

Beep Mat Location and Excavation

of

Airborne Megatem II Conductors

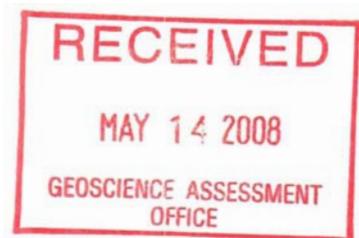
on Daxl Claims in Fripp - Musgrove Townships

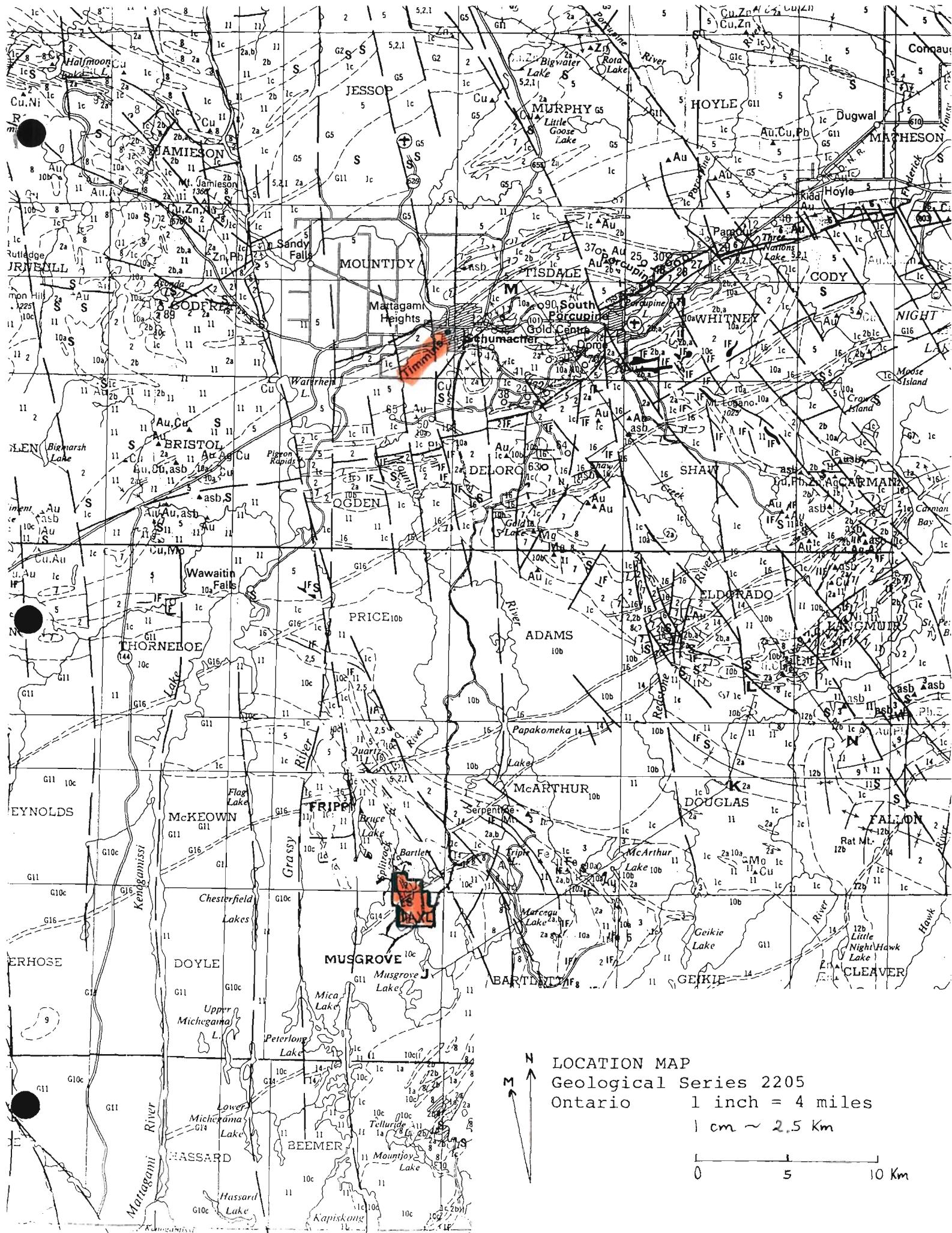
in Sep - Nov 2007

**2 • 38032**

Report by Hermann Daxl, M.Sc.

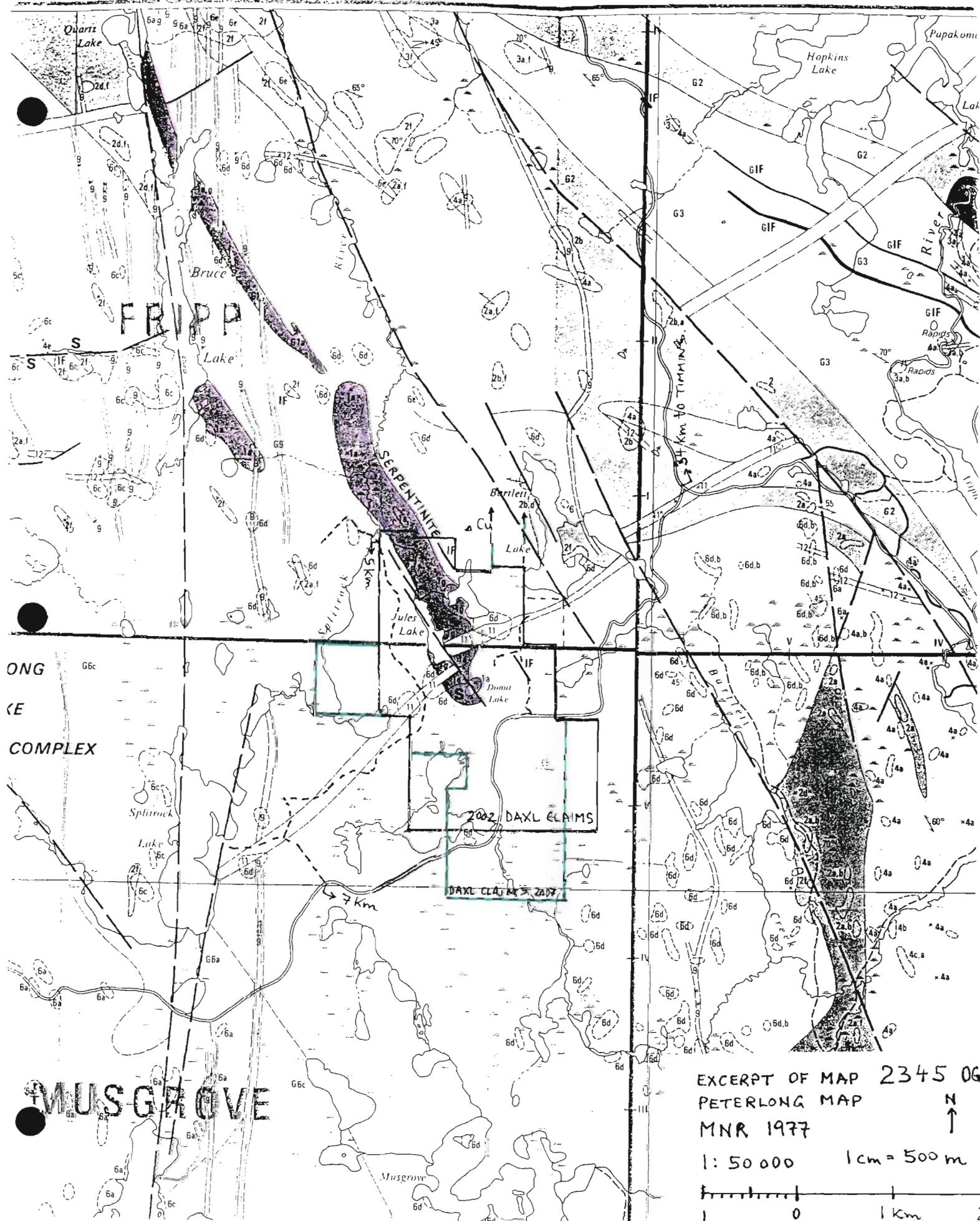
12 May 2008

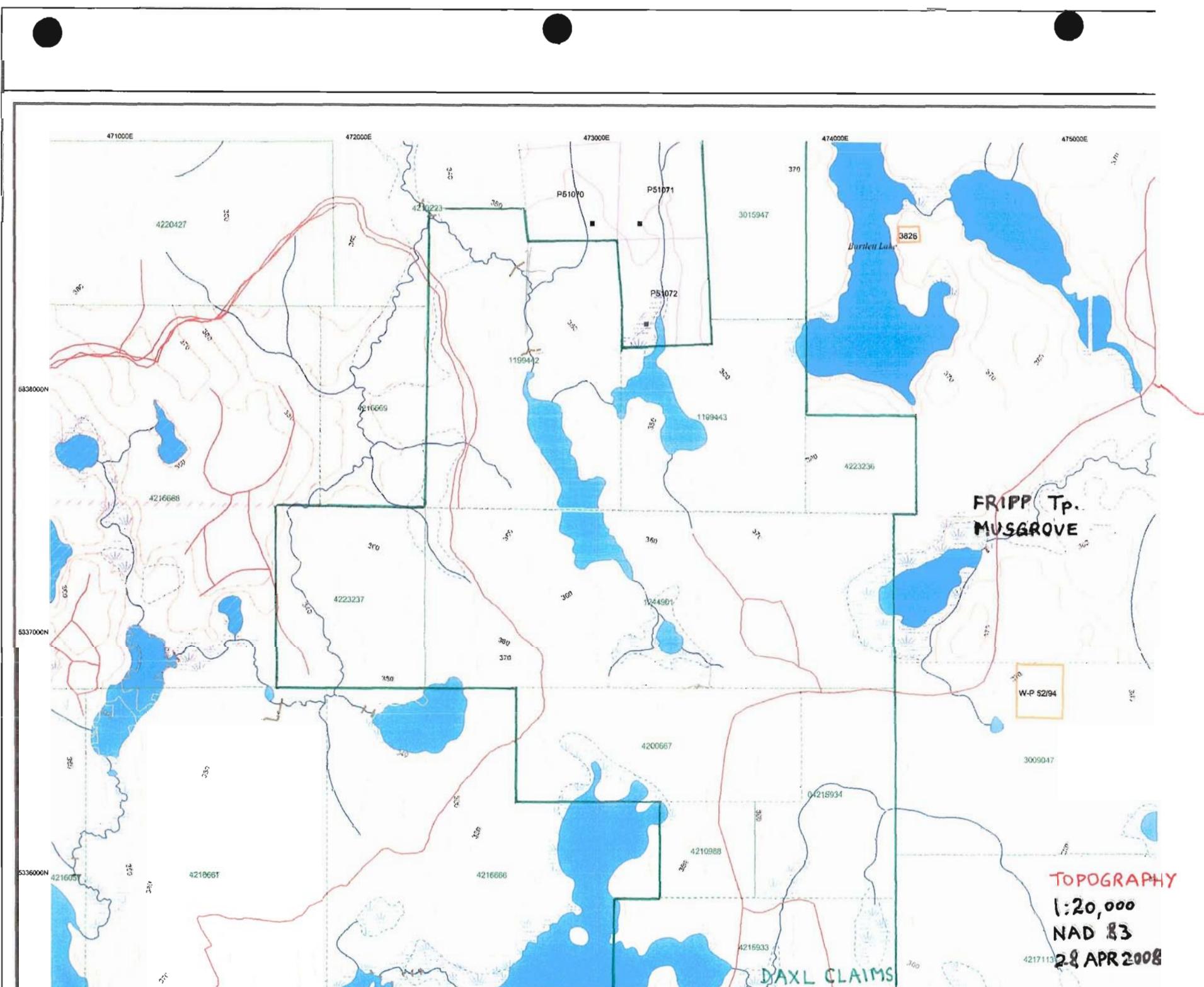


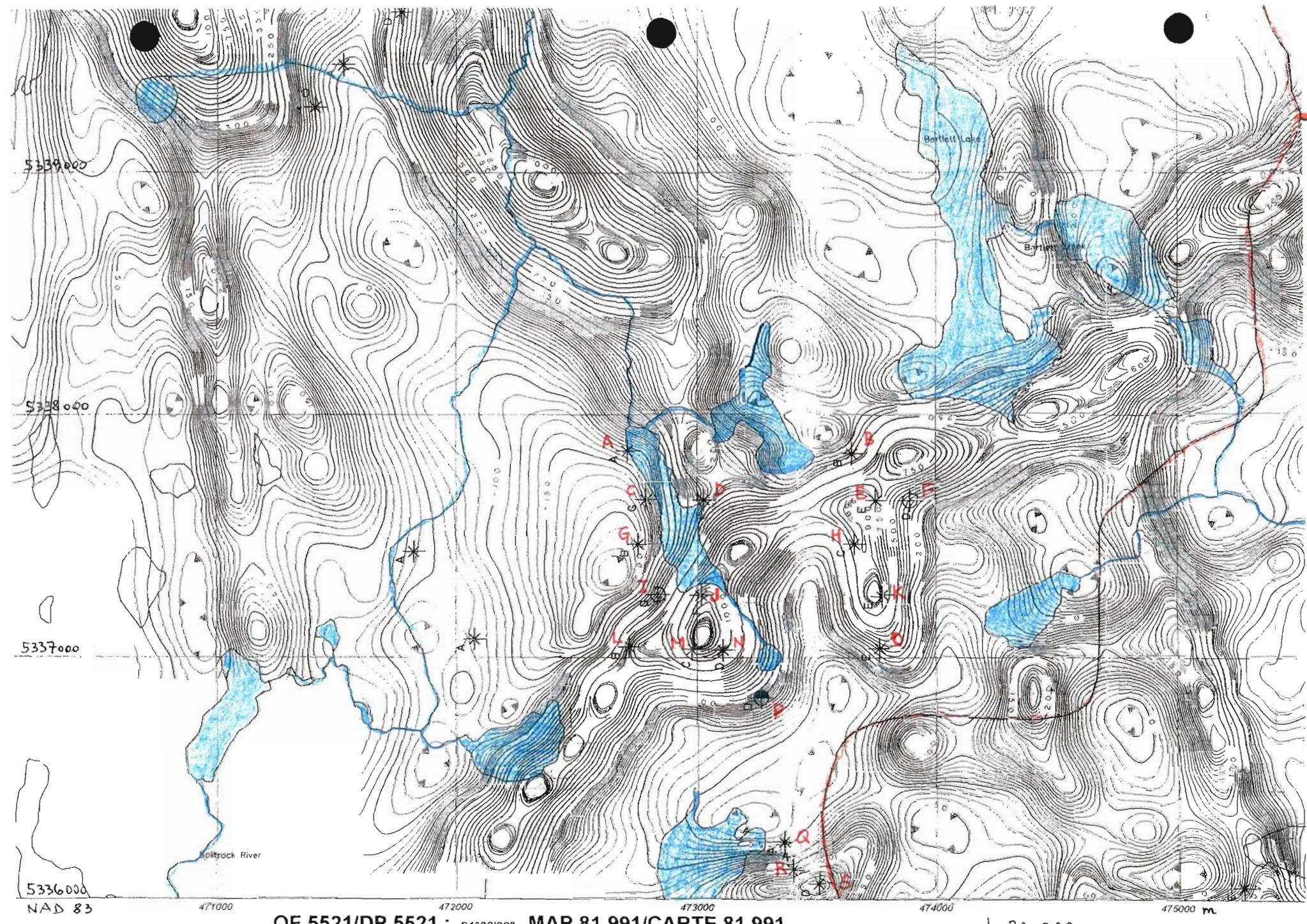


25'

20'







OF 5521/DP 5521 : -81°22'30" MAP 81 991/CARTE 81 991

1 : 20,000

-81°20'

R. Dumont  
J. Potvin

MEGATEM II SURVEY BARTLET DOME 2007  
GSC OPEN FILE 5519/ DOSSIER PUBLIC 5519 DE LA CGC  
OGS MAP 81 989 / CARTF 81 989 NFI LA CGC

FLIGHT LINES WEST-EAST

Residual MAG and EM anomalies

## Introduction

The present field work was done from 23 Sep to 17 Nov 2007 on mining claims 1199442 and 1199443 in Fripp, and 1244901 and 4210988 in Musgrove townships, by Hermann Daxl, author and holder of the claims, in an effort to locate and sample the hitherto unknown weak airborne conductors shown of the newly published Megatem II survey, Bartlett Dome 2007, GSC open file 5519, OGS map 81989 (excerpt attached), with the help of the Beep Mat BM4+ rented from GDD Instrumentation Inc., Quebec City.

In addition, the airborne conductor at S on claim 4210988 previously located with the Beep Mat and sampled, has now been stripped mechanically over 30m. New samples include a till sample for diamonds.

The area is of interest for copper because the historic "Hollinger Copper" resource lies only 1 - 2.5 km north of here, although it does not show on any airborne survey. Except for claim 4210988, the area had been covered by the previous airborne EM survey maps 81389 and 81393 of OGS, NTS reference 42A/3, but most of the present conductors did not show possibly because of the N-S versus the present E-W flight lines.

Access is easy via Pine Street South to 34km south of Timmins, then turning west towards Peterlong Lake on the 2-lane gravel road. The hand-dug pits near Jules Lake are <450m from open gravel trails as shown on the attached maps. The newly mechanically stripped area at NAD83 0473500 E - 5336035 N at 400m past the 4km sign and 70m west of the road, displays a cross-section of a sulfide dike. Location maps are enclosed.

## Geology

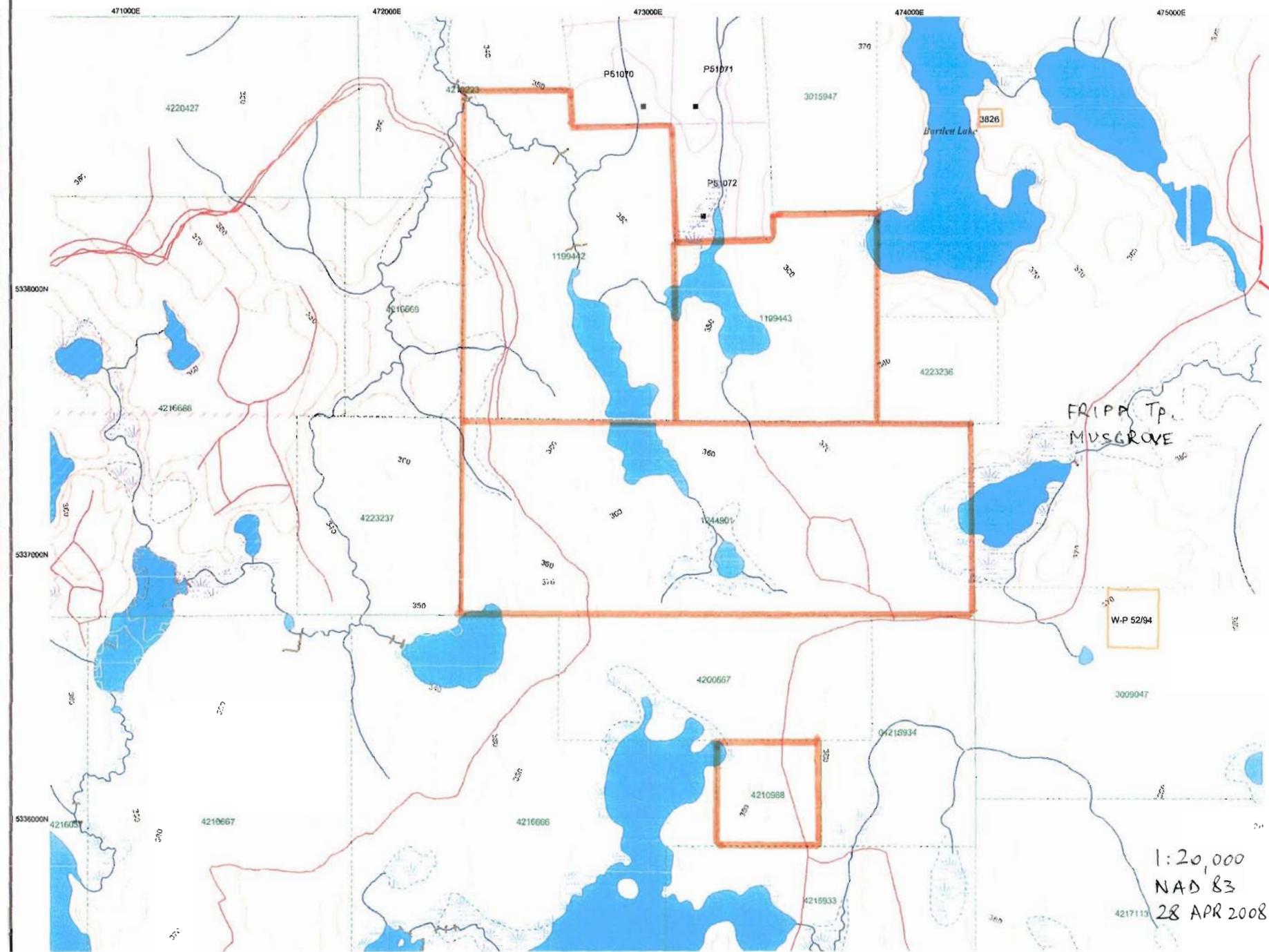
The attached excerpt of OGS Map 2345 shows serpentinite between Jules Lake and the lake to the northeast, trending 150 az. and stopping in Donut Lake, all within the northeastern margin of the Peterlong Lake Complex of diorite with 1% blue quartz. Airborne anomalies flank that serpentinite and may be related to it, influenced by parallel faults. These were previously called iron formations and were now found to be basalt to pyroxenite dikes with semi-massive pyrrhotite, pyrite, and magnetite.

