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JUN 29 1990

MINING LANDS SECTION

GEOPHYSICAL REPORT

(Magnetic & Electromagnetic Surveys)
on properties held by
Messrs. D. Jones and T. Kioke Jr.
for
CROSS LAKE MINERALS LTD.
in
Fox Township, Porcupine Mining Division
and
Stimson Township, Larder Lake Mining Division
District of Cochrane, Ontario
by

J.W. Newsome, Ph.D.

February 28, 1990

2.13401

Qual 2.8733

NOTE: Report of Work for Fox Twp is in file 2.13619

M-370/371

TABLE OF

ABSTRACT

Total field magnetics and horizontal loop electromagnetic surveys were conducted by Robert S. Middleton Exploration Services Inc., Timmins, Ontario, between February 18 and 25, 1990, on three separate claim groups held by Messrs. David Jones and Tom Kioke Jr., both residents of Timmins, in Fox Township, Porcupine Mining Division and Stimson Township, Larder Lake Mining Division, Ontario. All claims are currently held in trust to be transferred to Cross Lake Minerals Ltd., on who's behalf the surveys were conducted. The purpose of the surveys was to ground truth several airborne EM anomalies considered to be caused by sulphide mineralization with possible base and/or precious metals potential.

The three separate claim groups are denoted Blocks 'A', 'B' and 'C'. Several weak to strong electromagnetic anomalies, some proximal to magnetic high signatures (ultramafic rocks?) and interpreted structural lineaments, were defined on Blocks 'B' and 'C' (and possibly 'A').

A two-phased proposed work program of additional claim staking, continued geophysical surveying and initial diamond drill testing of anomalies is recommended at a total budget of approximately $128,390.

INTRODUCTION

At the request of the directors of Cross Lake Minerals Ltd., ground geophysical surveys consisting of total field magnetics and horizontal loop electromagnetics were conducted on three separate claim groups in Fox Township, Porcupine Mining Division and Stimson Township, Larder Lake Mining Division, Ontario (Figures 1 and 2). The surveys were performed between February 18 and 25, 1990, by Robert S. Middleton Exploration Services Inc., Timmins, Ontario, to verify and delineate several airborne EM anomalies as shown on O.G.S. Map 81220 (Figure 4) considered as potential base and/or precious metals sulphide targets associated with mafic to ultramafic rocks.

PROPERTY DESCRIPTION, LOCATION AND ACCESS

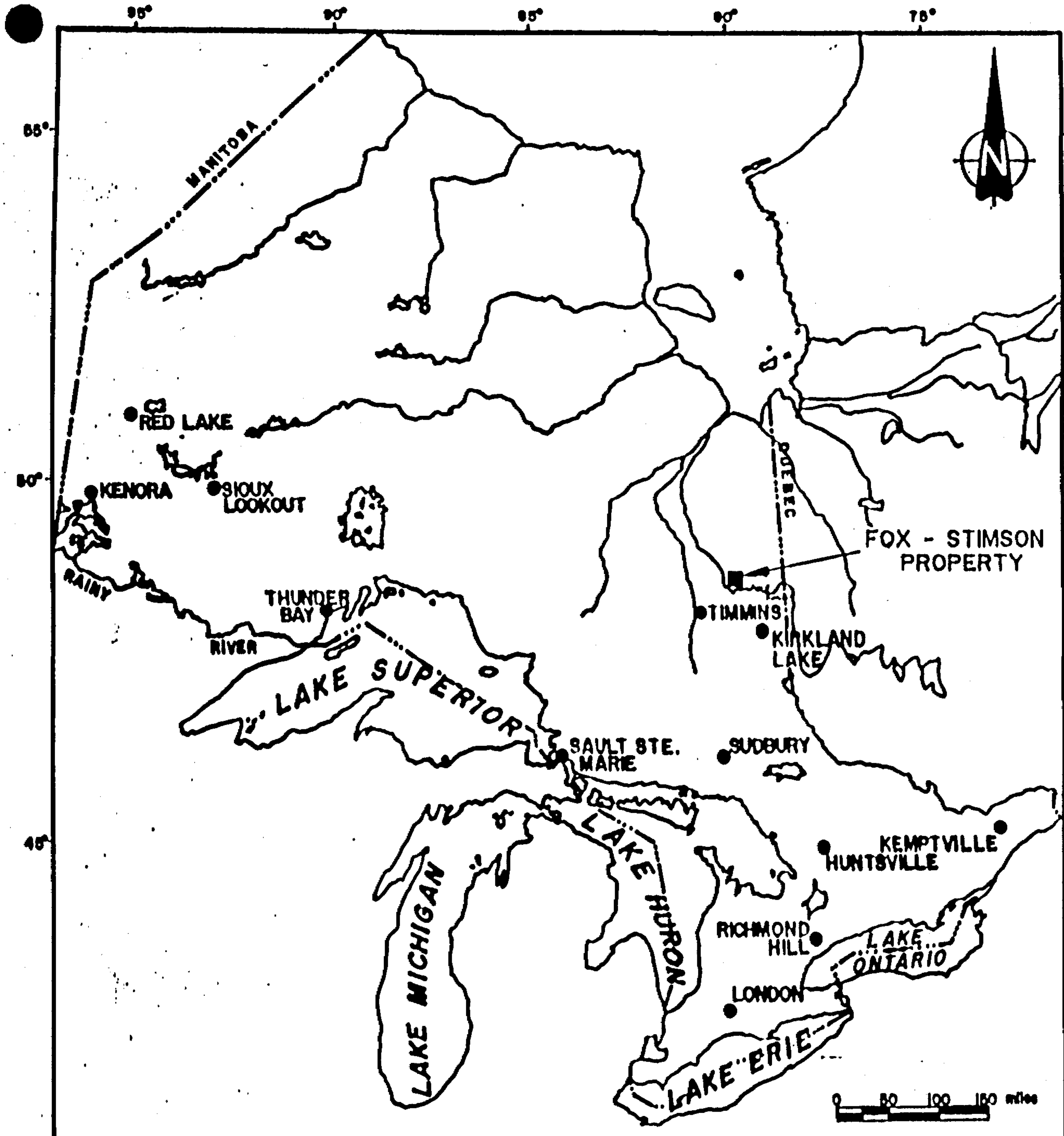
The property consists of 3 separate claim groups, hereafter referred to as Blocks A,B and C, comprised of 4,7 and 8 contiguous 40-acre unpatented claims respectively, (Figure 3). The claims which comprise the various blocks along with the recorded claim holders and recording dates are as follows:

Block A - Fox Township

Claim No.	Recorded Holder	Recording Date
P1113589	David Jones	June 27, 1989
P1113590	David Jones	June 27, 1989
P1113591	David Jones	June 27, 1989
P1113592	David Jones	June 27, 1989

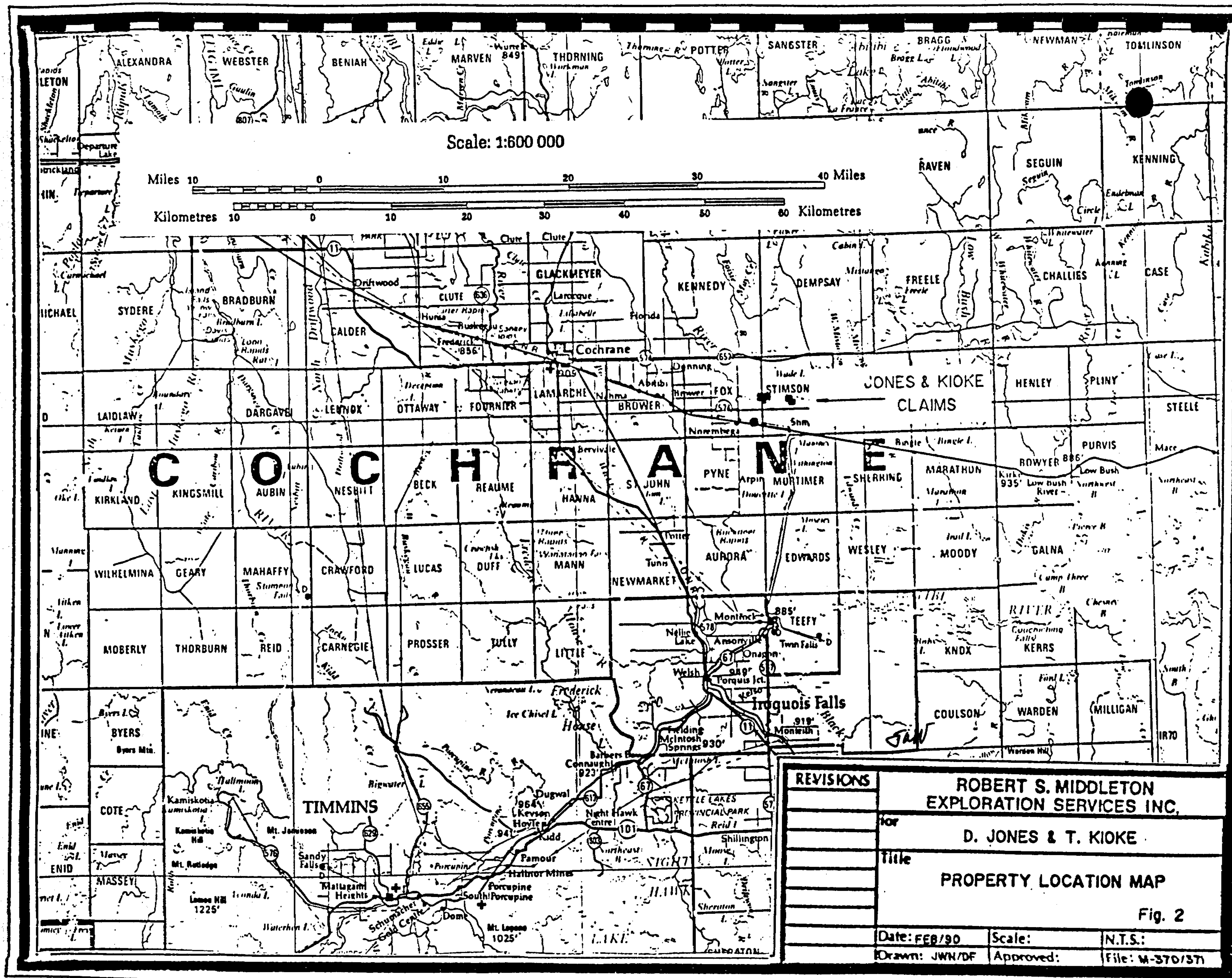
Block B - Fox and Stimson Townships

Claim No.	Recorded Holder	Recording Date
P1128614	Tom Kioke Jr.	February 15, 1990
P1128615	Tom Kioke Jr.	February 15, 1990
L1128616	Tom Kioke Jr.	February 15, 1990
L1128617	Tom Kioke Jr.	February 15, 1990
L1128618	Tom Kioke Jr.	February 15, 1990
L1128619	Tom Kioke Jr.	February 15, 1990
L1128620	Tom Kioke Jr.	February 15, 1990



PROVINCE OF ONTARIO

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	For D.JONES & T.KIOKE JR.		
	Title REGIONAL LOCATION MAP		Fig. 1
	Date: FEB/90	Scale: 1" = 160 mi.	N.T.S.:
	Drawn: JWN/DF	Approved:	File: M370/371



REVISIONS

ROBERT S. MIDDLETON EXPLORATION SERVICES INC.

for D. JONES & T. KIOKE

Title PROPERTY LOCATION MAP

Fig. 2

Date: FEB/90	Scale:	N.T.S.:
Drawn: JWN/DF	Approved:	File: M-370/371

Block C - *Stimson Township*

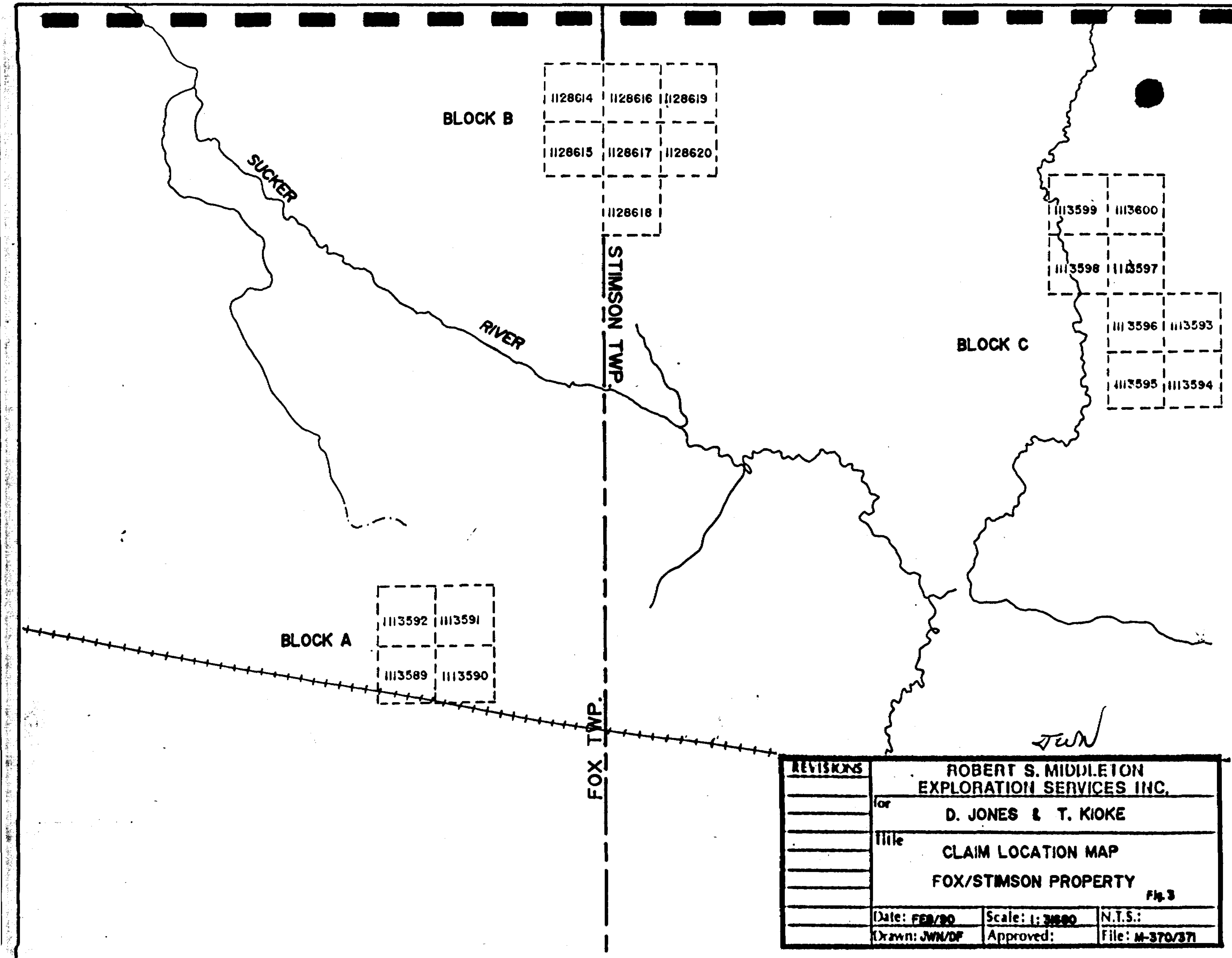
Claim No.	*Recorded Holder*	*Recording Date*
L1113593	David Jones	June 26, 1989
L1113594	David Jones	June 26, 1989
L1113595	David Jones	June 26, 1989
L1113596	David Jones	June 26, 1989
L1113597	David Jones	June 26, 1989
L1113598	David Jones	June 26, 1989
L1113599	David Jones	June 26, 1989
L1113600	David Jones	June 26, 1989

Claim Block A is located in the southeast sector of Fox Township near the hamlet of Norembega. Access is provided via Highway 574 from Cochrane, located approximately 29 kms to the northwest, to Norembega and from there eastward via snowmobile for a distance of approximately 1 km along a powerline which traverses the southwest corner of claim no. P1113589.

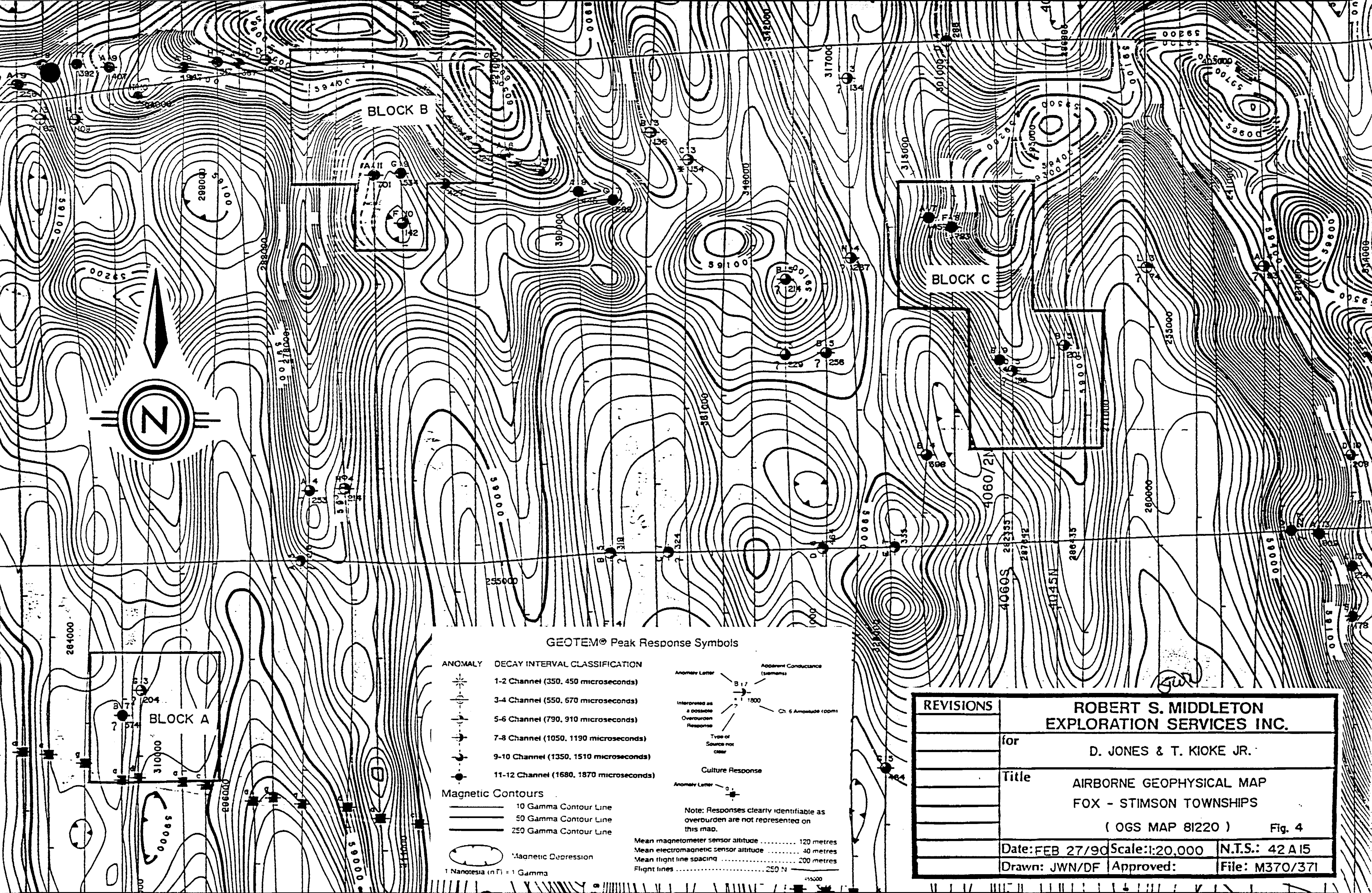
Claim Block B is accessed from Block A via snowmobile by continuing along the powerline for a distance of approximately 1.6 kms to the intersection of the Fox-Stimson Township line and from there northward for a distance of approximately 3.4 kms to where the township line intersects the no.3 post of claim no. L1128618.

