LAFOREST-HLAVA EXPLORATION SERVICES LTD.

(705) 268-2511

P.O. Box 1163, TIMMINS, ONTARIO P4N 7H9

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REPORT

ON

GEOPHYSICAL SURVEYS

ON THE

PROPERTY OF

MARKBRIDGE RESOURCES LTD.

IN

MINNIPUKA TOWNSHIP

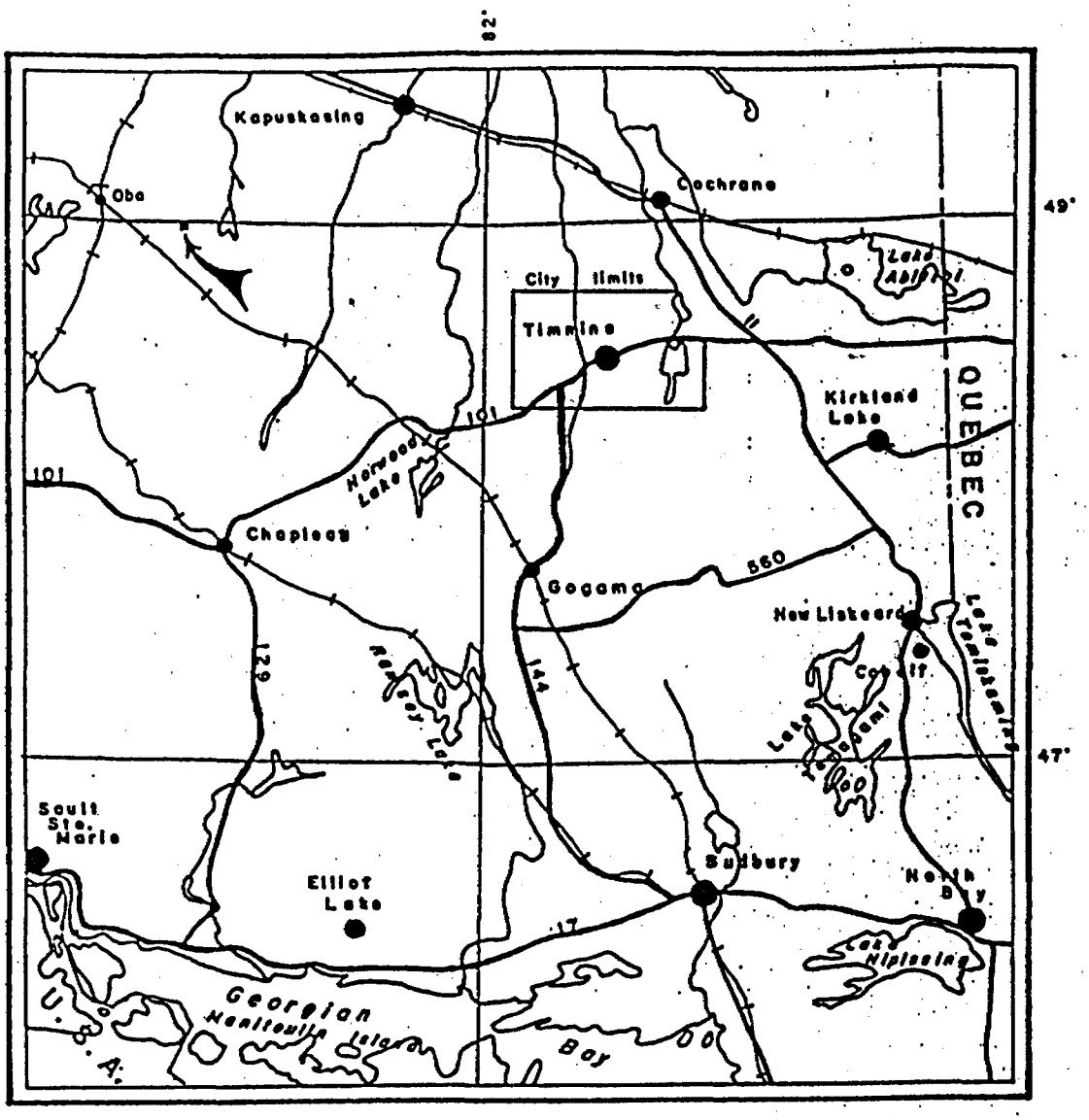
DISTRICT OF ALGOMA, ONTARIO

April 8, 1989
Timmins, Ontario

H.Z. Tittley, P.Eng.

Dual
63.2513

TABLE OF CONTENTS



KEY MAP

MARKBRIDGE RESOURCES LTD.

