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010

GEOPHYSICAL REPORT
FOR
FALCONBRIDGE LIMITED
ON THE
McCHRISTIE OPTION
CARR TOWNSHIP
LARDER LAKE MINING DIVISION
MATHESON, ONTARIO

PREPARED BY: John C. Grant,
September 1992



RECEIVED
OCT 30 1992
MINING LANDS BRANCH



42A09SW0136 2.14774 CARR

010C

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SUMMARY

The VLF-EM Survey was successful in locating and outlining a number of electrically charged units across the property. Of these Zones, A, D, B and E appear to be the better defined target areas.

Also, Zone G most probably relates to topography as it follows the southern extremes of the creek bed.

There are two well defined, north-south structures evident in the magnetic survey.

The eastern structure relates to a diabase dike which outcrops just east of the southern end of line 900MW.

The western structure is also well defined and roughly parallels the eastern structure. Although it does not have the high magnetic values of the eastern zone it does suggest the presence of a second dike like structure possibly deeper than the eastern zone.

INTRODUCTION

Falconbridge Limited retained the services of Exsics Exploration Limited to cut a detailed metric grid across the south half of Lot 6 Concession II of Carr Township. This grid was then to be covered by a detailed magnetic and VLF-EM survey.

The intent of the program was to outline structural targets which would be suitable horizons for gold or base metal deposition.

PROPERTY LOCATION AND ACCESS

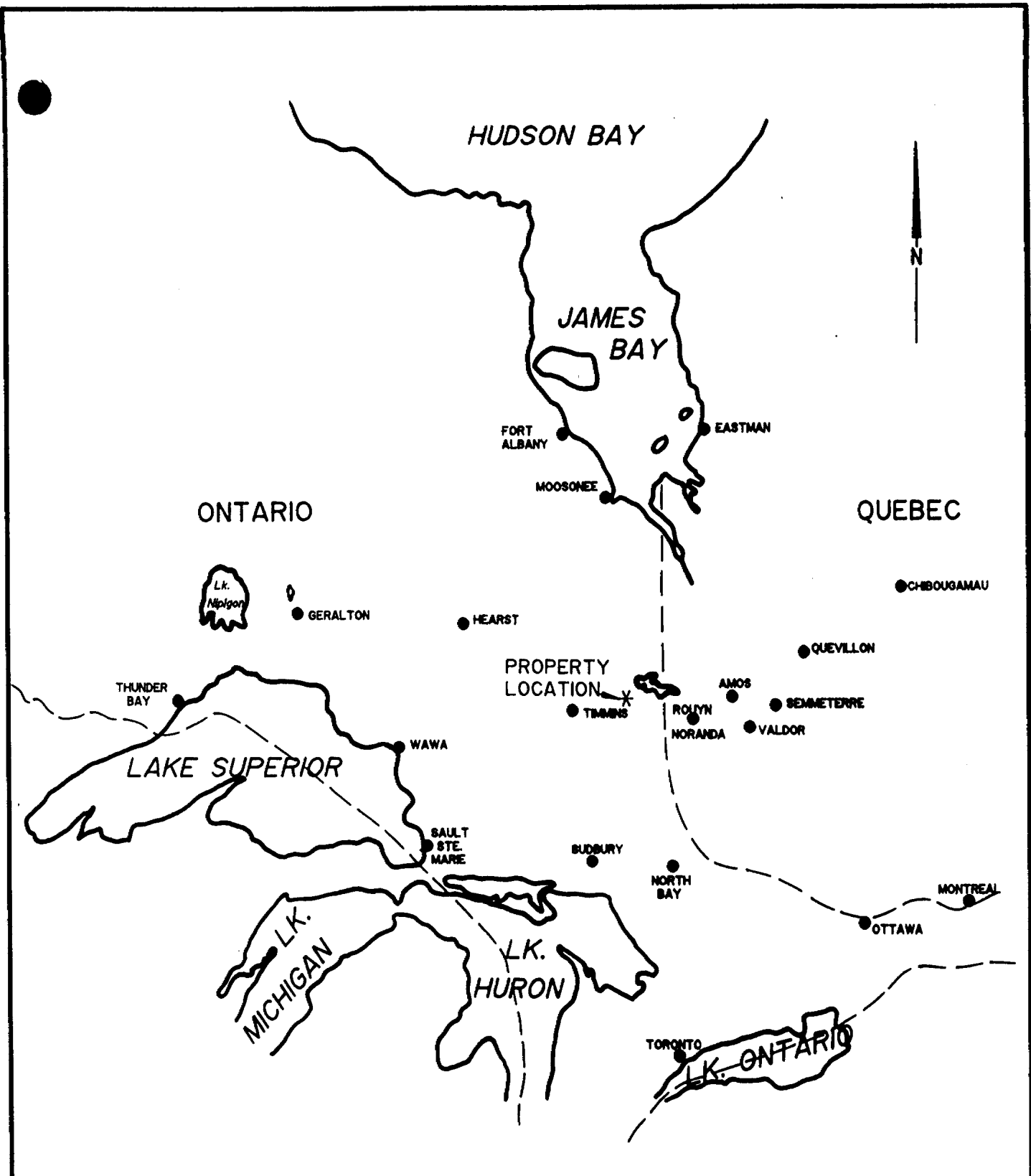
The property is located in the south half of Lot 6 Concession II of Carr Township, Larder Lake Mining Division, Matheson, Ontario.


