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PATINO MINES (QUEBEC) LIMITED

MINING LANDS SECTION

GEOPHYSICAL SURVEYS

WEBB TOWNSHIP CLAIM GROUP

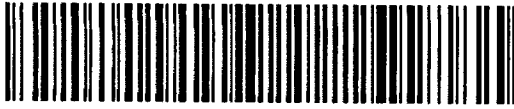
WEBB TOWNSHIP

PATRICIA MINING DIVISION

DISTRICT OF KENORA

ONTARIO, CANADA

November, 1980



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ACCOMPANYING MAPS

Drawing #1	Magnetometer Survey	Scale: 1 inch to 200 feet
Drawing #2	EM-16 Survey Profiles	Scale: 1 inch to 200 feet
Drawing #3	EM-16 VLF Contoured Data	Scale: 1 inch to 200 feet

A. INTRODUCTION

During the summer of 1980, line cutting totalling 4.88 miles was carried out on a property optioned to Patino Mines (Quebec) Limited. Subsequent electromagnetic and magnetic surveys were carried out during October, 1980 on this property. It is located in Webb township (Dryden area), Patricia Mining Division, District of Kenora, Ontario. The surveys were carried out by a geophysical crew from Patino Mines (Quebec) Limited.

B. SUMMARY AND RECOMMENDATIONS

Both ground electromagnetic (using EM-16) and magnetic surveys (using a proton magnetometer) were carried out over the claim group. Several medium strength EM conductors were outlined. These are believed to represent E-W striking shear zones with minor sulphides present (1-5% py, minor cpy perhaps) and/or conductive clay material within the sheared structures.

The magnetic survey revealed a few small magnetic anomalies within the main area of outcrop which is in the western part of the claim group. These small anomalies may represent slightly magnetic E-W trending diabase dykes or some other E-W trending slightly magnetic geological feature within the host rock.

Although the previously mentioned EM and magnetic anomalies are somewhat distinct, the correlation between magnetic anomalies and EM conductors is poor.

The proximity of some copper mineralization associated with minor shears (just south of the baseline between L44W and the western edge of the claims) suggests that the possible shear zones which are inferred from the electromagnetic survey should be given further study. It is thus recommended that further work in the form of a different and more detailed geophysical survey in addition to detailed geological mapping should be undertaken prior to carrying out any drilling program.

C. PROPERTY, LOCATION AND ACCESS

The property discussed consists of a group of 8 contiguous mining claims in Webb township over which both magnetic and electromagnetic surveys were carried out. These claims are designated by the following numbers:

PA 533133-5 3 inclusive claims
PA 490451-5 5 inclusive claims

The claim group is located along a forestry access road, near the eastern shore of Gullwing Lake in Webb township some 16 miles NE of Dryden, Ontario.

Access to the property is readily available by means of a secondary gravel road which parallels the southern shore of Gullwing Lake. A smaller, narrower gravel road which connects to the access road cuts across the SW corner of the claim group.

D. INSTRUMENT AND SURVEY DATA

The surveys were conducted over previously cut line spaces at 400 foot intervals across the property and oriented approximately north-south. A total of 4.88 miles of grid and baseline were cut and picketed every 100 feet. The baseline is 4490 feet long, its azimuth is 082°.

1. Magnetometer Survey

The magnetometer survey was carried out with a Geometrics "Unimag II" (model 836) portable proton magnetometer. This type of magnetometer utilizes the precession of spinning protons or nuclei of the hydrogen atom in a sample of hydrocarbon fluid to measure the total magnetic intensity.

These spinning protons behave as small spinning dipoles which are temporarily aligned or polarized by the application of a uniform magnetic field generated by a current in a coil of wire. When the current is removed, the spin of the proton causes them to precess about the direction of the ambient or earth's magnetic field. The

precessing proton then generates a small signal in the same coil used to polarize it, a signal whose frequency is precisely proportional to the total magnetic field intensity and independent of the orientation of the coil (sensor of the magnetometer). Operation of the instrument is simple: one simply presses a button and reads the number for the total magnetic field strength in gammas (γ), with a sensitivity of $\pm 10 \gamma$ (gammas). Readings were taken every 50 feet along both the grid and the baseline for a total of 508 stations. Readings along the baseline served as a standard to make the necessary corrections to compensate for the diurnal variations of the local magnetic field.

2. Electromagnetic Survey

The electromagnetic survey was carried out using a "Geonics" EM-16 unit. The EM-16 is a sensitive receiver covering the frequency of the V.L.F. (very low frequency) transmitting stations, with a means of measuring the vertical field components. The VLF transmitting stations operating for communication with submarines, have a vertical antenna. The antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, secondary fields are set up radiating from these bodies. The EM-16 equipment measures the vertical component of these secondary fields.

