

# Athabasca Basin

## EXPLORATION UPDATE

January.1.2013

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Uranium  
Group Inc.

	November 30, 2012	December 31, 2012	Change
Ux Consulting's <b>Spot Price</b>	US \$42.00/lb U <sub>3</sub> O <sub>8</sub>	US \$43.50/lb U <sub>3</sub> O <sub>8</sub>	<b>US \$1.50</b>

### Exploration News:

1. Anthem Resources Inc. (TSXV-AYN) / Denison Mines Corp. (TSX-DML): Anthem to Drill Hatchet Lake JV Property, Saskatchewan
2. Fission Energy Corp. (TSXV-FIS) / Alpha Minerals Inc. (TSXV-AMW): Fission Intersects 12.5M @ 2.49% U<sub>3</sub>O<sub>8</sub> with Assays to 11.1% U<sub>3</sub>O<sub>8</sub> at PLS
3. Fission Energy Corp. (TSXV-FIS): Fission Increases 43-101 Resource at J Zone on its Waterbury Lake Project
4. Mega Uranium Ltd. (TSX-MGA): Mega Uranium and NexGen Energy Complete Property Sale
5. UEX Corp. (TSX-UEX): UEX/Areva Report Final Results from 2012 Drilling Program at Shea Creek
6. UraVan Minerals Inc. (TSXV-UVN): Halliday Exploration Review

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**Anthem Resources Inc. (TSXV-AYN) / Denison Mines Corp. (TSX-DML): Anthem to Drill Hatchet Lake JV Property, Saskatchewan** – On December 18, it was announced that Anthem Resources Inc.'s 10-hole, 2,000-metre drill program had been approved for the Hatchet Lake joint venture uranium property, located on the northeast margin of the prolific Athabasca basin of Saskatchewan. Anthem holds a 50-per-cent joint venture interest in this 33,930-hectare property, with the remaining 50 per cent held by operator Denison Mines Corp.

The drilling is expected to begin about Feb. 1, 2013, and will focus on geophysical and geological targets along a five-kilometre portion of the Richardson-Crooked Lakes trend, which is accessible by winter road from the settlement of Points North. This trend consists of several strong, close-spaced, subparallel electromagnetic conductors. Previous drilling has identified very promising indications for unconformity-type uranium mineralization, including anomalous radioactivity, intense alteration and sulphide mineralization associated with graphitic basement rocks. The targets are at relatively shallow depths -- 60 metres to 120 metres below surface -- well within reach of open-pit mining. Maps of the trend are available at the company's website.

For example, hole 2011-02A, drilled by the joint venture in 2011, intersected 0.8 metre grading 0.15 per cent equivalent triuranium octoxide at 108 metres depth (see April 27, 2011, news release for details). At least 13 additional historic holes along the trend are reported to have encountered anomalous radioactivity, which, in some cases, occurs with base-metal sulphide mineralization. Notable historic intersections include 2.5 m grading 7.34 per cent cobalt, 1.66 per cent nickel, 16.07 per cent arsenic and up to 980 counts per second (hole SMDC 61), and 2.5 m grading 4.8 per cent copper, 0.3 per cent Co, 0.09 per cent Ni and up to 5,400 cps (hole HT-96). This style of polymetallic sulphide mineralization is also present at the Cigar Lake mine and other important deposits in the basin.

Additionally, the JV partners have begun flying a VTEM plus airborne electromagnetic survey over a portion of the adjacent Murphy Lake JV property. Anthem's share of the overall drilling and airborne program is budgeted at \$400,000.

On Anthem's 100-per-cent-owned Fir Island and Fond du Lac properties, also on the eastern side of the Athabasca basin, small programs of soil and boulder sampling were completed in fall 2012. Results are being compiled.

**Fission Energy Corp. (TSXV-FIS) / Alpha Minerals Inc. (TSXV-AMW): Fission Intersects 12.5M @ 2.49% U3O8 with Assays to 11.1% U3O8 at PLS** – On December 5, Fission Energy Corp. and its 50-per-cent joint venture partner Alpha Minerals Inc. released assay results from the recently completed drill program (see news release Nov. 15, 2012) on its Patterson Lake South (PLS) property.