The nearby "Hollinger Copper" resource of possibly 50,000 tonnes of about 4% copper with very minor silver, as can be estimated from assessment file T-3806, is in a similar dike system, although part of a serpentinite offshoot which may be necessary to carry copper. Where not contaminated by xenoliths it grades 20% copper.

## Previous Work

Historically ground EM, MAG, VLF, geology maps as well as drill holes were done by Sandrelli (T-492), Hollinger (T-702), Shadrack (T-1618), and Falconbridge (T-3482), but there is no evidence of trenching except for the workings at anomalies I and P which the present work excluded. A helicopter EM for Falconbridge to 55 az. shows only anomaly P, but many swamp and lake anomalies. Anomaly O may have been intersected by drill hole 2 of Shadrack in 1974.

Work by myself in this area included prospecting with the Beep Mat in 2002 (T-4800, 2.24758), and IP in 2003-2004 (T-5209, 2.30599) where the contact conductor M can be recognized on two lines which it approaches at L8755N-8829E and L8790N-8842E. The conductor S of my work filed under T-5579, 2.36060 on claim 4210988 has now been mechanically stripped.



## Present Work

### Megatem II anomalies near Jules Lake Fripp - Musgrove Townships

In an effort to locate the conductors and dig them up by hand I scanned 14 of the 16 areas of mostly very weak airborne anomalies with the Beep Mat BM4+ within 50-80m radius at 5-10m intervals, around the following UTM taken from map GSC Open File 5519 / OGS 81989:

UTM 17 U, NAD83, 047.... E - 533.... N, last 4 digits is meters:

A	2720 E - 7850 N	2 pits at 4m, samples 722, 723, 726, 727.
B	3640 E - 7840 N	Beeps 4x20m, az.5, 2 pits, 711,712,713,714.
C	2790 E - 7650 N	2 pits, 720, 721, 729.
D	3030 E - "	May be in bay, 715 b
E	3750 E - "	May be in gully.
F	3900 E - "	May be in swamp; 709 b, 710 b (b=boulder)
G	2760 E - 7470 N	No beeps but rusty, 724, 725, 728.
H	3660 E - "	Beeps 30 at 0%, 0.5 x 1.5m, 3677E-7513N.
I	2840 E - 7250 N	Not this time, historic blasting of outcrop.
J	3020 E - "	Ultramafic, beep 5m az.110, 3010E-7260N.
K	3770 E - "	May be in small swamp crossed by road.
L	2725 E - 7040 N	May be in deep swamp.
M	2975 E - "	Contact beeps 40m, dug 3m, 717, 718, 719.
N	3110 E - "	May be in small swamp.
O	3760 E - "	2 spots. NW dug, 730,731,732,733,734.
P	3265 E - 6830 N	Not this time, historic blasting of outcrop.

As detailed above, I located 7 of the 14 hitherto unknown conductors without outcrop, and dug up and sampled conductive bedrock of 5. Including three mineralized boulders, and one rusty outcrop at G, 26 chip

samples of 1-2kg, numbers 709 - 734, were analyzed for AuPtPd, Ag, base metals, and many other elements, by Activation Laboratories Ltd. at Ancaster, Ontario, by fire assay, neutron activation, 4-acid digestion, or lithium meta-tetra-borate fusion, to obtain total elements that may partly also be contained in magnetite, and would not be released by aqua-regia. Only sample 729 with 0.69% Cu, 7.2 g/t Ag, and only 2.3 % sulfur, could be of interest unless really a xenolith. The other anomalous values are of boulders but not high enough for boulders to be pursued.

Attached are an excerpt of OGS Map 81989 showing the anomalies and magnetic contours, the claims map with topography, a 1:10,000 location map of the new excavations, photographs of the hand-dug pits at B and O, sample descriptions 709 to 734 with UTM, and certificates of analyses.

### The Mechanically Stripped Megatem II Anomaly on Claim 4210988, NAD83 - 0473500 E - 5336035 N

Further to the hand-dug pit (T-5579, 2.36060) I outlined a <7X40m conductive and locally magnetic response with the Beep Mat, mostly 30-50m south of the airborne plot of conductor S on the east-west flight line. Mechanical stripping exposed subcrops including a <5m thick fine-grained pyroxenite dike, locally tending to gabbro, with 0<30% interstitial magnetite or magnetic pyrrhotite, or both, usually quite fresh.

The wallrock is medium-grained diorite with 1% blue quartz, locally banded <2m from the contact due to ductile interfingering with barren basalt, probably an earlier dike and shear. The pyroxenite dike is locally brecciated or nodular-sheared, with 0<20% pyrite as matrix or veinlets, which are variably rusted. Xenoliths of basalt as well as diorite occur in the pyroxenite, and being a dike is further confirmed by off-shoots into diorite as seen in the north-end of the excavation. The main contacts of the 5m thick pyroxenite dike are 320/50 and 345/80. A dextral fault seems to offset it towards 45 az. and thin it to 1m. Please refer to the attached 1:125 scale map, photographs showing some texture, sample descriptions, and certificates of analyses.

The stripping lies 70m west of the gravel road and was landscaped so geologists could further convince themselves that dikes of massive sulfides do exist within the 1-2km margin of this Peterlong Lake Complex of the Kenogamissi batholith. At the historic "Hollinger Copper" resource one of them is of massive chalcopyrite. The new exposure also shows how easily such a target could be missed in drilling, whereas it was exactly outlined for excavation with the Beep Mat. As there was no outcrop before, this is a geophysical discovery. The previous hand-dug pit is 15m outside the southeast rim, in the still covered continuation of the dike.

The 22 samples, 735 - 756, were taken as chips over <1m<sup>2</sup> areas each, with an attempt to test the various textures and locations as plotted on the enclosed map. The again various analyses returned no values of economic significance other than very minor copper or silver, relative to sulfur, namely <0.17% Cu or <6.3 g/t Ag. This may be significant because copper and silver are also the two elements of interest in the "Hollinger Copper" resource. Sample descriptions, photos, and certificates of analyses are attached.

### Lodgement Till from the Mechanical Stripping

NAD83 - 0473497 E - 5336030 N

Pyroxenite is variably rusty weathered, whereas diorite is locally crumbly below the surface polished by the glacier. The overburden is mostly fine clayey sand with 5% cobbles and boulders, and shows a brown B-horizon on top. The subcrop is coated with 2cm sticky sandy clay here which is rusty over the pyroxenite.

A 10kg sample of lodgement till from crevasses in the rusty pyroxenite was treated for diamonds including microscope picking of possible indicator minerals, but neither were found. Results of the <175micron overall fraction influenced by much magnetite, MUS-80, as well as the heavy fraction of >2.85 density including magnetics, of 210-430micron, MUS-HMC, were economically insignificant for the many elements analyzed. The full report with certificates is attached.

## Conclusions and Recommendations

As no economically significant results were obtained from the analyses it may be risky to pursue the remaining weak anomalies with ground geophysics and drilling. Regarding the very minor values of <0.17% copper and <6.3 g/t silver in several sulfide-rich samples from the stripped area S and the southpit at B, the association of Cu-Ag like in the "Hollinger Copper" occurrence may be promising, however, any association with serpentinite would probably be more important. As such, the conductor C with sample 729 of 0.69% Cu, 7.2 g/t Ag, despite only 2.3 % S, needs to be pursued.

Beep Mat and water analyses might further allow to qualify anomalies in swamps, because in my Beep Mat survey of 2002 I located so far unexplained anomalies along the creek in the swamp northward from Jules Lake to L102N. Bedrock or clay was too deep down to reach with a pole and therefore to respond. Since the Beep Mat responds well to salt water it possibly may detect electrolyte due to sulfides. Samples of stagnant swamp water may show values there, and may be best taken in the winter. Swamps over known serpentinite such as at Donut Lake, which also shows other indications, should be preferred.

More prospecting with the Beep Mat can discover more conductors, possibly one with chalcopyrite. This should be done nearer to the "Hollinger Copper" resource even if there are no airborne anomalies, nor serpentinite known. One must keep in mind that the occurrence lies only 10 to 80 m below the swamp, but 500m from the mapped serpentinite, yet did not register on any of the three airborne surveys, and is non-magnetic. However, it coincides with the IP anomaly on L10000N-10020E (T-5071 and T5209).

Respectfully submitted,



Timmins, 12 May 2008

Hermann Daxl, M.Sc.

## Record of Field Work Done

### BEEP MAT:

23 Sep 2007 Beep Mat area F, found only boulder.  
25 " " Beep Mat E, sample 709-710 of boulder F.  
26 " " Beep Mat area B, started digging.  
27 " " Dug 2 pits at B, samples 711-714, took photos.  
28 " " Beep Mat H and K, boulder? at H not dug up yet.  
29 " " Beep Mat D and N, sampled boulders 715-716.  
30 " " Beep Mat M and J, dug up only M, samples 717-719.

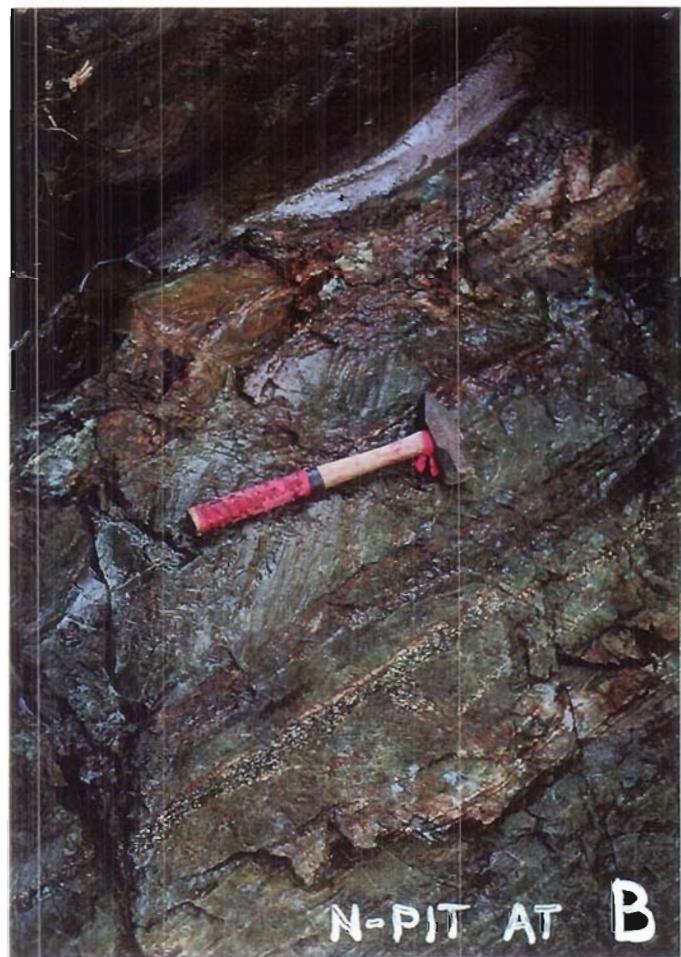
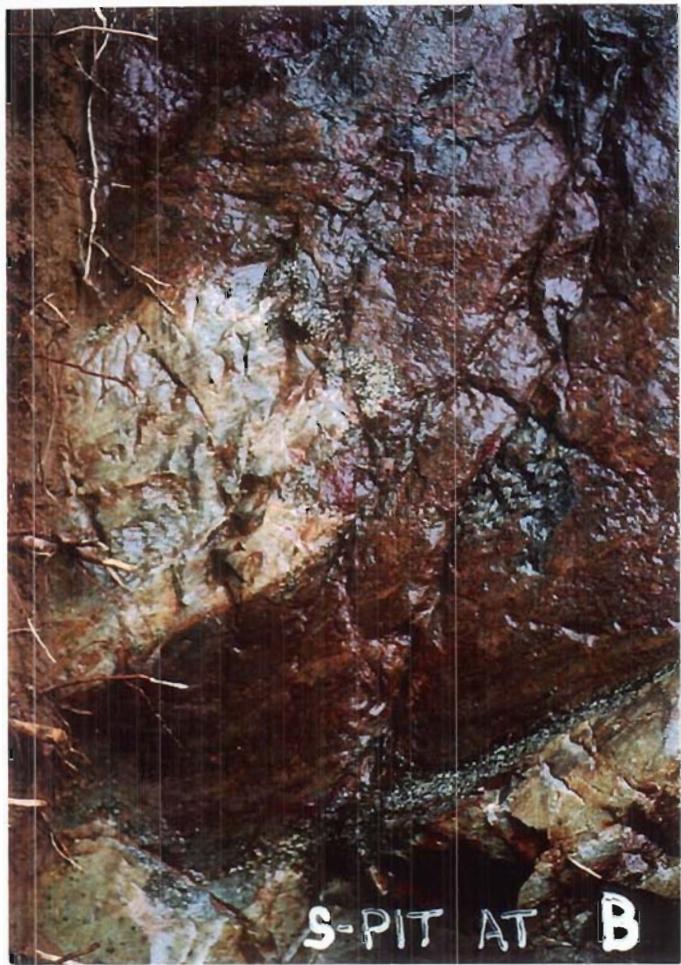
1 Oct 2007 Beep Mat C, dug 2 small pits, samples 721 and 729.  
2 " " Beep Mat A, dug up 2 spots, samples 722,23,26,27.  
3 " " Beep Mat G, no beeps, outcrop samples 724,25,28.  
4 " " Beep Mat L, no beeps, partly swamp, outlined beeps S.  
13 " " Beep Mat O, 2 areas beeped in line, started digging.  
16 " " Dug 1 pit, sampled 730-734, took photos.  
17 " " Washed and described samples  
18 " " Composed lab order and shipped samples

### STRIPPING:

29 " " Attended to backhoe at S Stripping, took samples  
30 " " ditto

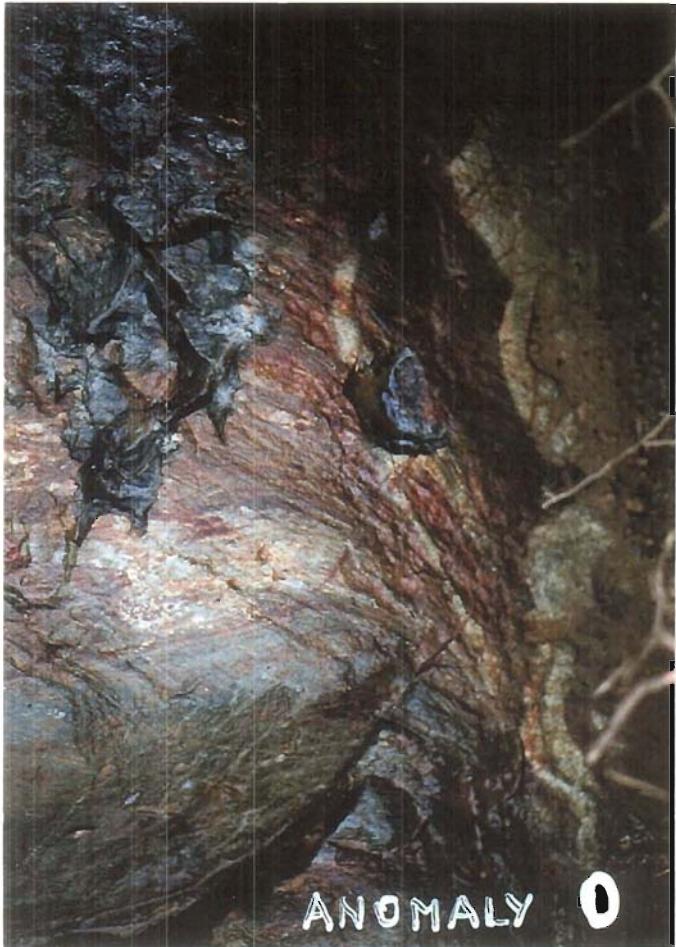
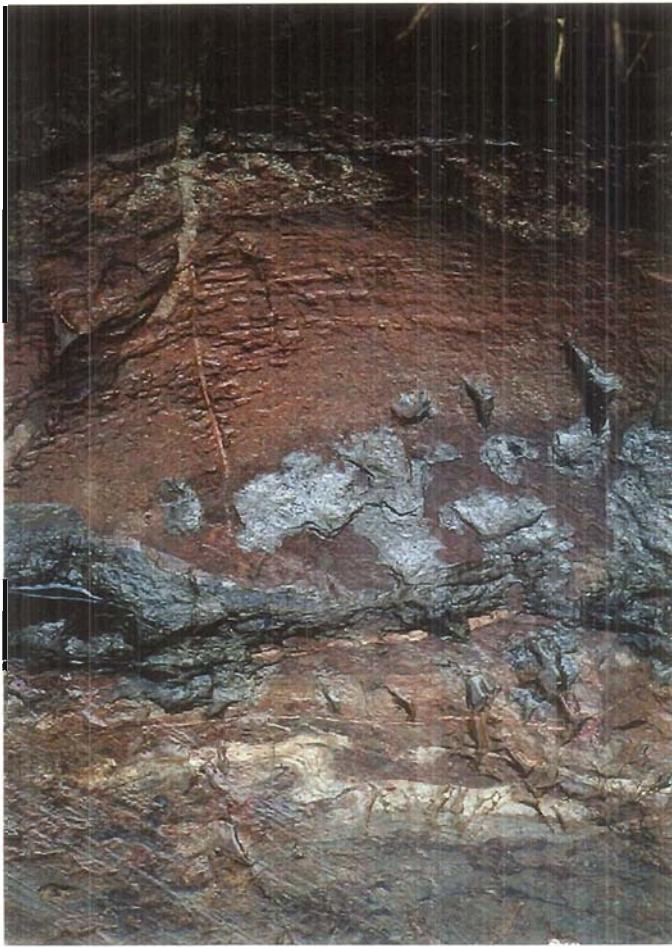
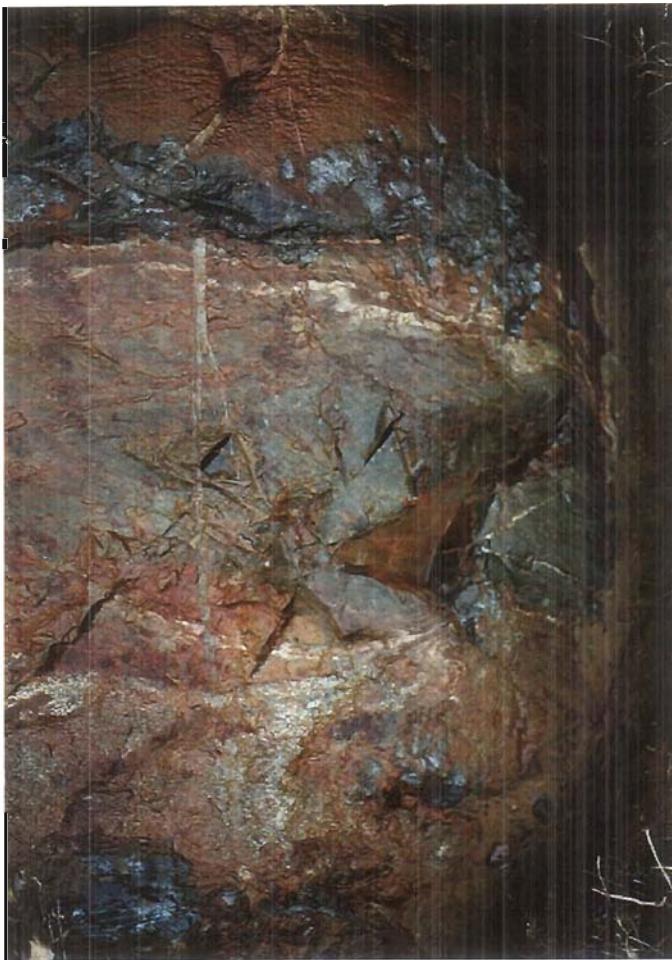
2 Nov 2007 Scraped bedrock of sand and clay, took samples  
3 " " ditto  
4 " " Swept and washed bedrock, took samples  
5 " " ditto  
8 " " Took samples  
9 " " Washed and described samples  
10 " " Composed lab order and shipped samples  
13 " " Dug by hand to expose more bedrock  
14 " " Swept and washed bedrock, started mapping  
15 " " Mapping, took till sample MUS for diamonds  
16 " " Swept and washed bedrock  
17 " " Mapping

