REPORT ON THE GEOPHYSICAL SURVEY
POLY ORE MINING COMPANY LIMITED
HAGGARTY, FRECHETTE AND HOTHAM ISLANDS
NORTH CHANNEL, LAKE HURON, ONTARIO

PROPERTY LOCATION

The property consists of the following claims :

Notham Island: 18 claims numbered SSM25233 to 25250,
Frechette and Haggarty Islands: 29 claims numbered
SSM 24234 to 24239, SSM 31785 to 31800, and SSM48200 to 48206.

The Islands are located in the North Channel of Lake Huron in the Sault Ste. Marie Mining Division, about five miles south-east of Spanish, Ontario.

GENERAL DESCRIPTION OF THE AREA

There is very little topographical relief, with a maximum of about twenty-five feet elevation above the lake. The overburden appears to be very thin and is composed mostly of sand and gravel, and there is a great deal of exposed bedrock. Betty Lake, about fifty acres in extent, is enclosed by Frechette Island, and the claims also include a considerable area under the water of Lake Huron.

GEOLOGY

Report by Mr. Michael Ogden of Halet, Broadhurst and Ogden, Geological and Mining Consultants and Mr. Mr. F.G.Huycke, Mining Engineer, and others indicate that there are several veins of quartz and calcite heavily mineralized with chalcopyrite and other copper minerals and with values in gold, silver and tungsten. Details of the geology will not be dealt with here since they are available in other reports but the above mention of the copper mineralization was made since it is the basis for the proposal of the electromagnetic survey. Chalcopyrite in massive form is an electrical conductor and if a deposit is large and continuous enough it can be detected by an electrical survey even though it be covered by many of overburden, water or rock.

PREVIOUS WORK ON THE PROPERTY

As far as is knownthere was no geophysical work done on the property before this survey. There has been considerable trenching and some diamond drilling to test the veins and details of this work are available inthe recent geological reports referred to above.

The results of the previous work was a recommendation for a greater expenditure for diamond drilling and further development of

the property, preceded by a detailed geophysical survey to aid in the spotting of drill holes. The electromagnetic technique has been used with great success in many mining areas to locate and outline deposits of minerals such as pyrrhotite, chalcopyrite, and other sulphides which are good electrical conductors and it was chosen as the best method in this instance since some of those minerals were known to be present in the veins.

THE ELECTROMAGNETIC SURVEY

GENERAL DESCRIPTION : The inductive electromagnetic survey method is designed to detect electrical conductors. The conductors sought are massive or heavily disseminated sulphides but it must be kept in mind that there are some other conductors that could react to the survey such as graphite, certain wet faults or shears, massive magnetite etc. all of which would give anomalies in any electrical survey. A great advantage of this method over other electrical methods, and the reason that it was used here, is that usually overburden conditions have no effect. This is because there is no direct contact with the ground by electrodes and so the method can be used over very wet, very dry or frozen ground, bare rock, or lakes, frozen or otherwise. The latter is very important in this case since some of the area surveyed was under water.

The field method consists of setting up an alternating magnetic field by means of a motor driven generator an a vertical coil called the transmitter and then measuring distortions of the field, caused by buried conductors, at stations along picket lines.

With no conductor present the measured field would always be horizontal at the receiver and the angle of the dip would be recorded as zero degrees. If a conductor is present the field would no longer be horizontal and the angle of the dip would be recorded as degrees north or degrees south. If a traverse is made from north to south over a conductor, the dip angles will changes from degrees north to degress south (a condition called a "cross-over") with the zero dip being at the electrical axis, generally vertically over the conductor axis. The values of the dip angles are studies and an interpretation can be made as to location and attitude of the conductor. It is also possible to tell something qualitative about its conductivity, which is partly determined by how massive or disseminated the conducting material is.

The instrument used was a Sharpe Model SE-100 which operate at a frequency of 1000 cycles per second. It has a useful range of

about 1200ft and can probably detect good conductors buried 400 feet deep.