***Composited drill hole mineralized intersections include:***

- Hole PLS12-024 -- 18 metres of 1.78 per cent triuranium octoxide (U3O8) from 65 metres to 83 metres;
  - Including 12.5 metres of 2.49 per cent U3O8;
  - Including 3.5 metres of 4.33 per cent U3O8;
  - Including 0.5 metre of 11.1 per cent U3O8;
- Hole PLS12-022 -- 8.5 metres of 1.07 per cent U3O8 from 70.5 metres to 79 metres;
  - Including 2.5 metres of 2.63 per cent U3O8;
- Hole PLS12-025 -- 22.5 metres of 0.4 per cent U3O8 from 60.5 metres to 83 metres;
  - Including 4.03 metres of 0.85 per cent U3O8;
- Hole PLS12-023 -- 9.5 metres of 0.27 per cent U3O8 from 66.5 metres to 76 metres.

The nine-hole, 1,631.86-metre core drilling program focused on the partially tested PL-3B electromagnetic conductor, in addition to other untested parallel east-northeast-trending electromagnetic conductors, which lie approximately three kilometres to the east of the high-grade uranium boulder field reported in July of last year (see news release dated July 27, 2011), where multiple boulder assays were recorded as high as 39.6 per cent U3O8.

Ross McElroy, president, chief operating officer and chief geologist for Fission, commented: "We are extremely pleased with the recent assay results at the PLS discovery that confirm high-grade mineralization within wide intersections at shallow depth. These encouraging results will help direct an aggressive winter program designed to further delineate this zone."

Composited triuranium-octoxide-mineralized intervals are summarized in the attached table. The four mineralized holes show that the uranium is concentrated primarily at the same shallow depth between 57.5 metres to 92.5 metres in basement graphitic metapelitic lithology and with continuous substantial widths. Uranium concentration is well developed throughout the mineralized sections, with assays being relatively consistent throughout.

**PLS HOLE SUMMARY**

Hole ID	Grid Line	From (m)	To (m)	Interval (m)	U <sub>3</sub> O <sub>8</sub> (wt%)
PLS12-017		<i>No significant mineralization</i>			
PLS12-018		<i>No significant mineralization</i>			
PLS12-019		<i>No significant mineralization</i>			
PLS12-020		<i>No significant mineralization</i>			
PLS12-021		<i>No significant mineralization</i>			
PLS12-022	000W	57.50	58.50	1.00	0.06
		66.00	68.50	2.50	0.14
		70.50	79.00	8.50	1.07
		<b>74.00</b>	<b>76.50</b>	<b>2.50</b>	<b>2.63</b>
		168.50	169.00	0.50	0.06
PLS12-023	000W	63.09	64.50	1.41	0.31
		66.50	76.00	9.50	0.27
		91.00	91.50	0.50	0.08
PLS12-024	010W	60.00	61.50	1.50	0.33
		65.00	83.00	18.00	1.78
		<b>65.50</b>	<b>78.00</b>	<b>12.50</b>	<b>2.49</b>
		<b>66.50</b>	<b>70.00</b>	<b>3.50</b>	<b>4.33</b>
		<b>69.50</b>	<b>70.00</b>	<b>0.50</b>	<b>11.10</b>
		91.50	92.50	1.00	0.11
PLS12-025	010W	60.50	83.00	22.50	0.40
		<b>77.50</b>	<b>81.53</b>	<b>4.03</b>	<b>0.85</b>
		85.50	86.00	0.50	0.07



Planning for an aggressive winter 2013 drilling program is under way to carry out additional core drilling to further define and identify the mineralized area established by these results. Details of the program will be released upon approval of the joint venture program.

Updated maps with drill hole locations and assay results showing zones of uranium mineralization have been posted to Fission's corporate website.

Drill core samples were analyzed by SRC Geoanalytical Laboratories (an SCC ISO/IEC 17025: 2005-accredited facility) of Saskatoon for assay analysis, which included a 63-element ICP-OES and uranium by fluorimetry (partial digestion).

### ***Patterson Lake South property***

The 31,039-hectare PLS project is a 50/50 joint venture held by Fission Energy and Alpha Minerals. Fission is the operator. PLS is accessible by road with primary access from all-weather Highway 955, which runs north to the former Cluff Lake mine (greater than 60 million pounds of U<sub>3</sub>O<sub>8</sub> produced), and passes through the nearby UEX-Areva Shea Creek discoveries located 50 kilometres to the north, currently under active exploration and development and with resource of approximately 88 million pounds of U<sub>3</sub>O<sub>8</sub>.

