



January 30, 2013

VIA EMAIL & COURIER

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Iqaluit, NU X0A 0H0

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

Dear All:

**Re: Kiggavik Project Field Program 2012 Annual Report: AANDC Land Use Permit N2009C0017; KIA Land Use Licence KVL306C02; NWB Water Licence 2BE-KIG0812; NIRB File No. 06AN085**

Please find enclosed the 2012 AREVA Resources Canada Inc. (AREVA) Annual Report for the Kiggavik Project Field Program and corresponding operational plans for your review, comment and distribution. The hard copies of these documents and CD have been sent via courier.

This report fulfills the Nunavut Impact Review Board (NIRB) screening recommendation; Aboriginal Affairs and Northern Development Canada (AANDC) permit condition No. 5, and Nunavut Water Board (NWB) Licence Part B, Item 2 for an annual report submitted by January 31 and March 31 respectively, which addresses the previous year of operation.

AREVA trusts that this annual report is an adequate summary of the activities conducted in 2012. Should you have any questions or comments, please do not hesitate to contact John Robbins at 306-343-4513 or [John.Robbins@areva.ca](mailto:John.Robbins@areva.ca) or myself at 306-343-4035.

Yours truly,

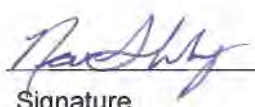
A handwritten signature in blue ink, appearing to read 'Naomi Stumborg', is written over a light blue horizontal line.

Naomi Stumborg  
SHEQ Supervisor, Exploration

Enclosure: Kiggavik Project Field Program 2012 Annual Report


cc: Workers' Safety and Compensation Commission  
ARC Distribution

## APPROVAL FOR USE

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## History of Revisions

Version	Date	Details of Revision
1	30-Jan-13	Original Release

## **AREVA Resources Canada Inc. - Kiggavik Project Field Program**

2012 Annual Report

January 2013

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AREVA Resources Canada Inc.

# KIGGAVIK PROJECT FIELD PROGRAM

2012 ANNUAL REPORT

Date of issue: January 2013





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# **Kiggavik Project Field Program**

## **2012 Annual Report**



## **EXECUTIVE SUMMARY**

The following Annual Report provides a summary of the 2012 Kiggavik Project field program conducted by AREVA Resources Canada Inc. (AREVA). This submission is required by Part B, Item 2 of Licence no. 2BE-KIG0812 issued by the Nunavut Water Board (NWB), and condition #5 of the original Land Use Permit N2006C0037, which remains applicable to the current Land Use Permit N2009C0017 issued by Aboriginal Affairs and Northern Development Canada (AANDC).

The 2012 Kiggavik Project field program focused on diamond drilling to further evaluate potential deposits. Drilling operations were conducted out of the Kiggavik camp with support provided by helicopter services and the Baker Lake office. Drilling commenced on June 14 and was completed on August 27. During this period, a total of 11,858 m were drilled with 31 drill holes using HQ and NQ sized diamond core equipment.

The Kiggavik Project Operational Plans were implemented throughout the field program to prevent or reduce any potential adverse effects from exploration activities on wildlife and the environment. There were no lost time incidents involving AREVA personnel or contractors. Occupational health, safety and radiation protection programs were implemented to ensure workers performed in a safe and responsible manner and were not exposed to adverse effects from uranium exploration activities. AREVA also maintained its ISO 14001:2004 and OHSAS 18001:2007 certifications for the Kiggavik Project Integrated Management System.

