

DATE March 30, 2010**PROJECT No.** 09-1362-0610/8000**TO** Mr. Chris Fillion,
Nunavut Research Institute**CC** Ms. Nicola Banton**FROM** Sarah Gauthier**EMAIL** Sarah_Gauthier@golder.com

**2010 NON-TECHNICAL PROJECT PROPOSAL AND 2009 NON-TECHNICAL SUMMARY FOR
HYDROLOGICAL INVESTIGATIONS AT THE KIGGAVIK PROJECT, NEAR BAKER LAKE, NU**

Introduction

The Kiggavik Project is a uranium surface exploration project located approximately 80 kilometres (km) west of Baker Lake (Figure 1A). The project is made of two large groups of mining leases and mineral claims subdivided into Kiggavik to the north and Sissons to the south. The Kiggavik camp was first established in 1977 and it was occupied for drill programs until 1997. Exploration drilling had not taken place at the project since the end of the 1997 field season but recommenced in 2007 and has continued through 2009.

Non-technical project summary (2010)

The focus of the hydrological assessment is to gather baseline streamflow and lake water level information from drainage areas in the Kiggavik and Sissons area. The collection of stream discharge data and lake level monitoring is to meet the following objectives for the project:

- collect sufficient water data to document the natural range in streamflow from selected locations to satisfy regulatory requirements;
- collect hydrology information that can be used for engineering design purposes; and
- collect baseline hydrology information that could be used in support of an environmental assessment (EA).

The name and contact information for the researcher involved in the hydrological investigations at Kiggavik is as follows:

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Saskatoon, Saskatchewan
S7H 0T4

Hydrological monitoring began at the Kiggavik Project in 2007. Three types of hydrological monitoring are again proposed for the Kiggavik Project in 2010, as presented in Table 1. These include instantaneous stream discharge measurements, continuous instream stage measurements and lake water level measurements.



Stream velocity and depth measurements will be made using a standard flow meter and these measurements will be used to calculate discharge. At each monitoring location, water elevation will be surveyed using an engineer's rod and level for relative elevation according to benchmarks that had been established in 2007. Continuous water level recorders will be re-installed on selected streams and will be removed at freeze-up to avoid damage from ice. Lake level monitoring will be carried out by surveying the lake elevation relative to a previously established benchmark in lakes that could potentially be impacted by project development.

The hydrology monitoring field program requires three field visits. The spring trip is to re-establish all discharge monitoring locations and to install continuous stage recorders. A second field trip is proposed for mid-summer (late July) to collect discharge measurements and survey stream and lake water elevations. During the summer program, a current profiler will also be installed near the shore of Judge Sissons Lake (Figure 1B) in order to define lake current in the vicinity of the location of effluent release. The final trip of the season (early September) will be to measure and record all stream cross-sections and survey all water elevations. At this time the continuous recorders would be downloaded and removed for the winter.

AREVA Resources Canada Inc. (AREVA) will provide camp services and transportation via helicopter for personnel involved with the hydrological assessment.

A report detailing the results of the 2010 hydrology program would be prepared for inclusion in the 2010 annual report (completion date for draft would be decided between AREVA and Golder Associates Ltd.).

Summary of Work Completed in 2009

The 2009 field season began on June 15 due to a later than usual spring snowmelt. The spring program continued until July 6, the summer field program was conducted from July 24 to 28, and the fall field program was conducted from August 24 to September 3. Continuous water surface elevation sensors were installed at SF2, SF3, SF4, SF5, SF6, SF7, SF8, SF13, and SF14. Two new sites were established to monitor stream discharge near the outflows of Andrew and Mushroom lakes, and lake elevation on Andrew and Mushroom lakes. A continuous water level sensor was also installed in the outflow channel of Andrew Lake. Stream topographic surveys were conducted as part of each of the field programs in 2009 for stream crossing locations along the proposed north all-weather road route (Figures 1A and 1B). These surveys included collection of stream topographic data and stream flow measurement.

During the spring field program stream discharge and lake elevation monitoring locations were re-established and continuous stage recorders were installed. Water elevations were measured relative to local benchmarks, which in each case were large boulders located in the vicinity of the monitoring location. Stream velocity and depth measurements were made using a standard flow meter and these measurements were used to calculate discharge. During the summer field program, water elevation and stream discharge measurements were taken at the monitoring locations and data from the continuous stage recorders were downloaded. Measurements were again taken at each location during the fall program; continuous stage recorders were again downloaded and were removed for the winter. All stream discharge measurements and lake elevation measurements are presented in Tables 2 and 3, respectively (attached). Preliminary results for the estimations of discharge in the streams that had continuous stage recorders are provided in Table 4 (attached). Note that these results are preliminary only. As more data are collected, better estimations of mean discharge may be provided.