**Fission Energy Corp. (TSXV-FIS): Fission Increases 43-101 Resource at J Zone on its Waterbury Lake Project** – On December 6, Fission Energy Corp. and its limited partner, the Korea Waterbury Uranium LP, released the preliminary results of an updated independent National Instrument 43-101-compliant resource estimate for the J zone uranium deposit at its 40,256-hectare Waterbury Lake property, located in the eastern part of the Athabasca basin. The previous resource estimate was announced in a news release on Jan. 16, 2012.

### ***The J zone deposit is currently estimated to contain:***

- An indicated resource totaling 10,284,000 pounds based on 307,000 tonnes at an average grade of 1.52 per cent triuranium octoxide (U<sub>3</sub>O<sub>8</sub>);
- An additional 2,747,000 pounds based on 138,000 tonnes averaging 0.90 per cent U<sub>3</sub>O<sub>8</sub> classified as an inferred mineral resource.

The current indicated and inferred resource are stated using a grade cut-off of 0.1 per cent U<sub>3</sub>O<sub>8</sub>. The previous resource statement was made using a grade cut-off of 0.05 per cent U<sub>3</sub>O<sub>8</sub>. A cut-off grade of 0.10 per cent is considered a reasonable economic cut-off grade for the J zone to maximize the grade of the resource while maintaining a coherent model of the resource.

### ***Key characteristics and details of the J zone preliminary resource estimate***

- Approximately 79 per cent of the mineral resource has been classified as an indicated resource, demonstrating the high level of confidence in the data analyzed. The overall indicated inventory has increased 39 per cent compared with the previous estimate (Jan. 16, 2012).
- Almost all mineralization is within the basement rocks proximal to sandstone-basement unconformity. Unconformity mineralization overlaps basement mineralization in the western part of the deposit delineated to date. Average vertical depth to the unconformity is approximately 200 metres.
- Low values for toxic elements such as arsenic and selenium compare favourably with Rio Tinto's Roughrider West uranium deposit, located immediately to the east.



Further details on the quantity and grade for each mineral resource category are shown in the associated table.

**PRELIMINARY MINERAL RESOURCE ESTIMATE**

Waterbury Lake Project -- J Zone, Athabasca Basin, Saskatchewan  
(Prepared by GeoVector Management Inc.)

CIM category	Tonnes	U3O8 (%)	Au (oz)	As (%)	Co (%)	Cu (%)	Mo (%)	Ni (%)	Contained U3O8 (lb)
Indicated resource	306,831	1.52	1,055	0.17	0.01	0.01	0.12	0.06	10,284,000
Inferred resource	138,404	0.90	243	0.10	0.01	0.01	0.09	0.04	2,747,000

*Reported at a U3O8 cut-off grade of 0.10 per cent, no capping of assays.*

Tonnes and pounds U3O8 are rounded to the nearest 1,000. It should be noted that mineral resources are not mineral reserves and have not demonstrated economic viability.

The resource is defined by 10,567 assay samples collected from 200 drill holes totalling 62,416 metres completed by Fission between January, 2010, and August, 2012. General spacing of the drill holes is five metres or 20 metres.

A block model with block dimensions of four by two by two metres was placed over a resource model solid with the proportion of each block inside the solid recorded. Two different search ellipses were used to constrain an IDW (inverse distance weighting) approach and were based on the ranges determined by variography. Half-metre composite samples were used in the resource estimation. Gemcom software was used to complete the resource estimate. An average specific gravity (SG) of 2.56 was used based on extensive SG testing of representative core from mineralized rock. No capping of composite samples was applied.

**J zone deposit**

The J zone uranium discovery was announced in February, 2010. Through successful exploration programs completed to date, it has evolved into an unconformity uranium deposit. Drilling has successfully expanded the strike of the J zone to 678 metres east-west, which in itself appears to be an extension of the Rio Tinto Roughrider deposit. The J zone deposit remains open along strike, laterally (horizontally at unconformity) as well as vertically (sandstone and basement), over significant widths, thereby exhibiting significant potential for expanding the resource. In addition, mineralization discovered at the Summit zone, 1,532 metres to the west of the J zone remains a high-priority target, and additional prospective areas including, Oban, Oban North, Murphy Lake and Talisker, continue to demonstrate the potential for multiple mineral occurrences throughout Waterbury Lake property, which, remains largely unexplored.

Split core samples from the mineralized section of core were taken continuously through the mineralized intervals and submitted to SRC Geoanalytical Laboratories (an SCC ISO/IEC 17025: 2005-accredited facility) of Saskatoon for analysis, which included U3O8 and fire assay for gold. In addition, all samples sent for analysis included a 63-element ICP-OES, uranium by fluorimetry (partial digestion) and boron.