The receiver has two inputs with two receiving coils built into the instrument. One coil has a normally vertical axis, and the other, a horizontal one. Secondary fields caused by conductive bodies, are therefore measured by the EM-16 by the angle of dip on the instrument and by measured percentage of the quadrature component (out of phase component) to give a null signal. Any deviation from the zero null position is indicative of a secondary field and therefore, of a possible conductive body.

The transmitting station used for this survey was station NLK (18.6 khz) - Seattle, Washington, U.S.A.

Readings were taken at 50 foot intervals along the picketed lines for a total of 473 stations, covering 4.03 miles of line.

E. DISCUSSION OF RESULTS

1. Magnetometer Survey (See Drawing #1)

Numerous small and somewhat irregular magnetic anomalies are found mainly in the western position of the claim group (see drawing #1). The anomalies correspond roughly to the entire outcrop area of the claim group, are east-west striking, and may represent slightly magnetic diabase dykes which crosscut the host rocks or some other slightly magnetic, east-west trending geological feature such as a lithological difference (i.e. magnetite-bearing sediments, lavas or intrusives) which contrasts with the surrounding rock types.

A few irregular magnetic highs are also found in the eastern part of the claim block and along the northeast boundary. These are most likely due to lithological variations of slightly more magnetic rocks than the surrounding area.

2. Electromagnetic Survey (See Drawings #2 and #3)

Several medium strength east-west conductors were detected by the EM-16 survey. Conductors A and B, B', B'' (see drawing #2) represent the southern and northern edges of the outcrop area, respectively. They probably represent shear zones with minor sulphide mineralization. These shear zones may occur within one lithological unit or may occur as sheared contacts between different lithological units. Another less likely alternative is that these conductors represent the overburden-outcrop interface with a moderate to strongly conductive overburden.

The "Fraser filtered" data for these same conductors confirms their presence, strength and orientation (see drawing #3). The Fraser filtered data allows for better correlation of data between lines (where there is no information with profiles). This method of data treatment also

allows for some sort of standardized comparison between the relative strengths of different conductors (i.e. the strongest conductors (> + 30 contours).

Conductor A' is probably partly caused by disseminated sulphides. Several pits are located in the immediate area of conductor A' - south of the baseline (50') and from L44-00W to the western claim line. The mineralization consists of minor (1-5% pyrite - minor cpy).

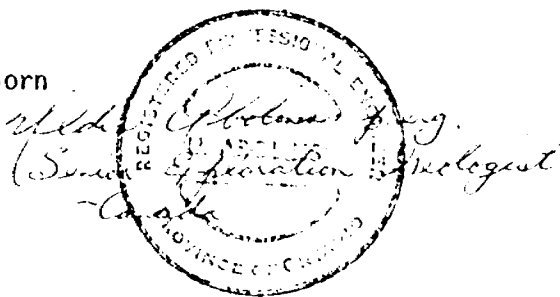
Conductor C also appears to be a medium strength conductor with both in phase and quadrature response. The Fraser filtered data also nicely outlines this medium strength conductor with the + 30 contour. This east-west striking conductor is interpreted as a probable shear zone (with minor sulphides) which parallels the other probable shear zone represented by conductors B, B', B'' and A, A'.

Conductors D, E and F are slightly weaker conductors (see diagram 3) in which there generally are both in phase and quadrature responses but the amplitudes of the inflections seen in the profiles (drawing #2) are not very great. Thus, these conductors are not as strong nor outlined as clearly by the Fraser filtered data (drawing #3). These conductors are however, also interpreted to represent probable shear zones (as before) which are along strike and parallel to the 3 shear zones (previously inferred) in the western part of the claim group.

Although distinctive features were outlined in both the electromagnetic and magnetic surveys, there is little correlation between EM-16 conductors and any major magnetic features such as areas of high magnetic readings.

per Peter Born

1/50



APPENDIX

PROFESSIONAL QUALIFICATIONS

Peter Born, B. Sc. (HON), M. Sc. (GEOLOGY)

- Graduate B. Sc. (HON) Geology - Carleton University, Ottawa, Ontario -1976.
- Graduate M. Sc. (Geology) - Laurentian University, Sudbury, Ontario -1979

Thesis Title - Geology of the East Bull Lake layered complex,
District of Algoma, Ontario.

Material from thesis included into two short
papers: GSC paper 78-1A and in Abstract and
Program-Joint Meeting Geol. Ass. Can. and Geol.
Soc. Amer. Toronto, Ontario, 1978.