Total 29 days of Field Work done by Hermann Daxl

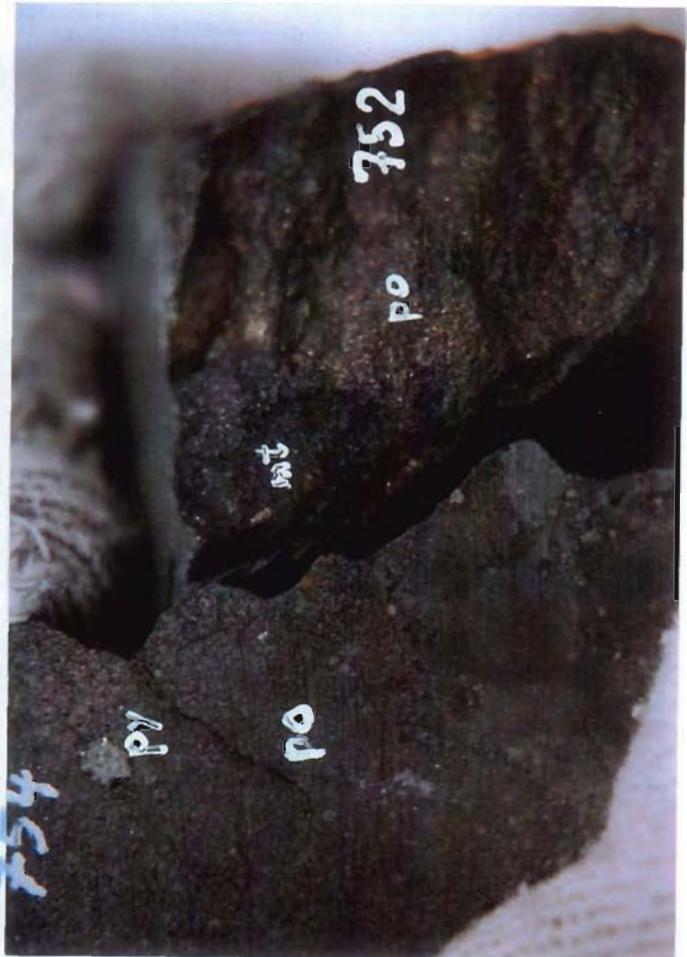


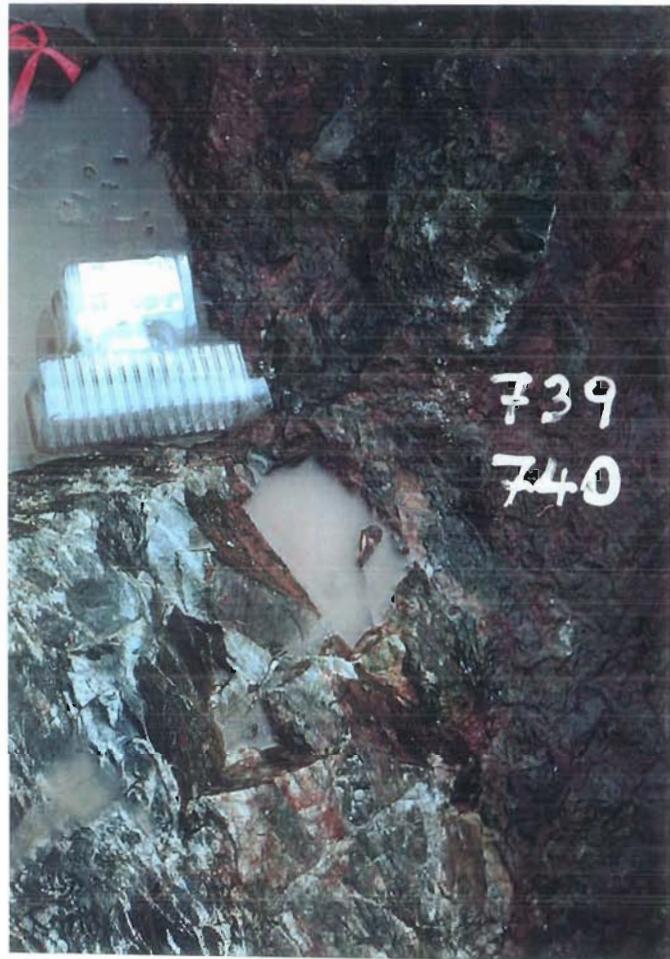


S-PIT (UPHILL) AT ANOMALY B





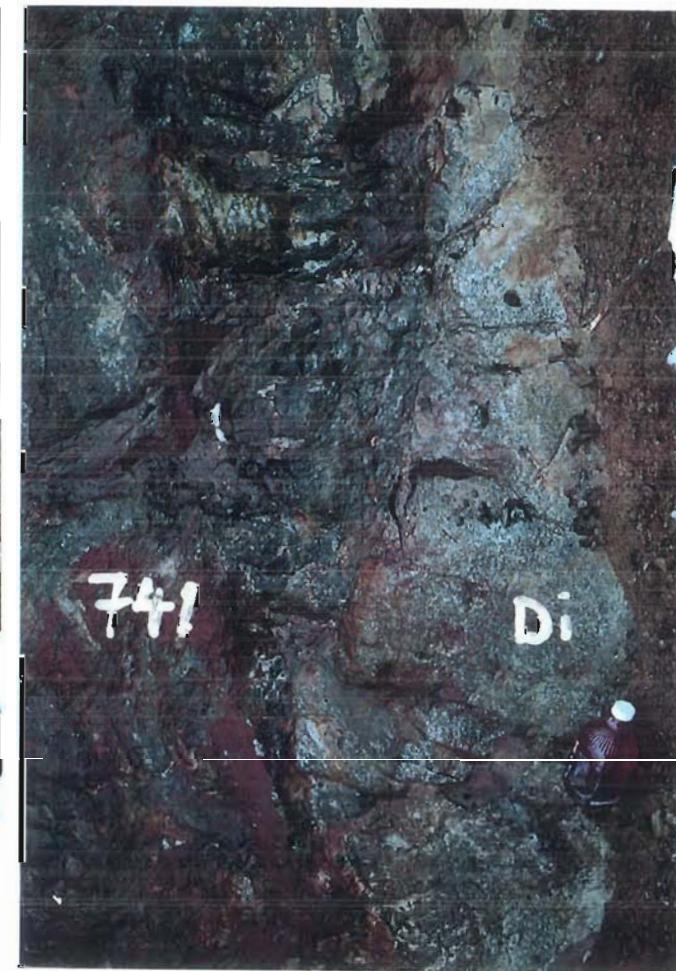


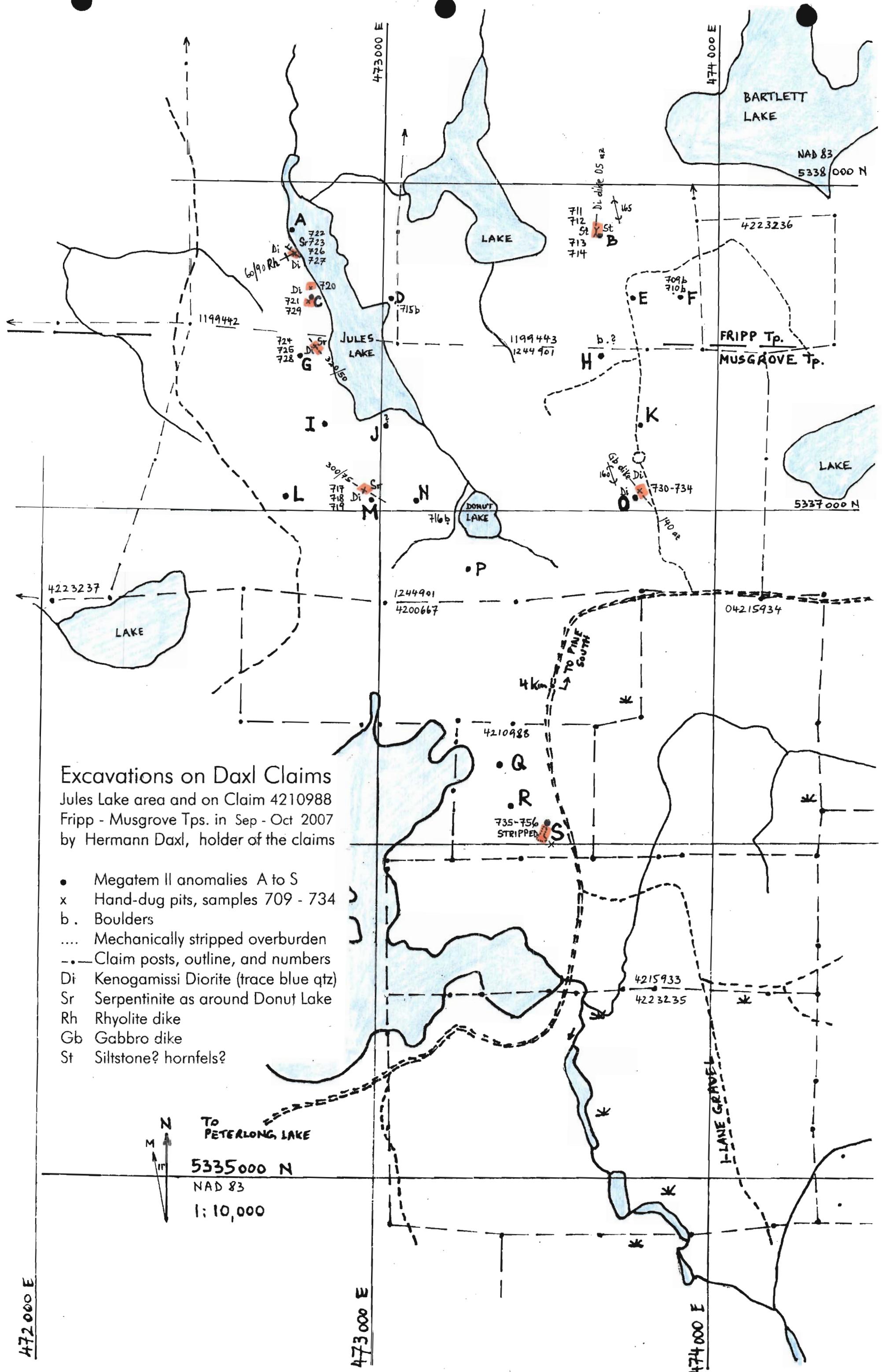


East contact



West Contact





# STRIPPED BEDROCK

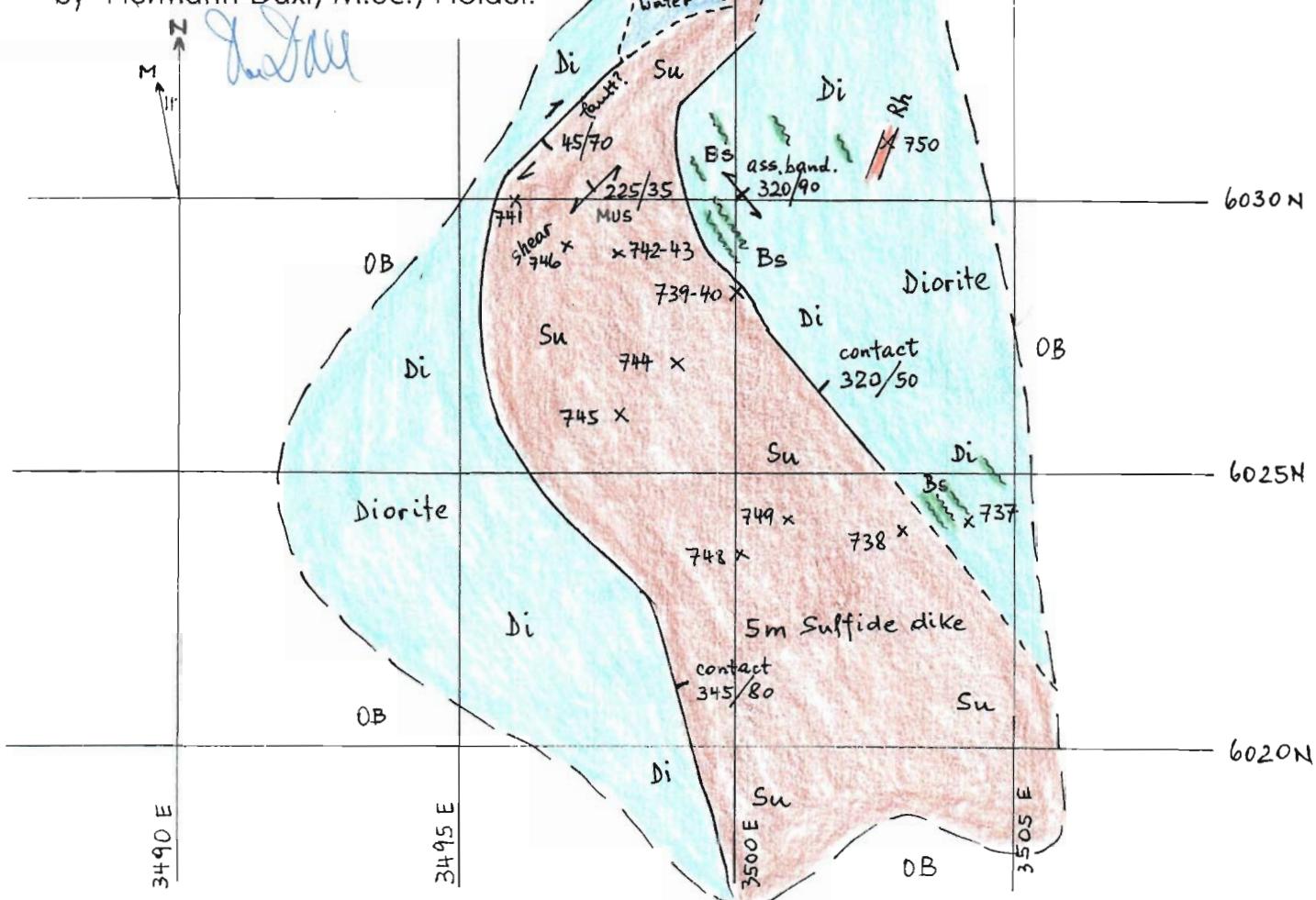
Claim 4210988 - Musgrove Tp.  
Geology and sample location

- Di Diorite, 1% blue quartz
- Su Sulfide-pyroxene dike
- Bs Basalt with assimilated Di
- Rh Rhyolite dike
- OB Overburden peeled back
- x Sampled 1-2m<sup>2</sup> area,  
numbers 735 to 756

UTM Grid NAD83, last 4 digits,  
center 0473500 E - 5336035 N

Scale: 1 : 125, 1cm = 1.25m

Mapped November 2007  
by Hermann Daxl, M.Sc., Holder.



Samples of Megatem II anomalies near Jules Lake  
Fripp - Musgrove Townships

- |                |                              |
|----------------|------------------------------|
| <u>Anomaly</u> | UTM 17 U, NAD83              |
| <u>Sample</u>  | <u>047.... E - 533.... N</u> |
- F 709 b        3870 E - 7610 N (last 4 UTM digits)  
Weakly to moderately magnetic boulder (=B) 35x65cm, square sub-rounded 2-layer slab. Very fine gabbro, 20% magnetic pyrrhotite, 5% pyrite, 5% covellite? 0.06% Cu, 0.26% Ni, 34.3%Fe, 8.3%S, 103ppb Pd.
- F 710 b        same boulder as 709  
Boulder showing assimilation contact of diorite and fine gabbro 709.
- B 711            3635 E - 7850 N, North-Pit (downslope).  
Conductor 4x20m at az. 005, beeps 80 at 100%, samples 711-714.  
Fine deuteritic? diorite dike with <20% fine disseminated magnetic pyrrhotite, pyrite, chalcopyrite; with siltstone? hornfels and xenoliths.  
Earlier coarser barren diorite as selvage and as dikelets in hornfels.  
Glacial striation az.165. See photos. 0.09% Cu, 0.13 % Zn, 5.8 % S.
- B 712            at 711  
Hornfels banding, 1% pyrite, downslope of 711 in same pit.
- B 713            3634 E - 7839 N, South-Pit (upslope).  
Uphill part of south-pit, fine diorite dike, nonmagnetic, 10% pyrite, trace magnetic pyrrhotite. See 711. 0.15 % Cu, 0.03 % Zn, 0.04% Co.
- B 714            at 713  
Fine-grained dike center, 10% very fine pyrite, 10% magnetic pyrrhotite.
- D 715 b          3051 E - 7631 N  
Sub-rounded 20x35cm boulder of banded iron formation? or dew-zone?  
<10cm layers of blue quartz with pyrite, >5cm of pyrrhotite-magnetite.  
20% magnetite, 20% pyrrhotite and pyrite. 0.06% Cu, 0.39% Zn, 9.5% S.

N 716 b 3195 E - 6980 N

Sub-rounded 80x60cm boulder, several <10cm distinct magnetite- or quartz-rich layers, attached to diorite? 20% pyrrhotite throughout, 5% magnetite, 25% rust. Magnetite layers are not conductive. 0.08% Cu.

M 717 2955 E - 7062 N

Conductor 40x2m az.120 at contact (wavy 300/75?) of diorite in SW and weakly magnetic serpentinite in NE, namely from L8790N-8842E (dug pit here) to L8755N-8829E. On rock HF<5000, LF<1500, 25%. Nearby 50m long 4-8m wide 1-2m deep parallel gully az.126 through L88N-8825E, with diorite on both sides, could be a similar conductor but did not respond to the Beep Mat.

70% rust, 5% pyrite, locally weakly to moderately magnetic, massive dirty black fine-grained spalling due to rust, black streak, moderate conductor with voltmeter. Probably the margin of, or a dike on the contact to, the serpentinite in the east.

