

2.39919



EXPLORATION REPORT  
OF 2006-2008 WORK CONDUCTED  
ON POLE LAKE PROPERTY  
LACKNER & MCNAUGHT TOWNSHIPS  
NTS 42A  
PORCUPINE MINING DIVISION  
FOR  
6378366 CANADA INC.  
&  
6070205 CANADA INC.

December 23, 2008

Submitted by: Lionel Bonhomme

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## **1.0 Introduction:**

6378366 CANADA INC., 6070205 CANADA INC. and Jean Claude Bonhomme assembled a land position in Lackner Township to explore for uranium, niobium, phosphate, iron and REE's. The project was optioned to Seagreen Capital Corporation who later terminated the option. The private companies compiled the area with the assistance of Matthew Johnston, a consulting geophysicist, and a decision to expand the land position and area of search was undertaken. A study of previous work and a compilation of the whole complex led to a pooling of interest with the patent holders Mertec Development Corporation (private company). The whole project was then studied and a review and sampling program was undertaken by a third party of evaluating the complex. As a result of this sample collection and based on new results the search was expanded for additional metals.

## **2.0 Property:**

The land position consists of 13 unpatented mining claims containing 85 units in Lackner Township and 2 unpatented mining claims containing 17 units in McNaught Township of a total in the complex of 15 claims for 102 units, being 1,632 hectares contiguous. Table 1 of the report details claim details and Map 1 shows a sketch of property. The property is registered in the name of 6878366 Canada Inc and it holds the property in trust for various interests.

## **3.0 Location & Access:**

The property is located in the Porcupine Mining Division and is situated 20 kilometers east of the Town of Chapleau. Access consists of paved highway 101 to the north part of property along an old logging road. Due to severe blowdown this access is only by walking. Similar problems occur to the south where the Sultan road can provide access to the Mertec patents then walking to the property. Attached to the report is map 2 showing the property location and roads to property.

#### **4.0 Regional Geology:**

The Lackner Lake Alkalic Complex is situated within the Kapuskasing Structural Zone. It has been dated at 1138 +/- 29 as stated (Bell and Blenkinsop 1980 Sage 1991). The Intrusive is quite recognizable by the magnetic intensity on the regional magnetic survey (ODM-GSC 1963).

#### **5.0 Property Geology:**

The property contains foliated and massive ijolite, ijolite breccia, leucocratic and melanocratic nepheline syenite and dykes of carbonatite and magnetite-apatite veins. In 1988 Sage had documented local fenitization of the granitic gneiss host rocks. Locally concentrations of magnetite, niobium, titanite and numerous crystals containing rare earth elements have been observed. A survey of radioactivity was conducted on the ground and confirmed elevated readings related to thorium and in some cases to uranium. The property is known to have economic concentrations of REE's, thorium, niobium, iron and phosphate as documented by historical and present work.

#### **6.0 Work 2007:**

The company retained a geophysicist to conduct a review and compile previous work carried out historically. Several assessment files were reviewed a digital map incorporating geophysics and economic zones and showings and geology were produced. A report is attached as appendix I to this report. As a result of recommendations several visits to the property were completed and samples collected. Many areas of interest were not accessible due to severe blowdown. The main target of interest at the time was the pole lake showing documented by Dominion Gulf in 1955 (Parsons).

## **7.0 Work 2008 Initial Review:**

In March 2008 an agreement to allow a review by a third party to confirm the potential for uranium was signed. The company accessed the property by helicopter from Chapleau and collected samples. The initial results were encouraging in that many elements were over the detection limits and as a result additional assays were ordered. The over detection limits were obtained and third set of assays ordered for certain elements still over the standard lab detection limits. The last set of analysis was obtained with one element over the laboratory limit. It became very clear that a zone enriched in REE's had been detected in 3 samples south of pole lake. It was also evident that high phosphate zones, iron zones, elevated uranium and thorium grades had been located. These REE's, uranium, thorium had not been analyzed in the past.

In August of 2008 it was decided to further study and focus on the REE potential of the South Pole lake showing. A plot of REE grade were prepared and demonstrated grades similar in ratios to Mountain Pass (California), Bayan Obo (China) and Mount Weld (Australia). Attached on a CD, is a listing of excel files containing samples, UTM coordinates and results. Attached as table 3 is a plot comparing the Lackner samples with various world class deposits. After consultation with various scientists specializing in the REE field it was concluded that more samples be collected to confirm the initial results. Due to the high cost of helicopters, it was decided to clear a trail for an ATV to allow reasonable access to obtain more samples. The trail used the Mertec property as a point of origin and written permission was obtained to cut and clear the blowdown trees. The trail then turned on the unpatented claims to gain access to the showing. A scintollimeter was loaned from the Porcupine District office in Timmins and readings were collected and samples taken. They were then read individually in the office and attached as Appendix II is information on readings. Attached as Maps 3 & 4 are samples locations in Nad 83 Zone 17 and claim location of samples. The way waypoints provided by Vale show the general area and Map 5 & Photographs 1, 2 & 3 show the sample locations.

An expert in the field was retained to review results and determine a way to interpret the findings to date. Some samples were sent to the Geoscience Laboratory of the OGS to be examined under a

binocular microscope for mineral identification. A further field visit was then conducted to sample and document the geology in detail. The total samples collected and sent to the lab for analysis and additional binocular microscopic examination is ongoing. Due to the elevated content of the REE's the samples have to be diluted and mixed by fusion to allow proper analysis and our first set of samples took 4 months to obtain final results. As a better understanding of this complex project is developing with an informed advisor the new approach of analysis would generate results within 3 months and will be forwarded as received. Attached as appendix III is a report of work conducted by Dr. Frederick W. Breaks as technical advisor to this project. Also attached as appendix IV is Mineralogy Reports from Geolabs Job #08-0337.

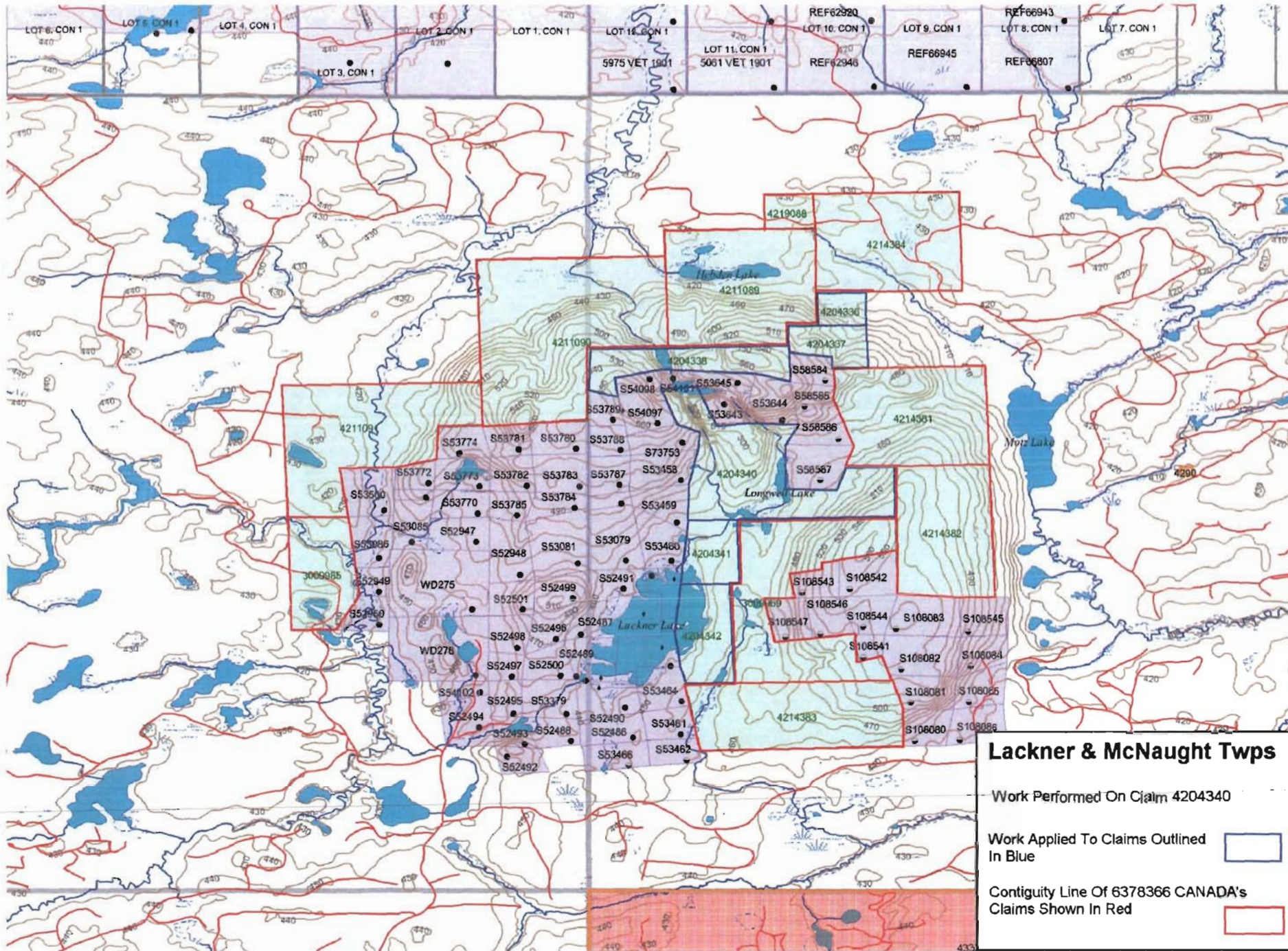
## **8.0 Conclusion:**

The Lackner Lake Complex remains an exciting project that warrants additional study. Upon receipt of samples pending in the laboratory a further report will be prepared to recommend additional work on the following targets.

- a) The iron and phosphate potential
- b) The rare earth element potential
- c) The uranium and thorium potential
- d) The niobium potential

The company would like to acknowledge the cooperation of Mertec Development Company in allowing access to their property and their files, Vale Exploration for advise and their expertise on the exploration of the project, OGS (J. Ayer) for advice on exploration approach, MNM (A. Wilson) Porcupine Mining Division for assistance.

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke at the end.



**Lackner & McNaught Twps**

Work Performed On Claim 4204340

Work Applied To Claims Outlined In Blue

Contiguity Line Of 6378366 CANADA's Claims Shown In Red

TABLE 1

DUE DATE	TOWNSHIP	DIVISION	CLAIM #	UNITS	HOLDER
Dec 29/08	Lackner	Porcupine	4204336	1	6378366 CANADA INC.
Dec 29/08	Lackner	Porcupine	4204337	2	6378366 CANADA INC.
Dec 29/08	Lackner	Porcupine	4204338	4	6378366 CANADA INC.
Dec 29/08	Lackner	Porcupine	4204340	9	6378366 CANADA INC.
Dec 29/08	Lackner	Porcupine	4204341	2	6378366 CANADA INC.
Dec 29/08	Lackner	Porcupine	4204342	3	6378366 CANADA INC.
June 5/09	Lackner	Porcupine	4214381	9	6378366 CANADA INC.
June 5/09	Lackner	Porcupine	4214382	8	6378366 CANADA INC.
June 5/09	Lackner	Porcupine	4214383	9	6378366 CANADA INC.
June 28/09	Lackner	Porcupine	4214384	9	6378366 CANADA INC.
Mar 12/10	Lackner	Porcupine	4211088	1	6378366 CANADA INC.
Mar 12/10	Lackner	Porcupine	4211089	12	6378366 CANADA INC.
Mar 12/10	Lackner	Porcupine	4211090	16	6378366 CANADA INC.
Mar 12/10	McNaught	Porcupine	3009985	5	6378366 CANADA INC.
Mar 12/10	McNaught	Porcupine	4211091	12	6378366 CANADA INC.



December 23, 2008

6378366 Canada Inc.  
1226 Gatineau Blvd.  
Timmins, ON P4R 1E3

Ministry of Northern Development and Mines  
Geoscience Assessment Office  
993 Ramsey Lake Rd. 3<sup>rd</sup> Floor  
Sudbury, ON P3E 6B5

Dear Sir/Madame

This letter is to confirm that Lionel Bonhomme is Acting Agent on behalf of 6378366 Canada Inc. He will be filing assessment work and any other paper work needed for its claims in Ontario.

Truly



Catherine Johnston  
President  
6378366 Canada Inc.

**6070205 Canada Inc.**  
167 Jury Timmins On. P4N 7A1  
705-264-2025

Ministry of Northern Development & Mines  
Geoscience Assessment Office  
993 Ramsey Lake Rd. 3rd floor  
Sudbury Ont. P3E6B5  
Fax 877-670-1555

December 22, 2008

Dear Sir / Madam

This is to confirm that Lionel Bonhomme is acting agent on behalf of 6070205 Canada Inc. to file assessment work or any other paper work deemed necessary for its claims in Ontario.

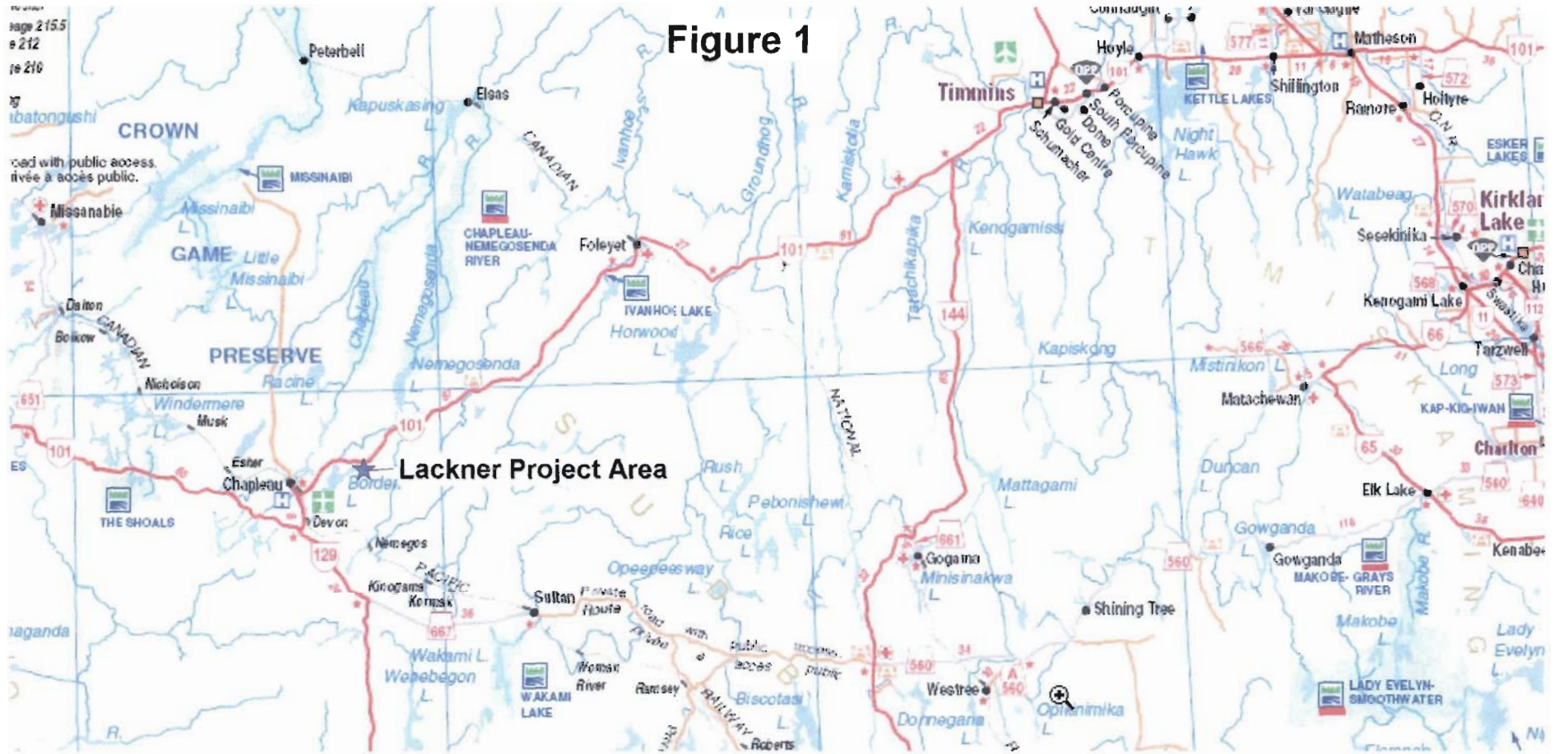
Trusting everything is satisfactory, I remain

Yours Truly



Peter Colbert  
President 6070205 Canada Inc.

Figure 1



Page 215.5  
of 212  
re 210

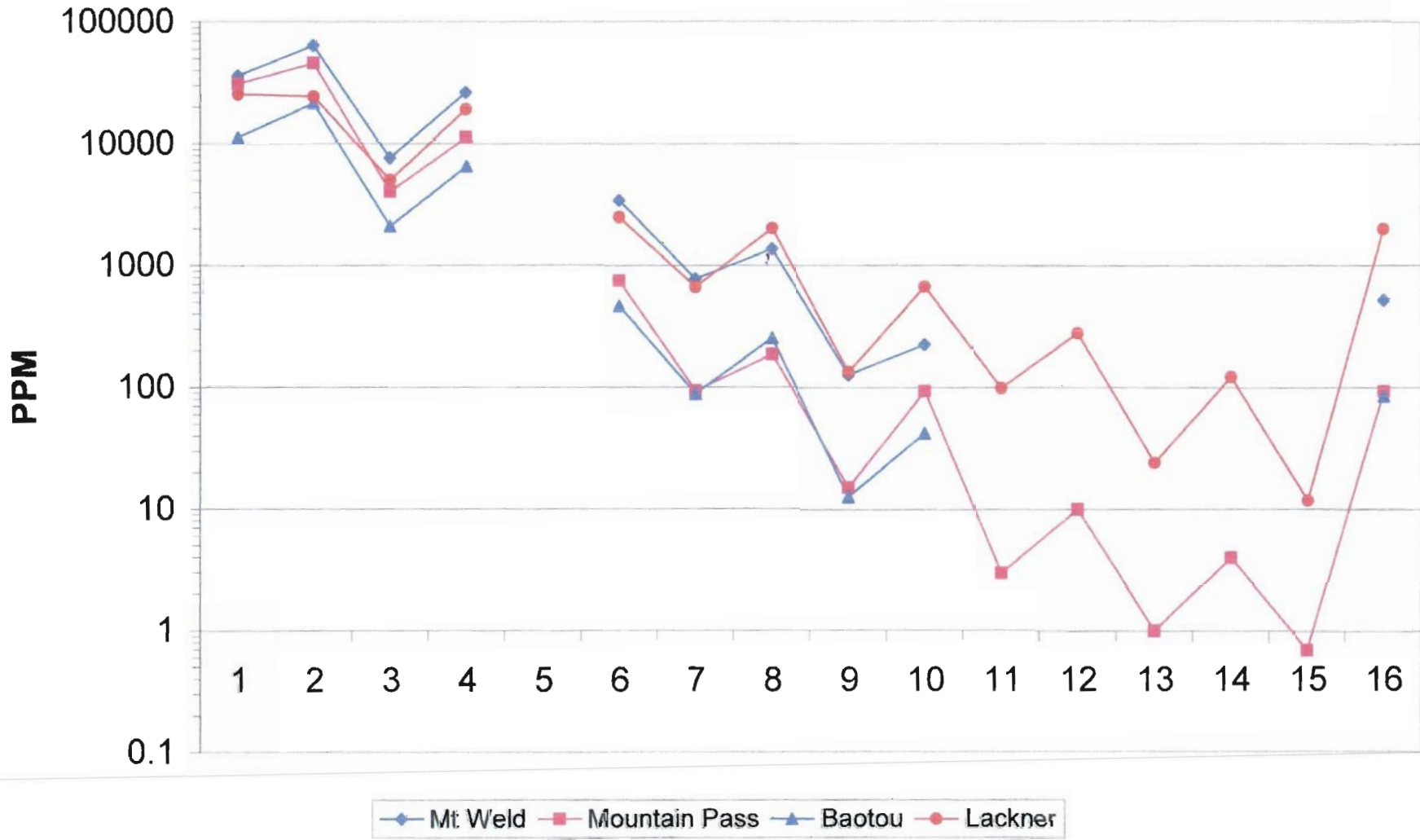
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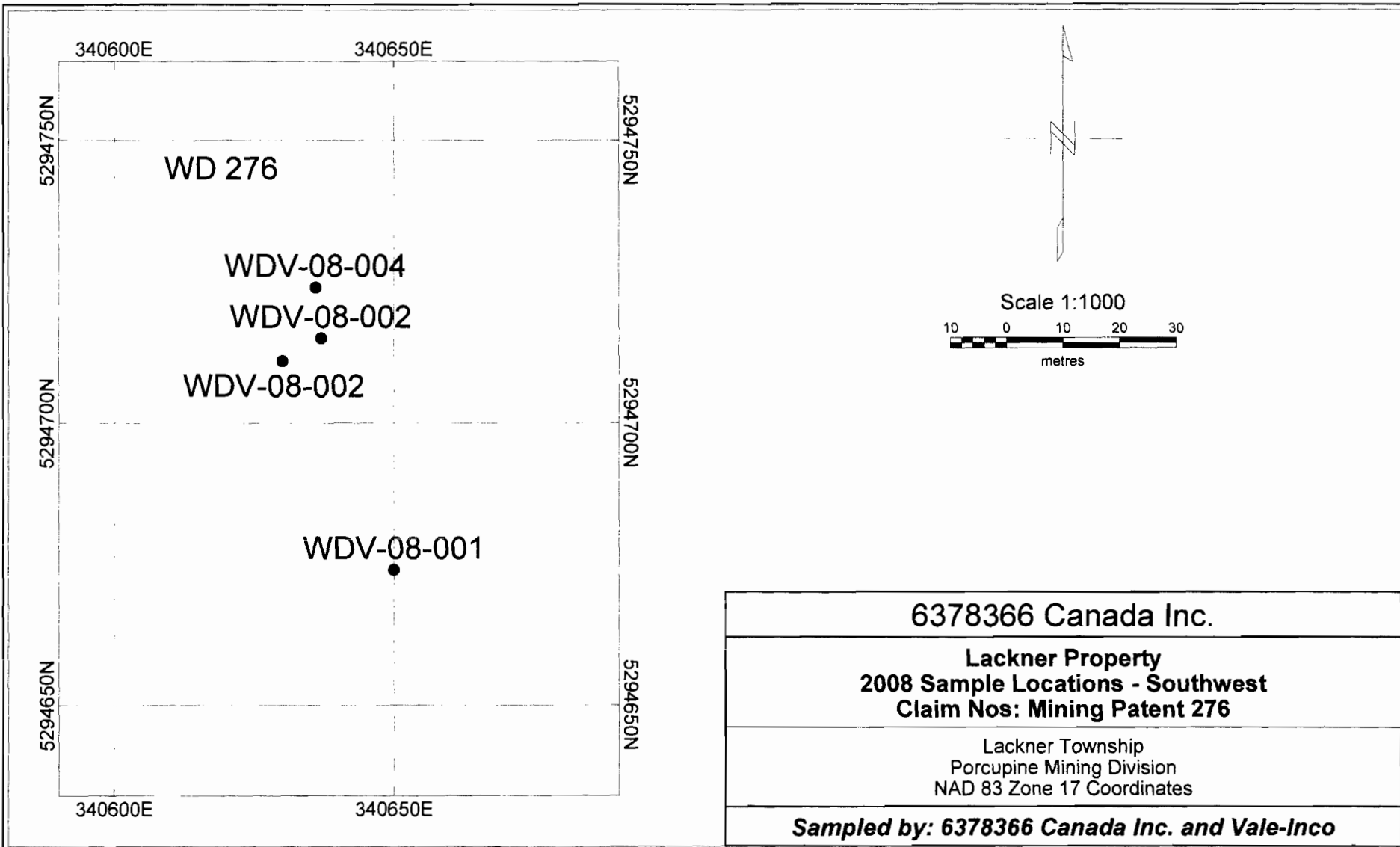
road with public access.  
rivière à accès public.

