Max Min II EM and Induced Polarization

Surveys on the Genesis Resources Corporation Property

Hopper Lake - Detour Lake Area
Porcupine Mining Division
District of Cochrane

by

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Box 1637 Timmins, Ontario P4N 7W8

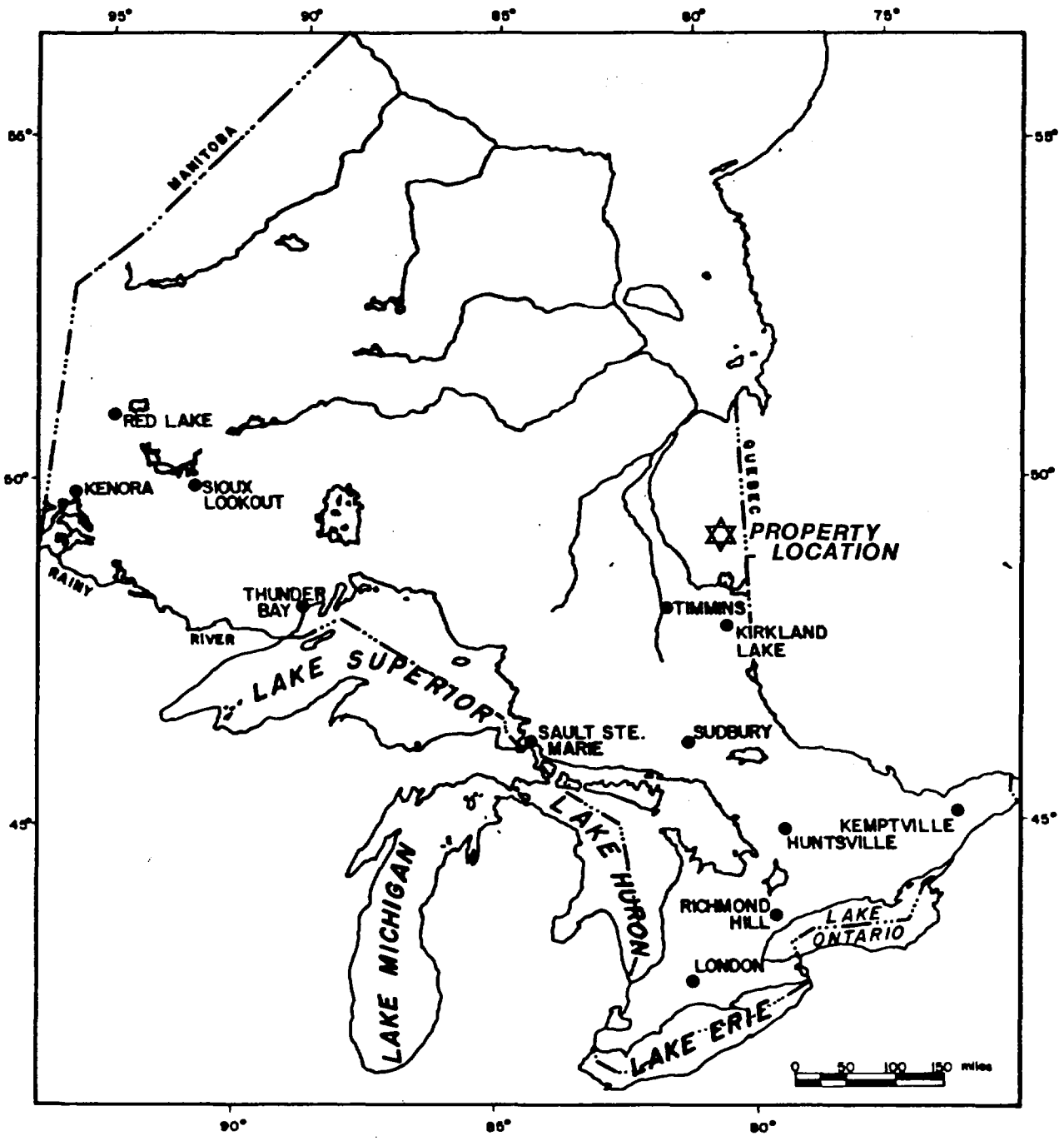
February 29, 1984

TABLE OF CONTENTS

	Page
INTRODUCTION.	1
Location	1
Property	1
Previous Work.	1
Survey Dates and Personnel	2
SURVEY PROCEDURE AND INSTRUMENTATION.	2
INTERPRETATION.	3
CONCLUSIONS AND RECOMMENDATIONS	4
REFERENCES.	5
CERTIFICATE	
INSTRUMENT SPECIFICATIONS	

LIST OF FIGURES

1.	Location Map	1:1,000,000
2.	Claim Map	1" = 1/2 mile
3.	Regional Geology	1:100,000
4.	Induced Polarization	1" = 200 feet
5.	Resistivity	1" = 200 feet
6.	MaxMin II EM 1777 Hz	1" = 200 feet
7.	MaxMin II EM 444 Hz	1" = 200 feet



PROVINCE OF ONTARIO

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GENESIS RESOURCES CORP.		
	Title PROPERTY LOCATION FIG. I		
	Date:	Scale:	N.T.S.:
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INTRODUCTION

A series of MaxMin EM and induced polarization profiles were run over various parts of a VLF EM conductor in order to confirm the conductor and establish more accurate parameters and the geological setting.

Location and Access

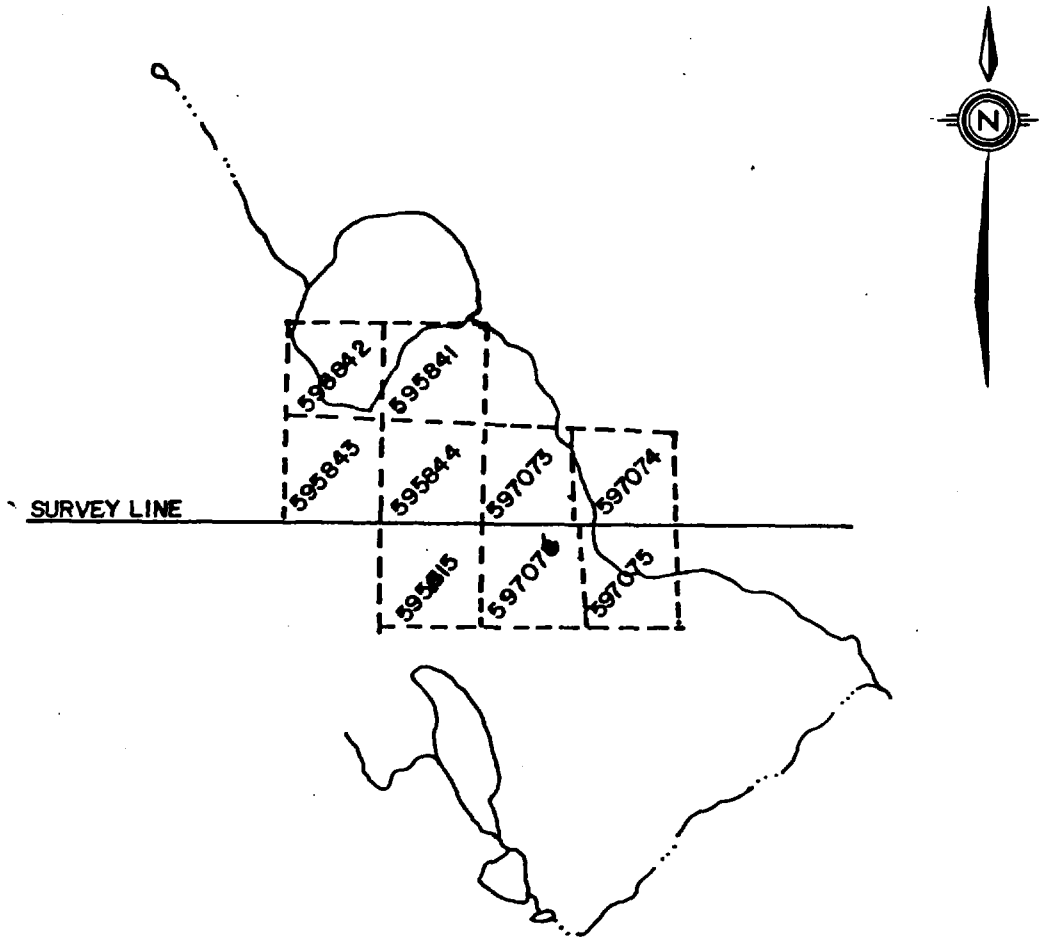
The 9 claim property is located roughly 120 miles north of Cochrane, Ontario and access to a point 4 km north of the property is by an all weather road that links the Detour Gold Mine with Cochrane. A muskeg road extends south of the Detour Mine road east of Hopper Lake to the property and this route can easily be travelled by skidoo in the winter.

