42A01SE0056 2.15419 OTTO

RESULTS OF MAXI-PROBE E.M. SURVEY
AT OTTO TOWNSHIP., ONTARIO
LARDER LAKE MINING DIVISION
FOR
FERNAND RIVARD

2.15419

S.J. Carmichael Consultants
Kirkland Lake, Ontario
GEOEM INC.
OPAP# OP93-270

Nov., 1993
NTS 42/SE

42A01SE0056 2.15419 OTTO

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Map 1 - Otto Twp. Surface Geology With Maxi-Probe Anomalies

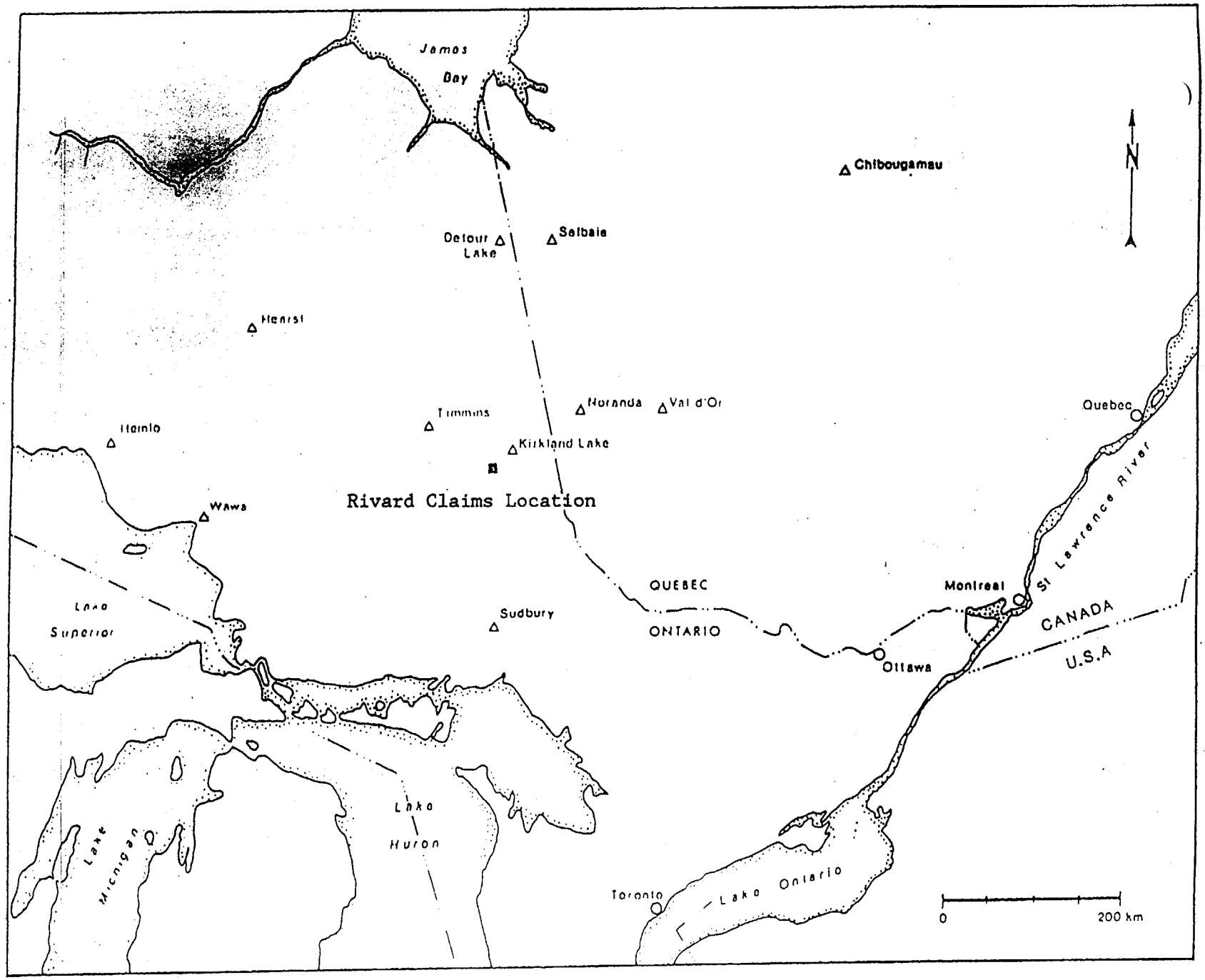


Figure 1 General Location Plan

Results of Maxi-Probe E.M. Survey
At Otto Twp., Ontario
Larder Lake Mining Division
for
Fernand Rivard

INTRODUCTION

This report on Fernand Rivard's Otto Township mining exploration property has been prepared by S.J. Carmichael and Mirnal K. Gosh at the request of Mr. Rivard. It is summary of results obtained by completing a multi-frequency E.M. survey by GEOEM Inc. of Toronto.

Information on the property is derived from the records of the Ministry of Northern Development and Mines and publications by the Ontario Geological Survey. The survey was performed during four days in the later part of June, 1992. The operator of the Maxi-Probe equipment was J. Whelan of Kirkland Lake.

PROPERTY LOCATION, ACCESS AND FACILITIES

The Rivard claim group is located in the north central portion of Otto Township (NTS 41A/SE), District of Timiskaming and within the Larder Lake Mining Division, approximately six kilometres west of Kirkland Lake. Access to the property is through Culver Park, located immediately west of the town of Swastika. A narrow trail, reconditioned by Mr. Rivard leads southeast a distance of two kilometres to the claims. The Blanche River flows through the south portion of the group and a beaver pond located in the middle of the property provides an ample water supply for diamond drilling.

TOPOGRAPHY

The north section of the group is covered by rocky bedrock

exposures with a 200' south-facing cliff located just north of the baseline. The central portion is covered by lacustrine clay deposits cut by several deep ravines. These ravines were dry in the fall but may be active with running creeks during spring run off. Bedrock exposure occurs over the south portion towards the Blanche River. Murdock Creek empties into the Blanche River at the east boundary of the claims. The Maxi-Probe survey (1992) indicated that the overburden is generally less than thirty feet in depth over the entire property.

LAND TENURE AND OWNERSHIP

The Otto Township property comprises 10 staked contiguous unsurveyed mining claims with a total area of approximately 400 acres. The claim numbers, recorded dates and applied assessment credits are listed in the following table:

CLAIM NUMBER	RECORDED DATE	APPLIED CREDITS	COMMENTS
L-982689	July 12, 1987	N/A	In good standing until July 12, 2000
L-982690	July 21, 1987	N/A	In good standing until July 21, 2000
L-982691	July 21, 1987	N/A	In good standing until July 21, 2000
L-982692	July 21, 1987	N/A	In good standing until July 21, 2000
L-982693	July 28, 1987	N/A	In good standing until July 28, 2000
L-982694	July 22, 1987	N/A	In good standing until July 22, 2000
L-982695	July 25, 1987	N/A	In good standing until July 25, 2000
L-982696	July 25, 1987	N/A	In good standing until July 25, 2000
L-982697	August 10, 1987	N/A	In good standing until Aug. 10, 2000
L-982698	August 10, 1987	N/A	In good standing until Aug. 10, 2000

Enough work has been applied to keep the claims in good standing until the year 2000.

PROPERTY HISTORY

The first government map published covering the present Rivard group was by J. Thomson, 1948 titled Geology of Teck Township and the Kenogami Lake Area, map No. 1946-1. The area was mapped again in 1967-68 by H. Lovell (Map No. 2239 - Eby-Otto Area). Lovell reported the outcrops to be basalt to andesite in composition with

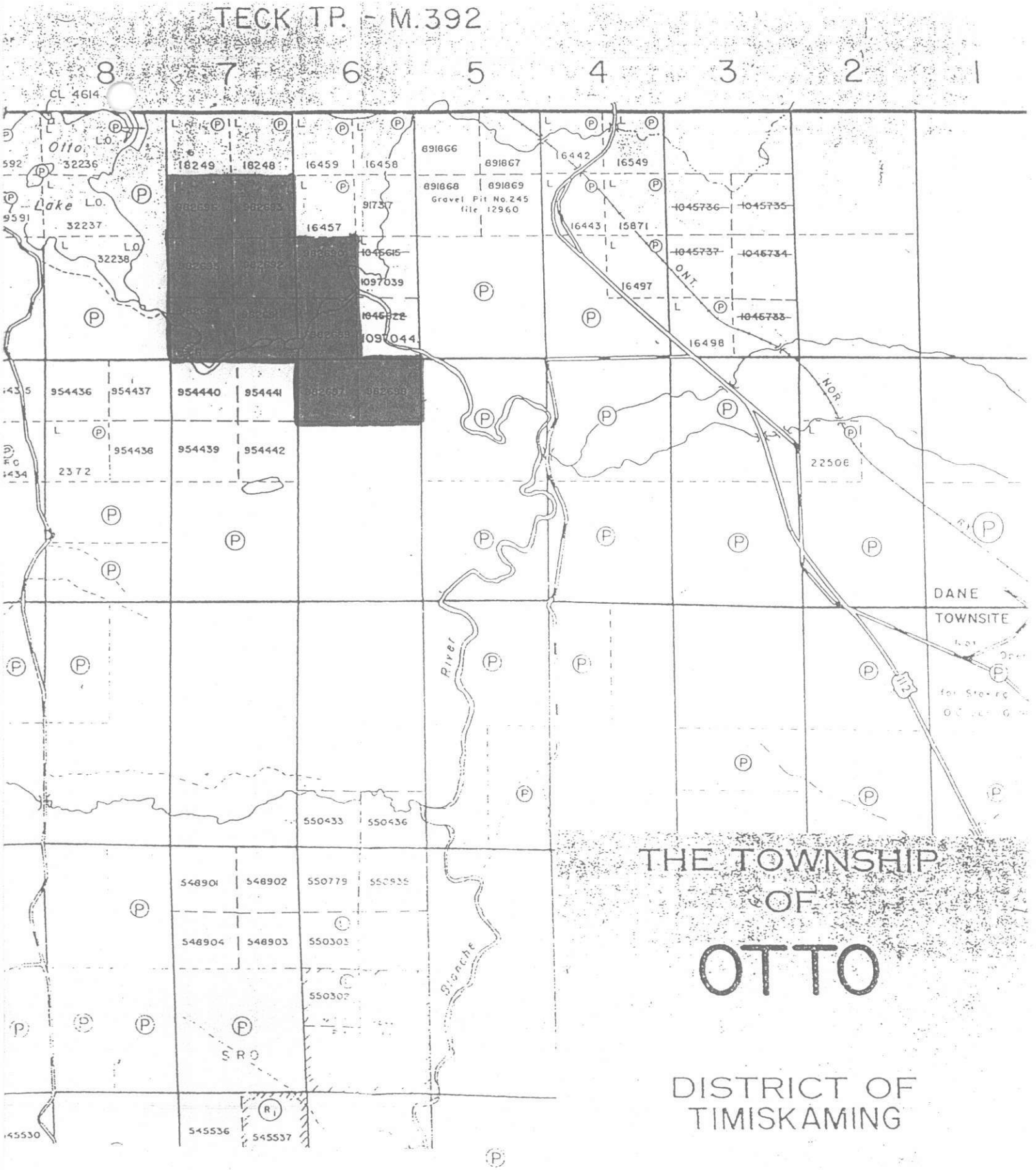


Figure 2

Claim Location Plan 1"=1/2 Mile

two northeast tending faults passing through the present claims. Further mapping by L.S. Jenson was completed in the late 1980's but never published.

