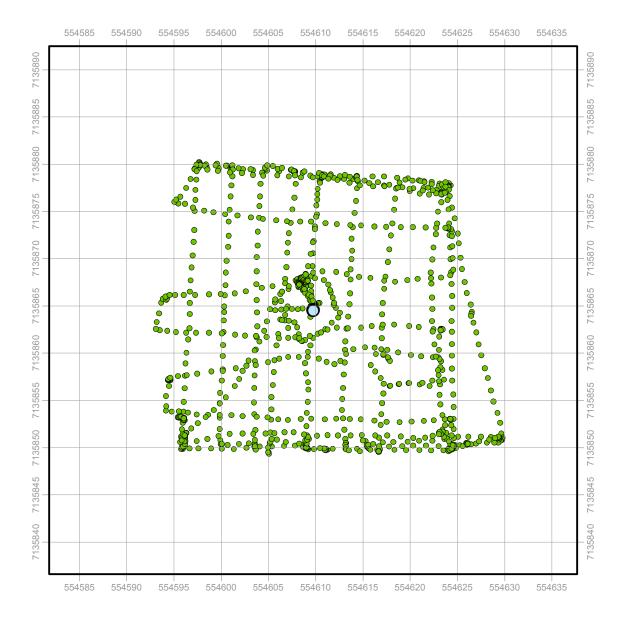
FIGURE 9.1-12 DRILL HOLE END-10-03





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-04 **Pre Gamma Survey** 

Point Count: 748 Min-Max: 0.049 - 0.143 μSv

END-10-04 **Post Gamma Survey** 

Point Count: 1168 Min-Max: 0.046 - 0.118 μSv

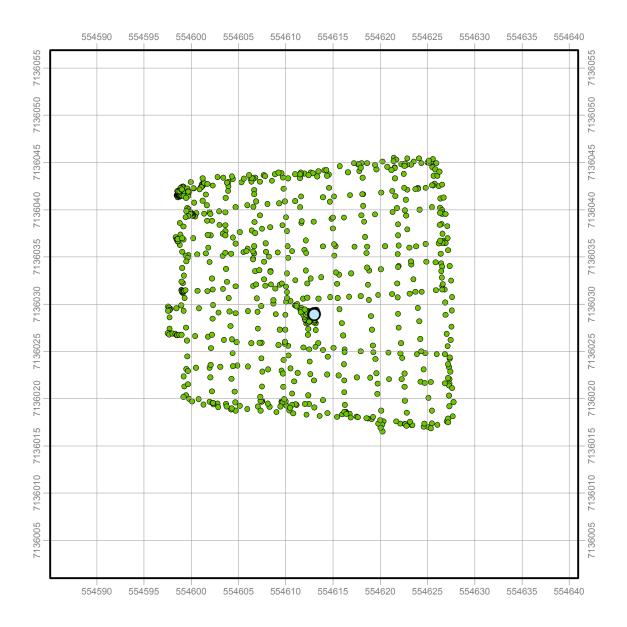
Creator: CDC
Date: 01/01/2011 Scale: 5m x 5m Grid
File: KI08F056

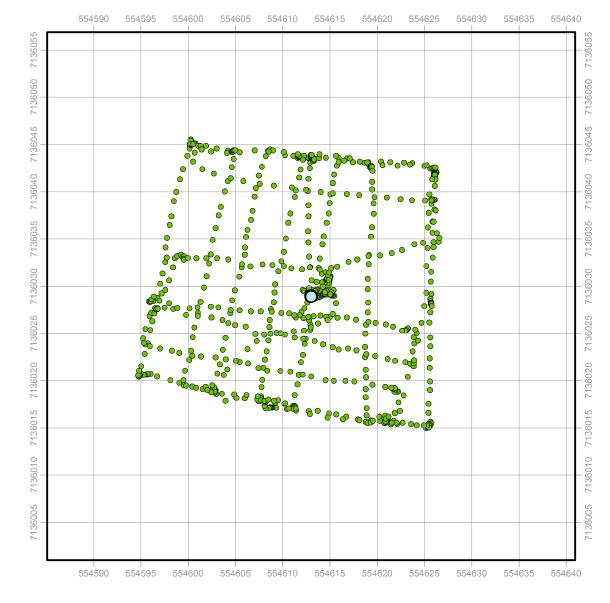
FIGURE 9.1-13 DRILL HOLE END-10-04





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-05 **Pre Gamma Survey** 

**Point Count: 868** Min-Max: 0.000 - 0.094 μSv

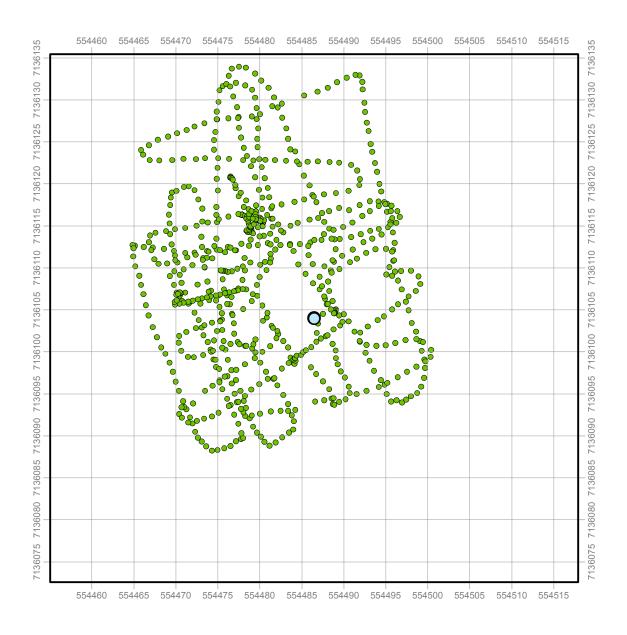
END-10-05 **Post Gamma Survey** 

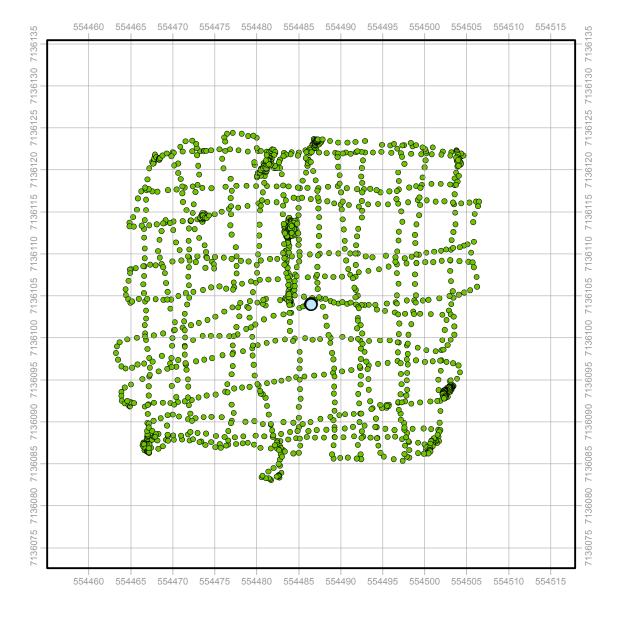
Point Count: 864 Min-Max: 0.000 - 0.086 μSv

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- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv O.6 - 1.0 μSv
- 1.0 2.5 μSv







END-10-06 **Pre Gamma Survey** 

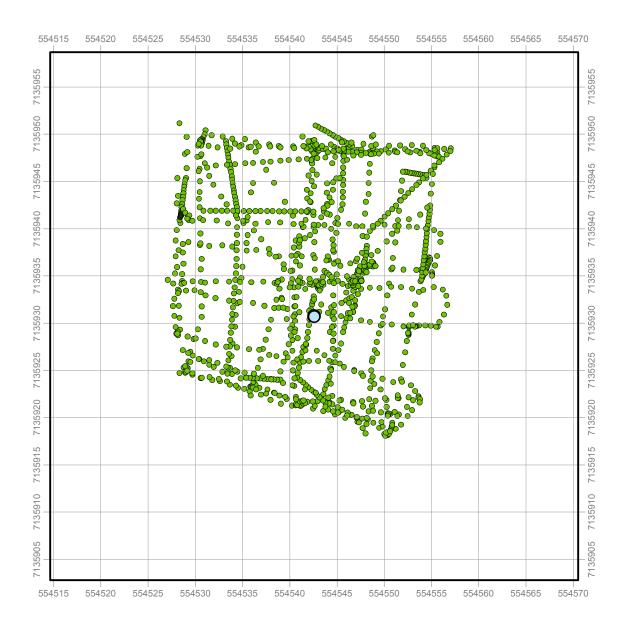
Point Count: 781 Min-Max: 0.000 - 0.047 μSv

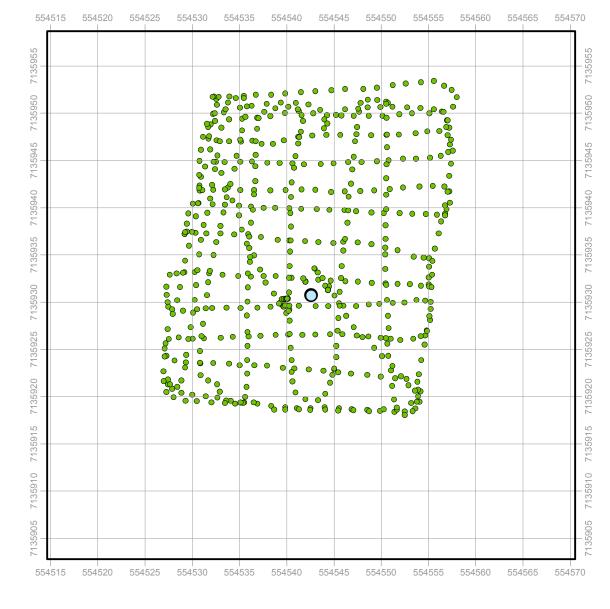
END-10-06 **Post Gamma Survey** 

Point Count: 1907 Min-Max: 0.000 - 0.066 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-07 Pre Gamma Survey

Point Count: 1134 Min-Max: 0.037 - 0.138 μSv END-10-07 Post Gamma Survey

Point Count: 595 Min-Max: 0.044 - 0.188 μSv

Projection: NAD 1983 UTM Zone 14N Creator: CDC

File: KI08F059

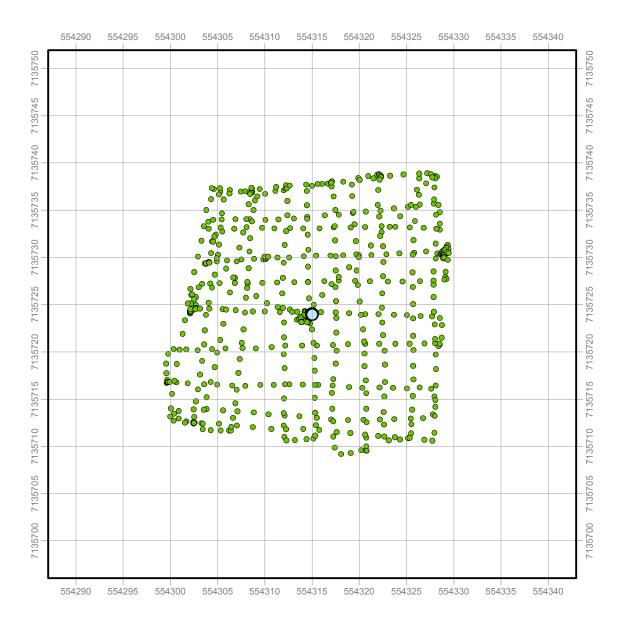
Data Sources: AREVA Resources Canada II

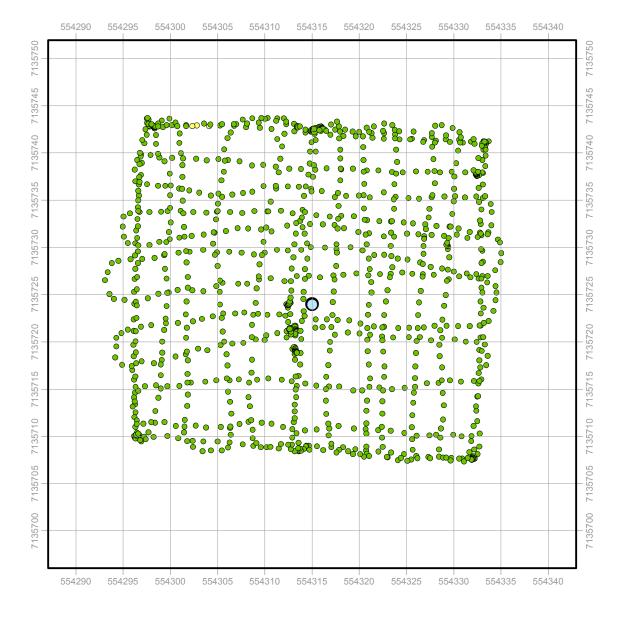
FIGURE 9.1-16
PRE AND POST GAMMA SURVEY
DRILL HOLE END-10-07





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-08 **Pre Gamma Survey** 

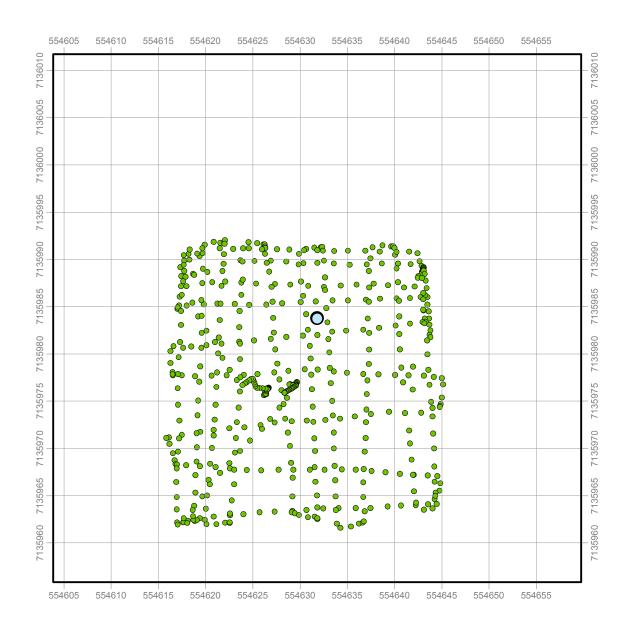
Point Count: 662 Min-Max: 0.073 - 0.108 μSv

