INTRODUCTION

Ground geophysical surveys, consisting of electromagnetic and magnetic, were carried out on a portion of the property of Conwest Exploration Company Ltd. in township M 2323, Frond Lake area, Ontario. The surveys were carried out over a previously cut network of lines and the following report and accompanying maps describe the results of the surveys, together with an interpretation.

PROPERTY AND LOCATION

The property is located in Northwestern Ontario, some 80 miles east of Pickle Lake Mines and about 16 miles northwest of Fort Hope. Access is by plane from Pickle Lake to Frond Lake on the south boundary.
The property consists of 82 claims of approximately 40 acres each, as shown on the accompanying maps. The claims are registered with the Ontario Department of Mines, as shown on Claim Map No. 2323.

The geophysical surveys were carried out over a portion of the property, as shown on the accompanying maps.

**GEOLOGY**

The property is situated within a belt of meta-volcanic and meta-sedimentary rocks trending in a general east-west direction. These include basalt, andesite, chert, iron formation, tuffs, and other meta-sediments. Within this complex there are several intrusive bodies of granitic rocks.

The property would appear to be largely underlain by meta-volcanic rocks and some minor meta-sediments. The schistosity on the property appears to be slightly north of east.

The general area is known for gold occurrences and some exploration work has been done in the past for gold in the Fort Hope area.
SURVEY METHODS AND INSTRUMENT DATA

The surveys were carried out over a network of lines previously cut at 400 foot intervals in a north-west direction.

The electromagnetic survey was carried out using a Geonics EM-17 horizontal loop equipment with a 300 foot coil interval. In the horizontal loop type of survey both the in-phase and out-of-phase components of the secondary field are measured, whose special characteristics make possible a fairly accurate evaluation of the conductivity. A conductor caused by sulphide mineralization will produce a curve going from positive readings through zero to negative and back again to positive. Both the in-phase and out-of-phase readings show the same general curve. The ratio between the in-phase and out-of-phase readings over a conductor is an indication of the conductivity of the body. A good conductor would cause a greater deviation of the in-phase component than the out-of-phase component. The opposite is true of a poor conductor.
The magnetic readings were taken with a Sharpe MF-1 fluxgate magnetometer measuring the variations of the vertical component of the earth's magnetic field. Readings were plotted as gammas on the accompanying map after correction for diurnal variation.

RESULTS OF THE GEOPHYSICAL SURVEYS AND INTERPRETATION

The electromagnetic survey outlined several conductive zones which have been lettered A, B, C, etc. for reference purposes. The zones all appear to trend in a northeast direction but vary considerably in their conductivity and size.

The magnetic survey has outlined a major magnetic anomaly in the north portion of the map and this extends off the area surveyed. The readings are quite high and it seems likely that this represents a band of iron formation. Conductive zone "E" is within this magnetic anomaly and may well represent a sulphide zone within the iron formation. This is discussed in more detail below.

There are other minor magnetic anomalies, several of which show corresponding highs and lows. This is very often caused by concentrations of magnetite and it seems likely
that these represent bands of iron formation.

A brief description of the conductive zones follows.

"A" ZONE consists of several discontinuous conductors following along a magnetic anomaly. The conductive zones are not particularly strong but the zone does extend further southwest off the area surveyed. The magnetic anomaly may well represent a band of iron formation and the conductors are probably due to either sulphides or graphite. There is also a suggestion of faulting, as shown by the magnetic anomaly.

"B" ZONE includes two separate conductors en echelon, starting at line 88W. The most westerly conductor shown on line 88W apparently continues further to the southwest. The zone is quite strong on line 76W and there is a coincident magnetic anomaly on this line. The zone is quite weak on the other lines, nor do they have coincident magnetic highs. The conductor extending southwest appears to be associated with a magnetic anomaly.

"C" ZONE is possibly related to "B" Zone and has
an apparent length of at least 1,600 feet but flooding prevented a full definition of the zone. It has no direct magnetic association and is probably caused by graphite and/or sulphides.