If you have any questions concerning this memo, please contact Sarah Gauthier at (306) 665-7989 or Sarah_Gauthier@golder.com.

Attachments: Tables 1 to 4
Figures 1A and 1B

SG/BT/cjf

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Table 1: Stream Discharge and Lake Elevation Monitoring Locations at the Kiggavik Project, 2009 and 2010

Stream Discharge Monitoring Stations			
Station ID	Description	Crossing Location	Continuous Monitoring
		(UTM NAD 83 Coordinates ^[a])	
SF1	Outflow of Skinny Lake	Zone 14 W 571655E 7155266N	No
SF2	Outflow of Unnamed Lake Downstream of Cirque Lake	Zone 14 W 563554E 7146242N	Yes
SF3	Northeast Inflow of Pointer Lake	Zone 14 W 565717E 7147088N	Yes
SF4	Outflow of Siksik Lake	Zone 14 W 565790E 7140386N	Yes
SF5	Outflow of Pointer Lake	Zone 14 W 566477E 7140840N	Yes
SF6	Outflow of Shack Lake	Zone 14 W 558223E 7131912N	Yes
SF7	Outflow of Judge Sissons Lake	Zone 14 W 574605E 7134734N	Yes
SF8	Outflow of Siamese Lake	Zone 14 W 580364E 7146775N	Yes
SF10	Tributary to the Northeast Inflow of Pointer Lake	Zone 14 W 565328E 7146771N	No
SF11	Northwest Inflow of Pointer Lake	Zone 14 W 565015E 7144882N	No
SF13	Aniguq River	Zone 14 W 617415E 7123391N	Yes
SF14	Qinguq Creek	Zone 14 W 630101E 7128437N	Yes
SF15	Outflow of Andrew Lake	Zone 14 W 553586E 7134121N	Yes
SF16	Outflow of Mushroom Lake	Zone 14 W 554181E 7136655N	No
Lake Water Surface Elevation Monitoring Stations			
Station ID	Description	Benchmark Location	Continuous Monitoring
		(UTM NAD 83 Coordinates ^[a])	
LE1	Pointer Lake	Zone 14 W 565652E 7142467N	No
LE2	Unnamed Lake Downstream of Cirque Lake	Zone 14 W 563603E 7146244N	No
LE3	Judge Sissons Lake	Zone 14 W 574537E 7134751N	No
LE5	Skinny Lake	Zone 14 W 571626E 7154893N	No
LE6	Kavisilik Lake	Zone 14 W 571712E 7155299N	No
LE7	Siamese Lake	Zone 14 W 576086E 7151648N	No
LE8	Andrew Lake	Zone 14 W 553222E 7134135N	No
LE9	Mushroom Lake	Zone 14 W 554219E 7136721N	No

Notes: (a) E is easting (in meters), N is northing (in meters)

Table 2: Stream Discharge and Water Surface Elevation Measurements, 2009

Station ID	Date	Water Elevation (m)	Discharge (m³/s)	Station ID	Date	Water Elevation (m)	Discharge (m³/s)
SF1	18-Jun-09	98.790	7.03	SF7	17-Jun-09	98.771	20.60
	27-Jul-09	98.216	0.10		25-Jul-09	98.519	8.23
	26-Aug-09	98.411	1.06		25-Aug-09	98.321	3.89
SF2	17-Jun-09	99.006	0.83	SF8	18-Jun-09	99.350	2.21
	20-Jun-09	98.985	0.71		26-Jul-09	99.249	1.03
	27-Jul-09	98.759	0.04		26-Aug-09	99.235	0.81
	24-Aug-09	98.870	0.18	SF10	16-Jun-09	98.897	0.10
SF3	16-Jun-09	99.714	0.17		20-Jun-09	98.874	0.05
	20-Jun-09	99.703	0.16		27-Jul-09	98.808	0.00
	27-Jul-09	99.498	0.00		24-Aug-09	98.860	0.01
	24-Aug-09	99.617	0.09	SF11	17-Jun-09	99.693	0.85
SF4	16-Jun-09	99.574	0.22		20-Jun-09	99.684	0.79
	26-Jul-09	99.258	0.00		27-Jul-09	99.477	0.01
	25-Aug-09	99.293	0.00		25-Aug-09	99.534	0.15
SF5	16-Jun-09	99.074	9.27	SF14	26-Jul-09	33.930	2.00
	25-Jul-09	98.511	0.24	SF15	18-Jun-09	99.705	4.00
	25-Aug-09	98.589	0.75		6-Jul-09	99.290	0.37
SF6	17-Jun-09	99.774	6.84 (0.60)		25-Jul-09	99.132	0.07
	25-Jul-09	99.242	0.08		25-Aug-09	99.165	0.12
	25-Aug-09	99.093	0.13	SF16	18-Jun-09	99.460	0.14
					25-Jul-09	99.216	0.02
					25-Aug-09	99.227	0.02