The south boundary of the property parallels Carr Township Road II and a branch of the Black River flows approximately east across the property.

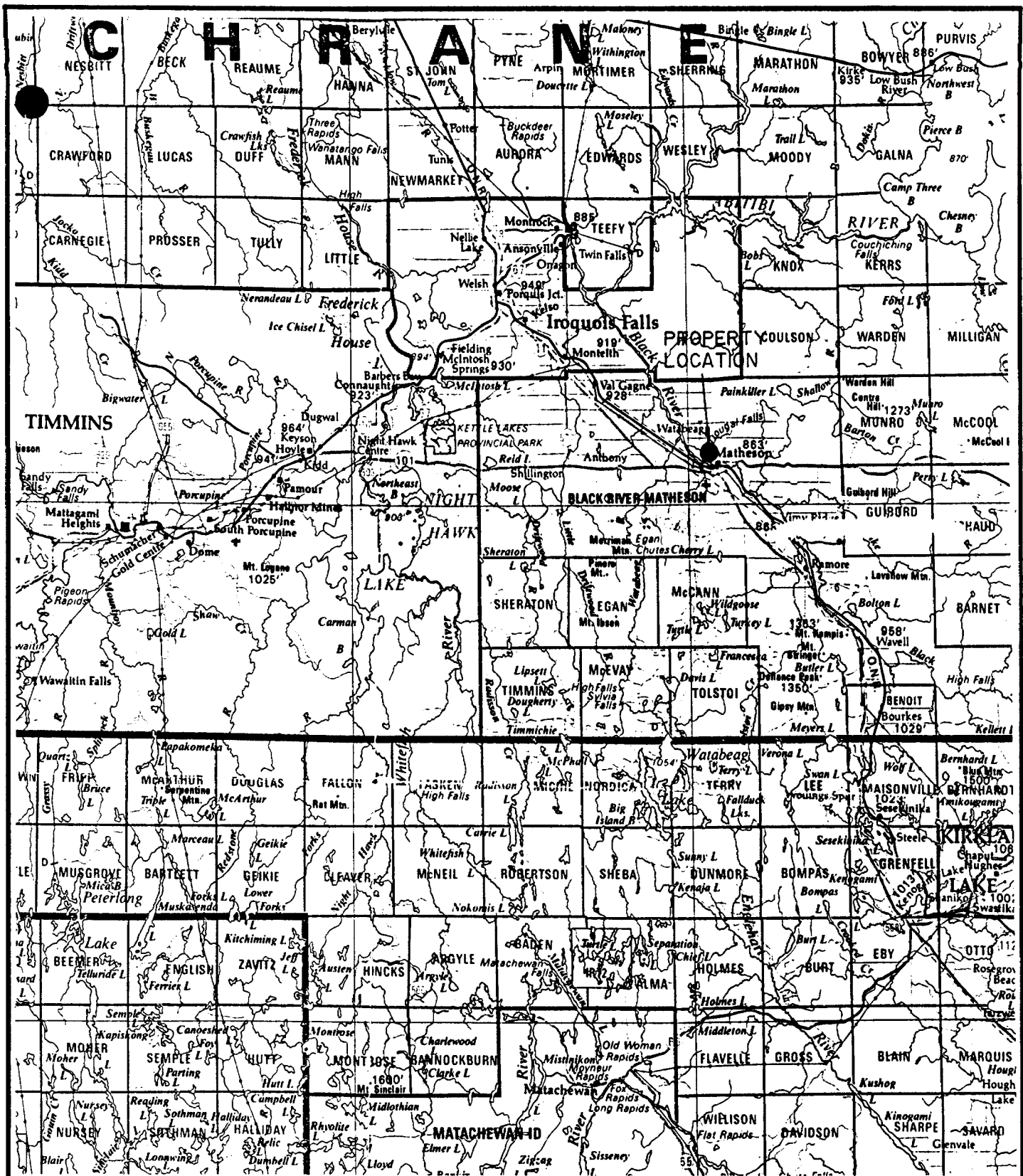
Access to the property is ideal year round. Highway 101 east runs through Matheson and continues east towards the Quebec border. On crossing the Black River one would continue north off of 101 East along a gravel road running up the lot line between lots 4 and 5.


