GEOCHEMICAL SURVEY

on

MINERAL CLAIM No. 373405

CAIRO TOWNSHIP, ONTARIO

INTRODUCTION

A reconnaissance geochemical survey was made on June 6th and 7th, 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 about three 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 some 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.

SOIL DEVELOPMENT

In general the overburden is quite thin in the claim area and soils are not too well developed. At a typical station, immediately below the thin organic forest material the leached A horizon was composed of light grey clayey silt to a depth of 2 to 4 inches. At about half of the stations this was followed by an enriched B horizon of brown clay and soil one to three inches thick, and followed in turn by a grey layer of silt or rubble. Whenever it was present the B horizon was sampled and the sample was assigned a quality classification of good.

When the B horizon was absent or only barely present the sample was taken of grey clay or silt at a depth of 4 to 6 inches and classified as fair.

At a couple of stations in low-lying flat areas soils were absent and there was only humic material and the sample was classified as humic or poor.

SOIL SAMPLING SURVEY

Soil samples were collected at every 100 foot station along each line using a grub hoe and trowel, for a total of 91 samples. Notes were made as to sample material, and terrain

and drainage, if significant. The map enclosed shows the locations of samples, a note at each station of the sample quality, and also notes drainage and terrain features. A few small shallow channels drain from north to south and a couple of soil samples were collected in these channels.

SAMPLE ANALYSES

Samples were analyzed by Technical Service Laboratories in Toronto using an acid extractable method on the minus 80 mesh portion. Extraction was by a 25% nitric acid at 100° Centigrade for 1 hour. Analyses were then made for copper and zinc using an atomic absorption method, with final results stated in parts per million.

As a matter of economy and to eliminate some samples of poorer quality analyses were only made of 47 samples, with selection made on sample quality and spacing.

SURVEY RESULTS

The map enclosed dated July 4, 1974, shows the sample locations, the sample quality and the copper and zinc values obtained.

Of 47 samples analyzed for copper only 7 were over 10 ppm, and eliminating these gave an average of 2.5 ppm, which was taken as background. Eleven samples with the lowest at 8 ppm were circled as anomalous.

Zinc analyses averaged 6.5 ppm after elimination of the 9 highest. Fourteen samples of 11 ppm were circled as anomalous.

Background for copper at 2½ ppm is quite low and anomalous samples range from 3 to over 10 times background. Background for zinc is 6½ ppm and values from about 2 to 4 times were marked as anomalous.

A good percentage of the higher samples appear to be related to drainage. Thus 8W on Line 0 and 9W on Line 2 occur in a swampy alder flat, while others such as 2 + 70W on Line 0, 8W on Line 10 and 4W on Line 12 are in small shallow but distinct drainage channels. Three others at 6W on Line 0 and 2W and 4W on Line 4 were marked as being on the edge of small draws which may have had some effect on the samples.

There are about 12 remaining samples, mostly anomalous for zinc, that are unrelated to drainage. These samples are in scattered locations and do not appear to be related to any particular geological formation or band. While these could be erratics and caused by transported material it seems more likely that they are valid and represent values through very shallow overburden.

CONCLUSIONS

Overburden in the claim area is quite thin and soil horizons are only moderately well developed. Backgrounds for copper and zinc are low and quite a few samples have values distinctly above background.

About five of the anomalous samples are related to drainage and several more may be. About twelve more appear to be valid but are in scattered locations and unrelated to the geology. Prospecting or further geochemical testing is warranted to check on a number of the anomalies.

F. J. Garbutt

July 14, 1974. F. J. Garbutt, P. Eng.

900

GEOPHYSICAL – GEOLC
TECHNICAL DATA

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 Reconnaissance Geochemical Survey
Township or Area Cairo Twp.
Claim holder(s) J. J. Garbutt

Author of Report J. J. Garbutt
Address 242 Hanna Rd., Toronto, Ont.
Covering Dates of Survey June 6 & 7, & July 9 & 19, 1974
(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	
--Magnetometer	
--Radiometric	
--Other	
Geological	
Geochemical	21 days

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

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

DATE: July 27, 1974 SIGNATURE: J. J. Garbutt
Author of Report or Agent

PROJECTS SECTION

Res. Geol. _____ Qualifications 63.1081

Previous Surveys 63.1516 (May)

Checked by _____ date _____

GEOLOGICAL BRANCH

LD

Approved by _____ date _____

GEOLOGICAL BRANCH

Approved by _____ date _____

OFFICE USE ONLY

MINING CLAIMS TRAVERSED
List numerically

L 373405
(prefix) (number)

See 'Man days' breakdown.

TOTAL CLAIMS _____

If space insufficient, attach list

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

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS

Number of Stations _____ Number of Readings _____

Station interval _____

Line spacing _____

Profile scale or Contour intervals _____
(specify for each type of survey)

MAGNETIC

Instrument _____

Accuracy - Scale constant _____

Diurnal correction method _____

Base station location _____

_____

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 _____

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth -- include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken 373405

Total Number of Samples 47 All Samples 42 Analyzed

Type of Sample Soil - Chips in thin overburden
(Nature of Material)

Average Sample Weight 2 to 3 ounces

Method of Collection Grub hoe & trowel

Soil Horizon Sampled Either present, or A.