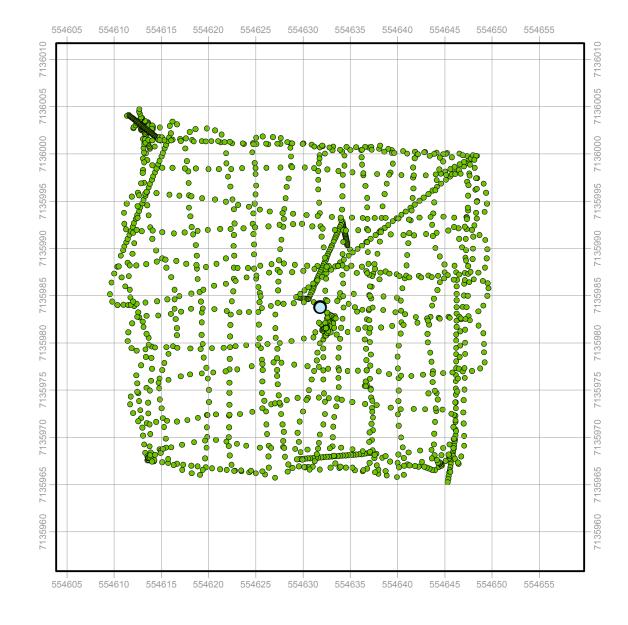
END-10-08 **Post Gamma Survey** 

Point Count: 1175 Min-Max: 0.000 - 0.335 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





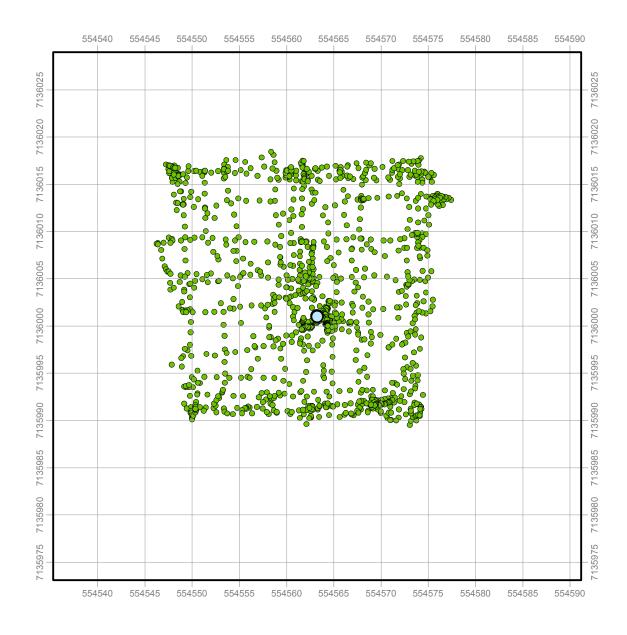
END-10-09 Pre Gamma Survey

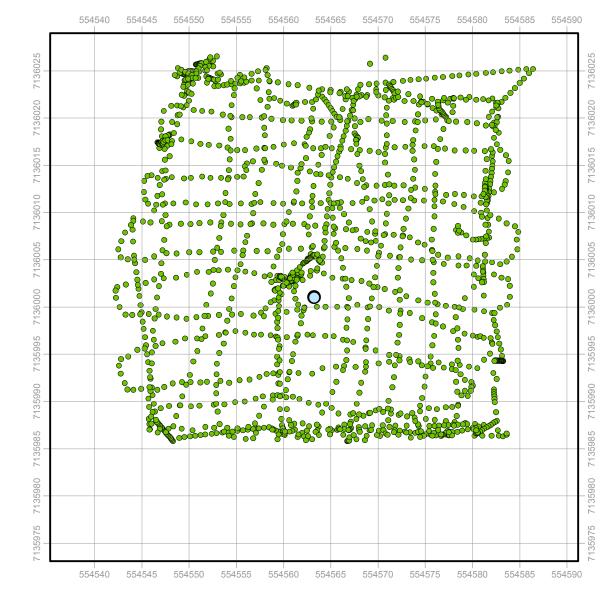
Point Count: 536 Min-Max: 0.049 - 0.089 μSv END-10-09 Post Gamma Survey

Point Count: 1473 Min-Max: 0.052 - 0.164 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-10 **Pre Gamma Survey** 

Point Count: 1266 Min-Max: 0.000 - 0.061 μSv

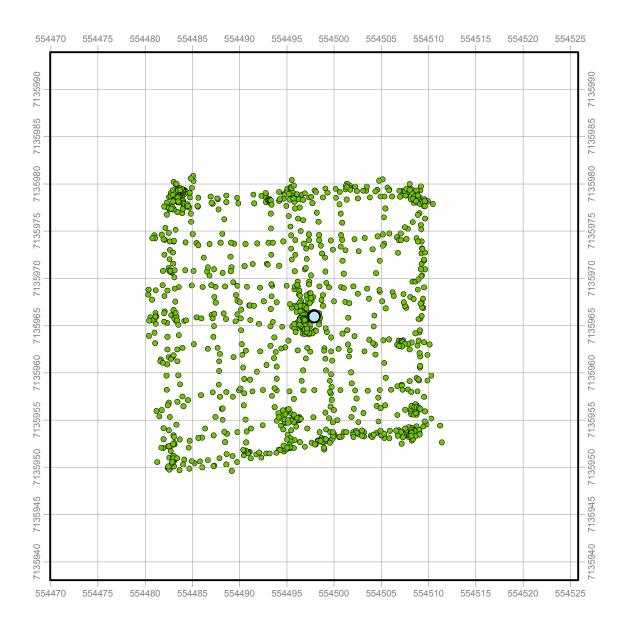
END-10-10 **Post Gamma Survey** 

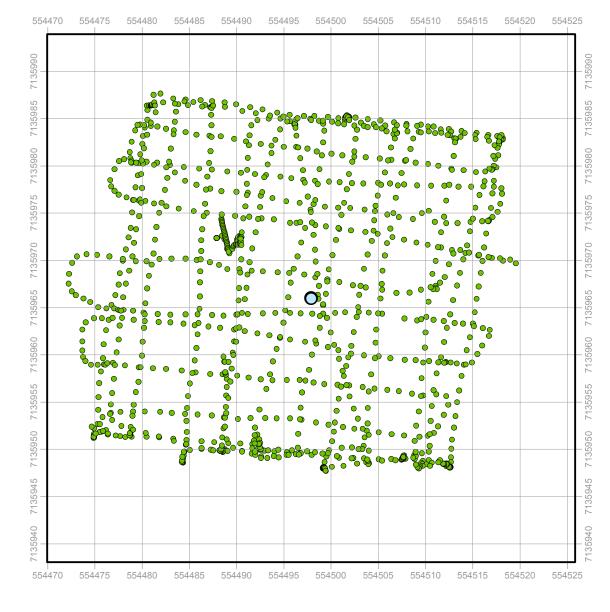
Point Count: 1644 Min-Max: 0.000 - 0.101 μSv





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





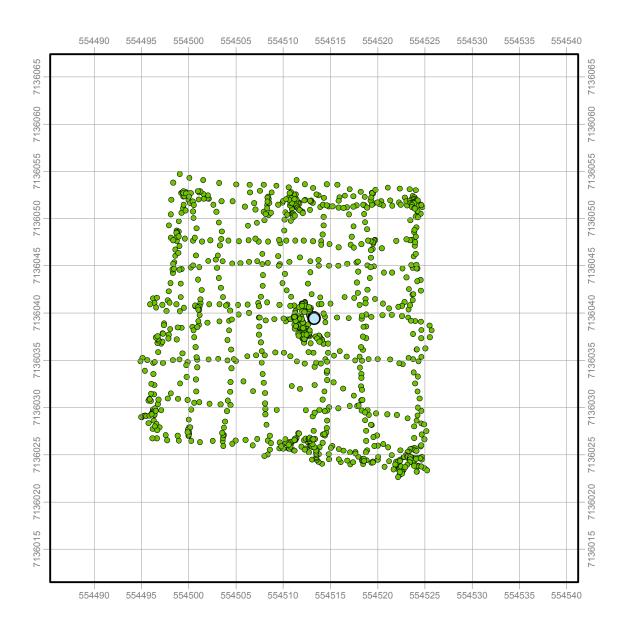
END-10-11 Pre Gamma Survey

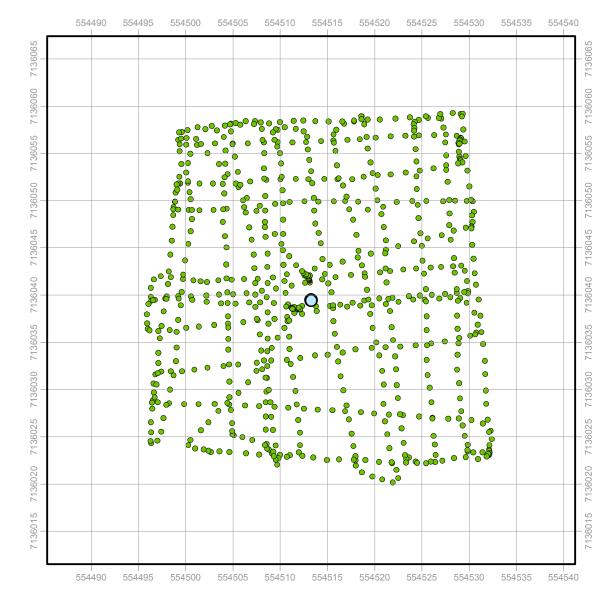
Point Count: 1110 Min-Max: 0.001 - 0.059 μSv END-10-11 Post Gamma Survey

Point Count: 1479 Min-Max: 0.001 - 0.063 μSv

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- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-12 **Pre Gamma Survey** 

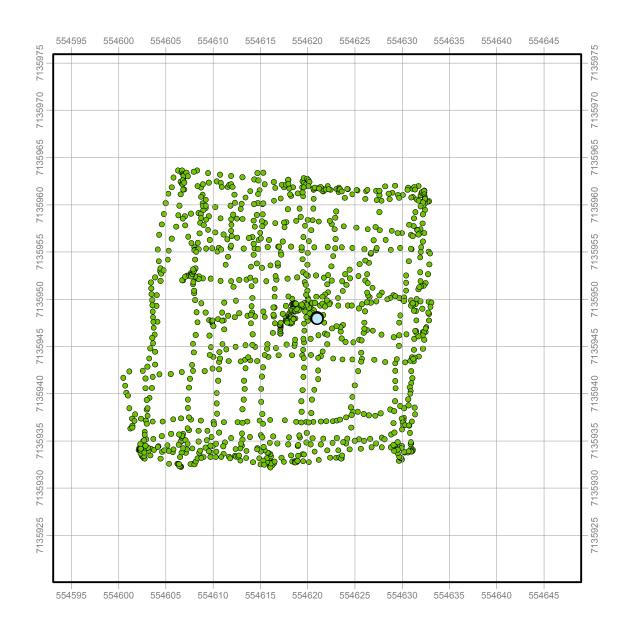
Point Count: 1037 Min-Max: 0.031 - 0.051 μSv

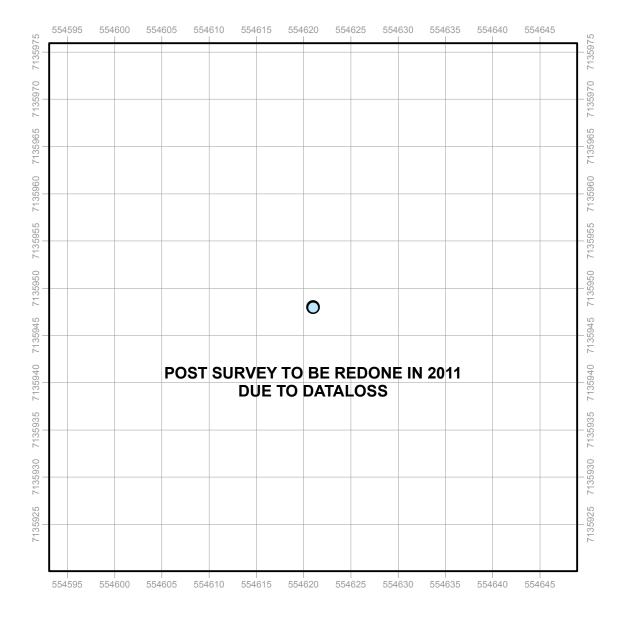
END-10-12 **Post Gamma Survey** 

Point Count: 740 Min-Max: 0.032 - 0.047 μSv

**AREVA** 

- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





END-10-13 Pre Gamma Survey

Point Count: 1206 Min-Max: 0.003 - 0.073 μSv END-10-13 Post Gamma Survey

Point Count: Min-Max:

