



41P11NW0402 2.14058 CHURCHILL

010

GEOPHYSICAL REPORT
FOR
NORTHGATE EXPLORATION LIMITED
ON THE
CHURCHILL TOWNSHIP PROPERTY
PROJECT # 708

2.14058 =

RECEIVED

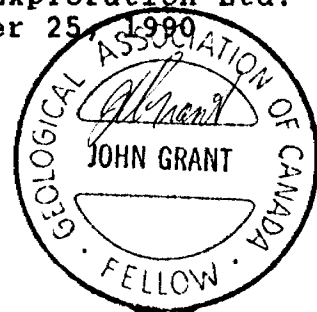
APR 17 1991

MINING LANDS SECTION

Prepared By:
J.C. Grant
Exsics Exploration Ltd.
September 25, 1990

Qual

2.5347





41P11NW0402 2.14058 CHURCHILL

010C

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INTRODUCTION

Northgate Exploration Limited staked a group of 66 claims all of which are located in the west central section of Churchill Township, Larder Lake Mining Division (refer to Figure 2 & 3 of this report).

Exsics Exploration Limited was contracted to perform a Total Field Magnetic and Two Directional VLF-EM survey over the property. The purpose of this program was to test the area for geological structure which would be suitable for base and or precious metal potential.

PERSONNEL

The people directly involved with the field portion of the project were all employees of Exsics. They are as follows:

Rob Mathieu.....Timmins, Ontario

Richard Mathieu.....Timmins, Ontario

The project was carried out under the supervision of John Grant.

CLAIM GROUP

The 66 claims which represent the Northgate block are as follows:

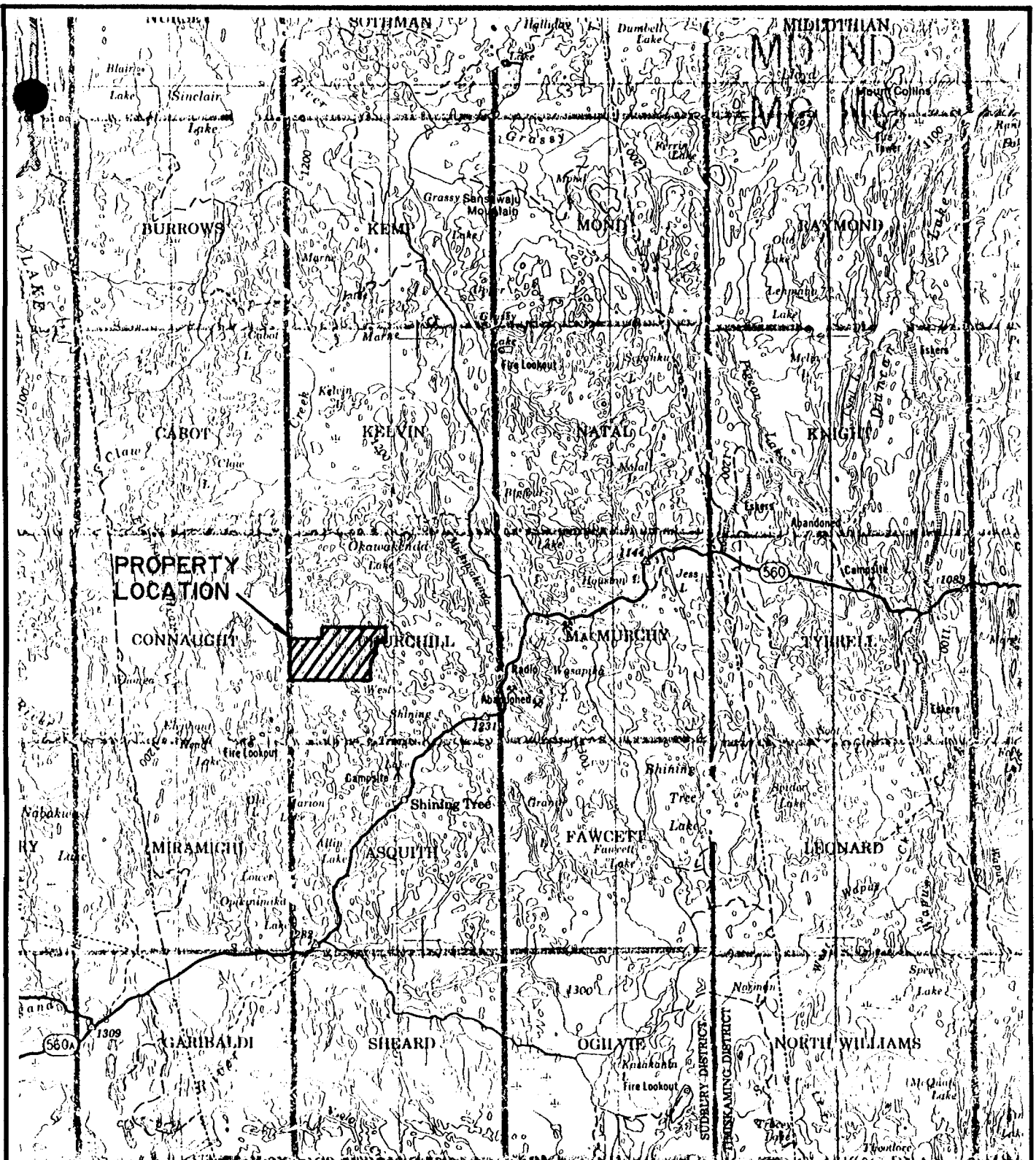
L-1132599 to L-1132614 inclusive.....	16
L-1155423 to L-1155458 inclusive.....	36
L-1132559 to L-1132572 inclusive.....	<u>14</u>
TOTAL.....	66

Refer to Figure 3 of this report which has been drawn from the Ministry of Northern Development & Mines Limited Map G-3210, Churchill Township 1"= 1/2 mile.

LOCATION AND ACCESS

The entire block is located in the west central section of Churchill Township such that the west boundary of the block is represented by the township line between Churchill and Connaught Townships. The West Shining Tree River flows north-south through the centre of the block and Saville Lake rests on the east boundary of the block (refer to Figure 2 & 3 of this report).

The village of Shining Tree is approximately 5 miles to the southeast of the property.



EXSICS EXPLORATION LTD.
 P.O. Box 1000, P4N-7X1
 Suite 13, Hollinger Bldg, Timmins Ont.
 Telephone: 705-267-4151

CLIENT: NORTHGATE EXPLORATION LIMITED

PROPERTY: PROJECT # 708 CHURCHILL TWP.

TITLE: PROPERTY LOCATION

Fig. 2

Date: Sept. 1990

Scale: 1:250,000

NTS:

Drawn:

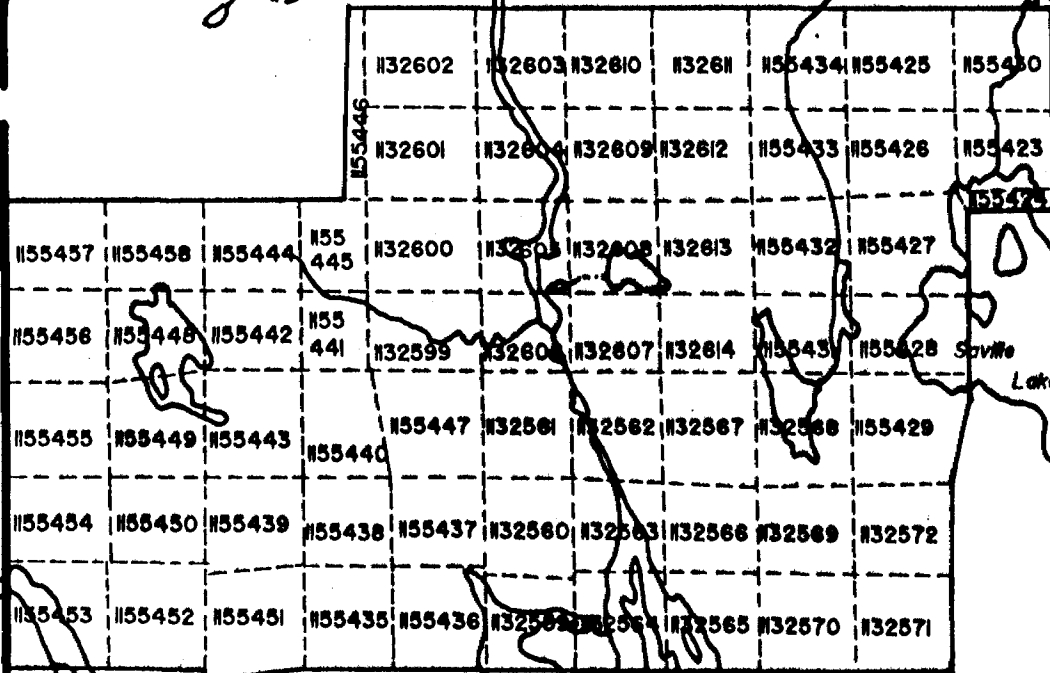
Interp: J. Grant

Job No. EE-372



CONNAUGHT TWP.

CHURCHILL TWP.



EXSICS EXPLORATION LTD.

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Suite 13, Mallinger Bldg, Timmins Ont.
Telephone: 705-267-4151

CLIENT: NORTHGATE EXPLORATION LIMITED

PROPERTY: PROJECT # 708 CHURCHILL TWP.

TITLE:
CLAIM SKETCH

Fig. 3

Date: Sept. 1990

Scale: 1"=1/2mile

NTS:

Drawn: P.G.

Interp: J. Grant

Job No. EE-372

Access to Shining Tree is ideal year round as it is serviced by an all weather gravel road which travels northeast off of Highway 144. The property can be reached by well travelled water routes which can be accessed from the village of Shining Tree (refer to Figure 1 and 2).

During the survey period, Exsics accessed the property by fixed wing from Ratcliff's Airbase in South Porcupine to West Shining Tree Lake. Flying time is approximately 45 - 60 minutes.

GEOPHYSICAL PROGRAM

The geophysical program consisted of a Total Field Magnetic and a Very Low Frequency (VLF) electromagnetic survey. Both of these surveys were completed over the entire property which had a cut grid established over the majority of the claim group. Portions of the property which were not covered by the cut grid had compassed and paced flagged lines established over it.