One mile north along this road will bring one to Carr Road II which travels due west across the south end of the grid.

Travelling time from Timmins to the property is approximately 65 minutes. Refer to Figures 1 and 2.



		
EXSICS EXPLORATION LTD. P.O. Box 1880, P4N-7X1 Suite 13, Hollinger Bldg. Timmins Ont. Telephone: 705-267-4151		
CLIENT: FALCONBRIDGE LTD.		
PROPERTY: Mc CHRISTIE PROPERTY		
TITLE: CARR TWP. LOCATION MAP		
Fig. 1		
Date: Sept. 1992	Scale: 1"=125miles	NTS:
Drawn: P.G.	Interp: J.C. Grant	Job No. EE-569



 <p>EXSICS EXPLORATION LTD. P.O. Box 1000, P4N-7X1 Suite 13, Hollinger Bldg, Timmins Ont. Telephone: 705-267-4511</p>		
CLIENT: FALCONBRIDGE LTD.		
PROPERTY: Mc CHRISTIE PROPERTY		
TITLE: CARR TWP.		
PROPERTY LOCATION Fig. 2		
Date: Sept. 1992	Scale: 1:600,000	NTS:
Drawn:	Interp: J.C. Grant	Job No. EE-569

CLAIM GROUP

The claims covered by this present program are as follows:

L-1151437	L-1151436	L-1151435	L-1151735
L-979580	western portion		
L-981451	western portion		

Refer to figure 3 for the location of the claims.

PERSONNEL

The field data was collected by J.C. Grant and plotted by Pierre Gauthier. All interpretation was completed by J.C. Grant.

LINECUTTING

A north-south grid was established over the property. A tie line was established along the south boundary of the property such that L1600MW/400MS represented the southwest corner of the grid.

The Tie line extends from L1600MW to L700MW with cross lines turned off at 100 meter intervals. All of the lines were cut from 400MS to 400MN.

In all, 11.8 Km of grid line were established.

GEOPHYSICAL PROGRAM

This program consisted of a total field magnetic survey done in conjunction with a VLF-EM survey.