Claim Block C is located in central Stimson Township. Access to the claims is provided either by helicopter or from the town of Iroquois Falls, located some 27 kms to the south, via the Abitibi Price forest access road to a point east of Dowie Lake and from there westward via snowmobile across the lake and down a creek flowing west from the southwest corner of the lake for a distance of approximately 2.5 kms to where the creek enters onto claim no. L1113597.

The terrain encompassing the three claim blocks is generally flat, poor to moderately drained and covered by stands of dominantly black spruce. Bedrock outcrops are non-existent due to a pervasive mantle of Pleistocene-age glacial and lacustrine sediments.



BLOCK B
1128614
1128616
1128619
1128615
1128617
1128620
1128618
SUCKER
RIVER
STIMSON TWP.
FOX TWP.
BLOCK C
1113599
1113600
1113598
1113597
1113596
1113593
1113595
1113594
BLOCK A
1113592
1113591
1113589
1113590
JWN
REVISIONS
ROBERT S. MIDDLETON
EXPLORATION SERVICES INC.
for
D. JONES & T. KIOKE
Title
CLAIM LOCATION MAP
FOX/STIMSON PROPERTY
Fig. 3
Date: FEB/90
Scale:
N.T.S.:
Drawn: JWN/DF
Approved:
File: M-370/371


BLOCK A
BLOCK B
BLOCK C
N
GEOTEM® Peak Response Symbols
ANOMALY
DECAY INTERVAL CLASSIFICATION
1-2 Channel (350, 450 microseconds)
3-4 Channel (550, 670 microseconds)
5-6 Channel (790, 910 microseconds)
7-8 Channel (1050, 1190 microseconds)
9-10 Channel (1350, 1510 microseconds)
11-12 Channel (1680, 1870 microseconds)
Anomaly Letter
Apparent Conductance (siemens)
Interpreted as a possible Overburden Response
Type of Source not clear
Ch. 6 Amplitude (ppm)
Culture Response
Anomaly Letter
Magnetic Contours
10 Gamma Contour Line
50 Gamma Contour Line
250 Gamma Contour Line
Magnetic Depression
1 Nanotesla (nT) = 1 Gamma
Note: Responses clearly identifiable as overburden are not represented on this map.
Mean magnetometer sensor altitude .... 120 metres
Mean electromagnetic sensor altitude .... 40 metres
Mean flight line spacing .... 200 metres
Flight lines .... 250 N
REVISIONS
ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
for
D. JONES & T. KIOKE JR.
Title
AIRBORNE GEOPHYSICAL MAP
FOX - STIMSON TOWNSHIPS
(OGS MAP 81220)
Fig. 4
Date: FEB 27/90
Scale: 1:20,000
N.T.S.: 42 A 15
Drawn: JWN/DF
Approved:
File: M370/371

GEOLOGY

The regional and property bedrock geology, interpreted primarily from airborne geophysical data and supported by regional geological data including mapping and diamond drilling, suggests that the property is underlain by mafic metavolcanic and ultramafic rocks. All rock types are cut by younger, north trending diabase dykes. The metamorphic grade is thought to be upper greenschist to lower amphibolite facies as suggested by diamond drill data from the southeastern sector of Stimson Township. Airborne EM anomalies occur within all three claim blocks and may represent massive to semi-massive or stringer-type sulphide mineralization.

SURVEY STATISTICS AND PERSONNEL

The surveys, requiring 8 days to complete (excluding line cutting), comprised a total of 41.2 kms of total field magnetics (Block A =8.8 kms, Block B =15.2 kms and Block C =17.2 kms) with readings taken at 12.5 to 25m intervals along 100 m-spaced lines as well as grid base lines and tie lines and a total of 34.0 kms of MaxMin II horizontal loop electromagnetics (Block A =7.2 kms, Block B =12.4 kms and Block C =14.4 kms) with 3 frequency readings (444Hz, 1777Hz and 3555Hz) using a 200m coil separation being taken at 25m intervals along 100m spaced lines. The surveys were conducted by Tom McAllister, Brent McAllister and Denis Crowley, all residents of Timmins, Ontario.

SURVEY PROCEDURE

MAGNETICS

Theory

The magnetic method is based on measuring alteration in the shape and magnitude of the earth's naturally occurring magnetic field caused by changes in the magnetization of the rocks in the earth.

These changes in magnetization are due mainly to the presence of the magnetic minerals, of which the most common is magnetite, and to a lesser extent ilmenite, pyrrhotite, and some less common minerals.

Magnetic anomalies in the earth's field are caused by changes in two types of magnetization: induced and remanent (permanent). Induced magnetization is caused by the magnetic field being altered and enhanced by increases in the magnetic susceptibility of the rocks, which is a function of the concentration of the magnetic minerals.

Remanent magnetism is independent of the earth's magnetic field, and is the permanent magnetization of the magnetic particles (magnetite, etc.) in the rocks. This is created when these particles orient themselves parallel to the ambient field when cooling. This magnetization may not be in the same direction as the present earth's field, due to changes in the orientation of the rock or the field.

The most common method of measuring the total magnetic field in ground exploration is with a proton precession magnetometer. This device measures the effect of the magnetic field on the magnetic dipole of hydrogen protons. This dipole is caused by the "spin" of the proton, and in a magnetometer these dipoles in a sample of hydrogen-rich fluid are oriented parallel to a magnetic field applied by an electric coil surrounding the sample. After this magnetic field is removed, the dipoles begin to precess (wobble) around their orientation under the influence of the ambient earth's magnetic field. The frequency of this precession is proportional to the earth's magnetic field intensity.

Field Method

The magnetics data were collected with a Geonics G-816 proton precession magnetometer, which measures the absolute value of the total magnetic field of the earth to an accuracy of ± 1n Tesla. The magnetometer is carried down the survey line by a single operator, with the sensor mounted on a short pole to remove it from the surface geologic noise. Readings are normally taken at 25m intervals, and at 12.5m intervals where the operator observes a high gradient (anomaly).

The readings are corrected for changes in the earth's total field (diurnal drift) by repeating readings at base stations and "tie points" several times each day. This recorded drift is then applied to the data as a correction.

MAX-MIN II

Theory

The Max-Min II is a frequency domain, horizontal loop electromagnetic (HLEM) system, based on measuring the response of conductors to a transmitted, time varying electromagnetic field.

The transmitted, or primary EM field is a sinusoidally varying field at any of five different frequencies. This field induces an electromotive force, (emf), or voltage, in any conductor through which the field passes. This is defined by:

$$\oint E.dl = \frac{\partial \phi}{\partial t} \quad \text{(the Faraday Induction Principle)}$$

where E is the electric field strength in volts/metre (and so $\oint E.dl$ is the emf around a closed loop) and ϕ is the magnetic flux through the conductor loop. This emf causes a "secondary" current to flow in the conductor in turn generating a secondary electromagnetic field.

This changing secondary field induces an emf in the receiver coil (by the Faraday law) at the same frequency, but which differs from the primary field in magnitude and phase. The difference in phase (the phase angle) is a function of the conductance of the conductor(s), both the target and the overburden and host rock.

The magnitude of the secondary is also dependant on the conductance, and also on the dimensions, depth, and geometry of the target, as well as on the interference from overburden and the host rock.

These two parameters (phase angle and magnitude) are measured by measuring the strength of the secondary field in two components: the real field or that part "in-phase" with the primary field; and the imaginary field, or that part in "quadrature" or 90 degrees out of phase from the primary field.

The magnitude and phase angle of the response is also a function of the frequency of the primary field. A higher frequency field generates a stronger response to weaker conductors, but a lower frequency tends to pass through weak conductors and penetrate to a greater depth. The lower frequency also tends to energise the full thickness of a conductor, and gives a better measure of its true conductivity-thickness product (conductance).

For these reasons two or more frequencies are usually used; the lower for penetration and accurate measure of good conductors, and the higher frequency for strong response to weak conductors.

Distinction between conductive targets, overburden, and host rock responses are made by studying the shape of the secondary field, and the difference in the frequency responses.

The transmitted primary field also creates an emf in the receiver coil, which is much stronger than the secondary, and which must be corrected for by the receiver. This is done by electronically creating an emf in the receiver, whose magnitude is determined by the distance from receiver to transmitter as set on the receiver, and whose phase is derived from the receiver via an interconnecting wire.

Field Method

The Max-Min II survey was carried out in the "maximum coupled" mode (horizontal co-planar). The transmitter and receiver are carried in-line down the survey line separated by a constant distance (in this case 200m) with the receiver leading. Three transmitter frequencies were used: 444Hz, 1777Hz and 3555Hz and readings were taken every 25m. The transmitter and receiver are connected by a cable, for phase reference and operator communication.

Note: *the data relating to the 3555 Hz frequency has not been included in this report.*

INTERPRETATION AND RECOMMENDATIONS

BLOCK 'A' (Figures 5, 6 and 7 - Appendix I)

The magnetic signature of Block 'A' is represented by three parallel, linear, north-trending magnetic high domains which follow along survey lines L1E, L5E and L8E and are interpreted to be the response of diabase dykes, (Figure 5 - Appendix I). The intervening magnetic low areas are interpreted to be underlain by mafic metavolcanic rocks based on regional mapping and diamond drill data.

Electromagnetically, all readings south of a line between 3N on Line L0 and 0+75Non line L8E are considered to be affected by the railroad and powerlines which transect the southern portion of the claim group near its southern boundary. Consequently, all EM readings in this area may be erroneous, (Figues 6&7 - Appendix I).

An 11-12 channel airborne EM anomaly within Block 'A' shown on Figure 4 is postulated to occur within the vicinity of 4N on line L2E. However, such an anomaly is not readily apparent on the ground survey data. The hint of a weak (4% in-phase response on 444 Hz frequency), 1-line anomaly occurs on line L2E with conductor axis at approximately 5+50N and may represent the airborne EM response, (Figure 6 - Appendix I). Otherwise, the remainder of the property does not appear to have any significant electromagnetic responses. However, the saw-tooth nature of the data shown on Figures 6 and 7 (Appendix I) suggests operator error. Given this finding, along with the limiting or negative effects that the railway and powerlines had on the electromagnetic survey, further examination of the claims using IP survey method is warranted.

BLOCK 'B' (Figures 8, 9 and 10 - Appendix II)

The interior portion of the claims of Block 'B' is bounded to the east and west by linear, north trending magnetic high signatures interpreted to be caused by diabase dykes, (Figure 8 - Appendix II). Similarly, within a 100-200 metre wide zone across the northern boundary of the 3 northern-most claims occurs another area of high magnetic signature. This magnetic high domain is interpreted to be caused by ultramafic bedrock when the claim group's location is considered relative to the regional magnetic picture displayed on OGS Map 81220 (Figure 3) and regional diamond drill data. The remaining area covered by the claim group is relatively magnetically quiet *and is interpreted to be underlain primarily by mafic metavolcanic rocks based on the regional dominance of this rock type.*

Electromagnetically, only one very strong anomaly (21% in-phase response on 444 Hz freqency) was detected on all three frequencies within Block 'B'. This anomaly, denoted conductor axis "1" on Figures 8, 9 and 10 - Appendix II, trends basically east-west for a detectable strike length of 500m with an apparent vertical dip and follows the base line between lines L4E and L8E between claim nos. 1128617 and 1128618. It corresponds to the three 11-12 channel airborne EM anomalies shown within the southern sector of the claim group in Figure 4. Conductor 1's strong response within a magnetically quiet domain suggests that it may be caused by an intraformational graphitic unit (possibly fault related). However, given that the property and local bedrock geology is only speculative, a massive sulphide occurrence within felsic to mafic metavolcanic rocks as the source of the anomaly cannot be completely ruled out and thus this anomaly should be diamond drill tested.

Two weaker EM anomalies, best detected on the higher frequencies (but still discernable on 444 Hz frequency) occur on claim no. 112814 at approximately 6N between lines L0 and L3E, denoted conductor axis no. "2" (2% in-phase response on 444 Hz) and on claim no. 1128620 at approximately 2+75Non line L12E, denoted conductor axis "3" (7% in-phase response on 444 Hz). These EM anomalies, however weak, are situated along the southern flank of the magnetically interpreted ultramafic unit and may represent semi-massive or stringer-type sulphide mineralization along the mafic volcanic - ultramafic rocks contact and thus warrant further consideration. Both conductors appear to be vertical and correspond to 7-8 to 11-12 channel airborne EM anomalies shown to trend along the southern flank of the magnetic high domain on either side and into Block 'B' in Figure 4.

BLOCK 'C' *(Figures 11, 12 and 13 - Appendix III)*

The prominent magnetic features of Block 'C' are represented by two north by northwesterly trending sub-parallel linear magnetic high trends interpreted to represent a diabase dyke for the most westerly feature and either a second diabase dyke for the eastern magnetic linear or part of an ultramafic body which is interpreted to underlie the major portion of claim no. 1113600 (Figure 11, Appendix III). The trace of these magnetic linear trends appear to be somewhat staggered, the result of interpreted off-setting faults oriented generally along east-west or northwest-southeast axes. A third magnetic linear trend displaying this off-set feature occurs in the northeast sector of claim no. 1113593 and is interpreted to represent the trace of another diabase dyke.

Several weak to moderate one and two-line electromagnetic anomalies occur within the claim group and are denoted anomaly axes nos. 1,2,3,4 and 5 on Figures 11, 12 and 13 - Appendix III.

Anomaly No.1 is a moderately strong (10-14% in-phase response on 444 Hz frequency), 2-line anomaly located at approximately 5+75N on lines L4E and L5E. The interesting feature of this anomaly is that it appears as two, south dipping, converging anomalies on 444 Hz frequency, one striking to the northeast and the other striking east-west, but only as a single northeast trending anomaly on 1777 Hz frequency, suggesting that the east-west trending anomaly may be deep seated. Anomaly No.1 lies along the north flank of the ultramafic body and may be related to an interpreted northeasterly trending fault and thus warrants diamond drill testing.

Anomaly No.1 corresponds to two 11-12 channel airborne EM anomalies centrally located within the 4 northern claims of Block 'C' as shown in Figure 4.

Anomaly No.2 is a weak (3% in-phase response on 444 Hz frequency), 1-line anomaly with conductor axis at 4N on line L3E, but appears to continue east for 3 lines to line L6E on 1777 Hz frequency with conductor axis at approximately 3+65N. This anomaly is considered of low priority at this time but should be further examined by IP survey method before a decision is made on its merits.

Anomaly No.3 is a weak to strong (2-15% in-phase response on 444 Hz frequency), south dipping, 2-line anomaly with conductor axis at approximately 0+37N on lines L6E and L7E. It is *proximal and parallel to an interpreted, major, east-west trending fault and thus warrants diamond drill testing.*

Anomaly No.4 is a northeast trending, moderate to strong (5-15% in-phase response on 444 Hz frequency), south dipping, 2-line anomaly with conductor axis from 2S to 1S on lines L8E and L9E respectively. It is similar to Anomaly No.3 in that it lies off the edge of a magnetic high (ultramafic or diabase?) and is proximal to the same major, east-west trending fault. It may represent a splay of this fault zone with a semi-massive/stringer-type sulphide mineralized horizon and thus warrants diamond drill testing. Anomaly No.4 is correlated with a 7-8 and an 11-12 channel airborne EM anomalies located in the central portion of the 4 southern claims of Block 'C' as shown in Figure 4.

Anomaly No.5 is a very weak (2% in-phase response on 444 Hz frequency), 1-line anomaly with conductor axis at approximately 3+37S on line L5E. As this anomaly occurs only on one line and is very weak on the 444 Hz frequency, it is considered of little consequence.

<u>SUMMARY</u>

<u>BLOCK 'A'</u>

No electromagnetic responses worthy of diamond drill testing were recorded during this survey. However, given the possibility of a weak EM response on line L2E at 5+50N, the possibility of operator error and the limiting effects of the railway and powerlines, an I.P. survey to better determine the merits of the claim group is warranted.

<u>BLOCK 'B'</u>

One strong electromagnetic anomaly detected on Block 'B' warrants diamond drill testing. This anomaly, denoted conductor axis No.1 on Figures 8, 9 and 10, has its strongest response on 444 Hz frequency on line L7E at baseline. Two other weak but significant EM anomalies, denoted conductor axes 2 and 3 on Figures 8, 9 and 10, also warrant further consideration. As these anomalies are located near the east and west margins of the claims group and Figure 4 suggests that these anomalies may be part of or the extremities of longer, airborne EM anomalies, it is recommended that additional claims be staked to cover the trend of these airborne EM responses *before EM anomalies 2 and 3 are diamond drill tested. On completion of the staking of the additional claims, ground geophysical surveys (magnetics, electromagnetic and IP over the weaker EM responses), should be completed before drill targets are selected.*

BLOCK 'C'

Five weak to moderately strong electromagnetic anomalies occur within claim Block 'C'and are denoted as anomalies 1-5 on Figures 11, 12 and 13. Anomaly Nos. 1 (located at approximately 5+75N on lines L4E and L5E), 3 (located at approximately 0+37N on lines L6E and L7E) and 4 (located between 2S and 1S on lines L8E and L9E respectively) are all viable targets worthy of diamond drill testing, given their proximity to magnetic high (ultramafic?) signatures and major structural lineaments. Anomaly Nos. 2 and 5 may be of significance, but should first be surveyed by I.P. method before their merits are considered. It is also advisable to conduct I.P. surveys over the other 3 EM anomalies, as well as their strike extensions and interpreted fault zones, before the final decision on initial diamond drill target selections is made.