Property

The property consists of 9 unpatented mining claims numbered P.595841 to 595844 inclusive, 597073 to 597076 inclusive and P.595815.

Previous Work

Noranda Exploration Company Limited drilled two holes near the southeast side of a small unnamed lake which is situated along the north boundary of the property. These holes intersected basalts, felsic tuffs and some graphite. The



From Hopper Lake sheet No.1637

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
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	Title CLAIM INDEX		
			FIG.2
	Date	Scale: 1"=1/2mi	N.T.S.:
	Drawn:	Approved:	File:

position of these holes could not be discerned in the field but are plotted on a published geological map by Johns, G. (1982) in a position north of the I.P. and EM anomalies outlined in the present survey.

In early 1983 a VLF EM and magnetometer survey was carried out on a 400 foot line spacing over the entire property and an east-southeast trending VLF conductor was outlined, Bowman, M. (1983).

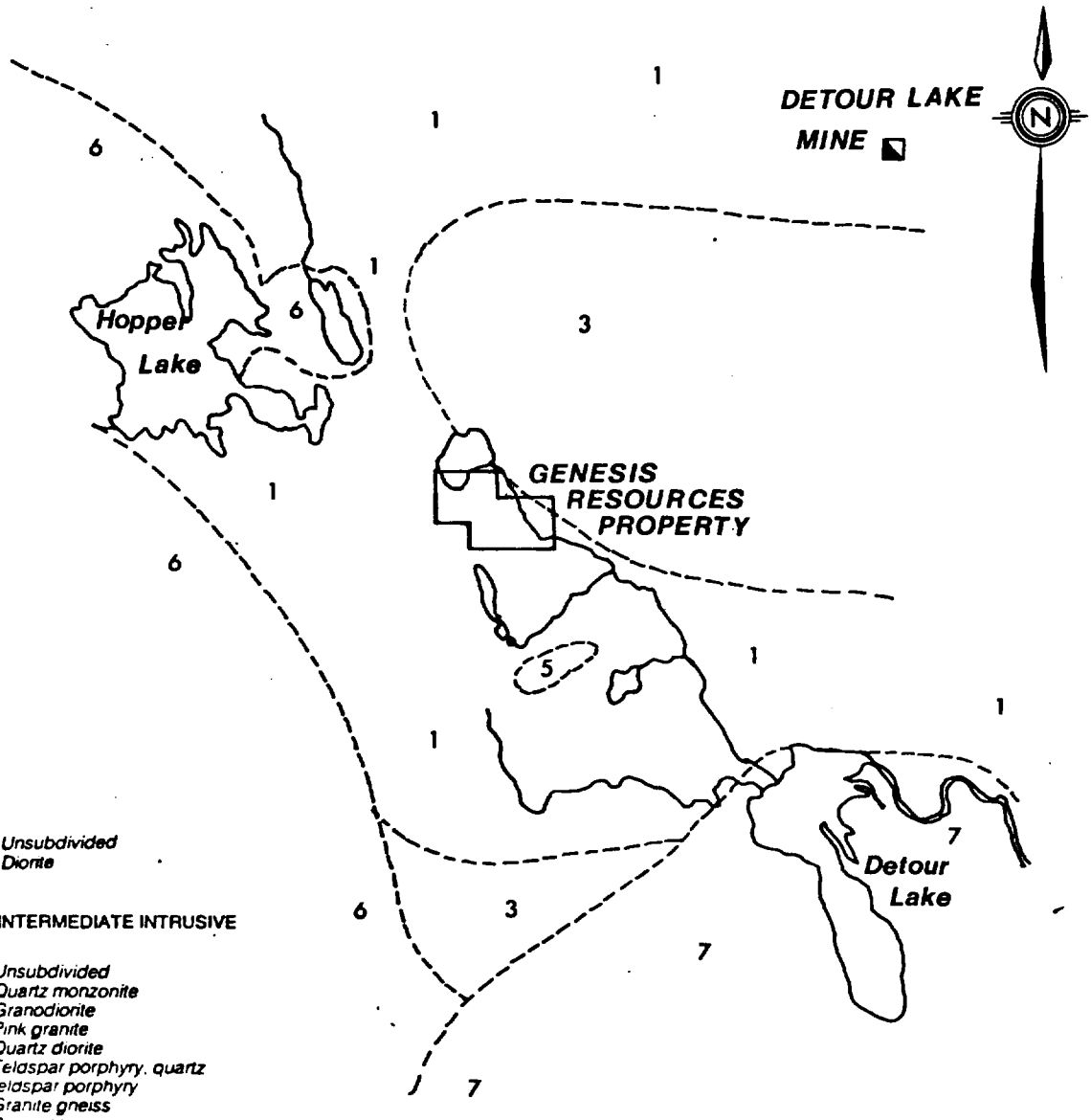
Survey Dates and Personnel

The MaxMin II EM and I.P. survey was carried out February 4 to Feburary 9, 1984 using a 4 man crew consisting of Tim Howards, Marc Seguin, Kevin Dickson and Steve Anderson all of North Bay, Ontario

SURVEY PROCEDURE AND INSTRUMENTATION

A MaxMin II EM was used to do the horizontal loop profiling and the inphase and out of phase results are plotted on the accompanying maps. A 100 metre (300 feet) coil separation was used and two frequencies were read (1777 Hz and 444 Hz). Specifications for the MaxMin II are given at the back of this report.

I.P. profiles were read using a pole-dipole array with an "a" spacing of 100 feet at n=2 and 3. A Crone MKIV receiver and a Phoenix 2.0 k watt transmitter was used. A 2 second on - 2



7 Unsubdivided
7a Diorite

FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

6 Unsubdivided
6a Quartz monzonite
6b Granodiorite
6c Pink granite
6d Quartz diorite
6e Feldspar porphyry, quartz feldspar porphyry
6f Granite gneiss
6g Pegmatite
6h Felsite
6j Trondhjemite

INTRUSIVE CONTACT

METAMORPHOSED MAFIC AND ULTRA-MAFIC INTRUSIVE ROCKS

5 Unsubdivided
5a Gabbro
5b Diorite
5c Amphibolite
5d Ultramafic rocks
5e Porphyritic gabbro

CLASTIC METASEDIMENTS*

3 Unsubdivided
3a Wacke
3b Arenite
3c Arkose
3d Calc-silicate rock
3e Grit
3f Fine grained to very fine grained, graphitic metasediments and tuffs
3g Schist
3h Garnet-bearing
3j Biotite-bearing
3k Amphibole-bearing
3m Staurolite-bearing

MAFIC TO INTERMEDIATE METAVOLCANICS*

1 Unsubdivided
1a Flow
1b Tuff
1c Lapilli-breccia, pyroclastic breccia
1d Autoclastic breccia
1e Pillow lava
1f Amphibolite
1g Porphyritic (feldspar phenocrysts)
1j Garnet-bearing
1k Biotite-bearing

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GENESIS RESOURCES CORP.		
	Title: REGIONAL GEOLOGY Fig 3		
	Date:	Scale: 1cm = 1km	N.T.S.:
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second off square wave pulse was transmitted into the ground via stainless steel stake electrodes and stainless steel rods were used for voltage electrodes as well in order to make contact below the frozen surface layer. Specification sheets are given at the back of the report.

INTERPRETATION

MaxMin II EM profiling on 7 lines is presented on the accompanying plan maps. These profiles show that the western portion of a previously outlined VLF EM conductor is real (see lines 8E and 12 E) with distinct Inphase and Quadrature anomalies. A magnetic anomaly directly coincides with the conductor on line 8E at 8+90N suggesting the presence of pyrrhotite. However the VLF EM conductor extension to the east does not reflect in the MaxMin EM data but can be traced by I.P. on line 3600E as a 14-34 millisecond anomaly as well as on line 8+00E where the conductor is known to occur. On line 56+00E the VLF trend flanks the south side of a weak to moderate I.P. chargeability anomaly at 7 to 8 south with values up to 15 milliseconds.

Therefore the overall I.P. trend likely outlines a horizon within the mafic volcanics which is softer than the surrounding rocks and has been somewhat eroded out, perhaps during glacial times. As a result a valley of conductive overburden follows the

I.P. trend creating the source of the VLF conductor on the eastern part of the property. This chargeable unit could be a felsic pyritic tuff horizon or an argillite unit and this setting could be an important interval within the volcanic sequence for the formation of exhalitive units. Since the Detour gold mine is associated with cherts and pyrrhotite, the I.P. anomaly and coincident EM conductor - magnetic anomaly on line 8 to 12 east becomes the most important target on the property.

CONCLUSIONS AND RECOMMENDATIONS

MaxMin II EM and I.P. profiling has confirmed the presence of a conductive horizon with a section containing an associated magnetic response which is interpreted to be a pyrrhotite zone. Two drill holes are recommended to test the property as follows:

	Collar	Dip	Depth
1.	Line 8E/10+50N	-50° South	400 feet = 120m
2.	Line 36E/2+50N	-50° South	400 feet = 120m

Respectfully Submitted,

R. Middleton

R.S. Middleton, P.Eng.