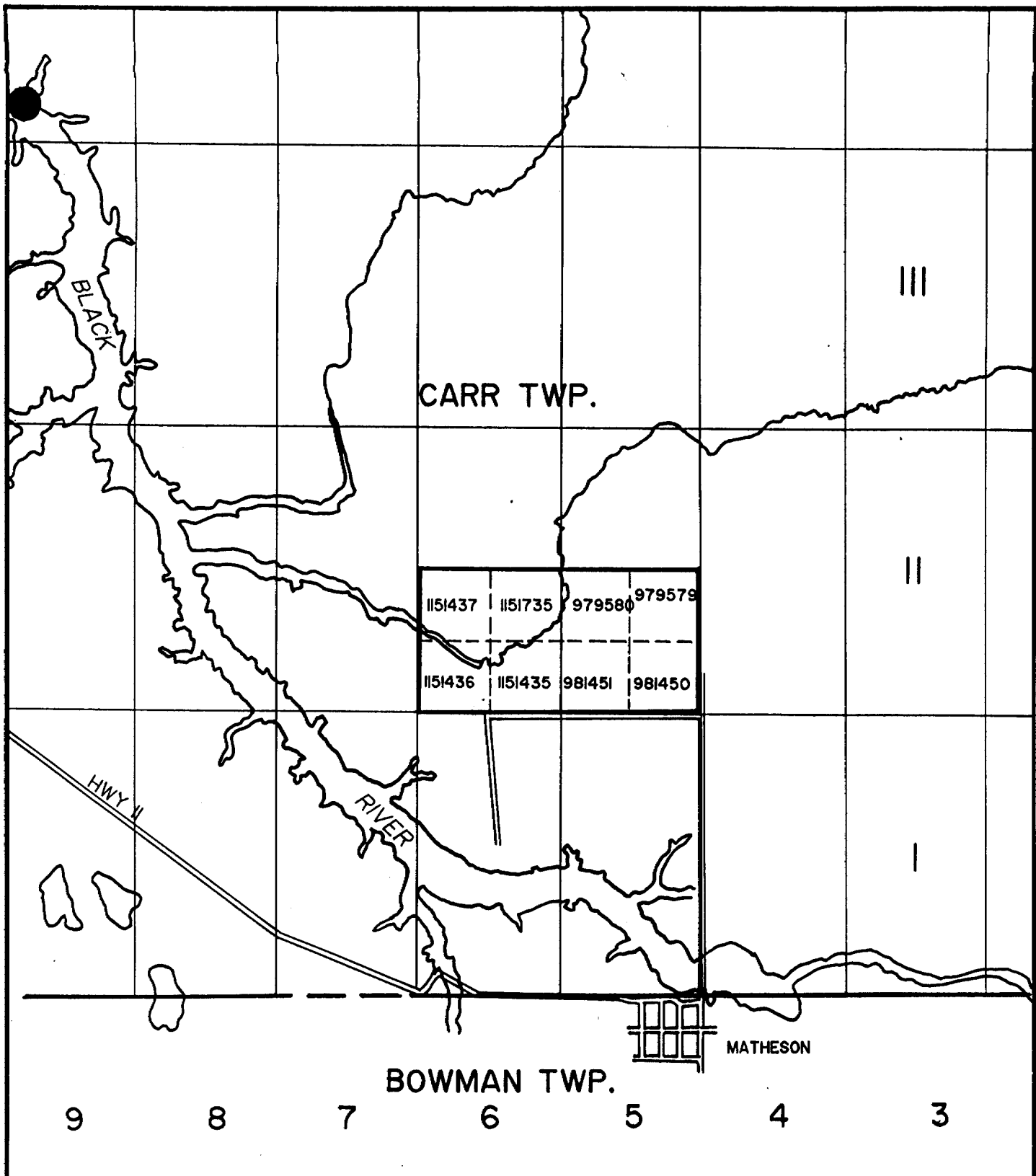
The equipment was the EDA OMNI Plus system incorporating the EDA OMNI IV base station unit which would monitor the magnetic changes in the earth's diurnal throughout the survey period.


The VLF-EM Dip Angle data had a low pass filtering done to it called Fraser Filtering which aids in interpreting structural trends. It also places a strong positive peak over shallow buried zones and a lesser positive peak over deeper buried zones.

The following parameters were kept constant throughout the survey.

VFL-EM SURVEY

Line Interval	-100 meters
Station interval	-20 meters
Transmitter Station	-Cutler, Maine, (NAA)
Frequency	-24.0 KHZ
Contour Interval (Fraser Filtering)	-2 unit intervals



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	CLIENT: FALCONBRIDGE LTD.	
PROPERTY: Mc CHRISTIE PROPERTY		
TITLE: CARR TWP.		
CLAIM SKETCH		
Fig. 3		
Date: Sept. 1992	Scale: 1"=1/2mile	NTS:
Drawn: P.G.	Interp: J.C. Grant	Job No. EE-569

vlf-em con't

Tx location to grid	-AZ 115 degrees
Survey Direction	-AZ 025 degrees
Profile Scale (Dip Angle)	-1 cm +/- 20%

MAGNETIC SURVEY

Line Interval	-100 meters
Station Interval	-20 meters
Reference Field	-58,500 gammas
Datum Subtract	-57,500 gammas
Contour Interval	-20 gammas
Base Station Location	-L920MW/275MS
Recording Interval	-30 seconds

BASE MAPS

The collected data was then plotted onto base maps at a scale of 1:5000, one map for each survey method. These base maps are included in the back pocket of the report.