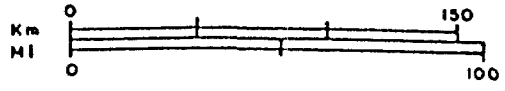
MINNIPUKA TOWNSHIP

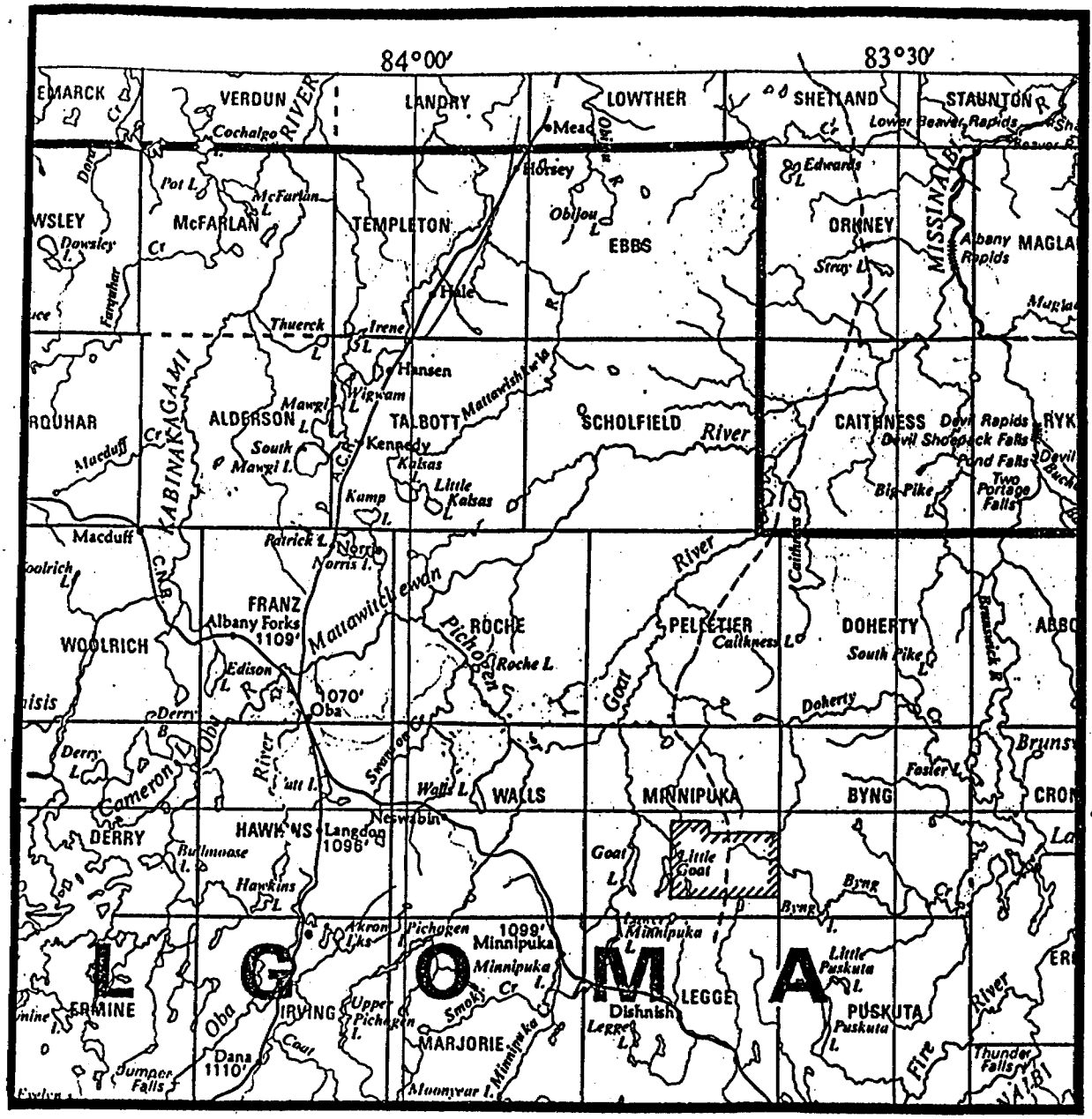
District of ALGOMA

PORCUPINE Mining Division

ONTARIO

SCALE





LOCATION MAP

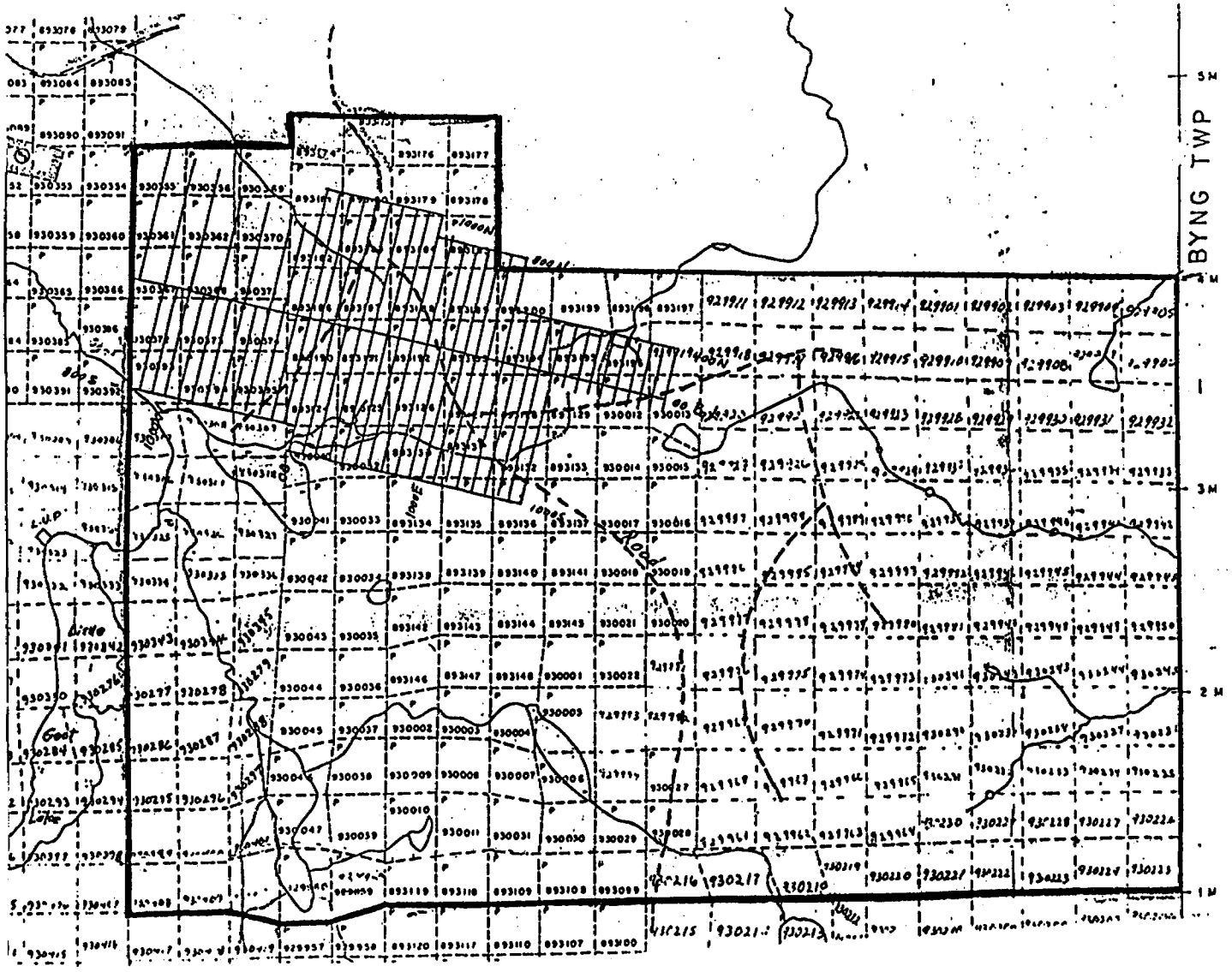
MARKBRIDGE RESOURCES LTD.

MINNIPUKA Township

District of ALGOMA

ONTARIO

Scale, 1:500,000



CLAIM MAP

MARKBRIDGE RESOURCES LTD.

MINNIPUKA Township

PORCUPINE Mining Division

ONTARIO

Scale, 1:50,000

REPORT
ON
GEOPHYSICAL SURVEYS
ON THE
PROPERTY OF
MARKBRIDGE RESOURCES LTD.
IN
MINNIPUKA TOWNSHIP
DISTRICT OF ALGOMA, ONTARIO

INTRODUCTION

Based on recommendations made by Jean Descarreaux, in his February 1988 report on the Minnipuka Township property of Markbridge Resources, geophysical investigations have been conducted in the northwest quarter of the property.

The work, consisting of a magnetic survey and a Max-Min horizontal loop electromagnetic survey, was executed by Laforest-Hlava Exploration Services Ltd. of Timmins, Ontario during February and March, 1989.

Airborne conductors running through the area are well tested. Apart from serving in the evaluation of the conductors, the magnetic data display alteration and structural features of possible interest.

PROPERTY, LOCATION & ACCESS

Markbridge Resources' Minnipuka property is a near-rectangular block consisting of 261 contiguous unpatented mining claims in Ontario's Porcupine Mining Division. Only those ~~43~~ 40 claims that are touched by the geophysical surveys fall within the scope of this report.

They are:

P-893124	to	P-893136	13
P-893182	to	P-893196	15
P-930012	to	P-930015	4
P-930032	and	P-930040	2
P-930361	and	P-930362	2
P-930370	and	P-930374	~~5~~ 2 Rm
and P-930395	and	P-939396 all inclusive.	2

The property lies in the southeastern quarter of Minnipuka Township in the District of Algoma, Northern Ontario. It is bounded on the east by the Minnipuka-Byng township line, between mile posts 1 and 4. The area of investigation lies in the central part of the township north of Little Goat Lake.