- Member of the Geological Association of Canada
- 1979 (Jan-Dec) worked for Urangesellschaft Canada Limited, as a field geologist on a project located in the Northwest territories.
- 1980 (Jan) joined Patino Mines (Quebec) Limited as a exploration/field geologist at their Chibougamau (Quebec) exploration office and worked on various properties in both Ontario and Quebec.



Peter Born

Chibougamau (Quebec)
November 13th, 1980



Ministry of
Natural
Resources

Ontario



52F16NW0121 52F16NW0060 WEBB

900

52 F/15 NE (24)

Your file:

March 2, 1981

Our file: 2.3604

Mr. Albert Hanson
Mining Recorder
Ministry of Natural Resources
P.O. Box 669
Sioux Lookout, Ontario
POV 2T0

Dear Sir:

Re: Geophysical (Electromagnetic and Magnetometer)
Survey on Mining Claim PA.490451 et al, in the
Township of Webb

The Geophysical (Electromagnetic and Magnetometer)
Survey assessment work credits as shown on the
attached statement have been approved as of the
above date.

Please inform the recorded holder of these mining
claims and so indicate on your records.

Yours very truly,

E.F. Anderson, Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

FWM FWM/RS

Enc.

cc: Patino Mines (Quebec) Limited
Toronto, Ontario

cc: Patino Mines (Quebec) Limited
Chibougamau, Quebec
Attention: Mr. Peter S. Born

cc: Resident Geologist
Sioux Lookout, Ontario



Recorded Holder	Patino Mines (Quebec) Limited
Township or Area	Township of Webb

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	
Electromagnetic _____ 20 _____ days	PA.490451 to PA.490455, incl
Magnetometer _____ 40 _____ days	PA.533132 to PA.533134, incl.
Radiometric _____ days	
Induced polarization _____ days	
Section 86 (18) _____ days	
Geological _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 86 (15a) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey Insufficient technical data filed



Ontario

Ministry of
Natural
Resources

Notification of recording
of assessment work credits

Supervisor, Projects Unit
Mining Lands Section
Ministry of Natural Resources
Room 1617, Whitney Block
Queen's Park, Toronto
M7A 1W3

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1.0V 2 5 1980

MINING LANDS SECTION

Date of recording of work: October 24, 1980

Recorded holder: Patino Mines (Quebec) Limited

Address: 7 King St. E., Suite 1401, Toronto, Ont. M5C 1A6

Township or Area: Webb Township M-1874

Type of survey and number of Assessment days credit per claim	Mining claims
Geophysical	Pa. 490451-55 incl. Pa. 533132-34 incl.
Electromagnetic <u>20</u> days	
Magnetometer <u>40</u> days	
Radiometric _____ days	
Induced polarization _____ days	
Section 86 (18) _____ days	
Geological _____ days	
Geochemical _____ days	
Man days <input type="checkbox"/>	Airborne <input type="checkbox"/>
Special provision <input type="checkbox"/>	Ground <input checked="" type="checkbox"/>

Notice to recorded holder:

- Survey reports and maps in duplicate must be submitted to the Projects Unit, Toronto within 60 days from the date of recording of this work.
- Reports and maps are being forwarded to the Projects Unit with this letter.

Mining recorder

c.c. Patino Mines (Quebec) Limited
Toronto, Ont.
Peter Born-Chibougamau, Quebec
#80-58



Ontario

Ministry of Natural Resources

GEOPHYSICAL - GEOLOGICAL + GEOCHEMICAL
TECHNICAL DATA STATEMENT

File _____

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

12 1980

Type of Survey(s) Geophysical
Township or Area Webb Twp.
Claim Holder(s) PATINO MINES (QUEBEC) LTD

MINING LANDS SECTION
MINING LANDS SECTION

Survey Company PATINO MINES (QUE) LTD
Author of Report PETER BORN
Address of Author CHIBOUGAMAU, QUE.
Covering Dates of Survey June - Nov. 1980
(linecutting to office)
Total Miles of Line Cut 4.88

MINING CLAIMS TRAVERSED
List numerically

PA	490451
PA (prefix)	490452 (number)
PA	490453
PA	491454
PA	490455
PA	533133 ²
PA	533134 ³
BPA	533135 ⁴

SPECIAL PROVISIONS CREDITS REQUESTED	Geophysical	DAYS per claim
ENTER 40 days (includes line cutting) for first survey.	-Electromagnetic	40
ENTER 20 days for each additional survey using same grid.	-Magnetometer	
	-Radiometric	
	-Other	
	Geological	
	Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)
Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Nov. 20, 1980 SIGNATURE: Peter Born
Author of Report or Agent

Res. Geol. _____ Qualifications _____

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS _____

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 508 Number of Readings 508
Station interval 50' Line spacing 400 ft.
Profile scale
Contour interval 60,000', 60,200', 60,300', 60,400'

