REPORT ON

HORIZONTAL LOOP ELECTROMAGNETIC AND MAGNETOMETER SURVEYS

MATTAGAMI RIVER CLAIMS

GEARY-1

PROJECT 824-04

GEARY TOWNSHIP
Northeastern Ontario

NTS: 42-A-13

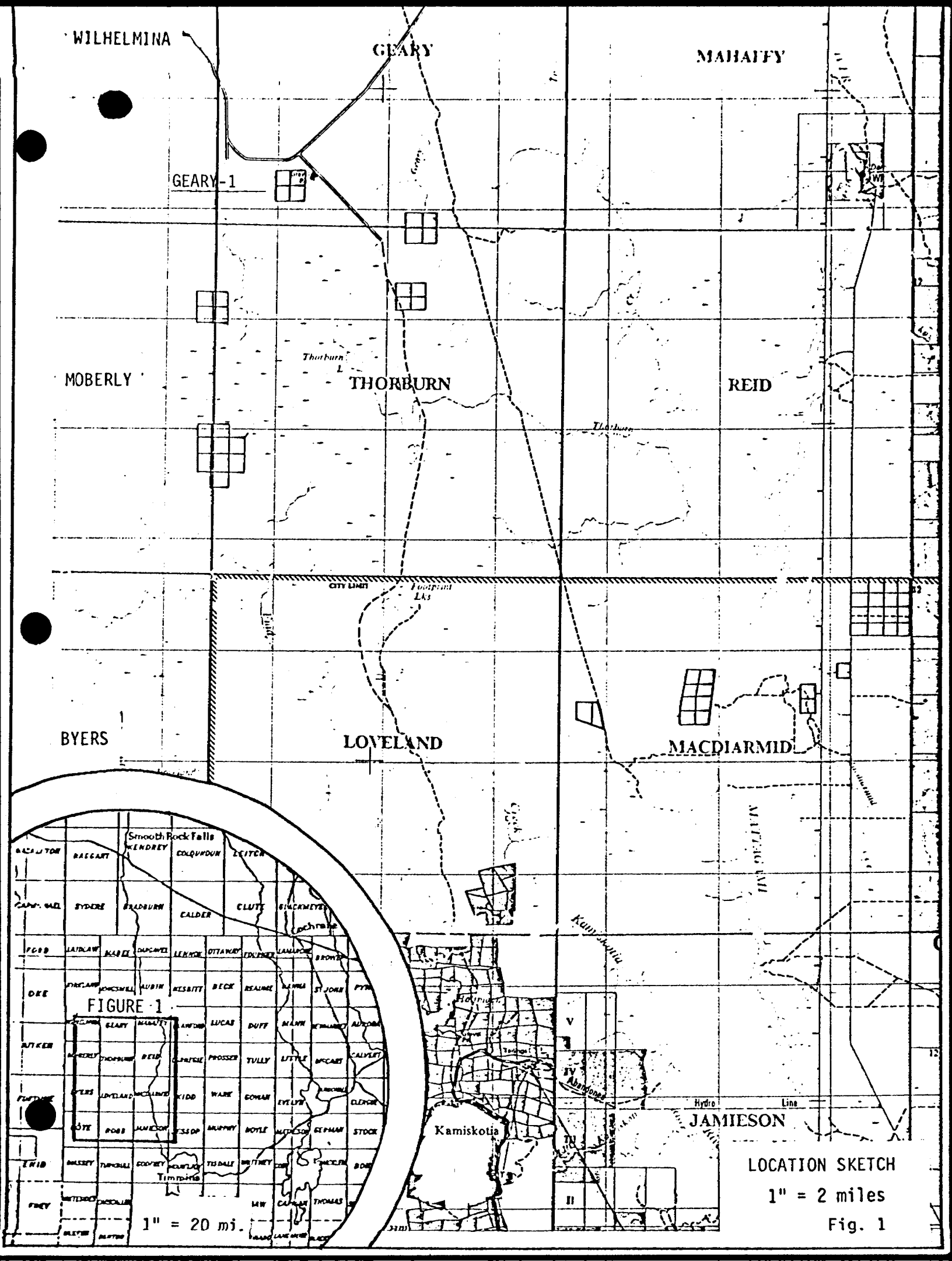
AMAX MINERALS EXPLORATION
Timmins, Ontario