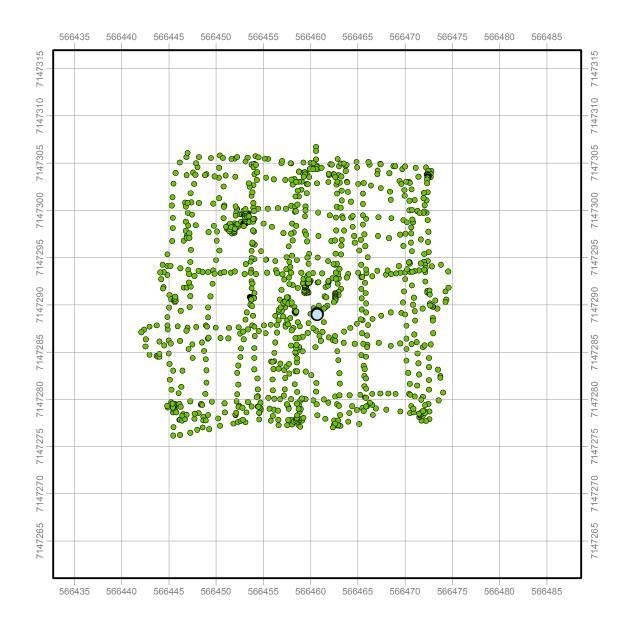


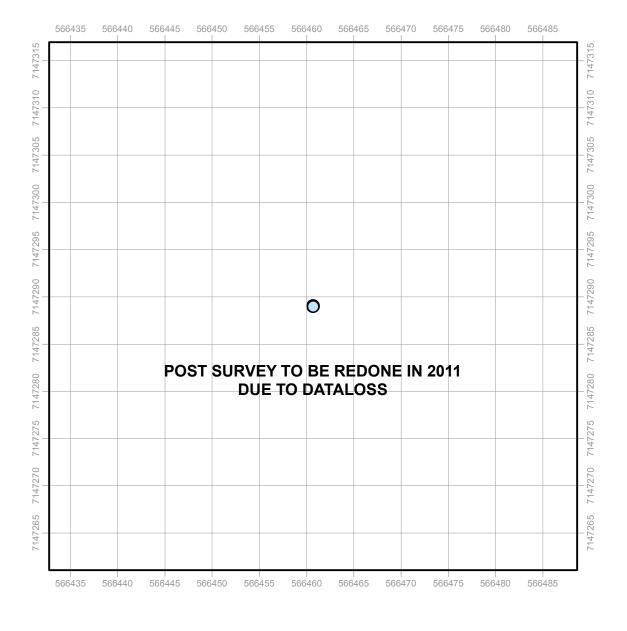
ile: KI08F065

Data Sources: AREVA Resources Canada Ir



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





EZ-10-01 **Pre Gamma Survey** 

Point Count: 1108 Min-Max: 0.000 - 0.160 μSv

EZ-10-01 **Post Gamma Survey** 

> **Point Count:** Min-Max:

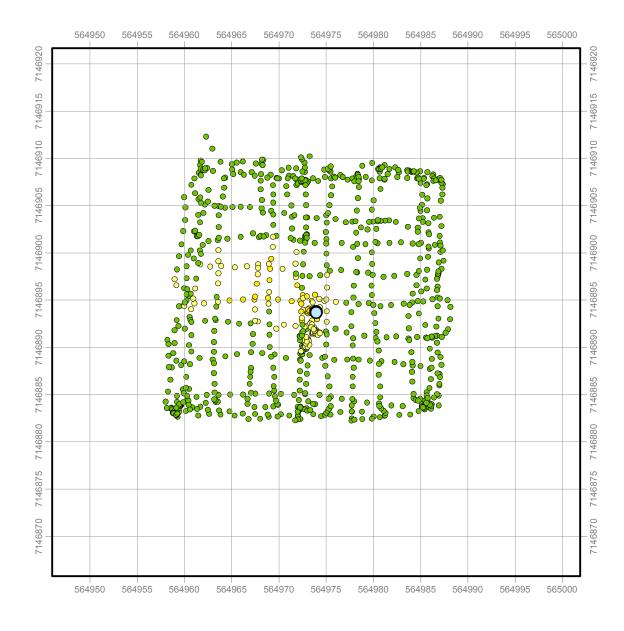
Creator: CDC
Date: 01/01/2011 Scale: 5m x 5m Grid

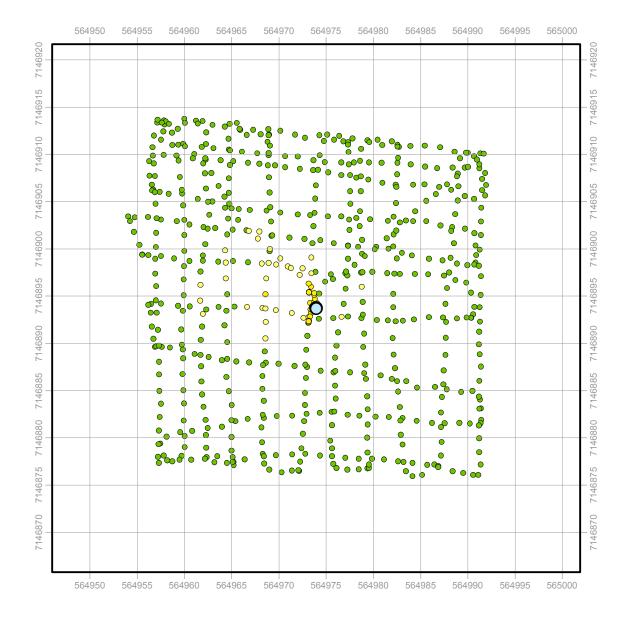
FIGURE 9.1-23





- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





MZ-10-01 **Pre Gamma Survey** 

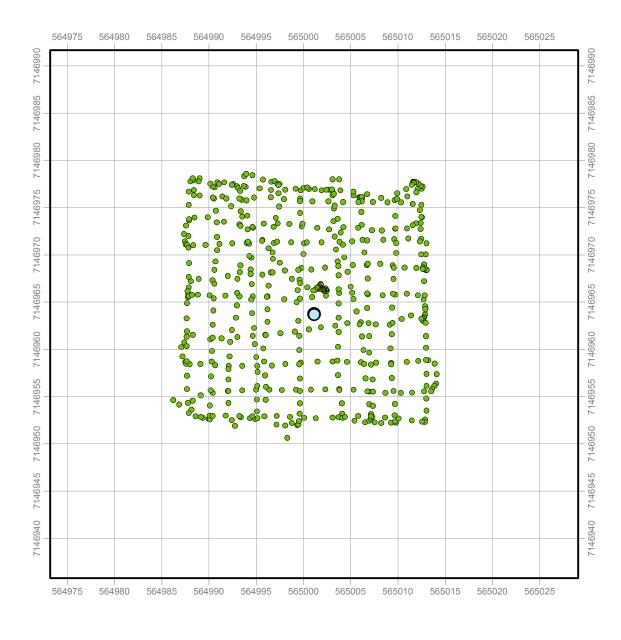
Point Count: 902 Min-Max: 0.117 - 0.938 μSv

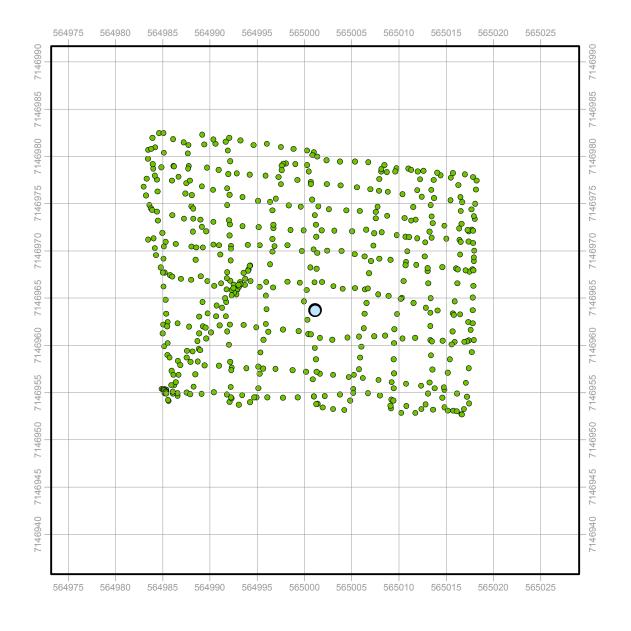
MZ-10-01 **Post Gamma Survey** 

Point Count: 1479 Min-Max: 0.000 - 0.880 μSv

**AREVA** 

- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





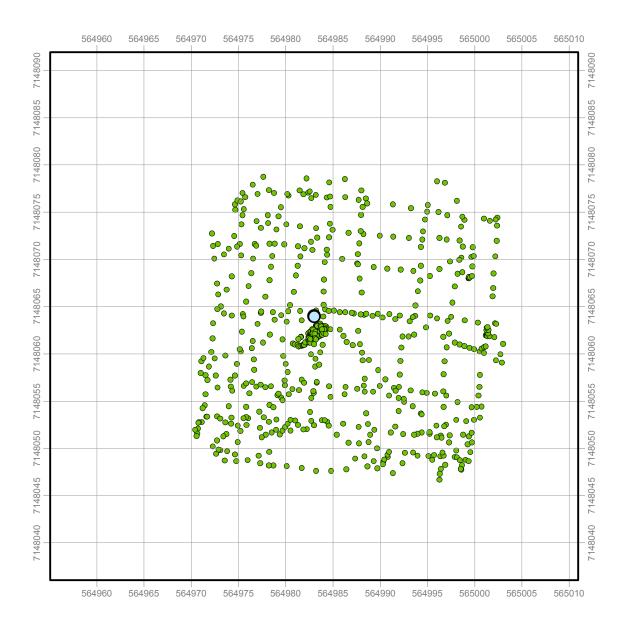
MZ-10-02 **Pre Gamma Survey** 

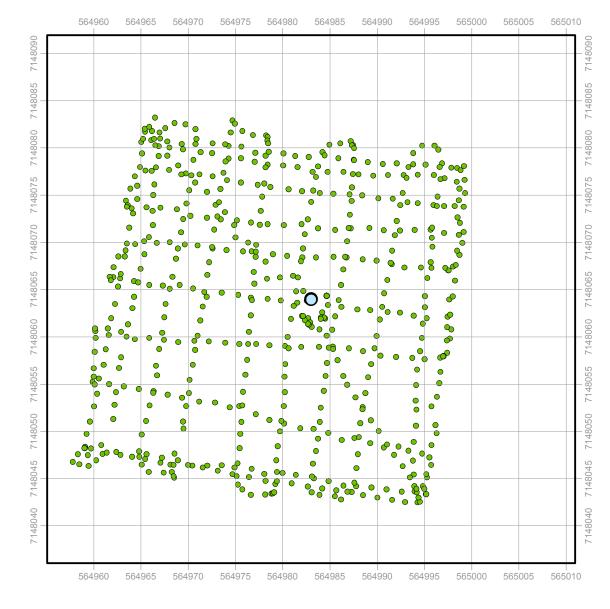
Point Count: 538 Min-Max: 0.123 - 0.292 μSv

MZ-10-02 **Post Gamma Survey** 

Point Count: 525 Min-Max: 0.000 - 0.274 μSv

- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSv
- O.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





RMI-10-01 **Pre Gamma Survey** 

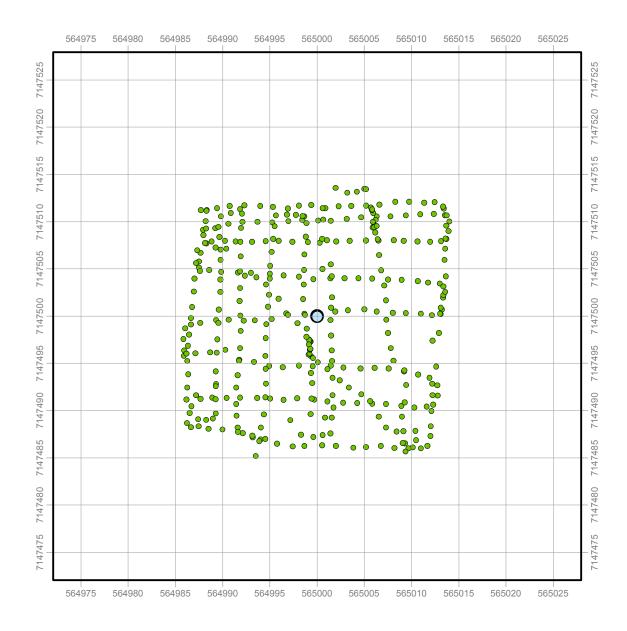
Point Count: 633 Min-Max: 0.000 - 0.118 μSv

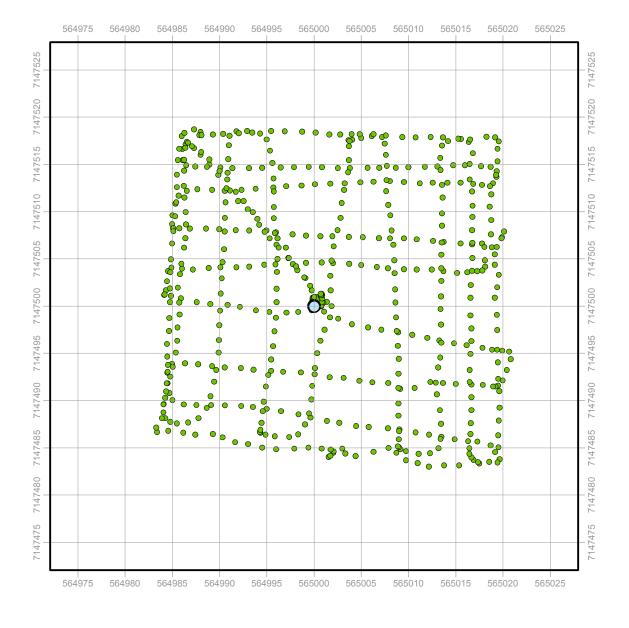
RMI-10-01 **Post Gamma Survey** 

Point Count: 618 Min-Max: 0.078 - 0.111 μSv



- O Drill Hole
- 0.0 0.3 μSv
- O.3 0.6 μSν
- 0.6 1.0 μSv
- 1.0 2.5 μSv
- > 2.5 μSv





RMI-10-02 Pre Gamma Survey

Point Count: 377 Min-Max: 0.000 - 0.096 μSv RMI-10-02 Post Gamma Survey

Point Count: 552 Min-Max: 0.078 - 0.097 μSv

Creator: CDC
Date: 01/01/2011 Scale: 5m x 5m Grid

Date: 01/01/2011 Scale: 5m x 5 iile: KI08F070

Data Sources: AREVA Resources Cana

FIGURE 9.1-27
PRE AND POST GAMMA SURVEY
DRILL HOLE RMI-10-02

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#### 10 CANADA WIDE STANDARDS

Efforts are being made to meet the Canada-Wide Standard (CWS) for Dioxins and Furans and the CWS for Mercury include the development and implementation of a Waste Management Plan involving waste inventorying, diversion and sorting prior to incineration. Only allowable materials are incinerated, including paper, food and packaging waste, non-treated wood and solid sewage waste. The potential impact of wastes on emissions is considered in the development of waste management procedures.