The maps are as follows:

- 1- Contoured Total field Magnetic Map
- 1- Contoured Fraser Filter Map
- 1- VLF-EM Dip Angle Profile Map.

SURVEY RESULTS

The VLF-EM Survey was successful in outlining a number of features across the grid. The VLF unit is a useful geological tool as it will locate, faults, contacts, shear zones, clay ridges and troughs as well as electrically charged units.

The following is a detailed description of each zone.

Zone A

This feature strikes east-west across lines 1500MW to 1100MW at the north end of the lines. The feature has magnetic correlation with its western section which also may relate to the dike like feature. The eastern extension of the grid is somewhat weaker and questionable. The Filtered data shows a spot high which may be the edge of the dike.

Zone B

Zone B strikes across lines 1100MW to 700MW and appears to strengthen eastward. It does not have any magnetic signature but runs across the eastern dike. There is no real Filter response with the zone.

Zone C

Zone C is a short EM response which appears to emanate from Zone B. This feature also crosses the dike. The creek is also present in the area which may relate to Zone C. There does not appear to be any magnetic correlation as the zone is centered within the dike.

Zone D

Zone D parallels B and lies between the two north-south Magnetic units. Weak buldges in the western structure appear to correlate to zone D which would suggest possible splays coming off of the dike and following Zone D. Again the Filtered data is moderate to weak.

Zone E

Zone E appears to hae been cut by the eastern dike and shifted to the northeast. Both portions of the zone have flanking to direct magnetic correlation as well as better defined Filtered correlation.

Zone F

Zone F appears to relate to the diabase dike on its eastern section with the western section lying across the other magnetic unit. The central portion of the zone may relate to the edges of each dike.

Zone G

Zone G most probably relates to topography as it lies along the southern flank of the original creek bed.

Table I is a brief generalization of each zone's characteristics and priorities.

TABLE I

ZONE	MAG CORRELATION	FILTERED RESPONSE	COMMENTS
A	Direct Mag	Spot high	Should be followed up further
B	Possible dike correlation	No evident correlation	low priority at this time
C	Possible dike correlation	no evident correlation	probable dike response low priority
D	Weak Mag	Moderate to Weak	Good trap zone should be followed up
E	Moderate to good mag	Moderate correlation	should be followed up further
F	No apparent correlation	No evident correlation	low priority may relate to dikes
G	n/a	n/a	probable topography ie old creek bed.

CONCLUSIONS AND RECOMMENDATIONS

The VLF Survey located a number of sources across the grid. Certainly, several of the zones can be ruled out as topography. Those features would be zones G, C and F, at this writing.

The remaining features may relate to bedrock sources but at this writing would have to be tested further to enhance them.

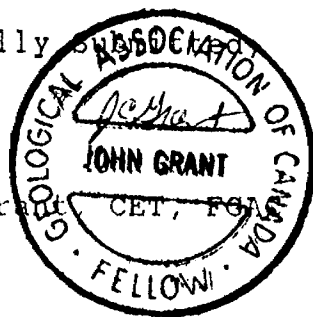
The magnetic survey was successful in outlining the eastern diabase dike as well as a parallel western structure. Also, several of the VLF zones relate to moderate magnetic highs striking off of the dikes.

A follow up program should consist of an HLEM Survey using the multi frequency Max Min system and a 150 meter coil separation. This would result in a 75 meter depth range search capability which should aid in determining the validity of the EM Zones.

Prospecting would not add greatly to the existing program, due to the lack of outcrop over the grid.

Respectfully

John C. Grant



CERTIFICATE

I, John C. Grant, hereby certify that:

- 1) I am a graduate geophysicist (1975) of the three year program in Geological Technology at Cambrian College of Applied Arts and Technology, Sudbury, Campus. I have worked subsequently as an Exploration Geophysicist for Teck Exploration Limited (5 years), North Bay office, and as Exploration Manager and Geophysicist for Exsics Exploration Limited from 1980 to present.
- 2) I am a Member of the Certified Engineering Technologist Association since 1984.
- 3) I am a member of the Geological Association of Canada.
- 4) I have been actively engaged in my profession for the last seventeen (17) years, including all aspects of exploration studies, surveys and interpretations.
- 5) I have no specific or special interest in the described property. I have been retained as a Consulting Geophysicist for property appraisal.