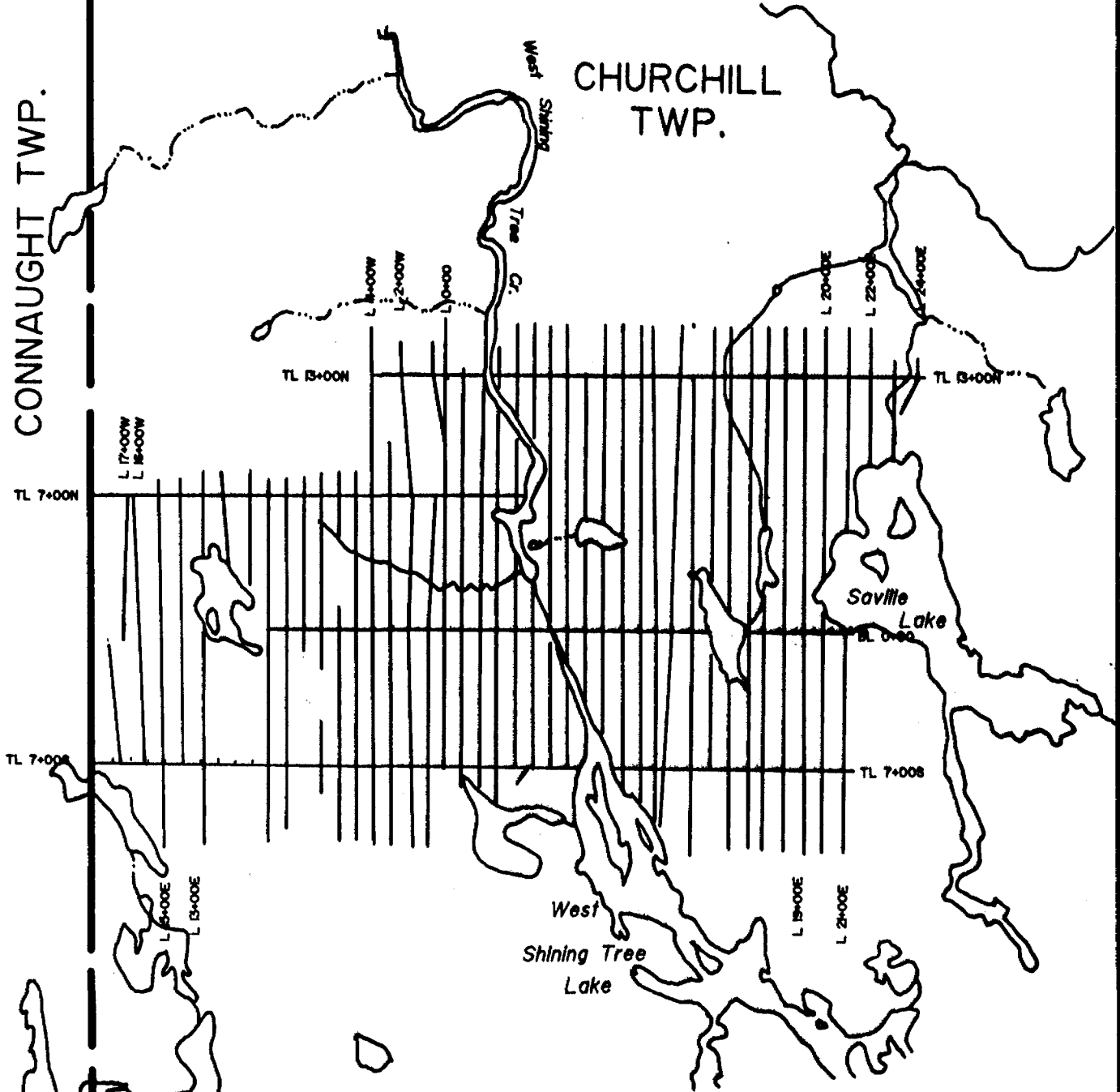
All of the readings were taken at 25 meter station intervals and 100 meter line intervals.

Base maps showing the grid and it's layout are included in the back pocket of this report.

In all, a total of 91 km were established and read on the claim group.

CONNAUGHT TWP.

CHURCHILL TWP.



EXSICS EXPLORATION LTD.
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 Telephone: 705-267-4151

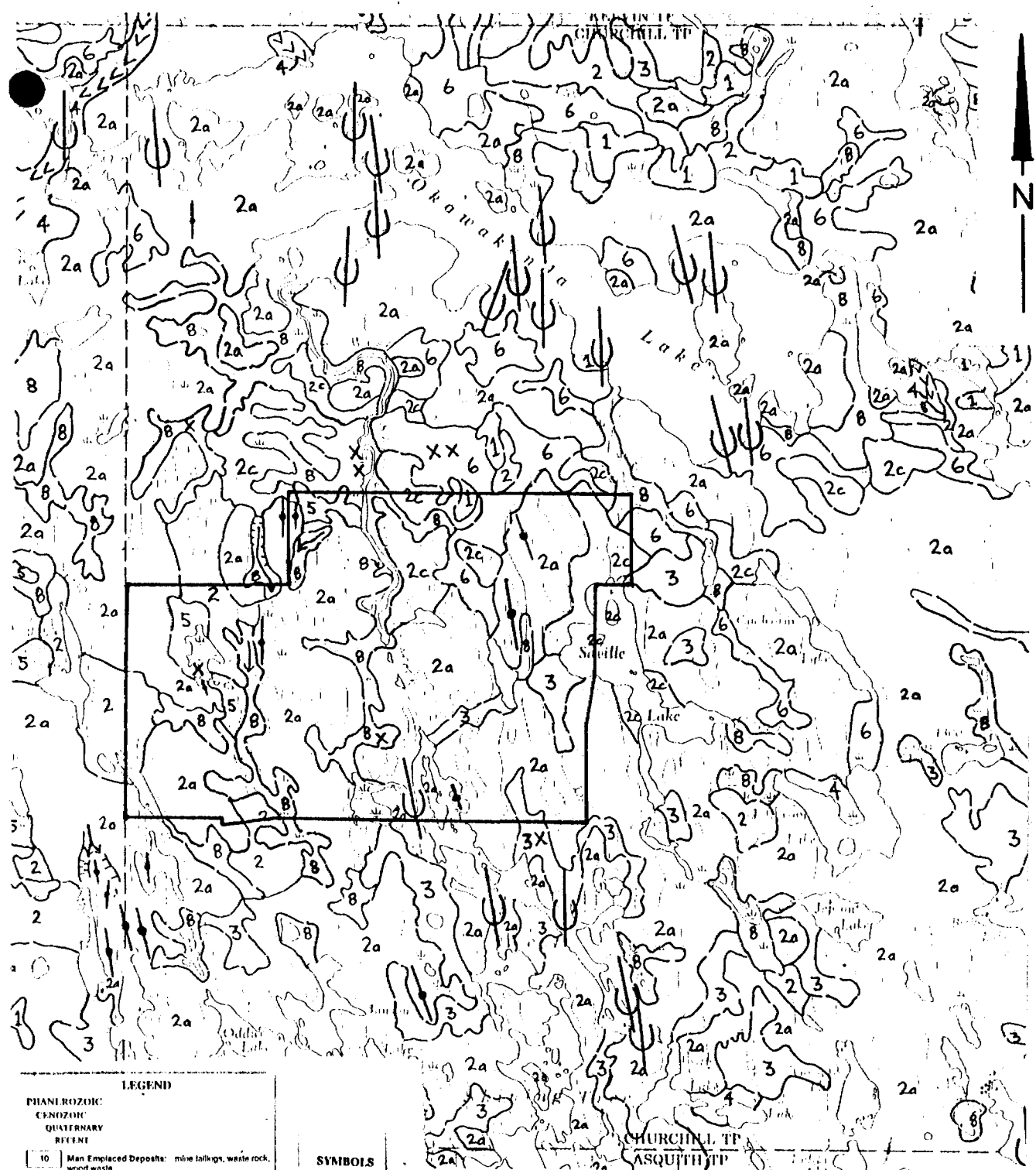
CLIENT: NORTHGATE EXPLORATION LIMITED

PROPERTY: PROJECT # 708 CHURCHILL TWP.

TITLE: GRID SKETCH

Fig. 4

Date: Sept. 1990	Scale: 1"=1/2mile	NTS:
Drawn: P.G.	Interp: J. Grant	Job No. EE-372



LEGEND

PHANEROZOIC	
CENOZOIC	
QUATERNARY	
RECENT	
10	Man Emplaced Deposits: mine tailings, waste rock, wood waste
9	Modern Alluvium: silty sand to cobble gravel
8	Organic Deposits: peat, muck, mud
PLEISTOCENE	
7	Eolian Deposits: coarse silt, fine to medium grained sand
6	Glaciolacustrine Deposits: silty sand to coarse sand, mixed clay and silt
5	Glacioluvial Outwash Deposits: fine grained sand to heavy gravel
4	Ice Contact Stratified Drift: silt, sand and gravel, boulders, minor flow silt
3	Till: silt to sand matrix with granule to boulder sized clasts
2	Bedrock-drift complex: thin (<1 m) and discontinuous drift (sedimentary character as indicated) over bedrock
2a	Unstratified drift veneer over bedrock
2b	Till veneer over bedrock
2c	Coarse grained ice contact stratified drift or glacioluvial outwash sands and gravels over bedrock
2c	Glaciolacustrine or eolian sediments over bedrock
EARLY TO LATE, PRECAMBRIAN	
1	Bedrock: (>50% exposure), with minor undifferentiated drift cover

SYMBOLS

	Geologic Boundary (Approximate)
	Small Bedrock Outcrop
	Glacial Station (Single, Multiple, Streamline, Vortex, Direction, Cross-sections, Other)
	Streamlined Bedrock or Till Form
	Minor Moraine Ridge
	Esker (Direction Known, Unknown)
A	Name
	Kettle, Ice Contact Slope
	Meltwater Channel (Inferred Flow Direction Indicated)
	Fluvial Terrace
	Dune Crest (Major Form Only)
	Beach Rim or Bar
	Gravel Pit

EXSICS EXPLORATION LTD.
 P.O. Box 1000, P4N-7X1
 Suite 13, Hurlinger Bldg, Timmins Ont.
 Telephone: 705-267-4551

CLIENT: NORTHGATE EXPLORATION LIMITED

PROPERTY: PROJECT #708 CHURCHILL TWP.

TITLE: GEOLOGY MAP

Fig. 5

Date: Sept. 1990	Scale: 1:50,000	NTS:
Drawn:	Interp: J. Grant	Job No. EE-372

Magnetic Survey:

This survey was completed using the EDA Omni Plus system. Specifications for this unit can be found as Appendix A of this report.

The survey was done by using a base station recorder. A fixed point was established on the survey grid, and the base station unit was tuned to a reference field of 58300 gammas. The field units were also tuned at the same fixed point and set to the same reference field. The base unit was set to record and store readings at 30 second intervals, so as to monitor any spiking or change in the earth's diurnal throughout the survey period.

At the end of each day, the field units and the base unit are coupled together and the raw field data is dumped to the base unit, where it is merged. The internal microprocessor then computes the diurnal variations in the earth's magnetic field for each survey grid co-ordinate by comparing the times at which the readings were taken and computing any mid-interval values.

This correction is done during the data dump sequence of the units. The retrieved data is the corrected data ready for plotting. Each value has had 58,000 gammas subtracted from it for ease in plotting only.

The base station correction method is most useful in these northern latitudes where more detailed monitoring of the diurnal variations are required.

This unit is capable of recording and storing magnetic data accurate to the decimal point, thus greatly improving the accuracy and quality of the data obtained.

The final data was then plotted on a base map at a scale of 1:500 and contoured at 100 & 500 gamma intervals wherever possible. This map is included in the back pocket of this report.

Electromagnetic Survey:

This survey was completed using the VLF mode of the EDA Omni Plus System. Specifications for this system can be found as Appendix B of this report.

This survey consisted of a two directional VLF survey utilizing the Cutler Maine Station at 24.0 khz and the Annapolis, Maryland station at 21.4 khz. The Cutler station would transmit into the survey grid at approximately an azimuth of 295 degrees and Annapolis would transmit in at an azimuth of 345 degrees. These two stations were chosen due to the expected geological structures. The Cutler station would couple well with east-west structure and the Annapolis station would couple well with north-south structure.

Readings were taken at 25 meter intervals over the grid using both stations with values for the in-phase and quadrature being recorded at each station.

The unit is capable of recording and storing each frequency separately.

The field data is dumped each night along with a fraser filtered value for each transmitting frequency.

The fraser filtered value, from Doug Fraser, results in a low pass filter being done for each frequency recorded, resulting in positioning a strong positive value over shallow conductors and a less positive value over deeper sources. This method better defines anomalous areas.

The filtered data has been plotted on base maps, one map for each frequency, and then contoured at 5 unit intervals.

The in-phase dip angle measurements have also been plotted on individual base maps and profiled at 1 cm to 20%. A true cross-over, or conductor axis is represented by a positive to negative, traversing south to north.

The VLF survey is a great mapping tool as it outlines bedrock unit changes, faults, shear zones, contact zones and anomalous areas. However, it is also greatly affected by outcrop to swamp contacts, creeks, clay filled troughs and ridges and

lake shores. One should be careful when reviewing just VLF data. All of these VLF maps are included in the back pocket of this report.

Generally, the claim group is underlain by mafic metavolcanics with several areas of mafic intrusives as diabase medium to coarse grained units as well as northwest-southeast trending felsic and intermediate flows.