REFERENCES

Bowman, M. (1983)
Geophysical Report on the Genesis Resources Corporation Property, Hopper Lake, Porcupine Mining Division, Ontario. (VLF EM and Magnetic survey filed for assessment credit).

Johns, G.W. (1982)
Geology of the Burntbush - Detour Lakes Area, District of Cochrane, Ontario Geological Survey Report 199.

CERTIFICATION

I, Robert S. Middleton, P.Eng., of 136 Cedar Avenue South, in the City of Timmins, Province of Ontario, certify as follows concerning the Genesis Resources Corporation property and dated February 29, 1984:

1) I am a member in good standing of:

   a) Geological Association of Canada (FGAC)
   b) The Association of Professional Engineers of Ontario
   c) European Association of Exploration Geophysicists
   d) Society of Exploration Geophysicists
   e) Canadian Institute of Mining and Metallurgy

2) I am a graduate of the Michigan Technological University, Houghton, Michigan, U.S.A. with a B.S. degree in Applied Geophysics obtained in 1968, and an M.S. degree in Geophysics in 1969.

3) I have been practising my profession in Canada, occasionally in the United States, Central America, Europe and South Africa for the past 14 years.

Dated this February 29, 1984,
TIMMINS, Ontario

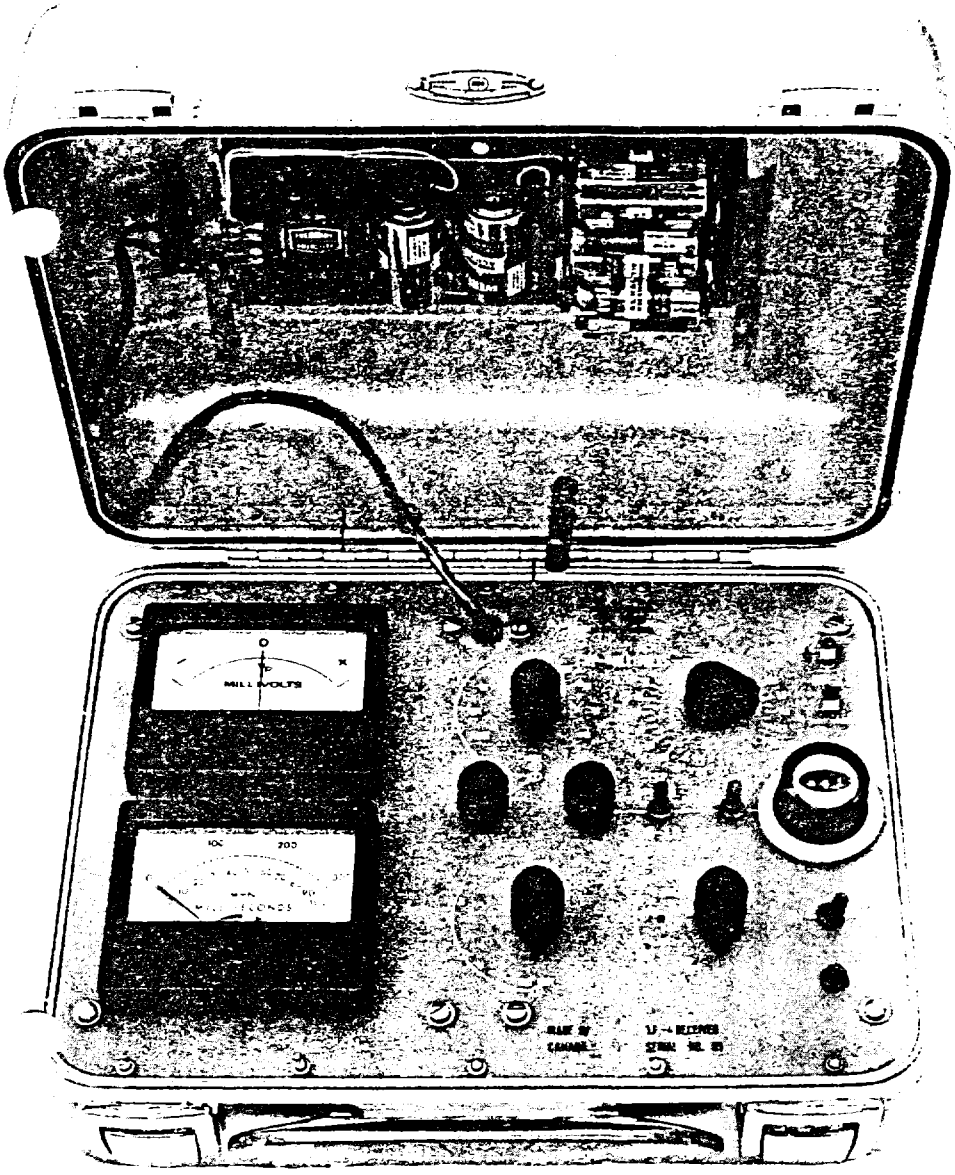
Robert S. Middleton, P.Eng.

CRONE GEOPHYSICS LIMITED

3607 WOLFEDALE ROAD,
MISSISSAUGA, ONTARIO,
CANADA
L5C 1V8
Cable: CRONGEO
Telephone: (416) 270-0096

Induced Polarization Receiver

NEWMONT DESIGNED - PULSE TYPE N-IV



A rugged I.P. Receiver designed for Simplicity of Operation and Reliability in the field.

INSTRUMENT SALES AND RENTALS

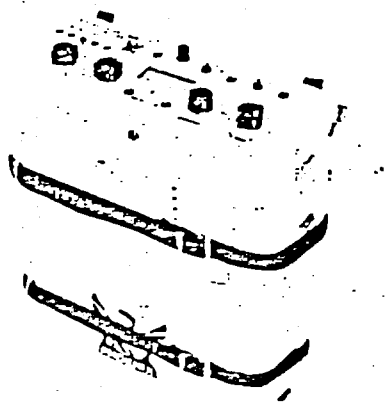
APEX MAXMIN I PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180 m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.

IPT-1

Variable Frequency, Time Doma and Phase IP Transmitter

- Reliable: Backed by twenty years experience in the design and worldwide operation of induced polarization and resistivity equipment
- Versatile: Can be used for resistivity, variable frequency IP, time domain IP or phase angle IP measurements
- Stable: Excellent current regulation
- Lightweight, portable
- Wide selection of power sources
- Low cost



Specifications

Power Sources	: Internal DC power module containing 8 45V dry cell batteries, or internal AC power module with external 1 KVA, 2 KVA or 3 KVA motor generator.
Ammeter Ranges	: 30 mA, 100 mA, 300 mA, 1A, 3A and 10A full scale.
Meter Display	: A meter function switch selects the display of current level, regulation status, input frequency, output voltage, control battery voltage or line voltage.
Current Regulation	: The change in output current is less than 0.2% for a 10% change in input voltage or electrode impedance.
Output Waveform	: Either DC, single frequency, two frequencies simultaneously, or time domain (50% duty cycle). Frequencies of 0.078, 0.156, 0.313, 1.25, 2.5, and 5.0 Hz are standard, whereas 0.062, 0.125, 0.25, 1.0, 2.0, and 4.0 Hz are optionally available. The simultaneous transmission mode has 0.313 and 5.0 Hz as standard, whereas 0.156 and 2.5 Hz are optional.
Frequency Stability	: ± 1% from -40° to +60°C is standard. A precision time base is optionally available for coherent detection and phase IP measurements.
Protection	: Current is turned off automatically if it exceeds 150% full scale or is less than 5% full scale.
Case	: Non-conductive, high impact resistant plastic.
Dimensions	: 20 x 40 x 55 cm (9 x 16 x 22 inches).
Weight	: 14 kg (31 lb) with DC power module. 16 kg (35 lb) with AC power module.
Standard Accessories	: Pack frame, manual. At least one of the two possible power modules is required. The AC power module in turn requires one of the external 1KVA, 2KVA or 3KVA motor generators and a connecting cable.

DC POWER MODULE (BPS-1)

Output Voltage	: 8 x 45V dry cell batteries (Eveready 482, Mallory 202 or equivalent) are switched in series or parallel to provide output voltag of 90V, 180V, and 360V.
Output Power	: Recommended maximum output power is 30 watts. Absolute maximum output pow is 100 watts.
Battery Life	: Normal field operation, with low output pow results in an average battery life expectancy one month. Operation with the absolute maximum output power results in much shor battery life.
Control Supply	: 4 x 6V lantern batteries (Eveready 409, Mall 908 or equivalent) connected in series/paral are used to provide the 40 to 70 mA required the control circuitry. Average battery life expectancy is six months.
Operating Temperature	: 0°C to + 60°C.