Lackner Project Area

aganda

# REE Grade Comparisons





340600E

340650E

5294750N

5294750N

WD 276

WDV-08-004

WDV-08-002

WDV-08-002

5294700N

5294700N

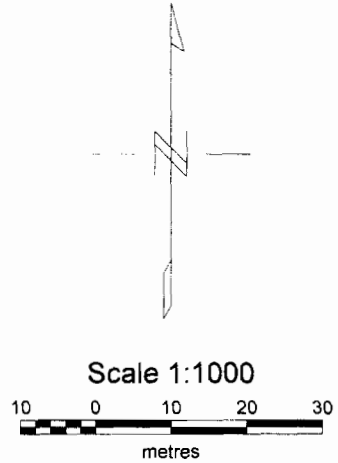
WDV-08-001

5294650N

5294650N

340600E

340650E



6378366 Canada Inc.

**Lackner Property**  
**2008 Sample Locations - Southwest**  
**Claim Nos: Mining Patent 276**

Lackner Township  
Porcupine Mining Division  
NAD 83 Zone 17 Coordinates

**Sampled by: 6378366 Canada Inc. and Vale-Inco**



**CERTIFICATE OF ANALYSIS**  
**GEO LABS**  
 GEOSCIENCE LABORATORIES

Geoscience Laboratories (Geo Labs)  
 933 Ramsey Lake Road, Bldg A4  
 Sudbury, ON P3E 6B5  
 Phone: (705) 670-5637  
 Toll Free: 1-866-436-5227  
 Fax: (705) 670-3047

Issued To: Mr. F Breaks  
  
 35 Kristi Court  
 Sudbury, ON P3E 5R4 Canada  
  
 Phone: 705-522-4778  
 Fax:  
 EMail: fwb289@persona.ca  
 Client No.: 706


Certificate No: CRT-08-0385-03  
 Certificate Date: 1/30/2009  
 Project Number:  
  
 Geo Labs Job No. 08-0385  
 Submission date: 10/27/2008  
  
 Delivery Via: Email  
 QC Requested: Y

**Method Code reported with this certificate: IMX-CUS**

Method Code	Description	QTY	Test Status
IMX-CUS	ICP-MS Custom Analysis	27	Complete
SAM-SPG	Ball Mill Sample Preparation (Using Al Oxide Bowls)	27	Complete
SOL-CAIO	Closed Vessel Multi-Acid Digestion	27	Complete
XRF-M01	XRF Major Elements	11	Complete

Legend:  
 < = Not Detected  
 N.M. = Not Measured  
 Please refer to the Geo Labs Job No. 08-0385 if you have any questions.

**CERTIFIED BY:**

  
 Ed Debicki, Laboratory Manager

Date: January 30, 2009

Except by special permission, reproduction of these results must include any qualifying remarks made by this Ministry with reference to any sample. Results are for samples as received.

**GEO LABS**

EARTH SCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

GL JOB#: 08-0385  
 CLIENT: Breaks  
 DATE: 27/01/2009  
 Method: IMX-CUS

Lab ID Units	Client ID	Ce ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Hf ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Nb ppm
08-0385-0001	3408	78.497	0.576	1.417	0.787	1.308	2.59	3.237	0.26	35.486	0.272	32.788	32.78
08-0385-0001D	3408	79.792	0.589	1.514	0.814	1.299	2.677	3.276	0.269	36.657	0.298	34.801	33.497
08-0385-0002	3409	98.721	0.805	1.894	1.033	1.596	3.261	4.746	0.312	46.355	0.32	40.716	28.6
08-0385-0003	3410	68.414	1.175	1.764	1.092	1.397	2.798	6.063	0.34	30.943	0.328	28.821	80.623
08-0385-0004	3411	478.286	1.708	11.578	4.788	8.07	19.535	5.725	1.9	255.887	0.489	189.655	262.25
08-0385-0005	3412	571.921	2.194	15.212	6.771	9.615	23.769	5.9	2.622	298.611	0.766	219.297	252.809
08-0385-0006	3413	555.883	2.253	15.25	6.783	9.856	23.427	5.905	2.625	282.037	0.735	219.927	240.967
08-0385-0007	3414	379.66	1.096	8.998	4.082	5.911	14.366	6.741	1.588	198.302	0.587	148.152	451.307
08-0385-0008	3415	340.808	0.574	14.709	4.977	9.176	24.787	16.323	2.261	156.326	0.365	167.643	202.264
08-0385-0009	3416-A	153.941	1.019	3.703	1.729	2.783	5.551	7.073	0.637	72.011	0.459	62.743	511.89
08-0385-0010	3416-B	219.356	1.025	3.939	1.815	3.352	6.938	2.886	0.69	106.422	0.345	83.62	160.424
08-0385-0011	3417	553.284	6.149	12.855	5.712	8.658	19.941	4.322	2.271	284.532	0.519	205.519	353.925
08-0385-0012	3418	259.342	6.788	7.678	5.163	3.492	8.281	49.275	1.604	140.832	1.034	77.123	1151.802
08-0385-0013	3419-A	210.269	8.263	5.83	3.829	2.697	6.187	23.836	1.169	111.62	0.653	59.758	1359.413
08-0385-0014	3419-B	898.347	2.831	19.39	8.366	12.522	30.743	5.471	3.255	438.158	0.794	309.18	315.213
08-0385-0015	3420	173.913	0.821	4.432	2.038	3.386	7.42	4.809	0.736	77.963	0.437	73.985	308.372
08-0385-0015D	3420	175.869	0.835	4.316	2.08	3.325	7.208	4.815	0.724	78.951	0.456	77.214	306.916
08-0385-0016	3421	436.654	1.072	9.759	4.468	5.875	15.15	6.975	1.698	228.511	0.656	163.407	623.947
08-0385-0017	3422	425.78	1.605	32.03	17.505	13.824	35.592	4.953	6.206	198.734	1.649	200.779	418.219
08-0385-0018	3423	1073.114	3.359	18.435	7.622	13.007	24.943	22.227	3.023	234.512	0.7	262.114	11979
08-0385-0019	3424	487.83	2.908	16.237	7.966	9.909	23.516	4.917	2.908	222.757	0.794	199.195	451.492
08-0385-0020	3425	1005.312	8.839	33.724	14.488	20.755	49.468	7.124	5.755	493.464	1.197	422.753	622.524
08-0385-0021	3426-A	558.186	7.424	18.09	8.687	10.289	24.899	5.026	3.165	256.772	0.898	217.411	479.207
08-0385-0022	3426-B	96.452	44.522	1.74	0.739	1.132	2.545	0.814	0.303	38.607	0.085	25.396	1086.46
08-0385-0023	3427	576.991	3.066	16.042	7.203	10.603	24.665	4.529	2.722	276.702	0.679	233.231	520.166
08-0385-0024	3428	849.78	1.725	15.263	6.378	10.083	19.705	9.131	2.569	161.318	0.507	203.768	11052
08-0385-0025	3429-A	1995.129	4.386	48.216	20.497	32.83	79.094	14.694	8.138	936.524	1.642	767.544	4107
08-0385-0026	3429-B	1064.167	3.773	35.868	15.27	21.921	53.735	10.28	6.204	537.922	1.328	441.973	731.261
08-0385-0027	3429-C	3400	1.569	80.338	33.702	54.554	130.62	6.107	13.693	1741.066	2.117	1297.471	594.375
08-0385-0027D	3429-C	3344	1.6	82.569	33.2	54.942	131.782	6.283	13.88	1730.438	2.146	1310.088	594.645
International Std	BHVO-2	38.328	0.145	5.743	2.777	2.259	6.657	4.525	1.085	16.158	0.305	25.846	17.311
In-house Std	Mrb-29	51.306	0.306	5.526	3.153	2.041	6.453	4.601	1.108	22.987	0.403	29.288	12.977

**GEO LABS**

GEOSCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0385  
**CLIENT:** Breaks  
**DATE:** 27/01/2009  
**Method:** IMX-CUS

Lab ID Units	Client ID	Ce ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Hf ppm	Ho ppm	La ppm	Lu ppm	Nd ppm	Nb ppm
BLANK	Blank	0.135	0.025	0.094	0.094	0.049	0.108	0.078	0.032	0.048	0.025	0.198	0.002
International Std	GSP-2	459.306	1.261	6.177	2.529	2.407	12.832	14.718	0.996	192.891	0.266	216.249	25.958
In-house Std	Mrb-29	51.129	0.28	5.685	2.988	2.012	6.459	4.773	1.068	22.633	0.382	28.892	12.498
BLANK	Blank	0.145	0.035	0.088	0.1	0.062	0.114	0.081	0.023	0.074	0.028	0.237	0.036



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**CERTIFICATE OF ANALYSIS**

GL JOB#: 08-0385  
 CLIENT: Breaks  
 DATE: 27/01/2009  
 Method: IMX-CUS

Lab ID Units	Client ID	Pr ppm	Rb ppm	Sm ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Yb ppm	Zr ppm
08-0385-0001	3408	8.957	205.042	4.859	1025.985	1.662	0.304	1.211	0.15	0.532	1.348	182.189
08-0385-0001D	3408	9.289	209.481	4.763	1052.114	1.644	0.305	1.205	0.151	0.558	1.307	184.591
08-0385-0002	3409	11.351	194.583	5.677	1042.942	1.418	0.381	1.496	0.18	0.388	1.625	296.957
08-0385-0003	3410	8.255	196.224	4.794	1185.555	3.768	0.363	4.069	0.195	2.236	1.732	400.532
08-0385-0004	3411	52.744	105.792	28.877	1935.304	11.379	2.298	38.335	0.62	3.731	3.611	370.907
08-0385-0005	3412	61.975	149.648	34.664	2087.307	13.249	2.936	39.9	0.883	14.676	5.229	411.569
08-0385-0006	3413	60.518	150.228	34.41	2055.152	12.49	2.944	38.641	0.923	13.466	5.302	408.509
08-0385-0007	3414	41.831	101.455	21.856	2061.967	17.897	1.771	44.85	0.575	11.689	3.915	466.722
08-0385-0008	3415	42.391	48.044	32.023	462.856	13.215	3.039	19.208	0.578	3.838	3.143	646.541
08-0385-0009	3416-A	17.717	193.239	9.644	1638.161	24.031	0.666	10.079	0.309	12.621	2.504	494.653
08-0385-0010	3416-B	23.689	189.584	11.811	1800.811	7.897	0.828	9.006	0.27	3.874	2.028	189.421
08-0385-0011	3417	59.917	223.493	31.122	2116.734	17.612	2.487	67.361	0.732	5.751	4.29	346.166
08-0385-0012	3418	24.674	283.408	12.015	2548.369	19.976	1.253	264.796	0.957	7.667	6.886	3688.389
08-0385-0013	3419-A	19.189	367.058	9.124	2899.737	47.983	0.928	272.046	0.647	37.094	4.671	2278.733
08-0385-0014	3419-B	91.406	149.511	46.257	1700.149	9.111	3.805	72.392	1.091	5.215	6.237	399.823
08-0385-0015	3420	20.913	163.06	11.517	1637.548	13.13	0.875	7.877	0.322	6.601	2.466	351.078
08-0385-0015D	3420	20.904	164.861	11.926	1643.369	13.092	0.865	8.049	0.319	6.596	2.552	355.998
08-0385-0016	3421	46.621	117.966	23.482	2078.579	23.912	1.838	29.768	0.626	7.554	4.22	471.813
08-0385-0017	3422	50.837	123.956	42.892	1864.191	17.382	5.407	66.337	2.421	4.847	13.932	377.771
08-0385-0018	3423	76.398	184.089	44.574	3689.47	287.578	3.611	1496.899	1.003	710.173	5.847	1906.143
08-0385-0019	3424	54.803	167.222	33.081	1875.004	20.573	3.028	59.918	1.079	2.92	6.537	371.34
08-0385-0020	3425	118.147	259.427	69.247	2192.407	18.476	6.554	207.164	1.825	18.263	9.952	643.837
08-0385-0021	3426-A	60.822	280.772	34.813	2081.843	24.026	3.289	70.374	1.19	6.907	7.018	396.98
08-0385-0022	3426-B	7.493	1043.773	4.04	3052.302	68.441	0.338	90.058	0.113	94.945	0.672	45.297
08-0385-0023	3427	66.243	136.534	37.298	2318.365	21.163	3.109	67.519	0.974	3.911	5.536	328.939
08-0385-0024	3428	58.335	63.697	34.337	1355.013	234.899	2.974	1149.896	0.886	571.082	4.713	861.865
08-0385-0025	3429-A	219.193	190.808	118.511	5392.755	112.617	9.755	684.65	2.47	217.877	13.401	1113.152
08-0385-0026	3429-B	123.463	160.846	74.87	2701.577	27.587	6.876	149.511	1.938	12.338	10.633	803.962
08-0385-0027	3429-C	381.617	160.512	197.056	15037.8	19.999	15.996	320.962	3.957	2.722	20.475	601.888
08-0385-0027D	3429-C	381.016	160.532	196.743	14981.92	20.316	16.26	330.733	4.003	2.897	20.444	606.235
International Std	BHVO-2	5.616	9.392	6.725	393.08	1.184	0.972	1.246	0.366	0.471	2.206	167.628
In-house Std	Mrb-29	6.672	14.907	6.874	318.314	0.84	0.95	2.722	0.427	0.68	2.649	171.984

**GEO LABS**

GEOSCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0385  
**CLIENT:** Breaks  
**DATE:** 27/01/2009  
**Method:** IMX-CUS

Lab ID Units	Client ID	Pr ppm	Rb ppm	Sm ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Tm ppm	U ppm	Yb ppm	Zr ppm
BLANK	Blank	0.021	0.084	0.138	6.831	0.014	0.02	0.022	0.028	0.019	0.155	0.033
International Std	GSP-2	58.045	236.177	27.46	238.799	0.89	1.308	112.709	0.317	2.652	1.876	568.674
In-house Std	Mrb-29	6.673	14.534	6.862	310.744	0.826	0.929	2.633	0.424	0.665	2.704	167.372
BLANK	Blank	0.033	0.107	0.161	6.369	0.01	0.022	0.039	0.023	0.02	0.164	0.197



**CERTIFICATE OF ANALYSIS**  
**GEO LABS**  
 GEOSCIENCE LABORATORIES

Geoscience Laboratories (Geo Labs)  
 933 Ramsey Lake Road, Bldg A4  
 Sudbury, ON P3E 6B5  
 Phone: (705) 670-5637  
 Toll Free: 1-866-436-5227  
 Fax: (705) 670-3047

Issued To: Mr. F Breaks  
  
 35 Kristi Court  
 Sudbury, ON P3E 5R4 Canada  
  
 Phone: 705-522-4778  
 Fax:  
 EMail: fwb289@persona.ca  
 Client No.: 706

Certificate No: CRT-08-0385-01  
 Certificate Date: 1/22/2009  
 Project Number:  
  
 Geo Labs Job No. 08-0385  
 Submission date: 10/27/2008  
  
 Delivery Via: Email  
 QC Requested: Y

**Method Code reported with this certificate: XRF-M01**

Method Code	Description	QTY	Test Status
IMX-CUS	ICP-MS Custom Analysis	27	In Progress
SAM-SPG	Ball Mill Sample Preparation (Using Al Oxide Bowls)	27	Complete
SOL-CAIO	Closed Vessel Multi-Acid Digestion	27	Complete
XRF-M01	XRF Major Elements	11	Complete

Legend:

< = Not Detected

N.M. = Not Measured

Please refer to the Geo Labs Job No. 08-0385 if you have any questions.

**CERTIFIED BY:**

  
 Ed Debicki, Laboratory Manager

Date: January 23, 2009



**GEOSCIENCE LABORATORIES  
CERTIFICATE OF ANALYSIS**



Client: Breaks

Geo Labs JOB#: 08-0385

Date: 1/22/2009

Method Code: XRF-M01

Client ID	Al2O3	CaO	Fe2O3	K2O	LOI	MgO	MnO	Na2O	P2O5	SiO2	TiO2	Total
Units	wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%
Detection Limit	0.005	0.005	0.005	0.005	0.05	0.005	0.005	0.005	0.005	0.005	0.005	
3409	20.97	3.50	6.89	7.14	0.21	0.58	0.21	8.06	0.16	51.80	0.16	99.70
3410	20.84	2.85	7.42	7.11	0.47	0.55	0.23	7.77	0.09	52.19	0.22	99.73
3411	13.47	13.61	15.38	3.12	0.51	6.30	0.35	5.39	2.75	37.27	1.53	99.68
3412	13.36	14.33	15.32	3.43	0.72	6.15	0.38	4.66	2.70	36.81	1.47	99.33
3414	16.91	7.20	12.86	4.41	0.70	2.74	0.35	5.49	1.01	45.83	1.32	98.83
3416-A	21.21	3.20	7.79	6.65	0.50	0.80	0.26	8.08	0.16	50.54	0.29	99.49
3416-B	22.31	3.14	6.58	6.96	0.37	0.71	0.21	8.68	0.25	50.31	0.26	99.78
3418	20.75	2.36	3.98	7.77	2.39	0.75	0.21	7.10	0.04	52.96	0.25	98.55
3420	21.68	3.55	7.43	6.15	0.38	0.95	0.26	8.43	0.21	49.78	0.30	99.13
3421	16.09	7.17	13.51	5.03	0.58	2.74	0.39	4.88	1.01	46.43	1.31	99.15
3429-C	9.18	28.75	0.46	5.28	15.66	0.19	0.11	1.43	8.17	26.49	0.48	96.20

# COMMENTS



Client: Breaks  
Geo Labs Job # : 08-0385  
Date: 1/22/2009  
Method : XRF-M01

CLIENT ID	LAB ID	COMMENT	QC COMMENT
3429-C	08-0385-0027	Sample 08-0385-0027 was re-fused, repeated and re-fused and the total still remains low.	



# CERIFICATE OF QUALITY CONTROL



Date: 1/22/2009  
Geoscience Laboratories  
933 Ramsey Lake Road, Bldg A4  
Sudbury, ON P3E 6B5  
Phone: (705) 670-5637  
Toll Free: 1-866-436-5227  
Fax: (705) 670-3047

Client: Breaks  
Project #:

Geoscience Laboratories Ref # : 08-0385

Method : XRF-M01

Lab ID	Client ID	QC Name	Analyte	Units	Measured Value	Certified Value	Long Term Average
DUP-09-06189	3409	DUP	Al2O3	wt%	20.97		
DUP-09-06189	3409	DUP	CaO	wt%	3.49		
DUP-09-06189	3409	DUP	Fe2O3	wt%	6.93		
DUP-09-06189	3409	DUP	K2O	wt%	7.15		
DUP-09-06189	3409	DUP	LOI	wt%	0.20		
DUP-09-06189	3409	DUP	MgO	wt%	0.58		
DUP-09-06189	3409	DUP	MnO	wt%	0.21		
DUP-09-06189	3409	DUP	Na2O	wt%	8.05		
DUP-09-06189	3409	DUP	P2O5	wt%	0.17		
DUP-09-06189	3409	DUP	SiO2	wt%	52.05		
DUP-09-06189	3409	DUP	TiO2	wt%	0.17		
DUP-09-06189	3409	DUP	Total	wt%	99.96		
IHST-09-03789		QS-1	Al2O3	wt%	13.96		
IHST-09-03789		QS-1	CaO	wt%	8.17		
IHST-09-03789		QS-1	Fe2O3	wt%	6.43		
IHST-09-03789		QS-1	K2O	wt%	4.54		
IHST-09-03789		QS-1	LOI	wt%	11.00		
IHST-09-03789		QS-1	MgO	wt%	3.64		
IHST-09-03789		QS-1	MnO	wt%	0.11		
IHST-09-03789		QS-1	Na2O	wt%	0.17		
IHST-09-03789		QS-1	P2O5	wt%	0.16		
IHST-09-03789		QS-1	SiO2	wt%	50.81		
IHST-09-03789		QS-1	TiO2	wt%	0.74		

## Note

IHST = InHouse Reference Material  
INTL = International Reference Material  
CORM = Certified Ontario Reference Material  
INST = Instrument Control  
DUP = Laboratory Duplicate  
BLANK = Laboratory Blank

Client ID	QC Name	Analyte	Units	Measured Value	Certified Value	Long Term Average
9-03789	QS-1	Total	wt%	99.72		
-09-04627	BIR-1	Al <sub>2</sub> O <sub>3</sub>	wt%	15.54	15.350	
INTL-09-04627	BIR-1	CaO	wt%	13.49	13.240	
INTL-09-04627	BIR-1	Fe <sub>2</sub> O <sub>3</sub>	wt%	11.52	11.260	
INTL-09-04627	BIR-1	K <sub>2</sub> O	wt%	0.02		
INTL-09-04627	BIR-1	LOI	wt%	-0.50		
INTL-09-04627	BIR-1	MgO	wt%	9.70	9.680	
INTL-09-04627	BIR-1	MnO	wt%	0.17	0.170	
INTL-09-04627	BIR-1	Na <sub>2</sub> O	wt%	1.77	1.750	
INTL-09-04627	BIR-1	P <sub>2</sub> O <sub>5</sub>	wt%	0.02		
INTL-09-04627	BIR-1	SiO <sub>2</sub>	wt%	47.55	47.770	
INTL-09-04627	BIR-1	TiO <sub>2</sub>	wt%	0.97		
INTL-09-04627	BIR-1	Total	wt%	100.24		

### Note

IHST = InHouse Reference Material  
 INTL = International Reference Material  
 CORM = Certified Ontario Reference Material  
 INST = Instrument Control  
 DUP = Laboratory Duplicate  
 BLANK = Laboratory Blank

<p>Issued To: Mr. F Breaks</p> <p>35 Kristi Court          Sudbury, ON P3E 5R4 Canada</p>
<p>Phone: 705-522-4778          Fax:          EMail: fwb289@persona.ca          Client No.: 706</p>

<p>Certificate No: CRT-08-0436-01          Certificate Date: 2/4/2009          Project Number:</p>
<p>Geo Labs Job No. 08-0436          Submission date: 11/19/2008</p>
<p>Delivery Via: Email          QC Requested: Y</p>

**Method Code reported with this certificate: IMX-CUS**

Method Code	Description	QTY	Test Status
IMX-CUS	ICP-MS Custom Analysis	7	Complete
SAM-SPA	Ring Mill Sample Preparation (Using Cr Steel)	7	Complete
SOL-CAIO	Closed Vessel Multi-Acid Digestion	7	Complete

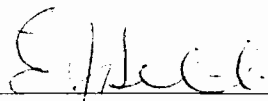
Legend:

< = Not Detected

N.M. = Not Measured

Please refer to the Geo Labs Job No. 08-0436 if you have any questions.