There is also a mapped diabase dike striking at 165 - 170 degrees off the south end of the lake in the vicinity of lines 1500, 1600, 1700 ME (OGS Map 2414, Connaught-Churchill Townships, Scale 1 inch to 1/2 mile).

Also, the group is cross cut by several northwest-southeast and north-south trending fault zones.

Also, of interest, is the Jonsmith Mines Ltd Occurrence (1971) which is located about 1.6 km northwest of Saville Lake. Here the property is underlain by the same geology as Northgates group and it was reported, (Northern Miner 1971b, P.18), a "grab sample assayed 2.57% copper". The grab sample was taken by Jonsmith Mines Ltd.

SURVEY RESULTS

Generally the surveys were successful in outlining the expected geological structures on the property.

The magnetics show quite a complicated structure to the north and northwest of Saville Lake which may be indicative of the felsic and intermediate flows as well as an intrusive. Several of the northwest trending faults are also evident in this area. There also appears to be a possible dike like response striking north along L1800 ME which coincides with a map dike in the area. Moving west into the grid, there is a narrow east-west structure striking between lines 500 MN to 900 ME which may be coincidental with a mafic flow unit. There are two VLF conductors in this same area which may represent a contact or sulphide target.

Another predominant mag feature is a northwest trending zone cutting lines 100 MW to 900 MW which again may represent a contact zone between the felsics and intermediates. The north portion of this feature butts up against a north-south fault zone.

The VLF surveys were successful in coupling with both east-west and northwest-southeast striking structures. Quite a number of responses were noted of which some most probably relate to geological noise and drainage systems. However, there are many features which are worthy of follow-up both geophysically and geologically.

RECOMMENDATIONS AND CONCLUSIONS

Churchill Township has had a history of gold and base metal discoveries and occurrences. Northgate's claim group has a good geological structure which could be a favourable environment for base and or precious metal discoveries. The VLF and Mag surveys have outlined a number of areas worthy of follow-up work.

Once the geophysical results have been correlated to the geochemical and geological surveys a follow-up program of the more interesting areas should be contemplated.

A geophysical program may include a horizontal loop, IP and or CEM survey to test the VLF zones for reliability. If the overburden is shallow in places of interest, stripping and washing may be considered to define targets.

Also, prospecting and mapping of the individual zones may also explain a number of the VLF targets.

Respectfully Submitted,

John C. Grant



CERTIFICATE OF QUALIFICATIONS

I, John Charles Grant do hereby certify:

1. that I am a geophysicist and reside at Lot 2 Martineau Avenue, Kamiskotia Lake, Timmins, Ontario.
2. that I am a Fellow of the Geological Association of Canada.
3. that I am a member of the Certified Engineering Technologist Association.
4. that I graduated from Cambrian College of Applied Arts and Technology, Sudbury Campus in 1975 with an Honour's diploma in Geology Technology.
5. that I have practised my profession continuously for 13 years.
6. that my report on the CHURCHILL TOWNSHIP PROPERTY, for NORTHGATE EXPLORATION LIMITED is based on work carried out under my supervision.
4. I hold no specific or special interest in the described property. I have been retained as a Consulting Geophysicist for "the property".

Dated this 25th day of September, 1990 at Timmins, Ontario

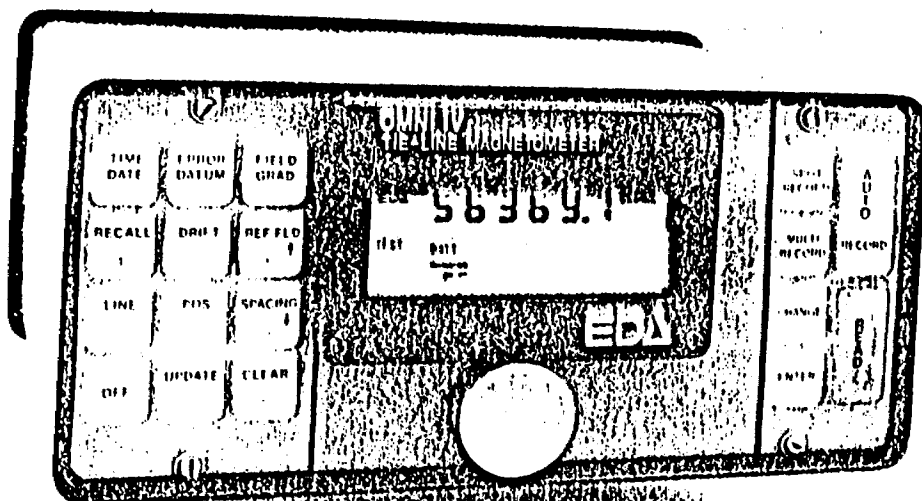
John C. Grant, C.E.T., F.G.A.C.



APPENDICES

APPENDIX A

OMNI IV "Tie-Line" Magnetometer



OMNI IV's Major Benefits

- Four Magnetometers In One
- Self Correcting for Diurnal Variations
- Reduced Instrumentation Requirements
- 25% Weight Reduction
- User Friendly Keypad Operation
- Universal Computer Interface
- Comprehensive Software Packages

Specifications

Dipoles	Two simultaneous input dipoles.
Input Voltage (Vp) Range	40 microvolts to 4 volts, with automatic ranging and overvoltage protection.
Vp Resolution	10 microvolts.
Vp Accuracy	0.3% typical; maximum 1% over temperature range.
Chargeability Resolution	1 %.
Chargeability Accuracy	0.3% typical; maximum 1% over temperature range for Vp > 10 mV.
Automatic SP Compensation	± 1 V with linear drift correction up to 1 mV/s.
Input Impedance	1 Megohm.
Sample Rate	10 milliseconds.
Automatic Stacking	3 to 99 cycles.
Synchronization	Minimum primary voltage level of 40 microvolts.
Rejection Filters	50 and 60 Hz power line rejection greater than 100 dB.
Grounding Resistance Check	100 ohm to 128 kilo-ohm.
Compatible Transmitters	Any time domain waveform transmitter with a pulse duration of 1 or 2 seconds and a crystal timing stability of 100 ppm.
Programmable Parameters	Geometric parameters, time parameter, intensity of current, type of array and station number.
Display	Two line, 32-character alphanumeric liquid crystal display protected by an internal heater for low temperature conditions.
Memory Capacity	600 sets of readings.
RS-232C Serial I/O Interface	1200 baud, 8 data bits, 1 stop bit, no parity.
Console Power Supply	Six- 1.5V "D" cell disposable batteries with a maximum supply current of 70 mA and auto power save.
Operating Environmental Range	- 25°C to + 55°C; 0-100% relative humidity; weatherproof.
Storage Temperature Range	- 40°C to + 60°C.
Weight and Dimensions	5.5 kg, 310x230x210 mm.
Standard System Complement	Instrument console with carrying strap, batteries and operations manual.
Available Options	Stainless steel transmitting electrodes, copper sulphate receiving electrodes, alligator clips, bridge leads, wire spools, interface cables, rechargeable batteries, charger and software programs.

EDA Instruments Inc.
4 Thorncliffe Park Drive,
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR
Cable: Instruments Toronto
(416) 425 7800

In U.S.A.
EDA Instruments Inc.
5151 Ward Road,
Wheat Ridge, Colorado
U.S.A. 80035
(303) 422 9112

APPENIX B

OMNI PLUS VLF/Magnetometer System



Major Benefits of the OMNI PLUS

- Combined VLF/Magnetometer/Gradiometer System
- No Orientation Required
- Three VLF Magnetic Parameters Recorded
- Automatic Calculation of Fraser Filter
- Calculation of Ellipticity
- Automatic Correction of Primary Field Variations
- Measurement of VLF Electric Field



Specifications

Dynamic Range	18,000 to 110,000 gammas. Roll-over display feature suppresses first significant digit upon exceeding 100,000 gammas.
Tuning Method	Tuning value is calculated accurately utilizing a specially developed tuning algorithm
Automatic Fine Tuning	$\pm 15\%$ relative to ambient field strength of last stored value
Display Resolution	0.1 gamma
Processing Sensitivity	± 0.02 gamma
Statistical Error Resolution	0.01 gamma
Absolute Accuracy	± 1 gamma at 50,000 gammas at 23°C ± 2 gamma over total temperature range
Standard Memory Capacity	
Total Field or Gradient	1,200 data blocks or sets of readings
Tie-Line Points	100 data blocks or sets of readings
Base Station	5,000 data blocks or sets of readings
Display	Custom-designed, ruggedized liquid crystal display with an operating temperature range from -40°C to $+55^{\circ}\text{C}$. The display contains six numeric digits, decimal point, battery status monitor, signal decay rate and signal amplitude monitor and function descriptors.
RS 232 Serial I/O Interface	2400 baud, 8 data bits, 2 stop bits, no parity
Gradient Tolerance	6,000 gammas per meter (field proven)
Test Mode	A. Diagnostic testing (data and programmable memory) B. Self Test (hardware)
Sensor	Optimized miniature design. Magnetic cleanliness is consistent with the specified absolute accuracy.
Gradient Sensors	0.5 meter sensor separation (standard), normalized to gammas/meter. Optional 1.0 meter sensor separation available. Horizontal sensors optional.
Sensor Cable	Remains flexible in temperature range specified, includes strain-relief connector
Cycling Time (Base Station Mode)	Programmable from 5 seconds up to 60 minutes in 1 second increments
Operating Environmental Range	-40°C to $+55^{\circ}\text{C}$; 0-100% relative humidity; weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid battery cartridge or belt; rechargeable NiCad or Disposable battery cartridge or belt; or 12V DC power source option for base station operation.
Battery Cartridge/Belt Life	2,000 to 5,000 readings, for sealed lead acid power supply, depending upon ambient temperature and rate of readings
Weights and Dimensions	
Instrument Console Only	2.8 kg, 238 x 150 x 250mm
NiCad or Alkaline Battery Cartridge	1.2 kg, 235 x 105 x 90mm
NiCad or Alkaline Battery Belt	1.2 kg, 540 x 100 x 40mm
Lead-Acid Battery Cartridge	1.8 kg, 235 x 105 x 90mm
Lead-Acid Battery Belt	1.8 kg, 540 x 100 x 40mm
Sensor	1.2 kg, 56mm diameter x 200mm
Gradient Sensor (0.5m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0m separation - optional)	2.2 kg, 56mm diameter x 1300mm
Standard System Complement	Instrument console; sensor; 3-meter cable, aluminum sectional sensor staff, power supply, harness assembly, operations manual.
Base Station Option	Standard system plus 30 meter cable
Gradiometer Option	Standard system plus 0.5 meter sensor

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Toronto, Ontario
Canada M4H 1H1
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In U.S.A.
E D A Instruments Inc.
5151 Ward Road
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422 9112

Printed in Canada

A P P E N D I X C



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.

Type of Survey(s) MAGNETIC & VLF EM.
Township or Area CHURCHILL TOWNSHIP
Claim Holder(s) NORTHGATE EXPLORATION LIMITED, TORONTO, ONT.
Survey Company EXSILS EXPLORATION LTD.
Author of Report A. C. GRANT.
Address of Author BOX 1880, TIMMINS, ONT.
Covering Dates of Survey JUNE 1/90 to SEPT 15/90
(linecutting to office)
Total Miles of Line Cut 91.0 KM.

MINING CLAIMS TRAVERSED
List numerically

L. 1132599 to L. 1132614 (16)
(prefix) (number)
L. 1155423 to L. 1155458 (36)
L. 1132559 to L. 1132572 (14)

If space insufficient, attach list

SPECIAL PROVISIONS
CREDITS REQUESTED

DAYS per claim

Geophysical
-Electromagnetic 20
-Magnetometer 40
-Radiometric _____
-Other _____
Geological _____
Geochemical _____

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

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

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

DATE: Sept 23/90 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 2.5347

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 66.