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 2012 FIELD ACTIVITIES

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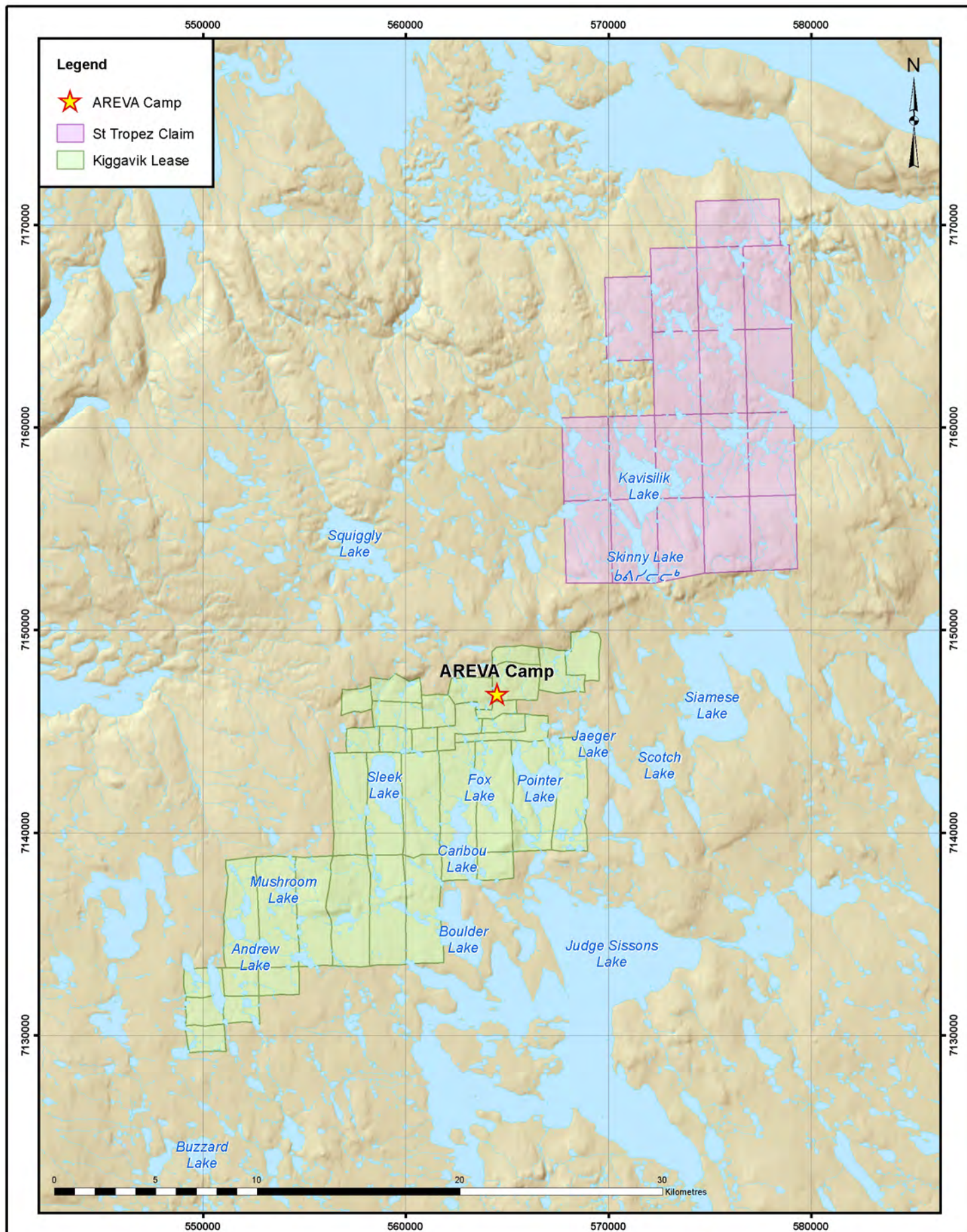
## 1.1 GENERAL

The Kiggavik Project is a uranium exploration project located 80 kilometers west of Baker Lake, Nunavut. The Kiggavik Project consists of the Kiggavik lease and the St. Tropez claim as indicated in Figure 1.1-1. Throughout the 2012 field season, AREVA and its contractors conducted geological exploration drilling on the Kiggavik lease which includes both the Kiggavik and Sissons sites. Geological exploration focused on diamond drilling in the End Grid, Bong, Granite Grid and Sleet Lake areas of the Kiggavik lease.

The drill and support crews were mobilized to site on June 8, 2012 to commence drilling on June 14, 2012. Operations were based out of the Kiggavik camp which consists of temporary tents, seacans, and wooden structures that were maintained throughout the 2012 field season. Support was provided by the Baker Lake office, and transport was provided by helicopter services. Throughout the 2012 field season, the camp accommodated a maximum of 42 persons. Following the completion of 11,858 m of drilling on August 27, the Kiggavik camp was closed on August 30, 2012. Main Project contributors were as follows:

Activity	Contributors
Management	AREVA
Drilling	Boart Longyear
Geological logging and probing	AREVA
Wildlife Monitoring	AREVA & NPS
Helicopter and Logistics	Forest North Aviation and Logistics Inc.
Environment, Safety and Radiation Protection	AREVA
Occupational First Aid & Catering	5136 Nunavut
Camp Operations & Maintenance	AREVA & NPS
Fuel and other Overland Transportation	Peter's Expediting
Expediting	AREVA & Forest North Aviation and Logistics Inc.