The 0.06% Ni and 0.02% Co at the serpentinite contact is not anomalous considering the 30.2% Fe.

M 718 at 717

Assimilated diorite xenolith near contact, nonmagnetic, 30% rusty fractures and nodular shear, trace fresh pyrite.

M 719 at 717

Barren fine serpentinite, 15% rust, from rusty fractures near contact to fresh at 1m, nonmagnetic. 2cm coarse diorite dikelet across it is not understood.

C 720 2787 E- 7674 N

Diorite with 15 % rusty fractures, trace pyrite, nonmagnetic.

C 721 2780 E - 7637 N

Beeps low 50 H and L, but <100%; 5x2m, az. 160. 50cm ridge at top slope. Diorite with weathered xenolith? 30% gossan, trace pyrite and chalcopyrite, nonmagnetic. See also 729.

A 722 2735 E - 7800 N

Fine pea-green serpentinite, 20% rust, nonmagnetic, quite hard.  
At rhyolite dike in diorite, 60/90, very rusty, at contact to serpentinite in  
East. 3m from Jules Lake. H300, L200, 69%, on rock. See also 723,  
726, 727. 0.21% total Cr.

A 723 2732 E - 7802 N

4m az. 305 from 722. Rusty diorite, likely at contact of az. 305. 20%  
gossan, nonmagnetic.

G 724 2797 E - 7492 N

Assimilation and shear over 2m at contact 320/50 between country rock  
diorite and very fine ultramafic. 30% gossan, nonmagnetic. See also 728.

G 725 at 724

0-5cm from contact, chilled ultramafic, 10% rust, trace chalcopyrite,  
nonmagnetic.

A 726 2735 E - 7800 N, at 722

Rhyolite dike at 722, 10% rust, trace very fine pyrite, nonmagnetic.

A 727 at 726 and 722

95% rust of 726, solid in place under ultramafic, trace very fine pyrite,  
nonmagnetic.

G 728 2797 E - 7492 N, at 724

Fresher part of 724. Assimilation and shear over 2m at contact 320/50  
between country rock diorite and very fine ultramafic. 5% rust, trace very  
fine pyrite, nonmagnetic.

C 729 2780 E - 7637 N, at 721.  
Richest part of 721. Diorite with weathered xenolith? 30% gossan, <5% bornite, chalcopyrite, pyrite, as <1cm nodules, nonmagnetic.  
The 0.69 % Cu and 7.2 g/t Ag require a follow-up in case it is not a xenolith. 2.3 % S, 10.4 % Fe.

O 730 3775 E - 7053 N  
Beeps 4x1.5m, and also at 20m az.140. Beeps on rock H39000, L30000, R77%; at 65cm H95, L60, R63%; at 1m H15, L13; at 1.2m nil. Pit dug 15m E of TL95E of az.145. Glacial striations az.160.  
Assimilation banding az.120 with dextral kink. Probably a very fine-grained gabbro dike through diorite, with assimilated diorite, and a pyrrhotite-rich center. A later 2cm medium-grained diorite dikelet crosses all. See photos.  
Sample 730 is from 15cm wide band of very fine gabbro with 35% magnetic pyrrhotite, trace bornite?, incl. 1mm weathering crust, from east-side of pit. Same as 734.

O 731 at 730  
Same as 730 but fresh without weathering. 0.05% Cu, 0.03% Ni, 7.9% S, 40% Fe.

O 732 at 730  
Mostly fine gabbro with quartz schlieren, trace pyrrhotite, nonmagnetic, from west-side of pit.

O 733 at 730  
Same fine gabbro with trace of very fine sulfides, nonmagnetic, from pit center.

O 734 at 730  
Same as 730.

Samples of the Stripped Megatem II Anomaly  
on Claim 4210988

Sample      UTM 17 U, NAD83 (last 4 digits)  
                      047.... E - 533.... N

735                3502 E - 6040 N

Trace pyrite and rust, nonmagnetic, diorite and pyroxenite near contact, from a kink-shear.

736                3500 E - 6045 N

10% pyrrhotite <1mm, 10% rust after pyrite, variably magnetic pyroxenite.

737                3504 E - 6024 N

Trace pyrite, 5% rust, leached cavities, nonmagnetic, assimilation zone.

738                3503 E - 6024 N

20% pyrrhotite, 5% pyrite strings or veinlets, 15% rust, often very magnetic probably due to very fine dirty magnetite. Mostly magnetite where nodular and nonconductive. Pyroxenite.

739                3500 E - 6028 N

15% <3mm pyrite, 25% rust, nonmagnetic, pyroxenite and assimilation. 0.14% Cu.

740                3500 E - 6028 N

20% pyrrhotite, 3% pyrite, weakly magnetic, pyroxenite.

741                3496 E - 6030 N

15% pyrrhotite, 25% magnetite, 1% pyrite, very magnetic, chilled pyroxenite with coarser pyrrhotite schlieren. 0.11% Cu.

- 742            3498 E - 6029 N  
3% pyrrhotite, 3% pyrite, 10% rust, variably magnetic, pyroxenite with nodular shear 225/35.
- 743            3498 E - 6029 N (3m radius)  
99% rusty red ochre from several spots, probably after pyrite veins through pyroxenite. 0.14% Cu.
- 744            3499 E - 6027 N  
25% magnetite, 3% pyrrhotite, 2% pyrite, 5% rust, very magnetic, pyroxenite.
- 745            3498 E - 6026 N  
10% pyrrhotite, 8% pyrite, 5% rust, 0-20% magnetite as diffuse layers, pyroxenite with local nodular shear or breccia.
- 746            3497 E - 6029 N  
15% pyrite, 10% rust, weakly to nonmagnetic, partly barren pyroxenite. Pyrite as matrix where nodular shear, or locally interstitial to fine mafics. The only sample with cobalt despite similar iron in others.  
0.17% Cu, 0.01% Ni, 0.04% Co, 3.3 g/t Ag, 28.1% Fe, 14.5% S.
- 747            3498 E - 6034 N  
3% pyrrhotite, 1% pyrite, minor quartz with flesh-colored grains. Mostly nonmagnetic, pyroxenite with minor assimilation.
- 748            3500 E - 6023 N  
30% pyrite as matrix, 10% rust, moderately or nonmagnetic, nodular pyroxenite. 0.13% Cu.
- 749            3501 E - 6024 N  
25% pyrrhotite vs. 25% magnetite diffusely layered, very magnetic, sooty very fine pyroxenite. 0.12% Cu.
- 750            3503 E - 6031 N  
70% yellow ochre, nonmagnetic, tip of injection of pyroxenite into diorite.

751            3501 E - 6048 N  
25% net-textured pyrite, 10% rust, locally magnetic, pyroxenite with coarse actinolite and 30% quartz-chlorite-pyrite vein at contact of 40cm dike. 0.12% Cu.

752 b?        3501 E - 6042 N - boulder ?  
20% pyrrhotite, 10% bornite-pyrite?, 25% magnetite including schlieren. Very magnetic, pyroxenite. 0.09% Cu, 6.3 g/t Ag.

753            3501 E - 6046 N  
10% pyrrhotite, local layer of <60% fine nonmagnetic pyrrhotite groundmass around greenish mafic grains, also as aphanitic dark dirty very conductive layer with sulfide sheen, few pyrite grains in both layers. Only locally magnetic. 5% pyrite veinlets where nodular magnetic breccia, trace chalcopyrite plating in 25% diorite, locally nonmagnetic barren pyroxenite. 50cm from center to E-contact of 1m dike. 0.09% Cu.

754            3501 E - 6045 N  
50% semi-massive to net-textured nonmagnetic pyrrhotite, <25% sooty magnetite locally, pyroxenite with 3% diorite-quartz assimilation.

755            3501 E - 6042 N  
40% <2mm pyrrhotite, very good conductor despite individual but densely disseminated grains. Variably moderately magnetic due to diffuse 1cm magnetite vs. pyrrhotite layering, pyroxenite. 20cm from E-contact. Maybe same as 752 b.

756            3501 E - 6047 N  
10% very fine-grained net-textured pyrite, nonmagnetic, pyroxenite with 20% diorite. <15cm from W-contact.

**Quality Analysis ...**



**Innovative Technologies**

**Date Submitted:** 18-Oct-07  
**Invoice No.:** A07-5143  
**Invoice Date:** 27-Dec-07  
**Your Reference:** BM4-OCT07

**Hermann Daxl**  
39-630 Riverpark Road  
Timmins Ontario P4P 1B4  
Canada

**ATTN:** Hermann Daxl

## CERTIFICATE OF ANALYSIS

8 Rock samples were submitted for analysis.

Mode 250 pulp from <2 mm crushed

The following analytical package was requested:

Code 1H2 INAA(INAAGEO)/Total Digestion ICP(TOTAL)/Total Digestion ICP/MS

**REPORT**      **A07-5143**

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Notes:

Elements which exceed the upper limits should be analyzed by assay techniques. Some elements are reported by multiple techniques. These are indicated by MULT.

**CERTIFIED BY :**

A handwritten signature in black ink, appearing to read "C. Douglas Read".

**C. Douglas Read, B.Sc.**  
**Laboratory Manager**

**ACTIVATION LABORATORIES LTD.**

**Activation Laboratories Ltd.**

**Report: A07-5143**

Analyte Symbol	Au	Ag	Ag	Cu	Cd	Pb	Ni	Ni	Zn	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Ca	Co	Cr	Cs	Fe	
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	%	
Detection Limit	2	5	0.3	1	0.3	1	3	20	1	50	1	0.01	0.01	0.5	50	1	0.1	0.5	0.01	1	1	2	1	0.01
Analysis Method	INAA	INAA	MULT INAA / TD- ICP	TD-ICP	TD-ICP	TD-ICP	TD-ICP	INAA	MULT INAA / TD- ICP	INAA	MULT INAA / TD- ICP	TD-ICP	TD-ICP	INAA	INAA	TD-ICP	TD-MS	INAA	TD-ICP	INAA	INAA	INAA	INAA	
709	21	< 5	0.9	646	1.8	< 1	5	2510	2660	< 50	17	8.29	0.38	< 0.5	< 50	< 1	0.2	< 0.5	0.97	< 1	123	12	< 1	34.3
711	< 2	< 5	0.9	871	4.3	6	6	120	121	1380	1340	5.79	5.42	< 0.5	< 50	< 1	0.1	< 0.5	2.36	3	69	42	< 1	14.5
715	37	< 5	1.9	641	5.7	3	19	60	59	3880	4100	9.48	0.63	2.7	100	2	0.3	< 0.5	3.07	3	54	36	< 1	22.3
716	28	< 5	2.0	771	1.6	1	15	40	41	550	598	6.71	0.21	6.4	< 50	3	< 0.1	< 0.5	3.51	4	38	26	< 1	17.0
717	< 2	< 5	1.0	411	1.9	2	< 3	570	584	< 50	74	19.0	1.89	< 0.5	< 50	< 1	2.1	< 0.5	2.06	< 1	198	87	1	30.2
722	< 2	< 5	0.5	229	1.0	2	3	200	189	< 50	82	0.28	2.84	< 0.5	230	< 1	0.8	1.7	1.84	2	18	2080	2	13.1
729	< 2	< 5	7.2	6900	0.8	42	< 3	< 20	31	< 50	68	2.32	6.89	< 0.5	< 50	< 1	0.7	< 0.5	1.38	< 1	54	53	< 1	10.4
731	< 2	< 5	1.0	503	2.2	3	< 3	310	331	130	116	7.90	2.18	4.3	< 50	< 1	0.5	< 0.5	1.07	< 1	205	41	< 1	40.0

**Activation Laboratories Ltd.**

**Report: A07-5143**

Analyte Symbol	Hf	Ge	Hg	In	Re	Ir	K	Li	Mg	Mn	Na	P	Rb	Sb	Sc	Se	Se	Sn	Sn	Sr	Sr	Ta	Te	Ti
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppb	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
Detection Limit	1	0.1	1	0.2	0.001	5	0.01	0.5	0.01	1	0.01	0.001	15	0.1	0.1	3	0.1	0.01	1	1	0.05	0.5	0.1	0.01
Analysis Method	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	MULT INAA/TD- ICP-MS	INAA	TD-MS	TD-ICP	INAA	INAA	TD-MS	TD-ICP
709	< 1	0.3	< 1	< 0.2	0.006	< 5	0.01	< 0.5	1.13	3000	< 0.01	0.006	< 15	0.3	0.5	5	5.3	< 0.01	< 1	7	< 0.05	< 0.5	0.5	0.02
711	< 1	0.2	< 1	< 0.2	0.006	< 5	0.47	13.0	0.81	414	1.71	0.036	< 15	< 0.1	7.9	9	8.8	< 0.01	1	243	< 0.05	< 0.5	1.2	0.16
715	< 1	0.4	4	1.6	0.011	< 5	0.02	9.8	1.92	2490	0.06	0.071	< 15	< 0.1	9.1	18	18.0	< 0.01	8	8	< 0.05	0.6	4.1	0.05
716	< 1	0.2	< 1	0.9	0.003	< 5	0.01	2.2	1.87	2340	0.03	0.059	< 15	< 0.1	2.3	7	7.0	< 0.01	6	10	< 0.05	< 0.5	3.1	0.01
717	< 1	0.3	< 1	< 0.2	0.005	< 5	0.24	4.2	1.85	1130	0.50	0.036	< 15	< 0.1	7.9	< 3	< 0.1	< 0.01	2	55	< 0.05	< 0.5	1.1	0.09
722	< 1	0.1	< 1	< 0.2	0.001	< 5	0.02	2.4	11.4	566	0.09	0.012	< 15	< 0.1	17.5	< 3	< 0.1	< 0.01	< 1	5	< 0.05	< 0.5	1.7	0.18
729	2	0.3	< 1	< 0.2	0.010	< 5	0.37	15.3	1.37	952	2.48	0.040	< 15	< 0.1	8.4	< 3	< 0.1	< 0.01	< 1	236	< 0.05	< 0.5	0.6	0.34
731	< 1	0.4	< 1	< 0.2	0.011	< 5	0.08	10.7	1.27	228	0.81	0.054	< 15	0.2	4.8	9	8.6	< 0.01	< 1	63	< 0.05	< 0.5	1.4	0.07

Activation Laboratories Ltd. Report: A07-5143

Analyte Symbol	Th	Tl	U	V	W	Y	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g
Detection Limit	0.2	0.1	0.5	2	1	1	0.5	3	5	0.1	0.2	0.5	0.2	0.05	
Analysis Method	INAA	TD-MS	INAA	TD-ICP	INAA	TD-ICP	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	
709	< 0.2	< 0.1	< 0.5	15	< 1	2	1.4	< 3	< 5	0.2	< 0.2	< 0.5	0.3	0.08	37.0
711	< 0.2	0.2	< 0.5	75	< 1	5	8.3	17	8	1.2	0.6	< 0.5	0.4	0.08	29.6
715	< 0.2	< 0.1	< 0.5	54	< 1	13	4.4	13	< 5	1.4	1.3	< 0.5	1.4	0.26	34.2
716	0.3	< 0.1	< 0.5	25	< 1	15	4.2	16	< 5	1.5	1.5	< 0.5	1.5	0.25	32.1
717	< 0.2	< 0.1	< 0.5	56	< 1	6	3.4	9	< 5	0.9	0.3	< 0.5	0.6	0.06	37.2
722	< 0.2	< 0.1	< 0.5	125	< 1	4	1.1	< 3	< 5	0.4	< 0.2	< 0.5	0.7	0.13	22.4
729	3.1	0.1	< 0.5	79	< 1	7	9.6	20	9	1.4	0.6	< 0.5	0.8	0.15	27.5
731	< 0.2	< 0.1	< 0.5	45	< 1	5	4.9	12	7	1.0	0.4	< 0.5	0.5	0.09	33.5

Activation Laboratories Ltd. Report: A07-5143

**Quality Analysis ...**



**Innovative Technologies**

**Date Submitted:** 18-Oct-07  
**Invoice No.:** A07-5144  
**Invoice Date:** 07-Dec-07  
**Your Reference:** BM4-OCT07

**Hermann Daxl**  
39-630 Riverpark Road  
Timmins Ontario P4P 1B4  
Canada

**ATTN: Hermann Daxl**

## CERTIFICATE OF ANALYSIS

26 Rock samples were submitted for analysis.

The following analytical package was requested:

**REPORT      A07-5144**

Code 1C-Exp Fire Assay-ICP/MS

4 Litho

{ 30 g from 250 g pulp  
from 2 mm-crushed

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**Notes:**

We recommend reanalysis by fire assay Au, Pt, Pd Code 8 if values exceed upper limit.

**CERTIFIED BY :**

A handwritten signature in black ink, appearing to read "Eric Hoffman". It is written in a cursive style with some loops and variations in thickness.

Eric Hoffman, Ph.D.  
President/General Manager

ACTIVATION LABORATORIES LTD.