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 3640 Number of Readings 14560
Station interval 25m Line spacing 100m
Profile scale 1cm to 20'
Contour interval 100 & 500 gammas

MAGNETIC

Instrument EDA OMNI PLUS
Accuracy - Scale constant +/- 5 gammas
Diurnal correction method BASE STATION RECORDER
Base Station check-in interval (hours) READING INT. 30 SEC.
Base Station location and value ON THE GRID WITH REF
FIELD SET TO 58300 GAMMAS

ELECTROMAGNETIC

Instrument EDA OMNI PLUS
Coil configuration FIXED TRANSMITTER
Coil separation INFINITE
Accuracy +/- 0.5 DEGREES
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency CUTLER MAINE 21.0 KHZ ANNAPOLIS, MARYLAND 21.4 KHZ
Parameters measured DIP ANGLE, QUADRATURE - 1 EACH FOR EACH FREQ.

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

LINECUTTING SUMMARY : **CHURCHILL TWP.** (NORTHGATE EXPLORATION)

Date :	AVG/90	Crew Boss :	SYDNEY.
Notes :	- 25 METRE STATIONS		

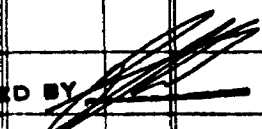
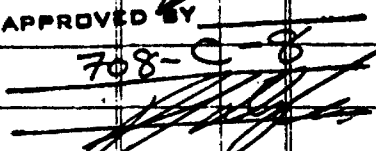
Line #	Chaining Interval (metres)	Length (km)	Line #	Chaining Interval (metres)	Length (km)
B.L.O.	1000 W - 1295 E	2.295	L-15-E	1300 N - 920 N	0.380
	1505 E - 2016 E	0.511		325 S - 700 S	1.025
T.L. 13N	375 W - 2475 E	2.850		58 N - 130	0.058
T.L. 7N	1925 W - 360 E	2.285	L-16-E	1300 N - 533 N	0.767
T.L. 7S	1950 W - 662 E	2.612		60 S - 700 S	0.640
	800 E - 1962 E	1.162	L-17-E	1300 N - 700 S	2.000
L-10-W	950 N - 1200 S	2.150	L-18-E	1300 N - 700 S	2.000
L-9-W	700 N - 700 S	1.400	L-19-E	1300 N - 250 N	1.050
L-8-W	700 N - 59 S	0.759		75 N - 700 S	0.775
L-7-W	700 N - 700 S	1.400	L-20-E	1300 N - 480 N	0.820
L-6-W	700 N - 700 S	1.400		10 N - 700 S	0.710
L-5-W	700 N - 700 S	1.400	L-21-E	1300 N - 780 N	0.520
L-4-W	700 N - 700 S	1.400		28 S - 700 S	0.728
L-3-W	700 N - 700 S	1.400	L-22-E	1265 N - 810 N	0.455
L-2-W	700 N - 700 S	1.400	L-23-E	1300 N - 850 N	0.450
L-1-W	700 N - 700 S	1.400	L-24-E	1300 N - 875 N	0.425
L-0	1700 N - 700 S	2.400			
L-1-E	1300 N - 700 S	2.000			
L-2-E	1170 N - 625 N	0.545			
	556 N - 700 S	1.256			
L-3-E	1025 N - 605 N	0.420			
	383 N - 700 S	1.083			
L-4-E	775 N - 700 S	1.475			
L-5-E	1300 N - 700 S	2.000			
L-6-E	1300 N - 700 S	2.000			
L-7-E	1180 N - 575 N	0.605			
	455 N - 500 S	0.955			
L-8-E	435 N - 597 S	1.032			
	1220 N - 515 N	0.705			
L-9-E	1300 N - 700 S	2.000			
L-10-E	1300 N - 700 S	2.000			
L-11-E	1300 N - 700 S	2.000			
L-12-E	1300 N - 320 N	0.980			
	232 N - 700 S	0.932			
L-13-E	935 N - 365 N	0.570			
	130 - 700 S	0.700			
L-14-E	1150 N - 112 N	1.038			
	326 S - 700 S	1.026			
TOTAL (km)					66.349

NO. 262


FORPRO
 Mining Exploration & Forestry
RESOURCES LTD.

P.O. Box 1513 ~~708-235-2474~~ DATE June 29, 1990
 South Porcupine, Ontario P0N 1H0

NORTHGATE EXPLORATION LIMITED
 Suite 2701, #1-First Canadian Place
 P.O. Box 143, Toronto, M5X 1C7. (Peter Doyle)

DESCRIPTION	CREDIT	DEBIT	BALANCE
Churchill Twp.			
linecutting contract:			
Total estimate: 65.6 KM			
@ \$240.63/KM	-	-	\$15,785.00
Camp mobilization,			
demob. & servicing	-	-	\$ 1,100.00
total			\$16,885.00
50 % advance payment			\$8,442.50
TOTAL DUE			\$8442.50
CHECKED BY			
APPROVED BY			
	708-C-8		



**INVOICE
90043**

Proj#9122

October 3, 1990

to

NORTHGATE EXPLORATION LTD.
Suite 2701, 1st Canadian Place
Toronto, Ont. M5X 3M7

Attn: Terrence McKillen, V.P. Expltn.

Re: Churchill Twp. Project: Review & Interpretation

Professional Fees:

J. Roth: 1 day @ \$ 550/day \$ 550.00

Expenses*:

NIL

TOTAL

\$ 550.00

708-D-8 \$ 550.00

Any delayed charges for fax, tel, courier, etc will be submitted in a subseqent invoice.

INV90043.NRT

Prompt payment is appreciated. Invoices unpaid after 30 days are subject to an interest charge of 2.0% per month.



EXSICS EXPLORATION LIMITED
CONTRACTING & CONSULTING GEOPHYSICS

Tel. (705) 267-4151

P.O. Box 1880
Timmins, Ontario P4N 7X1



INVOICE #: 783
PROJECT #: E-372

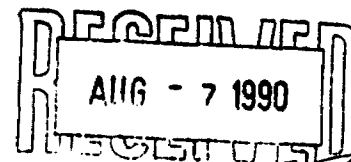
ON ACCOUNT WITH: NORTHGATE EXPLORATION LIMITED
P.O. BOX 143
1 FIRST CANADIAN PLACE
SUITE 2701
TORONTO, ONTARIO
M5X-1C7

ATTENTION: MR. PETER DOYLE

RE: GEOPHYSICAL SURVEYS IN CHURCHILL TOWNSHIP.

IN CONSIDERATION FOR: MAGNETIC AND VLF SURVEYS ON APPROXIMATELY
120 KILOMETERS OF LINES.

REQUEST ADVANCE OF: _____ \$8000.00



DATED: AUGUST 1, 1990

SIGNED: *[Signature]*

CHECKED BY *[Signature]*
APPROVED BY *[Signature]* \$8000
708-D-8

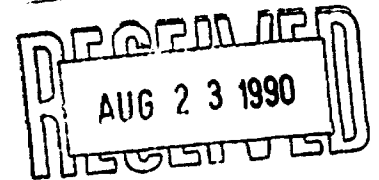


EXSICS EXPLORATION LIMITED
CONTRACTING & CONSULTING GEOPHYSICS

Tel. (705) 267-4151

P.O. Box 1880
Timmins, Ontario P4N 7X1

INVOICE #: 788
PROJECT #: E-372



ON ACCOUNT WITH: Northgate Exploration Limited
Suite 2701
1 First Canadian Place
TORONTO, ONTARIO
M5X 1C7

ATTENTION: Mr. Peter Doyle

RE: Geophysical Surveys in Churchill Township

IN CONSIDERATION FOR: 91 km of Magnetic and VLF Surveys,
plotting and interpretation

AT A RATE OF: \$185.00/km all inclusive, except air transport
Plus boat rental from July 11/90 to July 30/90

Charges: 91 km @ \$185.00/km.....\$16,835.00
Boat Rental - 20 Days @ \$25.00/day..\$ 500.00

TOTAL OF THIS INVOICE: \$17,335.00
Less Advance 8,000.00
9,335.00

NOTE: An advance was requested on Invoice # 783, but it has
not been received as of August 21, 1990.

DATE: August 21, 1990.

CHECKED BY 

APPROVED BY

708-C-8 \$9335.00


SIGNED: 

Payment due upon receipt of invoice. No statements issued.
Terms: Net 30, 2% interest per month on overdue accounts.



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) MAGNETIC & VLF EM.
Township or Area CHURCHILL TOWNSHIP
Claim Holder(s) NORTHGATE EXPLORATION
LIMITED, TORONTO, ONT.
Survey Company EXSIS EXPLORATION LTD.
Author of Report A. C. GRANT.
Address of Author BOX 1880, TIMMINS, ONT.
Covering Dates of Survey JUNE 1/90 to SEPT 15/90
(linecutting to office)
Total Miles of Line Cut 91.0 KM.

MINING CLAIMS TRAVERSED
List numerically

L. 1132599 to L. 1132614 (16)
(prefix) (number)
L. 1155423 to L. 1155458 (36)
L. 1132559 to L. 1132572 (14)

**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 23/90 SIGNATURE: [Signature]
Author of Report or Agent

Res. Geol. _____ Qualifications 2.5347

Previous Surveys

File No.	Type	Date	Claim Holder

TOTAL CLAIMS 66

If space insufficient, attach list

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations 3640 Number of Readings 14560
Station interval 25M Line spacing 100M
Profile scale 1cm to 20'
Contour interval 100 & 500 GAMMAS

MAGNETIC

Instrument EDA OMNI PLUS
Accuracy - Scale constant +/- 5 GAMMAS
Diurnal correction method BASE STATION RECORDER
Base Station check-in interval (hours) READING INT. 30 SEC.
Base Station location and value ON THE GRID WITH REF
FIELD SET TO 58300 GAMMAS

ELECTROMAGNETIC

Instrument EDA OMNI PLUS
Coil configuration FIXED TRANSMITTER
Coil separation INFINITE
Accuracy +/- 0.5 DEGREES
Method: [X] Fixed transmitter [] Shoot back [] In line [] Parallel line
Frequency CUTLER MAINE 24.0 KHZ ANNAPOLIS, MARYLAND 21.4 KHZ
Parameters measured DIP ANGLE, QUADRATURE - 1 EACH FOR EACH FREQ

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

**INVOICE
90043**

Proj#9122

October 3, 1990

to

NORTHGATE EXPLORATION LTD.
Suite 2701, 1st Canadian Place
Toronto, Ont. M5X 3M7

Attn: Terrence McKillen, V.P. Expltn.

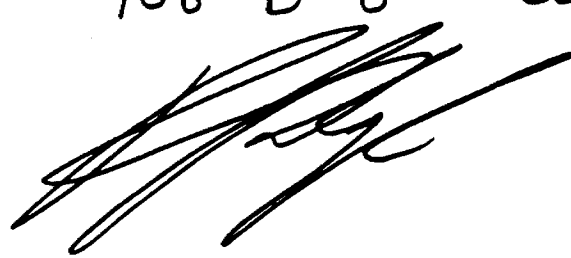
Re: Churchill Twp. Project: Review & Interpretation

Professional Fees:

J. Roth: 1 day @ \$ 550/day \$ 550.00

Expenses*:

TOTAL NIL
\$ 550.00

708-D-8 \$ 550.00


Any delayed charges for fax, tel, courier, etc will be submitted in a subsequent invoice.

INV90043.NRT

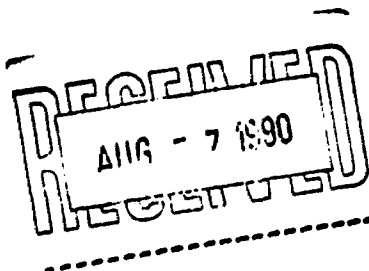
Prompt payment is appreciated. Invoices unpaid after 30 days are subject to an interest charge of 2.0% per month.