Projection: NAD 1983 UTM Zone 14N  
 Compiled: C. CARTER Drawn: C. CARTER  
 Date: 01/21/2013 Scale: 1:250,000  
 File:  
 Data Sources: Natural Resources Canada, Geobase®, Nation  
 Topographic Database, AREVA Resources Canada  
 Inc.

**FIGURE 1.1-1**  
 KIGGAVIK LEASES AND  
 ST. TROPEZ BOUNDARIES

KIGGAVIK PROJECT - 2012 ANNUAL REPORT

**KIGGAVIK  
 PROJECT**





## 1.2 FUEL CACHE

The primary fuel storage location is at the Kiggavik fuel cache which consists of eight 50,000 L double walled steel Envirotanks. The Envirotanks are registered with Environment Canada, and were originally installed in 2008 and 2009 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 Envirotanks are used for jet fuel and five for diesel fuel. In 2012, AREVA allowed Cameco to use two of AREVA's bulk diesel tanks at the fuel cache esker to support their field program. Photograph 1-1 shows an aerial photo of the Kiggavik fuel cache.



**Photograph 1-1 Kiggavik Fuel Cache**

A small number of 205 L diesel fuel drums are used to fuel the camp stove and incinerator, and are stored within secondary containment berms. Five double walled slip tanks containing diesel are used to fuel the camp generator. All fuel containers are labeled, identifying the contents and AREVA's name.

Two primary fuel cache locations were utilized in 2012:

- 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)

### 1.3 DRILLING, SAMPLING AND TESTING

No geophysical surveys, prospecting, geological mapping, packer testing, or thermistor installation and monitoring were conducted during the 2012 field program. The installation of thermistors was not necessary as this is an activity specific to mine development. The permafrost depths provided are therefore estimated based upon previous thermistor locations. Currently, the estimated depths of permafrost are 210 to 225 meters below ground surface at the Kiggavik site, and between 235 to 270 meters below ground surface at the Sissons site. As further mine development activities are conducted, the relevant data will be provided in subsequent annual reports.

Drilling started on June 14, 2012 and terminated on August 27, 2012. Diamond drilling was carried out in 4 areas in 2012: End Grid, Bong Grid, Sleek Lake and Granite Grid. During the drilling period a total of 11,858.1 m was completed on 31 drill holes using HQ or NQ sized diamond core equipment. Diamond drilling on the End Grid deposit included eleven drill holes with a total meterage of 4,337 m, 9 holes were drilled in the Bong area for 3,586.8 m, the Granite Grid area included 7 drill holes for 2,489.4 m, and the Sleek Lake area consisted of four drill holes for 1,444.9 m. All drill core was logged and core samples (non-mineralized and mineralized) were collected to be sent for laboratory testing. Table 1.3-1 includes a summary of the 2012 drilling program.

**Table 1.3-1 Summary of 2012 Drill Holes**

HOLE ID	Zone	Grid Coordinates	UTM X Easting	UTM Y Northing	Azimuth /Dip	Start	Finish	Depth (m)
BONG-053	BONG Prospect	L2+00N/3+25W	562183	7144186	110/-75	Jun-18	Jun-23	204.6
BONG-054	BONG Prospect	L2+00N/3+25W	562183	7144186	110/-75	Jun-24	Jul-02	489
BONG-055	BONG Prospect	L1+50N/1+65W	562273	7144096	290/-84	Jul-03	Jul-11	519
BONG-056	BONG Prospect	L2+50N/1+75W	562344	7144175	000/-90	Jul-12	Jul-19	462.5
BONG-057	BONG Prospect	L2+50N/1+65W	562344	7144177	290/-79	Jul-19	Jul-20	24.7
BONG-057A	BONG Prospect	L2+50N/1+65W	562344	7144177	290/-79	Jul-20	Jul-27	462
BONG-058	BONG Prospect	L2+50N/1+15W	562391	7144162	000/-90	Jul-28	Aug-04	468
BONG-059	BONG Prospect	L1+50N/2+30W	562256	7144110	000/-90	Aug-05	Aug-13	474
BONG-060	BONG Prospect	L1+00S/1+85W	562278	7144049	000/-90	Aug-13	Aug-20	483
END-12-01	END Deposit	L3+00S/0+44E	554651	7136102	000/-90	Jun-14	Jun-22	500
END-12-02	END Deposit	L3+00S/0+44E	554651	7136102	150/-81	Jun-22	Jun-23	21