Exploration on the claims has been limited in the past. The only recorded work was by Chavigny Gold Mines Limited which completed three diamond drill holes. The first two were completed on present claim 982690 in July of 1948. The first hole was drilled at a dip of -80 deg. and a southwest azimuth. Altered greenstone was intersected throughout with alteration and shearing intersected from 403.8 to 407.0'. A fault was also intersected at 638.0' and widespread narrow carbonate stringers were intersected to the end of the hole which was drilled to a depth of 1043 feet. An assay of 0.04 oz/ton Au was reported from this hole in rusty altered greenstone from 202.0 to 202.5'. The second hole, drilled at a -70 deg. dip and an azimuth of 250 deg. reached a depth of 945' with negligible results. A third hole was drilled on present claim 982694 intersected a major fault with a sludge assay of 0.02 oz/ton Au from 230.0 to 237.5'. Details from this hole are lacking. All collars from the Chavigny drilling were located during the 1991 geological mapping program. The property remained dormant until being staked by Rivard in 1987. Rivard completed one drill hole (EX) in 1989 (OT-89-1) at 0+75E, 0+50S, close to the first two Chavigny holes. The Rivard hole intersected mixed komatiitic to tholeiitic flows and returned an assay on 0.107 oz/ton Au over 13.0'. Core recovery from this section was poor and the sample was from a composite chip sample. This assay could not be reproduced

from the remaining core leading to some question to its validity. Rivard also completed some stripping and washing in the area of 0+00, 4+00S which uncovered a series of faults, shears and interflow graphitic/carbonaceous sediments. No significant gold assays were found. In 1990, Rivard completed an additional drill hole located at 7+50W, 3+75S. No significant gold assays were reported from this hole.

In 1992, Rivard completed a total of 3.5 km of Maxi-Probe EM surveying followed by diamond drilling. Two Maxi-Probe anomalies were tested with three holes; two of which were completed for a total of 212m with one hole abandoned due to blocky ground at 13.7m. Both holes were located on line 7+00W on the west section of the property. One additional hole was drilled on the east portion of the property in an attempt to verify the gold intersection (0.107 oz/ton/13.0 ft.). No significant assays were intersected during this drilling program.

Other projects active in the immediate area include those by Golden Crescent Resources, HSK Minerals, Jomi Minerals and Cyprus Canada. Previous producers in the area include the Golden Gate and Swastika Mines.

REGIONAL GEOLOGY

The Rivard claims are underlain by Archean meta-volcanics and sediments of the Larder Lake Group and close to, and perhaps part of the Skead Group. The prominent cliffs and ridges over the north half of the property are comprised of basaltic komatiite flows of the Larder Lake Group. To the south the volcanic chemistry changes

to a tholeiitic to calk-alkalic, representing a possible transition from the Larder Lake to Skead Group.

The Larder Lake Fault zone passes within 2 kilometres north of the Rivard claims.

PROPERTY GEOLOGY

Geological mapping of the Rivard claims was completed at a scale of 1:2500 Metric on grid lines cut at 100 m centres. The grid was cut on claims north of the Blanche River as the airborne INPUT survey indicated anomalies in this area. The mapping was completed in 1991.

Three distinct lithologies were mapped during the program. This include a massive to spinifex textured basaltic komatiite flows of the Larder Lake Group, transitional tholeiitic to calc-alkaline basalt, possibly part of the Skead Group and an intermediate diorite intrusive plug. Late diabase dikes cut all of the above lithologies. Stratigraphic indicators such as pillow tops and sedimentary bedding were poorly developed or absent from the property, however the volcanic stratigraphy appears to strike 100-120 deg. with a steep north dip.

1993 MAXI-PROBE SURVEY

A total of 3.5 kilometres of line were surveyed including:

7+00W from 0+25N-5+00S

6+00W from 0+00-7+50S

2+00W from 0+75N-6+75S

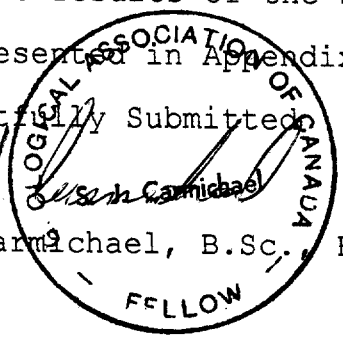
1+00E from 0+00-5+00S

2+00E from 0+00-4+75S

3+00E from 0+00-4+50S

The results of the survey, operating parameters and raw data are presented in Appendix B of this report.

Respectfully Submitted,



S.J. Carmichael, B.Sc., FGAC

Appendix A

CERTIFICATE OF QUALIFICATIONS

I, Stewart J. Carmichael, of the Town of Kirkland Lake, in the District of Timiskaming, in the Province of Ontario, Canada, do hereby certify that:

1) I am a consulting geologist with address 42 Rand Avenue East Kirkland Lake, Ontario, P2N 1X1.

2) I am a graduate of McMaster University, Hamilton, Ontario, having received the degree of Bachelor of Science, Geology from the Faculty of Science in 1982. I have since practised in the field of mineral exploration continuously since graduation.

3) I am a Fellow of the Geological Association of Canada.

4) I have no direct or indirect interest, nor do I expect to receive any interest in the Rivard claims.

5) In addition to my personal knowledge of the area, I have made use of the records of the Ministry of Natural Resources of Ontario, and of Mr. Rivard's records in the preparation of this report.

Dated this 2 day of May, 1994

Stewart J. Carmichael, B.Sc., FGAC

GEOLOGICAL ASSOCIATION OF CANADA
S. J. Carmichael
FELLOW

RESUME OF

Dr. Mrinal K. Ghosh
M.Sc.(Tor), Ph.D.(Tor), P.Eng.(Ont)

A. ACADEMIC QUALIFICATION:

1. Ph.D. (1972);
Doctor of Philosophy degree from University of Toronto in Physics majoring in Geophysics.

The thesis dealt with quantative interpretation of Airborne E.M. data based on thin sheet models.

2. M.Sc. (1969):
Master of Science degree from University of Toronto in Physics majoring in Geophysics.

The thesis dealt with a comprehensive study of multi-frequency ground E.M. measurements with differrent coil configurations. This lead to the development of the MAXI-PROBE E.M. system and its data interpretation procedures, in later years.

3. M.Sc. (1966):
Master of Science degree from Indian Institute of Technology, in Exploration Geophysics.

4. B.Sc. (1964):
Bachelor of Science degree from Indian Institute of Technology, in Geological Sciences.

B. PROFESSIONAL ASSOCIATION:

1. P.Eng. (1973):
A member of the Association of Professional Engineers in Ontario since 1973.

2. S.E.G. (1968):
A member of the Society of Exploration Geophysicists' since 1968.

3. K.E.G.S. (1968):
A member of Canadian Exploration Geophysical Society since 1968.

C. PATENT:

A patent held in Canada & USA for a multi-frequency ground E.M. system, since 1976, which later was known as MAXI-PROBE E.M. System.

D. EMPLOYMENT:

1. 1973-1975 Chief of research in McPHAR GEOPHYSICS.

2. From 1976, President & Geophysicist in GEOPROBE LIMITED.

3. From 1991, Geophysicist in GEO-EM INC.

Appendix B

Maxi-Probe Report

GEOPROBE

MAXI-PROBE E.M.

A WIDE BAND E.M. SYSTEM (60,000-1 Hz)

(NEW PORTABLE MODEL)

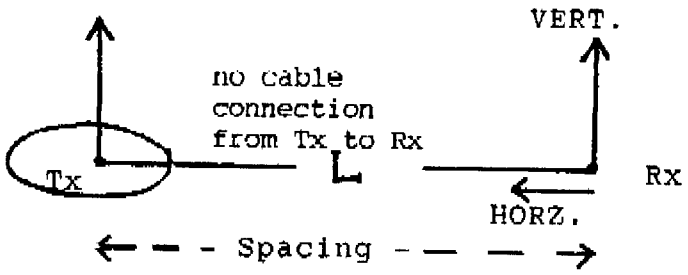
A. FEATURES:

(1) Frequency 1-60,000 c/s
(2) Measures **TOTAL FIELD** in 2-components
(3) Calculates Apparent ·istivity & Depth for each frequency
(4) Produces a **Resistivity Depth-Section** along a survey line
(5) Sharp horizontal resolution
(6) For Profiling & Depth-Sounding

B. APPLICATIONS:

(1) **Deep Conductor** Detection
(2) **Shear-Zone** Detection
(3) Penetration of Clay & Sand type overburden
(4) Detection of minor Sulphide zones in Bedrock for GOLD EXPLORATION
(5) Map Faults & Splays (conductive or non-conductive)
(6) Resolve multiple conductors
(7) Map Bedrock Topography
(8) Map Till in overburden
(9) **Depth-Determination of Target**

C. GEOMETRY:



D. SURVEY:

The survey is performed using a fixed Tx-Rx spacing array. The spacing is normally selected to be equal to the desired maximum depth of penetration.

Tx-Loop cable can be laid out in an irregular shape.

The receiving Vertical coil orients by means of a Bubble, horizontal coil is along the survey line.

Misorientation of Tx-Loop, receiver axis & Tx-Rx elevation difference is corrected in the Data using lowest Frequency measurement.

The frequency range & number of frequencies are selected in the field depending on the E.M. response of the ground.

E. Tx-LOOPS: (ALL 8-TURN CABLE)

	Loop	Length of Cable	Max. Depth
(1)	Small:	90 Feet long	200 metres
(2)	Medium:	120 Feet long	400 metres
(3)	Large:	160 Feet long (2-loops in parallel)	600 metres

F. MEASUREMENT:

Amplitude RATIO $= \frac{|V|}{|H|}$

& PHASE DIFF. $\theta = \theta_V - \theta_H$

CALCULATES:

ELLIPSE OF POLARIZATION

i.e. TILT-ANGLE (α) ↓ conductivity & ELLIPTICITY $= \frac{b}{a}$ ↓ Alteration & Dissemination

Finally using f, spacing, TILT & ELLIP.; apparent resistivity & apparent depth are calculated.

G. SURVEY PARAMETERS:

(1) Tx-Rx array is moved in Tandem along the SURVEY LINE

(2) MAXIMUM DEPTH $\approx$ 1.25 x (Tx-Rx spacing)

(3) Tx-Rx Spacing is 150 - 300 metres for RECONNISSANCE Survey

(4) Station Interval: 25 metres or 100 feet

(5) FREQUENCY RANGE is selected in Field (Usually 60,000 - 20 c/s)

(6) No. of Frequency: 12-16 per station

(7) Line Spacing: 100 - 200 Metres

H. RESULTS:

E.M. PROFILES of:

(1) TILT-ANGLE (degrees)

(2) ELLIPTICITY (percentage)

& (3) PSEUDO-SECTION (App. RES. Vs. FREQ.)