EXSICS EXPLORATION LIMITED
CONTRACTING & CONSULTING GEOPHYSICS

Tel. (705) 267-4151

P.O. Box 1880
Timmins, Ontario P4N 7X1



INVOICE #: 783
PROJECT #: E-372

ON ACCOUNT WITH: NORTHGATE EXPLORATION LIMITED
P.O. BOX 143
1 FIRST CANADIAN PLACE
SUITE 2701
TORONTO, ONTARIO
M5X-1C7

ATTENTION: MR. PETER DOYLE

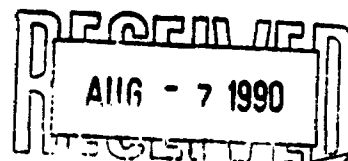
RE: GEOPHYSICAL SURVEYS IN CHURCHILL TOWNSHIP.

IN CONSIDERATION FOR: MAGNETIC AND VLF SURVEYS ON APPROXIMATELY
120 KILOMETERS OF LINES.

REQUEST ADVANCE OF: _____ \$8000.00

DATED: AUGUST 1, 1990

SIGNED: _____



CHECKED BY _____

APPROVED BY _____

708-D-8 \$8000



EXSICS EXPLORATION LIMITED
CONTRACTING & CONSULTING GEOPHYSICS

Tel. (705) 267-4151

P.O. Box 1880
Timmins, Ontario P4N 7X1

INVOICE #: 788
PROJECT #: E-372

RECEIVED
AUG 23 1990

ON ACCOUNT WITH: Northgate Exploration Limited
Suite 2701
1 First Canadian Place
TORONTO, ONTARIO
M5X 1C7

ATTENTION: Mr. Peter Doyle

RE: Geophysical Surveys in Churchill Township

IN CONSIDERATION FOR: 91 km of Magnetic and VLF Surveys,
plotting and interpretation

AT A RATE OF: \$185.00/km all inclusive, except air transport
Plus boat rental from July 11/90 to July 30/90

Charges: 91 km @ \$185.00/km.....\$16,835.00
Boat Rental - 20 Days @ \$25.00/day..\$ 500.00

TOTAL OF THIS INVOICE: \$17,335.00
Less Advance 8,000.00
9,335.00

NOTE: An advance was requested on Invoice # 783, but it has
not been received as of August 21, 1990.

DATE: August 21, 1990.

SIGNED: _____

CHECKED BY _____

APPROVED BY _____

708-C-8 9,335.00

Payment due upon receipt of invoice. No statements issued.
Terms: Net 30, 2% interest per month on overdue accounts.

FORPRO 
 Mining Exploration & Forestry
 **RESOURCES** LTD.

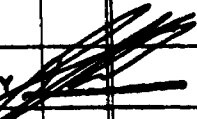
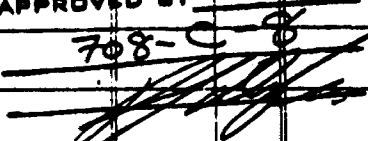
NO. 262

P.O. Box 1513 705-215-2474 DATE June 29, 1990
 South Porcupine, Ontario P0N 1H0

NORTHGATE EXPLORATION LIMITED

Suite 2701, #1-First Canadian Place

P.O. Box 143, Toronto, M5X 1C7. (Peter Doyle)

DESCRIPTION	CREDIT	DEBIT	BALANCE
Churchill Twp.			
linecutting contract:			
Total estimate: 65.6 KM			
@ \$240.63/KM	- - -	\$15,785.00	
Camp mobilization,			
demob. & servicing	- - -	\$ 1,100.00	
	total	\$16,885.00	
50 % advance payment			\$8,442.50
	TOTAL DUE		\$8442.50
	CHECKED BY 		
	APPROVED BY		
	708-C-8		
			

FORPRO 
 Mining Exploration & Forestry
RESOURCES 

RECEIVED
 AUG 24 1990
 LTD. REGISTRY

P.O. Box 1513 705-275-2474
 South Porcupine, Ontario P0N 1M0

DATE AUG. 23/90

NORTAGATE EXPLORATION LIMITED

SUITE 2701 #1-FIRST CANADIAN PLACE

P.O. BOX 143, TORONTO, MEXICO (ATT. PETER DOYLE)

DESCRIPTION	CREDIT	DEBIT	BALANCE
CHURCHILL TWP.			
LINE CUTTING CONTRACT.			
66.349 Km @			
\$240.63/KM			
CAMP 170A - DEBROS + SERVICING			
ADVANCE PAYMENT CHQ # 2918			
(INVOICE # 262)			
TOTAL OWING			

CHECKED BY
 APPROVED BY
 JOB # G-8

15965.56

1100.00

3442.50

8623.06

LINECUTTING SUMMARY : CHURCHILL TWP. (NORTHGATE EXPLORATION)

Date :	AVG/90	Crew Boss:	SYDNEY.
Notes:	- 25 METRE STATIONS		

Line #	Chaining Interval (metres)	Length (km)	Line #	Chaining Interval (metres)	Length (km)
B.L.O.	1000 W - 1295 E	2.295	L-15-E	1300 N - 920 N	0.380
	1505 E - 2016 E	0.511		325 S - 700 S	1.025
T.L. 13 N	375 W - 2475 E	2.850		58 N - 130	0.058
T.L. 7 N	1925 W - 360 E	2.285	L-16-E	1300 N - 533 N	0.767
T.L. 7 S	1950 W - 662 E	2.612		60 S - 700 S	0.640
	800 E - 1962 E	1.162	L-17-E	1300 N - 700 S	2.000
L-10-W	950 N - 1200 S	2.150	L-18-E	1300 N - 700 S	2.000
L-9-W	700 N - 700 S	1.400	L-19-E	1300 N - 250 N	1.050
L-8-W	700 N - 59 S	0.759		75 N - 700 S	0.775
L-7-W	700 N - 700 S	1.400	L-20-E	1300 N - 480 N	0.820
L-6-W	700 N - 700 S	1.400		10 N - 700 S	0.710
L-5-W	700 N - 700 S	1.400	L-21-E	1300 N - 780 N	0.520
L-4-W	700 N - 700 S	1.400		28 S - 700 S	0.725
L-3-W	700 N - 700 S	1.400	L-22-E	1265 N - 810 N	0.455
L-2-W	700 N - 700 S	1.400	L-23-E	1300 N - 850 N	0.450
L-1-W	700 N - 700 S	1.400	L-24-E	1300 N - 875 N	0.425
L-0	1700 N - 700 S	2.400			
L-1-E	1800 N - 700 S	2.000			
L-2-E	1170 N - 625 N	0.545			
	556 N - 700 S	1.256			
L-3-E	1025 N - 605 N	0.420			
	383 N - 700 S	1.083			
L-4-E	775 N - 700 S	1.475			
L-5-E	1300 N - 700 S	2.000			
L-6-E	1300 N - 700 S	2.000			
L-7-E	1180 N - 575 N	0.605			
	455 N - 500 S	0.955			
L-8-E	435 N - 597 S	1.032			
	1220 N - 515 N	0.705			
L-9-E	1300 N - 700 S	2.000			
L-10-E	1300 N - 700 S	2.000			
L-11-E	1300 N - 700 S	2.000			
L-12-E	1300 N - 320 N	0.980			
	232 N - 700 S	0.932			
L-13-E	935 N - 365 N	0.570			
	130 - 700 S	0.700			
L-14-E	1150 N - 112 N	1.038			
	326 S - 700 S	1.026			
				TOTAL (km)	66.347



41P11NW0402 2.14058 CHURCHILL

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Section
159 Cedar Street, 4th Floor
Sudbury, Ontario
P3E 6A5

Telephone: (705) 670-7264
Fax: (705) 670-7262

Your File: W/9180.00181
Our File: 2.14058

July 8, 1991

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

Dear Sir/Madam:

RE: Notice of Intent dated June 7, 1991 for Geophysical
(Electromagnetic and Magnetometer) Surveys on mining
claims L.1132599 et al in the Township of Churchill.

The assessment work credits, as listed with the above-mentioned
Notice of Intent have been approved as of the above date.

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

Yours sincerely,

Ron. C. Gashinski,
Provincial Manager, Mining Lands
Mines & Minerals Division

DM/jl
Enclosures:

cc: Northgate Exploration Ltd.
Toronto, Ontario

Exsics Exploration Ltd.
Timmins, Ontario

Assessment Files Office
Toronto, Ontario

Resident Geologist
Kirkland Lake, Ontario



Recorded Under Northgate Exploration Ltd.

Township or Area Churchill Township

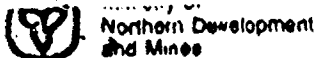
Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical Electromagnetic <u>18.0</u> days	L. 1132599 to 614 incl. 1132559 to 572 incl. 1155423 to 458 incl.
Magnetometer <u>36.0</u> days	
Radiometric _____ days	
Induced polarization _____ days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Men days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input type="checkbox"/>	
<input checked="" 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 77 (16) 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

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Northern Development and Mines

ML

Mining Act

Report of Work (Geophysical, Geological and Geochemical Surveys)

DOCUMENT NO.

9180-00191

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 Surveys: GEOPHYSICAL (MAGNETICS / VLFEM 2 chan)	Mining Division: LARDER LK.	Township or Area: CHURCHILL
Recorded Holder(s): NORTHGATE EXPLORATION LTD.	2.14058	Prospector's Licence No.: T 835
Address: PO Box 143, 1 First Canadian Place, Toronto, MSX1C3		Telephone No.: 416 362 6693
Survey Company: EXSIS EXPLORATION	J.C. Grant 267-2424-267-3311	
Name and Address of Author (of Geo-Technical Report): PO Box 1880, Timmins	267-415 / PAN-7X1	Date of Survey (from & to): Day of 90 15 of 90 Day Mo Yr.

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	VLF - Electromagnetic	20
	- Magnetometer	40
For each additional survey using the same grid: Enter 20 days (for each)	- Other	
	Geological	
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter 1000000	- Electromagnetic	
RECEIVED MAY 23 1991 MINING LANDS SECTION	- Magnetometer	
	- Other	
	Geological	
Airborne Credits	Geochemical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Other	
Total miles flown over claim(s).		
Date: April 12/91	Recorded Holder or Agent (Signature): <i>[Signature]</i>	

Mining Claim		Mining Claim		Mining Claim	
Prefix	Number	Prefix	Number	Prefix	Number
L	1132599	L	1132559		
	1132600		1132560		
	1132601		1132561		
	1132602		1132562		
	1132603		1132563		
	1132604		1132564		
	1132605		1132565		
	1132606		1132566		
	1132607		1132567		
	1132608		1132568		
	1132609		1132569		
	1132610		1132570		
	1132611		1132571		
	1132612		1132572		
	1132613		(14 cls)		
	1132614				
	(16 cls)				

CONTINUED ON ATTACHED SHEET

Total number of mining claims covered by this report of work: **66**

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:
T.N. McKillen, Vice-President Exploration, Northgate Exploration Ltd.

address: as above

Telephone No.: as above

Date: **April 12/91**

Certified By (Signature): *[Signature]*

For Office Use Only

Total Days Cr. Recorded: 3960	Date Recorded: May 13/91	Mining Recorder: <i>[Signature]</i>
	Date Approved as Recorded: <i>[Signature]</i>	Provincial Manager, Mining Lands: <i>[Signature]</i>
See revised work statement		

Received Stamp

RECEIVED
LARDER LAKE
MINING DIVISION

MAY 13 1991

TIME 10.50 am

Renewed

→ 15-1-91 Apr 91

MINING CLAIMS TRAVERSED

List numerically

CLAIM DAYS

L1155423	60
L1155424	60
L1155425	60
L1155426	60
L1155427	60
L1155428	60
L1155429	60
L1155430	60
L1155431	60
L1155432	60
L1155433	60
L1155434	60
L1155435	60
L1155436	60
L1155437	60
L1155438	60
L1155439	60
L1155440	60
L1155441	60
L1155442	60
L1155443	60
L1155444	60

TOTAL CLAIMS 22 claims

MINING CLAIMS TRAVERSED

List numerically

CLAIMS Days

L1155445	60
L1155446	60
L1155447	60
L1155448	60
L1155449	60
L1155450	60
L1155451	60
L1155452	60
L1155453	60
L1155454	60
L1155455	60
L1155456	60
L1155457	60
L1155458	60

TOTAL CLAIMS 14

MINING CLAIMS TRAVERSED

List numerically

(prefix) (number)

TOTAL CLAIMS _____

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M R O MINING RIGHTS ONLY
- S H O SURFACE RIGHTS ONLY
- M + S MINING AND SURFACE RIGHTS

Description Order No Date Disposition File

⑫ SURFACE + MINING RIGHTS WITHDRAWN
SECT. 34/80 ORDER NO. W3/86-NR
O-L14-90 NER OPENS W9/86NR

⑬ SURFACE + MINING RIGHTS WITHDRAWN
SECT. 34/80 ORDER NO. W3/86-NR
O-L12/89 NR OPENS W-13/86NR

⑭ SURFACE AND MINING RIGHTS NOT OPEN TO STAKING DUE TO PENDING PROCEEDINGS - SUBSECTION 34(1)

⑮ SURFACE AND MINING RIGHTS NOT OPEN TO STAKING - SUBSECTION 34(1) - PENDING PROCEEDINGS

⑯ PENDING PROCEEDINGS CANCELLED 10:45 AM FEB. 27, 1990

TOWNSHIP SURVEY
FORESTRY OPERATIONS

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.