**CERTIFIED BY:**



Ed Debicki, Laboratory Manager

Date: February 4, 2009

Page 1 of 1

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**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0436  
**CLIENT:** Breaks  
**DATE:** 02/02/09  
**Method:** IMX-CUS

Lab ID Unit	Client ID	Ce ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Hf ppm	Ho ppm	La ppm	Lu ppm
08-0436-0001	3430	1586	3.924	37.641	15.063	25.6	58.468	14.344	6.287	709.426	1.519
08-0436-0001D	3430	1548.986	3.894	36.668	14.942	24.931	58.208	13.98	6.156	689.28	1.446
08-0436-0002	3431	386.6	5.807	10.493	4.308	6.767	15.406	5.735	1.839	180.275	0.434
08-0436-0003	3432	618.288	1.631	15.247	6.968	9.629	23.874	6.18	2.634	327.317	0.656
08-0436-0004	3433	563.678	7.337	6.399	4.629	3.6	8.521	30.912	1.391	365.124	0.902
08-0436-0005	3434	2615.874	8.725	56.758	23.106	40.305	93.306	23.674	9.519	1272.396	1.618
08-0436-0006	3435	611.628	11.379	8.636	4.228	5.337	12.254	6.085	1.546	411.445	0.492
08-0436-0007	3436	330.042	2.998	9.562	4.417	6.258	14.516	3.935	1.666	201.709	0.547
GSP-2	QC	471.032	1.244	6.223	2.501	2.437	12.762	13.354	1.014	199.898	0.237
Mrb-29	QC	50.509	0.236	5.482	2.938	1.963	6.258	4.56	1.058	22.385	0.365
Blank	QC	0.047	0.001	0.001	0.003	0.002	0.002	0.003	0	0.011	0.001



**CERTIFICATE OF ANALYSIS**

GL JOB#: 08-0436  
 CLIENT: Breaks  
 DATE: 02/02/09  
 Method: IMX-CUS

Lab ID Unit	Client ID	Nd ppm	Nb ppm	Pr ppm	Rb ppm	Sm ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Tm ppm
08-0436-0001	3430	587.383	6830.543	169.025	162.559	91.146	4705.391	218.873	7.451	819.079	1.984
08-0436-0001D	3430	567.246	6737.412	167.671	167.938	90.897	4791.545	215.632	7.372	795.284	1.927
08-0436-0002	3431	140.732	1636.922	40.561	319.325	23.528	4557.363	41.42	2.016	189.705	0.574
08-0436-0003	3432	221.997	363.781	65.064	110.883	34.273	2626.108	17.863	3.004	66.425	0.875
08-0436-0004	3433	128.978	626.137	45.934	307.253	14.198	3382.42	15.149	1.099	115.442	0.808
08-0436-0005	3434	1004.317	2314.943	293.165	336.353	146.996	5559.687	53.389	11.27	637.037	2.872
08-0436-0006	3435	155.028	542.15	52.454	508.671	20.249	3876.788	16.512	1.634	124.064	0.614
08-0436-0007	3436	139.554	404.222	41.954	152.12	21.888	1201.879	20.097	1.8	62.672	0.59
GSP-2	QC	223.292	25.593	60.228	253.547	28.362	239.16	0.841	1.319	107.49	0.301
Mrb-29	QC	28.679	12.536	6.644	14.529	6.432	310.952	0.799	0.915	2.69	0.402
Blank	QC	0.021	-0.176	0.003	0.011	0.007	0.181	-0.034	0.001	0.004	0.001

**GEO LABS**

GEOSCIENCE LABORATOR

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0436  
**CLIENT:** Breaks  
**DATE:** 02/02/09  
**Method:** IMX-CUS

Lab ID Unit	Client ID	U ppm	Y ppm	Yb ppm	Zr ppm
08-0436-0001	3430	309.168	146.196	11.148	954.232
08-0436-0001D	3430	299.168	145.628	11.045	950.521
08-0436-0002	3431	56.529	43.331	3.408	417.208
08-0436-0003	3432	20.777	68.205	5.308	440.572
08-0436-0004	3433	15.129	36.549	5.703	2839.022
08-0436-0005	3434	82.831	230.622	14.887	2318.956
08-0436-0006	3435	21.284	45.865	3.902	537.521
08-0436-0007	3436	6.687	42.712	3.829	197.683
GSP-2	QC	2.412	26.137	1.702	527.962
Mrb-29	QC	0.682	27.455	2.52	178.062
Blank	QC	0.001	0.009	0.003	-0.164



# CERTIFICATE OF ANALYSIS

## GEO LABS

GEOSCIENCE LABORATORIES

Geoscience Laboratories (Geo Labs)  
933 Ramsey Lake Road, Bldg A4  
Sudbury, ON P3E 6B5  
Phone: (705) 670-5637  
Toll Free: 1-866-436-5227  
Fax: (705) 670-3047

Issued To: Mr. F Breaks

35 Kristi Court  
Sudbury, ON P3E 5R4 Canada

Phone: 705-522-4778

Fax:

E-Mail: fwb289@persona.ca

Client No.: 706

Certificate No: CRT-08-0437-03

Certificate Date: 2/4/2009

Project Number:

Geo Labs Job No. 08-0437

Submission date: 11/19/2008

Delivery Via: Email

QC Requested: Y

Method Code reported with this certificate: **IMX-CUS**

Method Code	Description	QTY	Test Status
IMX-CUS	ICP-MS Custom Analysis	6	Complete
SAM-SPG	Ball Mill Sample Preparation (Using Al Oxide Bowls)	6	Complete
SOL-CAIO	Closed Vessel Multi-Acid Digestion	6	Complete
XRF-M01	XRF Major Elements	6	Complete

Legend:

< = Not Detected

N.M. = Not Measured

Please refer to the Geo Labs Job No. 08-0437 if you have any questions.

**CERTIFIED BY:**

Ed Debicki, Laboratory Manager

Date: February 4, 2009

Page 1 of 1

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**GEO LABS**

GEOSCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0437  
**CLIENT:** Breaks  
**DATE:** 02/02/09  
**Method:** IMX-CUS

Lab ID	Client ID	Ce ppm	Cs ppm	Dy ppm	Er ppm	Eu ppm	Gd ppm	Hf ppm	Ho ppm	La ppm	Lu ppm
08-0437-0001	926540	3699.904	1.044	26.926	11.701	11.17	42.285	2.209	4.611	2269.929	1.131
08-0437-0002	926541	925.108	0.463	31.503	13.823	16.152	43.786	1.811	5.366	316.54	1.04
08-0437-0003	926542	544.25	0.501	16.473	7.738	8.534	22.364	2.716	3.002	252.602	0.834
08-0437-0004	926543	56.938	1.383	7.044	4.791	2.174	6.562	2.35	1.53	25.048	0.641
08-0437-0004D	926543	52.901	1.359	6.592	4.542	1.928	6.254	2.717	1.423	23.679	0.603
08-0437-0005	926544	108.047	1.408	5.851	3.444	1.914	6.655	2.255	1.187	52.454	0.487
08-0437-0006	926545	291.17	7.849	8.836	4.728	3.236	11.768	9.832	1.675	147.629	0.661
GSP-2	QC	471.032	1.244	6.223	2.501	2.437	12.762	13.354	1.014	199.898	0.237
Mrb-29	QC	50.509	0.236	5.482	2.938	1.963	6.258	4.56	1.058	22.385	0.365
Blank	QC	0.047	0.001	0.001	0.003	0.002	0.002	0.003	0	0.011	0.001

**GEO LABS**

GEOSCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0437  
**CLIENT:** Breaks  
**DATE:** 02/02/09  
**Method:** IMX-CUS

Lab ID	Client ID	Nd ppm	Nb ppm	Pr ppm	Rb ppm	Sm ppm	Sr ppm	Ta ppm	Tb ppm	Th ppm	Tm ppm
08-0437-0001	926540	827.705	95.557	309.698	41.083	82.914	133.056	8.826	5.337	435.937	1.509
08-0437-0002	926541	473.004	301.458	127.554	24.582	72.827	1045	15.094	5.82	7.802	1.747
08-0437-0003	926542	230.684	123.92	64.797	28.89	34.721	758.152	5.354	3.009	8.486	1.063
08-0437-0004	926543	32.127	21.371	7.712	6.987	7.492	588.429	1.269	1.155	7.55	0.73
08-0437-0004D	926543	30.383	21.113	7.025	7.127	6.738	562.958	1.221	1.014	7.819	0.681
08-0437-0005	926544	48.279	15.888	12.402	99.807	8.803	522.777	0.934	1.019	7.996	0.524
08-0437-0006	926545	115.138	22.605	32.225	98.01	18.154	321.429	1.719	1.592	41.999	0.695
GSP-2	QC	223.292	25.593	60.228	253.547	28.362	239.16	0.841	1.319	107.49	0.301
Mrb-29	QC	28.679	12.536	6.644	14.529	6.432	310.952	0.799	0.915	2.69	0.402
Blank	QC	0.021	-0.176	0.003	0.011	0.007	0.181	-0.034	0.001	0.004	0.001

**GEO LABS**

GEOSCIENCE LABORATORIES

**CERTIFICATE OF ANALYSIS**

**GL JOB#:** 08-0437  
**CLIENT:** Breaks  
**DATE:** 02/02/09  
**Method:** IMX-CUS

Lab ID	Client ID	U ppm	Y ppm	Yb ppm	Zr ppm
08-0437-0001	926540	14.283	116.414	8.825	39.223
08-0437-0002	926541	4.358	133.117	9.434	36.192
08-0437-0003	926542	4.004	75.244	6.296	78.171
08-0437-0004	926543	3.898	44.501	4.638	81.478
08-0437-0004D	926543	4.159	39.622	4.523	87.068
08-0437-0005	926544	2.629	31.52	3.446	78.603
08-0437-0006	926545	5.032	40.845	4.594	356.437
GSP-2	QC	2.412	26.137	1.702	527.962
Mrb-29	QC	0.682	27.455	2.52	178.062
Blank	QC	0.001	0.009	0.003	-0.164



# ALS Chemex

**EXCELLENCE IN ANALYTICAL CHEMISTRY**

ALS Canada Ltd.

212 Brooksbank Avenue

North Vancouver BC V7J 2C1

Phone: 604 984 0221 Fax: 604 984 0218 www.alschemex.com

To: VALE EXPLORATION CANADA INC.  
NORTH AMERICAN FIELD EXPLORATION  
HIGHWAY 17 WEST  
COPPER CLIFF ON P0M 1N0

Page: 1  
Finalized Date: 15-JUN-2008  
This copy reported on 24-APR-2009  
Account: ITSNAE

## CERTIFICATE SD08055342

Project: 13601

P.O. No.:

This report is for 20 Rock samples submitted to our lab in Sudbury, ON, Canada on 1-MAY-2008.

The following have access to data associated with this certificate:

CAMERON BELL  
DANIELLE LEGER  
CARRIE VAN LUVEN

LIONEL BONHOMME  
HERB MACKOWIAK  
ITSNAE WEBTRIEVE

HENRIQUE IZUMI  
MARS NAPOLI

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
LOG-23	Pulp Login - Rcvd with Barcode
DRY-21	High Temperature Drying
CRU-QC	Crushing QC Test

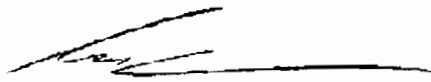
## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-MS61U	48 elements four acid ICP-MS (U pkg)

To: VALE EXPLORATION CANADA INC.  
ATTN: LIONEL BONHOMME  
NORTH AMERICAN FIELD EXPLORATION  
HIGHWAY 17 WEST  
COPPER CLIFF ON P0M 1N0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

  
Colin Ramshaw, Vancouver Laboratory Manager





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Total # Pages: 2 (A - D)  
Finalized Date: 15-JUN-2008  
Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08055342

Sample Description	Method Analyte Units LOR	WEI-21	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U
		Recvd Wt kg	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Fe %
		0.02	0.01	0.01	0.2	10	0.05	0.01	0.01	0.02	0.01	0.1	1	0.05	0.2	0.01
RX369635		0.60	2.69	5.59	<0.2	30	6.63	0.08	6.11	0.34	107	18.7	<1	0.47	25.5	19.55
RX369636		0.72	11.7	5.41	<0.2	60	5.52	0.11	3.67	0.32	131.5	24.6	<1	0.64	9.4	28.9
RX369637		0.70	11.95	6.47	<0.2	90	6.2	0.16	4.09	0.31	181.5	23.2	<1	0.51	11.9	24.2
RX369638		1.06	10	3.19	2	140	3.59	0.15	2.33	0.35	67.4	38.95	24	0.55	18.3	37.2
RX369639		1.20	10.15	8.19	<0.2	50	10.2	0.15	6.88	0.3	136.5	13.1	1	0.61	20.5	8.1
RX369640		1.26	10.4	7.12	<0.2	50	6.85	0.12	6.67	0.31	123.5	16.8	<1	0.42	24.2	13.95
RX369641		1.10	0.35	0.26	18	<10	0.24	6.57	15.85	0.24	>500	19.4	<1	<0.05	21	33.9
RX369642		0.26	4.94	0.24	<5	10	0.43	6.34	15.5	0.25	>500	18.4	<1	0.06	26.1	35.5
RX369643		0.70	5.7	0.13	22	<10	0.19	6.87	12.9	0.39	>500	38.8	<1	<0.05	38.3	41
RX369644		0.56	0.17	0.08	<5	<10	0.28	7.62	19.2	0.33	>500	18	<1	<0.05	15.8	25.1
RX369645		1.02	0.3	0.1	<5	<10	0.42	2.5	18.35	0.42	>500	23.1	<1	<0.05	42.6	27.9
RX369646		0.98	0.34	0.16	<5	<10	0.78	4.45	19.6	0.44	>500	19.3	<1	<0.05	42.4	25.9
RX369647		0.70	<0.01	9.27	<0.2	3030	2.85	0.12	2.4	0.15	269	9.4	6	1.36	22.5	7.82
RX369648		0.68	<0.01	7.73	<0.2	1660	10.05	0.08	8.48	0.09	364	40.8	15	2.65	55.5	10.5
RX369649		0.82	7.86	1.41	<5	1210	5.08	2.99	11.85	0.58	>500	41.5	<1	0.77	51.7	32.3
RX369663		1.34	<0.01	7.48	25.8	>10000	5.94	2.16	9.79	0.41	>500	8.3	<1	6.15	3.4	2.11
RX369664		2.56	<0.01	6.94	6.5	>10000	3.18	2.78	2.77	0.52	>500	11	<1	4.35	50.2	6.24
RX369665		1.10	0.42	4.91	7.9	>10000	3.24	3.4	2.08	0.29	>500	12.5	28	6.46	<0.2	4.61
RX369666		0.64	<0.01	7.67	3.4	>10000	3.18	1.05	1.69	0.19	>500	13.3	<1	5.27	17.4	4.87
RX369667		0.06	<0.01	4.53	4.9	710	0.86	0.27	1.03	0.11	468	7	42	0.73	28.4	1.65



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 Finalized Date: 15-JUN-2008  
 Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08055342

Sample Description	Method Analyte Units LOR	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U
		Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb
		ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
		0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	5	0.05	0.01	0.1	0.2	10	0.5
RX369635		12.15	0.34	12.3	0.053	1.51	32.9	3.5	1.67	6790	0.61	4.07	>500	17.6	40	29.9
RX369636		15.8	0.57	13	0.046	1.4	38.3	2.8	1.09	7790	1.02	3.61	>500	12.7	40	32.4
RX369637		16.8	0.6	13.5	0.043	1.73	50.5	3.8	1.14	7180	0.8	4.08	>500	13.6	30	51.6
RX369638		14.1	0.85	6.6	0.03	0.94	23.1	4.6	0.73	9680	1.33	1.92	>500	18.8	100	14.2
RX369639		15	0.27	15.2	0.063	2.23	38.8	3.6	1.92	4240	0.26	5.99	>500	8.1	20	36.6
RX369640		11.8	0.28	13.7	0.05	1.89	35.1	2.6	1.86	5590	0.35	5.1	>500	11.9	30	30.6
RX369641		26	3.78	1.8	0.013	0.03	1700	1.1	0.12	5320	0.96	0.19	32.2	11.4	>10000	47
RX369642		24.6	3.59	3.3	0.014	0.04	1690	1.4	0.15	5350	1.15	0.15	>500	10.5	>10000	46.9
RX369643		23.8	3.32	3.2	0.016	0.01	1430	1.2	0.13	6450	1.02	0.08	>500	20.05	>10000	48
RX369644		30.1	4.83	2.4	0.014	<0.01	2350	0.9	0.12	3910	0.62	0.1	19.7	9	>10000	99.3
RX369645		24.8	3.96	1.9	0.014	0.01	2400	1.5	0.14	4340	0.67	0.16	24	18.2	>10000	82.7
RX369646		30	4.64	2.3	0.02	<0.01	2510	2.1	0.16	4020	0.99	0.13	16.1	7.8	>10000	85.4
RX369647		25.7	0.38	5.7	0.035	4.04	114.5	27.3	0.63	2220	0.81	3.79	>500	5.3	2650	15.2
RX369648		13.25	0.39	5.4	0.051	3.34	184	38.9	3.9	2830	0.38	3.56	346	37.1	>10000	10.8
RX369649		21.1	2.46	7.7	0.033	0.64	1100	3.6	0.88	6060	0.95	0.68	>500	26.8	>10000	64.5
RX369663		28.4	2.16	8.3	0.018	4	1370	25.5	0.68	1340	1.22	1.93	>500	5.6	>10000	265
RX369664		94.2	19.15	6	0.018	3.93	>10000	31.9	1.27	2910	0.2	1.92	>500	3.1	9610	269
RX369665		75.5	18.35	7.9	0.039	3.39	>10000	56.2	1.83	2590	0.28	1.01	440	8.9	4770	365
RX369666		62.6	9.73	6	0.014	4.21	6060	70.6	1.96	2580	0.38	1.91	430	4.9	2760	158.5
RX369667		14.2	0.85	1.9	0.015	1.27	460	8.7	0.46	292	1.17	1.6	30.4	41.9	430	41.5



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Total # Pages: 2 (A - D)  
Finalized Date: 15-JUN-2008  
Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08055342

Sample Description	Method Analyte Units LOR	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	MF-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U	ME-MS61U
		Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Ti	U	V	W
		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
		0.1	0.002	0.01	0.05	1	0.2	0.05	0.05	0.2	0.005	0.02	0.1	1	0.1	
RX369635		55.3	0.003	0.16	0.09	4	13.1	587	>100	1.92	263	1.685	0.1	77.8	166	0.2
RX369636		57.1	0.003	0.01	0.19	8	21.2	404	>100	3.25	411	3.14	0.12	60.1	293	0.4
RX369637		74.1	0.004	0.04	0.13	8	20.5	515	>100	4.63	630	2.54	0.13	110	231	0.3
RX369638		38.9	0.004	0.02	0.17	12	25.6	278	75	1.78	130.5	4.16	0.07	28	366	0.8
RX369639		82.6	0.004	0.15	0.1	3	7.9	617	>100	2.35	550	0.27	0.17	64.2	50	0.2
RX369640		63.8	0.003	0.31	<0.05	3	9.7	621	>100	2.26	560	0.996	0.12	55	111	0.2
RX369641		0.6	0.048	0.16	0.28	16	14.4	5490	0.83	0.12	1010	0.177	<0.02	2.4	281	1.1
RX369642		2.4	0.048	0.2	0.32	18	23.6	5400	15.1	0.77	1060	1.525	0.02	1.9	272	1.3
RX369643		0.5	0.047	0.46	0.29	18	29.5	4380	24.3	0.87	890	2.24	<0.02	1.4	324	1
RX369644		0.3	0.068	0.11	0.31	21	10.1	6630	0.69	0.1	1940	0.138	<0.02	2.5	203	1.3
RX369645		1.2	0.051	0.61	0.2	18	11.1	6330	0.69	0.1	1990	0.155	<0.02	2.4	198	1.1
RX369646		1.3	0.063	0.01	0.3	21	12.7	7060	0.85	0.12	1760	0.185	0.02	2.5	190	1.6
RX369647		155	0.002	0.09	0.08	3	5.6	1745	65.2	0.59	50.9	0.25	0.29	55.7	23	0.6
RX369648		224	0.003	0.01	<0.05	3	1.9	2410	9.5	0.19	29.3	0.99	0.35	49.5	185	0.3
RX369649		29.5	0.029	0.59	1.02	13	22.9	4070	>100	1.92	830	1.915	0.05	91.5	256	1.1
RX369663		185.5	0.018	0.01	3.17	11	2.9	7690	89.2	1.14	1700	0.265	0.37	557	21	1.1
RX369664		216	0.136	0.02	0.13	48	5.3	3190	30.8	0.5	3540	0.177	0.65	33.1	188	2.7
RX369665		250	0.044	0.01	<0.05	40	4.3	2510	15.4	0.08	970	0.201	0.39	19.6	100	3.4
RX369666		239	0.068	0.01	0.05	26	2.1	2280	26.7	0.28	2020	0.23	0.4	20.4	60	1.6
RX369667		50.6	0.006	0.01	0.29	4	0.7	296	1.26	0.18	150	0.149	0.25	371	39	2



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 Total # Pages: 2 (A - D)  
 Finalized Date: 15-JUN-2008  
 Account: ITSNAE

Project: 13601

<b>CERTIFICATE OF ANALYSIS SD08055342</b>
---

Sample Description	Method	ME-MS61U	ME-MS61U	ME-MS61U
	Analyte	Y	Zn	Zr
	Units	ppm	ppm	ppm
	LOR	0.1	2	0.5
RX369635		19.5	689	>500
RX369636		15	1100	>500
RX369637		18.8	933	>500
RX369638		8.4	1560	>500
RX369639		25.3	240	>500
RX369640		21.1	474	>500
RX369641		427	723	65
RX369642		423	679	273
RX369643		359	991	207
RX369644		>500	549	42
RX369645		>500	622	31.5
RX369646		>500	578	36.4
RX369647		24	141	402
RX369648		32	168	>500
RX369649		252	806	>500
RX369663		310	65	>500
RX369664		>500	560	174.5
RX369665		>500	475	230
RX369666		>500	370	281
RX369667		46.2	23	73.4



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Finalized Date: 28-JUL-2008  
This copy reported on 24-APR-2009  
Account: ITSNAE

## CERTIFICATE SD08091106

Project: 13601

P.O. No.:

This report is for 20 Rock samples submitted to our lab in Sudbury, ON, Canada on 15-JUL-2008.

