



31E13SE2001 2.19526 LOUNT

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B-MAX
(Brothers Minerals and Exploration)

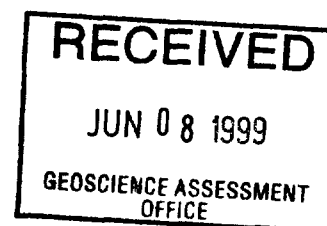
MAGNETAWAN PROJECT

**Results of the 1998 Exploration Program
for Ni-Cu-Co Sulphide Deposits
on Mining Claims SO 1077361 and SO 1077362
in Lount Township, Ontario**

N.T.S. 31-E/13

**Carried Out Under the
Ontario Prospectors Assistance Program
OPAP File Number OP98-011**

By G. Vandevalk
December 1998



2.19526

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31E13SE2001 2.19526 LOUNT

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**Results of the 1998 Exploration Program for Ni-Cu-Co Sulphide Deposits
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in Lount Township, Ontario
N.T.S. 31-E/13
Carried Out Under the
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OPAP File Number OP98-011**

SUMMARY

During the summer of 1997, the author and two associates (his brothers), hereinafter referred to as B-MAX (Brothers Minerals and Exploration), conducted a program of stream sediment sampling and prospecting to follow-up on Geological Survey of Canada Ni-Cu-Co lake sediment geochemical anomalies north of the Town of Magnetawan. Several of the area's documented Cu-Ni prospects were visited and sampled. By November 1997, the results of this program were sufficiently encouraging to warrant the staking of a 12-unit claim block, by Henry Vandevalk (SO1077361), over an area interpreted to be underlain by metagabbroic rocks, between Lake Of Many Islands and Spring Lake in Lount Township. Both of these lakes yielded GSC sediment samples that contained anomalous levels of nickel and cobalt. Streams that drained the area that was staked yielded sediment samples that contained anomalous levels of nickel, cobalt and chromium. Prospecting in the area that was staked confirmed the presence of mafic and ultramafic rocks including metagabbro and pyroxenite, both with disseminated sulphides. Samples of these rocks yielded interesting nickel, copper and cobalt analyses. B-MAX believed these results indicated that the area had potential to host economic concentrations of magmatic sulphides and that staking and follow up exploration was warranted to further investigate this potential.

In April 1998, William Vandevalk staked an additional, single claim unit (SO1077362) over a nearby pit exposed showing of semi-massive pyrrhotite in peridotite.

A proposal was submitted to the Ministry of Northern Development and Mines, under OPAP, to carry out a program of soil geochemical sampling, prospecting and ground magnetic surveys, directed toward the discovery of nickel-copper-cobalt, magmatic sulphide deposits on the property. The submission resulted in the awarding of a \$10,000 grant to the applicant (OP98-011). The Summer 1998 program was successful in identifying several areas with highly anomalous Ni + Cr + Co in soil, associated with strong ground magnetic anomalies. Follow-up prospecting in this area confirmed the presence of disseminated sulphide and magnetite bearing, ultramafic and metagabbroic rocks, that have the potential to host magmatic sulphides. The area covered by the Summer 1998 surveys undoubtedly contains the source(s) of the GSC Nickel anomaly in Spring Lake sediments.

This report documents the results of the 1998 Exploration Program carried out by B-MAX, on mining claims SO 1077361 and SO 1077362.

LOCATION AND ACCESS

The Properties lie approximately 14 kilometres north of the town of Magnetawan, (Figure 1). Figure 2 shows the locations of **Mining Claims SO1077361 (the North Block)** and **SO1077362 (the South Claim)**. The North Block lies on the north ½ of Concession 5, Concession 6 & the south ½ of Concession 7 – Lots 27, 28 & 29, and the South Claim lies on the south ½ of Lot 27, Concession 3, as shown on the Lount Township Claim Map number M.184. Lount Township is in the Parry Sound District of the Sudbury Mining Division. The properties lie within the N.T.S. 31 E/13 division (Golden Valley Sheet), and the southwest corner of Mining Claim SO1077361 occurs at approximately 45° 47' 05" north latitude and 79° 41' 03" west longitude. The U.T.M. coordinates of this corner are 602,295mE and 5,070,750mN.

The South Claim property can be accessed by travelling approximately 8.5 kilometres north on the Nipissing Road off of Highway 124 (at its junction with Highway 510), which will bring you to the Youthdale Camp Road (Figure 1). The Youthdale Road cuts across the property at approximately 3 kilometers distance, west from the Nipissing Road (Figure 2). **The North Block** property can be accessed by further heading west for approximately 1 kilometre on the Youthdale Road where a gate, which marks the beginning of the Youthdale private lands, will be encountered (Figure 2). The author requested and was granted permission from the owner, to travel a further 0.7km beyond the gate to a trail which heads north to the staked claim block. This trail can be traveled by highway vehicle for only a short distance, to a clearing and sandpit just off the Youthdale property. An ATV was used to travel the remainder of the trails across the property. A public boat launch ramp provides access to Spring Lake, from which the northern portion of the North Block Property can be accessed if desired.

REGIONAL GEOLOGY

The properties lie within the Parry Sound Mafic Domain (PSMD) of the Central Gneiss Belt (CGB) in the Grenville Geologic Province (Figure 3). Easton (1992) describes the geology of the Grenville Province and the CGB, including the PSMD.

Figure 4 shows existing Ontario Geological Survey detailed mapping coverage in the vicinity of the properties. Areas to the west and southwest were covered by fairly recent, 1 inch = ¼ mile scale OGS mapping (Bright E.G., 1987 and McRoberts, T., & Tremblay, M.L., 1988). Lount Township was mapped by J. Satterly in 1953 (Map No. 1955-4) primarily to investigate magnetite and garnet occurrences that were found along the Rosseau to Nipissing pioneer road, and to assess the iron potential of the area. Although the lithological classifications are not as detailed as the recent OGS mapping to the west, Satterly's map provides the only detailed coverage in Lount Township and it locates some of the definite metagabbro bodies, Cu-Ni occurrences and old workings on occurrences.

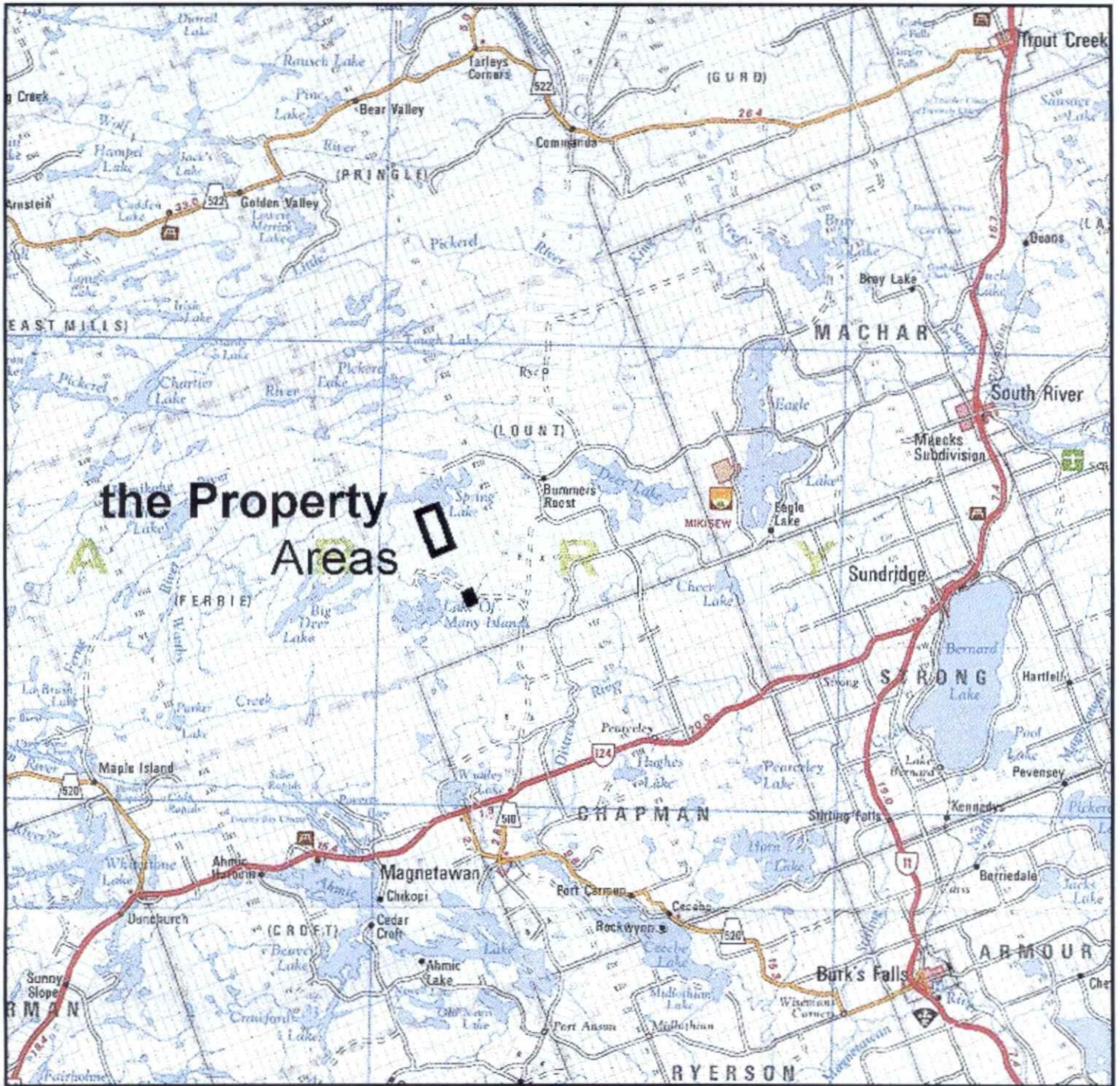


Figure 1
PROPERTY LOCATIONS
 Scale - 1:250,000

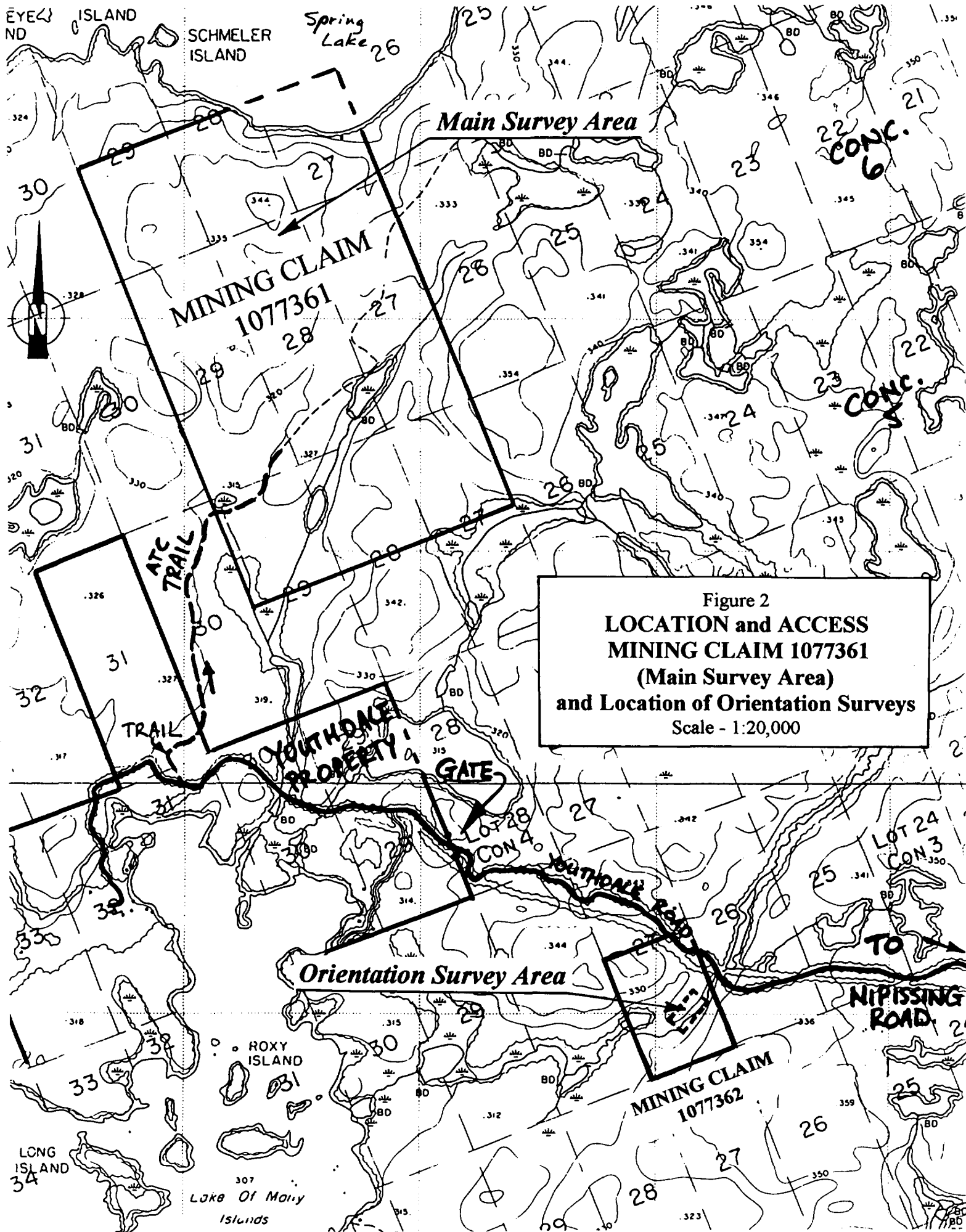
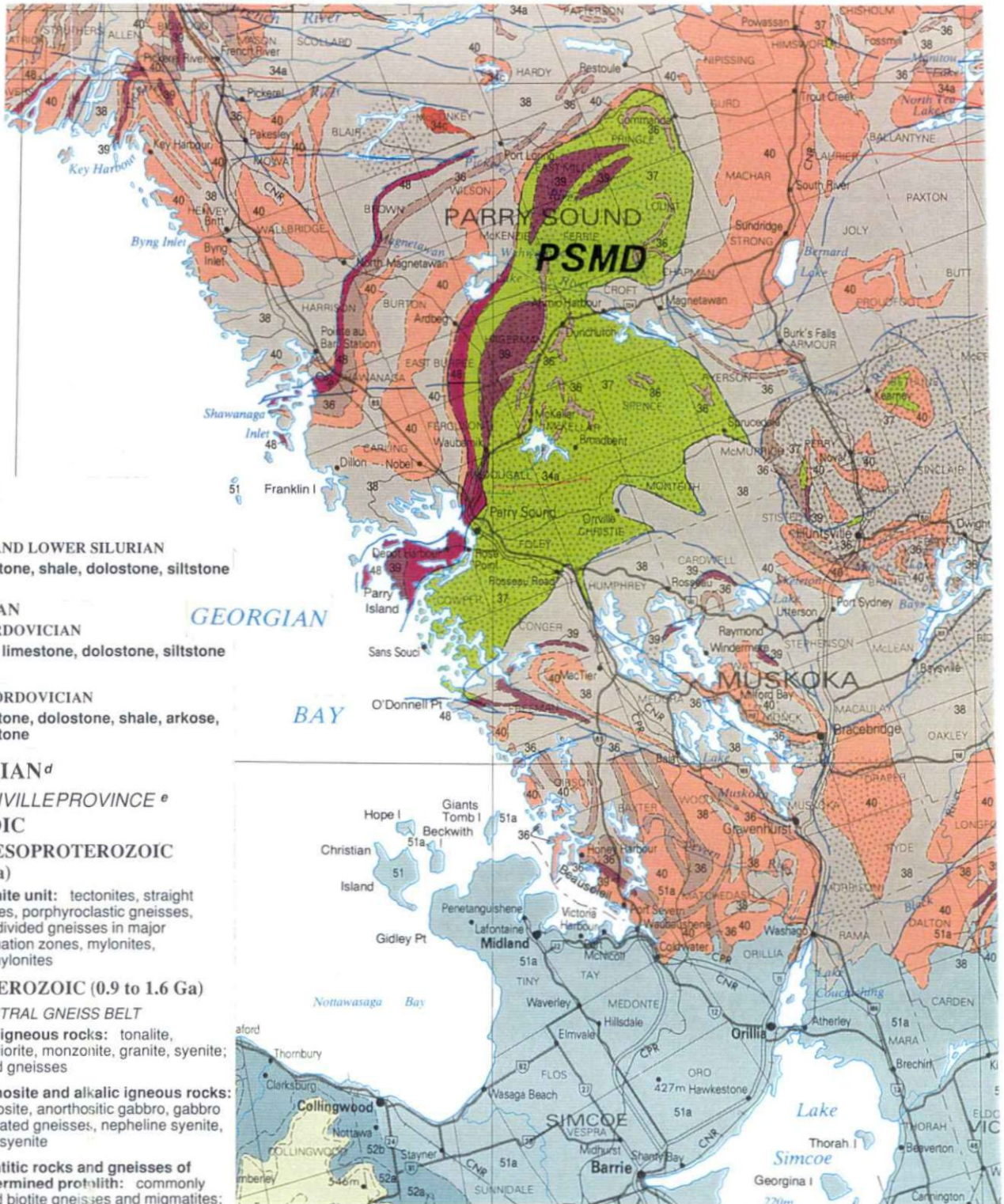


Figure 2
LOCATION and ACCESS
MINING CLAIM 1077361
(Main Survey Area)
and Location of Orientation Surveys
 Scale - 1:20,000



PALEOZOIC

SILURIAN

MIDDLE AND LOWER SILURIAN

53 Sandstone, shale, dolostone, siltstone

ORDOVICIAN

UPPER ORDOVICIAN

52 Shale, limestone, dolostone, siltstone

MIDDLE ORDOVICIAN

51 Limestone, dolostone, shale, arkose, sandstone

PRECAMBRIAN^d

GRENVILLE PROVINCE^e

PROTEROZOIC

NEO- TO MESOPROTEROZOIC (0.57 to 1.6 Ga)

48 Tectonite unit: tectonites, straight gneisses, porphyroclastic gneisses, unsubdivided gneisses in major deformation zones, mylonites, protomylonites

MESOPROTEROZOIC (0.9 to 1.6 Ga)

CENTRAL GNEISS BELT

40 Felsic igneous rocks: tonalite, granodiorite, monzonite, granite, syenite; derived gneisses

39 Anorthosite and alkalic igneous rocks: anorthosite, anorthositic gabbro, gabbro and related gneisses, nepheline syenite, alkalic syenite

38 Migmatitic rocks and gneisses of undetermined protolith: commonly layered biotite gneisses and migmatites; locally includes quartzofeldspathic gneisses, orthogneisses, paragneisses

37 Mafic rocks: amphibolite, gabbro, diorite mafic gneisses

36 Gneisses of metasedimentary origin: quartzofeldspathic gneisses, pelitic to semi-pelitic gneisses, calc-silicate gneisses, minor quartzite, minor marble and marble breccia



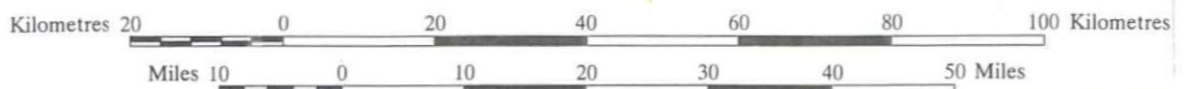
Ontario

Ministry of Northern Development and Mines



MAP 2544

Scale 1:1 000 000



published 1991

Figure 3



1900 Series

| Map No. | Topic | Scale | Date | Description |
|---------|--------|----------|------|-------------|
| 1955-4 | PRECAM | 1:31 680 | 1955 | Lount Tp. |

2000 Series

| Map No. | Topic | Scale | Date | Description |
|---------|--------|----------|------|--------------------|
| 2540 | PRECAM | 1:20 000 | 1990 | Whitestone L. area |

P Series

| Map No. | Topic | Scale | Date | Description |
|---------|--------|----------|------|----------------|
| P.3123 | PRECAM | 1:15 840 | 1988 | Ferrie R. area |

Ontario Geological Survey

**INDEX TO MAPS
BEDROCK GEOLOGY
1891-1991**

Scale 1:1 000 000

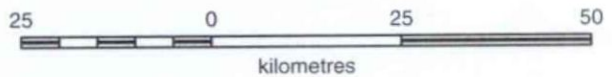


Figure 4

PREVIOUS WORK and LOCAL MINERAL OCCURRENCES

References to the mineral occurrences in the vicinity of the properties are found in MNDM assessment files and in Satterly, 1955 (with Map No. 1955-4). An examination of government assessment records was carried out using the ERLIS facilities at the OGS's public information office located in the MacDonald Block, Queens Park, Toronto. This examination was sufficient to ascertain that only a very minimal amount of exploration has been conducted in the project area, most of which was not recently done. There is no record of any work having ever been carried out on or immediately adjacent to the North Block Property (Claim Block SO 1077361).

An airborne magnetometer survey was flown in the 1950's by an iron ore company, along the Rosseau-Nipissing road allowance in Lount Township, presumably to follow-up on the iron potential discussed by Satterly, 1955. Some drilling was done on magnetite occurrences as a follow-up to that survey. Other unrecorded work in the form of pit or shaft blasting and some drilling are indicated in Satterly's report and shown on Map 1955-4. Satterly believed that the majority of old pits were blasted in error on a locally abundant massive red garnet rock, which was mistaken for magnetite.

Ground geophysics, geochemical surveys, geological surveys, and some diamond drilling were reported for several lots (claims) in southwestern Lount Township, covering the documented Cu-Ni occurrences and limestone prospects. All of the drilling reported in the area encountered varying concentrations of sulphide mineralization (in some cases massive, over narrow intervals) including py, po, cpy and, in some cases, pentlandite, in a variety of rock types including gabbro. The local occurrences described by Satterly are uneconomic, but are of interest in that they indicate that sulphides, sometimes containing nickel and copper, occur in, or in proximity to gabbroic rocks, locally in the project area. Satterly stated that the Cu-Ni occurrences fall into two groups; (1) as disseminations within mafic gneisses, and (2) as a garnet skarn at the contact between limestone and mafic gneisses.

The S.½ of Lot 27, Conc. III, Lount Township is the location of several pits blasted into a nickel and copper showing consisting of massive to semi-massive po and py. Occurring in amphibolite at the edge of a hybrid granite gneiss unit, its location is shown on Satterly's map (1955-4) by only a pit symbol. Subsequently, in 1992, P. McLean (OPAP File # OP92-245) carried out geological and geophysical work on this showing, which he interpreted to be a nickeliferous, peridotite "plug". McLean observed pentlandite in the showing and obtained a grab sample that assayed 0.12% Ni. He concluded that the showing was small and of "academic interest only". In April 1998, this showing was staked (SO 1077362 – the South Claim) by William Vandevalk (Figure 2) after a visit in March during which 5 rock samples, that yielded analyses of up to 0.21% Ni and 0.10% Cu, were obtained from the rubble dump (Vandevalk, November 1998).

ORIENTATION SOIL GEOCHEMICAL AND MAGNETOMETER SURVEYS

The previously mentioned, ultramafic-hosted Ni-Cu showing on the South Claim (SO 1077362) was chosen as the site for orientation soil geochemical and magnetometer surveys (Figure 2). These surveys were designed to provide a basis for comparison of the results for the main exploration program on the North Block (SO 1077361).

A small grid, with line spacing of 50 metres, was established on the South Claim, over the site of the pit exposures of the known showing (Figure 5). Line 0 was established directly adjacent to the main pit, at right angles to the strike of a prominent ridge, inferred to represent the strike of the local lithologies. A baseline and 4 additional lines were established in relation to Line 0 (Figure 6a).

Twenty-one B-Horizon soil samples were collected at 25 metre (or less) intervals along the grid lines. Twenty magnetometer readings were taken at the same stations as the soil sampling. Procedures for both orientation surveys were the same as those for the main survey area and are explained in the following sections of text relating to those surveys. The results of the orientation surveys are shown in Table 1 and on Figures 6a and 6b.

ESTABLISHING THE MAIN SURVEY GRID

A baseline was established along the western boundary of the North Block (at 339° azimuth). Distances were measured using a "hip-chain" (string) distance meter. The line was generously flagged with fluorescent orange flagging tape and 50 metre stations were marked with blue flagging tape. Gridlines, spaced 100 metres apart, were established by compass at 69° azimuth, east of the baseline and marked in the same manner as the baseline. This process was complicated by the presence of highly magnetic bedrock units, which caused severe compass deviations over short distances. Compass readings were frequently unreliable and lines had to be established by sight where bush conditions allowed. In areas of dense bush, uniform line spacing was impossible to maintain.

Another minor complicating factor was a vibrant moose and deer population that mistook our flagging tape for something that might taste good. Apparently, blue flagging tape looks more appetizing to moose or deer, as it was preferred over fluorescent orange. While carrying out the subsequent surveys, our chewed up flagging for a number of stations was found on the ground, a short distance from the original station locations.

Forest composition and topographic observations were recorded during grid establishment. General areas of outcrop exposure, and specific outcrops were also noted. These observations were plotted at a scale of 1:5,000 and incorporated into a detailed property base map (Figure 7). A total of 17.7 line kilometres of grid were established as control for the soil geochemical and magnetometer surveys. An additional 0.9 line kilometer of grid, at 50 metre spacing between previously established lines, was required for follow-up sampling. Results of the soil geochemical and magnetometer surveys were plotted on simplified versions of the base map.

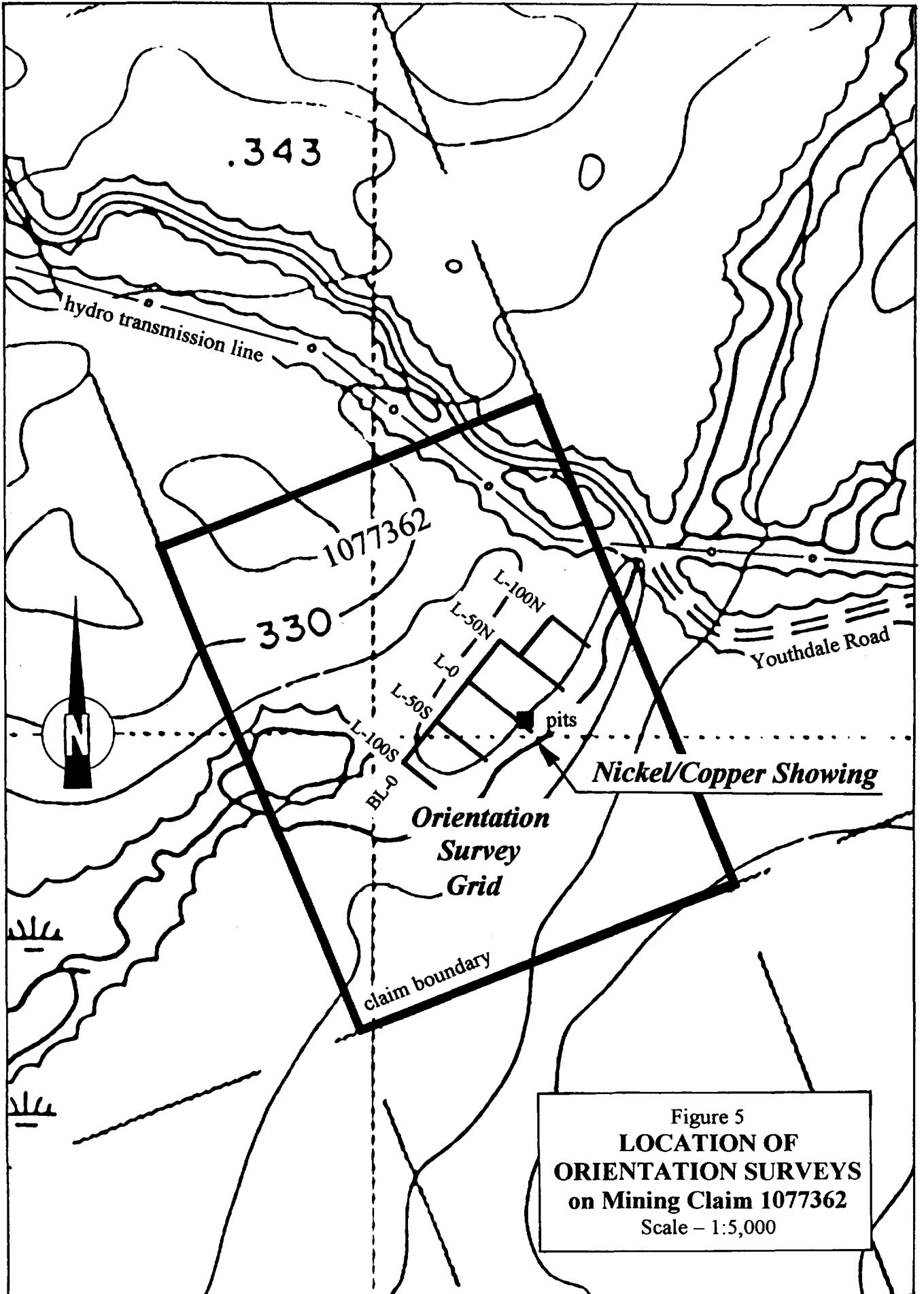
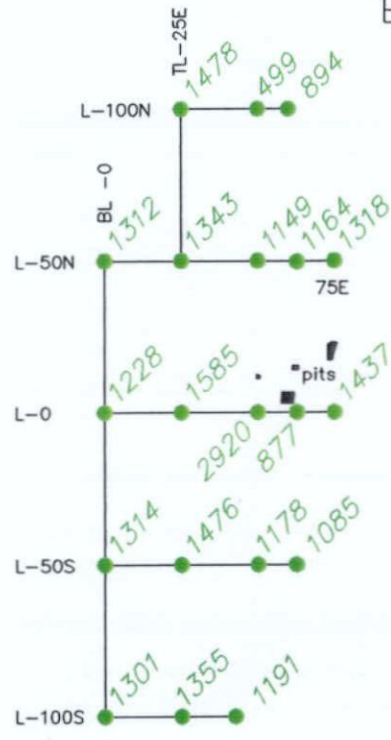
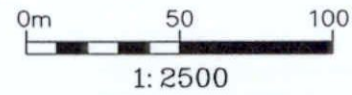
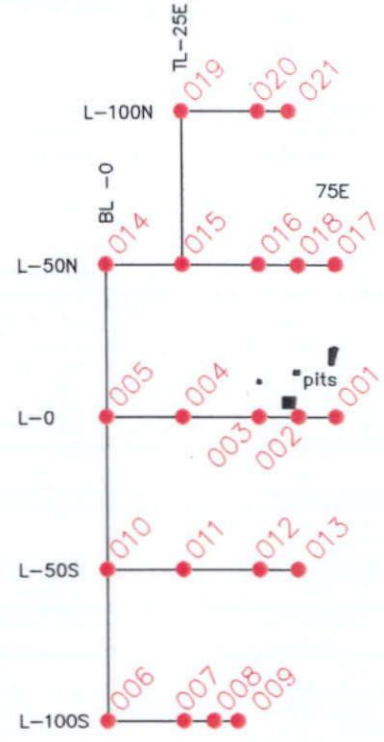
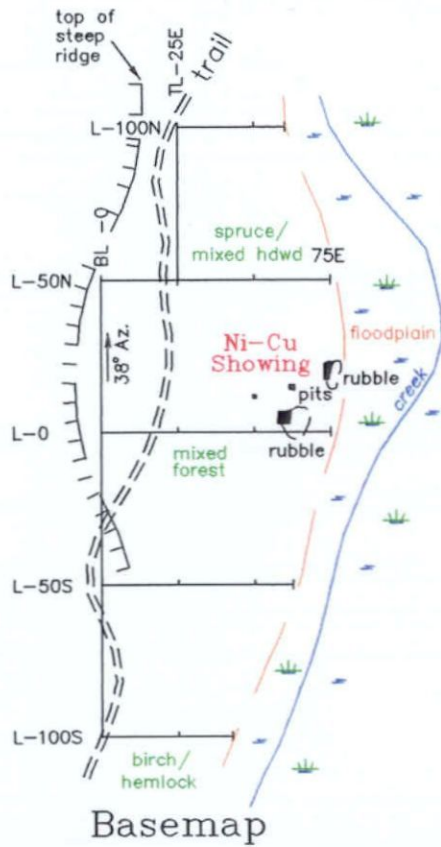


Figure 5
**LOCATION OF
ORIENTATION SURVEYS**
on Mining Claim 1077362
Scale - 1:5,000



Base Value = 56,000 nT

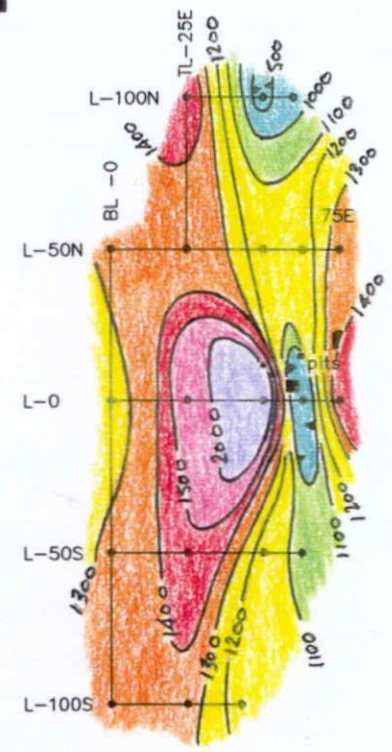
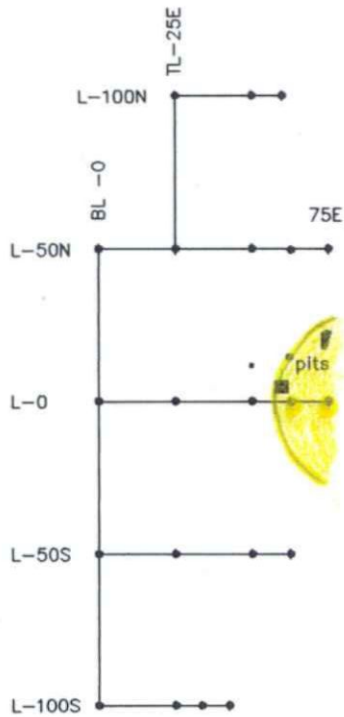
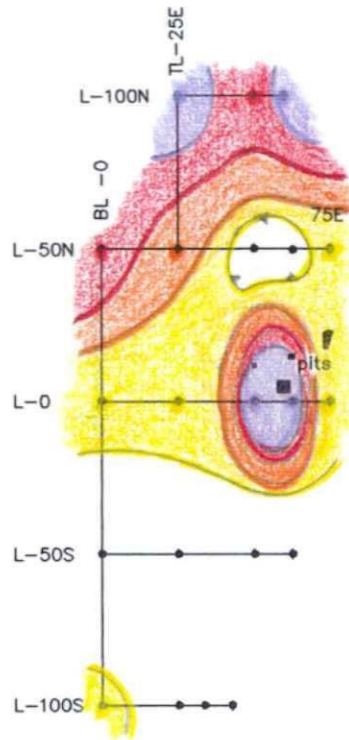


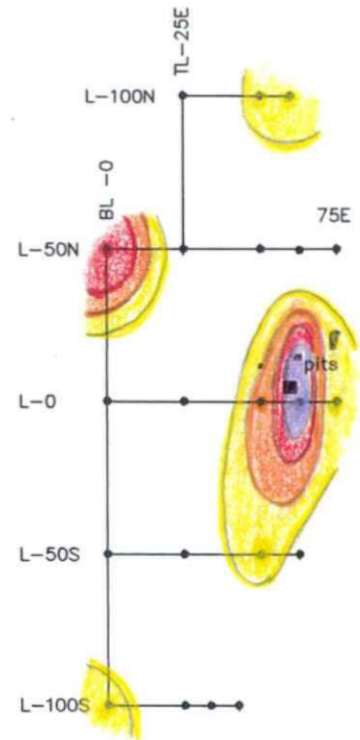
Figure 6a
ORIENTATION SURVEYS



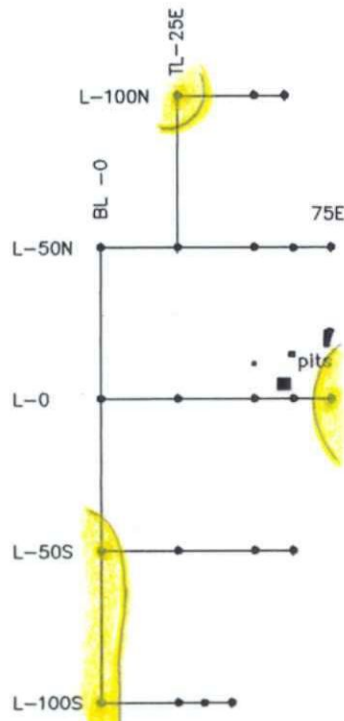
Nickel in Soil



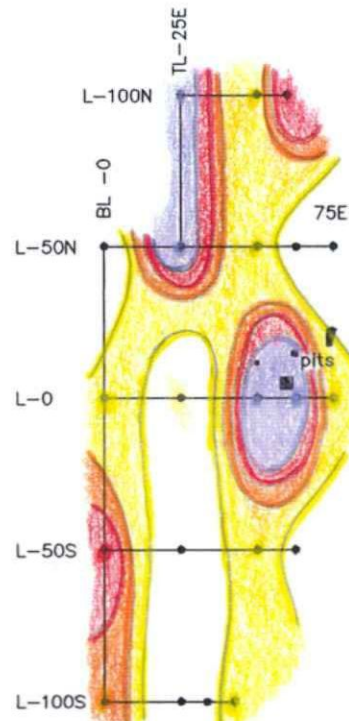
Copper in Soil



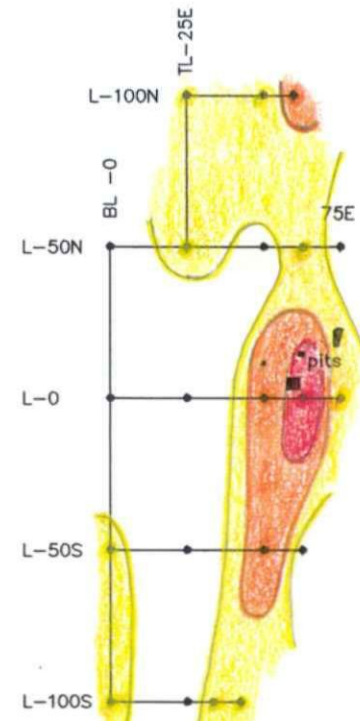
Cobalt in Soil



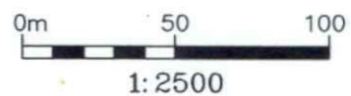
Chromium in Soil



Iron in Soil



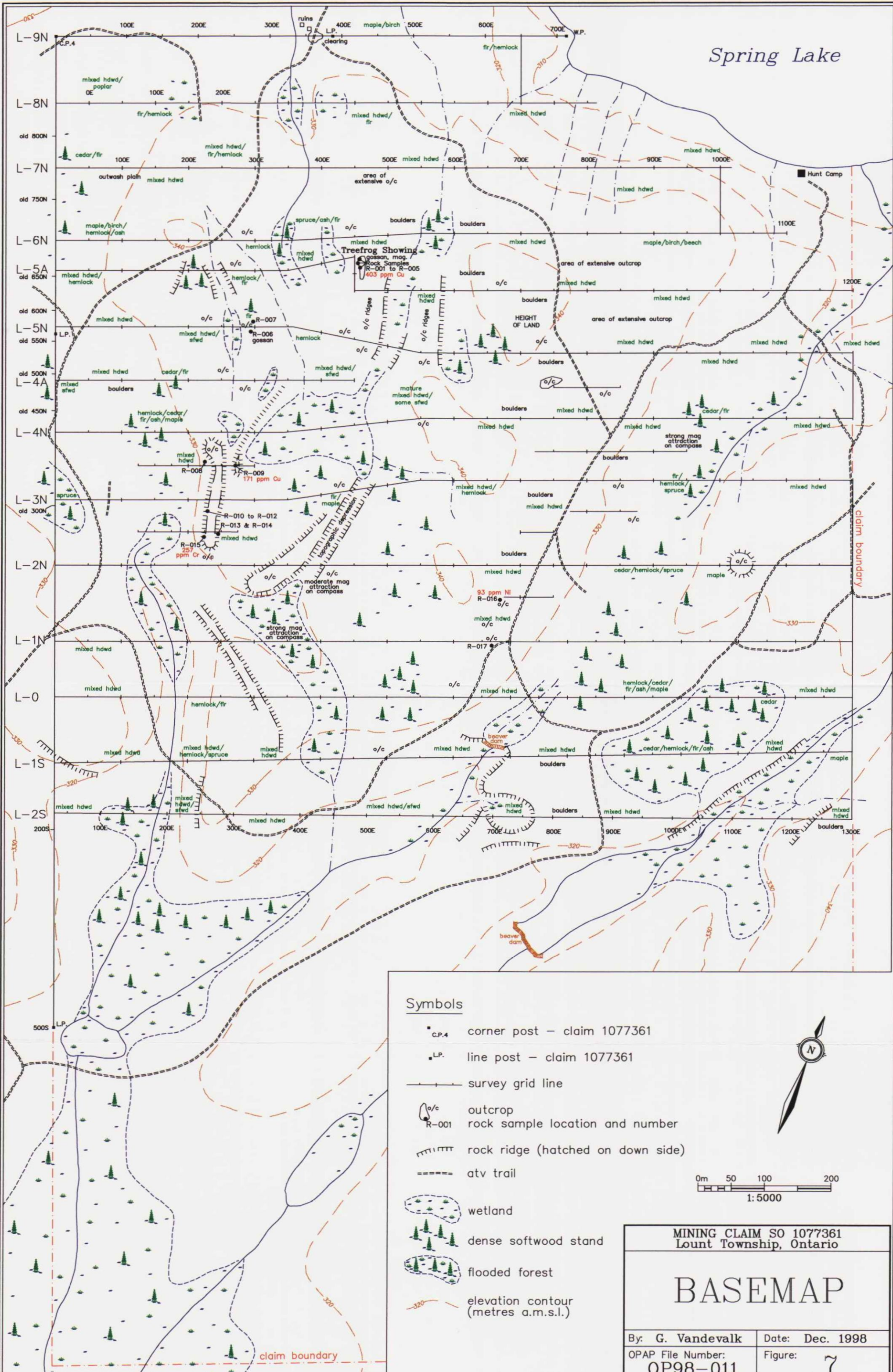
Manganese in Soil



See Figures 8b to 8g for explanation of soil geochemical thresholds for each element.

Figure 6b
ORIENTATION SURVEYS

Spring Lake



Symbols

- C.P.4 corner post – claim 1077361
- L.P. line post – claim 1077361
- survey grid line
- o/c outcrop
- R-001 rock sample location and number
- rock ridge (hatched on down side)
- atv trail
- wetland
- dense softwood stand
- flooded forest
- elevation contour (metres a.m.s.l.)

0m 50 100 200
1:5000

MINING CLAIM SO 1077361
Lount Township, Ontario

BASEMAP

| | |
|-------------------------------|-----------------|
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 7 |

SOIL GEOCHEMICAL SURVEY

The Summer 1998 soil geochemical survey commenced in August and was continued throughout the remainder of the summer and early autumn during weekend field trips to the property. B-horizon soil samples were collected following the field procedures outlined in *Levinson, 1974 (Introduction to Exploration Geochemistry, p. 11-14 and p. 227-231)*. A grub hoe was used to expose the B soil horizon by removing organic material, the A soil horizon, small tree roots and leached soil zones where present. Once the B-horizon was exposed, a painted steel garden trowel was used to scoop the samples into standard, kraft-paper soil bags. Organic matter (twigs and small roots) and pebbles were manually removed from the samples prior to their placement into the bags. In addition to the 21 orientation survey samples, 299 B-horizon soil samples were collected during the initial phase of the program. Based on encouraging initial results, a further 57 follow-up B-horizon soil samples were collected in two areas. Sample locations are shown on Figure 8a, at a scale of 1:5,000.

The samples were delivered to XRAL Laboratories in Toronto after each sample collection field trip. They were sieved to -80 mesh and analyzed, using the ICP scan method, for 31 elements, including Ni, Cu, Co, Cr, Mn and Fe. Complete analytical results for all soil samples collected during the 1998 program are provided in Appendix I. Table 1 is a summary, by sample number, of geochemical data used to interpret the results of the soil-sampling program.

Initial results were plotted at a scale of 1:5,000 as they were received in batches. Statistical analysis of the initial 299 samples (Appendix II) resulted in the determination of threshold levels that would reasonably represent the distribution of Ni, Cu, Co and Cr base metals in the B-horizon soils of the survey area. Estimation of background base metal values proved difficult, as the statistical medians (determined from both the grouped data and from the cumulative percent frequency plots) were too low, resulting in poorly defined base metal trends. The sample mean from grouped data was, in general, too close to the 70th percentile to be an accurate estimation of background. The background ranges for base metals were therefore left undefined in favour of an "elevated background" category that resulted in more discreetly defined base metal trends. The 90th, 95th and 98th percentiles were determined from the cumulative percent frequency plots to respectively represent "possibly anomalous", "anomalous" and "highly anomalous" ranges of base metal concentrations in B-horizon soils. The results for nickel, copper, cobalt and chromium are shown in Table 1 (by sample number) and on Figures 8b to 8e.

It is well documented that manganese and iron may act as base metal scavenging elements and that their concentrated presence in soil can result in spurious anomalies. The interpretation of the results of any geochemical survey must consider this as a potentially complicating factor. Figures 8f and 8g show the survey results for Mn and Fe in B-horizon soils. For comparative purposes, the raw nickel and copper data were filtered for Mn and Fe using the formula: $Ni / (0.01 \times Mn + Fe)$ for nickel, and: $Cu / (0.01 \times Mn + Fe)$ for copper. The results for Mn/Fe filtered Ni and Cu are shown in Table 1 and on Figures 8h and 8i.