The region, known as Kapuskasing-Hearst, lies 200 kilometres northwest of Timmins and 140 kilometres northeast of Wawa, both, mining communities. Nearer communities include the railway town of Oba, the railway and logging town of Hearst, and the pulp and paper town of Kapuskasing which are respectively, 20 km west, 70 km north, and 100 km east-northeast of the property

The survey area and the overall property is intersected by a major forestry road that connects with the Trans-Canada Highway (11) at Hearst. Diverse partially abandoned branch roads extend all through the property. The area is also accessible from Oba which is joined to Highway 11 by the secondary road 583.

Oba is at the junction of Canadian National Railways' main transcontinental line and the Algoma Central railway that runs from Sault Ste. Marie to Hearst. The station of Minnipuka on the Canadian National line is 13 kilometres southwest of the survey grid.

TOPOGRAPHY

Minnipuka Township lies at the southwestern margin of the Abitibi Clay Belt of Northern Ontario and Quebec; an ancient lake bed where most of the relief is due to erosion. Near the survey area, along the north boundary of the property, there is a small ridge that rises over 30 metres above the surrounding plain. Three kilometres south of the gridded area, a prominent knoll rises 80 metres above two neighbouring lakes.

Much of the forest that covered the area has recently been harvested by open slash methods. Reforestation in the form of burns, scarification of the land, and planting is currently in progress.

The property is drained by Byng Creek to the east, North Dishnish Creek to the south, Little Goat River to the west, and two tributaries of the Goat River in the northern part, which includes the gridded area. All are tributaries of the Missinaibi River and part of the Hudson Bay - James Bay watershed.

HISTORY

Following construction of the main railway near the turn of the century, government geologists carried out early examinations of the area. In 1923, gold was discovered by loggers working 25 kilometres due west of the property, near the Algoma Central Railway in Hawkins Township. That area was mapped by T.L. Gledhill for Ontario Department of Mines in 1928.

Initial mapping in Minnipuka Township was done by J.E. Maynard in 1929. The north part of the township was examined during Operation Kapuskasing in 1966, and the southern half during Operation Chapleau in 1970. All these activities were sponsored by the Ontario government.

In 1979, Amax Mineral Exploration Ltd. flew an aeromagnetic survey over the townships of Walls and Minnipuka . Follow-up in 1981 consisted of ground checks, detail helicopter-borne magnetic/electromagnetic surveys and drilling of 14 holes across strong conductive zones. Four of the holes are on Markbridge's property, two of which are close together in the southern part of the grid.

Around 1984 to 1986, large tracks of land were staked across several townships including Minnipuka and the present claims. During the winter of 1986-1987, H. Ferderber Geophysics Ltd. of Val d'Or, Quebec flew the properties with basic airborne magnetic and VLF electromagnetic equipment on behalf of Golden Trio Minerals Ltd.

GEOLOGY

The general geology of the Oba Area consists of Archean basement granites, and supracrustal sedimentary-volcanic rocks in the form of narrow generally east-west-trending belts. All the rocks are intruded by granitic stocks and northeast an northwest-trending diabase dykes. This part of the Precambrian Shield is at the northern edge of the Wawa Subprovince of the Superior Province.

The northern half of Minnipuka Township is underlain by massive granitic rocks. The south half contains two east-southeast-trending intercalated volcanic-sedimentary belts both averaging 1.5 kilometre in width and separated by 3 kilometres of partially foliated and partially porphyritic granite.

Markbridge's Minnipuka property straddles the northerly belt as does the survey grid. Drilling in the southern part of the gridded area, intersected a band of sediments lying between the predominantly volcanic rocks to the north and granites.

SURVEY METHODS

Linecutting:

From a point situated approximately 100 metres north of Little Goat River along the west boundary of the property, the 800S tie line was cut in the direction of 105 degrees over a distance of 1200 m to line 00. The latter was extended from 1000S to 1000N and served to establish tie lines at thes extremities and the 00 base line at the centre. From the 00 base line, between 1200W and 2700E, lines 100 metres apart were extended in a grid north and grid south directions to the tie lines or other predetermined point. Between 400W and 1400W on the North side, lines are at 200 metre intervals. Altogether, 8.7 km of tie line and base line, and 56.2 km of cross line were established with stations at 25 metre intervals.

Magnetic Survey:

The magnetic survey was conducted over all the grid lines with a Geometrics model G-816 proton precession magnetometer. Readings were taken at 12.5 m intervals and corrected for diurnal variations by applying values obtained from observing stations along the base line that had been read previously in a series of closed loops.

The main magnetic base is at station 00 on the 00 base line where the assigned total field value is 58,743 gammas.

SURVEY METHODS.....continued

Electromagnetic Survey:

The electromagnetic survey was conducted along the cross lines with an APEX Parametrics Model Max-Min II horizontal loop unit. Using 444 and 1777 hertz, observations were made at 25 metre intervals with a coil separation of 100 metres.

RESULTS

Magnetic Survey:

The magnetic survey results are plotted and contoured on the accompanying plan entitled 'Magnetic Survey' at a scale of 1:5000. The total range of 10,500 gammas is due mainly to a series of sharp highs and lows occurring as narrow bands.