(4) DEPTH-SECTION (App. RES. Vs. App. DEPTH)

GEOEM INC.

5468 DUNDAS STREET WEST
SUITE 701,
TORONTO, ONTARIO
CANADA M9B 6E3

TELEPHONE: (416) 234-6822
FACSIMILE: (416) 234-1564

COPY-2

RESULTS OF

MAXI-PROBE E.M. SURVEY

AT

OTTO TWP., ONTARIO

FOR

FERN RIVARD

2.15419

2.15167

DUPLICATE COPY

June, 1992

by: GEOEM INC.

GEOEM INC.

5468 DUNDAS STREET WEST
SUITE 701,
TORONTO, ONTARIO
CANADA M9B 6E3

TELEPHONE: (416) 234-6822
FACSIMILE: (416) 234-1564

July 7, 1992

Mr. Fernand Rivard
P.O. Box 1091
Kirkland Lake, Ontario
P2N 2C9

RE: MAXI-PROBE E.M. Survey in Otto Twp., Ontario

Dear Mr. Rivard:

At your request, GEOEM INC. has carried out a high-resolution MAXI-PROBE E.M. survey on your property at Otto Twp., Ontario on six cut lines, 7W, 6W, 2W, 1E, 2E &3E. This survey was carried out during four days in the later part of June 1992.

The survey was performed using a frequency range of 100 to 50,000 Hertz and a spacing of 150 metres between the transmitter & receiver to obtain good data down to 150 metres on this property. The transmitter was kept to the north, which is the preferred dip direction, to obtain better coupling with the conductors.

The survey results have been presented in two forms: one is the E.M. Profile of tilt-angles & the other is the Pseudo-section in color of apparent resistivity against the frequency-depth scale. The survey results show a number of interesting conductors having various types of conductivities.

...../2

The conductors detected in the survey have been classified as follows:

SYMBOL		Conductor Type
	-	Excellent
	-	Good
	-	Medium
	-	Weak
	-	Minor

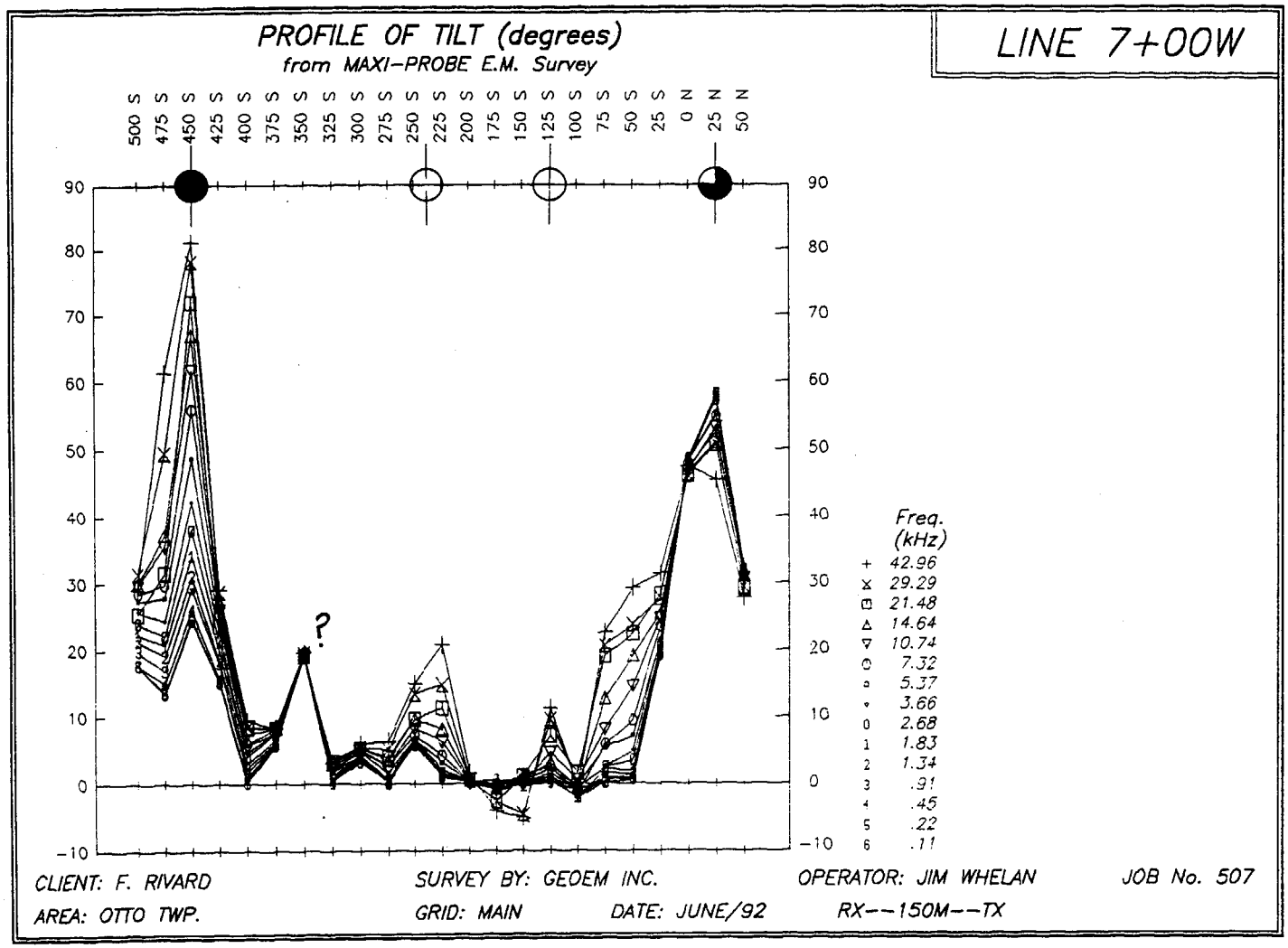
Each conductor identified on a line has been designated by one of the above symbols at its probable location. The excellent conductors have conductivity which may represent the massive sulphide or graphite targets. The minor, weak and medium conductors would represent shear-zone type structures. Shear-zones containing sulphide build-up will show somewhat higher conductivity. However, often gold is hosted in the silicified material at the shear-zones. This silicification is extremely resistive which shows only a weak or minor conductor anomaly. The good conductor classified in this survey might correspond to large fault zones or sulphides, or graphites.

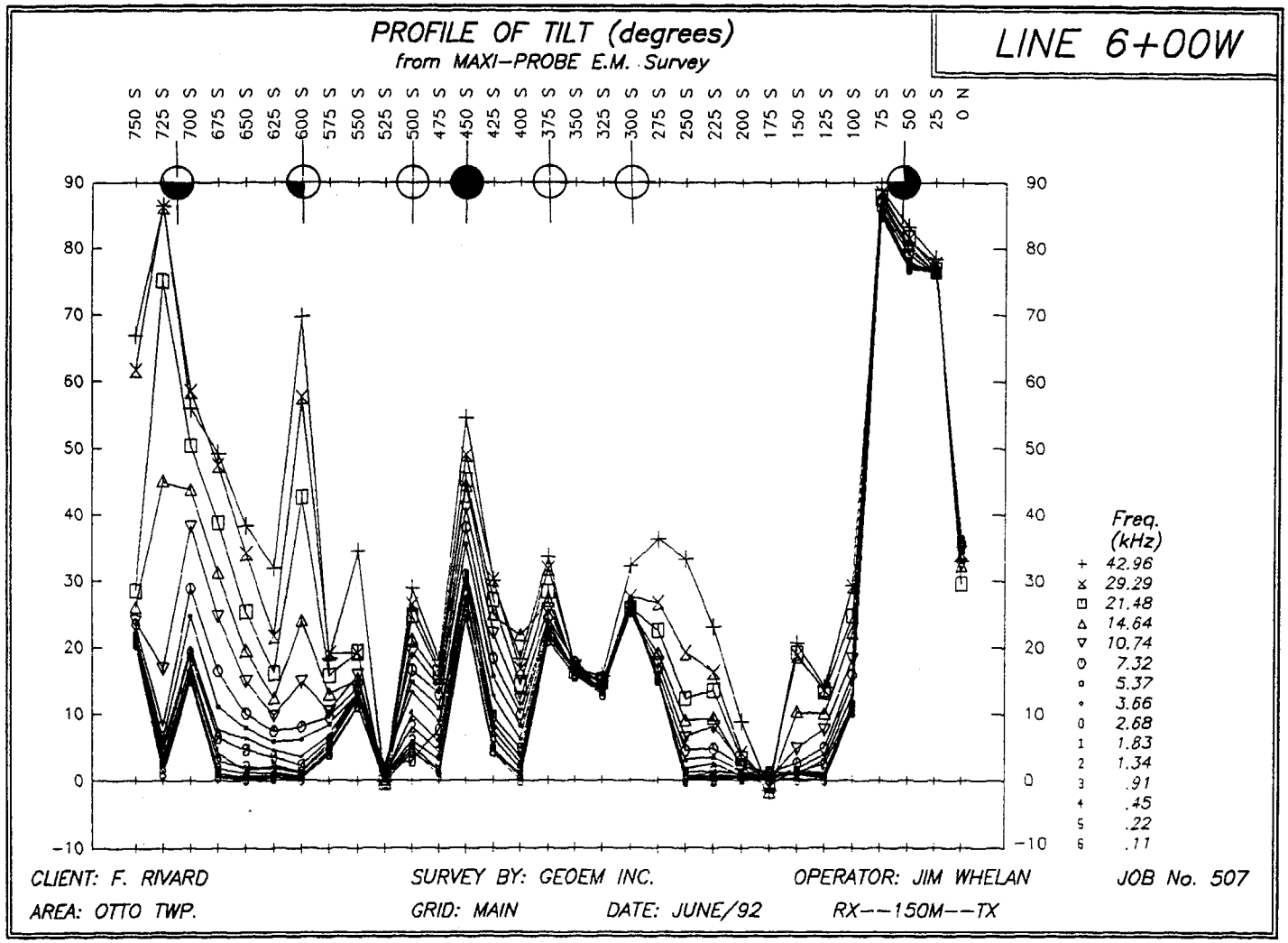
This property seems to have potential for both massive sulphide or gold. If initial drilling shows encouraging results, then it would be worth while to survey the entire property at 100 metre line spacing.