# 11 COMPLIANCE WITH CONDITIONS

The following sections list the conditions of the Nunavut Impact Review Board (NIRB) Screening Decision, the Indian and Northern Affairs Canada (INAC) Land Use Permit, the Kivalliq Inuit Association (KIA) Land Use Licence and the Nunavut Water Board (NWB) Water Licence for the Kiggavik Project and also describe the means by which the Project has achieved compliance with these conditions.

# 11.1 Nunavut Impact Review Board File No. 06AN085

On March 26, 2008 NIRB re-issued the original terms and conditions (April 3, 2007 Screening Decision) along with the additional terms and conditions outlined in the August 30, 2007 letter.

# 11.1.1 Original NIRB Screening Decision – April 3, 2007

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |
|---|--|
| INAC imposed mitigation measures, conditions and monitoring requirements pursuant to the Federal Land Use Permit  | Refer to Section 11.2 INAC Conditions of Land Use Permit   |
| INAC conducted land use inspections (pursuant to the Federal Land Use Permit) focused on ensuring compliance with DIAND Caribou Protection Measures   | Occur throughout field season, followed by an Inspection Report, AREVA strives to promptly follow-up on all recommendations/concerns/deficiencies.  Please refer to section 8 of this report for inspection details. |
| KIA imposed mitigation measures and/or<br>Environment Terms and Conditions<br>pursuant to the IOL License   | Refer to Section 11.3 KIA Land Use Licence   |
| Additional work (related to INAC or KIA land applications) outside the original scope of the project proposal requires screening by NIRB; NIRB recommends any renewal request to be forwarded to them | Continual communication efforts are made with all regulatory agencies and boards   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| GN – DOE CO's should conduct random inspections of the location from May to August to monitor compliance with DIAND Caribou Protection Measures  | No AREVA action required.  |
| GN-DOE should conduct on-going review of wildlife monitoring results as required by WMMP   | A monthly wildlife report was submitted to GN-DOE.   |
| After receiving the annual report, GN-DOE should report to NIRB and INAC its findings regarding the possible impact of the Project on the Beverly and Ahiak caribou herds  | No AREVA action required.  |
| INAC permit and KIA licence subject to any findings, direction or advice received from GN-DOE as result of 2007 GN/GNWT population surveys.  | No AREVA action required.  |
| AREVA to maintain a copy of Screening Decision at site   | Located in site office and kitchen   |
| AREVA is to forward copies to NIRB of all permits obtained and required for the Project  | Noted  |
| AREVA shall operate in accordance with commitments made in all the Operation Plans (namely Spill Contingency, Abandonment and Restoration, Noise Abatement, Waste Management, Wildlife Mitigation and Monitoring, Radiation Safety and the Environmental Code of Practice) | AREVA is committed to achieving compliance as part of AREVA's commitment to continuous improvement. Operational Plans are reviewed at least once per year and revised as necessary. All revisions to Operational Plans are submitted with this annual report. As part of obtaining and maintaining ISO 14001 certification external auditors ensure compliance with all permits, licences and other commitments. |
| AREVA to operate in accordance with proponent commitments stated in  | Refer to Section 11.1.2 Summary of   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| Appendix A (see 11.1.2 below)  | Proponent Commitments  |
| AREVA to submit annual report to NIRB, INAC, KIA and GN-DOE by 31 January each year  | Completed. Annual Reports have been submitted for 2007, 2008, 2009 and 2010  |
| Shall abide by DIAND Caribou Protection Measures (see 11.1.4) and those mitigation measures outlined in the WMMP.  | This is ongoing throughout the field season with proper work instructions and employee/contractor training and awareness. This is monitored by ERP staff and independent wildlife monitors. Refer to Section 11.1.4  |
| Prohibited to allow aircraft to take-off or land if groups of caribou are within 1 km of the airstrip or helipad.  | Addressed in the Wildlife Mitigation and Monitoring Plan; pilots receive training and awareness; verified by an independent wildlife monitor. Refer to Section 3.6 for more information.   |
| Update WMMP to include "Section 2.1 During June and July – To avoid injuries to caribou and humans, if one or more caribou approach within 1 km of drilling operations, then activities will be suspended until caribou leave the area." Any direction from GN-DOE or KIA regarding caribou management plan must be forwarded to NIRB. | Revised conditions established in previous Wildlife Mitigation and Monitoring Plan. GNDOE believes that 50 caribou is an appropriate threshold for the suspension of activities (December 16, 2008 letter to NIRB regarding INAC and KIA land use permit extension request). Monitoring program (including independent Inuit wildlife monitors) help to guide this protection measure. |
| Ensure no hunting or fishing without proper Nunavut authorizations   | Employees and contractors made aware of required authorization during orientation and through on-going awareness.  |
| Compliance with the CWS for Dioxins and Furans, and the CWS for Mercury. Efforts to achieve compliance reported in annual report.  | In compliance, please refer to section 10 of this report.  |
| Adherence to conditions in Appendix B  | Refer to Section 11.1.3; hiring of an  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |
|--|---|
| Archaeological and Palaeontological<br>Resources – Terms and Conditions for<br>Land Use Permit Holders (see 11.1.3<br>below) | independent consultant to conduct heritage surveys and investigations   |
| Shall avoid known archaeological and/or palaeontological sites   | Record of known sites is kept updated and sites are avoided or handled appropriately by consultants and responsible authorities |

# 11.1.2 Appendix A: Summary of Proponent Commitments

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |
|---|--|
| Disturbance to permafrost mitigated through insulating floors of buildings, keeping sump and incinerator area small and raising incinerator above ground  | In compliance through proper site planning   |
| Use walkways to minimize soil and vegetation disturbance  | Walkways are present between all buildings at the camp and geology areas. All staff use walkways as much as possible; addressed through training and awareness       |
| Avoid wildlife during flights and avoid low flying to minimize impact of helicopter and airplane noise and presence   | Ongoing through the implementation of the Wildlife Mitigation and Monitoring Plan; proper training and awareness to all site employees/contractors. Refer to Section |
| Carefully monitor wildlife presence and collect daily wildlife sighting records. Information reported to management boards and regulatory authorities and used to plan work that minimizes wildlife disturbance | 3.6 for more information.  |
| Use protective procedures and containments to protect water quality   | Ongoing through the implementation of the Spill Contingency Plan   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| Grey water treated and monitored to ensure containment   | Previously grey water was being placed in a natural depression; metal screen collected solids in discharge and this material was collected and incinerated. During the start-up of the 2010 field season a grease trap was installed however food particles were still getting through and grease trap was not working as efficiently as it should. AREVA will ensure proper installation of a food particulate removal device and will work closely with catering staff to ensure both the grease trap and food particulate removal system are properly maintained. |
| No garbage to remain on site   | Ongoing through the implementation of the Waste Management Plan  |
| Camp to be decommissioned when no longer in use  | This is addressed in the Abandonment and Restoration Plan  |
| No fuel, drill cuttings, chemicals, wastes or sediment will be deposited into any water body as per the <i>Fisheries Act</i> , <i>S</i> 36(3).   | Ongoing through the implemented of the Waste Management Plan and the Spill Contingency Plan; proper training and awareness provided to all site employees/contractors.   |
| Sumps located above the high water mark of any water body to prevent contents from entering water body frequented by fish  | Addressed through site planning  |
| Drilling additives or mud not to be used in connection with holes drilled through lake ice unless re-circulated or contained such that they do not enter the water or are demonstrated to be non-toxic | On ice drilling has not been conducted to date. If such activities take place in the future all proper methods will be applied in order to ensure drilling additives and muds do not enter the water. AREVA uses nontoxic materials wherever possible.   |
| Land-based drilling not to occur within 30m  | In Compliance and ongoing through the implementation of the Environmental Code   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| of the high water mark   | of Practice; proper training and awareness provided; regular inspections of drill sites performed by environment group. Any drilling within 30 m of the highwater mark will be under an approved licence amendment with applicable protection and mitigation measures in place to the satisfaction of the NWB and DFO. |
| Material will not be stored on the surface ice of lakes or streams. Materials on ice surface must be for immediate use.  | Any materials on ice surface are for immediate use and completely removed before the melting of the ice.   |
| If artesian flow is encountered, the drill hole will be immediately plugged and permanently sealed.  | Refer to section 12 for information regarding all artesians encountered during the 2010 field season.  |
| Winter road travel will not begin until the ground is sufficiently frozen to provide support and to avoid surface damage and rutting                                   | In compliance and ongoing. This is done by following the Environmental Code of Practice; proper training and awareness provided  |
| Locate winter road stream crossings that will minimize grades. Avoid bank disturbance and mechanized clearing immediately adjacent to any watercourse.                 | Committed to conduct when required and achievable  |
| Winter road lake and stream crossings to be constructed entirely of ice and snow materials and stream crossings are to be removed or notched prior to spring break-up. | Committed to conduct when required and achievable  |

# 11.1.3 Appendix B: Archaeological and Palaeontological Resources

Terms and Conditions for Land Use Permit Holders (Also attached to INAC permit).

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
|  |  |
| AREVA shall not operate any vehicle over a known or suspected archaeological or palaeontological site  | In compliance; use of ATV's only permitted around camp and for limited activities; addressed through proper training and awareness; included in site orientation           |
| AREVA shall not remove, disturb, or displace any archaeological artifact or site, or any fossil or palaeontological site   | Site rule that is reinforced during orientation.   |
| AREVA will immediately contact the Dept. of Culture, Language, Elders and Youth (CLEY) should an archaeological site or specimen, or a palaeontological site or fossil be encountered or disturbed by a land use activity. | AREVA strives to promptly contact CLEY should any site or specimen be encountered or disturbed   |
| AREVA will cease any activity that disturbs an archaeological or palaeontological site until permitted to proceed by CLEY  | In compliance through proper training and awareness; included in site orientation  |
| AREVA will follow CLEY and DIAND direction in restoring disturbed sites if required  | AREVA strives to promptly follow-up on all recommendations/concerns  |
| AREVA will provide CLEY with requested information on sites encountered in the course of land use  | Any information requested on sites encountered will continue be provided to CLEY   |
| AREVA will make best efforts to ensure all those working under a permit are aware of conditions concerning archaeological or palaeontological sites  | Training and awareness of archaeological and palaeontological protocol is included in site orientation. Copies of all permits and licences are kept on site for reference. |
| AREVA shall avoid known archaeological or palaeontological sites   | Record of known sites is kept updated and avoided or handled by consultants on the advice/recommendations of responsible   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |
|--|---|
|  | authorities   |
| AREVA shall have an archaeologist or palaeontologist perform those functions required and permitted by CLEY. | In compliance; hiring of an independent consultant to conduct heritage surveys and investigations |

# 11.1.4 DIAND Caribou Protection Measures

Note that these conditions are also included in the INAC and KIA permits.

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| CARIBOU PROTECTION AREAS   |  |
| No activity, without approval of Land Use Inspector, between May 15 and July 15 within the Caribou Protection Areas  | AREVA does not conduct any activity within the designated Caribou Protection Areas.  |
| When caribou cows approach area of operation within the Caribou Protection Areas all personal not required for maintenance and protection of camp and equipment must leave the area.                   |  |
| Activities within the Caribou Protection Areas occurring between May and July may be permitted by the Land Use Inspector if caribou cows are not expected to use the area for calving or post-calving. |  |
| CARIBOU PROTECTION – GENERAL   |  |
| Operations will be suspended within any area occupied by cows and calves between May 15 and July 15 in the event caribou cows calve outside the designated Caribou Protection Areas.                   | These requirements are included in the Wildlife Monitoring and Mitigation Plan. Employees are made aware of these commitments and they are monitored by ERP staff and independent Wildlife Monitors. See Section 3.6 for further |

|  | ,  |  |
|--|--|--|
| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |  |
| The following operations will be suspended in the presence of caribou cows and calves:  o blasting o overflights at <300m above ground o snowmobile and ATV use outside vicinity of camp  CARIBOU PROTECTION - MIGRATION | information.   |  |
|  |  |  |
| No operation will block or cause diversion to migration  | Ongoing through the implementation of the Wildlife Mitigation and Monitoring Plan; proper training and awareness provided to   |  |
| All activities that may interfere with migration will cease during migration   | all site employees/contractors   |  |
| CARIBOU CROSSING   |  |  |
| No camp construction, caching of fuel or<br>blasting will occur within 10 km of a<br>Designated Caribou Crossing between<br>May 15 and September 1   | Ongoing through the implementation of the Wildlife Mitigation and Monitoring Plan; proper training and awareness provided to all site employees/contractors                        |  |
| No diamond drilling operations within 5km of a Designated Caribou Crossing between May 15 and September 1  |  |  |
| ADDITIONAL   | <u>I</u>   |  |
| Concentrations of caribou should be avoided by low level aircraft at all times   | Ongoing through the implementation of the Wildlife Mitigation and Monitoring Plan; proper training and awareness provided to all pilots. Refer to Section 3.6 for more information |  |

#### 11.1.5 Additional NIRB Terms and Conditions

Terms and conditions contained in August 30, 2007 letter:

#### RECOMMENDATION/CONDITION

#### **COMPLIANCE ACTION**

#### SPILL CONTINGENCY PLAN

AREVA to consult and implement recommendations found in the 2003 CCME guidance document PN 1326 entitled "Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Product and Allied Petroleum Products"

AREVA to revise Spill Contingency Plan regarding this amendment and conduct personnel re-training as per revised Spill Contingency Plan. AREVA to submit revised plan to NIRB and other regulators within 30 days of this decision

Revisions to include: quantity of the proposed double-walled tanks and the site layout plan; design considerations for safe operation and maintenance; operation, maintenance and inspection procedures and an emergency response plan.

