42A01SE0108 2.13994 OTTO

010

OPAP REPT. #

"RAILROAD PROJECT"

OTTO TOWNSHIP

LARDER LAKE MINING DIVISION

Compiled by: Jeffery J. St. Jean

OPAP REPORT
RAILROAD PROJECT
OTTO TOWNSHIP

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OPAP #OP 90-382

42A01SE0108 2.13994 OTTO

010C

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1.0 INTRODUCTION

1.1 Objectives

The objectives of this program was to investigate 7 Input anomalies located 4 000 ft south east of a base metal showing indicated on the geology map of Otto township. From previous prospecting trips to this area numerous other zinc bloom and malachite showings were found along rock cuts made by Ontario Northland Railroad leading to the project area. From the number of base metal showings found to date in this area I found the results quite encouraging. In addition, the favourable geological horizon strikes onto the project area which has never been investigated properly. I felt further investigation was warranted by methods of rock sampling, soil sampling and a magnetometer survey. The main objective is to locate the airborne survey conductors on the ground and determine their potential by soil and rock sampling.

1.2 Property

The property consists of four contiguous unpatented claims 1111443, 1111444, 1111445 and 111146.

1.3 Location

The project is located in Northeastern Otto Township, Claim Map no. M-379, Larder Lake Mining Division, NTS 42A/1, claim nos. 1111443,111146 occupy the SW 1/4, SE 1/4 of the N 1/2, and 1111444, 111145 occupy the NW 1/4, NE 1/4 of the south 1/2 of Lot 3 Concession VI, Otto Township.

1.4 Access

The Ontario Northland Railway provides a perfect access route. Access can be gained by proceeding a 1/4 mile in the southeast direction along the railway from the high level bridge which crosses highway 112. The railway enters the west boundary of claim 1111445 approximately 200 feet north from post #3.

1.5 General Geology

Keewatin greenstones and their schistose equivalent broadly extend across concessions V and VI Otto township. In the north west corner of the township massive greenstones grade to the southwest into rocks of schistose character. The strike of the schists is usually parallel to the strike of the contacts. The schists contain irregular lenses of massive greenstone. Occasional bands of felsic tuff and iron formation conformable to the strike and dip of the schistosity confirms that deformation is subparallel to stratigraphy.

1.6 Previous Work

An electromagnetic and total intensity magnetic survey was flown over the area in 1979 by the Ontario Geological Survey. A total of seven conductors are located on the present claims. In the summer of 1980 Minorex Limited performed a geological mapping survey at a scale of 1 inch to 200 feet. They also executed a horizontal shootback electromagnetic survey, along with a gamma ray spectrometer survey.

2.0 DISCUSSION

2.1 Geology

2.1.1 Intermediate to mafic metavolcanics

In the northern portion of the property lies greenstones which are basaltic in composition, occurring as massive flows. Weathered outcrop exposures appear as dark grey-green to black in colour. Altered outcrops show a light green to white bleached spots on surface due to carbonatization. White and pink feldspar, quartz, carbonate veins are very common through the property. Large quartz veins intruding the massive basalts usually carry minor sulphide.

Through the south central part of the property chlorite schists strike to the southeast dipping to the southwest. Thin foliated veins of feldspar, quartz produce a banded appearance. Thin strips of magnetite make the schists range from weakly to strongly magnetic, depending on the amount. Very fine amounts of sulphide are disseminated throughout, but return no significant assay results.

2.1.2 Felsic Metavolcanics

On claim 1111444, five overgrown pits are located on a zone of sulphide facies iron formation in the form of a dark grey felsic tuff. The tuff being very massive in pyrite, pyrrhotite. The tuff is highly magnetic due to the pyrrhotite. Several grab samples where taken from the pits giving no significant results for gold, silver but several anomalous results for nickel, zinc, copper.

On claims 1111445, 1111446, again the massive sulphide grey felsic tuff appears in the form of narrow stratabound bodies within the foliated basalts. Five trenches are located along this zone, samples where taken giving no high results for gold, silver but anomalous results for nickel, zinc, copper. The grey felsic tuff is also found at the south end of 1111445 within the foliated basalts. No samples where taken from this zone.

2.2 Geochemical Survey

Till samples where taken at 50 meter intervals along cut lines by the use of an auger. The average depth of the samples being 45cm. Due to uncontrollable conditions such as bare outcrop, swamp certain locations where impossible to sample.

2.2.1 Survey Results

Samples numbered g-95, g-96, g-97 taken at the north end of 1111443 gave anomalous results for zinc giving a small anomaly. Travelling up ice from this anomaly 50 meters is a zone of felsic tuff which gave anomalous results for zinc,therefore being the source of the anomaly.

Samples g-34, g-48 were taken at the north-east end of claim 1111443. These samples returned anomalous copper, nickel concentrations. The anomaly could have been caused by contamination from bog soils which are usually high in base metals since the samples were taken at the edge of a swamp. Swamp extends to the north end of the property therefore the anomaly could not be traced by sampling. The magnetometer survey indicated a large high up ice from this anomaly, suggesting a bedrock source for further investigation.

2.4 Geophysical Survey

A geophysical survey was conducted by the use of a geometric proton magnetometer with digital readout. Readings where taken at 12.5 meter intervals along lines and baseline. Diurnal drift was corrected for by the standard looping method.

2.4.1 Survey Results

Magnetometic highs were located over each section of the massive sulphide felsic tuff along lines 100w, 000, 300e, 400e. Other mag highs located correspond to the magnetic nature of the schistose basalts. Several highs are located in swamp and could not be identified by sampling these should be investigated further.

3.0 CONCLUSIONS AND RECOMMENDATIONS

A horizontal loop electro-magnetic survey (Max-Min II) should be performed to locate conductive zones. Then if a strong conductor is found associated with the interflow sediments where a grab sample returned anomalous base metal a bore hole should be drilled to test it for a massive sulphide type deposit.

4.0 REFERENCES

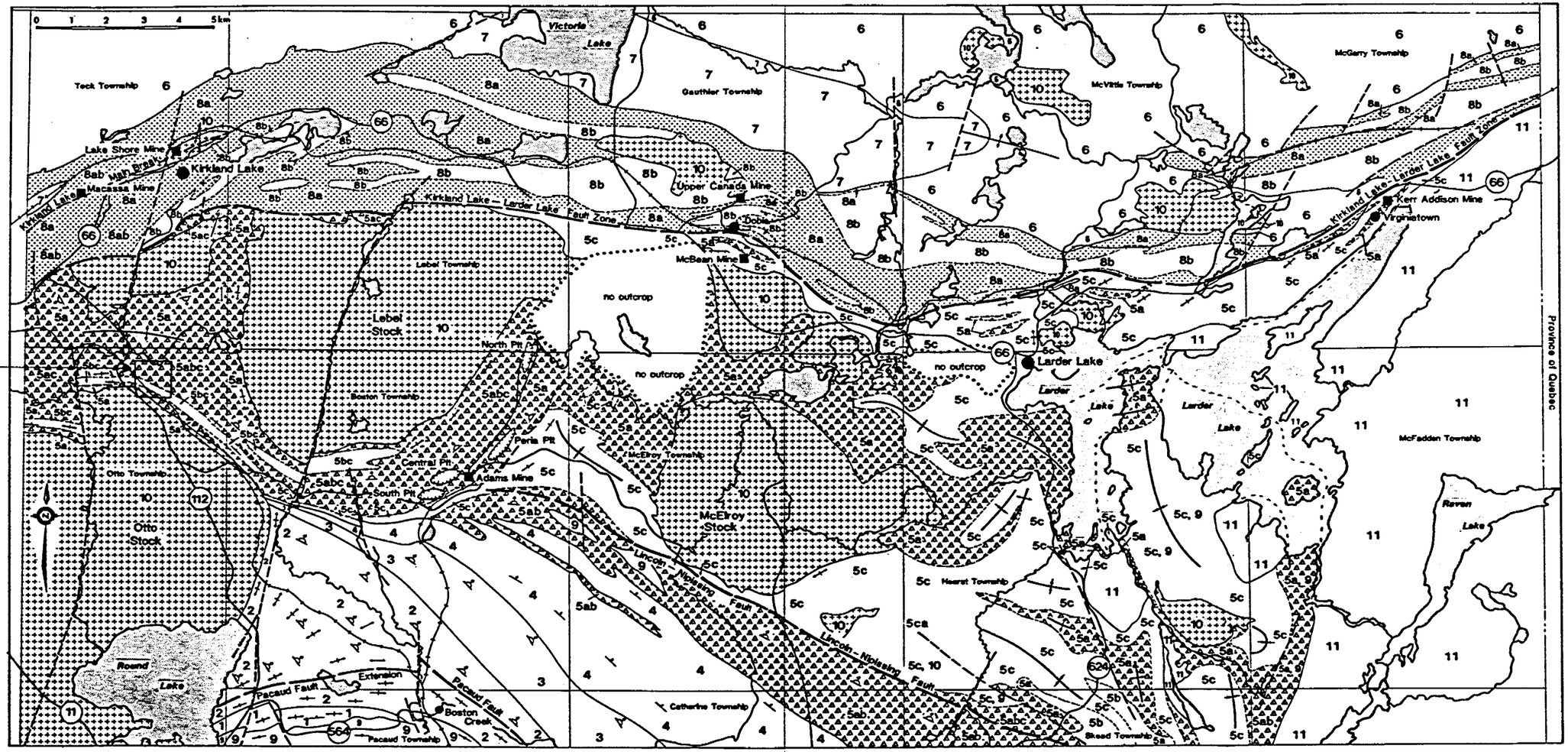
Lovell,H.L. 1972
Geology of Eby and Otto Area,District of Timiskaming;Ontario Dept. of Mines and Northern Affairs, GR99, 30p. Accompanied by Map 2239, scale 1 inch to 1/2 mile.

OGS 1979 Airborne Electromagnetic and Total Intensity Magnetic Survey Kirkland Lake Area, Otto Township, District of Timiskaming, by Questor Surveys Limited for the Ontario Geological Survey, Prelim. Map.2269 Geophys. Ser., scale 1:20,000. Survey and compilation, February and March 1979.

Savage,W.S. 1950
Mulligan Property Otto Township; Property visit by W.S.Savage, AFRO.

Stones,J.F 1980
Murdock Creek Property, Otto Township; By Minorex Limited, AFRO.

ILROAD PROJECT AREA



PROTEROZOIC

11 Cobalt Group

ARCHEAN

10 Alkalic to Subalkalic Intrusive Rocks

9 Trondhjemitic Intrusive Rocks (Round Lake Batholith)

8 Timiskaming Group

8a Sedimentary Rocks

8b Alkalic Volcanic Rocks

7 Gauthier Volcanics

6 Kinojevis Group

5 Larder Lake Group

5a Ultramafic and Mafic Volcanic Rocks

5b Intermediate and Felsic Volcanics Rocks

5c Sedimentary Rocks

4 Skead Group

3 Catherine Group

2 Wabewawa Group

1 Pacaud Tuff

bedding, bedding (with tops)

lava flow tops

schistosity

gneissosity

syncline

anticline

geological boundaries

stratigraphic contacts

fault

major fault zones

roads and highways

mines

towns

Figure *Stratigraphy of the Kirkland Lake area.*

FIGURE 1

TECK TP. - M.392

12 11 10 9 8 7 6 5 4 3 2 1

VI

V

IV

III

TOWNSHIP SUBJECT TO FORESTRY OPERATIONS

EBY TP. - M.

OTTO TWP.