"D" ZONE shows up on two lines and is quite strong on line 4E. The width is narrow but it does appear to be associated with a magnetic anomaly. This again may be a band of iron formation with some sulphides.

"E" ZONE is a very strong conductor with an indicated length of 2,000 feet and it is still open at the west end. On line 12E there is possible width of over 100 feet. The strike of the zone is northeast and the dip appears to be near vertical. There is another parallel conductor to the north but this is not too well defined as it extends off the area surveyed. The zone is within a major magnetic anomaly that may represent iron formation. Bands of sulphides are quite common in the cherty iron formations and this appears to be a distinct possibility in this case.

"F" ZONE has an indicated length of approximately 800 feet in a northeast direction. There does not appear
to be any magnetic highs associated with it so it is probably a different type to "D" and "E" zones.

Other conductive responses indicated in the survey are weak one line responses and at this time they are not of significance.

CONCLUSIONS AND RECOMMENDATIONS

The geophysical surveys outlined several conductive zones, some of which are associated with magnetic anomalies. The magnetic anomalies may represent bands of iron formation and the conductive zones within these could possibly be due to sulphides within the iron formation or graphitic zones.

"E*© Zone, which is the strongest conductor, is very likely near surface as indicated by the high intensity of the readings. The cause of this conductor may possibly be detected by geological examination or trenching.

It is recommended that the geophysical results be closely correlated with the geological data available to obtain a priority rating for the further investigation of the conductive zones.

Respectfully submitted,
PROSPECTING GEOPHYSICS LTD.

Montreal, Que.
November 2, 1972.

H.J. Bergmann, P.Eng.
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: Magnetometer

Township or Area: M2323 - Frond Lake Area, Ontario

Claim holder(s): Frond Lake Mining Co. Ltd.

Author of Report: H. J. Bergmann, P. Eng.

Address: 3518 Vendome Ave., Montreal, P.Q.

Covering Dates of Survey: Sept 1/72 - Nov 2/72

Total Miles of Line cut: (linecutting to office)

SPECIAL PROVISIONS
CREDITS REQUESTED

Geophysical

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: 20 days per claim

Electromagnetic

DATE: __________ SIGNATURE: __________________

Author of Report

PROJECTS SECTION

Res. Geol. ___________ Qualifications ___________

Previous Surveys ___________ ___________

Checked by: ___________ date ___________

GEOLOGICAL BRANCH

Approved by: ___________ date ___________

GEOLOGICAL BRANCH

Approved by: ___________ date ___________

MINING CLAIMS TRAVERSED

List numerically

(prefix) (number)

(enter days per claim)

See Attached

21 Claims

TOTAL CLAIMS: 21 Claims
<table>
<thead>
<tr>
<th>GEOPHYSICAL TECHNICAL DATA</th>
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</thead>
</table>

**GROUND SURVEYS**

- Number of Stations: approx. 909
- Number of Readings: approx. 1115
- Station interval: 100' (50' in anomalous areas)
- Line spacing: 400'

Profile scale or Contour intervals: EM - 1'' = 60' (specify for each type of survey)**

**MAGNETIC**

- Instrument: Sharpe MF fluxgate magnetometer
- Accuracy: Scale constant + 20 gammas
- Diurnal correction method: straight line function
- Base station location: Tie-in point at each station on the baseline

**ELECTROMAGNETIC**

- Instrument:
- Coil configuration:
- Coil separation:
- Accuracy:
- Method:  
  - Fixed transmitter
  - Shoot back
  - In line
  - Parallel line
- Frequency: (specify VLF station)
- Parameters measured:

**GRAVITY**

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

**INDUCED POLARIZATION - RESISTIVITY**

- Instrument:
- Time domain: Frequency domain:
- Frequency:
- Range:
- Power:
- Electrode array:
- Electrode spacing:
- Type of electrode:
Personnel - Prospecting Geophysics Limited
Frond Lake Project