TABLE 1
Analytical Results for B Horizon Soil Samples

Thresholds

| | | | | | | | | |
|------------|----------|-----------|---------|------------|-------|---------|-------|-----------|
| 70th %-ile | 163-485 | 3.42-4.16 | 123-272 | 31.8-60.1 | 15-24 | 60-93 | 27-46 | 5.3-10.1 |
| 90th %-ile | 486-973 | 4.17-4.66 | 273-346 | 60.2-80.4 | 25-28 | 94-108 | 47-55 | 10.2-14.4 |
| 95th %-ile | 974-1613 | 4.67-5.32 | 347-397 | 80.5-122.0 | 29-41 | 109-129 | 56-63 | 14.5-20.1 |
| 98th %-ile | >1613 | >5.32 | >397 | >122.0 | >41 | > 129 | >63 | >20.1 |

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-301 | 512 | 3.00 | 16 | 14.4 | 8 | 24 | 2 | 1.8 |
| SO98-302 | 705 | 0.89 | 11 | 10.6 | 7 | 22 | 1 | 1.3 |
| SO98-303 | 122 | 2.24 | 37 | 10.0 | 8 | 39 | 11 | 2.9 |
| SO98-304 | 95 | 1.79 | 135 | 54.7 | 13 | 45 | 49 | 20.0 |
| SO98-305 | 643 | 3.82 | 277 | 113.0 | 34 | 103 | 27 | 11.0 |
| SO98-306 | 145 | 3.66 | 191 | 40.7 | 16 | 118 | 37 | 8.0 |
| SO98-307 | 384 | 2.33 | 247 | 22.2 | 24 | 92 | 40 | 3.6 |
| SO98-308 | 201 | 3.43 | 104 | 37.2 | 14 | 83 | 19 | 6.8 |
| SO98-309 | 511 | 3.76 | 344 | 40.5 | 28 | 133 | 39 | 4.6 |
| SO98-310 | 161 | 2.77 | 114 | 31.6 | 12 | 60 | 26 | 7.2 |
| SO98-311 | 87 | 4.37 | 83 | 34.5 | 10 | 64 | 16 | 6.6 |
| SO98-312 | 105 | 3.26 | 122 | 24.9 | 11 | 68 | 28 | 5.8 |
| SO98-313 | 96 | 3.74 | 102 | 26.0 | 13 | 58 | 22 | 5.5 |
| SO98-314 | 1570 | 2.26 | 375 | 82.8 | 97 | 63 | 21 | 4.6 |
| SO98-315 | 168 | 2.38 | 103 | 36.0 | 12 | 49 | 25 | 8.9 |
| SO98-316 | 3130 | 3.23 | 295 | 95.4 | 42 | 106 | 9 | 2.8 |
| SO98-317 | 2020 | 2.99 | 412 | 47.2 | 30 | 105 | 18 | 2.0 |
| SO98-318 | 174 | 1.67 | 178 | 22.6 | 9 | 64 | 52 | 6.6 |
| SO98-319 | 28 | 0.68 | 24 | 3.8 | 3 | 50 | 25 | 4.0 |
| SO98-320 | 76 | 2.70 | 46 | 10.1 | 7 | 33 | 13 | 2.9 |
| SO98-321 | 297 | 1.11 | 11 | 8.9 | 8 | 21 | 3 | 2.2 |
| SO98-322 | 87 | 2.95 | 22 | 5.2 | 4 | 28 | 6 | 1.4 |
| SO98-323 | 175 | 1.83 | 32 | 6.1 | 5 | 30 | 9 | 1.7 |
| SO98-324 | 715 | 1.21 | 22 | 7.7 | 4 | 19 | 3 | 0.9 |
| SO98-325 | 184 | 2.84 | 25 | 5.0 | 4 | 28 | 5 | 1.1 |
| SO98-326 | 1100 | 3.44 | 62 | 67.9 | 19 | 23 | 4 | 4.7 |
| SO98-327 | 272 | 1.93 | 15 | 5.5 | 3 | 27 | 3 | 1.2 |
| SO98-328 | 116 | 1.71 | 16 | 5.3 | 3 | 31 | 6 | 1.8 |
| SO98-329 | 1120 | 3.23 | 58 | 64.0 | 17 | 23 | 4 | 4.4 |
| SO98-330 | 108 | 1.02 | 42 | 9.4 | 4 | 23 | 20 | 4.5 |
| SO98-331 | 106 | 2.31 | 15 | 5.5 | 3 | 32 | 4 | 1.6 |
| SO98-332 | 72 | 2.61 | 63 | 19.3 | 7 | 51 | 19 | 5.8 |
| SO98-333 | 15 | 0.57 | 10 | 1.4 | 2 | 11 | 14 | 1.9 |
| SO98-334 | 49 | 2.84 | 27 | 4.1 | 4 | 39 | 8 | 1.2 |
| SO98-335 | 135 | 4.06 | 65 | 8.6 | 8 | 57 | 12 | 1.6 |
| SO98-336 | 636 | 3.71 | 42 | 34.3 | 12 | 25 | 4 | 3.4 |
| SO98-337 | 179 | 3.37 | 26 | 28.5 | 8 | 26 | 5 | 5.5 |
| SO98-338 | 877 | 2.80 | 336 | 126.0 | 37 | 52 | 29 | 10.9 |
| SO98-339 | 32 | 3.05 | 16 | 17.8 | 6 | 41 | 5 | 5.3 |
| SO98-340 | 273 | 4.14 | 19 | 71.8 | 19 | 4 | 3 | 10.5 |
| SO98-341 | 178 | 3.18 | 227 | 51.4 | 20 | 78 | 46 | 10.4 |
| SO98-342 | 61 | 4.85 | 69 | 14.8 | 9 | 57 | 13 | 2.7 |
| SO98-343 | 30 | 3.81 | 13 | 13.4 | 3 | 38 | 3 | 3.3 |
| SO98-344 | 136 | 3.84 | 188 | 26.0 | 18 | 102 | 36 | 5.0 |
| SO98-345 | 114 | 1.47 | 62 | 7.1 | 7 | 43 | 24 | 2.7 |
| SO98-346 | 43 | 2.33 | 49 | 3.4 | 6 | 30 | 18 | 1.2 |

TABLE 1
Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-347 | 94 | 2.53 | 90 | 10.8 | 10 | 60 | 26 | 3.1 |
| SO98-348 | 82 | 2.57 | 64 | 9.9 | 8 | 58 | 19 | 2.9 |
| SO98-349 | 117 | 3.44 | 73 | 23.4 | 11 | 48 | 16 | 5.1 |
| SO98-350 | 401 | 3.14 | 61 | 31.7 | 10 | 54 | 9 | 4.4 |
| SO98-351 | 395 | 3.42 | 415 | 34.9 | 37 | 116 | 56 | 4.7 |
| SO98-352 | 193 | 2.55 | 78 | 15.0 | 9 | 47 | 17 | 3.3 |
| SO98-353 | 385 | 4.20 | 437 | 24.5 | 44 | 103 | 54 | 3.0 |
| SO98-354 | 117 | 2.53 | 194 | 5.1 | 14 | 50 | 52 | 1.4 |
| SO98-355 | 88 | 1.11 | 54 | 3.4 | 4 | 35 | 27 | 1.7 |
| SO98-356 | 128 | 2.41 | 79 | 6.4 | 9 | 44 | 21 | 1.7 |
| SO98-357 | 96 | 2.39 | 138 | 12.7 | 15 | 65 | 41 | 3.8 |
| SO98-358 | 123 | 2.08 | 132 | 5.0 | 12 | 46 | 40 | 1.5 |
| SO98-359 | 305 | 3.34 | 394 | 45.3 | 35 | 136 | 62 | 7.1 |
| SO98-360 | 93 | 2.26 | 147 | 4.6 | 12 | 47 | 46 | 1.4 |
| SO98-361 | 179 | 2.41 | 221 | 12.3 | 20 | 66 | 53 | 2.9 |
| SO98-362 | 181 | 3.05 | 213 | 26.5 | 20 | 67 | 44 | 5.5 |
| SO98-363 | 207 | 2.71 | 229 | 41.3 | 18 | 64 | 48 | 8.6 |
| SO98-364 | 119 | 3.01 | 181 | 14.8 | 20 | 66 | 43 | 3.5 |
| SO98-365 | 127 | 4.00 | 367 | 28.5 | 27 | 102 | 70 | 5.4 |
| SO98-366 | 62 | 4.81 | 28 | 52.7 | 12 | 22 | 5 | 9.7 |
| SO98-367 | 43 | 4.23 | 16 | 16.0 | 5 | 22 | 3 | 3.4 |
| SO98-368 | 90 | 3.54 | 185 | 96.1 | 21 | 75 | 42 | 21.6 |
| SO98-369 | 79 | 3.48 | 93 | 23.4 | 8 | 52 | 22 | 5.5 |
| SO98-370 | 211 | 1.84 | 56 | 20.1 | 11 | 35 | 14 | 5.1 |
| SO98-371 | 29 | 1.31 | 26 | 3.8 | 3 | 24 | 16 | 2.4 |
| SO98-372 | 141 | 2.60 | 56 | 5.6 | 7 | 40 | 14 | 1.4 |
| SO98-373 | 242 | 2.87 | 173 | 11.8 | 23 | 59 | 33 | 2.2 |
| SO98-374 | 43 | 2.16 | 63 | 7.3 | 7 | 36 | 24 | 2.8 |
| SO98-375 | 56 | 0.87 | 72 | 4.9 | 7 | 32 | 50 | 3.4 |
| SO98-376 | 145 | 2.75 | 92 | 44.2 | 12 | 48 | 22 | 10.5 |
| SO98-377 | 117 | 2.10 | 128 | 51.3 | 18 | 32 | 39 | 15.7 |
| SO98-378 | 57 | 4.33 | 44 | 33.8 | 9 | 51 | 9 | 6.9 |
| SO98-379 | 206 | 3.10 | 355 | 30.3 | 32 | 125 | 69 | 5.9 |
| SO98-380 | 107 | 2.85 | 56 | 10.2 | 9 | 49 | 14 | 2.6 |
| SO98-381 | 221 | 3.79 | 82 | 115.0 | 23 | 46 | 14 | 19.2 |
| SO98-382 | 1010 | 4.24 | 653 | 126.0 | 45 | 144 | 46 | 8.8 |
| SO98-383 | 210 | 2.93 | 232 | 32.3 | 18 | 77 | 46 | 6.4 |
| SO98-384 | 133 | 3.00 | 288 | 29.4 | 24 | 78 | 67 | 6.8 |
| SO98-385 | 274 | 3.77 | 196 | 57.6 | 26 | 82 | 30 | 8.8 |
| SO98-386 | 229 | 4.30 | 398 | 39.5 | 26 | 136 | 60 | 6.0 |
| SO98-387 | 392 | 4.22 | 136 | 50.5 | 23 | 112 | 17 | 6.2 |
| SO98-388 | 245 | 2.06 | 153 | 30.5 | 14 | 66 | 34 | 6.8 |
| SO98-389 | 209 | 2.76 | 246 | 9.6 | 20 | 83 | 51 | 2.0 |
| SO98-390 | 203 | 1.69 | 212 | 18.5 | 11 | 88 | 57 | 5.0 |
| SO98-391 | 147 | 1.95 | 77 | 10.2 | 8 | 36 | 23 | 3.0 |
| SO98-392 | 1090 | 3.27 | 279 | 41.7 | 30 | 131 | 20 | 2.9 |
| SO98-393 | 84 | 2.63 | 32 | 6.1 | 4 | 29 | 9 | 1.8 |
| SO98-394 | 262 | 2.01 | 112 | 10.4 | 13 | 58 | 24 | 2.2 |
| SO98-395 | 724 | 4.03 | 561 | 46.3 | 48 | 154 | 50 | 4.1 |
| SO98-396 | 523 | 3.06 | 39 | 43.2 | 15 | 42 | 5 | 5.2 |
| SO98-397 | 308 | 3.03 | 72 | 55.2 | 21 | 32 | 12 | 9.0 |
| SO98-398 | 128 | 1.70 | 115 | 10.1 | 11 | 32 | 39 | 3.4 |

TABLE 1

Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-399 | 146 | 2.05 | 139 | 13.7 | 14 | 57 | 40 | 3.9 |
| SO98-400 | 195 | 3.37 | 123 | 20.1 | 14 | 64 | 23 | 3.8 |
| SO98-401 | 120 | 2.94 | 48 | 52.8 | 15 | 30 | 12 | 12.8 |
| SO98-402 | 596 | 2.93 | 90 | 129.0 | 25 | 13 | 10 | 14.5 |
| SO98-403 | 39 | 2.83 | 10 | 17.5 | 4 | 19 | 3 | 5.4 |
| SO98-404 | 756 | 6.20 | 62 | 132.0 | 29 | 54 | 5 | 9.6 |
| SO98-405 | 57 | 4.42 | 38 | 8.9 | 9 | 41 | 8 | 1.8 |
| SO98-406 | 144 | 3.15 | 40 | 15.7 | 10 | 29 | 9 | 3.4 |
| SO98-407 | 89 | 3.84 | 149 | 19.9 | 18 | 100 | 32 | 4.2 |
| SO98-408 | 89 | 4.12 | 68 | 26.2 | 16 | 82 | 14 | 5.2 |
| SO98-409 | 91 | 3.84 | 142 | 24.8 | 9 | 49 | 30 | 5.2 |
| SO98-410 | 22 | 1.36 | 16 | 22.0 | 7 | 17 | 10 | 13.9 |
| SO98-411 | 43 | 4.52 | 29 | 26.7 | 7 | 111 | 6 | 5.4 |
| SO98-412 | 100 | 2.42 | 130 | 140.0 | 32 | 61 | 38 | 40.9 |
| SO98-413 | 125 | 1.36 | 91 | 28.5 | 9 | 33 | 35 | 10.9 |
| SO98-414 | 744 | 2.81 | 166 | 43.9 | 46 | 91 | 16 | 4.3 |
| SO98-415 | 1230 | 2.51 | 43 | 25.3 | 31 | 61 | 3 | 1.7 |
| SO98-416 | 87 | 2.16 | 197 | 49.4 | 17 | 49 | 65 | 16.3 |
| SO98-417 | 268 | 2.92 | 213 | 52.8 | 24 | 56 | 38 | 9.4 |
| SO98-418 | 123 | 2.36 | 224 | 19.5 | 26 | 68 | 62 | 5.4 |
| SO98-419 | 139 | 1.50 | 121 | 8.3 | 11 | 32 | 42 | 2.9 |
| SO98-420 | 57 | 1.62 | 40 | 3.5 | 5 | 22 | 18 | 1.6 |
| SO98-421 | 52 | 2.68 | 77 | 15.7 | 7 | 49 | 24 | 4.9 |
| SO98-422 | 90 | 1.77 | 68 | 6.4 | 7 | 41 | 25 | 2.4 |
| SO98-423 | 97 | 2.71 | 192 | 26.1 | 16 | 92 | 52 | 7.1 |
| SO98-424 | 234 | 3.02 | 366 | 57.6 | 23 | 93 | 68 | 10.7 |
| SO98-425 | 146 | 2.81 | 98 | 10.3 | 15 | 56 | 23 | 2.4 |
| SO98-426 | 197 | 5.59 | 393 | 150.0 | 22 | 116 | 52 | 19.8 |
| SO98-427 | 84 | 5.07 | 72 | 33.8 | 17 | 82 | 12 | 5.7 |
| SO98-428 | 116 | 2.33 | 122 | 45.5 | 23 | 61 | 35 | 13.0 |
| SO98-429 | 37 | 4.06 | 7 | 21.6 | 7 | 6 | 2 | 4.9 |
| SO98-430 | 1090 | 6.19 | 16 | 18.3 | 36 | 25 | 1 | 1.1 |
| SO98-431 | 43 | 3.33 | 28 | 34.1 | 8 | 42 | 7 | 9.1 |
| SO98-432 | 42 | 3.14 | 45 | 71.6 | 10 | 38 | 13 | 20.1 |
| SO98-433 | 183 | 1.88 | 118 | 58.5 | 26 | 70 | 32 | 15.8 |
| SO98-434 | 78 | 3.47 | 81 | 23.8 | 13 | 84 | 19 | 5.6 |
| SO98-435 | 137 | 4.80 | 27 | 59.2 | 10 | 65 | 4 | 9.6 |
| SO98-436 | 225 | 4.68 | 43 | 58.6 | 13 | 45 | 6 | 8.5 |
| SO98-437 | 610 | 3.98 | 273 | 50.8 | 30 | 109 | 27 | 5.0 |
| SO98-438 | 368 | 2.98 | 386 | 40.9 | 23 | 134 | 58 | 6.1 |
| SO98-439 | 104 | 2.83 | 112 | 10.5 | 10 | 65 | 29 | 2.7 |
| SO98-440 | 800 | 3.41 | 729 | 66.9 | 43 | 182 | 64 | 5.9 |
| SO98-441 | 725 | 2.17 | 335 | 27.3 | 20 | 96 | 36 | 2.9 |
| SO98-442 | 130 | 4.26 | 164 | 6.0 | 12 | 80 | 29 | 1.1 |
| SO98-443 | 63 | 2.01 | 67 | 3.6 | 8 | 33 | 25 | 1.4 |
| SO98-444 | 56 | 1.11 | 15 | 14.8 | 4 | 18 | 9 | 8.9 |
| SO98-445 | 160 | 2.14 | 136 | 13.4 | 12 | 53 | 36 | 3.6 |
| SO98-446 | 57 | 2.46 | 39 | 6.4 | 5 | 30 | 13 | 2.1 |
| SO98-447 | 260 | 3.61 | 107 | 41.9 | 15 | 71 | 17 | 6.7 |
| SO98-448 | 296 | 2.33 | 28 | 9.3 | 4 | 51 | 5 | 1.8 |
| SO98-449 | 82 | 3.60 | 14 | 7.1 | 3 | 44 | 3 | 1.6 |
| SO98-450 | 116 | 3.27 | 23 | 11.7 | 5 | 69 | 5 | 2.6 |

TABLE 1
Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-451 | 44 | 2.98 | 9 | 3.0 | 2 | 31 | 3 | 0.9 |
| SO98-452 | 69 | 2.84 | 32 | 21.0 | 6 | 43 | 9 | 5.9 |
| SO98-453 | 36 | 2.94 | 14 | 4.4 | 0 | 44 | 4 | 1.3 |
| SO98-454 | 92 | 4.33 | 49 | 7.1 | 9 | 77 | 9 | 1.4 |
| SO98-455 | 58 | 3.64 | 13 | 11.5 | 3 | 64 | 3 | 2.7 |
| SO98-456 | 30 | 2.09 | 13 | 3.5 | 1 | 18 | 5 | 1.5 |
| SO98-457 | 166 | 4.33 | 118 | 7.3 | 11 | 71 | 20 | 1.2 |
| SO98-458 | 108 | 3.85 | 41 | 13.6 | 7 | 49 | 8 | 2.8 |
| SO98-459 | 150 | 3.08 | 27 | 30.3 | 13 | 18 | 6 | 6.6 |
| SO98-460 | 16 | 0.54 | 9 | 14.6 | 1 | 17 | 13 | 20.9 |
| SO98-461 | 79 | 4.18 | 126 | 36.9 | 14 | 77 | 25 | 7.4 |
| SO98-462 | 147 | 4.10 | 283 | 44.2 | 25 | 93 | 51 | 7.9 |
| SO98-463 | 97 | 4.16 | 94 | 31.7 | 14 | 59 | 18 | 6.2 |
| SO98-464 | 166 | 4.41 | 77 | 27.8 | 15 | 61 | 13 | 4.6 |
| SO98-465 | 191 | 4.14 | 161 | 29.3 | 14 | 81 | 27 | 4.8 |
| SO98-466 | 128 | 4.06 | 135 | 15.5 | 16 | 74 | 25 | 2.9 |
| SO98-467 | 499 | 3.29 | 71 | 47.9 | 31 | 76 | 9 | 5.8 |
| SO98-468 | 156 | 3.12 | 89 | 24.4 | 13 | 61 | 19 | 5.2 |
| SO98-469 | 203 | 3.03 | 20 | 10.3 | 8 | 29 | 4 | 2.0 |
| SO98-470 | 99 | 1.30 | 12 | 10.9 | 4 | 22 | 5 | 4.8 |
| SO98-471 | 52 | 2.56 | 60 | 3.4 | 6 | 38 | 19 | 1.1 |
| SO98-472 | 85 | 2.94 | 89 | 16.9 | 10 | 51 | 23 | 4.5 |
| SO98-473 | 137 | 2.22 | 28 | 19.5 | 9 | 42 | 8 | 5.4 |
| SO98-474 | 85 | 4.15 | 60 | 47.9 | 20 | 67 | 12 | 9.6 |
| SO98-475 | 117 | 3.13 | 167 | 24.0 | 18 | 67 | 39 | 5.6 |
| SO98-476 | 51 | 2.25 | 43 | 74.9 | 9 | 20 | 16 | 27.1 |
| SO98-477 | 40 | 3.38 | 56 | 40.1 | 15 | 61 | 15 | 10.6 |
| SO98-478 | 72 | 1.56 | 47 | 48.5 | 9 | 28 | 21 | 21.3 |
| SO98-479 | 81 | 2.66 | 152 | 8.4 | 26 | 427 | 44 | 2.4 |
| SO98-480 | 95 | 3.96 | 12 | 30.1 | 7 | 14 | 2 | 6.1 |
| SO98-481 | 70 | 1.34 | 31 | 28.5 | 7 | 35 | 15 | 14.0 |
| SO98-482 | 380 | 3.86 | 301 | 93.8 | 19 | 67 | 39 | 12.2 |
| SO98-483 | 137 | 3.71 | 148 | 24.6 | 12 | 72 | 29 | 4.8 |
| SO98-484 | 167 | 3.49 | 105 | 10.2 | 11 | 59 | 20 | 2.0 |
| SO98-485 | 1090 | 5.91 | 959 | 159.0 | 72 | 345 | 57 | 9.5 |
| SO98-486 | 324 | 4.57 | 235 | 22.3 | 27 | 112 | 30 | 2.9 |
| SO98-487 | 220 | 2.87 | 319 | 39.3 | 22 | 89 | 63 | 7.8 |
| SO98-488 | 1310 | 3.03 | 391 | 34.5 | 31 | 107 | 24 | 2.1 |
| SO98-489 | 242 | 2.99 | 319 | 11.4 | 22 | 105 | 59 | 2.1 |
| SO98-490 | 247 | 2.76 | 340 | 14.7 | 30 | 109 | 65 | 2.8 |
| SO98-491 | 382 | 4.26 | 288 | 9.7 | 27 | 129 | 36 | 1.2 |
| SO98-492 | 261 | 1.82 | 128 | 11.5 | 14 | 63 | 29 | 2.6 |
| SO98-493 | 62 | 1.74 | 66 | 3.9 | 5 | 24 | 28 | 1.7 |
| SO98-494 | 146 | 3.90 | 200 | 7.8 | 16 | 91 | 37 | 1.5 |
| SO98-495 | 209 | 3.76 | 397 | 42.1 | 28 | 167 | 68 | 7.2 |
| SO98-496 | 269 | 3.81 | 332 | 14.3 | 27 | 109 | 51 | 2.2 |
| SO98-497 | 110 | 1.29 | 85 | 5.6 | 4 | 39 | 36 | 2.3 |
| SO98-498 | 102 | 2.82 | 87 | 4.9 | 8 | 47 | 23 | 1.3 |
| SO98-499 | 138 | 3.39 | 217 | 25.6 | 16 | 88 | 45 | 5.4 |
| SO98-500 | 430 | 3.19 | 170 | 35.6 | 16 | 75 | 23 | 4.8 |
| SO98-501 | 503 | 4.23 | 150 | 40.1 | 19 | 96 | 16 | 4.3 |
| SO98-502 | 283 | 4.02 | 98 | 18.2 | 15 | 97 | 14 | 2.7 |

TABLE 1
Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-503 | 205 | 2.46 | 135 | 17.4 | 13 | 42 | 30 | 3.9 |
| SO98-504 | 658 | 1.43 | 7 | 9.7 | 11 | 11 | 1 | 1.2 |
| SO98-505 | 149 | 3.03 | 67 | 75.3 | 19 | 17 | 15 | 16.7 |
| SO98-506 | 59 | 3.48 | 17 | 14.3 | 6 | 17 | 4 | 3.5 |
| SO98-507 | 86 | 4.24 | 39 | 15.3 | 5 | 53 | 8 | 3.0 |
| SO98-508 | 49 | 3.29 | 5 | 19.7 | 7 | 5 | 1 | 5.2 |
| SO98-509 | 31 | 3.19 | 11 | 9.4 | 5 | 32 | 3 | 2.7 |
| SO98-510 | 100 | 4.23 | 33 | 32.1 | 12 | 42 | 6 | 6.1 |
| SO98-511 | 3230 | 3.57 | 409 | 173.0 | 51 | 124 | 11 | 4.8 |
| SO98-512 | 32 | 1.07 | 7 | 13.2 | 3 | 6 | 5 | 9.5 |
| SO98-513 | 189 | 3.21 | 11 | 15.2 | 3 | 19 | 2 | 3.0 |
| SO98-514 | 1720 | 4.04 | 248 | 74.9 | 21 | 61 | 12 | 3.5 |
| SO98-515 | 149 | 4.13 | 124 | 31.1 | 13 | 69 | 22 | 5.5 |
| SO98-516 | 180 | 3.33 | 118 | 41.9 | 15 | 41 | 23 | 8.2 |
| SO98-517 | 286 | 2.02 | 109 | 6.0 | 8 | 35 | 22 | 1.2 |
| SO98-518 | 38 | 2.12 | 17 | 2.7 | 2 | 21 | 7 | 1.1 |
| SO98-519 | 31 | 0.88 | 22 | 3.3 | 2 | 22 | 18 | 2.8 |
| SO98-520 | 78 | 2.40 | 108 | 6.0 | 6 | 45 | 34 | 1.9 |
| SO98-521 | 109 | 2.21 | 107 | 21.6 | 12 | 31 | 32 | 6.5 |
| SO98-522 | 79 | 1.72 | 137 | 71.7 | 13 | 31 | 55 | 28.6 |
| SO98-523 | 46 | 2.38 | 10 | 28.8 | 2 | 18 | 4 | 10.1 |
| SO98-524 | 34 | 3.99 | 68 | 23.8 | 13 | 65 | 16 | 5.5 |
| SO98-525 | 242 | 4.44 | 112 | 16.6 | 14 | 55 | 16 | 2.4 |
| SO98-526 | 70 | 2.95 | 87 | 25.8 | 23 | 28 | 24 | 7.1 |
| SO98-527 | 106 | 3.95 | 111 | 71.8 | 20 | 69 | 22 | 14.3 |
| SO98-528 | 103 | 3.49 | 19 | 57.8 | 11 | 9 | 4 | 12.8 |
| SO98-529 | 88 | 4.91 | 68 | 58.7 | 22 | 53 | 12 | 10.1 |
| SO98-530 | 112 | 3.16 | 72 | 20.3 | 7 | 55 | 17 | 4.7 |
| SO98-531 | 1050 | 4.79 | 61 | 57.6 | 26 | 31 | 4 | 3.8 |
| SO98-532 | 44 | 3.88 | 7 | 19.3 | 3 | 28 | 2 | 4.5 |
| SO98-533 | 61 | 2.31 | 15 | 24.9 | 4 | 18 | 5 | 8.5 |
| SO98-534 | 67 | 1.98 | 12 | 22.1 | 3 | 15 | 5 | 8.3 |
| SO98-535 | 70 | 2.41 | 55 | 93.5 | 17 | 6 | 18 | 30.1 |
| SO98-536 | 200 | 3.19 | 216 | 50.1 | 23 | 88 | 42 | 9.7 |
| SO98-537 | 351 | 3.51 | 116 | 33.7 | 16 | 67 | 17 | 4.8 |
| SO98-538 | 406 | 2.20 | 93 | 60.4 | 17 | 43 | 15 | 9.6 |
| SO98-539 | 313 | 3.85 | 249 | 35.8 | 23 | 91 | 36 | 5.1 |
| SO98-540 | 156 | 3.97 | 146 | 16.6 | 14 | 66 | 26 | 3.0 |
| SO98-541 | 417 | 3.90 | 297 | 13.0 | 28 | 106 | 37 | 1.6 |
| SO98-542 | 253 | 5.66 | 66 | 59.9 | 16 | 82 | 8 | 7.3 |
| SO98-543 | 107 | 5.17 | 22 | 15.4 | 5 | 54 | 4 | 2.5 |
| SO98-544 | 266 | 3.17 | 24 | 19.0 | 6 | 33 | 4 | 3.3 |
| SO98-545 | 379 | 3.13 | 180 | 26.7 | 17 | 77 | 26 | 3.9 |
| SO98-546 | 90 | 2.49 | 27 | 7.3 | 2 | 37 | 8 | 2.2 |
| SO98-547 | 113 | 3.45 | 28 | 22.4 | 5 | 42 | 6 | 4.9 |
| SO98-548 | 282 | 3.48 | 63 | 22.4 | 10 | 77 | 10 | 3.6 |
| SO98-549 | 566 | 3.13 | 205 | 49.8 | 20 | 72 | 23 | 5.7 |
| SO98-550 | 153 | 3.71 | 90 | 43.0 | 17 | 35 | 17 | 8.2 |
| SO98-551 | 97 | 3.99 | 87 | 53.1 | 7 | 60 | 18 | 10.7 |
| SO98-552 | 108 | 1.82 | 22 | 9.2 | 6 | 20 | 8 | 3.2 |
| SO98-553 | 339 | 2.72 | 353 | 64.1 | 18 | 93 | 58 | 10.5 |
| SO98-554 | 87 | 2.53 | 18 | 10.5 | 2 | 23 | 5 | 3.1 |

TABLE 1
Analytical Results for B Horizon Soil Samples

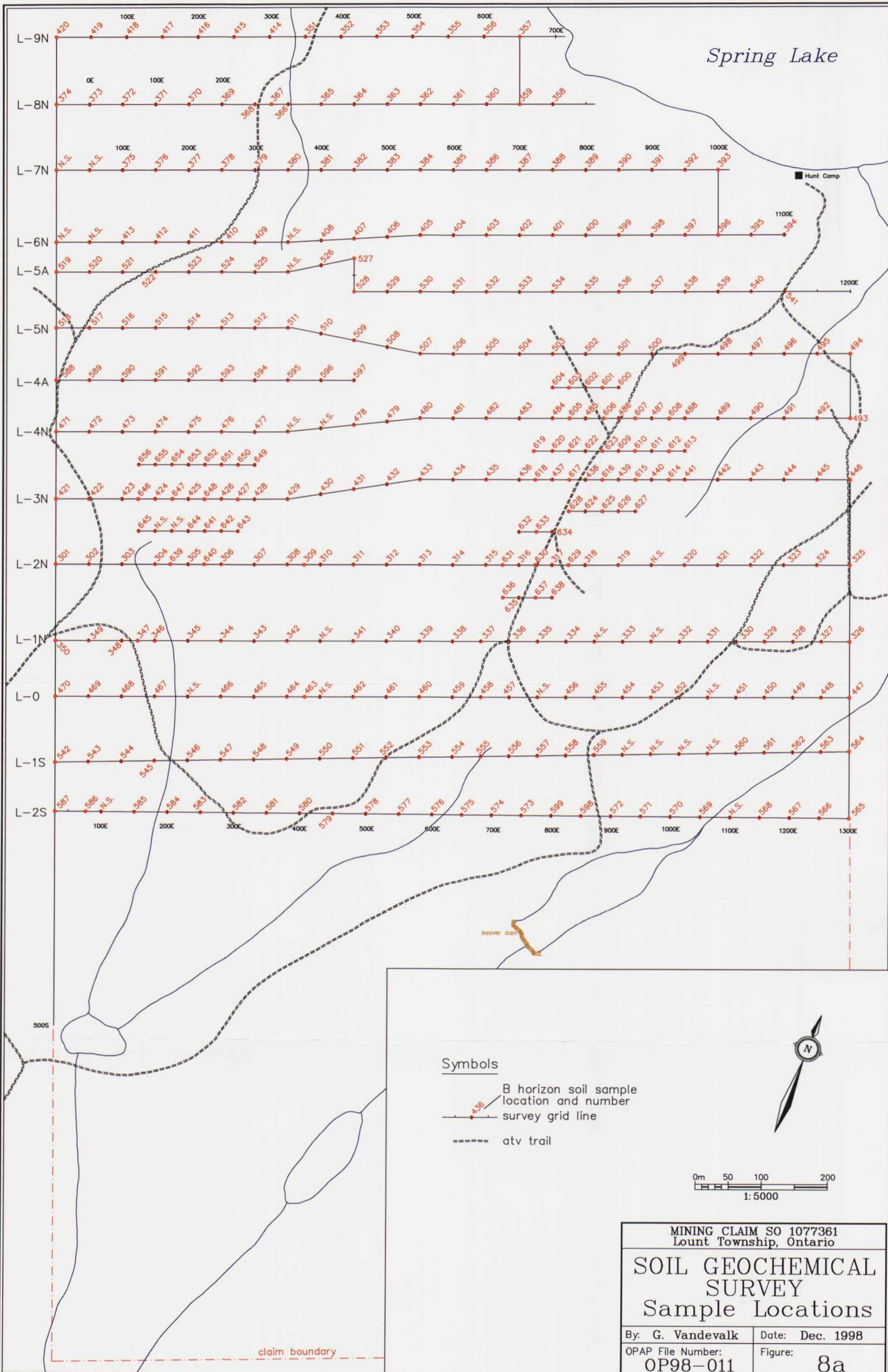
| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-555 | 2930 | 2.33 | 182 | 65.0 | 18 | 71 | 6 | 2.1 |
| SO98-556 | 62 | 4.27 | 13 | 8.7 | 1 | 40 | 3 | 1.8 |
| SO98-557 | 66 | 3.06 | 12 | 7.5 | 1 | 34 | 3 | 2.0 |
| SO98-558 | 61 | 1.28 | 11 | 6.2 | 1 | 16 | 6 | 3.3 |
| SO98-559 | 59 | 2.83 | 17 | 10.2 | 3 | 48 | 5 | 3.0 |
| SO98-560 | 42 | 3.02 | 6 | 3.0 | 1 | 26 | 2 | 0.9 |
| SO98-561 | 65 | 2.76 | 24 | 7.2 | 2 | 40 | 7 | 2.1 |
| SO98-562 | 68 | 1.81 | 76 | 16.1 | 7 | 41 | 31 | 6.5 |
| SO98-563 | 74 | 2.82 | 9 | 15.8 | 3 | 23 | 3 | 4.4 |
| SO98-564 | 160 | 3.43 | 58 | 42.3 | 11 | 72 | 12 | 8.4 |
| SO98-565 | 70 | 4.82 | 10 | 30.3 | 3 | 31 | 2 | 5.5 |
| SO98-566 | 30 | 2.50 | 7 | 6.4 | 1 | 32 | 3 | 2.3 |
| SO98-567 | 323 | 4.21 | 40 | 32.6 | 16 | 56 | 5 | 4.4 |
| SO98-568 | 88 | 1.65 | 30 | 11.1 | 4 | 40 | 12 | 4.4 |
| SO98-569 | 108 | 1.97 | 26 | 6.6 | 2 | 58 | 9 | 2.2 |
| SO98-570 | 32 | 1.73 | 7 | 3.2 | 1 | 28 | 3 | 1.6 |
| SO98-571 | 136 | 2.88 | 13 | 6.3 | 2 | 42 | 3 | 1.5 |
| SO98-572 | 65 | 3.03 | 12 | 3.8 | 2 | 33 | 3 | 1.0 |
| SO98-573 | 92 | 2.40 | 47 | 21.6 | 4 | 42 | 14 | 6.5 |
| SO98-574 | 295 | 3.27 | 38 | 19.2 | 8 | 63 | 6 | 3.1 |
| SO98-575 | 219 | 2.11 | 190 | 87.9 | 12 | 66 | 44 | 20.4 |
| SO98-576 | 66 | 1.52 | 38 | 16.8 | 3 | 29 | 17 | 7.7 |
| SO98-577 | 120 | 1.73 | 84 | 24.5 | 6 | 44 | 29 | 8.4 |
| SO98-578 | 114 | 2.60 | 153 | 34.4 | 7 | 47 | 41 | 9.2 |
| SO98-579 | 1920 | 4.58 | 185 | 66.2 | 26 | 102 | 8 | 2.8 |
| SO98-580 | 486 | 2.79 | 123 | 21.1 | 13 | 60 | 16 | 2.8 |
| SO98-581 | 354 | 2.89 | 236 | 38.0 | 21 | 59 | 37 | 5.9 |
| SO98-582 | 220 | 3.72 | 222 | 63.5 | 19 | 82 | 38 | 10.7 |
| SO98-583 | 532 | 3.27 | 308 | 35.9 | 30 | 109 | 36 | 4.2 |
| SO98-584 | 116 | 3.49 | 134 | 20.2 | 10 | 62 | 29 | 4.3 |
| SO98-585 | 128 | 2.78 | 39 | 63.7 | 12 | 23 | 10 | 15.7 |
| SO98-586 | 438 | 3.74 | 233 | 43.7 | 29 | 88 | 29 | 5.4 |
| SO98-587 | 474 | 4.67 | 17 | 27.1 | 14 | 25 | 2 | 2.9 |
| SO98-588 | 55 | 0.63 | 38 | 1.7 | 2 | 25 | 32 | 1.4 |
| SO98-589 | 59 | 1.27 | 43 | 6.5 | 4 | 19 | 23 | 3.5 |
| SO98-590 | 164 | 5.05 | 43 | 53.5 | 11 | 45 | 6 | 8.0 |
| SO98-591 | 172 | 3.03 | 224 | 12.8 | 17 | 93 | 47 | 2.7 |
| SO98-592 | 247 | 3.62 | 197 | 39.5 | 18 | 95 | 32 | 6.5 |
| SO98-593 | 41 | 5.48 | 14 | 35.3 | 2 | 39 | 2 | 6.0 |
| SO98-594 | 71 | 5.77 | 51 | 52.4 | 6 | 54 | 8 | 8.1 |
| SO98-595 | 42 | 3.74 | 15 | 17.1 | 5 | 16 | 4 | 4.1 |
| SO98-596 | 43 | 4.22 | 11 | 28.5 | 4 | 18 | 2 | 6.1 |
| SO98-597 | 56 | 3.33 | 34 | 27.7 | 6 | 23 | 9 | 7.1 |
| SO98-598 | 41 | 3.05 | 9 | 4.4 | 1 | 40 | 3 | 1.3 |
| SO98-599 | 109 | 2.66 | 15 | 8.9 | 2 | 42 | 4 | 2.4 |

TABLE 1
Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| Follow-up Soil Survey | | | | | | | | |
| SO98-600 | 191 | 5.10 | 261 | 52.3 | 21 | 147 | 37 | 7.5 |
| SO98-601 | 139 | 3.42 | 185 | 41.6 | 18 | 49 | 38 | 8.6 |
| SO98-602 | 608 | 3.78 | 274 | 27.8 | 31 | 128 | 28 | 2.8 |
| SO98-603 | 516 | 3.50 | 204 | 51.9 | 25 | 83 | 24 | 6.0 |
| SO98-604 | 290 | 3.87 | 25 | 14.1 | 7 | 25 | 4 | 2.1 |
| SO98-605 | 191 | 3.40 | 56 | 12.3 | 10 | 51 | 11 | 2.3 |
| SO98-606 | 2650 | 4.79 | 260 | 82.0 | 26 | 63 | 8 | 2.6 |
| SO98-607 | 191 | 3.16 | 80 | 14.2 | 9 | 63 | 16 | 2.8 |
| SO98-608 | 148 | 1.62 | 153 | 15.9 | 15 | 59 | 49 | 5.1 |
| SO98-609 | 1340 | 5.51 | 513 | 40.0 | 61 | 272 | 27 | 2.1 |
| SO98-610 | 2530 | 4.57 | 890 | 79.2 | 68 | 251 | 30 | 2.7 |
| SO98-611 | 537 | 2.81 | 504 | 84.1 | 32 | 148 | 62 | 10.3 |
| SO98-612 | 250 | 1.70 | 226 | 31.3 | 13 | 73 | 54 | 7.5 |
| SO98-613 | 136 | 1.77 | 210 | 21.6 | 15 | 82 | 67 | 6.9 |
| SO98-614 | 58 | 2.43 | 42 | 5.0 | 5 | 33 | 14 | 1.7 |
| SO98-615 | 1500 | 3.30 | 676 | 96.8 | 24 | 149 | 37 | 5.3 |
| SO98-616 | 757 | 4.59 | 532 | 50.8 | 39 | 218 | 44 | 4.2 |
| SO98-617 | 493 | 3.52 | 351 | 45.7 | 24 | 114 | 42 | 5.4 |
| SO98-618 | 242 | 2.57 | 214 | 91.1 | 23 | 35 | 43 | 18.3 |
| SO98-619 | 535 | 2.82 | 206 | 29.2 | 20 | 74 | 25 | 3.6 |
| SO98-620 | 2160 | 3.50 | 245 | 34.0 | 33 | 108 | 10 | 1.4 |
| SO98-621 | 274 | 4.01 | 202 | 24.2 | 23 | 120 | 30 | 3.6 |
| SO98-622 | 525 | 3.62 | 288 | 28.3 | 33 | 147 | 32 | 3.2 |
| SO98-623 | 1200 | 5.96 | 734 | 62.1 | 84 | 337 | 41 | 3.5 |
| SO98-624 | 178 | 3.81 | 103 | 11.7 | 14 | 94 | 18 | 2.1 |
| SO98-625 | 143 | 4.26 | 119 | 18.0 | 11 | 104 | 21 | 3.2 |
| SO98-626 | 54 | 4.26 | 32 | 8.5 | 5 | 43 | 7 | 1.8 |
| SO98-627 | 23 | 1.00 | 11 | 3.7 | 3 | 12 | 9 | 3.0 |
| SO98-628 | 1450 | 3.02 | 260 | 25.6 | 37 | 111 | 15 | 1.5 |
| SO98-629 | 415 | 3.14 | 370 | 41.5 | 26 | 114 | 51 | 5.7 |
| SO98-630 | 1150 | 3.07 | 358 | 50.6 | 24 | 113 | 25 | 3.5 |
| SO98-631 | 289 | 3.55 | 46 | 8.1 | 10 | 52 | 7 | 1.3 |
| SO98-632 | 419 | 3.19 | 64 | 28.1 | 12 | 41 | 9 | 3.8 |
| SO98-633 | 312 | 4.09 | 235 | 159.0 | 20 | 67 | 33 | 22.1 |
| SO98-634 | 385 | 3.52 | 213 | 30.7 | 22 | 100 | 29 | 4.2 |
| SO98-635 | 248 | 4.76 | 95 | 33.3 | 14 | 67 | 13 | 4.6 |
| SO98-636 | 364 | 3.02 | 18 | 24.8 | 6 | 33 | 3 | 3.7 |
| SO98-637 | 1790 | 2.94 | 362 | 45.7 | 23 | 111 | 17 | 2.2 |
| SO98-638 | 574 | 3.27 | 168 | 25.2 | 21 | 88 | 19 | 2.8 |
| SO98-639 | 92 | 3.53 | 66 | 25.0 | 8 | 52 | 15 | 5.6 |
| SO98-640 | 90 | 3.05 | 231 | 23.8 | 16 | 88 | 58 | 6.0 |
| SO98-641 | 78 | 3.96 | 125 | 21.6 | 13 | 55 | 26 | 4.6 |
| SO98-642 | 186 | 2.63 | 52 | 16.3 | 10 | 40 | 12 | 3.6 |
| SO98-643 | 100 | 4.47 | 64 | 73.3 | 18 | 46 | 12 | 13.4 |
| SO98-644 | 649 | 6.31 | 193 | 75.0 | 35 | 46 | 15 | 5.9 |
| SO98-645 | 35 | 3.18 | 40 | 3.4 | 4 | 37 | 11 | 1.0 |
| SO98-646 | 78 | 2.66 | 100 | 26.3 | 11 | 62 | 29 | 7.6 |
| SO98-647 | 80 | 2.02 | 169 | 11.7 | 12 | 72 | 60 | 4.1 |
| SO98-648 | 399 | 3.18 | 104 | 54.2 | 26 | 26 | 15 | 7.6 |
| SO98-649 | 40 | 4.39 | 41 | 14.5 | 9 | 57 | 9 | 3.0 |
| SO98-650 | 63 | 3.93 | 10 | 17.2 | 5 | 15 | 2 | 3.8 |

TABLE 1
Analytical Results for B Horizon Soil Samples

| Sample Ident Analysis Unit | Mn | Fe | Ni | Cu | Co | Cr | Nickel | Copper |
|-------------------------------|------|------|-----|-------|-----|-----|----------|----------|
| | ppm | % | ppm | ppm | ppm | ppm | .01Mn+Fe | .01Mn+Fe |
| SO98-651 | 42 | 3.51 | 18 | 37.4 | 6 | 20 | 5 | 9.5 |
| SO98-652 | 252 | 4.72 | 236 | 94.3 | 23 | 117 | 33 | 13.0 |
| SO98-653 | 128 | 3.59 | 144 | 9.0 | 16 | 72 | 30 | 1.8 |
| SO98-654 | 114 | 3.13 | 260 | 14.6 | 19 | 104 | 61 | 3.4 |
| SO98-655 | 71 | 4.11 | 38 | 24.2 | 7 | 48 | 8 | 5.0 |
| SO98-656 | 70 | 3.31 | 18 | 8.8 | 6 | 40 | 4 | 2.2 |
| Orientation Soil Survey | | | | | | | | |
| SO98-001 | 350 | 3.90 | 148 | 58.1 | 22 | 79 | 20 | 7.9 |
| SO98-002 | 1080 | 9.73 | 253 | 236.0 | 58 | 15 | 12 | 11.5 |
| SO98-003 | 519 | 8.49 | 113 | 195.0 | 26 | 12 | 8 | 14.3 |
| SO98-004 | 114 | 2.83 | 32 | 33.4 | 11 | 24 | 8 | 8.4 |
| SO98-005 | 120 | 3.43 | 30 | 50.2 | 11 | 35 | 6 | 10.8 |
| SO98-006 | 246 | 4.54 | 45 | 44.7 | 17 | 86 | 6 | 6.4 |
| SO98-007 | 80 | 1.61 | 8 | 6.2 | 2 | 14 | 3 | 2.6 |
| SO98-008 | 171 | 2.99 | 24 | 22.6 | 8 | 29 | 5 | 4.8 |
| SO98-009 | 176 | 3.93 | 23 | 19.1 | 8 | 30 | 4 | 3.4 |
| SO98-010 | 199 | 4.88 | 41 | 30.7 | 14 | 77 | 6 | 4.5 |
| SO98-011 | 122 | 1.99 | 18 | 11.9 | 6 | 22 | 6 | 3.7 |
| SO98-012 | 761 | 3.45 | 30 | 9.8 | 16 | 46 | 3 | 0.9 |
| SO98-013 | 130 | 2.07 | 19 | 14.0 | 7 | 27 | 6 | 4.2 |
| SO98-014 | 107 | 1.94 | 59 | 112.0 | 31 | 20 | 20 | 37.2 |
| SO98-015 | 407 | 5.79 | 15 | 77.1 | 11 | 38 | 2 | 7.8 |
| SO98-016 | 105 | 3.59 | 13 | 12.1 | 6 | 43 | 3 | 2.6 |
| SO98-017 | 130 | 1.97 | 40 | 41.4 | 9 | 23 | 12 | 12.7 |
| SO98-018 | 432 | 1.94 | 11 | 13.4 | 5 | 23 | 2 | 2.1 |
| SO98-019 | 231 | 8.11 | 14 | 175.0 | 8 | 88 | 1 | 16.8 |
| SO98-020 | 215 | 3.88 | 52 | 115.0 | 18 | 29 | 9 | 19.1 |
| SO98-021 | 490 | 5.26 | 44 | 150.0 | 20 | 47 | 4 | 14.8 |



Spring Lake

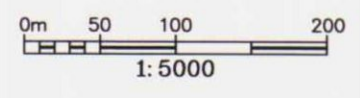
Hunt Camp

beaver dam

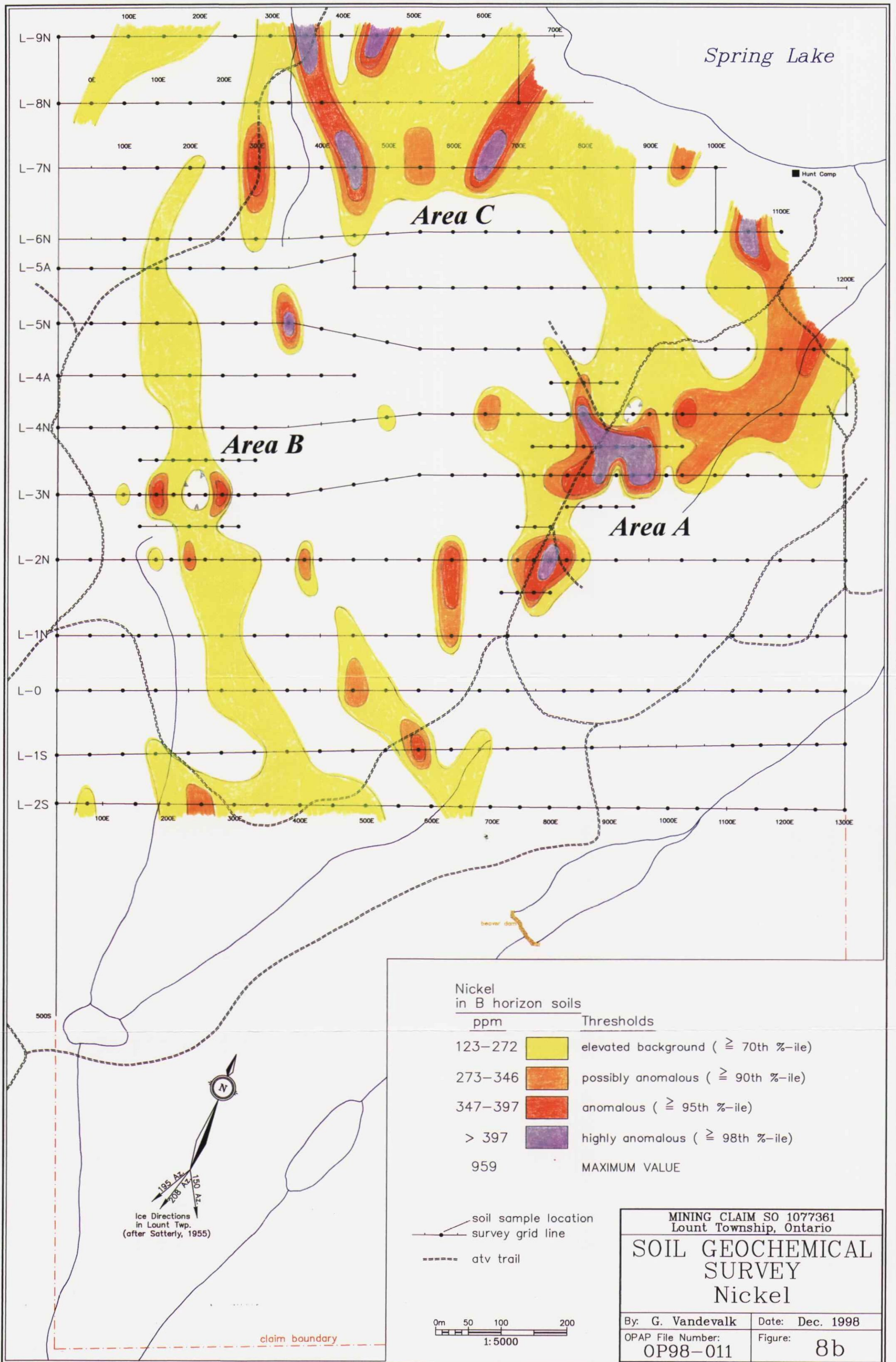
claim boundary

Symbols

- B horizon soil sample location and number
- survey grid line
- - - atv trail



| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY Sample Locations | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8a |



Spring Lake

Area C

Area B

Area A

Hunt Camp

beaver dam

Ice Directions
in Lount Twp.
(after Satterly, 1955)

Nickel
in B horizon soils

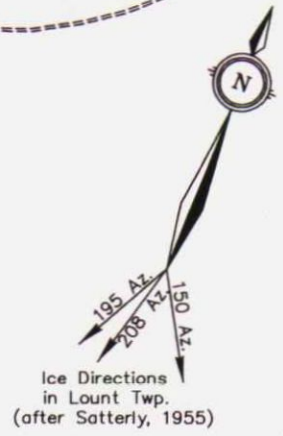
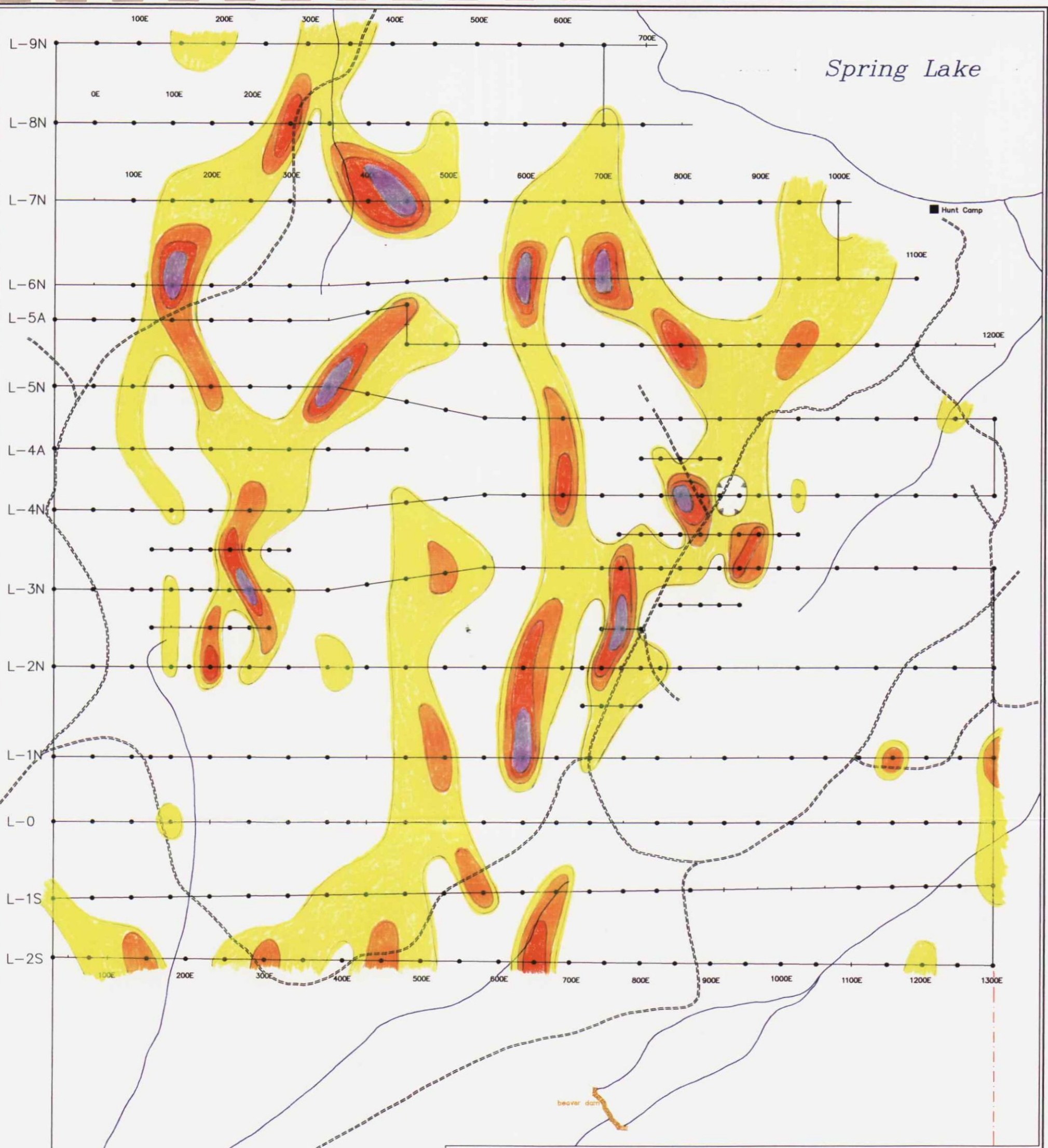
| ppm | Thresholds |
|---------|--|
| 123-272 | elevated background (\geq 70th %-ile) |
| 273-346 | possibly anomalous (\geq 90th %-ile) |
| 347-397 | anomalous (\geq 95th %-ile) |
| > 397 | highly anomalous (\geq 98th %-ile) |
| 959 | MAXIMUM VALUE |

soil sample location
survey grid line
atv trail

0m 50 100 200
1:5000

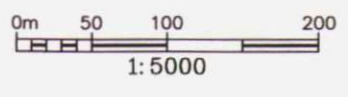
| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY Nickel | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8b |

Spring Lake



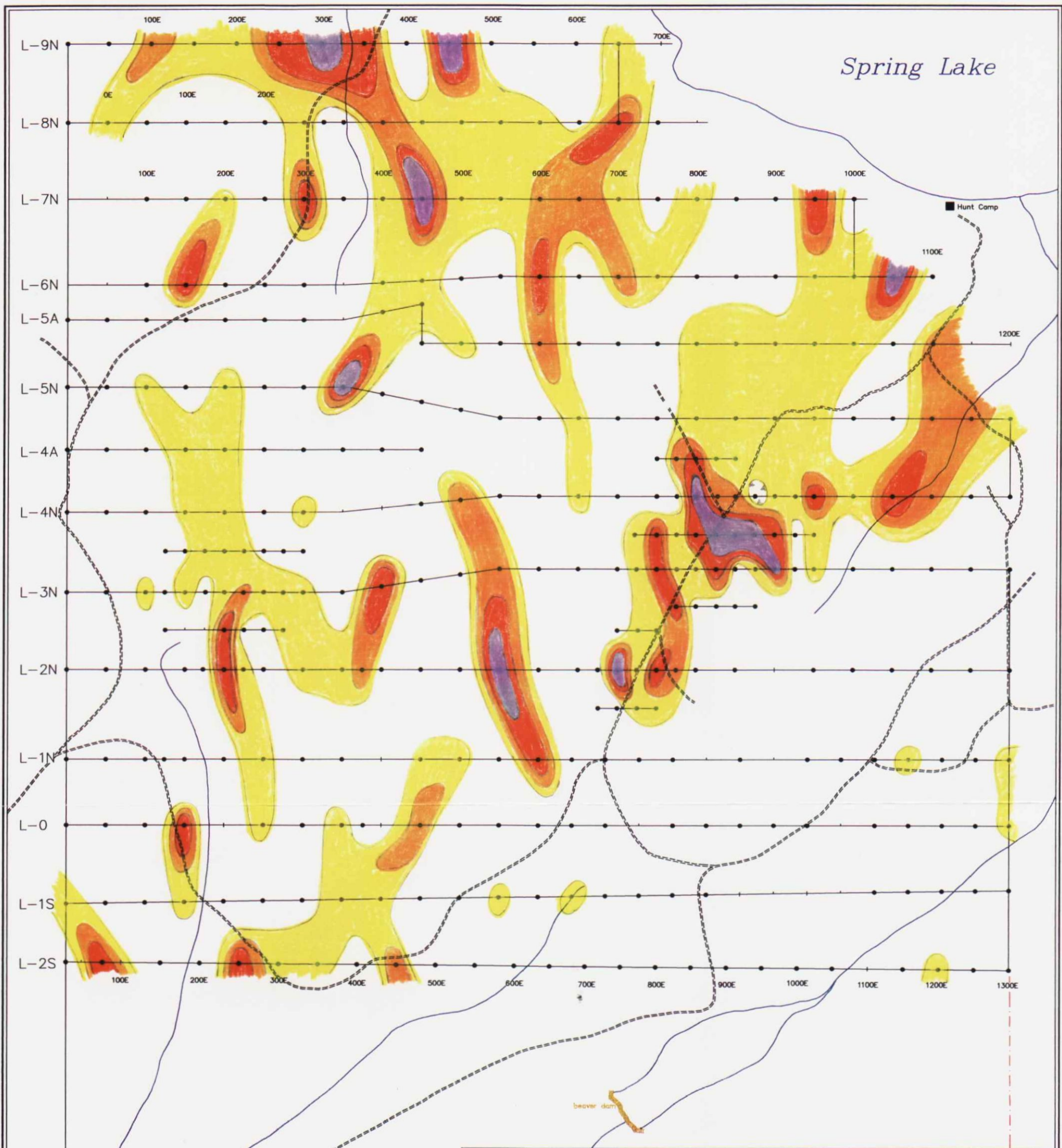
| Copper in B horizon soils | | Thresholds |
|---------------------------|--|--|
| ppm | | |
| 31.8-60.1 | | elevated background (\geq 70th %-ile) |
| 60.2-80.4 | | possibly anomalous (\geq 90th %-ile) |
| 80.5-122 | | anomalous (\geq 95th %-ile) |
| > 122 | | highly anomalous (\geq 98th %-ile) |
| 173 | | MAXIMUM VALUE |

soil sample location
 survey grid line
 atv trail



| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY | |
| Copper | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8c |

claim boundary



Spring Lake

Hunt Camp

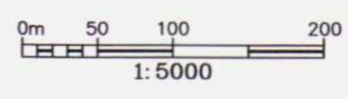
beaver dam

Ice Directions
in Lount Twp.
(after Satterly, 1955)