N.O.W.G. Lateral F.162526

L.O. 1656

CL. 4614

Otto Lake

Vigrass Lake

Hydro

66

ETH 14

Gravel Pit No. 245 File 12960

DANE TOWNSITE Not Open for Staking O.C. Jan. 10, 1911

River

Blanche

NOR

112

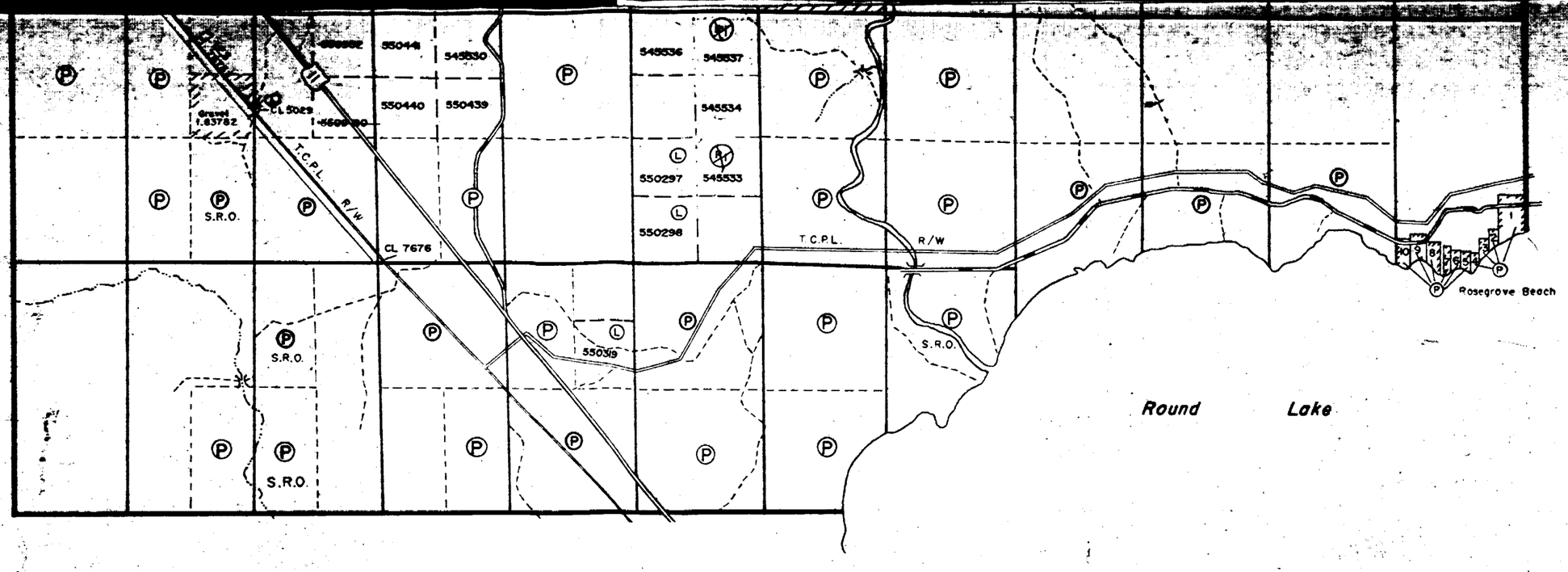
M.T.C. Gravel Pit No. 1566

S.R.O.

LEAF

SAR-1428

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.



MARQUIS TP. - M.362

M.362

TRIM LINE

THE TOWNSHIP OF OTTO

DATE OF ISSUE
JAN 25 1991
LARDER LAKE
MINING RECORDER'S OFFICE

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	
CROWN LAND SALE	
LEASES	
LOCATED LAND	
LICENSE OF OCCUPATION	
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	
PATENTED S.R.O.	

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

(R) SURFACE AND MINING RIGHTS WITHDRAWN FROM STAKING
SEC. 36/80, W.9/86, JAN. 24, 1986
O-L26-90 NR OPENS W9/86 DEC. 14, 1990

* APPLICATION UNDER THE PUBLIC LANDS ACT SEC. 31(1)
OF THE MINING ACT

CL 5029 DISPOSITION OF CROWN LAND

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE
TIMISKAMING MANAGEMENT UNIT

AND MAY BE SUBJECT TO FORESTRY OPERATIONS.
THE MNR UNIT FORESTER FOR THIS AREA CAN BE
CONTACTED AT: P.O. BOX 129
SWASTIKA, ONT.
POK ITO
705-642-3222

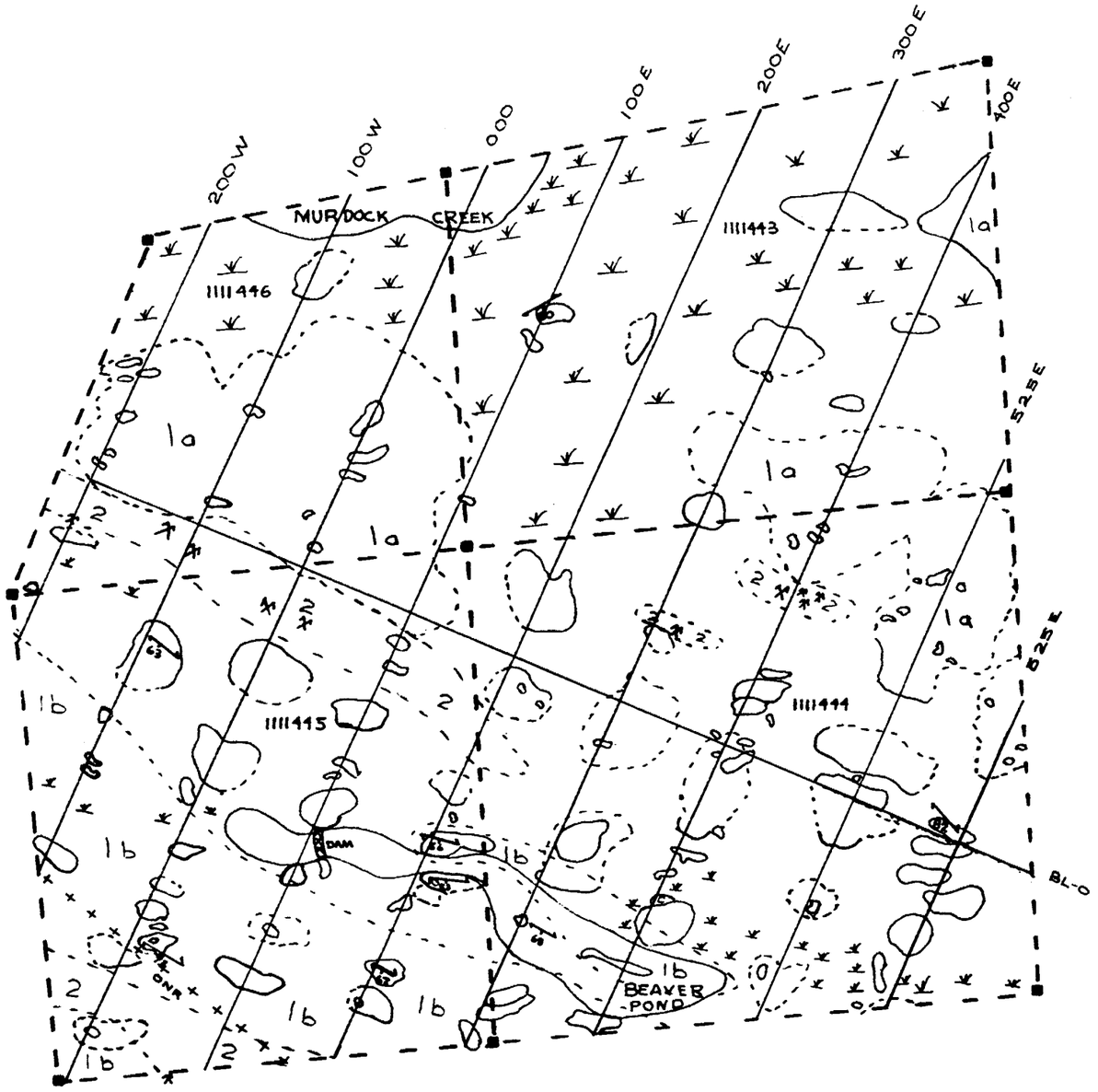
PLAN NO.- M-379

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

BOSTON TP. - M.332

OTTO TWP.

OTTO TWP.



RAILROAD PROJECT

geology
otto tp

0 250

SCALE 1:5000 | FIGURE 3

LEGEND

archean

2 FELSIC METAVOLCANICS (KEEWATIN)
banded felsic metavolcanics, tuffs ranging from dacite to rhyolite interbedded with magnetite-chert; pyrite - pyrrhotite facies iron formation

1c MAFIC METAVOLCANICS (KEEWATIN)
mafic metavolcanics metamorphosed to amphibolite and amphibolite gneiss