An unusual feature of this survey was the taking of readings over those parts of the property covered by water as shown on the accompanying map. This is a normal operation on the ice in the winter but at this time of the year it calls for some exacting boating and teamwork among the crew. The result is a virtual extension of the grid over the water.

RESULTS

The results of the electromagnetic survey are plotted on the accompanying maps. At a scale of 1 inch=200 feet the actual dip angles from all set-ups are plotted and the location of conductors are shown.

Hotham Island: The part of Hotham Island covered by this survey was tested for conductors from a total of sixteen electromagnetic set-ups. As can be seen there is only one reading over 4 degrees and most are only 3 degrees or less. Readings over a barren area are usually about this size but are completely haphazard, while in this area there is sufficient continuity of the pattern from line to line to conclude that the results are not completely negative.

There appear to be five weak conducting zones as outlined on the map. The readings are not high enough to allow any estimate regarding the dip or depth extent but it is probable that all the zones outlined begin at or very near the surface. It is unlikely that they are caused by unepxosed veins since the exposed vein did not react to the survey but they are most likely reflections of structural features.

FRECHETTE AND HAGGARTY ISLANDS : These islands were examined from a total of twenty-one set-ups with similar results to those of Hotham Island. Again there is just sufficient continuity of the pattern to outline five very weak conducting zones and the above remarks apply as regards interpretat

If a conductor large enough to be of commerical size were in the area, the readings would probably have been in the order of 10 or 15 degrees or larger. However, the fact that is now believed that such a conductor does not exist does not eliminate the possibility of ore being found. As was pointed out earlier ub this report, the electrical conductors that can be detected are massive or heavily disseminated sulphides as well as certain structural features. This survey has probably eliminated the possibility of finding massive or heavily disseminated sulphides but there still remains the chance of discovering more sparsely disseminated sulphides that could be ore if in large

enough amounts. Of course there has been essentially no change in the possibility of there being ore grades in gold, silver of tungsten since neither a rich gold or silver ore, nor a rich deposit of scheelite could be detected by an electrical survey.

RECOMMENDATIONS

Normally these results would not prompt the recommendation of diamond drilling. However, previous geological studies have indicated that there is sufficient cause for the expenditure of a considerable sum for drilling and other exploratory work. Therefore, it is recommended that at least some of the proposed drilling be done to test the conducting zones in each areas so that their effects overlap, and since the readings were all so small, it is not possible to predict a dip of the conductors. Therefore, drilling should be guided by regional dip observed at nearby outcrops.

If the conducting zones are in fact the reflections of structual features as it is suspected, then it may be profitable to drill them since features may be a control in the deposition of mineralization such as gold, silver or scheelite.

Respectfully submitted,

E. M. Spencer
Geophysicist for
HOPKINS EXPLORATION CONSULTANTS

63.731

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POLY ORES MINING COMPANY LIMITED

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NORTH CHANNEL, LAKE HURON, ONTARIO

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Respectfully submitted,

E. M. Spencer

E. M. Spencer
Geophysicist, for
HOPKINS EXPLORATION CONSULTANTS

EMS/vt

Your Ref: 63.731

HOTHAM ISLAND

The following man-days were expended on an electromagnetic survey carried out on the 18 mining claims of Poly Ores Mining Company Limited, numbered SSM-25233-25250 inclusive as follows:

POSITION	NAME	ADDRESS	FROM TO	MAN-DAYS
Linecutting:				
Foreman	W. Unterberger,	607, 320 Bay St. Toronto.	20-30 Apr.'56	11
Cutters	N. Kauric	" "	20-30 Apr.'56	11
	G. Sigismondi	" "	20-30 Apr.'56	11
	W. Lokay	" "	20-30 Apr.'56	11
	G. Tonelli	" "	20-30 Apr.'56	11
	D. Jocham	" "	20-30 Apr.'56	11
				66
Geophysics:				
Consultant	E.M. Spencer	607, 320 Bay St.	29-31 May'56	3
Fieldmen	W. Lokay	" "	9-19 May'56	11
	G. Edwards	Chapleau Ont.	9-19 May'56	11
	G. Sigismondi	607, 320 Bay St.	9-19 May'56	11
Engineer	A. Hopkins	" "	21-Apr.&9-May	2
Drafting	W. Unterberger	" "	28-30 May'56	3
Typing	V. Toushan	" "	1st June '56	1
				42
			Grand total	108