Cobalt
in B horizon soils

| ppm | Thresholds |
|-------|--|
| 15-24 | elevated background (\geq 70th %-ile) |
| 25-28 | possibly anomalous (\geq 90th %-ile) |
| 29-41 | anomalous (\geq 95th %-ile) |
| > 41 | highly anomalous (\geq 98th %-ile) |
| 97 | MAXIMUM VALUE |

—●— soil sample location
— survey grid line
- - - - - atv trail

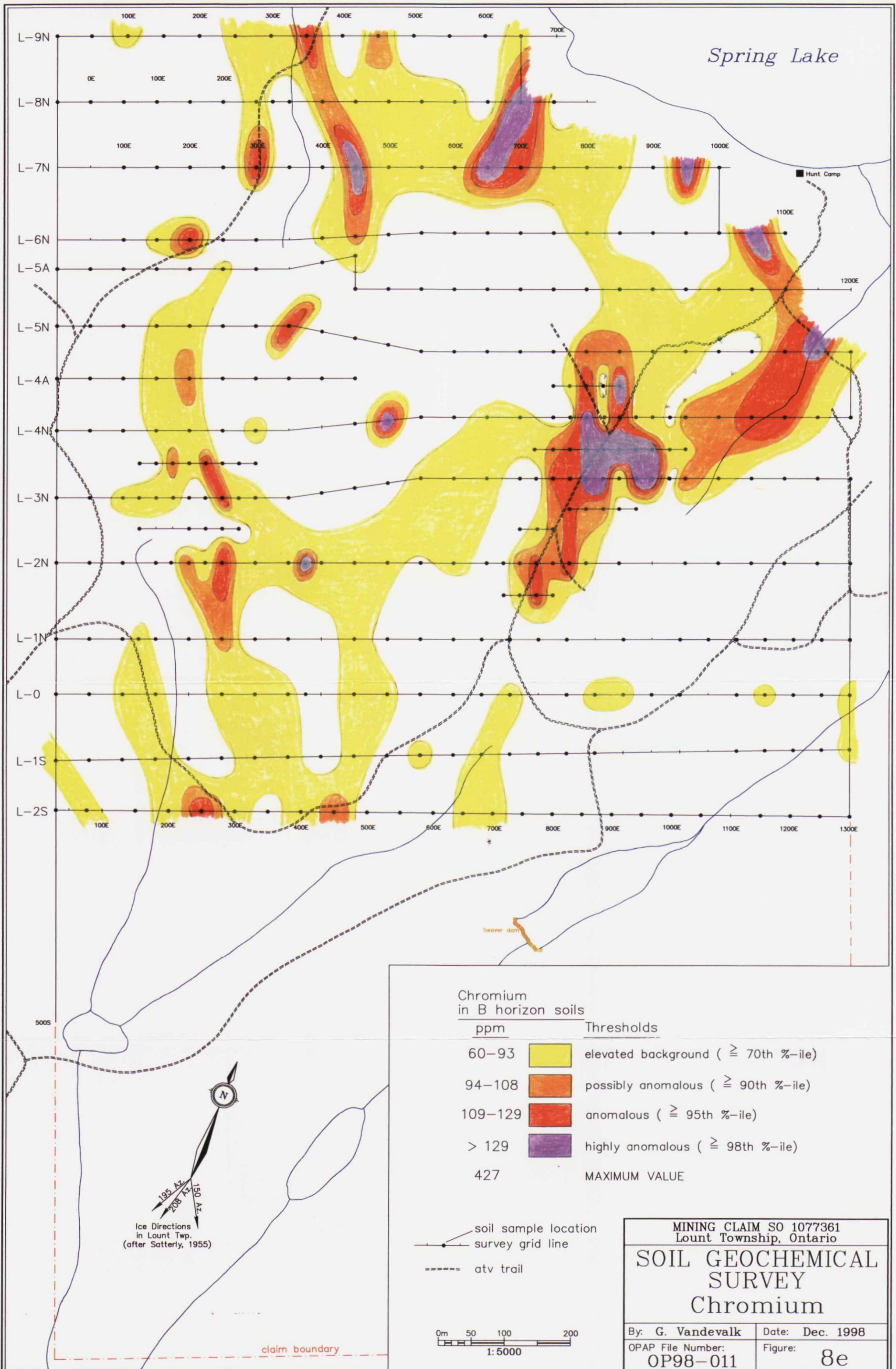


MINING CLAIM SO 1077361
Lount Township, Ontario

**SOIL GEOCHEMICAL
SURVEY
Cobalt**

By: G. Vandevalk Date: Dec. 1998
OPAP File Number: OP98-011 Figure: 8d

claim boundary



Spring Lake

Hunt Camp

beaver dam

500S

Ice Directions
in Lount Twp.
(after Satterly, 1955)

claim boundary

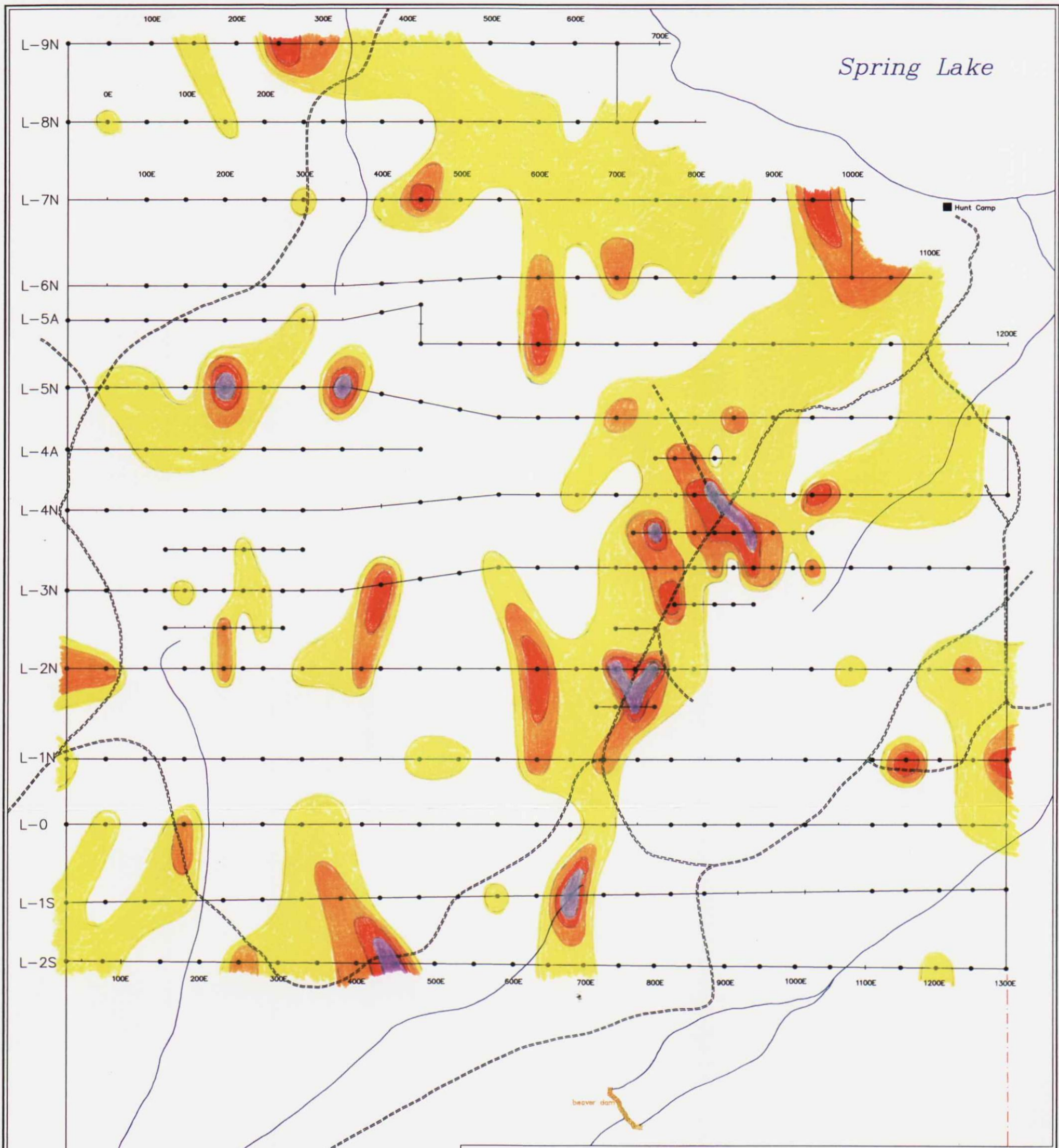
Chromium
in B horizon soils

| ppm | Thresholds |
|---------|--|
| 60-93 | elevated background (\geq 70th %-ile) |
| 94-108 | possibly anomalous (\geq 90th %-ile) |
| 109-129 | anomalous (\geq 95th %-ile) |
| > 129 | highly anomalous (\geq 98th %-ile) |
| 427 | MAXIMUM VALUE |

soil sample location
survey grid line
atv trail

0m 50 100 200
1:5000

| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY | |
| Chromium | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8e |



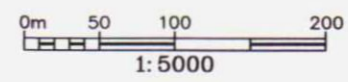
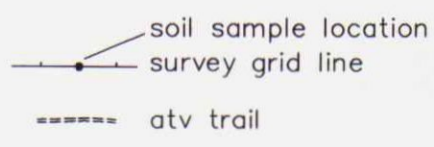
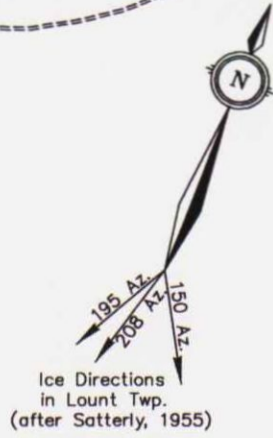
Spring Lake

Hunt Camp

beaver dam

Manganese in B horizon soils

| ppm | Thresholds |
|----------|--|
| 163-485 | elevated background (\geq 70th %-ile) |
| 486-973 | possibly anomalous (\geq 90th %-ile) |
| 974-1613 | anomalous (\geq 95th %-ile) |
| > 1613 | highly anomalous (\geq 98th %-ile) |
| 3230 | MAXIMUM VALUE |



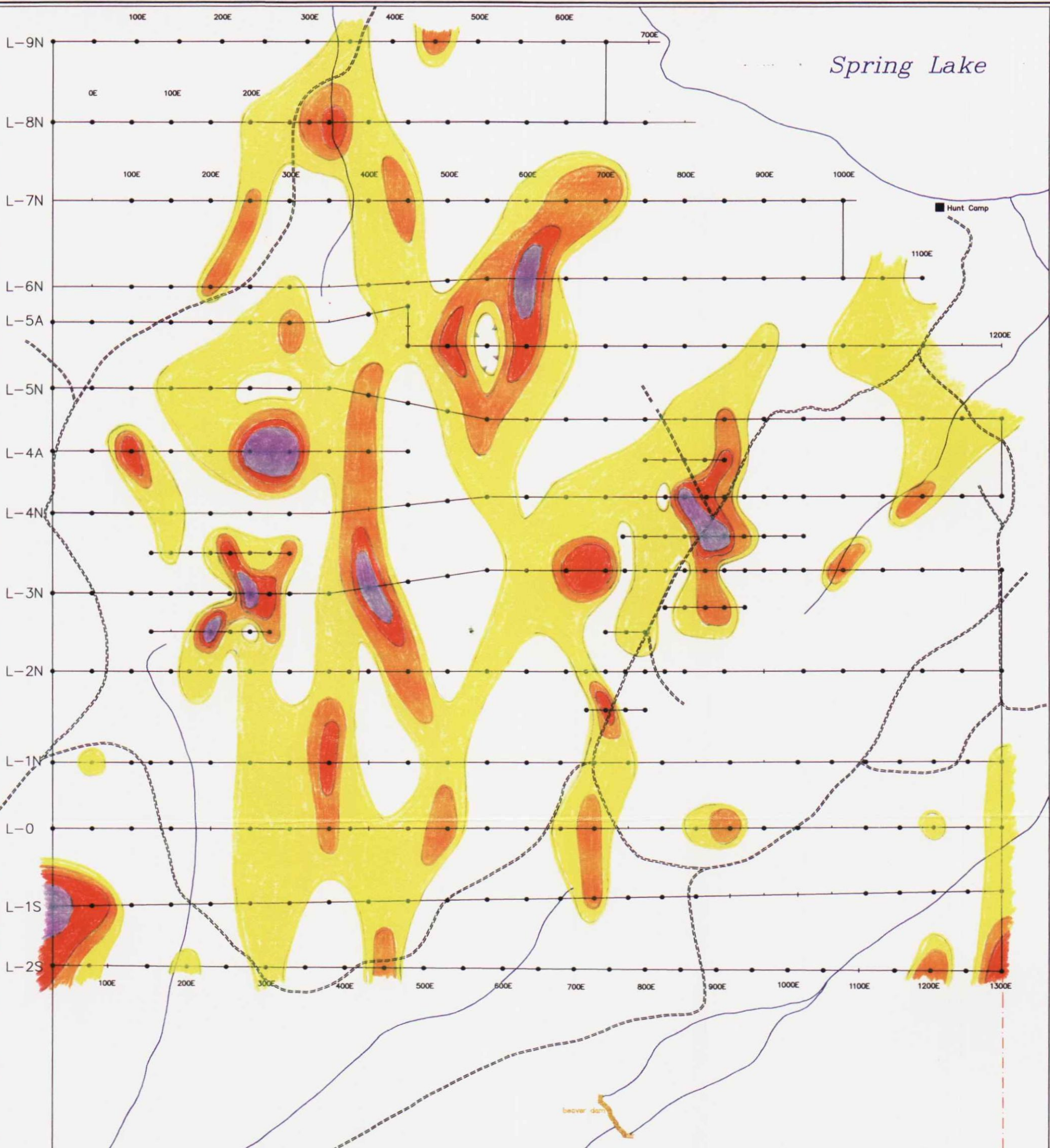
MINING CLAIM SO 1077361
Lount Township, Ontario

SOIL GEOCHEMICAL SURVEY
Manganese

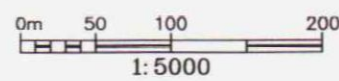
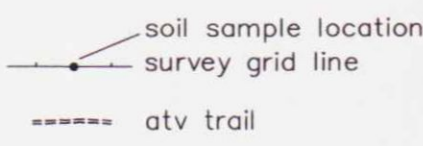
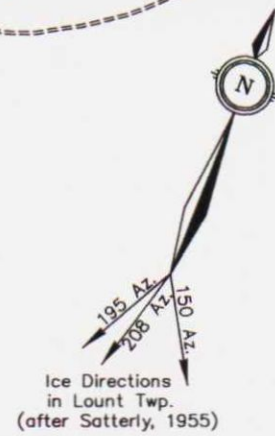
| | |
|----------------------------|-----------------|
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8f |

claim boundary

Spring Lake



| Iron in B horizon soils (%) | Thresholds |
|-----------------------------|--|
| 3.42–4.16 | elevated background (\geq 70th %-ile) |
| 4.17–4.66 | possibly anomalous (\geq 90th %-ile) |
| 4.67–5.32 | anomalous (\geq 95th %-ile) |
| > 5.32 | highly anomalous (\geq 98th %-ile) |
| 6.20 | MAXIMUM VALUE |



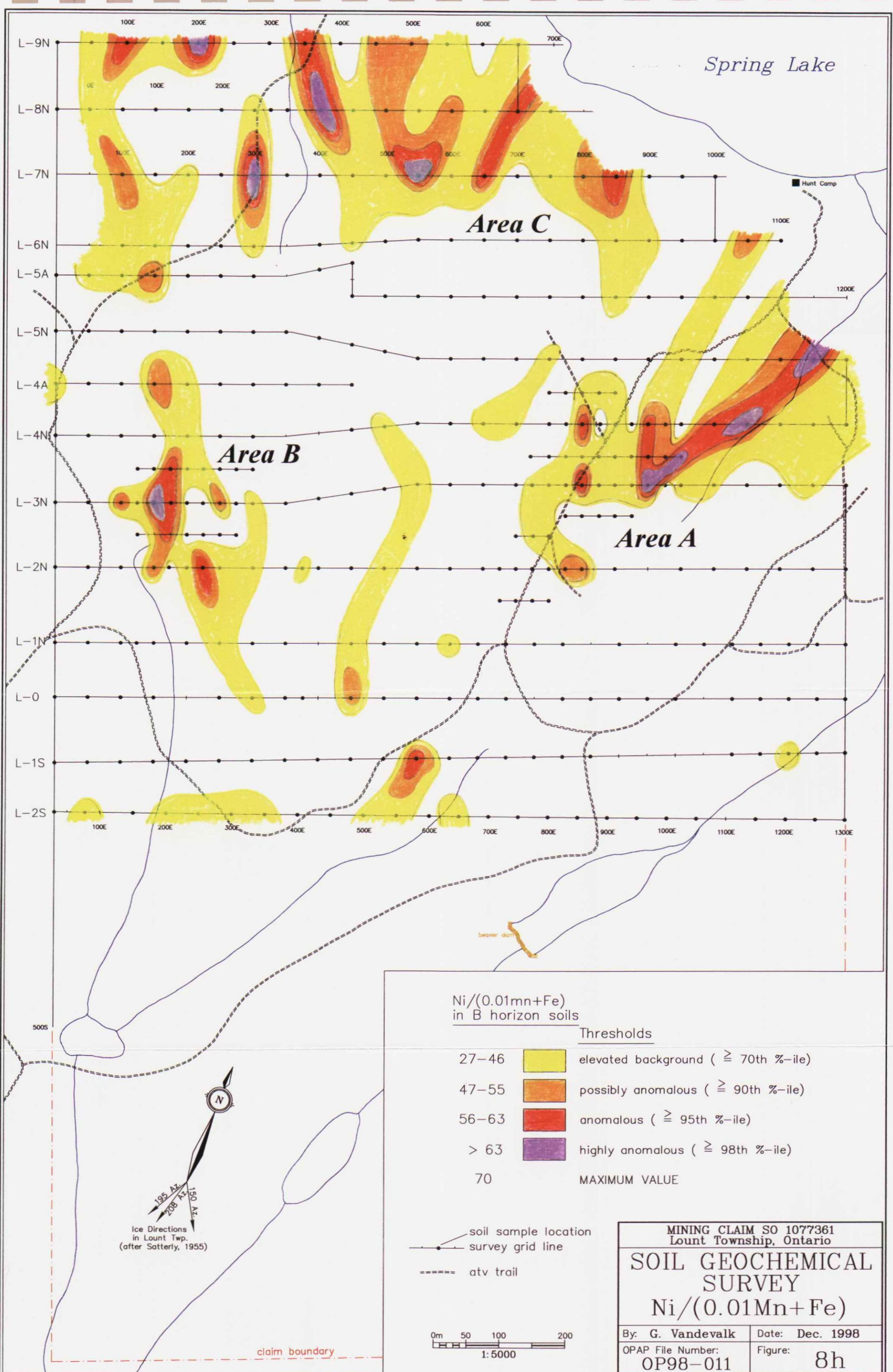
MINING CLAIM SO 1077361
Lount Township, Ontario

SOIL GEOCHEMICAL SURVEY

Iron

| | |
|----------------------------|-----------------|
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8g |

claim boundary



Spring Lake

Area C

Area B

Area A

Hunt Camp

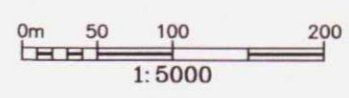
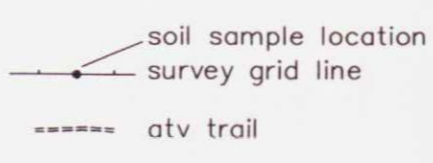
beaver dam



Ni/(0.01Mn+Fe)
in B horizon soils

Thresholds

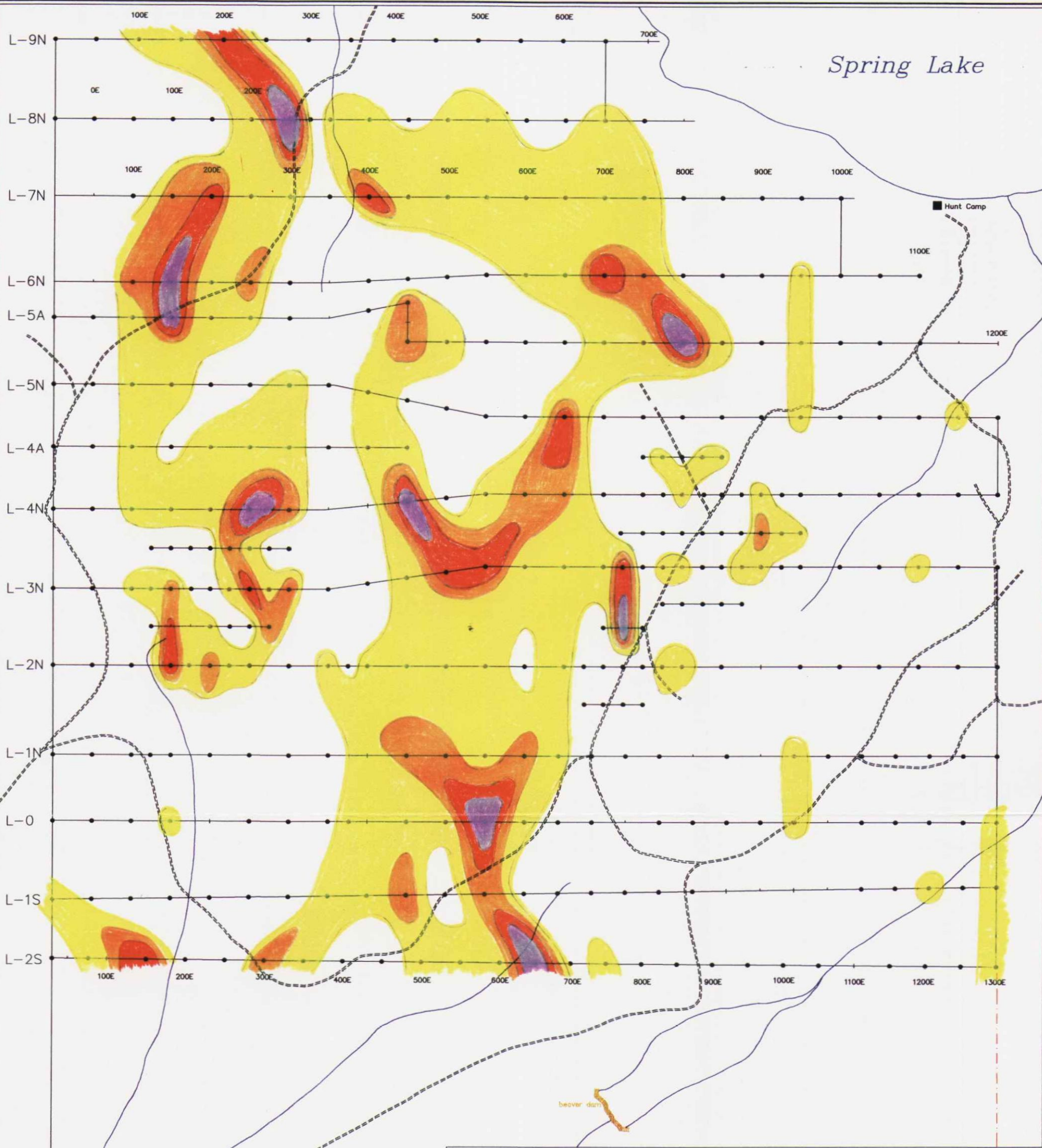
| | | |
|-------|--|-------------------------------------|
| 27-46 | | elevated background (≥ 70th %-ile) |
| 47-55 | | possibly anomalous (≥ 90th %-ile) |
| 56-63 | | anomalous (≥ 95th %-ile) |
| > 63 | | highly anomalous (≥ 98th %-ile) |
| 70 | | MAXIMUM VALUE |



| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY | |
| Ni/(0.01Mn+Fe) | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8h |

claim boundary

Spring Lake



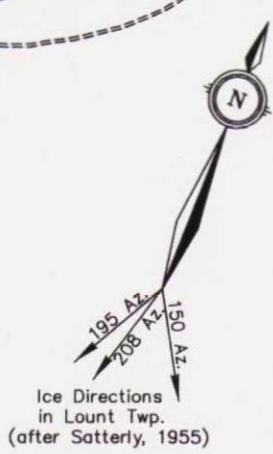
$Cu/(0.01Mn+Fe)$
in B horizon soils

| Thresholds | Color | Description |
|------------|--------|--|
| 5.3-10.1 | Yellow | elevated background (\geq 70th %-ile) |
| 10.2-14.4 | Orange | possibly anomalous (\geq 90th %-ile) |
| 14.5-20.1 | Red | anomalous (\geq 95th %-ile) |
| > 20.1 | Purple | highly anomalous (\geq 98th %-ile) |
| 40.9 | | MAXIMUM VALUE |

● soil sample location
 — survey grid line
 - - - atv trail

0m 50 100 200
 1:5000

| | |
|--|-----------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| SOIL GEOCHEMICAL SURVEY | |
| $Cu/(0.01Mn+Fe)$ | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 8i |



claim boundary

MAGNETOMETER SURVEY

A total of 17.7 line kilometres of magnetometer survey were carried out over the entire main survey grid, using a **GeoMetrics G 816 Magnetometer**. On August 22, an initial attempt to begin the survey was thwarted by what was presumed to be an intense magnetic storm, which caused wildly fluctuating readings at every station. Readings varied by greater than 1000nT at some stations, necessitating a deferral of the survey. The survey was recommenced several weeks later, following the successful completion of the orientation magnetometer survey, and was completed over 2½ days.

Base values for the survey were established at each 50-metre station along the base line by surveying it twice, correcting each reading for the diurnal magnetic drift, then averaging the corrected readings at each station. The resulting base values were subsequently used to correct the readings over the remainder of the grid, for both diurnal and day-to-day magnetic drift. Readings were taken at each 50-metre station along the lines until significant changes in values were observed between two adjacent stations. Those portions of the lines, over which large changes in readings occurred, were re-surveyed at 25 or 12.5-metre spacing so that sufficient detailing of magnetic anomalies could be obtained. The normal 50-metre reading intervals were resumed after the apparent effects of the magnetic anomalies were passed through.

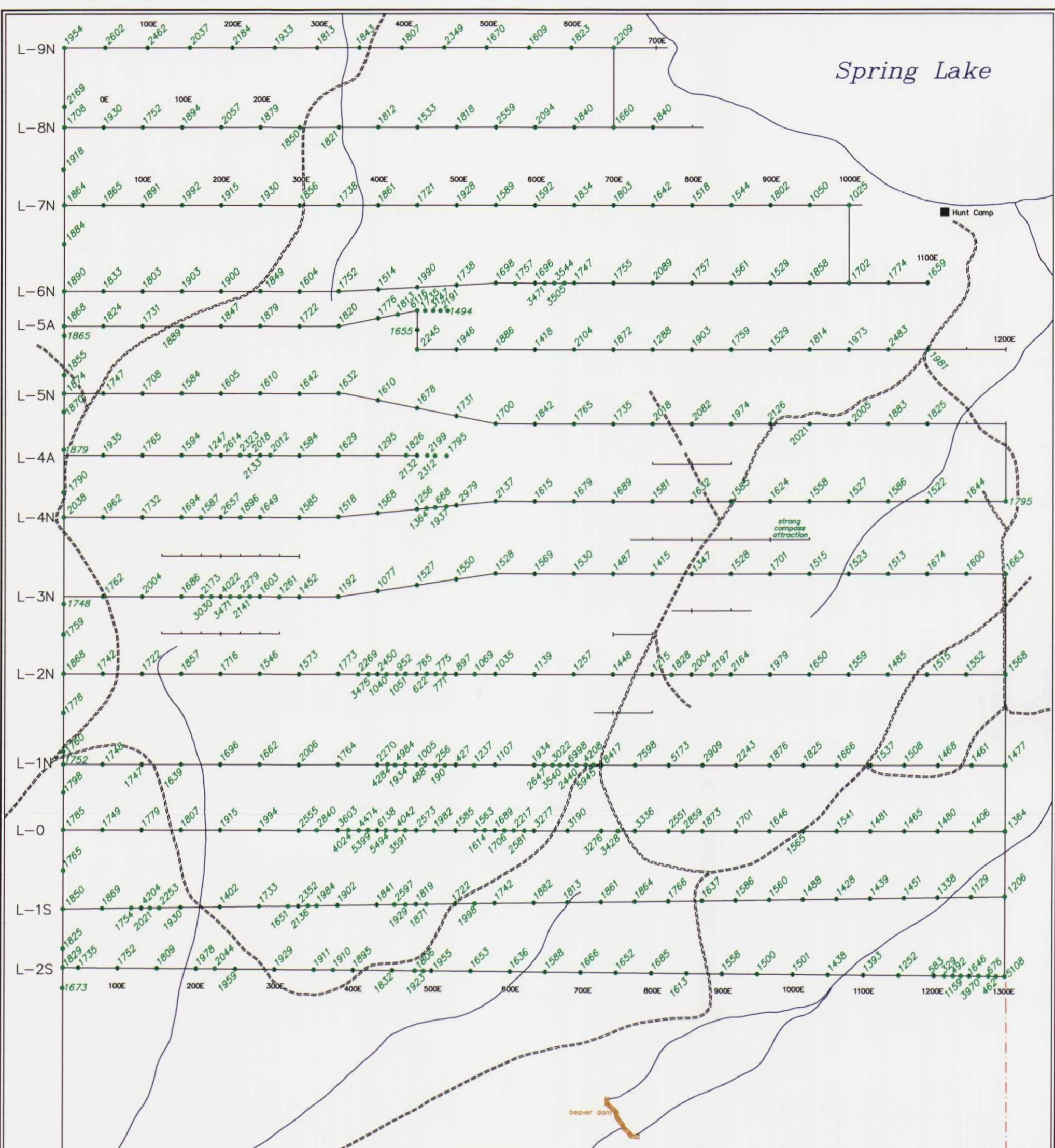
A base value of 55,000 nT was subtracted from each reading to simplify the plotting of the corrected values. The corrected values for each station are shown on Figure 9a, plotted to a scale of 1:5,000. Figure 9b shows the contoured corrected values of the total magnetic field for the entire survey area.

PROSPECTING

It was initially proposed to carry out reconnaissance prospecting in the course of establishing the grid and conducting the other surveys. This turned out to be impractical, as each separate task required considerable concentration and detailed field book entries. Consequently, prospecting was carried out in conjunction with the follow-up soil sampling and confined mainly to those areas. A significant exception to this was the discovery of a new showing of very gossanous, magnetite bearing, fine to medium-grained metagabbro with disseminated sulphides. The **Treefrog Showing** is associated with a small, but very strong magnetic anomaly, which caused a severe compass deviation. It was encountered along Line-5A at 450mE while correcting the errant line (Figures 7 and 9b). Five rock samples (MA 98-R-001 to 005) were collected from the Treefrog Showing and were sent to XRAL Labs in Toronto for preparation and analysis for Au, Pt and Pd by FA30/1 method and for 31 trace elements by ICP70 method. The only encouraging analytical result obtained from a rock sample at the Treefrog Showing was 403 ppm Cu. Analysis of the samples also returned up to 11.0% Fe.

In other areas, prospecting confirmed the presence of medium to coarse-grained metagabbroic rocks with minor disseminated sulphides. Black, pyroxene and olivine bearing, medium to very coarse-grained ultramafic rocks were found to occur commonly in the area. The ultramafic rocks (pyroxenite) are variably magnetic owing to the presence of magnetite that is sometimes

Spring Lake

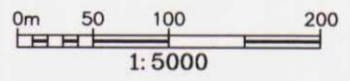


Symbols

- atv trail
- magnetometer reading location and value
- survey grid line

Base Value for Magnetometer Readings is 55,000nT

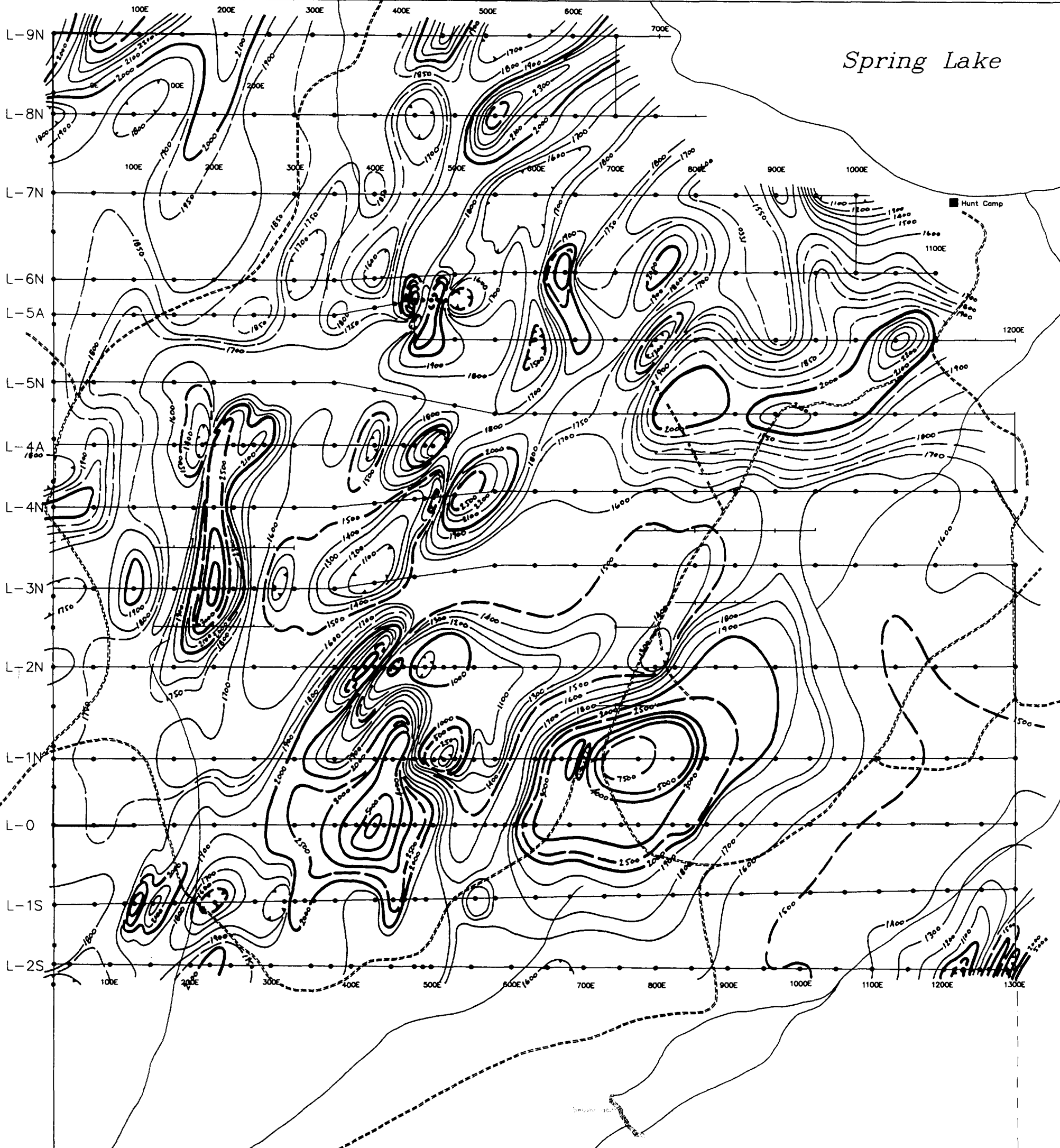
Instrument: GeoMetrics G-816 Magnetometer



| | |
|--|----------------------|
| MINING CLAIM SO 1077361 Lount Township, Ontario | |
| MAGNETOMETER SURVEY Readings | |
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 9a |

claim boundary

Spring Lake



Symbols

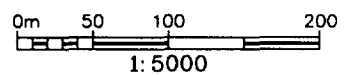
- atv trail
- magnetometer reading location
- survey grid line

Base Value for Contours of Total Magnetic Field is 55,000nT

Instrument: GeoMetrics G-816 Magnetometer

Contour Intervals

- 1,000nT
- - - - 500nT
- 100nT
- - - - 50nT



MINING CLAIM SO 1077361
Lount Township, Ontario

MAGNETOMETER SURVEY
Contours—Total Field

| | |
|-------------------------------|-----------------|
| By: G. Vandevalk | Date: Dec. 1998 |
| OPAP File Number: OP98-011 | Figure: 9b |

2.19526

claim boundary

interspersed throughout, or occurs as small seams within the rock. The magnetometer survey probably maps the ultramafic horizons fairly accurately (Figure 9b).

An additional 12 rock samples were collected (for a total of 17) and were also sent for analysis. The locations of all rock samples collected and significant geochemical analyses are shown on Figure 7. Complete analytical results for all rock samples (MA 98-R-001 to 017) are provided in Appendix III.

DISCUSSION OF RESULTS

Two deposit models were considered as possible targets for the Summer 1998 Exploration Program over mining claim 1077361:

1. Mafic (metagabbro or mafic gneiss) hosted Ni, Cu, Co magmatic sulphides
2. Ultramafic hosted Ni, Cu, Co (Cr, Pt, Pd) magmatic sulphides

Both types could possibly have been intruded as dykes, either crosscutting or parallel to stratigraphy, or intruded as larger bodies or masses.

Comparison of Orientation Survey Results with Main Survey Results

The orientation surveys were conducted over a known, sub-economic (?) showing of a "Type 2" deposit, intruded into the surrounding mafic gneisses as a small (?) "plug" (McClellan, 1992).

Magnetometer Surveys

The orientation magnetometer survey over the South Claim Ni-Cu Showing demonstrated that potential targets in the main survey area could have a very strong, sharply increasing magnetic response, followed by a strong negative dipole effect (Figure 6a). The magnetic signature of the South Claim Showing is very localized. Several similar magnetic anomalies of varying size were found to occur in the main survey area (Figure 9b). Two extensive, very high magnitude anomalies (up to 7000nT over background), centered at Line 0 - Station 400E and Line 1N - Station 700E, are separated by a broad, very low magnitude negative anomaly. The combined anomalies cover an area of approximately 600 metres by 300 metres and together, represent an intriguing anomaly that may require closer scrutiny. Rock sample MA 98-R-016 which returned an analysis of 93 ppm Ni, was taken from an outcrop of rusty, medium-grained pyroxenite, occurring along the northern flank of the eastern lobe of this anomaly (Figure 7).

Soil Geochemical Surveys

The orientation soil geochemical survey over the South Claim Ni-Cu Showing (Figure 6b) demonstrated that the presence of anomalous levels of Cu, Co and Fe, but not necessarily Ni, might indicate potential targets in the main survey area. Only moderately elevated background levels of Ni were found to occur in B-horizon soils, immediately down slope of the South Claim showing. This is interesting in that grab samples of rock, obtained from the rubble dump around the pit exposures of the showing, had a Ni to Cu content ratio of roughly 2 to 1, possibly indicating that the Cu minerals of that showing are more geochemically mobile than its Ni minerals. The presence of highly anomalous concentrations of Ni in soils (up to 959 ppm) in

several areas of the main survey area is therefore considered to be very encouraging (Figure 8b). Conversely, the highest level of Cu concentration in soils obtained from the main survey area (173 ppm) was only about $\frac{3}{4}$ of that in the soil over the South Claim Showing (236 ppm). Overall Cu concentrations in soils in the main survey area were also considerably lower than the orientation survey area (Figure 8c).

The presence of high Mn and very high Fe levels in soil, proximal to the known mineralization in the orientation survey area, significantly complicates the issue of base metal scavenging resulting in spuriously enhanced anomalies. Rock samples from the South Claim Showing returned analyses of up to 10.4% Fe and 883 ppm Mn, while rock samples from the Treefrog Showing, in the main survey area, returned analyses of up to 11% Fe and 1580 ppm Mn. This indicates that high levels of Fe (magnetite) are associated with the known base metal mineralization and that elevated levels of Mn may be associated with mineralization in the project area. At the South Claim Showing, the levels of Mn and Fe in soil are in line with what could be expected based on the Mn and Fe levels in the broken rock of the rubble pile, yet there appears to be no unusual or corresponding enhancement in base metal values. It is therefore assumed that the coincidence of high Mn and/or Fe with base metal soil geochemical anomalies cannot be the sole determining factor in ruling out base metal anomalies as spurious. It is further suggested that high Fe in soils may be a positive indicator that a coincident base metal soil anomaly has a mineralized bedrock source.

Main Survey Area

Soil Geochemical Trends

Figures 8b to 8g and Table 1 illustrate the following observations about the overall soil geochemical trends of the main survey area:

- a very strong correlation exists between Ni, Cr and, to a lesser extent, Co
- Ni, Cr and, to a lesser extent, Co are present in discernible trends
- distribution of higher levels of Cu, Mn and Fe is sporadic and discernible trends are less apparent
- the Ni, Cr and Co trends occur down-slope of, and encircle the highest topographic elevations (Figure 7)
- the strongest Ni, Cr and Co trend (Area A – Figure 8b) strikes sub-parallel to an apparent topographic linear (Figure 7) and possible fault

Treefrog Showing

The magnetic anomaly associated with the Treefrog Showing, while very strong, is very localized but may be part of a longer trend (Figures 7 and 9b). Elevated background Fe and possibly anomalous Cu in soils surround the Treefrog Showing. Only modest values of Cu (up to 403 ppm) and no significant Ni, Cr or Co were returned in analyses of rock samples from this showing. The Treefrog showing appears to have limited size and economic potential.

Area A

Area A (Figures 8b, d, e & g) represents the most intriguing soil geochemical anomaly

encountered in the Summer 1998 exploration program. The Ni, Cr, Co & Fe anomaly is pronounced by a very large and continuous, anomalous core that extends across 175 metres at its widest point along Line-3N, and along more than 300 metres of strike length. The highest Ni value of the soil geochemical survey was returned from sample number SO98-485 (959 ppm), located within the anomalous core. An anomalous trend adjacent to, and northeast of the core anomaly, may represent a possible down-drainage geochemical plume, and further extends the overall dimensions of the anomalous area dramatically. Area A lies within the strong NNW oriented geochemical trend, previously described in the **Geochemical Trends** discussion. Figure 8f illustrates an apparently strong Mn correlation with the trend of the Area A anomaly. The core of the anomaly becomes discontinuous and significantly diminished in strength after subjection to Mn/Fe filtering (Figure 8h), however, the adjacent anomalous “plume” emerges from the filtering as a sharply defined, highly anomalous trend.

The core of the anomaly trends along a magnetic “trough” adjacent to the northern flank of the eastern lobe of the extensive magnetic anomaly described previously in the **Magnetometer Surveys** discussion (Figure 9b). During the course of follow-up soil sampling, a strong compass attraction was observed at Line 3+50N – 925mE (Figure 9a), which coincides with the “plume” area of the anomaly. This feature was not detected by the original magnetometer survey.

The association of Ni and Cr in the soil geochemical trends is very strong in the Area A anomaly, which indicates that the source of the anomaly may possibly be in ultramafic rocks. It was therefore deemed prudent to check 11 soil samples that yielded the highest Ni and Cr for possible platinum and palladium association. No significant Pt or Pd was detected (Appendix I).

Problematic for the interpretation of the significance of the Area A anomaly is the fact that it occurs partly in glacial till which incorporates rounded cobbles and variably sized boulders. Some boulders as large as several metres in diameter lie on the surface. Three possible interpretations are considered for the existence of the anomaly:

1. The anomaly may be a false anomaly resulting from Mn/Fe scavenging of background base metal values from the underlying mafic intrusive rocks. The porous till cover would allow for the free movement of groundwater through it, where an active geochemical system may be in place.
2. The anomaly may have a genuine Ni and Cr (+Co) mineralized bedrock source that may also have high Fe and Mn. Depending on the thickness of the till cover, the same rationale for the geochemical mechanism as in the first interpretation, would apply in this case.
3. The source of the anomaly may be a dispersion train of mineralized boulders from an up ice mineralized bedrock source. Figures 8b to i show the interpreted ice directions for Lount Township (from Satterly, 1955). The area immediately “up ice”, to the north of the anomaly has a relatively thin soil cover over scattered exposures of bedrock, and has a sizeable, moderately strong magnetic signature (Figure 9b). Despite the presence of rounded boulders within the till, which suggests a longer distance of till transport, the shape and strongly defined nature of the anomaly would suggest a nearby source under this interpretation for the existence of the anomaly.

At this stage in the exploration of the property, it is impossible to rule out, or favour, any of the different interpretations that might explain the presence of the Area A anomaly.

Area B

Area B (Figure 8b) was chosen for follow-up sampling based on initially encouraging soil geochemical results and their direct correlation with a strong, linear, 300 metre long magnetic anomaly (Figure 9b). When only the raw data is considered, follow-up soil sampling resulted in the anomaly becoming discontinuous and thus, downgraded. The results of Mn/Fe filtering of the Ni data, however, significantly re-enhances the anomaly (Figure 8h). The results of prospecting in this area were only modest. A sample of pyroxenite from Area B (MA 98-R-015) returned an analysis of 257 ppm Cr and a sample of medium grained metagabbro with disseminated sulphides (MA 98-R-009) returned 171 ppm Cu (Figure 7).

Area C

The Area C soil geochemical anomaly (Figure 8b, d & e) is marked by several anomalous and highly anomalous Ni, Cr & Co trends which are enveloped by a broad area of elevated background values. The soil at the southern edge of the area forms a relatively thin cover over widespread outcroppings of metagabbroic rocks, and gradually thickens down-slope to Spring Lake. The source of the anomalous values in soil appears to be the topographically high area with thin soil cover, between Lines 6N and 7N, from 400mE to 700mE. The anomalous trends may define down-slope "metal rich" plumes that might be sourced by buried mineralization near the top of the slope. Mn and Fe concentrations in soil are not high in Area C (Figures 8f & g), and the Ni data survives Mn/Fe filtering completely intact (Figure 8h), giving validity to the genuineness of the anomalies. There is considerable fluctuation in magnetic relief in this area (Figure 9b) suggesting a complex bedrock makeup. Limited prospecting in this area failed to encounter any visually obvious bedrock source for the Ni, Cr & Co soil geochemical anomalies. The close proximity of Area C to Spring Lake diminishes its attractiveness as a follow-up target because of environmental considerations. Nonetheless, the discovery of a mineralized zone in Area C would significantly enhance the attractiveness and potential for discovery in other, less environmentally sensitive areas of the project area.

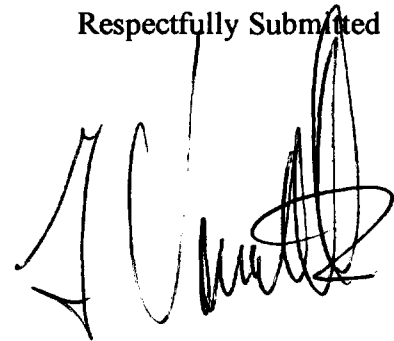
CONCLUSION AND RECOMMENDATIONS

The Summer 1998 exploration program over Mining Claim 1077361 (The North Block) was designed to test for the possible existence of significant Ni, Cu, Co (+Cr +Pt +Pd) magmatic sulphide deposits. The results indicate that this potential has not been eliminated and that support for such potential has been strengthened.

The program was successful in identifying several strong Ni + Cr + Co soil geochemical anomalies and several strong, potentially large magnetic bodies. The association of the Area A soil geochemical anomaly with the very large and strong magnetic anomaly to the south is particularly intriguing and requires greater scrutiny. Although prospecting failed to uncover any apparent mineralized sources for the soil geochemical anomalies, it can be concluded that the area covered by the Summer 1998 surveys probably contains the source(s) of the GSC Nickel anomaly in Spring Lake sediments. Follow-up prospecting in this area confirmed the presence of ultramafic and metagabbroic rocks that have the potential to host magmatic sulphides.

The results to date warrant the continuation of investigations directed toward the discovery of a buried massive sulphide body or mineralized horizon within the property. Specifically, a ground EM survey should be carried out over the entire survey area to test for conductive bedrock horizons that may be associated with the known soil geochemical and magnetic anomalies. Additional prospecting, geological mapping and rock geochemical sampling should be conducted in conjunction with the EM survey. The up-ice ridge, north of the Area A anomaly should be prospected and mapped in greater detail. Several overburden pits should be excavated in the Area A soil geochemical anomaly, to determine the thickness and nature of the cover and to check for favourable gabbroic or ultramafic bedrock. A more detailed follow-up magnetometer survey should be carried out over the Area A anomaly and adjacent areas. The Treefrog Showing should be blasted to obtain fresh samples for analysis.

Respectfully Submitted

A handwritten signature in black ink, appearing to read 'G. Vandevalk', is written over the typed name. The signature is stylized and somewhat cursive.

