010

REPORT ON THE

COMBINED GEOPHYSICAL SURVEYS

COTE PROJECT

COTE TOWNSHIP, ONTARIO

FOR

MATTAGAMI LAKE MINES LIMITED

INTRODUCTION

The Cote Project consists of a group of 32 claims located in the northern portion of Cote Township, in the Timmins Area of the District of Cochrane, Ontario.

A grid of N-S picket lines, spaced at 400 foot intervals, has been cut over the claims. Surveying has been carried out with horizontal loop electromagnetics and magnetics over 27.6 miles of picket line. The surveying was carried out by the crews of Mattagami Lake Mines Limited in the period from March 22 to April 14, 1976.

LOCATION AND ACCESS

The claims are located in the northern part of Cote Township, about 20 miles WNW of Timmins, Ontario.

In winter, access is by skidoo trail from the all weather road that crosses the SE corner of the township. However, a damaged bridge on the south part of this road prohibits vehicle access in summer. Best access is by helicopter.

GEOLOGY

The area is covered by Preliminary Map P 840, Timmins Data Series, Cote Township, which shows geology, drilling, and previous geophysical results.

Most of the claims are covered by overburden but a few outcrops

GEOLOGY (CONTINUED)

on the western part show Rhyolite tuffs, Quartz porphyry, and mafic rocks as well as several bands of E-W trending iron formation. The above are cut by a series of N-S trending diabase dikes. In addition, three strong N-S linears cross the claims and suggest other diabase dikes.

SURVEY INSTRUMENTS

A direct reading McPhar GP. 70 Proton mag. instrument was used to measure the total field to an accuracy of 1 gamma.

An Apex Max-Min electromagnetic unit was employed for the horizontal loop survey. A frequency of 444 H_z and a coil separation of 600 feet was used. The in-phase and quadrature components were measured to an accuracy of 1% of the primary field.

PRESENTATION OF RESULTS

The results of the electromagnetic and magnetic surveys are shown on the accompanying maps at a scale of 1" = 400 feet.

DISCUSSION OF RESULTS

Only one conductor, Zone A, was outlined by the survey.

ZONE A

Zone A is characterized by low amplitude responses on 36W and

and 40W and very weak indications on the adjacent traverses (i.e. 32W and 44W), giving a strike length of about 1,200 feet. The indicated conductivity is high, 20 mhos. on 36W and 100 mhos. on 40W with 444 H_z and 60 mhos. on the 888 H_z detail. There may be some inaccuracy due to the low amplitude of the response, but the conductor has a high conductivity in the massive sulphide-graphite range. Depth of burial calculations vary from 270 to 360 feet and indicate unusually deep overburden.

The magnetic association of Zone A is not clear due to presence of two interpreted diabase dikes that trend N-S and cross 40W near 13N and 28W near 10N. Subtracting these effects from the survey is difficult with present data, but it appears that Zone A has a direct magnetic expression of at least 100 gammas on every line or is associated with a long gentle magnetic high that extends from 3N on 80W eastward through the area of the conductor.

Zone A is regarded as an important first priority target and two long holes have been spotted (i.e. 36W and 42W) to determine its cause.

MAGNETICS

On the western portion of the grid, to the south of the baseline, a strong E-W anomaly extends from 104W to 52W and coincides with mapped iron formation. Its termination near 52W suggests a fault or diabase dike and it may continue along the south ends of line 48W to 36W.

The N-S diabase dikes that cross the baseline near 28W and 40W have been previously discussed under Zone A.

SUMMARY AND RECOMMENDATIONS

A single high conductivity zone, Zone A, has been outlined by the survey. It has a strike length of about 1,200 feet and appears to be covered by 300 feet of overburden. Its magnetic correlation is difficult to determine due to the presence of two diabase dikes but it appears to be associated with a gentle high in excess of 100 gammas. Zone A is definitely a first priority target and two holes have been spotted to test it.

Detailed magnetic surveying along Zone A might be of value in assessing its magnetic content.

Respectfully submitted,

Don B. Sutherland

June 9, 1976.

Don B. Sutherland,
Consulting Geophysicist.