The site layout and tanks have been designed by a consulting professional engineer and have been installed by a registered company/petroleum contractor to ensure compliance with the Canadian Council of Ministers of the Environment (CCME) Environmental Code of Practice Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003. In 2007 Golder Associates (Golder) conducted an engineering assessment to identify potential issues with the installation of storage tanks. Recommendations were provided for the foundation support for the storage tanks. To mitigate the potential issues described in the report, Golder recommended that the tanks be placed on timbers located under each saddle to provide an increased bearing area.

The use of timbers is a deviation from the CCME COP, however it should be noted that this is common practice in the area and AREVA received permission from the area Fire Marshal, Tim Hinds with the Government of Nunavut-Community and Government Services via email (Trevor Carlson, AREVA) on November 20<sup>th</sup>, 2007.

All necessary changes and appropriate training requirements have been made in both the Project's Spill Contingency Plan and the Emergency Response Manual.

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |
|---|--|
| RESONMENDATION CONDITION  | COMILIANCE ACTION  |
| Secondary containment or surface liner with adequate size and volume utilized during all fuel or hazardous substance transfers  | In compliance and ongoing through the implementation of the Spill Contingency Plan and the Environmental Code of Practice                            |
| Sufficient absorbent materials and spill kits during fuel transportation, storage and transfers are provided  | In compliance and ongoing through the implementation of the Spill Contingency Plan   |
| DRILLING AND DISPOSAL OF RADIOACTI  | VE SUBSTANCES  |
| Use of biodegradable and non-toxic additives (Canadian Environmental Protection Act lists CaCl2 as a toxic substance)   | Committed to minimize the use of CaCl <sub>2</sub> when drilling conditions allow  |
| Drill holes that encounter uranium mineralization with a content >1.0% over a length of >1m with a metre-percent concentration greater than 5% should be sealed by cementing over the entire mineralization zone; this should be at least 10 metres above and below each mineralization zone. | Committed to conduct when required and achievable as per Uranium Exploration Plan  |
| All land-based artesian holes shall be documented, plugged and sealed with grout.   | Refer to section 12 for information regarding all artesians encountered during the 2010 field season.  |
| Core storage areas should be located at least 100 metres from the high waterline of all water bodies.   | Ongoing through the implementation of the Radiation Protection Program and appropriate site planning   |
| PHYSICAL ENVIRONMENT  |  |
| No movement of equipment or vehicles unless the ground is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel  | Ongoing throughout field season. Importance communicated to employees and contractors during orientation and on- going awareness. ATV and snowmobile |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |
|---|---|
| suspended if rutting occurs   | use is strictly controlled                                |
| Additional camp facilities to be located on gravel, sand or other durable land  | Is in compliance and is ongoing through site planning     |
| New sleeping units properly designed to prevent any degradation to permafrost   |   |
| Final inspections of entire site to be conducted by proponent and lead agency to ensure all areas have been reclaimed in accordance with authorizations | This is addressed in the Abandonment and Restoration Plan |

# 11.2 Indian and Northern Affairs Conditions of Land Use Permit

The following table lists terms and conditions appended to INAC Land Use Permit N2009C0017 (Received January 21, 2010; permit extended to April 9, 2012).

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |
|--|--|
| Shall remove all scrap metal, machinery parts, barrels and kegs, building and building materials | Development of a Waste Management Plan and a Abandonment and Restoration Plan to address these issues; efforts are being made to identify local approved handling facilities |
| Shall notify a Land Use Inspector at least 10 days prior to backfilling any sump.                | Noted. Has not been required to date.  |
| Shall use a forced-air fuel-fired incinerator to incinerate all combustible garbage and debris.  | All combustible garbage is burned in a single chamber, forced-air fuel-fired incinerator.  |
| a) place all excavated material over the sump area   | Noted. There are no sumps constructed at site at this time.  |
| b) overlap the replaced material a minimum of two (2) metres beyond the                          |  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |
|---|---|
| edges of the existing sump wall   |   |
| a) where flowing water from bore holes is encountered, plug the borehole in such a manner as to permanently prevent any further outflow of water.                             | Refer to section 12 for information regarding all artesians encountered during the 2010 field season  |
| b) The artesian occurrence shall be reported to the Engineer within forty-eight (48) hours.   |   |
| Shall prepare the site in such a manner as to prevent rutting of the ground surface   | Walkways around camp prevent rutting and ground disturbance. As well an ATV is used around camp however it's use is not permitted when ground it soft. The area is inspected regularly by the ERP Group |
| Shall dispose of all fluids used to wash machinery and equipment in a sump unless otherwise authorized in writing by a Land Use Inspector                                     | Noted.  |
| Prior to the discharge of any sump, shall carry out an analysis of the fluids in a manner prescribed by the Engineer and obtain his written approval to discharge.            | Noted and will be implemented should a sump ever be constructed.  |
| Shall not conduct land use operation on any lands not designated in accepted application  | Plans are made for activity only on approved leases   |
| Locate all camps on durable land  | Camp location has been inspected and approved by regulatory agencies  |
| Advise a Land Use Inspector at least 10 days prior to completion of land use operation (1. removal or storage of equipment and materials or 2. final clean-up and restoration | Seasonal shutdown management has been reviewed with regulatory agencies   |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |
|---|---|
| of the lands use will be completed)   |   |
| Shall complete all clean-up and restoration of lands prior to expiry date of permit | Development of a Seasonal and Final Abandonment and Restoration Plan  |
| Only allow the use of equipment that is listed in the accepted application          | AREVA abides by this and has made amendment requests seeking approval for additional equipment prior to its purchase/arrival on site  |
| Burn all combustible garbage in a acceptable container                              | An approved incinerator is used for burning   |
| Keep all garbage and debris in a covered metal container until disposal.            | All garbage is contained until incinerated  |
| Not locate any sump within 31 meters of normal high water mark                      | Addressed through site planning   |
| Backfill and restore all sumps prior to expiry date of permit                       | Addressed in Abandonment and Restoration Plan   |
| Housekeeping  | Addressed through formal daily site inspections conducted by ERP group  |
| Not use unapproved chemicals  | Comply with list provided in application  |
| Deposit all sewage in sump  | Received verbal approval from inspector to incinerate solid sewage waste and discharge liquid waste with grey water   |
| Not to allow the spreading of drilling waste on surrounding lands                   | All non-radioactive drill waste is contained to a low-lying depression. All radioactive drill waste is disposed of down hole when achievable or collected and stored in long-term on-site storage facility. |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |
|---|---|
| Burn all garbage at least daily   | On going throughout field season  |
| Remove all non-combustible garbage and debris from land use area to a disposal site approved in writing by a Land Use Inspector | Currently being separated and stored for future removal off-site; some items are being backhauled off-site  |
| Report all spills immediately   | Development and implementation of a Spill Contingency Plan; training and awareness. There were no reportable spills during the 2010 field season. |
| Shall not unnecessarily damage wildlife habitat   | Development and implementation of the Environmental Code of practice and the Wildlife Mitigation and Monitoring Plan; training and awareness      |
| Shall not feed the wildlife   | Implementation of the Wildlife Monitoring and Mitigation Plan; Communicated as site rule during orientation, training and awareness               |
| Provide in writing the location of all fuel caches within 10 days of establishment  | Completed and AREVA will continue to communicate any fuel cache locations   |
| Fuel storage must be a minimum of 30 meters from normal high water mark   | Instructed through Environmental Management Plans and adhered to through site planning  |
| Shall not allow petroleum products to spread to surrounding lands or into water bodies  | Ongoing through the implementation of the Spill Contingency Plan  |
| Mark all fuel containers with Permittee's name  | Is occurring  |
| Display land use permit number on all vehicles and equipment  | These are displayed on both the ATV and the stand-up forklift   |
| Dispose and seal drill mud solids or cuttings with uranium concentration >0.05% down  | Radiologically contaminated material is collected in bags and stored in long  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |
|---|---|
| hole  | term storage facility on site. All drill holes are permanently sealed.                                      |
| Seal by grouting entire mineralization zone and greater than 10 meters both above and below each mineralization zone, any drill hole that encounters mineralization with a uranium content greater than 1.0% over a length of >1 meter, and with a meter-percent concentration >5.0 | Committed to conduct when required  |
| Seal by cementing, all drill holes by grouting to an appropriate depth from the surface such that surface waters are prevented from interacting with ground waters  | All drill holes are cemented and grouted as required.   |
| Conduct radiometric surveys following backfilling of site. If material exceeds background radiation levels the Land Use Inspector must review and approve handling procedures.  | Conducted upon completion of hole. Refer to section 9 for further information                               |
| Ensure gamma radiation levels of core storage meet the decommissioning requirements of less than 1.0 $\mu$ Sv one meter from surface, not to exceed 2.5 $\mu$ Sv. If core exceeds identified levels the Land Use Inspector must review and approve handling procedures.             | Conducted as part of routine monitoring schedule  |
| Convert instruments to measure radiation counts per second to µSv/h   | Automess has a readout in μSv/h. Conversion is known for other instruments used to measure gamma radiation. |

# 11.3 Kivalliq Inuit Association Land Use Licence

The following table lists terms and conditions appended to KIA Land Use Licence KVL306C02 (received 3 April, 2007; expiry January 2012).

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |  |  |
|---|---|--|--|
| LICENCE TERMS AND CONDITIONS  |   |  |  |
| Compliance with all applicable regulations, laws, orders and with terms of licence. Provide KIA with written notices of noncompliance.  | AREVA strives to comply with all regulations, laws, orders and with terms of licence. Written notices are and will continue to be provided to KIA should a non-compliance occur |  |  |
| Obtain and maintain such licences, permits or approvals from the federal, territorial or other governing bodies as may be necessary to enable the Licensee to undertake the permitted activities on the lands | AREVA will obtain all required authorizations   |  |  |
| Permit KIA reasonable access to site for purpose of inspecting  | Ongoing. KIA conducted an inspection of the Kiggavik Project on September 19, 2010.   |  |  |
| All fees required under licence due on the first of each month. AREVA responsible for reasonable costs of inspections KIA deems necessary to monitor compliance.  | AREVA has provided all formally requested fees  |  |  |
| Obtain and maintain appropriate insurance at all times during occupation. Proof of all insurance shall be provided  | Ongoing   |  |  |
| AREVA is required to pay the applicable license fees if operations cease and environmental remediation reclamation occurs   | Condition is recognized by AREVA  |  |  |
| Any damage or injury to lands or property caused by licensee will be repaired, rebuilt,   | This is addressed in the Abandonment and  |  |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |  |
|--|---|--|
|  |   |  |
| replaced and restored to the satisfaction of KIA.  | Restoration Plan  |  |
| Submit a Work Plan (proposed operation for upcoming year) and an Environmental Action Plan (reclamation and remediation plans) to KIA no later than September 30 <sup>th</sup> each year | Obtained written agreement from KIA allowing all revised Plans to be submitted with the Annual Report in January of each year.                      |  |
| SCHEDULE A: GENERAL STANDARDS  |   |  |
| No operations on lands not covered by approved licence   | In compliance and ongoing   |  |
| Contact KIA at least 48 hours prior to commencement of licensed activities   | Ongoing. KIA will be notified prior to the start of each field season   |  |
| Keep all computable garbage and debris in<br>a covered metal container; combustible<br>garbage burned in a suitable container;<br>non-combustible removed to approved<br>locations       | Ongoing by implementing the Waste Management Plan; includes the proper sorting and storage of garbage; non-combustible garbage back-hauled off-site |  |
| Sewage deposited into a sump or removed from lands   | Received verbal approval from inspector to incinerate solid sewage waste and discharge liquid waste with grey water                                 |  |
| No metal wastes buried without consent of the KIA  | In compliance through the implementation of the Waste Management Plan; proper training and awareness; proper sorting and storage                    |  |
| Locate all camps on gravel, sand or other durable land. No permanent structures erected without KIA consent.   | Addressed in site plans; all permanent structures have approval of KIA  |  |
| Housekeeping – keep lands free of garbage and debris   | Addressed through formal daily site inspections conducted by ERP group. Expectations are reviewed during site                                       |  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |  |
|---|---|--|
|   | orientation.  |  |
| All man-bear interactions reported to nearest Renewable Resources Office  | In 2007 a man-bear interaction occurred and was reported. AREVA will continue to comply if such interactions were to occur.           |  |
| Licence available for viewing in a conspicuous place on site  | In compliance. All site staff are made aware of its location in the camp office and kitchen   |  |
| Within 60 days of licence expiry AREVA to provide KIA with final plan showing all areas used in operations  | Condition noted and will be complied with upon expiry of approvals  |  |
| All buildings, equipment and materials removed (unless otherwise authorized) at completion of operations or licence termination.                        | This is addressed in the Abandonment and Restoration Plan   |  |
| All burial grounds avoided and left undisturbed. All discovered sites to be reported to KIA.  | Condition noted and will be complied with upon occurrence   |  |
| Operations carried out as to minimize surface disturbance   | Ongoing by continually following the Environmental Code of Practice   |  |
| All disturbed areas restored  | AREVA continues to implement the Abandonment and Restoration Plan   |  |
| Surface vehicles not to be used to move drill rigs or other equipment/supplies without prior authorization. Vehicle use off approved routes prohibited. | In compliance; ATV approved to be used around camp only. Most material is moved by helicopter.  |  |
| No petroleum storage containers within 12 m of the normal high water mark.  | In compliance through the implementation of the Spill Contingency Plan; generally adhere to the more stringent condition of 30 meters |  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |
|---|--|
| No petroleum or chemical products to spread to surrounding lands or waters  | Ongoing through the implementation of the Environmental Code of Practice and the Spill Contingency Plan. This involves extensive preventative measures and careful monitoring. All fuel and equipment is kept at a minimum of 30 meters from the high water mark |
| All petroleum shall be kept in approved containers marked or with a bermed area. All containers labelled with licensee name | Ongoing through the implementation of the Spill Contingency Plan   |
| All spills reported   | There were no spills in 2010. Spills are prevented through awareness training in site orientation and by implementation of the Spill Contingency Plan  |
| All combustible waste will be incinerated or removed  | Ongoing through the implementation of the Waste Management Plan; proper sorting of wastes; proper training and awareness   |
| All drill fluids disposed of in sump or naturally occurring contained depression.  Drill fluids recycled whenever possible. | In compliance through proper site planning. Non-mineralized drill fluids are deposited in a naturally low lying depression >30m from any water body. Mineralized cuttings are collected and stored in the Radioactive storage compound.                          |
| No drill sumps to be located within 30 m of any water body  | Instructed through Environmental Management Plans and adhered to through site planning   |
| All drill sumps to be restored to natural surrounding contours of the land prior to licence expiry                          | Ongoing through the implementation of the Abandonment and Restoration Plan   |
| Restrict vegetation disturbance from deposit of drill fluids/cuttings to the area of the sump and ground prepared for re-   | Ongoing throughout field season and implemented through the Abandonment  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |  |
|---|--|--|
| vegetation upon abandonment   | and Restoration Plan   |  |
| No deposit of deleterious substances into any water body  | Ongoing through the implementation of the Spill Contingency Plan   |  |
| Not cause obstruction of any stream   | In Compliance through implementation of the Environmental Code of Practice; proper training and awareness  |  |
| Winter stream crossings must be removed prior to annual break-up  | Condition noted  |  |
| Shall abide by Caribou Protection<br>Measures   | Measures have been integrated into the Wildlife Mitigation and Monitoring Plan   |  |
| Ensure there is not damage to wildlife habitat  | Condition integrated into Wildlife Mitigation and Monitoring Plan and continued employee awareness through orientation and on-going training   |  |
| Shall cease activities that may interfere with migration or calving                                     | Integrated into Wildlife Mitigation and Monitoring Plan and considered when planning site activities. Refer to Section 3.6 .2 for further information on mitigation actions taken in 2010. |  |
| Shall not move any equipment or vehicles without prior testing the thickness of ice                     | No on ice drilling conducted to date; recommendation is implemented by contractors conducting winter haulage   |  |
| Shall suspend overland travel of equipment or vehicles if rutting occurs                                | Condition is noted. AREVA staff monitor land conditions during regular inspections of field operations and winter hauls  |  |
| Shall construct and maintain winter roads with a minimum of ten centimetres of packed snow at all times | Condition communicated to contractor carrying out winter haul  |  |
| Shall not use any equipment except of the   | AREVA is in compliance with this list and  |  |