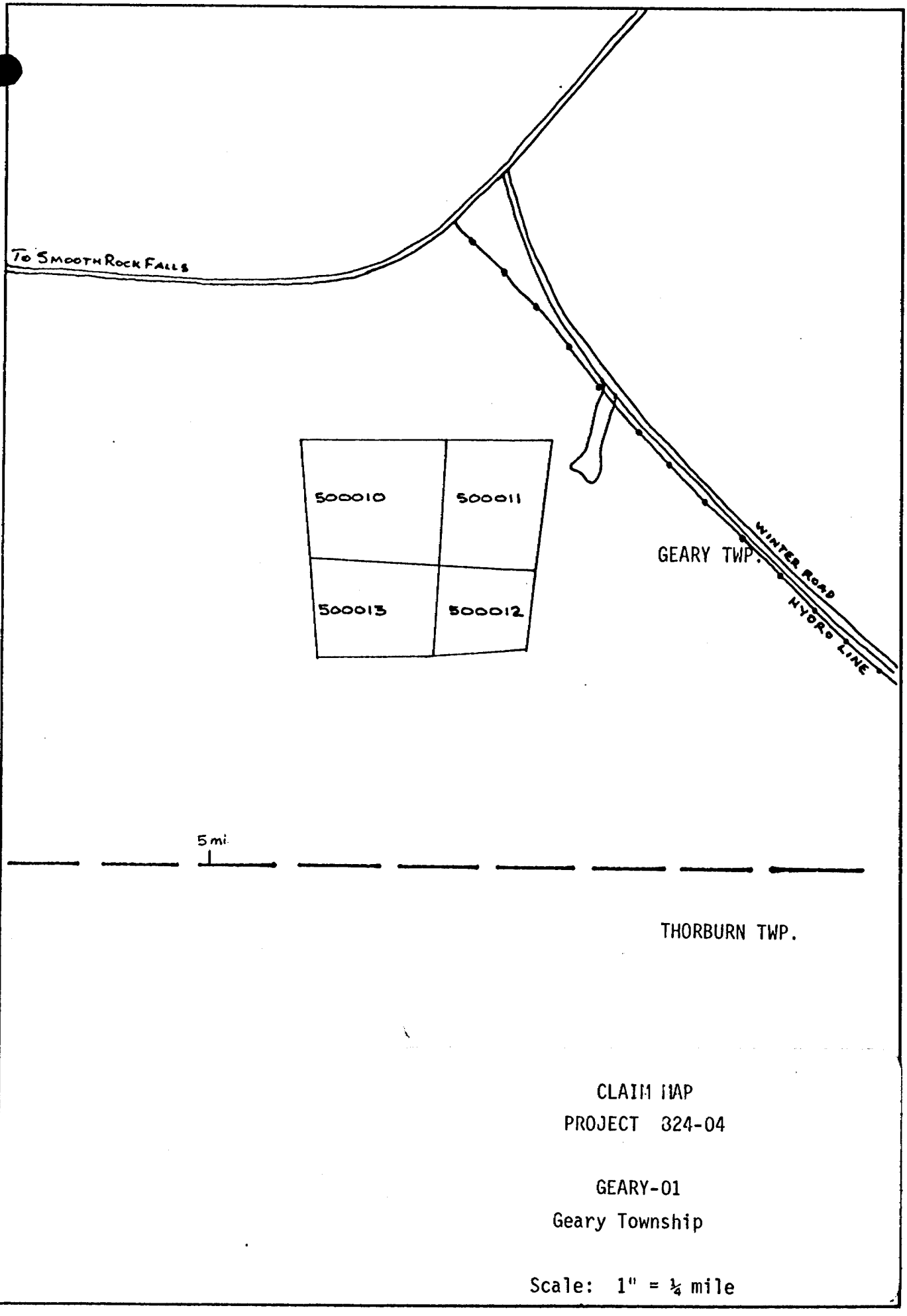
Timmins, Ontario
April 1978

John F. Gillan
Geologist

SUMMARY

A 4.8 Km. grid was cut and 4.5 Km. of Maxmin surveys defined one definite bedrock conductor. The conductor is approximately 250 meters (800 feet) long and parallels the 59,750 gamma contour striking approximately 140°. There are no data points within the property and the nearest drill hole intersected rhyolite and dacite tuff and breccia with pyrite and graphite approximately 8,000 feet along strike. This conductor represents a first priority drill target within a geologically favourable environment.