The following have access to data associated with this certificate:

CAMERON BELL  
HENRIQUE IZUMI  
MARS NAPOLI

LIONEL BONHOMME  
DANIELLE LEGER  
ITSNAE WEBTRIEVE

CAM BOWIE  
HERB MACKOWIAK

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
FND-02	Find Sample for Addn Analysis

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS81	38 element fusion ICP-MS	ICP-MS

To: VALE EXPLORATION CANADA INC.  
ATTN: LIONEL BONHOMME  
NORTH AMERICAN FIELD EXPLORATION  
HIGHWAY 17 WEST  
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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## CERTIFICATE OF ANALYSIS SD08091106

Sample Description	Method	WLI 21	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81
	Analyte	Recvd Wt	Ag	Ba	Ce	Co	Cr	Cs	Cu	Dy	Er	Eu	Ga	Gd	Hf	Ho
	Units	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOR	0.02	1	0.5	0.5	0.5	0.5	10	0.01	5	0.05	0.03	0.03	0.1	0.05	0.2	0.01
RX369635		0.60	<1	40.6	128.0	15.8	10	0.41	39	5.46	3.89	3.00	14.4	7.94	13.7	1.08
RX369636		0.72	<1	64.3	115.0	9.5	<10	0.44	<5	3.85	2.34	2.36	14.5	6.17	12.4	0.71
RX369637		0.70	<1	91.8	229	13.6	<10	0.34	7	6.71	3.48	4.72	16.0	12.50	11.1	1.18
RX369638		1.06	<1	142.5	86.3	8.8	<10	0.25	11	2.92	1.45	1.90	12.8	5.03	6.2	0.50
RX369639		1.20	<1	66.8	157.0	14.7	10	0.59	28	6.66	4.46	3.67	16.6	9.55	17.3	1.28
RX369640		1.26	1	53.3	167.0	22.8	<10	0.45	40	6.56	4.42	3.89	15.8	9.99	16.5	1.28
RX369641		1.10	<1	70.1	4700	3.5	<10	<0.01	20	128.0	48.0	96.5	21.5	283	2.8	19.85
RX369642		0.26	<1	86.6	4430	4.5	<10	0.01	23	119.5	45.3	89.6	21.6	265	2.4	18.60
RX369643		0.70	<1	24.6	3890	5.9	<10	<0.01	25	107.5	40.1	80.1	19.7	239	2.5	16.50
RX369644		0.56	<1	37.5	7150	4.2	<10	<0.01	15	193.0	71.9	143.5	28.7	427	1.9	29.7
RX369645		1.02	<1	74.7	7080	7.0	<10	<0.01	46	192.0	70.7	143.0	28.9	423	2.5	29.2
RX369646		0.98	<1	63.7	6900	7.7	<10	<0.01	51	180.0	68.5	135.5	28.5	399	2.9	27.8
RX369647		0.70	<1	2980	259	8.4	10	1.14	26	6.27	2.64	4.73	22.3	13.75	5.5	0.99
RX369648		0.68	<1	1660	455	45.8	20	2.90	87	9.35	4.13	6.63	15.4	20.4	6.4	1.56
RX369649		0.82	<1	1200	2710	14.4	<10	0.50	50	70.3	26.7	51.9	18.3	153.5	6.1	10.85
RX369663		1.34	<1	>10000	3190	7.0	10	5.41	<5	73.8	32.3	50.4	23.1	147.5	15.5	12.45
RX369664		2.56	<1	>10000	>10000	10.0	10	3.72	57	373	150.5	347	71.9	993	3.6	56.8
RX369665		1.10	<1	>10000	>10000	13.5	40	7.29	<5	673	272	616	120.5	>1000	9.1	103.5
RX369666		0.64	<1	>10000	7470	13.4	10	5.11	21	216	87.0	195.0	54.2	566	7.7	33.4
RX369667		0.06	<1	712	455	5.9	60	0.62	32	13.85	5.80	12.45	12.2	36.4	3.0	2.15



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Project: 13601

## CERTIFICATE OF ANALYSIS SD08091106

Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	MC-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	
		La	Lu	Mo	Nb	Nd	Ni	Pb	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.01	2	0.2	0.1	5	5	0.03	0.2	0.03	1	0.1	0.1	0.05	
RX369635		40.2	1.50	<2	3670	57.6	9	12	15.55	61.3	10.40	13	583	122.5	1.07	322
RX369636		34.7	0.77	<2	3490	48.1	<5	8	13.55	56.9	8.37	14	416	98.2	0.83	411
RX369637		73.6	0.87	<2	4860	99.5	5	10	27.6	63.1	16.90	14	584	167.0	1.58	654
RX369638		34.3	0.42	<2	1170	38.5	<5	7	10.35	39.4	6.75	14	302	19.3	0.64	145.5
RX369639		45.6	1.61	<2	5750	72.0	13	8	19.45	95.1	12.85	8	633	189.5	1.33	580
RX369640		48.1	1.60	<2	5810	74.6	20	7	20.4	78.0	13.40	12	631	182.5	1.37	557
RX369641		1935	2.22	<2	201	2210	<5	<5	582	0.5	370	8	5320	2.1	32.7	943
RX369642		1825	2.22	<2	369	2060	<5	5	544	2.0	345	12	4850	7.0	30.7	888
RX369643		1580	1.89	<2	223	1840	<5	<5	484	0.3	311	10	4040	2.7	27.4	918
RX369644		2910	3.35	<2	160.0	3390	<5	6	886	0.2	568	5	6630	0.8	49.5	>1000
RX369645		2880	2.98	<2	182.0	3390	<5	6	882	1.3	569	7	6130	1.3	49.1	>1000
RX369646		2850	3.14	<2	394	3230	<5	6	842	1.0	532	11	6570	6.9	45.9	>1000
RX369647		112.0	0.34	<2	1040	112.5	7	8	31.1	184.0	17.65	5	1600	61.9	1.55	48.4
RX369648		223	0.40	<2	552	172.5	55	7	49.4	217	25.5	3	2100	15.5	2.31	34.3
RX369649		1140	1.38	<2	1445	1220	<5	15	328	27.0	200	14	3630	35.2	17.60	715
RX369663		1435	1.95	2	>10000	1195	7	80	347	240	184.5	12	7120	317	17.45	>1000
RX369664		>10000	6.34	<2	714	>10000	<5	122	>1000	223	>1000	5	5240	30.6	104.0	>1000
RX369665		>10000	11.75	<2	427	>10000	11	27	>1000	268	>1000	5	5150	16.9	187.5	>1000
RX369666		7790	3.94	<2	473	6160	7	63	>1000	290	822	2	2380	27.9	59.7	>1000
RX369667		472	0.32	<2	29.0	364	44	19	111.0	45.8	48.7	1	285	1.2	3.84	144.0



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 Total # Pages: 2 (A - C)  
 Finalized Date: 28-JUL-2008  
 Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08091106

Sample Description	Method Analyte Units LOR	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	ME-MS81	
		Ti	Im	U	V	W	Y	Yb	Zn	Zr
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.5	0.01	0.05	5	1	0.5	0.03	5	2
RX369635		<0.5	0.81	108.0	174	1	23.9	7.97	620	1670
RX369636		<0.5	0.45	69.3	213	1	15.3	4.15	719	1400
RX369637		<0.5	0.59	119.5	196	1	24.2	4.85	728	1300
RX369638		<0.5	0.29	31.5	183	5	11.5	2.62	902	732
RX369639		<0.5	0.92	80.4	59	2	28.0	8.67	242	2120
RX369640		<0.5	0.92	78.4	129	1	28.1	8.39	486	2080
RX369641		<0.5	4.59	2.10	164	2	430	22.2	389	573
RX369642		<0.5	4.42	1.71	190	2	404	21.8	427	642
RX369643		<0.5	3.90	1.17	178	1	358	19.00	551	483
RX369644		<0.5	6.94	2.29	113	1	640	34.1	386	504
RX369645		<0.5	6.67	2.44	119	2	625	31.6	417	405
RX369646		<0.5	6.60	2.13	148	2	605	31.8	436	584
RX369647		<0.5	0.31	53.5	26	2	21.5	2.12	149	382
RX369648		<0.5	0.47	63.3	196	2	37.3	2.73	175	569
RX369649		<0.5	2.57	98.7	163	5	245	13.70	599	631
RX369663		<0.5	3.53	560	33	4	291	18.45	94	1050
RX369664		<0.5	13.75	36.1	239	2	1095	65.7	640	211
RX369665		<0.5	25.2	25.8	160	3	2030	121.5	575	614
RX369666		<0.5	8.13	23.7	77	2	629	40.3	442	587
RX369667		<0.5	0.58	361	43	3	43.7	3.01	34	121





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Page: 1  
Finalized Date: 15-DEC-2008  
This copy reported on 24-APR-2009  
Account: ITSNAE

## CERTIFICATE SD08167593

Project: 13601

P.O. No.:

This report is for 20 Rock samples submitted to our lab in Sudbury, ON, Canada on 24-NOV-2008

The following have access to data associated with this certificate:

CAMERON BELL  
DANIELLE LEGER  
WIM VANDERKLIFT

LIONEL BONHOMME  
HERB MACKOWIAK  
ITSNAE WEBTRIEVE

HENRIQUE IZUMI  
MARS NAPOLI

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
FND-02	Find Sample for Addn Analysis

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-GRA06	LOI for ME-XRF06	WST-SIM
ME-XRF06	Whole Rock Package - XRF	XRF

To: VALE EXPLORATION CANADA INC.  
ATTN: LIONEL BONHOMME  
NORTH AMERICAN FIELD EXPLORATION  
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Signature:

  
Colin Ramshaw, Vancouver Laboratory Manager



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 Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08167593

Sample Description	Method Analyte Units LOR	WEI-21	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06	ME-XRF06
		Recvd Wt	SiO2	Al2O3	Fe2O3	CaO	MgO	Na2O	K2O	Cr2O3	TiO2	MnO	P2O5	SrO	BaO	LOI
		kg	%	%	%	%	%	%	%	%	%	%	%	%	%	%
RX369635		0.60	34.82	9.94	31.60	9.10	2.96	5.13	1.75	<0.01	3.00	0.95	0.018	0.05	<0.01	-0.94
RX369636		0.72	24.51	9.30	46.22	5.36	1.95	4.37	1.61	<0.01	5.43	1.09	0.016	0.03	<0.01	-1.45
RX369637		0.70	29.23	11.60	37.96	6.21	2.10	5.16	2.07	<0.01	4.59	1.00	0.018	0.06	0.01	-0.90
RX369638		1.06	17.19	5.75	59.38	3.51	1.40	2.45	1.10	0.01	7.80	1.39	0.032	0.02	0.03	-1.73
RX369639		1.20	45.22	15.69	12.04	10.08	3.41	7.75	2.65	<0.01	0.49	0.58	0.013	0.06	<0.01	0.45
RX369640		1.26	40.34	12.77	21.09	9.99	3.35	6.53	2.22	<0.01	1.77	0.78	0.015	0.06	<0.01	-0.56
RX369641		1.10	1.56	0.21	50.53	23.74	0.23	0.13	0.02	<0.01	3.41	0.70	18.010	0.57	0.01	-1.01
RX369642		0.26	2.72	0.36	52.54	22.20	0.32	0.17	0.06	<0.01	3.22	0.68	15.953	0.54	0.01	-0.54
RX369643		0.70	1.44	0.18	59.93	18.40	0.29	0.10	0.02	<0.01	3.91	0.83	14.001	0.42	0.01	-1.41
RX369644		0.56	2.07	0.11	39.97	30.45	0.27	0.12	0.02	<0.01	2.22	0.55	22.559	0.72	0.01	-0.89
RX369645		1.02	2.61	0.17	42.79	27.13	0.31	0.20	0.03	<0.01	2.34	0.58	21.442	0.67	0.01	-0.03
RX369646		0.98	2.94	0.28	40.82	28.40	0.33	0.17	0.03	<0.01	2.07	0.53	22.135	0.73	<0.01	-0.31
RX369647		0.70	51.90	17.02	10.97	3.25	1.13	4.96	6.74	<0.01	0.41	0.28	0.515	0.18	0.33	0.78
RX369648		0.68	37.37	13.45	15.31	12.36	6.44	4.43	3.79	<0.01	1.82	0.38	2.872	0.24	0.19	1.28
RX369649		0.82	12.90	2.59	47.60	17.38	1.67	0.89	0.80	<0.01	3.32	0.80	10.144	0.43	0.15	-0.43
RX369663		1.34	41.94	13.77	2.92	13.33	1.16	2.44	7.03	<0.01	1.21	0.17	7.412	0.81	1.15	2.87
RX369664		2.56	43.91	15.02	9.58	4.48	2.60	2.89	6.12	<0.01	0.31	0.41	2.463	0.37	4.03	1.14
RX369665		1.10	41.71	13.73	8.48	4.25	4.24	2.20	6.00	0.01	0.44	0.41	1.391	0.33	3.00	2.46
RX369666		0.64	48.74	16.60	7.06	2.54	3.86	2.71	7.27	<0.01	0.40	0.35	0.601	0.25	3.14	1.76
RX369667		0.06														

Comments: MEXRF06: Samples with low total were rechecked and low totals were confirmed.



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Page: 2 - B

Total # Pages: 2 (A - B)

Finalized Date: 15-DEC-2008

Account: ITSNAE

Project: 13601

## CERTIFICATE OF ANALYSIS SD08167593

Sample Description	Method Analyte Units LOR	ME-XRF06
		Total %
		0.01
RX369635		98.38
RX369636		98.45
RX369637		99.10
RX369638		98.34
RX369639		98.44
RX369640		98.35
RX369641		98.11
RX369642		98.24
RX369643		98.13
RX369644		98.17
RX369645		98.25
RX369646		98.12
RX369647		98.47
RX369648		99.94
RX369649		98.25
RX369663		96.21
RX369664		93.32
RX369665		88.65
RX369666		95.27
RX369667		

Comments: MEXRF06: Samples with low total were rechecked and low totals were confirmed.



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TIMMINS ON P4N 8K8

Page: 1

Finalized Date: 11-SEP-2008

This copy reported on 24-APR-2009

Account: CANAIN

## CERTIFICATE SD08125805

Project:

P.O. No.:

This report is for 3 Pulp samples submitted to our lab in Sudbury, ON, Canada on 4-SEP-2008.

The following have access to data associated with this certificate:

LIONEL BONHOMME

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND-02	Find Sample for Addn Analysis
LOG-22	Sample login - Rcd w/o BarCode

## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS81h	High grade REE by fusion/ICPMS	ICP-MS
ME-ICP61a	High Grade Four Acid ICP-AES	ICP-AES

To: 6070205 CANADA INC  
ATTN: LIONEL BONHOMME  
168 ALGONQUIN BLVD EAST  
TIMMINS ON P4N 8K8

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Signature:

Colin Ramshaw, Vancouver Laboratory Manager



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Page: 2 - A

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Account: CANAIN

## CERTIFICATE OF ANALYSIS SD08125805

Sample Description	Method	ME-MS81h	MC-MS81h	MC-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	
	Analyte	Ce	Dy	Er	Eu	Gd	Hf	Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	3	0.3	0.2	0.2	0.3	1	0.05	3	0.05	1	0.5	0.2	1	0.2	5
RX369664		12700	365	151.0	339	1125	5	53.8	13650	6.22	679	10250	2990	220	1335	5
RX369665		24200	669	279	622	2020	9	98.9	25300	11.65	422	18900	>5000	266	2480	<5
RX369666		6720	200.0	82.5	179.5	591	7	29.8	6900	3.56	421	5180	1525	269	685	<5



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TIMMINS ON P4N 8K8

Page: 2 - B  
Total # Pages: 2 (A - B)  
Finalized Date: 11-SEP-2008  
Account: CANAIN

## CERTIFICATE OF ANALYSIS SD08125805

Sample Description	Method	ME-MS81h	MC-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-MS81h	ME-ICP61a
	Analyte	Ta	Tb	Th	Tm	U	W	Y	Yb	Zr	P
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	LOR	0.5	0.05	0.3	0.05	0.3	5	3	0.2	10	50
RX369664		26.6	105.5	3810	13.00	34.2	<5	1070	64.9	230	8050
RX369665		16.7	193.0	>5000	24.1	23.9	<5	2020	122.0	580	6460
RX369666		24.2	56.8	2660	7.20	20.8	<5	583	36.9	540	2380



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## CERTIFICATE SD08133059

Project:

P.O. No.:

This report is for 1 Pulp sample submitted to our lab in Sudbury, ON, Canada on 15-SEP-2008.

The following have access to data associated with this certificate:

LIONEL BONHOMME

## SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND-02	Find Sample for Addn Analysis

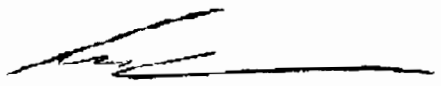
## ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-XRF05	Trace Level XRF Analysis	XRF

To: 6070205 CANADA INC  
ATTN: LIONEL BONHOMME  
168 ALGONQUIN BLVD EAST  
TIMMINS ON P4N 8K8

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:



Colin Ramshaw, Vancouver Laboratory Manager



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Page: 2 - A

Total # Pages: 2 (A)

Finalized Date: 27-SEP-2008

Account: CANAIN

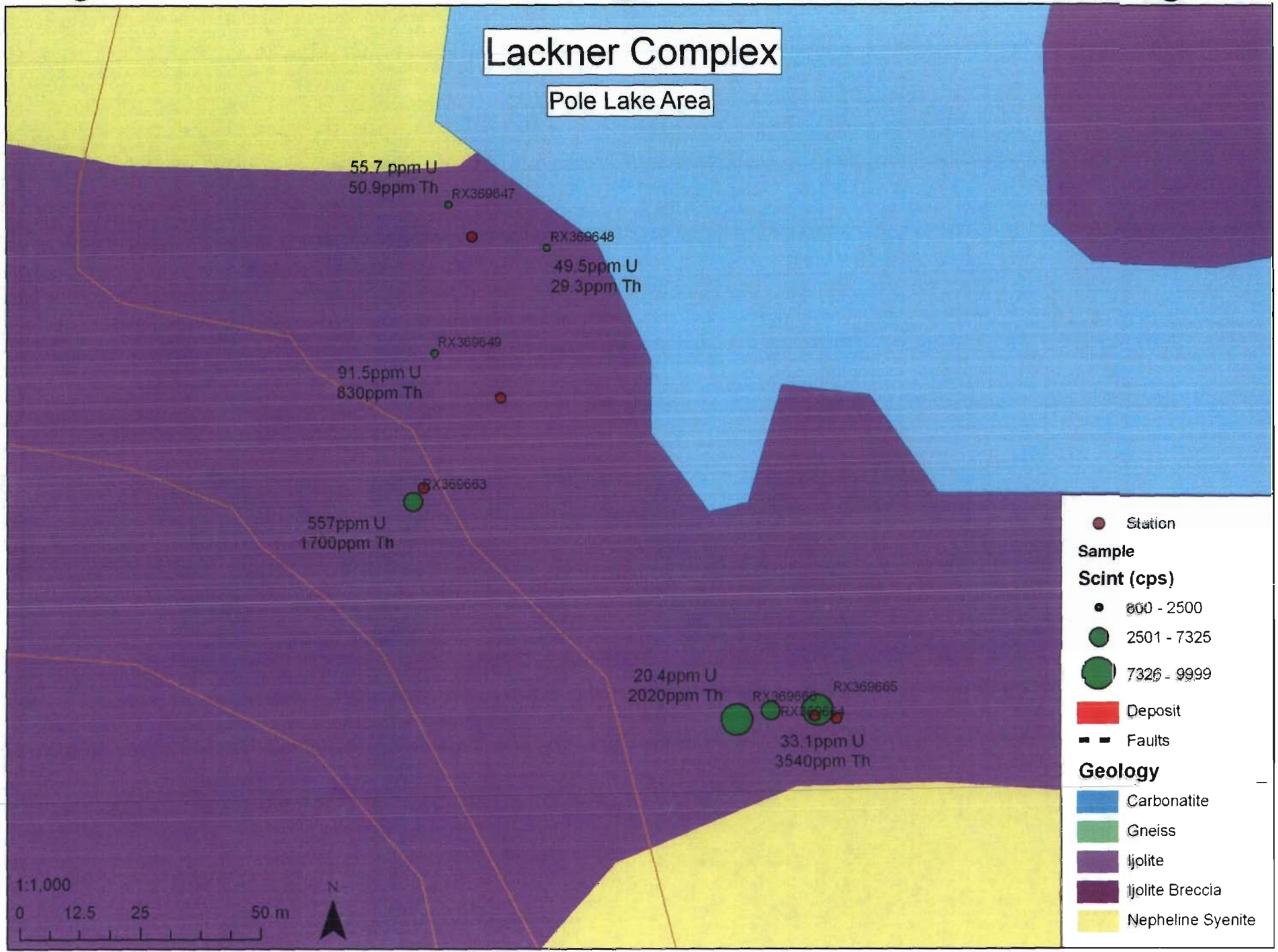
## CERTIFICATE OF ANALYSIS SD08133059

Sample Description	Method Analyte Units LOR	ME-XRF05 Ti ppm 4
RX369665		8690



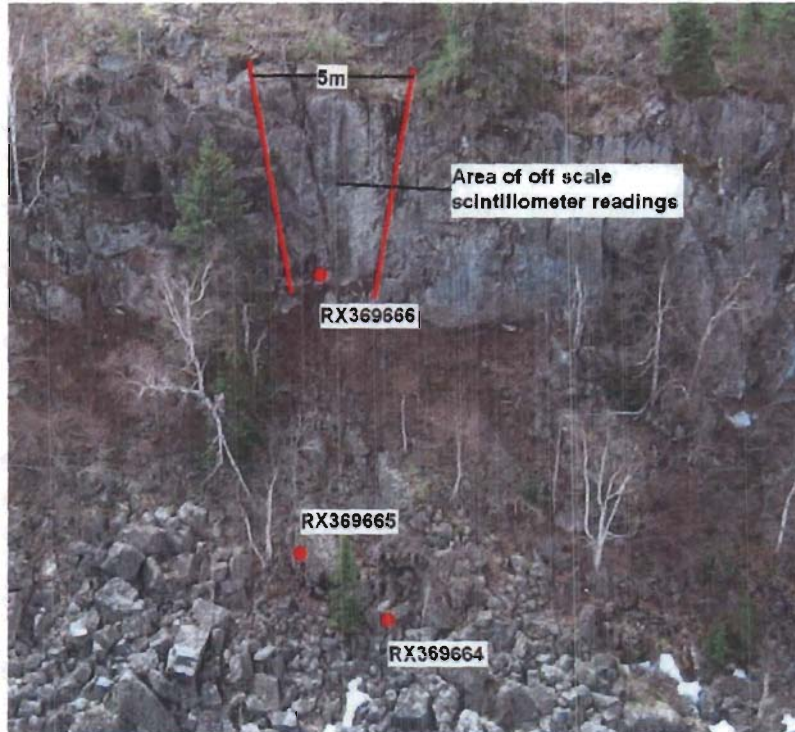
# Lackner Complex

## Pole Lake Area



- Station
- Sample Scint (cps)**
  - 800 - 2500
  - 2501 - 7325
  - 7326 - 9999
- Deposit
- - - Faults
- Geology**
  - Carbonatite
  - Gneiss
  - Ijolite
  - Ijolite Breccia
  - Nepheline Syenite

1:1,000  
0 12.5 25 50 m  
N



View of Pole Lake area, red lines show area of high radiation in outcrop. At outcrop sample -666 and boulder sample -664, scintillometer readings were off scale.



View of area of high apatite concentration near Camp Lake.



View of area near Camp Lake showing sample locations.

APPENDIX I

Geophysics Compilation Report  
Lackner and MacNaught Townships, Ontario  
NTS 42 A  
Porcupine Mining Division  
Mining Claims  
4204336, 4204337, 4204338, 4204340, 4204341, 4204342

For

6378366 Canada Inc.

May 1, 2007  
Timmins, Ontario

Matthew Johnston  
Consulting Geophysicist  
1226 Gatineau Blvd.  
Timmins, Ont. P4R 1E3

## Table of Contents

1.0	Introduction	Page No. 1
2.0	Location and Access	1
3.0	Regional Geology	1
4.0	Discussion of Results	4
5.0	Conclusions and Recommendations	5

Statement of Qualifications

References

## **List of Maps**

<b>Map</b>	<b>Scale</b>
1. Total Field Magnetic Survey - Contours	1:50000
2. Calculated 1 <sup>st</sup> Vertical Derivative- Magnetic Survey	1:50000
3. Airborne Uranium – GSC Regional Radiometric Survey	1:50000

## **1.0 Introduction**

The Lackner property of 6378366 Canada consists of six unpatented mining claims numbered 4204336, 4204337, 4204338, 4204340, 4204341, and 4204342, located in Lackner Township. During early May 2007, a review of available public domain geophysical data was undertaken. The geophysical review consisted of a search for all relevant airborne magnetic, electromagnetic, and radiometric data available for the Lackner Lake carbonatite complex in order to recommend further exploration work and possible additional claim staking in the search for uranium and REE deposits.