Table 3: Measured Lake Elevations, 2009

Station ID	Lake	Date	Elevation (m)
LE1	Pointer Lake	17-Jun-09	98.906
		25-Jul-09	98.285
		25-Aug-09	98.316
LE2	Unnamed Lake Downstream of Cirque Lake	17-Jun-09	99.142
		20-Jun-09	99.035
		27-Jul-09	98.774
		24-Aug-09	98.900
LE3	Judge Sissons Lake	17-Jun-09	99.816
		25-Jul-09	99.680
		25-Aug-09	99.578
LE5	Skinny Lake	18-Jun-09	99.601
		27-Jul-09	99.232
		26-Aug-09	99.334
LE6	Kavisilik Lake	03-Aug-07	98.170
		20-Sep-07	98.255
		22-Jul-08	98.229
		31-Aug-08	98.196
		18-Jun-09	98.540
		27-Jul-09	98.187
		26-Aug-09	98.263
LE7	Siamese Lake	18-Jun-09	97.241
		26-Jul-09	97.084
		26-Aug-09	97.043
LE8	Andrew Lake	18-Jun-09	99.460
		6-Jul-09	99.028
		25-Jul-09	98.871
		25-Aug-09	98.882
LE9	Mushroom Lake	18-Jun-09	99.579
		25-Jul-09	99.419
		25-Aug-09	99.410

Table 4: Monthly Mean, Maximum and Minimum Discharge Estimates in 2009 (m³/s)

Station ID	Discharge (m ³ /s)	June	July	Station ID	Discharge (m ³ /s)	June	July
SF2	Mean		0.06	SF7	Mean	17.2	12.4
	Maximum		0.25		Maximum	26.1	18.9
	Minimum		0.01		Minimum	0.00	8.09
SF3	Mean		0.01	SF8	Mean	1.76	1.35
	Maximum		0.06		Maximum	2.80	1.99
	Minimum		0.00		Minimum	0.00	0.85
SF4	Mean		0.00	SF13	Mean	83.4	38.0
	Maximum		0.00		Maximum	128	75.3
	Minimum		0.00		Minimum	0.00	20.3
SF5	Mean	4.29	0.77	SF14	Mean		3.43
	Maximum	8.77	1.92		Maximum		7.26
	Minimum	0.00	0.23		Minimum		2.12
SF6	Mean	2.53	0.29	SF15	Mean	1.84	0.21
	Maximum	5.40	0.95		Maximum	3.97	0.65
	Minimum	0.00	0.08		Minimum	0.00	0.04

