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MAGNETOMETER SURVEY

on

MINERAL CLAIM No. 373405

CAIRO TOWNSHIP, ONTARIO

INTRODUCTION

A reconnaissance magnetometer survey was made on June 7th and 11th, 1974, on claim No. 373405 in Cairo Township, Larder Lake Mining Division. This report and the map attached cover the work done and show the results of the survey.

Claim 373405 is located on the eastern boundary of Cairo Township about six miles east of the village of Matachewan. Access is by Highway 66 which cuts through the southeastern part of the claim. The cleared line between Cairo and Flavelle Townships forms the eastern claim boundary.

The claim area is covered with typical bush from which the timber was cut years ago. The land slopes moderately from north to south and drainage is to the south by a couple of shallow drainage channels.

Bedrock is exposed in a number of places, particularly along the east side of the claim, and overburden is generally fairly shallow but probably deeper in the swampy areas.

GEOLOGY

The area geology is described in the Ontario Department of Mines Geological Report No. 51 and Map 2110 which accompanies the report. Timiskaming sediments occupy the southeastern portion of the claim with Algoman intrusives of syenite or syenite porphyry occupying close to two-thirds of the claim to the north-west of the sediments. The intrusive-sedimentary contact runs from about the north-east corner of the claim in a direction a little south of south-west. Pyrite is known to occur in minor amounts in the sediments and gold is associated with pyrite in at least one old trench on the claim.

SURVEY GRID

For the reconnaissance survey the township line was used as a base line and pace and compass lines were run between the east and west claim boundaries. Lines were generally spaced 200 to 250 feet apart, and stations were marked every 100 feet along lines using red plastic flagging.

The method of gridding is not entirely accurate. However with the relatively short length of lines between the known base line and the west boundary and by checking the distance from line to line no large errors could accumulate.

Thus the position of each station is fairly accurate in relation to nearby stations, or sufficiently so for a reconnaissance survey.

MAGNETOMETER SURVEY

A Sharpe Fluxgate magnetometer Model MF-1 with a sensitivity of about 20 gammas per scale division was used for the survey. The magnetometer indicates the vertical component only of the earth's magnetic intensity at the point read, in gammas.

Readings were taken every 100 feet along each line with a number of readings at 25 foot intervals along the base line and on some of the lines for a short distance west of the base line. A total of 150 readings were made. No diurnal variations were used but checks were made at intervals to several stations along the base line.

SURVEY RESULTS

The map enclosed shows all the magnetic readings taken. Contour lines have been drawn along lines of equal intensity and colours show some interpreted zones of magnetic intensity.

The magnetic readings divide the claim area into two separate portions. The east and south-east section has quite distinct magnetic bands and readings range from 0 gammas to over 5000 gammas. The other section to the north-west is

composed of negative readings except for one area of moderate positive readings.

The vertical component varied considerably. In the north-west sector of the claim differences from one station to the next were fairly moderate. However near the base line the differences sometimes were over 4000 gammas between stations 25 feet apart, and at one station a one foot vertical movement of the magnetometer gave a 1000 gamma change in readings. High or erratic horizontal and vertical gradients such as these are likely due to the presence of magnetite in bands in the sediments.

A fairly strong magnetic zone trends south-westerly across the claim, with the west edge of the zone extending from near the No.1 Post to about 11 West on Line 12, and would appear to follow the contact between sediments and intrusives.

West of the main magnetic zone readings are generally in the range from 0 gammas to minus 1500 gammas, but one area of anomalously high magnetism is indicated on Lines 2 and 4. This could be interpreted as an inclusion or projection of sediments within the syenite intrusives. Alternatively this high and the low magnetic zone to the south-west could be associated with intrusives which often have non-patterned highs and lows of moderate intensity.

CONCLUSIONS

The survey has rather clearly outlined a belt of highly magnetic rocks, with the higher values probably representing magnetite. The west edge of the high magnetic belt appears to be the contact between sediments and intrusives.

Prospecting or other investigation for mineralization is warranted along and near the contact, and in the area of the possible sedimentary inclusion that lies to the west and is indicated on Lines 2 and 4.

F. J. Garbutt

June 17, 1974 F. J. Garbutt, P.Eng.

41P15NE8358 2.1530 CAIRO

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File 2.1530

Rec'd Projects Unit

JUL 30 1974

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

Type of Survey Magnetometer Survey

Township or Area Cairo Twp.

Claim holder(s) E. J. Garbutt

Author of Report E. J. Garbutt

Address 242 Hanna Rd., Toronto

Covering Dates of Survey June 7 & 11 & June 17
(linecutting to office)

Total Miles of Line cut None.

SPECIAL PROVISIONS CREDITS REQUESTED

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

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
--Electromagnetic	12.25
--Magnetometer	20
--Radiometric	
--Other	
Geological	
Geochemical	

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

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

DATE: July 22, 1974 SIGNATURE: E. J. Garbutt
Author of Report or Agent

PROJECTS SECTION

Res. Geol. _____ Qualifications 63.1081

Previous Surveys 63.1516 (Mag) different instrument type done in 1965

Checked by _____ date _____

GEOLOGICAL BRANCH LD

Approved by _____ date _____

GEOLOGICAL BRANCH _____

Approved by _____ date _____

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	373405

If space insufficient, attach list

TOTAL CLAIMS _____

Show instrument technical data in each space for type of survey submitted or indicate "not applicable"

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations 90 Number of Readings 150

Station interval 100 feet apart. Some readings 25' apart.

Line spacing 200 To 250 Feet

Profile scale or Contour intervals As per map - varying contours
(specify for each type of survey)

MAGNETIC

Instrument Sharpe Fluxgate, Model MF-1

Accuracy - Scale constant 20 gammas per scale division.

Diurnal correction method Multiple checks To intermediate stations.

Base station location Centre of Highway on Township line.

ELECTROMAGNETIC

Instrument

Coil configuration

Coil separation

Accuracy

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

Frequency
(specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION – RESISTIVITY

Instrument

Time domain Frequency domain

Frequency Range

Power

Electrode array

Electrode spacing

Type of electrode

Alma Twp.- M.202

Powell Twp. - M.241

Flavelle Twp.- M.220

Kimberley Twp.- M.226

THE TOWNSHIP
OF

CAIRO

DISTRICT OF
TIMISKAMING

LARDER LAKE
MINING DIVISION

SCALE: 1-INCH 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S
LEASES	(L)
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 rivers.

Matachewan Townsite subject to Sec. 36(b) of The Mining Act. File: 37893, Vol. 4

MINING LANDS
DATE OF ISSUE
JUL 31 1974
MINISTRY
OF NATURAL RESOURCES

PLAN NO. M.210

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

41P15NE8358 2.1530 CAIRO

NORTH

No. 4 Post — No. 1 Post

LINE 0 — LINE 2 — LINE 4 — LINE 6 — LINE 8 — LINE 10 — LINE 12

1000 X — 2000 X — 1500 X — 0 X

Highway 66

CAIRO TWP. — FLAVELLE TWP.

No. 3 Post — No. 2 Post

LEGEND

1450 – Negative Reading
1800 – Positive Reading

- Below 1500 gammas
- 1500 to 1000 "
- 1000 to 0 "
- 0 to 2000 "
- 2000 to 5000
- Above 5000

Note – The reading shows the vertical component [illegible] rth's magnetic intensity as read [illegible] tation.

MAGNETOMETER SURVEY

CLAIM No. 373405 – CAIRO TWP.

Scale: 1 inch = 100 feet

0 100' 200' 300'

June 17, 1974

F.J. Garbutt, P.Eng.

F.J. Garbutt