AC POWER MODULE (AC-3)

Output Voltage	: 0V, 75V, 150V, 300V, 600V and 1200V.
Output Power	: Maximum continuous output power is 3 k This requires the 3KVA motor generator.
Input Power	: 350 to 1000 Hz, 60V (45V to 78V) 3 phase is standard. 120V (90V to 156V) and/or single phase may be link selected inside the module
Current Regulation	: Achieved by feedback to the alternator of the motor generator unit.
Operating Temperature	: -40°C to + 60°C.
Thermal Protection	: Thermostat turns off at 65°C and turns back o at 55°C internal temperature.

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REVIEW

OF

GENESIS RESOURCES CORP. PROPERTY

IN

THE HOPPER LAKE AREA

OF

THE PORCUPINE MINING DIVISION

NORTHERN ONTARIO

J.K. Filo, HBSc. Geology

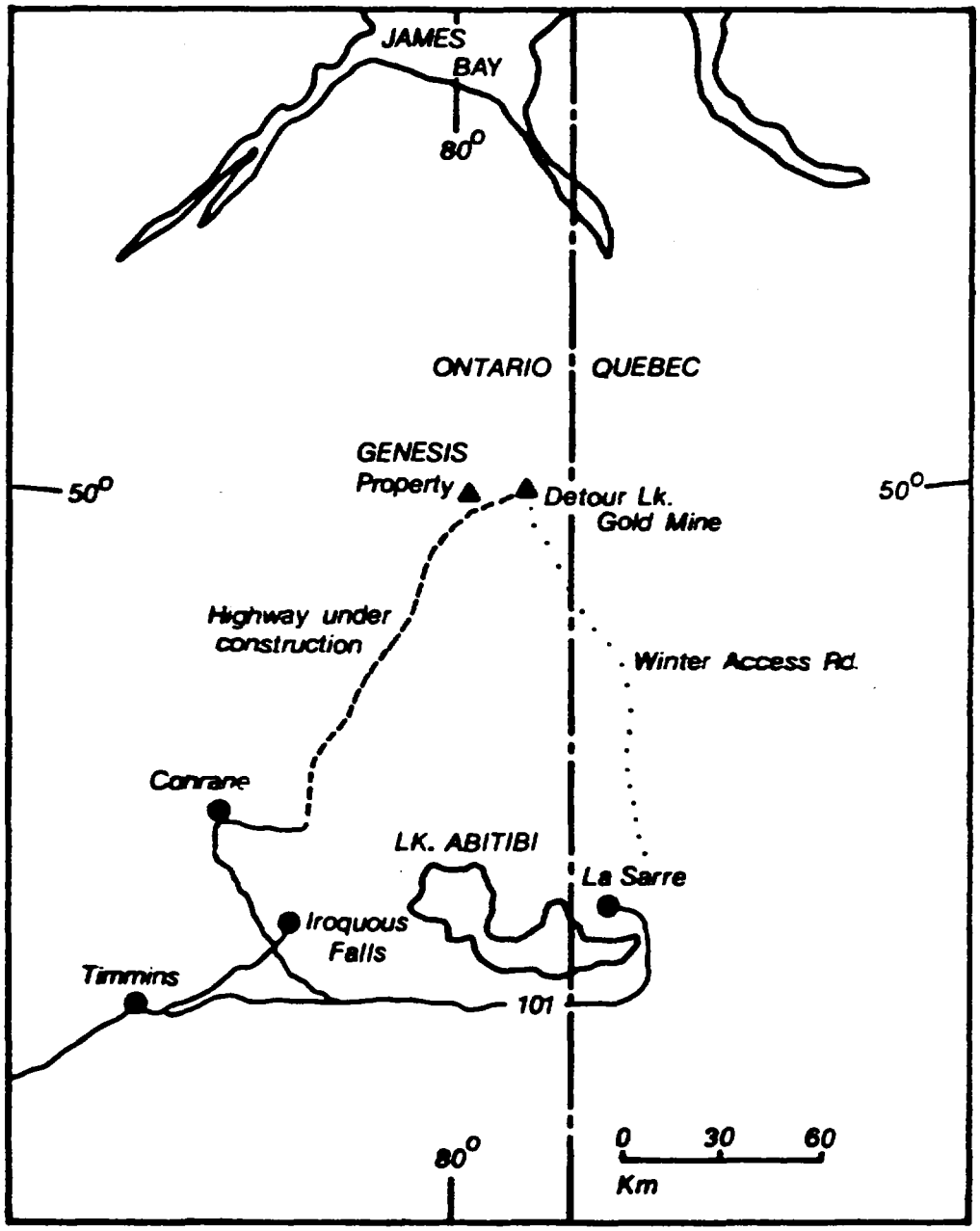


FIG 1

LOCATION MAP

ASSESSMENT WORK

In January 1984, Genesis Resources Corp. requested that all data on the Hopper Lake Property in the Detour Lake Camp be reviewed. The purpose of this investigation was to re-examine the work to date by Genesis and also note the results of previous geophysical surveys and diamond drill programs.

In the past, two companies worked on the ground that comprises the Genesis Property. These companies were Pennaroya (1972) and Noranda Exploration. The first company carried magnetic and electromagnetic surveys over the property but no drilling was carried out on the Genesis ground. In 1976 Noranda carried out a similar program over an extensive block of ground which included the Genesis Property.

Two conductors of interest were located and tested by Noranda on claims 424162 and 424159. (Appendix Map) These conductors are now located on Genesis claims 593841 and 593844 respectively. (Fig. #1 & 2) The exact location of D.D.H. H-77-2 is difficult to assess due to discrepancies in drill logs and geophysical data maps containing conductor axis. It appears that H-77-2 was put down to test a weak conductor adjacent to a lake in the northern part of claim 595841. (Assessment File T-1700) Hole H-78-2 was put down to test another conductor -- believed to be conductor "B" in the recent Genesis report. (T-2601)

In both instances graphite and pyrhotite were found to be the cause of the two conductors. No significant gold values were detected within these zones. However in D.D.H. H-77-2 an interesting horizon was encountered. An andesite tuff from 110' to 205' was noted to contain chlorite and an abundance of phlogopite mica and minor pyrite and pyrhotite (1%). This alteration and mineralization was found to contain anomalous gold values on the Global Energy