G. Vandevalk
December, 1998

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Appendix I

Analytical Results for All B-Horizon Soil Samples Collected During the Summer 1998 Program



XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ontario
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 051993

To: **B-MAX Ltd.**
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 02/09/98

Copy 1 to :


Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 51 SOIL & S. SEDIMENTS
Date Submitted : 25/08/98
Report Comprises : Cover Sheet plus
Pages 1 to 4

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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Work Order: 051993

Date: 02/09/98

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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-301 | <0.5 | 0.02 | 0.43 | 1.89 | 0.08 | 0.04 | 0.13 | 1.3 | 0.18 | 64 | 24 | 512 | 3.00 | 8 | 16 | 14.4 |
| SO98-302 | <0.5 | 0.02 | 0.13 | 0.39 | 0.04 | 0.06 | 0.10 | 0.7 | 0.12 | 31 | 22 | 705 | 0.89 | 7 | 11 | 10.6 |
| SO98-303 | <0.5 | 0.02 | 0.27 | 1.24 | 0.04 | 0.02 | 0.05 | 0.9 | 0.07 | 40 | 39 | 122 | 2.24 | 8 | 37 | 10.0 |
| SO98-304 | <0.5 | 0.02 | 0.65 | 1.44 | 0.07 | 0.02 | 0.18 | 1.0 | 0.05 | 24 | 45 | 95 | 1.79 | 13 | 135 | 54.7 |
| SO98-305 | <0.5 | 0.02 | 1.04 | 2.10 | 0.12 | 0.03 | 0.64 | 2.9 | 0.10 | 63 | 103 | 643 | 3.82 | 34 | 277 | 113 |
| SO98-306 | <0.5 | 0.02 | 0.64 | 1.58 | 0.03 | 0.03 | 0.15 | 1.3 | 0.13 | 57 | 118 | 145 | 3.66 | 16 | 191 | 40.7 |
| SO98-307 | <0.5 | 0.02 | 0.70 | 1.13 | 0.03 | 0.03 | 0.18 | 1.9 | 0.08 | 41 | 92 | 384 | 2.33 | 24 | 247 | 22.2 |
| SO98-308 | <0.5 | 0.02 | 0.46 | 1.62 | 0.07 | 0.03 | 0.25 | 1.2 | 0.14 | 61 | 83 | 201 | 3.43 | 14 | 104 | 37.2 |
| SO98-309 | <0.5 | 0.02 | 0.97 | 1.97 | 0.07 | 0.05 | 0.34 | 2.8 | 0.14 | 61 | 133 | 511 | 3.76 | 28 | 344 | 40.5 |
| SO98-310 | <0.5 | 0.02 | 0.39 | 0.91 | 0.06 | 0.04 | 0.12 | 1.4 | 0.09 | 62 | 60 | 161 | 2.77 | 12 | 114 | 31.6 |
| SO98-311 | <0.5 | 0.02 | 0.41 | 2.18 | 0.09 | 0.03 | 0.09 | 2.0 | 0.13 | 90 | 64 | 87 | 4.37 | 10 | 83 | 34.5 |
| SO98-312 | <0.5 | 0.02 | 0.51 | 1.30 | 0.04 | 0.03 | 0.15 | 2.2 | 0.13 | 75 | 68 | 105 | 3.26 | 11 | 122 | 24.9 |
| SO98-313 | <0.5 | 0.02 | 0.47 | 1.29 | 0.03 | 0.02 | 0.26 | 1.6 | 0.15 | 111 | 58 | 96 | 3.74 | 13 | 102 | 26.0 |
| SO98-314 | <0.5 | 0.02 | 0.35 | 2.26 | 0.09 | 0.04 | 0.51 | 3.4 | 0.04 | 39 | 63 | 1570 | 2.26 | 97 | 375 | 82.8 |
| SO98-315 | <0.5 | 0.02 | 0.59 | 1.52 | 0.05 | 0.03 | 0.39 | 1.8 | 0.10 | 54 | 49 | 168 | 2.38 | 12 | 103 | 36.0 |
| SO98-316 | <0.5 | 0.02 | 0.61 | 1.71 | 0.07 | 0.04 | 0.35 | 5.2 | 0.06 | 64 | 106 | 3130 | 3.23 | 42 | 295 | 95.4 |
| SO98-317 | <0.5 | 0.02 | 0.81 | 1.49 | 0.06 | 0.05 | 0.61 | 6.0 | 0.05 | 54 | 105 | 2020 | 2.99 | 30 | 412 | 47.2 |
| SO98-318 | <0.5 | 0.02 | 0.60 | 0.65 | 0.03 | 0.02 | 0.30 | 2.2 | 0.05 | 28 | 64 | 174 | 1.67 | 9 | 178 | 22.6 |
| SO98-319 | <0.5 | 0.02 | 0.17 | 0.32 | 0.03 | 0.04 | 0.51 | <0.5 | 0.07 | 18 | 50 | 28 | 0.68 | 3 | 24 | 3.8 |
| SO98-320 | <0.5 | 0.02 | 0.21 | 1.24 | 0.03 | 0.03 | 0.09 | 1.9 | 0.12 | 48 | 33 | 76 | 2.70 | 7 | 46 | 10.1 |
| SO98-321 | <0.5 | 0.02 | 0.09 | 0.79 | 0.05 | 0.02 | 0.05 | 0.7 | 0.03 | 29 | 21 | 297 | 1.11 | 8 | 11 | 8.9 |
| SO98-322 | <0.5 | 0.02 | 0.13 | 1.62 | 0.05 | 0.03 | 0.16 | 1.3 | 0.08 | 42 | 28 | 87 | 2.95 | 4 | 22 | 5.2 |
| SO98-323 | <0.5 | 0.02 | 0.20 | 1.29 | 0.04 | 0.03 | 0.14 | 0.9 | 0.06 | 29 | 30 | 175 | 1.83 | 5 | 32 | 6.1 |
| SO98-324 | <0.5 | 0.02 | 0.15 | 0.83 | 0.05 | 0.02 | 0.10 | 0.8 | 0.05 | 25 | 19 | 715 | 1.21 | 4 | 22 | 7.7 |
| SO98-325 | <0.5 | 0.02 | 0.11 | 1.41 | 0.05 | 0.03 | 0.28 | 1.0 | 0.08 | 42 | 28 | 184 | 2.84 | 4 | 25 | 5.0 |
| SO98-326 | 1.0 | 0.03 | 0.26 | 3.78 | 0.14 | 0.03 | 0.46 | 1.7 | 0.05 | 33 | 23 | 1100 | 3.44 | 19 | 62 | 67.9 |
| SO98-327 | <0.5 | 0.02 | 0.16 | 1.57 | 0.05 | 0.03 | 0.06 | 1.1 | 0.06 | 30 | 27 | 272 | 1.93 | 3 | 15 | 5.5 |
| SO98-328 | <0.5 | 0.02 | 0.16 | 0.96 | 0.03 | 0.03 | 0.11 | 1.0 | 0.08 | 29 | 31 | 116 | 1.71 | 3 | 16 | 5.3 |
| SO98-329 | 0.9 | 0.03 | 0.25 | 3.57 | 0.14 | 0.03 | 0.46 | 1.7 | 0.05 | 32 | 23 | 1120 | 3.23 | 17 | 58 | 64.0 |
| SO98-330 | <0.5 | 0.02 | 0.23 | 0.73 | 0.05 | 0.03 | 0.21 | 0.9 | 0.05 | 18 | 23 | 108 | 1.02 | 4 | 42 | 9.4 |



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-331 | <0.5 | 0.02 | 0.12 | 0.95 | 0.04 | 0.03 | 0.08 | 0.9 | 0.09 | 38 | 32 | 106 | 2.31 | 3 | 15 | 5.5 |
| SO98-332 | <0.5 | 0.02 | 0.33 | 1.66 | 0.04 | 0.03 | 0.08 | 1.7 | 0.09 | 40 | 51 | 72 | 2.61 | 7 | 63 | 19.3 |
| SO98-333 | <0.5 | 0.02 | 0.02 | 0.16 | <0.01 | <0.01 | 0.02 | <0.5 | 0.07 | 36 | 11 | 15 | 0.57 | 2 | 10 | 1.4 |
| SO98-334 | <0.5 | 0.02 | 0.12 | 0.69 | 0.02 | 0.03 | 0.13 | 0.7 | 0.17 | 72 | 39 | 49 | 2.84 | 4 | 27 | 4.1 |
| SO98-335 | <0.5 | 0.02 | 0.28 | 1.39 | 0.04 | 0.05 | 0.18 | 1.6 | 0.17 | 86 | 57 | 135 | 4.06 | 8 | 65 | 8.6 |
| SO98-336 | <0.5 | 0.02 | 0.24 | 1.74 | 0.06 | 0.03 | 0.53 | 1.3 | 0.16 | 54 | 25 | 636 | 3.71 | 12 | 42 | 34.3 |
| SO98-337 | <0.5 | 0.02 | 0.20 | 1.32 | 0.06 | 0.03 | 0.21 | 1.2 | 0.10 | 69 | 26 | 179 | 3.37 | 8 | 26 | 28.5 |
| SO98-338 | 0.5 | 0.02 | 0.37 | 3.25 | 0.21 | 0.04 | 0.90 | 3.8 | 0.06 | 50 | 52 | 877 | 2.80 | 37 | 336 | 126 |
| SO98-339 | <0.5 | 0.02 | 0.08 | 0.61 | 0.08 | 0.02 | 0.07 | 1.6 | 0.19 | 109 | 41 | 32 | 3.05 | 6 | 16 | 17.8 |
| SO98-340 | <0.5 | 0.05 | 0.53 | 1.13 | 0.12 | 0.07 | 0.58 | 2.0 | 0.20 | 139 | 4 | 273 | 4.14 | 19 | 19 | 71.8 |
| SO98-341 | <0.5 | 0.03 | 1.27 | 1.68 | 0.14 | 0.03 | 0.78 | 2.6 | 0.12 | 61 | 78 | 178 | 3.18 | 20 | 227 | 51.4 |
| SO98-342 | <0.5 | 0.02 | 0.43 | 1.77 | 0.02 | 0.01 | 0.05 | 3.0 | 0.25 | 149 | 57 | 61 | 4.85 | 9 | 69 | 14.8 |
| SO98-343 | <0.5 | 0.02 | 0.08 | 0.67 | 0.04 | 0.02 | 0.03 | 0.6 | 0.19 | 139 | 38 | 30 | 3.81 | 3 | 13 | 13.4 |
| SO98-344 | <0.5 | 0.02 | 0.81 | 1.35 | 0.05 | 0.02 | 0.16 | 1.5 | 0.13 | 84 | 102 | 136 | 3.84 | 18 | 188 | 26.0 |
| SO98-345 | <0.5 | 0.02 | 0.33 | 0.74 | 0.02 | 0.02 | 0.16 | 1.1 | 0.07 | 28 | 43 | 114 | 1.47 | 7 | 62 | 7.1 |
| SO98-346 | <0.5 | 0.02 | 0.14 | 0.85 | 0.02 | 0.02 | 0.06 | 0.8 | 0.12 | 41 | 30 | 43 | 2.33 | 6 | 49 | 3.4 |
| SO98-347 | <0.5 | 0.02 | 0.45 | 1.25 | 0.04 | 0.02 | 0.08 | 1.3 | 0.12 | 41 | 60 | 94 | 2.53 | 10 | 90 | 10.8 |
| SO98-348 | <0.5 | 0.02 | 0.28 | 1.16 | 0.04 | 0.02 | 0.06 | 1.0 | 0.11 | 52 | 58 | 82 | 2.57 | 8 | 64 | 9.9 |
| SO98-349 | <0.5 | 0.02 | 0.45 | 1.95 | 0.06 | 0.04 | 0.11 | 2.2 | 0.12 | 76 | 48 | 117 | 3.44 | 11 | 73 | 23.4 |
| SO98-350 | <0.5 | 0.02 | 0.35 | 2.08 | 0.08 | 0.03 | 0.11 | 1.8 | 0.11 | 68 | 54 | 401 | 3.14 | 10 | 61 | 31.7 |
| SS98-063 | <0.5 | 0.02 | 0.21 | 0.82 | 0.16 | 0.03 | 0.39 | 1.9 | 0.04 | 23 | 14 | 814 | 1.08 | 13 | 16 | 11.2 |
| *Dup SO98-301 | <0.5 | 0.02 | 0.43 | 1.90 | 0.09 | 0.04 | 0.15 | 1.3 | 0.19 | 64 | 23 | 502 | 2.97 | 9 | 16 | 14.2 |
| *Dup SO98-313 | <0.5 | 0.02 | 0.48 | 1.32 | 0.03 | 0.02 | 0.28 | 1.7 | 0.16 | 111 | 58 | 99 | 3.72 | 12 | 100 | 25.3 |
| *Dup SO98-325 | <0.5 | 0.02 | 0.12 | 1.46 | 0.05 | 0.03 | 0.30 | 1.0 | 0.09 | 43 | 29 | 181 | 2.90 | 4 | 25 | 4.8 |
| *Dup SO98-337 | <0.5 | 0.02 | 0.21 | 1.38 | 0.06 | 0.03 | 0.23 | 1.2 | 0.11 | 71 | 28 | 185 | 3.44 | 10 | 27 | 28.9 |
| *Dup SO98-349 | <0.5 | 0.02 | 0.45 | 1.98 | 0.07 | 0.04 | 0.12 | 2.2 | 0.12 | 77 | 49 | 120 | 3.52 | 11 | 74 | 23.6 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| S098-301 | 81.8 | <3 | 5.4 | 3.4 | 1.6 | <1 | 0.2 | <1 | <10 | <5 | 66 | 3.9 | <10 | 4 | <5 |
| S098-302 | 17.6 | <3 | 4.3 | 2.8 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 63 | 5.0 | <10 | 5 | <5 |
| S098-303 | 52.0 | <3 | 3.6 | 2.3 | 1.5 | <1 | 0.3 | <1 | <10 | <5 | 36 | 4.0 | <10 | 6 | <5 |
| S098-304 | 64.7 | <3 | 6.5 | 4.7 | 1.7 | <1 | 0.4 | <1 | <10 | <5 | 22 | 5.7 | <10 | 3 | <5 |
| S098-305 | 178 | <3 | 38.5 | 9.5 | 3.6 | <1 | 0.3 | <1 | <10 | <5 | 111 | 10.7 | <10 | 9 | <5 |
| S098-306 | 119 | <3 | 10.6 | 2.6 | 2.8 | <1 | 0.3 | <1 | <10 | <5 | 33 | 5.6 | <10 | 12 | <5 |
| S098-307 | 144 | <3 | 12.5 | 3.2 | 2.2 | <1 | 0.4 | <1 | <10 | <5 | 39 | 7.1 | <10 | 11 | <5 |
| S098-308 | 79.7 | <3 | 18.5 | 2.7 | 3.8 | <1 | 0.3 | <1 | <10 | <5 | 46 | 6.7 | <10 | 13 | <5 |
| S098-309 | 150 | <3 | 22.5 | 7.1 | 2.8 | <1 | 0.3 | <1 | <10 | <5 | 70 | 10.8 | <10 | 11 | <5 |
| S098-310 | 62.3 | <3 | 8.3 | 2.1 | 2.2 | <1 | 0.3 | <1 | <10 | <5 | 49 | 7.1 | <10 | 17 | <5 |
| S098-311 | 102 | <3 | 6.6 | 3.1 | 2.8 | <1 | 0.5 | <1 | <10 | <5 | 43 | 7.7 | <10 | 37 | <5 |
| S098-312 | 82.3 | <3 | 15.4 | 5.4 | 2.2 | <1 | 0.3 | <1 | <10 | <5 | 50 | 8.4 | <10 | 13 | <5 |
| S098-313 | 78.2 | <3 | 22.6 | 2.7 | 2.7 | <1 | 0.4 | <1 | <10 | <5 | 37 | 5.8 | <10 | 14 | <5 |
| S098-314 | 129 | <3 | 47.1 | 11.3 | 1.7 | <1 | 0.4 | <1 | <10 | <5 | 95 | 17.9 | <10 | 9 | <5 |
| S098-315 | 75.4 | <3 | 30.0 | 6.1 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 45 | 9.1 | <10 | 9 | <5 |
| S098-316 | 158 | <3 | 25.8 | 16.0 | 2.0 | <1 | 0.4 | <1 | <10 | <5 | 93 | 30.7 | <10 | 26 | <5 |
| S098-317 | 187 | <3 | 47.6 | 20.9 | 2.0 | <1 | 0.7 | <1 | <10 | <5 | 107 | 31.4 | <10 | 16 | <5 |
| S098-318 | 47.0 | <3 | 20.5 | 7.7 | 1.8 | <1 | 0.3 | <1 | <10 | <5 | 31 | 14.0 | <10 | 6 | <5 |
| S098-319 | 23.8 | 3 | 54.9 | 1.1 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 55 | 2.4 | <10 | 8 | <5 |
| S098-320 | 48.4 | <3 | 7.9 | 11.4 | 2.2 | <1 | 0.4 | <1 | <10 | <5 | 38 | 17.8 | <10 | 7 | <5 |
| S098-321 | 26.4 | <3 | 4.2 | 2.4 | 0.8 | <1 | 0.2 | <1 | <10 | <5 | 31 | 7.3 | <10 | 10 | <5 |
| S098-322 | 52.6 | <3 | 14.2 | 3.7 | 2.0 | <1 | 0.3 | <1 | <10 | <5 | 54 | 8.0 | <10 | 10 | <5 |
| S098-323 | 39.2 | <3 | 12.0 | 3.3 | 1.4 | <1 | 0.2 | <1 | <10 | <5 | 74 | 6.2 | <10 | 6 | <5 |
| S098-324 | 47.1 | <3 | 6.6 | 3.1 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 55 | 7.0 | <10 | 6 | <5 |
| S098-325 | 54.9 | <3 | 28.1 | 3.3 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 96 | 7.3 | <10 | 10 | <5 |
| S098-326 | 113 | <3 | 45.8 | 10.3 | 2.8 | <1 | <0.2 | <1 | <10 | <5 | 94 | 8.8 | <10 | 9 | <5 |
| S098-327 | 51.4 | <3 | 3.6 | 3.2 | 2.1 | <1 | <0.2 | <1 | <10 | <5 | 30 | 6.9 | <10 | 8 | <5 |
| S098-328 | 34.9 | <3 | 8.9 | 2.7 | 2.0 | <1 | 0.3 | <1 | <10 | <5 | 29 | 8.6 | <10 | 5 | <5 |
| S098-329 | 109 | <3 | 44.8 | 10.0 | 3.1 | <1 | <0.2 | <1 | <10 | <5 | 91 | 8.5 | <10 | 11 | <5 |
| S098-330 | 26.9 | <3 | 10.7 | 5.2 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 38 | 7.8 | <10 | 3 | <5 |



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| Element. Method. Def.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-331 | 54.5 | <3 | 6.7 | 2.0 | 2.3 | <1 | 0.3 | <1 | <10 | <5 | 40 | 8.1 | <10 | 11 | <5 |
| SO98-332 | 39.3 | <3 | 5.3 | 3.4 | 3.8 | <1 | 0.4 | <1 | <10 | <5 | 29 | 7.6 | <10 | 8 | <5 |
| SO98-333 | 6.8 | <3 | 3.3 | 1.4 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 7 | 11.3 | <10 | 6 | <5 |
| SO98-334 | 44.5 | <3 | 11.4 | 1.4 | 2.8 | <1 | <0.2 | <1 | <10 | <5 | 32 | 7.0 | <10 | 10 | <5 |
| SO98-335 | 103 | <3 | 13.8 | 3.6 | 4.3 | <1 | <0.2 | <1 | <10 | <5 | 47 | 8.4 | <10 | 10 | <5 |
| SO98-336 | 71.3 | <3 | 40.4 | 4.9 | 8.6 | <1 | 0.3 | <1 | <10 | <5 | 83 | 8.4 | <10 | 16 | <5 |
| SO98-337 | 50.1 | <3 | 17.2 | 3.8 | 3.3 | <1 | <0.2 | <1 | <10 | <5 | 34 | 8.5 | <10 | 8 | <5 |
| SO98-338 | 266 | <3 | 73.4 | 25.1 | 3.3 | <1 | <0.2 | <1 | <10 | <5 | 109 | 28.2 | <10 | 11 | <5 |
| SO98-339 | 26.0 | <3 | 7.7 | 1.5 | 3.8 | <1 | <0.2 | <1 | <10 | <5 | 25 | 4.5 | <10 | 9 | <5 |
| SO98-340 | 52.3 | <3 | 40.5 | 2.9 | 4.1 | <1 | 0.2 | <1 | <10 | <5 | 103 | 5.8 | <10 | 8 | <5 |
| SO98-341 | 171 | <3 | 47.5 | 7.0 | 2.2 | <1 | 0.3 | <1 | <10 | <5 | 54 | 14.9 | <10 | 22 | <5 |
| SO98-342 | 52.4 | <3 | 5.1 | 4.2 | 4.4 | <1 | <0.2 | <1 | <10 | <5 | 27 | 10.2 | <10 | 12 | <5 |
| SO98-343 | 29.1 | <3 | 4.9 | 1.1 | 2.4 | 2 | <0.2 | <1 | <10 | <5 | 18 | 5.4 | <10 | 9 | <5 |
| SO98-344 | 95.1 | <3 | 8.8 | 2.8 | 3.1 | <1 | 0.5 | <1 | <10 | <5 | 29 | 5.7 | <10 | 13 | <5 |
| SO98-345 | 39.9 | <3 | 12.2 | 2.8 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 29 | 5.8 | <10 | 6 | <5 |
| SO98-346 | 24.5 | <3 | 5.8 | 3.5 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 32 | 5.5 | <10 | 6 | <5 |
| SO98-347 | 50.3 | <3 | 4.4 | 4.1 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 26 | 5.7 | <10 | 5 | <5 |
| SO98-348 | 42.5 | <3 | 3.4 | 2.9 | 2.4 | <1 | 0.3 | <1 | <10 | <5 | 27 | 5.6 | <10 | 12 | <5 |
| SO98-349 | 91.6 | <3 | 6.2 | 4.3 | 2.5 | <1 | 0.3 | <1 | <10 | <5 | 58 | 8.6 | <10 | 8 | <5 |
| SO98-350 | 61.6 | <3 | 6.7 | 4.5 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 72 | 11.7 | <10 | 11 | <5 |
| SS98-063 | 46.3 | <3 | 8.5 | 11.4 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 46 | 14.6 | <10 | 5 | <5 |
| *Dup SO98-301 | 81.5 | <3 | 5.6 | 4.0 | 1.9 | <1 | 0.4 | <1 | <10 | <5 | 65 | 4.9 | <10 | 5 | <5 |
| *Dup SO98-313 | 79.5 | <3 | 23.2 | 3.0 | 2.7 | <1 | 0.5 | <1 | <10 | <5 | 36 | 6.3 | <10 | 14 | <5 |
| *Dup SO98-325 | 57.3 | <3 | 29.0 | 3.6 | 2.6 | <1 | 0.2 | <1 | <10 | <5 | 98 | 7.5 | <10 | 9 | <5 |
| *Dup SO98-337 | 52.9 | <3 | 17.9 | 3.9 | 3.6 | <1 | <0.2 | <1 | <10 | <5 | 35 | 9.3 | <10 | 8 | <5 |
| *Dup SO98-349 | 93.3 | <3 | 6.6 | 4.6 | 2.9 | <1 | <0.2 | <1 | <10 | <5 | 59 | 8.4 | <10 | 9 | <5 |



XRAL Laboratories
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CERTIFICATE OF ANALYSIS

Work Order: 052191

To: **B-MAX Ltd.**
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 18/09/98

Copy 1 to :

Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 120 SOIL
Date Submitted : 10/09/98
Report Comprises : Cover Sheet plus
Pages 1 to 10

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :

Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-351 | <0.5 | 0.04 | 1.67 | 1.95 | 0.07 | 0.06 | 0.57 | 3.7 | 0.07 | 46 | 116 | 395 | 3.42 | 37 | 415 | 34.9 |
| SO98-352 | <0.5 | 0.01 | 0.28 | 1.06 | 0.04 | 0.03 | 0.18 | 1.1 | 0.08 | 40 | 47 | 193 | 2.55 | 9 | 78 | 15.0 |
| SO98-353 | <0.5 | 0.02 | 1.91 | 1.84 | 0.09 | 0.05 | 0.43 | 2.4 | 0.09 | 57 | 103 | 385 | 4.20 | 44 | 437 | 24.5 |
| SO98-354 | <0.5 | 0.01 | 0.43 | 1.01 | 0.05 | 0.02 | 0.29 | 1.1 | 0.08 | 33 | 50 | 117 | 2.53 | 14 | 194 | 5.1 |
| SO98-355 | <0.5 | 0.01 | 0.48 | 0.53 | 0.12 | 0.02 | 0.37 | 1.1 | 0.05 | 19 | 35 | 88 | 1.11 | 4 | 54 | 3.4 |
| SO98-356 | <0.5 | 0.01 | 0.41 | 0.88 | 0.04 | 0.03 | 0.18 | 1.2 | 0.11 | 59 | 44 | 128 | 2.41 | 9 | 79 | 6.4 |
| SO98-357 | <0.5 | 0.01 | 0.53 | 1.12 | 0.02 | 0.02 | 0.19 | 1.3 | 0.09 | 45 | 65 | 96 | 2.39 | 15 | 138 | 12.7 |
| SO98-358 | <0.5 | 0.01 | 0.35 | 0.87 | 0.02 | 0.02 | 0.16 | 1.0 | 0.09 | 35 | 46 | 123 | 2.08 | 12 | 132 | 5.0 |
| SO98-359 | <0.5 | 0.01 | 1.46 | 1.39 | 0.08 | 0.06 | 0.48 | 2.9 | 0.10 | 49 | 136 | 305 | 3.34 | 35 | 394 | 45.3 |
| SO98-360 | <0.5 | 0.01 | 0.36 | 1.00 | 0.03 | 0.02 | 0.20 | 0.9 | 0.08 | 33 | 47 | 93 | 2.26 | 12 | 147 | 4.6 |
| SO98-361 | <0.5 | 0.01 | 0.84 | 1.18 | 0.05 | 0.03 | 0.52 | 1.6 | 0.06 | 40 | 66 | 179 | 2.41 | 20 | 221 | 12.3 |
| SO98-362 | <0.5 | 0.01 | 0.85 | 1.42 | 0.06 | 0.03 | 0.29 | 2.4 | 0.10 | 48 | 67 | 181 | 3.05 | 20 | 213 | 26.5 |
| SO98-363 | <0.5 | 0.01 | 0.72 | 1.38 | 0.04 | 0.03 | 0.54 | 1.5 | 0.09 | 39 | 64 | 207 | 2.71 | 18 | 229 | 41.3 |
| SO98-364 | <0.5 | 0.01 | 0.79 | 1.55 | 0.06 | 0.03 | 0.36 | 1.8 | 0.11 | 55 | 66 | 119 | 3.01 | 20 | 181 | 14.8 |
| SO98-365 | <0.5 | 0.02 | 1.14 | 2.40 | 0.06 | 0.03 | 0.59 | 3.1 | 0.13 | 70 | 102 | 127 | 4.00 | 27 | 367 | 28.5 |
| SO98-366 | <0.5 | 0.02 | 0.20 | 2.27 | 0.08 | 0.03 | 0.22 | 2.5 | 0.13 | 100 | 22 | 62 | 4.81 | 12 | 28 | 52.7 |
| SO98-367 | <0.5 | 0.02 | 0.12 | 2.80 | 0.08 | 0.03 | 0.19 | 2.3 | 0.09 | 77 | 22 | 43 | 4.23 | 5 | 16 | 16.0 |
| SO98-368 | <0.5 | 0.02 | 0.70 | 1.98 | 0.07 | 0.03 | 0.20 | 2.7 | 0.12 | 74 | 75 | 90 | 3.54 | 21 | 185 | 96.1 |
| SO98-369 | <0.5 | 0.01 | 0.33 | 1.48 | 0.04 | 0.04 | 0.18 | 1.7 | 0.12 | 62 | 52 | 79 | 3.48 | 8 | 93 | 23.4 |
| SO98-370 | <0.5 | 0.02 | 0.45 | 1.16 | 0.09 | 0.04 | 0.52 | 1.9 | 0.07 | 43 | 35 | 211 | 1.84 | 11 | 56 | 20.1 |
| SO98-371 | <0.5 | 0.01 | 0.11 | 0.70 | 0.01 | 0.01 | 0.15 | 0.8 | 0.06 | 24 | 24 | 29 | 1.31 | 3 | 26 | 3.8 |
| SO98-372 | <0.5 | 0.01 | 0.17 | 1.04 | 0.03 | 0.02 | 0.14 | 1.0 | 0.07 | 42 | 40 | 141 | 2.60 | 7 | 56 | 5.6 |
| SO98-373 | <0.5 | 0.01 | 0.93 | 1.70 | 0.05 | 0.06 | 0.33 | 1.7 | 0.08 | 44 | 59 | 242 | 2.87 | 23 | 173 | 11.8 |
| SO98-374 | <0.5 | <0.01 | 0.35 | 1.30 | 0.04 | 0.02 | 0.12 | 1.2 | 0.08 | 37 | 36 | 43 | 2.16 | 7 | 63 | 7.3 |
| SO98-375 | <0.5 | 0.01 | 0.44 | 0.67 | 0.05 | 0.02 | 0.17 | 0.9 | 0.04 | 13 | 32 | 56 | 0.87 | 7 | 72 | 4.9 |
| SO98-376 | <0.5 | 0.02 | 0.48 | 1.36 | 0.08 | 0.04 | 0.21 | 1.4 | 0.09 | 47 | 48 | 145 | 2.75 | 12 | 92 | 44.2 |
| SO98-377 | <0.5 | 0.02 | 0.35 | 1.64 | 0.09 | 0.03 | 0.49 | 2.2 | 0.05 | 31 | 32 | 117 | 2.10 | 18 | 128 | 51.3 |
| SO98-378 | <0.5 | 0.01 | 0.38 | 1.66 | 0.08 | 0.03 | 0.17 | 1.9 | 0.14 | 97 | 51 | 57 | 4.33 | 9 | 44 | 33.8 |
| SO98-379 | <0.5 | 0.02 | 1.62 | 1.76 | 0.06 | 0.03 | 0.22 | 2.3 | 0.10 | 46 | 125 | 206 | 3.10 | 32 | 355 | 30.3 |
| SO98-380 | <0.5 | 0.02 | 0.35 | 1.11 | 0.03 | 0.03 | 0.12 | 1.4 | 0.13 | 67 | 49 | 107 | 2.85 | 9 | 56 | 10.2 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-381 | <0.5 | 0.02 | 0.52 | 1.63 | 0.05 | 0.06 | 0.52 | 2.2 | 0.16 | 67 | 46 | 221 | 3.79 | 23 | 82 | 115 |
| SO98-382 | <0.5 | 0.02 | 2.66 | 2.12 | 0.12 | 0.14 | 1.04 | 9.7 | 0.17 | 66 | 144 | 1010 | 4.24 | 45 | 653 | 126 |
| SO98-383 | <0.5 | 0.02 | 0.88 | 1.66 | 0.11 | 0.04 | 0.58 | 3.6 | 0.10 | 54 | 77 | 210 | 2.93 | 18 | 232 | 32.3 |
| SO98-384 | <0.5 | 0.01 | 0.83 | 1.63 | 0.06 | 0.03 | 0.49 | 2.1 | 0.08 | 48 | 78 | 133 | 3.00 | 24 | 288 | 29.4 |
| SO98-385 | <0.5 | 0.01 | 0.85 | 2.05 | 0.08 | 0.04 | 0.32 | 2.9 | 0.17 | 72 | 82 | 274 | 3.77 | 26 | 196 | 57.6 |
| SO98-386 | <0.5 | 0.01 | 1.05 | 1.87 | 0.08 | 0.03 | 0.21 | 2.2 | 0.10 | 66 | 136 | 229 | 4.30 | 26 | 398 | 39.5 |
| SO98-387 | <0.5 | 0.01 | 0.80 | 1.80 | 0.09 | 0.09 | 0.31 | 2.0 | 0.18 | 79 | 112 | 392 | 4.22 | 23 | 136 | 50.5 |
| SO98-388 | <0.5 | 0.01 | 0.47 | 1.02 | 0.05 | 0.03 | 0.31 | 2.2 | 0.06 | 31 | 66 | 245 | 2.06 | 14 | 153 | 30.5 |
| SO98-389 | <0.5 | 0.01 | 0.69 | 1.27 | 0.07 | 0.04 | 0.28 | 1.7 | 0.08 | 39 | 83 | 209 | 2.76 | 20 | 246 | 9.6 |
| SO98-390 | <0.5 | 0.02 | 0.72 | 0.84 | 0.07 | 0.09 | 0.43 | 3.6 | 0.06 | 26 | 88 | 203 | 1.69 | 11 | 212 | 18.5 |
| SO98-391 | <0.5 | 0.01 | 0.26 | 0.76 | 0.03 | 0.03 | 0.27 | 1.0 | 0.07 | 31 | 36 | 147 | 1.95 | 8 | 77 | 10.2 |
| SO98-392 | <0.5 | 0.02 | 1.49 | 1.70 | 0.08 | 0.04 | 0.39 | 4.8 | 0.10 | 68 | 131 | 1090 | 3.27 | 30 | 279 | 41.7 |
| SO98-393 | <0.5 | 0.01 | 0.18 | 0.92 | 0.03 | 0.03 | 0.18 | 1.0 | 0.10 | 43 | 29 | 84 | 2.63 | 4 | 32 | 6.1 |
| SO98-394 | <0.5 | 0.01 | 0.49 | 0.88 | 0.03 | 0.04 | 0.20 | 1.4 | 0.06 | 32 | 58 | 262 | 2.01 | 13 | 112 | 10.4 |
| SO98-395 | <0.5 | 0.02 | 2.25 | 1.50 | 0.11 | 0.07 | 0.57 | 3.0 | 0.06 | 46 | 154 | 724 | 4.03 | 48 | 561 | 46.3 |
| SO98-396 | <0.5 | 0.03 | 0.58 | 1.31 | 0.16 | 0.07 | 0.55 | 1.9 | 0.09 | 62 | 42 | 523 | 3.06 | 15 | 39 | 43.2 |
| SO98-397 | <0.5 | 0.02 | 0.51 | 1.25 | 0.13 | 0.04 | 0.39 | 1.5 | 0.12 | 58 | 32 | 308 | 3.03 | 21 | 72 | 55.2 |
| SO98-398 | <0.5 | <0.01 | 0.38 | 0.86 | 0.07 | 0.02 | 0.21 | 1.0 | 0.05 | 27 | 32 | 128 | 1.70 | 11 | 115 | 10.1 |
| SO98-399 | <0.5 | <0.01 | 0.37 | 1.12 | 0.04 | 0.02 | 0.12 | 1.2 | 0.07 | 32 | 57 | 146 | 2.05 | 14 | 139 | 13.7 |
| SO98-400 | <0.5 | 0.01 | 0.49 | 1.44 | 0.05 | 0.03 | 0.41 | 1.4 | 0.10 | 59 | 64 | 195 | 3.37 | 14 | 123 | 20.1 |
| SO98-401 | <0.5 | 0.02 | 0.61 | 2.48 | 0.27 | 0.13 | 0.66 | 1.7 | 0.11 | 52 | 30 | 120 | 2.94 | 15 | 48 | 52.8 |
| SO98-402 | <0.5 | 0.02 | 0.57 | 1.44 | 0.10 | 0.04 | 0.79 | 2.1 | 0.11 | 61 | 13 | 596 | 2.93 | 25 | 90 | 129 |
| SO98-403 | <0.5 | 0.01 | 0.11 | 2.08 | 0.07 | 0.02 | 0.09 | 2.1 | 0.06 | 54 | 19 | 39 | 2.83 | 4 | 10 | 17.5 |
| SO98-404 | 0.8 | 0.01 | 0.42 | 3.92 | 0.08 | 0.02 | 1.51 | 13.0 | 0.16 | 101 | 54 | 756 | 6.20 | 29 | 62 | 132 |
| SO98-405 | <0.5 | 0.01 | 0.24 | 1.67 | 0.04 | 0.02 | 0.25 | 2.5 | 0.18 | 139 | 41 | 57 | 4.42 | 9 | 38 | 8.9 |
| SO98-406 | <0.5 | 0.01 | 0.19 | 1.41 | 0.05 | 0.03 | 0.18 | 1.2 | 0.06 | 45 | 29 | 144 | 3.15 | 10 | 40 | 15.7 |
| SO98-407 | <0.5 | 0.01 | 0.82 | 1.78 | 0.05 | 0.04 | 0.22 | 1.5 | 0.18 | 78 | 100 | 89 | 3.84 | 18 | 149 | 19.9 |
| SO98-408 | <0.5 | 0.02 | 0.80 | 2.18 | 0.05 | 0.08 | 0.48 | 2.5 | 0.26 | 82 | 82 | 89 | 4.12 | 16 | 68 | 26.2 |
| SO98-409 | <0.5 | <0.01 | 0.40 | 1.53 | 0.04 | 0.03 | 0.14 | 1.8 | 0.16 | 83 | 49 | 91 | 3.84 | 9 | 142 | 24.8 |
| SO98-410 | <0.5 | 0.02 | 0.07 | 0.43 | 0.02 | 0.03 | 0.07 | 0.9 | 0.16 | 121 | 17 | 22 | 1.36 | 7 | 16 | 22.0 |



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-411 | <0.5 | 0.02 | 0.10 | 0.68 | 0.07 | 0.02 | 0.10 | 1.1 | 0.23 | 158 | 111 | 43 | 4.52 | 7 | 29 | 26.7 |
| SO98-412 | <0.5 | 0.05 | 0.84 | 1.53 | 0.34 | 0.04 | 1.10 | 1.5 | 0.09 | 39 | 61 | 100 | 2.42 | 32 | 130 | 140 |
| SO98-413 | <0.5 | 0.01 | 0.28 | 1.02 | 0.03 | 0.03 | 0.36 | 2.3 | 0.04 | 22 | 33 | 125 | 1.36 | 9 | 91 | 28.5 |
| SO98-414 | <0.5 | 0.01 | 0.91 | 1.98 | 0.09 | 0.09 | 0.26 | 3.2 | 0.10 | 68 | 91 | 744 | 2.81 | 46 | 166 | 43.9 |
| SO98-415 | <0.5 | 0.02 | 0.24 | 1.03 | 0.08 | 0.05 | 0.36 | 1.9 | 0.11 | 78 | 61 | 1230 | 2.51 | 31 | 43 | 25.3 |
| SO98-416 | <0.5 | 0.02 | 0.60 | 1.36 | 0.06 | 0.02 | 0.28 | 1.6 | 0.08 | 33 | 49 | 87 | 2.16 | 17 | 197 | 49.4 |
| SO98-417 | <0.5 | 0.02 | 0.49 | 2.63 | 0.12 | 0.03 | 0.26 | 2.3 | 0.06 | 46 | 56 | 268 | 2.92 | 24 | 213 | 52.8 |
| SO98-418 | <0.5 | 0.01 | 0.80 | 1.46 | 0.07 | 0.03 | 0.43 | 1.8 | 0.05 | 30 | 68 | 123 | 2.36 | 26 | 224 | 19.5 |
| SO98-419 | <0.5 | 0.01 | 0.41 | 1.05 | 0.06 | 0.02 | 0.24 | 1.0 | 0.05 | 21 | 32 | 139 | 1.50 | 11 | 121 | 8.3 |
| SO98-420 | <0.5 | 0.01 | 0.25 | 1.04 | 0.08 | 0.02 | 0.20 | 1.1 | 0.05 | 24 | 22 | 57 | 1.62 | 5 | 40 | 3.5 |
| SO98-421 | <0.5 | <0.01 | 0.39 | 1.40 | 0.04 | 0.02 | 0.07 | 1.8 | 0.09 | 53 | 49 | 52 | 2.68 | 7 | 77 | 15.7 |
| SO98-422 | <0.5 | <0.01 | 0.28 | 0.80 | 0.03 | 0.02 | 0.07 | 0.8 | 0.08 | 36 | 41 | 90 | 1.77 | 7 | 68 | 6.4 |
| SO98-423 | <0.5 | 0.01 | 0.97 | 2.09 | 0.05 | 0.02 | 0.10 | 1.9 | 0.08 | 40 | 92 | 97 | 2.71 | 16 | 192 | 26.1 |
| SO98-424 | <0.5 | 0.02 | 1.32 | 1.70 | 0.09 | 0.06 | 0.65 | 3.8 | 0.13 | 50 | 93 | 234 | 3.02 | 23 | 366 | 57.6 |
| SO98-425 | <0.5 | 0.01 | 0.37 | 1.67 | 0.04 | 0.04 | 0.35 | 1.6 | 0.12 | 50 | 56 | 146 | 2.81 | 15 | 98 | 10.3 |
| SO98-426 | <0.5 | 0.01 | 1.21 | 2.49 | 0.06 | 0.07 | 0.24 | 3.0 | 0.20 | 122 | 116 | 197 | 5.59 | 22 | 393 | 150 |
| SO98-427 | <0.5 | 0.01 | 0.80 | 2.65 | 0.08 | 0.04 | 0.40 | 2.0 | 0.29 | 112 | 82 | 84 | 5.07 | 17 | 72 | 33.8 |
| SO98-428 | <0.5 | 0.04 | 0.90 | 1.18 | 0.03 | 0.11 | 0.37 | 1.6 | 0.24 | 49 | 61 | 116 | 2.33 | 23 | 122 | 45.5 |
| SO98-429 | <0.5 | 0.03 | 0.28 | 1.54 | 0.36 | 0.03 | 0.29 | 1.7 | 0.11 | 95 | 6 | 37 | 4.06 | 7 | 7 | 21.6 |
| SO98-430 | <0.5 | 0.01 | 0.18 | 1.72 | 0.26 | 0.07 | 0.09 | 1.3 | 0.10 | 97 | 25 | 1090 | 6.19 | 36 | 16 | 18.3 |
| SO98-431 | <0.5 | 0.02 | 0.21 | 3.10 | 0.13 | 0.02 | 0.20 | 3.6 | 0.09 | 62 | 42 | 43 | 3.33 | 8 | 28 | 34.1 |
| SO98-432 | <0.5 | 0.02 | 0.23 | 2.62 | 0.10 | 0.03 | 0.23 | 3.5 | 0.10 | 55 | 38 | 42 | 3.14 | 10 | 45 | 71.6 |
| SO98-433 | <0.5 | 0.01 | 0.34 | 1.70 | 0.19 | 0.04 | 0.20 | 2.5 | 0.06 | 51 | 70 | 183 | 1.88 | 26 | 118 | 58.5 |
| SO98-434 | <0.5 | 0.01 | 0.44 | 1.95 | 0.05 | 0.02 | 0.09 | 2.6 | 0.14 | 77 | 84 | 78 | 3.47 | 13 | 81 | 23.8 |
| SO98-435 | <0.5 | 0.02 | 0.16 | 1.38 | 0.11 | 0.03 | 0.49 | 3.0 | 0.12 | 97 | 65 | 137 | 4.80 | 10 | 27 | 59.2 |
| SO98-436 | <0.5 | 0.01 | 0.41 | 1.80 | 0.10 | 0.04 | 0.41 | 2.5 | 0.09 | 118 | 45 | 225 | 4.68 | 13 | 43 | 58.6 |
| SO98-437 | <0.5 | 0.02 | 1.02 | 2.45 | 0.08 | 0.06 | 0.45 | 3.8 | 0.11 | 69 | 109 | 610 | 3.98 | 30 | 273 | 50.8 |
| SO98-438 | <0.5 | 0.02 | 1.24 | 1.43 | 0.05 | 0.05 | 0.41 | 3.3 | 0.11 | 56 | 134 | 368 | 2.98 | 23 | 386 | 40.9 |
| SO98-439 | <0.5 | 0.02 | 0.32 | 0.72 | 0.03 | 0.03 | 0.16 | 1.3 | 0.13 | 69 | 65 | 104 | 2.83 | 10 | 112 | 10.5 |
| SO98-440 | <0.5 | 0.02 | 2.49 | 1.10 | 0.05 | 0.09 | 0.27 | 6.4 | 0.08 | 50 | 182 | 800 | 3.41 | 43 | 729 | 66.9 |