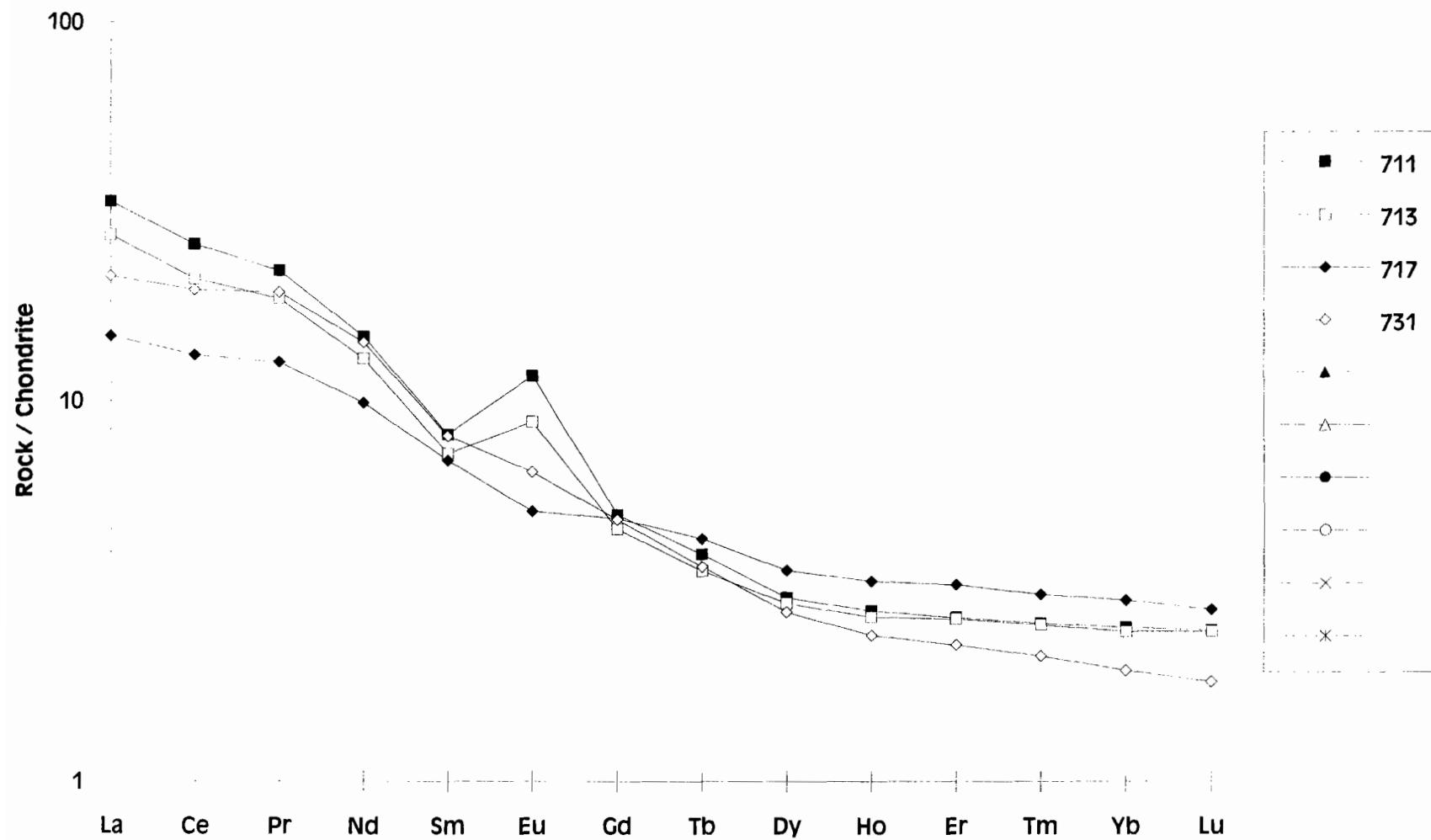
Activation Laboratories Ltd. Report: A07-5144

**Activation Laboratories Ltd.**

Report: A07-5144

Activation Laboratories Ltd. Report: A07-5144

Chart114



Activation Laboratories Ltd. Report: A07-5144

Quality Control		Pd	Pt	Au	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Sc	Be	V	Ba	Sr	Y	Zr	Cr	Co	Ni	Cu
Analyte Symbol	Unit Symbol	ppb	ppb	ppb	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm							
Detection Limit	1	1	2	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.001	0.001	0.01	1	1	5	3	2	2	4	20	1	20	10	
Analysis Method	FA-MS	FA-MS	FA-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas																					< 20	7	40	1100	
GXR-1 Cert																					12.0	8.20	41.0	1110	
WMG-1 Meas																					760	190	2580	5610	
WMG-1 Cert																					770	200	2700	5900	
NIST 694 Meas																									
NIST 694 Cert																									
DNC-1 Meas																									
DNC-1 Cert																									
BIR-1 Meas																									
BIR-1 Cert																									
MICA-FE Meas																									
MICA-FE Cert																					90	25	40	< 10	
GXR-2 Meas																					90.0	23.0	35.0	5.00	
GXR-2 Cert																					30	8	< 20	100	
FK-N Meas																					36.0	8.60	21.0	76.0	
FK-N Cert																					80	29	50	40	
LKSD-3 Meas																					87.0	30.0	47.0	35.0	
LKSD-3 Cert																					100	24	50	40	
MAG-1 Meas																					97.0	20.4	53.0	30.0	
MAG-1 Cert																									
NIST 1633b Meas																					316	716	1037		
NIST 1633b Cert																					296	709	1040		
SY-3 Meas																					6	22	453	271	
SY-3 Cert																					700	131	282		
W-2a Meas																					50.0	450	302	718	
W-2a Cert																					20.0	196	22	90	
CDN-PGMS-9 Meas	2600	705	1080																		304	175	90	42	
CDN-PGMS-9 Cert	2600	710	1040																		262	182	190	24.0	
NIST 696 Meas																					36.0	1.30	94.0	92.0	
NIST 696 Cert																					260	1.30	43.0	70.0	
CDN-PGMS-8 Meas	1540	433	869																		421		1058		
CDN-PGMS-8 Cert	1500	440	820																		403		1040		
JSD-3 Meas																					78.73	10.07	4.23	0.148	
JSD-3 Cert																					1.21	0.68	0.47	1.96	
CTA-AC-1 Meas																					0.419	0.418	0.13		
CTA-AC-1 Cert																					0.0817				
718 Orig	< 3	< 3	< 6																						
718 Dup	< 6	23	30																						
727 Split	15	3	< 6																						
728 Orig	< 2	< 2	< 4																						
728 Dup	< 2	< 2	< 4																						
734 Split	< 6	< 6	< 10																						
Method Blank Method																									
Blank	< 1	< 1	< 2																						
Method Blank Method																									
Blank																									

**Quality Analysis ...**



**Innovative Technologies**

**Date Submitted:** 18-Oct-07

**Invoice No.:** A07-5145

**Invoice Date:** 26-Nov-07

**Your Reference:**

**Hermann Daxl**  
39-630 Riverpark Road  
Timmins Ontario P4P 1B4  
Canada

**ATTN: Hermann Daxl**

## **CERTIFICATE OF ANALYSIS**

4 Rock samples were submitted for analysis.

The following analytical package was requested:      Code 1F Total Digestion ICP(TOTAL) *4 acid*

REPORT      **A07-5145**

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**Notes:**

Values which exceed the upper limit should be assayed for accurate numbers.

**CERTIFIED BY :**

A handwritten signature in black ink, appearing to read "Eric Hoffman". It is positioned above a horizontal line.

**Eric Hoffman, Ph.D.**  
**President/General Manager**

**ACTIVATION LABORATORIES LTD.**

## Activation Laboratories Ltd.

## Report: A07-5145

Analyte Symbol	Ag	Cd	Cu	Mn	Mo	Na	Ni	Pb	Zn	Al	Be	Bi	Ca	Co	Fe	K	Mg	P	Sr	Ti	V	Y	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%
Detection Limit	0.3	0.3	1	1	1	0.01	1	3	1	0.01	1	2	0.01	1	0.01	0.01	0.001	1	0.01	2	2	0.01	
Analysis Method	TD-ICP																						
713	3.1	1.4	1760	585	3	2.07	81	9	285	4.43	< 1	< 2	2.14	415	17.6	0.38	1.07	0.039	156	0.17	57	4	16.3
714	3.4	2.1	1260	881	2	2.27	109	6	620	3.79	1	< 2	3.47	95	16.5	0.39	1.26	0.047	245	0.22	66	3	8.33
724	0.4	0.5	137	746	2	1.62	55	< 3	62	4.88	1	< 2	3.08	15	6.91	1.09	1.98	0.044	179	0.21	104	5	0.74
727	2.5	1.7	635	370	18	0.34	27	21	59	2.70	< 1	< 2	3.87	8	24.2	0.30	4.99	0.018	36	0.14	129	9	0.82

Quality Analysis ...



Innovative Technologies

Date Submitted: 19-Nov-07

Invoice No.: A07-5943

Invoice Date: 21-Dec-07

Your Reference: EXCAVMUS

Hermann Daxl  
39-630 Riverpark Road  
Timmins Ontario P4P 1B4  
Canada

ATTN: Hermann Daxl

## CERTIFICATE OF ANALYSIS

*22 Clips + 1 pulp*

~~22~~ Pulp samples were submitted for analysis.

Prep. mild steel 90% < 2 mm (< 0.2% Fe contam.)

The following analytical packages were requested:

Code 1C-Exp Fire Assay-ICP/MS  
Code 1C-Rh Rhodium FA ICP/MS  
Code 1D INAA(INAAGEO)

*30g of 250g pulp*  
*30g " "*  
*30g " "*

REPORT      A07-5943

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Notes:

For values exceeding the upper limits we recommend assays.

We recommend reanalysis by fire assay Au, Pt, Pd Code 8 if values exceed upper limit.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "C. Douglas Read".

C. Douglas Read, B.Sc.  
Laboratory Manager

ACTIVATION LABORATORIES LTD.

**Activation Laboratories Ltd.**      **Report: A07-5943**

Analyte Symbol	Pd	Pt	Au	Rh	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se
Unit Symbol	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	1	1	2	5	5	5	2	100	1	1	5	10	2	0.02	1	1	5	5	0.05	50	30	0.2	0.1	5
Analysis Method	FA-MS	FA-MS	FA-MS	FA-MS	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
735	--	--	--	--	< 5	< 5	6	< 100	< 1	3	21	60	< 2	5.02	2	< 1	< 5	7	3.89	< 50	< 30	< 0.2	15.5	< 5
736	--	--	--	--	< 5	< 5	6	< 100	< 1	< 1	53	20	< 2	33.8	< 1	< 1	< 5	< 5	0.35	< 50	< 30	< 0.2	3.0	< 5
737	< 10	< 10	< 20	--	< 5	< 5	7	300	< 1	< 1	15	40	< 2	4.28	2	< 1	< 5	< 5	2.93	< 50	< 30	< 0.2	7.2	< 5
738	< 6	< 6	< 10	< 20	< 5	< 5	5	< 100	< 1	2	46	10	5	26.6	< 1	< 1	< 5	< 5	0.12	< 50	< 30	0.3	3.4	< 5
739	< 6	< 6	< 10	--	12	< 5	6	< 100	< 1	< 1	76	20	< 2	24.2	< 1	< 1	< 5	< 5	0.19	100	40	< 0.2	4.4	8
740	--	--	--	--	< 5	< 5	< 2	< 100	< 1	4	37	< 10	< 2	24.3	< 1	< 1	< 5	< 5	0.22	120	< 30	< 0.2	3.4	< 5
741	< 6	< 6	10	< 20	< 5	< 5	5	300	< 1	3	34	20	4	26.9	< 1	< 1	< 5	< 5	0.18	130	< 30	0.3	4.5	< 5
742	--	--	--	--	15	< 5	6	< 100	< 1	< 1	37	10	7	25.0	< 1	< 1	< 5	< 5	0.13	< 50	< 30	< 0.2	4.2	< 5
743	< 6	< 6	< 10	--	< 5	< 5	6	< 100	< 1	< 1	37	30	5	33.1	< 1	< 1	< 5	< 5	0.17	< 50	< 30	< 0.2	4.7	< 5
744	--	--	--	--	34	< 5	5	< 100	< 1	3	16	20	< 2	38.7	< 1	< 1	< 5	< 5	0.08	< 50	< 30	< 0.2	2.8	< 5
745	< 6	< 6	< 10	--	15	< 5	4	< 100	< 1	< 1	40	20	< 2	33.9	< 1	< 1	< 5	< 5	0.10	150	40	< 0.2	3.0	< 5
746	--	--	--	--	34	< 5	22	< 100	< 1	3	523	20	7	29.4	< 1	< 1	< 5	< 5	0.10	< 50	< 30	0.4	3.1	< 5
747	--	--	--	--	< 5	< 5	3	< 100	< 1	< 1	38	30	3	16.8	< 1	< 1	< 5	< 5	1.34	< 50	< 30	< 0.2	5.8	< 5
748	< 6	< 6	10	< 20	23	< 5	9	< 100	< 1	3	42	20	12	22.4	< 1	< 1	< 5	< 5	0.29	< 50	< 30	0.6	4.9	< 5
749	< 6	< 6	< 10	--	< 5	< 5	4	< 100	< 1	< 1	37	20	< 2	31.8	< 1	< 1	< 5	< 5	0.12	< 50	< 30	< 0.2	4.5	< 5
750	< 3	< 3	< 6	--	< 5	< 5	8	< 100	< 1	3	30	20	< 2	7.67	2	< 1	< 5	< 5	1.33	< 50	< 30	0.3	10.1	< 5
751	< 6	< 6	< 10	--	< 5	< 5	5	< 100	2	< 1	70	30	< 2	17.8	< 1	< 1	< 5	< 5	0.21	< 50	< 30	< 0.2	3.5	< 5
752	< 6	< 6	< 10	--	< 5	< 5	< 2	< 100	< 1	< 1	75	30	< 2	31.5	< 1	< 1	< 5	< 5	0.14	< 50	< 30	< 0.2	4.5	< 5
753	< 6	< 6	< 10	--	< 5	< 5	6	< 100	< 1	< 1	43	40	< 2	22.5	1	< 1	< 5	< 5	0.36	< 50	< 30	< 0.2	8.2	< 5
754	< 6	< 6	< 10	< 20	< 5	< 5	5	< 100	< 1	< 1	79	20	< 2	32.6	< 1	< 1	< 5	< 5	0.07	< 50	< 30	0.4	4.0	< 5
755	< 6	< 6	< 10	< 20	< 5	< 5	6	< 100	< 1	< 1	45	20	< 2	37.5	< 1	< 1	< 5	< 5	0.10	< 50	< 30	< 0.2	2.1	< 5
756	--	--	--	--	< 5	< 5	3	< 100	< 1	< 1	32	50	< 2	18.5	1	< 1	< 5	< 5	0.96	230	< 30	< 0.2	11.7	< 5
757 TEST PULP	2150	905	20	--	< 5	9	12	< 100	< 1	< 1	1170	510	< 2	33.4	2	< 1	29	< 5	0.24	> 10000	< 30	4.0	4.5	34

**Activation Laboratories Ltd.**      Report: **A07-5943**

Analyte Symbol	Sn	Sr	Ta	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass
Unit Symbol	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g
Detection Limit	0.05	0.1	1	0.5	0.5	4	50	1	3	5	0.1	0.2	0.5	0.2	0.05	
Analysis Method	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
735	< 0.05	< 0.1	< 1	2.7	< 0.5	< 4	170	14	24	< 5	1.8	1.0	< 0.5	1.4	0.18	24.5
736	< 0.05	< 0.1	< 1	1.7	< 0.5	< 4	< 50	6	7	< 5	0.7	0.8	< 0.5	< 0.2	0.07	38.6
737	< 0.05	< 0.1	< 1	2.7	< 0.5	< 4	< 50	14	23	10	1.7	0.7	< 0.5	0.7	0.09	23.3
738	< 0.05	< 0.1	< 1	1.7	< 0.5	< 4	< 50	6	7	< 5	0.9	0.6	< 0.5	0.9	0.18	37.7
739	< 0.05	< 0.1	< 1	2.0	< 0.5	< 4	< 50	5	< 3	< 5	1.0	0.5	< 0.5	1.0	0.11	34.8
740	< 0.05	< 0.1	< 1	1.8	< 0.5	< 4	70	4	6	< 5	0.7	0.3	< 0.5	0.9	0.21	36.1
741	< 0.05	< 0.1	< 1	1.9	< 0.5	< 4	< 50	6	11	< 5	1.1	0.6	< 0.5	0.7	0.17	35.8
742	< 0.05	< 0.1	< 1	1.7	< 0.5	6	100	4	5	< 5	0.8	< 0.2	< 0.5	0.7	0.14	39.9
743	< 0.05	< 0.1	< 1	3.0	< 0.5	< 4	< 50	13	17	9	2.2	0.6	< 0.5	1.4	0.21	27.3
744	< 0.05	< 0.1	< 1	1.9	< 0.5	< 4	< 50	3	5	< 5	0.6	0.4	< 0.5	0.8	0.14	35.5
745	< 0.05	< 0.1	< 1	1.8	< 0.5	< 4	< 50	3	< 3	8	0.7	0.6	< 0.5	< 0.2	0.17	33.8
746	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	4	< 3	< 5	0.8	< 0.2	< 0.5	1.1	< 0.05	33.6
747	< 0.05	< 0.1	< 1	1.3	2.8	< 4	< 50	9	15	< 5	1.2	0.7	< 0.5	0.8	< 0.05	28.5
748	< 0.05	< 0.1	< 1	0.8	< 0.5	< 4	< 50	7	14	11	1.1	0.7	< 0.5	0.8	0.14	30.8
749	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	6	11	< 5	0.9	0.8	< 0.5	1.2	0.21	34.3
750	< 0.05	< 0.1	< 1	1.7	1.8	< 4	< 50	14	20	15	1.9	0.9	< 0.5	1.5	0.18	27.4
751	< 0.05	< 0.1	< 1	0.8	1.3	< 4	< 50	4	8	12	0.6	< 0.2	< 0.5	0.4	< 0.05	26.0
752	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	4	10	< 5	0.9	< 0.2	< 0.5	0.6	< 0.05	28.9
753	< 0.05	< 0.1	< 1	0.9	< 0.5	< 4	< 50	6	12	< 5	1.4	0.8	< 0.5	1.2	0.13	28.4
754	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	4	10	< 5	0.8	0.5	< 0.5	0.9	0.12	38.3
755	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	3	< 3	< 5	0.6	0.4	< 0.5	0.4	0.15	36.8
756	< 0.05	< 0.1	< 1	< 0.5	< 0.5	< 4	< 50	7	12	10	1.7	1.0	< 0.5	1.5	0.12	33.0
757 TEST PULP	< 0.05	< 0.1	< 1	< 0.5	4.6	< 4	200	6	< 3	< 5	0.7	< 0.2	< 0.5	< 0.2	< 0.05	20.0

Quality Analysis ...



Innovative Technologies

Date Submitted: 20-Nov-07

Invoice No.: A07-5954

Invoice Date: 07-Mar-08

Your Reference: EXCAVMUS - 2

Hermann Daxl  
39-630 Riverpark Road  
Timmins Ontario P4P 1B4  
Canada

ATTN: Hermann Daxl

## CERTIFICATE OF ANALYSIS

22 Pulp samples were submitted for analysis.

from A07-5143 but invoiced here

The following analytical packages were requested:

Code 4LITHO (11+) Major Elements Fusion ICP(WRA)/Trace  
Elements Fusion ICP/MS(WRA4B2)  
Code 1E1 Aqua Regia ICP(AQUAGEO)

REPORT      A07-5954

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

### Notes:

Values which exceed the upper limit should be assayed for accurate numbers.

We recommend using option 4B1 for accurate levels of the base metals Cu, Pb, Zn, Ni and Ag.

Option 4B-INAA for As, Sb, high W >100ppm, Cr >1000ppm and Sn >50ppm by Code 5D.

Values for these elements provided by Fusion ICP/MS, are order of magnitude only and are provided for general information. Mineralized samples should have the Quant option selected or request assays for values which exceed the range of option 4B1. Total includes all elements in % oxide to the left of total.

CERTIFIED BY :

A handwritten signature in black ink, appearing to read "C. Douglas Read".

C. Douglas Read, B.Sc.  
Laboratory Manager

ACTIVATION LABORATORIES LTD.