WILHELMINA
GEARY
MAHAFFY
GEARY-1
MOBERLY
THORBURN
REID
BYERS
LOVELAND
MACDIARMID
JAMIESON
Kamiskotia
Smooth Rock Falls
Timmins
1" = 20 mi.
FIGURE 1
LOCATION SKETCH
1" = 2 miles
Fig. 1



CLAIM MAP
PROJECT 324-04

GEARY-01
Geary Township

Scale: 1" = ¼ mile

INTRODUCTION

This report deals with electromagnetic and magnetic surveys covering the Geary-1 property, Project 824-04. The four contiguous claims were acquired by Amax Potash Limited on May 18, 1977 to cover a one line 5-channel Input anomaly defined in the Amax Input Mark VI A survey flown in May 1977.

The H.E.M. and magnetometer surveys were completed by Geoex Limited personnel in February 1978.

LOCATION AND ACCESS

The property is located approximately 28 miles northwest of Timmins in the southwest quadrant of Geary Township. Summer access is by road from Smooth Rock Falls. Winter access is by helicopter or ski-doo along a winter road north from Kamiskotia Lake.

TOPOGRAPHY AND RESOURCES

The property lies within a topographic high, flat, well drained ridge which was cut over in the 1960's. Second growth spruce, pine and balsam with some birch stands predominate. A gravel pit near the southeast corner of the property was used to build the access road to a microwave tower located approximately 5,000 feet northeast of the property. Gravel and clay overburden between 125 and 175 feet would be anticipated.

GENERAL GEOLOGY

There are no data points within the property. Drilling, approximately 8,000 feet southeast of the property intersected a sequence of rhyolite and dacite tuffs and tuff breccias with associated pyrite

and graphite. An assemblage of granite, intermediate tuffs, chlorite-sericite schists and felsic and intermediate flows were intersected in drilling approximately 5,000 feet across strike to the southwest.

PREVIOUS WORK

No evidence of ground work was found within or near this claim group. Yukeno Mines filed a V.E.M. survey in 1965 with no anomalies indicated. Cheskirk Mines filed logs of 2 drill holes which tested an SE300 conductor about 1 mile west of our group. Patino drilled an SE200 target about 8,000 feet along strike, southeast of our group in 1965.

SURVEY METHODS

An Apex Maxmin II instrument was used with frequencies of 444 and 1777 Hz and coil separation of 600 feet. Detail H.E.M. work at 400 foot coil separation was read over the conductor.

A Scintrex MP-2 proton magnetometer was used for the magnetometer survey.

The surveys were completed by Geoex Limited personnel in March 1978 on a picket line grid with 25 meter station intervals along lines spaced 125 meters apart.

RESULTS AND DISCUSSIONS

Electromagnetic Surveys (see Maps 1 and 2, back pocket)

The H.E.M. surveys defined one conductor with the following parameters:

Strike:	approximately 140°
Length:	approximately 250 meters (800 feet)
Width:	maximum 30 meters (100 feet)
Depth:	approximately 30 meters (100 feet)
Dip:	near vertical
Conductivity:	approximately 20 mhos
Coincidental Magnetics:	parallel to 59,750 gamma contour interval which forms a narrow mag low flanking a mag high.

Magnetic Survey (see Map 3, back pocket)

The magnetometer survey outlined a northwesterly striking stratigraphy with a mag low crossing the center of the property flanked by somewhat higher magnetics to the east and high magnetics to the west. The mag high to the west is the isolated mag high outlined in the aeromag survey. Total magnetic relief is approximately 600 gammas. The mag high may reflect a discontinuous diabase dyke which is traceable into Thorburn Township.

CONCLUSIONS AND RECOMMENDATIONS

1. One zone of conductivity was defined by electromagnetic surveys.
2. The conductor is parallel to the stratigraphy as defined by the magnetometer survey.
3. Extrapolation along strike suggests the conductor lies within a felsic to intermediate pyroclastic rock assemblage.

It is recommended that the conductor should be drilled as soon as logistically feasible.