| RECOMMENDATION/CONDITION |  |     |        |        |    | COMPLIANCE ACTION |                             |
|--------------------------|--|-----|--------|--------|----|-------------------|-----------------------------|
| type,<br>applic          |  | and | number | listed | in | the               | any other amendments issued |

# 11.4 Nunavut Water Board Licence

The following table lists terms and conditions appended to NWB Licence 2BE-KIG0812 (April 25, 2008 to December 31, 2012; previous licence No.'s 2BE-KIG0708 and 2BE-SIS0607).

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |  |  |
|---|--|--|--|
| GENERAL   |  |  |  |
| Annual fees paid in advance of water use  | Ongoing  |  |  |
| File an annual report by March 31st   | Fulfilled with submission of this report. Annual Reports have been submitted for 2007, 2008 and 2009.  |  |  |
| Notify NWB of any changes in operating plan   | Continual communication efforts are made with all regulatory agencies and boards   |  |  |
| Install flow meters for measuring water volumes   | Complete on camp water supply. Known pumping capabilities for all pumps at drills are known and can be used to calculate the maximum amount of water that can be used at the drills each day. This number is below the allowable limit for water used at the drills each day. Refer to section 12 for further information. |  |  |
| Include proposed implementation timetable with submitted plans for Board approval and direction and implement plans as approved | All plans have been implemented  |  |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |  |
|--|---|--|
| Copy of Licence is maintained at site  | Available in site office and in kitchen   |  |
| All reports, studies and plans submitted in paper and electronic and include executive summary in Inuktitut. Ensure documents are received and acknowledged. | Ongoing   |  |
| WATER USE  |   |  |
| Obtain all camp water from small unnamed lake approx. 300m distance north of camp to maximum of 5 m³/day   | Licence No 2BE-KIG0812 Amendment #3 effective as of Aug. 7, 2009 states that the volume of water obtained for the camp is not to exceed 10m³/day. Please see section 12 Water Consumption for more details on compliance.                     |  |
| Obtain drill water from local source(s) to a maximum of 295 m <sup>3</sup> /day  | Licence No 2BE-KIG0812 Amendment #3 effective as of Aug. 7, 2009 states that the volume of drill water obtained from local source(s) is not to exceed 290 m³/day. AREVA was compliant with this licence condition throughout the field season |  |
| Volume of water under this licence not to exceed 300 m³/day  | AREVA was compliant with this licence condition throughout the season   |  |
| Streams cannot be used as a water source   | Streams have not and will not be used as water sources  |  |
| Notify NWB of potential drawdown of a water source within 30 days of its occurrence  | Condition is noted. NWB will be notified as required  |  |
| Water intake hoses have screens of appropriated mesh size  | Ongoing. All water hoses are inspected by the ERP group on an ongoing basis to ensure compliance with this condition.   |  |
| Shall not remove any material from below the   | Training and awareness. Inspections   |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |  |  |
|--|--|--|--|
| ordinary high water mark of any water body   | are conducted to note non-compliance   |  |  |
| Shall not cause erosion to banks of any body of water  | Condition met throughout the 2010 field season.  |  |  |
| Implement sediment and erosion controls prior to and maintained during operation                                     | Condition noted, preventative and mitigation measures are in place for sediment and erosion control during drilling activities                                       |  |  |
| WASTE DISPOSAL   |  |  |  |
| Waste disposal is a minimum of 30 m from high water mark   | Waste disposal sites are selected to be located more than 30 metres from the high water mark   |  |  |
| No open burning or on-site land filling  | On-site incinerator is the only permitted burning; development and implementation of a Waste Management Plan   |  |  |
| Provide authorization from the community of Baker Lake prior to backhauling any waste                                | Received written consent from Baker Lake, forwarded to NWB   |  |  |
| Waste manifesting  | Waste manifests are up to date for all waste backhauled.   |  |  |
| Backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste in an approved waste disposal site | Waste management and sorting is addressed in the Waste Management Plan. Currently all waste oil is shipped to BLCS in Baker Lake to be burned in waste oil furnaces. |  |  |
| Contain all grey water in a sump 30 m from high water mark   | Currently grey water is being placed in a natural depression which is >100m from any water body  |  |  |
| Handling of toilet wastes  | Rather than incinerator toilets, solid sewage waste is collected and   |  |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |  |
|--|--|--|
|  | incinerated  |  |
| CAMPS, ACCESS INFRASTRUCTURES AND  | OPERATIONS   |  |
| No camps or stored material on frozen streams or lakes   | Operation is seasonal from May to September. Informed through training and awareness   |  |
| Conduct activities in a way to minimize impacts on surface drainage  | Drainage and flow are considered prior to activities   |  |
| Winter lake and stream crossings shall be conducted entirely of water, ice or snow. Choose locations that minimize disturbance and remove or notch stream crossings prior to spring break-up.      | Training and awareness and discussed with winter transport contractors   |  |
| Deposition of any debris or sediment into or onto any water body is prohibited. Disposed of at least 30m from the high water mark.   | Training and awareness and project planning  |  |
| Within 90 days of licence issuance, provide<br>Bulk Fuel Storage Facilities secondary<br>containment facility design report and<br>drawings and additional detail in the Spill<br>Contingency Plan | Completed  |  |
| DRILLING OPERATIONS  |  |  |
| AREVA to review and revise Uranium Exploration Plan as required by changes in operation and/or technology. Revisions to Plan submitted as addendum with Annual Report.                             | Board approved AREVA's Uranium Exploration Plan submitted October 17 <sup>th</sup> , 2007. As part of AREVA's commitment to continuous improvement. Operational Plans are reviewed at least once per year and revised as necessary |  |
| The Licensee shall not conduct any land based drilling within thirty (30) metres of the ordinary high water mark of any water body   | Any drilling within 30 m of the highwater mark will be under an approved licence amendment with applicable protection  |  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION   |  |
|---|---|--|
| with the exception of the End Grid Lake area as identified in the application received dated October 9, 2008"   | and mitigation measures in place to the satisfaction of the NWB and DFO.  |  |
| Drill waste (water, chips, muds, salts) from land-based drilling are disposed of in properly constructed sump or natural depression                               | Utilizing natural depressions, supplemented by temporary sandbag berms and visually monitoring flow. These inspections take place daily by ERP staff.   |  |
| Drill mud solids or cuttings with a Uranium concentration > 0.05 percent are collected and disposed down hole and sealed.   | This material is disposed of down hole or collected in bags and stored in appropriate storage facility for future handling  |  |
| Immediately seal and cap artesian flow and report to NWB in annual report   | Refer to section 12 for information regarding all artesians encountered during the 2010 field season  |  |
| Record the depth of permafrost – include in annual report   | Please refer to section 1.5 of this annual report   |  |
| No on-ice drilling  | On ice drilling will only occur under applicable approved licence amendments with appropriate protection and mitigation measures in place to the satisfaction all regulatory bodies.              |  |
| When conducting drilling within 30 m of the ordinary high water mark of End Grid Lake, activities are to be on stable ground such as frozen tundra or bedrock     | All drilling activities are conducted on frozen ground.   |  |
| AREVA shall establish water quality conditions of adjacent waters or waters immediately downstream prior to and upon completion of any drilling program within 30 | End Grid Lake was sampled on July 16, 2010 prior to commencing any drilling activities and again on August 23, 2010 after the completion of drilling in this area. Please refer to section 13 for |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |
|--|---|
| m of the high water mark   | further details.  |
| MODIFICATIONS  |   |
| Modification conditions  | Project Manager is aware of these conditions and will comply to them if required  |
| SPILL CONTINGENCY PLANNING   |   |
| Within 30 days of Licence issuance, submit addendum to Spill Contingency Plan to address issues identified during previous technical reviews and letter dated November 29, 2007 not incorporated into October 2007 version.  | The Spill Contingency Plan was updated and submitted according to requirement and addressed all issues identified in 2007. The Plan will be continue to be reviewed at least annually and revised if necessary.   |
| AREVA to review and revise Spill Contingency Plan as required by changes in operation and/or technology. Revisions to Plan submitted as addendum with Annual Report.   | Reviewed at least annually and reviews are submitted with the annual report.  |
| Ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. All sumps and fuel caches located at least 30m from highwater mark and inspected on a regular basis. An exception to this condition is during drilling activities within 30 m of the ordinary high water mark at End Grid. | In compliance through the implementation of the Spill Contingency Plan; proper training and awareness. All drilling sites are inspected daily by the ERP group. Double walled tanks are used at the drills and secondary containment is used under all pumps and hoses. |
| While drilling is occurring within the 30 m high water mark at End Grid, AREVA may allow a limited supply of fuel within 30 m of the ordinary high water mark to support the drilling operations, provided that secondary containment is made available for the storage  |   |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION  |  |  |  |
|--|--|--|--|--|
| of fuel and all external pumps and motorized equipment used.   |  |  |  |  |
| Equipment maintenance and servicing conducted only in designated areas   | Addressed through training and awareness   |  |  |  |
| Spill reporting procedure  | Addressed in Spill Contingency Plan; training and awareness and site planning.   |  |  |  |
| ABANDONMENT AND RESTORATION OR TE  | EMPORARY CLOSING   |  |  |  |
| Submit Abandonment and Restoration Plan  | Submitted, will be reviewed at least annually and revised if necessary   |  |  |  |
| Within 30 days of Licence issuance, submit addendum to Abandonment and Restoration Plan to address issues identified during previous technical reviews with letter dated November 12, 2007 not incorporated into October 2007 version. | Complete  The Kiggavik Contact List is kept as a separate document to allow frequent updates. All operational plans are reviewed and updated at least annually.  |  |  |  |
| AREVA to review and revise Abandonment and Restoration Plan as required by changes in operation and/or technology. Revisions to Plan submitted as addendum with Annual Report.   | Noted  This and other plans are reviewed annually and revisions are submitted with the annual report.  |  |  |  |
| Complete restoration work prior to the expiry of this Licence  | AREVA is committed to this condition. If unforeseen delays in permitting renewals occur, AREVA will consult with the agencies to arrange for an agreement regarding site infrastructure pending a permitting decision. |  |  |  |
| Progressive reclamation is to be carried out   | Reclamation to ensure chemical stability occurs in a progressive manner; best management practices for reclamation to ensure physical stability of surface   |  |  |  |

| RECOMMENDATION/CONDITION   | COMPLIANCE ACTION   |
|--|---|
|  | disturbance is currently being investigated   |
| All sumps are backfilled to satisfaction of an Inspector   | Will occur if required and will be inspected during regular visits to site  |
| Remove all site infrastructure and material before expiry of licence   | Addressed in the Abandonment and Restoration Plan   |
| Shall re-grade roads and airstrip  | Currently not required  |
| Remove all culverts  | Currently not required  |
| Disturbed surfaces prepared for vegetation growth by ripping, grading or scaring surface to conform to natural topography  | Addressed in the Abandonment and Restoration Plan   |
| Ensure areas contaminated by hydrocarbons are reclaimed to meet objectives outlined in the GN's Environmental Guidance for Site Remediation, January 2002. GN consultation and approval necessary to use reclaimed soil for the purpose of backfill or general site grading. | This is addressed in the Abandonment and Restoration Plan and the Spill Contingency Plan  |
| Drill holes and disturbed areas to be restored immediately upon completion of drilling. Reclamation must include removal of any drill casing material and capping of holes with a permanent seal.  | The casing is removed from all drill holes and holes are sealed by cementing and/or grouting. This is addressed in the Abandonment and Restoration Plan |
| Drill core must be stored >30m above high water mark   | Core is transported from the drill location to the Kiggavik camp on a daily basis and stored >30 m above the high water mark of the nearest water body. |
| Long term storage of core will not exceed radiation measurements of > 1.0 µSv at 1 m   | Implemented Radiation Protection Plan; regular inspections and monitoring are   |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |  |  |  |
|---|--|--|--|--|
| from surface and not to exceed 2.5 μSv  | conducted by ERP group   |  |  |  |
| Seal by grouting entire mineralization zone and greater than 10 meters both above and below each mineralization zone, any drill hole that encounters mineralization with a uranium content greater than 1.0% over a length of >1 meter, and with a meter-percent concentration >5.0 | Completed as required in all holes to date   |  |  |  |
| Seal by cementing the upper 30 meters of bedrock or entire depth of hole, which ever is less  | Completed as required in all holes to date   |  |  |  |
| A detailed report outlining test results and proposed long term core handling and storage/removal mitigation will be submitted to the INAC Water Resources Inspector if radiation levels for stored core exceed approved levels   | Condition is noted, AREVA is committed to its compliance if required   |  |  |  |
| All disturbed areas contoured and stabilized upon completion of work.   | Addressed in the Abandonment and Restoration Plan  |  |  |  |
| MONITORING PROGRAM  |  |  |  |  |
| Measure and record daily water quantities   | Conducted and recorded daily by site staff — information available in this annual report. Please refer to Section 12 Water Consumption               |  |  |  |
| Provide GPS coordinates of all water sources  | Completed; please refer to section 12<br>Water Consumption   |  |  |  |
| Provide GPS coordinates of all waste locations  | Incinerator: 64° 26′ 26.97″ N<br>97° 39′ 30.47″ W<br>Grey Water Discharge Point (south of<br>Kitchen building): 64° 26′ 26.75″ N<br>97° 39′ 31.68″ W |  |  |  |