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E-MAIL: ancaster@actlabsint.com ACTLABS GROUP WEBSITE <http://www.actlabsint.com>

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Analyte Symbol	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As
Unit Symbol	ppm	%	ppm							
Detection Limit	0.2	0.5	1	2	2	1	2	1	0.01	10
Analysis Method	AR-ICP									
735	< 0.2	< 0.5	102	1090	< 2	48	6	116	2.16	< 10
736	1.0	< 0.5	668	642	< 2	145	5	15	0.39	< 10
737	< 0.2	< 0.5	46	1430	< 2	32	6	52	2.10	< 10
738	1.4	< 0.5	604	3090	< 2	121	5	20	0.93	< 10
739	2.7	< 0.5	1380	5990	2	76	11	14	0.80	10
740	2.1	< 0.5	506	4030	< 2	112	5	19	0.72	< 10
741	1.4	< 0.5	1140	2110	< 2	61	< 2	22	0.85	< 10
742	1.7	< 0.5	599	5080	2	61	9	20	0.91	< 10
743	1.4	< 0.5	1430	1510	3	47	6	13	0.85	< 10
744	1.2	< 0.5	922	571	< 2	50	4	19	0.39	< 10
745	1.4	< 0.5	488	583	< 2	139	5	11	0.29	< 10
746	3.3	< 0.5	1690	2180	< 2	112	11	21	0.89	23
747	0.9	< 0.5	744	3810	< 2	50	6	57	1.13	< 10
748	2.3	< 0.5	1270	5540	2	68	9	28	1.57	10
749	2.0	< 0.5	1170	822	< 2	116	3	14	0.50	< 10
750	< 0.2	< 0.5	204	1610	< 2	35	6	90	2.96	< 10
751	1.6	< 0.5	1160	1140	3	77	9	25	0.76	< 10
752	6.3	< 0.5	932	663	2	118	4	20	0.53	< 10
753	1.7	< 0.5	887	3510	< 2	104	< 2	57	2.12	< 10
754	1.8	< 0.5	635	1510	< 2	152	2	26	0.79	< 10
755	1.1	< 0.5	326	511	< 2	163	3	13	0.32	11
756	0.8	< 0.5	354	2770	< 2	67	2	57	2.08	< 10

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Analyte Symbol	Ba	Be	Bi	Ca	Co	Cr	Fe	K	Mg	Na
Unit Symbol	ppm	ppm	ppm	%	ppm	ppm	%	%	%	%
Detection Limit	1	1	10	0.01	1	2	0.01	0.01	0.01	0.01
Analysis Method	AR-ICP									
735	67	< 1	< 10	0.64	28	75	5.53	0.15	2.13	0.12
736	5	< 1	< 10	0.25	44	8	33.50	0.02	0.39	0.04
737	71	< 1	< 10	1.02	18	44	4.78	0.12	1.75	0.12
738	4	< 1	< 10	0.50	43	5	30.20	0.05	0.79	0.05
739	4	< 1	< 10	0.42	74	8	25.70	0.02	0.33	0.03
740	12	< 1	< 10	0.78	35	< 2	23.00	0.02	0.74	0.07
741	7	< 1	< 10	0.68	33	11	29.2	0.05	0.75	0.07
742	4	< 1	< 10	0.64	38	5	27.6	0.06	0.63	0.05
743	29	< 1	< 10	0.37	31	15	34.5	0.04	0.45	0.05
744	19	< 1	< 10	0.26	13	5	37.1	0.01	0.87	0.02
745	3	< 1	< 10	0.33	36	4	35.00	0.03	0.40	0.04
746	2	< 1	< 10	0.45	363	7	28.10	0.06	0.68	0.04
747	8	< 1	< 10	0.86	34	15	17.30	0.11	0.92	0.10
748	5	< 1	< 10	0.97	35	12	24.60	0.14	0.95	0.10
749	6	< 1	< 10	0.44	32	5	35.60	0.03	0.74	0.04
750	45	< 1	< 10	1.02	33	22	9.11	0.06	2.39	0.05
751	11	< 1	< 10	0.37	57	17	20.30	0.02	0.70	0.04
752	4	< 1	< 10	0.33	63	16	34.40	0.01	0.69	0.04
753	6	< 1	< 10	0.80	36	25	26.10	0.07	1.63	0.09
754	6	< 1	< 10	0.25	58	11	35.60	0.01	0.73	0.03
755	7	< 1	< 10	0.29	31	9	36.90	0.01	0.38	0.04
756	12	< 1	< 10	1.64	27	31	18.10	0.11	1.81	0.21

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Analyte Symbol	P	Sb	Sc	Sn	Sr	Ti	V	W	Y	Zr
Unit Symbol	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
Detection Limit	.0.001	10	1	10	1	0.01	1	10	1	1
Analysis Method	AR-ICP									
735	0.048	< 10	12	< 10	23	0.22	121	< 10	7	4
736	0.010	< 10	< 1	< 10	4	0.03	30	< 10	3	9
737	0.059	< 10	5	< 10	48	0.15	57	< 10	5	3
738	0.020	< 10	< 1	< 10	9	0.03	23	< 10	4	10
739	0.026	< 10	1	< 10	3	0.03	20	< 10	4	9
740	0.030	< 10	< 1	< 10	3	0.02	20	< 10	4	12
741	0.016	< 10	1	< 10	6	0.08	49	< 10	4	8
742	0.014	< 10	1	< 10	4	0.06	28	< 10	4	8
743	0.021	< 10	2	< 10	8	0.03	27	< 10	9	10
744	0.008	< 10	< 1	< 10	2	0.02	23	< 10	3	10
745	0.007	10	< 1	< 10	4	0.03	26	< 10	3	10
746	0.010	< 10	1	< 10	4	0.05	28	< 10	4	8
747	0.025	< 10	2	< 10	15	0.09	36	< 10	4	7
748	0.023	< 10	2	< 10	12	0.07	34	< 10	5	7
749	0.012	< 10	1	< 10	10	0.03	34	< 10	5	11
750	0.038	< 10	4	< 10	76	0.12	61	< 10	8	5
751	0.016	< 10	2	< 10	4	0.04	25	< 10	3	6
752	0.013	< 10	< 1	< 10	3	0.03	61	< 10	3	8
753	0.034	11	4	< 10	8	0.07	59	< 10	5	6
754	0.017	< 10	1	< 10	3	0.03	44	< 10	3	8
755	0.008	< 10	< 1	< 10	4	0.02	34	< 10	2	9
756	0.038	< 10	6	< 10	12	0.10	69	< 10	7	5

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<b>Analyte Symbol</b>	S	SiO2	Al2O3	Fe2O3 (T)	MnO	MgO	CaO	Na2O	K2O
<b>Unit Symbol</b>	%	%	%	%	%	%	%	%	%
<b>Detection Limit</b>	0.001	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01
<b>Analysis Method</b>	AR-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
735	0.54								
736	9.754								
737	0.164								
738	9.752	19.13	4.33	52.57	1.589	3.78	3.93	0.17	0.13
739	8.875								
740	12.22								
741	7.235	22.31	3.89	53.24	0.874	4.45	4.70	0.33	0.11
742	9.096								
743	2.042								
744	6.322	14.39	1.34	67.14	0.236	5.04	3.26	0.12	0.02
745	9.785	14.05	1.45	62.26	0.315	3.28	3.22	0.18	0.09
746	14.53								
747	7.128								
748	8.234								
749	8.301	15.17	2.40	61.27	0.359	4.31	3.90	0.12	0.08
750	0.261								
751	9.967								
752	8.896								
753	9.367								
754	9.374	13.46	2.62	62.51	0.633	2.62	2.02	0.08	0.04
755	10.45	7.92	1.56	67.44	0.235	2.05	2.10	0.22	0.06
756	6.545								

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Analyte Symbol	TiO2	P2O5	LOI	Total	Sc	Be	V	Ba	Sr
Unit Symbol	%	%	%	%	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.001	0.01		0.01	1	1	5	3	2
Analysis Method	FUS-ICP								
735									
736									
737									
738	0.148	0.06	14.97	100.80	5	1	33	95	31
739									
740									
741	0.290	< 0.01	9.05	99.22	6	1	65	142	22
742									
743									
744	0.073	< 0.01	7.61	99.22	3	1	21	19	4
745	0.095	< 0.01	15.06	99.91	3	< 1	23	34	12
746									
747									
748									
749	0.111	0.04	12.91	100.70	6	1	41	39	31
750									
751									
752									
753									
754	0.179	0.05	15.80	100.00	5	< 1	58	22	9
755	0.089	< 0.01	17.85	99.40	2	1	37	18	18
756									

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<b>Analyte Symbol</b>	Y	Zr	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
<b>Unit Symbol</b>	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>Detection Limit</b>	2	4	20	1	20	10	30	1	1	5
<b>Analysis Method</b>	FUS-ICP	FUS-ICP	FUS-MS							
735										
736										
737										
738	12	25	< 20	8	< 20	30	60	12	< 1	< 5
739										
740										
741	10	33	< 20	10	< 20	80	90	17	< 1	< 5
742										
743										
744	10	21	< 20	7	< 20	80	50	5	< 1	< 5
745	7	13	< 20	5	< 20	30	50	5	< 1	< 5
746										
747										
748										
749	14	20	< 20	29	100	50	50	4	< 1	< 5
750										
751										
752										
753										
754	8	12	< 20	48	130	30	60	6	< 1	< 5
755	5	12	< 20	4	< 20	10	40	6	< 1	< 5
756										

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<b>Analyte Symbol</b>	Rb	Nb	Mo	Ag	In	Sn	Sb	Cs	La	Ce
<b>Unit Symbol</b>	ppm									
<b>Detection Limit</b>	2	1	2	0.5	0.2	1	0.5	0.5	0.1	0.1
<b>Analysis Method</b>	FUS-MS									
735										
736										
737										
738	8	1	< 2	< 0.5	< 0.2	< 1	< 0.5	7	6.5	12.3
739										
740										
741	5	2	3	< 0.5	< 0.2	2	< 0.5	6.4	6.6	13.3
742										
743										
744	< 2	< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	1.4	3.1	5.9
745	3	< 1	2	< 0.5	< 0.2	< 1	< 0.5	2.4	3.4	7.4
746										
747										
748										
749	2	< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	1.0	6.9	13.0
750										
751										
752										
753										
754	< 2	1	< 2	< 0.5	< 0.2	< 1	< 0.5	1.1	4.3	9.1
755	< 2	< 1	3	< 0.5	< 0.2	2	< 0.5	< 0.5	3.7	7.2
756										

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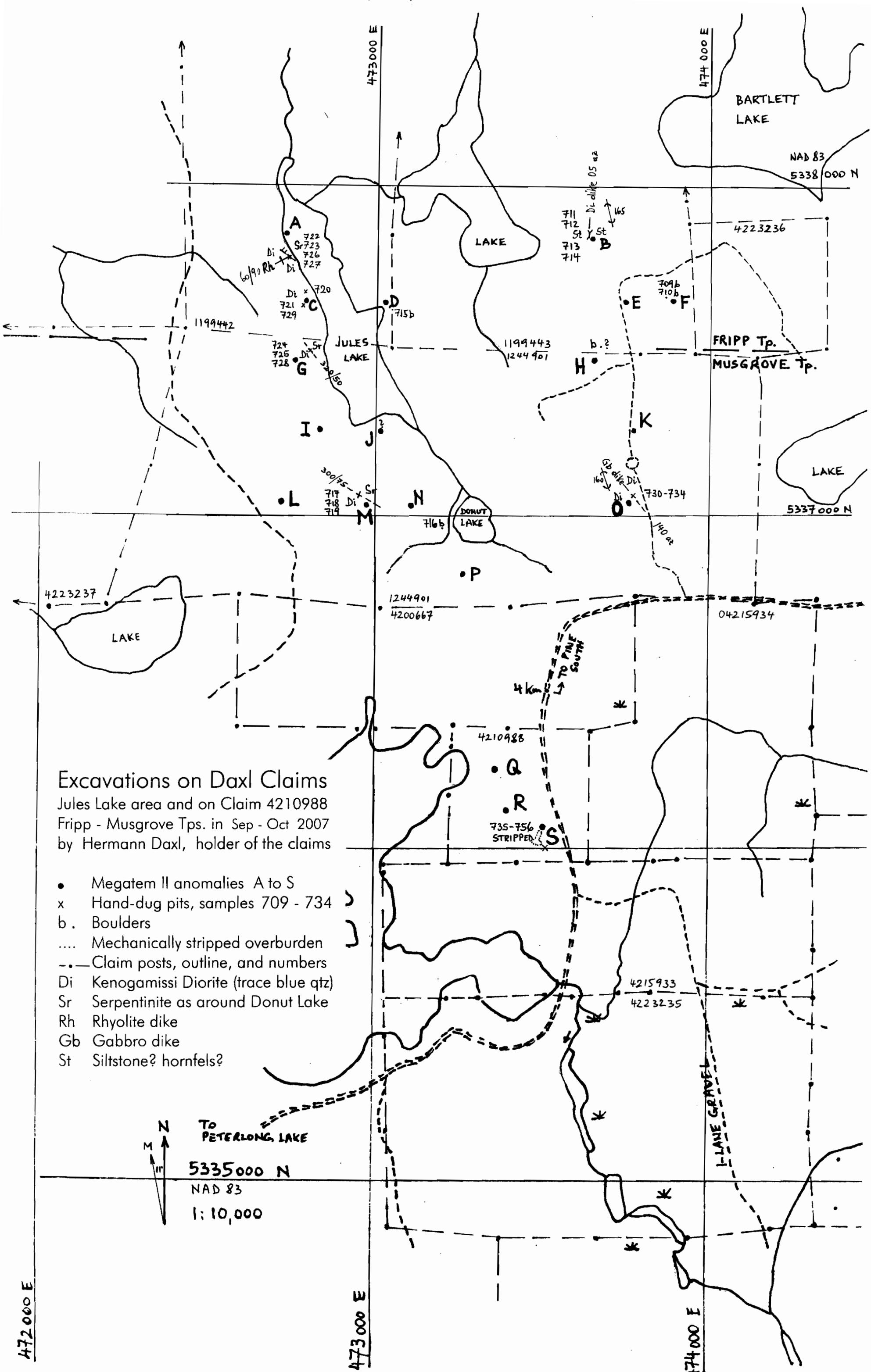
<b>Analyte Symbol</b>	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
<b>Unit Symbol</b>	ppm									
<b>Detection Limit</b>	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05
<b>Analysis Method</b>	FUS-MS									
735										
736										
737										
738	1.63	6.2	1.2	0.69	1.3	0.2	1.3	0.3	1.0	0.15
739										
740										
741	1.92	7.0	1.6	0.75	1.8	0.3	1.5	0.3	1.0	0.14
742										
743										
744	0.82	3.2	0.7	0.37	1.0	0.2	1.1	0.3	0.8	0.12
745	1.06	4.1	0.9	0.51	1.0	0.2	1.0	0.2	0.7	0.11
746										
747										
748										
749	1.65	6.0	1.2	0.97	1.5	0.2	1.6	0.4	1.1	0.18
750										
751										
752										
753										
754	1.29	4.9	1.0	0.38	1.1	0.2	1.2	0.2	0.7	0.11
755	0.96	3.6	0.8	0.44	0.8	0.1	0.8	0.2	0.5	0.08
756										

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<b>Analyte Symbol</b>	Yb	Lu	Hf	Ta	W	Tl	Pb	Bi	Th	U
<b>Unit Symbol</b>	ppm									
<b>Detection Limit</b>	0.1	0.04	0.2	0.1	1	0.1	5	0.4	0.1	0.1
<b>Analysis Method</b>	FUS-MS									
735										
736										
737										
738	0.9	0.14	0.9	< 0.1	< 1	0.1	< 5	< 0.4	0.3	0.1
739										
740										
741	0.9	0.13	1.1	< 0.1	< 1	< 0.1	< 5	0.6	0.3	0.2
742										
743										
744	0.8	0.12	0.4	< 0.1	< 1	< 0.1	< 5	< 0.4	0.2	0.2
745	0.7	0.10	0.5	< 0.1	< 1	< 0.1	< 5	0.5	0.2	0.1
746										
747										
748										
749	1.1	0.17	0.7	< 0.1	< 1	< 0.1	< 5	< 0.4	0.3	0.2
750										
751										
752										
753										
754	0.7	0.10	0.7	< 0.1	< 1	< 0.1	< 5	< 0.4	0.1	0.2
755	0.5	0.08	0.3	< 0.1	< 1	< 0.1	< 5	0.6	0.2	0.2
756										



# STRIPPED BEDROCK

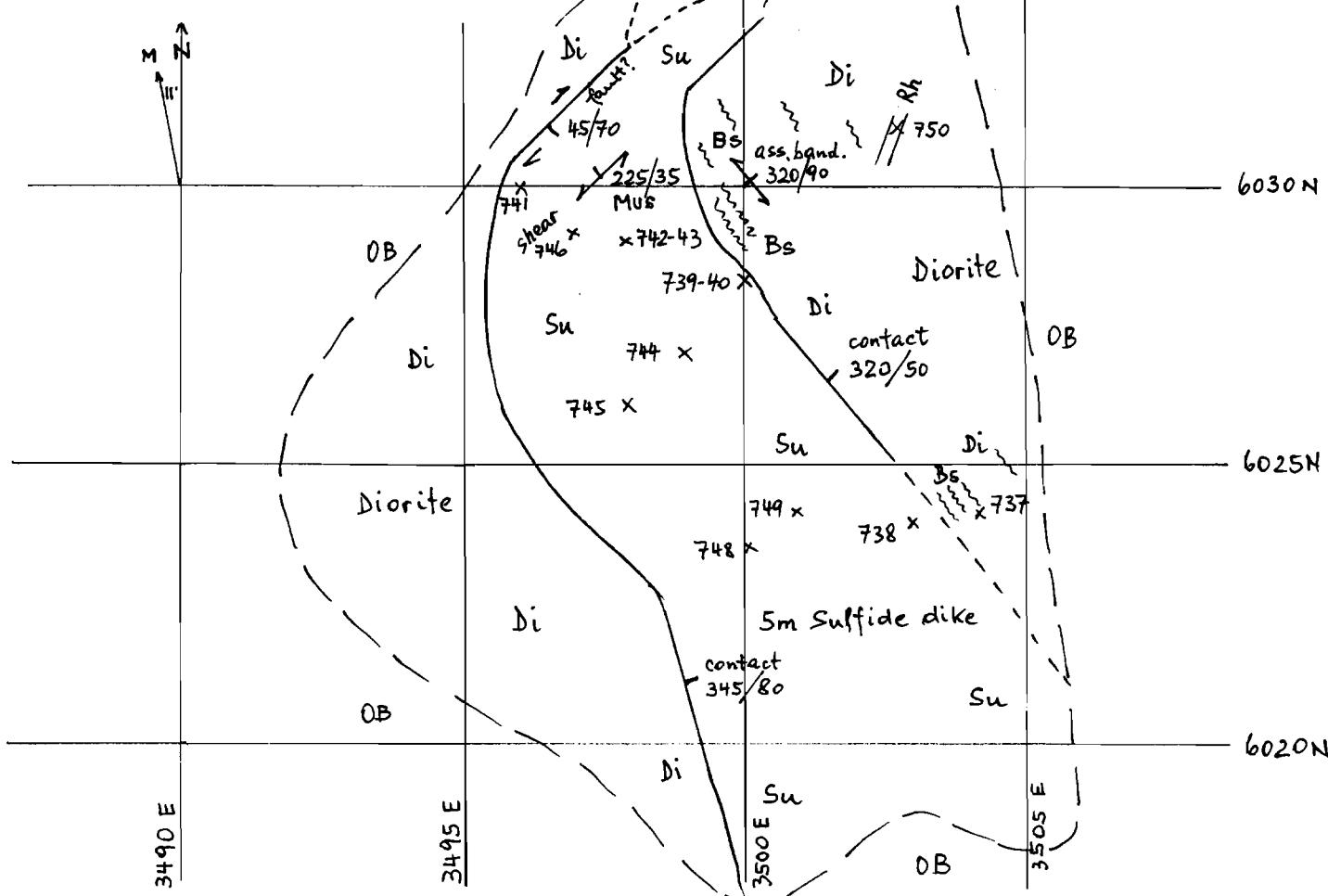
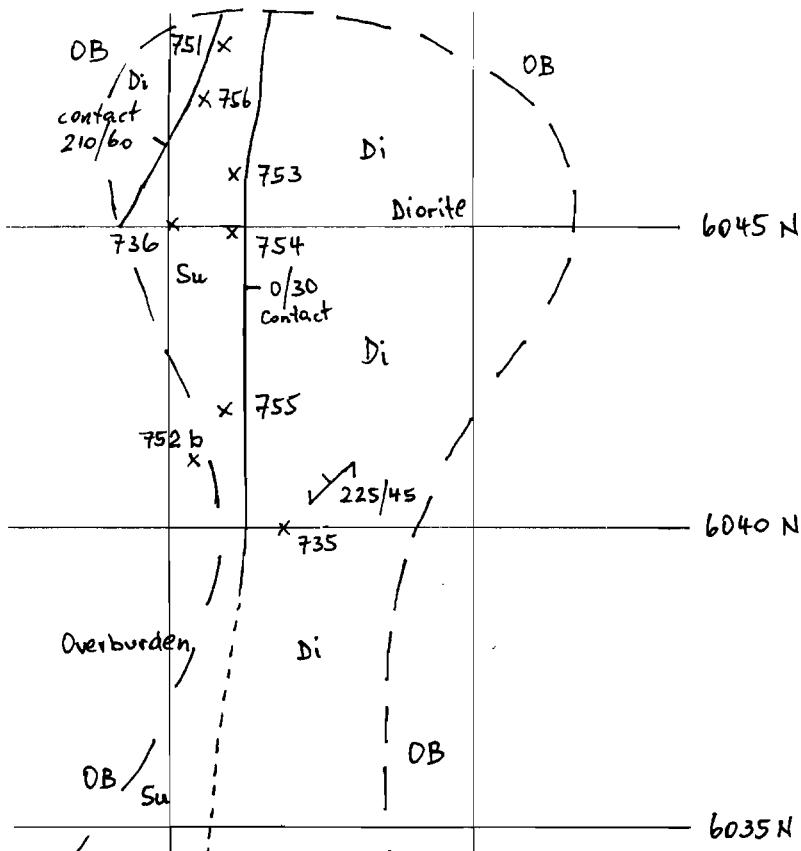
Claim 4210988 - Musgrove Tp.  
Geology and sample location

- Di Diorite, 1% blue quartz
- Su Sulfide-pyroxene dike
- Bs Basalt with assimilated Di
- Rh Rhyolite dike
- OB Overburden peeled back
- x Sampled 1-2m<sup>2</sup> area,  
numbers 735 to 756

UTM Grid NAD83, last 4 digits,  
center 0473500 E - 5336035 N

Scale: 1 : 125, 1cm = 1.25m

Mapped November 2007  
by Hermann Daxl, M.Sc., Holder.