COTE PROJECT

DRILL SCHEDULE

ZONE	LINE	STA	DIP	DIRECTION	LENGTH
A	36 W	10.5 N	50°	North	800
A	42 W	9.5 N	50°	North	800

Ontario

Ministry of Nat

GEOPHYSICAL – GEOLOG
TECHNICAL DAT

42A12SW0207 2.2208 COTE

900

SEP 27 1976

MINING LANDS SECTION

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) Geophysical

Township or Area Côté

Claim Holder(s) Mattagami Lake Mines Limited

Survey Company Mattagami Lake Mines Limited

Author of Report Mr. D. B. Sutherland

Address of Author

Covering Dates of Survey March 22 to June 9, 1976
(linecutting to office)

Total Miles of Line Cut 27.6

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	40
–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: Sept 7/76 SIGNATURE: D. B. Sutherland
Author of Report or Agent

L.D

Res. Geol. _____ Qualifications 63.1168

Previous Surveys

File No.	Type	Date	Claim Holder
63.1894	E.M.	1966	Roger Duprau
63.1358	Air Geology mag E.M.		
63.769		1956	Dominion Gulf Co.

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)	
P443392,	P443393,	
P443394	P443395	
P443396	P443397	
P443398	P443399	
P443400	P443401	
P443402	P443403	
P443404	P443405	
P443406	P443407	
P443408	P443409	
P443410	P443411	
P443412	P443413	
P443414	P443415	
P443416	P443417	
P443418	P443419	
P443420	P443421	
P443422	P443423	

RECEIVED
SEP 28 1976
PROJECTS UNIT

TOTAL CLAIMS 32

If space insufficient, attach list

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations EM 1296, Mag 1362 Number of Readings EM2662, Mag 1462

Station interval 100' Line spacing 400'

Profile scale EM 1" = 20

Contour interval

MAGNETIC

Instrument McPhar GP. 70 Proton Magnetometer

Accuracy – Scale constant ± 1 gamma

Diurnal correction method graphical

Base Station check-in interval (hours)

Base Station location and value

ELECTROMAGNETIC

Instrument Apex, Max-Min

Coil configuration Horizontal Loop

Coil separation 600'

Accuracy 1% of primary field

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

Frequency 444 H3 and (888 H3)
(specify V.L.F. station)

Parameters measured In phase and out of phases

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

Byers Twp. (M.265)

Fortune Twp. (M.813)

Enid Twp. (M.788)

Robb Twp. (M.309)

Massey Twp. (M.296)

5 M. 4 M. 3 M. 2 M. 1 M.

23 M. 22 M. 21 M. 20 M. 19 M.

2nd BASE LINE surveyed in 1905 by O.L.S. A. NIVEN

Creek

Enid

River

Winter Lake

West Commando Lake

Massey

Kamiskotia

R.

Little Massey Lake

443423 443422 443421 443420 443407 443406 443405 443404

443419 443418 443417 443416 443403 443402 443401 443400

443415 443414 443413 443412 443399 443398 443397 443396

443411 443410 443409 443408 443395 443394 443393 443392

37784 37778 37777

37779 37785

37787 37781 37780 37786

37782

37783

THE TOWNSHIP OF 2.2208 CÔTÉ

DISTRICT OF COCHRANE

PORCUPINE 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 along the shores of all lakes and rivers