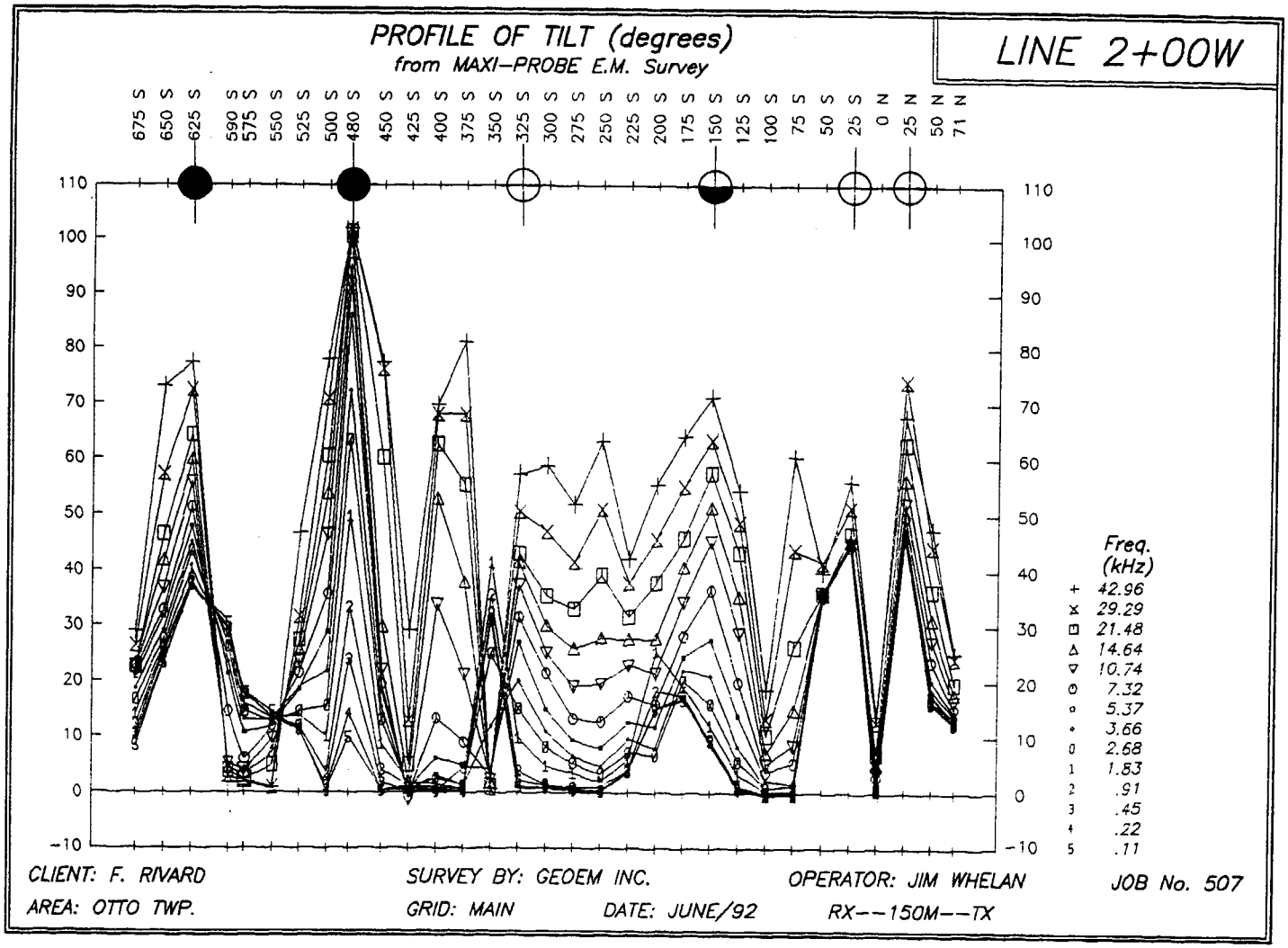
Good Luck!

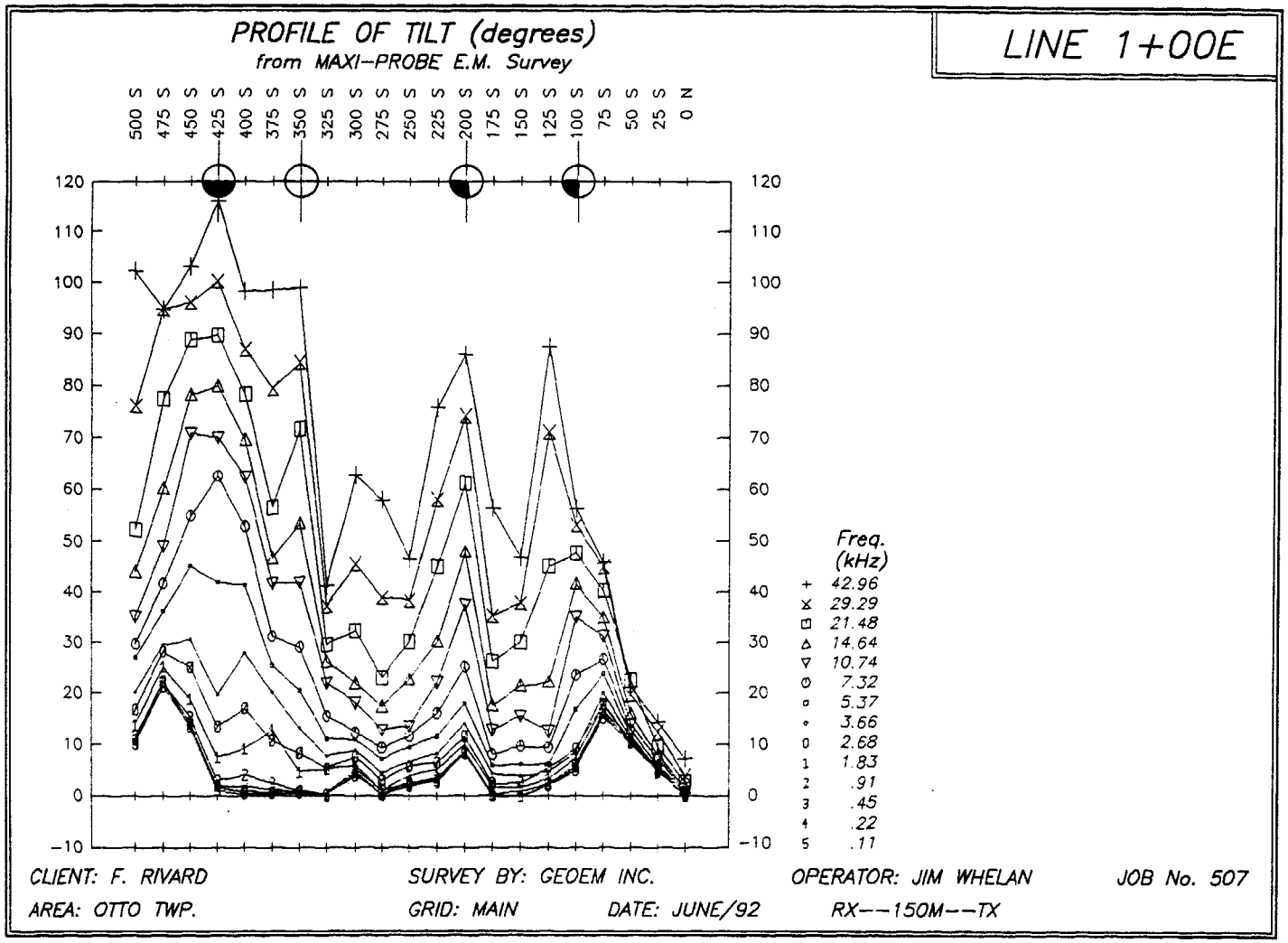
Yours sincerely
GEOEM INC.

Dr. Mrinal K. Ghosh, Ph.D., P. Eng.


PROFILE OF TILT (degrees)
from MAXI-PROBE E.M. Survey
LINE 7+00W
500 S 475 S 450 S 425 S 400 S 375 S 350 S 325 S 300 S 275 S 250 S 225 S 200 S 175 S 150 S 125 S 100 S 75 S 50 S 25 S 0 N 25 N 50 N
90 80 70 60 50 40 30 20 10 0 -10
?
Freq. (kHz)
+ 42.96
X 29.29
□ 21.48
△ 14.64
▽ 10.74
○ 7.32
▫ 5.37
• 3.66
0 2.68
1 1.83
2 1.34
3 .91
4 .45
5 .22
6 .11
CLIENT: F. RIVARD
SURVEY BY: GEOEM INC.
OPERATOR: JIM WHELAN
JOB No. 507
AREA: OTTO TWP.
GRID: MAIN
DATE: JUNE/92
RX--150M--TX


PROFILE OF TILT (degrees)
from MAXI-PROBE E.M. Survey
LINE 6+00W
750 S 725 S 700 S 675 S 650 S 625 S 600 S 575 S 550 S 525 S 500 S 475 S 450 S 425 S 400 S 375 S 350 S 325 S 300 S 275 S 250 S 225 S 200 S 175 S 150 S 125 S 100 S 75 S 50 S 25 S 0 N
90 80 70 60 50 40 30 20 10 0 -10
Freq. (kHz)
+ 42.96
x 29.29
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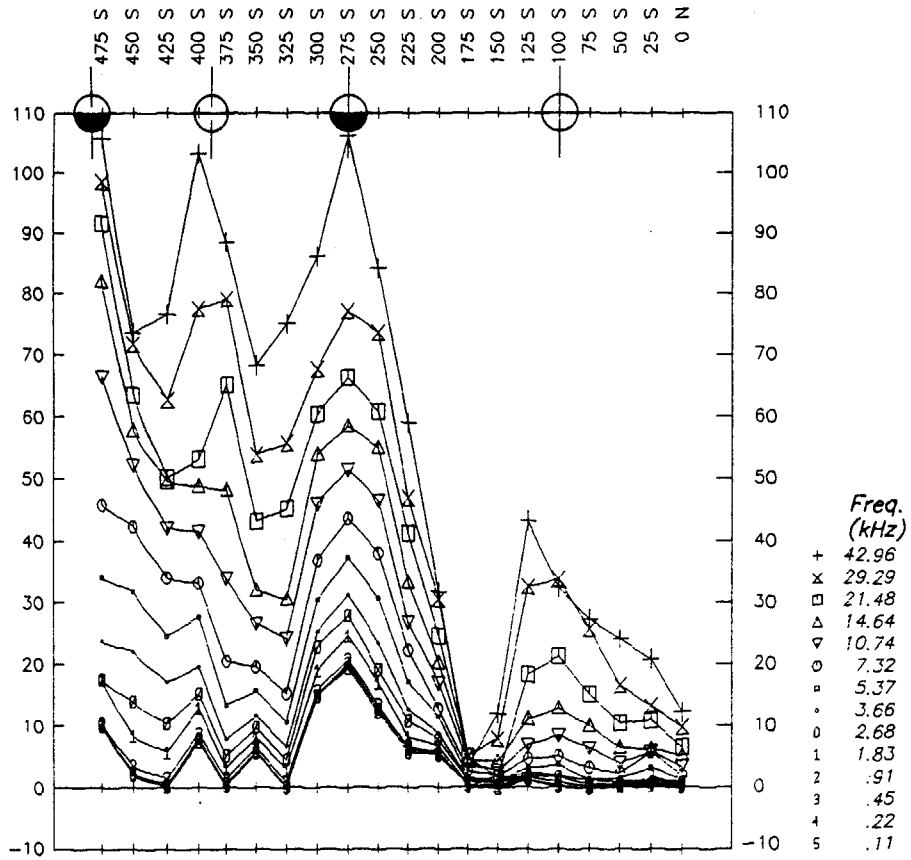