MAGNETIC

Instrument GEOMETRICS UNIMAG II (model 836)
Accuracy - Scale constant +/- 10%
Diurnal correction method done by using BASELINE as standard
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument
Coil configuration
Coil separation
Accuracy
Method: [] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency (specify V.L.F. station)
Parameters measured

GRAVITY

Instrument
Scale constant
Corrections made
Base station value and location
Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument
Method [] Time Domain [] Frequency Domain
Parameters - On time Frequency
- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode



GEOPHYSICAL - GEOLOGICAL - GECHEMICAL
TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

RECEIVED

EC 12 1980

MINING LANDS SECTION

Type of Survey(s) Geophysical
Township or Area Webb Twp
Claim Holder(s) PATINO MINES (QUEBEC) LTD
Survey Company PATINO MINES (QUEBEC) LTD
Author of Report PETER BORN
Address of Author CHIBOUGAMAU, QUE
Covering Dates of Survey JUNE - NOV. 1980
(linecutting to office)
Total Miles of Line Cut 4.88

MINING CLAIMS TRAVERSED
List numerically

PA	MTC	490451	EM
(prefix)	✓	(number)	✓
PA	✓	490452	✓
PA	✓	490453	✓
PA	✓	490454	✓
PA	- $\frac{1}{4}$	490455	- $\frac{1}{4}$
PA	✓	533133 ²	✓
PA	✓	533134 ³	✓
PA	✓	533135 ⁴	✓

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

DAYS
per claim

ENTER 40 days (includes
line cutting) for first
survey.
ENTER 20 days for each
additional survey using
same grid.

Geophysical
- Electromagnetic 20
- Magnetometer _____
- Radiometric _____
- Other _____
Geological _____
Geochemical _____

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: Nov. 29 1980 SIGNATURE: Peter Born
Author of Report or Agent

Res. Geol. _____ Qualifications on this file

Previous Surveys

File No.	Type	Date	Claim Holder
			L.D.

TOTAL CLAIMS 8

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS - If more than one survey, specify data for each type of survey

Number of Stations 473 Number of Readings 473
Station interval 50 ft. Line spacing 400 ft.
Profile scale 1 inch to 20%
Contour interval 0, 10, 20, 30, 50

MAGNETIC

Instrument GEONICS EM-16
Accuracy - Scale constant
Diurnal correction method
Base Station check-in interval (hours)
Base Station location and value

ELECTROMAGNETIC

Instrument GEONICS EM-16
Coil configuration COPLANAR, COAXIAL
Coil separation
Accuracy +/- 1%
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency NLK - Seattle, Washington, USA 18.6 KHz (specify V.L.F. station)
Parameters measured

GRAVITY

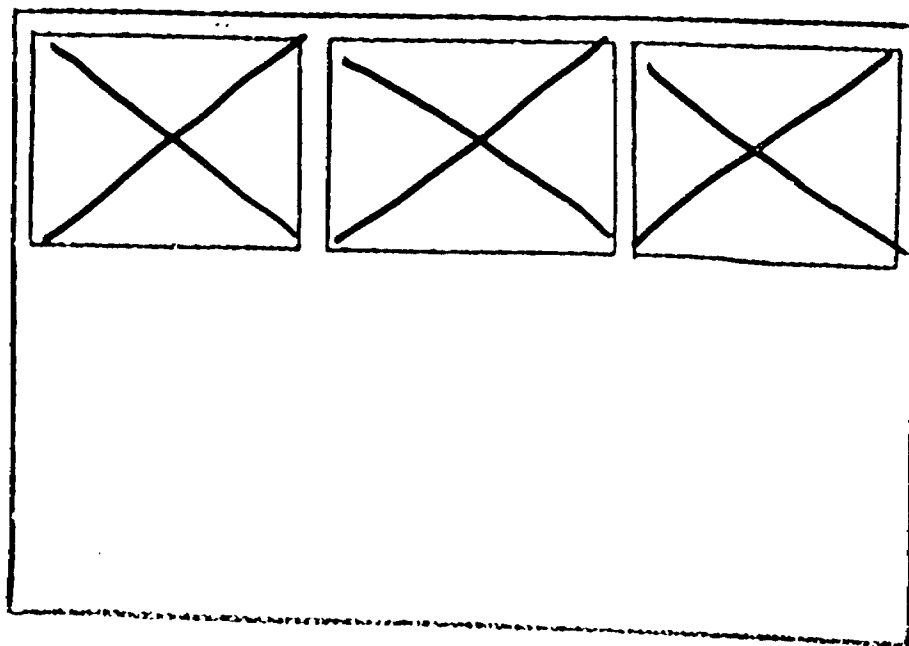
Instrument
Scale constant
Correction made
Base station value and location
Elevation accuracy