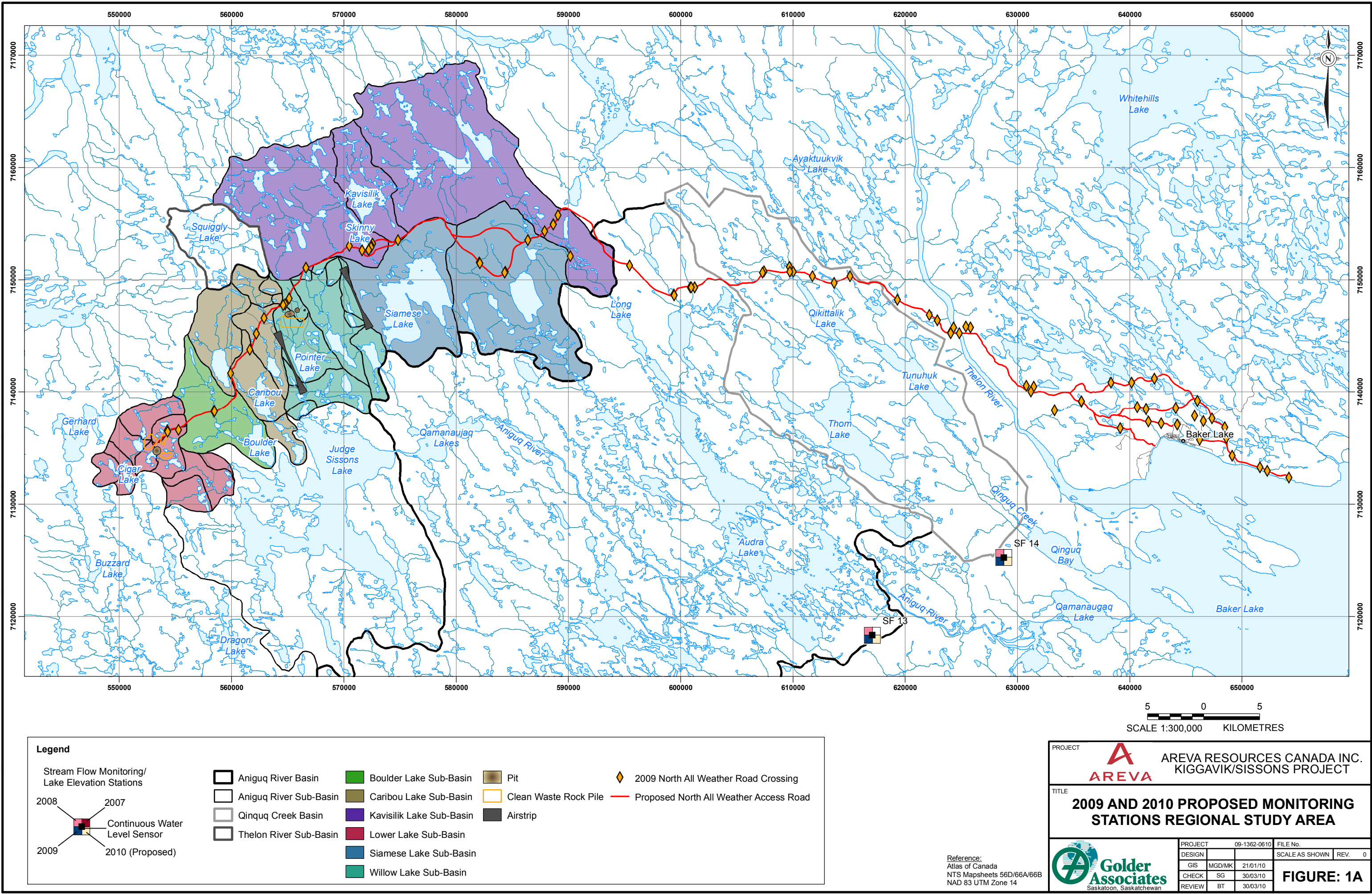
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SF1	18-ᐱᕐᕐ-09	98.790	7.03	SF7	17-ᐱᕐᕐ-09	98.771	20.60	
	27-ᐱᕐᕐ-09	98.216	0.10		25-ᐱᕐᕐ-09	98.519	8.23	
	26-ᐱᕐᕐ-09	98.411	1.06		25-ᐱᕐᕐ-09	98.321	3.89	
SF2	17-ᐱᕐᕐ-09	99.006	0.83	SF8	18-ᐱᕐᕐ-09	99.350	2.21	
	20-ᐱᕐᕐ-09	98.985	0.71		26-ᐱᕐᕐ-09	99.249	1.03	
	27-ᐱᕐᕐ-09	98.759	0.04		26-ᐱᕐᕐ-09	99.235	0.81	
	24-ᐱᕐᕐ-09	98.870	0.18	SF10	16-ᐱᕐᕐ-09	98.897	0.10	
SF3	16-ᐱᕐᕐ-09	99.714	0.17		20-ᐱᕐᕐ-09	98.874	0.05	
	20-ᐱᕐᕐ-09	99.703	0.16		27-ᐱᕐᕐ-09	98.808	0.00	
	27-ᐱᕐᕐ-09	99.498	0.00		24-ᐱᕐᕐ-09	98.860	0.01	
	24-ᐱᕐᕐ-09	99.617	0.09	SF11	17-ᐱᕐᕐ-09	99.693	0.85	
SF4	16-ᐱᕐᕐ-09	99.574	0.22		20-ᐱᕐᕐ-09	99.684	0.79	
	26-ᐱᕐᕐ-09	99.258	0.00		27-ᐱᕐᕐ-09	99.477	0.01	
	25-ᐱᕐᕐ-09	99.293	0.00		25-ᐱᕐᕐ-09	99.534	0.15	
SF5	16-ᐱᕐᕐ-09	99.074	9.27	SF14	26-ᐱᕐᕐ-09	33.930	2.00	
	25-ᐱᕐᕐ-09	98.511	0.24	SF15	18-ᐱᕐᕐ-09	99.705	4.00	
	25-ᐱᕐᕐ-09	98.589	0.75		6-ᐱᕐᕐ-09	99.290	0.37	
SF6	17-ᐱᕐᕐ-09	99.774	6.84 (0.60)		25-ᐱᕐᕐ-09	99.132	0.07	
	25-ᐱᕐᕐ-09	99.242	0.08		25-ᐱᕐᕐ-09	99.165	0.12	
	25-ᐱᕐᕐ-09	99.093	0.13	SF16	18-ᐱᕐᕐ-09	99.460	0.14	
					25-ᐱᕐᕐ-09	99.216	0.02	
					25-ᐱᕐᕐ-09	99.227	0.02	