PROPOSED EXPLORATION PROGRAM AND BUDGET
(for Blocks 'A', 'B' and 'C' combined)

Phase I

Staking (Block 'B')	
8 claims @ $125./claim	*$ 1,000.00*
Linecutting (Block 'B')	
15 kms @ $295./km	*4,425.00*
Magnetic Survey (Block 'B')	
15 kms @ $110./km	*1,650.00*
Electromagnetic Survey (Block 'B')	
12 kms @ $184./km	*2,208.00*
I.P. Survey (Blocks A,B and C)	
14 production days @ $1,450./day +	
6 mob-demob days @ $1,000./day	*26,300.00*
Report (combined geophysical surveys)	*4,000.00*
Sub-Total	*$ 39,583.00*
Contingency: 10%	*3,958.00*
PHASE I TOTAL	*$ 43,541.00*

Phase II: Initial Diamond Drill Testing of Blocks 'A','B' and 'C'

2,500 feet diamond drilling @ $25./foot	*$ 62,500.00*
Assaying	
125 samples @ $20./sample	*2,500.00*
Geologist: core logging & supervision	
18 days @ $300./;day	*5,400.00*
Subsistence: room & board, transportation, etc.	
18 days @ $150./day	*2,700.00*
Report	*3,000.00*
Field Supplies	*1,000.00*
Sub-Total	*$ 77,100.00*
Contingency: 10%	*7,710.00*
PHASE II TOTAL	*$84,810.00*
TOTAL PHASE I & II BUDGET	*$128,351.00*

Respectfully submitted

[signature]

J.W. Newsome, Ph.D.

CERTIFICATION

I, Johial W. Newsome, Ph.D., of 141 Second Avenue, in the City of Timmins, Province of Ontario, certify as follows concerning my report on the Fox and Stimson Townships properties of Cross Lake Minerals Ltd. and dated February 28, 1990.

1) *I am a graduate of the University of Western Ontario, London, Ontario, with a BSc degree in Geology (1976) and a graduate of the University of East Anglia, Norwich, England, with a Ph.D. degree in Environmental Sciences (1987).*

2) *I have been practising my profession in Canada for the past fourteen years.*

3) *I am and have been employed since May 01, 1987 by Robert S. Middleton Exploration Services Inc. located in the City of Timmins, Province of Ontario.*

4) *I have no direct or indirect interest in the properties, leases or securities of Cross Lake Minerals Ltd., nor do I expect to receive any.*

5) *The attached report is a product of:*

   a) *Examination and interpretation of data contained therein.*

   b) *Literature review and personal knowledge of the subject area.*

Dated this 28th day of February, 1990
TIMMINS, Ontario

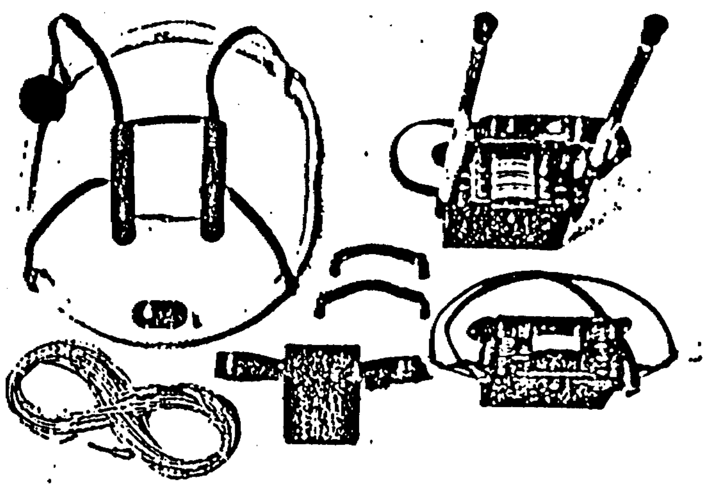
Johial W. Newsome

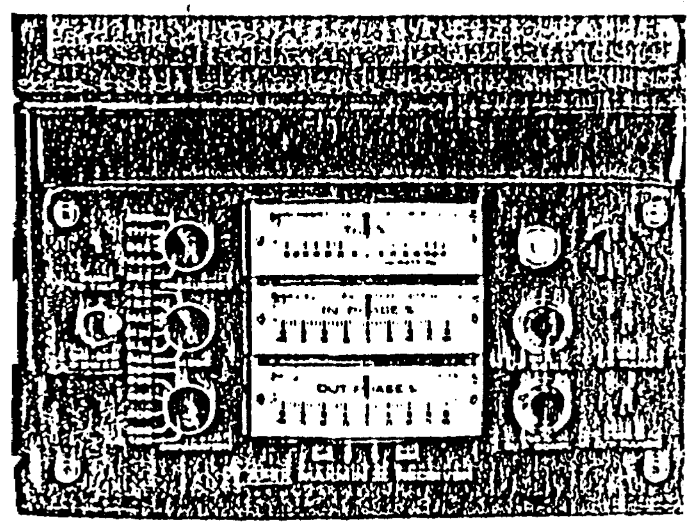
Johial W. Newsome, Ph.D.

APEX MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.

NOW ALSO ±4% QUADRATURE FULL SCALE.





SPECIFICATIONS:

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refen cable.
MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
V.L.: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90mm edgewise meters in V.L. mode.

Scale Ranges:
In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

NOW ALSO ±4% QUADRATURE FULL SCALE.

Readability: In-Phase and Quadrature: 0.25% to 0.5%; Tilt: 1%.

Repeatability: ±0.25% to ±1% normally, depenc on conditions, frequencies and separation used.

Transmitter Output:
- 222 Hz : 220 Atm²
- 444 Hz : 200 Atm²
- 888 Hz : 120 Atm²
- 1777 Hz : 60 Atm²
- 3555 Hz : 30 Atm²

Receiver Batteries: 9V trans. radio type batteries Life: approx. 35 hrs. continuous ty (alkaline, 0.5 Ah), less in (weather.

Transmitter Batteries: 12V 6 Ah Gel-type recharge battery. (Charger suppli

Reference Cable: Light weight 2-conductor te cable for minimum friction. Unsl ed. All reference cables opti at extra cost. Please spe

Voice Link: Built-in intercom system voice communication between ceiver and transmitter operat in MAX and MIN modes, via ference cable.

Indicator Lights: Built-in signal and reference w ing lights to indicate errone readings.

Temperature Range: -40°C to +60°C (-40°F to +14

Receiver Weight: 6kg (13 lbs.)

Transmitter Weight: 13kg (29 lbs.)

Shipping Weight: Typically 60kg (135 lbs.), dep ing on quantities of refer cable and batteries inclu Shipped in two field/shipping c

Specifications subject to change without notific

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 . Cables: APEXPARA TORONTO Telex: [illegible]

APPENDIX II

geoMetrics

Instrument Division

PORTABLE PROTON MAGNETOMETER
MODEL G-816

- ★ 1 gamma sensitivity and repeatability
- ★ Very small size and weight: less than 12 lbs complete with batteries and sensor
- ★ Over 10,000 readings per set of alkaline "D" cell (flashlight) batteries
- ★ Provision to attach sensor to carrying harness for use without staff
- ★ Pushbutton operation—numeric display directly in gammas
- ★ Total field measurements—independent of orientation—no calibration—no leveling

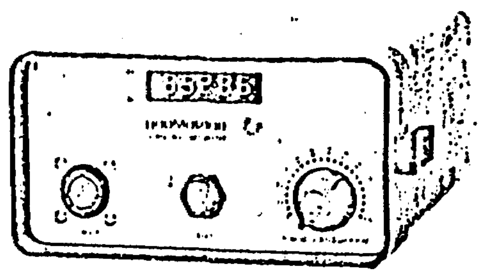
The Model G-816 is a complete portable magnetometer for all man-carry field applications. As an accurate yet simple to operate instrument, it features an outstanding combination of one gamma sensitivity and repeatability, compact size and weight, operation on standard universally available flashlight batteries, ruggedized packaging and very low price.

The G-816 magnetometer allows precise mapping of very small or large amplitude anomalies for ground geophysical surveys, or for detail follow-up to aeromagnetic reconnaissance surveys. It is a rugged, lightweight, and versatile instrument, equally well suited for field studies in geophysics, research programs or other magnetic mapping application where low cost, dependable operation and accurate measurements are required.

For marine, airborne or ground recording systems consider GeoMetrics Models G-801, G-803, and G-826A.

"Hands-free" Back Pack Sensor

Based upon the principle of nuclear precession (proton) the G-816 offers absolute drift-free measurements of the total field directly in gammas. (The proton precession method is the officially recognized standard for measurement of the earth's magnetic field.) Operation is worldwide with one gamma sensitivity and repeatability maintained throughout the range. There is no temperature drift, no set-up or leveling required, and no adjustment for orientation, field polarity, or arbitrary reference levels. Operation is very simple with no prior training required. Only 6 seconds are required to obtain a measurement which is always correct to one gamma, regardless of operator experience. Only the Proton Magnetometer offers such repeatability—an important consideration even for 10 gamma survey resolution.



Complete Field Portable System

The Model G-816 comes complete, ready for portable field operation and consists of:

1. Electronics console with internally mounted and easily replaced "D" cell battery pack.
2. Proton sensor and signal cable for attachment to carrying harness or staff.
3. Adjustable carrying harness.
4. 8 foot collapsible aluminum staff.
5. Instruction manual, complete set of spare batteries, applications manual, and rugged field suitcase.

Price and lease rates on the G-816 magnetometer are available upon request.

SPECIFICATIONS

Sensitivity: ±1 gamma throughout range

Range: 20,000 to 100,000 gammas (worldwide)

Tuning: Multi-position switch with signal amplitude indicator light on display

Gradient Tolerance: Exceeds 800 gammas/ft

Sampling Rate: Manual push-button, one reading each 6 seconds

Output: 5 digit numeric display with readout directly in gammas

Power Requirements: Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.

Battery Type	Number of Readings	
Alkaline	over	10,000
Premium Carbon Zinc	over	4,000
Standard Flashlight	over	1,500

NOTE: Battery life decreases with low temperature operation.

Temperature Range: Console and sensor: −40° to +85°C

Battery Pack: 0° to +50°C (limited use to −15°C; lower temperature battery belt operation—optional)

Accuracy (Total Field): ±1 gamma through 0° to +50°C temperature range

Sensor: High signal, noise cancelling, interchangeably mounted on separate staff or attached to carrying harness

Size:
Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm)
Sensor: 3.5 x 5 inches (9 x 13 cm)
Staff: 1 inch diameter x 8 ft length (3 cm x 2.44 m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.5
Sensor & signal cable:	4	1.8
Aluminum staff:	2	0.9
Total:	11.5	5.2

All magnetometers and parts are covered by a one year warranty beginning with the date of receipt but not to exceed fifteen months from the shipping date.

geoMetrics, INC. A subsidiary of EG&G
395 JAVA DRIVE
SUNNYVALE, CA 94086 U.S.A.
TEL (408) 734-4616
CABLE "GEOMETRICS"
TELEX NO 357-435

geoMetrics SERVICES (CANADA) LTD.
436 LIMESTONE CRESCENT
DOWNSVIEW (TORONTO),
ONTARIO CANADA
TEL (416) 661-1956
TELEX NO 06-22694

geoMetrics INTERNATIONAL CORP.
80 ALFRED ST
MILSONS POINT
SYDNEY NSW 2061
AUSTRALIA
TEL 929 9942
TELEX NO 790 22624

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21152P

RECEIVED
JUN 29 1990
MINING LANDS SECTION

GEOPHYSICAL REPORT
(Magnetic & Electromagnetic Surveys)
on claims held by
Mr. P. Mathews
for
CROSS LAKE MINERALS LTD.
in
Stimson Township, Larder Lake Mining Division
District of Cochrane, Ontario
by

J.W. Newsome, Ph.D.

March 30, 1990

TABLE OF CONTENTS

ABSTRACT

Total Field Magnetics and horizontal loop electromagnetic surveys were conducted by Robert S. Middleton Exploration Services Inc., Timmins, Ontario, between March 12 and 13,1990, on three claims held by Mr. Peter Mathews of Timmins in Stimson Township, Larder Lake Mining Division, Ontario. The claims are currently held in trust for Cross Lake Minerals Ltd., on who's behalf the surveys were conducted. The purpose of the survey was to ground truth a weak airborne EM anomaly located with the claims.

The weak airborne EM anomaly was not detected by the ground geophysical survey. It's cause may be due to overburden effects or disseminated sulphide mineralization that does not reflect a ground electromagnetic response. Thus, an IP survey is warranted before the merits of the 3 claims may be considered.

INTRODUCTION

At the request of the directors of Cross Lake Minerals Ltd., ground geophysical surveys consisting of total field magnetics and horizontal loop electromagnetics were conducted on 3 claims in Stimson Township, Larder Lake Mining Division, Ontario (Figures 1 and 2). The surveys were performed between March 12 and 13, 1990 by Robert S. Middleton Exploration Services Inc., Timmins, Ontario, to verify and delineate an airborne EM anomaly shown on O.G.S. Map 81220 (Figure 4) considered to possibly be caused by sulphide mineralization associated with mafic metavolcanic rocks.

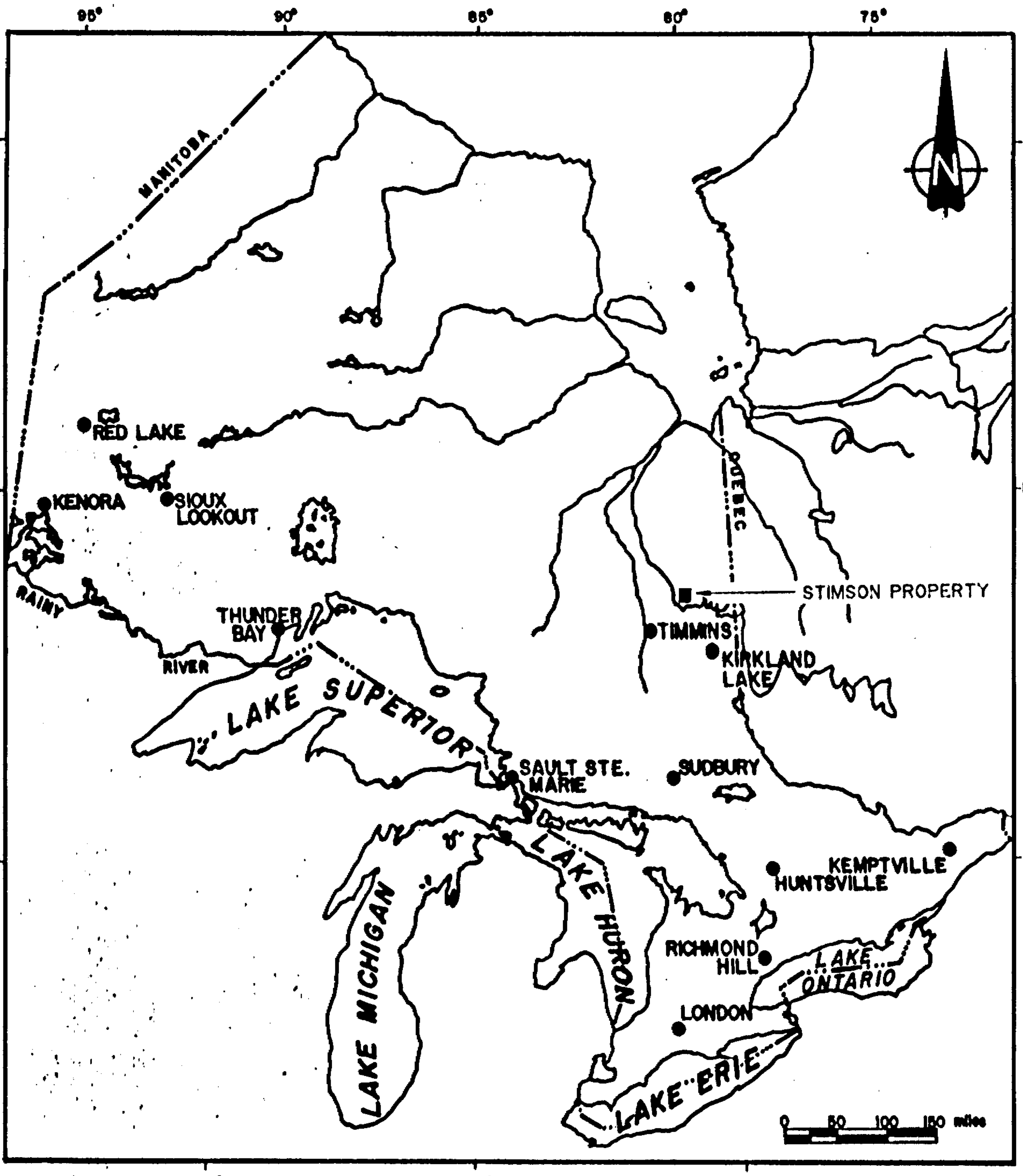
PROPERTY DESCRIPTION, LOCATION AND ACCESS

The property consists of 3 contiguous, unpatented 40-acre claims located in central Stimson Township, west of and adjacent to 8 other claims in which Cross Lake Minerals Ltd. has a beneficial interest. The 3 claims are further described as follows:

Claim No.	*Recorded Holder*	*Recording Date*
1130459	*Peter Mathews*	*March 6, 1990*
1130460	*Peter Mathews*	*March 6, 1990*
1130461	*Peter Mathews*	*March 6, 1990*

Access to the 3 claims is provided either by helicopter or from the town of Iroquois Falls, located some 27 kms to the south, via the Abitibi Price forest access road to a point east of Dowie Lake and from there westward via snowmobile across the lake and down a creek flowing west from the southwest corner of the lake for a distance of approximately 3 kms to the property.