John F. Gillan
Geologist

APPENDIX A

SCHEDULE OF CLAIMS

PROJECT 824-04

Claim Group	Township	Number	Claim Numbers	Recording Date
824-04	Geary	4	P-500010	May 18, 1977
			P-500011	May 18, 1977
			P-500012	May 18, 1977
			P-500013	May 18, 1977

Ontario

Ministry of N

GEOPHYSICAL – GEOL(
TECHNICAL DA...

42A13SE0016 2.2694 GEARY

900

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) Electromagnetic and Magnetometer
Township or Area Geary Township
Claim Holder(s) Amax Potash Limited

Survey Company Geoex Limited
Author of Report John F. Gillan
Address of Author 255 Algonquin Blvd. West, Timmins
Covering Dates of Survey Linecutting: October 19-20, 1977
Surveys: March 3-4, 1978
(linecutting to office)
Total Miles of Line Cut 4.8 Km
Kilometers

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: May 15, 1978 SIGNATURE: _____
Author of Report or Agent

L.D.

Res. Geol. _____ Qualifications 2.26 77 & on this file

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
EM	MAC
P 1/2	500010
P 1/4 no coverage	500011
P 1/3	500012 1/3
P 1/4	500013

EM
Area of claims not covered = 1/3

4 × 40 = 160 ÷ (4+1)
= 32 days per claim.

If space insufficient, attach list

TOTAL CLAIMS 4

OFFICE USE ONLY

GEOPHYSICAL TECHNICAL DATA

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

Number of Stations EM 104 Mag 182 Number of Readings EM 544 Mag 182

Station interval 25 meters Line spacing 125 meters

Profile scale 1 cm = 20%

Contour interval 100 gammas

MAGNETIC

Instrument Scintrex MP-2 Proton Magnetometer

Accuracy – Scale constant 1 gamma

Diurnal correction method Base station check in

Base Station check-in interval (hours) 1 hour

Base Station location and value Base line at 0+00 : 59710 gammas

ELECTROMAGNETIC

Instrument Apex Maxmin II

Coil configuration Horizontal Loop Coplanar

Coil separation 600 feet : detail at 400 feet

Accuracy 1% per scale division

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

Frequency 444 and 1777 Hz
(specify V.L.F. station)

Parameters measured In Phase + Quadrature

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

RESISTIVITY

Power

Electrode array

Electrode spacing

Type of electrode

7W 6W 5W 4W 3W 2W 1W B.L.O. 1E 2E 3E ROAD

750N
625N
500N
375N
250N
125N
0+0

P500010
P500013
P500011
P500012

I.P.
Q.

GRAVEL PIT

600' CABLE

400' CABLE
DETAIL

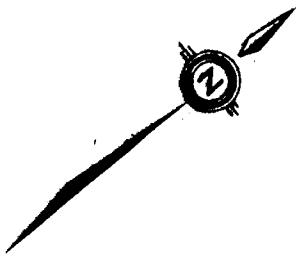
500N
375N
250N

P500010
P500013

P500011

GRAVEL PIT

P500012



AMAX MINERALS EXPLORATION

ELECTROMAGNETIC SURVEY

PROPERTY:	Geary - I	
PROJECT:	824-04	
LOCATION:	Geary Twp.	N.T.S. 42 A/13
INSTRUMENT:	Maxmin II H.E.M.	
CABLE LENGTH:	600', 400'	FREQUENCY: 1777 Hz
PROFILE SCALE:	1cm. = 20%	
MAP SCALE:	1cm. = 50m.	
IN PHASE:	.——.——.	
QUADRATURE:	.....	
HELICOPTER PAD	(H)	
CLAIM POST:	⊕	

To Accompany: Report on H.E.M. & Mag Surveys
By: J. F. Gillan

Drawn By: G.R. Smith

Date: April, 1978

2.2694

7W 6W 5W 4W 3W 2W 1W B.L.O 1E 2E 3E

ROAD

750N

625N

500N

375N

250N

125N

0+0

GRAVEL PIT

P500010

P500013

P500011

P500012

I.P.

Q.