## **2.0 Location And Access**

The property is located in the Porcupine Mining division 20 kilometers east of Chapleau, Ontario. Access to the northern part is via provincial highway 101 and then a 4 kilometer logging road with 2 wheel drive. The southern portion can be accessed via the Sultan Lake road network with a branch northerly using 4x4 vehicles and walking a few kilometers (see figures 1 to 2).

## **3.0 Regional Geology:**

The Lackner Lake Alkalic Rock Complex consists of arcuate bands and partial rings of ijolite, malignite, and nepheline syenite. Minor carbonatite is associated with the malignite and ijolite rocks. The complex has been emplaced into gneisses of the Kapuskasing Structural Zone and has been dated by rubidium-strontium isotopic techniques at 1138 +or- 29 ma.

The complex is known to host uranium, thorium, rare earth elements, apatite and titaniferous magnetite mineralization and has been extensively prospected for niobium. Diamond drilling has outlined four zones of low grade niobium mineralization which together total in excess of 100 million tonnes.

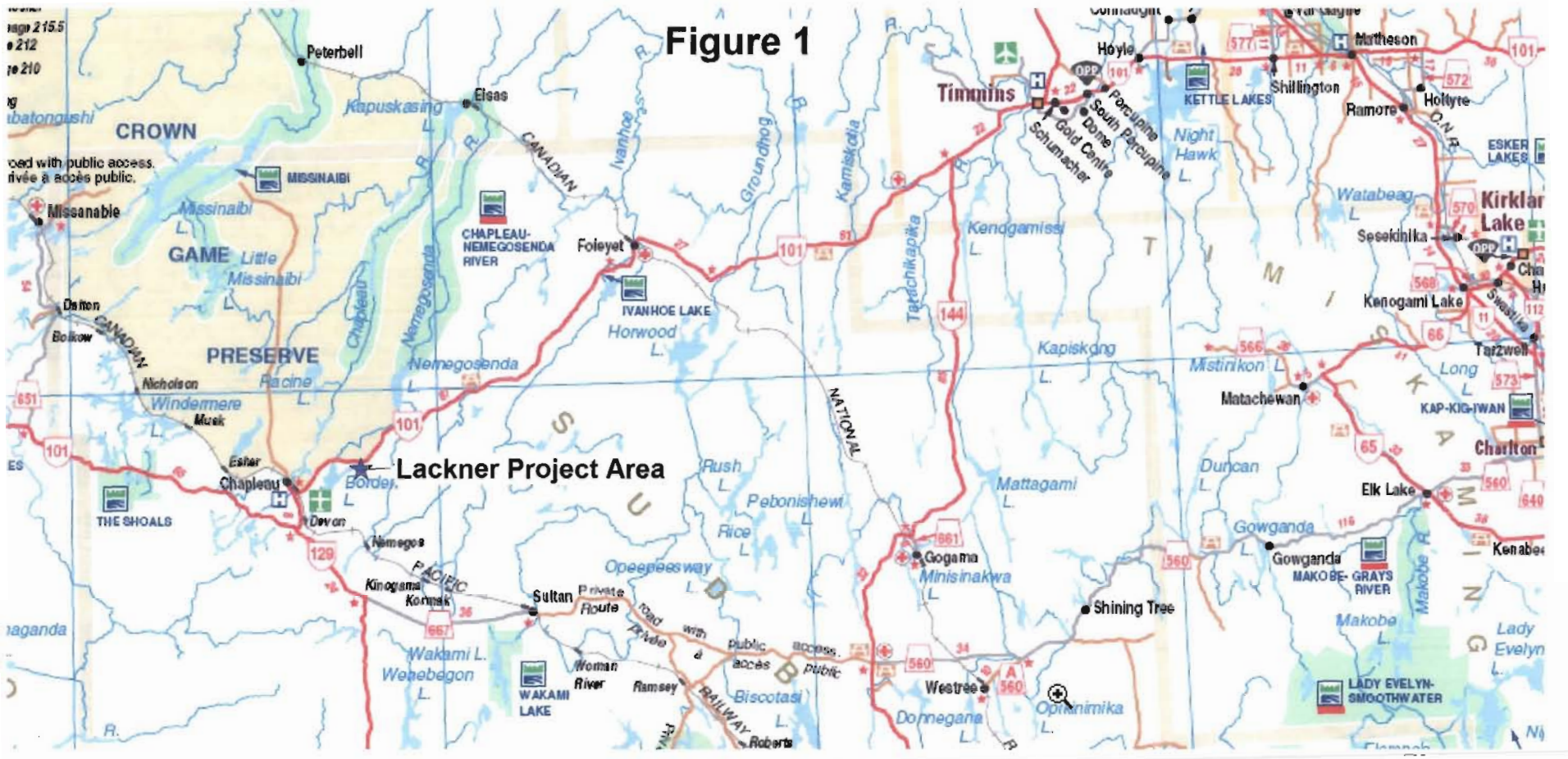


Figure 1

Lackner Project Area



### **3.1 Previous Exploration:**

Well documented work is summarized in Ontario Department Of Mines, Geological Report No. 3; "Niobium-Bearing Complexes East of Lake Superior by G.E.Parsons 1961 and Mines and Minerals Division, Ontario Geological Survey Study 32 by R.P. Sage, 1988 .

### **3.2 Potential for Uranium and REE's**

E.H. Nickel, who made mineralogical studies of both the pyrochlore in ijolite wall rock zone (Nickel 1955) of the number 6 body and in number 8 zone (Nickel 1956) on the Multi-Minerals property reports that the pyrochlore is different in the two zones. The chief differences that he notes are:

1. The Number 6 zone pyrochlore is metamictic but that in No. 8 zone gives a weak X-ray pattern without ignition.
2. The No. 6 zone pyrochlore assays 12.6%  $U_3O_8$  and 4.7%  $ThO_2$  and the No 8 zone assays 1.2%  $U_3O_8$  and nil  $ThO_2$  (see Table 4, OGS report 32)
3. The Pyrochlore in No 8 zone contains nearly four times as much iron and titanium as that in the number 6 zone

### **4.0 Discussion of Results**

A high resolution airborne magnetic survey was flown over the Lackner Township area as part of a larger survey in 2002 by the Geological Survey of Canada (GSC, 2002) and a portion of this data was windowed to the Lackner area and plotted at 1:50000 scale with existing claims shown as well. In addition to the airborne magnetic data regional radiometric data flown by the Geological Survey of Canada during the 1960's was downloaded and compiled and plotted at 1:50000 scale for the Lackner township area as well.

The magnetic data as shown by the total field magnetic (Map 1) and calculated 1<sup>st</sup> vertical derivative of the magnetic data (Map 2) clearly indicates areas of anomalous magnetic and outlines the carbonatite complex in some detail. Previous exploration targeted magnetic highs which mapped iron and niobium deposits (OGS, 1988). It is clear that there are significant anomalous magnetic signatures outside the areas of the known mineral patents within the carbonatite complex. These areas are the areas which 6378366 Canada Inc. targeted by their 1<sup>st</sup> round of land staking in 2006.

The radiometric survey shows a very distinct and strong Uranium anomaly (Map 3) over the central and central north portion of the claim group. This anomaly indicates the high potential for this area to host economic concentrations of Uranium ore as well as REE metals; which are known to have an association with carbonatite complexes.

## **5.0 Conclusions and Recommendations**

The airborne magnetic and regional radiometric surveys have outlined areas of the complex which are very prospective for iron, uranium, and REE deposits.

A program of prospecting, sampling or geological mapping in these areas and throughout the area is recommended in order to further evaluate the Lackner property.

The property would also benefit from a high resolution helicopter borne magnetic and radiometric survey in order to more map in more detail magnetic and radiometric anomalies associated with potential iron, uranium and REE mineralization.

Any other existing geological, diamond drilling or geochemical information that may exist in the mining recorder assessment files should be investigated and compiled prior to further exploration of the Lackner property in order to accurately assess the area

APPENDIX II

**REPORT OF WORK PERFORMED**

**POLE LAKE PROPERTY**

**LACKNER TOWNSHIP**

**PORCUPINE MINING DIVISION**

**FOR 6378366 CANADA INC.**

J.V. Bonhomme  
December 5, 2008

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### Introduction:

In September of 2008, 7066848 CANADA INC. was contracted to provide preliminary prospecting on the Pole Lake Property owned by 6378366 CANADA INC.

### Property Location & Access:

The Pole Lake Property is located in Lackner & McNaught Townships, in the Porcupine Mining Division. It is located approximately 40km from the Town of Chapleau. Access to the property is gained by travelling south on a logging road just east of the Borden Lake Campground, located on Highway 101. From the turnoff, travel south for a distance of 15km to the turnoff for the Multi-Minerals access road. Travel the Multi-Minerals access road for 1km, and turn a sharp right onto a cut/access road for a distance of 2km to where the road ends. The Pole Lake access trail begins at this location & continues north for 2km. The trail then turns east and follows the canyon ridge north to a steep drainage creek down to Pole Lake. An ATV can be used on the access trail for 2km. Travel time to Pole Lake from Timmins is approximately 3hrs.

### September 17, 2008:

Accompanied Peter Colbert to visit the Pole Lake Property to locate a means of access to the area. Originally, access to the property was thought to be obtained from the north (a shorter distance of 13km from Highway 101), but the area around Hebden Lake has been flooded due to beaver damming on the outlet stream. Access from the south of the property was obtained through the Multi-Minerals access road to a cut/access road. From there, we travelled north on foot for 3km uphill to an old MNR fire tower on top of the hill west of Pole Lake. A steep drainage creek can be followed downhill to the shore of Pole Lake.

A 10m cliff face and boulder pile was sampled. 11 samples were taken (numbered 3408-3419) at various locations near the cliff face. The area has experienced a large amount of wind blowdown, making it very difficult to reach Pole Lake. It became clear that a better means for access to the property was needed for future sampling & work to be done.



Cliff Face & Boulder Pile Looking West From Pole Lake

September 20-21, 2008:

Over the course of two days, a 2.6km trail was cleared to gain easier access to Pole Lake. Two helpers were hired (Abdul Lee & Gabriel Turcotte) to aid with the workload. Permission was granted from Mertec Development to clear the trail on their portion of the property. The trail was cleared north for 2km and then east for 600m. The last part of travel remains a walking trail due to the topography of the area.



Pole Lake Access Trail Construction

September 23, 2008:

Returned to the property with Peter Colbert to re-sample the cliff face & boulder pile with a scintillometer (borrowed from MNDM). 10 samples (numbered 3420-3429) were taken from the area based on high readings. A boulder that was previously sampled by Vale Inco was located and re-sampled. With the access trail completed, travel time to and from the property was significantly reduced (3hrs vs. 5hrs).

November 6, 2008:

Visit property with Fred Breaks (P. Geo). Abdul Lee was also present to assist with sampling. Under the supervision of Fred Breaks, a mineralization zone was discovered along the cliff face. This zone was sampled and examined. 7 samples were taken (numbered 3430-3436) from the cliff face & boulder pile.



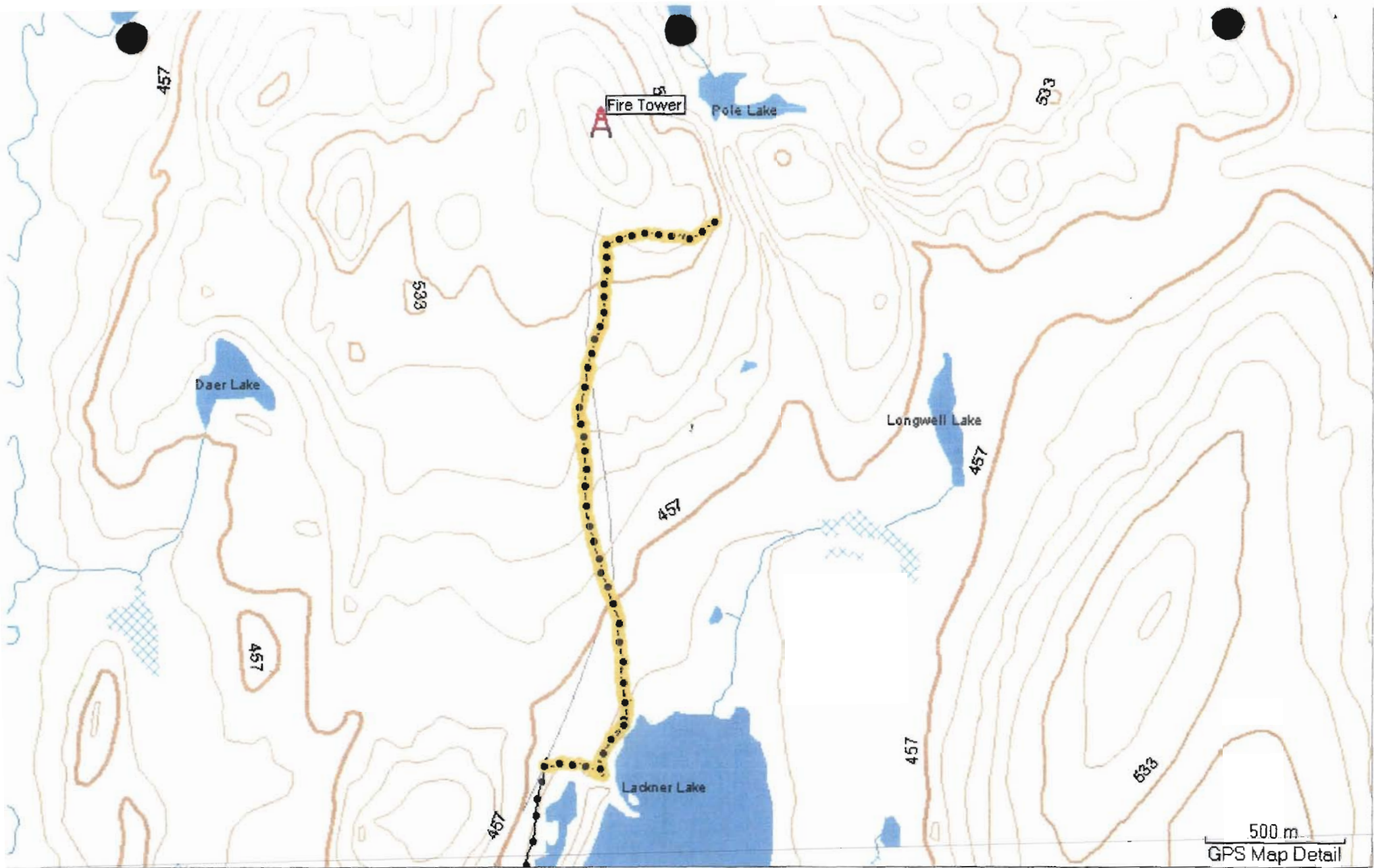
Sample Locations

Description	Sample Location	
	mE	mN
3408	342277	5297568
3409	342461	5297565
3410	342457	5297554
3411	342467	5297550
3412	342471	5297554
3414	342479	5297537
3415	342530	5297464
3416	342545	5297424
3417	342483	5297492
3418	342476	5297492
3419	342458	5297547
3420	342487	5297407
3421	342438	5297485
3422	342425	5297506
3423	342448	5297501
3424	342448	5297501
3425	342448	5297511
3426	342448	5297496
3427	342448	5297496
3428	342448	5297496
3429	342444	5297507
3430	342444	5297507
3431	342424	5297511
3432	342461	5297512
3433	342451	5297510
3434	342440	5297513
3435	342440	5297446
3436	342459	5297464

All Coordinates Are Nad 83

Scintillometer Readings For Samples Taken During September 23, 2008 Visit To Pole Lake

Reading Location	Description	Sample Location		Readings							
		mE	mN	T1 Slow	Scale	T1 Fast	Scale	T2	Scale	T3	Scale
Field Office	3420	342487	5297407	12	X1000	10	X1000	30	X10	10-15	X10
	3420			5	X1000	5	X1000	10	X10	25-40	X1
Field Office	3421	342438	5297485	5	X1000	5	X1000	20	X10	10	X10
	3421			6	X1000	5	X1000	15	X10	20-35	X1
Field Office	3422	342425	5297506	10	X1000	10	X1000	25	X10	5-10	X10
	3422			25	X100	25	X100	15	X10	40-60	X1
Field Office	3423	342448	5297501	40	X1000	40	X1000	20	X100	5	X100
	3423			15	X1000	15	X1000	60	X10	10-15	X10
Field Office	3424	342448	5297501	20	X1000	20	X1000	10	X100	5	X100
	3424			20	X100	20-25	X100	10	X10	35-60	X1
Field Office	3425	342448	5297501	20	X1000	20	X1000	10	X100	5	X100
	3425			6	X1000	6	X1000	20	X10	40-70	X1
Field Office	3426	342448	5297496	20	X1000	20	X1000	10	X100	5	X100
	3426			7	X1000	5	X1000	14	X10	30-50	X1
Field Office	3427	342448	5297496	30	X1000	35	X1000	10	X100	5	X100
	3427			15	X1000	15	X1000	6	X100	60-80	X1
Field Office	3428	342448	5297496	20	X1000	20	X1000	10	X100	5	X100
	3428			5	X1000	5	X1000	10	X10	30-40	X1
Field Office	3429	342444	5297507	30	X1000	30	X1000	15	X100	5	X100
	3429			11	X1000	10	X1000	40	X10	60-100	X1
Field	Background	342487	52971407	10	X1000	10	X1000	25	X10	40-60	X1
Field	Background	342451	5297476	25	X100	20-30	X100	15	X10	20-60	X1
Field	Background	342425	5297496	35	X100	35	X100	20	X10	10	X10
Field	Background	342448	5297501	20	X1000	20	X1000	10	X100	5	X100



Pole Lake Access Trail (2.6km)

APPENDIX III

**Rare-Earth Element Mineralization in the Lackner Lake Alkalic  
Intrusive Complex**

**Frederick W. Breaks, Ph.D, P. Geo.**

**November 14, 2008**

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## Introduction

The Lackner Lake alkalic intrusive complex has witnessed a significant history of mineral exploration that mainly focused upon niobium, apatite, and magnetite. Mineral exploration conducted to 1988 has been extensively documented by Sage (1988) and was also summarized by Vale Exploration Canada Limited (2008).

However, little attention has been directed towards the rare-earth elements and yttrium although minerals enriched in these elements, such as the pyrochlore-group, the apatite-group and cerianite  $[(\text{Ce}^{4+}, \text{Th})\text{O}_2]$  have been known since the 1970's. The highest levels of LREE in the lithochemistry database of Sage (1988, p.98), which included all major units, were documented in the late carbonatite units (Sage 1988, p.76-98). Five samples of carbonatite revealed a range for La+Ce+Pr between 3210 and 7770 ppm.

Several mineral concentrates were analyzed by Multi-Minerals Limited. Apatite from the Number 6 magnetite-apatite zone registered 2.75 wt. % total rare-earth elements (Sage 1988, p.40). Two analyses of pyrochlore-group minerals from the magnetite-apatite zones 6 and 8 registered respective La+Ce+Sm contents of 1.7 wt. % and 0.32 wt. % (Sage 1988, p.37). However, the preceding historical data are not NI 43-101 compliant and therefore cannot be relied upon.

This report summarizes a property visitation undertaken on November 6, 2008 to newly discovered rare-earth element mineralization in the northwest part of the Lackner Lake intrusion and specifically adjacent to Pole Lake where high radioactivity levels were recently documented by Vale Exploration Canada Limited. Note that on the 1:10 000 geological map of Sage (1988), Pole Lake of Parsons (1961) was changed to "Tower Lake".

The laboratory assessment of the mineralization is currently in progress and, to date, rare-earth element minerals that contain carbonate and phosphate have been tentatively identified (Appendix 1). Further work that utilizes electron microprobe analysis will be required to specifically identify these phases.

## Recent Investigations

A recent property examination was undertaken in May 2008 by Vale Exploration Canada Limited that focused upon areas of elevated radioactivity:

- Number 6 magnetite-apatite zone of Multi-Minerals Limited (Sage, 1988, p. 38-44) near Camp Lake in the southwest part of the Lackner Lake complex, and,
- Pole Lake area situated 3 km to the northeast.

The Vale Exploration Canada Limited investigation, which was supported by lithochemistry with 19 grab samples as fully presented in Appendix 2. These data revealed a wide range of total rare-earth element content with numerous economically interesting values between 2.2 and 7.5 wt. % in the Pole Lake area. In particular, sample 369665 at locality WDV-08-007 constitutes the highest total rare-earth element content that far known to the author in a bulk rock sample from the Superior Province of Ontario. In the Camp Lake area, this work also revealed several grab samples with significant total rare-earth contents in

the 0.98 to 1.57 wt. % range (Appendix 2). The mean values and ranges for the  $\Sigma$ REE,  $\Sigma$ LREE,  $\Sigma$ HREE, Y, Nb and Ta are summarized in Table 1.

The Vale Exploration Canada Limited bulk rock samples also revealed anomalous tantalum values in the Camp Lake and Pole Lake areas where six samples ranged between 98 and 317 ppm Ta. The tantalum is plausibly contained in pyrochlore-group minerals, although electron microprobe investigations should be undertaken to determine the exact tantalum mineral species present.

Recent sampling in September 2008 by 1218395 Ontario Inc. amassed 23 grab samples of various rock types and mineralized material from across the main outcrop area and adjacent talus pile. Laboratory analysis of these samples is currently in progress.

Table 1. Summary of means and ranges for the rare-earth elements, yttrium, tantalum and niobium in bulk rock samples of Vale Exploration Canada Limited (2008).

	$\Sigma$ REE		$\Sigma$ LREE		$\Sigma$ HREE		Y		Ta		Nb	
	Mean	range	mean	range	mean	Range	mean	range	mean	range	mean	range
<b>Camp Lake</b>	5676	222 ppm to 1.59 wt.%	5381	178 to 1.51 wt.%	294	19-815	233	12-625	61	0.8-190	1954	178-5810
<b>Pole Lake</b>	2.97 wt.%	1529 ppm to 7.5 wt.%	2.83 wt.%	1463 ppm to 7.15 wt.%	1337	66 to 3418	801	44-2020	78	1.2 to 317	2310	29-2020

LREE – La to Eu and HREE – Gd to Lu as defined by Samson and Wood (2005).

Values, in ppm unless indicated as weight percent, are based upon 15 and 5 bulk rock samples respectively from the Camp Lake and Pole Lake areas



## General Geology

The  $1138 \pm 29$  Ma Lackner Lake alkalic complex is situated within the Kapuskasing structural zone that also hosts several other alkalic rock-carbonatite intrusions such as at Seabrook Lake, Borden Lake, Nemegosenda Lake and Cargill Township (Bell and Blenkinsop 1980; Sage 1991). The main rock types in the Lackner Lake alkalic complex comprise foliated and massive ijolite, ijolite breccia, leucocratic and melanocratic nepheline syenite and sparse, late dykes of carbonatite (sövite and silicocarbonatite) and apatite-magnetite veins. Local fenitization of granitic gneiss host-rocks has been documented by Sage (1988).