108 X 4 = 432 Man-days

$\frac{432}{18}$ = 24 Man-days per claim

Line Mileage: 8 miles
Line Interval: 400 feet

This is certified correct:-

Albert Hopkins
HOPKINS EXPLORATION CONSULTANTS

Toronto Ont.
15th June, 1956

The following man-days were expended on an electromagnetic survey on Frechette and Haggarty Islands in the North Channel of Lake Huron on 29 claim Nos. SSM 24234 to 24239 inclusive, 48200-6 incl. and SSM 31785 to 31800 inclusive. The breakdown of this work for Poly Ores Mining Company Limited is as follows:

LINE-CUTTING

POSITION & NAME	ADDRESS	FROM TO	MAN-DAYS
Foreman			
W. Unterberger	607, 320 Bay St. Toronto Ont.	May 1-10/56	10
Cutters			
G. Sigismondi	" " "	May 1-10/56	10
N. Kaurio	" " "	May 1-10/56	10
G. Tonelli	" " "	May 1-10/56	10
D. Jocham	" " "	May 1- 3/56	3
W. Lokay	" " "	May 1-10/56	10
			53

GEOPHYSICS

Consultant			
E. N. Spencer	607, 320 Bay St. Toronto Ont.	June 23-29/56	7
Fieldmen			
N. Clogg	Chapleau Ontario	May 11-20/56	10
N. Clogg	" "	June 4-16/56	13
G. Edwards	" "	May 10-20/56	11
W. Lokay	607, 320 Bay St. Toronto Ont.	May 11-20/56	10
W. Lokay	" " "	June 4-22/56	19
G. Sigismondi	" " "	May 11-20/56	10
Engineer G. Sigismondi	" " "	June 4-22/56	19
A. Hopkins	" " "	June 4,7,23,24,25,27.	6
Drafting			
W. Unterberger	" " "	June 22-28/56	7
Typing			
Miss V. Toushan	" " "	June 28-29/56	2
			114
		GRAND TOTAL	167