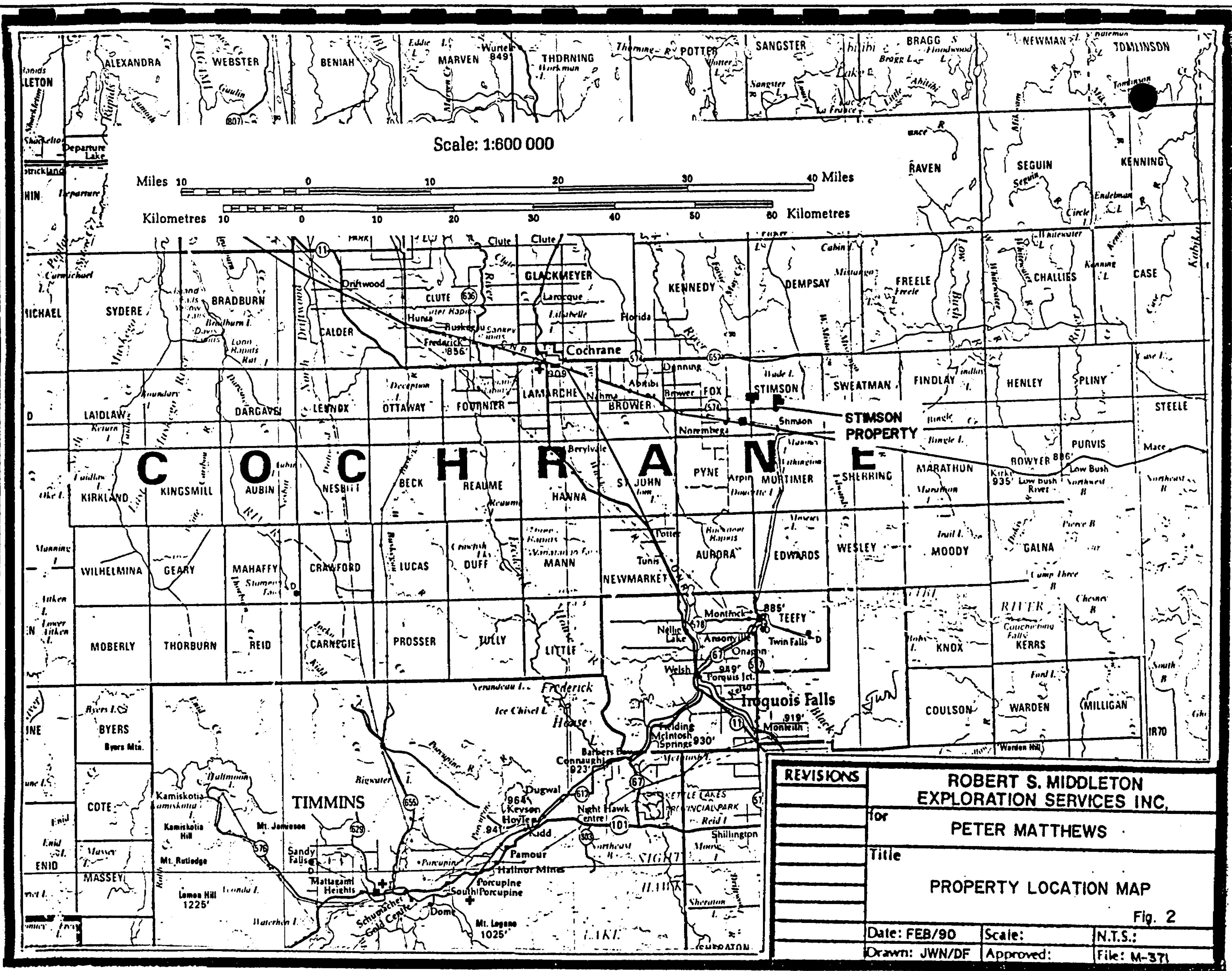
The terrain encompassing the 3 claims is relatively flat, poor to moderately drained and covered by a stand of dominantly black spruce. Bedrock outcrops are non-existent due to a pervasive mantle of Pleistocene-age glacial and lacustrine sediments.



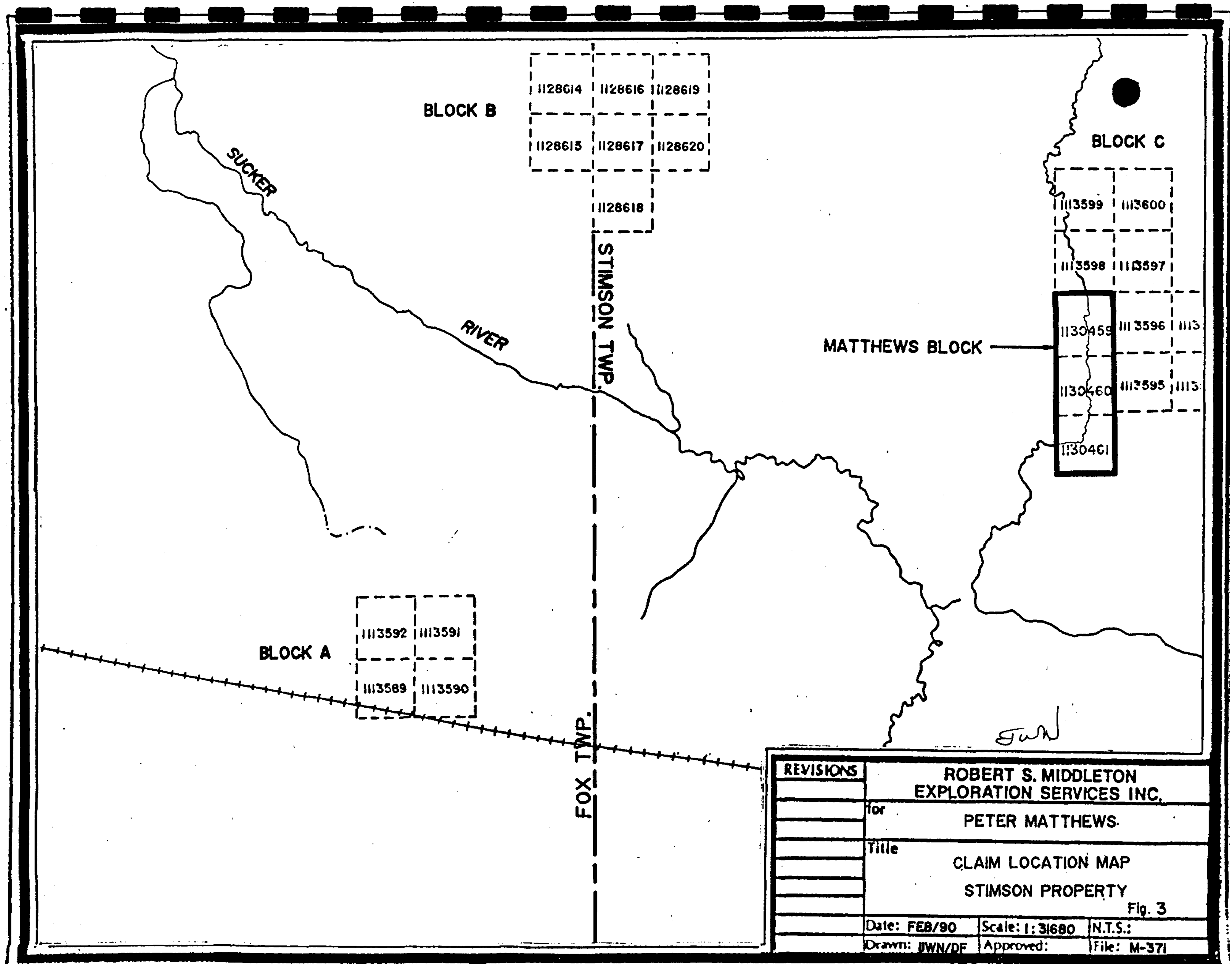
PROVINCE OF ONTARIO

JWN

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for PETER MATTHEWS		
	Title REGIONAL LOCATION MAP Fig. 1		
	Date: FEB/90	Scale: 1" = 160 ml.	N.T.S.:
	Drawn: JWN/DF	Approved:	File: M-371



REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for PETER MATTHEWS		
	Title PROPERTY LOCATION MAP		
	Fig. 2		
	Date: FEB/90	Scale:	N.T.S.:
	Drawn: JWN/DF	Approved:	File: M-371


BLOCK B
1128614
1128616
1128619
1128615
1128617
1128620
1128618
SUCKER
RIVER
STIMSON TWP.
FOX TWP.
BLOCK C
1113599
1113600
1113598
1113597
1130459
1113596
MATTHEWS BLOCK
1130460
1130461
BLOCK A
1113592
1113591
1113589
1113590
REVISIONS
ROBERT S. MIDDLETON
EXPLORATION SERVICES INC.
for
PETER MATTHEWS
Title
CLAIM LOCATION MAP
STIMSON PROPERTY
Fig. 3
Date: FEB/90
Scale: 1:31680
N.T.S.:
Drawn: JWN/DF
Approved:
File: M-371

GEOLOGY

The regional and property bedrock geology, interpreted primarily from airborne geophysical data and supported by regional geological mapping and diamond drill data, suggests that the 3 claims are underlain by mafic metavolcanic rocks. A weak airborne EM anomaly within the claim group may represent disseminated or stringer-type sulphide mineralization. Diamond drill data from the southeastern sector of Stimson Township suggests a metamorphic grade of upper greenschist to lower amphibolite facies for the host mafic metavolcanic rocks.

SURVEY STATISTICS AND PERSONNEL

The surveys, requiring 2 days to complete, (excluding line cutting) comprised a total of 6.8 kms of total field magnetics with readings taken every 25m along 100m spaced lines, including base line and tie lines, and 6.0 kms of MaxMin II horizontal loop electromagnetics with 3 frequency readings (444Hz, 1777Hz and 3555Hz) using a 200m coil separation being taken at 25m intervals along 100 m-spaced lines. The surveys were conducted by Tom McAllister and Denis Crowley, both residents of Timmins, Ontario.

Note: *the data relating to the 3555 Hz frequency has not been included in this report.*

SURVEY PROCEDURES

MAGNETICS

Theory

The magnetic method is based on measuring alteration in the shape and magnitude of the earth's naturally occurring magnetic field caused by changes in the magnetization of the rocks in the earth.

These changes in magnetization are due mainly to the presence of the magnetic minerals, of which the most common is magnetite, and to a lesser extent ilmenite, pyrrhotite, and some less common minerals.

Magnetic anomalies in the earth's field are caused by changes in two types of magnetization: induced and remanent (permanent). Induced magnetization is caused by the *magnetic field being altered and enhanced by increases in the magnetic susceptibility of the rocks, which is a function of the concentration of the magnetic minerals.*

Remanent magnetism is independent of the earth's magnetic field, and is the permanent magnetization of the magnetic particles (magnetite, etc.) in the rocks. This is created when these particles orient themselves parallel to the ambient field when cooling. This magnetization may not be in the same direction as the present earth's field, due to changes in the orientation of the rock or the field.

The most common method of measuring the total magnetic field in ground exploration is with a proton precession magnetometer. This device measures the effect of the magnetic field on the magnetic dipole of hydrogen protons. This dipole is caused by the "spin" of the proton, and in a magnetometer these dipoles in a sample of hydrogen-rich fluid are oriented parallel to a magnetic field applied by an electric coil surrounding the sample. After this magnetic field is removed, the dipoles begin to precess (wobble) around their orientation under the influence of the ambient earth's magnetic field. The frequency of this precession is proportional to the earth's magnetic field intensity.

Field Method

The magnetics data were collected with a Geonics G-816 proton precession magnetometer, which measures the absolute value of the total magnetic field of the earth to an accuracy of ±1n Tesla. The magnetometer is carried down the survey line by a single operator, with the sensor mounted on a short pole to remove it from the surface geologic noise. Readings are normally taken at 25m intervals, and at 12.5m intervals where the operator observes a high gradient (anomaly).

The readings are corrected for changes in the earth's total field (diurnal drift) by repeating readings at base stations and "tie points" several times each day. This recorded drift is then applied to the data as a correction.

MAX-MIN II

Theory

The Max-Min II is a frequency domain, horizontal loop electromagnetic (HLEM) system, based on measuring the response of conductors to a transmitted, time varying electromagnetic field.

The transmitted, or primary EM field is a sinusoidally varying field at any of five different frequencies. This field induces an electromotive force, (emf), or voltage, in any conductor through which the field passes. This is defined by:

$$\oint E.dl = \frac{\partial \phi}{\partial t} \quad \text{(the Faraday Induction Principle)}$$

where E is the electric field strength in volts/metre (and so $\oint E.dl$ *is the emf around a closed loop) and* ϕ *is the magnetic flux through the conductor loop. This emf causes a "secondary" current to flow in the conductor in turn generating a secondary electromagnetic field.*

This changing secondary field induces an emf in the receiver coil (by the Faraday law) at the same frequency, but which differs from the primary field in magnitude and phase. The difference in phase (the phase angle) is a function of the conductance of the conductor(s), both the target and the overburden and host rock.

The magnitude of the secondary is also dependant on the conductance, and also on the dimensions, depth, and geometry of the target, as well as on the interference from overburden and the host rock.

These two parameters (phase angle and magnitude) are measured by measuring the strength of the secondary field in two components: the real field or that part "in-phase" with the primary field; and the imaginary field, or that part in "quadrature" or 90 degrees out of phase from the primary field.

The magnitude and phase angle of the response is also a function of the frequency of the primary field. A higher frequency field generates a stronger response to weaker conductors, but a lower frequency tends to pass through weak conductors and penetrate to a greater depth. The lower frequency also tends to energise the full thickness of a conductor, and gives a better measure of its true conductivity-thickness product (conductance).

For these reasons two or more frequencies are usually used; the lower for penetration and accurate measure of good conductors, and the higher frequency for strong response to weak conductors.

Distinction between conductive targets, overburden, and host rock responses are made by studying the shape of the secondary field, and the difference in the frequency responses.

The transmitted primary field also creates an emf in the receiver coil, which is much stronger than the secondary, and which must be corrected for by the receiver. This is done by electronically creating an emf in the receiver, whose magnitude is determined by the distance from receiver to transmitter as set on the receiver, and whose phase is derived from the receiver via an interconnecting wire.

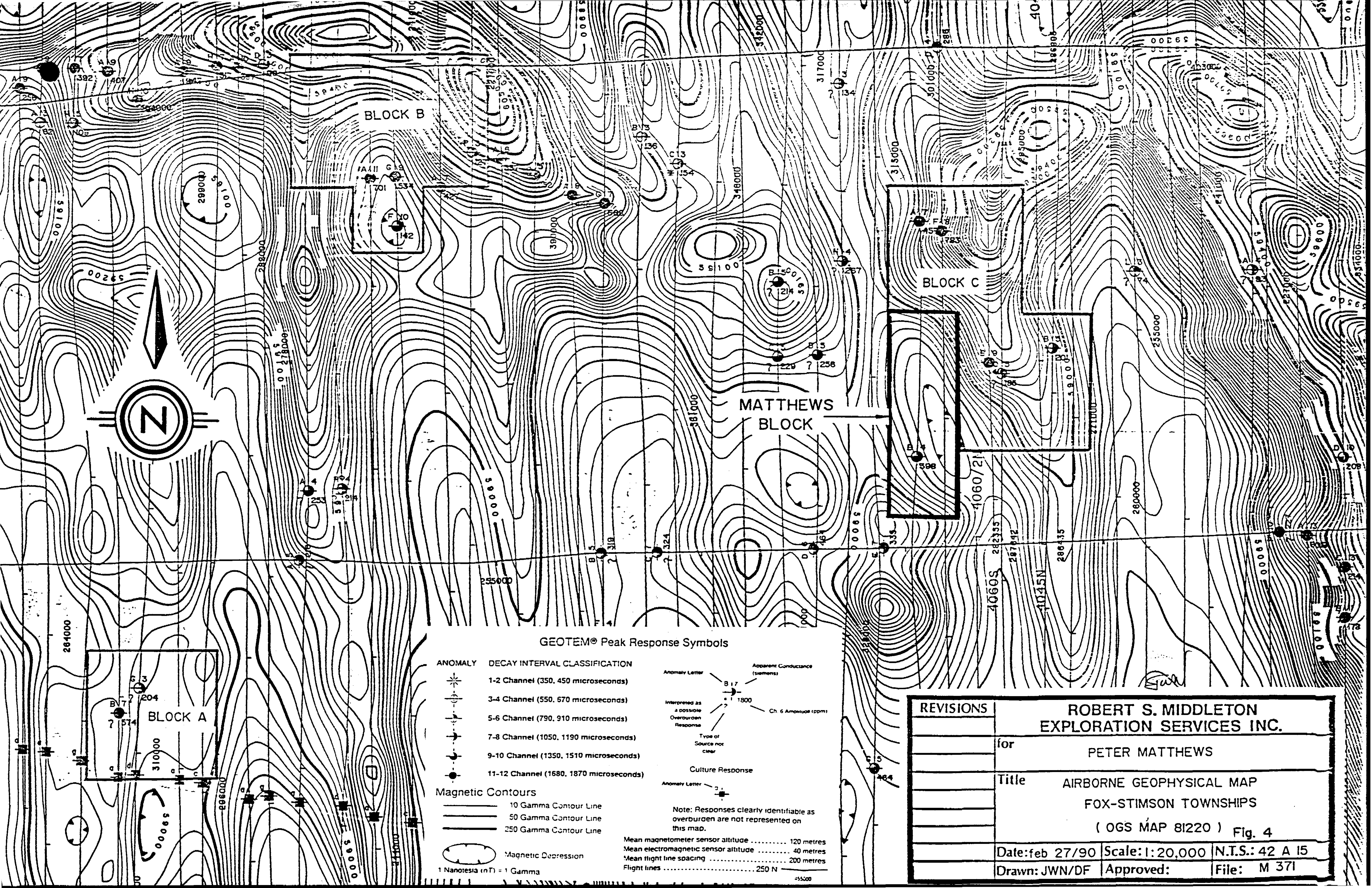
Field Method

The Max-Min II survey was carried out in the "maximum coupled" mode (horizontal co-planar). The transmitter and receiver are carried in-line down the survey line separated by a constant distance (in this case 200m) with the receiver leading. Three transmitter frequencies were used: 444Hz, 1777Hz and 3555Hz and readings were taken every 25m. The transmitter and receiver are connected by a cable, for phase reference and operator communication.

INTERPRETATION AND CONCLUSIONS

Magnetically, the 3 claims are relatively quiet except for a slight increase in the magnetic response from approximately 6+50S on line L0 to 11+50S on L100E and the extreme northeast corner outside of claim no. 1130459 between baseline and 1+00S on line L500E. These magnetic high responses are interpreted to be caused by diabase dykes, based on the regional magnetic signature as shown in Figure 4. The remainder of the property is interpreted to be underlain by mafic metavolcanic rocks based on regional mapping and diamond drill data.

Given that the claims were staked in the location as shown, the weak airborne EM anomaly shown on Figure 4 is postulated to occur in the vicinity of 8+00S to 9+00S around lines L100E and L200E. However, the ground electromagnetic survey failed to delineate this airborne response. This failure may be due to the fact that the airborne response is caused by overburden effects or


BLOCK A
BLOCK B
BLOCK C
MATTHEWS BLOCK
N
GEOTEM® Peak Response Symbols
ANOMALY
DECAY INTERVAL CLASSIFICATION
1-2 Channel (350, 450 microseconds)
3-4 Channel (550, 670 microseconds)
5-6 Channel (790, 910 microseconds)
7-8 Channel (1050, 1190 microseconds)
9-10 Channel (1350, 1510 microseconds)
11-12 Channel (1680, 1870 microseconds)
Anomaly Letter
Apparent Conductance (siemens)
Interpreted as a possible Overburden Response
Type of Source not clear
Ch. 6 Amplitude (ppm)
Culture Response
Anomaly Letter
Magnetic Contours
10 Gamma Contour Line
50 Gamma Contour Line
250 Gamma Contour Line
Magnetic Depression
1 Nanotesla (nT) = 1 Gamma
Note: Responses clearly identifiable as overburden are not represented on this map.
Mean magnetometer sensor altitude .... 120 metres
Mean electromagnetic sensor altitude .... 40 metres
Mean flight line spacing .... 200 metres
Flight lines .... 250 N
REVISIONS
ROBERT S. MIDDLETON EXPLORATION SERVICES INC.
for PETER MATTHEWS
Title AIRBORNE GEOPHYSICAL MAP
FOX-STIMSON TOWNSHIPS
(OGS MAP 81220)
Fig. 4
Date: feb 27/90
Scale: 1:20,000
N.T.S.: 42 A 15
Drawn: JWN/DF
Approved:
File: M 371

represents disseminated sulphide mineralization that does not reflect the airborne EM response on the ground electromagnetic survey. Thus an I.P. survey is warranted to test whether in fact the airborne EM anomaly does exist and may be caused by disseminated sulphide mineralization or whether it is merely an overburden response.