Photo 1. Massive, coarse-grained nepheline syenite situated in the southwest part of Lackner Lake alkalic complex on main logging road south from Highway 101.

The intrusion is distinctively evident on regional aeromagnetic maps and, in particular, the inner ijolite ring of Parsons (1961) which passes through the Pole Lake rare-earth element occurrence, is quite discernible with magnetic intensities in the range of 61, 500 to 62, 500 gammas (ODM-GSC 1963).

Areas of relatively low total field magnetic intensity such north of Pole Lake and east of Lackner Lake (Figure 1) may correspond to larger zones of carbonatite that typically have low amounts of magnetite. Sparse, late carbonatite dykes have been documented on surface and traced in a drilling program at the Multi-Minerals Limited No.8 zone in the Camp Lake area (Sage 1988, p. 51) for 150 m and with a thickness of 30 m. A second area of carbonatite is situated 100 m north of Pole Lake where a 50 by 250 m mass with plausibly related boulders was delineated by Parsons (1961).

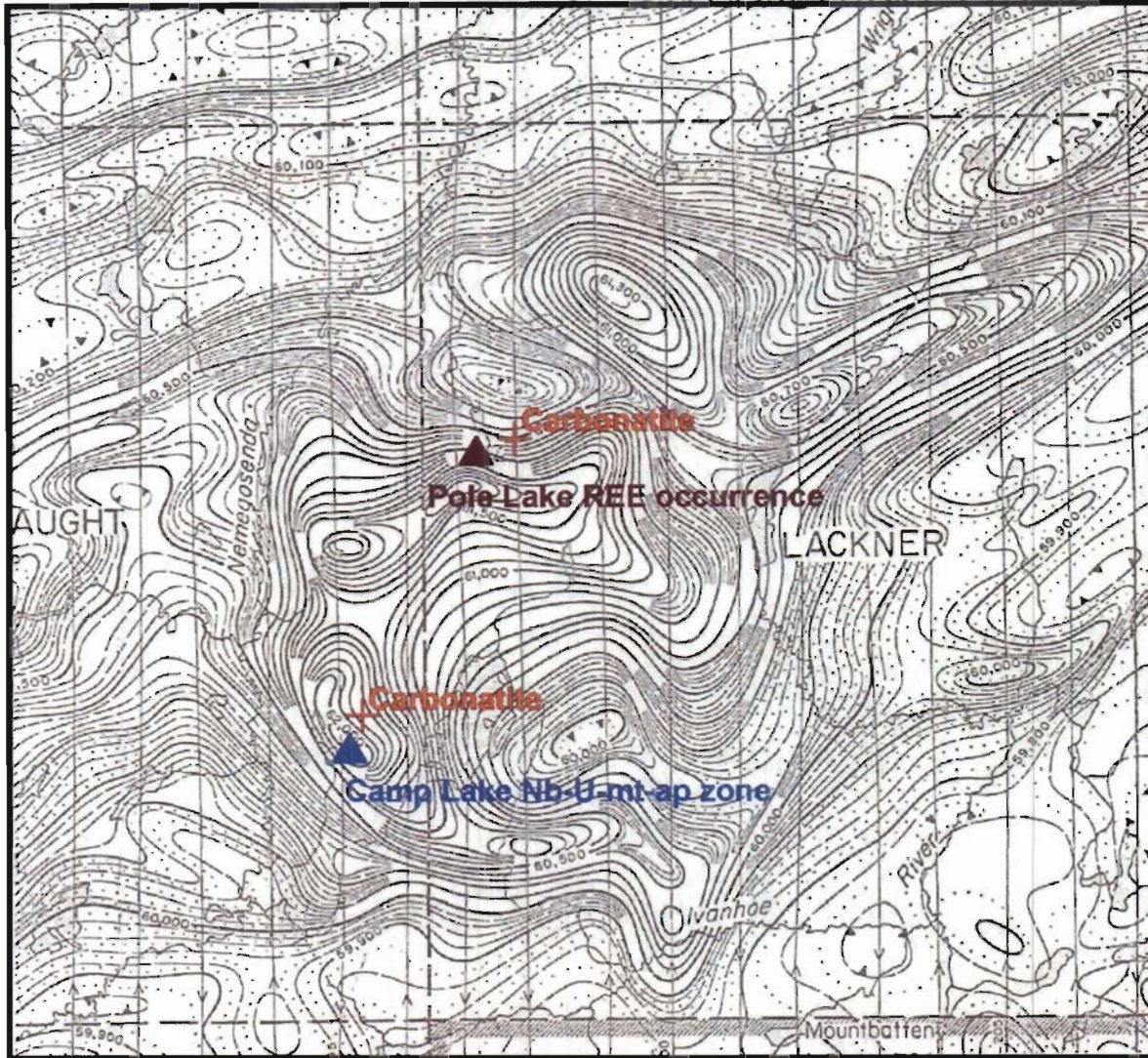


Figure 1. Total field aeromagnetic pattern over the Lackner Lake alkalic complex (ODM-GSC 1963) and known rare-earth element mineralized areas. The locations of documented carbonatite dyke swarms are marked by orange crosses.

## Property Geology

Rock types on claim 420430 comprise foliated and massive ijolite, several petrographic variants of nepheline syenite and rare carbonatite pods and magnetite-apatite segregations. The main exposure comprises a steep cliff face, about 10 m in height, abutted by an extensive talus pile of angular boulders that have spalled from the rock face. The cliff face and talus boulder pile is quite obscured by a pervasive black stain (? humic acids) coupled with various species of lichen and moss. It is conceivable that the mineralized zone will be more readily observed subsequent to Wajax® power washing and bleaching of the lower part of the cliff face. Clean weathered surfaces of most rock types in the area can be observed along the shoreline of Pole Lake.

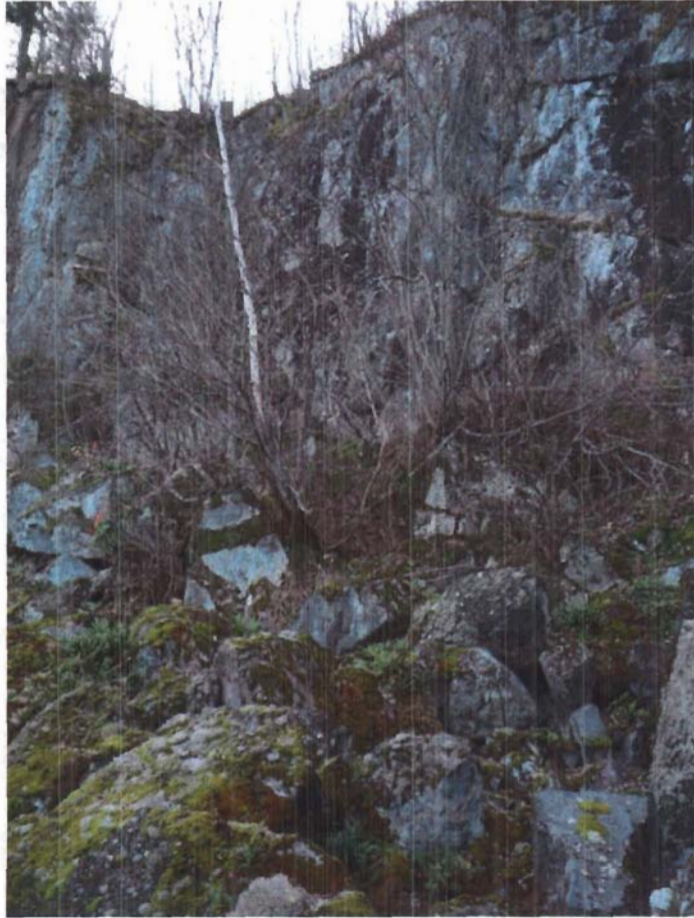


Photo 2. Part of talus pile composed dominantly of moss covered, angular boulders of ijolite adjacent to a cliff face.

The most abundant rock type at the Pole Lake rare-earth element occurrence is a dark-grey weathered, weakly to modestly foliated, dark, fine-to coarse-grained, porphyritic to equigranular ijolite (Photo 3). Phenocrysts of white weathered nepheline mostly lie in a 3 and 6 mm diameter range that on wet surfaces exhibit a distinctive rose colouration identical to nepheline observed in nepheline syenite of the Callander Bay alkalic complex near North Bay, Ontario.



Photo 3. Vaguely foliated, nepheline porphyritic, fine-to coarse-grained ijolite near locality 3434.

## Mineralization

The rare-earth element mineralization is associated with light pink, coarse-grained nepheline syenite dykes and related magnetite-apatite segregations and carbonatite pods. The mineralization appears to coincide with a zone of high radioactivity, estimated at 3-5 m in thickness on the cliff face (Vale Exploration Canada Limited). This zone generally lies subconcordant to the subvertical foliation of the host ijolite and could represent the source area for samples with highly elevated total rare-earth contents (369664, -665, and -666). However, the cliff face is overly obscured by staining and lichens.

Pink nepheline syenite dykes were observed elsewhere as on the cliff face about 15 m to the north of the zone of high radioactivity. The dykes are variably oriented and can be both subconcordant and discordant to the foliation of the host ijolite as at locality 3431 (Photo 4). The pink weathering nepheline syenite was also found in several large boulders below this locality.

In general, elevated thorium contents correlate with increased total REE contents as revealed in the bulk analyses of Vale Exploration Canada Limited (*see* Figure 2). The high thorium contents are likely due to thorite as suggested by scanning electron microscopy work (Appendix 1). Hence, thorium may have utility as a geochemical guide for rare-earth element mineralization in the alkalic intrusive complex. Thorium and uranium exhibit no correlation.

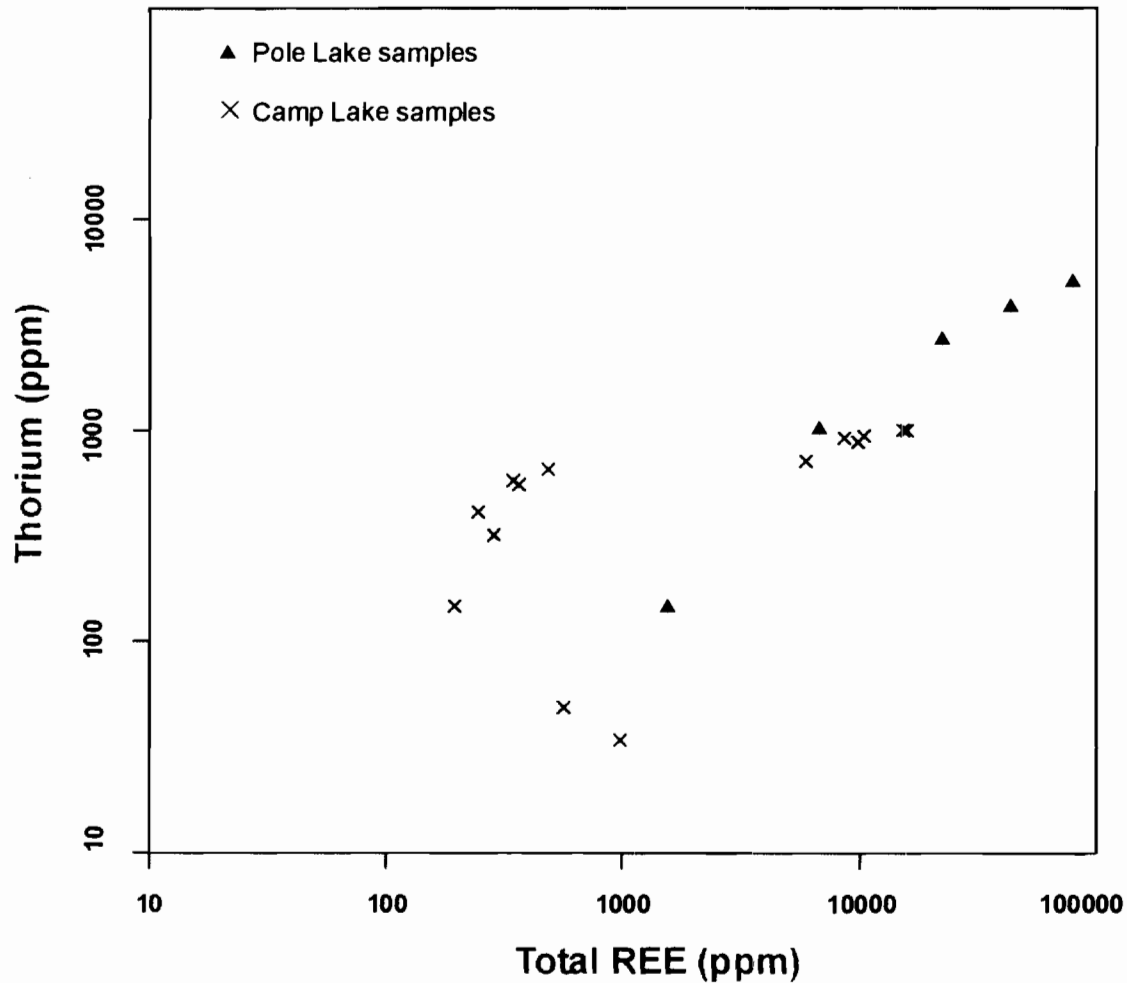


Figure 2. Variation of thorium *versus* total rare-earth elements in the Lackner Lake alkalic complex.

The nepheline syenite dykes, oriented at 005/30N, were noted to individually measure to 30 cm in thickness but commonly are accompanied by a zone of diffuse vein and patchy infiltration of the host ijolite (Photo 4). A cut slab from locality 3429 revealed that the foliation of the host ijolite has been obliterated in the zone of diffuse veining coupled with abundant dark-green possible aegerine-augite (Photo 5). The 0.8 by 1.9 by 2m angular boulder of ijolite at locality 3430 is pervasively infiltrated by a nepheline syenite-carbonatite vein system. It is inferred that sodium fenitization of the ijolite host-rocks has accompanied the development of this delicate vein system, subject to a more definitive mineralogical assessment.



Photo 4. Dike of light pink, leucocratic nepheline syenite with related veins that is in part concordant and also discordant to foliation in host ijolite as exposed on the cliff face at locality 3431. The foliation of host-rock is approximately parallel to pen.



Photo 5. Part of a silicocarbonatite vein (arrow) and related veins and patches in a deep green to black ijolite host-rock from locality 3429. The deep green, medium- to coarse-grained mineral is possibly aegerine-augite (as above coin) that may have evolved via fenitization of the foliated ijolite host. The light pink phase is likely natrolite.



Photo 6. View across silicocarbonatite at localities 3430 and 3431 that exposes possible fenitization (brown selvage marked by arrow) of the ijolite host-rocks. The silicocarbonatite part of vein system contains green fluorapatite, titanite, pyrochlore and white calcite and is weakly magnetic relative to the ijolite host-rocks.



Photo 7. A small pod of silicocarbonatite that is enclosed by a light brown, symmetrical zone of possible fenitization developed in foliated ijolite at locality 3430.

A local transition of the pink nepheline syenite dykes into silicocarbonatite pods rich in coarse calcite, lime green, translucent fluorapatite, and light pink euhedra. K-feldspar accompanied by sparse, dark



brown titanite, and deep orange to light brown, euhedral pyrochlore were noted at localities 3431 and 3434. Small patches of the vein system exhibit a gradation into urtite that contain more than 80 modal percent of dull grey, recessively weathered nepheline.



Photo 8. Close-up of a silicocarbonatite pod in the nepheline syenite vein system with white calcite, dark euhedral titanite, nepheline and lime-green fluorapatite.

A late stage of fracture-controlled, fine-grained, brick-red mineralization, between 1-15 mm in thickness (Photo 9) and oriented at 130/65NE, crosscuts the pink nepheline syenite-silicocarbonatite dykes. The brick-red mineral has been confirmed (Appendix 1) as natrolite [ $\text{Na}_2(\text{Al}_2\text{Si}_{13})\text{O}_{10} \cdot 2\text{H}_2\text{O}$ ] and is associated with deep-green clinopyroxene and niobium titanite. Zeolite-group minerals are a common replacement of nepheline (Mitchell and Platt 1979) and at the Pole Lake occurrence the fracture-controlled natrolite-rich veins are likely connected to the rare-earth element mineralization event.

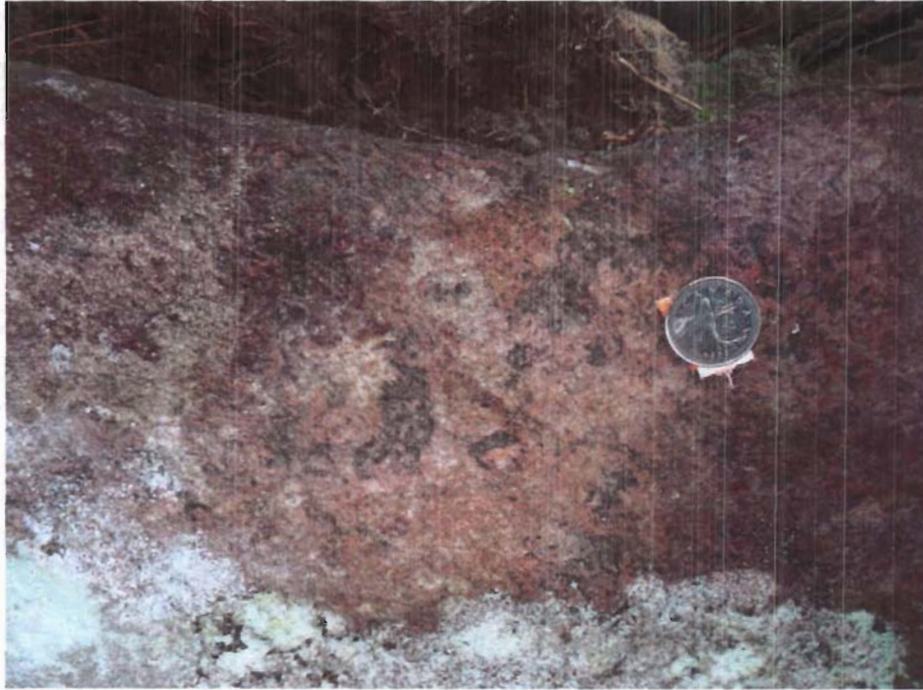


Photo 9. Fracture surface composed of brick-red natrolite, dark green clinopyroxene and niobium titanite at locality 3436. The white area along the bottom consists of organic matter.

## Laboratory Investigation

Small chips were separated from the rejects of samples with the highest total rare-earth element contents (329664, -665 and -666) and examined under a binocular microscope. Several hand-picked representative rock pieces were subsequently submitted to the Geoscience Laboratory of the Ontario Geological Survey for mineral identification work (Appendix 2).

The rare-earth element-rich mineral(s) could not be definitively identified due to the small grain size as shown in Photo 8, in which individual equant to elongate grains range from 40 microns diameter to 10 by 100 microns. The scanning electron microscopy indicated that the rare-earth element minerals likely comprise carbonate- and phosphate-bearing species and are associated with natrolite, biotite, and possible barite and thorite.

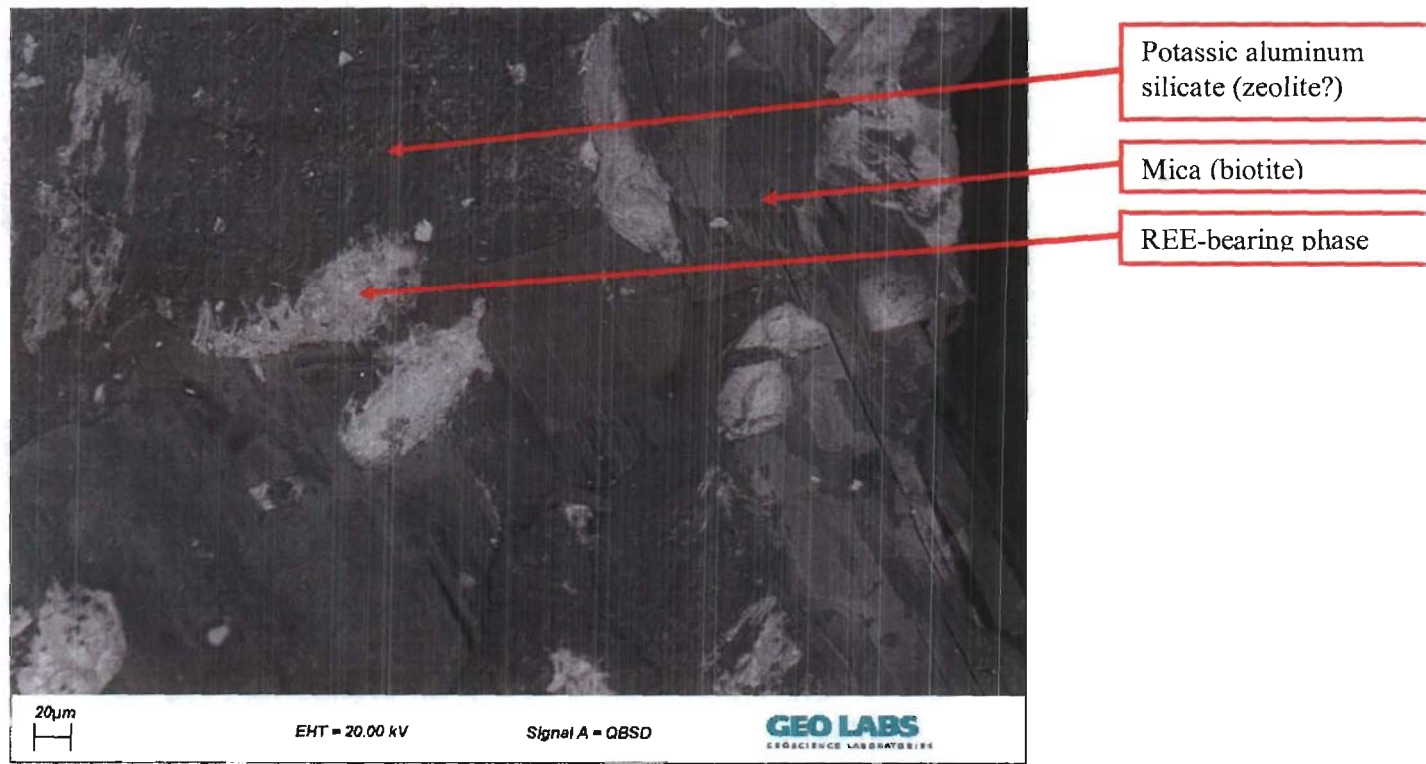


Photo 10. Scanning electron image of a small chip obtained the rejects of sample 369665. The image reveals presently unidentified rare-earth element minerals that occur as inclusions in biotite and a possible zeolite phase.

## Recommendations

Several recommendations are advanced in order to better evaluate the possibly significant rare-earth element mineralization discovered at Pole Lake:

1. Wajax® power washing of lower part of cliff face and angular boulders to more clearly discern nepheline syenite-carbonatite veins. Localized bleaching may be useful for areas where the organic staining cannot be removed via the initial Wajax work.
2. Establishment of a grid and undertake geological mapping to help determine the areal extent of the late nepheline syenite-carbonatite vein system. It should be noted that a nearby exposure of carbonatite and possibly related boulders that was previously documented by Parsons (1961) and situated 100 m north of Pole Lake and may be part of the same rare-earth element-mineralized system.
3. Gamma ray spectrometer survey over the grid as rare-earth element mineralization strongly correlates with elevated thorium at the Pole Lake occurrence (*see* Figure 2).
4. A ground magnetic survey may also be considered if the mineralization exposed by the Wajax® work and the geological mapping appears substantial. There may be a magnetic contrast, as suggested by magnetic testing of hand specimens, between the ijolite and the pink nepheline syenite dyke system especially with regards to the local silicocarbonatite veins.
5. Stripping with a backhoe and Wajax® washing to the north of the cliff edge across the zone of mineralization.