Appendix III

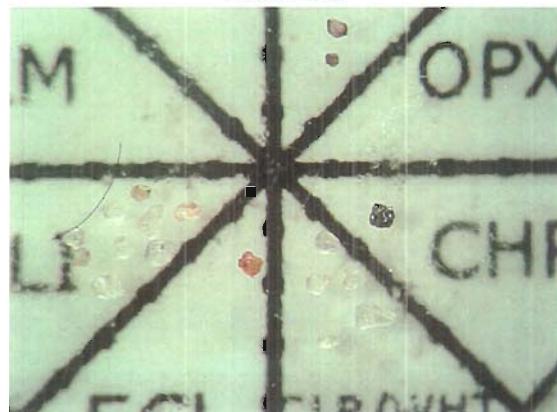
MUS

First Pass



Vial #9388

Final Picks



Vial #9444



# Mineral Processing Summary

February 2008

For

Hermann Daxl

Date: February 2008

# C.F. MINERAL RESEARCH LIMITED

1677 POWICK ROAD  
KELOWNA, BRITISH COLUMBIA  
CANADA V1X 4L1

TEL (250) 860-8525  
FAX (250) 862-9435

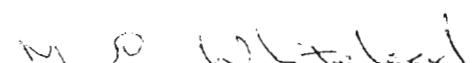
Client: True North Mineral Laboratories  
475 Railway Street  
Timmons, Ont. P4N 2P3

## CERTIFICATE PW07HB44002344

This certificate refers to a report of **0** full electron microprobe analyses (and associated work) carried out within C.F. Mineral Research batches **07-3897(1)**. The report was completed on the **22 January 2008**.

All results apply to samples/fractions/grains as submitted and are considered to be the confidential property of the Client and supersede any preliminary report with this certificate number.

The certificate gives **Kevin Cool** (the Client representative) full access to all cited results.

Signed by:  Dr. M.E. Whitehead

Date: 13 February 2008

Access to cited results, for the above Batch Number(s), relating directly to the Client: Hermann Daxyl, is hereby transferred to Hermann Daxyl.

Signed by:



Kevin Cool (Client Representative)

Date: February 25, 2008

**Appendix V**  
**Field Notations**

Sample # \_\_\_\_\_

name: \_\_\_\_\_ date: \_\_\_\_\_

project: \_\_\_\_\_

location: (Nad 83, UTM, Zone 17)

Northing: \_\_\_\_\_

Easting: \_\_\_\_\_

location: (Local grid reference)

Sampling method: \_\_\_\_\_

Depth: \_\_\_\_\_

Comments: \_\_\_\_\_

Sample # \_\_\_\_\_

name: \_\_\_\_\_ date: \_\_\_\_\_

project: \_\_\_\_\_

Location: (Nad 83, UTM, Zone 17)

Northing: \_\_\_\_\_

Easting: \_\_\_\_\_

Location: (Local grid reference)

Sampling method: \_\_\_\_\_

Depth: \_\_\_\_\_

Comments: \_\_\_\_\_

Sample # MvS

name: DAXL date: 15 NOV. 2007

project: Excavation Musgrave Tp.

Location: (Nad 83, UTM, Zone 17)

Northing: 5336030

Easting: 0473497

Location: (Local grid reference)

Sampling method: after mechanical excav.

Depth: 1-2 m

Comments: Clayey lodgement till, rusty,  
2 cm thick on bedrock and in crevasses,  
of massive pyrrhotite. Under 1-2 m  
of sandy till on well-drained hillside.

Sample # \_\_\_\_\_

name: \_\_\_\_\_ date: \_\_\_\_\_

project: \_\_\_\_\_

Location: (Nad 83, UTM, Zone 17)

Northing: \_\_\_\_\_

Easting: \_\_\_\_\_

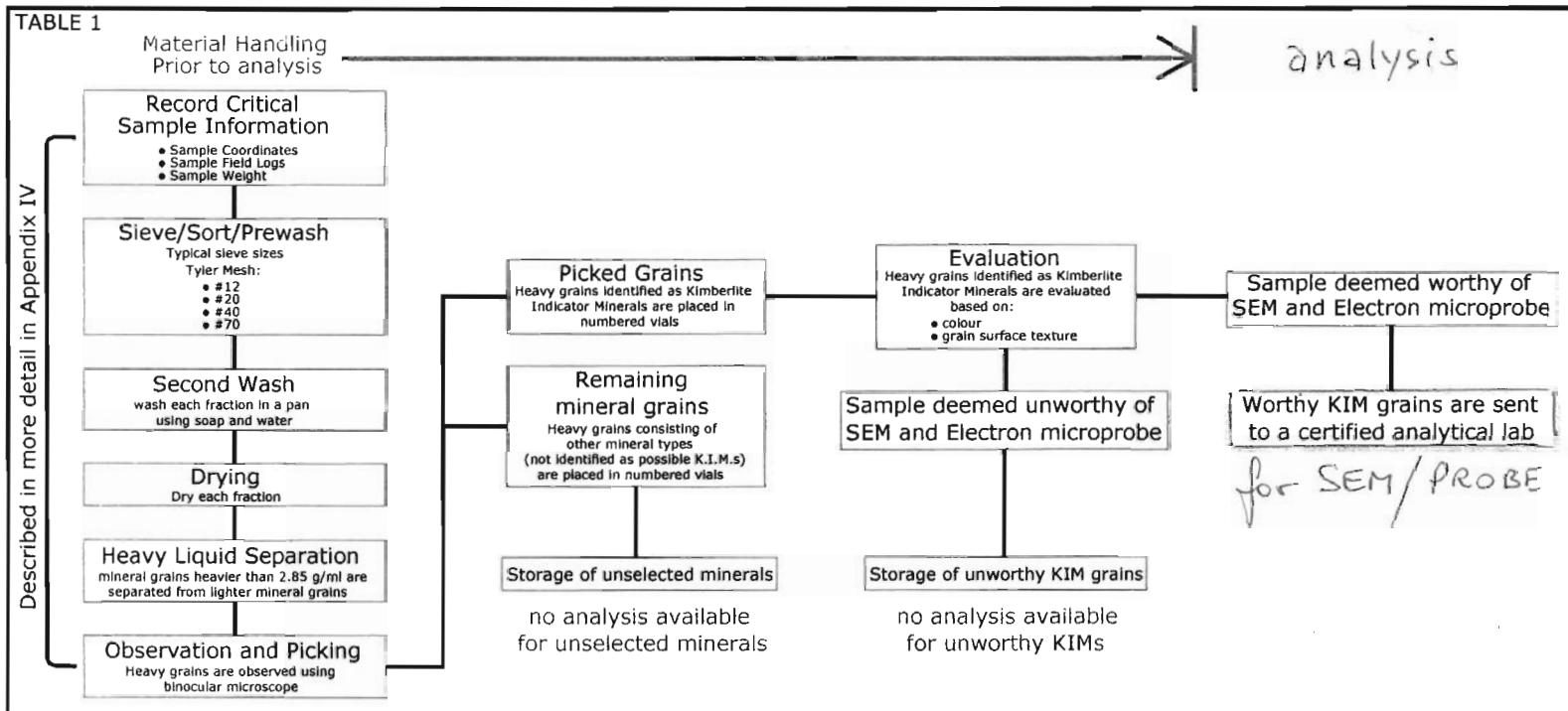
Location: (Local grid reference)

Sampling method: \_\_\_\_\_

Depth: \_\_\_\_\_

Comments: \_\_\_\_\_

## Material Handling Prior to Analysis



**True North Mineral Laboratories Inc.**

**Appendix I**

**Project:**

Client: Hermann Daxl

## True North Mineral Laboratories Inc.

### Appendix I

Abbreviations	Meaning
Concentrate	-mineral grains with specific gravity >2.85g/ml
Floats	-mineral grains with specific gravity <2.85g/ml
(g)	-grams
HMS	-Heavy Mineral Separation
RNM	-Remaining Non-Magnetic Concentrate after picking
#12 Tyler Mesh	-1.7mm
#20 Tyler Mesh	-0.85mm
#40 Tyler Mesh	-0.43mm
#70 Tyler Mesh	-0.21mm

## True North Mineral Laboratories Inc.

### Appendix II

Where observed concentrates and picked grains from this program were deemed not worthy of further SEM and Microprobe analysis the microscope observations are included in the current report as well as photographs found in Appendix III.

Abbreviations	Meaning
CHR	-Chromite
CLR/WHT	-Clear/White
CPX	-Clinopyroxene
ECL	-Eclogitic garnet
GAR	- Garnet
ILM	- Ilmenite
OLI	- Olivine
OPX	- Orthopyroxene

**True North Mineral Laboratories Inc.**

**Appendix II**

## Project:

Client: Hermann Daxl

## **Summary of Heavy Mineral Observation**

Sample No.	Fraction	Vial #	GAR	ECL	CPX	ILM	CHR	OPX	OLI	CLR/WHT	Total Number	Remarks	Observer	Date
MUS	<40>70	9444	2	1	0	0	1	0	9	5	18	2 Possible Purples	AS	Nov 26/07

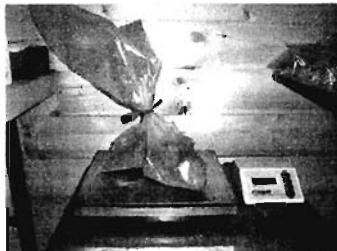
## Appendix IV

### Material Handling Prior to Analysis – Methods and Procedures

#### 1. Recording Sample Information

The sample is weighed, information is taken from a field book, sample log and hand written weight logs and entered into appropriate computer spreadsheet(s). Hand written location coordinates are normally cross checked against stored GPS waypoints if available. Often, GPS waypoints are downloaded into a computer and archived at this time as further backup. An effort for completeness is made to properly document the following information prior to the start of sample processing as it is critical sample information:

- Sample location – in NAD83, UTM coordinates including zone number.
- Sample logs – type, depth (if auger), material description, observations.
- Sample weight – full sample weight as it arrived from the field.



Weighing Field Sample



Cleaning sieves



Typical sieve arrangement

#### 2. Sieving, Sorting, Pre-wash

The sieves are thoroughly cleaned and inspected to eliminate any possibility of contamination from previous samples. The sample is washed through a stack of sieves. This process provides a preliminary wash for the mineral grains and sorts them by size. Selection of appropriate sieve mesh sizes can vary according to the type of material being sorted. Typical sieve sizes used are (Tyler mesh) #12, #20, #40 and #70.

Stated as metric equivalents:

$$\begin{aligned}\#12 &= 1.7\text{mm} \\ \#20 &= 0.85\text{mm} \\ \#40 &= 0.43\text{mm} \\ \#70 &= 0.21\text{mm}\end{aligned}$$

Sieve mesh sizes used for any particular sample can be found in the attached appendices that provide sample weights and mineral grain observations. Normally a lower size limit is determined and accepted beforehand. Sample material smaller than the lowest mesh size is normally washed away. In some cases all of the fine material is kept for possible microscope study, particularly in the case of an expensive sample.

### **3. Washing**

Each resulting size fraction is washed thoroughly with clean water and dish soap as it is removed from the sieves. Any organic material remaining with each fraction is floated off and washed away through repeated washing and rinsing. Washing is complete when the mineral grains are free of any organics, soap and fine silt.

### **4. Drying**

The resulting, washed fractions are then dried. An oven can be used to speed drying time. Once dry each of the size fractions is bagged in a plastic zip-loc bag and weighed. The resulting weight is recorded in both hand written log form and on computer spreadsheet. Clear labels must accompany each fraction through all remaining procedures.



Drying sample fractions



Fractions bagged and labelled



Fractions weighed

### **5. Heavy Liquid Separation**

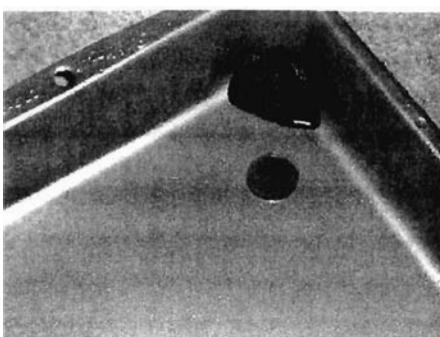
The resulting size fractions are looked at to determine which fraction(s) are suitable for heavy liquid separation. Larger size fractions may not contain enough mineral grains to make heavy liquid separation worthwhile. Program budget may limit the number of heavy liquid separations per sample or sample program. Smaller size fractions can provide the greatest number of heavy grains for observation in the resulting heavy mineral concentrate. However, fine grains can be more difficult to handle during microscope work. Each sample will have one ore more size fractions that are better suited for the process than the others.

The selected size fraction is run through a heavy liquid process where all grains having a density greater than 2.85 g/ml (sinks) are separated from the lighter fraction material (floats). All kimberlite indicator minerals will sink, as will many other minerals of economic interest, such as gold.

Both the sinks and floats are rinsed thoroughly in distilled water. The distilled water is saved for recycling as most of the expensive heavy liquid can be recaptured later. Both portions are then dried. An oven can be used to speed drying time. The floats are normally put in storage as the grains may warrant further study should the heavy mineral portion yield positive results. Abrasion due to grain transport for example, can help to determine transport distance. The sinks, or heavy mineral concentrate moves on to the next stage.



Separatory funnel



Typical yield of Heavy Minerals



Floats (less than 2.85 g/ml) stored

## 6. Observation and Picking

The microscope observation table and surrounding area must be thoroughly cleaned to ensure there are no grains around from past samples. A clean paper table cover is placed under the microscope to cover the surrounding table top. All grain handling is done on the table cover.

Small portions of heavy mineral concentrate are placed in plastic dishes in preparation for microscope observation. A small hand magnet is used to pull out and separate any magnetic grains from each dish. The magnetic grains are carefully placed into a separate dish for observation. This portion will be stored separately in a numbered plastic vial.

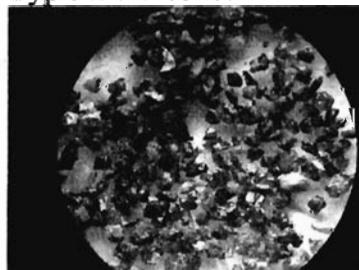
The non-magnetic portion of the heavy mineral concentrate is observed using binocular microscope and a good light source. When visually identified, kimberlite indicator minerals or any mineral grains of interest are manually picked using tweezers and placed in a numbered plastic vial. A computer log is maintained during observation where notes are linked to sample number, fraction, vial number and other basic information. When observation of each dish is complete, any remaining, unpicked grains are placed into a separate, numbered plastic vial using a small funnel. Observation notes are backed up regularly onto CD and archived. All vials are weighed on a fine scale and documented by hand written log and computer spreadsheet before storage.

Important grains or vials of picked grains that are selected for further analysis, such as SEM and microprobe are photographed through the microscope using a digital camera. Total number of grains to be sent for analysis is verified by counting them on the digital image using suitable graphics software. Normally all grains sent for SEM or microprobe analysis are returned, mounted on a slide or plug. The digital photograph, observation notes and grain count can be used at that time for basic verification and identification of analyzed grains. Copies of the digital photographs can be shipped to the analytical lab along with the selected vials of grains. This helps the receiver to confirm all grains were received and discrepancies can be noted by both parties.

Observation work station



Typical full concentrate



Grains in vials



**True North Mineral Laboratories Inc.**

Appendix VI

---

### Project:

### Client:

EXCAVATION MUSGROVE Tp.  
# DAXI -

H. DAXL

## **Sample locations - NAD83, UTM, Zone 17**

Sample No.	Local Grid Easting	Local Grid Northing	UTM NAD83, Zone 17	
			Northing	Easting
MUS	0473497	5336030	5336030	0473497

Appendix VII

*CF Microprobe*

And/or

*ActLabs*

Analyses

Certificates and Details

Sample Number: MJS		TRUE NORTH MINERAL LABORATORIES				ALL WEIGHTS IN GRAMS				
		Sample Record				Special Instructions: RUSTY - CLR PRIOR TO PACKING Rust cleaner 1E1 + PGE				
		Client: H.D.	Arrival Date: NOV 16/07	Crushed Rock	Till	Combined	Container	Resulting	Bin #	Tech
Date	Description									
Nov. 17/07	Field Weight -sample weight upon arrival			21685	60.39	21624.61				
	Split Sample-Amount of sample washed									
	Split Sample-sample put in storage for possible future processing									
Nov 19/07	>12 - Full Fraction Weight			811.0	2.82	808.18				AMC
Nov 19/07	<12>20 - Full Fraction Weight			780.9	2.88	778.02				AMC
Nov 19/07	<20>40 - Full Fraction Weight			715.3	2.82	712.48				AMC
Nov. 18/07	<40>70 - Full Fraction Weight all to heavy liquid G=2.85, float (26)			—	—	874.50				
	<40 - Full Fraction Weight									
Nov. 20/07	<70 - Full Fraction Weight			380.0	14.65	379.5.35				mm
Nov 21/07	<80 - Multi Element Analysis - Act Labs Code 1H of total fines			104	3.5	101.5				mm
	<70 - Remaining					3693.85				mm
	<20>40 - Full Sample Weight - Deister									
	<20>40 - Deister Table Concentrate									
	<20>40 - Deister Table Tailings									
	<20>40 - Sent to HMS									
	<20>40 - Remaining for future HMS									
	<20>40 - Floats from HMS									
	<40>70 - Full Sample Weight - Deister									
	<40>70 - Deister Table Concentrate									
	<40>70 - Deister Table Tailings									
Nov. 18/07	<40>70 - Sent to HMS			—	—	874.50				
	<40>70 - Remaining for future HMS									
Nov. 20/07	<40>70 - Floats from HMS G= 2.85 liquid.			238.9	2.86	236.04				mm
Nov 18/07	>7 - full fraction weight (mush opening 2.80mm) 10085				44.04	10040.96				AMC
Nov 18/07	SAMPLE WEIGHT - >7									AMC
Nov 21/07	Heavy mineral concentrates sent for Code 3+ (61.31)			61.31	0.55	60.76	ind. mag.			AS
11	Remaining Heavy Mineral Concentrate			+36	—	—	554.14			AS
11	Non - Magnetic weighed fraction				34.27	.55	33.72			AS
11	of heavy Magnetic pulled from Heavy Mineral Conc.				9.67	.55	9.12			AS
Vial#					9386	9389	9390			
Description	<20>40 F.P.P.	<20>40 MAGS	<20<40 N-MAGS	<20>40 FP	LIM Batch # <80	<40>70 F.P.P.	<40<70 MAGS	<40<70 N-MAGS	<40>70 FP	

## **Quality Analysis ...**



## **Innovative Technologies**

**Date Submitted:** 27-Nov-07

**Invoice No.:** A07-6129

**Invoice Date:** 24-Dec-07

## Your Reference:

**Hermann Daxl**  
**39-630 Riverpark Road**  
**Timmins Ontario P4P 1B4**  
**Canada**

ATTN: Hermann Daxl

## CERTIFICATE OF ANALYSIS

1 Heavy Mineral Concentrates sample and 1 Pulp sample were submitted for analysis.

The following analytical packages were requested: Code 1H INAA(INAA GEO) / Total Digestion ICP(TOTAL)  
REPORT A07-6129 Code 3A-Large HMC INAA(INAA GEO)  
Code 3C Aqua Regia ICP(AQUA GEO)

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

Notes:

Elements which exceed the upper limits should be analyzed by assay techniques. Some elements are reported by multiple techniques. These are indicated by MULT. Unaltered silicates and resistate minerals may not be dissolved. Values which exceed upper limit should be assayed.