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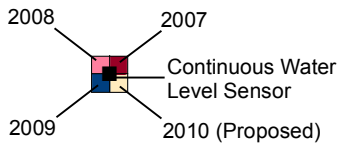
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LE1	ᐱᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ	17-ᐱᐱᐱ-09	98.906
		25-ᐱᐱᐱ-09	98.285
		25-ᐱᐱᐱ-09	98.316
LE2	ᐱᐱᐱᐱᐱᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ ᐱᐱᐱᐱᐱᐱᐱᐱ ᐱᐱᐱ ᐱᐱᐱᐱᐱᐱᐱ	17-ᐱᐱᐱ-09	99.142
		20-ᐱᐱᐱ-09	99.035
		27-ᐱᐱᐱ-09	98.774
		24-ᐱᐱᐱ-09	98.900
LE3	ᐱᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ	17-ᐱᐱᐱ-09	99.816
		25-ᐱᐱᐱ-09	99.680
		25-ᐱᐱᐱ-09	99.578
LE5	ᐱᐱᐱᐱ ᐱᐱᐱᐱ	18-ᐱᐱᐱ-09	99.601
		27-ᐱᐱᐱ-09	99.232
		26-ᐱᐱᐱ-09	99.334
LE6	ᐱᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ	03-ᐱᐱᐱ-07	98.170
		20-Sep-07	98.255
		22-ᐱᐱᐱ-08	98.229
		31-ᐱᐱᐱ-08	98.196
		18-ᐱᐱᐱ-09	98.540
		27-ᐱᐱᐱ-09	98.187
		26-ᐱᐱᐱ-09	98.263
LE7	ᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ	18-ᐱᐱᐱ-09	97.241
		26-ᐱᐱᐱ-09	97.084
		26-ᐱᐱᐱ-09	97.043
LE8	ᐱᐱᐱᐱᐱ ᐱᐱᐱᐱ	18-ᐱᐱᐱ-09	99.460
		6-ᐱᐱᐱ-09	99.028
		25-ᐱᐱᐱ-09	98.871
		25-ᐱᐱᐱ-09	98.882
LE9	ᐱᐱᐱᐱ ᐱᐱᐱᐱ	18-ᐱᐱᐱ-09	99.579
		25-ᐱᐱᐱ-09	99.419
		25-ᐱᐱᐱ-09	99.410

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Legend

Stream Flow Monitoring/
Lake Elevation Stations



Aniguq River Basin

Aniguq River Sub-Basin

Qinquq Creek Basin

Thelon River Sub-Basin

Boulder Lake Sub-Basin

Caribou Lake Sub-Basin

Kavisilik Lake Sub-Basin

Lower Lake Sub-Basin

Siamese Lake Sub-Basin

Willow Lake Sub-Basin

Pit

Clean Waste Rock Pile

Airstrip

2009 North All Weather Road Crossing

Proposed North All Weather Access Road

Reference:
Atlas of Canada
NTS Mapsheets 56D/66A/66B
NAD 83 UTM Zone 14

PROJECT		AREVA		AREVA RESOURCES CANADA INC. KIGGAVIK/SISSONS PROJECT	
TITLE					
2009 AND 2010 PROPOSED MONITORING STATIONS REGIONAL STUDY AREA					
PROJECT		09-1362-0610		FILE No.	
DESIGN	MGD/MK	21/01/10	SCALE AS SHOWN		REV. 0
GIS	SG	30/03/10	FIGURE: 1A		
CHECK	BT	30/03/10			
REVIEW					

Golder Associates
Saskatoon, Saskatchewan

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