John Charles Grant, CET., EGAC

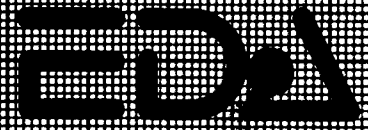
APPENDIX A

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*

Frequency Tuning Range	15 to 30 kHz, with bandwidth of 150 Hz; tuning range accommodates new Puerto Rico station at 28.5 kHz
Transmitting Stations Measured	Up to 3 stations can be automatically measured at any given grid location within frequency tuning range
Recorded VLF Magnetic Parameters	Total field strength, total dip, vertical quadrature (or alternately, horizontal amplitude)
Standard Memory Capacity	800 combined VLF magnetic and VLF electric measurements as well as gradiometer and magnetometer readings
Display	Custom designed, ruggedized liquid crystal display with built-in heater and an operating temperature range from -40°C to $+55^{\circ}\text{C}$. The display contains six numeric digits, decimal point, battery status monitor, signal strength status monitor and function descriptors.
RS232C Serial I/O Interface	2400 baud rate, 8 data bits, 2 stop bits, no parity
Test Mode	A. Diagnostic Testing (data and programmable memory) B. Self Test (hardware)
Sensor Head	Contains 3 orthogonally mounted coils with automatic tilt compensation
Operating Environmental Range	-40°C to $+55^{\circ}\text{C}$; 0 - 100% relative humidity; Weatherproof
Power Supply	Non-magnetic rechargeable sealed lead-acid 18V DC battery cartridge or belt; 18V DC disposable battery belt; 12V DC external power source for base station operation only.
Weights and Dimensions	
Instrument Console	2.8 kg, 128 x 150 x 250 mm
Sensor Head	2.1 kg, 130 dia. x 130 mm
VLF Electronics Module	1.1 kg, 40 x 150 x 250 mm
Lead Acid Battery Cartridge	1.8 kg, 235 x 105 x 90 mm
Lead Acid Battery Belt	1.8 kg, 540 x 100 x 40 mm
Disposable Battery Belt	1.2 kg, 540 x 100 x 40 mm

*Preliminary

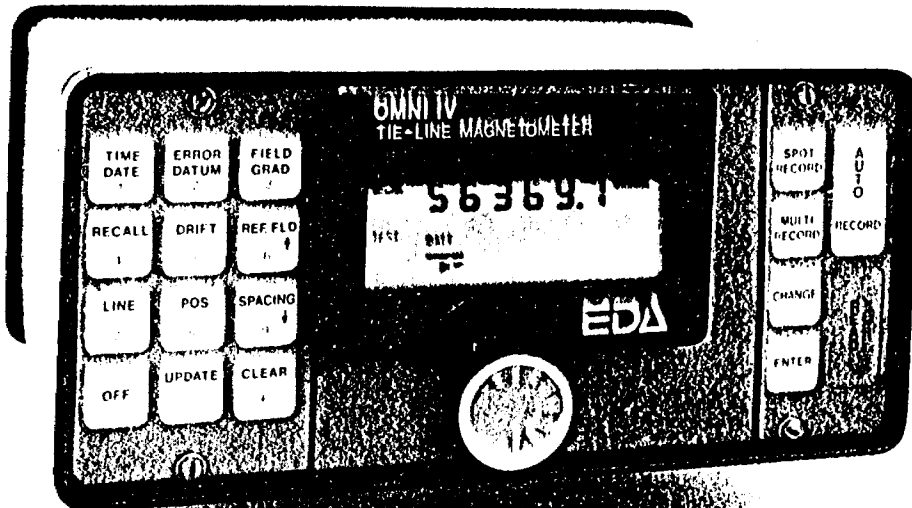
EDA Instruments Inc.,
4 Thorncliffe Park Drive,
Toronto, Ontario
Canada M4H 1H1
Telex: 06 23222 EDA TOR,
Cables: Instruments Toronto
(416) 425-7800

In USA,
EDA Instruments Inc.,
5151 Ward Road,
Wheat Ridge, Colorado
U.S.A. 80033
(303) 422-9112