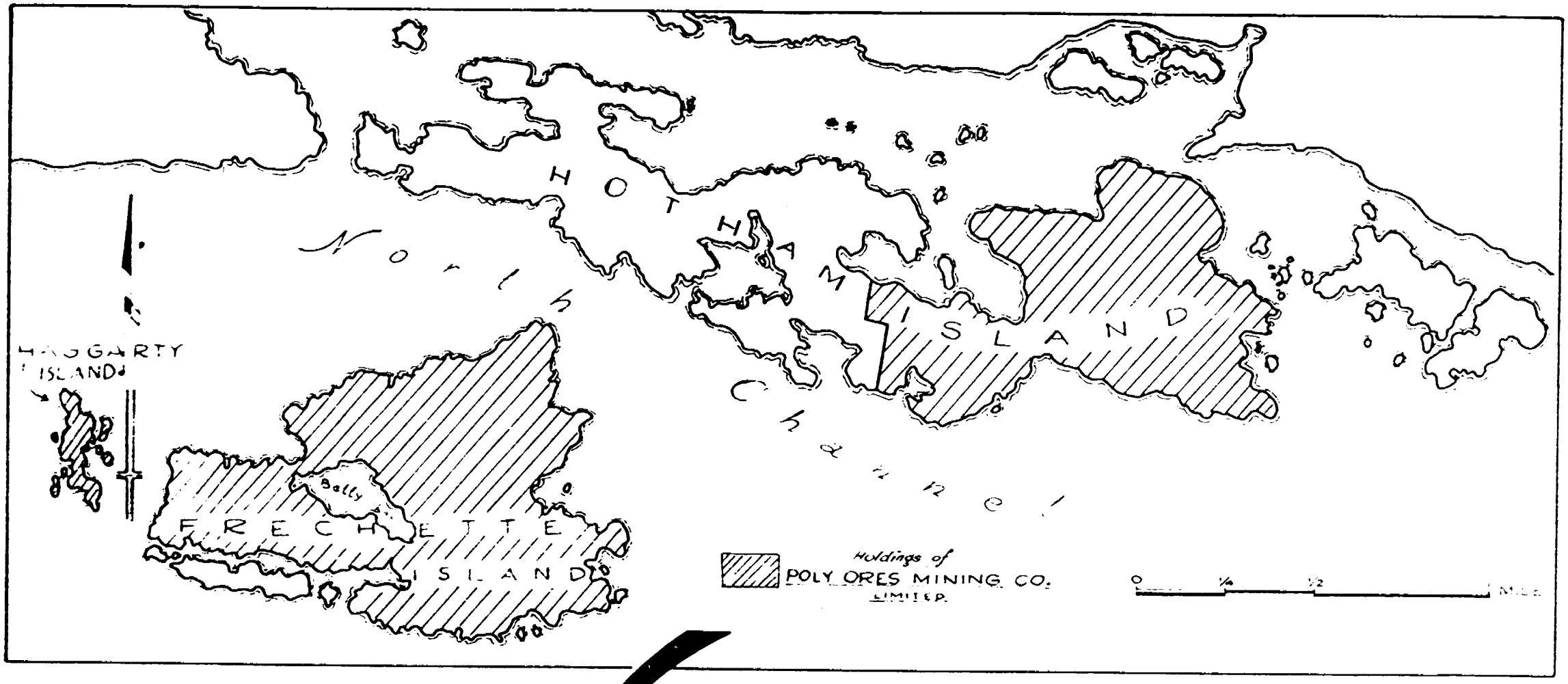
167X4 = 668 Man-days

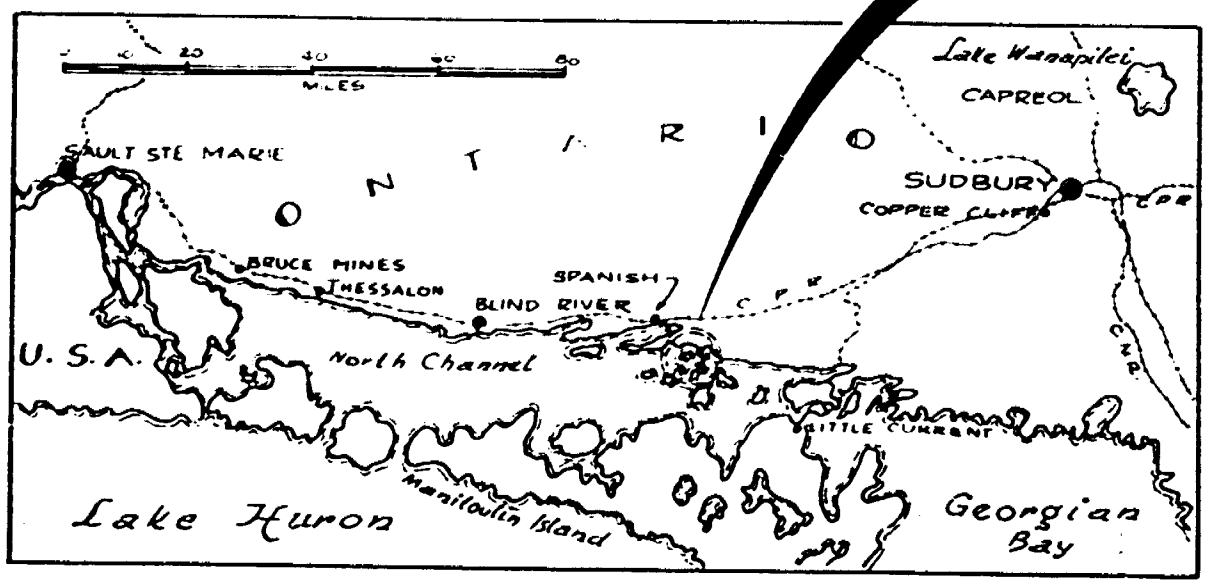
668/29 = 23 Man-days per claim

This is certified correct

Toronto Ont.
29th June/56

Albert Hopkins.
HOPKINS EXPLORATION CONSULTANTS





LOCATION MAP

SHOWING

POLY ORES MINING CO. LTD.