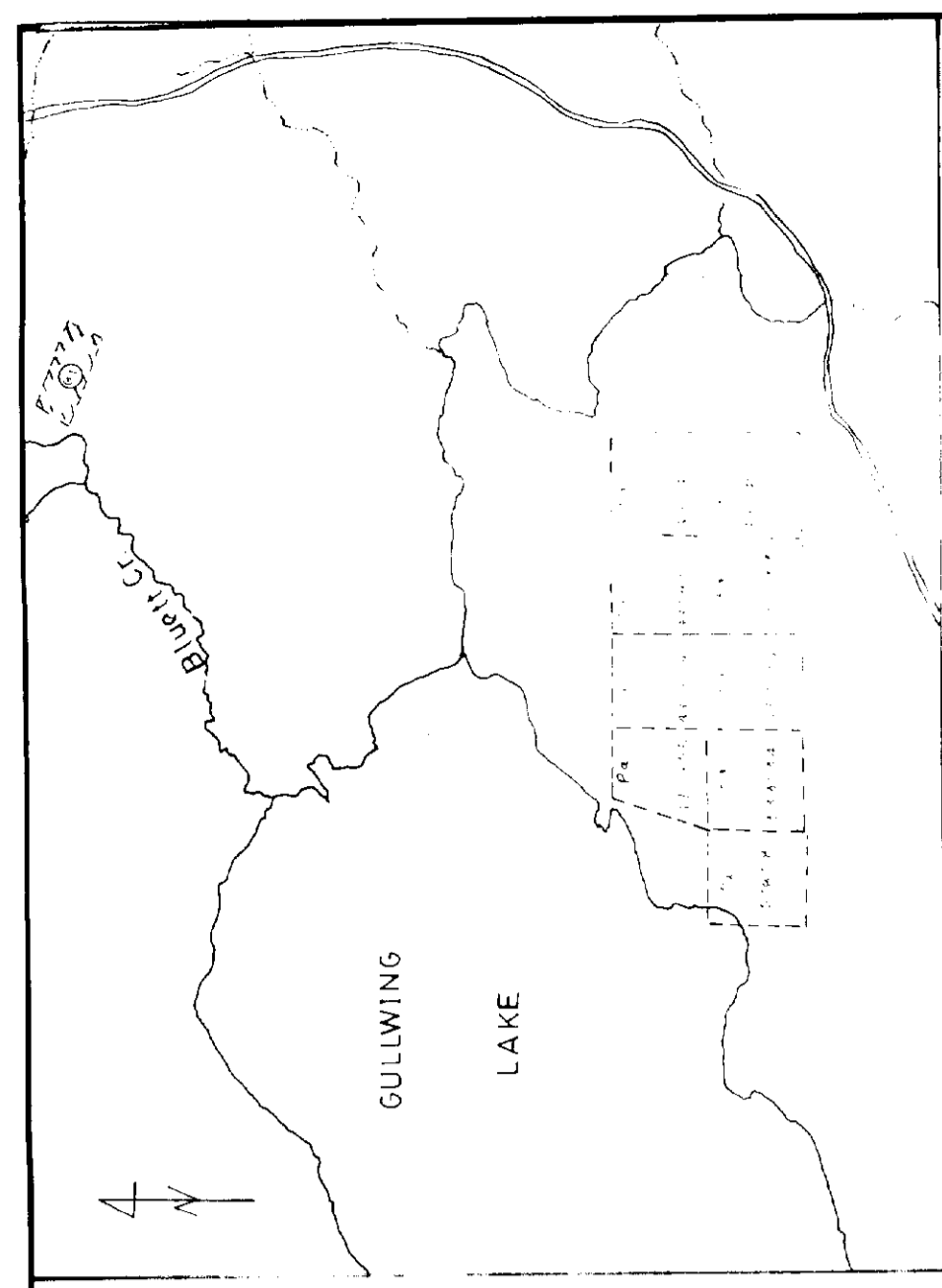
INDUCED POLARIZATION RESISTIVITY

Instrument
Method [] Time Domain [] Frequency Domain
Parameters - On time Frequency
-- Off time Range
- Delay time
- Integration time
Power
Electrode array
Electrode spacing
Type of electrode

SEE ACCOMPANYING
MAP(S) IDENTIFIED AS
52 F/16 NW-0060 (1,2,3)

LOCATED IN THE MAP
CHANNEL IN THE FOLLOWING
SEQUENCE (X)