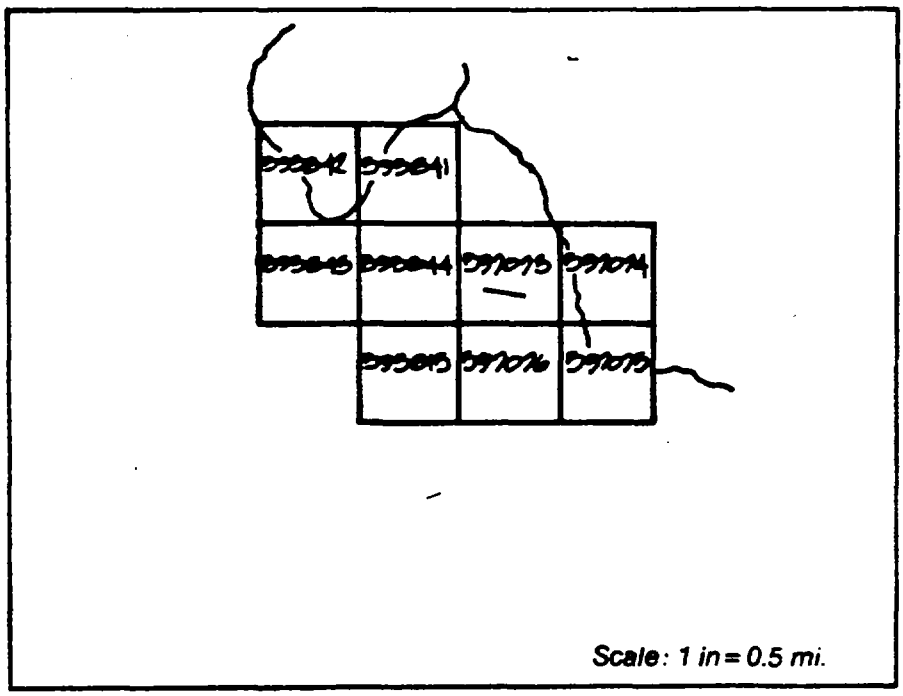


FIG. 2
INDEX MAP

GENESIS RESOURCES CORP. T-2601
Hopper Lake Area

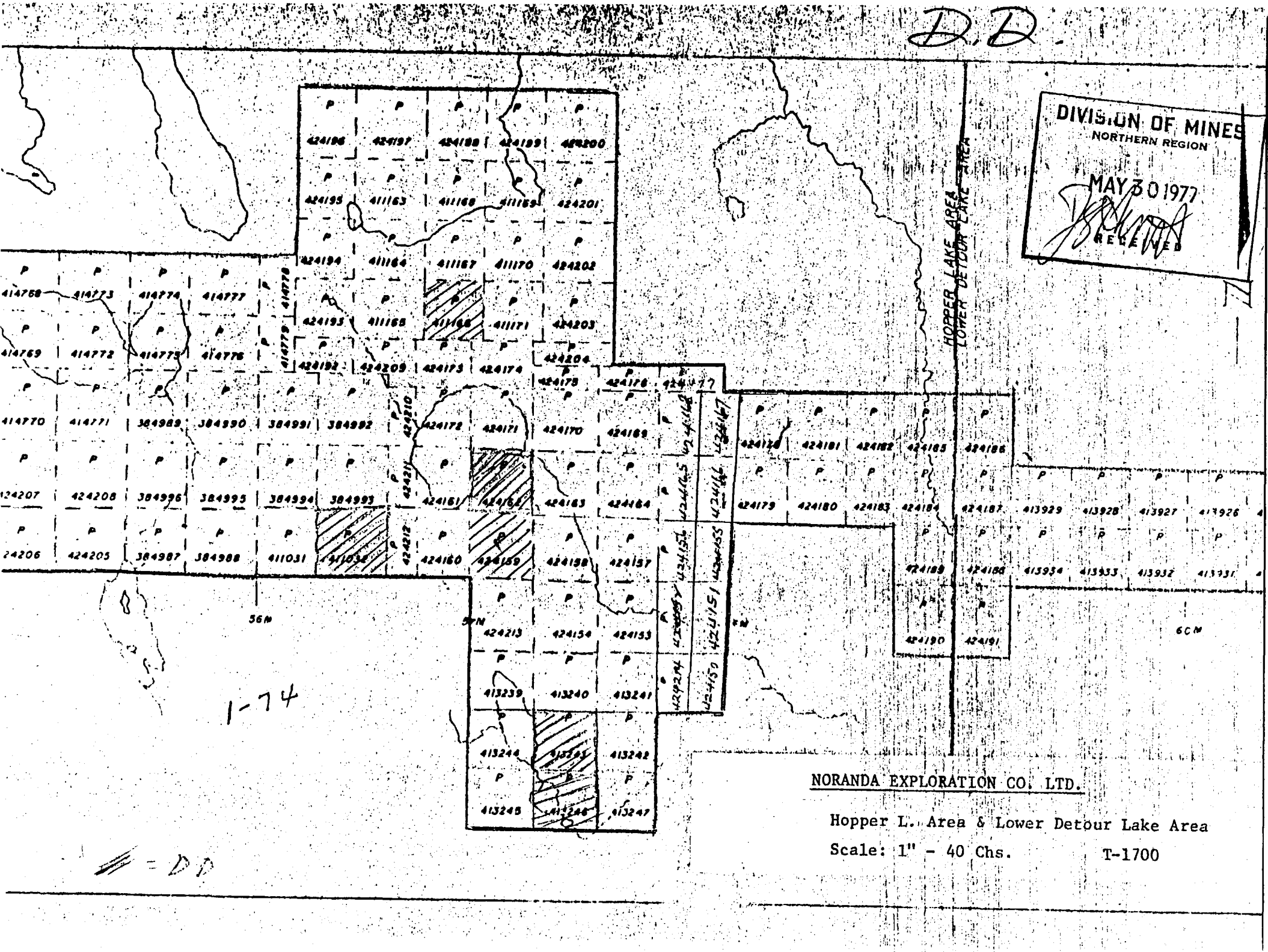
Property, and this type of alteration is also known to be associated with certain gold bearing horizons at the Detour Mine site.

These horizons of disseminated pyrhotite are easily overlooked by conventional E.M. systems. Thus further work on this property should include an I.P. survey over known magnetic highs and weak E.M. conductors. This type of survey would help to delineate a possible disseminated sulphide zone which may be associated with economic gold values.

Respectfully submitted,

J.K. Filo, HBSc. Geology

APPENDIX


D.D.
DIVISION OF MINES
NORTHERN REGION
MAY 30 1977
RECEIVED
HOPPER LAKE AREA
LOWER DETOUR LAKE AREA
56N
57N
58N
60N
1-74
= D.D.
NORANDA EXPLORATION CO. LTD.
Hopper L. Area & Lower Detour Lake Area
Scale: 1" - 40 Chs.
T-1700

DIAMOND DRILL CORE LOG

LATITUDE 7+00N

DEPARTURE L12W

ELEVATION surface

BEARING N40°E

DIP AT COLLAR -55°

TESTS DEPTH	DIP	MAGNETIC BEARING	CORRECTED BEARING
430'	31°		

TOTAL DEPTH OF HOLE 525.0'

PROPERTY Hopper Lake 1-74

CLAIM NO. P-424159

HOLE NO. H-78-2

CORE SIZE AQ

STARTED April 20, 1978

FINISHED May 4, 1978

CORE LENGTH

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC. WIDTH
0.0	150.0	CASING.			SAMPLES ON FILE AT							
150.0	158.0	GRAPHITE - banded to massive with pyrite and quartzite stringers			REGIONAL CORE LIBRARY							
		banding at 30° to core axis.										
158.0	166.5	ANDESITE - massive, fine grained, green-black coloration.										
166.5	174.5	GRAPHITE - pyrite stringers.	4921	TR	0.07					166.5	170.5	4.0
		170.0-175.0 - numerous quartz stringers	4922	NIL						170.5	175.0	4.5
174.0	193.0	DACITE TUFF OR FLOW - coarsely banded.										
		174.0-175.0 - disseminated pyrite. 179.0-182.0 - quartz veining.	4923	NIL	0.07					178.0	181.5	3.5
		190.0-193.0 - quartz veining	4924	NIL	0.05					190.3	193.5	3.2
193.0	200.0	GRAPHITE - pyrite stringers, quartz veining.	4925	NIL						197.5	200.5	3.0
200.0	241.0	DACITE TUFF OR FLOW - light grey in color with numerous graphite										
		bands. Banding at 50° to core axis. 200.0-229.0 - pronounced banding graphite becoming more	4926	TR	0.05					209.0	212.0	3.0
		frequent, giving an overall darker color to the rock. 223.3-225.0 - quartz veining.	4927	NIL						221.0	225.0	4.0
		229.0-232.0 - quartz veining, minor pyrite, tremolite.	4928	NIL	0.04					228.0	232.0	4.0

CONTRACTOR

LOGGED BY A. Dal Bello

ASSESSMENT WORK 1700

DIAMOND DRILL CORE LOG

PROPERTY Hopper Lake 1-74

HOLE NO. H-78

H-78-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	TO	ACC. WIDTH
		236.0-241.0 - quartz veining, minor pyrite.	4929	NIL						236.0	239.0	3.0
			4930	NIL						239.0	243.0	4.0
241.0	276.0	ANDESITE - dark grey-green coloration, fine grained.	4931	NIL	0.04					247.0	250.0	3.0
		247.0-275.0 - quartz veining, minor pyrite, tremolite.	4932	NIL	0.03					250.0	255.0	5.0
			4933	NIL						258.0	263.0	5.0
			4934	NIL	0.04					266.0	270.0	4.0
		270.0-276.0 - graphitic bands.	4935	NIL						273.0	276.5	3.5
276.0	525.0	DACITE with interbedded graphite.	4936	NIL	0.05		0.52	←		276.5	280.0	3.5
		277.0-283.0 - quartz veining with sphalerite, graphite	4937	NIL	0.05		0.55	←		280.0	283.0	3.0
		stringers and minor pyrite. 293.0-295.0 - graphite.										
		303.0-325.0 - graphite	4938	NIL	0.05					302.0	306.0	4.0
			4939	NIL	0.06					313.0	316.5	3.5
		319.0-320.0 - granular pyrite with minor sphalerite, minor graphite.	4940	TR	0.07		0.15			316.5	321.0	4.5
		333.0-346.0 - graphite, minor pyrite and sphalerite.	4941	TR	0.07					321.0	325.0	4.0
			4942	NIL	0.07		0.19			336.0	340.0	4.0
			4943	NIL	0.08					342.5	346.0	3.5
		349.0-350.0 - graphite	4944	TR	0.07					348.5	351.0	2.5
		355.0-360.0 - graphite with pyrite bands banding at 60° to core axis.	4945	TR	0.08					356.0	360.0	4.0
		363.0-365.0 - graphite with pyrite bands.	4946	NIL	0.08					362.0	365.0	3.0

ASSESSMENT WORK

DIAMOND DRILL CORE LOG

PROPERTY Hopper Lake 1-74

HOLE NO. H- -2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	ASSAYS AG OZ	ASSAYS % CU	ASSAYS % ZN	ASSAYS % NI	ASSAYS	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC. WIDTH
		369.0-370.0 - granular pyrite with minor graphite.	4947	NIL						369.0	370.5	1.5
		375.0-378.0 - graphite, minor pyrite.	4948	NIL	0.07					374.0	379.0	5.0
			4949	NIL						385.0	388.5	3.5
		412.0-419.0 - grahite, minor pyrite.	4950	NIL	0.16					407.0	413.0	6.0
		423.0-425.0 - graphite, minor pyrite banding at 50° to	4951	NIL	0.06					423.0	425.0	2.0
		core axis.										
525.0		END OF HOLE.										