PROFILE OF TILT (degrees)
from MAXI–PROBE E.M. Survey
LINE 2+00W
675 S
650 S
625 S
590 S
575 S
550 S
525 S
500 S
480 S
450 S
425 S
400 S
375 S
350 S
325 S
300 S
275 S
250 S
225 S
200 S
175 S
150 S
125 S
100 S
75 S
50 S
25 S
0 N
25 N
50 N
71 N
110
100
90
80
70
60
50
40
30
20
10
0
-10
Freq. (kHz)
+ 42.96
x 29.29
□ 21.48
△ 14.64
▽ 10.74
⊙ 7.32
▫ 5.37
• 3.66
0 2.68
1 1.83
2 .91
3 .45
4 .22
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AREA: OTTO TWP.
GRID: MAIN
DATE: JUNE/92
RX--150M--TX


PROFILE OF TILT (degrees)
from MAXI-PROBE E.M. Survey
LINE 1+00E
500 S
475 S
450 S
425 S
400 S
375 S
350 S
325 S
300 S
275 S
250 S
225 S
200 S
175 S
150 S
125 S
100 S
75 S
50 S
25 S
0 N
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
Freq. (kHz)
+ 42.96
X 29.29
□ 21.48
△ 14.64
▽ 10.74
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2 .91
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PROFILE OF TILT (degrees)

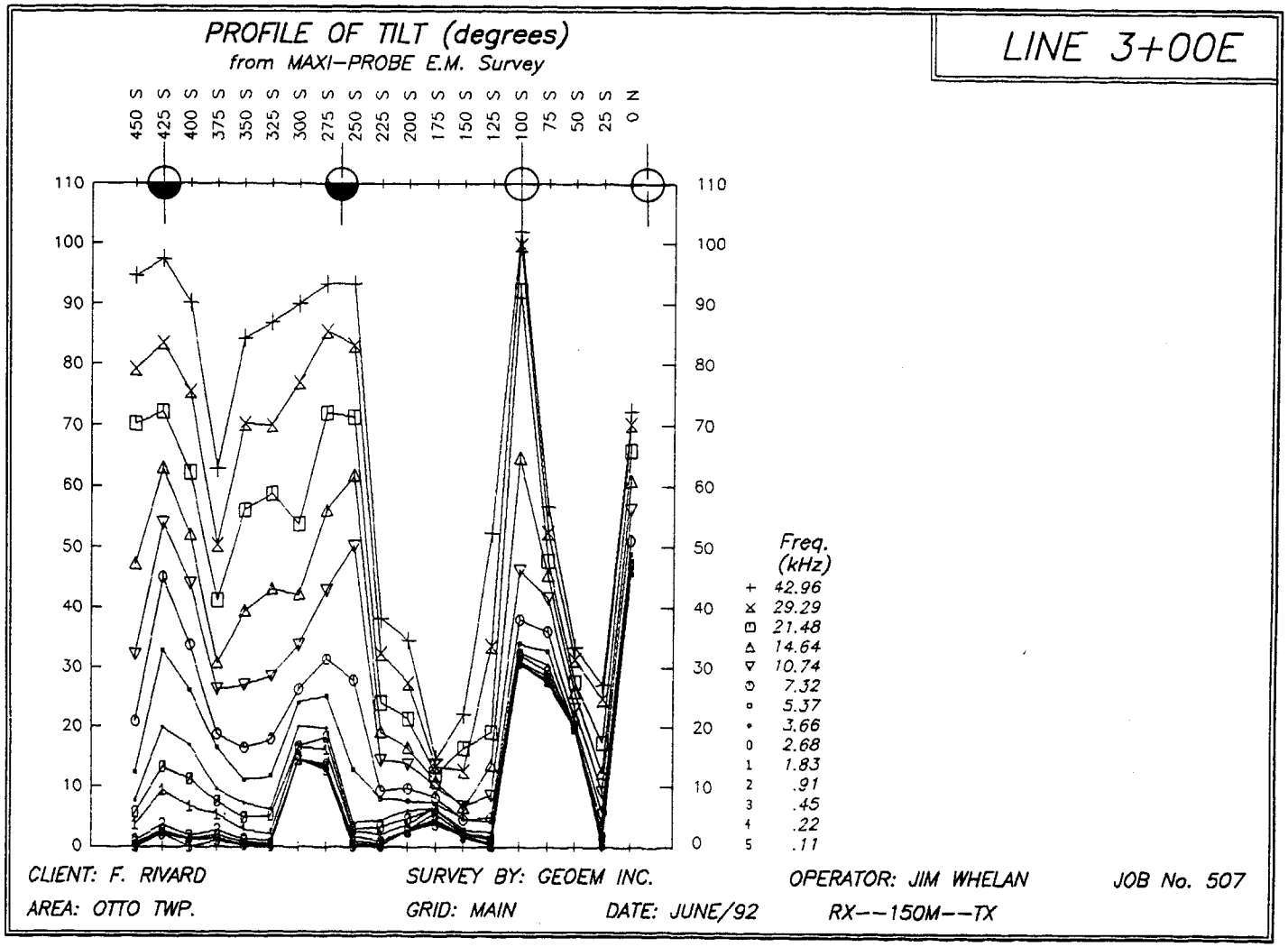
from MAXI–PROBE E.M. Survey

LINE 2+00E



CLIENT: F. RIVARD SURVEY BY: GEOEM INC. OPERATOR: JIM WHELAN JOB No. 507

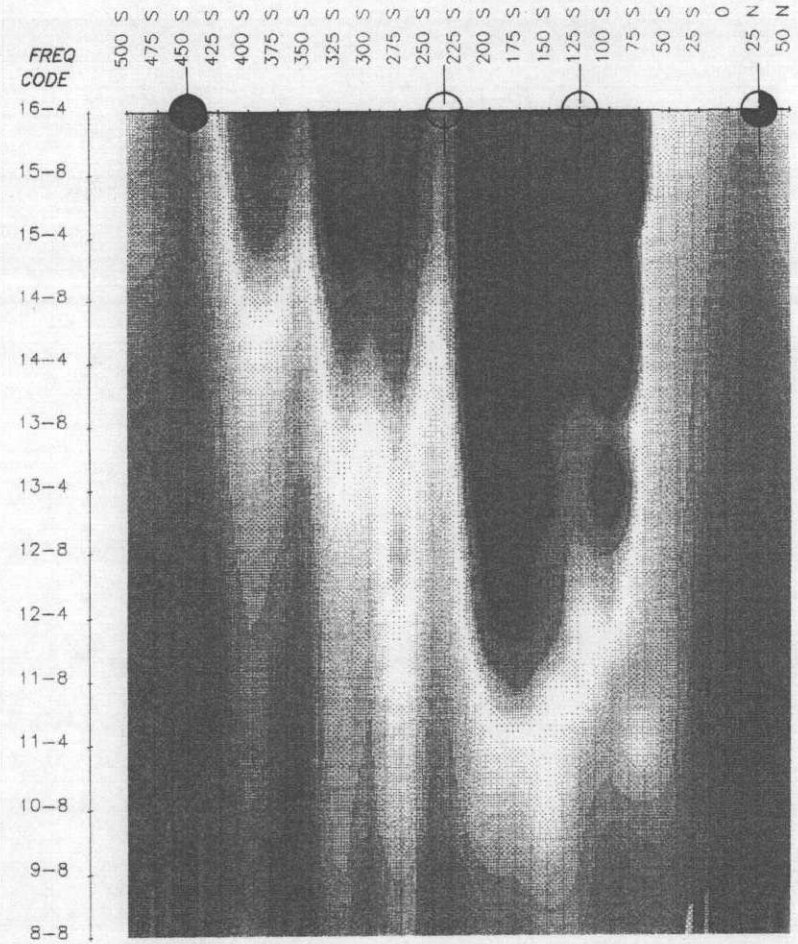
AREA: OTTO TWP. GRID: MAIN DATE: JUNE/92 RX--150M--TX


PROFILE OF TILT (degrees)
from MAXI-PROBE E.M. Survey
LINE 3+00E
450 S
425 S
400 S
375 S
350 S
325 S
300 S
275 S
250 S
225 S
200 S
175 S
150 S
125 S
100 S
75 S
50 S
25 S
0 N
110
100
90
80
70
60
50
40
30
20
10
0
Freq. (kHz)
+ 42.96
X 29.29
□ 21.48
△ 14.64
▽ 10.74
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• 3.66
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2 .91
3 .45
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RX--150M--TX

PSEUDO-SECTION OF APP. RESISITIVITY (ohm-metres)

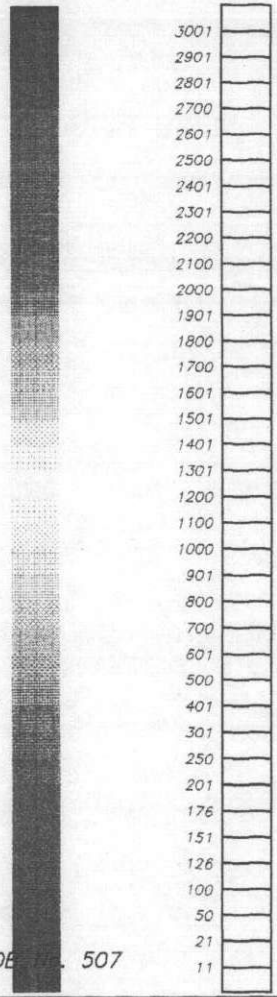
from MAXI-PROBE E.M. Survey

LINE 7+00W



FREQ (kHz)

42.968
29.296
21.484
14.648
10.742
7.324
5.371
3.662
2.685
1.831
1.342
.915
.457
.228



CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN DATE: JUNE/92

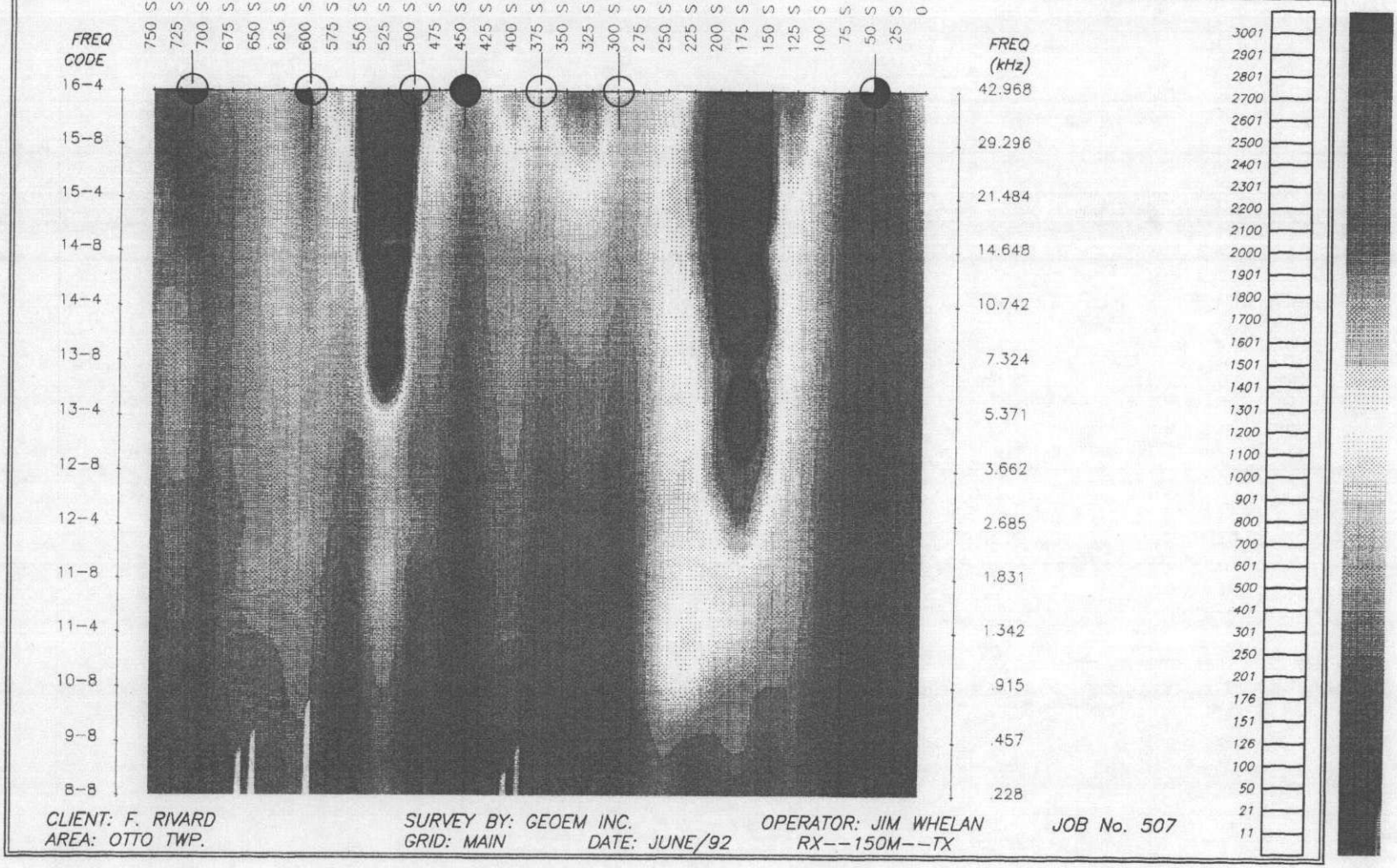
OPERATOR: JIM WHELAN
RX--150M--TX

JOB [illegible] 507

PSEUDO–SECTION OF APP. RESISITIVITY (ohm–metres)

from MAXI–PROBE E.M. Survey

LINE 6+00W



CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN DATE: JUNE/92

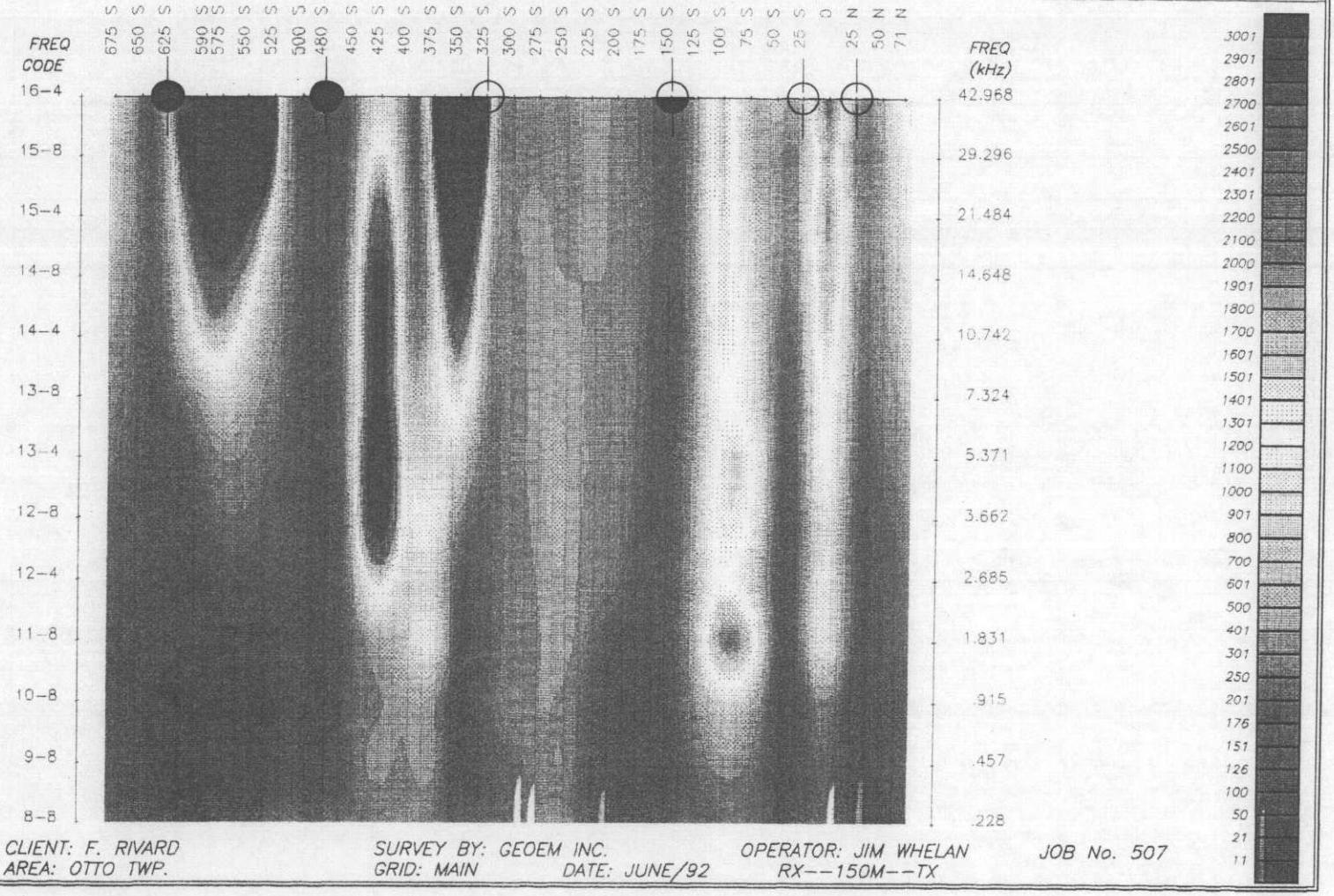
OPERATOR: JIM WHELAN
RX––150M––TX

JOB No. 507

PSEUDO–SECTION OF APP. RESISITIVITY (ohm–metres)

from MAXI–PROBE E.M. Survey

LINE 2+00W



CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN DATE: JUNE/92

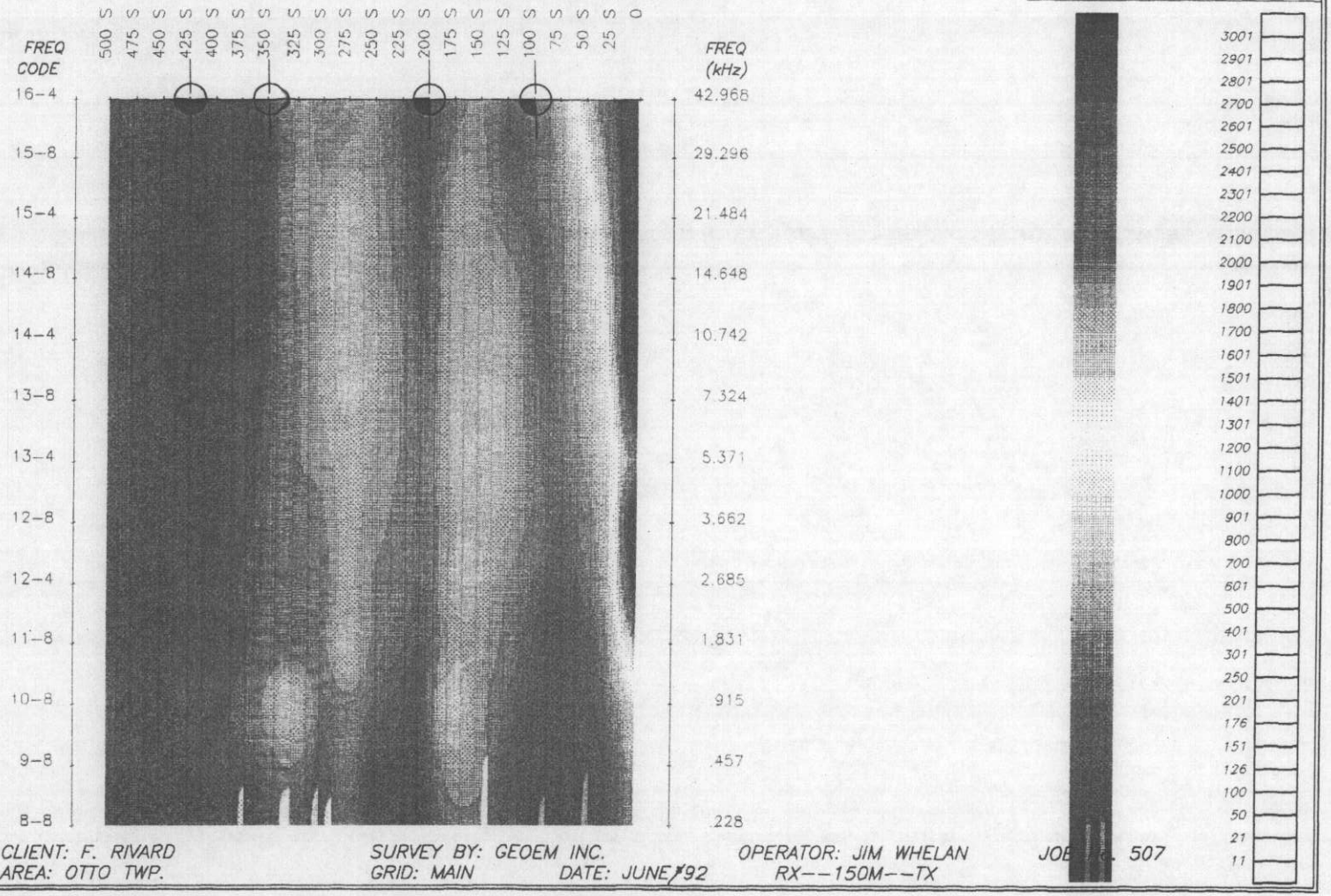
OPERATOR: JIM WHELAN
RX––150M––TX

JOB No. 507

PSEUDO-SECTION OF APP. RESISITIVITY (ohm-metres)