Horizon Development Fairly good to poor

Sample Depth 4 to 8 inches

Terrain Moderate with slope to South

Drainage Development Poor to fair.

Estimated Range of Overburden Thickness
0 to 10 feet

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

Mesh size of fraction used for analysis
Minus 80 mesh.

General

ANALYTICAL METHODS

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

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

Others

Field Analysis (_____ tests)

Extraction Method

Analytical Method

Reagents Used

Field Laboratory Analysis

No. (_____ tests)

Extraction Method

Analytical Method

Reagents Used

Commercial Laboratory (47 tests)

Name of Laboratory Technical Service Labs

Extraction Method 25% Nitric Acid @ 100°C. for 1 hour.

Analytical Method Atomic Absorption.

Reagents Used

General

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

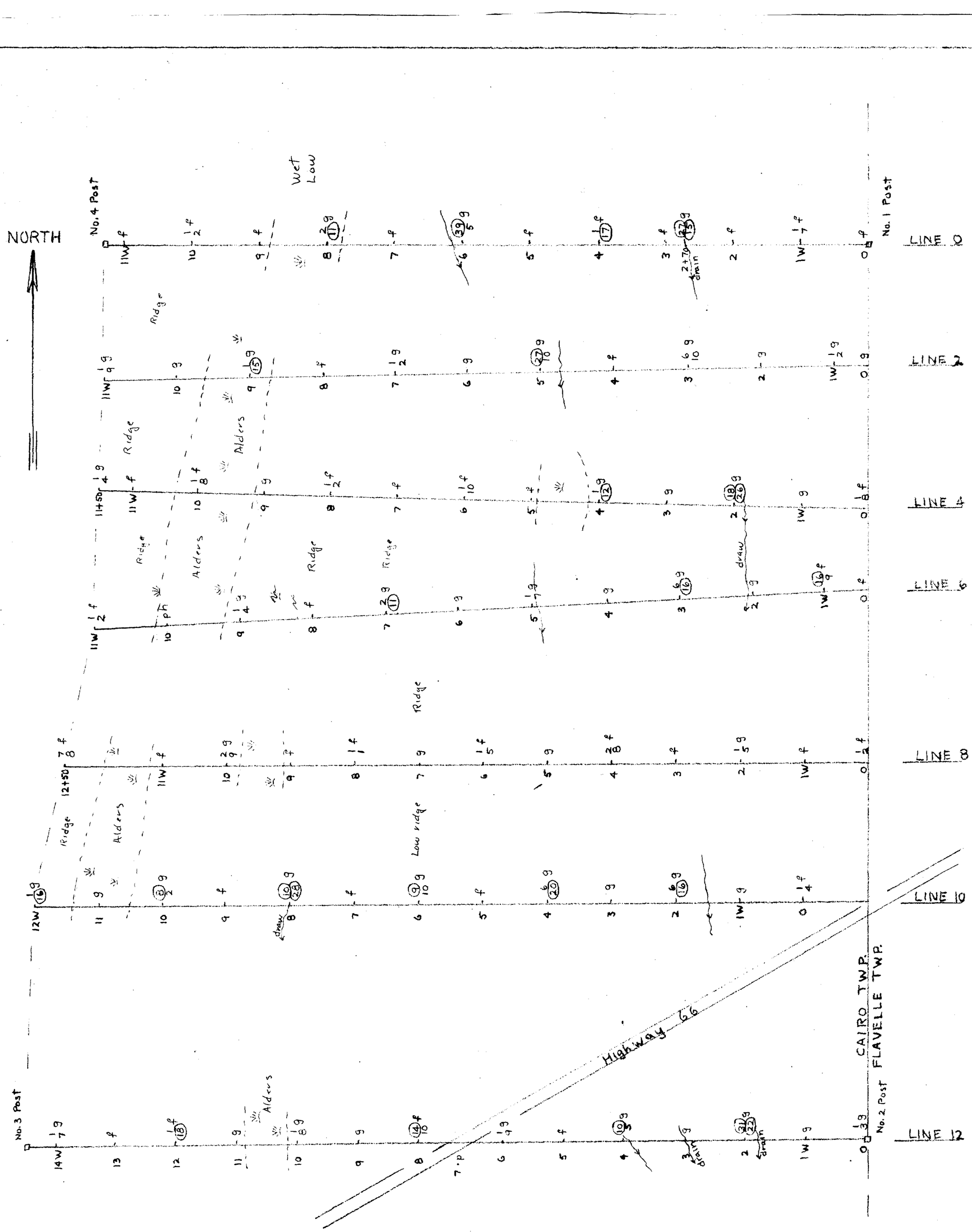
NOTES

400' Surface Rights Reservation around all lakes and rivers.

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

PLAN NO. M.210

MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH



LEGEND

$\frac{2}{6}$ – p.p.m. for $\frac{\text{Copper}}{\text{Zinc}}$

1W – Station Sampled

Sample Quality:
- g - good
- f - fair
- p - poor
- h - humic

Note: Anomalous values are circled.

GEOCHEMICAL SURVEY

CLAIM No. 373405 – CAIRO TWP.

Scale: 1 inch = 100 feet

0 100' 200' 300'

July 4, 1974 F. J. Garbutt, P. Eng.

F. J. G.