ASSESSMENT WORK T-1700

DIAMOND DRILL CORE LOG

LATITUDE 12+00 North

DEPARTURE 8+00 West

ELEVATION

BEARING 360°

DIP AT COLLAR -55°

TESTS DEPTH	CORRECTED DIP	MAGNETIC BEARING	CORRECTED BEARING
175'	34°		

TOTAL DEPTH OF HOLE 334'

PROPERTY Hopper Lake 1-74 - Detour Lake Area

CLAIM NO. P-424162

HOLE NO. H-77-2

CORE SIZE AQ

STARTED March 1, 1977

FINISHED March 5, 1977

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	AG OZ	% CU	% ZN	% NI	CORE LENGTH FROM	CORE LENGTH TO
0.0	110.0	CASING.								
110.0	205.3	ANDESITE TUFF: Dark green to black coloured rock. Medium to medium fine grained with a mottled textured. Some thin bedding is evident generally at 40-45° to the core axis. Chlorite is the most common alteration mineral comprising 40% of the rock followed in abundance by a brownish micaeous mineral (phlogapite?). Possibly a few garnets occur sporadically throughout the section. 1% pyrite-pyrrhotite. Core takes on a blotchy appearance with depth alternating from dark to light coloured every few inches. 181.5'-188.0': Core is coarser grained. Relict amphiboles are visible. Garnet crystals up to ¼" diameter are prominant at 189.0', 191.9'-192.9'. Pyrite and chalcopyrite occur as smears on the slip faces.								
205.3	212.9	ANDESITE PORPHYRY: Sodic plagioclase and quartz phenocrysts up to ½" diameter set in an andesitic matrix similar to that above. plagioclase predominates and zonation is often visible and the show elongation in the direction of shearing. Upper and lower contact are both sharp and comformable with the bedding in the surrounding rock.								
212.9	213.3	ANDESITE TUFF: Similar to that from 110.0'-205.3'.								
213.3	220.7	ANDESITE PORPHYRY: Similar to that from 205.3'- 212.9'.								

CONTRACTOR MODERNE DIAMOND DRILLING

LOGGED BY R.J. Fraser

DIAMOND DRILL CORE LOG

PROPERTY Hopper Lake 1-74 - Detour Lake rea

HOLE NO. H-77-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	TO	ACC. WIDTH
220.7	221.4	ANDESITE TUFF: Similar to that from 110.0'-205.3'.										
221.4	224.8	ANDESITE TUFF: Lighter coloured thinly bedded mafic tuff. Biotite prominant in narrow bands. Bedding is quite distinct at 45° to the core axis. Some silification due to breakdown of feldspars during metamorphism.	4546	Tr.		0.01	0.02			221.4	224.8	3.4
224.8	254.5	ANDESITE TUFF: Similar to that from 110.0'-205.3'. Bedding more apparent and often contorted varying from 40° to 50° to the core axis. Becomes more siliceous with depth and the occasional lapilli sized fragment can be seen. Pyrite occurs as narrow stringers along the bedding planes.										
254.5	262.8	DACITE: Light grey to grey coloured rock. Fine grained to aphanitic, generally quite homogeneous in appearance. Has been extensively fractured and healed with carbonate cement. Foliation well defined at 45° to the core axis. Pyrite, up to 190, occurs as narrow stringers, disseminations and fracture fillings.										
262.8	263.7	GRAPHITIC SCHIST: Dark black coloured graphitic schist. Conductivity is poor except along individual planes of schistosity. Up to 5% pyrite as disseminations and narrow stringers.	4547	Tr		0.02	0.01			262.8	263.7	0.9
263.7	266.8	DACITE: Similar to that from 254.5'-262.8'.	12109	NIL			0.22			272.1	273.8	1.7
266.8	305.0	GRAPHITIC TUFF-BRECCIA: Dark black coloured rock with abundant graphitic material. Numerous tuff to breccia sized fragments of dacite are interalated within the graphite. Bedding is well preserved and is often contorted varying from 0 to 90° to the core axis.	4548	NIL		0.04	0.02			266.8	268.8	2.0
			4549	NIL		0.02	0.10			280.0	285.0	5.0
			4550	NIL		0.01	0.08			290.0	293.0	3.0

DIAMOND DRILL CORE LOG

PROPERTY Hopper Lake 1-74 - Detour Lake Area

HOLE NO. H-77-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	ASSAYS AU OZ	ASSAYS AG OZ	ASSAYS % CU	ASSAYS % ZN	ASSAYS % NI	ASSAYS	CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC. WIDTH
		Up to 10% pyrite is small masses, stringers and disseminations throughout the zone. Rare specks of chalcopyrite.	4551	Nil		0.01	0.06			302.5	305.0	2.5
		Conductivity variable from moderate to strong. 266.8'-266.9': 1" massive pyrite.										
		267.8'-268.3': 15% pyrite in irregular pods and masses. 272.1'-272.4': Semi-massive pyrite.										
		281.6'-282.5': Siliceous section with 15% pyrite. Extensively fractured. Possibly an interflow sediment.										
		298.6'-298.8': Extremely siliceous zone with 1-2% pyrite.										
305.0	308.0	DACITE: Similar to that from 254.5'-262.8'.										
		Finely mineralized with disseminated pyrite.										
308.0	332.2	RHYOLITE: Light grey coloured siliceous rock. Occasionally										
		lapilli to breccia sized fragments are visible. Schistosity moderately devleoped varying from 25°-45° to the core axis.										
		Very finely mineralized with pyrite. 313.6'-317.8': Weak graphitic zone with minor pyrite.	4552	Nil		N.D.	0.01			313.6	317.8	4.1
		@319.7': ½" seam of graphite mineralized with pyrite. @324.5': ½" of fault gouge.										
		326.0'-327.7': Numerous narrow seams of graphite. 331.1'-332.3': Quartz-carbonate vein with minor pyrite.	4553	Nil	0.01					331.1	332.2	1.1
		Intersected slightly down dip.										
332.2	334.0	GRAPHITIC TUFF: Poorly developed graphitic zone with minor stringers										
		and dissemination of pyrite.										
334.0		END OF HOLE.										

** GENESIS

Ministry of Natural Resources
Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

W. #18

The Min

W8406.00181 · 2.6709

32E13NW0008 2.6709 HOPPER LAKE

900

Type of Survey(s)
MaxMin II EM and Induced Polarization Surveys

Township or Area
Hopper Lake Area

Claim Holder(s)
Ingamar Explorations Limited

Prospector's Licence No.
T-836

Address
Cedar Hill, Connaught, Ont. P0N 1A0

Survey Company
Robert S. Middleton Exploration Services

Date of Survey (from & to)
Day 23 Mo. 01 Yr. 84 Day 15 Mo. 03 Yr. 84

Total Miles of line Cut

Name and Address of Author (of Geo-Technical report)
Robt. S. Middleton, Box 1637, Timmins, Ont. P4N 7W8

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other MaxMin l.p.	20
	Geological	
	Geochemical	

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ + 15 = Total Days Credits

Instructions
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: April 30/84

Recorded Holder or Agent (Signature)

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	595815	
	595841	
	595842	
	595843	
	595844	
	597073	
	597074	
	597075	
	597076	

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECORDED
APR 30 1984
Receipt No.

PORCUPINE MINING DIVISION
RECEIVED
APR 30 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

See Revised Statement

Total number of mining claims covered by this report of work: 9

For Office Use Only

Total Days Cr. Recorded: 180

Date Recorded: Nov 30, 1984

Date Approved as Recorded

Mining Recorder

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying
MAURICE HIBBARD CEDAR HILL
CONNAUGHT ONT. P.O. N.I.A.O

Date Certified: April 30/84

Certified by (Signature)

Assessment Work Breakdown

Man Days are based on eight (8) hour Technical or Line-cutting days. Technical days include work performed by consultants, draftsmen, etc..

Type of Survey	Technical Days		Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
MaxMin II EM and Induced Polarization	37.5	X 7 =	262.5	+	1	=	[illegible]	÷	9	=	29.16
		X 7 =		+		=		÷		=	
		X 7 =		+		=		÷		=	
		X 7 =		+		=	0	÷		=	

MaxMin II EM and I.P. Survey

Tim Howards	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Marc Sequin	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Kevin Dickenson	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Steve Anderson	Feb. 4,5,6,7,8&9/84
North Bay, Ont	- 6 days

TYPING & ASSEMBLING REPORT

Aldean Bonk	Jan. 27/84
Iroquois Falls	- 1 day
Sylvia David	Mar. 13/84
Connaught, Ont.	- .5 day
Marilyn Talon	Mar. 6&11/84
Timmins, Ont.	- 2 days

REPORT WRITING & SUPERVISION

R.S. Middleton	Mar. 2&3/84
Timmins, Ont.	- 1.5 days

DRAFTING & PLOTTING

Alan Wells	Mar. 3,4,12,24,&25/84
Timmins, Ont.	- 4.5 days

RESEARCH & WRITING REPORT

Kevin Filo	Jan. 23,24,25&26/84
Timmins, Ont.	- 4 days

Mining Lands Section

File No 2.6709

Control Sheet

TYPE OF SURVEY ✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

Checked lgd. L.D.