from MAXI-PROBE E.M. Survey

LINE 1+00E



CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN DATE: JUNE/92

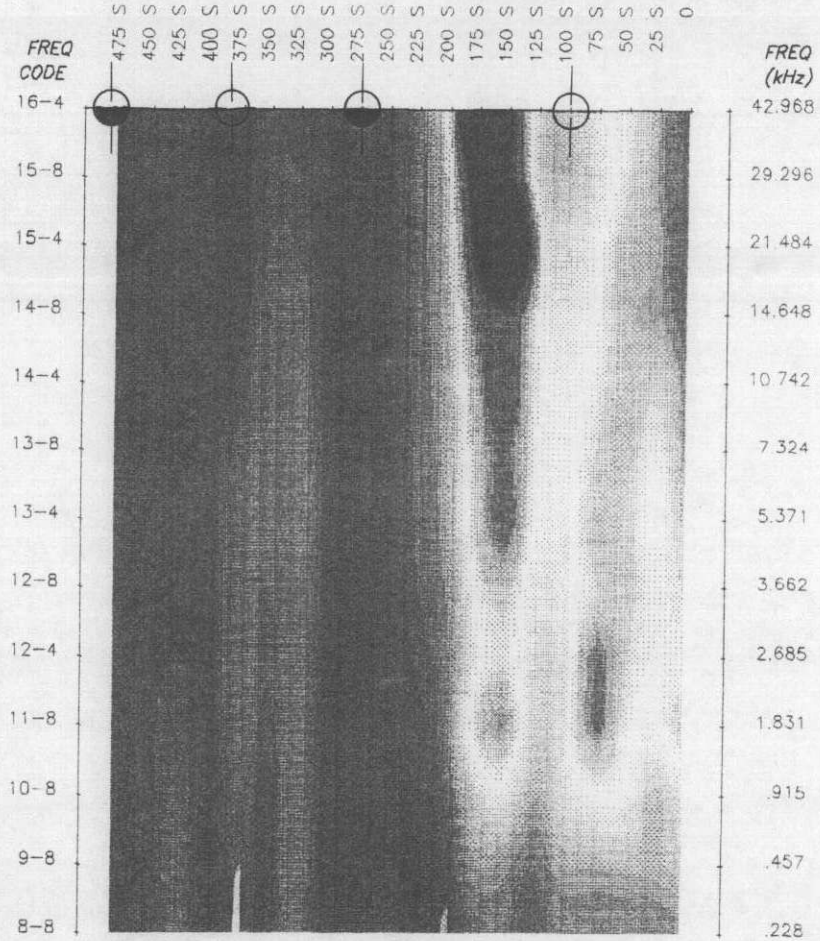
OPERATOR: JIM WHELAN
RX--150M--TX

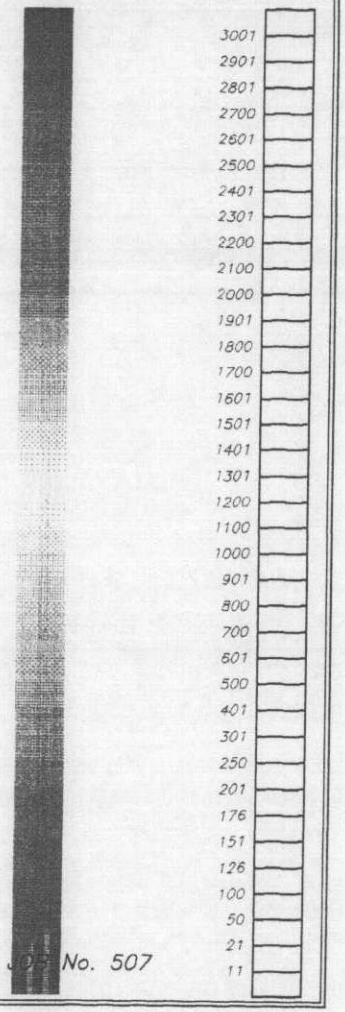
JOB [illegible] 507

PSEUDO-SECTION OF APP. RESISITIVITY (ohm-metres)

from MAXI-PROBE E.M. Survey

LINE 2+00E





CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN DATE: JUNE/92

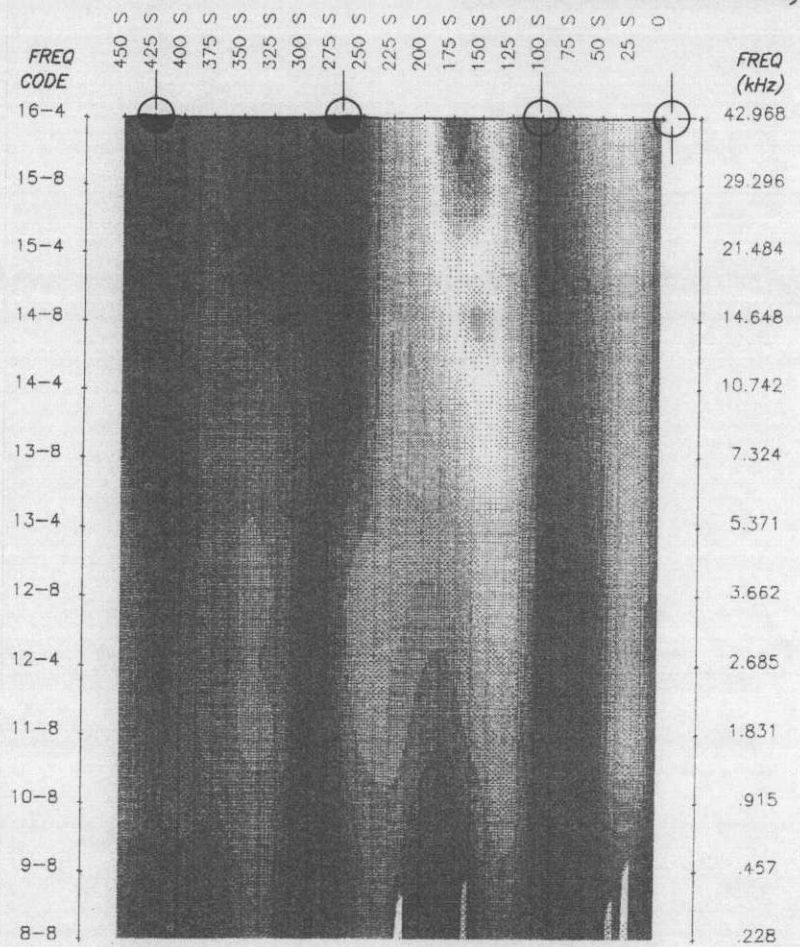
OPERATOR: JIM WHELAN
RX--150M--TX

J[illegible] No. 507

PSEUDO-SECTION OF APP. RESISITIVITY (ohm-metres)

from MAXI-PROBE E.M. Survey

LINE 3+00E





CLIENT: F. RIVARD
AREA: OTTO TWP.

SURVEY BY: GEOEM INC.
GRID: MAIN
DATE: JUNE/92

OPERATOR: JIM WHELAN
RX--150M--TX

JOB No. 507

Ministry of Northern Development and Mines
Ontario

GAO

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number
W9480.00267

Personal information collected on this form is obtained under the authority of th
this collection should be directed to the Provincial Manager, Mining Lands, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

42A01SE0056 2.15419 OTTO

900

Instructions:
- Please type or print and submit in duplicate.
- Refer to the Mining Act and Regulations for requirements of filing assessment work or consult the ... Recorder.
- A separate copy of this form must be completed for each Work Group.
- Technical reports and maps must accompany this form in duplicate.
- A sketch, showing the claims the work is assigned to, must accompany this form.

Recorded Holder(s): Fernand Rivard		Client No.: 187868
Address: 867 Government Rd. West, Kirkland Lake		Telephone No.: 705-567-5891
Mining Division: Larder Lake	Township/Area: OTTO TWP	M or G Plan No.: M-379
Dates Work Performed — From: June 11/92	To: June 14/92	

Work Performed (Check One Work Group Only)

	Work Group	Type
	Geotechnical Survey	Mag-Probe Survey J6114
	Physical Work, Including Drilling	
	Rehabilitation	
	Other Authorized Work	
	Assays	
	Assignment from Reserve	

RECEIVED
MAY 0 9 1994
MINING LANDS BRANCH

Total Assessment Work Claimed on the Attached Statement of Costs $ 4,280.00

Note: The Minister may reject for assessment work credit all or part of the assessment work submitted if the recorded holder cannot verify expenditures claimed in the statement of costs within 30 days of a request for verification.

Persons and Survey Company Who Performed the Work (Give Name and Address of Author of Report)

Name	Address
Geo-EM	Mirnal Ghosh, 5468 Dundas St. W. Toronto, ont. Suite 701
S. Carmichael	42 Rand Av. East, Kirkland Lake, Ont.

(attach a schedule if necessary)

Certification of Beneficial Interest * See Note No. 1 on reverse side

	Date	Recorded Holder or Agent (Signature)
I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	May 2/94	

Certification of Work Report

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

Name and Address of Person Certifying: Stewart Carmichael, 42 Rand Av. East, Kirkland Lake, Ont.

Telepone No.	Date	Certified By (Signature)
705-567-7286	May 2/94	S. Carmichael

LARDER LAKE MINING DIVISION

For Office Use Only

Total Value Cr. Recorded	Date Recorded	Mining Recorder	Received Stamp
applied $4280.00	May 3/94 DM		94 MAY 3 PM 12 59 RECEIVED
	Deemed Approval Date: Aug 1/94	Date Approved	
	Date Notice for Amendments Sent		

0241 (03/91)

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units	Value of Assessment Work Done on this Claim	Value Applied to this Claim	Value Assigned from this Claim	Reserve Work to be Claimed at a Future Date
	982684	1	713	428	285	
	982690	1	713	428	285	
	982691	1	713	428	285	
	982692	1	713	428	285	
	982693	1	ϕ	428		
	982694	1	713	428	285	
	982695	1	713	428	285	
	982696	1	ϕ	428		
	982697	1	ϕ	428		
	982698	1	ϕ	428		
	10		4,280.00	4,280.00	1,710.00	
	Total Number of Claims		Total Value Work Done	Total Value Work Applied	Total Assigned From	Total Reserve

0241 (03/89)

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to prioritize the deletion of credits. Please mark (✓) one of the following:

1. ☐ Credits are to be cut back starting with the claim listed last, working backwards.
2. ☒ Credits are to be cut back equally over all claims contained in this report of work.
3. ☐ Credits are to be cut back as priorized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature	Date

Ministry of Northern Development and Mines

Ontario

...ère du ...eloppement du Nord et des mines

Statement of Costs for Assessment Credit

État des coûts aux fins du crédit d'évaluation

Mining Act/Loi sur les mines

Transaction No./N° de transaction: W9480.00267

Personal information collected on this form is obtained under the authority of the **Mining Act**. This information will be used to maintain a record and ongoing status of the mining claim(s). Questions about this collection should be directed to the Provincial Manager, Minings Lands, Ministry of Northern Development and Mines, 4th Floor, 159 Cedar Street, Sudbury, Ontario P3E 6A5, telephone (705) 670-7264.

Les renseignements personnels contenus dans la présente formule sont recueillis en vertu de la **Loi sur les mines** et serviront à tenir à jour un registre des concessions minières. Adresser toute quesiton sur la collece de ces renseignements au chef provincial des terrains miniers, ministère du Développement du Nord et des Mines, 159, rue Cedar, 4e étage, Sudbury (Ontario) P3E 6A5, téléphone (705) 670-7264.