The majority of features can be placed in five susceptibility ranges. The first range covers the overall background of 1020 gammas. A second range is represented by a series of highly magnetic anomalies that trend easterly across the length of the grid. The third range consists of 3 north-northwest zones in the central part of the grid. Range 4 is an area of generally higher background extending across the southerly part of the grid beginning with, and continuing south of, the main magnetic band. The fifth range is a depression running from the north end of line 200W to 125N on line 1300E. A somewhat similar but strataform range follows the base line in the centre of the grid.

Based on the writer's experience and current knowledge, range 2 can be interpreted as sulphide-bearing iron-formation, 3 as diabase dyke, and 5 as an alteration zone. The latter is topographically visible running diagonally across Minnipuka Township.

RESULTS.....continued

Electromagnetic Survey:

The results of the horizontal loop survey are plotted and profiled on two accompanying maps entitled 'Max-Min II H.E.M. Survey, 1777 Hz' and 'Max-Min II H.E.M. Survey, 444 Hz' at a scale of 1:5000. Interpretation and evaluation of the conductors is shown on the 1777 Hz plan. A ratio representing the relative conductivity of selected anomalies is shown on the plan near the interpreted intercept. The value is derived from a combination of the high and low frequencies and in-phase and out-of-phase components.

Although 15 conductors, labelled A to O, are shown on the plan, they appear to represent only 7 stratigraphic horizons.

With the exception of anomaly F, all conductors have a magnetic association. Where the intensities exceed 4000 gammas, magnetite should be present. Since magnetite alone doe not usually account for these type of E.M. responses, pyrrhotite and graphite are also suspected. Based on the strength of the anomalies, many combinations are possible; all of which could host economic minerals.

Anomaly F is quite different. Apart from lacking magnetic association it has irregular profiles, suggesting a non-tabular source, and very high conductivity. Since flaky graphite was encountered in Amax drilling in Walls Township, this mineral is the most likely cause. In other environments however, EM conductors with no quadrature response were found associated with pentlandite mineralization. Pyrolusite, an ore of manganese, is reportedly very conductive also.

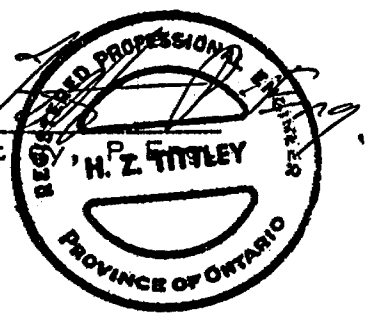
CONCLUSIONS & RECOMMENDATIONS

As previously mentioned in J. Descarreaux' report, the property has potential for base and precious metals. The geophysics have outlined probable areas for both types of mineralization. They should add considerably to the existing data base on the property.

Since conductor F appears to be located in a difficult area, at the base of a ridge, it should be examined in greater detail before drilling. The northwesterly magnetic low should be covered by VLF electromagnetics using station NSS, followed by drilling of the principal electrical axis.

Respectfully submitted,

H. Z. Titley, P. Eng.



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Ontario

900

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Mining Lands Section
880 Bay Street, 3rd Floor
Toronto, Ontario
M5S 1Z8

Telephone: (416) 965-4888

September 7, 1989

Your File: W8906-353
Our File: 2.12542

Mining Recorder
Ministry of Northern Development and Mines
60 Wilson Avenue
Timmins, Ontario
P4N 2S7

Dear Sir:

Re: Notice of Intent dated July 31, 1989 Geophysical (Electromagnetic & Magnetometer) Survey submitted on Mining Claims P 893200 et al in Minnipuka Township.

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,

W.R. Cowan
Provincial Manager, Mining Lands
Mines & Minerals Division

KS LS:eb
Enclosure

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

Golden Trio Minerals Ltd.
Toronto, Ontario

H.Z. Tittley
Timmins, Ontario

Henry Hutteri
Timmins, Ontario

Resident Geologist
Timmins, Ontario

Ministry of Northern Development and Mines

Ontario

Technical Assessment Work Credits

File: 2.12542

Date: July 31, 1989

Mining Recorder's Report of Work No.: W8906-353

Recorded Holder: GOLDEN TRIO MINERALS LTD.

Township or Area: MINNIPUKA TOWNSHIP

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
Geophysical	P 893200 893180-81 930309 930355-56 930367-68 930371 to 373 incl. 930393-94
Electromagnetic 7.0 days	
Magnetometer 7.5 days	
Radiometric ____ days	
Induced polarization ____ days	
Other ____ days	
Section 77 (19) See "Mining Claims Assessed" column	
Geological ____ days	
Geochemical ____ days	
Man days ☐ Airborne ☐	
Special provision ☒ Ground ☒	
☒ 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

☐ not sufficiently covered by the survey ☐ insufficient technical data filed

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; Geologocal - 40; Geochemical - 40; Section 77(19) - 60.