**Mega Uranium Ltd. (TSX-MGA): Mega Uranium and NexGen Energy Complete Property Sale** – On December 18, it was announced that Mega Uranium Ltd. and NexGen Energy Ltd. had closed NexGen's purchase of Mega's uranium projects located in the Athabasca basin, Saskatchewan, and the Thelon basin, Nunavut. Mega received an aggregate of 21,876,265 common shares of NexGen as consideration for the sale of the projects, representing approximately 39 per cent of NexGen's outstanding common shares. Concurrent with the closing, Richard Patricio and Gerry Feldman, Mega's executive vice-president, corporate affairs, and chief financial officer, respectively, were appointed to the board of directors of NexGen.

NexGen, a private company, has also entered into a letter of intent with Clermont Capital Inc., a capital pool company (see Clermont's news release dated Nov. 30, 2012), regarding a proposed reverse takeover of Clermont by NexGen. If completed, current shareholders of NexGen would become shareholders of the resulting publicly listed entity.

**UEX Corp. (TSX-UEX): UEX/Areva Report Final Results from 2012 Drilling Program at Shea Creek** – On December 20, UEX Corp. released the results from the final two holes of the 2012 exploration program at the Shea Creek project. Shea Creek hosts the Kianna, Anne, Colette and 58B deposits, and is one of 10 49-per-cent-owned Western Athabasca uranium projects joint ventured with AREVA Resources Canada Inc., the project operator.

The new results reported are from two step-out directional drill holes, SHE-118-25 and SHE-135-15, which were drilled to test the northwest extensions and updip projection of the previous drilling in the Kianna East zone. Kianna East is a newly discovered mineralized body that dips shallowly to the southwest, and lies to the east of, and below, the main zone of the Kianna basement mineralization. Drill hole SHE-135-15 significantly expands Kianna East mineralization approximately 40 metres to the northwest. Results from this drill hole are as follows.

***SHE-135-15:***

- Upper Kianna East zone -- 0.41 per cent equivalent triuranium octoxide over 9.3 metres, including 1.40 per cent eU3O8 over 1.8 metres;
- Kianna East zone -- 0.19 per cent eU3O8 over 23.7 metres, including 0.50 per cent eU3O8 over 5.0 metres and 0.47 per cent eU3O8 over 3.4 metres.

Complete results from drilling in Kianna East that have been intersected to date are reported in the attached table.

Although SHE-135-15 did not intersect higher grades as previously obtained in other drill holes which lie to the southeast, the mineralization in this drill hole maintains a substantial width, and the position of the drill hole suggests that the zone continues to the northwest of the previously reported drilling. Mineralization is open in most directions around this drill hole, and there is potential for the still-open, thick, higher-grade areas seen in previous drilling to extend into this area.

In addition, drill hole SHE-135-15 intersected 9.3 metres grading 0.41 per cent eU3O8, including 1.8 metres grading 1.40 per cent eU3O8, located approximately 20 metres above the Kianna East mineralization. This intersection, when modelled in conjunction with previous results, indicates that a second, parallel, narrower mineralized zone (Upper Kianna East) is located approximately 20 metres to 50 metres above the Kianna East mineralization. This mineralized zone displays continuity between several holes and includes previously reported intercepts such as 14.6 metres grading 0.18 per cent eU3O8, including 0.8 metre grading 2.64 per cent eU3O8 in drill hole SHE-118-23; 6.2 metres grading 0.26 per cent eU3O8 in drill hole SHE-135-13; and 11.0 metres grading 0.17 per cent eU3O8 in drill hole SHE-135-14.



Drill hole SHE-118-25 did not intercept any mineralization above the 0.1-per-cent eU3O8 cut-off utilized in the attached table, but did intersect sections exhibiting lower-grade mineralization. In addition, the hole intersected a fault zone with strongly tectonized and brecciated graphitic pelitic gneiss from 995.2 metres to 1,004.1 metres approximately 50 metres updip to the northeast of mineralization in drill hole SHE-118-24. This fault zone is present in all of the Kianna East drill holes and represents the controlling structure to the mineralization. Although no significant mineralization was intersected at this location, the drill hole provides important geological information to continue future tracing of the mineralized structure.

The results reported here conclude the 2012 drilling program at Shea Creek. A total of 29 directional holes were completed for the year. The program was very successful in identifying new mineralization as seen at Kianna East, as well as expanding the footprint of mineralization at the Colette and 58B deposits. Planning for the 2013 exploration program at Shea Creek is currently under way, and the plan and budgets will be reported when they are finalized. The Kianna East zone will be included in an upcoming mineral resource update for Shea Creek which will be reported in early 2013.