BUDGET

I.P. Survey *3 days production @ $1,450./day +* *2 days mob/demob @ $1,000./day*		*$ 6,350.00*
Helicopter *8 hours @ $550./hour*		*4,400.00*
Geophysical Report		*3,000.00*
	Subtotal	*$13,750.00*
Contingency: 10%		*1,375.00*
	Total	*$15,125.00*

Respectfully submitted

J.W. Newsome, Ph.D.

GEOLOGICAL ASSOCIATION OF CANADA
J. W. NEWSOME
Ph. D.
FELLOW

CERTIFICATION

I, Johial W. Newsome, Ph.D., of 141 Second Avenue, in the City of Timmins, Province of Ontario, certify as follows concerning my report on the Stimson Township property of Cross Lake Minerals Ltd. and dated March 30, 1990..

1) *I am a graduate of the University of Western Ontario, London, Ontario, with a BSc degree in Geology (1976) and a graduate of the University of East Anglia, Norwich, England, with a Ph.D. degree in Environmental Sciences (1987).*

2) *I have been practising my profession in Canada for the past fourteen years.*

3) *I am and have been employed since May 01, 1987 by Robert S. Middleton Exploration Services Inc. located in the City of Timmins, Province of Ontario.*

4) *I have no direct or indirect interest in the properties, leases or securities of Cross Lake Minerals Ltd., nor do I expect to receive any.*

5) *The attached report is a product of:*

   a) *Examination and interpretation of data contained therein.*

   b) *Literature review and personal knowledge of the subject area.*

Dated this 30th day of March, 1990
TIMMINS, Ontario

Johial W. Newsome, Ph.D.

GEOLOGICAL ASSOCIATION OF CANADA
J. W. NEWSOME
Ph. D.
FELLOW

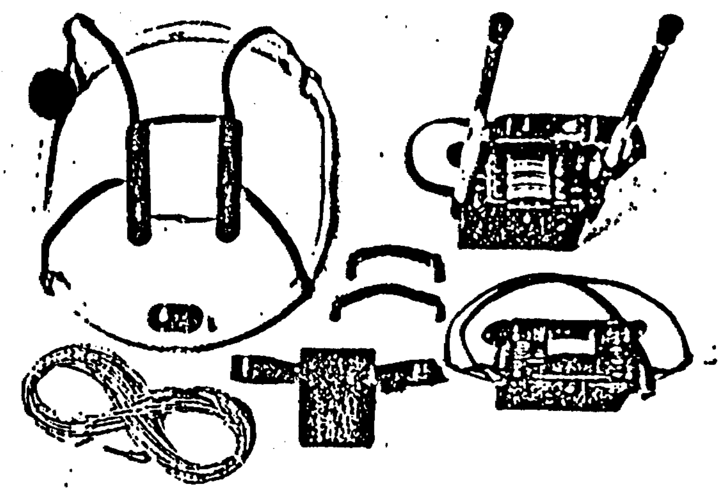
APPENDIX I

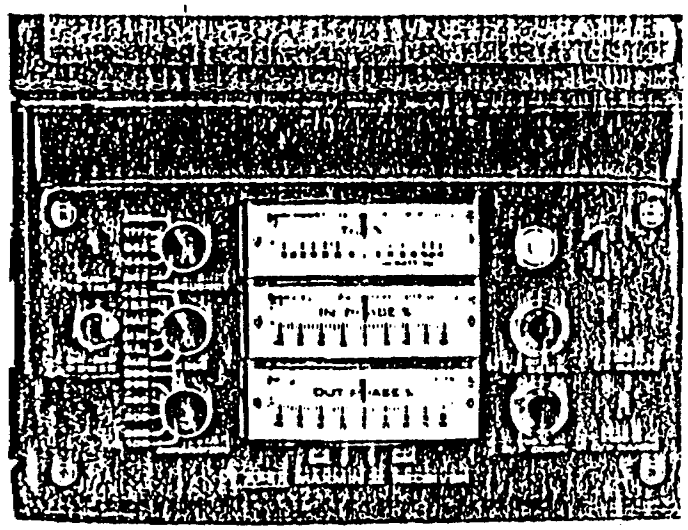
APPENDIX I

APEX MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180 m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.

NOW ALSO ±4% QUADRATURE FULL SCALE.





SPECIFICATIONS:

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
- MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with ref en cable.
- MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
- V.L.: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250m (MMI) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90mm edgewise meters in V.L. mode.

Scale Ranges:

In-Phase:	±20%, ±100% by push-button switch.
Quadrature:	±20%, ±100% by push-button switch.
Tilt:	±75% slope.
Null (V.L.):	Sensitivity adjustable by separation switch.

NOW ALSO ±4% QUADRATURE FULL SCALE.

Readability: In-Phase and Quadrature: 0.25% to 0.5%; Tilt: 1%.

Repeatability: ±0.25% to ±1% normally, depenc on conditions, frequencies and separation used.

Transmitter Output:
- 222Hz : 220 Atm²
- 444Hz : 200 Atm²
- 888Hz : 120 Atm²
- 1777Hz : 60 Atm²
- 3555Hz : 30 Atm²

Receiver Batteries: 9V trans. radio type batteries Life: approx. 35hrs. continuous ty (alkaline, 0.5 Ah), less in c weather.

Transmitter Batteries: 12V 6Ah Gel-type recharge battery. (Charger suppli

Reference Cable: Light weight 2-conductor te cable for minimum friction. Unsl ed. All reference cables opti at extra cost. Please spe

Voice Link: Built-in intercom system voice communication between ceiver and transmitter operat in MAX and MIN modes, via ference cable.

Indicator Lights: Built-in signal and reference v ing lights to indicate errone readings.

Temperature Range: -40°C to +60°C (-40°F to +14

Receiver Weight: 6kg (13 lbs.)

Transmitter Weight: 13kg (29 lbs.)

Shipping Weight: Typically 60kg (135 lbs.), dep ing on quantities of refere cable and batteries inclu Shipped in two field/shipping ca

Specifications subject to change without notific

APEX PARAMETRICS LIMITED
200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: [illegible]

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geoMetrics

Instrument Division

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- ★ 1 gamma sensitivity and repeatability
- ★ Very small size and weight: less than 12 lbs complete with batteries and sensor
- ★ Over 10,000 readings per set of alkaline "D" cell (flashlight) batteries
- ★ Provision to attach sensor to carrying harness for use without staff
- ★ Pushbutton operation—numeric display directly in gammas
- ★ Total field measurements—independent of orientation—no calibration—no leveling

The Model G-816 is a complete portable magnetometer for all man-carry field applications. As an accurate yet simple to operate instrument, it features an outstanding combination of one gamma sensitivity and repeatability, compact size and weight, operation on standard universally available flashlight batteries, ruggedized packaging and very low price.

The G-816 magnetometer allows precise mapping of very small or large amplitude anomalies for ground geophysical surveys, or for detail follow-up to aeromagnetic reconnaissance surveys. It is a rugged, lightweight, and versatile instrument, equally well suited for field studies in geophysics, research programs or other magnetic mapping application where low cost, dependable operation and accurate measurements are required.

For marine, airborne or ground recording systems consider GeoMetrics Models G-801, G-803, and G-826A.

"Hands-free" Back Pack Sensor

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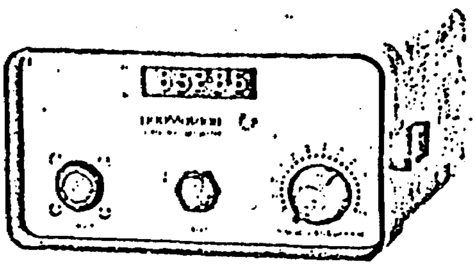

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The Model G-816 comes complete, ready for portable field operation and consists of:

1. Electronics console with internally mounted and easily replaced "D" cell battery pack.
2. Proton sensor and signal cable for attachment to carrying harness or staff.
3. Adjustable carrying harness.
4. 8 foot collapsible aluminum staff.
5. Instruction manual, complete set of spare batteries, applications manual, and rugged field suitcase.

Price and lease rates on the G-816 magnetometer are available upon request.

SPECIFICATIONS

Sensitivity: ±1 gamma throughout range

Range: 20,000 to 100,000 gammas (worldwide)

Tuning: Multi-position switch with signal amplitude indicator light on display

Gradient Tolerance: Exceeds 800 gammas/ft

Sampling Rate: Manual push-button, one reading each 6 seconds

Output: 5 digit numeric display with readout directly in gammas

Power Requirements: Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.

Battery Type	Number of Readings	
Alkaline	over	10,000
Premium Carbon Zinc	over	4,000
Standard Flashlight	over	1,500

NOTE: Battery life decreases with low temperature operation.

Temperature Range: Console and sensor: −40° to +85°C

Battery Pack: 0° to +50°C (limited use to −15°C; lower temperature battery belt operation—optional)

Accuracy (Total Field): ±1 gamma through 0° to +50°C temperature range

Sensor: High signal, noise cancelling, interchangeably mounted on separate staff or attached to carrying harness

Size:
Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm)
Sensor: 3.5 x 5 inches (9 x 13 cm)
Staff: 1 inch diameter x 8 ft length (3 cm x 2.44 m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.5
Sensor & signal cable:	4	1.8
Aluminum staff:	2	0.9
Total:	11.5	5.2

All magnetometers and parts are covered by a one year warranty beginning with the date of receipt but not to exceed fifteen months from the shipping date.

geoMetrics, INC.
A SUBSIDIARY OF EG&G
395 JAVA DRIVE
SUNNYVALE, CA 94086 U.S.A.
TEL (408) 734-4616
CABLE "GEOMETRICS"
TELEX NO 357-435

geoMetrics SERVICES (CANADA) LTD.
436 LIMESTONE CRESCENT
DOWNSVIEW (TORONTO),
ONTARIO CANADA
TEL (416) 661-1956
TELEX NO 06-22694

geoMetrics INTERNATIONAL CORP.
80 ALFRED ST
MILSONS POINT
SYDNEY NSW 2061
AUSTRALIA
TEL 929-9942
TELEX NO 790 22624

WORLD-WIDE AGENTS: EUROPE • SCANDINAVIA • UNITED KINGDOM • JAPAN • SO. AFRICA • SO. AMERICA

21157P

Ministry of Northern Development and Mines
Ontario

DOCUMENT No. W9008·188

Report of Work 2.13401

42H02SE0004 2.13401 STIMSON 900

Mining Act
(Geophysical, Geological and Geochemical Su

Type of Survey(s)	Mining Division	Township or Area
GROUND GEOPHYSICS (MAG & EM)	LARDER LAKE	STIMSON

Recorded Holder(s): PETER MATHEWS (FOR CROSS LAKE MINERALS LTD) 2.13401
Prospector's Licence No.: K20094
Address: C/O P.O. BOX 1637 TIMMINS ONT P4N 7W8
Telephone No.: (705) 264-4246
Survey Company: R.S. MIDDLETON EXPLORATION SERVICES INC
Name and Address of Author (of Geo-Technical Report): J.W. NEWSOME (ADDRESS AS ABOVE)
Date of Survey (from & to): 12 03 90 | 13 03 90 (Day Mo. Yr. | Day Mo. Yr.)

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey:	Geophysical	
Enter 40 days. (This includes line cutting)	- Electromagnetic	20
	- Magnetometer	40
For each additional survey: using the same grid:	- Other	
Enter 20 days (for each)	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- 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).

Date: June 20/90 Recorded Holder or Agent (Signature): Cliff David

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Mining Claim Prefix	Number	Mining Claim Prefix	Number
L	1130459				
L	1130460				
L	1130461				

RECEIVED
JUL 27 1990
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 3

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: CLIFF DAVID P.O. Box 1637 TIMMINS P4N 7W8
Telephone No.: (705) 268-6403 Date: June 20/90 Certified By (Signature): Cliff David

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
180	June 29-90	[signature]
	Date Approved as Recorded	Provincial Manager, Mining Lands
	October 17, 1990	[signature]

Received Stamp: RECEIVED LARDER LAKE MINING DIVISION JUN 29 1990 TIME 9:08am

1362 (89/06)

M371

Ministry of Northern Development and Mines

Ontario

2.13401

Report of Work

(Geophysical, Geological and Geochemical Surveys)

Mining Act

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)	Mining Division	Township or Area
GROUND GEOPHYSICS (MAG; EM)	LARDER LAKE	STIMSON TWP

Recorded Holder(s): DAVID JONES & TOM KIOKE JR (for CROSS LAKE MINERALS) 2.13401

Prospector's Licence No.: D19892, M21190

Address: P.O. BOX 1637 TIMMINS ONT P4N 7W8

Telephone No.: (705) 264-4246

Survey Company: R.S MIDDLETON EXPLORATION SERVICES INC

Name and Address of Author (of Geo-Technical Report): J.W. NEWSOME C/O P.O. BOX 1637 TIMMINS ONT

Date of Survey (from & to): 18 02 90 | 25 02 90 (Day Mo. Yr. | Day Mo. 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	20
	- Magnetometer	40
For each additional survey: using the same grid: Enter 20 days (for each)	- Other	
	Geological	
	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).

Date	Recorded Holder or Agent (Signature)
June 20 90	[signature]

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Number	Mining Claim Prefix	Number	Mining Claim Prefix	Number
L	1128616				
L	1128617				
L	1128618				
L	1128619				
L	1128620				
L	1113593				
L	1113594				
L	1113595				
L	1113596				
L	1113597				
L	1113598				
L	1113599				
L	1113600				

RECEIVED
JUL 27 1990
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 13

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: CLIFF DAVID C/O P.O. BOX 1637 TIMMINS ONT

Telephone No.	Date	Certified By (Signature)
(705) 268-6403	June 20/90	[signature]

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
780	June 29-90	for [signature]
	Date Approved as Recorded	Provincial Manager, Mining Lands
	October 17, 1990	[signature]

Received Stamp: RECEIVED LARDER LAKE MINING DIVISION JUN 29 1990 TIME 9.08 am

RJS

1362 (89/06)

Ministry of Northern Development and Mines

Ontario

Geophysical-Geological-Geochemical Technical Data Statement

File 2.13401

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.

Type of Survey(s) GROUND GEOPHYSICS (MAG & EM) LINECUTTING

Township or Area FOX TWP

Claim Holder(s) DAVID JONES / PETER JONES / TOM KIOKE JR.

Survey Company R.S. MIDDLETON EXPLORATION SERVICES INC

Author of Report J.W. NEWSOME

Address of Author % P.O. BOX 1637 TIMMINS ONT P4N 7W8

Covering Dates of Survey JAN 15 - MAR 31/90 (linecutting to office)

Total Miles of Line Cut 47.2 Km

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

Geophysical	DAYS per claim
–Electromagnetic	20
–Magnetometer	40
–Radiometric	
–Other	
Geological	
Geochemical	

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

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

DATE: Sept 3/90 SIGNATURE: [signature] Author of Report or Agent

OFFICE USE ONLY

Res. Geol. ______ Qualifications 2.8733

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	1113589
L	1113590
L	1113591
L	1113592
L	1113593
L	1113594
L	1113595
L	1113596
L	1113597
L	1113598
L	1113599
L	1113600
L	1128614
L	1128615
L	1128616
L	1128617
L	1128618
L	1128619
L	1128620
L	1130459
L	1130460
L	1130461

If space insufficient, attach list

TOTAL CLAIMS 22

837 (85/12)

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 188 Number of Readings 188

Station interval 25m Line spacing 100m

Profile scale

Contour interval

MAGNETIC

Instrument EDA OMNI IV

Accuracy – Scale constant ±1Nt

Diurnal correction method BASELINE LOOPING

Base Station check-in interval (hours) N/A

Base Station location and value N/A

ELECTROMAGNETIC

Instrument ~~Geonics EM-16~~ Apex · Parametrics Max · Min II

Coil configuration Horizontal Loop

Coil separation 25m

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☑ In line ☐ Parallel line

Frequency 444mHz / 777mHz / 1777mHz (specify V.L.F. station)

Parameters measured InPhase / Out of Phase - (~~Quadrature~~)

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

SELF POTENTIAL

Instrument ______________________________ Range ______________

Survey Method ____

____

Corrections made ____

____

RADIOMETRIC

Instrument ____

Values measured ____

Energy windows (levels) ____________________________________

Height of instrument ____________________ Background Count ______________

Size of detector ____

Overburden ____
(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey ____

Instrument ____

Accuracy ____

Parameters measured ____

____

Additional information (for understanding results) __________

____

____

AIRBORNE SURVEYS

Type of survey(s) ____

Instrument(s) ____
(specify for each type of survey)

Accuracy ____
(specify for each type of survey)

Aircraft used ____

Sensor altitude ____

Navigation and flight path recovery method _________________

____

Aircraft altitude ____________________ Line Spacing ______________

Miles flown over total area ____________________ Over claims only ______________

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken ______________________

Total Number of Samples ______________________

Type of Sample ______________________
(Nature of Material)

Average Sample Weight ______________________

Method of Collection ______________________

Soil Horizon Sampled ______________________

Horizon Development ______________________

Sample Depth ______________________

Terrain ______________________

Drainage Development ______________________

Estimated Range of Overburden Thickness ______________________

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis ______________________

General ______________________

ANALYTICAL METHODS

Values expressed in:
- per cent ☐
- p. p. m. ☐
- p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others ______________________

Field Analysis (______________ tests)

Extraction Method ______________________

Analytical Method ______________________

Reagents Used ______________________

Field Laboratory Analysis

No. (______________ tests)

Extraction Method ______________________

Analytical Method ______________________

Reagents Used ______________________

Commercial Laboratory (______________ tests)

Name of Laboratory ______________________

Extraction Method ______________________

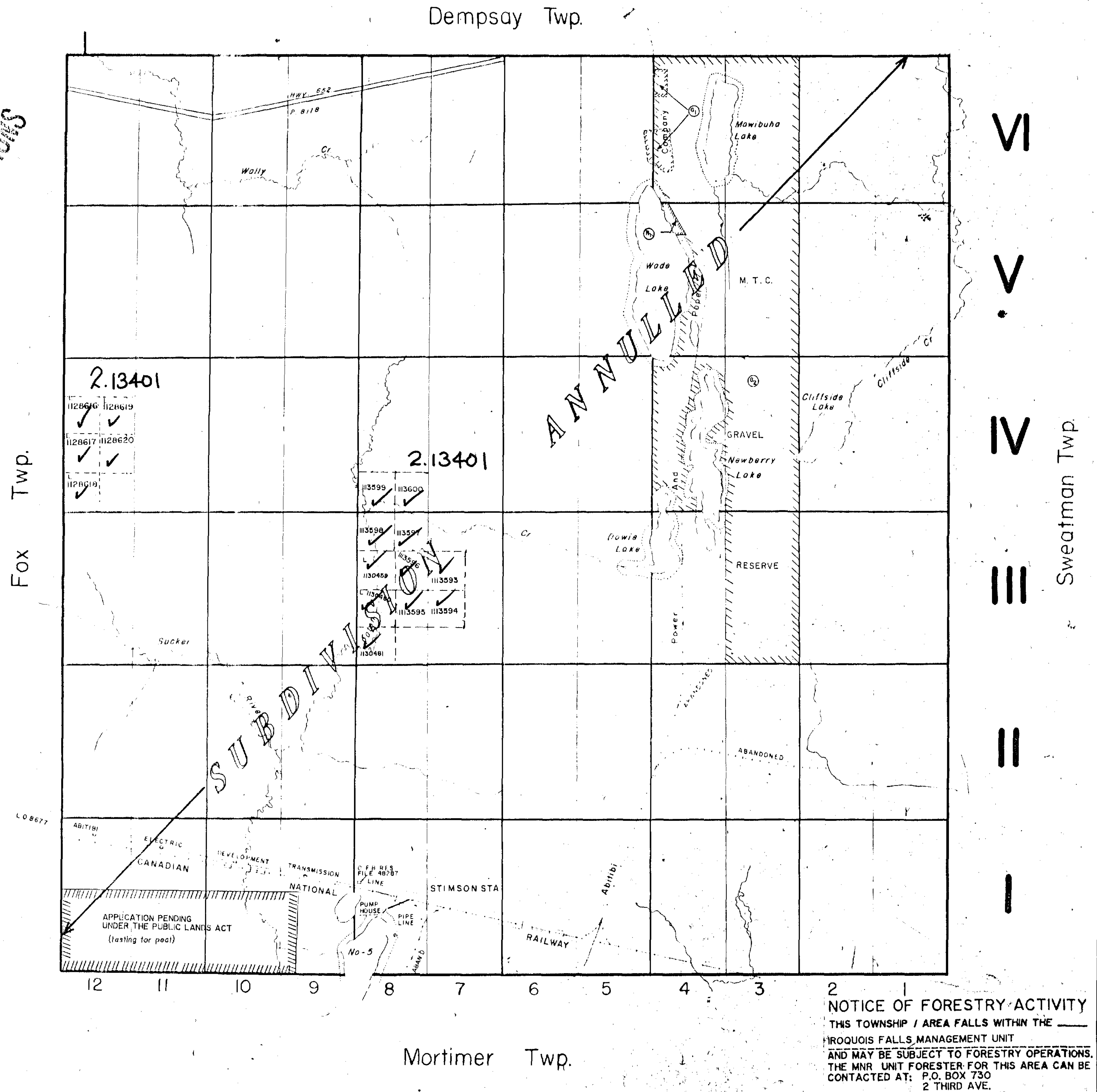
Analytical Method ______________________

Reagents Used ______________________

General ______________________

M. 1643

STIMSON TWP



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

STIMSON

DISTRICT OF COCHRANE

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
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	C.