HOLDINGS

ON HAGGARTY, FRECHETTE AND HOTHAM ISLANDS

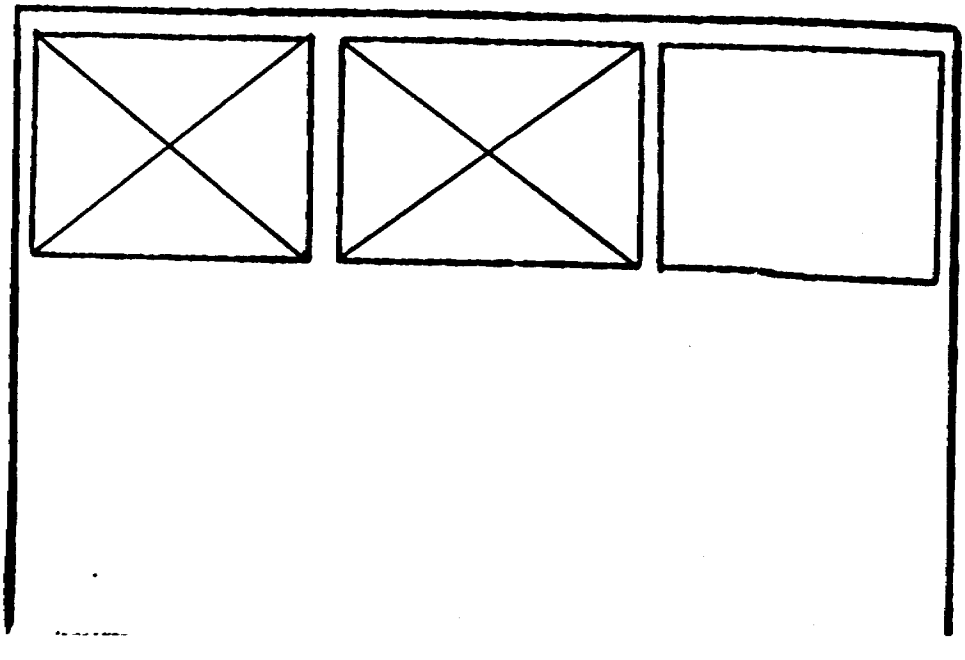
NORTH CHANNEL LAKE HURON

ONTARIO

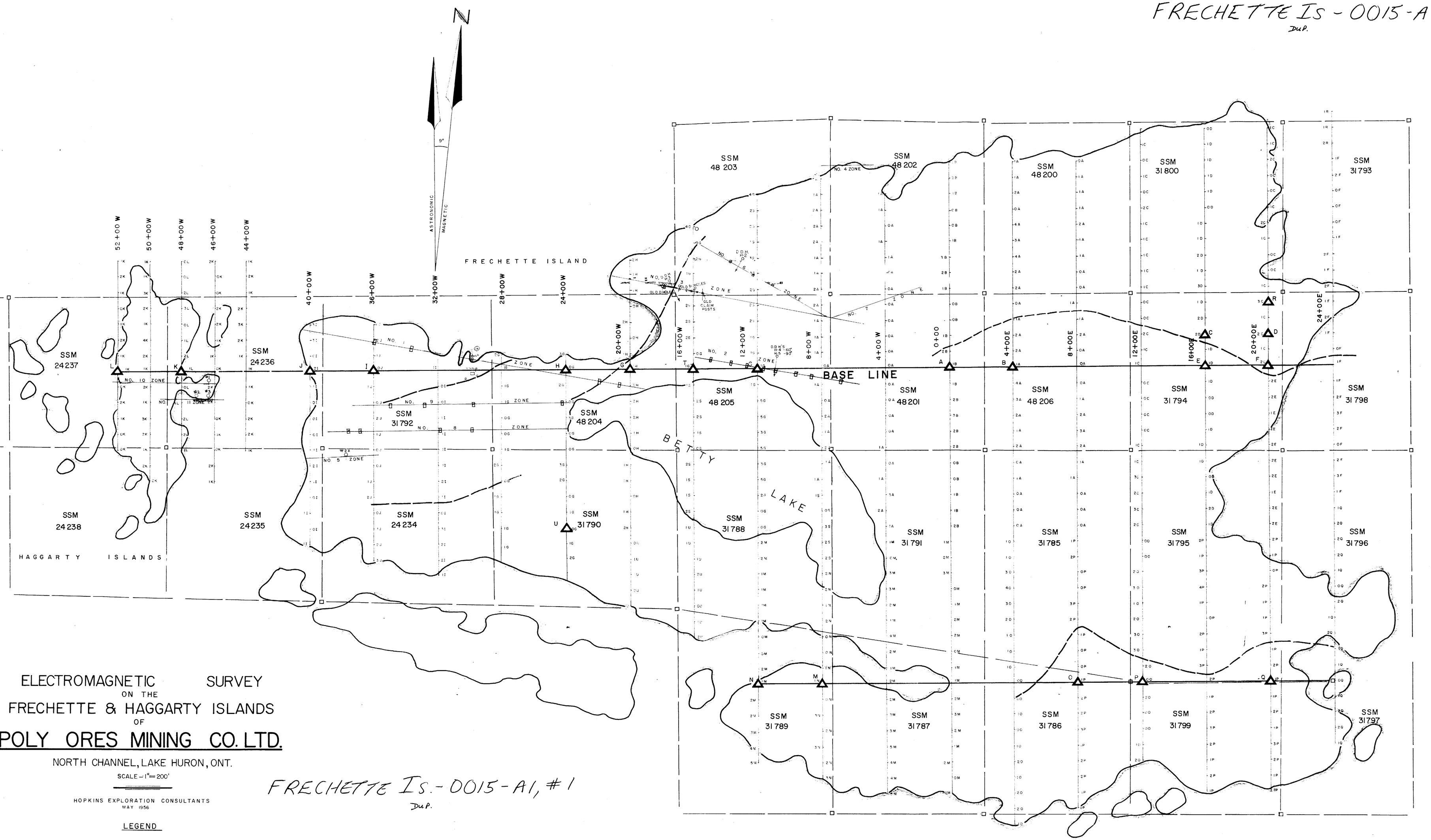
SEE ACCOMPANYING MAP(S) IDENTIFIED AS

FRECHETTE IS-0015-AL, #1, #2

LOCATED IN THE MAP CHANNEL IN THE FOLLOWING SEQUENCE (X)



FRECHETTE Is - 0015 - A1, #1
Dup.



ELECTROMAGNETIC SURVEY
ON THE
FRECHETTE & HAGGARTY ISLANDS
OF
POLY ORES MINING CO. LTD.

NORTH CHANNEL, LAKE HURON, ONT.

SCALE – 1" = 200'