### ***Kianna East Mineralization***

The Kianna East mineralization is a southwest-dipping zone of mineralization which lies approximately 80 metres to 110 metres below and east of the main Kianna basement resource, and about 200 metres below the unconformity. Previous results from Kianna East include 16.0 metres grading 3.59 per cent eU3O8 in drill hole SHE-135-11 and 18.1 metres grading 3.70 per cent eU3O8 in drill hole SHE-135-13 (see UEX's news release dated Oct. 15, 2012), as well as 1.55 per cent eU3O8 over 19.9 metres in drill hole SHE-118-24 and 7.0 metres grading 2.36 per cent U3O8 in hole SHE-135-12 (see UEX's news release dated Nov. 14, 2012). Full results of drilling from the Kianna East zone in 2012 are reported in the attached table.

This high-grade zone occurs parallel to, and along the top of, a southwest-dipping graphitic unit which forms an electromagnetic (EM) anomaly to the east of, and parallel to, the Saskatoon Lake conductor. Given the orientation of the drill holes, the Kianna East intercepts may lie at or close to true thickness. The new zone is open to the northwest, southeast and updip to the northeast. Future drilling will test for the potential of the new basement zone to extend upward along the graphitic unit to the unconformity and for new mineralized zones along this parallel conductive graphitic unit.

Further information regarding UEX's projects, including maps, is available on UEX's website.

To view figure 1 (Northern Shea Creek area -- 2012 drilling program) and figure 2 (2012 Shea Creek (Kianna East) drill results: SHE-118-25 and SHE-135-15), please access this news release on UEX's website.

### ***About Shea Creek***

Effective Dec. 31, 2009, UEX reported a combined mineral resource estimate for the Kianna, Anne and Colette deposits. This mineral resource estimate is based on drilling information up to Dec. 31, 2009. Subsequent results, which include the identification of the 58B deposit, and the expansion of the Kianna and Colette deposits, are not incorporated in this mineral resource estimate.

This estimate confirmed Shea Creek as the largest undeveloped uranium resource in the Athabasca basin. Shea Creek also ranks as the third-largest uranium resource in the basin, exceeded in size only by McArthur River and Cigar Lake. Resources at Shea Creek are largely open and have excellent potential for both expansion of known areas of mineralization and discovery of new zones.

UEX intends to update its mineral resource estimate for Shea Creek in early 2013 to include the results from the 2010, 2011 and 2012 drilling campaigns.



**About AREVA Resources Canada**

AREVA, a uranium exploration, mining and milling company, is a subsidiary of AREVA Group, the global nuclear industry leader with an expanding presence in the renewable energies field, and 48,000 employees worldwide to help supply safer, cleaner and more economical energy to the greatest number of people. AREVA Group, through its Canadian subsidiary, has significant interests in several uranium deposits in the Athabasca basin, including the McClean Lake, Midwest and Shea Creek deposits operated by AREVA, as well as the McArthur River and Cigar Lake deposits operated by Cameco Corp. AREVA also holds a majority interest in the Kiggavik deposits in Nunavut.

**TABLE 1**

**2012 Shea Creek (Kianna East) Drill Results**

Results are reported with a grade of greater than 0.1% eU<sub>3</sub>O<sub>8</sub> and a grade-thickness product of greater than 0.2

Hole	Total Depth of Hole (metres)	Depth to Unconformity (metres)	From (metres)	To (metres)	Length (metres)	Avg. Grade Within the Intersection (% eU <sub>3</sub> O <sub>8</sub> )	Type†
SHE-118-22*	1003.5	745.0	737.5	755.2	17.7	0.22	UC
			<i>including</i> 739.8	746.2	6.4	0.49	UC
			946.4	978.7	32.3	0.24	B
			<i>including</i> 968.1	975.6	7.5	0.52	B
SHE-118-23**	1013.0	749.4	743.5	749.7	6.2	0.36	UC
			<i>including</i> 743.5	745.2	1.7	0.43	UC
			<i>including</i> 748.2	749.7	1.5	0.68	UC
			941.6	942.4	0.8	2.64	B
			953.6	956.2	2.6	0.19	B
			962.1	962.9	0.8	0.26	B
			969.7	972.4	2.7	0.23	B
			982.5	983.5	1.0	1.10	B
SHE-118-24**	1041.0	755.1	750.6	756.4	5.8	0.13	UC
			943.7	963.6	19.9	1.55	B
			<i>including</i> 943.7	947.8	4.1	3.09	B
			<i>including</i> 948.9	950.1	1.2	0.57	B