1. Direct Costs/Coûts directs

Type	Description	Amount Montant	Totals Total global
Wages Salaires	Labour Main-d'oeuvre		
	Field Supervision Supervision sur le terrain		
Contractor's and Consultant's Fees Droits de l'entrepreneur et de l'expert-conseil	Type: Maxi-Pak EM	4,280.00	
Supplies Used Fournitures utilisées	Type		
Equipment Rental Location de matériel	Type		
	Total Direct Costs Total des coûts directs		

2. Indirect Costs/Coûts indirects

** **Note:** When claiming Rehabilitation work Indirect costs are not allowable as assessment work.
Pour le remboursement des travaux de réhabilitation, les coûts indirects ne sont pas admissibles en tant que travaux d'évaluation.

Type	Description	Amount Montant	Totals Total global
Transportation Transport	Type		
Food and Lodging Nourriture et hébergement			
Mobilization and Demobilization Mobilisation et démobilisation			
	Sub Total of Indirect Costs Total partiel des coûts indirects		
	Amount Allowable (not greater than 20% of Direct Costs) Montant admissible (n'excédant pas 20 % des coûts directs)		
	Total Value of Assessment Credit (Total of Direct and Allowable Indirect costs) / **Valeur totale du crédit d'évaluation (Total des coûts directs et indirects admissibles)**		

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 30 days of a request for verification. If verification is not made, the Minister may reject for assessment work all or part of the assessment work submitted.

Note : Le titulaire enregistré sera tenu de vérifier les dépenses demandées dans le présent état des coûts dans les 30 jours suivant une demande à cet effet. Si la vérification n'est pas effectuée, le ministre peut rejeter tout ou une partie des travaux d'évaluation présentés.

Filing Discounts

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.

2. Work filed three, four or five years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculations below:

Total Value of Assessment Credit	Total Assessment Claimed
× 0.50 =	

Remises pour dépôt

1. Les travaux déposés dans les deux ans suivant leur achèvement sont remboursés à 100 % de la valeur totale susmentionnée du crédit d'évaluation.

2. Les travaux déposés trois, quatre ou cinq ans après leur achèvement sont remboursés à 50 % de la valeur totale du crédit d'évaluation susmentionné. Voir les calculs ci-dessous.

Valeur totale du crédit d'évaluation	Évaluation totale demandée
× 0,50 =	

Certification Verifying Statement of Costs

I hereby certify:
that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work form.

that as Recorded Holder I am authorized
(Recorded Holder, Agent, Position in Company)

to make this certification

Attestation de l'état des coûts

J'atteste par la présente :
que les montants indiqués sont le plus exact possible et que ces dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terrains indiqués dans la formule de rapport de travail ci-joint.

Et qu'à titre de _____ je suis autorisé
(titulaire enregistré, représentant, poste occupé dans la compagnie)

à faire cette attestation.

Signature	Date
	May 2/94

0212 (04/91)

Nota : Dans cette formule, lorsqu'il désigne des personnes, le masculin est utilisé au sens neutre.

Ontario

Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

Geoscience Approvals Office
933 Ramsey Lake Rd., 6th Flr
Sudbury, Ontario
P3E 6B5

Telephone: (705) 670-5853
Fax: (705) 670-5863

Our File: 2.15419
Transaction #: W9480.00267

August 4, 1994

Mining Recorder
Ministry of Northern
Development and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Mr. Spooner:

RE: Approval of Assessment Work on mining claims L 982689 **et. al. in Otto Township.**

The assessment credits for Geophysics, section 14 of the Mining Act Regulations, as listed on the original Report of Work, have been approved as of **July 29, 1994.**

Please indicate this approval on the claim record sheets.

If you have any questions concerning this submission please contact Dale Messenger at 670-5858.

Yours sincerely,

for Ron C. Gashinski
Senior Manager, Mining Lands Section
Mining and Land Management Branch
Mines and Minerals Division

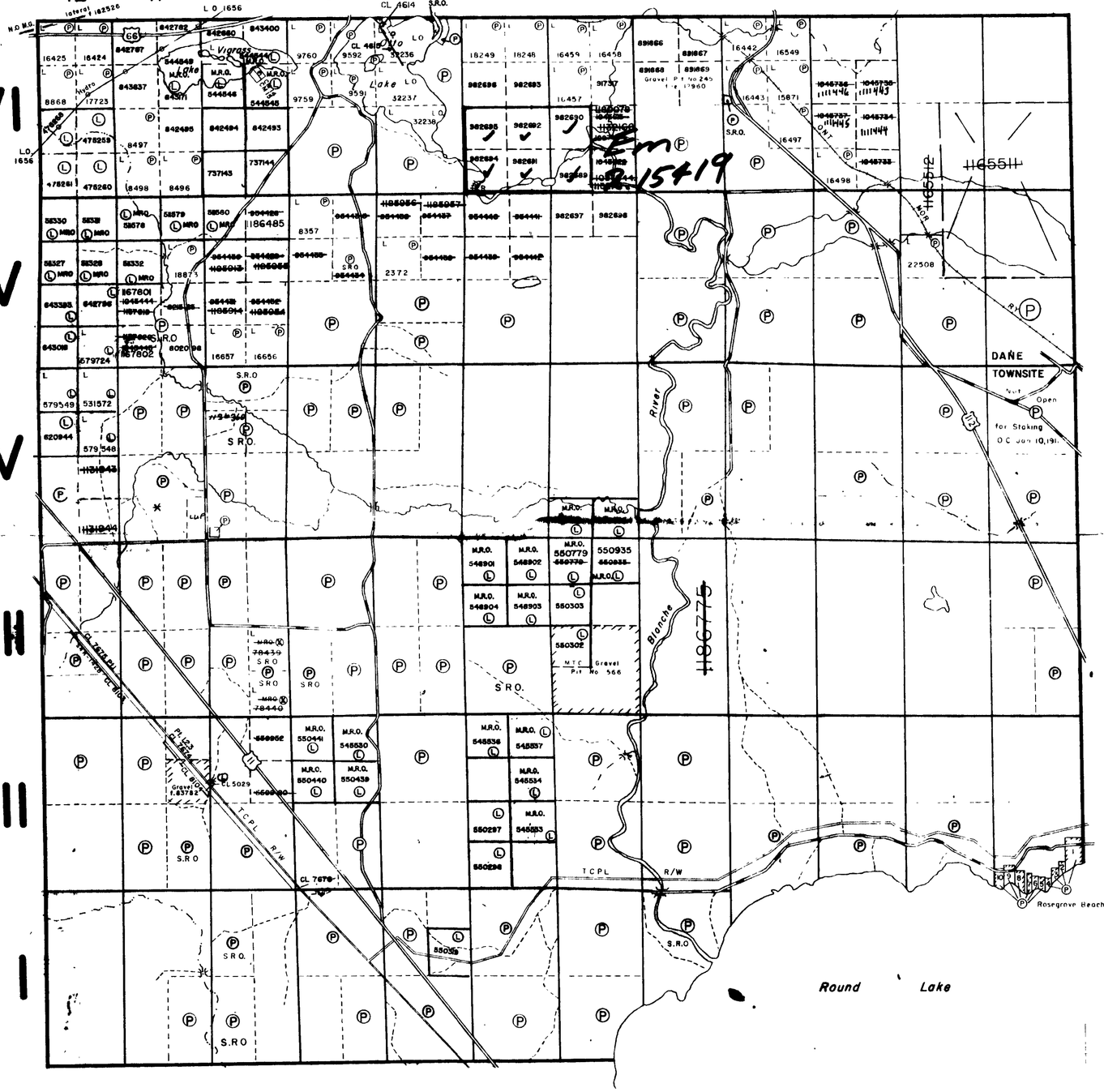
DEM/dl
Enclosures:

cc: Assessment Files Office ✓
Sudbury, Ontario

Resident Geologist
Kirkland Lake, Ontario

M379

TECK TP. - M.392



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.

THE TOWNSHIP OF OTTO

RECEIVED
SEP 2 9 1994
MINING LANDS BRANCH

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	● or (P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
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

(R1) 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 (b) OF THE MINING ACT

CL.5029 DISPOSITION OF CROWN LAND
Surface Rights Withdrawn under Sec. 36,
The Mining Act R.S.O. 1980, ORDER NO. W-01/91/ONT
(Trans Canada Pipeline Right of Way and Buffer
Zone particularly 40.25 meters or 132 ft. on
either side of centre line of right of way)

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 1TO
705-642-3222

PLAN NO. M-379

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

CIRCULATED NOV.3/88

42A01SE0056 2 15419 OTTO
200
TRIM LINE

LEGEND

FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

7 — 7 Undivided; 7a Granite; 7b Syenite; 7c Feldspar Porphyry; 7d Granodiorite; 7e Diorite; 7f Monzonite

MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS

6 — 6 Undivided; 6a Gabbro; 6b Gabbro Anorthosite; 6c Anorthosite; 6d Pyroxenite; 6e Peridotite; 6f Diabase; 6g Lamprophyre

SEDIMENTS

5 — 5 Undivided; 5a Greywacke; 5b Chert; 5c Graphitic shale; 5d Conglomerate; 5e Sandstone; 5f Shale

FELSIC METAVOLCANICS

4 — 4 Undivided; 4a Rhyolite; 4b Rhyolite breccia; 4c Dacite; 4d Dacite breccia

MAFIC METAVOLCANICS

2 2' Fe Mg — 2 Undivided; 2a Massive flows; 2b Pillowed flows; 2c Massive to well foliated coarse-grained flows; 2d Variolitic flows; 2e Tuff and lapilli-tuff; 2f Flow-top breccia

ULTRAMAFIC METAVOLCANICS

1 — 1 Undivided; 1a Massive, polysutured serpentinized flows; 1b Spinifex textured flows; 1c Ultramafic pyroclastics; 1d Talc-carbonate alteration

SYMBOLS

- Claim Post
- Claim Line
- Trail
- Creek
- Outcrop Boundary
- Small Outcrop or Station
- Whole Rock or Assay Sample Location
- Strike and Dip of Foliation
- Strike and Dip of Bedding
- Geological Contact
- Fault
- q.s. Quartz Stringers
- Q.V. Quartz Vein With Width and Dip
- cal. Calcite Stringers
- mag. Magnetic Attraction
- py. Pyrite
- cpy. Chalcopyrite
- mal. Malachite
- carb. Carbonate Alteration
- spar. Sparry Calcite
- Drill Hole
- Pit or Trench
- VLF-EM Anomaly

MAXI PROBE ANOMALY
RED – GOOD TO EXCELLENT
YELLOW – MEDIUM TO GOOD
BLACK – MINOR TO WEAK

SCALE 1:2500

50 0 50 100 150 200

METRES

GEOLOGICAL ASSOCIATION OF CANADA — S. J. Carmichael — FELLOW

OTTO TWP. PROPERTY

SURFACE GEOLOGY PLAN

2.15419

OTTO TOWNSHIP
LARDER LAKE MINING DIVISION
DISTRICT OF TIMISKAMING, ONT.

NTS 42 A/SE	SCALE: 1:2500	PROJECT: OP93-270
DATE: JAN. 1992	DRAWN BY: S.J.C.	REVISED: OCTOBER, 1993 DRAWING NO. 1

42A01SE0056 2 15419 OTTO