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-441 | <0.5 | 0.02 | 1.14 | 0.77 | 0.04 | 0.05 | 0.57 | 3.2 | 0.04 | 29 | 96 | 725 | 2.17 | 20 | 335 | 27.3 |
| SO98-442 | <0.5 | 0.01 | 0.38 | 1.51 | 0.02 | 0.02 | 0.07 | 1.4 | 0.17 | 83 | 80 | 130 | 4.26 | 12 | 164 | 6.0 |
| SO98-443 | <0.5 | <0.01 | 0.16 | 1.08 | 0.03 | 0.02 | 0.06 | 0.9 | 0.08 | 37 | 33 | 63 | 2.01 | 8 | 67 | 3.6 |
| SO98-444 | <0.5 | <0.01 | 0.08 | 0.70 | 0.02 | 0.02 | 0.04 | 0.7 | 0.05 | 27 | 18 | 56 | 1.11 | 4 | 15 | 14.8 |
| SO98-445 | <0.5 | 0.01 | 0.64 | 1.11 | 0.10 | 0.03 | 0.22 | 1.5 | 0.07 | 31 | 53 | 160 | 2.14 | 12 | 136 | 13.4 |
| SO98-446 | <0.5 | 0.01 | 0.18 | 1.11 | 0.05 | 0.03 | 0.14 | 1.5 | 0.11 | 46 | 30 | 57 | 2.46 | 5 | 39 | 6.4 |
| SO98-447 | <0.5 | 0.01 | 0.48 | 3.10 | 0.07 | 0.08 | 0.20 | 3.0 | 0.13 | 50 | 71 | 260 | 3.61 | 15 | 107 | 41.9 |
| SO98-448 | <0.5 | 0.01 | 0.26 | 2.72 | 0.07 | 0.04 | 0.08 | 2.0 | 0.08 | 33 | 51 | 296 | 2.33 | 4 | 28 | 9.3 |
| SO98-449 | <0.5 | 0.01 | 0.20 | 1.70 | 0.04 | 0.04 | 0.09 | 1.6 | 0.14 | 49 | 44 | 82 | 3.60 | 3 | 14 | 7.1 |
| SO98-450 | <0.5 | 0.01 | 0.38 | 1.60 | 0.04 | 0.08 | 1.00 | 2.1 | 0.17 | 75 | 69 | 116 | 3.27 | 5 | 23 | 11.7 |
| SO98-451 | <0.5 | 0.01 | 0.12 | 1.78 | 0.04 | 0.03 | 0.09 | 1.7 | 0.11 | 36 | 31 | 44 | 2.98 | 2 | 9 | 3.0 |
| SO98-452 | <0.5 | 0.01 | 0.36 | 1.91 | 0.03 | 0.03 | 0.09 | 1.7 | 0.15 | 52 | 43 | 69 | 2.84 | 6 | 32 | 21.0 |
| SO98-453 | <0.5 | <0.01 | 0.09 | 1.51 | 0.03 | 0.03 | 0.04 | 1.0 | 0.13 | 46 | 44 | 36 | 2.94 | <1 | 14 | 4.4 |
| SO98-454 | <0.5 | 0.01 | 0.33 | 2.37 | 0.04 | 0.04 | 0.05 | 2.0 | 0.18 | 72 | 77 | 92 | 4.33 | 9 | 49 | 7.1 |
| SO98-455 | <0.5 | <0.01 | 0.20 | 1.33 | 0.04 | 0.04 | 0.04 | 1.1 | 0.16 | 88 | 64 | 58 | 3.64 | 3 | 13 | 11.5 |
| SO98-456 | <0.5 | <0.01 | 0.06 | 0.52 | 0.02 | 0.02 | 0.06 | 0.9 | 0.12 | 111 | 18 | 30 | 2.09 | 1 | 13 | 3.5 |
| SO98-457 | <0.5 | <0.01 | 0.39 | 1.42 | 0.04 | 0.03 | 0.12 | 1.5 | 0.14 | 84 | 71 | 166 | 4.33 | 11 | 118 | 7.3 |
| SO98-458 | <0.5 | 0.01 | 0.23 | 1.32 | 0.05 | 0.05 | 0.14 | 1.5 | 0.13 | 76 | 49 | 108 | 3.85 | 7 | 41 | 13.6 |
| SO98-459 | <0.5 | 0.03 | 0.90 | 1.64 | 0.21 | 0.11 | 0.62 | 1.1 | 0.15 | 54 | 18 | 150 | 3.08 | 13 | 27 | 30.3 |
| SO98-460 | <0.5 | 0.01 | 0.04 | 0.46 | 0.04 | 0.03 | 0.07 | 1.1 | 0.07 | 25 | 17 | 16 | 0.54 | 1 | 9 | 14.6 |
| SO98-461 | <0.5 | 0.02 | 0.64 | 1.81 | 0.07 | 0.04 | 0.21 | 2.4 | 0.15 | 127 | 77 | 79 | 4.18 | 14 | 126 | 36.9 |
| SO98-462 | <0.5 | 0.02 | 1.43 | 1.89 | 0.05 | 0.02 | 0.21 | 2.3 | 0.11 | 62 | 93 | 147 | 4.10 | 25 | 283 | 44.2 |
| SO98-463 | <0.5 | 0.02 | 0.74 | 1.56 | 0.03 | 0.02 | 0.30 | 2.4 | 0.16 | 128 | 59 | 97 | 4.16 | 14 | 94 | 31.7 |
| SO98-464 | <0.5 | 0.01 | 0.51 | 1.59 | 0.04 | 0.04 | 0.19 | 2.5 | 0.14 | 116 | 61 | 166 | 4.41 | 15 | 77 | 27.8 |
| SO98-465 | <0.5 | 0.01 | 0.62 | 2.04 | 0.07 | 0.04 | 0.22 | 2.5 | 0.10 | 63 | 81 | 191 | 4.14 | 14 | 161 | 29.3 |
| SO98-466 | <0.5 | 0.01 | 0.55 | 1.72 | 0.06 | 0.03 | 0.25 | 1.6 | 0.11 | 63 | 74 | 128 | 4.06 | 16 | 135 | 15.5 |
| SO98-467 | <0.5 | 0.01 | 1.05 | 2.08 | 0.13 | 0.44 | 0.31 | 2.0 | 0.17 | 62 | 76 | 499 | 3.29 | 31 | 71 | 47.9 |
| SO98-468 | <0.5 | 0.01 | 0.40 | 1.96 | 0.06 | 0.05 | 0.10 | 2.6 | 0.08 | 46 | 61 | 156 | 3.12 | 13 | 89 | 24.4 |
| SO98-469 | <0.5 | 0.01 | 0.55 | 1.32 | 0.20 | 0.21 | 0.34 | 1.1 | 0.15 | 60 | 29 | 203 | 3.03 | 8 | 20 | 10.3 |
| SO98-470 | <0.5 | 0.01 | 0.25 | 0.89 | 0.07 | 0.05 | 0.08 | 0.9 | 0.12 | 38 | 22 | 99 | 1.30 | 4 | 12 | 10.9 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| *Dup SO98-351 | <0.5 | 0.04 | 1.68 | 1.97 | 0.07 | 0.06 | 0.56 | 3.7 | 0.07 | 45 | 115 | 393 | 3.35 | 37 | 400 | 34.8 |
| *Dup SO98-363 | <0.5 | 0.01 | 0.72 | 1.39 | 0.05 | 0.03 | 0.54 | 1.5 | 0.09 | 38 | 61 | 202 | 2.65 | 19 | 220 | 41.3 |
| *Dup SO98-375 | <0.5 | 0.01 | 0.42 | 0.63 | 0.04 | 0.02 | 0.15 | 0.8 | 0.03 | 12 | 30 | 50 | 0.80 | 7 | 65 | 4.6 |
| *Dup SO98-387 | <0.5 | 0.01 | 0.81 | 1.80 | 0.09 | 0.09 | 0.31 | 1.9 | 0.17 | 78 | 112 | 391 | 4.13 | 22 | 132 | 50.1 |
| *Dup SO98-399 | <0.5 | 0.01 | 0.36 | 1.10 | 0.04 | 0.02 | 0.11 | 1.2 | 0.07 | 31 | 55 | 137 | 1.97 | 14 | 132 | 13.3 |
| *Dup SO98-411 | <0.5 | 0.02 | 0.10 | 0.68 | 0.07 | 0.02 | 0.09 | 1.2 | 0.24 | 157 | 111 | 42 | 4.48 | 7 | 28 | 27.4 |
| *Dup SO98-423 | <0.5 | 0.01 | 0.96 | 2.06 | 0.05 | 0.02 | 0.10 | 1.7 | 0.08 | 40 | 90 | 95 | 2.65 | 16 | 191 | 25.7 |
| *Dup SO98-435 | <0.5 | 0.02 | 0.16 | 1.35 | 0.11 | 0.03 | 0.47 | 2.9 | 0.13 | 94 | 63 | 137 | 4.64 | 9 | 26 | 56.9 |
| *Dup SO98-447 | <0.5 | 0.01 | 0.49 | 3.15 | 0.07 | 0.08 | 0.20 | 3.0 | 0.13 | 51 | 72 | 264 | 3.65 | 16 | 108 | 42.6 |
| *Dup SO98-459 | <0.5 | 0.03 | 0.89 | 1.62 | 0.21 | 0.11 | 0.59 | 1.0 | 0.17 | 53 | 17 | 147 | 3.03 | 12 | 26 | 29.9 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-351 | 108 | <3 | 45.3 | 10.7 | 1.7 | <1 | 0.4 | <1 | <10 | <5 | 57 | 18.2 | <10 | 13 | <5 |
| SO98-352 | 62.6 | <3 | 13.1 | 3.4 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 40 | 6.4 | <10 | 7 | <5 |
| SO98-353 | 93.8 | <3 | 26.1 | 6.1 | 1.3 | <1 | 0.2 | <1 | <10 | <5 | 67 | 8.6 | <10 | 14 | <5 |
| SO98-354 | 32.8 | <3 | 17.5 | 4.9 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 21 | 3.9 | <10 | 6 | <5 |
| SO98-355 | 37.0 | <3 | 12.1 | 7.1 | 1.0 | <1 | <0.2 | <1 | <10 | <5 | 13 | 8.9 | <10 | <2 | <5 |
| SO98-356 | 67.9 | <3 | 11.2 | 2.6 | 1.9 | <1 | 0.5 | <1 | <10 | <5 | 34 | 5.6 | <10 | 9 | <5 |
| SO98-357 | 48.0 | <3 | 9.4 | 3.6 | 1.5 | <1 | 0.3 | <1 | <10 | <5 | 30 | 5.6 | <10 | 8 | <5 |
| SO98-358 | 53.2 | <3 | 9.6 | 3.5 | 1.7 | <1 | 0.3 | <1 | <10 | <5 | 24 | 5.1 | <10 | 5 | <5 |
| SO98-359 | 84.7 | <3 | 29.5 | 10.2 | 2.2 | <1 | 0.2 | <1 | <10 | <5 | 58 | 16.0 | <10 | 7 | <5 |
| SO98-360 | 40.8 | <3 | 14.0 | 3.6 | 1.7 | <1 | 0.4 | <1 | <10 | <5 | 24 | 3.4 | <10 | 6 | <5 |
| SO98-361 | 52.4 | <3 | 36.8 | 4.6 | 1.5 | <1 | 0.2 | <1 | <10 | <5 | 48 | 6.6 | <10 | 11 | <5 |
| SO98-362 | 61.1 | <3 | 16.3 | 5.0 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 33 | 8.1 | <10 | 9 | <5 |
| SO98-363 | 77.7 | <3 | 35.1 | 3.8 | 2.2 | <1 | 0.2 | <1 | <10 | <5 | 48 | 6.0 | <10 | 7 | <5 |
| SO98-364 | 119 | <3 | 24.5 | 4.6 | 2.7 | <1 | 0.4 | <1 | <10 | <5 | 51 | 5.4 | <10 | 9 | <5 |
| SO98-365 | 158 | <3 | 50.8 | 6.4 | 2.2 | <1 | 0.4 | <1 | <10 | <5 | 67 | 9.9 | <10 | 15 | <5 |
| SO98-366 | 40.1 | <3 | 20.1 | 3.2 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 38 | 4.4 | <10 | 8 | <5 |
| SO98-367 | 47.9 | <3 | 21.5 | 3.0 | 3.0 | <1 | 0.2 | <1 | <10 | <5 | 36 | 4.7 | <10 | 5 | <5 |
| SO98-368 | 66.5 | <3 | 13.6 | 4.8 | 2.4 | <1 | <0.2 | <1 | <10 | <5 | 32 | 7.1 | <10 | 14 | <5 |
| SO98-369 | 62.6 | <3 | 14.6 | 4.2 | 2.2 | <1 | 0.3 | <1 | <10 | <5 | 39 | 7.0 | <10 | 11 | <5 |
| SO98-370 | 57.2 | <3 | 32.0 | 5.2 | 1.2 | <1 | 0.4 | <1 | <10 | <5 | 47 | 8.2 | <10 | 4 | <5 |
| SO98-371 | 10.2 | <3 | 11.8 | 2.9 | 1.2 | <1 | 0.4 | <1 | <10 | <5 | 15 | 4.0 | <10 | 5 | <5 |
| SO98-372 | 35.8 | <3 | 13.0 | 3.2 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 33 | 5.4 | <10 | 10 | <5 |
| SO98-373 | 76.6 | <3 | 23.2 | 5.3 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 77 | 8.0 | <10 | 6 | <5 |
| SO98-374 | 24.5 | <3 | 5.4 | 3.8 | 1.9 | <1 | 0.4 | <1 | <10 | <5 | 25 | 4.2 | <10 | 3 | <5 |
| SO98-375 | 12.3 | <3 | 6.2 | 3.6 | 1.1 | <1 | <0.2 | <1 | <10 | <5 | 15 | 3.9 | <10 | <2 | <5 |
| SO98-376 | 63.1 | <3 | 10.7 | 3.3 | 2.2 | <1 | 0.6 | <1 | <10 | <5 | 29 | 6.4 | <10 | 11 | <5 |
| SO98-377 | 57.7 | <3 | 37.8 | 7.5 | 1.4 | <1 | 0.4 | <1 | <10 | <5 | 50 | 8.4 | <10 | 5 | <5 |
| SO98-378 | 56.8 | <3 | 11.1 | 3.5 | 2.6 | <1 | 0.5 | <1 | <10 | <5 | 34 | 6.6 | <10 | 12 | <5 |
| SO98-379 | 81.1 | <3 | 10.4 | 4.2 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 36 | 8.5 | <10 | 11 | <5 |
| SO98-380 | 76.6 | <3 | 7.5 | 2.9 | 2.0 | <1 | 0.3 | <1 | <10 | <5 | 37 | 5.5 | <10 | 8 | <5 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-381 | 114 | <3 | 41.6 | 5.2 | 3.3 | <1 | 0.5 | <1 | <10 | <5 | 62 | 7.8 | <10 | 8 | <5 |
| SO98-382 | 196 | <3 | 69.6 | 63.2 | 5.0 | <1 | <0.2 | <1 | <10 | <5 | 99 | 53.4 | <10 | 11 | <5 |
| SO98-383 | 127 | <3 | 32.2 | 8.4 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 90 | 9.1 | <10 | 5 | <5 |
| SO98-384 | 51.3 | <3 | 34.2 | 6.2 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 51 | 7.3 | <10 | 6 | <5 |
| SO98-385 | 81.2 | <3 | 21.8 | 6.8 | 4.5 | <1 | 0.3 | <1 | <10 | <5 | 51 | 10.3 | <10 | 6 | <5 |
| SO98-386 | 104 | <3 | 14.4 | 4.5 | 2.0 | <1 | 0.2 | <1 | <10 | <5 | 35 | 7.1 | <10 | 10 | <5 |
| SO98-387 | 168 | <3 | 24.7 | 3.6 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 118 | 7.2 | <10 | 7 | <5 |
| SO98-388 | 76.0 | <3 | 20.9 | 10.0 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 38 | 10.7 | <10 | 6 | <5 |
| SO98-389 | 46.5 | <3 | 18.8 | 6.3 | 2.4 | <1 | <0.2 | <1 | <10 | <5 | 40 | 7.8 | <10 | 5 | <5 |
| SO98-390 | 36.8 | <3 | 22.7 | 12.8 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 54 | 27.3 | <10 | 4 | <5 |
| SO98-391 | 69.4 | <3 | 17.8 | 2.7 | 1.4 | <1 | 0.2 | <1 | <10 | <5 | 39 | 5.5 | <10 | 5 | <5 |
| SO98-392 | 107 | <3 | 23.6 | 7.1 | 3.9 | <1 | 0.2 | <1 | <10 | <5 | 77 | 11.3 | <10 | 13 | <5 |
| SO98-393 | 69.9 | <3 | 13.4 | 3.3 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 47 | 7.0 | <10 | 6 | <5 |
| SO98-394 | 49.2 | <3 | 14.3 | 3.2 | 1.1 | <1 | <0.2 | <1 | <10 | <5 | 35 | 5.5 | <10 | 5 | <5 |
| SO98-395 | 116 | <3 | 37.1 | 6.7 | 2.3 | <1 | 0.2 | <1 | <10 | <5 | 75 | 10.9 | <10 | 11 | <5 |
| SO98-396 | 73.3 | <3 | 27.9 | 2.7 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 109 | 5.0 | <10 | 5 | <5 |
| SO98-397 | 66.8 | <3 | 19.1 | 3.4 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 48 | 6.3 | <10 | 4 | <5 |
| SO98-398 | 53.7 | <3 | 10.3 | 5.1 | 1.1 | <1 | <0.2 | <1 | <10 | <5 | 33 | 6.1 | <10 | 5 | <5 |
| SO98-399 | 74.3 | <3 | 8.1 | 4.6 | 1.1 | <1 | 0.2 | <1 | <10 | <5 | 27 | 6.3 | <10 | 5 | <5 |
| SO98-400 | 88.0 | <3 | 41.2 | 3.3 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 54 | 5.2 | <10 | 9 | <5 |
| SO98-401 | 54.6 | <3 | 28.4 | 3.7 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 113 | 6.7 | <10 | <2 | <5 |
| SO98-402 | 54.7 | <3 | 58.4 | 3.5 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 72 | 5.1 | <10 | 6 | <5 |
| SO98-403 | 28.3 | <3 | 8.2 | 2.9 | 2.5 | <1 | <0.2 | <1 | <10 | <5 | 26 | 6.0 | <10 | 8 | <5 |
| SO98-404 | 84.0 | 7 | 113 | 114 | 39.8 | 1 | <0.2 | <1 | <10 | <5 | 69 | 68.8 | <10 | 25 | <5 |
| SO98-405 | 34.8 | <3 | 21.1 | 3.5 | 2.7 | <1 | <0.2 | <1 | <10 | <5 | 37 | 5.6 | <10 | 10 | <5 |
| SO98-406 | 78.9 | <3 | 15.8 | 3.9 | 1.6 | <1 | 0.2 | <1 | <10 | <5 | 54 | 7.5 | <10 | 9 | <5 |
| SO98-407 | 115 | <3 | 14.6 | 3.2 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 43 | 5.5 | <10 | 6 | <5 |
| SO98-408 | 77.3 | <3 | 31.0 | 3.8 | 7.2 | 1 | <0.2 | <1 | <10 | <5 | 74 | 4.2 | <10 | 4 | <5 |
| SO98-409 | 56.8 | <3 | 9.9 | 4.0 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 32 | 6.3 | <10 | 14 | <5 |
| SO98-410 | 12.3 | <3 | 7.5 | 1.2 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 22 | 4.7 | <10 | 9 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-411 | 25.0 | <3 | 6.9 | 1.0 | 2.9 | <1 | <0.2 | <1 | <10 | <5 | 21 | 2.1 | <10 | 10 | <5 |
| SO98-412 | 40.0 | <3 | 60.8 | 5.5 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 31 | 14.2 | <10 | 4 | <5 |
| SO98-413 | 113 | <3 | 24.4 | 15.8 | 1.1 | <1 | <0.2 | <1 | <10 | <5 | 41 | 18.1 | <10 | 4 | <5 |
| SO98-414 | 122 | <3 | 15.3 | 6.4 | 1.0 | <1 | 0.2 | <1 | <10 | <5 | 65 | 8.9 | <10 | 5 | <5 |
| SO98-415 | 68.1 | <3 | 36.1 | 3.0 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 81 | 6.2 | <10 | 13 | <5 |
| SO98-416 | 51.4 | <3 | 15.5 | 5.4 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 28 | 6.7 | <10 | 5 | <5 |
| SO98-417 | 83.2 | <3 | 17.0 | 8.6 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 42 | 11.5 | <10 | 7 | <5 |
| SO98-418 | 55.5 | <3 | 31.3 | 8.7 | 0.7 | <1 | <0.2 | <1 | <10 | <5 | 46 | 9.2 | <10 | 4 | <5 |
| SO98-419 | 57.7 | <3 | 12.1 | 4.9 | 0.6 | <1 | <0.2 | <1 | <10 | <5 | 35 | 6.7 | <10 | 3 | <5 |
| SO98-420 | 26.7 | <3 | 7.1 | 7.0 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 24 | 6.2 | <10 | 4 | <5 |
| SO98-421 | 32.9 | <3 | 4.8 | 3.2 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 27 | 5.0 | <10 | 8 | <5 |
| SO98-422 | 35.1 | <3 | 3.1 | 2.1 | 1.4 | <1 | <0.2 | <1 | <10 | <5 | 18 | 3.0 | <10 | 5 | <5 |
| SO98-423 | 50.1 | <3 | 4.1 | 3.9 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 23 | 4.3 | <10 | 6 | <5 |
| SO98-424 | 125 | <3 | 35.1 | 8.8 | 1.9 | <1 | 0.2 | <1 | <10 | <5 | 81 | 13.3 | <10 | 3 | <5 |
| SO98-425 | 119 | <3 | 21.2 | 4.5 | 2.1 | <1 | 0.2 | <1 | <10 | <5 | 52 | 6.0 | <10 | 7 | <5 |
| SO98-426 | 203 | <3 | 20.7 | 4.7 | 2.8 | 1 | 0.2 | <1 | <10 | <5 | 82 | 9.3 | <10 | 51 | <5 |
| SO98-427 | 139 | <3 | 29.4 | 4.6 | 3.0 | <1 | 0.3 | <1 | <10 | <5 | 92 | 8.4 | <10 | 8 | <5 |
| SO98-428 | 44.9 | <3 | 17.6 | 2.4 | 7.1 | <1 | <0.2 | <1 | <10 | <5 | 53 | 2.8 | <10 | <2 | <5 |
| SO98-429 | 18.2 | <3 | 13.7 | 3.2 | 3.5 | <1 | <0.2 | <1 | <10 | <5 | 42 | 6.9 | <10 | 7 | <5 |
| SO98-430 | 42.4 | <3 | 9.2 | 3.5 | 2.6 | 2 | 0.3 | <1 | <10 | <5 | 41 | 6.9 | <10 | 17 | <5 |
| SO98-431 | 31.6 | <3 | 13.9 | 3.7 | 4.9 | <1 | <0.2 | <1 | <10 | <5 | 37 | 4.9 | <10 | 8 | <5 |
| SO98-432 | 34.4 | <3 | 14.7 | 4.2 | 3.6 | <1 | <0.2 | <1 | <10 | <5 | 47 | 8.5 | <10 | 3 | <5 |
| SO98-433 | 65.8 | <3 | 11.1 | 3.4 | 1.3 | <1 | 0.4 | <1 | <10 | <5 | 79 | 7.0 | <10 | 13 | <5 |
| SO98-434 | 49.2 | <3 | 5.4 | 6.1 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 34 | 5.4 | <10 | 9 | <5 |
| SO98-435 | 52.4 | <3 | 44.1 | 2.5 | 3.3 | <1 | 0.3 | <1 | <10 | <5 | 63 | 4.6 | <10 | 7 | <5 |
| SO98-436 | 98.3 | <3 | 30.6 | 4.5 | 2.4 | <1 | 0.2 | <1 | <10 | <5 | 65 | 7.0 | <10 | 11 | <5 |
| SO98-437 | 204 | <3 | 30.6 | 22.3 | 2.5 | <1 | 0.2 | <1 | <10 | <5 | 85 | 19.9 | <10 | 10 | <5 |
| SO98-438 | 153 | <3 | 24.7 | 10.1 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 72 | 17.4 | <10 | 12 | <5 |
| SO98-439 | 48.2 | <3 | 11.7 | 2.6 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 34 | 6.1 | <10 | 11 | <5 |
| SO98-440 | 120 | <3 | 12.5 | 21.8 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 65 | 32.0 | <10 | 10 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-441 | 91.2 | <3 | 37.6 | 11.4 | 1.3 | <1 | 0.3 | <1 | <10 | <5 | 74 | 26.2 | <10 | 18 | <5 |
| SO98-442 | 57.4 | <3 | 6.9 | 2.7 | 3.5 | <1 | <0.2 | <1 | <10 | <5 | 36 | 4.7 | <10 | 11 | <5 |
| SO98-443 | 29.5 | <3 | 3.9 | 3.1 | 2.1 | <1 | <0.2 | <1 | <10 | <5 | 23 | 4.0 | <10 | 7 | <5 |
| SO98-444 | 18.5 | <3 | 3.9 | 3.2 | <0.5 | <1 | <0.2 | <1 | <10 | <5 | 20 | 7.4 | <10 | 4 | <5 |
| SO98-445 | 52.0 | <3 | 6.9 | 5.9 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 21 | 7.4 | <10 | <2 | <5 |
| SO98-446 | 29.6 | <3 | 10.2 | 7.6 | 2.3 | <1 | <0.2 | <1 | <10 | <5 | 36 | 11.3 | <10 | 6 | <5 |
| SO98-447 | 80.3 | <3 | 12.0 | 7.3 | 6.2 | <1 | <0.2 | <1 | <10 | <5 | 80 | 12.0 | <10 | 12 | <5 |
| SO98-448 | 66.9 | <3 | 5.1 | 3.6 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 51 | 7.6 | <10 | 6 | <5 |
| SO98-449 | 70.2 | <3 | 6.3 | 3.7 | 2.8 | <1 | <0.2 | <1 | <10 | <5 | 41 | 6.1 | <10 | 10 | <5 |
| SO98-450 | 35.4 | <3 | 75.4 | 4.9 | 3.3 | <1 | <0.2 | <1 | <10 | <5 | 56 | 8.7 | <10 | 8 | <5 |
| SO98-451 | 32.9 | <3 | 6.1 | 2.9 | 2.8 | <1 | <0.2 | <1 | <10 | <5 | 27 | 5.6 | <10 | 10 | <5 |
| SO98-452 | 34.5 | <3 | 4.9 | 4.3 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 31 | 8.1 | <10 | 7 | <5 |
| SO98-453 | 21.8 | <3 | 4.1 | 2.2 | 2.8 | <1 | 0.3 | <1 | <10 | <5 | 31 | 5.2 | <10 | 10 | <5 |
| SO98-454 | 67.6 | <3 | 4.3 | 2.6 | 4.5 | <1 | 0.4 | <1 | <10 | <5 | 32 | 6.4 | <10 | 8 | <5 |
| SO98-455 | 18.4 | <3 | 4.7 | 1.8 | 3.6 | <1 | <0.2 | <1 | <10 | <5 | 26 | 6.8 | <10 | 19 | <5 |
| SO98-456 | 16.5 | <3 | 7.4 | 1.4 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 25 | 5.6 | <10 | 6 | <5 |
| SO98-457 | 69.2 | <3 | 8.8 | 3.0 | 2.9 | <1 | 0.2 | <1 | <10 | <5 | 36 | 5.3 | <10 | 10 | <5 |
| SO98-458 | 80.0 | <3 | 12.1 | 3.8 | 2.6 | <1 | 0.3 | <1 | <10 | <5 | 70 | 7.2 | <10 | 12 | <5 |
| SO98-459 | 59.4 | <3 | 29.5 | 3.1 | 0.8 | <1 | <0.2 | <1 | <10 | <5 | 140 | 6.0 | <10 | <2 | <5 |
| SO98-460 | 17.5 | <3 | 9.1 | 1.9 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 36 | 6.3 | <10 | 17 | <5 |
| SO98-461 | 111 | <3 | 9.8 | 2.7 | 2.9 | <1 | 0.2 | <1 | <10 | <5 | 38 | 4.8 | <10 | 42 | <5 |
| SO98-462 | 130 | <3 | 16.1 | 3.9 | 3.0 | <1 | 0.3 | <1 | <10 | <5 | 40 | 4.8 | <10 | 9 | <5 |
| SO98-463 | 88.2 | <3 | 13.7 | 3.1 | 2.1 | <1 | 0.3 | <1 | <10 | <5 | 33 | 4.1 | <10 | 7 | <5 |
| SO98-464 | 116 | <3 | 11.4 | 4.1 | 3.4 | <1 | 0.3 | <1 | <10 | <5 | 49 | 7.7 | <10 | 14 | <5 |
| SO98-465 | 133 | <3 | 15.1 | 4.8 | 2.8 | <1 | 0.3 | <1 | <10 | <5 | 63 | 8.5 | <10 | 8 | <5 |
| SO98-466 | 145 | <3 | 16.6 | 3.5 | 2.7 | <1 | 0.3 | <1 | <10 | <5 | 64 | 5.3 | <10 | 9 | <5 |
| SO98-467 | 73.9 | <3 | 9.8 | 8.1 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 238 | 11.3 | <10 | 8 | <5 |
| SO98-468 | 113 | <3 | 6.7 | 7.4 | 1.8 | <1 | 0.2 | <1 | <10 | <5 | 56 | 12.1 | <10 | 8 | <5 |
| SO98-469 | 41.0 | <3 | 11.9 | 4.1 | 1.1 | <1 | <0.2 | <1 | <10 | <5 | 130 | 6.0 | <10 | 6 | <5 |
| SO98-470 | 30.4 | <3 | 3.6 | 2.3 | 0.9 | <1 | <0.2 | <1 | <10 | <5 | 47 | 4.7 | <10 | 10 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| *Dup SO98-351 | 107 | <3 | 45.3 | 10.8 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 57 | 17.9 | <10 | 9 | <5 |
| *Dup SO98-363 | 77.2 | <3 | 35.2 | 3.8 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 47 | 6.0 | <10 | 6 | <5 |
| *Dup SO98-375 | 11.0 | <3 | 5.4 | 3.1 | 0.8 | <1 | <0.2 | <1 | <10 | <5 | 14 | 3.6 | <10 | <2 | <5 |
| *Dup SO98-387 | 169 | <3 | 24.7 | 3.7 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 118 | 6.7 | <10 | 8 | <5 |
| *Dup SO98-399 | 73.1 | <3 | 8.2 | 4.6 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 26 | 7.3 | <10 | 5 | <5 |
| *Dup SO98-411 | 25.2 | <3 | 6.8 | 1.0 | 3.3 | <1 | <0.2 | <1 | <10 | <5 | 22 | 1.9 | <10 | 9 | <5 |
| *Dup SO98-423 | 49.1 | <3 | 4.0 | 3.6 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 23 | 4.1 | <10 | 6 | <5 |
| *Dup SO98-435 | 50.4 | <3 | 43.2 | 2.4 | 3.3 | <1 | 0.2 | <1 | <10 | <5 | 62 | 4.2 | <10 | 7 | <5 |
| *Dup SO98-447 | 81.1 | <3 | 11.8 | 7.5 | 7.0 | <1 | <0.2 | <1 | <10 | <5 | 80 | 12.5 | <10 | 11 | <5 |
| *Dup SO98-459 | 58.4 | <3 | 28.0 | 2.9 | 0.8 | <1 | <0.2 | <1 | <10 | <5 | 138 | 5.6 | <10 | 2 | <5 |



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CERTIFICATE OF ANALYSIS

Work Order: 052353

To: B-MAX Ltd.
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 29/09/98

Copy 1 to :

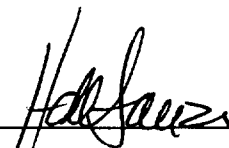
Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 92 SOILS
Date Submitted : 21/09/98
Report Comprises : Cover Sheet plus
Pages 1 to 8

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-471 | 0.6 | 0.02 | 0.21 | 1.82 | 0.04 | 0.01 | 0.05 | 1.6 | 0.10 | 42 | 38 | 52 | 2.56 | 6 | 60 | 3.4 |
| SO98-472 | <0.5 | 0.02 | 0.54 | 1.72 | 0.08 | 0.02 | 0.14 | 1.9 | 0.10 | 47 | 51 | 85 | 2.94 | 10 | 89 | 16.9 |
| SO98-473 | <0.5 | 0.03 | 0.89 | 1.35 | 0.27 | 0.38 | 0.64 | 1.0 | 0.18 | 46 | 42 | 137 | 2.22 | 9 | 28 | 19.5 |
| SO98-474 | <0.5 | 0.02 | 0.98 | 1.92 | 0.13 | 0.03 | 0.43 | 1.4 | 0.21 | 79 | 67 | 85 | 4.15 | 20 | 60 | 47.9 |
| SO98-475 | <0.5 | 0.02 | 0.63 | 1.57 | 0.04 | 0.03 | 0.21 | 2.2 | 0.13 | 66 | 67 | 117 | 3.13 | 18 | 167 | 24.0 |
| SO98-476 | <0.5 | 0.03 | 0.22 | 2.84 | 0.06 | 0.03 | 0.15 | 2.8 | 0.10 | 46 | 20 | 51 | 2.25 | 9 | 43 | 74.9 |
| SO98-477 | <0.5 | 0.04 | 0.48 | 0.86 | 0.02 | 0.02 | 0.24 | 1.7 | 0.41 | 132 | 61 | 40 | 3.38 | 15 | 56 | 40.1 |
| SO98-478 | <0.5 | 0.06 | 0.53 | 0.78 | 0.34 | 0.03 | 1.01 | 1.8 | 0.05 | 32 | 28 | 72 | 1.56 | 9 | 47 | 48.5 |
| SO98-479 | <0.5 | 0.03 | 0.77 | 0.66 | 0.03 | 0.01 | 0.14 | 0.7 | 0.06 | 31 | 427 | 81 | 2.66 | 26 | 152 | 8.4 |
| SO98-480 | <0.5 | 0.03 | 0.45 | 1.76 | 0.25 | 0.05 | 0.34 | 1.5 | 0.15 | 62 | 14 | 95 | 3.96 | 7 | 12 | 30.1 |
| SO98-481 | <0.5 | 0.02 | 0.31 | 1.24 | 0.12 | 0.03 | 0.23 | 2.0 | 0.09 | 35 | 35 | 70 | 1.34 | 7 | 31 | 28.5 |
| SO98-482 | 1.1 | 0.02 | 0.60 | 3.50 | 0.14 | 0.02 | 0.81 | 10.5 | 0.10 | 78 | 67 | 380 | 3.86 | 19 | 301 | 93.8 |
| SO98-483 | 0.6 | 0.02 | 0.41 | 1.53 | 0.04 | 0.03 | 0.24 | 1.5 | 0.11 | 61 | 72 | 137 | 3.71 | 12 | 148 | 24.6 |
| SO98-484 | 0.6 | 0.02 | 0.41 | 1.54 | 0.05 | 0.04 | 0.55 | 1.4 | 0.10 | 56 | 59 | 167 | 3.49 | 11 | 105 | 10.2 |
| SO98-485 | 0.7 | 0.03 | 3.37 | 2.21 | 0.13 | 0.17 | 0.87 | 12.6 | 0.10 | 76 | 345 | 1090 | 5.91 | 72 | 959 | 159 |
| SO98-486 | 0.9 | 0.02 | 1.00 | 2.04 | 0.06 | 0.05 | 0.30 | 2.3 | 0.12 | 74 | 112 | 324 | 4.57 | 27 | 235 | 22.3 |
| SO98-487 | <0.5 | 0.03 | 1.10 | 1.52 | 0.05 | 0.04 | 0.39 | 2.7 | 0.08 | 47 | 89 | 220 | 2.87 | 22 | 319 | 39.3 |
| SO98-488 | <0.5 | 0.02 | 0.64 | 0.98 | 0.04 | 0.04 | 0.47 | 3.6 | 0.04 | 46 | 107 | 1310 | 3.03 | 31 | 391 | 34.5 |
| SO98-489 | <0.5 | 0.03 | 0.86 | 1.15 | 0.03 | 0.03 | 0.54 | 2.4 | 0.08 | 41 | 105 | 242 | 2.99 | 22 | 319 | 11.4 |
| SO98-490 | <0.5 | 0.03 | 1.51 | 1.25 | 0.03 | 0.04 | 0.23 | 2.4 | 0.06 | 41 | 109 | 247 | 2.76 | 30 | 340 | 14.7 |
| SO98-491 | 0.6 | 0.02 | 0.67 | 1.58 | 0.03 | 0.03 | 0.10 | 1.7 | 0.11 | 69 | 129 | 382 | 4.26 | 27 | 288 | 9.7 |
| SO98-492 | <0.5 | 0.02 | 0.76 | 0.76 | 0.07 | 0.03 | 0.29 | 2.9 | 0.05 | 29 | 63 | 261 | 1.82 | 14 | 128 | 11.5 |
| SO98-493 | <0.5 | 0.02 | 0.14 | 0.73 | 0.04 | 0.03 | 0.14 | 1.0 | 0.10 | 38 | 24 | 62 | 1.74 | 5 | 66 | 3.9 |
| SO98-494 | 0.8 | 0.02 | 0.96 | 2.48 | 0.05 | 0.03 | 0.15 | 2.3 | 0.12 | 55 | 91 | 146 | 3.90 | 16 | 200 | 7.8 |
| SO98-495 | 0.6 | 0.03 | 2.34 | 1.91 | 0.08 | 0.05 | 1.28 | 4.6 | 0.05 | 51 | 167 | 209 | 3.76 | 28 | 397 | 42.1 |
| SO98-496 | 0.6 | 0.02 | 1.17 | 1.81 | 0.07 | 0.04 | 0.61 | 1.8 | 0.10 | 53 | 109 | 269 | 3.81 | 27 | 332 | 14.3 |
| SO98-497 | <0.5 | 0.02 | 0.46 | 0.62 | 0.05 | 0.02 | 0.23 | 1.0 | 0.06 | 29 | 39 | 110 | 1.29 | 4 | 85 | 5.6 |
| SO98-498 | <0.5 | 0.02 | 0.26 | 0.77 | 0.03 | 0.03 | 0.13 | 1.1 | 0.13 | 56 | 47 | 102 | 2.82 | 8 | 87 | 4.9 |
| SO98-499 | 0.5 | 0.02 | 0.94 | 1.43 | 0.05 | 0.04 | 0.19 | 2.2 | 0.12 | 67 | 88 | 138 | 3.39 | 16 | 217 | 25.6 |
| SO98-500 | 0.5 | 0.02 | 0.44 | 1.24 | 0.05 | 0.05 | 0.44 | 3.7 | 0.09 | 56 | 75 | 430 | 3.19 | 16 | 170 | 35.6 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-501 | 0.5 | 0.02 | 0.66 | 1.65 | 0.05 | 0.06 | 0.21 | 2.0 | 0.16 | 92 | 96 | 503 | 4.23 | 19 | 150 | 40.1 |
| SO98-502 | 0.5 | 0.02 | 0.46 | 1.49 | 0.07 | 0.04 | 0.19 | 1.6 | 0.12 | 88 | 97 | 283 | 4.02 | 15 | 98 | 18.2 |
| SO98-503 | <0.5 | 0.02 | 0.37 | 1.45 | 0.04 | 0.03 | 0.09 | 1.2 | 0.09 | 40 | 42 | 205 | 2.46 | 13 | 135 | 17.4 |
| SO98-504 | <0.5 | 0.02 | 0.09 | 0.72 | 0.07 | 0.04 | 0.25 | <0.5 | 0.02 | 24 | 11 | 658 | 1.43 | 11 | 7 | 9.7 |
| SO98-505 | 0.6 | 0.03 | 0.42 | 1.97 | 0.12 | 0.03 | 0.43 | 1.5 | 0.13 | 45 | 17 | 149 | 3.03 | 19 | 67 | 75.3 |
| SO98-506 | 0.7 | 0.02 | 0.12 | 2.35 | 0.06 | 0.02 | 0.38 | 1.4 | 0.18 | 68 | 17 | 59 | 3.48 | 6 | 17 | 14.3 |
| SO98-507 | <0.5 | 0.02 | 0.23 | 1.21 | 0.05 | 0.03 | 0.17 | 1.2 | 0.18 | 84 | 53 | 86 | 4.24 | 5 | 39 | 15.3 |
| SO98-508 | <0.5 | 0.03 | 0.22 | 2.76 | 0.20 | 0.02 | 0.38 | 1.8 | 0.06 | 64 | 5 | 49 | 3.29 | 7 | 5 | 19.7 |
| SO98-509 | <0.5 | 0.03 | 0.16 | 1.55 | 0.05 | 0.02 | 0.12 | 2.1 | 0.11 | 69 | 32 | 31 | 3.19 | 5 | 11 | 9.4 |
| SO98-510 | 0.5 | 0.03 | 0.61 | 1.91 | 0.16 | 0.03 | 0.51 | 1.4 | 0.17 | 62 | 42 | 100 | 4.23 | 12 | 33 | 32.1 |
| SO98-511 | 0.8 | 0.02 | 0.73 | 2.72 | 0.10 | 0.03 | 0.79 | 12.1 | 0.06 | 69 | 124 | 3230 | 3.57 | 51 | 409 | 173 |
| SO98-512 | <0.5 | 0.02 | 0.04 | 0.55 | 0.03 | 0.03 | 0.12 | 0.9 | 0.10 | 56 | 6 | 32 | 1.07 | 3 | 7 | 13.2 |
| SO98-513 | <0.5 | 0.02 | 0.09 | 1.41 | 0.06 | 0.02 | 0.13 | 1.1 | 0.10 | 58 | 19 | 189 | 3.21 | 3 | 11 | 15.2 |
| SO98-514 | 0.7 | 0.02 | 0.52 | 1.97 | 0.08 | 0.03 | 0.45 | 8.0 | 0.21 | 63 | 61 | 1720 | 4.04 | 21 | 248 | 74.9 |
| SO98-515 | 0.6 | 0.02 | 0.62 | 1.86 | 0.06 | 0.04 | 0.40 | 1.7 | 0.17 | 85 | 69 | 149 | 4.13 | 13 | 124 | 31.1 |
| SO98-516 | 0.6 | 0.02 | 0.51 | 2.14 | 0.11 | 0.03 | 0.87 | 1.8 | 0.10 | 54 | 41 | 180 | 3.33 | 15 | 118 | 41.9 |
| SO98-517 | <0.5 | 0.02 | 0.30 | 1.06 | 0.05 | 0.02 | 0.11 | 0.9 | 0.06 | 29 | 35 | 286 | 2.02 | 8 | 109 | 6.0 |
| SO98-518 | <0.5 | 0.02 | 0.10 | 0.88 | 0.02 | 0.01 | 0.04 | 0.6 | 0.07 | 30 | 21 | 38 | 2.12 | 2 | 17 | 2.7 |
| SO98-519 | <0.5 | 0.02 | 0.13 | 0.83 | 0.03 | 0.02 | 0.06 | 1.0 | 0.06 | 21 | 22 | 31 | 0.88 | 2 | 22 | 3.3 |
| SO98-520 | <0.5 | 0.02 | 0.41 | 0.99 | 0.07 | 0.02 | 0.19 | 1.3 | 0.12 | 49 | 45 | 78 | 2.40 | 6 | 108 | 6.0 |
| SO98-521 | 0.5 | 0.02 | 0.37 | 1.66 | 0.06 | 0.03 | 0.29 | 1.8 | 0.08 | 32 | 31 | 109 | 2.21 | 12 | 107 | 21.6 |
| SO98-522 | <0.5 | 0.02 | 0.43 | 1.36 | 0.09 | 0.03 | 0.28 | 1.7 | 0.08 | 33 | 31 | 79 | 1.72 | 13 | 137 | 71.7 |
| SO98-523 | <0.5 | 0.02 | 0.14 | 2.33 | 0.09 | 0.02 | 0.09 | 2.1 | 0.09 | 52 | 18 | 46 | 2.38 | 2 | 10 | 28.8 |
| SO98-524 | <0.5 | 0.03 | 0.33 | 2.78 | 0.06 | 0.02 | 0.10 | 3.6 | 0.15 | 92 | 65 | 34 | 3.99 | 13 | 68 | 23.8 |
| SO98-525 | <0.5 | 0.02 | 0.71 | 1.56 | 0.03 | 0.03 | 0.22 | 2.0 | 0.19 | 115 | 55 | 242 | 4.44 | 14 | 112 | 16.6 |
| SO98-526 | 0.6 | 0.04 | 0.39 | 2.72 | 0.08 | 0.03 | 0.38 | 2.4 | 0.16 | 47 | 28 | 70 | 2.95 | 23 | 87 | 25.8 |
| SO98-527 | <0.5 | 0.02 | 0.33 | 1.35 | 0.03 | 0.03 | 0.25 | 1.4 | 0.13 | 68 | 69 | 106 | 3.95 | 20 | 111 | 71.8 |
| SO98-528 | <0.5 | 0.04 | 0.46 | 1.93 | 0.63 | 0.07 | 1.28 | 1.8 | 0.10 | 66 | 9 | 103 | 3.49 | 11 | 19 | 57.8 |
| SO98-529 | 0.6 | 0.02 | 0.39 | 2.09 | 0.07 | 0.04 | 0.18 | 2.3 | 0.19 | 125 | 53 | 88 | 4.91 | 22 | 68 | 58.7 |
| SO98-530 | <0.5 | 0.02 | 0.23 | 1.11 | 0.04 | 0.03 | 0.16 | 1.5 | 0.13 | 69 | 55 | 112 | 3.16 | 7 | 72 | 20.3 |



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-531 | 1.2 | 0.07 | 0.64 | 2.58 | 0.13 | 0.03 | 1.68 | 3.6 | 0.12 | 56 | 31 | 1050 | 4.79 | 26 | 61 | 57.6 |
| SO98-532 | <0.5 | 0.03 | 0.10 | 3.11 | 0.29 | 0.03 | 0.42 | 1.3 | 0.05 | 67 | 28 | 44 | 3.88 | 3 | 7 | 19.3 |
| SO98-533 | <0.5 | 0.02 | 0.21 | 2.61 | 0.13 | 0.02 | 0.09 | 1.5 | 0.04 | 39 | 18 | 61 | 2.31 | 4 | 15 | 24.9 |
| SO98-534 | <0.5 | 0.02 | 0.18 | 2.19 | 0.09 | 0.03 | 0.11 | 1.4 | 0.05 | 44 | 15 | 67 | 1.98 | 3 | 12 | 22.1 |
| SO98-535 | <0.5 | 0.04 | 0.62 | 1.85 | 0.10 | 0.11 | 0.31 | 1.9 | 0.10 | 66 | 6 | 70 | 2.41 | 17 | 55 | 93.5 |
| SO98-536 | 0.5 | 0.02 | 0.65 | 1.74 | 0.07 | 0.03 | 0.19 | 2.3 | 0.11 | 58 | 88 | 200 | 3.19 | 23 | 216 | 50.1 |
| SO98-537 | 0.6 | 0.03 | 0.92 | 1.58 | 0.11 | 0.08 | 0.36 | 2.4 | 0.13 | 71 | 67 | 351 | 3.51 | 16 | 116 | 33.7 |
| SO98-538 | <0.5 | 0.03 | 0.65 | 1.83 | 0.21 | 0.08 | 0.52 | 1.1 | 0.08 | 33 | 43 | 406 | 2.20 | 17 | 93 | 60.4 |
| SO98-539 | 0.5 | 0.02 | 0.97 | 1.65 | 0.13 | 0.05 | 0.32 | 2.2 | 0.12 | 73 | 91 | 313 | 3.85 | 23 | 249 | 35.8 |
| SO98-540 | <0.5 | 0.02 | 0.61 | 1.33 | 0.08 | 0.03 | 0.28 | 1.7 | 0.13 | 63 | 66 | 156 | 3.97 | 14 | 146 | 16.6 |
| SO98-541 | 0.6 | 0.02 | 1.21 | 1.83 | 0.06 | 0.04 | 0.24 | 1.8 | 0.09 | 56 | 106 | 417 | 3.90 | 28 | 297 | 13.0 |
| SO98-001 | <0.5 | 0.02 | 0.51 | 1.04 | 0.04 | 0.04 | 0.12 | 1.3 | 0.10 | 41 | 79 | 350 | 3.90 | 22 | 148 | 58.1 |
| SO98-002 | 0.9 | 0.02 | 0.16 | 0.83 | 0.13 | 0.04 | 0.34 | 2.2 | 0.10 | 104 | 15 | 1080 | 9.73 | 58 | 253 | 236 |
| SO98-003 | 1.0 | 0.02 | 0.08 | 0.98 | 0.09 | 0.02 | 0.15 | 0.5 | 0.11 | 69 | 12 | 519 | 8.49 | 26 | 113 | 195 |
| SO98-004 | 0.5 | 0.02 | 0.41 | 1.61 | 0.07 | 0.06 | 0.17 | 1.8 | 0.10 | 46 | 24 | 114 | 2.83 | 11 | 32 | 33.4 |
| SO98-005 | <0.5 | 0.02 | 0.48 | 1.49 | 0.09 | 0.04 | 0.20 | 1.6 | 0.14 | 51 | 35 | 120 | 3.43 | 11 | 30 | 50.2 |
| SO98-006 | 0.8 | 0.02 | 1.20 | 2.58 | 0.11 | 0.05 | 0.48 | 3.3 | 0.29 | 88 | 86 | 246 | 4.54 | 17 | 45 | 44.7 |
| SO98-007 | <0.5 | 0.02 | 0.15 | 0.90 | 0.05 | 0.03 | 0.17 | 1.1 | 0.07 | 26 | 14 | 80 | 1.61 | 2 | 8 | 6.2 |
| SO98-008 | 0.5 | 0.02 | 0.53 | 1.39 | 0.05 | 0.11 | 0.20 | 2.3 | 0.18 | 61 | 29 | 171 | 2.99 | 8 | 24 | 22.6 |
| SO98-009 | 0.6 | 0.02 | 0.49 | 1.53 | 0.04 | 0.08 | 0.18 | 2.3 | 0.19 | 68 | 30 | 176 | 3.93 | 8 | 23 | 19.1 |
| SO98-010 | <0.5 | 0.04 | 2.07 | 2.73 | 0.30 | 0.65 | 0.70 | 2.1 | 0.27 | 103 | 77 | 199 | 4.88 | 14 | 41 | 30.7 |
| SO98-011 | <0.5 | 0.02 | 0.28 | 1.66 | 0.11 | 0.03 | 0.17 | 1.4 | 0.07 | 31 | 22 | 122 | 1.99 | 6 | 18 | 11.9 |
| SO98-012 | <0.5 | 0.02 | 0.85 | 2.05 | 0.20 | 0.23 | 0.37 | 0.8 | 0.16 | 55 | 46 | 761 | 3.45 | 16 | 30 | 9.8 |
| SO98-013 | <0.5 | 0.02 | 0.55 | 1.60 | 0.09 | 0.07 | 0.27 | 1.4 | 0.10 | 33 | 27 | 130 | 2.07 | 7 | 19 | 14.0 |
| SO98-014 | <0.5 | 0.02 | 0.35 | 1.51 | 0.07 | 0.04 | 0.17 | 1.9 | 0.08 | 30 | 20 | 107 | 1.94 | 31 | 59 | 112 |
| SO98-015 | 0.6 | 0.02 | 1.20 | 2.52 | 0.18 | 0.44 | 0.42 | 2.0 | 0.22 | 96 | 38 | 407 | 5.79 | 11 | 15 | 77.1 |
| SO98-016 | <0.5 | 0.02 | 0.42 | 1.38 | 0.26 | 0.06 | 0.25 | 1.5 | 0.11 | 64 | 43 | 105 | 3.59 | 6 | 13 | 12.1 |
| SO98-017 | 0.5 | 0.02 | 0.35 | 1.41 | 0.10 | 0.04 | 0.28 | 1.6 | 0.08 | 30 | 23 | 130 | 1.97 | 9 | 40 | 41.4 |
| SO98-018 | <0.5 | 0.02 | 0.23 | 0.98 | 0.07 | 0.06 | 0.19 | 1.1 | 0.09 | 40 | 23 | 432 | 1.94 | 5 | 11 | 13.4 |
| SO98-019 | 0.8 | 0.02 | 1.52 | 3.96 | 0.15 | 0.66 | 0.08 | 10.9 | 0.29 | 160 | 88 | 231 | 8.11 | 8 | 14 | 175 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-020 | 0.6 | 0.03 | 0.71 | 2.30 | 0.14 | 0.30 | 0.26 | 2.2 | 0.15 | 45 | 29 | 215 | 3.88 | 18 | 52 | 115 |
| SO98-021 | 0.7 | 0.02 | 0.83 | 2.09 | 0.11 | 0.34 | 0.21 | 3.9 | 0.23 | 87 | 47 | 490 | 5.26 | 20 | 44 | 150 |
| *Dup SO98-471 | 0.6 | 0.02 | 0.21 | 1.76 | 0.03 | 0.01 | 0.05 | 1.5 | 0.10 | 40 | 35 | 51 | 2.47 | 6 | 59 | 4.1 |
| *Dup SO98-483 | 0.5 | 0.02 | 0.39 | 1.46 | 0.03 | 0.03 | 0.23 | 1.4 | 0.11 | 57 | 70 | 128 | 3.54 | 13 | 140 | 24.4 |
| *Dup SO98-495 | 0.5 | 0.02 | 2.21 | 1.83 | 0.09 | 0.05 | 1.24 | 4.4 | 0.05 | 49 | 161 | 198 | 3.61 | 28 | 381 | 40.2 |
| *Dup SO98-507 | <0.5 | 0.02 | 0.23 | 1.21 | 0.05 | 0.03 | 0.17 | 1.1 | 0.18 | 84 | 53 | 86 | 4.29 | 6 | 40 | 16.6 |
| *Dup SO98-519 | <0.5 | 0.02 | 0.12 | 0.80 | 0.03 | 0.01 | 0.05 | 1.0 | 0.06 | 20 | 22 | 28 | 0.86 | 2 | 22 | 4.3 |
| *Dup SO98-531 | 1.2 | 0.06 | 0.62 | 2.50 | 0.12 | 0.03 | 1.62 | 3.4 | 0.13 | 55 | 30 | 1040 | 4.70 | 25 | 59 | 58.1 |
| *Dup SO98-002 | 0.9 | 0.02 | 0.16 | 0.81 | 0.13 | 0.03 | 0.34 | 2.1 | 0.11 | 102 | 15 | 1090 | 9.63 | 58 | 250 | 233 |
| *Dup SO98-014 | <0.5 | 0.02 | 0.34 | 1.50 | 0.07 | 0.04 | 0.16 | 1.8 | 0.08 | 29 | 19 | 104 | 1.91 | 29 | 59 | 109 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-471 | 46.6 | <3 | 3.8 | 4.5 | 2.9 | <1 | <0.2 | 4 | <10 | <5 | 29 | 5.1 | <10 | 5 | <5 |
| SO98-472 | 49.6 | <3 | 5.8 | 4.5 | 2.4 | <1 | <0.2 | 4 | <10 | <5 | 30 | 5.7 | <10 | 7 | <5 |
| SO98-473 | 33.8 | <3 | 15.7 | 5.5 | 1.2 | <1 | <0.2 | 4 | <10 | <5 | 195 | 5.7 | <10 | 2 | <5 |
| SO98-474 | 63.0 | <3 | 20.8 | 5.3 | 1.7 | <1 | <0.2 | 6 | <10 | <5 | 50 | 7.7 | <10 | 4 | <5 |
| SO98-475 | 99.4 | <3 | 13.2 | 3.9 | 2.5 | <1 | <0.2 | 5 | <10 | <5 | 60 | 6.2 | <10 | 8 | <5 |
| SO98-476 | 39.1 | <3 | 11.0 | 2.8 | 3.2 | <1 | <0.2 | 3 | <10 | <5 | 29 | 4.7 | <10 | 10 | <5 |
| SO98-477 | 18.4 | <3 | 13.0 | 2.8 | 2.8 | <1 | <0.2 | 5 | <10 | <5 | 21 | 2.2 | <10 | 4 | <5 |
| SO98-478 | 27.6 | <3 | 37.7 | 3.6 | 1.2 | <1 | <0.2 | 2 | <10 | <5 | 46 | 11.6 | <10 | 2 | <5 |
| SO98-479 | 29.1 | <3 | 10.9 | 0.5 | 1.7 | <1 | <0.2 | 4 | <10 | <5 | 20 | 1.3 | <10 | 3 | <5 |
| SO98-480 | 57.5 | <3 | 19.6 | 2.9 | 2.2 | <1 | <0.2 | 6 | <10 | <5 | 95 | 4.4 | <10 | 9 | <5 |
| SO98-481 | 29.5 | <3 | 14.9 | 3.0 | 2.2 | <1 | <0.2 | 2 | <10 | <5 | 42 | 8.6 | <10 | 6 | <5 |
| SO98-482 | 162 | <3 | 66.1 | 62.1 | 5.9 | <1 | <0.2 | 6 | <10 | <5 | 100 | 63.9 | <10 | 17 | <5 |
| SO98-483 | 147 | <3 | 18.4 | 3.8 | 2.5 | <1 | <0.2 | 6 | <10 | <5 | 63 | 7.6 | <10 | 14 | <5 |
| SO98-484 | 113 | <3 | 44.3 | 3.6 | 2.3 | <1 | <0.2 | 5 | <10 | <5 | 78 | 6.0 | <10 | 9 | <5 |
| SO98-485 | 338 | <3 | 54.6 | 53.1 | 4.1 | <1 | 0.6 | 9 | <10 | <5 | 110 | 50.4 | <10 | 26 | <5 |
| SO98-486 | 133 | <3 | 21.3 | 4.6 | 2.4 | <1 | <0.2 | 7 | <10 | <5 | 54 | 6.6 | <10 | 12 | <5 |
| SO98-487 | 113 | <3 | 25.6 | 6.9 | 1.7 | <1 | <0.2 | 4 | <10 | <5 | 54 | 10.7 | <10 | 20 | <5 |
| SO98-488 | 96.7 | <3 | 34.7 | 12.6 | 1.6 | <1 | 0.2 | 5 | <10 | <5 | 55 | 17.6 | <10 | 7 | <5 |
| SO98-489 | 76.3 | <3 | 45.6 | 5.3 | 2.1 | <1 | <0.2 | 4 | <10 | <5 | 73 | 10.8 | <10 | 8 | <5 |
| SO98-490 | 82.4 | <3 | 17.0 | 5.1 | 1.4 | <1 | <0.2 | 4 | <10 | <5 | 55 | 10.9 | <10 | 7 | <5 |
| SO98-491 | 122 | <3 | 8.3 | 3.1 | 2.4 | <1 | <0.2 | 6 | <10 | <5 | 42 | 6.5 | <10 | 8 | <5 |
| SO98-492 | 37.4 | <3 | 12.5 | 9.8 | 1.7 | <1 | <0.2 | 3 | <10 | <5 | 45 | 13.5 | <10 | 5 | <5 |
| SO98-493 | 18.0 | <3 | 8.3 | 5.1 | 1.5 | <1 | <0.2 | 2 | <10 | <5 | 21 | 7.9 | <10 | 6 | <5 |
| SO98-494 | 137 | <3 | 11.0 | 4.1 | 3.2 | <1 | <0.2 | 6 | <10 | <5 | 57 | 5.3 | <10 | 7 | <5 |
| SO98-495 | 118 | <3 | 81.2 | 18.4 | 2.2 | <1 | <0.2 | 6 | <10 | <5 | 68 | 17.9 | <10 | 6 | <5 |
| SO98-496 | 87.6 | <3 | 38.1 | 4.8 | 2.5 | <1 | <0.2 | 6 | <10 | <5 | 44 | 6.0 | <10 | 7 | <5 |
| SO98-497 | 42.5 | <3 | 14.3 | 3.3 | 1.3 | <1 | <0.2 | 2 | <10 | <5 | 41 | 7.2 | <10 | 3 | <5 |
| SO98-498 | 43.3 | <3 | 12.1 | 2.5 | 1.9 | <1 | <0.2 | 4 | <10 | <5 | 43 | 5.9 | <10 | 7 | <5 |
| SO98-499 | 98.8 | <3 | 16.2 | 4.5 | 2.4 | <1 | <0.2 | 5 | <10 | <5 | 59 | 7.8 | <10 | 10 | <5 |
| SO98-500 | 117 | <3 | 35.7 | 22.0 | 2.5 | <1 | <0.2 | 5 | <10 | <5 | 74 | 23.4 | <10 | 14 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-501 | 156 | <3 | 17.2 | 3.4 | 2.7 | <1 | 0.3 | 7 | <10 | <5 | 82 | 7.1 | <10 | 16 | <5 |
| SO98-502 | 124 | <3 | 12.7 | 3.0 | 2.4 | <1 | <0.2 | 6 | <10 | <5 | 66 | 7.1 | <10 | 10 | <5 |
| SO98-503 | 87.5 | <3 | 6.8 | 3.2 | 1.4 | <1 | <0.2 | 4 | <10 | <5 | 35 | 7.1 | <10 | 3 | <5 |
| SO98-504 | 35.3 | <3 | 27.7 | 2.5 | 0.8 | <1 | <0.2 | 2 | <10 | <5 | 66 | 6.4 | <10 | 10 | <5 |
| SO98-505 | 65.4 | <3 | 26.5 | 5.8 | 3.3 | <1 | <0.2 | 4 | <10 | <5 | 45 | 6.3 | <10 | 3 | <5 |
| SO98-506 | 38.5 | <3 | 36.3 | 4.3 | 5.1 | <1 | <0.2 | 5 | <10 | <5 | 49 | 7.4 | <10 | 4 | <5 |
| SO98-507 | 55.4 | <3 | 18.0 | 2.7 | 3.5 | <1 | <0.2 | 7 | <10 | <5 | 46 | 6.1 | <10 | 12 | <5 |
| SO98-508 | 32.9 | <3 | 15.8 | 5.1 | 2.4 | <1 | <0.2 | 5 | <10 | <5 | 27 | 4.7 | <10 | 4 | <5 |
| SO98-509 | 19.7 | <3 | 7.3 | 2.3 | 3.3 | <1 | <0.2 | 5 | <10 | <5 | 30 | 3.6 | <10 | 3 | <5 |
| SO98-510 | 76.2 | <3 | 30.5 | 2.9 | 2.7 | <1 | <0.2 | 6 | <10 | <5 | 63 | 4.9 | <10 | 6 | <5 |
| SO98-511 | 172 | <3 | 61.0 | 99.6 | 2.6 | <1 | <0.2 | 7 | <10 | <5 | 100 | 111 | <10 | 11 | <5 |
| SO98-512 | 19.5 | <3 | 14.9 | 1.3 | 1.8 | <1 | <0.2 | 2 | <10 | <5 | 35 | 5.0 | <10 | 9 | <5 |
| SO98-513 | 119 | <3 | 13.1 | 2.1 | 2.5 | <1 | <0.2 | 6 | <10 | <5 | 86 | 5.2 | <10 | 10 | <5 |
| SO98-514 | 91.0 | <3 | 32.7 | 33.2 | 14.0 | <1 | 0.3 | 7 | <10 | <5 | 111 | 39.1 | <10 | 12 | <5 |
| SO98-515 | 86.7 | <3 | 26.9 | 3.9 | 2.7 | <1 | <0.2 | 7 | <10 | <5 | 57 | 7.3 | <10 | 15 | <5 |
| SO98-516 | 86.5 | <3 | 62.3 | 4.8 | 3.5 | <1 | <0.2 | 5 | <10 | <5 | 37 | 7.6 | <10 | 33 | <5 |
| SO98-517 | 61.0 | <3 | 5.6 | 4.3 | 1.2 | <1 | <0.2 | 3 | <10 | <5 | 37 | 4.3 | <10 | 6 | <5 |
| SO98-518 | 13.7 | <3 | 2.7 | 2.5 | 1.6 | <1 | <0.2 | 3 | <10 | <5 | 18 | 4.4 | <10 | 4 | <5 |
| SO98-519 | 14.1 | <3 | 3.7 | 3.6 | 1.3 | <1 | <0.2 | 2 | <10 | <5 | 15 | 6.6 | <10 | 5 | <5 |
| SO98-520 | 39.8 | <3 | 7.2 | 7.4 | 2.2 | <1 | <0.2 | 4 | <10 | <5 | 26 | 11.3 | <10 | 5 | <5 |
| SO98-521 | 47.7 | <3 | 18.4 | 5.8 | 2.5 | <1 | <0.2 | 3 | <10 | <5 | 35 | 9.0 | <10 | 8 | <5 |
| SO98-522 | 43.9 | <3 | 12.1 | 4.6 | 2.4 | <1 | <0.2 | 3 | <10 | <5 | 51 | 9.8 | <10 | 4 | <5 |
| SO98-523 | 25.1 | <3 | 7.8 | 2.0 | 4.2 | <1 | <0.2 | 3 | <10 | <5 | 31 | 6.5 | <10 | 7 | <5 |
| SO98-524 | 39.7 | <3 | 4.2 | 2.3 | 4.7 | <1 | <0.2 | 6 | <10 | <5 | 26 | 3.4 | <10 | 3 | <5 |
| SO98-525 | 62.0 | <3 | 16.3 | 3.3 | 3.0 | <1 | <0.2 | 7 | <10 | <5 | 81 | 10.4 | <10 | 13 | <5 |
| SO98-526 | 44.6 | <3 | 28.8 | 5.6 | 7.3 | <1 | <0.2 | 4 | <10 | <5 | 43 | 7.6 | <10 | 5 | <5 |
| SO98-527 | 102 | <3 | 19.2 | 2.9 | 2.6 | <1 | 0.2 | 6 | <10 | <5 | 52 | 6.4 | <10 | 8 | <5 |
| SO98-528 | 37.5 | <3 | 42.3 | 6.2 | 2.5 | <1 | <0.2 | 5 | <10 | <5 | 82 | 16.8 | <10 | 3 | <5 |
| SO98-529 | 111 | <3 | 20.7 | 2.8 | 3.0 | <1 | <0.2 | 8 | <10 | <5 | 105 | 6.2 | <10 | 11 | <5 |
| SO98-530 | 74.9 | <3 | 12.7 | 4.8 | 2.0 | <1 | <0.2 | 5 | <10 | <5 | 41 | 8.8 | <10 | 15 | <5 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-531 | 110 | <3 | 147 | 42.7 | 10.4 | <1 | <0.2 | 8 | <10 | <5 | 92 | 33.7 | <10 | 13 | <5 |
| SO98-532 | 22.0 | <3 | 21.4 | 3.9 | 2.1 | <1 | <0.2 | 6 | <10 | <5 | 34 | 9.7 | <10 | 8 | <5 |
| SO98-533 | 31.1 | <3 | 6.7 | 2.8 | 1.4 | <1 | <0.2 | 3 | <10 | <5 | 24 | 7.2 | <10 | 4 | <5 |
| SO98-534 | 33.6 | <3 | 11.2 | 2.2 | 1.6 | <1 | <0.2 | 3 | <10 | <5 | 48 | 7.6 | <10 | 4 | <5 |
| SO98-535 | 50.0 | <3 | 17.9 | 2.0 | 1.5 | <1 | <0.2 | 4 | <10 | <5 | 76 | 3.5 | <10 | <2 | <5 |
| SO98-536 | 113 | <3 | 9.3 | 5.2 | 2.6 | <1 | 0.3 | 5 | <10 | <5 | 27 | 9.7 | <10 | 8 | <5 |
| SO98-537 | 128 | <3 | 14.0 | 3.3 | 1.9 | <1 | <0.2 | 6 | <10 | <5 | 76 | 7.1 | <10 | 10 | <5 |
| SO98-538 | 90.9 | <3 | 18.8 | 2.3 | 1.4 | <1 | <0.2 | 3 | <10 | <5 | 77 | 5.4 | <10 | <2 | <5 |
| SO98-539 | 142 | <3 | 14.2 | 4.7 | 2.1 | <1 | <0.2 | 6 | <10 | <5 | 62 | 9.1 | <10 | 11 | <5 |
| SO98-540 | 85.7 | <3 | 18.6 | 3.8 | 2.5 | <1 | <0.2 | 6 | <10 | <5 | 50 | 7.6 | <10 | 8 | <5 |
| SO98-541 | 105 | <3 | 16.2 | 4.3 | 2.2 | <1 | <0.2 | 6 | <10 | <5 | 52 | 6.9 | <10 | 7 | <5 |
| SO98-001 | 95.6 | <3 | 6.2 | 3.1 | 2.4 | <1 | <0.2 | 6 | <10 | <5 | 35 | 5.2 | <10 | 7 | <5 |
| SO98-002 | 109 | <3 | 12.5 | 3.1 | 4.0 | 1 | 0.5 | 16 | <10 | <5 | 92 | 6.6 | <10 | 10 | <5 |
| SO98-003 | 64.4 | <3 | 6.0 | 3.5 | 4.7 | 1 | 0.3 | 14 | <10 | <5 | 37 | 24.3 | <10 | 11 | <5 |
| SO98-004 | 230 | <3 | 8.3 | 4.0 | 2.2 | <1 | 0.7 | 5 | <10 | <5 | 58 | 6.5 | <10 | 17 | <5 |
| SO98-005 | 203 | <3 | 7.9 | 3.4 | 2.9 | <1 | 0.2 | 6 | <10 | <5 | 47 | 5.9 | <10 | 20 | <5 |
| SO98-006 | 73.0 | <3 | 26.6 | 6.0 | 5.7 | <1 | <0.2 | 8 | <10 | <5 | 76 | 16.8 | <10 | 5 | <5 |
| SO98-007 | 33.6 | <3 | 9.1 | 4.0 | 1.2 | <1 | <0.2 | 2 | <10 | <5 | 32 | 5.6 | <10 | 4 | <5 |
| SO98-008 | 58.5 | <3 | 13.0 | 4.0 | 3.2 | <1 | <0.2 | 5 | <10 | <5 | 59 | 9.4 | <10 | 7 | <5 |
| SO98-009 | 85.2 | <3 | 11.0 | 4.2 | 3.5 | <1 | <0.2 | 6 | <10 | <5 | 69 | 7.9 | <10 | 8 | <5 |
| SO98-010 | 55.5 | <3 | 16.3 | 3.5 | 1.9 | <1 | <0.2 | 8 | <10 | <5 | 252 | 7.8 | <10 | <2 | <5 |
| SO98-011 | 84.2 | <3 | 7.2 | 3.9 | 1.7 | <1 | <0.2 | 3 | <10 | <5 | 42 | 7.2 | <10 | 4 | <5 |
| SO98-012 | 86.9 | <3 | 12.0 | 3.4 | 1.6 | <1 | <0.2 | 5 | <10 | <5 | 62 | 7.2 | <10 | 3 | <5 |
| SO98-013 | 31.1 | <3 | 9.5 | 5.0 | 1.8 | <1 | <0.2 | 3 | <10 | <5 | 32 | 12.3 | <10 | <2 | <5 |
| SO98-014 | 81.1 | <3 | 5.1 | 6.3 | 1.9 | <1 | <0.2 | 3 | <10 | <5 | 46 | 11.9 | <10 | 5 | <5 |
| SO98-015 | 150 | <3 | 23.5 | 3.6 | 2.5 | 1 | <0.2 | 9 | <10 | <5 | 197 | 8.2 | <10 | 2 | <5 |
| SO98-016 | 45.2 | <3 | 10.5 | 1.8 | 1.7 | <1 | <0.2 | 6 | <10 | <5 | 56 | 4.5 | <10 | 6 | <5 |
| SO98-017 | 57.4 | <3 | 10.5 | 6.4 | 1.9 | <1 | <0.2 | 3 | <10 | <5 | 41 | 12.8 | <10 | 7 | <5 |
| SO98-018 | 38.6 | <3 | 12.1 | 2.4 | 1.3 | <1 | <0.2 | 3 | <10 | <5 | 68 | 5.4 | <10 | 4 | <5 |
| SO98-019 | 168 | <3 | 13.9 | 10.4 | 3.6 | 6 | <0.2 | 13 | <10 | <5 | 488 | 23.4 | <10 | 5 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-020 | 139 | <3 | 13.1 | 5.3 | 2.0 | 2 | <0.2 | 6 | <10 | <5 | 225 | 11.9 | <10 | 11 | <5 |
| SO98-021 | 289 | <3 | 15.7 | 5.2 | 4.7 | 2 | 0.3 | 8 | <10 | <5 | 264 | 17.6 | <10 | 31 | <5 |
| *Dup SO98-471 | 46.0 | <3 | 3.4 | 4.3 | 2.8 | <1 | <0.2 | 4 | <10 | <5 | 28 | 5.2 | <10 | 5 | <5 |
| *Dup SO98-483 | 142 | <3 | 17.4 | 3.6 | 2.2 | <1 | 0.2 | 5 | <10 | <5 | 59 | 8.0 | <10 | 13 | <5 |
| *Dup SO98-495 | 114 | <3 | 77.2 | 18.0 | 2.2 | <1 | <0.2 | 5 | <10 | <5 | 64 | 17.0 | <10 | 6 | <5 |
| *Dup SO98-507 | 55.5 | <3 | 18.1 | 2.7 | 3.2 | <1 | <0.2 | 7 | <10 | <5 | 46 | 5.5 | <10 | 11 | <5 |
| *Dup SO98-519 | 13.7 | <3 | 3.4 | 2.9 | 1.2 | <1 | <0.2 | 1 | <10 | <5 | 15 | 5.7 | <10 | 4 | <5 |
| *Dup SO98-531 | 106 | <3 | 140 | 41.9 | 11.2 | <1 | <0.2 | 8 | <10 | <5 | 90 | 33.0 | <10 | 13 | <5 |
| *Dup SO98-002 | 107 | <3 | 12.4 | 3.1 | 3.9 | 1 | 0.4 | 16 | <10 | <5 | 92 | 6.8 | <10 | 9 | <5 |
| *Dup SO98-014 | 78.9 | <3 | 4.9 | 6.3 | 2.5 | <1 | <0.2 | 3 | <10 | <5 | 46 | 12.2 | <10 | 4 | <5 |