			<i>including</i> 960.6	963.6	3.0	5.73	B
			987.5	988.3	0.8	1.58	B
SHE-118-25	1080.0	769.0	No significant results				
SHE-135-10*	765.0	749.2	746.8	749.7	2.9	0.13	UC
			<i>including</i> 748.1	749.7	1.6	0.20	UC
<p><i>NOTE: Before reaching the depth of the new mineralized zone, hole SHE-135-10 was terminated at 765.0 m due to excessive deviation and was re-drilled as hole SHE-135-11.</i></p>							
SHE-135-11*	1074.6	756.6	807.7	808.9	1.2	0.22	B
			979.2	995.2	16.0	3.59	B
			<i>including</i> 979.2	987.4	8.2	6.39	B
			<i>including</i> 991.0	995.0	4.0	1.25	B
SHE-135-12*	1029.0	755.0	888.7	899.9	11.2	0.22	B
			<i>including</i> 888.7	889.8	1.1	0.33	B
			<i>including</i> 896.0	899.9	3.9	0.35	B
			990.5	997.5	7.0	2.36***	B
			<i>including</i> 994.0	997.5	3.5	4.06***	B
SHE-135-13*	1065.0	758.7	948.6	954.8	6.2	0.26	B
			<i>including</i> 949.6	952.0	2.4	0.60	B
			985.5	1003.6	18.1	3.70	B
			<i>including</i> 985.5	989.1	3.6	2.62	B
			<i>including</i> 991.7	996.5	4.8	11.28	B
			<i>including</i> 998.8	1003.6	4.8	0.66	B
SHE-135-14**	1042.0	748.1	745.4	749.0	3.6	0.11	UC
			938.6	949.6	11.0	0.17	B
			984.7	993.5	8.8	1.29	B
			<i>including</i> 984.7	987.4	2.7	2.84	B

			<i>including</i> 989.1	992.3	3.2	0.99	B
SHE-135-15	1041.0	749.2	843.7	844.3	0.6	0.43	B
			953.6	962.9	9.3	0.41	B
			<i>including</i> 955.9	957.7	1.8	1.40	B
			974.6	998.3	23.7	0.19	B
			<i>including</i> 974.6	979.6	5.0	0.50	B
			<i>including</i> 988.3	991.7	3.4	0.47	B

\* Previously reported hole - (see UEX news release dated October 15, 2012)  
 \*\* Previously reported hole - (see UEX news release dated November 14, 2012)  
 \*\*\* Corrected geochemical results in %U<sub>3</sub>O<sub>8</sub>

† UC - Unconformity mineralization  
 B -- Basement mineralization

Note: Uranium grades are calculated from gamma probe logging. True widths of mineralized intervals have not yet been determined.

**UraVan Minerals Inc. (TSXV-UVN): Halliday Exploration Review** – On December 20, UraVan Minerals Inc. released Halliday Exploration Review. In September, 2012, UraVan Minerals Inc. completed an exploration program on its Halliday project, Athabasca basin, Northern Saskatchewan. The technical program consisted of five diamond drill holes (HL-01, -02, -03, -05 and -06) totalling 4,836 metres drilled and an infill surface geochemical sampling program (see press release dated Sept. 6, 2012).

Drill holes were positioned to test the potential occurrence of uranium mineralization at depth along a prominent five-kilometre-long, east-west-trending corridor. This corridor was defined by an electromagnetic (EM) geophysical conductor (conductor A), which crosscuts a prominent linear magnetic low and was supported by a concordant distribution of anomalous surface geochemical signatures.

All drill holes were surveyed for anomalous radioactivity (suggesting potential uranium mineralization) using a Mount Sopris triple-gamma (2GHF-1000) downhole geophysical probe. The results from these downhole radiometric surveys disclosed anomalous radioactivity (400 counts per second to 1,200 cps) in most drill holes, occurring predominantly in the underlying structurally disrupted and hydrothermally altered basement rocks (granites and metasediments). Based on the triple-gamma probe data, no economic uranium mineralization was encountered during this drill program. All zones of anomalous radioactivity were systematically sampled and analyzed for total uranium content. The most significant intersections are indicated in the table.