Printed In Canada

APPENDIX B

OMNI IV "Tie-Line" Magnetometer



- 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

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 (0.5 m separation - standard)	2.1 kg, 56mm diameter x 790mm
Gradient Sensor (1.0 m 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

EDA Instruments Inc.
4 Thorncliffe Park Drive
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Printed in Canada



Ontario



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Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Branch
Geoscience Approvals Section
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

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

December 15, 1992

Our File: 2.14774
Transaction #W9280.00206

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

Dear Sir/Madam:

**Subject: APPROVAL OF ASSESSMENT WORK CREDITS ON MINING CLAIMS
L1151435 ET AL IN CARR TOWNSHIP**

The assessment work credits for the Geophysical Surveys filed under Section 14 of the Mining Act Regulations have been approved as originally filed.

The approval date is December 4, 1992.

If you have any questions regarding this correspondence, please contact Lucille Jerome at (705) 670-5855.

Yours sincerely,


Ron C. Gashinski
Senior Manager, Mining Lands Branch
Mines and Minerals Division

LJ/jl
Enclosures:

cc: Resident Geologist
Kirkland Lake, Ontario

✓ Assessment Files Library
Toronto, Ontario

Report of Work Conducted After Recording Claim

Mining Act

Transaction Number
W9280.00206

2. 14864

Personal information collected on this form is obtained under the authority of the Mining Act. This information will be used for correspondence. Questions about this collection should be directed to the Provincial Manager, Mining Lands, Ministry of Northern Development and Mines, Fourth Floor, 159 Cedar Street, Sudbury, Ontario, P3E 6A5, telephone (705) 670-7264.

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

Recorded Holder(s) Falconbridge Gold Corporation		Client No. 130666
Address 95 Wellington St. West, Suite 1002, Toronto, On. M5J 2V4		Telephone No. (416) 956-5951
Mining Division Larder Lake	Township/Area Carr	M or G Plan No. G- 3613
Dates Work Performed From: August, 1992		To:

Work Performed (Check One Work Group Only)

Work Group	Type
<input checked="" type="checkbox"/> Geotechnical Survey	Line Cutting and Geophysics
<input type="checkbox"/> Physical Work, Including Drilling	
<input type="checkbox"/> Rehabilitation	
<input type="checkbox"/> Other Authorized Work	
<input type="checkbox"/> Assays	
<input type="checkbox"/> Assignment from Reserve	

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OCT 30 1992

MINING LANDS BRANCH

Total Assessment Work Claimed on the Attached Statement of Costs \$ 3,512.³₆₀

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

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

Name	Address
Exsics Exploration Ltd.	P.O. Box 1880, Suite 13, Hollinger Bldg.
	Timmins, On. P4N 7X1

(attach a schedule if necessary)

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

I certify that at the time the work was performed, the claims covered in this work report were recorded in the current holder's name or held under a beneficial interest by the current recorded holder.	Date 7. Oct. 1992	Recorded Holder or Agent (Signature) <i>[Signature]</i>
--	-----------------------------	--