J. Hurst

Signature of Assessor

July 9/84

Date

1984 08 17

Your File: 181-84
Our File: 2.6709

Mr. Bruce Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

RE: Notice of Intent dated July 24, 1984
Geophysical (Induced Polarization)
Survey on Mining Claims P 595815 et al
in the Area of Hopper Lake

The assessment work credits, as listed with the above mentioned Notice of Intent, have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: (416) 965-6918

S. Hurst:mc

cc: Ingamar Explorations Limited
Cedar Hill
Connaught, Ontario
P0N 1A0

cc: Resident Geologist
Timmins, Ontario

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

Encl.

Ministry of Natural Resources
Ontario

Technical Assessment Work Credits

File: 2.6709

Date: 1984 07 24

Mining Recorder's Report of Work No.: 181-84

Recorded Holder: INGAMAR EXPLORATIONS LTD

Township or Area: HOPPER LAKE AREA

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 595842-43 597073 to 076 inclusive
Electromagnetic _____ days	
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization 20 days	
Other _____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological _____ days	
Geochemical _____ days	
Man days [X] Airborne [ ]	
Special provision [ ] Ground [X]	
[ ] Credits have been reduced because of partial coverage of claims.	
[ ] Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

[X] *not sufficiently covered by the survey* [ ] *Insufficient technical data filed*

P 595815-41-44

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical — 80; Geological — 40; Geochemical — 40; Section 77(19)—60.

828 (83/6)

Ministry of Natural Resources

Ontario

Aug 8/84

1984 07 24

Your File: 181-84
Our File: 2.6709

Mr. Bruce W. Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Enclosed are two copies of a Notice of Intent with statements listing a reduced rate of assessment work credits to be allowed for a technical survey. Please forward one copy to the recorded holder of the claims and retain the other. In approximately fifteen days from the above date, a final letter of approval of these credits will be sent to you. On receipt of the approval letter, you may then change the work entries on the claim record sheets.

For further information, if required, please contact Mr. R.J. Pichette at 416/965-4888.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3

for S. Hurst:mc

Encls.

cc: Ingamar Explorations Limited
Cedar Hill
Connaught, Ontario
PON 1A0

cc: Mr. G.H. Ferguson
Mining & Lands Commissioner
Toronto, Ontario

845

Ministry of Natural Resources
Ontario

Notice of Intent

for Technical Reports

1984 07 24

2.6709/181-84

An examination of your survey report indicates that the requirements of The Ontario Mining Act have not been fully met to warrant maximum assessment work credits. This notice is merely a warning that you will not be allowed the number of assessment work days credits that you expected and also that in approximately 15 days from the above date, the mining recorder will be authorized to change the entries on his record sheets to agree with the enclosed statement. Please note that until such time as the recorder actually changes the entry on the record sheet, the status of the claim remains unchanged.

If you are of the opinion that these changes by the mining recorder will jeopardize your claims, you may during the next fifteen days apply to the Mining and Lands Commissioner for an extension of time. Abstracts should be sent with your application.

If the reduced rate of credits does not jeopardize the status of the claims then you need not seek relief from the Mining and Lands Commissioner and this Notice of Intent may be disregarded.

If your survey was submitted and assessed under the "Special Provision-Performance and Coverage" method and you are of the opinion that a re-appraisal under the "Man-days" method would result in the approval of a greater number of days credit per claim, you may, within the said fifteen day period, submit assessment work breakdowns listing the employees names, addresses and the dates and hours they worked. The new work breakdowns should be submitted direct to the Land Management Branch, Toronto. The report will be re-assessed and a new statement of credits based on actual days worked will be issued.

1984 05 17

Your File: 181
Our File: 2.6709

Mr. Bruce W. Hanley
Mining Recorder
Ministry of Natural Resources
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

We have received reports and maps for a Geophysical (~~Electromagnetic~~ and Induced Polarization) Survey submitted on Mining Claims P 595815 et al in the Area of Hopper Lake.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)968-6918

A. Barr:mc

cc: Ingamar Explorations Ltd
Cedar Hill
Connaught, Ontario
P0N 1A0

INGAMAR EXPLORATIONS LIMITED

CEDAR HILL CONNAUGHT, ONTARIO P0N 1A0
TEL. (705) 433-3551 or (705) 264-3100
TELEX 067-81502

May 1, 1984

Mr. Fred Mathews
Ministry of Natural Resources
Land Management Branch
Whitney Block, Room 6450
Queen's Park
TORONTO, ONTARIO
M7A 1W3

SUBJECT: MaxMin II & Induced Polarization Surveys on Genesis Rec. Corp. property in Hopper Lake
Also Review of Genesis property by Filo

Enclosed please find two copies of the above surveys and also a Review Report of this property.

Sincerely,
INGMAR EXPLORATIONS LIMITED

A.E. Bonk, Bookkeeper
Enc.

** GENESIS

W.R. #181/84

Ministry of Natural Resources — Ontario

Report of Work
(Geophysical, Geological, Geochemical and Expenditures)

The Mining Act

Instructions: — Please type or print.
— If number of mining claims traversed exceeds space on this form, attach a list.
Note: — Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.
— Do not use shaded areas below.

Type of Survey(s): MaxMin II EM and Induced Polarization Surveys

Township or Area: Hopper Lake Area

Claim Holder(s): Ingamar Explorations Limited

Prospector's Licence No.: T-836

Address: Cedar Hill, Connaught, Ont. P0N 1A0

Survey Company: Robert S. Middleton Exploration Services

Date of Survey (from & to): 23 01 84 (Day Mo. Yr.) 15 03 84 (Day Mo. Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo-Technical report): Robt. S. Middleton, Box 1637, Timmins, Ont. P4N 7W8

Credits Requested per Each Claim in Columns at right

Special Provisions

For first survey: Enter 40 days. (This includes line cutting)

For each additional survey: using the same grid: Enter 20 days (for each)

	Days per Claim
Geophysical	
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other	
Geological	
Geochemical	

Days

Complete reverse side and enter total(s) here

	Days per Claim
Geophysical	
- Electromagnetic	
- Magnetometer	
- Radiometric	
- Other MaxMin I.p.	20
Geological	
Geochemical	

Airborne Credits

Note: Special provisions credits do not apply to Airborne Surveys

	Days per Claim
Electromagnetic	
Magnetometer	
Radiometric	

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures $ ____ + 15 = Total Days Credits ____

Instructions

Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: April 30/84 — Recorded Holder or Agent (Signature): Maurice Hibbard

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	595815				
	595841				
	595842				
	595843				
	595844				
	597073				
	597074				
	597075				
	~~597076~~				
	597076				

RECORDED
APR 30 1984
Receipt No.

PORCUPINE MINING DIVISION
RECEIVED
APR 30 1984
A.M. 7 8 9 10 11 12 1 2 3 4 5 6 P.M.

Total number of mining claims covered by this report of work: 9

For Office Use Only

Total Days Cr. Recorded: 180

Date Recorded: April 30, 1984

Date Approved as Recorded:

Mining Recorder: Stanley

Branch Director, Mining Recorder

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying

MAURICE HIBBARD CEDAR HILL
CONNAUGHT ONT. P.O.N.1.A.0

Date Certified: April 30/84

Certified by (Signature): Maurice Hibbard

Assessment Work Breakdown

Man Days are based on eight (8) hour Technical or Line-cutting days. Technical days include work performed by consultants, draftsmen, etc..