600' CABLE

400' CABLE
DETAIL

500N

375N

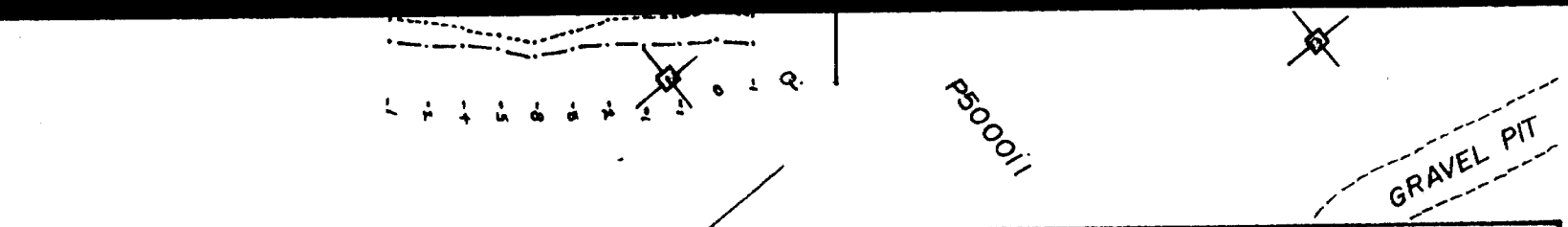
250N

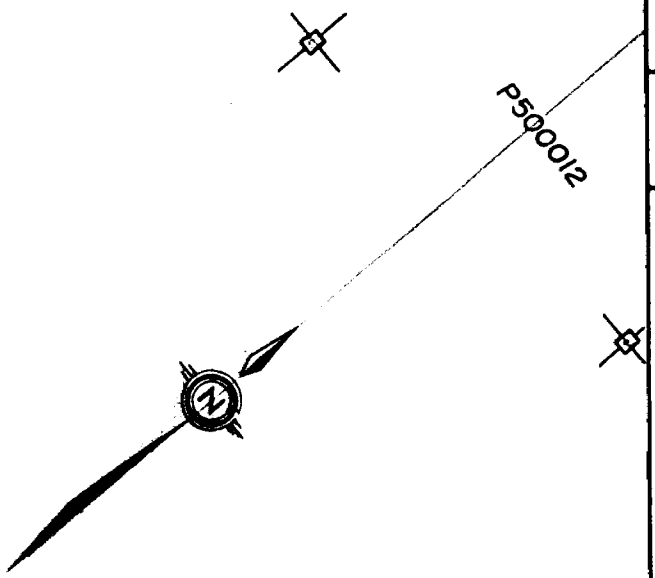
P500013

P500010

I.P.

Q.





AMAX MINERALS EXPLORATION

ELECTROMAGNETIC SURVEY

PROPERTY:	Geary-I	
PROJECT:	824-04	
LOCATION:	Geary Twp.	N.T.S. 42 A/13
INSTRUMENT:	Maxmin II H.E.M.	
CABLE LENGTH:	600',400'	FREQUENCY: 444 Hz.
PROFILE SCALE:	1cm. = 20%	
MAP SCALE:	1cm = 50m.	
IN PHASE:	———·———	
QUADRATURE:	----------	
HELICOPTER PAD:	(H)	
CLAIM POST:	⊕	