DATE OF ISSUE
SEP 28 1976
SURVEYS AND MAPPING BRANCH

PLAN NO. M-271

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

42A12SW0207 2.2208 COTE

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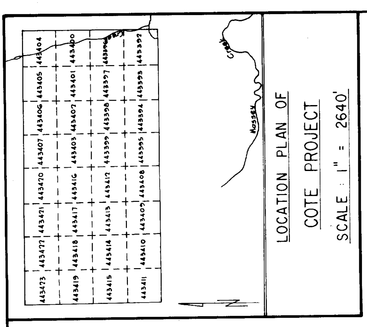
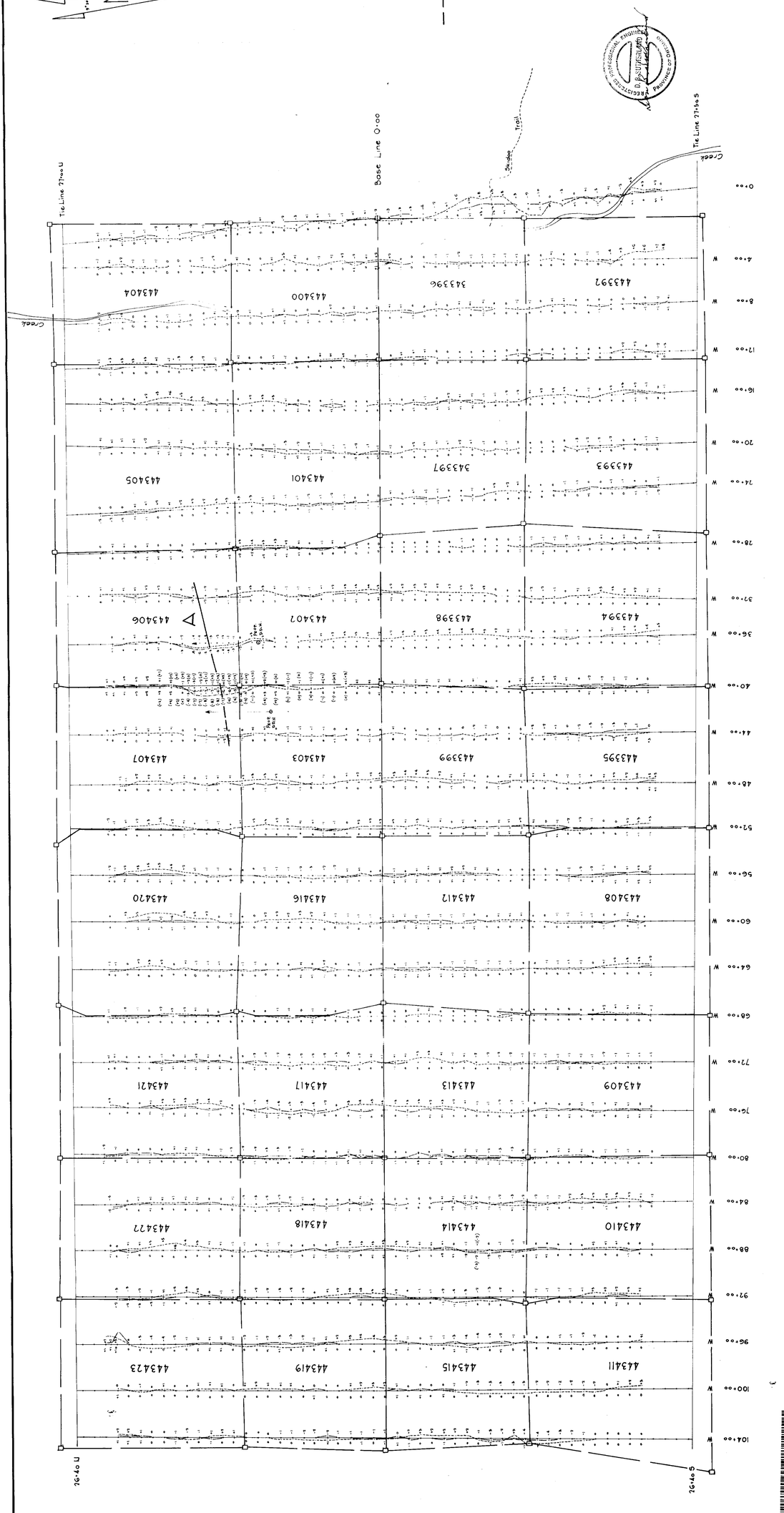


Out of Phase on the right of line
In Phase on the left of line
Coil spacing : 600 ft.
Frequency : 444 Hz.
Reading in brackets ( ) 888 Hz
E.M. Conductor
Instrument: Apex Max-Min

MATTAGAMI LAKE MINES LTD.
EXPLORATION DIVISION

EM SURVEY
COTE PROJECT
ONTARIO

DATE : FEB. 1976
DRAWN BY :
SCALE : 1" = 400'
TWP. : COTE
MAP No. :




LOCATION PLAN OF
COTE PROJECT
SCALE : 1" = 2640'
Tie Line 27+00 N
Tie Line 27+50 S
Base Line 0+00
26+40 N
26+40 S
Creek
Skidoo Trail
Contour Interval : 200 γ
Proton GP-70
MATTAGAMI LAKE MINES LTD.
EXPLORATION DIVISION
MAGNETOMETER SURVEY
COTE PROJECT
ONTARIO
DATE : FEB 1976
DRAWN BY:
SCALE : 1" = 400'
TWP.: COTE
MAP No.:
REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO
42A12SW0207 2.2208 COTE
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