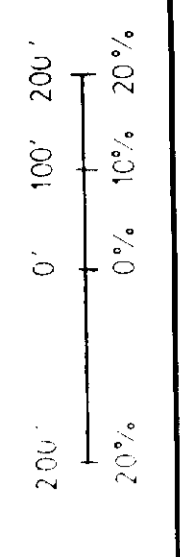




ELECTROMAGNETIC SURVEY (WEBB TWP PROPERTY)

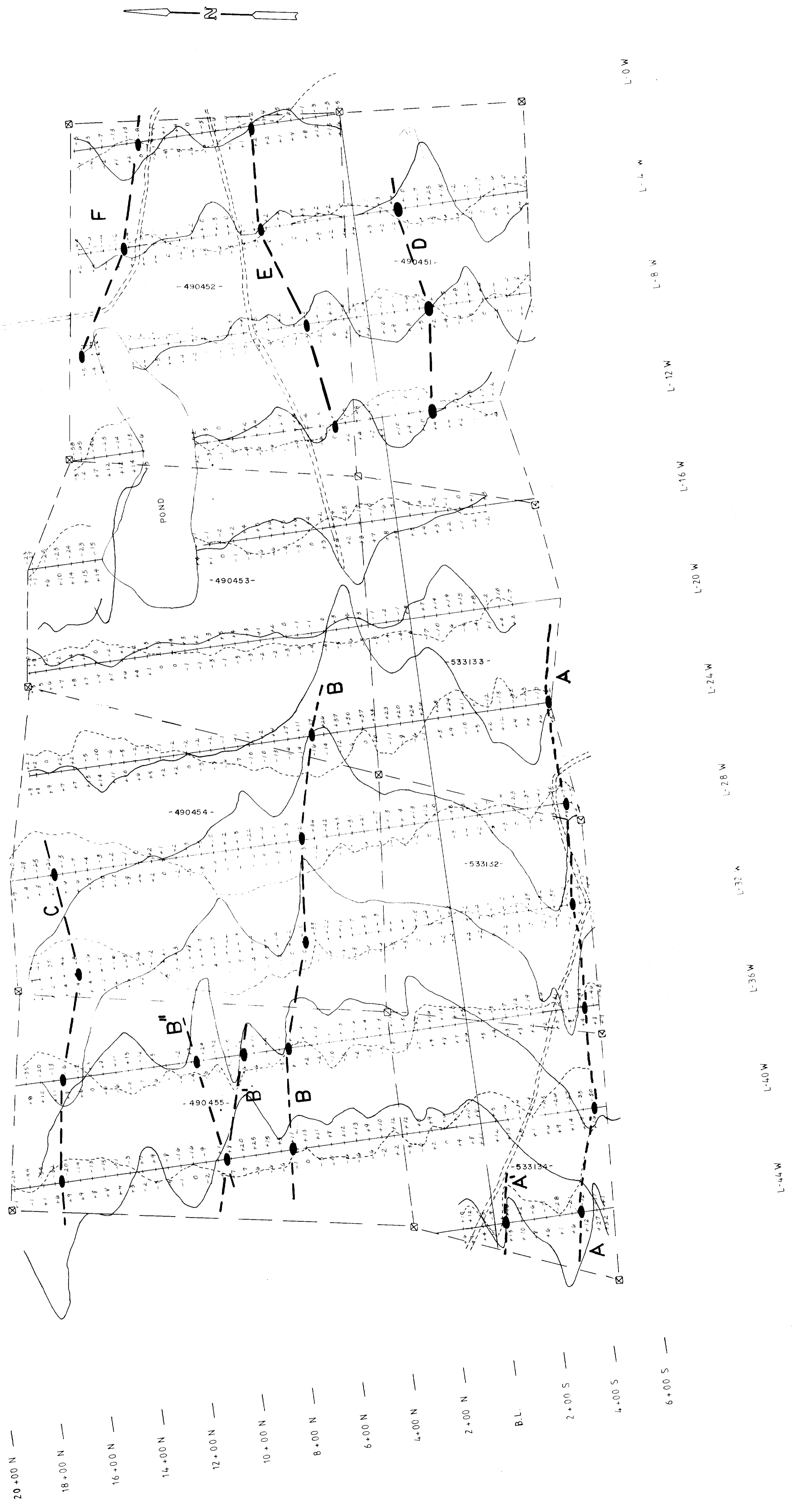
LEGEND:

INSTRUMENT: FM 76 (GEONICS)
 OPERATOR: R. WOJCIECH
 READING: IN-PHASE AND QUADRATURE
 COMMENTS:
 STATION: N.L.K. (1.4, 6 Khz)
 PROFILES:
 QUADRATURE IN PHASE
 ● CONDUCTOR AXIS
 DATE: OCT 80
 SCALE: 1" = 200' ± 2%