XRAL Laboratories
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CERTIFICATE OF ANALYSIS

Work Order: 052658

To: B-MAX Ltd.
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 21/10/98

Copy 1 to :


Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 58 SOIL
Date Submitted : 13/10/98
Report Comprises : Cover Sheet plus
Pages 1 to 6

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-542 | <0.5 | 0.02 | 0.87 | 2.36 | 0.11 | 0.24 | 0.15 | 2.5 | 0.25 | 108 | 82 | 253 | 5.66 | 16 | 66 | 59.9 |
| SO98-543 | <0.5 | 0.02 | 0.59 | 2.15 | 0.25 | 0.13 | 0.34 | 1.8 | 0.22 | 106 | 54 | 107 | 5.17 | 5 | 22 | 15.4 |
| SO98-544 | <0.5 | 0.01 | 0.49 | 1.51 | 0.07 | 0.05 | 0.12 | 1.9 | 0.18 | 83 | 33 | 266 | 3.17 | 6 | 24 | 19.0 |
| SO98-545 | <0.5 | 0.02 | 0.66 | 1.78 | 0.07 | 0.04 | 0.12 | 2.2 | 0.12 | 58 | 77 | 379 | 3.13 | 17 | 180 | 26.7 |
| SO98-546 | <0.5 | 0.01 | 0.19 | 0.88 | 0.02 | 0.04 | 0.11 | 1.2 | 0.13 | 49 | 37 | 90 | 2.49 | 2 | 27 | 7.3 |
| SO98-547 | <0.5 | 0.02 | 0.39 | 1.42 | 0.05 | 0.05 | 0.16 | 1.9 | 0.17 | 65 | 42 | 113 | 3.45 | 5 | 28 | 22.4 |
| SO98-548 | <0.5 | 0.01 | 0.65 | 1.60 | 0.06 | 0.12 | 0.46 | 3.3 | 0.16 | 75 | 77 | 282 | 3.48 | 10 | 63 | 22.4 |
| SO98-549 | <0.5 | 0.02 | 0.52 | 2.72 | 0.06 | 0.04 | 0.34 | 3.3 | 0.10 | 54 | 72 | 566 | 3.13 | 20 | 205 | 49.8 |
| SO98-550 | <0.5 | 0.02 | 0.42 | 1.67 | 0.06 | 0.03 | 0.42 | 1.6 | 0.12 | 99 | 35 | 153 | 3.71 | 17 | 90 | 43.0 |
| SO98-551 | <0.5 | 0.02 | 0.42 | 1.85 | 0.06 | 0.03 | 0.20 | 2.5 | 0.12 | 64 | 60 | 97 | 3.99 | 7 | 87 | 53.1 |
| SO98-552 | <0.5 | 0.02 | 0.12 | 1.23 | 0.03 | 0.02 | 0.18 | 1.4 | 0.09 | 36 | 20 | 108 | 1.82 | 6 | 22 | 9.2 |
| SO98-553 | <0.5 | 0.01 | 0.82 | 1.88 | 0.04 | 0.04 | 0.26 | 3.2 | 0.08 | 43 | 93 | 339 | 2.72 | 18 | 353 | 64.1 |
| SO98-554 | <0.5 | 0.01 | 0.16 | 0.83 | 0.04 | 0.06 | 0.18 | 1.6 | 0.14 | 62 | 23 | 87 | 2.53 | 2 | 18 | 10.5 |
| SO98-555 | <0.5 | 0.02 | 0.52 | 1.73 | 0.09 | 0.07 | 0.98 | 9.1 | 0.03 | 44 | 71 | 2930 | 2.33 | 18 | 182 | 65.0 |
| SO98-556 | <0.5 | 0.01 | 0.20 | 1.21 | 0.05 | 0.05 | 0.13 | 1.7 | 0.20 | 99 | 40 | 62 | 4.27 | 1 | 13 | 8.7 |
| SO98-557 | <0.5 | 0.01 | 0.15 | 1.59 | 0.05 | 0.04 | 0.06 | 1.4 | 0.11 | 48 | 34 | 66 | 3.06 | 1 | 12 | 7.5 |
| SO98-558 | <0.5 | 0.01 | 0.08 | 0.49 | 0.02 | 0.04 | 0.08 | 0.8 | 0.13 | 40 | 16 | 61 | 1.28 | <1 | 11 | 6.2 |
| SO98-559 | <0.5 | 0.01 | 0.20 | 1.50 | 0.03 | 0.06 | 0.06 | 2.4 | 0.15 | 61 | 48 | 59 | 2.83 | 3 | 17 | 10.2 |
| SO98-560 | <0.5 | 0.01 | 0.06 | 0.79 | 0.02 | 0.02 | 0.03 | 0.7 | 0.23 | 104 | 26 | 42 | 3.02 | <1 | 6 | 3.0 |
| SO98-561 | <0.5 | 0.02 | 0.21 | 1.83 | 0.04 | 0.03 | 0.12 | 1.7 | 0.10 | 34 | 40 | 65 | 2.76 | 2 | 24 | 7.2 |
| SO98-562 | <0.5 | 0.02 | 0.47 | 1.28 | 0.03 | 0.03 | 0.15 | 1.8 | 0.12 | 33 | 41 | 68 | 1.81 | 7 | 76 | 16.1 |
| SO98-563 | <0.5 | 0.02 | 0.25 | 0.95 | 0.02 | 0.04 | 0.09 | 1.4 | 0.18 | 61 | 23 | 74 | 2.82 | 3 | 9 | 15.8 |
| SO98-564 | <0.5 | 0.02 | 0.92 | 2.53 | 0.08 | 0.08 | 0.19 | 1.8 | 0.24 | 57 | 72 | 160 | 3.43 | 11 | 58 | 42.3 |
| SO98-565 | <0.5 | 0.01 | 0.19 | 1.96 | 0.05 | 0.03 | 0.05 | 2.2 | 0.14 | 94 | 31 | 70 | 4.82 | 3 | 10 | 30.3 |
| SO98-566 | <0.5 | 0.01 | 0.07 | 1.45 | 0.03 | 0.02 | 0.05 | 1.3 | 0.11 | 42 | 32 | 30 | 2.50 | <1 | 7 | 6.4 |
| SO98-567 | 0.7 | 0.01 | 0.32 | 2.55 | 0.06 | 0.06 | 0.09 | 3.4 | 0.09 | 58 | 56 | 323 | 4.21 | 16 | 40 | 32.6 |
| SO98-568 | <0.5 | 0.01 | 0.39 | 0.95 | 0.02 | 0.05 | 0.09 | 1.4 | 0.15 | 38 | 40 | 88 | 1.65 | 4 | 30 | 11.1 |
| SO98-569 | <0.5 | 0.01 | 0.33 | 0.77 | 0.02 | 0.05 | 0.19 | 1.3 | 0.15 | 61 | 58 | 108 | 1.97 | 2 | 26 | 6.6 |
| SO98-570 | <0.5 | 0.01 | 0.10 | 0.46 | 0.02 | 0.06 | 0.08 | 0.9 | 0.11 | 58 | 28 | 32 | 1.73 | <1 | 7 | 3.2 |
| SO98-571 | <0.5 | 0.02 | 0.21 | 1.78 | 0.05 | 0.04 | 0.14 | 1.7 | 0.10 | 39 | 42 | 136 | 2.88 | 2 | 13 | 6.3 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-572 | <0.5 | 0.01 | 0.14 | 1.99 | 0.05 | 0.04 | 0.08 | 1.8 | 0.10 | 46 | 33 | 65 | 3.03 | 2 | 12 | 3.8 |
| SO98-573 | <0.5 | 0.01 | 0.30 | 1.21 | 0.04 | 0.04 | 0.13 | 1.3 | 0.13 | 42 | 42 | 92 | 2.40 | 4 | 47 | 21.6 |
| SO98-574 | <0.5 | 0.02 | 0.40 | 1.72 | 0.12 | 0.05 | 0.16 | 1.6 | 0.11 | 58 | 63 | 295 | 3.27 | 8 | 38 | 19.2 |
| SO98-575 | <0.5 | 0.02 | 0.68 | 1.67 | 0.05 | 0.06 | 0.53 | 6.6 | 0.07 | 35 | 66 | 219 | 2.11 | 12 | 190 | 87.9 |
| SO98-576 | <0.5 | 0.01 | 0.14 | 1.00 | 0.01 | 0.03 | 0.12 | 1.4 | 0.07 | 28 | 29 | 66 | 1.52 | 3 | 38 | 16.8 |
| SO98-577 | <0.5 | 0.02 | 0.42 | 1.27 | 0.03 | 0.04 | 0.15 | 1.9 | 0.07 | 29 | 44 | 120 | 1.73 | 6 | 84 | 24.5 |
| SO98-578 | <0.5 | 0.01 | 0.31 | 1.62 | 0.03 | 0.05 | 0.14 | 1.8 | 0.09 | 34 | 47 | 114 | 2.60 | 7 | 153 | 34.4 |
| SO98-579 | <0.5 | 0.01 | 0.53 | 1.77 | 0.15 | 0.07 | 0.66 | 7.3 | 0.04 | 81 | 102 | 1920 | 4.58 | 26 | 185 | 66.2 |
| SO98-580 | <0.5 | 0.01 | 0.53 | 1.41 | 0.04 | 0.06 | 0.35 | 2.4 | 0.10 | 49 | 60 | 486 | 2.79 | 13 | 123 | 21.1 |
| SO98-581 | <0.5 | 0.03 | 0.92 | 2.73 | 0.11 | 0.04 | 0.34 | 2.2 | 0.08 | 39 | 59 | 354 | 2.89 | 21 | 236 | 38.0 |
| SO98-582 | <0.5 | 0.02 | 1.10 | 2.00 | 0.07 | 0.04 | 0.24 | 2.4 | 0.11 | 64 | 82 | 220 | 3.72 | 19 | 222 | 63.5 |
| SO98-583 | <0.5 | 0.02 | 1.73 | 1.79 | 0.10 | 0.04 | 0.54 | 3.3 | 0.11 | 55 | 109 | 532 | 3.27 | 30 | 308 | 35.9 |
| SO98-584 | <0.5 | 0.02 | 0.72 | 1.32 | 0.05 | 0.04 | 0.30 | 1.7 | 0.14 | 50 | 62 | 116 | 3.49 | 10 | 134 | 20.2 |
| SO98-585 | <0.5 | 0.02 | 0.74 | 1.02 | 0.12 | 0.22 | 0.37 | 1.3 | 0.26 | 84 | 23 | 128 | 2.78 | 12 | 39 | 63.7 |
| SO98-586 | <0.5 | 0.02 | 0.97 | 2.41 | 0.10 | 0.13 | 0.39 | 4.2 | 0.15 | 56 | 88 | 438 | 3.74 | 29 | 233 | 43.7 |
| SO98-587 | <0.5 | 0.01 | 0.59 | 1.75 | 0.11 | 0.26 | 0.24 | 1.8 | 0.24 | 96 | 25 | 474 | 4.67 | 14 | 17 | 27.1 |
| SO98-588 | <0.5 | 0.01 | 0.22 | 0.81 | 0.04 | 0.01 | 0.11 | 0.9 | 0.05 | 13 | 25 | 55 | 0.63 | 2 | 38 | 1.7 |
| SO98-589 | <0.5 | 0.01 | 0.16 | 0.65 | 0.05 | 0.02 | 0.11 | 0.9 | 0.05 | 20 | 19 | 59 | 1.27 | 4 | 43 | 6.5 |
| SO98-590 | <0.5 | 0.02 | 0.85 | 2.43 | 0.19 | 0.17 | 0.40 | 2.2 | 0.23 | 87 | 45 | 164 | 5.05 | 11 | 43 | 53.5 |
| SO98-591 | <0.5 | 0.01 | 0.85 | 1.21 | 0.03 | 0.03 | 0.18 | 2.1 | 0.08 | 44 | 93 | 172 | 3.03 | 17 | 224 | 12.8 |
| SO98-592 | <0.5 | 0.02 | 0.63 | 1.71 | 0.05 | 0.03 | 0.25 | 2.5 | 0.12 | 58 | 95 | 247 | 3.62 | 18 | 197 | 39.5 |
| SO98-593 | <0.5 | 0.02 | 0.13 | 2.76 | 0.10 | 0.02 | 0.17 | 4.2 | 0.13 | 106 | 39 | 41 | 5.48 | 2 | 14 | 35.3 |
| SO98-594 | <0.5 | 0.02 | 0.27 | 1.37 | 0.07 | 0.03 | 0.17 | 3.0 | 0.24 | 178 | 54 | 71 | 5.77 | 6 | 51 | 52.4 |
| SO98-595 | <0.5 | 0.02 | 0.36 | 1.99 | 0.07 | 0.04 | 0.20 | 2.4 | 0.22 | 76 | 16 | 42 | 3.74 | 5 | 15 | 17.1 |
| SO98-596 | <0.5 | 0.02 | 0.16 | 3.08 | 0.16 | 0.03 | 0.26 | 2.9 | 0.11 | 85 | 18 | 43 | 4.22 | 4 | 11 | 28.5 |
| SO98-597 | <0.5 | 0.02 | 0.24 | 1.42 | 0.09 | 0.02 | 0.22 | 1.5 | 0.11 | 76 | 23 | 56 | 3.33 | 6 | 34 | 27.7 |
| SO98-598 | <0.5 | 0.01 | 0.13 | 1.37 | 0.03 | 0.02 | 0.12 | 1.3 | 0.17 | 68 | 40 | 41 | 3.05 | <1 | 9 | 4.4 |
| SO98-599 | <0.5 | 0.01 | 0.20 | 1.83 | 0.08 | 0.03 | 0.12 | 1.5 | 0.07 | 36 | 42 | 109 | 2.66 | 2 | 15 | 8.9 |
| *Dup SO98-542 | <0.5 | 0.01 | 0.93 | 2.46 | 0.12 | 0.26 | 0.17 | 2.5 | 0.26 | 115 | 85 | 274 | 5.91 | 17 | 70 | 63.5 |
| *Dup SO98-554 | <0.5 | 0.01 | 0.16 | 0.82 | 0.04 | 0.06 | 0.18 | 1.5 | 0.14 | 62 | 25 | 89 | 2.52 | 3 | 20 | 10.6 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det. Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| *Dup SO98-566 | <0.5 | 0.01 | 0.07 | 1.45 | 0.04 | 0.02 | 0.05 | 1.3 | 0.11 | 42 | 32 | 30 | 2.47 | <1 | 8 | 6.0 |
| *Dup SO98-578 | <0.5 | 0.01 | 0.30 | 1.62 | 0.03 | 0.04 | 0.14 | 1.7 | 0.09 | 34 | 47 | 114 | 2.58 | 7 | 150 | 33.9 |
| *Dup SO98-590 | <0.5 | 0.02 | 0.83 | 2.34 | 0.20 | 0.17 | 0.43 | 2.1 | 0.23 | 84 | 43 | 159 | 4.86 | 13 | 43 | 51.9 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-542 | 153 | <3 | 23.7 | 3.8 | 1.9 | 2 | 0.3 | <1 | <10 | <5 | 370 | 12.8 | <10 | 12 | <5 |
| SO98-543 | 73.7 | <3 | 14.5 | 5.0 | 2.5 | <1 | 0.5 | <1 | <10 | <5 | 144 | 7.9 | <10 | 9 | <5 |
| SO98-544 | 73.2 | <3 | 5.4 | 3.4 | 2.6 | <1 | 0.2 | <1 | <10 | <5 | 61 | 6.5 | <10 | 9 | <5 |
| SO98-545 | 127 | <3 | 6.5 | 5.0 | 1.2 | <1 | <0.2 | <1 | <10 | <5 | 69 | 8.7 | <10 | 11 | <5 |
| SO98-546 | 81.0 | <3 | 8.8 | 3.0 | 2.1 | <1 | 0.2 | <1 | <10 | <5 | 49 | 7.1 | <10 | 10 | <5 |
| SO98-547 | 110 | <3 | 10.3 | 4.1 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 53 | 7.3 | <10 | 9 | <5 |
| SO98-548 | 153 | <3 | 33.5 | 3.5 | 2.1 | <1 | <0.2 | <1 | <10 | <5 | 90 | 9.1 | <10 | 13 | <5 |
| SO98-549 | 101 | <3 | 27.2 | 10.3 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 68 | 17.6 | <10 | 14 | <5 |
| SO98-550 | 87.1 | <3 | 35.6 | 2.4 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 61 | 5.3 | <10 | 11 | <5 |
| SO98-551 | 70.0 | <3 | 15.3 | 5.1 | 3.5 | <1 | 0.4 | <1 | <10 | <5 | 47 | 9.4 | <10 | 13 | <5 |
| SO98-552 | 64.7 | <3 | 16.0 | 2.9 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 61 | 6.0 | <10 | 7 | <5 |
| SO98-553 | 114 | <3 | 18.1 | 9.1 | 1.9 | <1 | 0.3 | <1 | <10 | <5 | 75 | 11.6 | <10 | 10 | <5 |
| SO98-554 | 73.1 | <3 | 14.6 | 2.6 | 2.9 | <1 | <0.2 | <1 | <10 | <5 | 61 | 7.6 | <10 | 9 | <5 |
| SO98-555 | 107 | <3 | 75.9 | 47.2 | 1.6 | <1 | <0.2 | <1 | <10 | <5 | 126 | 57.5 | <10 | 11 | <5 |
| SO98-556 | 41.7 | <3 | 11.4 | 2.7 | 4.3 | <1 | 0.4 | <1 | <10 | <5 | 49 | 7.9 | <10 | 13 | <5 |
| SO98-557 | 43.0 | <3 | 4.9 | 3.7 | 2.6 | <1 | 0.4 | <1 | <10 | <5 | 40 | 9.1 | <10 | 15 | <5 |
| SO98-558 | 22.5 | <3 | 9.4 | 2.2 | 1.8 | <1 | 0.2 | <1 | <10 | <5 | 41 | 8.5 | <10 | 17 | <5 |
| SO98-559 | 24.8 | <3 | 7.5 | 7.2 | 3.6 | <1 | <0.2 | <1 | <10 | <5 | 66 | 16.4 | <10 | 15 | <5 |
| SO98-560 | 17.9 | <3 | 5.2 | 1.5 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 22 | 5.8 | <10 | 17 | <5 |
| SO98-561 | 34.6 | <3 | 9.5 | 3.2 | 3.2 | <1 | 0.4 | <1 | <10 | <5 | 39 | 9.7 | <10 | 10 | <5 |
| SO98-562 | 33.5 | <3 | 9.9 | 3.3 | 3.3 | <1 | <0.2 | <1 | <10 | <5 | 39 | 6.7 | <10 | 7 | <5 |
| SO98-563 | 29.0 | <3 | 5.0 | 2.9 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 30 | 5.0 | <10 | 7 | <5 |
| SO98-564 | 105 | <3 | 7.6 | 3.4 | 3.1 | <1 | 0.4 | <1 | <10 | <5 | 62 | 6.0 | <10 | 7 | <5 |
| SO98-565 | 51.4 | <3 | 3.5 | 4.3 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 34 | 8.0 | <10 | 12 | <5 |
| SO98-566 | 21.2 | <3 | 6.9 | 2.6 | 2.8 | <1 | 0.2 | <1 | <10 | <5 | 50 | 9.0 | <10 | 15 | <5 |
| SO98-567 | 89.3 | <3 | 7.1 | 15.9 | 2.4 | 1 | 0.3 | <1 | <10 | <5 | 73 | 18.5 | <10 | 10 | 6 |
| SO98-568 | 33.5 | <3 | 7.9 | 2.9 | 2.0 | <1 | 0.3 | <1 | <10 | <5 | 45 | 7.9 | <10 | 13 | <5 |
| SO98-569 | 30.6 | <3 | 15.7 | 1.7 | 2.6 | 1 | 0.4 | <1 | <10 | <5 | 30 | 7.2 | <10 | 11 | <5 |
| SO98-570 | 11.7 | <3 | 6.8 | 2.1 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 29 | 16.0 | <10 | 8 | <5 |
| SO98-571 | 124 | <3 | 12.2 | 3.7 | 3.1 | <1 | 0.4 | <1 | <10 | <5 | 54 | 10.5 | <10 | 9 | 5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| SO98-572 | 48.5 | <3 | 6.0 | 4.3 | 3.5 | <1 | <0.2 | <1 | <10 | <5 | 33 | 8.8 | <10 | 15 | <5 |
| SO98-573 | 30.5 | <3 | 9.6 | 4.1 | 1.7 | <1 | <0.2 | <1 | <10 | <5 | 42 | 9.1 | <10 | 10 | <5 |
| SO98-574 | 92.6 | <3 | 11.3 | 3.6 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 68 | 9.1 | <10 | 9 | <5 |
| SO98-575 | 67.8 | <3 | 39.3 | 49.9 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 95 | 36.9 | <10 | 9 | <5 |
| SO98-576 | 40.5 | <3 | 10.5 | 4.7 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 25 | 7.8 | <10 | 8 | <5 |
| SO98-577 | 34.5 | <3 | 8.3 | 5.8 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 39 | 10.3 | <10 | 9 | <5 |
| SO98-578 | 87.0 | <3 | 11.2 | 4.1 | 2.5 | <1 | 0.5 | <1 | <10 | <5 | 69 | 8.3 | <10 | 9 | <5 |
| SO98-579 | 139 | <3 | 45.1 | 32.0 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 106 | 30.2 | <10 | 8 | <5 |
| SO98-580 | 207 | <3 | 27.4 | 3.6 | 1.3 | <1 | <0.2 | <1 | <10 | <5 | 92 | 6.7 | <10 | 6 | <5 |
| SO98-581 | 170 | <3 | 15.7 | 7.7 | 3.6 | <1 | <0.2 | <1 | <10 | <5 | 66 | 10.5 | <10 | 24 | <5 |
| SO98-582 | 142 | <3 | 12.7 | 5.3 | 1.7 | <1 | 0.2 | <1 | <10 | <5 | 44 | 8.9 | <10 | 15 | <5 |
| SO98-583 | 179 | <3 | 27.6 | 7.8 | 3.5 | <1 | <0.2 | <1 | <10 | <5 | 71 | 12.8 | <10 | 13 | <5 |
| SO98-584 | 60.0 | <3 | 18.9 | 4.2 | 3.2 | <1 | 0.2 | <1 | <10 | <5 | 67 | 5.8 | <10 | 12 | <5 |
| SO98-585 | 38.7 | <3 | 11.0 | 4.9 | 2.0 | <1 | <0.2 | <1 | <10 | <5 | 161 | 5.7 | <10 | 6 | <5 |
| SO98-586 | 150 | <3 | 17.3 | 22.2 | 2.9 | <1 | <0.2 | <1 | <10 | <5 | 121 | 20.4 | <10 | 11 | <5 |
| SO98-587 | 116 | <3 | 11.8 | 6.0 | 2.3 | <1 | <0.2 | <1 | <10 | <5 | 143 | 6.6 | <10 | 7 | <5 |
| SO98-588 | 26.1 | <3 | 4.0 | 3.5 | 1.0 | <1 | <0.2 | <1 | <10 | <5 | 18 | 4.6 | <10 | 5 | <5 |
| SO98-589 | 20.3 | <3 | 3.9 | 4.8 | 1.3 | <1 | <0.2 | <1 | <10 | <5 | 20 | 5.1 | <10 | 7 | <5 |
| SO98-590 | 100 | <3 | 13.4 | 7.0 | 2.8 | <1 | 0.2 | <1 | <10 | <5 | 90 | 13.4 | <10 | 8 | <5 |
| SO98-591 | 49.8 | <3 | 11.6 | 4.4 | 2.1 | <1 | 0.4 | <1 | <10 | <5 | 36 | 7.1 | <10 | 10 | <5 |
| SO98-592 | 122 | <3 | 15.8 | 11.2 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 45 | 18.0 | <10 | 25 | <5 |
| SO98-593 | 24.5 | <3 | 18.2 | 3.2 | 8.2 | <1 | <0.2 | <1 | <10 | <5 | 39 | 5.5 | <10 | 13 | <5 |
| SO98-594 | 57.9 | <3 | 13.1 | 2.1 | 5.2 | <1 | 0.2 | <1 | <10 | <5 | 43 | 3.8 | <10 | 18 | <5 |
| SO98-595 | 41.3 | <3 | 11.3 | 3.5 | 6.5 | <1 | <0.2 | <1 | <10 | <5 | 57 | 6.8 | <10 | 9 | <5 |
| SO98-596 | 38.4 | <3 | 18.1 | 5.0 | 4.0 | <1 | 0.3 | <1 | <10 | <5 | 46 | 6.1 | <10 | 7 | <5 |
| SO98-597 | 67.9 | <3 | 16.0 | 2.8 | 2.4 | <1 | <0.2 | <1 | <10 | <5 | 34 | 4.3 | <10 | 9 | <5 |
| SO98-598 | 26.9 | <3 | 13.1 | 2.4 | 3.5 | <1 | 0.2 | <1 | <10 | <5 | 46 | 8.9 | <10 | 16 | <5 |
| SO98-599 | 68.2 | <3 | 9.1 | 3.0 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 74 | 8.5 | <10 | 11 | <5 |
| *Dup SO98-542 | 161 | <3 | 24.8 | 4.0 | 2.8 | 2 | 0.3 | <1 | <10 | <5 | 389 | 12.9 | <10 | 10 | <5 |
| *Dup SO98-554 | 72.9 | <3 | 14.6 | 2.6 | 3.1 | <1 | 0.2 | <1 | <10 | <5 | 61 | 7.5 | <10 | 11 | <5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| *Dup SO98-566 | 20.7 | <3 | 6.8 | 2.6 | 2.6 | <1 | <0.2 | <1 | <10 | <5 | 51 | 8.3 | <10 | 15 | <5 |
| *Dup SO98-578 | 87.1 | <3 | 11.0 | 4.1 | 2.0 | <1 | 0.3 | <1 | <10 | <5 | 69 | 7.7 | <10 | 7 | <5 |
| *Dup SO98-590 | 96.8 | <3 | 14.2 | 7.3 | 2.8 | 1 | <0.2 | <1 | <10 | <5 | 88 | 13.0 | <10 | 9 | <5 |



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CERTIFICATE OF ANALYSIS

Work Order: 052724

To: B-MAX Ltd.
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 28/10/98

Copy 1 to :

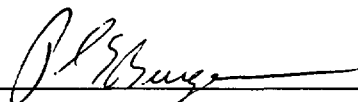
Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 57 SOIL
Date Submitted : 19/10/98
Report Comprises : Cover Sheet plus
Pages 1 to 6

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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| Element. Method. Det.Lim. Units. | Be ICP70 0.5 ppm | Na ICP70 0.01 % | Mg ICP70 0.01 % | Al ICP70 0.01 % | P ICP70 0.01 % | K ICP70 0.01 % | Ca ICP70 0.01 % | Sc ICP70 0.5 ppm | Ti ICP70 0.01 % | V ICP70 2 ppm | Cr ICP70 1 ppm | Mn ICP70 2 ppm | Fe ICP70 0.01 % | Co ICP70 1 ppm | Ni ICP70 1 ppm | Cu ICP70 0.5 ppm |
|---|---------------------------|--------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|---------------------------|--------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|
| SO98-600 | 0.9 | 0.02 | 0.91 | 1.98 | 0.06 | 0.04 | 0.43 | 2.0 | 0.20 | 88 | 147 | 191 | 5.10 | 21 | 261 | 52.3 |
| SO98-601 | 0.6 | 0.02 | 0.67 | 1.69 | 0.04 | 0.06 | 0.22 | 1.6 | 0.17 | 59 | 49 | 139 | 3.42 | 18 | 185 | 41.6 |
| SO98-602 | 0.6 | 0.02 | 0.86 | 1.78 | 0.05 | 0.04 | 0.37 | 2.1 | 0.12 | 69 | 128 | 608 | 3.78 | 31 | 274 | 27.8 |
| SO98-603 | 1.1 | 0.03 | 0.88 | 3.87 | 0.09 | 0.07 | 0.30 | 2.6 | 0.15 | 58 | 83 | 516 | 3.50 | 25 | 204 | 51.9 |
| SO98-604 | 0.8 | 0.02 | 0.21 | 2.11 | 0.08 | 0.04 | 0.26 | 1.4 | 0.16 | 55 | 25 | 290 | 3.87 | 7 | 25 | 14.1 |
| SO98-605 | 0.5 | 0.02 | 0.39 | 1.35 | 0.03 | 0.03 | 0.19 | 1.2 | 0.15 | 71 | 51 | 191 | 3.40 | 10 | 56 | 12.3 |
| SO98-606 | 1.3 | 0.02 | 0.51 | 2.40 | 0.10 | 0.04 | 0.69 | 9.1 | 0.17 | 80 | 63 | 2650 | 4.79 | 26 | 260 | 82.0 |
| SO98-607 | <0.5 | 0.02 | 0.36 | 0.97 | 0.03 | 0.08 | 0.36 | 1.3 | 0.21 | 83 | 63 | 191 | 3.16 | 9 | 80 | 14.2 |
| SO98-608 | <0.5 | 0.02 | 0.89 | 0.64 | 0.06 | 0.04 | 0.20 | 1.3 | 0.05 | 25 | 59 | 148 | 1.62 | 15 | 153 | 15.9 |
| SO98-609 | 0.8 | 0.02 | 2.70 | 2.06 | 0.09 | 0.14 | 0.42 | 4.4 | 0.16 | 86 | 272 | 1340 | 5.51 | 61 | 513 | 40.0 |
| SO98-610 | 0.8 | 0.02 | 2.82 | 1.80 | 0.06 | 0.15 | 0.35 | 7.6 | 0.11 | 81 | 251 | 2530 | 4.57 | 68 | 890 | 79.2 |
| SO98-611 | <0.5 | 0.03 | 1.53 | 1.23 | 0.05 | 0.07 | 0.66 | 6.0 | 0.06 | 44 | 148 | 537 | 2.81 | 32 | 504 | 84.1 |
| SO98-612 | <0.5 | 0.02 | 0.65 | 0.71 | 0.04 | 0.04 | 0.56 | 2.4 | 0.04 | 24 | 73 | 250 | 1.70 | 13 | 226 | 31.3 |
| SO98-613 | <0.5 | 0.02 | 0.80 | 0.75 | 0.06 | 0.03 | 0.40 | 2.0 | 0.04 | 25 | 82 | 136 | 1.77 | 15 | 210 | 21.6 |
| SO98-614 | <0.5 | 0.02 | 0.20 | 1.03 | 0.02 | 0.03 | 0.07 | 0.9 | 0.17 | 45 | 33 | 58 | 2.43 | 5 | 42 | 5.0 |
| SO98-615 | 0.7 | 0.02 | 1.40 | 1.81 | 0.06 | 0.16 | 0.53 | 16.7 | 0.11 | 49 | 149 | 1500 | 3.30 | 24 | 676 | 96.8 |
| SO98-616 | 0.7 | 0.03 | 2.28 | 1.65 | 0.06 | 0.07 | 0.37 | 6.1 | 0.10 | 74 | 218 | 757 | 4.59 | 39 | 532 | 50.8 |
| SO98-617 | 0.7 | 0.02 | 1.01 | 1.82 | 0.04 | 0.04 | 0.45 | 4.6 | 0.13 | 69 | 114 | 493 | 3.52 | 24 | 351 | 45.7 |
| SO98-618 | 0.5 | 0.03 | 0.40 | 1.89 | 0.07 | 0.03 | 0.18 | 1.5 | 0.07 | 33 | 35 | 242 | 2.57 | 23 | 214 | 91.1 |
| SO98-619 | 0.5 | 0.02 | 0.74 | 1.56 | 0.03 | 0.03 | 0.27 | 2.8 | 0.12 | 54 | 74 | 535 | 2.82 | 20 | 206 | 29.2 |
| SO98-620 | 0.6 | 0.03 | 1.16 | 1.93 | 0.06 | 0.11 | 0.36 | 3.7 | 0.18 | 67 | 108 | 2160 | 3.50 | 33 | 245 | 34.0 |
| SO98-621 | 0.7 | 0.02 | 0.89 | 1.73 | 0.05 | 0.05 | 0.19 | 2.0 | 0.18 | 90 | 120 | 274 | 4.01 | 23 | 202 | 24.2 |
| SO98-622 | 0.6 | 0.02 | 1.27 | 1.79 | 0.08 | 0.08 | 0.36 | 2.0 | 0.14 | 84 | 147 | 525 | 3.62 | 33 | 288 | 28.3 |
| SO98-623 | 0.8 | 0.02 | 3.74 | 2.23 | 0.11 | 0.16 | 0.50 | 4.3 | 0.14 | 93 | 337 | 1200 | 5.96 | 84 | 734 | 62.1 |
| SO98-624 | 0.5 | 0.02 | 0.54 | 1.45 | 0.03 | 0.06 | 0.38 | 1.6 | 0.21 | 68 | 94 | 178 | 3.81 | 14 | 103 | 11.7 |
| SO98-625 | 0.6 | 0.02 | 0.55 | 1.38 | 0.03 | 0.08 | 0.17 | 1.9 | 0.23 | 83 | 104 | 143 | 4.26 | 11 | 119 | 18.0 |
| SO98-626 | 0.8 | 0.02 | 0.21 | 1.63 | 0.04 | 0.04 | 0.12 | 1.1 | 0.25 | 101 | 43 | 54 | 4.26 | 5 | 32 | 8.5 |
| SO98-627 | <0.5 | 0.02 | 0.06 | 0.48 | 0.01 | 0.01 | 0.04 | <0.5 | 0.10 | 30 | 12 | 23 | 1.00 | 3 | 11 | 3.7 |
| SO98-628 | 0.6 | 0.02 | 0.93 | 1.60 | 0.05 | 0.08 | 0.47 | 4.6 | 0.07 | 46 | 111 | 1450 | 3.02 | 37 | 260 | 25.6 |
| SO98-629 | <0.5 | 0.03 | 1.28 | 1.02 | 0.04 | 0.05 | 0.40 | 5.2 | 0.08 | 46 | 114 | 415 | 3.14 | 26 | 370 | 41.5 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| SO98-630 | <0.5 | 0.03 | 0.97 | 1.45 | 0.04 | 0.05 | 0.36 | 5.1 | 0.09 | 56 | 113 | 1150 | 3.07 | 24 | 358 | 50.6 |
| SO98-631 | 0.5 | 0.02 | 0.23 | 1.08 | 0.03 | 0.03 | 0.12 | 1.3 | 0.17 | 94 | 52 | 289 | 3.55 | 10 | 46 | 8.1 |
| SO98-632 | 0.5 | 0.03 | 0.43 | 1.52 | 0.06 | 0.05 | 0.47 | 1.6 | 0.13 | 76 | 41 | 419 | 3.19 | 12 | 64 | 28.1 |
| SO98-633 | 0.7 | 0.02 | 0.90 | 1.78 | 0.10 | 0.08 | 0.58 | 1.8 | 0.15 | 77 | 67 | 312 | 4.09 | 20 | 235 | 159 |
| SO98-634 | 0.6 | 0.02 | 0.89 | 1.76 | 0.04 | 0.04 | 0.15 | 2.0 | 0.12 | 57 | 100 | 385 | 3.52 | 22 | 213 | 30.7 |
| SO98-635 | 0.8 | 0.02 | 0.53 | 2.18 | 0.06 | 0.05 | 0.11 | 2.3 | 0.12 | 81 | 67 | 248 | 4.76 | 14 | 95 | 33.3 |
| SO98-636 | <0.5 | 0.03 | 0.18 | 1.93 | 0.09 | 0.04 | 0.09 | 1.7 | 0.10 | 56 | 33 | 364 | 3.02 | 6 | 18 | 24.8 |
| SO98-637 | 0.8 | 0.03 | 0.64 | 1.88 | 0.04 | 0.04 | 0.33 | 4.7 | 0.07 | 51 | 111 | 1790 | 2.94 | 23 | 362 | 45.7 |
| SO98-638 | 0.6 | 0.02 | 0.61 | 1.31 | 0.05 | 0.04 | 0.30 | 2.5 | 0.12 | 68 | 88 | 574 | 3.27 | 21 | 168 | 25.2 |
| SO98-639 | 0.5 | 0.02 | 0.45 | 1.22 | 0.05 | 0.05 | 0.21 | 1.2 | 0.20 | 73 | 52 | 92 | 3.53 | 8 | 66 | 25.0 |
| SO98-640 | 0.5 | 0.02 | 1.02 | 1.58 | 0.08 | 0.02 | 0.24 | 1.3 | 0.10 | 44 | 88 | 90 | 3.05 | 16 | 231 | 23.8 |
| SO98-641 | 0.7 | 0.02 | 0.57 | 1.77 | 0.05 | 0.04 | 0.18 | 1.8 | 0.16 | 71 | 55 | 78 | 3.96 | 13 | 125 | 21.6 |
| SO98-642 | <0.5 | 0.02 | 0.24 | 1.30 | 0.05 | 0.03 | 0.12 | 2.0 | 0.11 | 59 | 40 | 186 | 2.63 | 10 | 52 | 16.3 |
| SO98-643 | 0.6 | 0.04 | 0.62 | 1.62 | 0.41 | 0.14 | 1.20 | 1.5 | 0.12 | 67 | 46 | 100 | 4.47 | 18 | 64 | 73.3 |
| SO98-644 | 2.7 | 0.03 | 0.38 | 4.84 | 0.14 | 0.03 | 0.81 | 3.3 | 0.17 | 74 | 46 | 649 | 6.31 | 35 | 193 | 75.0 |
| SO98-645 | <0.5 | 0.02 | 0.17 | 1.43 | 0.03 | 0.02 | 0.06 | 1.3 | 0.23 | 72 | 37 | 35 | 3.18 | 4 | 40 | 3.4 |
| SO98-646 | 0.6 | 0.02 | 0.55 | 1.93 | 0.05 | 0.03 | 0.08 | 1.5 | 0.17 | 47 | 62 | 78 | 2.66 | 11 | 100 | 26.3 |
| SO98-647 | <0.5 | 0.02 | 0.73 | 1.13 | 0.03 | 0.02 | 0.16 | 1.3 | 0.09 | 26 | 72 | 80 | 2.02 | 12 | 169 | 11.7 |
| SO98-648 | 1.5 | 0.03 | 0.48 | 4.27 | 0.10 | 0.03 | 0.38 | 1.6 | 0.10 | 41 | 26 | 399 | 3.18 | 26 | 104 | 54.2 |
| SO98-649 | 0.6 | 0.02 | 0.28 | 1.53 | 0.03 | 0.02 | 0.11 | 1.7 | 0.21 | 145 | 57 | 40 | 4.39 | 9 | 41 | 14.5 |
| SO98-650 | 0.5 | 0.02 | 0.11 | 1.56 | 0.05 | 0.02 | 0.20 | 1.1 | 0.17 | 94 | 15 | 63 | 3.93 | 5 | 10 | 17.2 |
| SO98-651 | <0.5 | 0.02 | 0.09 | 1.39 | 0.04 | 0.02 | 0.08 | 1.4 | 0.18 | 105 | 20 | 42 | 3.51 | 6 | 18 | 37.4 |
| SO98-652 | 0.7 | 0.02 | 1.37 | 2.24 | 0.07 | 0.06 | 0.23 | 2.2 | 0.25 | 116 | 117 | 252 | 4.72 | 23 | 236 | 94.3 |
| SO98-653 | 0.5 | 0.02 | 0.77 | 1.45 | 0.03 | 0.02 | 0.14 | 1.2 | 0.19 | 88 | 72 | 128 | 3.59 | 16 | 144 | 9.0 |
| SO98-654 | 0.6 | 0.02 | 1.06 | 1.74 | 0.03 | 0.02 | 0.21 | 2.2 | 0.13 | 57 | 104 | 114 | 3.13 | 19 | 260 | 14.6 |
| SO98-655 | 0.5 | 0.02 | 0.38 | 1.58 | 0.04 | 0.03 | 0.09 | 1.0 | 0.28 | 87 | 48 | 71 | 4.11 | 7 | 38 | 24.2 |
| SO98-656 | <0.5 | 0.02 | 0.31 | 1.21 | 0.04 | 0.05 | 0.07 | 1.1 | 0.23 | 77 | 40 | 70 | 3.31 | 6 | 18 | 8.8 |
| *Dup SO98-600 | 0.9 | 0.02 | 0.95 | 2.07 | 0.06 | 0.05 | 0.45 | 2.0 | 0.19 | 95 | 154 | 211 | 5.44 | 23 | 291 | 54.8 |
| *Dup SO98-612 | <0.5 | 0.02 | 0.62 | 0.68 | 0.04 | 0.04 | 0.54 | 2.2 | 0.04 | 23 | 71 | 242 | 1.63 | 12 | 219 | 30.3 |
| *Dup SO98-624 | 0.5 | 0.02 | 0.51 | 1.36 | 0.03 | 0.06 | 0.36 | 1.7 | 0.18 | 65 | 88 | 169 | 3.62 | 12 | 97 | 11.7 |



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| Element. | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 | 1 | 1 | 0.5 |
| Units. | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % | ppm | ppm | ppm |
| *Dup SO98-636 | <0.5 | 0.02 | 0.17 | 1.85 | 0.09 | 0.03 | 0.09 | 1.6 | 0.08 | 53 | 32 | 342 | 2.91 | 7 | 19 | 24.3 |
| *Dup SO98-648 | 1.5 | 0.02 | 0.48 | 4.33 | 0.10 | 0.03 | 0.40 | 1.6 | 0.10 | 41 | 27 | 407 | 3.26 | 26 | 107 | 54.4 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-600 | 146 | <3 | 35.4 | 3.1 | 4.0 | <1 | <0.2 | <1 | <10 | <5 | 80 | 4.5 | <10 | 12 | <5 |
| SO98-601 | 119 | <3 | 14.6 | 4.0 | 2.1 | <1 | 0.4 | <1 | <10 | <5 | 74 | 5.3 | <10 | 8 | <5 |
| SO98-602 | 144 | <3 | 25.4 | 5.8 | 2.3 | <1 | 0.3 | <1 | <10 | <5 | 86 | 9.2 | <10 | 13 | <5 |
| SO98-603 | 257 | <3 | 15.4 | 7.0 | 4.8 | <1 | 0.7 | <1 | <10 | <5 | 62 | 12.1 | <10 | 4 | <5 |
| SO98-604 | 86.5 | <3 | 16.6 | 5.6 | 10.4 | <1 | <0.2 | <1 | <10 | <5 | 69 | 8.7 | <10 | 9 | <5 |
| SO98-605 | 123 | <3 | 13.9 | 2.8 | 3.0 | <1 | 0.3 | <1 | <10 | <5 | 53 | 5.0 | <10 | 7 | <5 |
| SO98-606 | 178 | <3 | 53.8 | 85.0 | 30.4 | <1 | 0.7 | 2 | <10 | <5 | 120 | 81.0 | <10 | 21 | <5 |
| SO98-607 | 62.2 | <3 | 25.1 | 2.3 | 3.1 | <1 | 0.4 | <1 | <10 | <5 | 65 | 4.7 | <10 | 10 | 5 |
| SO98-608 | 32.4 | <3 | 7.9 | 4.1 | 1.3 | <1 | 0.7 | <1 | <10 | <5 | 22 | 5.7 | <10 | 3 | <5 |
| SO98-609 | 272 | <3 | 23.5 | 5.7 | 5.3 | <1 | 0.8 | <1 | <10 | <5 | 84 | 10.4 | <10 | 12 | <5 |
| SO98-610 | 215 | <3 | 21.1 | 23.2 | 3.3 | <1 | 0.9 | <1 | <10 | <5 | 113 | 36.3 | <10 | 22 | <5 |
| SO98-611 | 106 | <3 | 42.2 | 57.7 | 2.2 | <1 | <0.2 | <1 | <10 | <5 | 59 | 35.3 | <10 | 6 | <5 |
| SO98-612 | 77.4 | <3 | 35.7 | 8.9 | 0.7 | <1 | 0.6 | <1 | <10 | <5 | 38 | 11.3 | <10 | 5 | <5 |
| SO98-613 | 43.0 | <3 | 22.0 | 11.3 | 0.9 | <1 | <0.2 | <1 | <10 | <5 | 35 | 14.3 | <10 | 3 | <5 |
| SO98-614 | 34.8 | <3 | 5.3 | 2.3 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 23 | 2.6 | <10 | 4 | <5 |
| SO98-615 | 146 | <3 | 33.7 | 49.2 | 3.6 | <1 | 0.3 | <1 | <10 | <5 | 95 | 46.6 | <10 | 6 | <5 |
| SO98-616 | 197 | <3 | 23.9 | 12.5 | 1.8 | <1 | 0.3 | <1 | <10 | <5 | 80 | 22.5 | <10 | 16 | <5 |
| SO98-617 | 167 | <3 | 31.7 | 17.3 | 2.7 | <1 | <0.2 | <1 | <10 | <5 | 64 | 20.7 | <10 | 11 | <5 |
| SO98-618 | 88.3 | <3 | 10.5 | 3.8 | 4.2 | <1 | <0.2 | <1 | <10 | <5 | 33 | 6.7 | <10 | <2 | <5 |
| SO98-619 | 192 | <3 | 19.0 | 5.5 | 3.1 | <1 | <0.2 | <1 | <10 | <5 | 56 | 9.2 | <10 | 7 | <5 |
| SO98-620 | 355 | <3 | 18.4 | 7.4 | 3.3 | <1 | 0.2 | <1 | <10 | <5 | 103 | 12.6 | <10 | 13 | <5 |
| SO98-621 | 186 | <3 | 13.3 | 3.0 | 2.2 | <1 | 0.4 | <1 | <10 | <5 | 66 | 5.3 | <10 | 10 | <5 |
| SO98-622 | 201 | <3 | 20.9 | 3.2 | 3.4 | <1 | 0.2 | <1 | <10 | <5 | 71 | 6.4 | <10 | 12 | <5 |
| SO98-623 | 319 | <3 | 25.9 | 4.7 | 3.6 | <1 | 0.6 | <1 | <10 | <5 | 120 | 11.2 | <10 | 21 | <5 |
| SO98-624 | 118 | <3 | 25.4 | 2.0 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 46 | 4.7 | <10 | 9 | <5 |
| SO98-625 | 77.3 | <3 | 12.9 | 2.7 | 2.3 | 1 | 0.3 | <1 | <10 | <5 | 53 | 4.9 | <10 | 8 | <5 |
| SO98-626 | 36.8 | <3 | 10.3 | 3.4 | 2.8 | <1 | 0.4 | <1 | <10 | <5 | 43 | 4.9 | <10 | 7 | <5 |
| SO98-627 | 17.2 | <3 | 4.4 | 1.8 | 1.8 | <1 | 0.4 | <1 | <10 | <5 | 19 | 3.8 | <10 | 5 | <5 |
| SO98-628 | 253 | <3 | 32.0 | 9.8 | 3.6 | <1 | 0.7 | <1 | <10 | <5 | 95 | 14.6 | <10 | 8 | <5 |
| SO98-629 | 92.6 | <3 | 26.2 | 14.4 | 2.8 | <1 | <0.2 | <1 | <10 | <5 | 47 | 21.2 | <10 | 4 | <5 |