CIRCULATED AUGUST 17/88

NOTICE OF FORESTRY ACTIVITY

THIS TOWNSHIP/AREA FALLS WITHIN THE SHININGTREE MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS

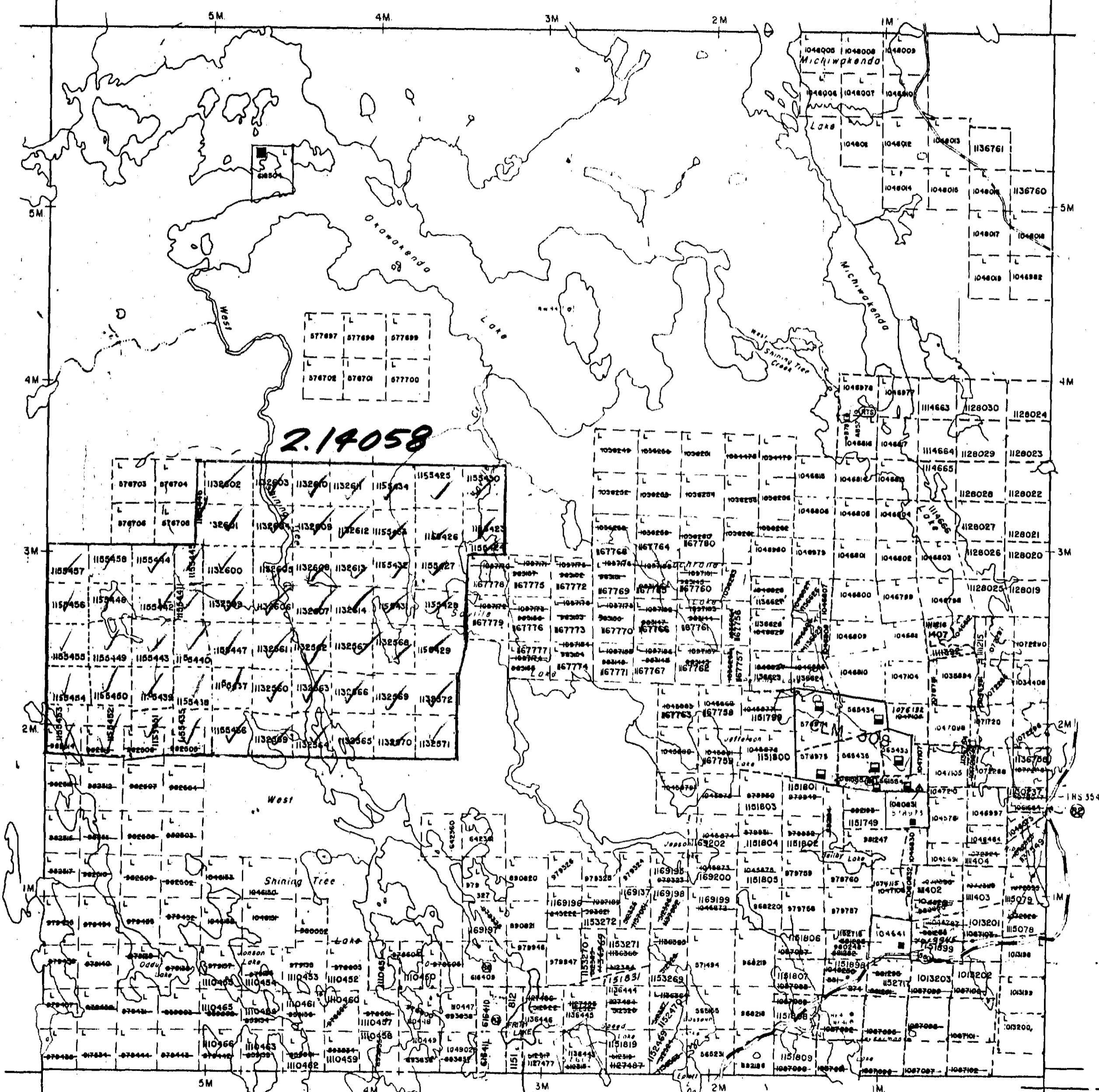
THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT- P.O. BOX 129
LOW AVENUE
GOGAMA, ONT.
POM IWO
705-894-2000



200

GEOLOGY REFERENCE COBALT
RESIDENT GEOLOGIST

Kelvin Twp.



LEGEND

- HIGHWAY AND ROUTES
- OTHER ROADS
- TRAILS
- SURVEYED LINES
- TOWNSHIP BOUNDARIES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES
- LOT LINES
- PARCEL BOUNDARIES
- MINING CLAIMS
- RAILWAY AND RAILROAD
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOOD RISK
- SUBDIVISION OF COMPLEX LOTS
- RESERVATIONS
- ORIGINAL SURVEY LINE
- MAJOR ROADS
- MINES
- TRAVEL MONUMENT
- REMOTE TOURIST SETUPS (RTS)

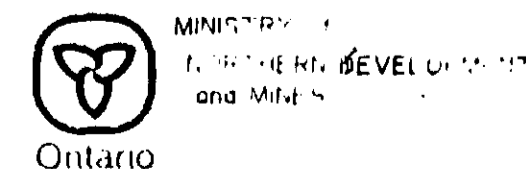
DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT SURFACE & MINING RIGHTS	●
SURFACE RIGHTS ONLY	○
MINING RIGHTS ONLY	○
LEASE SURFACE & MINING RIGHTS	○
SURFACE RIGHTS ONLY	○
MINING RIGHTS ONLY	○
LICENCE OF OCCUPATION	○
ORDER IN COUNCIL	○
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

NOTE: MINING RIGHTS IN PARTS OF PATENT SURFACE RIGHTS ARE VESTED IN THE LAND PATENTEE BY THE CROWN LANDS ACT. THIS MAP DOES NOT SHOW THESE RIGHTS.

SCALE 1 INCH = 40 CHAINS

TOWNSHIP
CHURCHILL
M.N.R. ADMINISTRATIVE DISTRICT
GOGAMA
MINING DIVISION
LARDER LAKE
LAND TITLES / REGISTRY DIVISION
SUDBURY

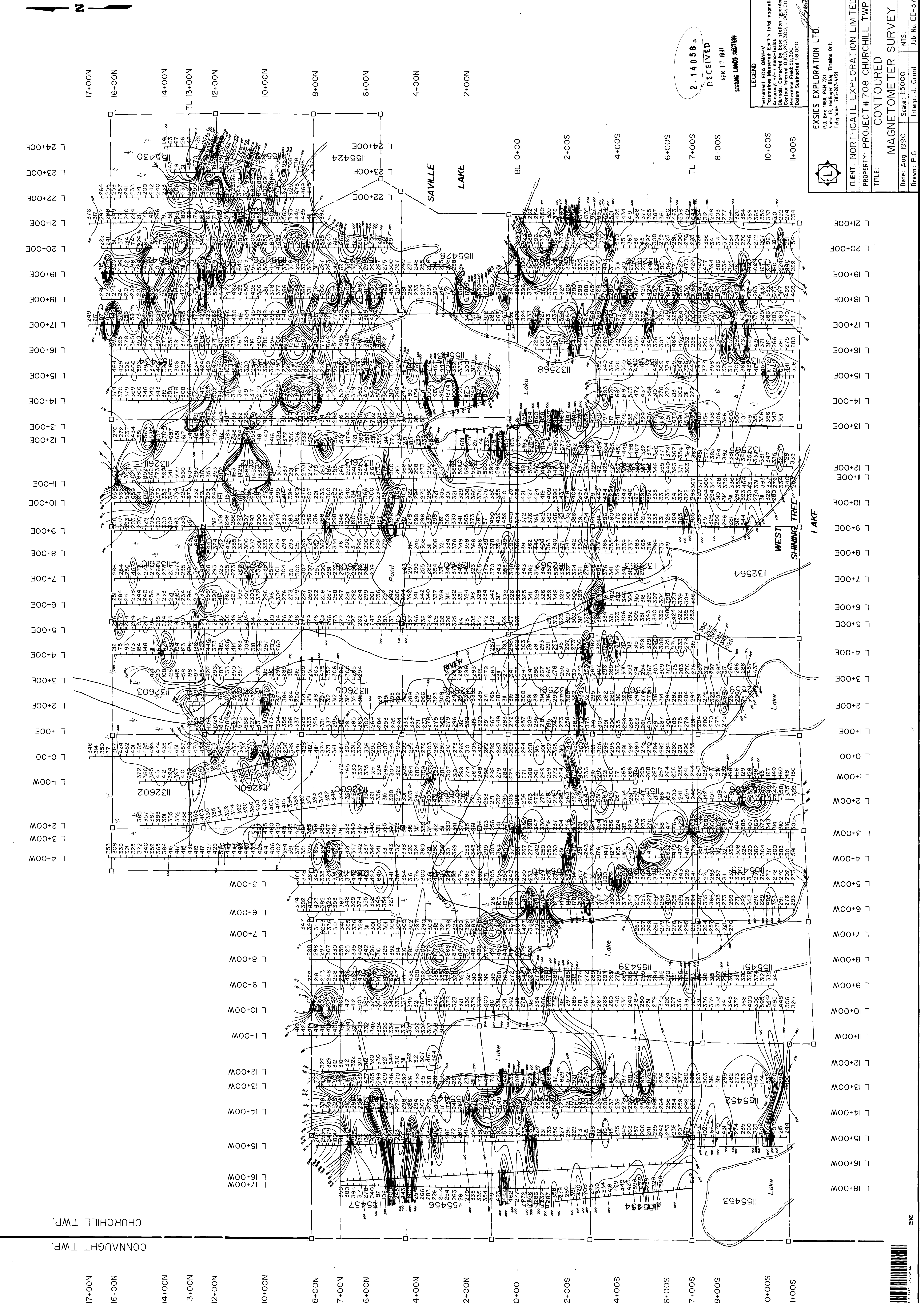


DATE OF ISSUE

APR 8 1991

Number
0-3010

Asquith Twp.