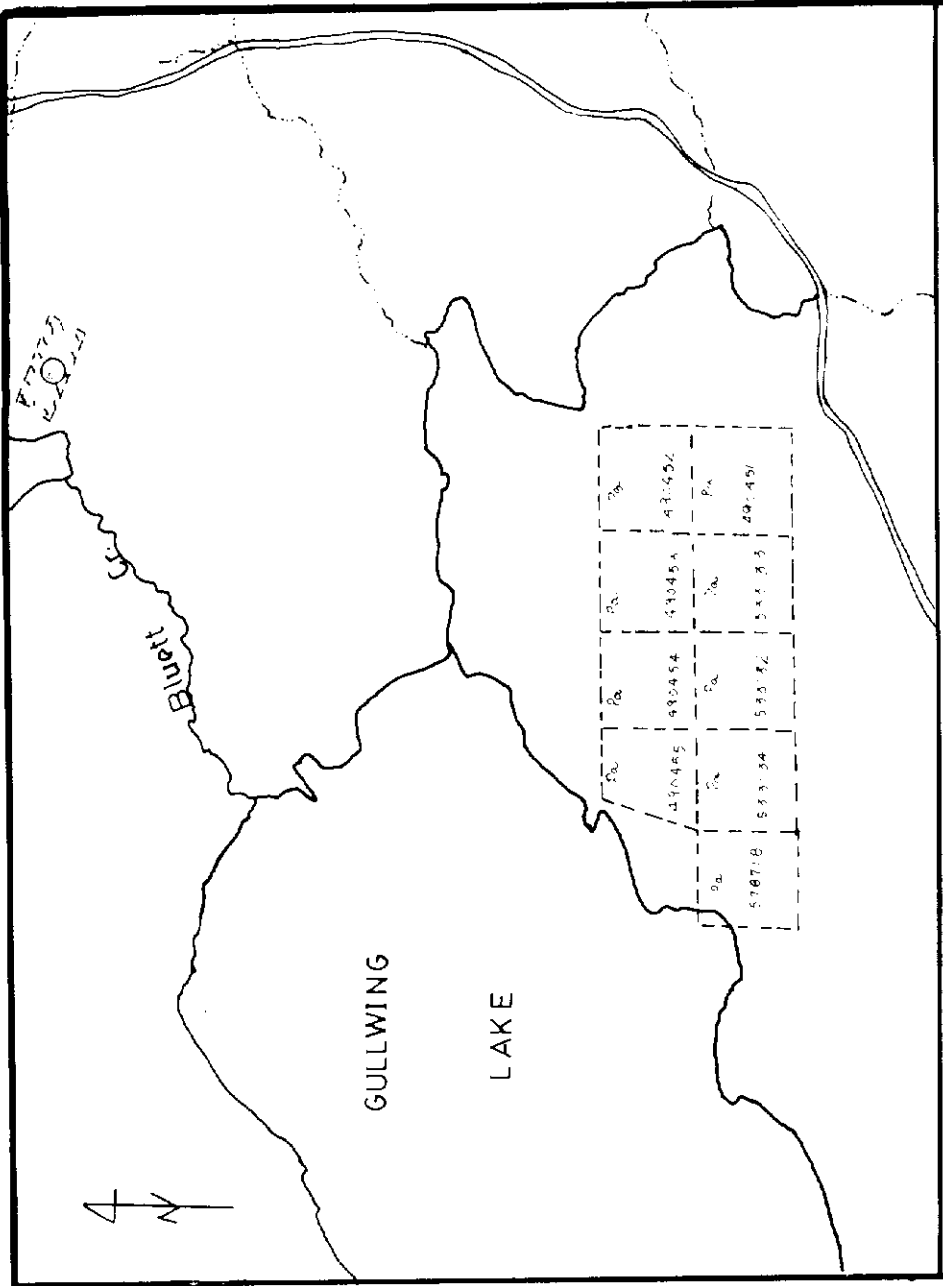
PATINO MINES QUEBEC LIMITED
 Exploration Department
 ELECTROMAGNETIC SURVEY
 WEBB TWP PROPERTY

designed by S.L. date NOV 80 Scale 1" = 200'
 conducted by R. WOJCIECH date OCT 80
 checked by P. BORN date NOV 80 Drawing No. 2