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| Element. Method. Det.Lim. Units. | Zn ICP70 0.5 ppm | As ICP70 3 ppm | Sr ICP70 0.5 ppm | Y ICP70 0.5 ppm | Zr ICP70 0.5 ppm | Mo ICP70 1 ppm | Ag ICP70 0.2 ppm | Cd ICP70 1 ppm | Sn ICP70 10 ppm | Sb ICP70 5 ppm | Ba ICP70 1 ppm | La ICP70 0.5 ppm | W ICP70 10 ppm | Pb ICP70 2 ppm | Bi ICP70 5 ppm |
|---|---------------------------|-------------------------|---------------------------|--------------------------|---------------------------|-------------------------|---------------------------|-------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-------------------------|-------------------------|-------------------------|
| SO98-630 | 231 | <3 | 25.0 | 19.1 | 2.1 | <1 | 0.4 | 1 | <10 | <5 | 93 | 23.4 | <10 | 15 | <5 |
| SO98-631 | 88.3 | <3 | 8.4 | 2.8 | 3.0 | <1 | <0.2 | <1 | <10 | <5 | 39 | 6.0 | <10 | 11 | <5 |
| SO98-632 | 131 | <3 | 38.3 | 3.0 | 2.7 | 1 | 0.4 | <1 | <10 | <5 | 95 | 5.2 | <10 | 11 | <5 |
| SO98-633 | 145 | <3 | 30.6 | 6.0 | 2.1 | <1 | 0.8 | <1 | <10 | <5 | 95 | 8.3 | <10 | 12 | <5 |
| SO98-634 | 127 | <3 | 9.1 | 4.6 | 2.6 | <1 | 0.7 | <1 | <10 | <5 | 41 | 7.7 | <10 | 11 | <5 |
| SO98-635 | 94.9 | <3 | 7.6 | 4.5 | 3.2 | <1 | 0.2 | <1 | <10 | <5 | 42 | 7.1 | <10 | 11 | <5 |
| SO98-636 | 34.9 | <3 | 6.5 | 3.3 | 2.0 | 1 | <0.2 | <1 | <10 | <5 | 36 | 5.3 | <10 | 4 | <5 |
| SO98-637 | 130 | <3 | 26.2 | 15.0 | 2.3 | <1 | 0.7 | <1 | <10 | <5 | 88 | 24.4 | <10 | 9 | <5 |
| SO98-638 | 81.4 | <3 | 23.2 | 10.7 | 1.7 | <1 | 0.6 | <1 | <10 | <5 | 63 | 18.1 | <10 | 11 | <5 |
| SO98-639 | 61.7 | <3 | 12.5 | 3.5 | 3.0 | <1 | 0.5 | <1 | <10 | <5 | 51 | 6.1 | <10 | 7 | <5 |
| SO98-640 | 85.7 | <3 | 11.4 | 4.2 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 33 | 5.1 | <10 | 7 | <5 |
| SO98-641 | 107 | <3 | 10.8 | 4.1 | 1.6 | <1 | 0.3 | <1 | <10 | <5 | 53 | 5.9 | <10 | 8 | <5 |
| SO98-642 | 119 | <3 | 7.4 | 2.4 | 1.8 | <1 | <0.2 | <1 | <10 | <5 | 54 | 4.9 | <10 | 4 | <5 |
| SO98-643 | 78.7 | <3 | 51.7 | 4.9 | 1.9 | <1 | <0.2 | <1 | <10 | <5 | 118 | 3.7 | <10 | 3 | <5 |
| SO98-644 | 63.9 | <3 | 65.1 | 18.9 | 10.2 | 1 | 0.7 | <1 | <10 | <5 | 63 | 21.0 | <10 | 19 | 6 |
| SO98-645 | 17.2 | <3 | 6.1 | 3.4 | 3.1 | <1 | <0.2 | <1 | <10 | <5 | 29 | 3.5 | <10 | 8 | <5 |
| SO98-646 | 64.2 | <3 | 3.8 | 3.9 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 25 | 3.9 | <10 | <2 | <5 |
| SO98-647 | 31.2 | <3 | 8.6 | 2.9 | 1.5 | <1 | <0.2 | <1 | <10 | <5 | 18 | 3.3 | <10 | 3 | <5 |
| SO98-648 | 163 | <3 | 30.9 | 8.9 | 9.4 | 2 | <0.2 | <1 | <10 | <5 | 67 | 7.0 | <10 | 4 | <5 |
| SO98-649 | 39.8 | <3 | 7.2 | 2.3 | 3.7 | <1 | 0.4 | <1 | <10 | <5 | 34 | 4.6 | <10 | 2 | <5 |
| SO98-650 | 27.1 | <3 | 12.3 | 1.7 | 5.1 | <1 | 0.9 | <1 | <10 | <5 | 34 | 3.5 | <10 | 4 | <5 |
| SO98-651 | 23.0 | <3 | 5.5 | 1.7 | 1.8 | <1 | 0.2 | <1 | <10 | <5 | 20 | 2.7 | <10 | 4 | <5 |
| SO98-652 | 124 | <3 | 12.5 | 4.0 | 2.3 | 1 | 0.9 | <1 | <10 | <5 | 61 | 8.0 | <10 | 8 | <5 |
| SO98-653 | 84.0 | <3 | 7.1 | 2.7 | 1.6 | <1 | 0.4 | <1 | <10 | <5 | 39 | 4.0 | <10 | 3 | <5 |
| SO98-654 | 59.9 | <3 | 14.3 | 6.8 | 3.0 | <1 | 0.2 | <1 | <10 | <5 | 52 | 7.7 | <10 | 5 | <5 |
| SO98-655 | 43.2 | <3 | 8.7 | 3.0 | 2.6 | 1 | 0.3 | <1 | <10 | <5 | 26 | 7.9 | <10 | 5 | <5 |
| SO98-656 | 27.4 | <3 | 7.8 | 2.4 | 1.6 | <1 | 0.3 | <1 | <10 | <5 | 60 | 4.6 | <10 | 7 | <5 |
| *Dup SO98-600 | 154 | <3 | 36.5 | 3.7 | 2.6 | <1 | <0.2 | 1 | <10 | <5 | 83 | 6.0 | <10 | 15 | <5 |
| *Dup SO98-612 | 75.2 | <3 | 34.7 | 8.3 | <0.5 | <1 | 0.3 | <1 | <10 | <5 | 37 | 10.4 | <10 | 4 | <5 |
| *Dup SO98-624 | 112 | <3 | 24.3 | 1.8 | 3.9 | <1 | <0.2 | <1 | <10 | <5 | 43 | 5.3 | <10 | 10 | 5 |



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| Element. | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W | Pb | Bi |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 | 2 | 5 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| *Dup SO98-636 | 33.4 | <3 | 6.2 | 3.1 | 1.6 | 2 | <0.2 | <1 | <10 | <5 | 34 | 5.0 | <10 | 3 | <5 |
| *Dup SO98-648 | 165 | <3 | 31.9 | 9.1 | 8.4 | 2 | <0.2 | <1 | <10 | <5 | 68 | 6.4 | <10 | 4 | <5 |



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CERTIFICATE OF ANALYSIS

Work Order: 053506

To: **B-MAX Ltd.**
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 18/12/98

Copy 1 to :


Copy 2 to :

P.O. No. : POH WO#52191/353/724
Project No. : MA98
No. of Samples : 11 SOILS
Date Submitted : 09/12/98
Report Comprises : Cover Sheet plus
Pages 1 to 1

Distribution of unused material:

Pulps: Hold
Rejects: Hold

Certified By :



Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



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| Element. | Au | Pt | Pd |
|---------------|-------|-------|-------|
| Method. | FA301 | FA301 | FA301 |
| Det.Lim. | 1 | 10 | 1 |
| Units. | ppb | ppb | ppb |
| SO98-382 | 6 | <10 | 1 |
| SO98-395 | 6 | <10 | <1 |
| SO98-440 | 5 | <10 | 2 |
| SO98-479 | 4 | <10 | <1 |
| SO98-485 | 5 | <10 | <1 |
| SO98-609 | 25 | <10 | <1 |
| SO98-610 | 7 | <10 | 1 |
| SO98-611 | 4 | <10 | <1 |
| SO98-615 | 7 | <10 | 1 |
| SO98-616 | 9 | <10 | 1 |
| SO98-623 | 7 | <10 | <1 |
| *Dup SO98-382 | 6 | <10 | 1 |

Appendix II

Statistical Analysis of B-Horizon Soil Samples Collected During the Initial Soil Geochemical Survey in the Main Survey Area

Distribution of Grouped Data for Nickel Content of Soils

Initial Soil Survey - Claim No. SO 1077361

| Class Interval (ppm Ni) | Midpoint of Interval (ppm Ni) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-------------------------|-------------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 40 | 20 | 97 | 0.324 | 97 | 32.4 |
| 41 to 80 | 60 | 58 | 0.194 | 155 | 51.8 |
| 81 to 120 | 100 | 38 | 0.127 | 193 | 64.5 |
| 121 to 160 | 140 | 29 | 0.097 | 222 | 74.2 |
| 161 to 200 | 180 | 21 | 0.070 | 243 | 81.3 |
| 201 to 240 | 220 | 16 | 0.054 | 259 | 86.6 |
| 241 to 280 | 260 | 7 | 0.023 | 266 | 89.0 |
| 281 to 320 | 300 | 9 | 0.030 | 275 | 92.0 |
| 321 to 360 | 340 | 7 | 0.023 | 282 | 94.3 |
| 361 to 400 | 380 | 9 | 0.030 | 291 | 97.3 |
| 401 to 440 | 420 | 4 | 0.013 | 295 | 98.7 |
| 441 to 480 | 460 | 0 | 0.000 | 295 | 98.7 |
| 481 to 520 | 500 | 0 | 0.000 | 295 | 98.7 |
| 521 to 560 | 540 | 0 | 0.000 | 295 | 98.7 |
| 561 to 600 | 580 | 1 | 0.003 | 296 | 99.0 |
| 601 to 640 | 620 | 0 | 0.000 | 296 | 99.0 |
| 641 to 680 | 660 | 1 | 0.003 | 297 | 99.3 |
| 681 to 720 | 700 | 0 | 0.000 | 297 | 99.3 |
| 721 to 760 | 740 | 1 | 0.003 | 298 | 99.7 |
| 761 to 800 | 780 | 0 | 0.000 | 298 | 99.7 |
| 801 to 840 | 820 | 0 | 0.000 | 298 | 99.7 |
| 841 to 880 | 860 | 0 | 0.000 | 298 | 99.7 |
| 881 to 920 | 900 | 0 | 0.000 | 298 | 99.7 |
| 921 to 960 | 940 | 1 | 0.003 | 299 | 100.0 |

TOTALS 299 1.000

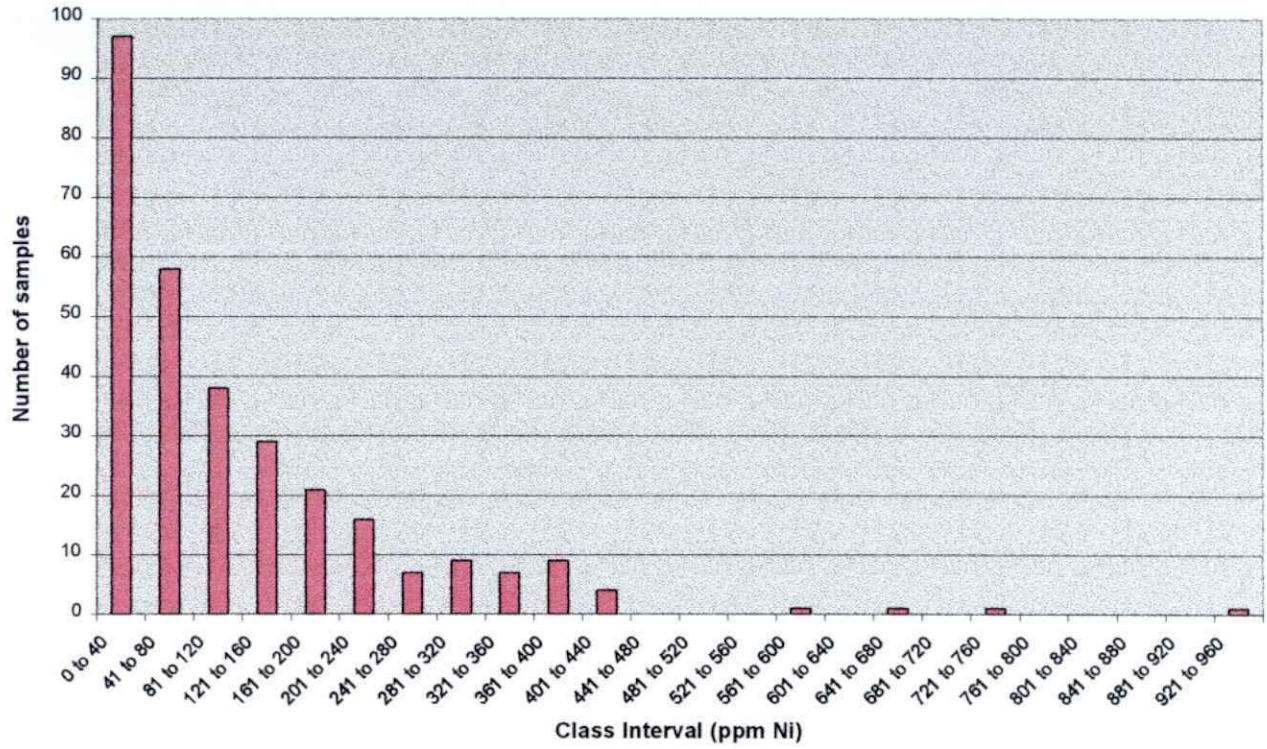
Sample Mean (from grouped data) = 119 ppm Ni

Median value (from grouped data) = 73 ppm Ni

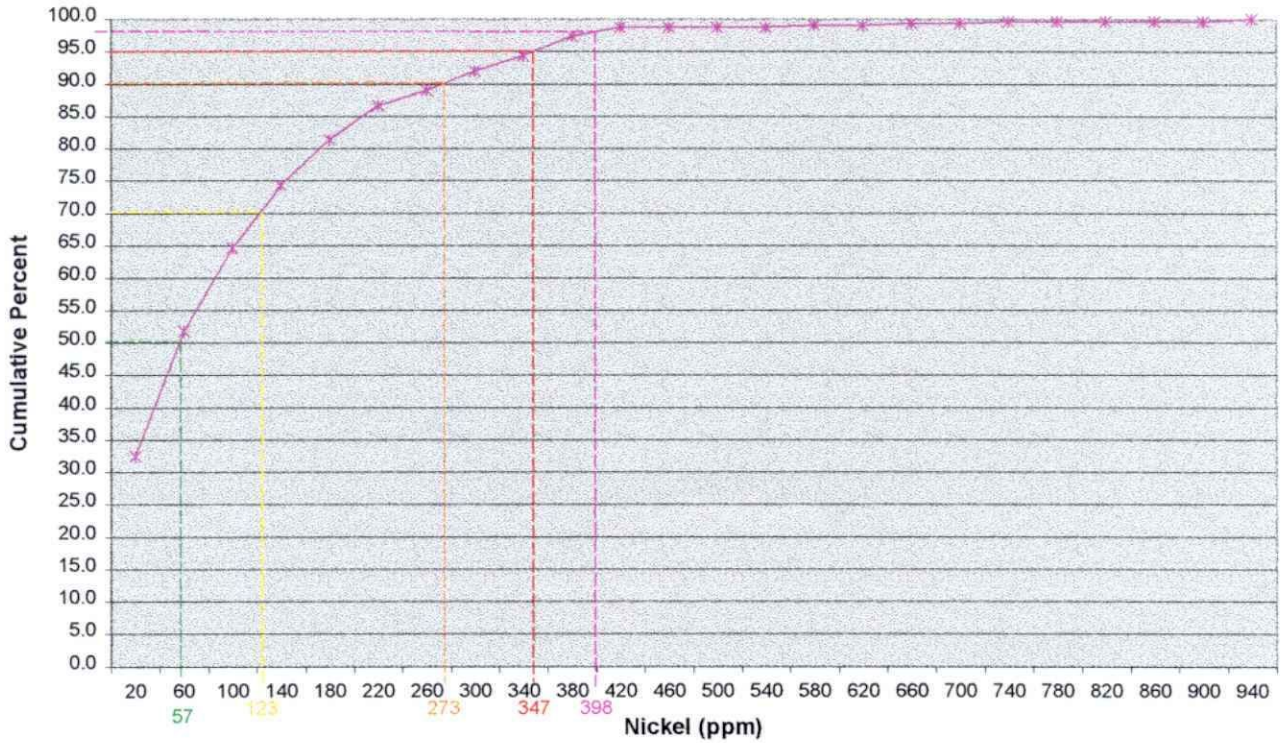
Median value (from cum. Freq. Plot) = 57 ppm Ni

Distribution Mode (from grouped data) = 20 ppm Ni

Histogram of Class Frequency of Nickel in B Horizon Soils



Cumulative Frequency Plot of Nickel in B Horizon Soils



Distribution of Grouped Data for Copper Content of Soils

Initial Soil Survey - Claim No. SO 1077361

| Class Interval (ppm Cu) | Midpoint of Interval (ppm Cu) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-------------------------|-------------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 7 | 3.5 | 45 | 0.151 | 45 | 15.1 |
| 7.1 to 14 | 10.5 | 55 | 0.184 | 100 | 33.4 |
| 14.1 to 21 | 17.5 | 42 | 0.140 | 142 | 47.5 |
| 21.1 to 28 | 24.5 | 37 | 0.124 | 179 | 59.9 |
| 28.1 to 35 | 31.5 | 29 | 0.097 | 208 | 69.6 |
| 35.1 to 42 | 38.5 | 20 | 0.067 | 228 | 76.3 |
| 42.1 to 49 | 45.5 | 15 | 0.050 | 243 | 81.3 |
| 49.1 to 56 | 52.5 | 15 | 0.050 | 258 | 86.3 |
| 56.1 to 63 | 59.5 | 10 | 0.033 | 268 | 89.6 |
| 63.1 to 70 | 66.5 | 8 | 0.027 | 276 | 92.3 |
| 70.1 to 77 | 73.5 | 7 | 0.023 | 283 | 94.6 |
| 77.1 to 84 | 80.5 | 1 | 0.003 | 284 | 95.0 |
| 84.1 to 91 | 87.5 | 1 | 0.003 | 285 | 95.3 |
| 91.1 to 98 | 94.5 | 4 | 0.013 | 289 | 96.7 |
| 98.1 to 105 | 101.5 | 0 | 0.000 | 289 | 96.7 |
| 105.1 to 112 | 108.5 | 0 | 0.000 | 289 | 96.7 |
| 112.1 to 119 | 115.5 | 2 | 0.007 | 291 | 97.3 |
| 119.1 to 126 | 122.5 | 2 | 0.007 | 293 | 98.0 |
| 126.1 to 133 | 129.5 | 2 | 0.007 | 295 | 98.7 |
| 133.1 to 140 | 136.5 | 1 | 0.003 | 296 | 99.0 |
| 140.1 to 147 | 143.5 | 0 | 0.000 | 296 | 99.0 |
| 147.1 to 154 | 150.5 | 1 | 0.003 | 297 | 99.3 |
| 154.1 to 161 | 157.5 | 1 | 0.003 | 298 | 99.7 |
| 161.1 to 168 | 164.5 | 0 | 0.000 | 298 | 99.7 |
| 168.1 to 175 | 171.5 | 1 | 0.003 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

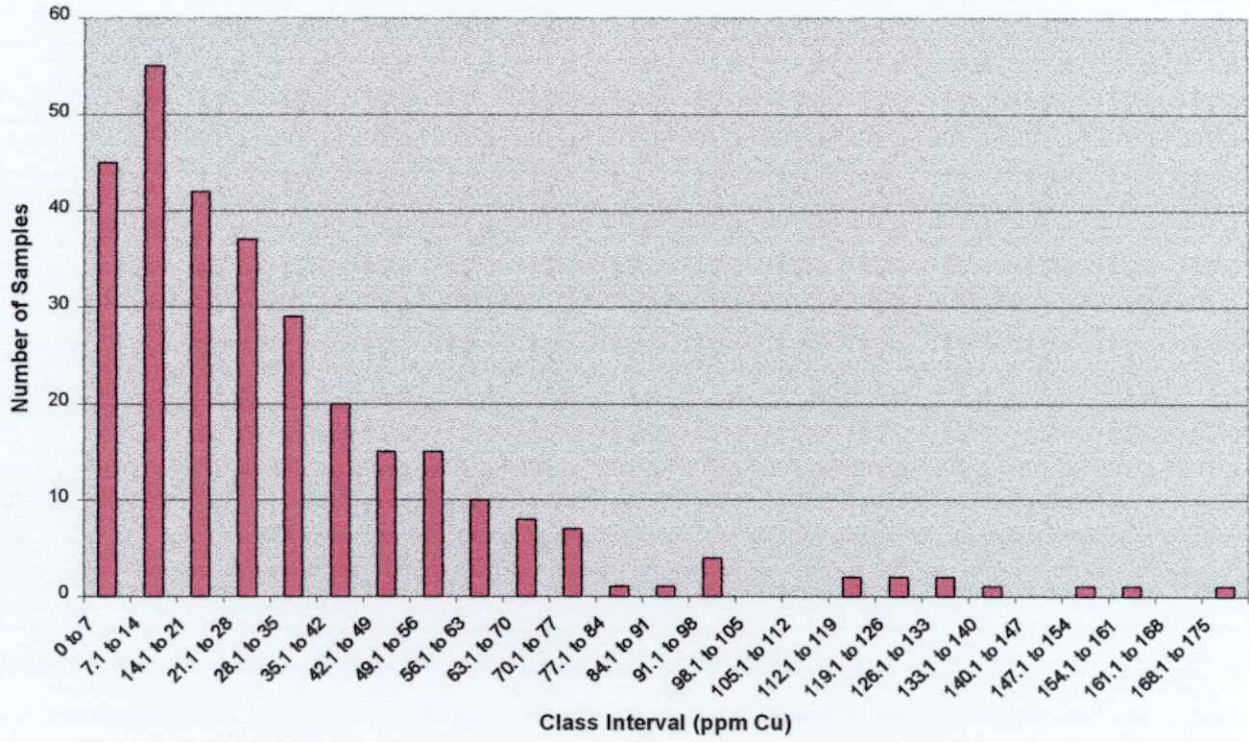
Sample Mean (from grouped data) = 30.3 ppm Cu

Median value (from grouped data) = 22.2 ppm Cu

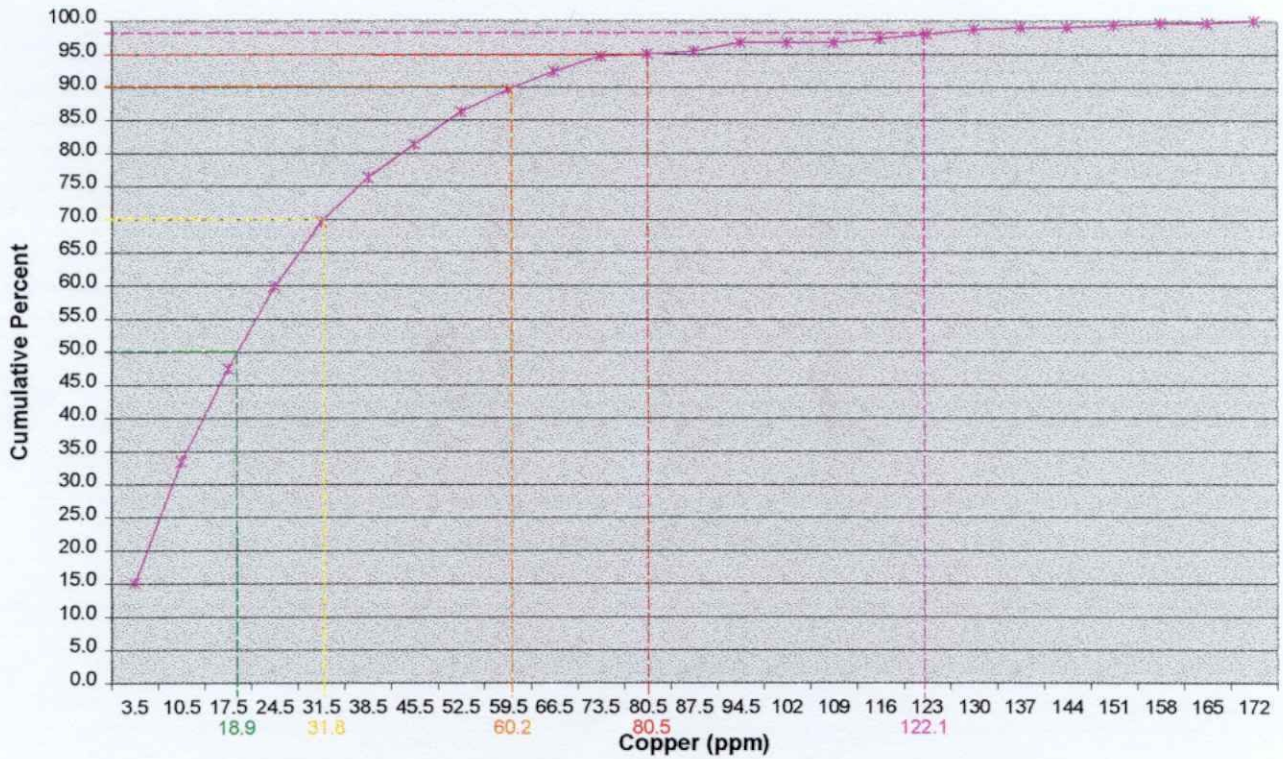
Median value (from cum. Freq. Plot) = 18.9 ppm Cu

Distribution Mode (from grouped data) = 10.5 ppm Cu

Histogram of Class Frequency for Copper in B Horizon Soils



Cumulative Frequency Plot of Copper in B Horizon Soils

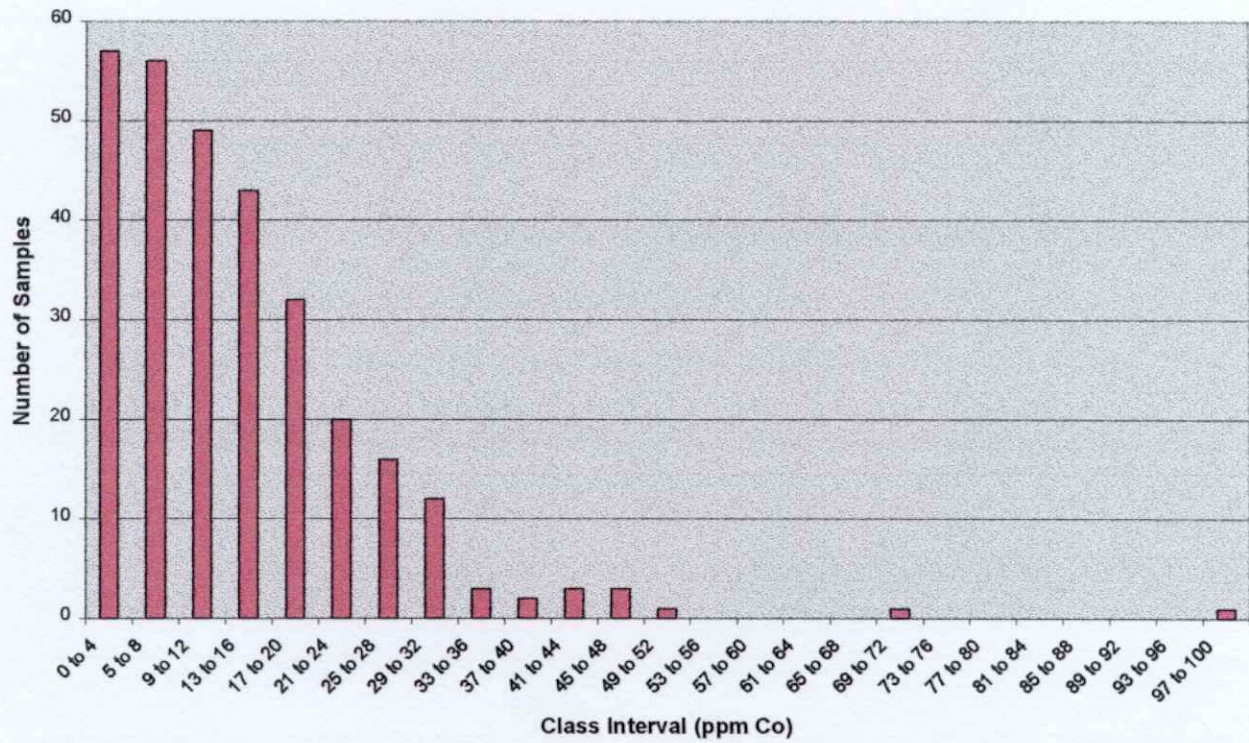


Distribution of Grouped Data for **Cobalt** Content of Soils
 Initial Soil Survey - Claim No. SO 1077361

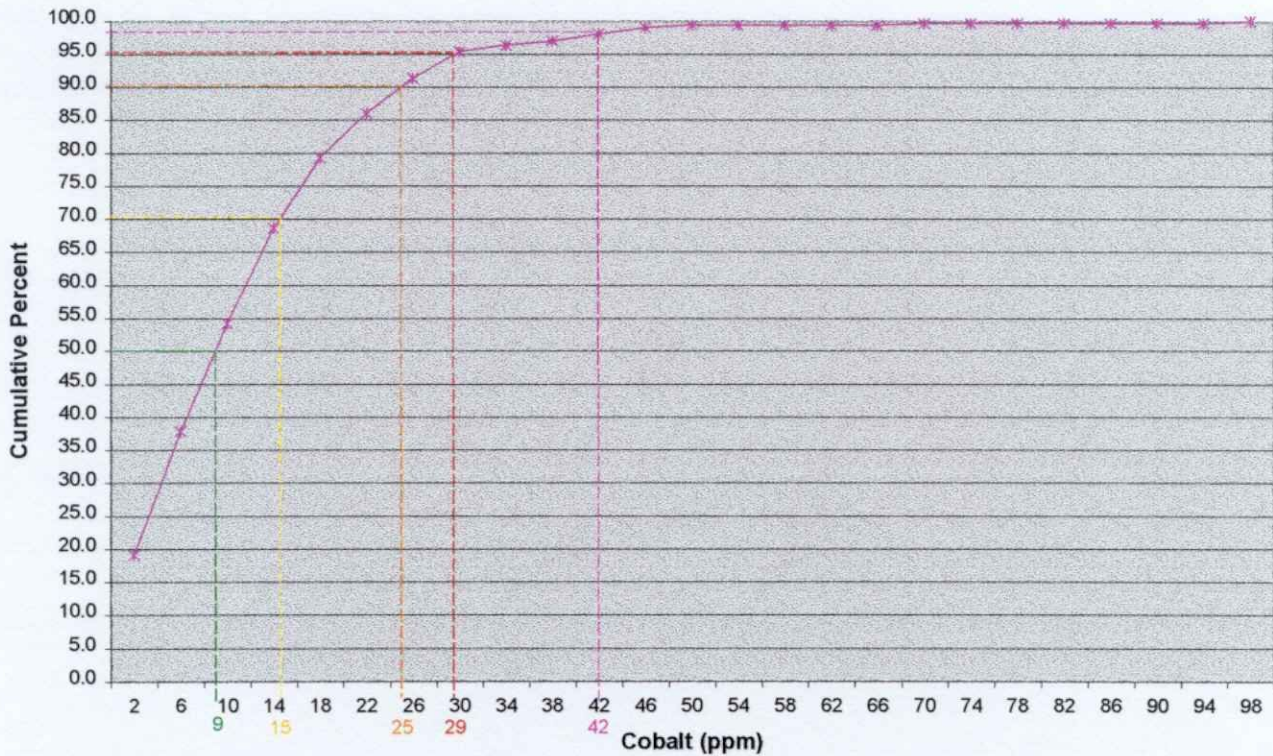
| Class Interval (ppm Co) | Midpoint of Interval (ppm Co) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-------------------------|-------------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 4 | 2 | 57 | 0.191 | 57 | 19.1 |
| 5 to 8 | 6 | 56 | 0.187 | 113 | 37.8 |
| 9 to 12 | 10 | 49 | 0.164 | 162 | 54.2 |
| 13 to 16 | 14 | 43 | 0.144 | 205 | 68.6 |
| 17 to 20 | 18 | 32 | 0.107 | 237 | 79.3 |
| 21 to 24 | 22 | 20 | 0.067 | 257 | 86.0 |
| 25 to 28 | 26 | 16 | 0.054 | 273 | 91.3 |
| 29 to 32 | 30 | 12 | 0.040 | 285 | 95.3 |
| 33 to 36 | 34 | 3 | 0.010 | 288 | 96.3 |
| 37 to 40 | 38 | 2 | 0.007 | 290 | 97.0 |
| 41 to 44 | 42 | 3 | 0.010 | 293 | 98.0 |
| 45 to 48 | 46 | 3 | 0.010 | 296 | 99.0 |
| 49 to 52 | 50 | 1 | 0.003 | 297 | 99.3 |
| 53 to 56 | 54 | 0 | 0.000 | 297 | 99.3 |
| 57 to 60 | 58 | 0 | 0.000 | 297 | 99.3 |
| 61 to 64 | 62 | 0 | 0.000 | 297 | 99.3 |
| 65 to 68 | 66 | 0 | 0.000 | 297 | 99.3 |
| 69 to 72 | 70 | 1 | 0.003 | 298 | 99.7 |
| 73 to 76 | 74 | 0 | 0.000 | 298 | 99.7 |
| 77 to 80 | 78 | 0 | 0.000 | 298 | 99.7 |
| 81 to 84 | 82 | 0 | 0.000 | 298 | 99.7 |
| 85 to 88 | 86 | 0 | 0.000 | 298 | 99.7 |
| 89 to 92 | 90 | 0 | 0.000 | 298 | 99.7 |
| 93 to 96 | 94 | 0 | 0.000 | 298 | 99.7 |
| 97 to 100 | 98 | 1 | 0.003 | 299 | 100.0 |
| TOTALS | | 299 | 0.003 | | |

Sample Mean (from grouped data) = 13 ppm Co
 Median value (from grouped data) = 12 ppm Co
 Median value (from cum. Freq. Plot) = 9 ppm Co
 Distribution Mode (from grouped data) = 2 ppm Co

Histogram of Class Frequency of Cobalt in B Horizon Soils



Cumulative Frequency Plot of Cobalt in B Horizon Soils

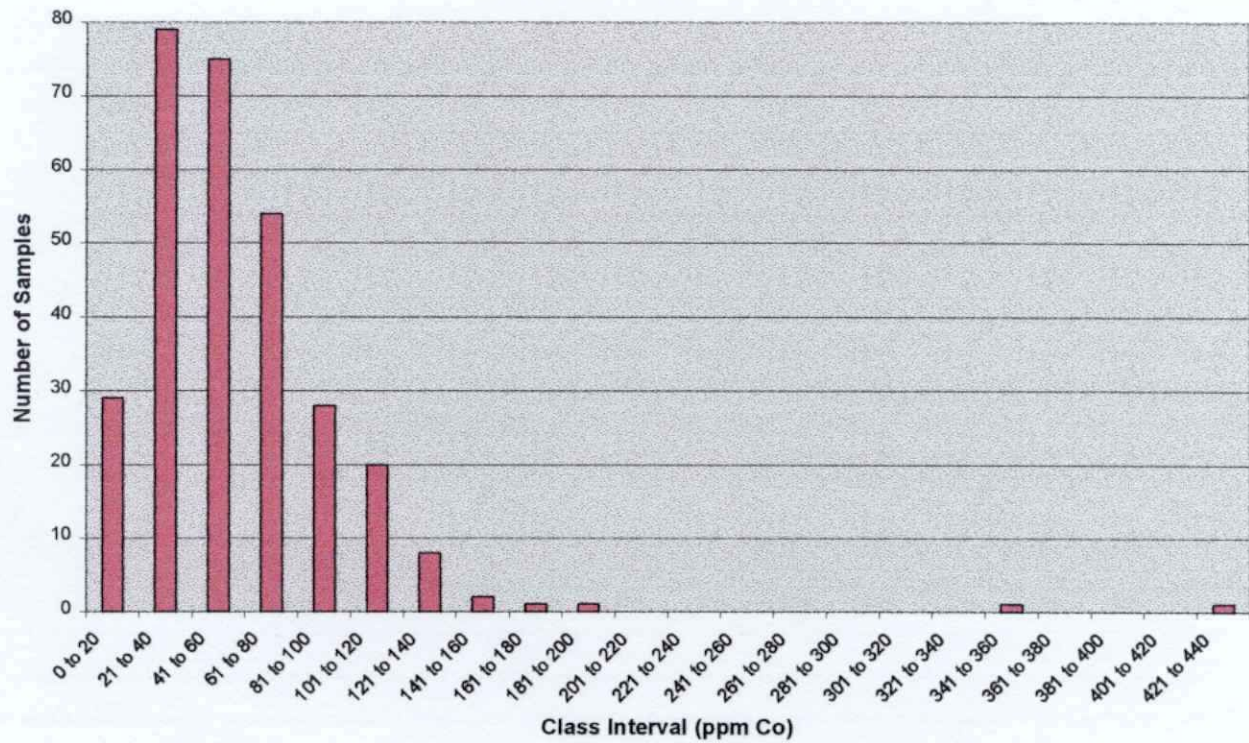


Distribution of Grouped Data for Chromium Content of Soils
Initial Soil Survey - Claim No. SO 1077361

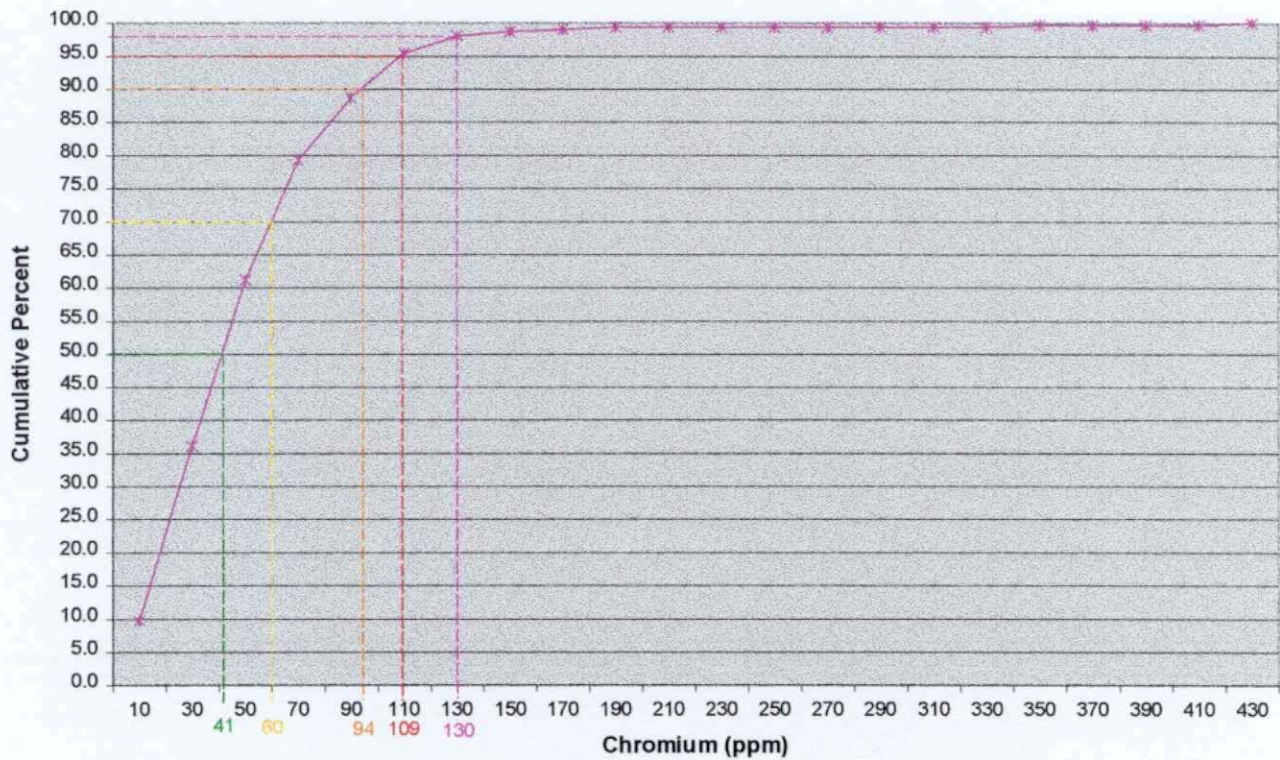
| Class Interval (ppm Cr) | Midpoint of Interval (ppm Cr) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-------------------------|-------------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 20 | 10 | 29 | 0.097 | 29 | 9.7 |
| 21 to 40 | 30 | 79 | 0.264 | 108 | 36.1 |
| 41 to 60 | 50 | 75 | 0.251 | 183 | 61.2 |
| 61 to 80 | 70 | 54 | 0.181 | 237 | 79.3 |
| 81 to 100 | 90 | 28 | 0.094 | 265 | 88.6 |
| 101 to 120 | 110 | 20 | 0.067 | 285 | 95.3 |
| 121 to 140 | 130 | 8 | 0.027 | 293 | 98.0 |
| 141 to 160 | 150 | 2 | 0.007 | 295 | 98.7 |
| 161 to 180 | 170 | 1 | 0.003 | 296 | 99.0 |
| 181 to 200 | 190 | 1 | 0.003 | 297 | 99.3 |
| 201 to 220 | 210 | 0 | 0.000 | 297 | 99.3 |
| 221 to 240 | 230 | 0 | 0.000 | 297 | 99.3 |
| 241 to 260 | 250 | 0 | 0.000 | 297 | 99.3 |
| 261 to 280 | 270 | 0 | 0.000 | 297 | 99.3 |
| 281 to 300 | 290 | 0 | 0.000 | 297 | 99.3 |
| 301 to 320 | 310 | 0 | 0.000 | 297 | 99.3 |
| 321 to 340 | 330 | 0 | 0.000 | 297 | 99.3 |
| 341 to 360 | 350 | 1 | 0.003 | 298 | 99.7 |
| 361 to 380 | 370 | 0 | 0.000 | 298 | 99.7 |
| 381 to 400 | 390 | 0 | 0.000 | 298 | 99.7 |
| 401 to 420 | 410 | 0 | 0.000 | 298 | 99.7 |
| 421 to 440 | 430 | 1 | 0.003 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

Sample Mean (from grouped data) = 58 ppm Cr
Median value (from grouped data) = 50 ppm Cr
Median value (from cum. Freq. Plot) = 41 ppm C
Distribution Mode (from grouped data) = 30 ppm Cr

Histogram of Class Frequency of Chromium in B Horizon Soils



Cumulative Frequency Plot of Chromium in B Horizon Soils



Distribution of Grouped Data for **Manganese** Content of Soils

Initial Soil Survey - Claim No. SO 1077361

| Class Interval (ppm Mn) | Midpoint of Interval (ppm Mn) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-------------------------|-------------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 130 | 65 | 153 | 0.512 | 153 | 51.2 |
| 131 to 260 | 195 | 73 | 0.244 | 226 | 75.6 |
| 261 to 390 | 325 | 28 | 0.094 | 254 | 84.9 |
| 391 to 520 | 455 | 13 | 0.043 | 267 | 89.3 |
| 521 to 650 | 585 | 7 | 0.023 | 274 | 91.6 |
| 651 to 780 | 715 | 7 | 0.023 | 281 | 94.0 |
| 781 to 910 | 845 | 2 | 0.007 | 283 | 94.6 |
| 911 to 1040 | 975 | 1 | 0.003 | 284 | 95.0 |
| 1041 to 117 | 1105 | 6 | 0.020 | 290 | 97.0 |
| 1171 to 130 | 1235 | 1 | 0.003 | 291 | 97.3 |
| 1301 to 143 | 1365 | 1 | 0.003 | 292 | 97.7 |
| 1431 to 156 | 1495 | 0 | 0.000 | 292 | 97.7 |
| 1561 to 169 | 1625 | 1 | 0.003 | 293 | 98.0 |
| 1691 to 182 | 1755 | 1 | 0.003 | 294 | 98.3 |
| 1821 to 195 | 1885 | 1 | 0.003 | 295 | 98.7 |
| 1951 to 208 | 2015 | 1 | 0.003 | 296 | 99.0 |
| 2081 to 221 | 2145 | 0 | 0.000 | 296 | 99.0 |
| 2211 to 234 | 2275 | 0 | 0.000 | 296 | 99.0 |
| 2341 to 247 | 2405 | 0 | 0.000 | 296 | 99.0 |
| 2471 to 260 | 2535 | 0 | 0.000 | 296 | 99.0 |
| 2601 to 273 | 2665 | 0 | 0.000 | 296 | 99.0 |
| 2731 to 286 | 2795 | 0 | 0.000 | 296 | 99.0 |
| 2861 to 299 | 2925 | 1 | 0.003 | 297 | 99.3 |
| 2991 to 312 | 3055 | 0 | 0.000 | 297 | 99.3 |
| 3121 to 325 | 3185 | 2 | 0.007 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

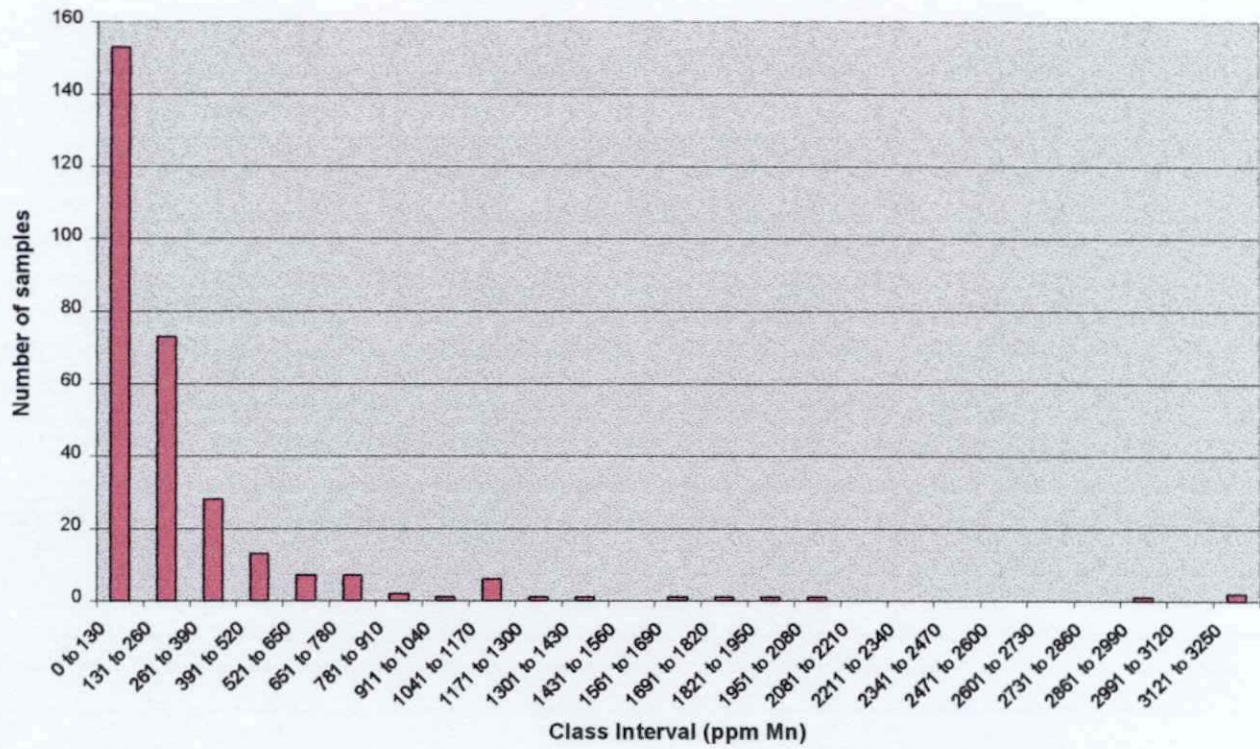
Sample Mean (from grouped data) = 257 ppm Mn

Median value (from grouped data) = 128 ppm Mn

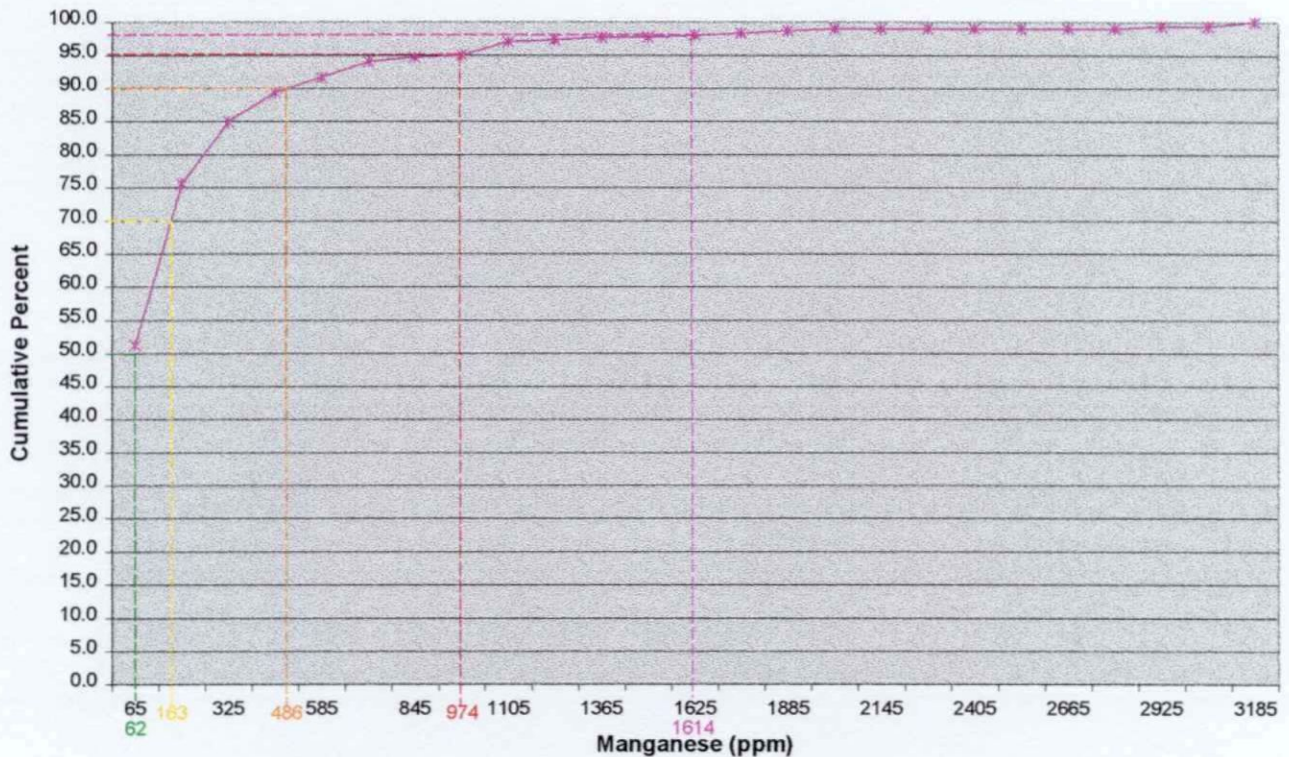
Median value (from cum. Freq. Plot) = 62 ppm Mn