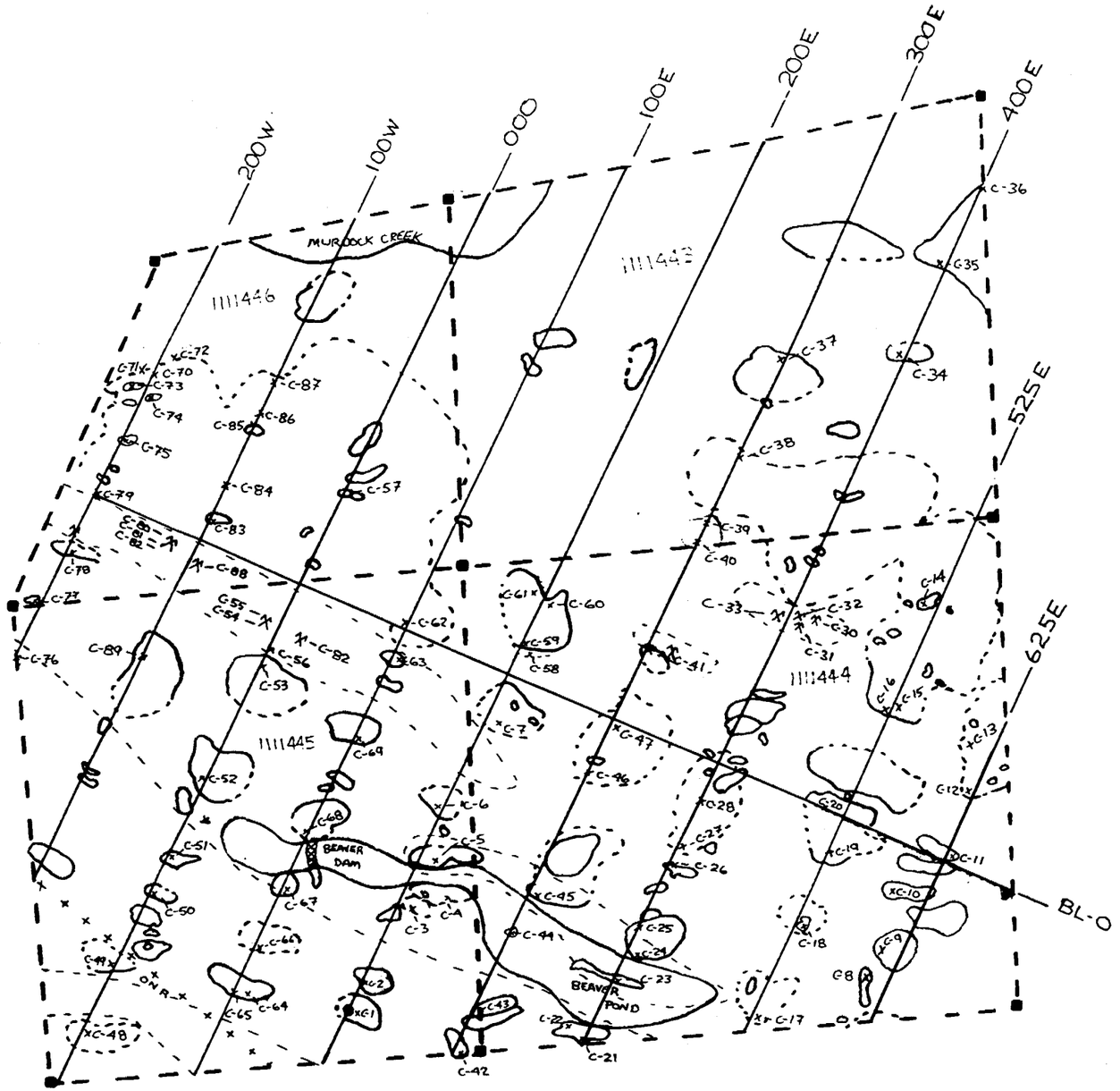
1a massive basalt
1b chlorite schist

FOLIATION

SWAMP

EXPOSED OUTCROP ——
ASSUMED BOUNDARY-----

PIT



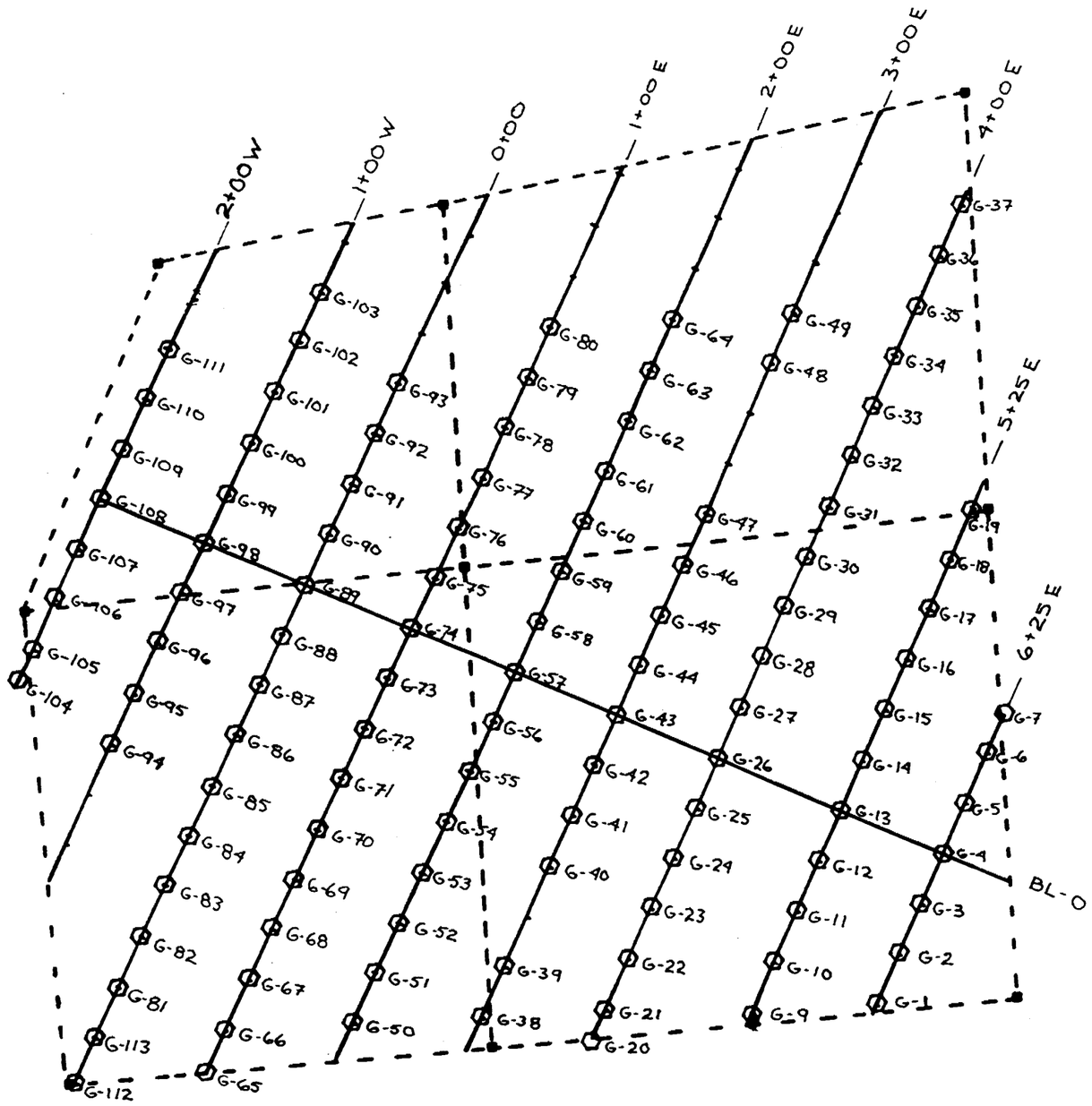


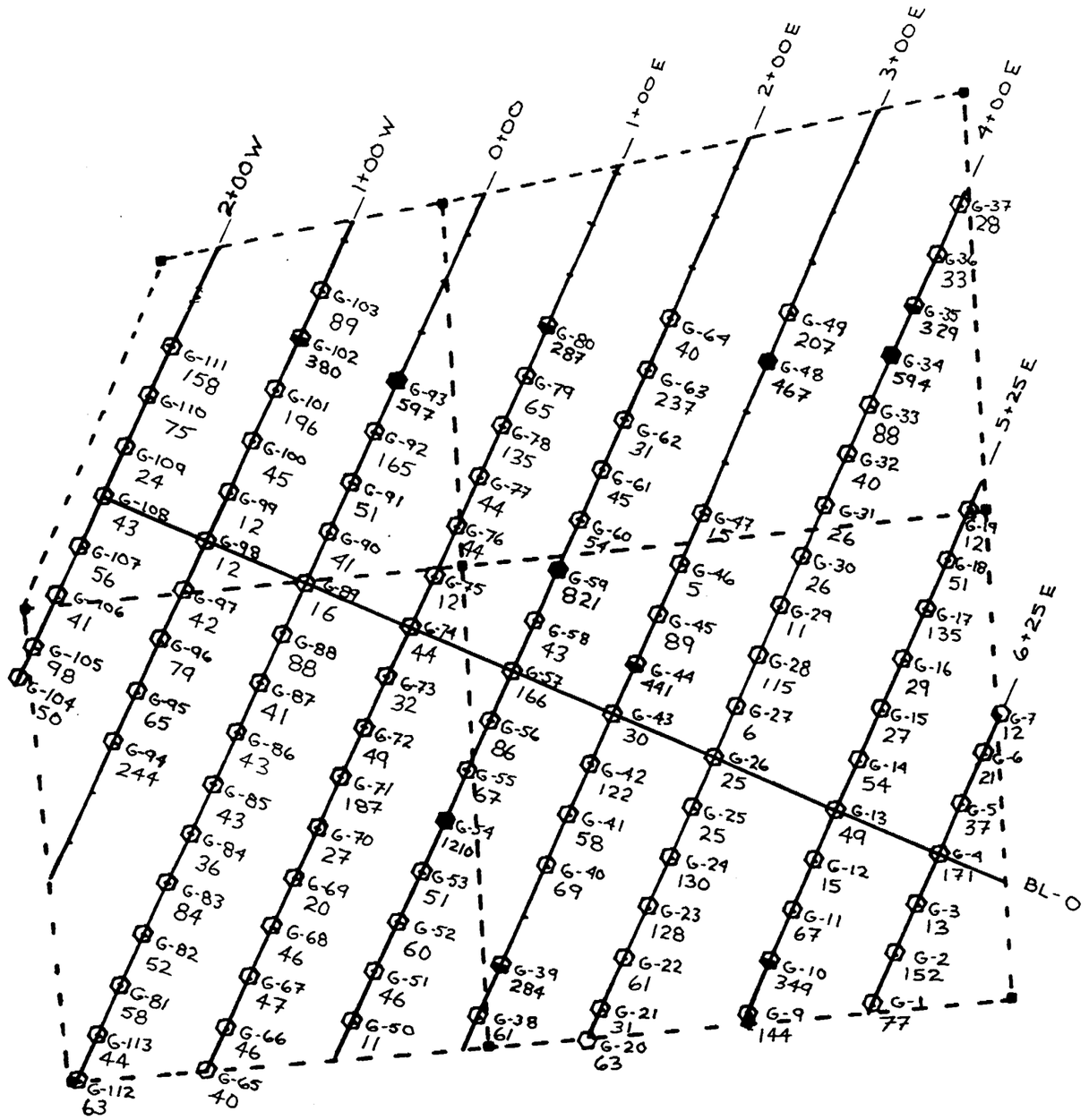
RAILROAD PROJECT

OTTO Tp
GRAB SAMPLE
LOCATION MAP

0 200

SCALE 1:5000 | FIGURE 4


2+00W
1+00W
0+00
1+00E
2+00E
3+00E
4+00E
5+25E
6+25E
BL-0
G-111
G-110
G-109
G-108
G-107
G-106
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G-15
G-14
G-13
G-12
G-11
G-10
G-9
G-7
G-6
G-5
G-4
G-3
G-2
G-1
N
RAILROAD PROJECT
OTTO Tp
SOIL SAMPLE LOCATION MAP
0
200
FIGURE 5