NOTES

400' Surface Rights Reservation around all lakes and rives.

GRAVEL

(G1) GRAVEL FILE: 112095.

(G2) M.T.C. GRAVEL RESERVE.

RESERVES

(R) ~~CROWN RESERVE~~ FILE: 112094.
Rescinded NRO 68/84 March 9/84 8:30am

ANNULMENT CERTIFICATE

The Subdivision of this Township into Lots and Concessions is Wholly Annulled by Order of the Deputy Minister of Lands and Forests October 9, 1962.

PLAN NO.- M. 1643

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

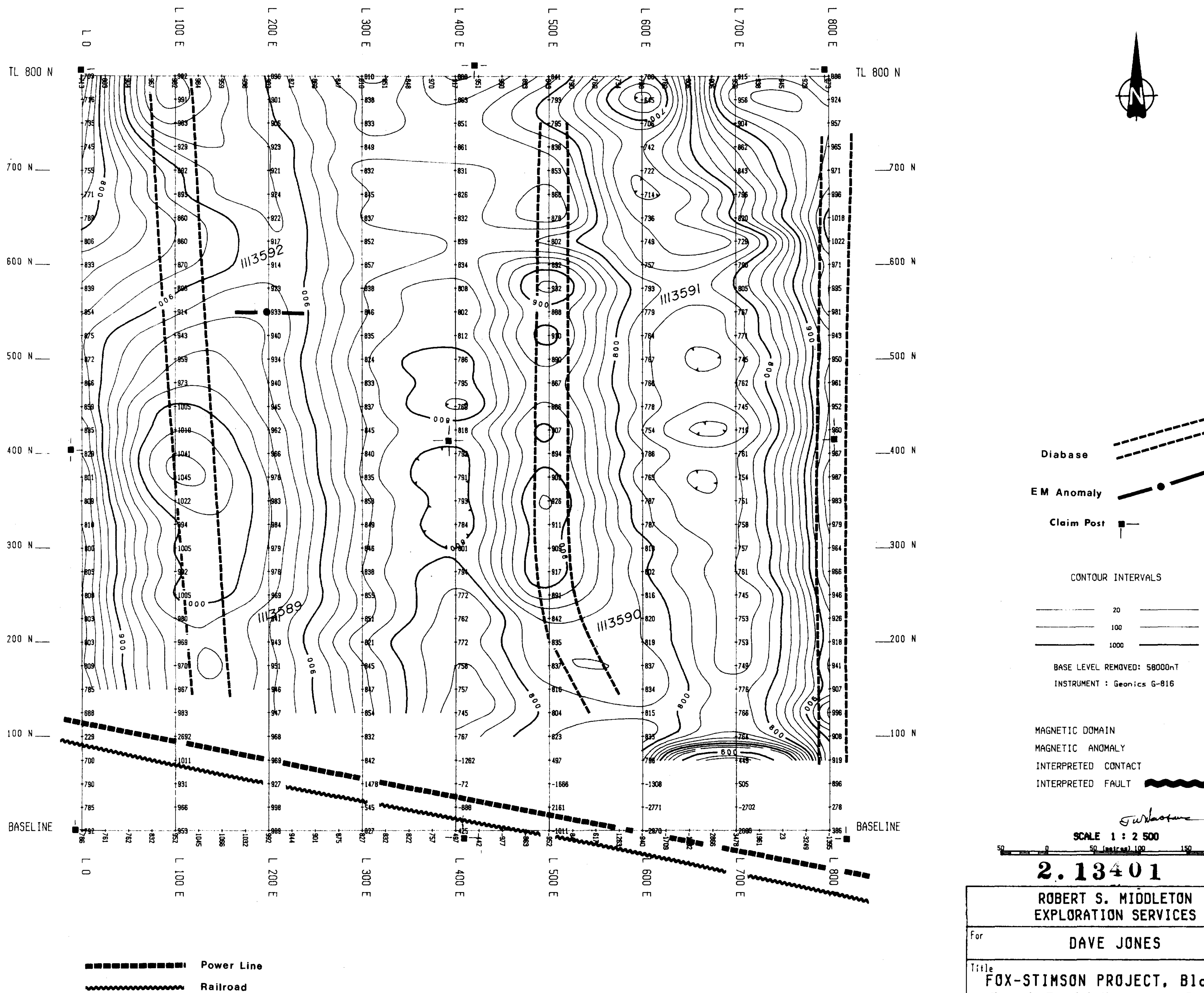
#20

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP / AREA FALLS WITHIN THE IROQUOIS FALLS MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 730
2 THIRD AVE.
COCHRANE, ONT.
POL ICO
705-272-4365

42H02SE0004 2.13401 STIMSON

200



2.13401

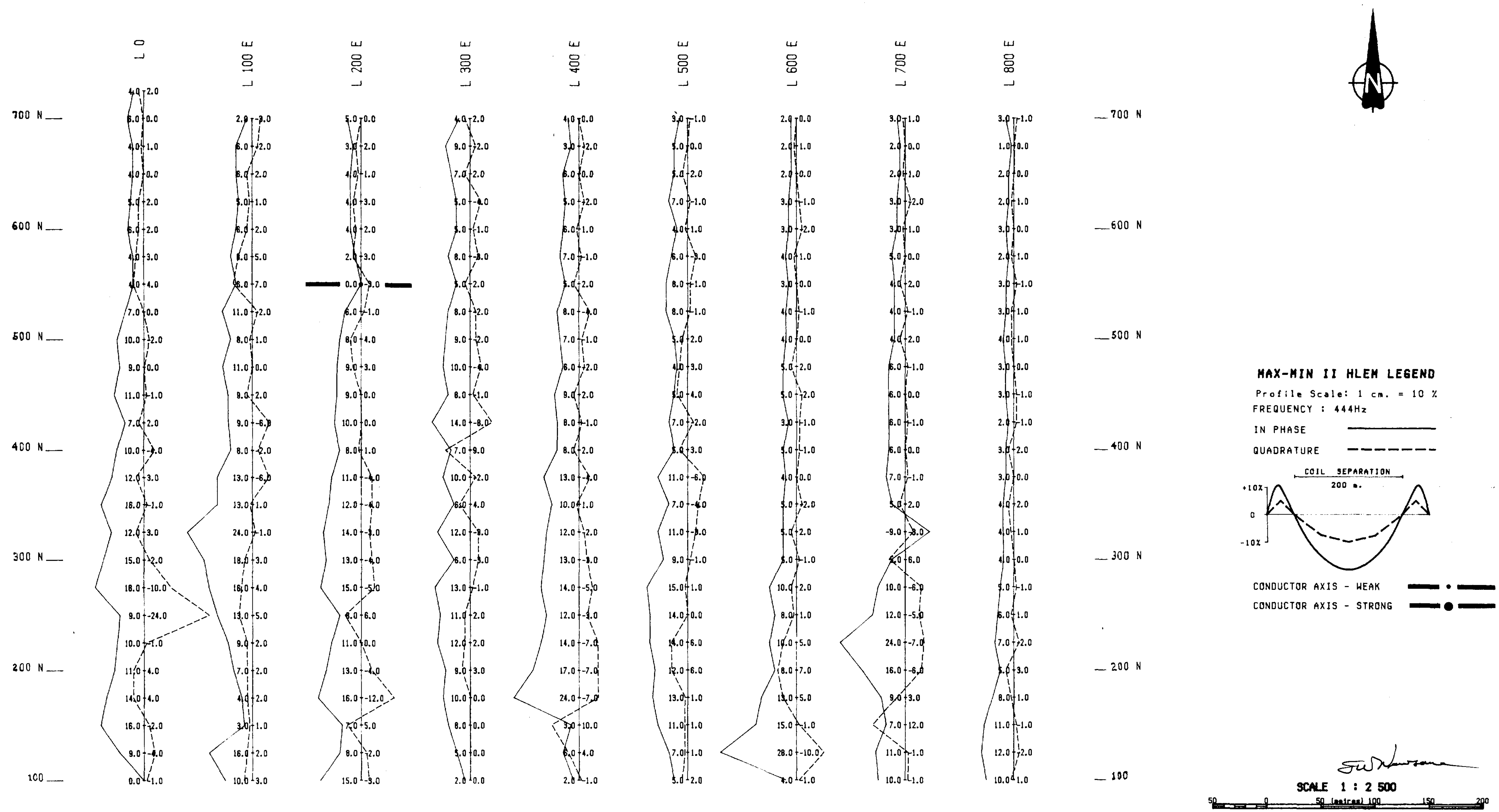
ROBERT S. MIDDLETON
EXPLORATION SERVICES

For DAVE JONES

Title FOX-STIMSON PROJECT, Block A
Total Field Magnetic Survey
Fox Twp., Ontario

Date: February '90	N.T.S.: 42 H/2
Operator: T.McAllister	Job #: M-370

Figure 5



2.13401

ROBERT S. MIDDLETON
EXPLORATION SERVICES

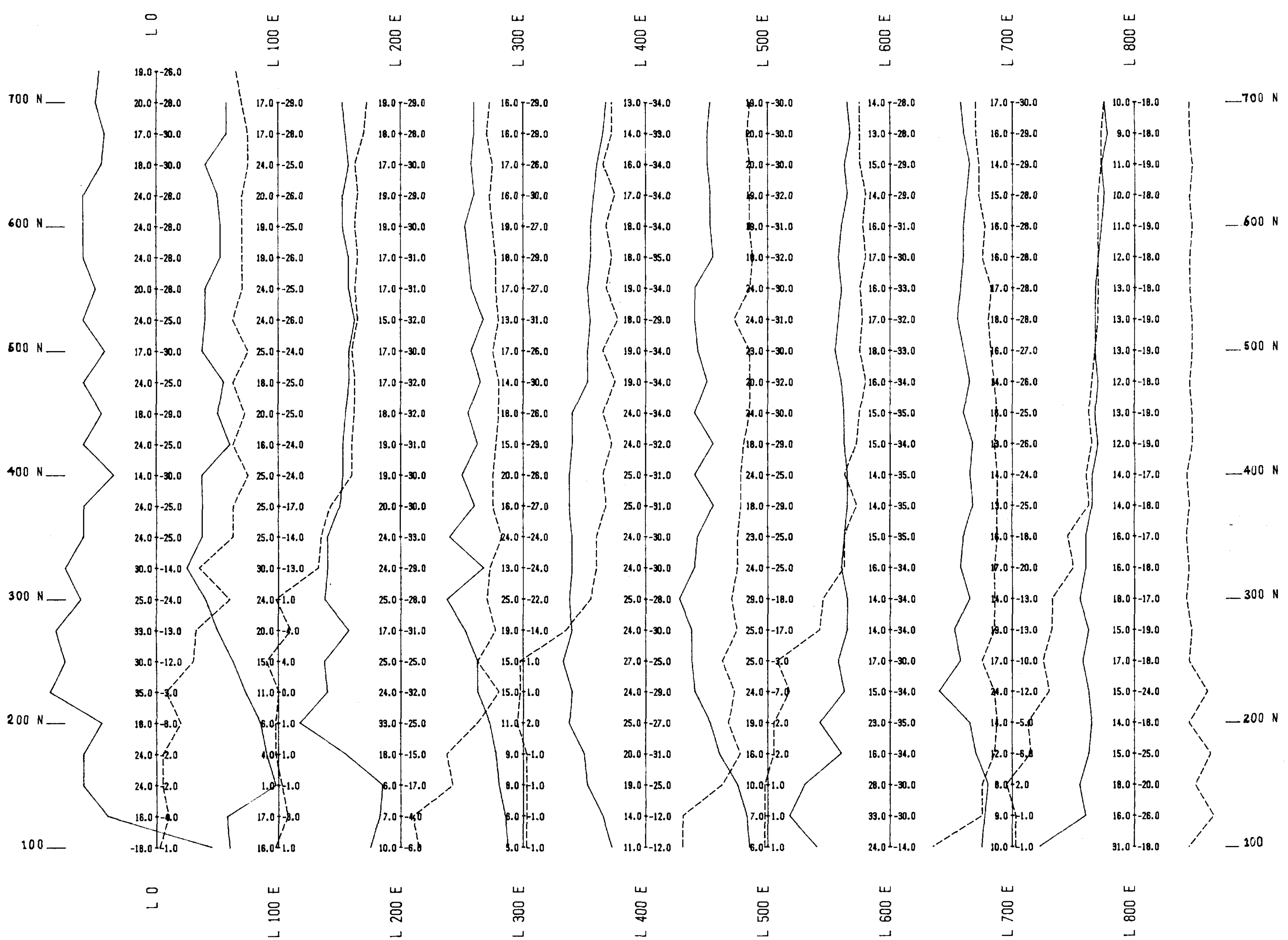
For
DAVE JONES

Title
FOX-STIMSON PROJECT, Block A
Horizontal Loop EM Survey
Fox Twp., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros	Job #: M-370

Figure 6

42H02SE0004 2.13401 STIMSON



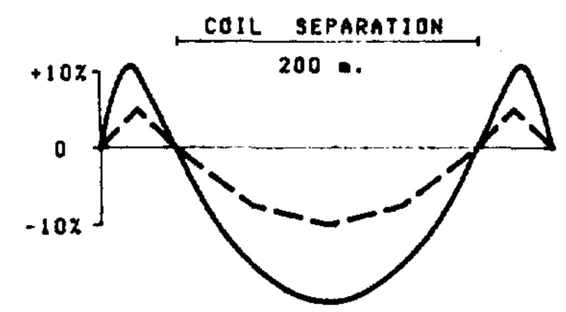
MAX-MIN II HLEM LEGEND

Profile Scale: 1 cm. = 10 %

FREQUENCY : 1777Hz

IN PHASE ————

QUADRATURE - - - - -



CONDUCTOR AXIS - WEAK

CONDUCTOR AXIS - STRONG

2.13401

SCALE 1 : 2 500

50 0 50 (metres) 100 150 200

ROBERT S. MIDDLETON
EXPLORATION SERVICES

For DAVE JONES

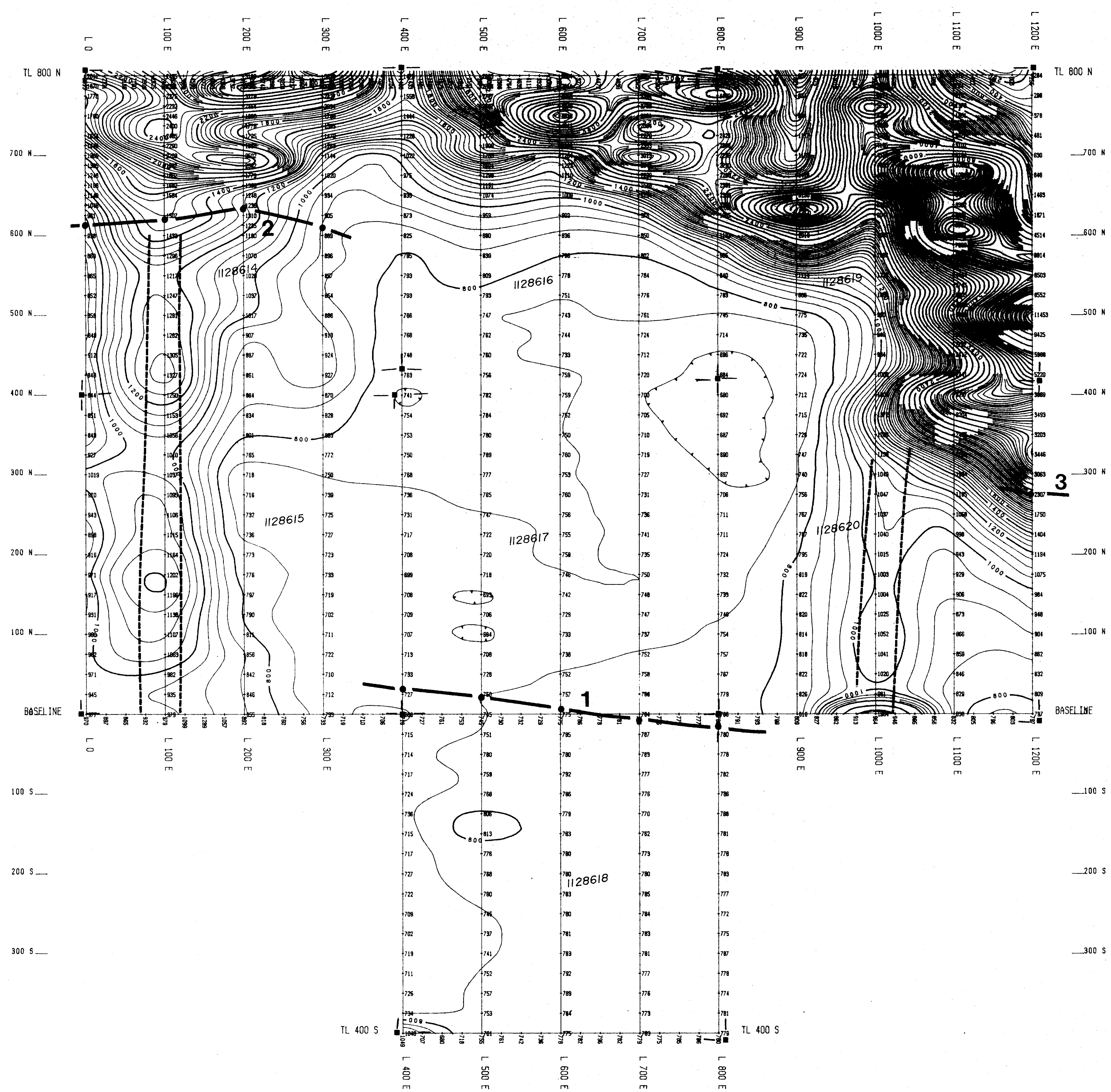
Title FOX-STIMSON PROJECT, Block A
Horizontal Loop EM Survey
Fox Twp., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros	Job #: M-370