HOLE ID	Zone	Grid Coordinates	UTM X Easting	UTM Y Northing	Azimuth /Dip	Start	Finish	Depth (m)
END-12-02A	END Deposit	L3+00S/0+44E	554651	7136102	150/-81	Jun-23	Jun-24	63
END-12-02B	END Deposit	L3+00S/0+44E	554651	7136102	150/-81	Jun-24	Jul-01	498
END-12-03	END Deposit	L2+00S/0+25E	554726	7136164	150/-80	Jul-02	Jul-08	450
END-12-04	END Deposit	L2+00S/0+25E	554726	7136164	000/-90	Jul-08	Jul-13	432
END-12-05	END Deposit	L3+50S/0+08E	554562	7136151	215/-75	Jul-14	Jul-21	498
END-12-06	END Deposit	L4+25S/0+10W	554517	7136085	150/-84	Jul-22	Jul-3	540
END-12-07	END Deposit	L3+85S/0+12W	554554	7136097	000/-90	Aug-01	Aug-09	420
END-12-08	END Deposit	L4+18S/0+32W	554544	7136058	000/-90	Aug-10	Aug-19	495
END-12-09	END Deposit	L3+50S/0+35E	554598	7136086	000/-90	Aug-20	Aug-26	420
GG-021	GRANITE Area	NA	559976	7145756	210/-75	Jul-09	Jul-18	372.4
GG-022	GRANITE Area	NA	559826	7145591	210/-80	Jul-19	Jul-23	224
GG-022A	GRANITE Area	NA	559826	7145591	210/-80	Jul-23	Jul-30	414
GG-023	GRANITE Area	NA	559919	7145840	000/-90	Jul-30	Aug-05	402
GG-024	GRANITE Area	NA	559475	7146141	210/-70	Aug-06	Aug-13	390
GG-025	GRANITE Area	NA	559475	7146141	000/-90	Aug-13	Aug-18	327
GG-026	GRANITE Area	NA	559722	7146027	000/-90	Aug-20	Aug-27	360
SLEK-013	SLEEK Area	NA	557083	7138287	310/-70	Jun-16	Jun-20	327
SLEK-014	SLEEK Area	NA	556566	7137874	290/-80	Jun-21	Jun-28	519
SLEK-015	SLEEK Area	NA	556108	7137409	290/-80	Jun-28	Jul-05	397
SLEK-016	SLEEK Area	NA	556106	7137100	310/-80	Jul-06	Jul-08	201.9
<b>TOTAL:</b>								<b>11858.1 m</b>

### 1.3.1 End Grid

Eight holes were drilled to completion, however drill holes END-12-02, END-12-02A, and END-12-06 were not completed. Drill hole END-12-02A was lost due to broken drill rods and END-12-06 was lost because of the ground conditions. Drilling was ceased at END-12-02 due to deviation issues. All the drilling in 2012 focused on the North Pod of the End Deposit, and all of these holes were on the Northwest edge of this pod (Figure 1.3-1). They confirmed additional resources in the area. With the exception of END-12-02 and END-12-02A, all drill holes were probed to completion.

The main rock type observed at the End Grid was metasediment (psammite and quartzite) with local granite intrusions, 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. Main structural features include a shallow foliation, and variably-dipping fractures, shear zones, faults, breccias and vein systems.

In 2012, the End Grid drilling focused on five sections evaluating most of the strike length of the North Pod, on its Northwest edge. Although in almost all cases mineralization was extended to the NW, in general its grade and extent decreased. However, the mineralization is still open along strike (ENE-WSW) and to the Northwest.

### **1.3.2 Bong Grid**

Drilling on Bong Grid in 2012 attempted to expand mineralization to the North, West and South of the “North Pod”. Due to artesian conditions, previous drilling campaigns were often limited in their ability to test the area, but in 2012 permitting amendments made this less of an issue.

The original plan for drilling at Bong Grid in 2012 was to test the down-dip mineralization intersected in the “North Pod” (Figure 1.3-2). In order to accomplish this, four holes (BONG-053, 054, 055 and 059) were drilled on two sections. Of these four holes, 1 was lost at a shallow depth (BONG-053 at 204.6m), while the final three holes were lost in massive clay at significant depths (468 to 519m). All three holes drilled to depths greater than 300 m intersected extensive alteration (bleaching, chloritization, clay replacement), but did not intersect significant mineralization. Drilling to the North virtually terminated the mineralization extension in that area, while BONG-060 to the South of the North Pod expanded the mineralization in that direction.