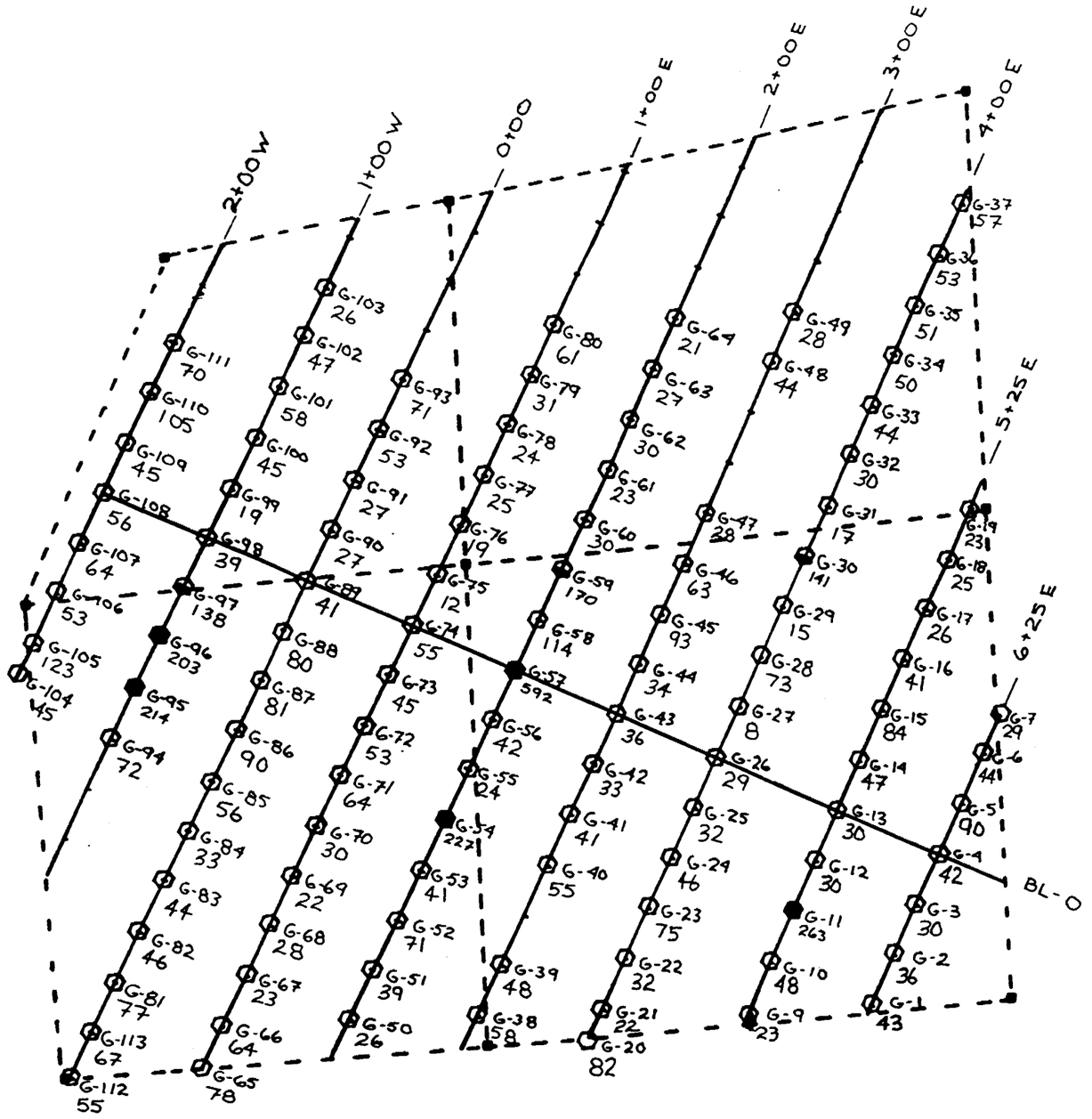
RAILROAD PROJECT

OTTO Tp

SOIL SAMPLE LOCATION MAP -

Ni RESULTS

SCALE 1:5000 | FIGURE 6



N

○G- SAMPLE NUMBER
RESULTS PPM

○ $< \bar{X} + 1\sigma$

$\bar{X} + 1\sigma < \text{⬢} \leq \bar{X} + 2\sigma$

⬢ $> \bar{X} + 2\sigma$

0 200

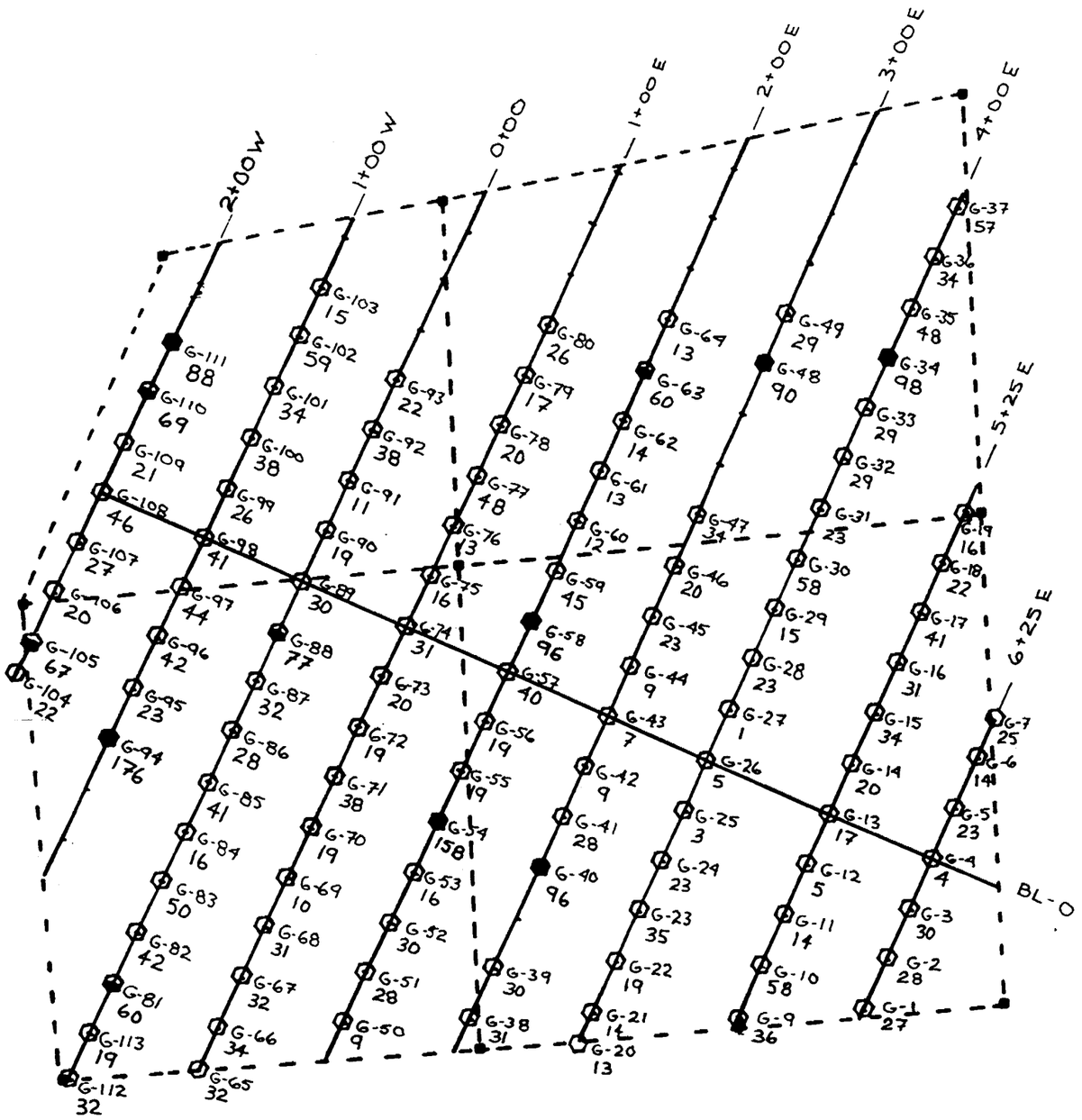
RAILROAD PROJECT

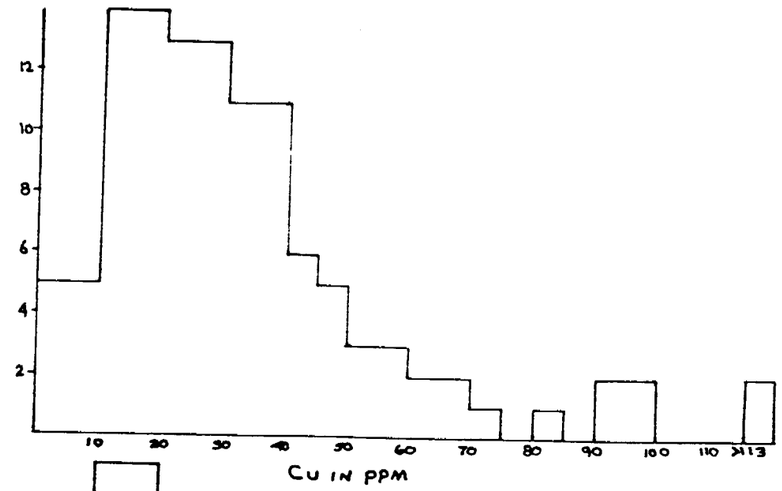
OTTO Tp

SOIL SAMPLE
LOCATION MAP

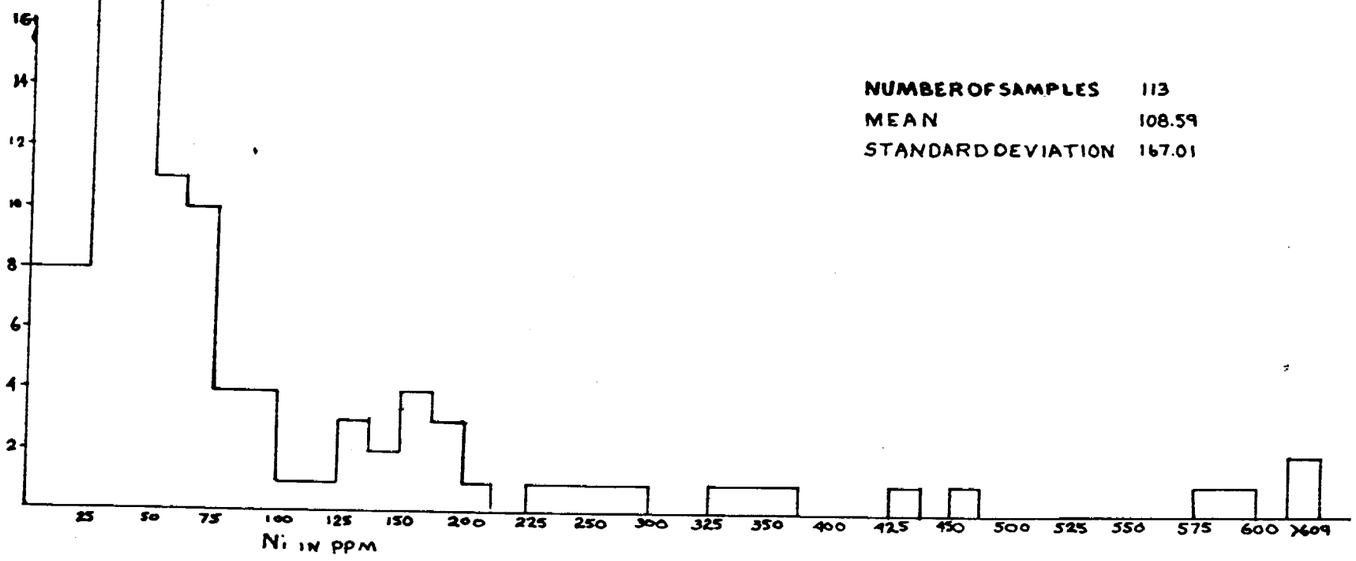
Zn RESULTS

SCALE 1:5000 | FIGURE 7

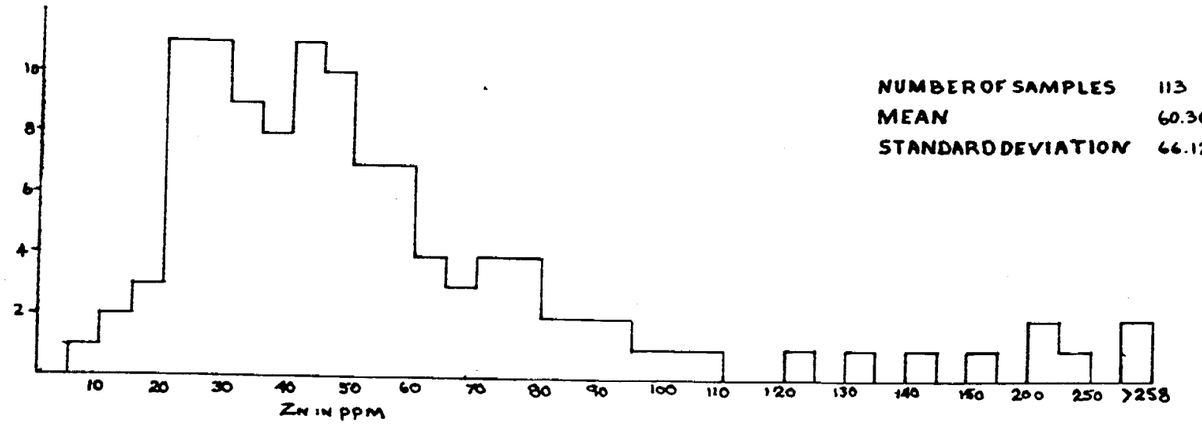

2+00W
1+00W
0+00
1+00E
2+00E
3+00E
4+00E
5+25E
6+25E
BL-0
G-111 88
G-110 69
G-109 21
G-108 46
G-107 27
G-106 20
G-105 67
G-104 122
G-103 15
G-102 59
G-101 34
G-100 38
G-99 26
G-98 41
G-97 44
G-96 42
G-95 23
G-94 176
G-93 22
G-92 38
G-91 11
G-90 19
G-89 30
G-88 77
G-87 32
G-86 28
G-85 41
G-84 16
G-83 50
G-82 42
G-81 60
G-113 19
G-112 32
G-80 26
G-79 17
G-78 20
G-77 48
G-76 13
G-75 16
G-74 31
G-73 20
G-72 19
G-71 38
G-70 19
G-69 10
G-68 31
G-67 32
G-66 34
G-65 32
G-64 13
G-63 60
G-62 14
G-61 13
G-60 12
G-59 45
G-58 96
G-57 40
G-56 19
G-55 19
G-54 158
G-53 16
G-52 30
G-51 28
G-50 9
G-49 29
G-48 90
G-47 34
G-46 20
G-45 23
G-44 9
G-43 7
G-42 9
G-41 28
G-40 96
G-39 30
G-38 31
G-37 157
G-36 34
G-35 48
G-34 98
G-33 29
G-32 29
G-31 23
G-30 58
G-29 15
G-28 23
G-27 1
G-26 5
G-25 3
G-24 23
G-23 35
G-22 19
G-21 14
G-20 13
G-19 161
G-18 22
G-17 41
G-16 31
G-15 34
G-14 20
G-13 17
G-12 5
G-11 14
G-10 58
G-9 36
G-7 25
G-6 141
G-5 23
G-4 4
G-3 30
G-2 28
G-1 27
N
O G- SAMPLE NUMBER RESULTS ppm
O < x̄ +1σ
x̄ +1σ < ⬢ ≤ x̄ +2σ
⬢ > x̄ +2σ
0
200
RAILROAD PROJECT
OTTO Tp
SOIL SAMPLE LOCATION MAP
Cu RESULTS
SCALE 1:5000
FIGURE 3



NUMBER OF SAMPLES	113
MEAN	33.23
STANDARD DEVIATION	26.92



NUMBER OF SAMPLES	113
MEAN	108.59
STANDARD DEVIATION	167.01



NUMBER OF SAMPLES	113
MEAN	60.36
STANDARD DEVIATION	66.12

RAILROAD PROJECT

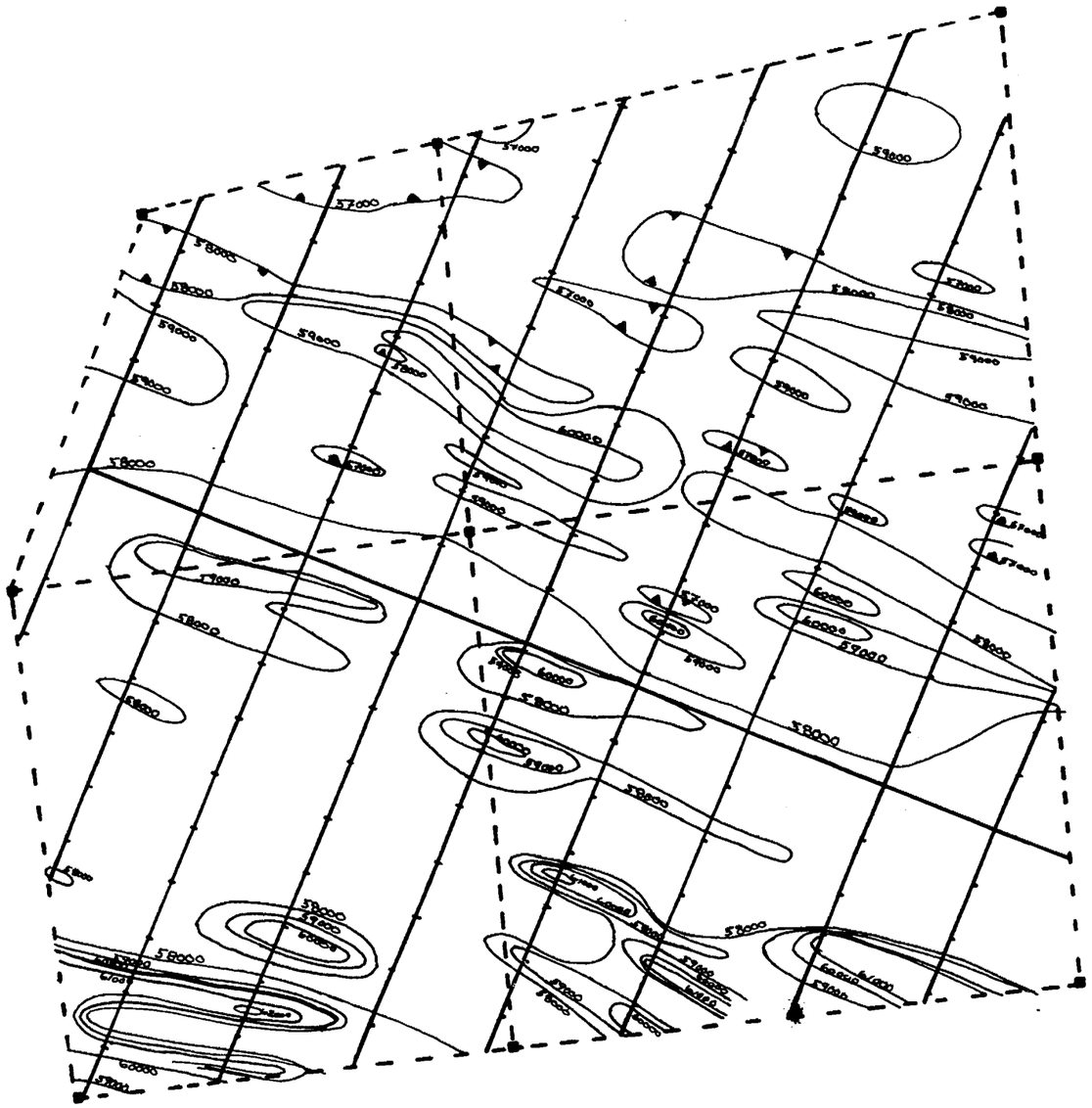
OTTO Tp

HISTOGRAMS

FOR SOIL SAMPLES

Cu Ni Zn

FIGURE 9



RAILROAD PROJECT

OTTO Tp

MAGNETIC CONTOUR MAP

0 200

SCALE 1:5000 | FIGURE 10

APPENDIX I

CHARACTER SAMPLES

C-1 200E/345S
CHLORITE SCHIST
greyish-green, aphanitic, very hard, highly foliated, no reaction to 10% HCl acid, weakly magnetic, pink feldspar banding ranging from .5cm to 1cm wide.

C-2 200E/315S
CHLORITE SCHIST
green-black, aphanitic, moderately soft, highly foliated, no reaction to 10% HCl acid, weakly magnetic, semi massive to disseminated pyrite.

C-3 200E/230S
BASALT
green-black, aphanitic, moderately soft, foliated, no reaction to 10% HCl acid, non magnetic, minor specks of pyrite.

C-4 200E/210S
BASALT
green-black, aphanitic, moderately soft, highly foliated, no reaction to 10% HCl acid, non magnetic.

C-5 200E/180S
CHLORITE SCHIST
green-black, aphanitic, moderately soft, highly foliated, minor reaction to 10% HCl acid due to carbonization, white banding from .01cm to .5cm in width, fine specks of pyrite.

C-6 200E/135S
BASALT
green-black, medium grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic.

C-7 200E/045S
BASALT
green-black, fine grained, moderately soft, sheared, no reaction to 10% HCl acid, non magnetic, minor specks of pyrite.

C-8 625E/130S
BASALT
green-black, aphanitic, moderately soft, massive, no reaction to 10% HCl acid, highly magnetic.

C-9 625E/100S
BASALT
green-black, aphanitic, moderately soft, massive, no reaction to 10% HCl acid, highly magnetic.

C-10 625E/055S
CHLORITE SCHIST
greyish-green, fine grained, very hard, highly foliated, silicified, no reaction to 10% HCl acid except along white calcite bands, non magnetic, fine specks of pyrite.