Figure 7

42H02SE0004 2.13401 STIMSON

230



Diabase

EM Anomaly

Claim Post

CONTOUR INTERVALS

50

200

1000

BASE LEVEL REMOVED: 58000nT

INSTRUMENT : Geonics G-816

MAGNETIC DOMAIN

MAGNETIC ANOMALY

INTERPRETED CONTACT

INTERPRETED FAULT

SCALE 1 : 2 500

50 0 50 (metres) 100 150 200

2.13401

ROBERT S. MIDDLETON
EXPLORATION SERVICES

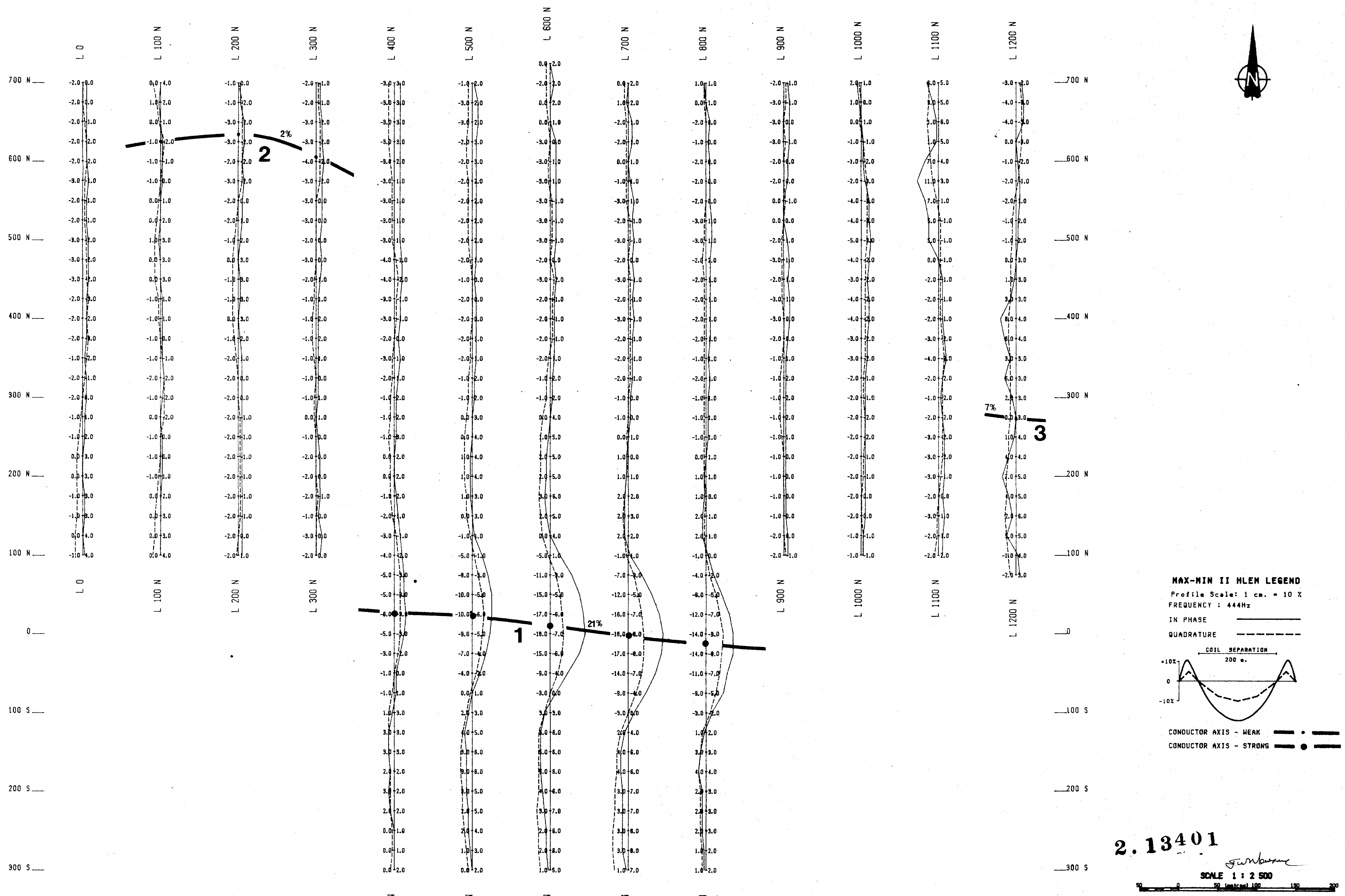
For CROSS LAKE MINERALS LTD.

Title STIMSON PROJECT, Grid A
Total Field Magnetic Survey
Fox/Stimson Twps., Ontario

Date: February '90	N.T.S.: 42 H/2
Operator: T. McAllister	Job #: M-370

Figure 8

240



42H02SE0004 2.13401 STIMSON

250

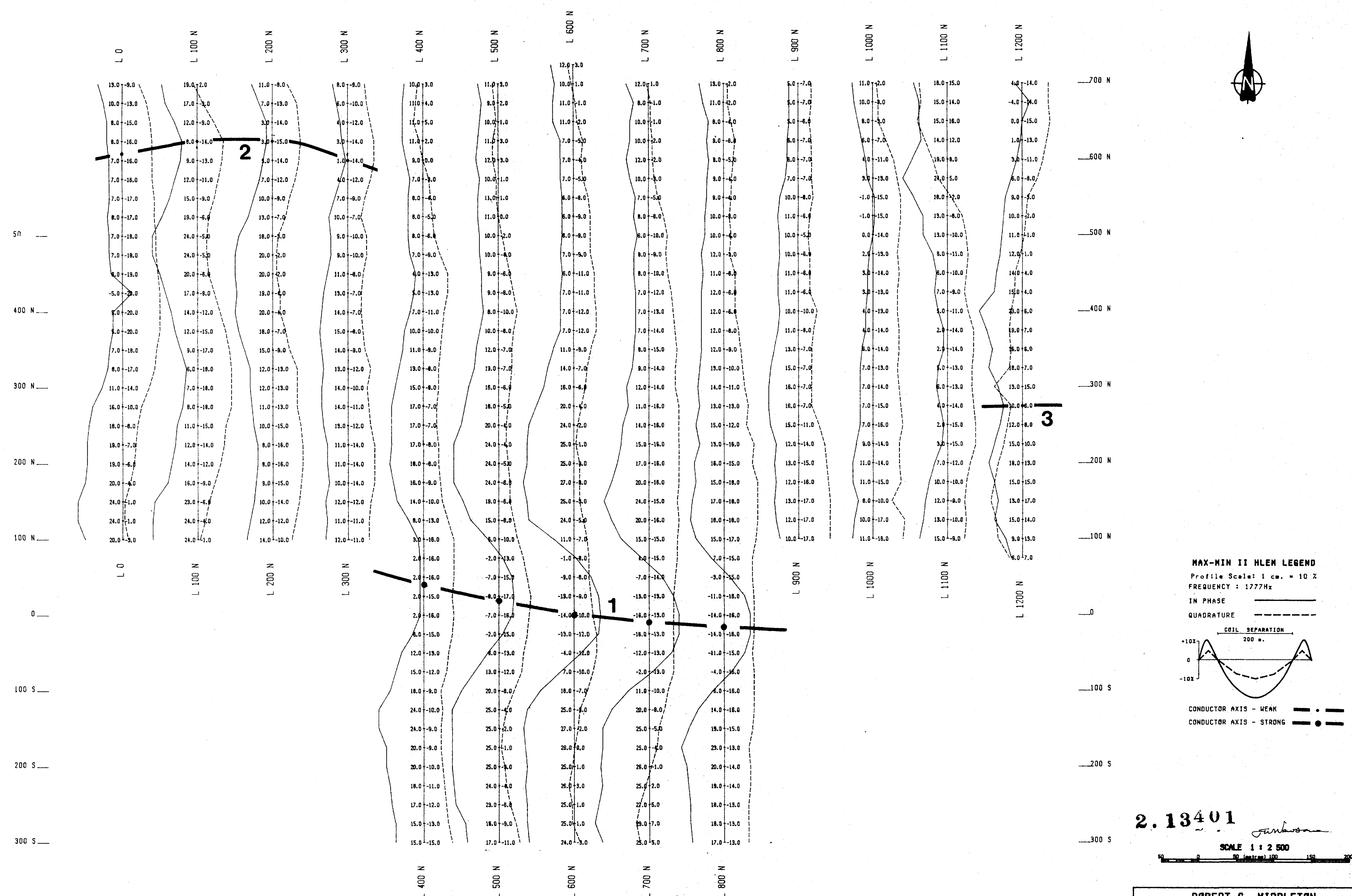
ROBERT S. MIDDLETON
EXPLORATION SERVICES

For **TOM KIOKE JR.**

Title **STIMSON PROJECT, Block B**
Horizontal Loop EM Survey
Fox/Stimson Twps., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros	Job #: M-370

Figure 9



2.13401

ROBERT S. MIDDLETON EXPLORATION SERVICES

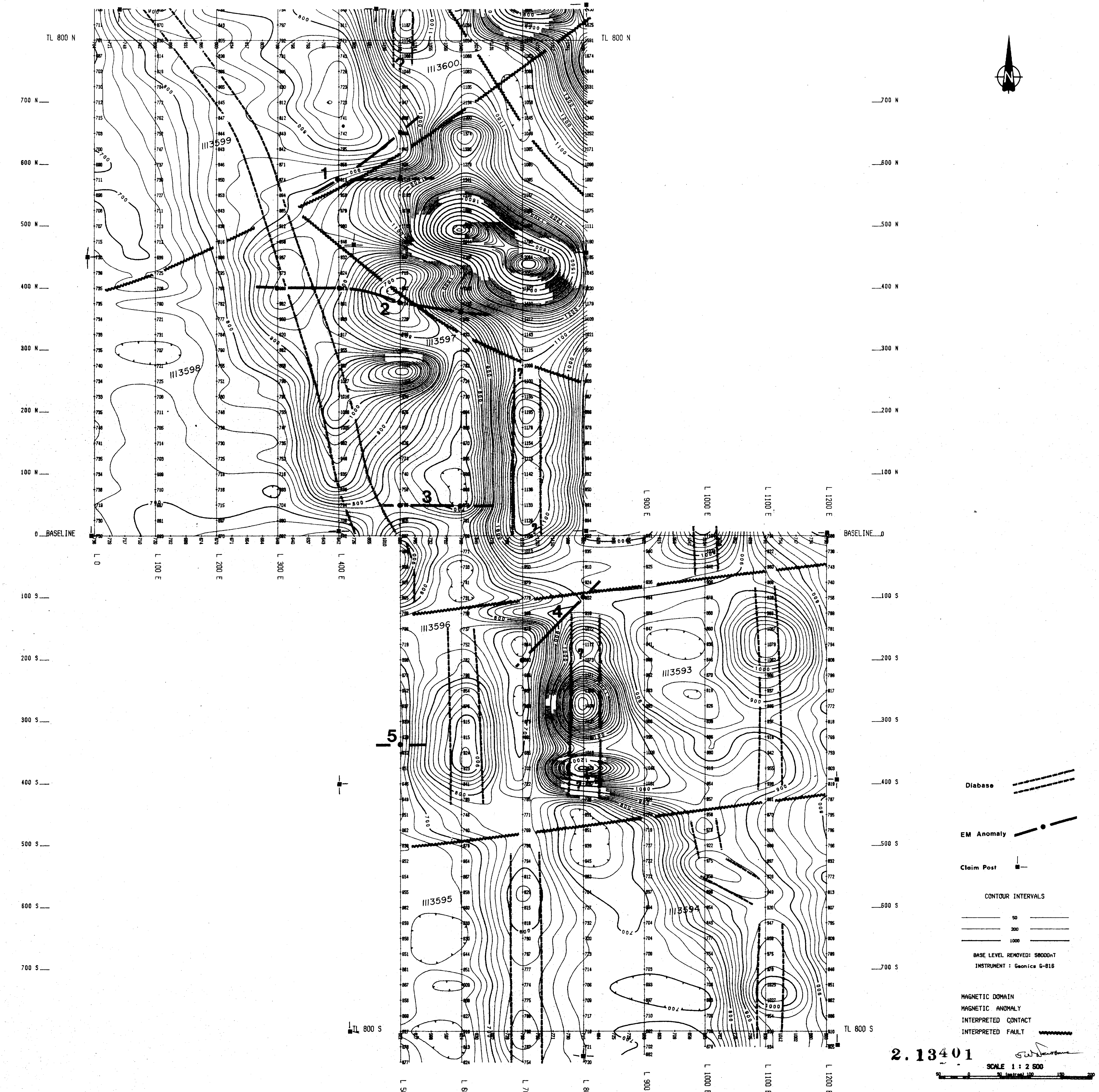
For: **TOM KIOKE JR.**

Title: **STIMSON PROJECT, Block B**
Horizontal Loop EM Survey
Fox/Stimson Twps., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros.	Job #: M-370

260

Figure 10



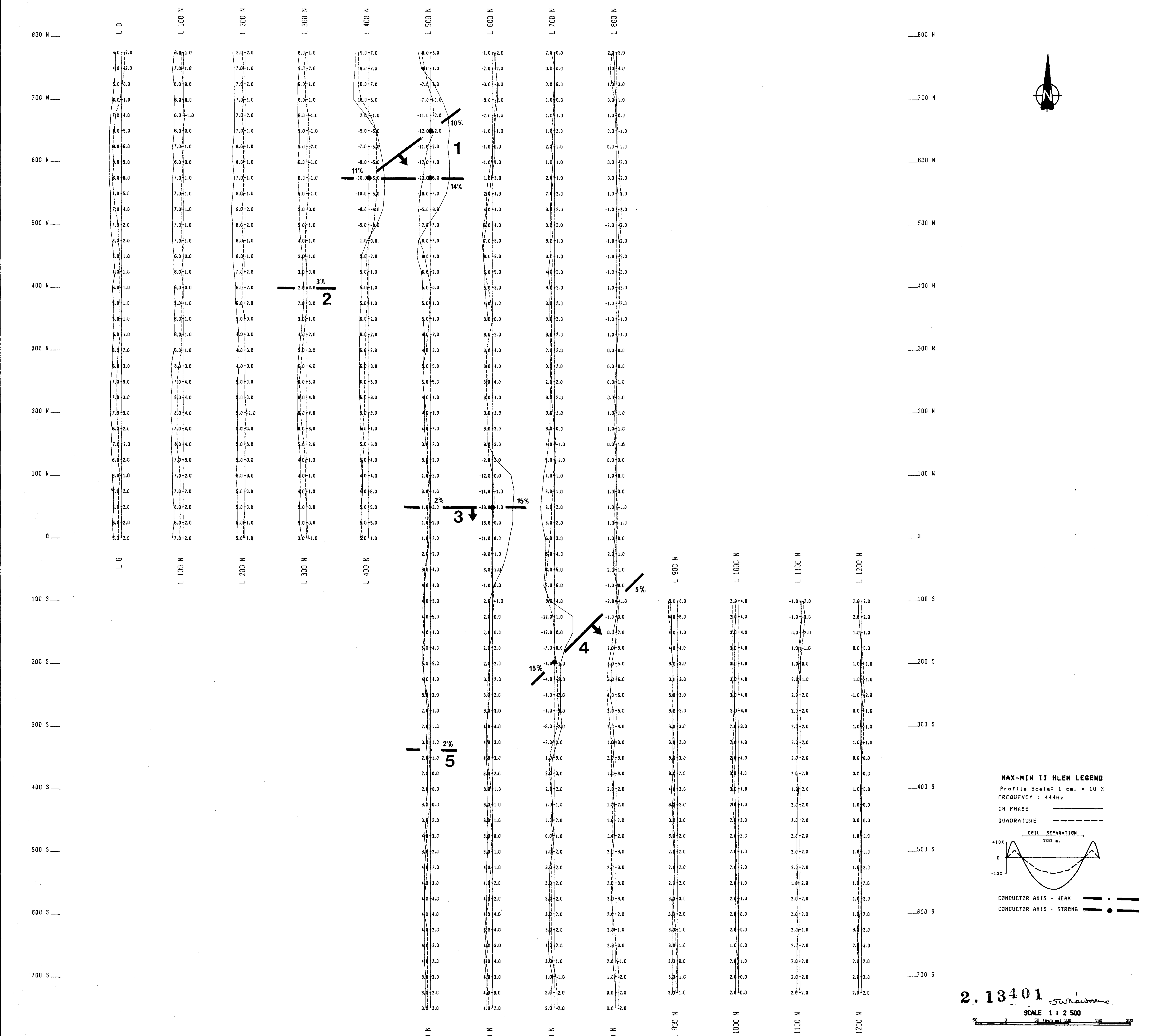
ROBERT S. MIDDLETON
EXPLORATION SERVICES