Certification of Work Report

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

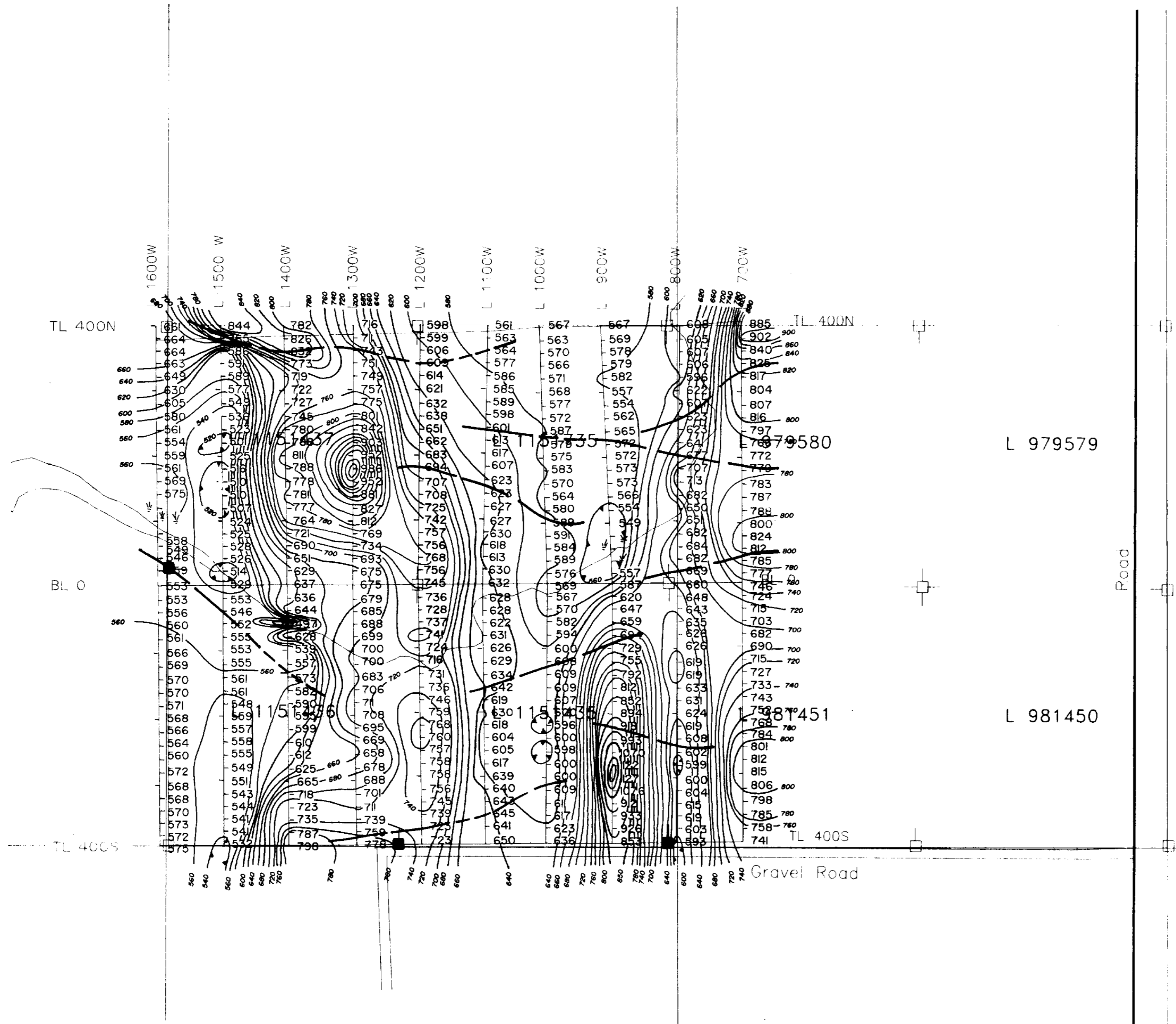
Name and Address of Person Certifying
Damien J. Duff, c/o Falconbridge Limited, Box 1140, 571 Moneta Ave. Timmins, On. P4N 5H1

Telephone No. (705) 261-1188	Date 7 OCTOBER, 1992	Certified By (Signature) <i>[Signature]</i>
--	--------------------------------	--

For Office Use Only

Total Value Cr. Recorded \$1600.	Date Recorded October 8/92	Mining Recorder <i>[Signature]</i>	Received Stamp RECEIVED LARDER LAKE MINING DIVISION OCT 9 1992
Reserve \$1913.	Deemed Approval Date January 6/93	Date Approved	
	Date Notice for Amendments Sent		

TIME **8:59 A.M. Oct**



2.14774

LEGEND
 Instrument: EDA OMNI-IV
 Parameters Measured: Earth's total magnetic field
 Accuracy: +/- 1 nano-Teslas
 Diurnals: Corrected by base station recorder
 Contour Interval: 0,20,40,60,80,100,.....
 Reference Field: 58,500
 Datum Subtracted: 57,500

	EXSICS EXPLORATION LTD.	
	P.O. Box 1880, P4N-7X1 Suite 13, Hollinger Bldg, Timmins Ont. Telephone: 705-267-4151	
CLIENT:	FALCONBRIDGE LIMITED	
PROPERTY:	CARR TOWNSHIP	
TITLE:	CONTOURED MAGNETOMETER SURVEY	
Date: Sept. 1992	Scale: 1:5000	NTS:
Drawn: P.C.	Interp: J.C. Grant	Job No. EE-569