To Accompany: Report on H.E.M. & Mag Surveys
By: J. F. Gillan

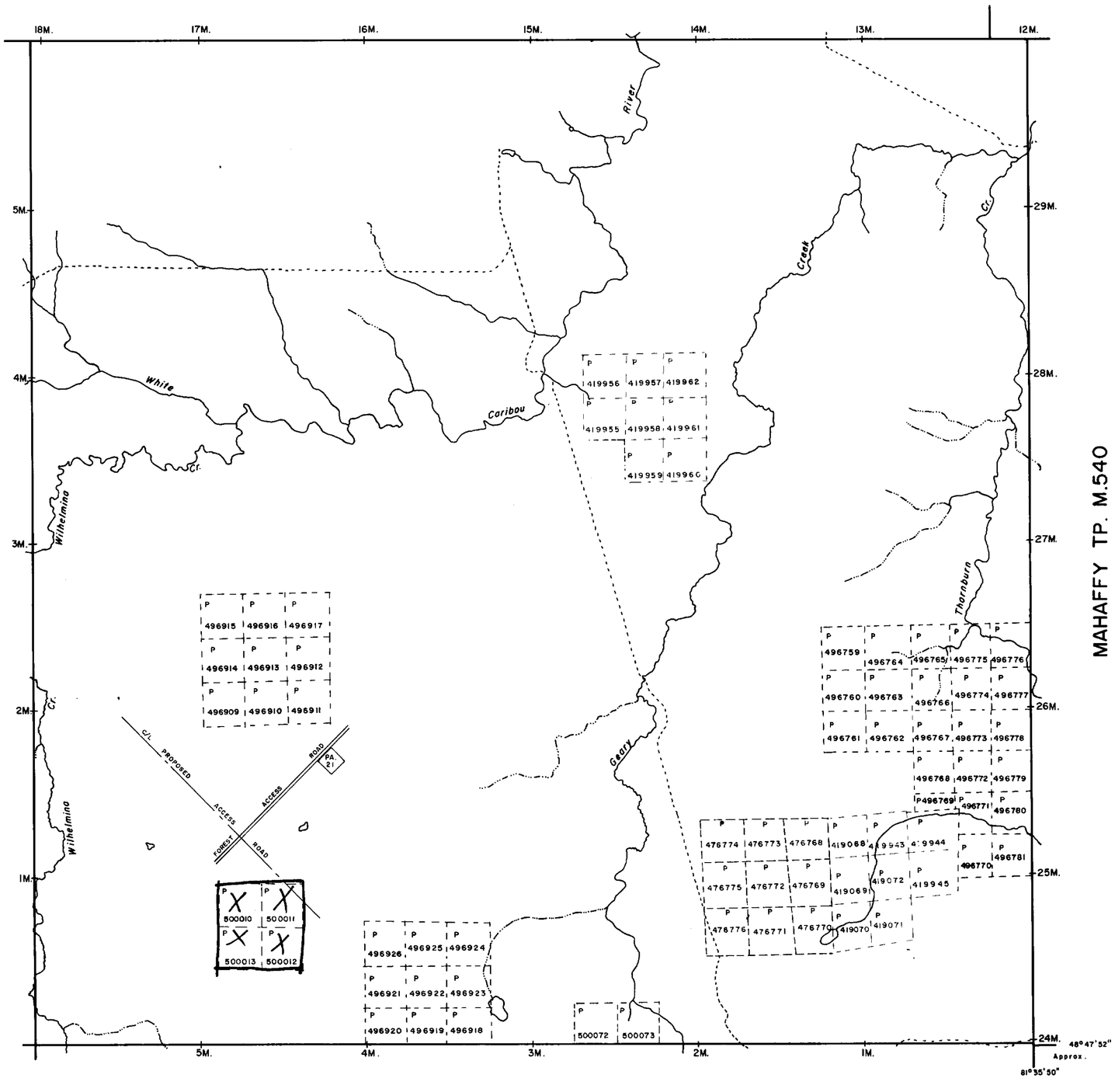
Drawn By: G.R.Smith

Date: April, 1978

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

KINGSMILL TP. M.521



WILHELMINA TP. M.614

MAHAFFY TP. M.540

THORBURN TP. M.601

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	●
" SURFACE RIGHTS ONLY	◒
" MINING RIGHTS ONLY	◓
LEASE, SURFACE & MINING RIGHTS	■
" SURFACE RIGHTS ONLY	◪
" MINING RIGHTS ONLY	◧
LICENCE OF OCCUPATION	▼
CROWN LAND SALE	C.S.
ORDER-IN-COUNCIL	OC
RESERVATION	(R)
CANCELLED	(X)
SAND & GRAVEL	(P)