| RECOMMENDATION/CONDITION  | COMPLIANCE ACTION  |
|---|--|
| Provide follow-up monitoring and analytical results of the potable water supply previously utilized under Licence 2BE-KIG0708 including contamination sources and possible mitigation. Plans to address matter included in Annual Report. | Lab analysis was determined to be subject to error, therefore, AREVA resampled the camp water supply on June 27, 2009. Analysis conducted at the SRC Laboratory showed no traces of grease and oil   |
| All sampling, preservation and analysis to be conducted in accordance with the Standard Methods for the Examination of Water and Wastewater   | Noted  |
| All analysis performed in an accredited lab (ISO/IEC Standard 17025)  | SRC is accredited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) for environmental testing procedures. Accreditation ensures that procedures, facilities, and methods conform to ISO 17025, the internationally recognized standard. AREVA commits to only using labs that are adequately accredited. |
| Monitor drill sumps and core storage areas to assess and ensure mitigation required under Abandonment and Restoration Plan have been completed.   | Ongoing, refer to Section 9.   |
| All data, monitoring results and information required by this "Monitoring" section to be included in the annual report.   | In compliance  |
| AREVA shall establish baseline water quality conditions prior to drilling adjacent to End Grid Lake. Monitoring shall include but not be limited to the parameters listed in Part J, Item 10  | End Grid Lake was sampled on July 16, 2010 prior to drilling activities in order to establish baseline water quality conditions. It was sampled again on August 23, 2010 after the completion of drilling in this area. Details and results can be found in section 13 of this report.   |

| RECOMMENDATION/CONDITION                          | COMPLIANCE ACTION                      |
|---|--|
|   |  |
|   | In compliance. This information is     |
|   | included in section 13 of this report. |
| AREVA shall determine GPS co-ordinates (in        |  |
| degrees, minutes and seconds of latitude and      |  |
| longitude) of all drill hole locations within the |  |
| 30 m ordinary high water mark in the END          |  |
| Grid area and provide these locations on a        |  |
| map of suitable scale for review as part of the   |  |
| annual report.                                    |  |
|   |  |

#### 12 WATER CONSUMPTION AND MANAGEMENT

Water used during the 2010 Kiggavik Project is permitted under the Nunavut Water Board License No. 2BE-KIG0812. The volume of water allowed at camp is 10 m³/day while at the drills it is 290 m³/day for a total of 300 m³/day.

### 12.1 Water use at camp and drills

Water was drawn from local water sources for both hygienic uses at the camp, as well as to support drilling activities. The locations of these water sources are listed below in Table 12.1-1.

Table 12.1-1: Water Source Coordinates

| Location Name | Use  | Coordinates                       |   |
|---------------|--|-----------------------------------|---|
| Camp          | Emergency water source (i.e. Firefighting), drill water  | 64° 26′ 31.78″ N 97° 39′ 30.83″ V | V |
| Unnamed Lake  | Hygienic water source                                    | 64° 26′ 36.93″ N 97° 39′ 49.51″ V | Ν |
| Mushroom Lake | Drill water when End Grid Lake is still frozen to bottom |                                   |   |
| End Grid Lake | Drill water  | 64° 20' 36.73" N 97° 52' 5.66" W  | ' |
| Andrew Lake   | Drill water  | 64° 19' 57.48" N 97° 53' 52.46" V | Ν |
| Bong          | Drill water  | 64° 25′ 18.68″ N 97° 42′ 58.08″ V | Ν |
| Bong          | Drill water  | 64° 25′ 16.32″ N 97° 41′ 33.73″ V | Ν |

The daily amount of water used during the 2010 field season is summarized in table 12.1-2 below:

Table 12.1-2: Camp Water Use During 2010 Season

| Month | Date | Total<br>Camp<br>(m³) | Drill 1<br>(m³) | Drill 2<br>(m³) | Drill 3<br>(m³) | Total | Comments    |
|-------|------|-----------------------|-----------------|-----------------|-----------------|-------|-------------|
| May   | 30   | 5.68                  | 0               | 0               | 0               | 5.68  | No drilling |
| May   | 31   | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 1    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 2    | 3.79                  | 0               | 0               | 0               | 3.79  | No drilling |
| June  | 3    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 4    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 5    | 3.79                  | 0               | 0               | 0               | 3.79  | No drilling |
| June  | 6    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 7    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 8    | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 9    | 3.79                  | 0               | 0               | 0               | 3.79  | No drilling |
| June  | 10   | 0.00                  | 0               | 0               | 0               | 0.00  | No drilling |
| June  | 11   | 1.50                  | 81.76           | 0               | 0               | 83.26 |             |

| June         | 12         | 6.23         | 81.76          | 0              | 0              | 87.99            |   |
|--------------|------------|--------------|----------------|----------------|----------------|------------------|---|
| June         | 13         | 2.05         | 81.76          | 81.76          | 0              | 165.57           |   |
| June         | 14         | 2.58         | 81.76          | 81.76          | 0              | 166.10           |   |
| June         | 15         | 2.01         | 81.76          | 81.76          | 81.76          | 247.29           |   |
| June         | 16         | 1.80         | 81.76          | 81.76          | 0              | 165.32           | Drill 3 move (rods stuck)                 |
| June         | 17         | 2.89         | 81.76          | 81.76          | 81.76          | 248.17           | Dilli 3 move (rous stuck)                 |
| June         | 18         | 1.43         | 81.76          | 81.76          | 81.76          | 246.71           |   |
| June         | 19         | 2.13         | 81.76          | 81.76          | 81.76          | 247.41           |   |
| June         | 20         | 2.13         | 81.76          | 81.76          | 81.76          | 247.41           |   |
| June         | 21         | 3.28         | 0              | 0              | 81.76          | 85.04            | Drills 1&2 move                           |
| June         | 22         | 2.12         | 81.76          | 81.76          | 81.76          | 247.40           | Dillis 182 Illove                         |
|              | 23         | 3.18         | 81.76          | 0              | 81.76          | 166.70           | Drill 2 move (rods stuck)                 |
| June         |            |              |                |                |                |                  | Dilli 2 Move (rods stuck)                 |
| June         | 24         | 3.70         | 81.76          | 81.76          | 81.76          | 248.98           |   |
| June         | 25         | 3.86         | 81.76          | 81.76          | 81.76          | 249.14           |   |
| June         | 26         | 4.97         | 81.76          | 81.76          | 81.76          | 250.25           | Dell 4.00 manus                           |
| June         | 27         | 2.96         | 81.76          | 81.76          | 0              | 166.48           | Drill 1 &3 move                           |
| June         | 28         | 5.07         | 81.76          | 81.76          | 81.76          | 250.35           | Delli O ana                               |
| June         | 29         | 2.21         | 81.76          | 0              | 81.76          | 165.73           | Drill 2 move                              |
| June         | 30         | 2.72         | 81.76          | 81.76          | 81.76          | 248.00           | D. 111.4                                  |
| July         | 1          | 2.12         | 0              | 81.76          | 81.76          | 165.64           | Drill 1 move                              |
| July         | 2          | 4.10         | 81.76          | 81.76          | 81.76          | 249.38           |   |
| July         | 3          | 3.51         | 81.76          | 81.76          | 81.76          | 248.79           |   |
| July         | 4          | 1.53         | 81.76          | 81.76          | 81.76          | 246.81           |   |
| July         | 5          | 1.33         | 81.76          | 81.76          | 81.76          | 246.61           |   |
| July         | 6          | 3.04         | 81.76          | 81.76          | 81.76          | 248.32           |   |
| July         | 7          | 2.48         | 81.76          | 81.76          | 81.76          | 247.76           |   |
| July         | 8          | 4.04         | 81.76          | 81.76          | 81.76          | 249.32           |   |
| July         | 9          | 3.40         | 81.76          | 81.76          | 81.76          | 248.68           |   |
| July         | 10         | 3.02         | 81.76          | 81.76          | 81.76          | 248.30           |   |
| July         | 11         | 3.71         | 0              | 0              | 0              | 3.71             | All rigs moving                           |
| July         | 12         | 3.15         | 0              | 0              | 0              | 3.15             | Drills 1&2 down for crew change. #3 move. |
| July         | 13         | 5.38         | 81.76          | 81.76          | 81.76          | 250.66           |   |
| July         | 14         | 5.62         | 81.76          | 81.76          | 81.76          | 250.90           |   |
| July         | 15         | 1.76         | 81.76          | 81.76          | 81.76          | 247.04           |   |
| July         | 16         | 2.23         | 81.76          | 81.76          | 81.76          | 247.51           |   |
| July         | 17         | 4.84         | 81.76          | 81.76          | 81.76          | 250.12           |   |
| July         | 18         | 5.09         | 81.76          | 81.76          | 81.76          | 250.37           |   |
| July         | 19         | 3.39         | 0              | 81.76          | 81.76          | 166.91           | Drill 1 move                              |
| July         | 20         | 3.31         | 81.76          | 81.76          | 81.76          | 248.59           |   |
| July         | 21         | 3.15         | 81.76          | 81.76          | 81.76          | 248.43           |   |
| July         | 22         | 1.98         | 81.76          | 81.76          | 81.76          | 247.26           |   |
| July         | 23         | 2.37         | 81.76          | 81.76          | 0              | 165.89           | Drill 3 move                              |
| July         | 24         | 6.45         | 81.76          | 81.76          | 81.76          | 251.73           |   |
| July         | 25         | 2.72         | 81.76          | 81.76          | 81.76          | 248.00           |   |
| July         | 26         | 3.50         | 0              | 81.76          | 81.76          | 167.02           | Rig 1 move                                |
| July         | 27         | 2.61         | 81.76          | 81.76          | 81.76          | 247.89           | <u> </u>                                  |
| July         | <b>~</b> 1 |              |                | -              |                |                  |   |
| -            |            | 2.04         | 81.76          | 81.76          | 81.76          | 247.32           |   |
| July<br>July | 28<br>29   | 2.04<br>2.74 | 81.76<br>81.76 | 81.76<br>81.76 | 81.76<br>81.76 | 247.32<br>248.02 |   |

| July | 31 | 2.82 | 81.76 | 81.76 | 81.76 | 248.10 |                                       |  |
|------|----|------|-------|-------|-------|--------|---------------------------------------|--|
| Aug  | 1  | 3.18 | 81.76 | 81.76 | 81.76 | 248.46 |                                       |  |
| Aug  | 2  | 3.42 | 81.76 | 81.76 | 81.76 | 248.70 |                                       |  |
| Aug  | 3  | 3.32 | 0     | 81.76 | 81.76 | 166.84 | Drill 1 move                          |  |
| Aug  | 4  | 2.75 | 81.76 | 0     | 81.76 | 166.27 | Drill 2 move                          |  |
| Aug  | 5  | 3.33 | 81.76 | 81.76 | 81.76 | 248.61 |                                       |  |
| Aug  | 6  | 3.21 | 81.76 | 81.76 | 81.76 | 248.49 |                                       |  |
| Aug  | 7  | 2.44 | 81.76 | 81.76 | 81.76 | 247.72 |                                       |  |
| Aug  | 8  | 3.77 | 81.76 | 81.76 | 81.76 | 249.05 |                                       |  |
| Aug  | 9  | 2.13 | 81.76 | 81.76 | 0     | 165.65 | Drill 3 move                          |  |
| Aug  | 10 | 4.53 | 81.76 | 81.76 | 81.76 | 249.81 |                                       |  |
| Aug  | 11 | 3.48 | 0     | 81.76 | 81.76 | 167.00 | Drill 1 move                          |  |
| Aug  | 12 | 3.89 | 81.76 | 81.76 | 81.76 | 249.17 |                                       |  |
| Aug  | 13 | 3.82 | 81.76 | 0     | 81.76 | 167.34 | Drill 2 move                          |  |
| Aug  | 14 | 3.09 | 81.76 | 81.76 | 81.76 | 248.37 |                                       |  |
| Aug  | 15 | 6.88 | 81.76 | 81.76 | 81.76 | 252.16 |                                       |  |
| Aug  | 16 | 1.38 | 0     | 81.76 | 0     | 83.14  | Drills 1 & 3 move                     |  |
| Aug  | 17 | 1.12 | 81.76 | 81.76 | 81.76 | 246.40 |                                       |  |
| Aug  | 18 | 2.21 | 81.76 | 0     | 81.76 | 165.73 | Drill 2 move                          |  |
| Aug  | 19 | 4.94 | 0     | 0     | 81.76 | 86.70  | Drill 1 and 2 move                    |  |
| Aug  | 20 | 1.22 | 81.76 | 81.76 | 81.76 | 246.50 |                                       |  |
| Aug  | 21 | 1.17 | 81.76 | 81.76 | 0     | 164.69 | Drill 3 dismantled and put in storage |  |
| Aug  | 22 | 2.66 | 81.76 | 0     | 0     | 84.42  | Drill 2 dismantled and put in storage |  |
| Aug  | 23 | 5.14 | 81.76 | 0     | 0     | 86.90  |                                       |  |
| Aug  | 24 | 3.89 | 81.76 | 0     | 0     | 85.65  |                                       |  |
| Aug  | 25 | 2.87 | 0     | 0     | 0     | 2.87   | Drill 1 dismantled and put in storage |  |
| Aug  | 26 | 0.66 | 0     | 0     | 0     | 0.66   |                                       |  |
| Aug  | 27 | 0.00 | 0     | 0     | 0     | 0.00   |                                       |  |
| Aug  | 28 | 0.00 | 0     | 0     | 0     | 0.00   |                                       |  |
| Aug  | 29 | 0.00 | 0     | 0     | 0     | 0.00   |                                       |  |
| Aug  | 30 | 0.00 | 0     | 0     | 0     | 0.00   |                                       |  |
| Aug  | 31 | 0.00 | 0     | 0     | 0     | 0.00   |                                       |  |

All camp water was pumped from the Unnamed Lake into holding tanks with marked volumes. These tanks were filled almost daily during slow periods and at least twice a day during busy periods. A water meter was installed at the beginning of the season, which measured the accumulative amount of water used. The camp's daily water usage was calculated each time the water tanks were refilled by subtracting the water meter reading before filling from the reading after refilling.