Type of Survey: MaxMin II EM and Induced Polarization

Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
37.5	X	7	=	262.5	+		=	[illegible]	÷	9	=	29.16

Type of Survey

Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

Type of Survey

Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

Type of Survey

Technical Days				Technical Days Credits		Line-cutting Days		Total Credits		No. of Claims		Days per Claim
	X	7	=		+		=		÷		=	

MAXMIN II EM and I.P. Survey

Tim Howards	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Marc Sequin	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Kevin Dickenson	Feb. 4,5,6,7,8&9/84
North Bay, Ont.	- 6 days
Steve Anderson	Feb. 4,5,6,7,8&9/84
North Bay, Ont	- 6 days

REPORT WRITING & SUPERVISION

R.S. Middleton	Mar. 2&3/84
Timmins, Ont.	- 1.5 days

DRAFTING & PLOTTING

Alan Wells	Mar. 3,4,12,24,&25/84
Timmins, Ont.	- 4.5 days

RESEARCH & WRITING REPORT

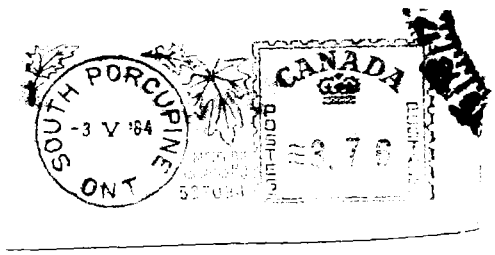
Kevin Filo	Jan. 23,24,25&26/84
Timmins, Ont.	- 4 days

TYPING & ASSEMBLING REPORT

Aldean Bonk	Jan. 27/8
Iroquois Falls	- 1 day
Sylvia David	Mar. 13/8
Connaught, Ont.	- .5 day
Marilyn Talon	Mar. 6&11
Timmins, Ont.	- 2 days

2.6709

595815	∅			597073	✓								
41	∅			74	✓				2				
42	✓			75	✓								
43	✓			76	✓								
44	∅												

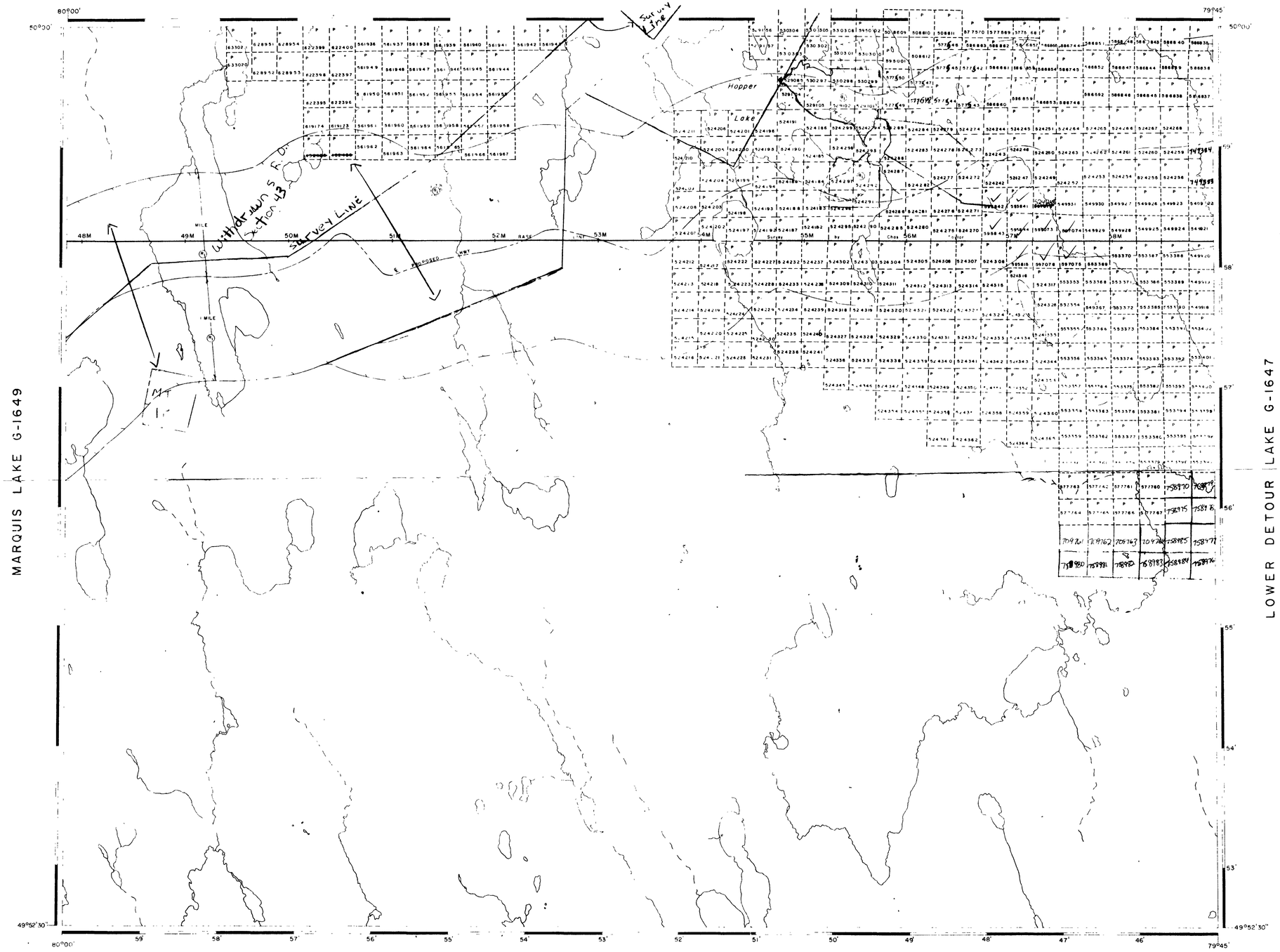


WEST OF SUNDAY LAKE G-1680

MARQUIS LAKE G-1649

LOWER DETOUR LAKE G-1647

LITTLE DETOUR LAKE G-1645



REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M R O MINING RIGHTS ONLY
S R O - SURFACE RIGHTS ONLY
M.+S. MINING AND SURFACE RIGHTS

Description	Order No	Date	Disposition	File
(43)	NR W 1181	157 R	SR	8851

SAND AND GRAVEL

(6) QUARRY PERMIT

(43) Withdrawn S.R.O. Section 43

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 OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

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	▼
ORDER IN COUNCIL	OC
RESERVATION	⊕
CANCELLED	⊗
SAND & GRAVEL	⊕

NOTE MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6 1913 VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT R.S.O. 1970 CHAP 380 SEC 63 SUBSEC 1

SCALE 1 INCH - 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

AREA

HOPPER LAKE

M N R ADMINISTRATIVE DISTRICT
COCHRANE

MINING DIVISION
PORCUPINE

LAND TITLES / REGISTRY DIVISION
COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

Date DECEMBER 1982

Number G-1636

498794

22N
20N
18N
16N
14N
12N
10N
8 N
6 N
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L4 E
L8 E
L12E
L16E
L20E
L24E
L28E
L32E
L36 E
L40 E
L44E
L48E
L52E
L56E

595842
595841
595844
595843
597073
597074
595815
597076
597075

N-3 N-2

16N
14N
12N
10N
8N
6N
4N
2N
B.L.0 00
2S
4S
6S
8S
10S
12S
14S

INDUCED POLARIZATION SURVEY
RX: CRONE MK. IV **TX:** PHOENIX IPT-1-2Kw
ARRAY: POLE-DIPOLE
A SPACING: 100' reading N2 & N3

2.6709

CLAIM INDEX MAP
1" = 1/2 mile

595842 595841 595844 595843 597073 597074 595815 597076 597075

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GENESIS RESOURCES CORP.		
	Title HOPPER LAKE AREA PORCUPINE MINING DIVISION		
	Induced Polarization Survey Chargeability, n2, n3 a=100'		
	Date: MARCH 84	Scale: 1"=200'	N.T.S.:
	Drawn: AW	Approved:	File:

210

INDUCED POLARIZATION SURVEY
RX: CRONE MK.IV TX: PHOENIX IPT-1-2Kw
ARRAY: POLE-DIPOLE
A SPACING: 100' reading N2 & N3

2.6709

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for **GENESIS RESOURCES CORP.**		
	Title HOPPER LAKE AREA PORCUPINE MINING DIVISION		
	Induced Polarization Survey Resistivity, n2, n3, a=100' Fig 5		
	Date: MARCH 84	Scale: 1"=200'	N.T.S.:
	Drawn: KW	Approved:	File:

220

HORIZONTAL LOOP SURVEY

INSTRUMENT: APEX MAX-MIN II
CABLE LENGTH: 100 metres
FREQUENCY: 1777Hz.

2.6709

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for GENESIS RESOURCES CORP		
	Title HOPPER LAKE AREA, PORCUPINE MINING DIV. Horizontal Loop Survey 1777 Hz. Fig.6		
	Date: March/84	Scale: 1" = 200'	N.T.S.:
	Drawn: A.W.	Approved:	File:

HORIZONTAL LOOP SURVEY
INSTRUMENT: APEX MAX MIN II
CABLE LENGTH: 100metres
FREQUENCY: 1777 Hz.

2.6709

REVISIONS	ROBERT S. MIDDLETON EXPLORATION SERVICES INC.		
	for **GENESIS RESOURCES CORP.**		
	Title HOPPER LAKE AREA, PORCUPINE MINING DIV.		
	Horizontal Loop Survey 444 Hz. Fig.7		
	Date March/84	Scale 1" = 200'	N.T.S.
	Drawn A.W.	Approved	File