DATE OF ISSUE
MAY 31 1978
SURVEYS AND MAPPING BRANCH

SCALE : 1 INCH — 40 CHAINS

FEET 0 500 1000 2000 4000 6000 8000
METRES 0 200 400 600 800 1 KM 2 KM

ACRES	HECTARES
40	16

TOWNSHIP 2.2694

GEARY

DISTRICT

COCHRANE

MINING DIVISION

PORCUPINE

Ministry of Natural Resources

Ontario Surveys and Mapping Branch

Date MAY 15, 1973

Whitney Block
Queen's Park, Toronto

Plan No. M.482

42A13SE0016 2.2694 GEARY

200

L - 750 N

L - 625 N

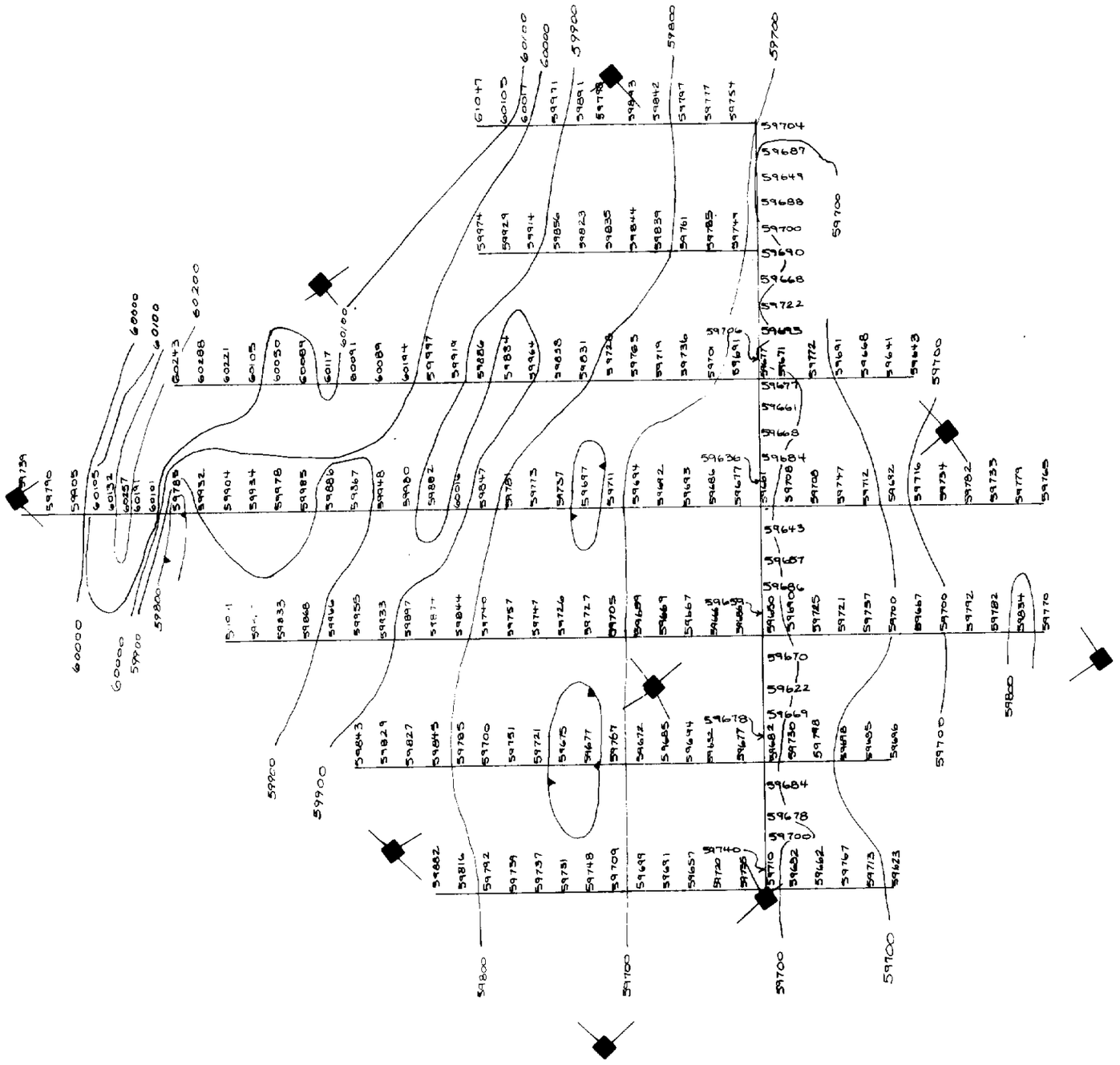
L - 500 N

L - 375 N

L - 250 N

L - 125 N

L - 0



1 W

100 W

200 W

300 W

400 W

500 W

0

100 E

200 E

300 E

LEGEND

Instrument: Scintrex MP-2

Surveyed by: P.H., March, 1978

Contour Interval: 100ϒ

59000 Magnetic Contour

GEARY-1

82404

2.2694

AMAX EXPLORATION INC.

TYPE OF SURVEY MAGNETOMETER

AREA NORTH TIMMINS AREA

LOCATION Geary Twp. Ont.

DRAWN BY S.G.	SCALE 1 cm : 50m	DATE Mar '78
TRACED BY	MAP No NTS REF 42-A-13	REVISED
TO ACCOMPANY BY		DATE Apr 1 '78