C-11 625E/010N
BASALT
green, aphanitic, very soft, sheared, no reaction to 10% HCl acid, non magnetic.

C-12 625E/070N
BASALT
greyish-green, aphanitic, very hard, massive, no reaction to 10% HCl acid, non magnetic, minor specks of pyrite.

C-13 625E/120N
BASALT
greyish-green, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-14 525E/215N
BASALT
greyish-green, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-15 525E/115N
BASALT
greyish-green, fine grained, very hard, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-16 525E/105N
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl acid, non magnetic, massive to fine disseminated pyrite.

C-17 525E/195S
BASALT
green-black, fine grained to medium, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, white quartz veining.

C-18 525E/110S
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, white quartz and pink feldspar veining, specks of pyrite.

C-19 525E/030S
BASALT
green, aphanitic, moderately soft, massive, no reaction to 10% HCl acid, non magnetic.

C-20 525E/BL-0/20MW
BASALT
greyish-green, fine grained, very hard, massive, no reaction to 10% HCl acid, non magnetic, fine disseminated pyrite.

C-21 400E/285S
CHLORITE SCHIST
greyish-green, fine grained, very hard, foliated , epidote, white calcite banding reacts to 10% HCl acid, highly magnetic, light-green high silica alteration blebs, fine disseminated pyrite.

C-22 400E/280S/20MW
CHLORITE SCHIST
green-black, fine grained, moderately soft, foliated, no reaction to 10% HCl acid, weak magnetism.

C-23 400E/220S
CHLORITE SCHIST
green-black, fine grained, moderately soft, highly foliated silicified, no reaction to 10% HCl acid, weak magnetism, pink and white banding.

C-24 400E/190S
CHLORITE SCHIST
green-black, fine grained, moderately soft, highly foliated , no reaction to 10% HCl acid, weak magnetism, disseminated pyrite.

C-25 400E/160S
AMPHIBOLITE
black-white, coarse grained, hard, no reaction to 10% HCl acid, medium magnetism.

C-26 400E/125S
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, white quartz and calcite veining, disseminated pyrite.

C-27 400E/085S
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-28 400E/040S
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-29 400E/070N
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic.

C-30 400E/150N
BASALT
green-black, aphanitic, moderately soft, sheared, no reaction to 10% HCl acid, weak magnetism, disseminated pyrite.

C-31 400E/145N
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl acid, strong magnetism, massive pyrite.

C-32 400E/150N
FELSIC TUFF
grey, aphanitic, very hard, highly fractured, no reaction to 10% HCl acid, strong magnetism, disseminated pyrite.

C-33 400E/155N
BASALT
greyish-green, fine grained, moderately soft, slightly altered, reaction to 10% HCl acid due to carbonation, non magnetic, disseminated pyrite.

C-34 400E/415N
BASALT
green-black, fine grained, moderately soft, massive, no reaction to 10% HCl, non magnetic.

C-35 400E/505N
BASALT
green-black, fine-grained, moderately soft, slightly sheared, no reaction to 10% HCl, disseminated to massive pyrite, non-magnetic.

C-36 400E/570N
BASALT
green-black, aphanitic, very-hard, massive, no reaction to 10%HCl, non magnetic, minor specks of pyrite.

C-37 300E/365N
BASALT
green-black, aphanitic, very-hard, massive, no reaction to 10% HCl, non magnetic, minor specks of pyrite.

C-38 300L/265N
BASALT
green-black, aphanitic, very hard, massive, no reaction to 10% HCl except calcite veining, non magnetic, specks of pyrite.