Magnetometer:
Garth Zimmer - Val d'or, Quebec
Sept. 29 - Oct. 3

Electromagnetometer:
Alphonse Lecouter - Val d'or, Quebec
Sept. 29 - Oct. 3
L. Patriquin - Val d'or, Quebec
Sept. 29 - Oct. 3

Office:
H.J. Bergmann - 3518 Vendome Avenue
Montreal, Quebec
Oct. 20

T.J. Shaw - 5256 Prince of Wales, Avenue,
Montreal, Quebec
Oct. 16-19

Linecutting:
- Audit Bros Staking Inc.,
Val d'or, Quebec
Sept./72
Magnetometer Survey


Distribution of Work Credits.

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21 Claims
Type of Survey: Electromagnetometer

Township or Area: M2323 - Frond Lake Area, Ont.

Claim holder(s): Frond Lake Mining Co. Ltd.


Address: 3518 Vendome Ave., Montreal, P.Q.

Covering Dates of Survey: Sept. 1/72 - Nov. 2/72

Total Miles of Line cut: [Number]

SPECIAL PROVISIONS

CREDITS REQUESTED

Geophysical
- Electromagnetic: 40 days
- Magnetometer
- Radiometric
- Other

Geological

Geochemical

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

Magnetometer
Electromagnetic
Radiometric

DATE: [Entry]

SIGNATURE: [Signature]

Author of Report

PROJECTS SECTION

Res. Geol. [Name] Qualifications

Previous Surveys

Checked by: [Signature] date

GEOLOGICAL BRANCH

Approved by: date

GEOLOGICAL BRANCH

Approved by: date

TOTAL CLAIMS: 21
GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations, approx 909
Number of Readings, approx 970
Station interval, 100' - (50' in anomalous areas)
Line spacing, 400'
Profile scale or Contour intervals: EM 1" = 40, MAG - 250 Gamma contours

MAGNETIC

Instrument
Accuracy - Scale constant
Diurnal correction method
Base station location

ELECTROMAGNETIC

Instrument: Geonics EM - 17
Coil configuration: Horizontal Loop
Coil separation, 300'
Accuracy, Repeatability ± 1%
Method: [ ] Fixed transmitter [ ] Shoot back [X] In line [ ] Parallel line
Frequency, (specify V.L.F. station)
Parameters measured

GRAVITY

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

INDUCED POLARIZATION - RESISTIVITY

Instrument
Time domain, Frequency domain
Frequency, Range
Power
Electrode array
Electrode spacing
Type of electrode
Personnel - Prospecting Geophysics Limited

Frond Lake Project

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21 Claims
AREA OF FERGUSON LAKE
DISTRICT OF KENORA - PATRICIA PORTION
MINING DIVISION
SCALE: 1-INCH = 40 CHAINS

LEGEND
PATENTED LAND
CROWN LAND SALE
LEASES
LICENSED LANDS
LICENSE OF OCCUPATION
MINES
MINING RIGHTS ONLY
SURFACE RIGHTS ONLY
ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG

NOTES
Reserve around all lakes and marshes by Dept. of Lands & Forests.

MINISTRY OF NATURAL RESOURCES
DATE OF ISSUE
FEB 15 1973

PLAN NO M-2326
ONTARIO DEPARTMENT OF MINES AND NORTHERN AFFAIRS
CLAIM GROUP

LEGEND

MEASUREMENT STATIONS ALONG PICKET LINES

RELATIVE VALUES OF THE VERTICAL COMPONENT
FORCES OF THE EARTH’S MAGNETIC FIELD (IN GAMMAS)

MAGNETIC CONTOURS

A BASE STATION

— — ELECTRICAL CONDUCTOR

MAGNETOMETER SURVEY

CONWEST EXPLORATION CO. LTD.

PROSPECTING GEOPHYSICS LTD.

OCT. 1972

S2P09NW12S 21 150 FERGUSON LAKE