RECEIVED
APR 17 1991
SATTING LAMBS SECTION

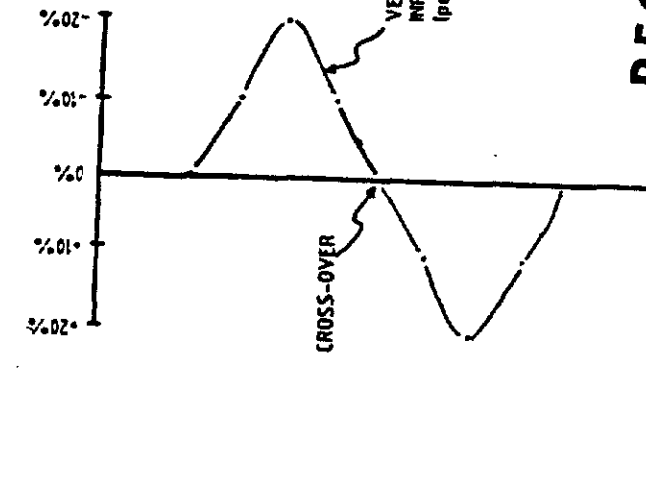
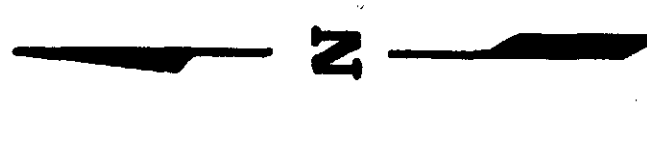
LEGEND
Instrument: EDI OAK-N-V
Parameters Measured: Earth's Total magnetic field
Accuracy: +/- 1 meter-1 meter
Datum: Canadian National datum
Reference Field: 50,300
Datum Subtracted: 50,000

ESXIS EXPLORATION LTD.
P.O. Box 1881, P44-071 Timmins Ont.
Telephone: 705-267-451


CLIENT: NORTHGATE EXPLORATION LIMITED
PROPERTY: PROJECT # 708 CHURCHILL TWP.
TITLE: CONTOURED
MAGNETOMETER SURVEY

Date: Aug. 1990 Scale: 1:5000 NTS:
Drawn: P.G. Interp: J. Grant Job No. EE-372





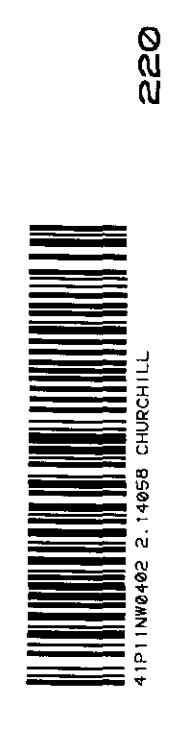
RECEIVED
 APR 17 1991
LEGEND
 INSTRUMENT: EDI OMA MINING LANDS SECTION
 TRANSMITTER STATION: NES ANNAPOLIS
 FREQUENCY: 21.4 KHz
 PARAMETERS MEASURED: Emiss Dip Angle
 VERTICAL SCALE: (mm=20m)

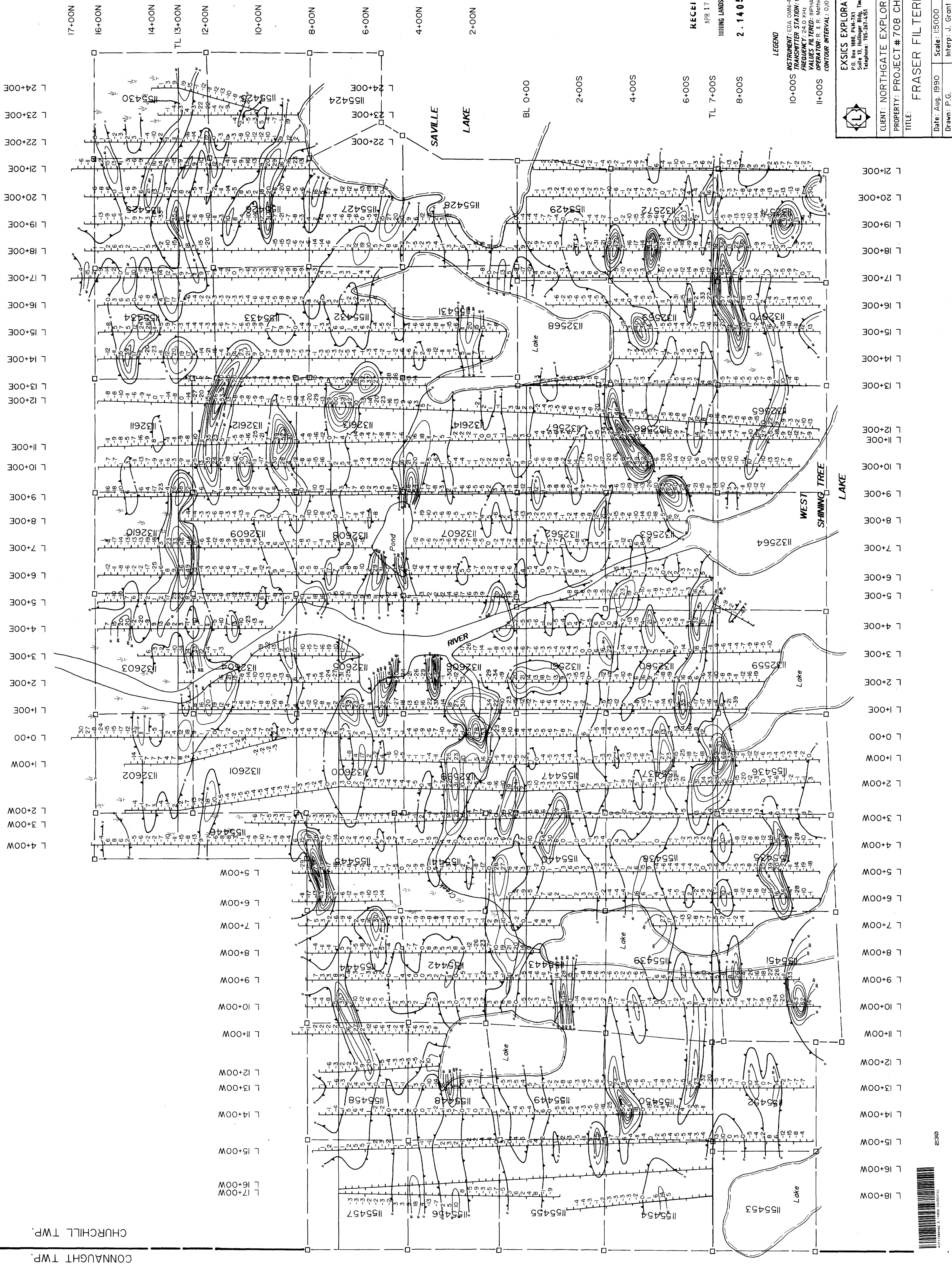
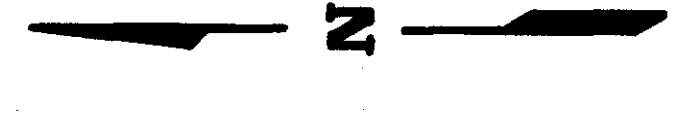

EXSICS EXPLORATION LTD.
 P.O. Box 880, Park 2X1
 Suite 13, Hollinger Bldg, Timmins Ont.
 Telephone: 705-867-4451

CLIENT: NORTHGATE EXPLORATION LIMITED
PROPERTY: PROJECT # 708 CHURCHILL TWP.
TITLE: VLF DIP-ANGLE

Date: Aug. 1990 Scale: 1:5000 NTS:
 Drawn: P.G. Interpret: J. Grant Job No. EE-372

CONNAUGHT TWP.
 CHURCHILL TWP.





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APR 17 1991
MINING LANDS SECTION
2. 14 058

LEGEND
10+00S INSTRUMENT: EDA OMNI-PLUS
TRANSMITTER STATION: NAA CUTLER MAINE
FREQUENCY: 24.0 KHZ
VALUES FILTERED: INPHASE DIP-ANGLE
OPERATOR: R. & R. Metheru
CONTOUR INTERVAL: 0.10, 20, 30, 40, ...

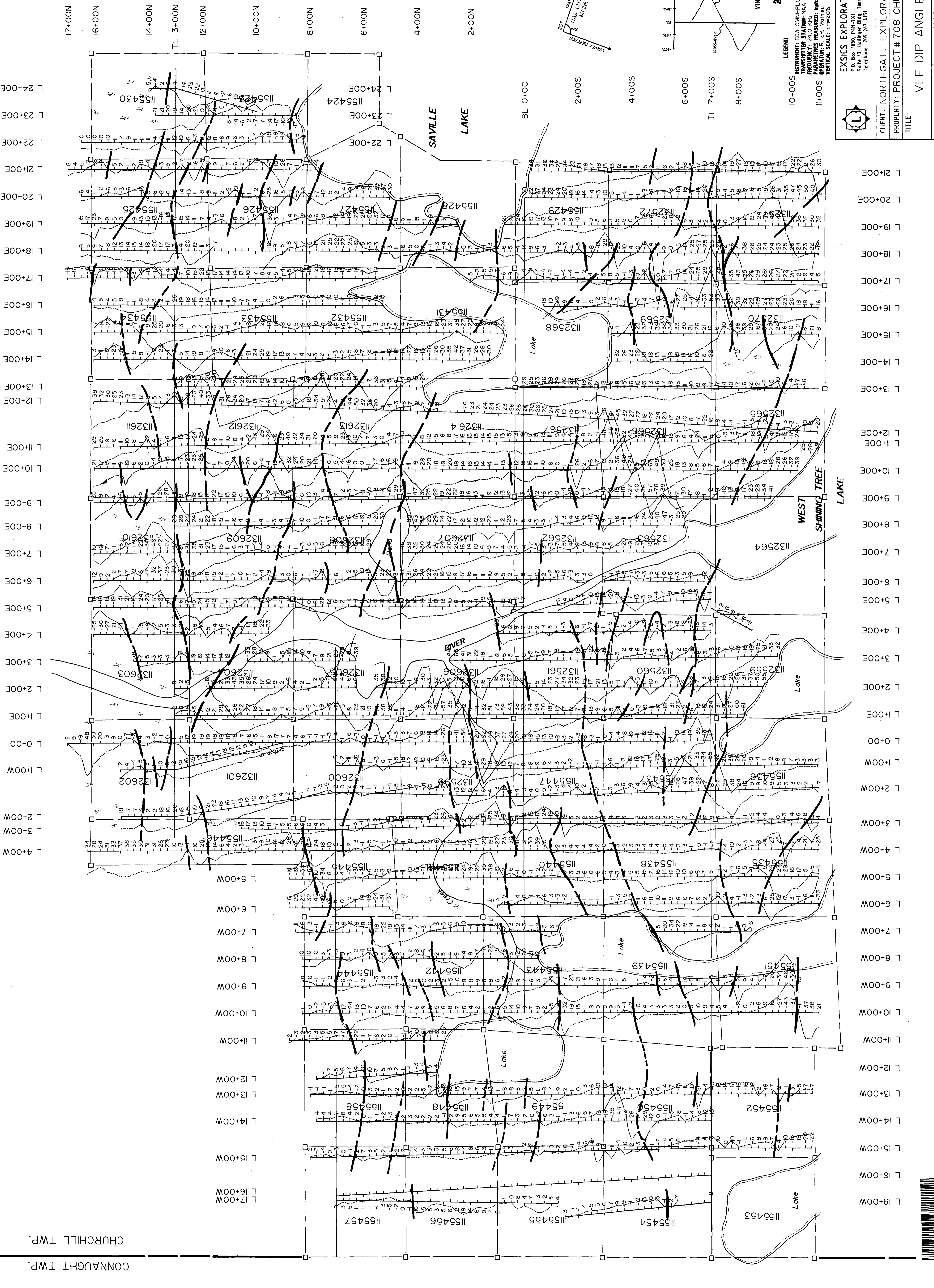
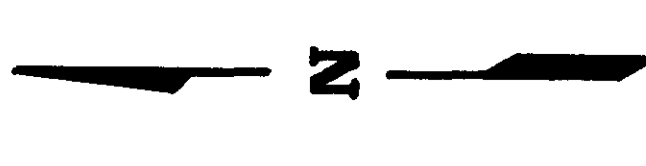
EXSICS EXPLORATION LTD.
P.O. Box 1880, P.M. 751
Suite 13, Hollinger Bldg., Timmins Ont.
Telephone: 705-261-451

CLIENT: NORTHGATE EXPLORATION LIMITED
PROPERTY: PROJECT # 708 CHURCHILL TWP.
TITLE: FRASER FILTERED VLF

Date: Aug. 1990 Scale: 1:5000 NTS:
Drawn: P.G. Interp: J. Grant Job No. EE-372

CHURCHILL TWP.
CONNAUGHT TWP.