C-39 300E /205N
BASALT
green, aphanitic, moderately soft, sheared, no reaction to 10% HCl acid, some magnetization, minor calcite veining, specks of pyrite.

C-40 300E/185N
BASALT
green-black, fine-grained, moderately soft, massive, no reaction to 10% HCl acid, non magnetic, disseminated pyrite.

C-41 300E/070N
FELSIC TUFF
grey, aphanitic, very hard, highly foliated, no reaction to 10% HCl acid, non-magnetic, disseminated to massive pyrite.

C-42 300E/340S
CHLORITE SCHIST
greyish-green, aphanitic, moderately soft, no reaction to 10% HCl acid, banding of white veining, weakly magnetized, blebs of pyrite.

C-43 300E/295S
CHLORITE SCHIST
grey-green, aphanitic, moderately soft, Reaction to 10% HCl acid due to carbonates, medium magnetism.

C-44 300E/220S
CHLORITE SCHIST
grey-green, fine-grained, slightly sheared, moderately soft, no reaction to 10% HCl acid, weakly magnetized.

C-45 300E/175S
CHLORITE SCHIST
green-black, aphanitic, moderately soft, no reaction to 10% HCl acid, pink and white veining, medium magnetization, specks of pyrite.

C-46 300E/050S
BASALT
black-green, fine-grained, moderately soft, massive, no reaction to 10% HCl acid, non-magnetic, specks of pyrite.

C-47 300E/10S
BASALT
greyish green, aphanitic, moderately soft, massive, reacts with 10% HCl due to carbonization, non-magnetic, specks of fine pyrite with alteration with blebs of carbonate.

C-48 000/460S
CHLORITE SCHIST
greyish-green, fine-grained, very hard, slightly foliated, no reaction to 10% HCl, non-magnetic, disseminated pyrite.

C-49 000/395S
CHLORITE SCHIST
grey-green, aphanitic, foliated, very hard, no reaction to 10% HCl, weakly magnetized, white and pink banding.

C-50 000/315S
BASALT
green-black, fine-grained, moderately soft, massive, no reaction to 10% HCl, pink and white veining, weakly magnetic, specks of pyrite.

C-51 000/280S
BASALT
greenish-black, fine-grained, moderately soft, massive, no reaction to HCl, weakly magnetized, pink & white veining.

C-52 000/205S
BASALT
green black, fine-grained, moderately soft, massive, no reaction to 10% HCl, non-magnetic, white (quartz, calcite) veining. Minor specks of pyrite.

C-53 L000/075S
BASALT
green black, aphanitic, moderately soft, massive, no reaction with 10% HCl acid, non magnetic, minor specks of pyrite.

C-54 L000/050S
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl, Strongly magnetic, massive pyrite, pyrrhotite.

C-55 000/050S
FELSIC TUFF
grey, aphanitic, very hard, no reaction to HCl 10% strongly magnetic, semi massive to massive, pyrite, pyrrhotite.

C-56 000/050
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl , strongly magnetic, disseminated to semi massive pyrite, pyrrhotite.

C-57 L000/0175N
BASALT
green-black, fine grained, moderately soft, no reaction to 10% HCl, non magnetic, very minor specks of sulphide.

C-58 200E/024N
BASALT
green-black, fine-grained, moderately soft, massive, no reaction with 10% HCl, non-magnetic, very minor specks of sulphide.

C-59 200E/040N
BASALT
green-black, fine-grained, moderately soft, massive, no reaction to 10% HCl, non-magnetic, pink & white veining.

C-60 200E/15N
BASALT
green-black, fine-grained, moderately soft, no reaction to 10% HCl, strongly magnetic in spots, pyrrhotite, disseminated to massive sulphide (pyrite, pyrrhotite).

C-61 200E/115N
BASALT
green-black, fine-grained, moderately soft, massive, no reaction to 10% HCl, medium magnetic, fine disseminated pyrite, minor calcite and quartz veining.

C-62 100E/101N
BASALT
green-black, fine grained moderately soft, massive, no reaction to 10% HCl, non-magnetic, quart-veining up to 1 cm wide with pyrite.

C-63 100E/023S
FELSIC TUFF
grey, aphanitic, very hard, no reaction with 10% HCl, non-magnetic, semi massive sulphide.

C-64 100E/370S
CHLORITE SCHIST
greyish-green, aphanitic, moderately soft, no reaction to HCl acid, minor specks of pyrite.

C-65 100E/370S
CHLORITE SCHIST
green-black, fine-grained, moderately soft, no reaction to HCl, weakly magnetic, pink veining reacts with HCl.

C-66 100E/325S
CHLORITE SCHIST
green-black, fine-grained, moderately soft, no reaction with 10% HCl, weak magnetic banded texture.

C-67 100E/265S
BASALT
green-black, aphanitic, moderately soft, no reaction with 10%HCl, non-magnetic, slightly sheared.

C-68 100E/200S
BASALT
green-black, aphanitic, moderately soft, no reaction with 10% HCl, non-magnetic, foliated, specks of pyrite, quartz veining.

C-69 L100E/110S
BASALT
green, black, medium-grained, moderately soft, non reactive to 10% HCl except calcite white blebs, non magnetic.

C-70 200W/135N
BASALT
green, fine-grained, very hard, no reaction with 10% HCl, non magnetic, pink and white veining, specks of pyrite.

C-71 200W/130N
CHLORITE SCHIST
green, aphanitic, very soft, highly sheared, reaction with HCl where highly sheared, very magnetic in certain spots,
minor specks of pyrite.

C-72 200W/130N
BASALT
green, fine-grained, sheared, reacts with HCl 10%, strongly magnetic.

C-73 200W/125N
BASALT
green, fine-grained, moderately soft, reaction with HCl due to carbonization, Highly magnetic.

C-74 200W/100N
BASALT
greyish green, fine-grained, very hard, no reaction with 10% HCl, non-magnetic, disseminated pyrite, pink and white veining.

C-75 200W/060N
BASALT
greyish green, fine-grained, very hard, no reaction with 10% HCl, non-magnetic, disseminated pyrite, pink and white veining.

C-76 200W/190S
CHLORITE SCHIST
grey green, fine-grained, very hard, no reaction to 10% HCl, non-magnetic.

C-77 200W/095S
BASALT
green-black, fine grained, very hard, no reaction to 10% HCl, magnetic in spots, specks of pyrite.

C-78 200W/060S
BASALT
green-black, aphanitic, very hard, no reaction to HCl, weakly magnetic, specks of pyrite, bands of light green, silicious alteration, white blebs.

C-79 200W/031S
BASALT
green, fine-grained, very hard, no reaction from HCl, non magnetic, pink (calcite) and white quartz veining, specks of pyrite.

C-80 BL0
FELSIC TUFF
grey, aphanitic, very hard, no reaction from 10% HCl, medium magnetism in spots, very fine to coarse disseminated pyrite.

C-81 BLO/125W
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl, highly magnetic, disseminated to massive pyrite, pyrrhotite.

C-82 BLO/125W
FELSIC TUFF
grey, aphanitic, very hard, no reaction to 10% HCl, highly magnetic, disseminated to semi-massive pyrite, pyrrhotite. chalcopyrite blebs.

C-83 100W/025N
BASALT
green-black, aphanitic, moderately soft, sheared, no reaction from 10% HCl, non-magnetic, specks of pyrite.

C-84 100W/050N
BASALT
green-black, aphanitic to fine-grained, very hard, no reaction from 10% HCl, non-magnetic, specks of pyrite, chalcopyrite.

C-85 100W/118N
BASALT
green-black, aphanitic, very hard, no reaction to 10% HCl, magnetic in some spots, specks of pyrite.

C-86 100W/130N
BASALT
green-black, aphanitic, very hard, no reaction with 10% HCl, non-magnetic, specks of pyrite.

C-87 100W/170N
BASALT
green-black, aphanitic, very hard, no reaction with 10% HCl, non-magnetic, minor pink and white veining, disseminated pyrite.

C-88 100W/025S
FELSIC TUFF
grey, aphanitic, very hard, no reaction to HCl 10%, highly magnetic, very fine disseminated pyrite to pyrite in stringer form.

C-89 100W/120S
BASALT
grey-green, fine grained, very hard, no reaction to HCl 10%, non-magnetic disseminated pyrite.

C-90 000/345S
CHLORITE SCHIST
grey-green, aphanitic, very hard, no reaction to HCl 10% medium magnetism, minor calcite veining.

APPENDIX #II

SOIL SAMPLES DESCRIPTION AND LOCATION

G-1 L-625E/160S

Grey, high clay content, very pebble rich, angular to subangular up to 1.5 cm.

G-2 L-625E/100S

Light brown, high sand content, very pebble rich, subangular to rounded.

G-3 L-625E/050S

Light brownish grey, high clay content, minor pebbles, subangular.

G-4 L-625E/BL-O

Light brown, minor clay content, minor pebbles, subangular.

G-5 L-625E/050N

Light grey; minor clay content, very pebble rich, angular to subangular.

G-6 L-625E/100N

Light grey, minor clay content, minor pebbles, subangular.

G-7 L-625E/150N

Dark brown, minor clay content, minor pebbles, subangular.

G-8 L-625E/200N

Light brown, minor clay content, very pebble rich, angular to subangular.

G-9 L-525E/200S

Light brown, minor clay content, very pebble rich , angular to subangular, range up to 1.5 cm. in size.

G-10 L-525E/150S

Light brown; minor clay content, very pebble rich, subangular to subrounded.

G-11 L-525E/100S

Light brown, minor clay content, minor pebble rich, subangular.

G-12 L-525E/050S

Light brown grey, minor clay content, minor pebble rich, subangular.

G-13 L-525E/BL-0

Light brown, minor clay rich, very pebble rich, subangular.

G-14 L-525E/0+50N

Light brown, minor clay content, very pebble rich, angular to subangular.

G-15 L-525E/100N

Brownish orange, slightly oxidized, pebbles angular.

G-16 L-525E/150N

Light brown, minor clay content, very pebble rich, subangular to subrounded ranging to 1 cm.

G-17 L-525E/200N

Light brown, minor clay content, minor pebbles, subrounded.

G-18 L-525E/250N

Light brown, very high clay content, pebbles subangular to subrounded ranging to 1 cm.

G-19 L-525E/300N

Light brown, very high clay content, minor subrounded pebbles.

...2

G-20 L-400E/275S

Light brown, minor clay content, minor angular pebbles.

G-21 L-400E/250S

Grey, very high clay content, minor pebbles, subangular to subrounded.

G-22 L-400E/220S

Light grey, very high clay content, minor pebbles, subangular.

G-23 L-400E/150S

Light brown, minor clay content, very pebble rich, subangular to subrounded.

G-24 L-400E/100S

Light brown, high clay content, very pebble rich, subangular to subrounded.

G-25 L-400E/050S

Light brown, minor clay content, minor pebbles, subangular.

G-26 L-400E/BL-0

Light brown, minor clay content, minor pebbles, subangular.

G-27 L-400E/050N

Grey, very high clay content, minor subangular pebbles.

G-28 L-400E/100N

Brownish grey, very high clay content, very pebble rich, angular to subangular.

G-29 L-400E/150N

Orange, oxidized, minor clay content, minor pebbles, subangular.

G-30 L-400E/200N

Brown, minor clay content, pebbles angular to subangular.

G-31 L-400E/250N

Light brown, minor clay content, minor pebbles, subangular to subrounded.

G-32 L-400E/300N

Light brown, minor clay content, minor pebbles, subangular.

G-33 L-400E/350N

Light brown, minor clay content, pebbles angular.