### **1.3.3 Sleek Lake**

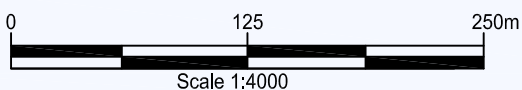
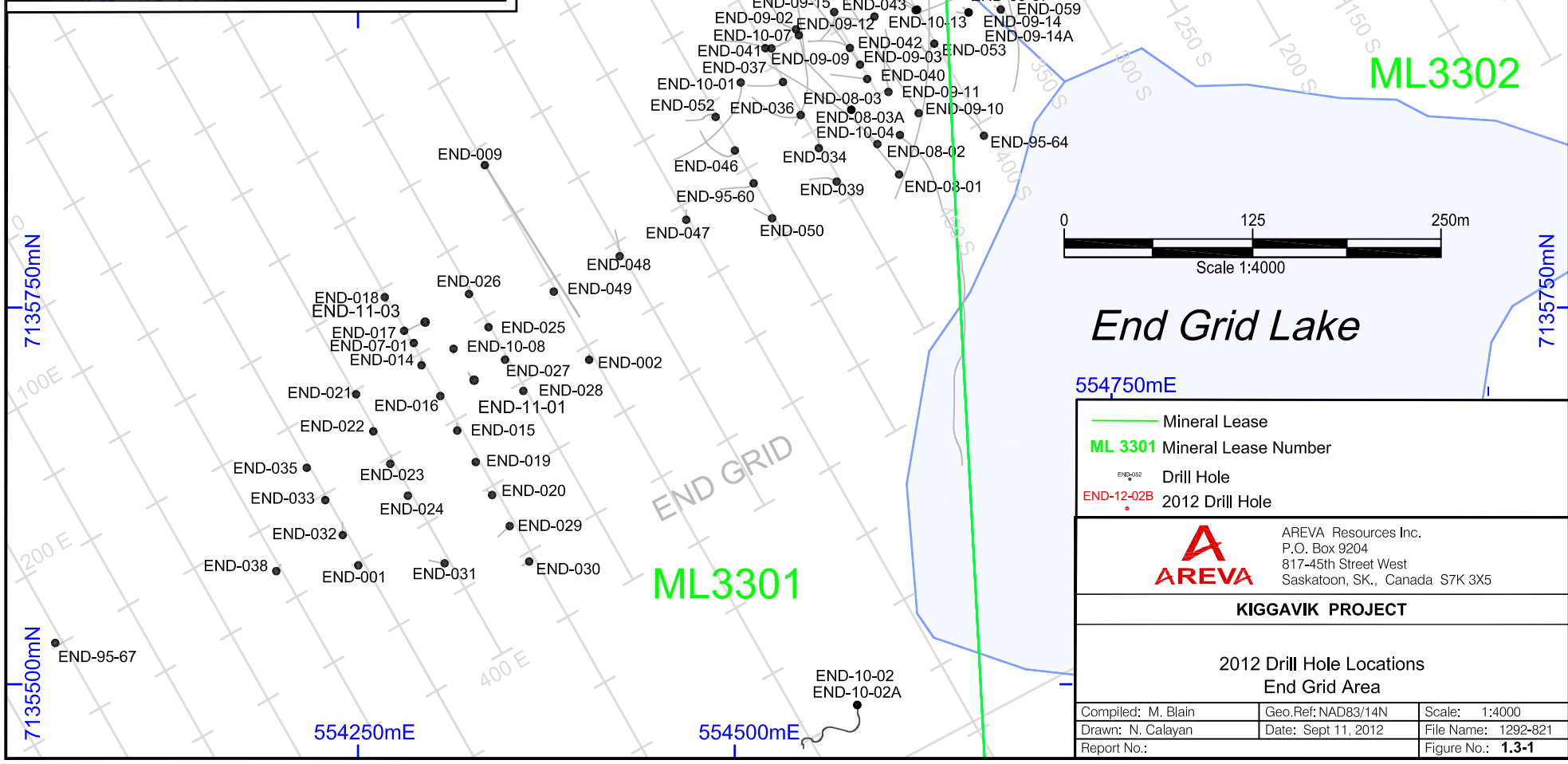
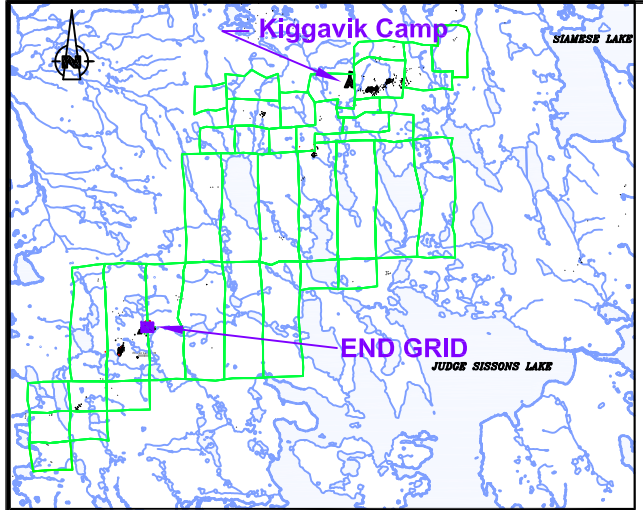
Four holes were drilled, with 3 completed for a total of 1,444.9 m in the Sleek Lake area (Figure 1.3-3). All holes intersected weak alteration and structural disruption. The geology in the area is defined by the North-south trending contact between a large granite body to the West and metasediments to the East. Drilling started on the North end of the area and proceeded to the South side. The final hole on the South end of the area was lost at 201.9 m. All results were negative in 2012.