For DAVE JONES

Title STIMSON PROJECT, Block C
Total Field Magnetic Survey
Stimson Twp., Ontario

Date: February '90	N.T.S.: 42 H/2
Operator: T.McAllister	Job #: M-371

Figure 11



ROBERT S. MIDDLETON
EXPLORATION SERVICES

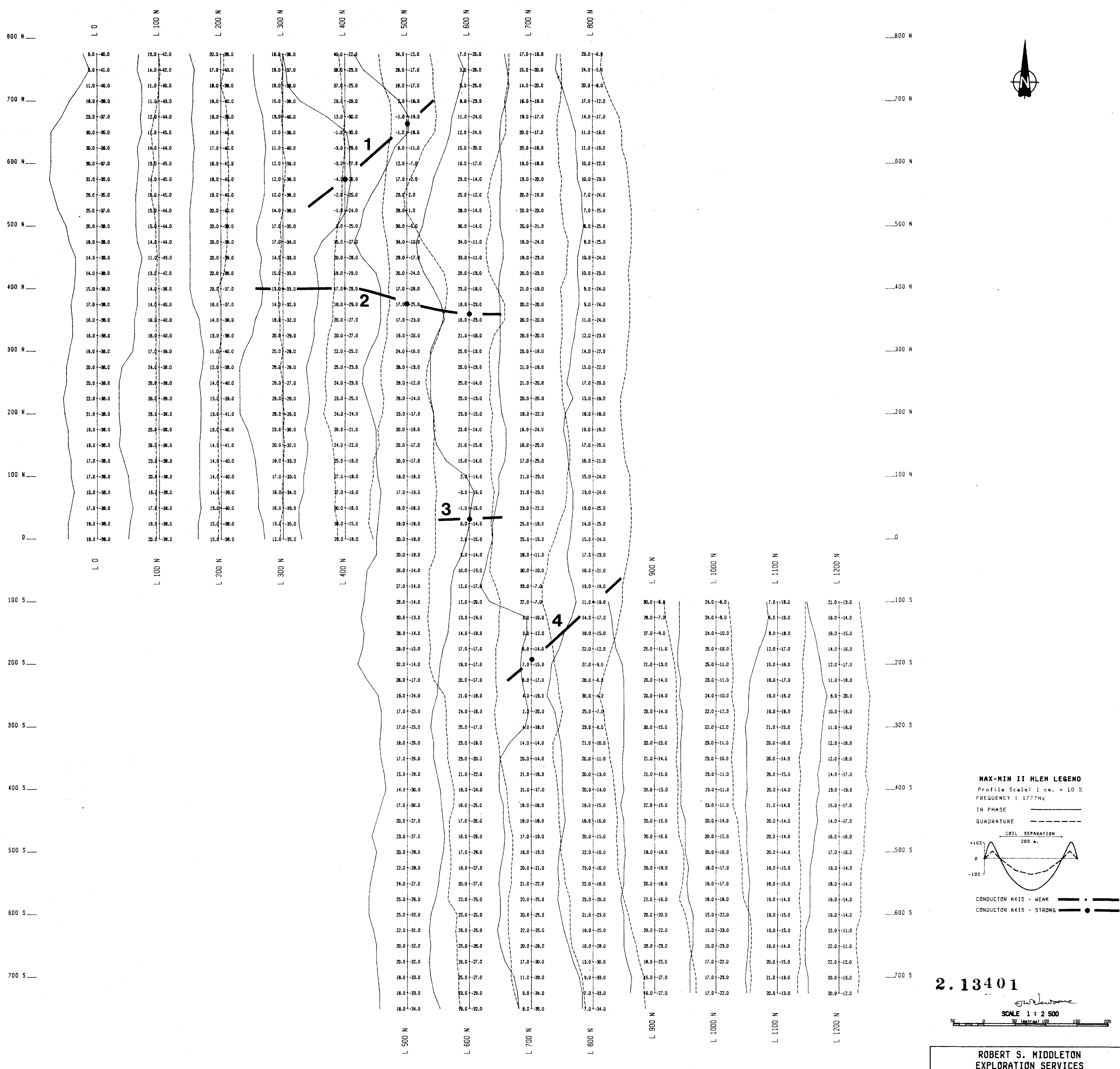
For DAVE JONES

Title STIMSON PROJECT, Block C
Horizontal Loop EM Survey
Fox/Stimson Twps., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros.	Job #: M-371

280

Figure 12



ROBERT S. MIDDLETON
EXPLORATION SERVICES

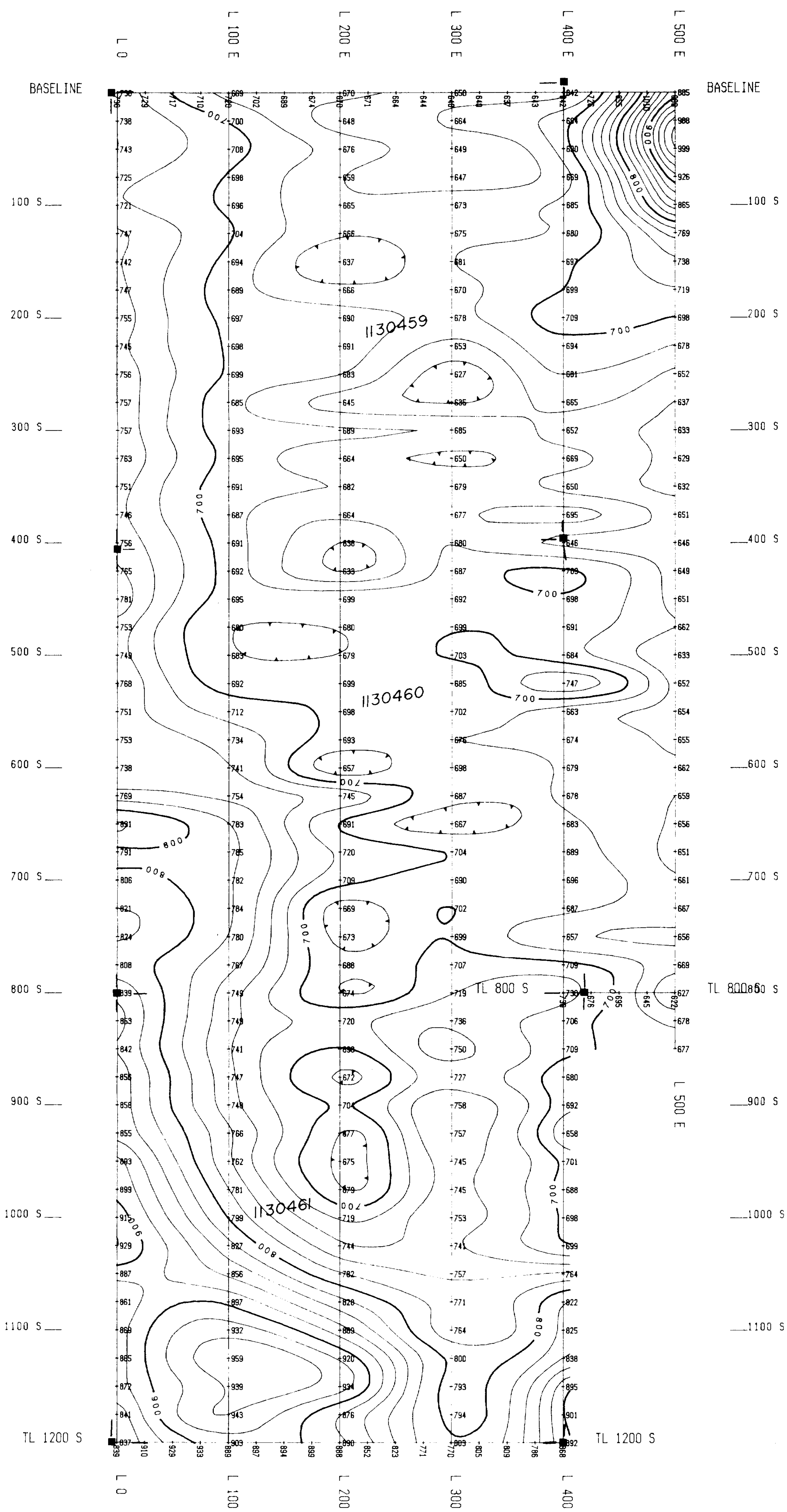
For DAVE JONES

Title STIMSON PROJECT, Block C
Horizontal Loop EM Survey
Fox/Stimson Twps., Ontario

Date: February '90	N.T.S.: 42 H/2
Operators: McAllister Bros.	Job #: M-371

Figure 13

290



Claim Post

CONTOUR INTERVALS

20

100

500

BASE LEVEL REMOVED: 58000nT

INSTRUMENT : Geonics G-816

MAGNETIC DOMAIN

MAGNETIC ANOMALY

INTERPRETED CONTACT

INTERPRETED FAULT

2.13401

SCALE 1 : 2 500

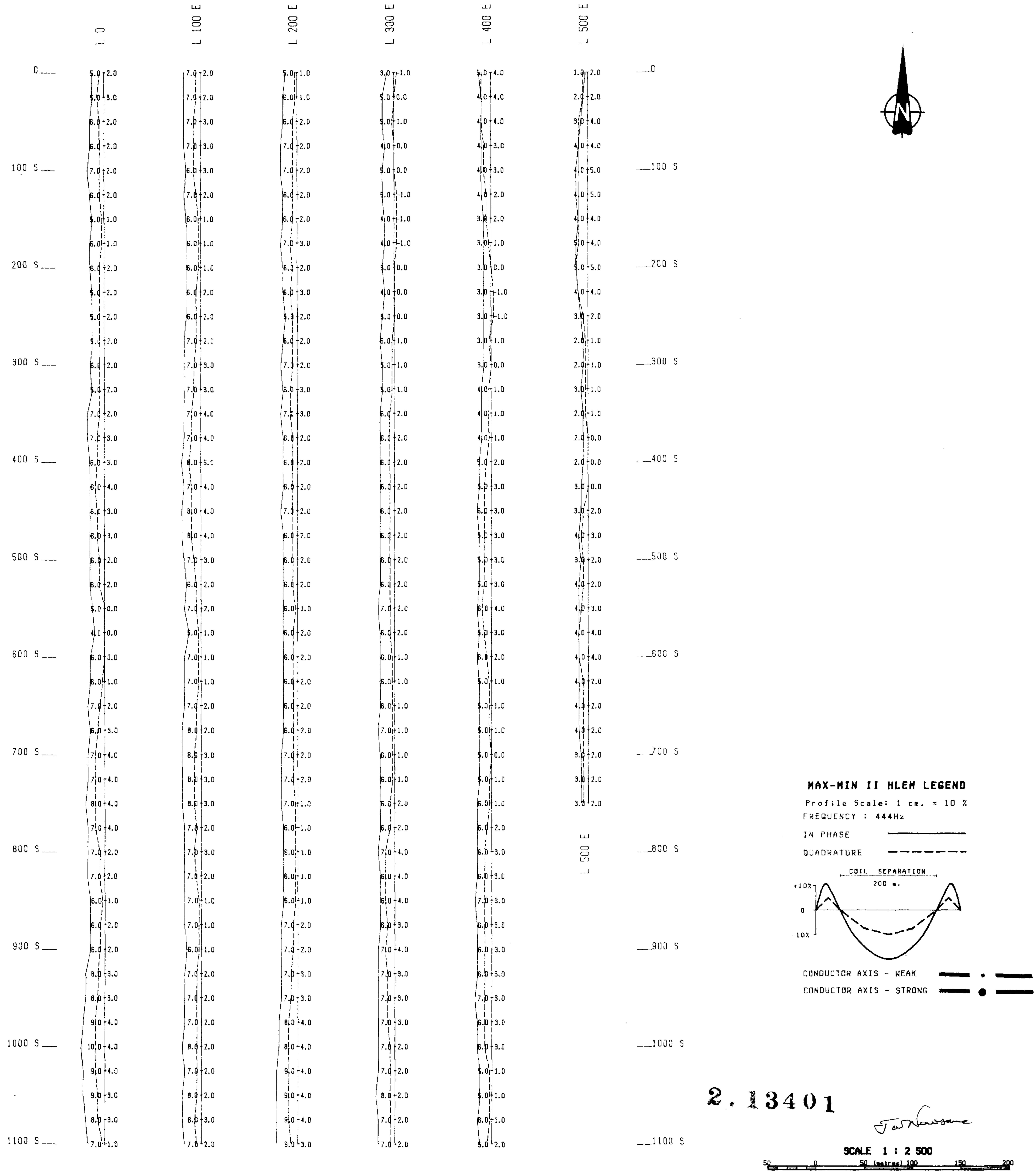
50 0 50 (metres) 100 150 200

FIGURE 5

ROBERT S. MIDDLETON EXPLORATION SERVICES	
For PETER MATTHEWS	
Title STIMSON PROJECT, Block D Total Field Magnetic Survey Stimson Twp., Ontario	
Date: March '90	N.T.S.: 42 H/2
Operator: T.McAllister	Job #: M-371

42H02SE0024 2.13401 STIMSON

300



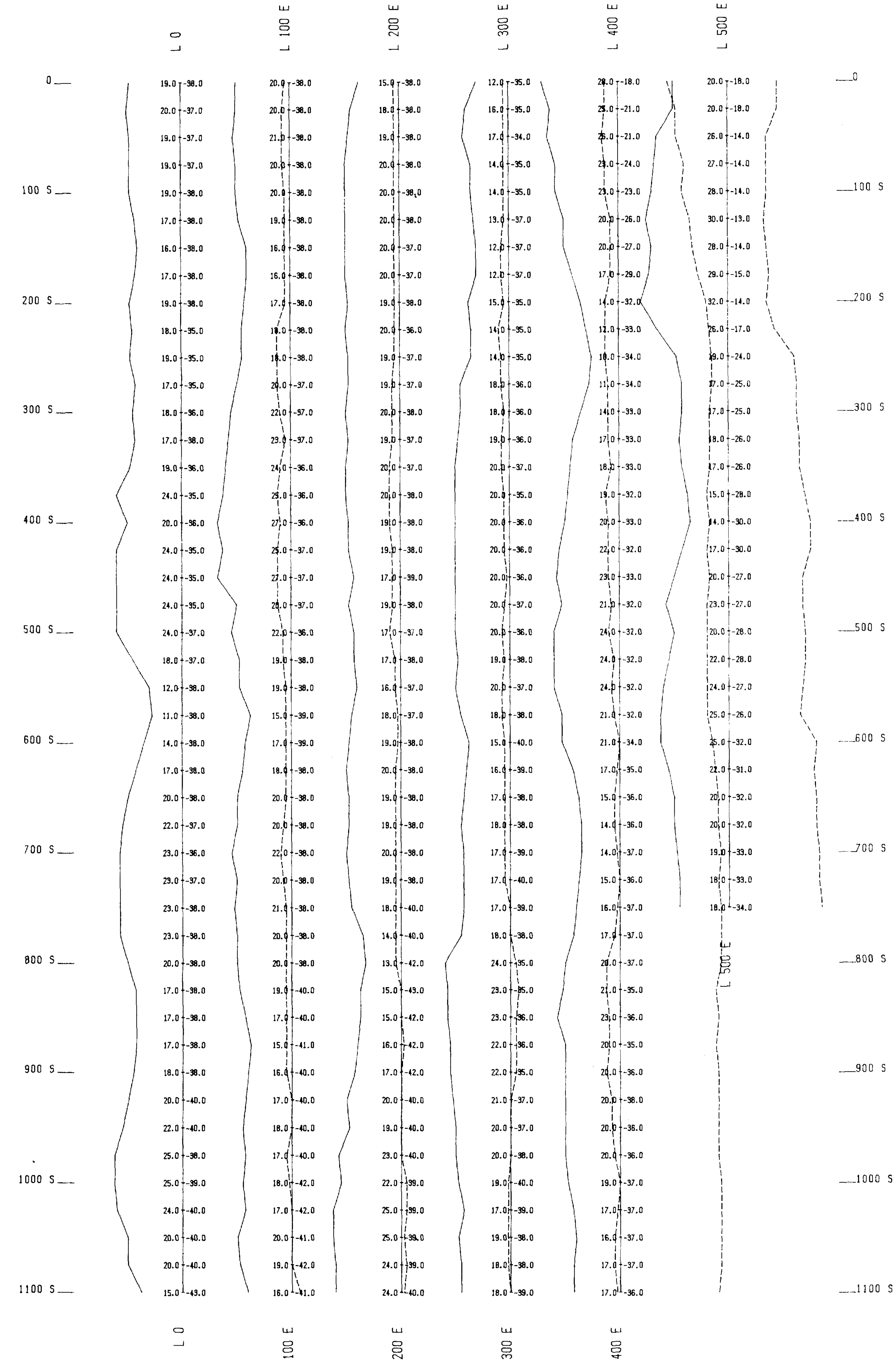
2.13401

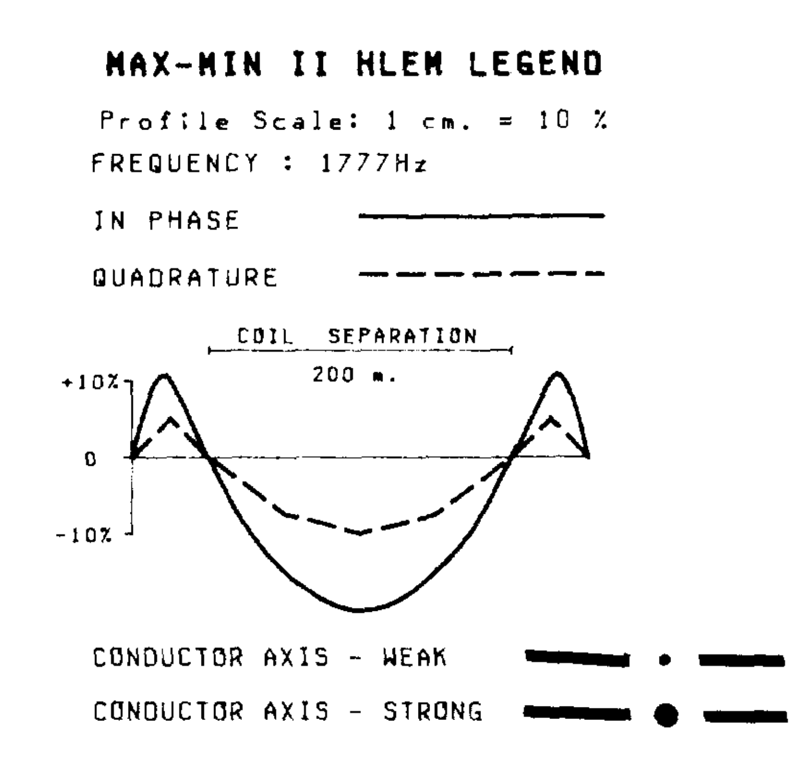
FIGURE 6

ROBERT S. MIDDLETON EXPLORATION SERVICES	
For PETER MATTHEWS	
Title STIMSON PROJECT, Block D Horizontal Loop EM Survey Stimson Twp., Ontario	
Date: March '90	N.T.S.: 42 H/2
Operators: McAllister Bros.	Job #: M-371

42H02SE0004 2.13401 STIMSON

310





2.13401

SCALE 1 : 2 500

50 0 50 (metres) 100 150 200

FIGURE 7

ROBERT S. MIDDLETON
EXPLORATION SERVICES

For PETER MATTHEWS

Title STIMSON PROJECT, Block D
Horizontal Loop EM Survey
Stimson Twp., Ontario

Date: March '90	N.T.S.: 42 H/2
Operators: McAllister Bros.	Job #: M-371

42H02SE0004 2.13401 STIMSON

320