Distribution Mode (from grouped data) = 65 ppm Mn

Histogram of Class Frequency of Manganese in B Horizon Soils



Cumulative Frequency Plot of Manganese in B Horizon Soils

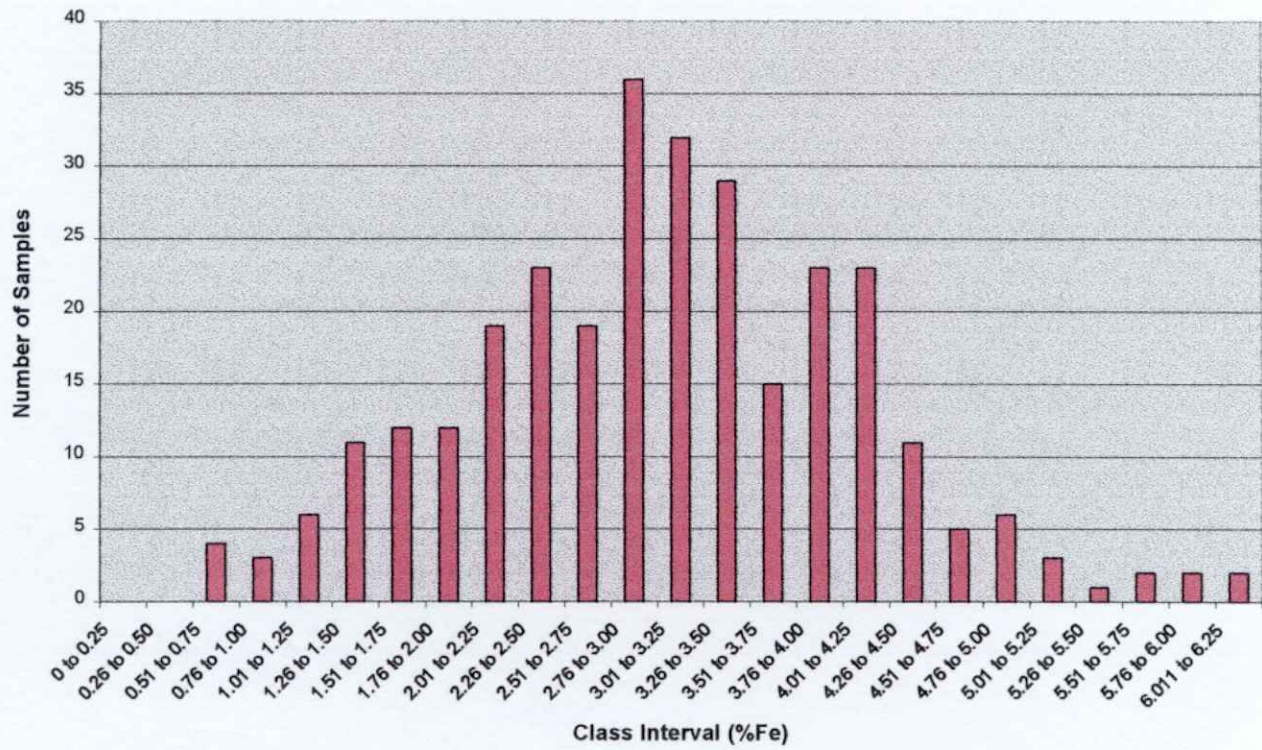


Distribution of Grouped Data for IRON Content of Soils
Initial Soil Survey - Claim No. SO 1077361

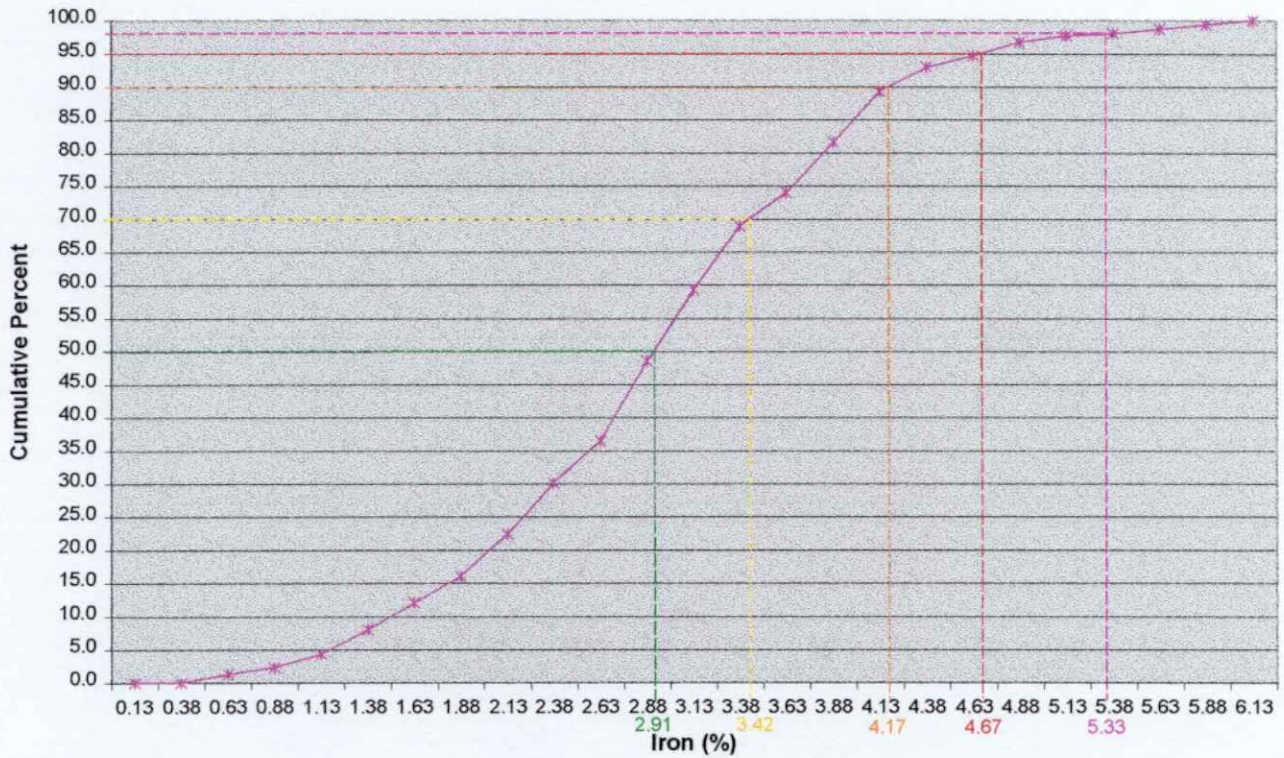
| Class Interval (% Fe) | Midpoint of Interval (% Fe) | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|-----------------------|-----------------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 0.25 | 0.125 | 0 | 0.000 | 0 | 0.0 |
| 0.26 to 0.50 | 0.375 | 0 | 0.000 | 0 | 0.0 |
| 0.51 to 0.75 | 0.625 | 4 | 0.013 | 4 | 1.3 |
| 0.76 to 1.00 | 0.875 | 3 | 0.010 | 7 | 2.3 |
| 1.01 to 1.25 | 1.125 | 6 | 0.020 | 13 | 4.3 |
| 1.26 to 1.50 | 1.375 | 11 | 0.037 | 24 | 8.0 |
| 1.51 to 1.75 | 1.625 | 12 | 0.040 | 36 | 12.0 |
| 1.76 to 2.00 | 1.875 | 12 | 0.040 | 48 | 16.1 |
| 2.01 to 2.25 | 2.125 | 19 | 0.064 | 67 | 22.4 |
| 2.26 to 2.50 | 2.375 | 23 | 0.077 | 90 | 30.1 |
| 2.51 to 2.75 | 2.625 | 19 | 0.064 | 109 | 36.5 |
| 2.76 to 3.00 | 2.875 | 36 | 0.120 | 145 | 48.5 |
| 3.01 to 3.25 | 3.125 | 32 | 0.107 | 177 | 59.2 |
| 3.26 to 3.50 | 3.375 | 29 | 0.097 | 206 | 68.9 |
| 3.51 to 3.75 | 3.625 | 15 | 0.050 | 221 | 73.9 |
| 3.76 to 4.00 | 3.875 | 23 | 0.077 | 244 | 81.6 |
| 4.01 to 4.25 | 4.125 | 23 | 0.077 | 267 | 89.3 |
| 4.26 to 4.50 | 4.375 | 11 | 0.037 | 278 | 93.0 |
| 4.51 to 4.75 | 4.625 | 5 | 0.017 | 283 | 94.6 |
| 4.76 to 5.00 | 4.875 | 6 | 0.020 | 289 | 96.7 |
| 5.01 to 5.25 | 5.125 | 3 | 0.010 | 292 | 97.7 |
| 5.26 to 5.50 | 5.375 | 1 | 0.003 | 293 | 98.0 |
| 5.51 to 5.75 | 5.625 | 2 | 0.007 | 295 | 98.7 |
| 5.76 to 6.00 | 5.875 | 2 | 0.007 | 297 | 99.3 |
| 6.011 to 6.2 | 6.125 | 2 | 0.007 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

Sample Mean (from grouped data) = 3.04 % Fe
 Median value (from grouped data) = 3.03% Fe
 Median value (from cum. Freq. Plot) = 2.91% Fe
 Distribution Mode (from grouped data) = 2.88% Fe

Histogram of Class frequency of Iron in B Horizon Soils



Cumulative Frequency Plot of Iron in B Horizon Soils



Distribution of Grouped Data for Ni/(0.01Mn+Fe) Content of Soils
Initial Soil Survey - Claim No. SO 1077361

| Class Interval | Midpoint of Interval | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|----------------|----------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 3 | 2 | 34 | 0.114 | 34 | 11.4 |
| 4 to 6 | 5 | 42 | 0.140 | 76 | 25.4 |
| 7 to 9 | 8 | 25 | 0.084 | 101 | 33.8 |
| 10 to 12 | 11 | 15 | 0.050 | 116 | 38.8 |
| 13 to 15 | 14 | 18 | 0.060 | 134 | 44.8 |
| 16 to 18 | 17 | 23 | 0.077 | 157 | 52.5 |
| 19 to 21 | 20 | 13 | 0.043 | 170 | 56.9 |
| 22 to 24 | 23 | 21 | 0.070 | 191 | 63.9 |
| 25 to 27 | 26 | 14 | 0.047 | 205 | 68.6 |
| 28 to 30 | 29 | 14 | 0.047 | 219 | 73.2 |
| 31 to 33 | 32 | 7 | 0.023 | 226 | 75.6 |
| 34 to 36 | 35 | 11 | 0.037 | 237 | 79.3 |
| 37 to 39 | 38 | 12 | 0.040 | 249 | 83.3 |
| 40 to 42 | 41 | 8 | 0.027 | 257 | 86.0 |
| 43 to 45 | 44 | 5 | 0.017 | 262 | 87.6 |
| 46 to 48 | 47 | 6 | 0.020 | 268 | 89.6 |
| 49 to 51 | 50 | 6 | 0.020 | 274 | 91.6 |
| 52 to 54 | 53 | 6 | 0.020 | 280 | 93.6 |
| 55 to 57 | 56 | 4 | 0.013 | 284 | 95.0 |
| 58 to 60 | 59 | 4 | 0.013 | 288 | 96.3 |
| 61 to 63 | 62 | 3 | 0.010 | 291 | 97.3 |
| 64 to 66 | 65 | 3 | 0.010 | 294 | 98.3 |
| 67 to 69 | 68 | 4 | 0.013 | 298 | 99.7 |
| 70 to 72 | 71 | 1 | 0.003 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

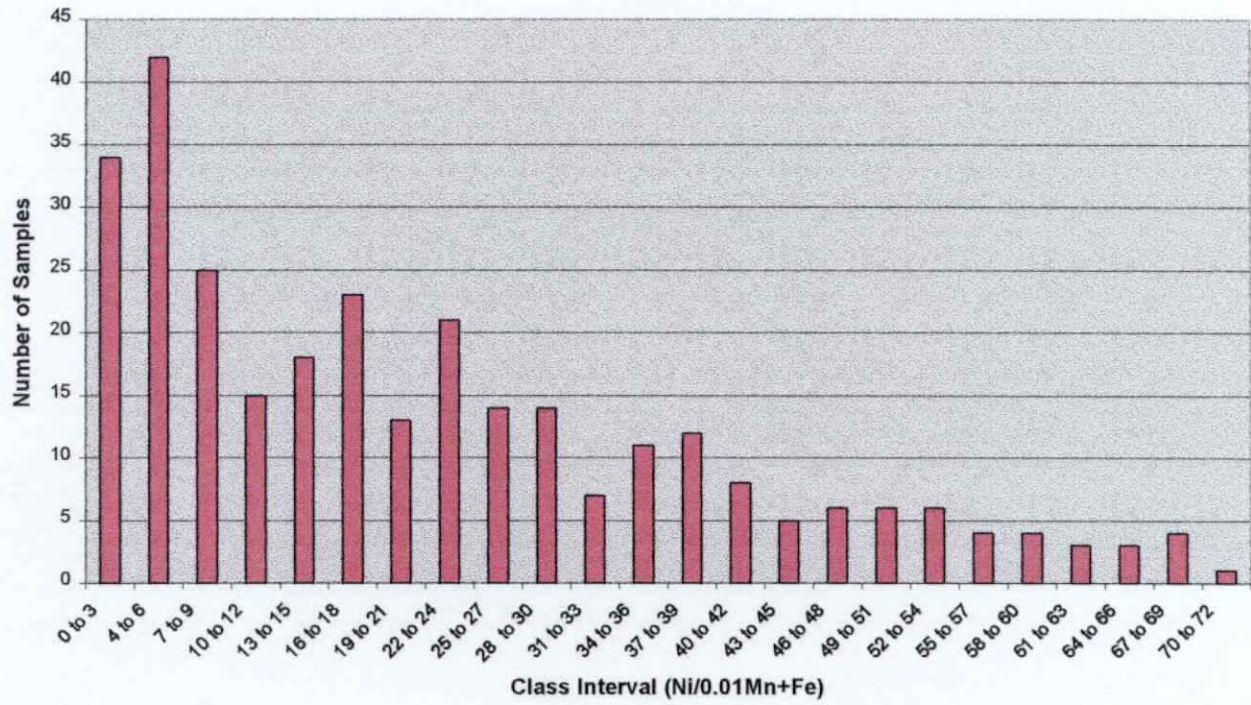
Sample Mean (from grouped data) = 21.7 Ni/(0.01Mn+Fe)

Median value (from grouped data) = ___ Ni/(0.01Mn+Fe)

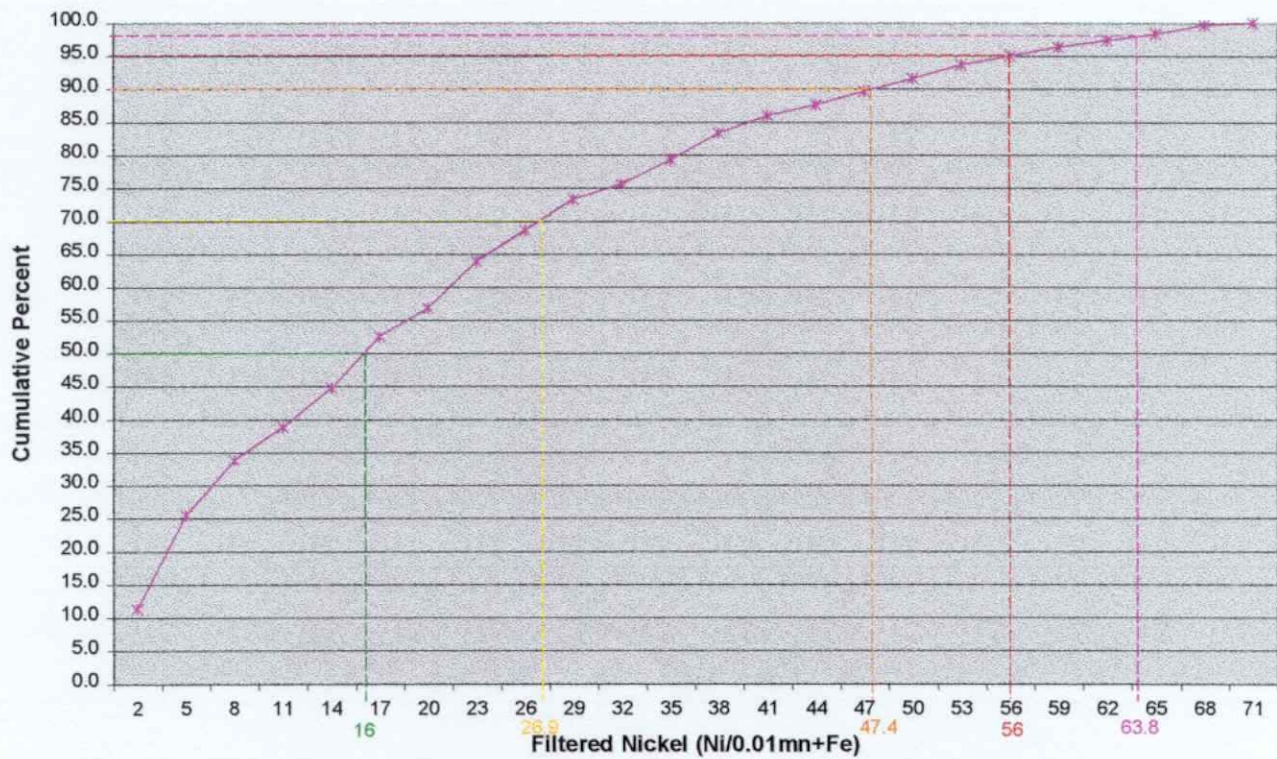
Median value (from cum. Freq. Plot) = 16 Ni/(0.01Mn+Fe)

Distribution Mode (from grouped data) = 5 Ni/(0.01Mn+Fe)

Histogram of Class frequency of Mn/Fe Filtered Nickel in B Horizon Soils



Cumulative Frequency Plot of Mn/Fe Filtered Nickel in B Horizon Soils



Distribution of Grouped Data for **Cu/(0.01Mn+Fe)** Content of Soils
 Initial Soil Survey - Claim No. SO 1077361

| Class Interval | Midpoint of Interval | Class Frequency | Relative Frequency | Cumulative Frequency | Cumulative Frequency (%) |
|----------------|----------------------|-----------------|--------------------|----------------------|--------------------------|
| 0 to 2 | 1 | 55 | 0.184 | 55 | 18.4 |
| 2.1 to 4 | 3 | 80 | 0.268 | 135 | 45.2 |
| 4.1 to 6 | 5 | 69 | 0.231 | 204 | 68.2 |
| 6.1 to 8 | 7 | 32 | 0.107 | 236 | 78.9 |
| 8.1 to 10 | 9 | 25 | 0.084 | 261 | 87.3 |
| 10.1 to 12 | 11 | 13 | 0.043 | 274 | 91.6 |
| 12.1 to 14 | 13 | 6 | 0.020 | 280 | 93.6 |
| 14.1 to 16 | 15 | 5 | 0.017 | 285 | 95.3 |
| 16.1 to 18 | 17 | 2 | 0.007 | 287 | 96.0 |
| 18.1 to 20 | 19 | 3 | 0.010 | 290 | 97.0 |
| 20.1 to 22 | 21 | 5 | 0.017 | 295 | 98.7 |
| 22.1 to 24 | 23 | 0 | 0.000 | 295 | 98.7 |
| 24.1 to 26 | 25 | 0 | 0.000 | 295 | 98.7 |
| 26.1 to 28 | 27 | 1 | 0.003 | 296 | 99.0 |
| 28.1 to 30 | 29 | 1 | 0.003 | 297 | 99.3 |
| 30.1 to 32 | 31 | 1 | 0.003 | 298 | 99.7 |
| 32.1 to 34 | 33 | 0 | 0.000 | 298 | 99.7 |
| 34.1 to 36 | 35 | 0 | 0.000 | 298 | 99.7 |
| 36.1 to 38 | 37 | 0 | 0.000 | 298 | 99.7 |
| 38.1 to 40 | 39 | 0 | 0.000 | 298 | 99.7 |
| 40.1 to 42 | 41 | 1 | 0.003 | 299 | 100.0 |
| TOTALS | | 299 | 1.000 | | |

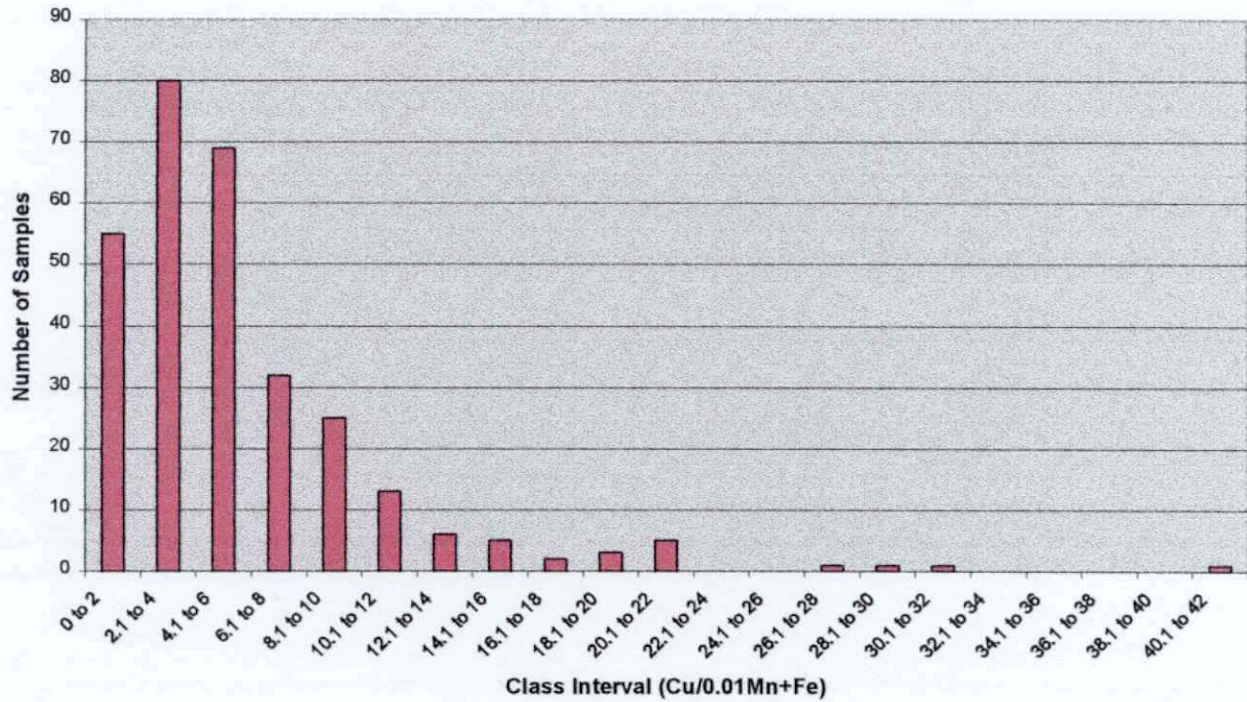
Sample Mean (from grouped data) = 5.7 Cu/(0.01Mn+Fe)

Median value (from grouped data) = ___ Cu/(0.012Mn+Fe)

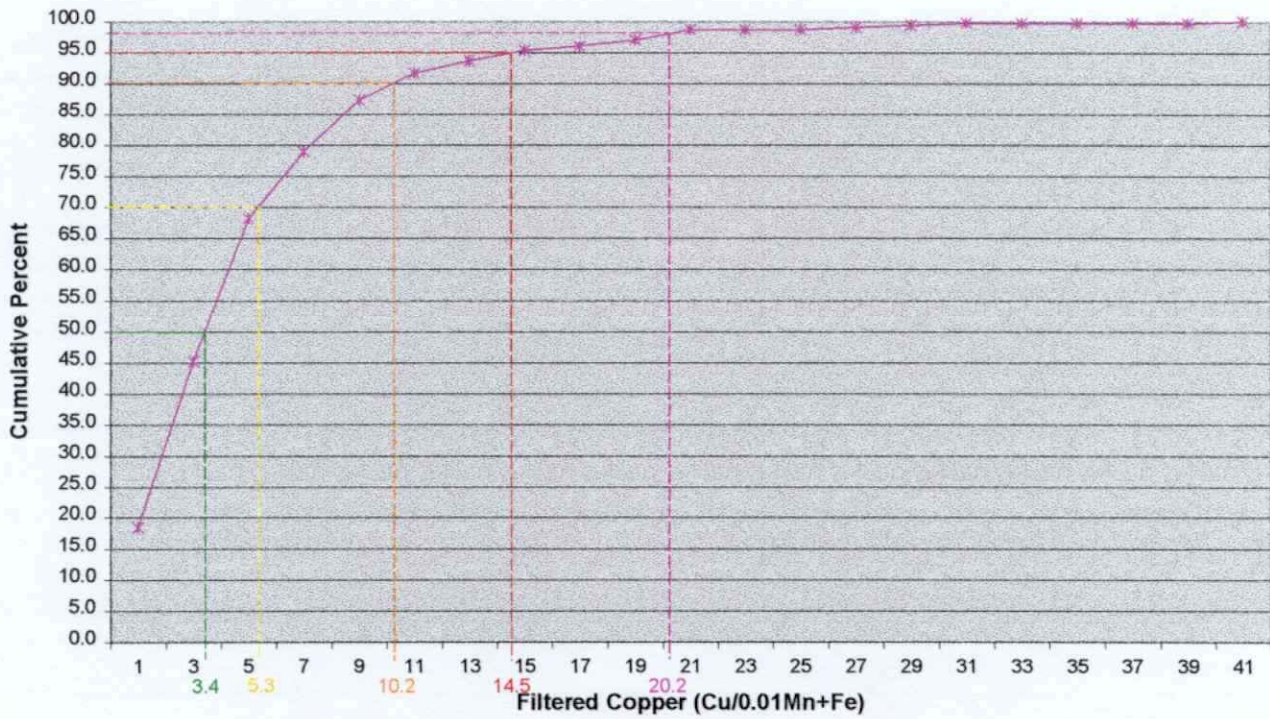
Median value (from cum. Freq. Plot) = 3.4 Cu/(0.01Mn+Fe)

Distribution Mode (from grouped data) = 3 Cu/(0.01Mn+Fe)

Histogram of Class Frequency of Mn/Fe Filtered Copper in B Horizon Soils



Cumulative Frequency Plot of Mn/Fe Filtered Copper in B Horizon Soils



Appendix III

Analytical Results for All Rock Samples Collected During the Summer 1998 Program



XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ontario
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 052352

To: B-MAX Ltd.
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 30/09/98

Copy 1 to :

Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 7 ROCKS
Date Submitted : 21/09/98
Report Comprises : Cover Sheet plus
Pages 1 to 3

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :

Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received I.S. = Insufficient Sample
n.a. = Not applicable -- = No result
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 052352

Date: 30/09/98

FINAL

Page 1 of 3

| Element. | Au | Pt | Pd | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | FA301 | FA301 | FA301 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 1 | 10 | 1 | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 |
| Units. | ppb | ppb | ppb | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % |
| MA 98-R-001 | 5 | <10 | 2 | 0.5 | 0.04 | 0.03 | 0.67 | 0.02 | 0.01 | 1.19 | <0.5 | 0.04 | 36 | 80 | 380 | 8.65 |
| MA 98-R-002 | 5 | <10 | 4 | <0.5 | 0.12 | 0.07 | 0.80 | 0.07 | 0.02 | 1.01 | <0.5 | 0.04 | 26 | 80 | 211 | 3.67 |
| MA 98-R-003 | 4 | <10 | 4 | <0.5 | 0.03 | 0.06 | 1.21 | 0.16 | <0.01 | 3.87 | <0.5 | 0.04 | 37 | 137 | 1210 | 5.70 |
| MA 98-R-004 | 5 | <10 | 3 | 0.6 | 0.08 | 0.03 | 0.82 | 0.05 | 0.04 | 1.57 | <0.5 | 0.06 | 48 | 98 | 501 | 8.15 |
| MA 98-R-005 | 5 | <10 | 1 | 0.6 | 0.02 | 0.03 | 1.40 | 0.10 | <0.01 | 4.63 | <0.5 | 0.06 | 72 | 128 | 1580 | 11.0 |
| MA 98-R-006 | 2 | <10 | 2 | <0.5 | 0.54 | 1.04 | 2.52 | 0.02 | 0.21 | 2.35 | 5.2 | 0.14 | 82 | 73 | 246 | 2.88 |
| MA 98-R-007 | 3 | <10 | <1 | <0.5 | 0.40 | 1.40 | 1.67 | 0.02 | 0.19 | 1.98 | 9.6 | 0.18 | 86 | 59 | 261 | 2.18 |
| *Dup MA 98-R-001 | 4 | <10 | 2 | 0.5 | 0.04 | 0.03 | 0.65 | 0.02 | 0.01 | 1.16 | <0.5 | 0.04 | 36 | 77 | 371 | 8.44 |



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Work Order: 052352 Date: 30/09/98

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| Element. | Co | Ni | Cu | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 1 | 1 | 0.5 | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| MA 98-R-001 | 8 | 5 | 337 | 13.3 | <3 | 26.0 | 3.1 | 8.8 | <1 | 0.4 | 12 | <10 | <5 | 12 | 3.2 | <10 |
| MA 98-R-002 | 8 | 8 | 26.1 | 9.9 | <3 | 85.9 | 4.0 | 5.4 | <1 | <0.2 | 5 | <10 | <5 | 16 | 5.0 | <10 |
| MA 98-R-003 | 13 | 9 | 157 | 15.9 | <3 | 34.6 | 22.3 | 10.8 | <1 | 0.4 | 8 | <10 | <5 | 18 | 30.0 | <10 |
| MA 98-R-004 | 19 | 6 | 403 | 9.3 | <3 | 63.1 | 4.1 | 9.9 | <1 | 0.5 | 12 | <10 | <5 | 10 | 3.7 | <10 |
| MA 98-R-005 | 18 | 10 | 308 | 18.8 | <3 | 12.0 | 39.0 | 17.0 | <1 | 0.4 | 17 | <10 | <5 | 6 | 21.0 | <10 |
| MA 98-R-006 | 17 | 12 | 51.9 | 19.5 | <3 | 224 | 4.3 | 7.3 | <1 | 0.3 | 3 | <10 | <5 | 70 | 3.3 | <10 |
| MA 98-R-007 | 15 | 28 | 13.7 | 24.6 | <3 | 82.5 | 4.9 | 4.3 | <1 | <0.2 | 3 | <10 | <5 | 47 | 2.1 | <10 |
| *Dup MA 98-R-001 | 8 | 5 | 326 | 12.9 | <3 | 25.4 | 3.1 | 8.2 | <1 | 0.4 | 13 | <10 | <5 | 12 | 2.8 | <10 |



XRAL Laboratories
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Work Order: 052352 Date: 30/09/98

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| Element. | Pb | Bi |
|------------------|-------|-------|
| Method. | ICP70 | ICP70 |
| Det.Lim. | 2 | 5 |
| Units. | ppm | ppm |
| MA 98-R-001 | 6 | <5 |
| MA 98-R-002 | 2 | <5 |
| MA 98-R-003 | 5 | <5 |
| MA 98-R-004 | 7 | <5 |
| MA 98-R-005 | 7 | <5 |
| MA 98-R-006 | <2 | <5 |
| MA 98-R-007 | 3 | <5 |
| *Dup MA 98-R-001 | 5 | <5 |



XRAL Laboratories
A Division of SGS Canada Inc.

1885 Leslie Street
Don Mills, Ontario
Canada M3B 3J4
Telephone (416) 445-5755
Fax (416) 445-4152

CERTIFICATE OF ANALYSIS

Work Order: 052763

To: B-MAX Ltd.
Attn: Gord Vandevalk
Brothers Minerals and Exploration
R.R.#3 Milton
HALTON HILLS
ONTARIO, CANADA L9T 2X7

Date : 02/11/98

Copy 1 to :

Copy 2 to :

P.O. No. :
Project No. : MA98
No. of Samples : 10 ROCKS
Date Submitted : 20/10/98
Report Comprises : Cover Sheet plus
Pages 1 to 3

Distribution of unused material:

Pulps: Pulps dumped after 90 days of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By :

Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer:

| | | | |
|--|--|------|-----------------------|
| L.N.R. | = Listed not received | I.S. | = Insufficient Sample |
| n.a. | = Not applicable | -- | = No result |
| *INF | = Composition of this sample makes detection impossible by this method | | |
| <i>M</i> after a result denotes ppb to ppm conversion, % denotes ppm to % conversion | | | |



XRAL Laboratories
A Division of SGS Canada Inc.

Work Order: 052763

Date: 02/11/98

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| Element. | Au | Pt | Pd | Be | Na | Mg | Al | P | K | Ca | Sc | Ti | V | Cr | Mn | Fe |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | FA301 | FA301 | FA301 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 1 | 10 | 1 | 0.5 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.5 | 0.01 | 2 | 1 | 2 | 0.01 |
| Units. | ppb | ppb | ppb | ppm | % | % | % | % | % | % | ppm | % | ppm | ppm | ppm | % |
| MA98-R-008 | 1 | <10 | 1 | <0.5 | 0.46 | 1.67 | 2.67 | 0.10 | 0.34 | 2.64 | 8.8 | 0.24 | 191 | 49 | 313 | 4.85 |
| MA98-R-009 | 1 | <10 | <1 | <0.5 | 0.45 | 1.26 | 2.08 | 0.02 | 0.22 | 2.40 | 6.7 | 0.26 | 107 | 60 | 249 | 3.57 |
| MA98-R-010 | <1 | <10 | <1 | <0.5 | 0.20 | 0.07 | 1.25 | 0.21 | 0.05 | 4.93 | 0.8 | 0.03 | 25 | 120 | 495 | 1.36 |
| MA98-R-011 | <1 | <10 | <1 | <0.5 | 0.08 | 0.13 | 0.68 | <0.01 | 0.02 | 1.81 | <0.5 | 0.01 | 17 | 92 | 411 | 1.28 |
| MA98-R-012 | <1 | <10 | <1 | <0.5 | 0.25 | 1.21 | 1.22 | 0.06 | 0.16 | 1.80 | 6.3 | 0.19 | 74 | 156 | 218 | 1.64 |
| MA98-R-013 | <1 | <10 | <1 | <0.5 | 0.38 | 0.42 | 1.86 | 0.02 | 0.08 | 1.56 | 2.8 | 0.05 | 23 | 82 | 82 | 0.87 |
| MA98-R-014 | <1 | <10 | <1 | <0.5 | 0.11 | 0.55 | 0.49 | <0.01 | 0.02 | 0.93 | 3.0 | 0.08 | 29 | 77 | 127 | 0.84 |
| MA98-R-015 | 1 | <10 | <1 | <0.5 | 0.15 | 0.72 | 1.22 | 0.07 | 0.31 | 0.58 | 2.7 | 0.06 | 43 | 257 | 151 | 2.37 |
| MA98-R-016 | <1 | <10 | <1 | <0.5 | 0.37 | 1.63 | 1.25 | 0.09 | 0.14 | 1.76 | 8.8 | 0.18 | 66 | 147 | 197 | 2.04 |
| MA98-R-017 | <1 | <10 | <1 | <0.5 | 0.09 | 0.49 | 0.40 | <0.01 | 0.02 | 0.80 | 2.2 | 0.08 | 25 | 67 | 130 | 0.81 |
| *Dup MA98-R-008 | <1 | <10 | <1 | <0.5 | 0.41 | 1.51 | 2.40 | 0.10 | 0.31 | 2.36 | 7.9 | 0.21 | 171 | 48 | 285 | 4.46 |



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| Element. | Co | Ni | Cu | Zn | As | Sr | Y | Zr | Mo | Ag | Cd | Sn | Sb | Ba | La | W |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Method. | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 | ICP70 |
| Det.Lim. | 1 | 1 | 0.5 | 0.5 | 3 | 0.5 | 0.5 | 0.5 | 1 | 0.2 | 1 | 10 | 5 | 1 | 0.5 | 10 |
| Units. | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm | ppm |
| MA98-R-008 | 21 | 11 | 68.0 | 31.4 | <3 | 78.7 | 5.4 | 7.3 | <1 | 0.3 | <1 | <10 | <5 | 95 | 2.4 | <10 |
| MA98-R-009 | 36 | 17 | 171 | 25.1 | <3 | 139 | 4.9 | 6.4 | 2 | <0.2 | <1 | <10 | <5 | 63 | 1.7 | <10 |
| MA98-R-010 | 2 | 7 | 3.0 | 10.9 | <3 | 158 | 4.1 | 7.8 | 2 | 0.3 | <1 | <10 | <5 | 13 | 2.4 | <10 |
| MA98-R-011 | 3 | 8 | 1.4 | 13.6 | <3 | 15.7 | 5.6 | 6.3 | <1 | <0.2 | <1 | <10 | <5 | 10 | 0.7 | <10 |
| MA98-R-012 | 10 | 43 | 2.1 | 22.1 | <3 | 50.7 | 5.9 | 4.9 | 1 | <0.2 | <1 | <10 | <5 | 23 | 1.8 | <10 |
| MA98-R-013 | 8 | 42 | 31.4 | 6.3 | <3 | 210 | 2.5 | 2.7 | 1 | <0.2 | <1 | <10 | <5 | 28 | 1.9 | <10 |
| MA98-R-014 | 7 | 25 | 8.8 | 12.1 | <3 | 25.4 | 3.6 | 4.6 | 2 | <0.2 | <1 | <10 | <5 | 8 | 2.0 | <10 |
| MA98-R-015 | 16 | 65 | 36.6 | 28.4 | <3 | 19.8 | 5.2 | 2.9 | 2 | <0.2 | <1 | <10 | <5 | 89 | 8.6 | <10 |
| MA98-R-016 | 15 | 93 | 4.8 | 18.5 | <3 | 77.1 | 6.1 | 11.2 | <1 | <0.2 | <1 | <10 | <5 | 27 | 5.9 | <10 |
| MA98-R-017 | 10 | 35 | 18.9 | 10.3 | <3 | 15.0 | 3.6 | 6.3 | <1 | 0.3 | <1 | <10 | <5 | 6 | 2.5 | <10 |
| *Dup MA98-R-008 | 20 | 9 | 66.3 | 28.9 | <3 | 68.7 | 4.4 | 6.1 | <1 | <0.2 | <1 | <10 | <5 | 87 | 1.8 | <10 |



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Work Order: 052763

Date: 02/11/98

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| Element. | Pb | Bi |
|-----------------|-------|-------|
| Method. | ICP70 | ICP70 |
| Det. Lim. | 2 | 5 |
| Units. | ppm | ppm |
| MA98-R-008 | <2 | 9 |
| MA98-R-009 | <2 | <5 |
| MA98-R-010 | <2 | 8 |
| MA98-R-011 | <2 | 7 |
| MA98-R-012 | <2 | 6 |
| MA98-R-013 | <2 | 7 |
| MA98-R-014 | <2 | 6 |
| MA98-R-015 | <2 | 8 |
| MA98-R-016 | <2 | 7 |
| MA98-R-017 | 2 | <5 |
| *Dup MA98-R-008 | <2 | 6 |

Appendix IV

Identification of Author And Claim Holders

**Identification of Author
And Claim Holders**

All fieldwork submitted under this assessment application was carried out by the Author of this report and the Claim Holders of Mining Claims SO 1077361 and SO 1077362. The Author and Claim Holders are Licensed Ontario Prospectors. For the purpose of this report, the Author and Claim Holders are collectively referred to as B-MAX (Brothers Minerals and Exploration). The Author presently holds no direct or indirect interest in either of the two mining claims, which are the subject of this report. The Author and Claim Holders are identified as follows:

Author: **Gordon J. Vandevalk**
Prospecting License: A52179
Client Number: 303366
Address: R.R.#3 Milton, Halton Hills, Ontario, L9T 2X7
Occupation: Mineral Exploration Draftsman

Claim Holder (SO 1077361): **Henry Vandevalk**
Prospecting License: A52183
Client Number: 303369
Address: 1978 Balsam Avenue, Mississauga, Ontario, L5J 1L2
Occupation: Water Treatment Plant Operator

Claim Holder (SO 1077362): **William J. Vandevalk**
Prospecting License: A52184
Client Number: 303370
Address: 1880 Carrera Court, Mississauga, Ontario, L5J 4R5
Occupation: Trucking Company Dispatch Manager



Ministry of
Northern Development
and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

| |
|---|
| Transaction Number (office use) W9990.00022 Assessment Files Research Imaging |
|---|



31E13SE2001 2.19526 LOUNT

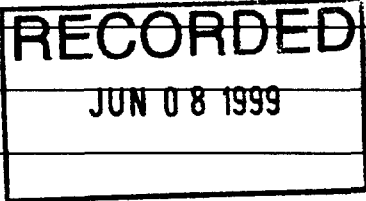
900

of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the review the assessment work and correspond with the mining land holder. Recorder, Ministry of Northern Development and Mines, 6th Floor,

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

| | |
|---|---|
| Name <i>WILLIAM J. VANDEVALK LIC. NO. A52184</i> | Client Number <i>CLN 303370</i> |
| Address <i>1880 CARRERA CRT. MISSISSAUGA</i> | Telephone Number <i>(905) 823-4131</i> |
| <i>ONTARIO L5J 4R5</i> | Fax Number <i>(905) 823-1597</i> |
| Name | Client Number |
| Address | Telephone Number |
| | Fax Number |



2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

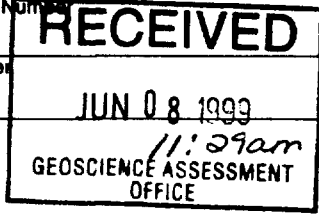
Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

| | |
|---|--|
| Work Type <i>ESTABLISH GRID, MAPPING (TOPOGRAPHIC) SOIL SAMPLING, PROSPECTING MAGNETOMETER SURVEY REPORT PREPARATION</i> | Office Use |
| | Commodity |
| | Total \$ Value of Work Claimed <i>1324.</i> |
| Dates Work Performed From <i>15 4 98</i> To <i>31 12 98</i> | NTS Reference |
| Global Positioning System Data (if available) | Mining Division <i>Southern Ontario</i> |
| Township/Area <i>LOUNT</i> | Resident Geologist District <i>Sudbury</i> |
| M or G-Plan Number <i>M184</i> | |

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

| | |
|---|---|
| Name <i>GORDON VANDEVALK</i> | Telephone Number <i>(905) 878-0018</i> |
| Address <i>RR#3 MILTON HALTON HILLS ONT. L9T 2Y7</i> | Fax Number <i>(905) 823-1597</i> |
| Name | Telephone Number |
| Address | Fax Number |
| Name | Telephone Number |
| Address | Fax Number |



2.19526

4. Certification by Recorded Holder or Agent

I, WILLIAM VANDEVALK (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

| | |
|---|----------------------------|
| Signature of Recorded Holder or Agent <i>X</i> | Date <i>X JUNE 3/99</i> |
| Agent's Address | Telephone Number |
| | Fax Number |

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

| Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map. | Number of Claim Units. For other mining land, list hectares. | Value of work performed on this claim or other mining land. | Value of work applied to this claim. | Value of work assigned to other mining claims. | Bank. Value of work to be distributed at a future date. |
|---|--|---|--------------------------------------|--|---|
| eg TB 7827 | 16 ha | \$26,825 | N/A | \$24,000 | \$2,825 |
| eg 1234567 | 12 | 0 | \$24,000 | 0 | 0 |
| eg 1234568 | 2 | \$8,892 | \$4,000 | 0 | \$4,892 |
| 1 1077362 | 1 | \$1,384 | 400 400 | NIL | \$1,384 984 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
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| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| Column Totals | | | | | |

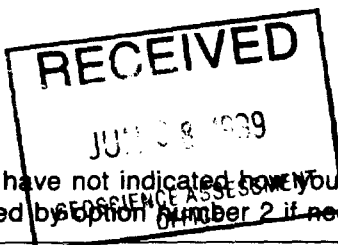
I, WILLIAM VANDEVALK, do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorder/Holder or Agent Authorized in Writing: [Signature] Date: JUNE 3/99

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):



Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by Option number 2 if necessary.

For Office Use Only

| | | |
|---|----------------------|--------------------------------|
| Received Stamp | Deemed Approved Date | Date Notification Sent |
| | Date Approved | Total Value of Credit Approved |
| Approved for Recording by Mining Recorder (Signature) | | |

2.19526

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

| Work Type | Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.</small> | Cost Per Unit of work | Total Cost |
|---|---|-----------------------|-----------------------|
| ESTABLISH GRID | .6 Km .5 man/day | \$200/man/day | \$100.00 |
| SOIL SAMPLING | 21 SAMPLES 1 man/day | " | 200.00 |
| MAGNETOMETER SURVEY | .6 Km .5 man/day | " | 100.00 |
| MAPPING RESULTS (PLOTING) | 1 man/day | " | 200.00 |
| FINAL REPORT PREP. | 1 man/day | " | 200.00 |
| Associated Costs (e.g. supplies, mobilization and demobilization). | | | |
| EQUIPMENT - SAMPLE BAGS, FLAGGING TAPE ETC. | | | 80.88 |
| ANALYSIS COSTS | | | 158.34 |
| FINAL REPORT COSTS | | | 20.00 |
| Transportation Costs 682 Km | | | \$.30/km 204.60 |
| Food and Lodging Costs | | | \$40/night/man 120.00 |
| Total Value of Assessment Work | | | 1383.77 |

RECEIVED
JUN 08 1999
GEOSCIENCE ASSESSMENT OFFICE

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:


TOTAL VALUE OF ASSESSMENT WORK $\times 0.50 =$ Total \$ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

2.19526

I, WILLIAM VANDEVALK (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as RECORDED HOLDER (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature  Date 6/8/99



Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

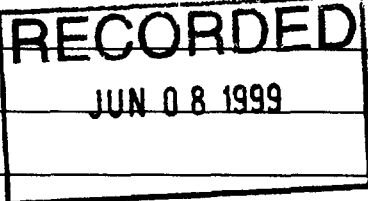
Transaction Number (office use) W9990.00021 Assessment Files Research Imaging

Personal information collected on this form is obtained under the authority of subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Name: HENRY VANDEVALK LIC. NO. A52183 Client Number: CLN 303369 Address: 1978 BALSAM AVE. MISSISSAUGA Telephone Number: (905) 823-4319 Fax Number: (905) 823-1597



2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

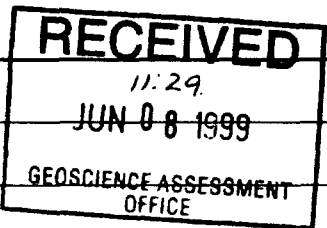
Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

Work Type: ESTABLISH GRID, TOPOGRAPHIC MAPPING SOIL SAMPLING PROSPECTING MAGNETOMETER SURVEY, REPORT PREPARATION Office Use: Commodity, Total \$ Value of Work Claimed 15,418. Dates Work Performed: From 18/11/97 To 31/12/98 Mining Division: Southern Ontario Resident Geologist District: Sudbury

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name: GORDON VANDEVALK Telephone Number: (905) - 878 - 0018 Address: RR#3 MILTON HALTON HILLS ONT. L9T 2K7 Fax Number: (905) - 823 - 1597



2.19526

4. Certification by Recorded Holder or Agent

I, HENRY VANDEVALK, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: [Signature] Date: JUNE 3/99 Agent's Address: Telephone Number: Fax Number:

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

| Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map. | Number of Claim Units. For other mining land, list hectares. | Value of work performed on this claim or other mining land. | Value of work applied to this claim. | Value of work assigned to other mining claims. | Bank. Value of work to be distributed at a future date. |
|---|--|---|--------------------------------------|--|---|
| eg TB 7827 | 16 ha | \$26, 825 | N/A | \$24,000 | \$2,825 |
| eg 1234567 | 12 | 0 | \$24,000 | 0 | 0 |
| eg 1234568 | 2 | \$ 8, 892 | \$ 4,000 | 0 | \$4,892 |
| 1 1077361 | 12 | \$15,418.61 | \$4,800 | 0 | \$10,618.61 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
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| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| 13 | | | | | |
| 14 | | | | | |
| 15 | | | | | |
| Column Totals | | | | | |

I, HENRY VANDEVALK (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing

Henry Vandevalk

Date

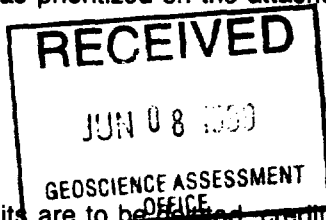
JUNE 3/99

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

2.19526



Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

| | | |
|---|----------------------|--------------------------------|
| Received Stamp | Deemed Approved Date | Date Notification Sent |
| | Date Approved | Total Value of Credit Approved |
| Approved for Recording by Mining Recorder (Signature) | | |

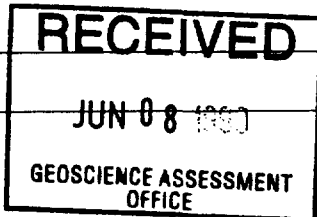


**Statement of Costs
for Assessment Credit**

Transaction Number (office use)
W9990.00021

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/98. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

| Work Type | Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.</small> | Cost Per Unit of work | Total Cost |
|---|---|-----------------------|---------------------------|
| ESTABLISH GRID | 18.6 Km 7.5 man/days | \$200/man/day | \$1,500.00 |
| SOIL SAMPLING | 377 SAMPLES 14 man/days | " | \$2,800.00 |
| MAGNETOMETER SURVEY | 18.6 Km 4.5 man/days | " | 900.00 |
| PROSPECTING | 17 SAMPLES 1 man/day | " | 200.00 |
| MAPPING RESULTS (PLOTING) | 6 man/days | " | 1200.00 |
| FINAL REPORT PREP. | 5 man/days | " | 1000.00 |
| Associated Costs (e.g. supplies, mobilization and demobilization). | | | |
| EQUIPMENT - SAMPLE BAGS, FLAGGING TAPE ETC. | | | 250.31 |
| ATC RENTAL (12 DAYS) | | | \$150/day 1800.00 |
| ANALYSIS COSTS | | | 3165.89 |
| FINAL REPORT COSTS - PAPER, PHOTOCOPYING ETC. | | | 231.01 |
| Transportation Costs 4438 Km | | | \$.30/km 1331.40 |
| Food and Lodging Costs 26 ^{MAN} nights | | | \$40/night/man 1040.00 |
| Total Value of Assessment Work | | | 15,418.61 |



2.19526

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total \$ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, HENRY VANDEVALK (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as RECORDED HOLDER I am authorized (recorded holder, agent, or state company position with signing authority) to make this certification.

Signature: [Signature] Date: JUNE 3/99

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

June 14, 1999

HENRY VANDEVALK
1978 BALSAM AVE.
MISSISSAUGA, ONTARIO
L5J-1L2

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpg.htm

Dear Sir or Madam:

Submission Number: 2.19526

Status

Subject: Transaction Number(s): W9990.00021 Deemed Approval
W9990.00022 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at steve.beneteau@ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.19526

Date Correspondence Sent: June 14, 1999

Assessor: Steve Beneteau

| Transaction Number | First Claim Number | Township(s) / Area(s) | Status | Approval Date |
|---------------------------|---------------------------|------------------------------|-----------------|----------------------|
| W9990.00021 | 1077361 | LOUNT | Deemed Approval | June 14, 1999 |

Section:

14 Geophysical MAG
9 Prospecting PROSP
13 Geochemical GCHEM

| Transaction Number | First Claim Number | Township(s) / Area(s) | Status | Approval Date |
|---------------------------|---------------------------|------------------------------|-----------------|----------------------|
| W9990.00022 | 1077362 | LOUNT | Deemed Approval | June 14, 1999 |

Section:

14 Geophysical MAG
13 Geochemical GCHEM
9 Prospecting PROSP

Correspondence to:

Resident Geologist
Sudbury, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

HENRY VANDEVALK
MISSISSAUGA, ONTARIO

WILLIAM JOHN VANDEVALK
MISSISSAUGA, ONTARIO

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

LEGEND

- CANCELLED
- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY

- C
- Ⓢ
- CS
- Ⓛ
- LOC
- LO
- MRO
- SRO

LOUNT

EASTERN ONTARIO MINING DIVISION
Scale - 40 Chains - Inch

Areas withdrawn from staking under Section 47 of the Mining Act, R50 (70)

| File | Date | Disposition |
|--|---------|-----------------------------------|
| 140707 | 31/8/72 | S.R.O. (location amended 6/11/72) |
| 171870 | 22/2/85 | S.P.B.M.R. |
| | 22/2/85 | S.R.O. Order No. W-3-85 |
| SEC. 35 W.L.L.C75/99 ONT May 11/99 M&S | | |

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

400' Surface rights reservation around all lakes & rivers.

PRINGLE