52 File NW-0060 # 2

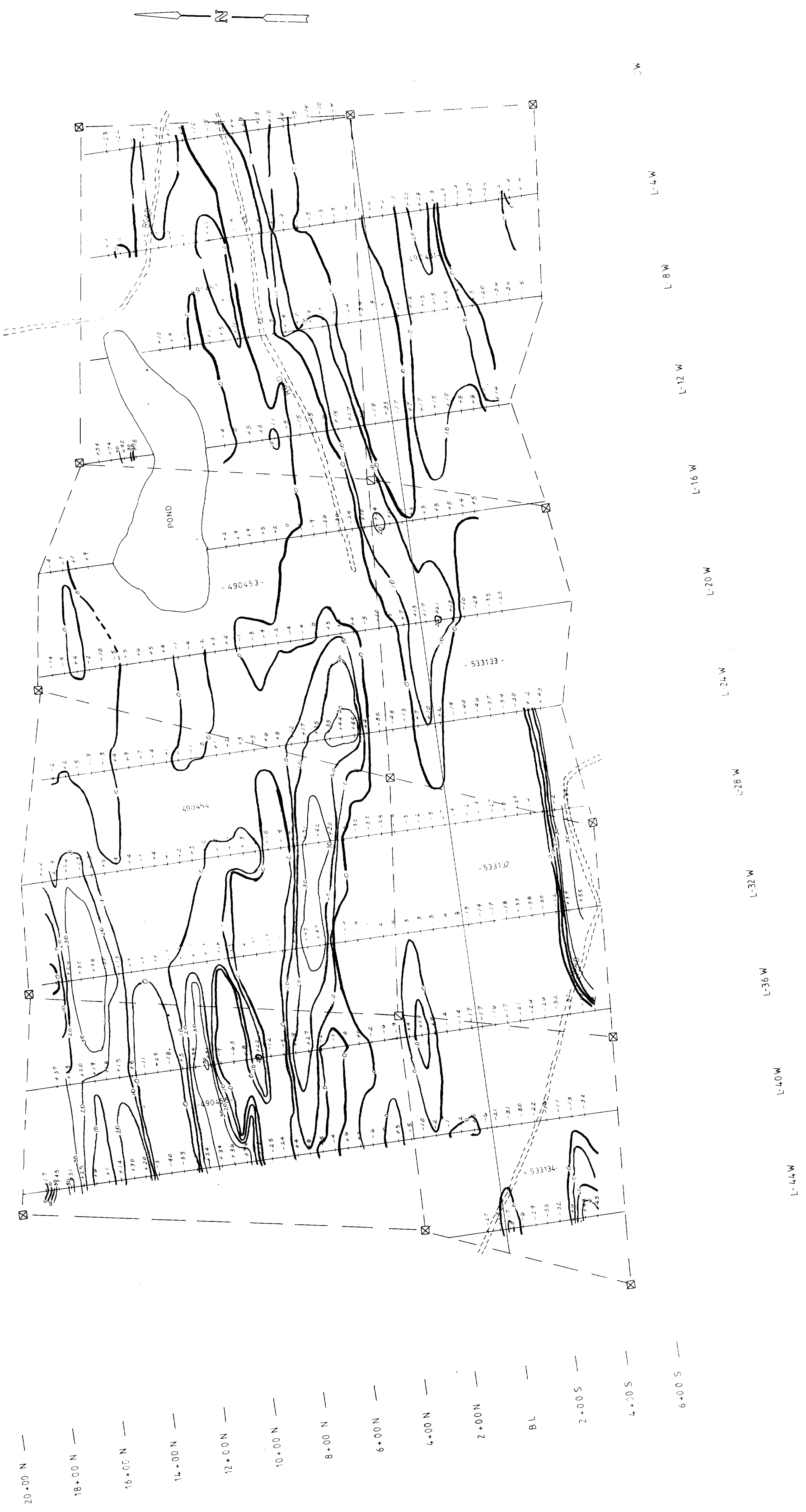
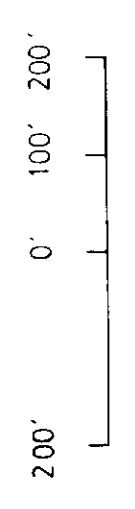




ELECTROMAGNETIC SURVEY (WEBB TWP. PROPERTY)

LEGEND:

INSTRUMENT: EM-16 (GEONICS)
 OPERATOR: R. WOJCIECH
 READINGS: FRASER FILTER OF IN PHASE COMPONENT
 STATION: NLK (18.6 KHz)
 CONTOURS: 0 - 30
 10 - 50
 20 - 80
 DATE: OCT. 80
 SCALE: 1" = 200'



PATINO MINES QUEBEC LIMITED
 Exploration Department

ELECTROMAGNETIC SURVEY
 WEBB TWP. PROPERTY

Drawn by: S. L. date: NOV 80
 Conducted by: R. WOJCIECH date: OCT. 80
 Checked by: F. BIGNON date: NOV 80

Scale: 1" = 200'
 Drawing No: 3

52.F/16.NW-0060 # 3