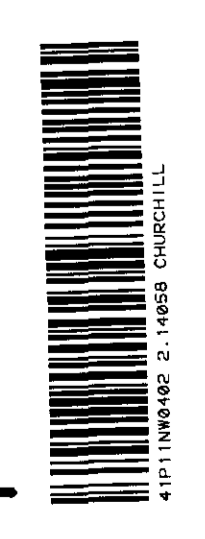
EXSICS EXPLORATION LTD.
 1000 Highway 101
 Suite 103, Westville, Nova Scotia
 Telephone: 709-267-4551

CLIENT: NORTHGATE EXPLORATION LIMITED
PROPERTY: PROJECT # 708, CHURCHILL TWP.

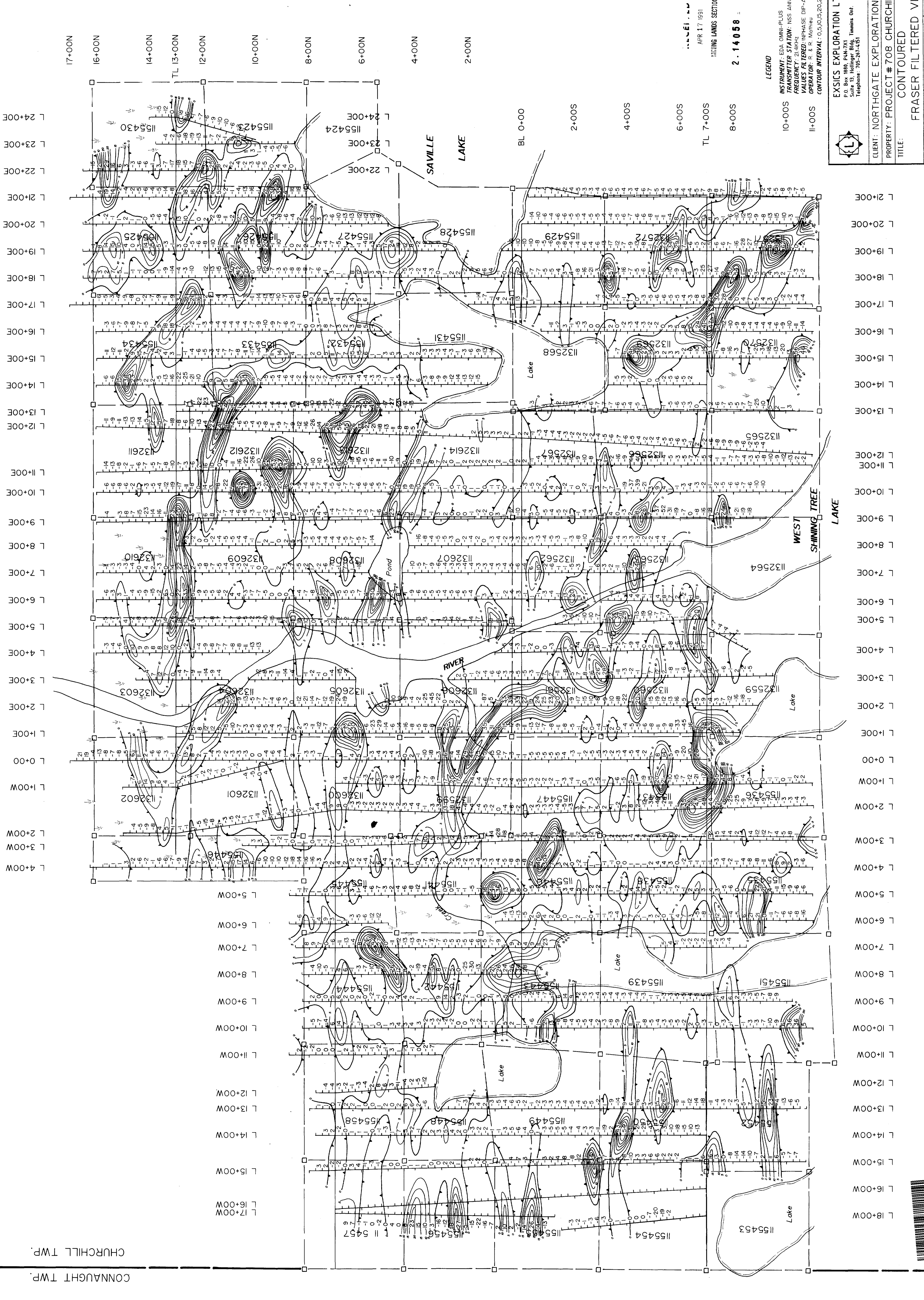
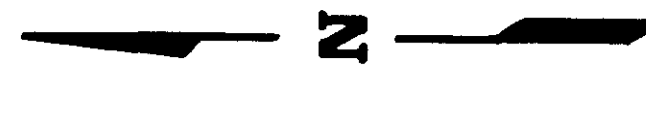
TITLE: VLF DIP ANGLE #2

Date: Aug. 1990 Scale: 1:5000
 Drawn: P.G. Interp: J. Grant NIS: Job No. EE-372

CONNAUGHT TWP.
 CHURCHILL TWP.



240

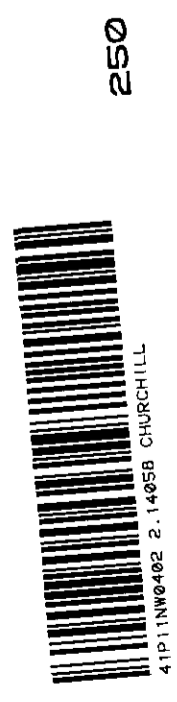


INSTRUMENT: EDI OMNI-PLUS
 TRANSPIRER STATION: NSS ANIMAPOLIS
 VALUES FILTERED: PHASE DP-ANGLE
 OPERATOR: R. & R. Mathieu
 CONTOUR INTERVAL: 0.5, 0.5, 0.5, 2.0, 2.5,
 APR 17 1991
 SHINNING LANDS SECTION
 2. 14 058

LEGEND
 INSTRUMENT: EDI OMNI-PLUS
 TRANSPIRER STATION: NSS ANIMAPOLIS
 VALUES FILTERED: PHASE DP-ANGLE
 OPERATOR: R. & R. Mathieu
 CONTOUR INTERVAL: 0.5, 0.5, 0.5, 2.0, 2.5,



EXSICS EXPLORATION LTD.
 P.O. Box 1880, 844-741
 Suite 13, Inuvik, N.W.T.
 Telephone: 782-6740/45
 CLIENT: NORTHGATE EXPLORATION LIMITED
 PROPERTY: PROJECT # 708 CHURCHILL TWP.
 TITLE: CONTOURED
 FRASER FILTERED VLF # 2
 Date: Aug. 1990 Scale: 1:5000
 Drawn: P.G. Interp.: J. Grant Job No. EE-372

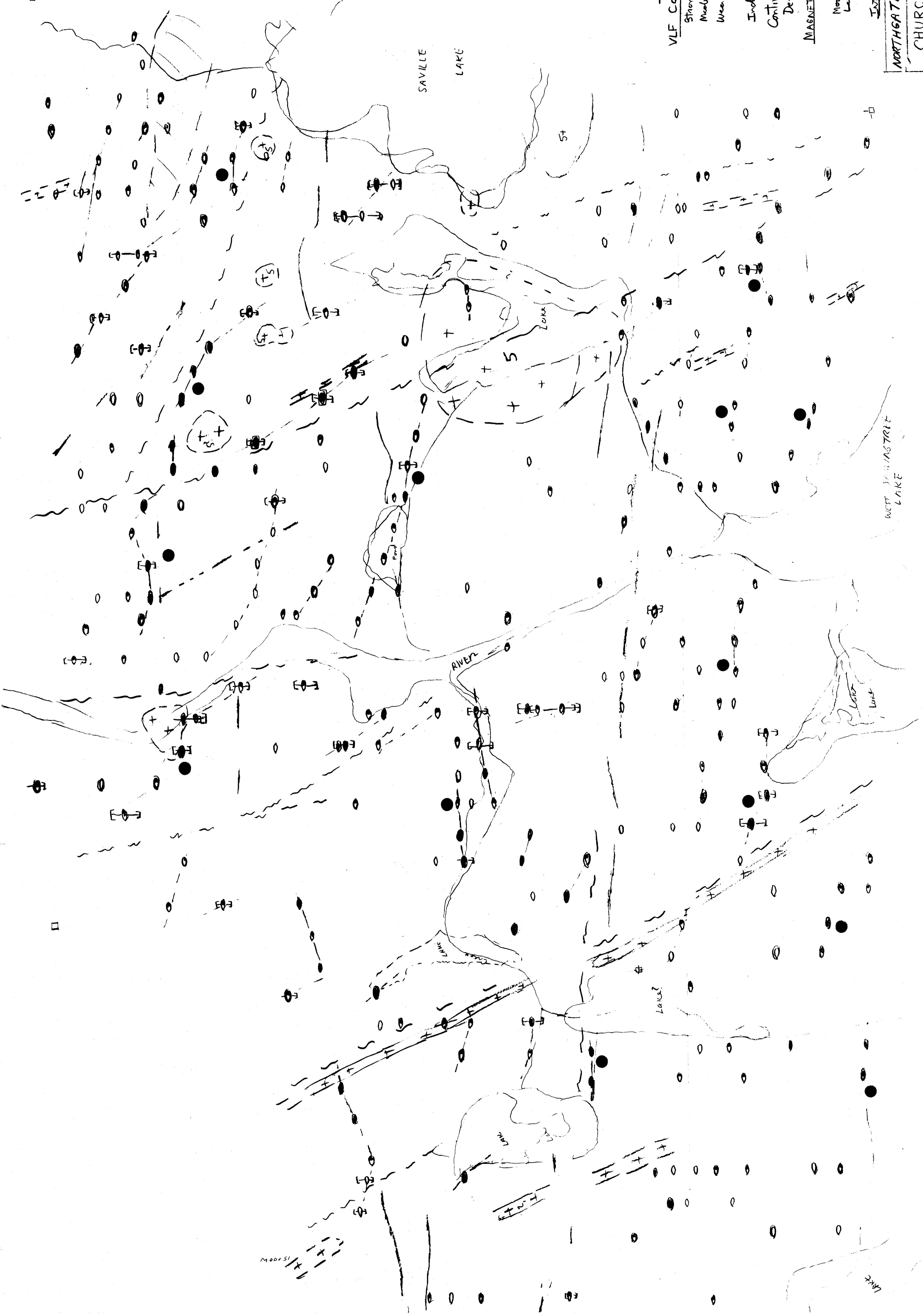


250



17-60 N

17-60 W



RECEIVED
 APR 14 1990
 HITCHCOCK SECTION
 TX: NWA
 TX: NSS
 2.14058 =

LEGEND

VLF Conductors

- Strong, Definite
- Moderate, Probable
- Weak, Possible

Indicated width [E-F]

Continuity: Probable Possible

Definite

MAGNETICS SOURCES

- E-W (Strike-slip)
- Moderate K
- Low K
- NNW (Diabase?)

FAULTS

INFERRED

NORTHGATE EXPLORATION LTD

CHURCHILL TWP PROJECT

POSSIBLE TARGETS (for geol. evaluation)

- GREATER INTEREST
- LESSEN INTEREST

DATA: VLF (92) + MAGNETICS: EXSIS / 1990

Scale: 1:5000

CHURCHILL TWP
 CHURCHILL TWP