CERTIFIED BY :

Cochran

C. Douglas Read, B.Sc.  
Laboratory Manager

ACTIVATION LABORATORIES LTD.

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or  
+1.888.228.5227 FAX +1.905.648.9613  
E-MAIL [ancaster@actlabsint.com](mailto:ancaster@actlabsint.com) ACTLABS GROUP WEBSITE <http://www.actlabsint.com>

Activation Laboratories Ltd.

Report: A07-6129

MUS-80 = finest of sieved bulk sample, <175 µm (microns)

MVS-HMC = full hexagonal magnetics,  $\sim 40 - 70 \mu\text{m}$ ,  $\sim 240 - 480 \mu\text{m}$  fraction.  
 density  $> 2.85 \text{ g/cm}^3$

Activation Laboratories Ltd.

Report: A07-6129

## Activation Laboratories Ltd.

Report: A07-6129

Analyte Symbol	Lu	Mass	Au	Ag	As	Ba	Br	Ca	Co	Cr	Cs	Fe	Hf	Hg	Ir	Mo	Na	Ni	Rb	Sb	Sc	Se	Sr	Ta
Unit Symbol	ppm	g	ppb	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm
Detection Limit	0.05		5	5	2	200	5	1	5	10	2	0.02	1	5	50	20	0.05	200	50	0.2	0.1	20	0.2	1
Analysis Method	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA
MUS -80	0.26	25.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MUS-HMC	—	—	20	< 5	9	< 200	< 5	5	58	40	11	31.5	< 1	< 5	< 50	< 20	0.20	< 200	< 50	0.7	8.6	< 20	< 0.2	< 1

## Activation Laboratories Ltd.

Report: A07-6129

Analyte Symbol	Th	U	W	Zn	La	Ce	Nd	Sm	Eu	Tb	Yb	Lu	Mass	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	S
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	g	ppm	%							
Detection Limit	0.5	0.5	4	200	1	3	10	0.1	0.2	2	0.2	0.05	0.2	0.5	1	2	2	1	2	1	1	0.01
Analysis Method	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	INAA	AR-ICP									
MUS -80	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MUS-HMC	< 0.5	1.4	1500	< 200	11	11	20	1.9	0.8	< 2	1.7	0.19	28.8	1.1	< 0.5	624	2370	3	53	10	21	1.91

●

# Microprobe

## Analysis

●

## Classifications

Customer: HB44  
Probe Batch: jan (08)  
Comment:

MicroProbe Analysis fro Mineral Research Ltd.  
Batch File: 07-3897

23-Jan-08 8:38am  
File: prb3897T.prn

Name	Fraction	Mount	Cell	Grain	SA	CFM	DI	M	C	T(Zn)Ø	*	SiO <sub>2</sub>	TiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	V <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	FeO	MgO	CaO	MnO	NiO	ZnO	Nb <sub>2</sub> O <sub>5</sub>	Na <sub>2</sub> O	MaxNa <sub>2</sub> O	K <sub>2</sub> O	Total
MUS	<40>70	5831	5	301		*																						
MUS	<40>70	5831	5	302		*																						
MUS	<40>70	5831	5	303		*																						
MUS	<40>70	5831	5	304		*																						
MUS	<40>70	5831	5	305		*																						
MUS	<40>70	5831	5	306		*																						
MUS	<40>70	5831	5	307		*																						
MUS	<40>70	5831	5	308		*																						
MUS	<40>70	5831	5	309		*																						
MUS	<40>70	5831	5	310		*																						
MUS	<40>70	5831	5	311		*																						
MUS	<40>70	5831	5	401		*																						
MUS	<40>70	5831	5	402		*																						
MUS	<40>70	5831	5	403		*																						
MUS	<40>70	5831	5	404		*																						
MUS	<40>70	5831	5	405		*																						
MUS	<40>70	5831	5	406		*																						
MUS	<40>70	5831	5	407		*																						

were  
deemed  
worthy  
of SEM

## PROBE CLASSIFICATION DESCRIPTIONS

<u>MINERAL</u>	<u>DESCRIPTION</u>	<u>CFM-CONFIDENTIAL</u>
1 ACTN	Actinolite	
2 ACTN*	Actinolite with composition characteristic of skarn or massive sulfide deposits	
3 AEG-AUGT	Aegirine-Augite	
4 AEGR	Aegirine	
5 AKER	Akermanite	
6 AL-Si	Aluminum-Silicate	
7 ALBT	Albite	
8 ALM	Almandine	
9 ALM-Mn	Almandine with high manganese	
10 ALM-Mn-Di	Almandine with high manganese with diamond inclusion composition	
11 ALM-Mn*	Almandine (high manganese) with composition characteristic of skarn or massive sulfide deposits	
12 AMPH	Amphibole	
13 AMPH-Al	Aluminum-Amphibole	
14 ANAL	Analcime	
15 ANDR	Andradite	
16 ANDR-Mn	Andradite with high manganese	
17 ANDR-Ti-Mn	Andradite with high titanium and manganese	
18 ANKR	Ankerite	
19 APAT	Apatite	
20 APAT*	Apatite with composition characteristic of skarn or massive sulfide deposits	
21 APAT-WILK	Apatite, Wilkeite Series	
22 APOP	Apophyllite	
23 ARFV	Arfvedsonite	
24 ARFV-K	Potassium Arfvedsonite	
25 ARMA	Armalcolite	
26 ASTR	Astrophyllite Series	
27 AUGT	Augite	
28 AUGT-Ti	Augite with high titanium	
29 BADL	Baddeleyite	
30 BARK	Barkevikite	
31 BART	Barite	

<u>MINERAL</u>	<u>DESCRIPTION</u>	CFM-CONFIDENTIAL
32 BART-Si	Silica-Barite	
33 BART-Sr	Strontium Barite	
34 BARY	Barytocalcite	
35 BIOT	Biotite	
36 BIOT-Ti	Biotite with high titanium	
37 BIOT*	Biotite with composition characteristic of skarn or massive sulfide deposits	
38 BUST	Bustamite	
39 CALC	Calcite	
40 CANC	Cancrinite	
41 CD	Chrome Diopside	
42 CDRT	Cordierite	
43 CE	Eclogitic Clinopyroxene	
44 CE*	High pressure Clinopyroxene of eclogitic paragenesis	
45 CELS	Celestite	
46 CHLORT	Chlorite	
47 CHLRD	Chloritoid	
48 CORO	Coronadite	
49 CORU	Corundum	
50 CP	Peridotitic Clinopyroxene	
51 CP*	High pressure Clinopyroxene of peridotitic paragenesis	
52 CP1	Clinopyroxene - Dawson's (modified by CFM) group 1	
53 CP2	Clinopyroxene - Dawson's (modified by CFM) group 2	
54 CP3	Clinopyroxene - Dawson's (modified by CFM) group 3	
55 CP4	Clinopyroxene - Dawson's (modified by CFM) group 4	
56 CP5	Clinopyroxene - Dawson's (modified by CFM) group 5	
57 CP6	Clinopyroxene - Dawson's (modified by CFM) group 6	
58 CP7	Clinopyroxene - Dawson's (modified by CFM) group 7	
59 CP8	Clinopyroxene - Dawson's (modified by CFM) group 8	
60 CP9	Clinopyroxene - Dawson's (modified by CFM) group 9	
61 CP10	Clinopyroxene - Dawson's (modified by CFM) group 10	
62 CPX	Clinopyroxene	
63 CP DI	Clinopyroxene with diamond inclusion composition	
64 CP DI\$	Clinopyroxene with diamond inclusion composition which forms with large diamond	

<u>MINERAL</u>	<u>DESCRIPTION</u>	<u>CFM-CONFIDENTIAL</u>
65 CP DIO	Clinopyroxene with diamond inclusion composition that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources	
66 CP DI\$O	Clinopyroxene with diamond inclusion composition which forms with large diamond that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources	
67 CP DI*	Favorable high pressure Clinopyroxene with diamond inclusion composition	
68 CP DI\$*	Favorable high pressure Clinopyroxene with diamond inclusion composition which forms with large diamond	
69 CP DIO*	High pressure Clinopyroxene with diamond inclusion composition that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources	
70 CP DI\$O*	High pressure Clinopyroxene with diamond inclusion composition which form with large diamond that overlaps with compositions of Clinopyroxenes that classify from non diamond inclusion sources	
71 CR	Chromite	
72 CR-Ca	Chromite with high calcium	
73 CR-Si	Chromite with high silicon	
74 CR DI	Chromite with major element diamond inclusion composition	
75 CR DI*	Diamond inclusion Chromite from favorable harzburgite source	
76 CR Ti	Chromite with high titanium (magmatic)	
77 CR M/C	Mars/Cart classification of rock type provenance of chromites	
78 CR K	Classified by Mars/Cart as being from Kimberlite sources	
79 CR L	Classified by Mars/Cart as being from Lamproite sources	
80 CR U	Classified by Mars/Cart as being from Ultramafic sources	
81 CR G	Classified by Mars/Cart as being from Greenstone sources	
82 CRIC	Crichtonite	
83 CUMN	Cummingtonite	
84 CUMN-Na	Cummingtonite with high sodium	
85 CV	Volcanic Clinopyroxene	
86 DIOP	Diopside	
87 DOLM	Dolomite	
88 E	Eclogitic Garnet	
89 ECKR	Eckermannite	
90 ENST	Enstatite	
91 ENST-L	Lamproitic Enstatite	
92 EPID	Epidote - Clinozoisite	

**MINERAL****DESCRIPTION****CFM-CONFIDENTIAL**

93 EPID*	Epidote with composition characteristic of skarn or massive sulfide deposits
94 FLSP	Feldspar
95 FLSP-Ba	Feldspar with high barium
96 G 1	CFM modification after Dawson's group 1
97 G 2	CFM modification after Dawson's group 2
98 G 3	CFM modification after Dawson's group 3
99 G 4	CFM modification after Dawson's group 4
100 G 5	CFM modification after Dawson's group 5
101 G 6	CFM modification after Dawson's group 6
102 G 7	CFM modification after Dawson's group 7
103 G 8-Grosp	CFM modification after Dawson's group 8 (Grospydite)
104 G 8-GrospD	CFM modification after Dawson's group 8 (Grospydite with diamond inclusion composition)
105 G 9	CFM modification after Dawson's group 9
106 G11	CFM modification after Dawson's group 11
107 G12	CFM modification after Dawson's group 12
108 G10	Gurney group 10 Pyrope
109 G10-10*	Gurney (Best) 10 score category of G10 garnet
110 G10-9*	Gurney 9 score category of G10 garnet
111 G10-8	Gurney 8 score category of G10 garnet
112 G10-7*	Gurney 7 score category of G10 garnet
113 G10-6	Gurney 6 score category of G10 garnet
114 G10-5*	Gurney 5 score category of G10 garnet
115 G10-4	Gurney 4 score category of G10 garnet
116 G10-3*	Gurney 3 score category of G10 garnet
117 G10-2	Gurney (Least) 2 score category of G10 garnet
118 G11-1	Gurney 1 score category of G11 garnet
119 G 9-1	Gurney 1 score category of G 9 garnet
120 G10-0	Score category of G10 garnet with non diamond inclusion composition

\*

Within the diamond stability region indicated by the granite-diamond constraint of H.S. Gruther and R.J. Sweeney (2000), Ext. Abstract GAC/MAC Annual Joint Meeting, CD-ROM, GeoCanada 2000

Note:

Gurney scores (after J. Lee, 1993 PDAC meeting Toronto, Ont. pg.213-234), upgraded by CFM, has been demonstrated to be related to diamond grades of source kimberlites. An average pyrope score of 5, for example, implies a grade estimate of about 7 carats/100 tonnes attributable to garnet harzburgite.

MINERALDESCRIPTION

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121 G1*	Best group 1 eclogitic Garnet (classifies in every diamond inclusion field)
122 G1	Group 1 eclogitic Garnet (classifies mostly in diamond inclusion fields and subordinate diamond inclusion overlap fields)
123 G2	Group 2 Garnet from non diamond bearing or regional eclogite sources
124 ...	Overlap fields; first field (before the /) is the most probable classification, second field (after the /) is the less probable yet possible classification for example, the classification G1/LPM would indicate that the grain is most probably a group 1 eclogitic garnet but may be, although less likely, a low pressure megacrystic eclogitic garnet
125 GAHN	Gahnite
126 GLAS	Glass
127 GROS	Grossular
128 GROS-ANDR	Grossular-Andradite
129 GROS-Mn	Grossular with high manganese
130 GT	general Garnet
131 GT-Mn	Garnet with high manganese
132 GT-Zr-Ti	zirconium-titanium Garnet
133 HEDN	Hedenbergite
134 HOLN	Hollandite
135 HORN	Hornblende
136 HUMI	Humite Group
137 IL	Ilmenite - regional
138 IL-Ca	Ilmenite with high calcium
139 IL-Mn	Ilmenite with high manganese
140 KAER	Kaersutite
141 KALS	Kalsilite
142 KAOL	Kaolinite
143 KNEB	Knebelite
144 KUTN	Kutnohorite
145 KYAN	Kyanite/Andalusite/Sillimanite
146 LEUC	Leucite
147 LEUC-L	Lamproitic Leucite
148 LPM	Low pressure megacrystic eclogitic garnet (usually from kimberlite sources)

**MINERAL****DESCRIPTION**

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149 HPM	High pressure megacrystic eclogitic garnet (diamond indicator mineral from kimberlite and lamproite)
150 MAGN	Magnetite
151 MAGN-Ti	Magnetite with high titanium
152 MAGNS	Magnesite
153 MAJT-Di	Majorite with diamond inclusion composition
154 MARG	Margarite
155 MELA	Melanite
156 MELI	Melilite
157 MONT	Monticellite
158 NEPH	Nepheline
159 NEPT	Neptunite
160 NOSN	Nosean-Hauyne
161 OLV	Olivine
162 OLV-FORS	Olivine Forsterite
163 OLV-FAY	Olivine Fayalite
164 OLV-FAY*	Olivine Fayalite with composition characteristic of skarn or massive sulfide deposits
165 OLV-FAY-Mn	Olivine Fayalite with high manganese
166 OLV DI	Olivine with diamond inclusion composition
167 OLV DI\$	Olivine with diamond inclusion composition which forms with large diamond
168 OLV DIO	Olivine with diamond inclusion composition that overlaps with composition of olivine from non-diamondiferous sources
169 OLV DIO\$	Olivine with diamond inclusion composition which forms with large diamond that overlaps with composition of olivine from non-diamondiferous sources
170 OP1	Orthopyroxene - Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 1
171 OP2	Orthopyroxene - Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 2
172 OP3	Orthopyroxene - Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 3
173 OP4	Orthopyroxene - Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 4
174 OP5	Orthopyroxene - Dawson's (modified by CFM to classify all orthopyroxenes included in diamond) group 5
175 OPX	Orthopyroxene
176 OPX DI	Orthopyroxene with diamond inclusion composition

<u>MINERAL</u>	<u>DESCRIPTION</u>
177 OPX-ENS	Enstatite
178 OPX-HY	Hypersthene
179 ORTHCL	Orthoclase
180 P	Peridotitic Garnet
181 PERC	Periclase
182 PERC-Fe	Periclase with high iron
183 PERV	Perovskite
184 PHLG	Phlogopite
185 PHLG-Ti	Phlogopite with high titanium
186 PIEM	Piemontite
187 PIL	Picroilmenite
188 PLAG	Plagioclase
189 PLEU	Pseudoleucite
190 PREH	Prehnite
191 PRID	Pridelite
192 PSBK	Pseudobrookite
193 PSBK-Fe	Pseudobrookite with high iron
194 PYRL	Pyrolusite
195 PYROPH	Pyrophanite
196 PYROX	Pyroxmangite
197 PYRP	Pyrope
198 PYRP-Mn	Pyrope with high Manganese
199 QRTZ	Quartz
200 QRTZ-IMP	Impure Quartz
201 R	Regional Garnet
202 RHOD	Rhodonite
203 RICT	Richterite
204 RICT-K	K-Richterite
205 RIEB	Riebeckite
206 RIEB-K	Riebeckite with high potassium
207 RUTL	Rutile
208 RUTL-Nb	Rutile with high niobium
209 RUTL-Si	Rutile with high silicon
210 SALT	Salite

**MINERAL****DESCRIPTION**

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211 SAND	Sanidine
212 SAND-L	Lamproitic Sanidine
213 SAPH	Sapphirine
214 SERP	Serpentine
215 SHCH	Shcherbakovite
216 SIDR	Siderite
217 Si-Zr	Silica-Zircon
218 SODL	Sodalite
219 SPES	Spessartine
220 SPES*	Spessartine of Broken Hill Mine composition
221 SPHN	Sphene
222 SPNL	Spinel
223 SPNL-Si-Al	Silicon-aluminum Spinel
224 SPNL-Zn	Spinel with high zinc
225 STAU	Staurolite
226 STRN	Strontianite
227 TALC	Talc
228 TEPH	Tephroite
229 TOPZ	Topaz
230 Tour-D*	Round brown dravitic tourmaline of composition and morphology consistent with being pseudomorph after jadeitic diopside from group 1 (diamond bearing) eclogite
231 Tour-D	Round brown dravitic tourmaline from group 2 (non diamond bearing) eclogite
232 Tour-R*	Tourmaline (regional) with elevated K <sub>2</sub> O-TiO <sub>2</sub> composition
233 Tour-R	Tourmaline with composition and morphology equivalent to regional tourmaline
234 Tourmalin	Tourmaline with no B <sub>2</sub> O <sub>3</sub> analysis
235 TREM	Tremolite
236 UN01	Calcium-titanium Silicate (Ca-Ti Silicate)
237 UN02	Potassium-titanium-silicon Shcherbakovite like (K-Ti-Si Shcherbakovite like)
238 UN03	Manganese-titanium-silicon (Mn-Ti-Si)
239 UN04	Titanium silicate altered Sphene
240 UN05	Chromium-iron-silicon-magnesium-aluminum silicon altered chrome spinel (Ca-Fe-Si-Mg-Al silicon altered chrome spinel)
241 UN06	Siliceous Titanites
242 UN07	Calcium-magnesium-iron-silicon silicon Carbonate (Ca-Mg-Fe-Si silicon Carbonate)
243 UN08	Sodium-iron-silicon (Na-Fe-Si)

**MINERAL****DESCRIPTION**

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244 UN09	Silicon Corundum
245 UN10	Calcium-titanium-iron silicate altered Sphene (Ca-Ti-Fe silicate altered Sphene)
246 UN11	Iron-titanium-zirconium Silicate (Fe-Ti-Zr Silicate)
247 UN12	Tungsten-niobium-titanium-iron Oxide (W-Nb-Ti-Fe Oxide)
248 UN13	Niobium-titanium-iron-silicon (Nb-Ti-Fe-Si)
249 UN14	Iron-magnesium-aluminum-silicon (Fe-Mg-Al-Si)
250 UN16	Sodium-aluminum-silicon (Na-Al-Si)
251 UN21	Magnesium-calcium-titanium Oxide (Mg-Ca-Ti Oxide)
252 UN24	Calcium-aluminum-silicon (Ca-Al-Si)
253 UVAR	Uvarovite
254 UVAR-DI	Uvarovite with diamond inclusion composition
255 WAD	Wad
256 WADT	Wadeite
257 WILK	Wilkeite
258 WILM	Willemite
259 WOLA	Wollastonite
260 ZOIS	Zoisite