The daily amount allowable for the camp was not exceeded at any time during the 2010 field season. The maximum amount of water used at camp during the 2010 field season was 6.88 m³ on August 15<sup>th</sup>.

The water pumps that Boart Longyear use at each drill are identical and capable of pumping a maximum of 15 GPM (0.05678 m³/min). At this rate, if all three pumps ran for 24 hours then the maximum volume of water that could be pumped to the drills in a day would be 245.29 m³. Therefore, even if all water pumps are pumping at their maximum rate, which never occurred during the 2010 field season, the amount of water used at the drills would still fall below the limit of 290 m³/day.

#### 12.2 Artesians

The Kiggavik Project discovered two artesian in the Bong area during the 2010 field program. The first was found on June 17, 2010 at Bon-045. The artesian water was discovered at a depth of 320 m and had an estimated flow rate of 12 L/min. At this rate the water could be managed in the same manner as the other drills; non-mineralized cuttings and water was directed to a natural low-lying depression and when mineralization was intercepted all cuttings were collected and then stored in the radioactive storage compound. A water sample was taken from the drill rods June 18, 2010. The results of the water sample are shown in table 12.2-1 Bong-045 Water Results. The hole was permanently sealed and capped June 20, 2010.

Table 12.2-1: Bong-045 Water Results

| Analyte                | Units    | Bong-045 Result | CCME* Limits | DL      |
|------------------------|----------|-----------------|--------------|---------|
| pН                     | pH units | 6.93            |              | 0.07    |
| Specific conductivity  | uS/cm    | 23              |              | 1       |
| Total suspended solids | mg/L     | <1              |              | 1       |
| Aluminum, dissolved    | mg/L     | 0.034           | 0.005-0.1    | 0.0005  |
| Antimony, dissolved    | mg/L     | <0.0002         |              | 0.0002  |
| Arsenic, dissolved     | ug/L     | 0.2             | 5            | 0.1     |
| Barium, dissolved      | mg/L     | 0.032           |              | 0.0005  |
| Beryllium, dissolved   | mg/L     | <0.0001         |              | 0.0001  |
| Boron, dissolved       | mg/L     | <0.01           |              | 0.01    |
| Cadmium, dissolved     | mg/L     | 0.00001         | 0.000017     | 0.00001 |
| Chromium, dissolved    | mg/L     | <0.0005         |              | 0.0005  |
| Cobalt, dissolved      | mg/L     | <0.0001         |              | 0.0001  |
| Copper, dissolved      | mg/L     | 0.0031          | 0.002-0.004  | 0.0002  |
| Iron, dissolved        | mg/L     | 0.074           | 0.3          | 0.0005  |
| Lead, dissolved        | mg/L     | 0.0006          | 0.001-0.007  | 0.0001  |
| Manganese, dissolved   | mg/L     | 0.010           |              | 0.0005  |
| Molybdenum, dissolved  | mg/L     | <0.0001         | 0.073        | 0.0001  |
| Nickel, dissolved      | mg/L     | 0.0007          | 0.025-0.150  | 0.0001  |
| Selenium, dissolved    | mg/L     | <0.0001         | 0.001        | 0.0001  |
| Silver, dissolved      | mg/L     | 0.00001         | 0.0001       | 0.00001 |
| Strontium, dissolved   | mg/L     | 0.013           |              | 0.0005  |
| Thallium, dissolved    | mg/L     | <0.0002         | 0.0008       | 0.0002  |
| Tin, dissolved         | mg/L     | 0.0001          |              | 0.0001  |
| Titanium, dissolved    | mg/L     | <0.0002         |              | 0.0002  |

| Uranium, dissolved  | ug/L | <0.1    |      | 0.1    |
|---------------------|------|---------|------|--------|
| Vanadium, dissolved | mg/L | <0.0001 |      | 0.0001 |
| Zinc, dissolved     | mg/L | 0.012   | 0.03 | 0.0005 |

<sup>\*</sup> Canadian Water Quality Guidelines for the Protection of Aquatic Life (Canadian Council of Ministers of the Environment

The second artesian was found at Bong-047 on June 27, 2010 at a depth of 282 m. This hole was permanently capped and sealed the same day it was discovered and no water sample was taken.

# 13 DRILLING WITHIN 30 M OF THE ORDINARY HIGH WATER MARK AT END GRID SITE

On March 23, 2009 AREVA received approval from the Nunavut Water Board (NWB) to drill within 30 m of the ordinary high water mark in the End Grid area which includes End Grid Lake and the surrounding temporary and permanent streams. The spring spawning timing window for this area is May 1 – July 15 while the fall spawning timing window is August 15 – June 30 as identified by the Department of Fisheries and Oceans (DFO). AREVA makes efforts to avoid drilling within the 30 m ordinary high water mark during spawning timing windows, however water management and environmental protection is more manageable when the ground, lakes and streams are frozen. AREVA made commitments to both the NWB and the DFO in order to carry out drilling operations in a safe and environmentally conscience manner. The coordinates of all drill holes located within 30 metres of the ordinary high water mark in the End Grid area are listed in Table 13.0-1 and shown in figure 13.0-1.

Table 13.0-1: Drill Hole Coordinates

| Name      | Date Started | Date<br>Completed | Lat/Long Coordinates                 | UTM coordinates             |
|-----------|--------------|-------------------|--------------------------------------|-----------------------------|
| END-10-10 | Aug. 3, 2010 | Aug. 10, 2010     | 64° 20' 42.46" N<br>97° 52' 7.81" W  | 14W 554642m E<br>7135960m N |
| END-10-11 | Aug. 5, 2010 | Aug. 12, 2010     | 64° 20' 41.98" N<br>97° 52' 11.71" W | 14W 554590m E<br>7135944m N |
| END-10-13 | Aug. 9, 2010 | Aug. 15, 2010     | 64° 20' 43.18" N<br>97° 52' 8.68" W  | 14W 554630m E<br>7135982m N |

As a condition of this amendment approval the NWB required that water samples be taken prior to commencing drilling operations within 30 m of the ordinary high water mark and again once the drilling activities in this area were completed. These samples were taken on July 16<sup>th</sup> prior to the start of drilling activities and again on August 23<sup>rd</sup> after the completion of the drilling program. The samples were then analyzed by a third party laboratory for the parameters set out by the NWB. The results of the water samples are shown in table 13.0-2.

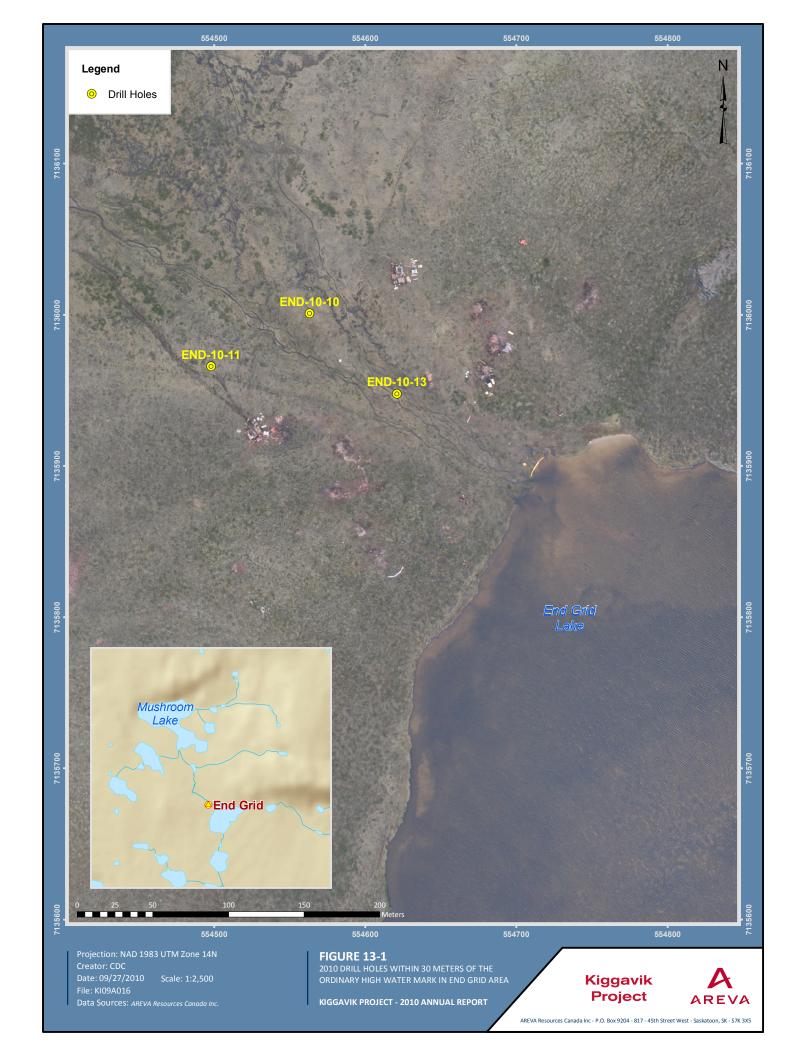
Table 13.0-2: Water Analysis Results

| Parameter                | Units       | SSWQO1  | CWQG <sup>2</sup> | End Grid Lake July<br>16, 2010 | End Grid Lake Aug.<br>23, 2010 |
|--------------------------|-------------|---------|-------------------|--------------------------------|--------------------------------|
| рН                       | pH<br>units |         | 6.5-9             | 7.19                           | 7.26                           |
| Specific<br>Conductivity | uS/cm       |         |                   | 31                             | 55                             |
| Aluminum                 | mg/L        | 0.5-0.1 | 0.5-0.1           | 0.028                          | 0.030                          |
| Antimony                 | mg/L        |         |                   | <0.0002                        | <0.0002                        |

| Arsenic     | ug/L | 5        | 5        | 0.1     | 0.2     |
|-------------|------|----------|----------|---------|---------|
| Barium      | mg/L |          |          | 0.030   | 0.052   |
| Beryllium   | mg/L |          |          | <0.0001 | <0.0001 |
| Boron       | mg/L |          |          | <0.01   | <0.01   |
| Cadmium     | mg/L | 0.000017 | 0.000017 | <0.0001 | <0.0001 |
| Chromium    | mg/L |          | 0.001    | <0.0005 | <0.0005 |
| Cobalt      | mg/L |          |          | <0.0001 | 0.0001  |
| Copper      | mg/L | 0.002    | 0.002    | 0.0009  | 0.0006  |
| Iron        | mg/L | 0.3      | 0.3      | 0.22    | 0.27    |
| Lead        | mg/L | 0.001    | 0.001    | <0.0001 | 0.0002  |
| Manganese   | mg/L |          |          | 0.013   | 0.017   |
| Molybderium | mg/L |          | 0.073    | <0.0001 | <0.0001 |
| Nickel      | mg/L | 0.025    | 0.025    | 0.0007  | 0.0008  |
| Selenium    | mg/L | 0.001    | 0.001    | <0.0001 | 0.0002  |
| Silver      | mg/L | 0.0001   | 0.0001   | <0.0001 | <0.0001 |
| Strontium   | mg/L |          |          | 0.022   | 0.039   |
| Thallium    | mg/L |          | 0.0008   | <0.0002 | <0.0002 |
| Tin         | mg/L |          |          | <0.0001 | <0.0001 |
| Titanium    | mg/L |          |          | 0.0002  | 0.0004  |
| Uranium     | ug/L | 15       |          | <0.1    | 0.1     |
| Vanadium    | mg/L |          |          | <0.0001 | 0.0001  |
| Zinc        | mg/L | 0.03     | 0.03     | 0.0009  | 0.0008  |

<sup>&</sup>lt;sup>1</sup> Saskatchewan Surface Water Quality Guidelines

<sup>&</sup>lt;sup>2</sup> Canadian Water Quality Guidelines (CCME 2007)



### 14 REPORTABLE SPILLS

| No reportable spills occurred during the 2010 field season. |  |  |  |  |  |  |  |  |  |
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# **15 ADDITIONAL PHOTOS**



Figure 15.0-1: Opening of Kiggavik Camp, May 2010



Figure 15.0-2: Opening of Kiggavik Camp, May 2010



Figure 15.0-3: Core Shacks at Kiggavik Camp, August 2010

# APPENDIX A OPERATIONAL PLANS

Spill Contingency Plan
Radiation Protection Plan
Waste Management Plan
Wildlife Mitigation and Monitoring Plan
Abandonment and Restoration Plan
Noise Abatement
Uranium Exploration Plan