## References

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## Appendix 1:

Laboratory Mineral Identification Work

**GEO LABS**  
GEOSCIENCE LABORATORIES

Geoscience Laboratories  
Willet Green Miller Centre  
933 Ramsey Lake Road  
Sudbury, ON P3E 6B5  
Phone: (705) 670-5634  
FAX: (705) 670 3047

## Mineralogy Report

Client Contact: Fred Breaks  
GL Job Number: 08-0292  
Test Group: SEM-101  
Date: October 8, 2008

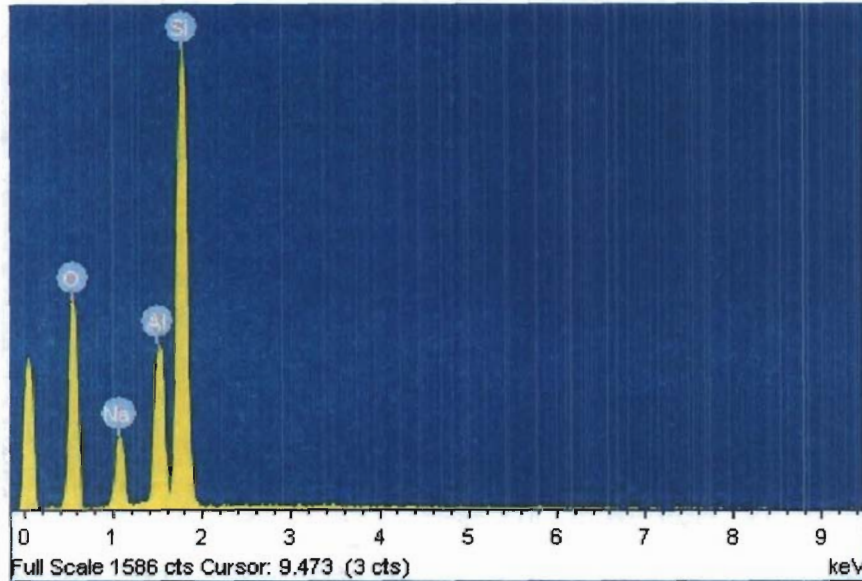
### Client Request:

Mineral ID of grains, as indicated.

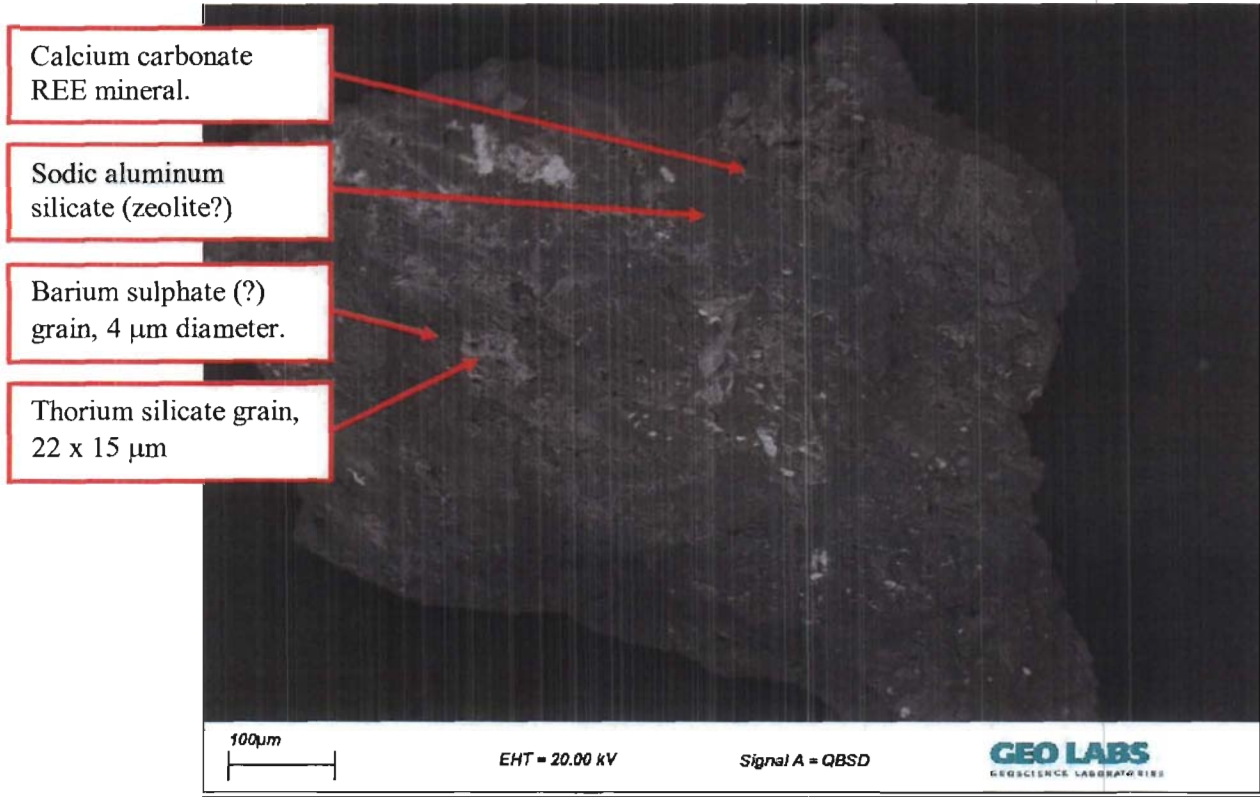
- 369664-1 - Identify red mineral (about 60%) present in small amount of concentrate that has intergrown biotite and unknown milky white mineral.
- 369665-1 - Identify red mineral that is abundant (about 80%) in the largest of two pieces (1 X 2 X 5 mm) that has intergrown biotite.
- 369666-1 - Identify the light pink mineral in a small amount of mineral concentrate that has intergrown biotite and unidentified grey mineral

**Client ID: 369664-1 (LIMS ID 08-0292-0001)**

Energy dispersive X-ray data were collected from a sub-sample of the grain. The red mineral is a sodium aluminum silicate, possibly the sodic zeolite **natrolite** (figure 1). A thorium silicate was found in the (optically) white area of the grain (figure 2). Some inclusions of calcium carbonate REE minerals were noted under SEM backscatter imaging. A few small barium calcium carbonate grains (several microns in size) and a possible barium sulfate (4 microns in size) were also noted.



**Figure 1:** EDS spectra of an uncoated grain, red mineral in sample # 369664-1.

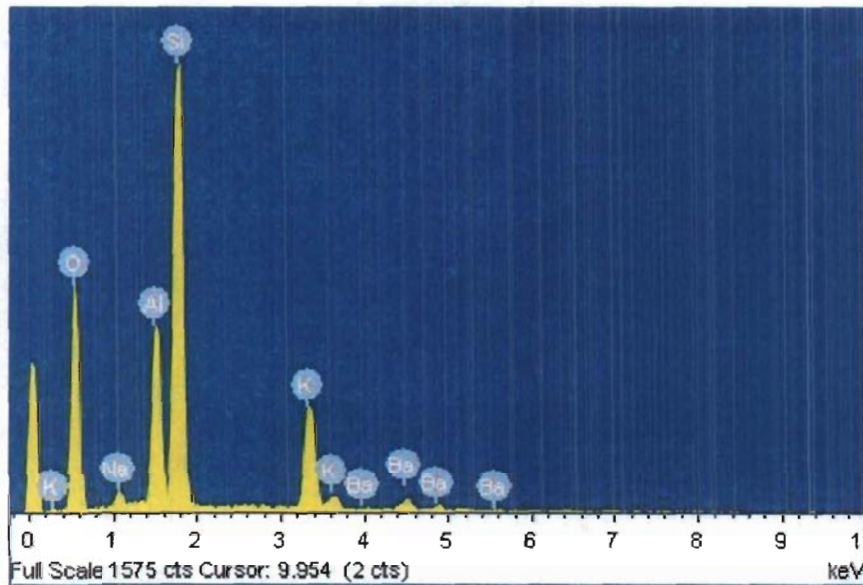


**Figure 2:** Backscatter electron image of white grain portion, sample # 369664-1.



**Client ID: 369665-1 (LIMS ID 08-0292-0001)**

Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The EDS data identified the red mineral as a mixture of potassium aluminum silicate (figure 3) with a subordinate amount of sodium aluminum silicate. XRD search match software produced a good fit for the zeolite mineral **natrolite**, thereby accounting for the sodium aluminum silicate. The search match software was unable to identify a convincing match for the potassium aluminum silicate. Since no match was identified for the feldspar or feldspathoid groups, it is conceivable that this phase is also a zeolite. Numerous inclusions of REE minerals (figure 4) were noted under SEM backscatter imaging (of both phosphorus REE and calcium carbonate REE compositions).



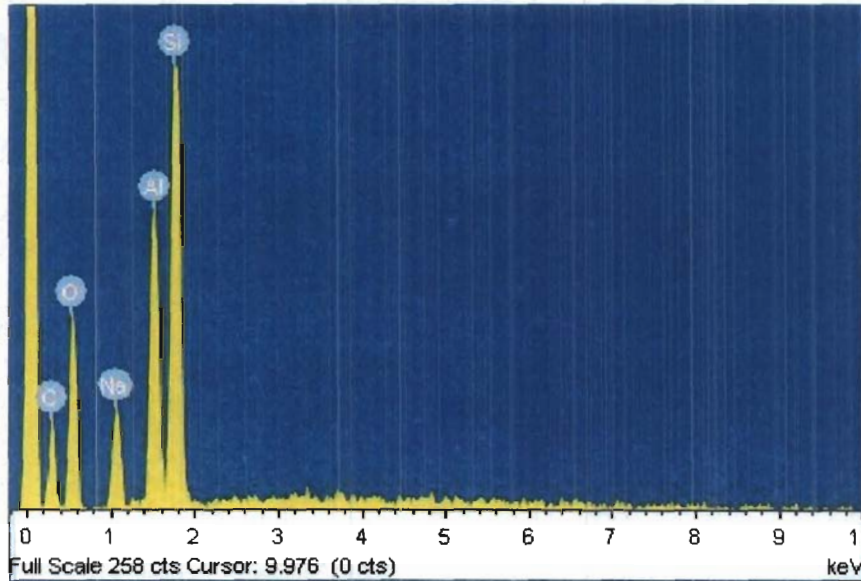
**Figure 3:** EDS spectra of an uncoated grain, red mineral in sample # 369665-1.



Figure 4: Backscatter electron image of sample # 369665-1.

**Client ID: 369666-1 (LIMS ID 08-0292-0001)**

Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The red mineral is a sodium aluminum silicate, likely a sodic **zeolite** (figure 5). XRD search match software suggests that the zeolite mineral **natrolite** matches the spectra obtained. Numerous inclusions of REE minerals (figure 6) were noted under SEM backscatter imaging (of both phosphorus REE and calcium carbonate REE compositions).



**Figure 5:** EDS spectra of an uncoated grain, red mineral in sample # 369666-1.

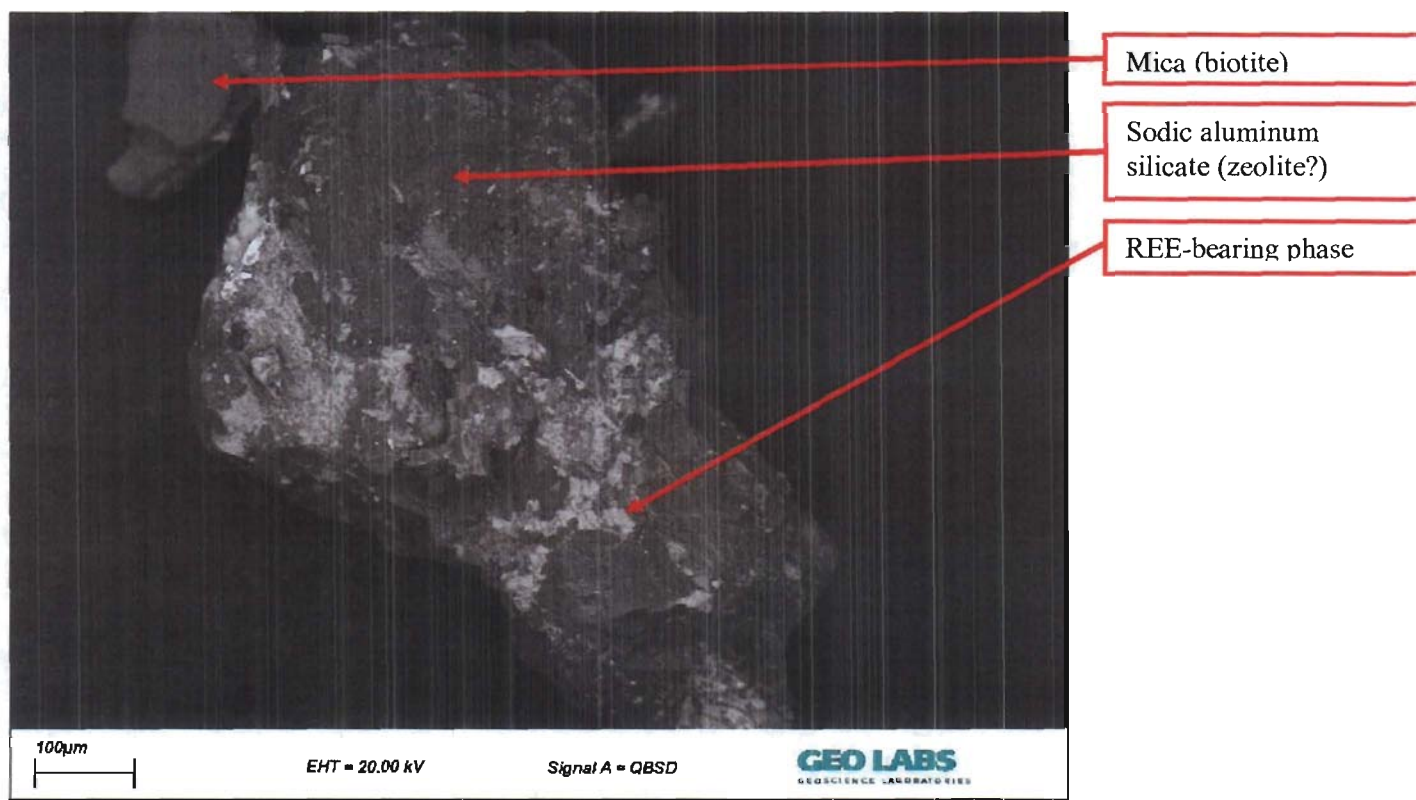


Figure 6: Backscatter electron image of sample # 369666-1.

Sample vial # 369666-1 also contain some small brown-yellow grains with a chalky-earthly appearance (unlike the vitreous red grains also in this vial). Energy dispersive X-ray data were collected from a sub-sample of the grain. The mineral is a potassic aluminum silicate, with some subordinate amount of sodium aluminum silicate, possibly a potassic **zeolite** (figure 7). Some inclusions of calcium carbonate REE minerals (figure 8) were noted under SEM backscatter.

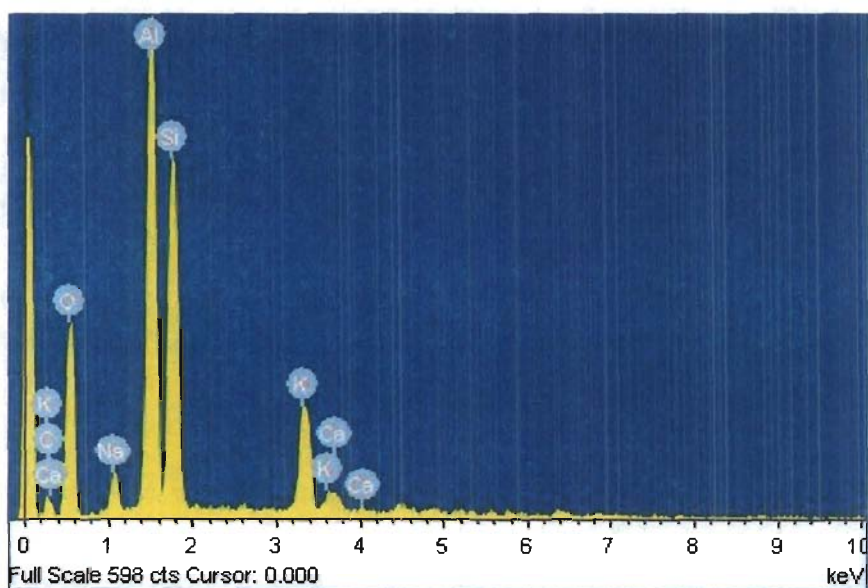
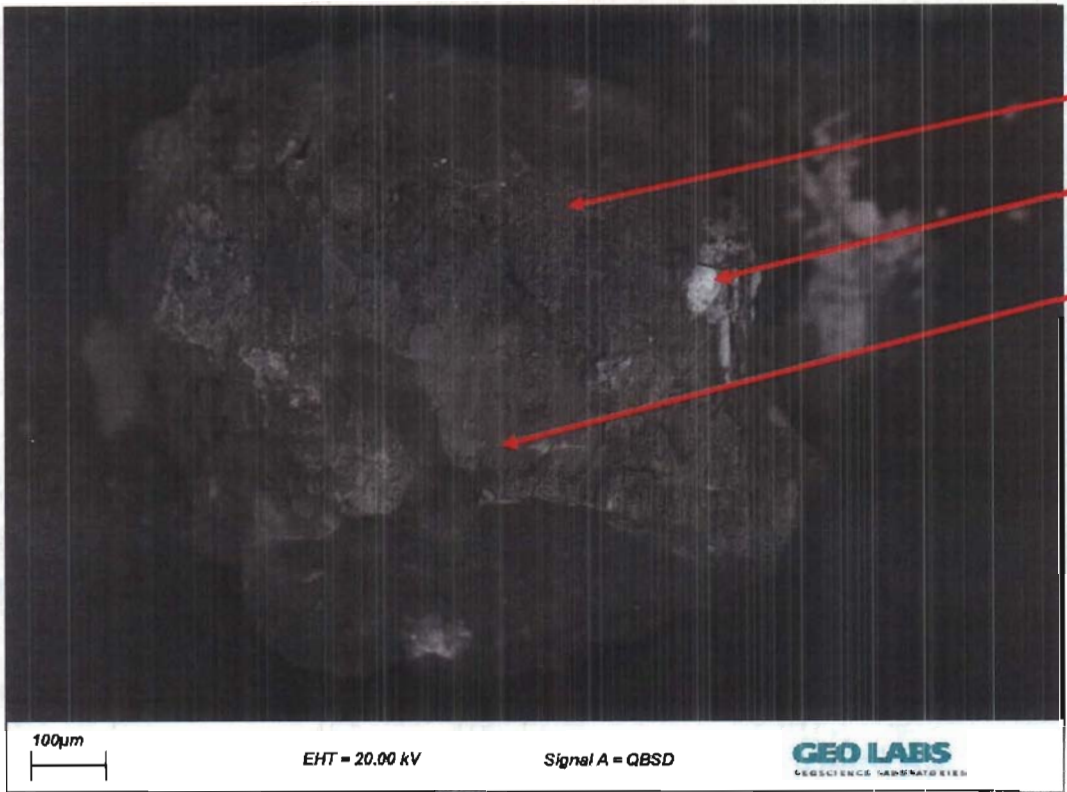


Figure 7: EDS spectra of an uncoated grain, chalky mineral in sample # 369666-1.



Potassic aluminum silicate (zeolite?)

REE-bearing phase

Potassic aluminum silicate (zeolite?)

## Appendix 2

Compilation of Rare-earth elements, U, Th, Nb, Ta, Y and Zr contents (ppm) in grab samples from the Camp Lake and Pole Lake areas in the Lackner Lake alkalic complex

Sample#	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Σ REE
Camp Lake area															
RX369635	40.2	128	15.55	57.6	10.4	3	7.94	1.07	5.46	1.08	3.89	0.81	7.97	1.5	284
RX369636	34.7	115	13.55	48.1	8.37	2.36	6.17	0.83	3.85	0.71	2.34	0.45	4.15	0.77	241
RX369637	73.6	229	27.6	99.5	16.9	4.72	12.5	1.58	6.71	1.18	3.48	0.59	4.85	0.87	483
RX369638	34.3	86.3	10.35	38.5	6.75	1.9	5.03	0.64	2.92	0.5	1.45	0.29	2.62	0.42	192
RX369639	45.6	157	19.45	72	12.85	3.67	9.55	1.33	6.66	1.28	4.46	0.92	8.67	1.61	345
RX369640	48.1	167	20.4	74.6	13.4	3.89	9.99	1.37	6.56	1.28	4.42	0.92	8.39	1.6	362
RX369641	1935	4700	582	2210	370	96.5	283	32.7	128	19.85	48	4.59	22.2	2.22	10434
RX369642	1825	4430	544	2060	345	89.6	265	30.7	119.5	18.6	45.3	4.42	21.8	2.22	9801
RX369643	1580	3890	484	1840	311	80.1	239	27.4	107.5	16.5	40.1	3.9	19	1.89	8640
RX369644	2910	7150	886	3390	568	143.5	427	49.5	193	29.7	71.9	6.94	34.1	3.35	15863
RX369645	2880	7080	882	3390	569	143	423	49.1	192	29.2	70.7	6.67	31.6	2.98	15749
RX369646	2850	6900	842	3230	532	135.5	399	45.9	180	27.8	68.5	6.6	31.8	3.14	15252
RX369647	112	259	31.1	112.5	17.65	4.73	13.75	1.55	6.27	0.99	2.64	0.31	2.12	0.34	565
RX369648	223	455	49.4	172.5	25.5	6.63	20.4	2.31	9.35	1.56	4.13	0.47	2.73	0.4	973
RX369649	<u>1140</u>	<u>2710</u>	<u>328</u>	<u>1220</u>	<u>200</u>	<u>51.9</u>	<u>153.5</u>	<u>17.6</u>	<u>70.3</u>	<u>10.85</u>	<u>26.7</u>	<u>2.57</u>	<u>13.7</u>	<u>1.38</u>	<u>425</u>
Mean	<b>1049</b>	<b>2564</b>	<b>316</b>	<b>1201</b>	<b>200</b>	<b>51</b>	<b>152</b>	<b>18</b>	<b>69</b>	<b>11</b>	<b>27</b>	<b>3</b>	<b>14</b>	<b>2</b>	<b>5307</b>
Pole Lake area															
RX369663	1435	3190	347	1195	184.5	50.4	147.5	17.45	73.8	12.45	32.3	3.53	18.45	1.95	6709
RX369664	13650	12700	2990	10250	1335	339	1125	105.5	365	53.8	151	13	64.9	6.22	43148
RX369665	25300	24200	>5000	18900	2480	622	2020	193	669	98.9	279	24.1	122	11.65	74920
RX369666	6900	6720	1525	5180	685	179.5	591	56.8	200	29.8	82.5	7.2	36.9	3.56	22197
RX369667	<u>472.0</u>	<u>455.0</u>	<u>111.0</u>	<u>364.0</u>	<u>48.7</u>	<u>12.5</u>	<u>36.4</u>	<u>3.8</u>	<u>13.9</u>	<u>2.2</u>	<u>5.8</u>	<u>0.6</u>	<u>3.0</u>	<u>0.3</u>	<u>1529</u>
Mean	<b>9551</b>	<b>9453</b>	<b>1243</b>	<b>7178</b>	<b>947</b>	<b>241</b>	<b>784</b>	<b>75</b>	<b>264</b>	<b>39</b>	<b>110</b>	<b>10</b>	<b>49</b>	<b>5</b>	<b>29701</b>

Sample#	$\Sigma$ LREE	$\Sigma$ HREE	U	Th	Ta	Nb	Y	Zr
Camp Lake area								
RX369635	255	30	108	322	122.5	3670	23.9	1670
RX369636	222	19	69.3	411	98.2	3490	15.3	1400
RX369637	451	32	119.5	654	167	4860	24.2	1300
RX369638	178	14	31.5	145.5	19.3	1170	11.5	732
RX369639	311	34	80.4	580	189.5	5750	28	2120
RX369640	327	35	78.4	557	182.5	5810	28.1	2080
RX369641	9894	541	2.1	943	2.1	201	430	573
RX369642	9294	508	1.71	888	7	369	404	642
RX369643	8185	455	1.17	918	2.7	223	358	483
RX369644	15048	815	2.29	1000	0.8	160	640	504
RX369645	14944	805	2.44	1000	1.3	182	625	405
RX369646	14490	763	2.13	1000	6.9	394	605	584
RX369647	537	28	53.5	48.4	61.9	1040	21.5	382
RX369648	932	41	63.3	34.3	15.5	552	37.3	569
RX369649	<u>5650</u>	<u>297</u>	<u>98.7</u>	<u>715</u>	<u>35.2</u>	<u>1445</u>	<u>245</u>	<u>631</u>
Mean	<b>5381</b>	<b>294</b>	<b>48</b>	<b>614</b>	<b>61</b>	<b>1954</b>	<b>233</b>	<b>938</b>
Pole Lake area								
RX369663	6402	307	560	1000	317	10000	291	1050
RX369664	41264	1884	34.2	3810	28.6	679	1070	230
RX369665	71502	3418	23.9	5000	16.7	422	2020	580
RX369666	21190	1008	20.8	2660	24.2	421	583	540
RX369667	<u>1463</u>	<u>66</u>	<u>361</u>	<u>144</u>	<u>1.2</u>	<u>29</u>	<u>43.7</u>	<u>121</u>
Mean	<b>28364</b>	<b>1337</b>	<b>200</b>	<b>2523</b>	<b>78</b>	<b>2310</b>	<b>802</b>	<b>504</b>

APPENDIX IV



Geoscience Laboratories  
Willet Green Miller Centre  
933 Ramsey Lake Road  
Sudbury, ON P3E 6B5  
Phone: (705) 670-5634  
FAX: (705) 670 3047

## Mineralogy Report

Client Contact: Fred Breaks  
GL Job Number: 08-0337  
Test Group: SEM-101  
Date: November 10<sup>th</sup>, 2008

### Client Request:

Please ID indicated minerals.