Ministry of Northern Affairs and Mines

Ontario

Report of Work

(Geophysical, Geological, Geochemical and Expenditures)

DOCUMENT No. W 8906.353

Mining Act 2.12542

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): Magnetometer and Max Min II

Township or Area: Minnipuka Township

Claim Holder(s): Golden Trio Minerals Ltd.

Prospector's Licence No.: T-720

Address: 1404-141 Adelaide Street West, Toronto, Ontario M5H 3M7

Survey Company: Laforest-Hlava Exploration

Date of Survey (from & to): 01 02 89 (Day Mo. Yr.) 31 03 89 (Day Mo. Yr.)

Total Miles of line Cut:

Name and Address of Author (of Geo-Technical report): H. Z. Tittley P. O. Box 1163, Timmins, Ontario P4N 7H9

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	~~20~~ 10
	Geophysical - Magnetometer	~~20~~ 10
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	
	Geochemical	

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

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

RECEIVED
JUL 25 1989
MINING LANDS SECTION

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	893200	40
	893180	40
	893181	40
	893309	40
	930355	40
	930356	40
	930367	40
	930368	40
	930371	40
	930372	40
	930373	40
	930393	40
	930394	40

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

RECEIVED
JUL 24 1989
MINING LANDS SECTION

RECORDED
JUL 24 1989

PORCUPINE MINING DIVISION
RECEIVED
JUL 24 1989
1:50 P.M.

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.

*Max Reached See (Section 77-9)

Note: Above claims were omitted from original Report of Work (2.12542)

Total number of mining claims covered by this report of work: 13

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
260	JULY 24/89	S. White
	Date Approved as Recorded	Branch Director
	See revised work statement L/C.	

Date: July 24, 1989

Recorded Holder or Agent (Signature): Henry Hutteri

Certification Verifying Report of Work

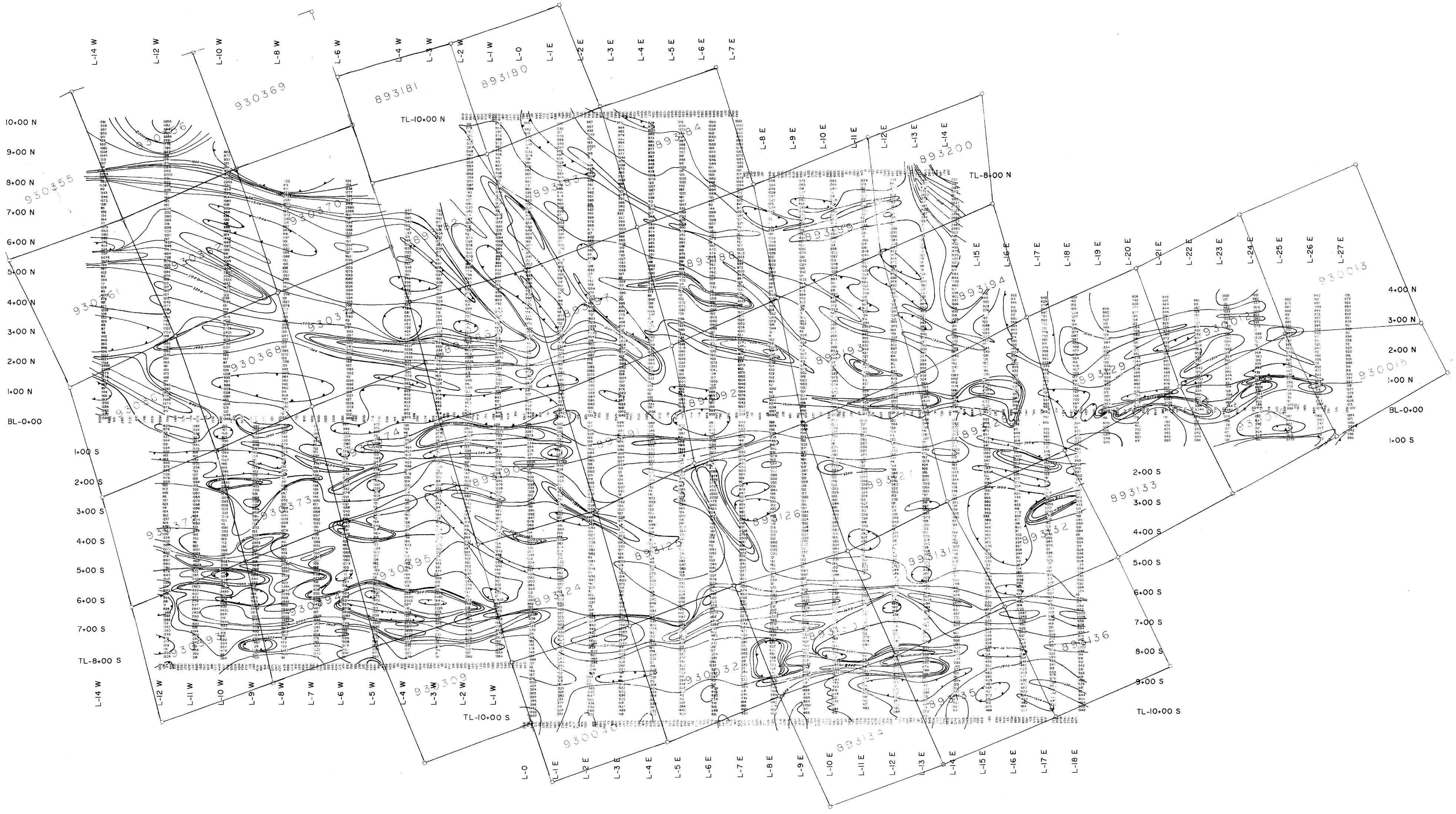
I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: Henry Hutteri, Box 1330, Timmins, Ontario P4N 7J8