**HALLIDAY DRILL RESULTS**

HoleID	Unconformity	From (m)	To (m)	Thkness (m)	U (ppm)	Rock Type
HL-003	801.83	845.90	846.55	0.65	486.6	Basement
HL-003	801.83	816.40	816.70	0.30	177.1	Basement
HL-003	801.83	829.20	829.49	0.29	198.4	Basement
HL-003	801.83	832.64	832.80	0.16	199.1	Basement
HL-005	808.90	816.35	816.57	0.22	732.6	Basement



To help relate the geochemical signals coming from the basement through the unconformity and then vertically through the Athabasca sandstone (MF) to the surface environment (soils and trees), all drill cores were systematically sampled. A total of 629 core samples (sandstone, fractures and basement rocks) were collected and then analyzed at Acme Labs in Vancouver, B.C., using whole-rock (aqua regia) geochemical techniques and at the Queen's Facility for Isotope Research (QFIR) at Queen's University using WAL (weak-acid leach). These samples were analyzed using multielement ICP-MS for 52 elements, REEs (rare-earth elements), and isotopes of lead, carbon and nitrogen. Additional testwork completed on each drill hole consisted of systematically scanning the core using ASD Terraspec instrumentation (spectral analysis) to map the change/spatial distribution of clay minerals through the cored sandstone intervals. The ASD data provide a means for determining the extent of clay alteration in the sandstone section above the unconformity as a result of basement-sourced hydrothermal activity.

The geochemical data obtained from core samples (sandstone, fractures and basement rocks) strongly suggest that certain mobile uranium pathfinder elements, hosted in basement lithologies, have migrated vertically along fractures/fault systems occurring in the sandstone as a result of basement structural reactivation and coincident hydrothermal activity. The ASD clay spectral data indicate a significant east-to-west increase in illite clay alteration through the sandstone section, suggesting an increase in hydrothermal activity west of drill holes HL-01 and EL-10.

The 2012 infill surface geochemical sampling program (soils and tree cores) was completed over the central and eastern portions of the Halliday project. This sampling program was designed to infill areas from which samples were collected in 2011. The infill program was designed to test data quality, sample reproducibility and to add surface geochemical detail to the survey area. The combined infill area sampled (2011/12) was 1,250 hectares, resulting in the collection of 290 B- and C-horizon soils (clay separates), and 267 tree cores on a 185-metre (average) sample grid. Clay separations from B- and C-horizon soils were prepared at QFIR and submitted to Acme Labs in Vancouver where they were analyzed using multielement ICP-MS for 52 elements, REE and Pb isotopes. The tree cores were prepared and analyzed at QFIR for 50 elements and Pb isotopes using HR ICP-SFMS. In conjunction with the infill sampling program, a gamma-ray spectrometer (GRS) survey was conducted at each soil sample site (in hole) to record the total CPS of gamma radiation present.

The combined 2011/2012 analytical results (clays and tree cores) indicated good overall data quality and reproducibility (radiogenic  $^{207}\text{Pb}/^{206}\text{Pb}$  isotopic ratios and other pathfinder elements) for the clay separates. The combined 2011/2012 tree core analytical data revealed poor reproducibility between the two surveys, which was recently determined to be the result of errors during the preparation of some of the tree cores at QFIR. This resulted in a number of errors in the analytical results and a loss of a number of radiogenic Pb anomalies previously reported in the 2011 survey.

The combined 2011/2012 surface clay anomalies, which are supported by the 2012 tree core data, also vector toward a potential target west of drill hole HL-01 and EL-10 (as suggested by the illite clay alteration described above) along conductor A. The analytical results of the 2012 infill surface geochemical program (clays and tree cores) provided UraVan's technical group significant insight into the advances and limitations that this technology may provide for targeting uranium mineralization at depth. More interpretive work is required to fully understand the positive geochemical signals coming from depth, as expressed in the clay separates, versus what may be potentially masking these signatures based on the endogenous geochemistry of the surficial environment (glacial till). UraVan considers its current level of understanding and knowledge of its surface geochemical approach proprietary which supports the continuing applied research and future development of this technology.