### **1.3.4 Granite Grid**

A total of 7 holes were drilled on the Granite Grid in 2012 for 2,489.4 m (Figure 1.3-4). Of these holes, five were completed. Part of the program was developed to evaluate the known mineralized area for additional mineralization (at depth) below the quartzite in the area. This was accomplished with two of the holes (GG-021 and GG-023) being drilled on the margins of the known mineralization. Both holes intersected weak mineralization and weak-moderate alteration both above and below the quartzite, but failed to intersect significant amounts of uranium.

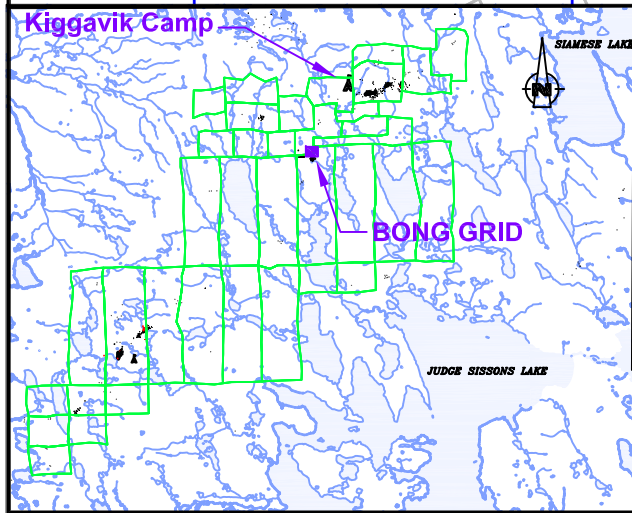
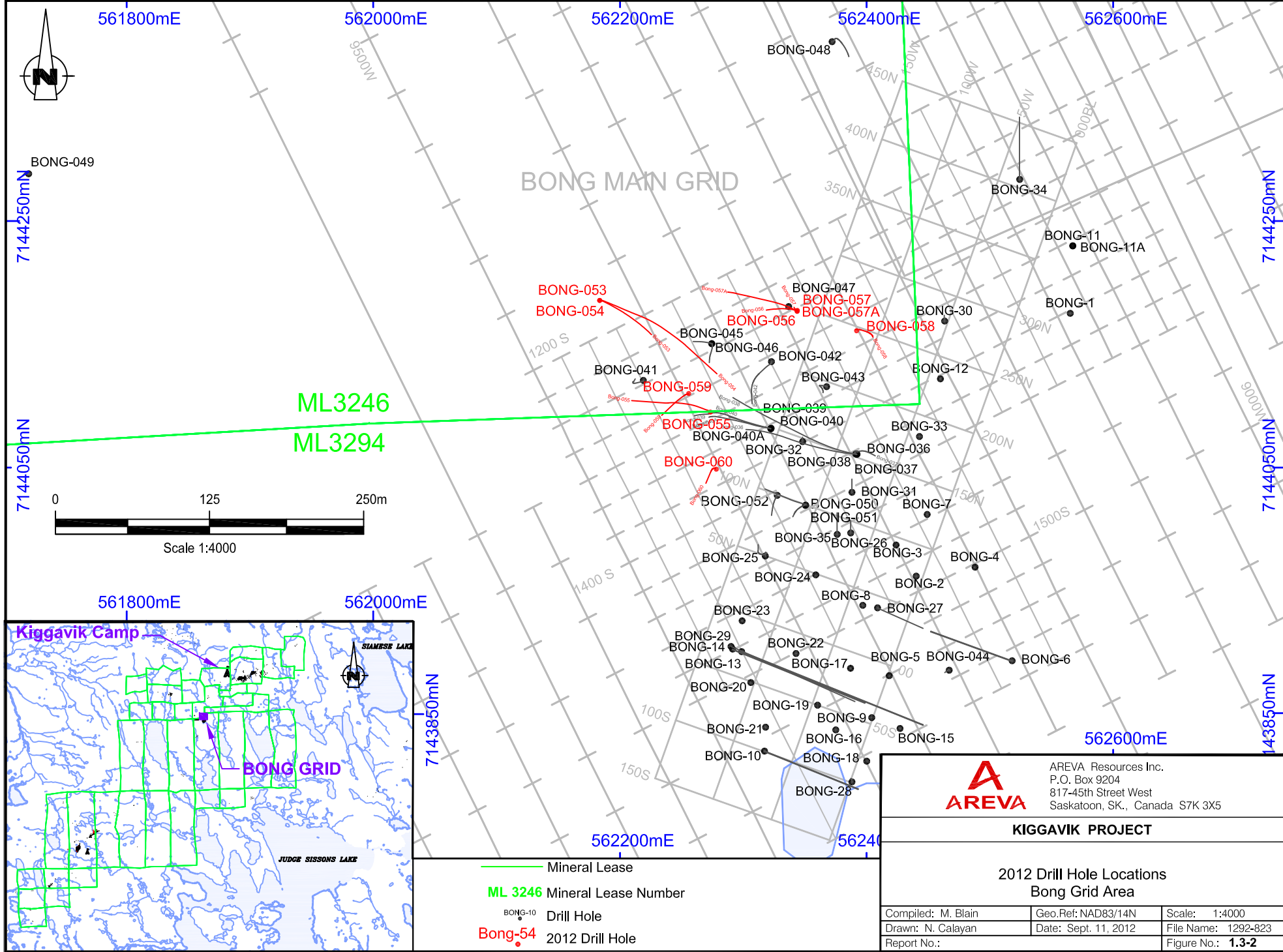
An additional part of the program at Granite Grid was to evaluate the geophysical results obtained in 2011. In order to do that, four holes were collared (GG-022A, 024, 025 and 026). Results from these four holes were mixed, GG-022A was lost and did not fully achieve its objective, GG-024 intersected weak mineralization and the other two holes (GG-025 and 026) had poor results.





# End Grid Lake

<div><div></div> Mineral Lease</div> <div><b>ML 3301</b> Mineral Lease Number</div> <div><div></div> Drill Hole</div> <div><b>END-12-02B</b> 2012 Drill Hole</div>		
<div><div><div></div></div><div>AREVA Resources Inc. P.O. Box 9204 817-45th Street West Saskatoon, SK., Canada S7K 3X5</div></div>		
<b>KIGGAVIK PROJECT</b>		
<b>2012 Drill Hole Locations End Grid Area</b>		
Compiled: M. Blain	Geo.Ref: NAD83/14N	Scale: 1:4000
Drawn: N. Calayan	Date: Sept 11, 2012	File Name: 1292-821
Report No.:	Figure No.: <b>1.3-1</b>	



- Mineral Lease
- ML 3246 Mineral Lease Number
- BONG-10 Drill Hole
- Bong-54 2012 Drill Hole



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**KIGGAVIK PROJECT**

**2012 Drill Hole Locations  
Bong Grid Area**

Compiled: M. Blain	Geo.Ref: NAD83/14N	Scale: 1:4000
Drawn: N. Calayan	Date: Sept. 11, 2012	File Name: 1292-823
Report No.:		Figure No.: <b>1.3-2</b>