HOPKINS EXPLORATION CONSULTANTS
MAY 1956

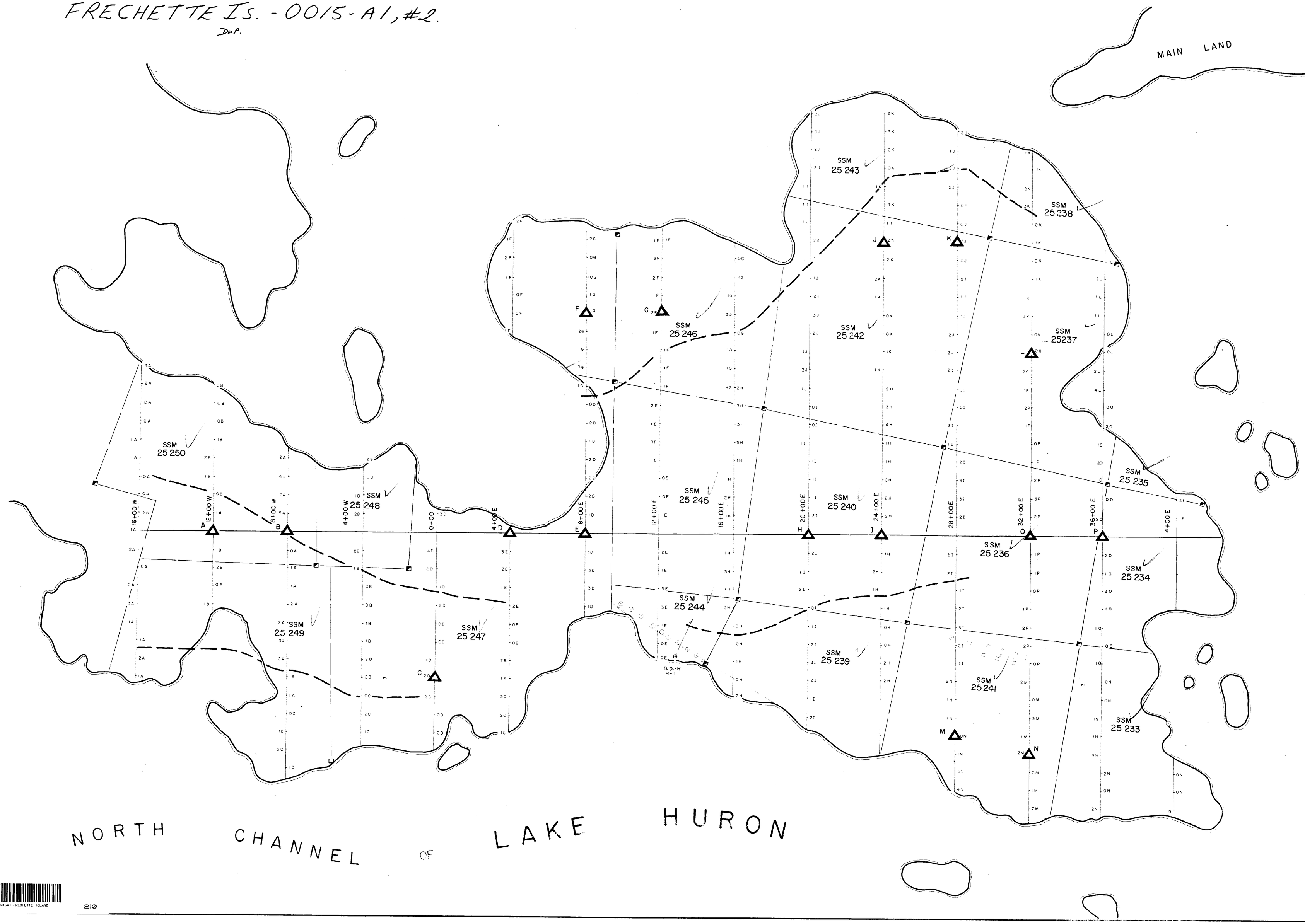
LEGEND

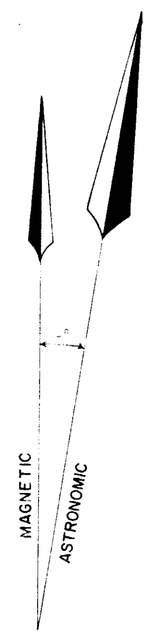
- 3A / NORTH READINGS / 1A
- 2A / SOUTH READINGS
- TRANSMITTER LOCATION
- DRILL HOLE
- TRENCH
- VEIN
- CLAIM LINE
- CLAIM POST
- CONDUCTOR

FRECHETTE Is. - 0015 - A1, #1
Dup.

200

FRECHETTE Is. - 0015 - A1, #2.
Dup.





FRECHETTE Is - 0015-A1, #2
Dup.

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SCALE: 1"=200'

MAY 1956 HOPKINS EXPLORATION CONSULTANTS

LEGEND

NORTH READINGS 1A | SOUTH READINGS 1A | 2A
TANSMITTER LOCATION
DRILL HOLE
TRENCH
VEIN
CLAIM LINE
CLAIM POST
CONDUCTOR