Date Certified: July 24/89

Certified by (Signature): Henry Hutteri

1362 (85/9)



MAGNETIC SURVEY

CONTOURS

GAMMAS

2.12542

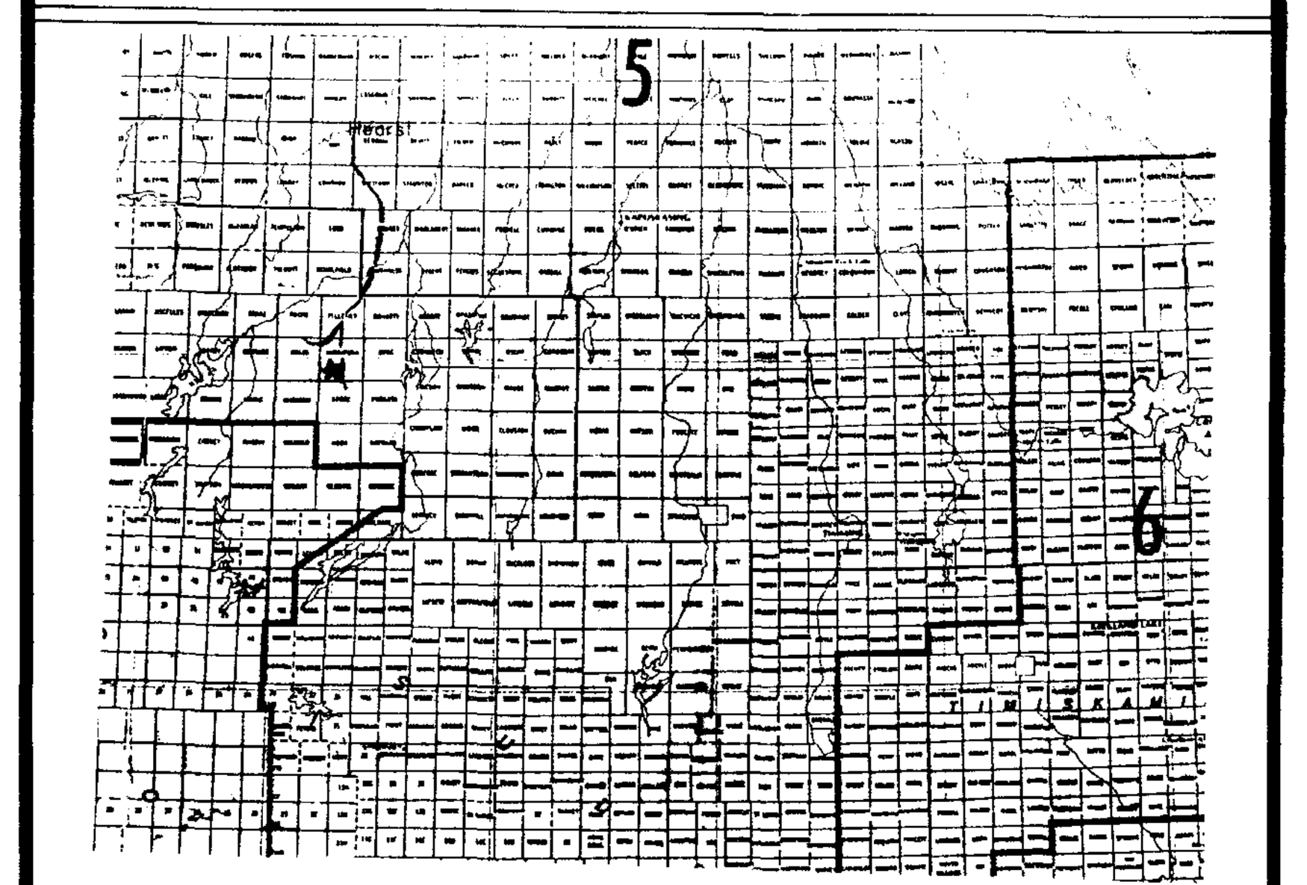
GROUP A

MARBRIDGE RESOURCES LTD.