G-34 L-400E/400N

Light brownish grey, minor clay content. Pebbles angular to subangular up to 1 cm in size.

G-35 L-400E/450N

Light grey, very high clay content, minor pebbles, angular.

G-36 L-400E/500N

Light grey, very high clay content, minor pebbles, subangular.

G-37 L-400E/550N

Light grey brown, very high clay content. Minor pebbles subangular.

G-38 L-300E/300S

Light brown, minor clay content, pebbles subangular to subrounded.

G-39 L-300E/250S

Light brown, minor clay content, pebbles subangular.

---- L-300E/200S

No sample available due to swamp.

G-40 L-300E/150S

Dark brownish orange, minor clay content, pebbles subangular.

G-41 L-300E/100S

Light brown, minor clay content, pebbles subangular.

G-42 L-300E/050S

Light grey, high clay content, pebbles subangular.

G-43 L-300E/BL-0

Light brown, minor clay content, pebbles subangular.

G-44 L-300E/050N

Brown, high sand content, very pebble rich, subrounded to rounded.

G-45 L-300E/100N

Light brown, snady, very pebble rich, subangular to subrounded.

G-46 L-300E/150N

Light grey, high clay content, very pebble rich. Subangular to subrounded.

G-47 L-300E/200N

Brown, minor clay content, pebbles subangular.

---- L-300E/250N

No sample due to swamp.

---- L-300E/300N

No sample due to swamp.

G-48 L-300E/350N

Grey, High clay content, pebbles subangular.

G-49 L-300E/400N

Brown, sandy, high pebble content, subangular to subrounded.

G-50 L-200E/345S

Grey, high clay content, minor pebbles subangular.

G-51 L-200E/300S

Light brown, minor clay content, pebbles subangular.

G-52 L-200E/250S

Brown, minor clay content, pebbles angular to subangular.

G-53 L-200E/200S

Light brown, minor clay content, very pebble rich, subangular to subrounded.

G-54 L-200E/150S

Light grey, high clay content, minor pebbles, subangular.

G-55 L-200E/100S

Grey, high clay content, pebbles subangular.

G-56 L-200E/050S

Light grey, high clay content, pebbles subangular.

G-57 L-200E/BL-0

Light brown, minor clay content, pebbles subangular to subrounded.

G-58 L-200E/050N

Dark brownish orange, minor clay content, pebbles subangular.

G-59 L-200E/100N

Light brownish grey, minor clay content, minor angular pebbles.

G-60 L-200E/150N

Brownish orange, minor clay content, very pebble rich angular to subangular.

G-61 L-200E/200N

Brown, minor clay content, pebbles subangular to subrounded.

G-62 L-200E/250N

Brownish orange, minor clay content, very pebble rich, angular to subangular.

G-63 L-200E/300N

Light brown grey, sandy, very pebble rich, subrounded.

G-64 L-200E/350N

Light brown, high clay content, minor pebbles, subangular.

G-65 L-100E/446S

Light brownish grey, minor clay content, minor pebbles, subangular.

G-66 L-100E/400S

Light grey, high clay content, minor subangular pebbles.

G-67 L-100E/350S

Light brown, sandy, very pebble rich, subrounded to rounded.

G-68 L-100E/300S

Light grey, high clay content, pebbles subangular to subrounded.

G-69 L-100E/250S

Grey, very high clay content, pebbles subangular.

G-70 L-100E/200S

Brown, minor clay content, pebbles subrounded.

G-71 L-100E/150S

Brown, minor clay content, pebbles subangular.

G-72 L-100E/100S

Brown, minor clay content, pebbles subangular.

G-73 L-100E/050S

Light brown, minor clay content, pebbles subangular.

G-74 L-100E/BL-0

Light brown, high clay content, minor subangular pebbles.

G-75 L-100E/050N

Light brown, minor clay content, pebbles subangular.

G-76 L-100E/100N

Light brown, minor clay content, pebbles subangular.

G-77 L-100E/150N

Dark brown, minor clay rich, minor subrounded pebbles.

G-78 L-100E/200N

Grey, high clay content, pebbles subrounded.

G-79 L-100E/250N

Grey, very high clay content, minor pebbles, subangular to subrounded.

G-80 L-100E/300N

Light brown, high clay content, minor subrounded pebbles.

G-112 L-000/500S

Brownish black, minor clay content, very pebble rich, subangular to subrounded.

G-113 L-000/450S

Light brown, very high clay content, minor subangular pebbles.

G-81 L-000/400S

Light brown, minor clay content, pebbles subangular.

G-82 L-000/350S

Light brown, minor clay content, pebbles subangular to subrounded.

G-83 L-000/300S

Light brown, minor clay content, very pebble rich, angular to subangular.

G-84 L-000/250S

Light brownish grey, minor clay content, pebbles subangular to subrounded.

G-85 L-000/200s

Brownish grey, minor clay content, pebbles angular to subangular

G-86 L-000/150S

Brown. minor clay content, angular to subangular.

G-87 L-000/100S

Brown, minor clay content, pebbles subangular to rounded.

G-88 L-000/050S

Brownish grey, high clay content, minor subangular pebbles.

G-89 L-000/BL-0

Dark brownish orange, minor clay content, pebble rich, angular to subangular.

G-90 L-000/050N

Light brown, minor clay content, very pebble rich, subangular to subrounded.

G-91 L-000/100N

Light grey, minor clay content, pebbles subangular to subrounded.

G-92 L-000/150N

Light brown, minor clay content, very pebble rich, subangular to subrounded.

G-93 L-000/200N

Brown, minor clay content, pebbles subangular.

G-94 L-100W/200S

Greyish to black, minor clay content, minor angular to subangular pebbles.

G-95 L-100W/150S

Brown, minor clay content, pebbles angular to subangular.

G-96 L-100W/100S

Brown, minor clay content, pebbles angular to subangular.

G-97 L-100W/050S

Brown, sandy, minor subangular pebbles.

G-98 L-100W/BL-0

Brown, minor pebbles angular to 2 cm.

G-99 L-100W/050N

Brown, sandy, minor angular pebbles.

G-100 L-100W/100N

Dark brown, minor clay content, pebbles subangular to subrounded.

G-101 L-100W/150N

Grey, very high clay content, pebbles subrounded.

G-102 L-100W/200W

Light brown, minor clay content, pebbles angular to subangular.

G-103 L-100W/250N

Light brown, high clay content, minor pebbles subangular to subrounded.

G-104 L-200W/190S

Light brown, minor clay content, very pebble rich, subrounded.

G-105 L-200W/150S

Brown, minor clay content, minor subangular pebbles.

G-106 L-200W/100S

Light grey, very high clay content, minor subangular pebbles.

G-107 L-200W/050S

Light brown, high clay content, minor subangular pebbles.

G-108 L-200W/BL-0

Brown, minor clay content, pebbles subangular to subrounded.

G-109 L-200W/050N

Light grey, very high clay content, minor subangular pebbles.

G-110 L-200W/100N

Brown, minor clay rich, minor subangular pebbles.

G-111 L-200W/150N

Grey, very high clay content, pebbles subrounded.

APPENDIX # III

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-2004-RG1

Company: **JEFF ST JEAN** Date: JAN-04-91

Project: Copy 1. HOLD

Attn:

We hereby certify the following Geochemical Analysis of 24 ROCK samples submitted JAN-02-91 by JEFF ST JEAN.

Sample Number	Au ppb	Ag ppm	Cu ppm	Ni ppm	Zn ppm
C-2	Nil	0.1	81	35	57
C-13	Nil	0.1	200	69	63
C-14	Nil	0.1	83	69	42
C-16	Nil	0.1	147	81	49
C-18	Nil	0.1	66	94	26
C-20	Nil	0.1	128	418	24
C-22	Nil	0.1	97	25	27
C-24	Nil	0.1	70	34	40
C-26	Nil	0.1	83	78	26
C-31	Nil/Nil	0.3	202	150	201
C-32	Nil	0.1	98	41	22
C-33	Nil	0.1	115	114	92
C-35	Nil	0.1	51	244	41
C-40	Nil	0.1	64	66	64
C-41	Nil	0.1	125	32	46
C-54	10/10	0.7	827	538	533
C-55	Nil	0.8	1600	323	932
C-56	Nil	0.2	345	388	50
C-63	Nil	0.1	70	29	35
C-74	Nil	0.1	156	48	23
C-80	Nil	0.1	84	82	1070
C-81	Nil	0.1	149	117	749
C-82	Nil	0.2	254	104	623
C-88	Nil	0.1	118	87	136

Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0

Telephone (705) 642-3244 FAX (705)642-3300

APPENDIX # IV

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Established 1928

Geochemical Analysis Certificate

0W-1971-SG1

Company: **JEFF ST. JEAN**

Date: DEC-21-90

Project:

Copy 1. 14 ATKINS AVE KIRKLAND LAKE P2N 3N5

Attn:

2. PICK UP RESULTS 567-6662

We hereby certify the following Geochemical Analysis of 113 SOILS samples submitted DEC-19-90 by .

Sample Number	Ag ppm	Cu ppm	Ni ppm	Zn ppm
G-1	0.1	27	77	43
G-2	0.1	28	152	36
G-3	0.1	30	13	30
G-4	0.1	4	171	42
G-5	0.1	23	37	90
G-6	0.1	14	21	44
G-7	0.1	25	12	29
G-8	0.1	24	25	23
G-9	0.1	36	144	48
G-10	0.1	58	349	68
G-11	0.3	14	67	263
G-12	0.1	5	15	30
G-13	0.1	17	49	30
G-14	0.1	20	54	47
G-15	0.1	34	27	84
G-16	0.1	31	29	41
G-17	0.1	41	135	26
G-18	0.1	22	51	25
G-19	0.1	16	12	23
G-20	0.1	13	63	82
G-21	0.1	14	31	22
G-22	0.1	19	61	32
G-23	0.1	35	128	75
G-24	0.1	23	130	46
G-25	0.1	3	25	32
G-26	0.1	5	25	29
G-27	0.1	1	6	8
G-28	0.1	23	115	73
G-29	0.1	15	11	15
G-30	0.1	58	26	141

Certified by Donna Gardner

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Established 1928

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-1971-SG1

Company: JEFF ST. JEAN
Project:
Attn:

Date: DEC-21-90
Copy 1. 14 ATKINS AVE KIRKLAND LAKE P2N 3N5
2. PICK UP RESULTS 567-6662

We hereby certify the following Geochemical Analysis of 113 SOILS samples submitted DEC-19-90 by .

Sample Number	Ag ppm	Cu ppm	Ni ppm	Zn ppm
G-31	0.1	23	26	17
G-32	0.1	29	40	30
G-33	0.1	29	88	44
G-34	0.1	98	594	50
G-35	0.1	48	329	51
G-36	0.1	34	33	53
G-37	0.1	57	28	57
G-38	0.1	31	61	58
G-39	0.1	30	284	48
G-40	0.1	96	69	55
G-41	0.1	28	58	41
G-42	0.1	9	122	33
G-43	0.1	7	30	36
G-44	0.1	9	441	34
G-45	0.1	23	89	93
G-46	0.1	20	5	63
G-47	0.1	34	15	28
G-48	0.1	90	467	44
G-49	0.1	29	207	28
G-50	0.1	9	11	26
G-51	0.1	28	46	39
G-52	0.1	30	60	71
G-53	0.1	16	51	41
G-54	0.1	158	1210	227
G-55	0.1	19	67	24
G-56	0.1	19	86	42
G-57	0.1	40	166	592
G-58	0.1	96	43	114
G-59	0.1	45	821	170
G-60	0.1	12	54	30

Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244. FAX (705)642-3300

Established 1928

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-1971-SG1

Company: JEFF ST. JEAN

Project:

Attn:

Date: DEC-21-90

Copy 1. 14 ATKINS AVE KIRKLAND LAKE P2N 3N5

2. PICK UP RESULTS 567-6662

We hereby certify the following Geochemical Analysis of 113 SOILS samples submitted DEC-19-90 by .