- 3411-1 – Identify deep brown anhedral mineral (?pyrochlore)
- 3413-1 – Identify two minerals: brick red fg mineral intergrown with a significant amount of a deep green phase.
- 3418-1 – Identify the deep pink mineral.
- 3418-2 – Identify the deep brown euhedral mineral (?titanite)
- 3423-1 – Identify orange-brown euhedral mineral
- 3429-A-1 – Identify the fg lime green mineral (?fluorapatite)
- 3429-A-2 – Identify the euhedral , amber brown mineral (?titanite)

Additional samples were provided to the GeoLabs on November 10<sup>th</sup>:

1. extra sample for 3413-1 (red mineral and green phase)
2. 08 FWB 43-02 (possible pyrochlore mineral)

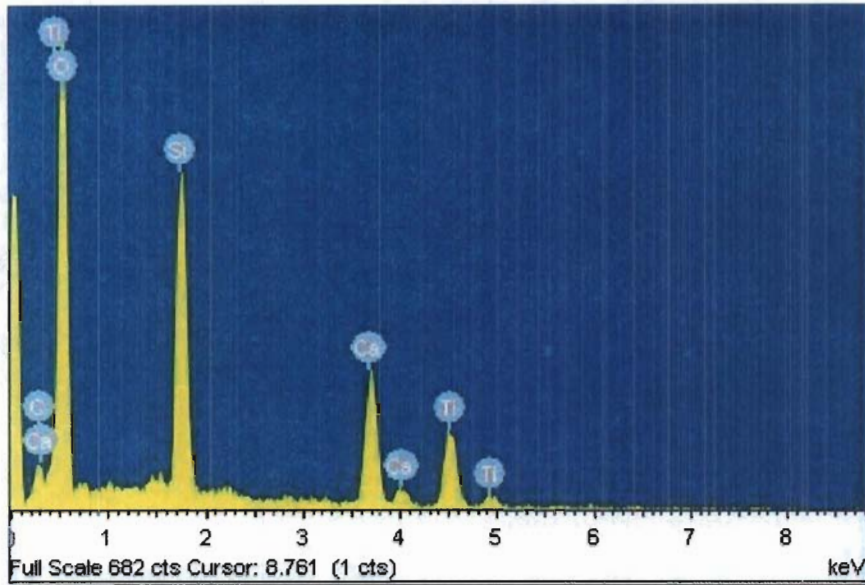
Sample 3418-2 was not received (empty vial). Client notified and sample omitted.

Analyzed by:  
John Hechler  
Geoscience Laboratories

Reviewed by:  
Dave Crabtree  
Geoscience Laboratories

**Client ID: Sample 3411-1 (LIMS ID 08-0337-0001)**

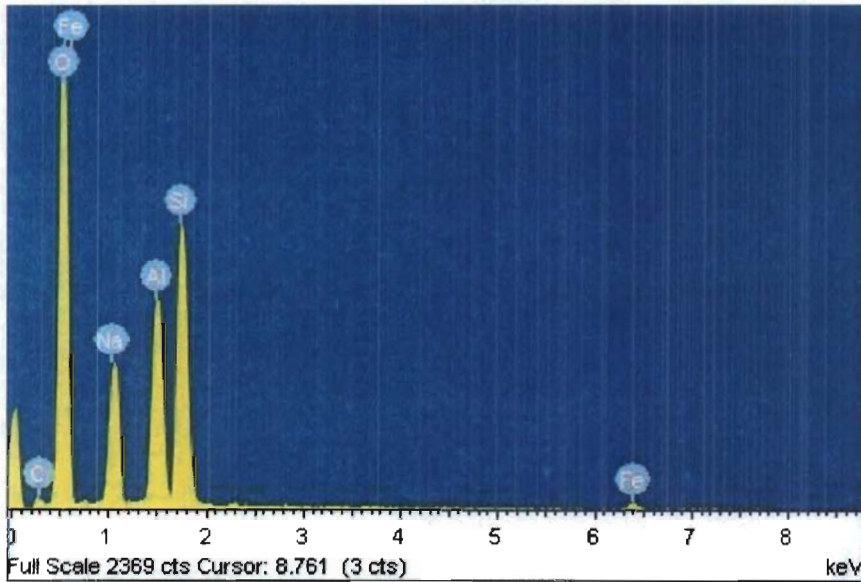
Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The mineral is identified as **titanite**.



**Figure 1:** EDS spectra of an uncoated grain, brown mineral in sample # 3411-1.

**Client ID: Sample 3413-1 (LIMS ID 08-0337-0001)**

Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The EDS data identified the red mineral as a sodic aluminum silicate (figure 2). XRD search match software produced a good fit for the zeolite mineral **natrolite**.



**Figure 2:** EDS spectra of an uncoated grain, red mineral in sample # 3413-1.

Additional minerals noted in this sample include biotite, as well as subordinate clinopyroxene (augite?), calcite, and niobium titanite (figure 3).

Numerous diatoms were noted on the sample (figure 4).

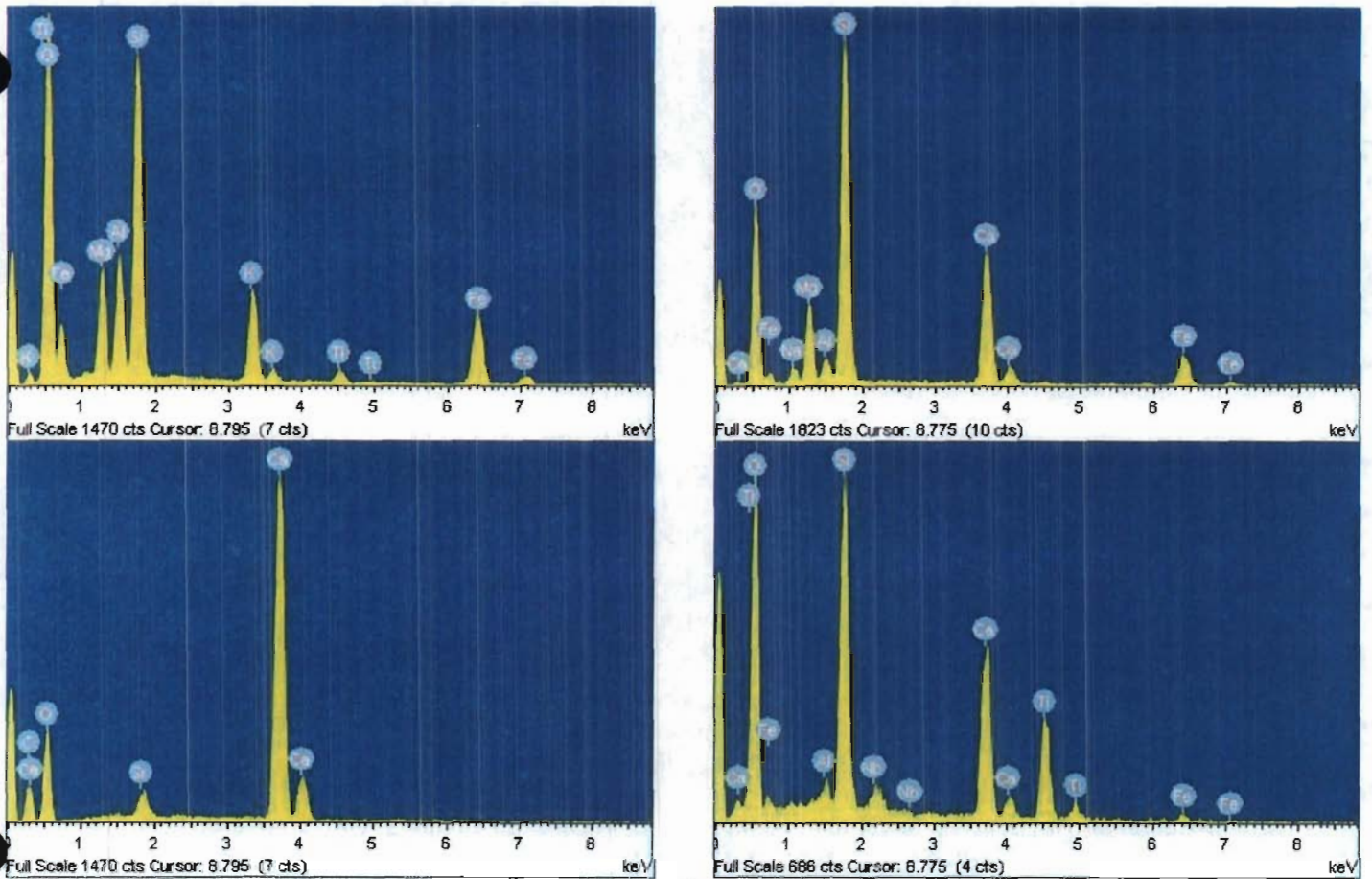


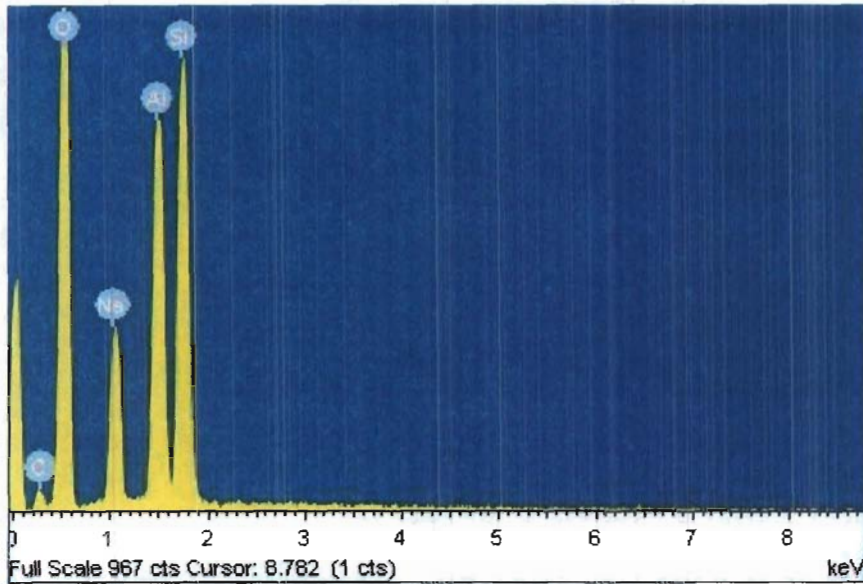
Figure 3: EDS spectra of additional minerals noted in sample # 3413-1.



Figure 4: BSE image of grain 3413-1 with a secondary electron image box-out of a selected diatom.

**Client ID: Sample 3418-1 (LIMS ID 08-0337-0001)**

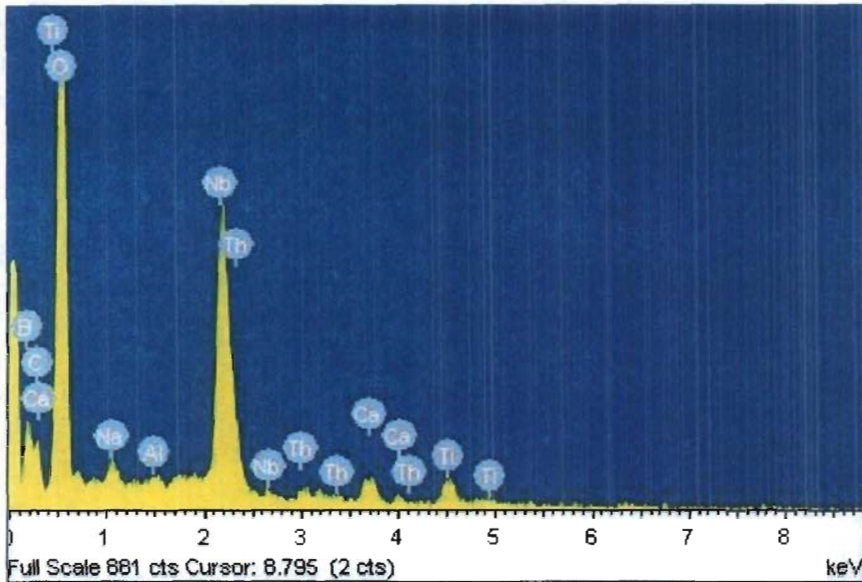
Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The EDS data identified the red mineral as a sodic aluminum silicate (figure 5). XRD search match software produced a good fit for the zeolite mineral **natrolite**.



**Figure 5:** EDS spectra of an uncoated grain, red mineral in sample # 3413-1.

**Client ID: Sample 3423-1 (LIMS ID 08-0337-0001)**

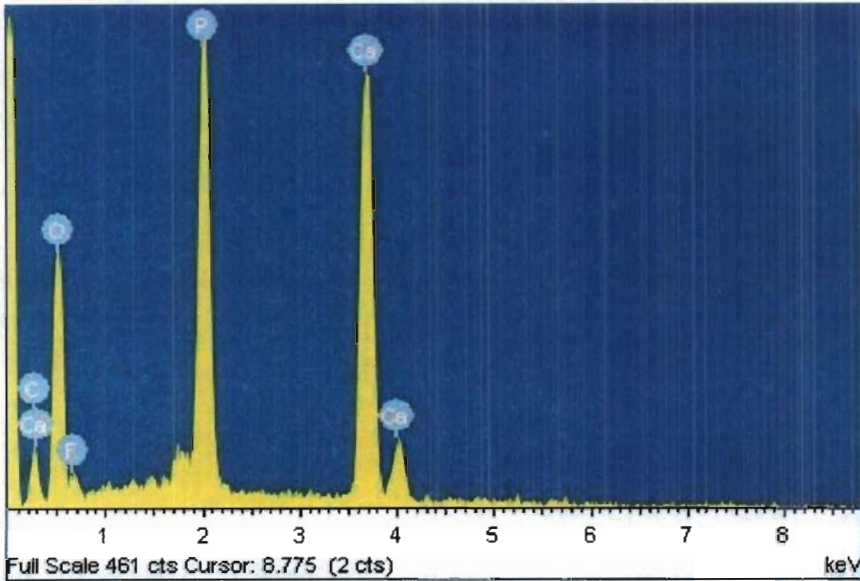
Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The EDS data identified the orange-brown mineral as a niobium oxide (figure 6). XRD analysis was inconclusive, producing an amorphous pattern, suggesting that the sample lacks a crystalline structure.



**Figure 6:** EDS spectra of an uncoated grain, orange-brown mineral in sample # 3423-1.

**Client ID: Sample 3429-A-1 (LIMS ID 08-0337-0001)**

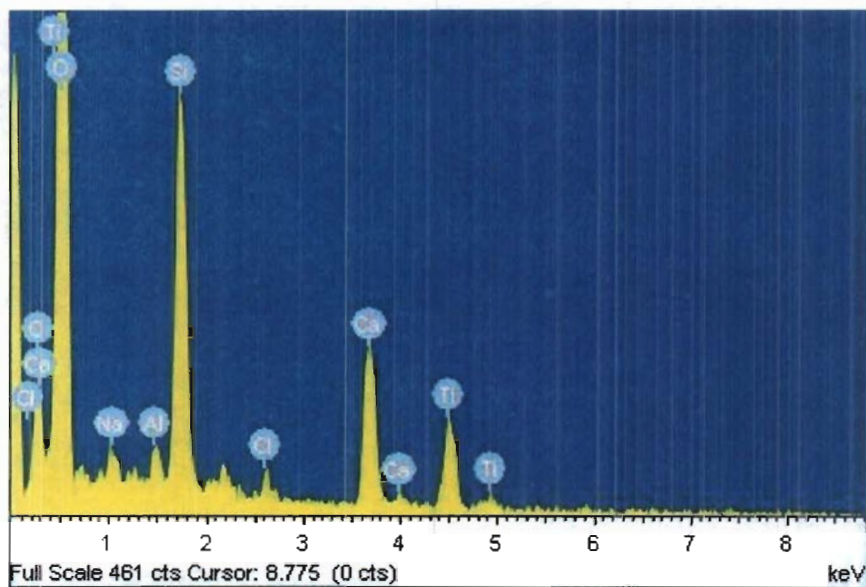
Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The sample is identified as a **fluoroapatite**.



**Figure 7:** EDS spectra of an uncoated grain, green mineral in sample # 3429-A-1

**Client ID: Sample 3429-A-2 (LIMS ID 08-0337-0001)**

Energy dispersive X-ray data and X-ray diffraction data were collected from a sub-sample of the grain. The sample is identified as a **titanite**.



**Figure 8:** EDS spectra of an uncoated grain, brown mineral in sample # 3429-A-2



X-ray diffraction data were collected from a sub-sample of the grain. The sample is identified as a **zircon**.

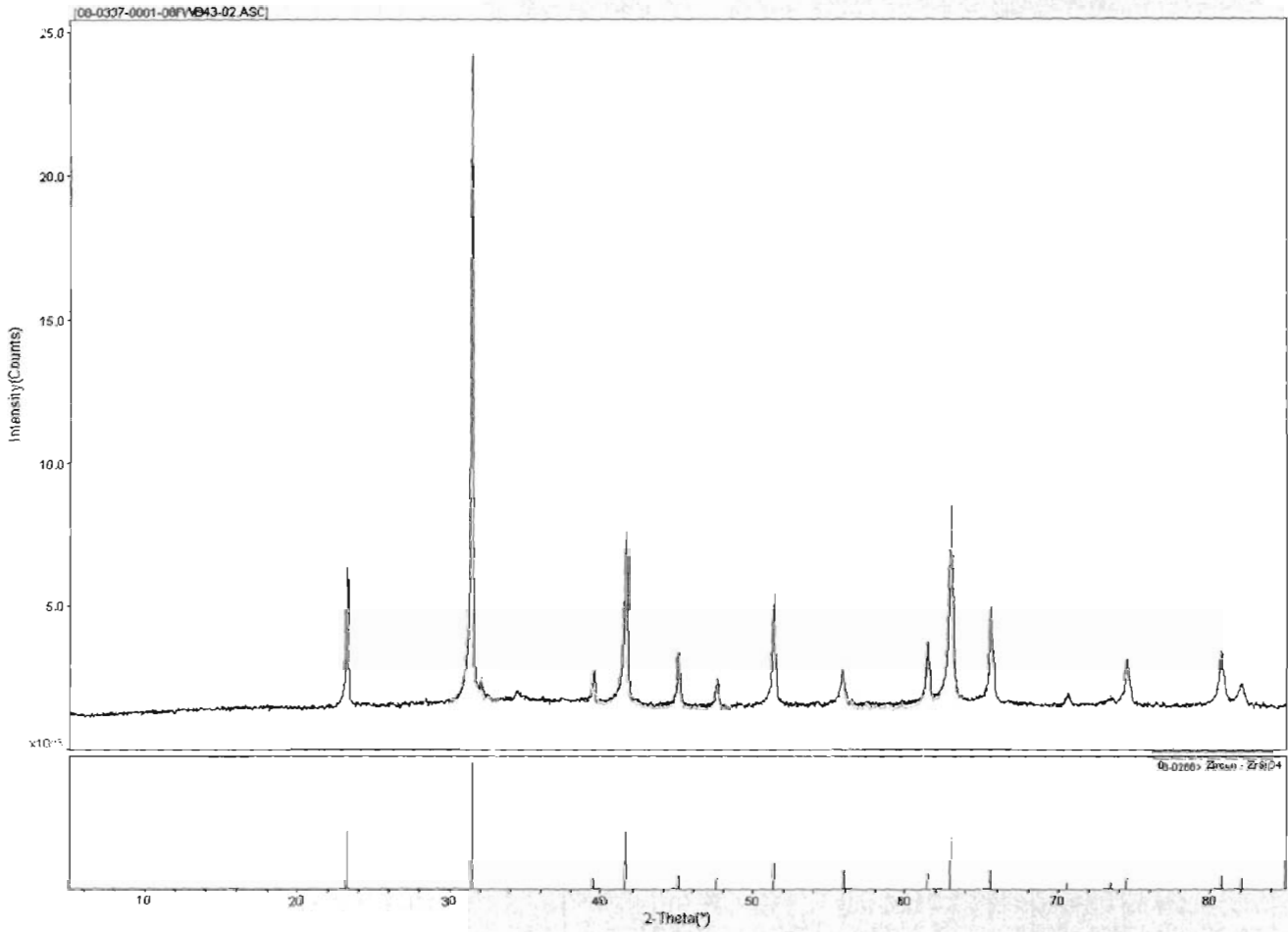


Figure 9: XRD pattern of a grain from sample # 08 FWB 43-02.