**Summary of key technical details from the Halliday drilling and surface sampling program:**

- Electromagnetic conductor targets (conductor A) were explained by drill hole intersections (EL-10, HL-005, HL-002 and locally in EL-09) of favourable graphitic pelitic basement lithologies which are well defined by the magnetic low and are characterized by steeply northeast-dipping foliations and structures.
- The central magnetic low defines favourable graphitic basement units, however, even moderate departure toward the magnetic high results in intersecting unfavourable pegmatite-dominated basement (HL-001, HL-003, EL-11, HL-006 and to a lesser extent EL-09).
- The occurrence of major basement faulting has resulted in extensive fracturing radiating upward into the Athabasca sandstone, suggesting major structural reactivation along the conductor A corridor.
- Pathfinder elements enriched in sandstone fractures radiating from the basement are also elevated in pelitic basement lithologies suggesting mobile element migration from depth to the surface environment.
- The alteration and mineralogy of the basement units suggest a dominantly reduced environment due to hydrothermal activity that has had limited interaction with oxidized fluids, a missing key ingredient for uranium mineralization at the unconformity in the area tested.
- Uranium mineralization occurring in the basement of drill holes HL-003, HL-005 and EL-09 is a positive indicator of uranium in a system having a favourable geological/structural setting, however, the lack of supportive elevated uranium mineralization in the lower sandstone (MFa) above unconformity is another missing key component in the area drilled.
- Pervasive illite clay mineral alteration occurring over significant thicknesses in the Athabasca sandstone and well-developed chlorite clay alteration above the unconformity (HL-001 and EL-10), along with pervasive sandstone bleaching, elevated pathfinder elements and REEs suggest that a more advanced hydrothermal and structural system exists toward the untested western end of the conductor A corridor.
- Positive surface geochemical anomalies (more interpretive work required) also highlight an area west of drill holes HL-01 and EL-10 along conductor A.

The 2012 drill program and surface sampling program on the Halliday project was a joint exploration effort by UraVan and Cameco Corp. (see press release dated April 25, 2012). UraVan is currently the operator with the responsibility to plan and implement the exploration program on behalf of Cameco. In a recent technical meeting with Cameco, UraVan's technical group did not present a 2013 exploration program on the Halliday project but deferred this proposal until January, 2013. UraVan believes the cumulative results (geochemical and structural interpretation) of the 2012 technical program are vectoring toward an untested area west of drill holes HL-01 and EL-10. Further drilling in this area will be the basis of UraVan's proposal to Cameco once UraVan's technical group has fully evaluated and understands the 2012 data.

UraVan has presented Cameco with a 2013 program and budget on the Stewardson project. Details of this proposal will be announced in a separate press release in the near future.

The Athabasca basin is an ancient (Paleoproterozoic) sandstone basin located in Northern Saskatchewan, Canada. The Athabasca basin sandstone (Manitou Falls formation) hosts high-grade uranium deposits at and below the unconformity between the sandstone and the older crystalline basement rocks. These unconformity-type uranium deposits occur in sandstones at the sandstone-basement unconformity contact (sandstone-hosted mineralization) and within the underlying structurally disrupted crystalline basement (basement-hosted mineralization). These unconformity-type uranium deposits account for about 28 per cent of the world's primary uranium production. The ore grades are high, typically grading 2 per cent to 20 per cent triuranium octoxide.

Drill hole HL-04 was abandoned in the upper Athabasca sandstone section (250 metres) due to broken ground as a result of heavy fracturing and faulting.



The Halliday surface anomalies were identified by a multifaceted geochemical sampling program completed by Uravan in the summer of 2011. This surface program capitalized on new geochemical technologies developed from a geochemical remote sensing study conducted over the Cigar West uranium deposit (Cigar Lake study), which focused on the detection of buried unconformity-related uranium mineralization in underexplored areas in the Athabasca basin.

The Cigar West study was a collaborative applied research program conducted by Uravan and QFIR in 2009 over a known high-grade uranium deposit in the Athabasca basin. The study was designed to develop new surface geochemical techniques that can better identify bedrock sources of uranium mineralization at depth. This research clearly identified distinctive elements and isotopic compositions that have been mobilized from the deposit (geosphere) to the surface media (plants and soils) from depths greater than 450 metres. The Cigar Lake deposit is on the Waterbury/Cigar uranium property located in the Athabasca basin, Saskatchewan, and is a joint venture partnership between Cameco, AREVA, Idemitsu Kosan Co. Ltd. and Tokyo Electric Power Co. Uravan thanks both AREVA and Cameco for their collaboration and gracious support for the Cigar West study, and the support provided by the Cigar Lake facility during the company's field operations.

The Queen's Facility for Isotope Research at Queen's University, Ontario, is a state-of-the-art research facility, comprising a group of highly experienced research geochemists. The QFIR lab contains some of the most technologically advanced analytical equipment in Canada. Under the direction of Dr. Kurt Kyser, the QFIR research team is working collaboratively with Uravan's technical group to develop new exploration technologies using applied research.