Sample Number	Ag ppm	Cu ppm	Ni ppm	Zn ppm
G-61	0.1	13	45	23
G-62	0.1	14	31	30
G-63	0.1	60	237	27
G-64	0.1	13	40	21
G-65	0.1	32	40	78
G-66	0.1	34	46	64
G-67	0.1	32	47	23
G-68	0.1	31	46	28
G-69	0.1	10	20	22
G-70	0.1	19	27	30
G-71	0.1	38	187	64
G-72	0.1	19	49	53
G-73	0.1	20	32	45
G-74	0.1	31	44	55
G-75	0.1	16	12	12
G-76	0.1	13	44	19
G-77	0.1	48	44	25
G-78	0.1	20	135	24
G-79	0.1	17	65	31
G-80	0.1	26	287	61
G-81	0.1	60	58	77
G-82	0.2	42	52	46
G-83	0.1	50	84	44
G-84	0.1	16	36	33
G-85	0.1	41	43	56
G-86	0.1	28	43	90
G-87	0.1	32	41	81
G-88	0.1	77	88	80
G-89	0.1	30	16	41
G-90	0.1	19	41	27

Certified by Donna Gardner

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Established 1928

Swastika Laboratories

A Division of Assayers Corporation Ltd.

Assaying - Consulting - Representation

Geochemical Analysis Certificate

0W-1971-SG1

Company: JEFF ST. JEAN
Project:
Attn:

Date: DEC-21-90
Copy 1. 14 ATKINS AVE KIRKLAND LAKE P2N 3N5
2. PICK UP RESULTS 567-6662

We hereby certify the following Geochemical Analysis of 113 SOILS samples submitted DEC-19-90 by .

Sample Number	Ag ppm	Cu ppm	Ni ppm	Zn ppm
G-91	0.1	11	51	27
G-92	0.1	38	165	53
G-93	0.1	22	597	71
G-94	0.1	176	244	72
G-95	0.1	23	65	214
G-96	0.1	42	79	203
G-97	0.1	44	42	138
G-98	0.1	41	12	39
G-99	0.1	26	12	19
G-100	0.1	38	45	45
G-101	0.1	34	196	58
G-102	0.1	59	380	47
G-103	0.1	15	89	26
G-104	0.1	22	50	45
G-105	0.2	67	98	123
G-106	0.1	20	41	53
G-107	0.1	27	56	64
G-108	0.1	46	43	56
G-109	0.1	21	24	45
G-110	0.1	69	75	105
G-111	0.2	88	158	70
G-112	0.1	32	63	55
G-113	0.1	19	44	67

Certified by Donna Gardner

P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244, FAX (705) 642-3300

2.13994

Ministry of Northern Development and Mines

DOCUMENT No. W9108.00099

42A01SE0108 2.13994 OTTO

900

Report of Work
Mining Act
(Geophysical, Geological and Geochemical Surveys)

- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch:

Type of Survey(s)	Mining Division	Township or Area
GEOLOGY	LARDER LAKE	OTTO

Recorded Holder(s)	Prospector's Licence No.
JEFF ST JEAN 2.13994	K22086

Address	Telephone No.
14 ATKINS AVE KIRKLAND LAKE	567-6662

Survey Company: JEFF ST JEAN

Name and Address of Author (of Geo-Technical Report): JEFF ST JEAN

Date of Survey (from & to): 28 Day | 08 Mo | 90 Yr — 26 Day | 10 Mo | 90 Yr

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	· Electromagnetic	
	· Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	· Other	
	Geological	40
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	· Electromagnetic	
	· Magnetometer	
	· Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys	Electromagnetic	
	Magnetometer	
	Other	

Total miles flown over claim(s).

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number
L	1111443				
L	1111444				
L	1111445				
L	1111446				

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MAR 15 1991
MINING LANDS SECTION
MINISTRY OF NORTHERN DEVELOPMENT AND MINES
RES GEOLOGIST OFFICE
KIRKLAND LAKE
RECEIVED
JUL 29 1991

Total number of mining claims covered by this report of work: 4

Date: FEB 28/91 — Recorded Holder or Agent (Signature): Jeff St Jean

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true

Name and Address of Person Certifying: JEFF ST JEAN 14 ATKINS AVE KIRKLAND LAKE

Telephone No.	Date	Certified By (Signature)
P2N 3N5 567-6662	FEB 28/91	Jeff St Jean

Received Stamp

LARDER LAKE MINING DIVISION
91 MAR 1 PM 1 37

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Total Days Cr. Recorded	Date Recorded	Mining Recorder
160	March/91	for J Bottrill
	Date Approved as Recorded	Provincial Manager, Mining Lands
	July 11/91	for C Gashinski

1362 (89/06)

Ministry of Northern Development and Mines
Ontario

DOCUMENT No. W 9108. 00100

Instructions
- Please type or print.
- Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
- If number of mining claims traversed exceeds space on this form, attach a list.
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Report of Work
Mining Act (Geophysical, Geological and Geochemical Surveys)

Type of Survey(s)	Mining Division	Township or Area
MAGNETOMETER	LARDER LAKE	OTTO

Recorded Holder(s)	Prospector's Licence No.
JEFF ST JEAN 2.13994	K 22086

Address	Telephone No.
14 ATKINS AVE KIRKLAND LAKE	567-6662

Survey Company: JEFF ST JEAN

Name and Address of Author (of Geo-Technical Report): JEFF ST JEAN

Date of Survey (from & to): 13 12 90 (Day | Mo. | Yr.) — 15 12 90

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical · Electromagnetic	
	Geophysical · Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical · Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical · Electromagnetic	
	Geophysical · Magnetometer	
	Geophysical · Other	
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Other	

Total miles flown over claim(s).

Date	Recorded Holder or Agent (Signature)
FEB 28/91	Jeff St Jean

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number
L	1111443				
L	1111444				
L	1111445				
L	1111446				

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MAR 15 1991
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 4

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true.

Name and Address of Person Certifying	Telephone No.	Date	Certified By (Signature)
JEFF ST JEAN 14 ATKINS AVE KIRKLAND LAKE P2N 3N5	567-6662	FEB 28/91	Jeff St Jean

Received Stamp

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Total Days Cr. Recorded	Date Recorded	Mining Recorder
80	March 1/90	per J Bettinger
	Date Approved as Recorded	Provincial Manager, Mining Lands
	July 11/91	Ron C Gashinski

LARDER LAKE MINING DIVISION
91 MAR 1 PM 1 37

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M.L.

Ministry of Northern Development and Mines

Ontario

DOCUMENT No. W9108. 00101

Report of Work

Mining Act

(Geophysical, Geological and Geochemical Surveys)

Instructions
- Please type or print
- Refer to Section 77, the Mining Act for assessment work requirements and maximum credits allowed per survey type.
- If number of mining claims traversed exceeds space on this form, attach a list.
- Technical Reports and maps in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Type of Survey(s): GEOCHEMICAL	Mining Division: LARDER LAKE	Township or Area: OTTO
Recorded Holder(s): JEFF ST JEAN 2.13994 ? 13994		Prospector's Licence No.: K 22086
Address: 19 ATKINS AVE KIRKLAND LAKE		Telephone No.: 567-6662
Survey Company: JEFF ST JEAN		
Name and Address of Author (of Geo-Technical Report): JEFF ST JEAN		Date of Survey (from & to): 27 10 90 (Day Mo Yr) 04 10 90 (Day Mo Yr)

Credits Requested per Each Claim in Columns at right

		Days per Claim
Special Provisions For first survey: Enter 40 days (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Other	
	Geological	
	Geochemical	20
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Other	
	Geological	
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.		Days per Claim
	Electromagnetic	
	Magnetometer	
	Other	
Total miles flown over claim(s).		

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number	Mining Claim Prefix	Mining Claim Number
L	1111943				
L	1111444				
L	1111445				
L	1111446				

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21-01
MAR 15 1991
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 4

Date	Recorded Holder or Agent (Signature)
FEB 28/91	Jeff St Jean

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in this Report of Work, having performed the work or witnessed same during and/or after its completion and annexed report is true

Name and Address of Person Certifying	Telephone No.	Date	Certified By (Signature)
JEFF ST JEAN 19 ATKINS AVE KIRKLAND LAKE P2N 3N5	567-6662	FEB 28/91	Jeff St Jean

Received Stamp

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Total Days Cr. Recorded	Date Recorded	Mining Recorder
80	March 1/91	
	Date Approved as Recorded	Provincial Manager, Mining Lands
	July 11/91	Ron Gashinski

LARDER LAKE MINING DIVISION
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Technical reports RECEIVED

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ML

Ministry of Northern Development and Mines

DOCUMENT No. W9108. 00102

Mining Act

Report of Work
(Expenditures, Subsection 77(19))

Instructions
- Please type or print.
- Refer to Subsection 77(19), the Mining Act for assessment work requirements and maximum credits allowed under this Subsection.
- Technical Reports, maps and proof of expenditures in duplicate should be submitted to Mining Lands Section, Mineral Development and Lands Branch.

Type of Work Performed	Mining Division	Township or Area
ASSAY	LARDER LAKE	OTTO

Recorded Holder: JEFF ST JEAN — Prospector's Licence No.: K 22086

Address: 14 ATKINS AVE KIRKLAND LAKE — Telephone No.: 567-6662

2.13994

Work Performed By: JEFF ST JEAN

Name and Address of Author (of Submission): JEFF ST JEAN

Date When Work was Performed: From: 13 10 90 (Day, Mo., Yr.) To: 04 11 90 (Day, Mo., Yr.)

All the work was performed on Mining Claim(s): Indicate no. of days performed on each claim. *See Note No. 1 on reverse side

Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days	Mining Claim	No. of Days
1111443	27	1111444	27	1111445	27	1111446	30.7				

Instructions
Total days credits may be distributed at claim holder's choice. Enter number of days credits per claim in the expenditure days credit column (below).

Calculation of Expenditure Days Credits: Total Expenditures $ 1675.69 ÷ 15 = Total Days Credits 111.7

Total Number of Mining Claims Covered by this Report of Work: 4

Mining Claims (List in numerical sequence). If space is insufficient, attach schedules with required information

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
L	1111443	27									
L	1111444	27									
L	1111445	27									
L	1111446	27									

RECEIVED 21-01 MAR 15 1991 MINING LANDS SECTION

Total Number of Days Performed	Total Number of Days Claimed	Total Number of Days to be Claimed at a Future Date
111.7	108	3.7

Certification of Beneficial Interest *See Note No. 2 on reverse side

I hereby certify that, at the time the work was performed, the claims covered in this report of work were recorded in the current recorded holder's name or held under a beneficial interest by the current recorded holder.

Date: FEB 28/91 — Recorded Holder or Agent (Signature): Jeff St Jean

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Address of Person Certifying: JEFF ST JEAN 14 ATKINS AVE KIRKLAND LAKE P2N 3N5

Telephone No.: 567-6662 — Date: FEB 28/91 — Certified By (Signature): Jeff St Jean

Received Stamp: LARDER LAKE MINING DIVISION 91 MAR 1 PM 1 37 RECEIVED

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Total Days Cr. Recorded	Date Recorded	Mining Recorder
111.7	March 1/91	
	Date Approved as Recorded: July 11/91	Provincial Manager, Mining Lands

878 (89/06)