Contoured by: H. Z. Tittley

Drawn by: Shirley Groulx

PROPERTY LOCATION MAP



MAX-MIN II H.E.M. SURVEY

Frequency 444 Hz
Coil Separation: 100 Meters

Profile: In Phase
Out Phase

I.P. | O.P.

2.12542

GROUP A

MARKBRIDGE RESOURCES LTD.

Bruce Pigeon Shawn Ryan

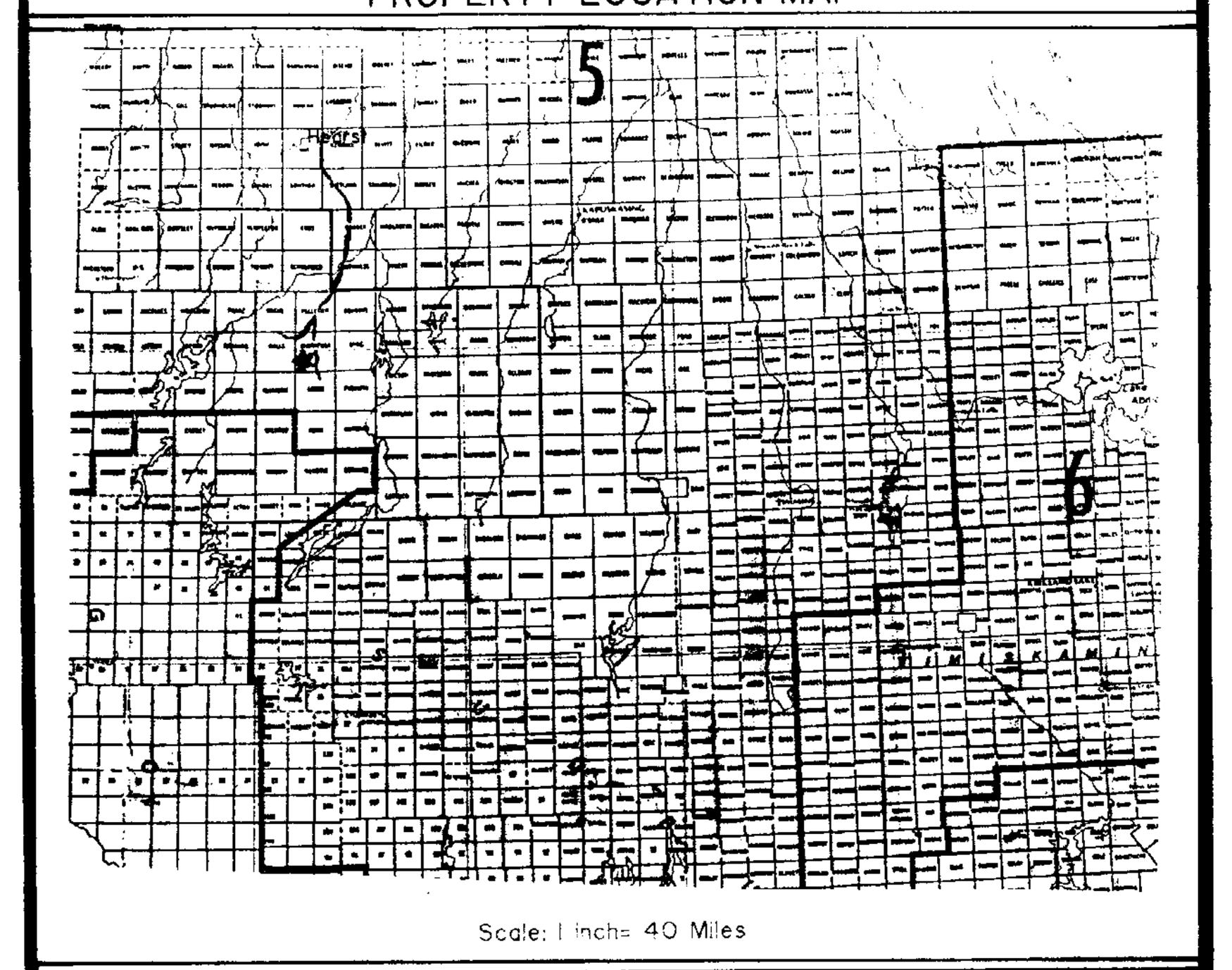
Apex Parametrics

Feb. 1989

42B13NE0205 2.12542 KINNIPUKA

210

PROPERTY LOCATION MAP



Scale: 1 inch = 40 Miles

MAX-MIN II H.E.M. SURVEY

Frequency 1777 Hz
Coil Separation: 100 Meters

Profile:
In Phase
Out Phase

I.P. | O.P.

(M) = Conductor designating and rating

R 1.0= Ratio, perfect conductor

2.12542

GROUP A

Bruce Pigeon Shawn Ryan

Apex Parametrics | Feb. 1989

42B13NE0205 2.12542 MINNIPUKA

220