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Sheridan Geophysics Limited

The President & Directors of
the Participating Companies,
The Red Lake Syndicate,
4 King Street West,
15th Floor,
Toronto 1, Ontario.

August 7, 1970

Dear Sirs,

REPORT on Geophysical Exploration Programme, Groups 1, 3, 4, 5 & 6, located in the Townships of Agnew, Costello, Mitchell, et al, in the Red Lake area, Ontario.

During the months of November and December, 1969, and January, February and March, 1970, a geophysical exploration programme consisting of a detailed Electromagnetic Survey was carried out on the Red Lake area property, known as Groups 1, 3, 4, 5 & 6 and located in the Townships of Agnew, Costello, Mitchell, et al, consisting of approximately 319 claims in the Red Lake district of Ontario. In addition, detailed magnetic surveys were conducted over areas where electric conductivity was indicated.

Summary of Results and Recommendations and Conclusions:

The Electromagnetic Survey reveals a number of minor conductors located on the properties. In general, these conductors are believed to represent zones of conductivity, probably caused by layers of clay generally located in and around the known lake bottoms, but in some instances extending on the dry portions of the properties. In general, the magnetic profiles over these conductors substantiate these interpretations in a negative manner.

There is one exception to this interpretation and this is a very small conductor on claim KRL64629 in Group No.3 located in Mitchell Township. This conductor is apparently deeply buried and projects as a very week anomaly. However, there is excellent magnetic correlation coincident with the conductor axis and it is recommended that this conductor be drilled after thorough surface examination of the area involved.

The remainder of the claims should be kept in good standing for another year, pending further developments in the area.

AUTOPOSITIVES ..... (2)
STORED SEPERATELY

Terms of Reference:

The survey was carried out on the recommendations of Mr. J.P. Sheridan, Consulting Engineer and Managing Director of the project. The survey was designed to explore an area of known favourable geology located in the general vicinity of an important copper-zinc discovery made by Selco Explorations in 1968 and 1969. The claims covered by this survey are as follows:

GROUP 1
AGNEW & COSTELLO TWPS.

73493	-	73502	= 10
73503	-	73520	= 18
73521	-	73539	= 19
73455	-	73472	= 18
63055	-	63058	= 4
73394	-	73398	= 5
73399	-	73411	= 13
73473	-	73492	= 20
			107

GROUP 3
MITCHELL TWP.

64601	-	64617	= 17
64618	-	64625	= 8
64626	-	64634	= 9
64635	-	64638	= 4
64639	-	64645	= 7
64648	-	64649	= 2
			47

GROUP 4
EARNGY TWP.

72180	-	72212	= 33

GROUP 5
EARNGY TWP.

72091	-	72133	= 43
72134	-	72179	= 46
			89

..... (3)

GROUP 6
EARNGY TWP.

73412 - 73455 = 43

The lines were cut under subcontract by Mr. Philippe Roby of Senneterre, Quebec and consisted of approximately 281 line miles. Line spacing was 400 feet with station intervals established at 100 feet intervals. The station interval was reduced to 50 feet in some anomalous areas.

The breakdown of Line miles for individual claim groups are as follows:

GROUP	MILES OF LINE	APPROX. NO. OF STATION
1	94	5640
3	42	2460
4	29	1740
5	78	4680
6	38	2270
	281	

The survey was carried out under the direct field supervision of Mr. Maxwell Juby, B.Sc.

Methods used and presentation of results:

The Electromagnetic Survey

The E.M. Survey employed the Sheridan-Kelk Dual Frequency Magniphase Electromagnetic Instrument operated in the horizontal coil configuration, with a transmitter receiver separation of 300 feet, unless otherwise noted on the map, in which case the separation was 200 feet. In general, readings of amplitude and phase of the resultant fields at the high frequency (2400 cps) were recorded at station intervals of 100 feet. In anomalous areas, readings of amplitude and phase at the lower frequency (880 cps) were also recorded and the station interval was reduced to 50 feet.

The results of the survey as plotted on the accompanying map show only the profile of the high frequency phase.

..... (4)

Conductivity Determination

The ratio "r" beside the conductor refers to the ratio of the low ffequency phase response to the high frequency phase response. In general, the ratio increases as the conductivity increases and a ratio greater than 0.8 is considered to represent a good conductor, 0.5 to 0.8, a moderate conductor, less than 0.5, a fair conductor.

Magnometer Survey

The Magnometer Survey employed an Askania Torsion Balance Magnometer with a scale constant of approximately 236 gammas per scale division.

The Magnetic results have all been corrected for diurnal variation and instrument drift.

Magnetic Surveys were conducted only over the indicated conductors.

Interpretation of Geophysical Results

The Electromagnetic Survey employed is a highly sensitive system designed to detect and map any zone showing conductivity contrast with the country rock. The system also provides a method of determining the conductivity of the detected conductor.

There are a number of conductors indicated by the survey and these have been marked in the appropriate fashion, as shown by the legend. In addition, detailed Magnetic Surveys have been completed over all indicated conductors.

The conductors generally indicated in the vicinity of the Lake Areas are not considered to be significant. They are believed to represent a slight conductivity contrast between the overburden lying under the lakes and the overburden normally occurring in this area.

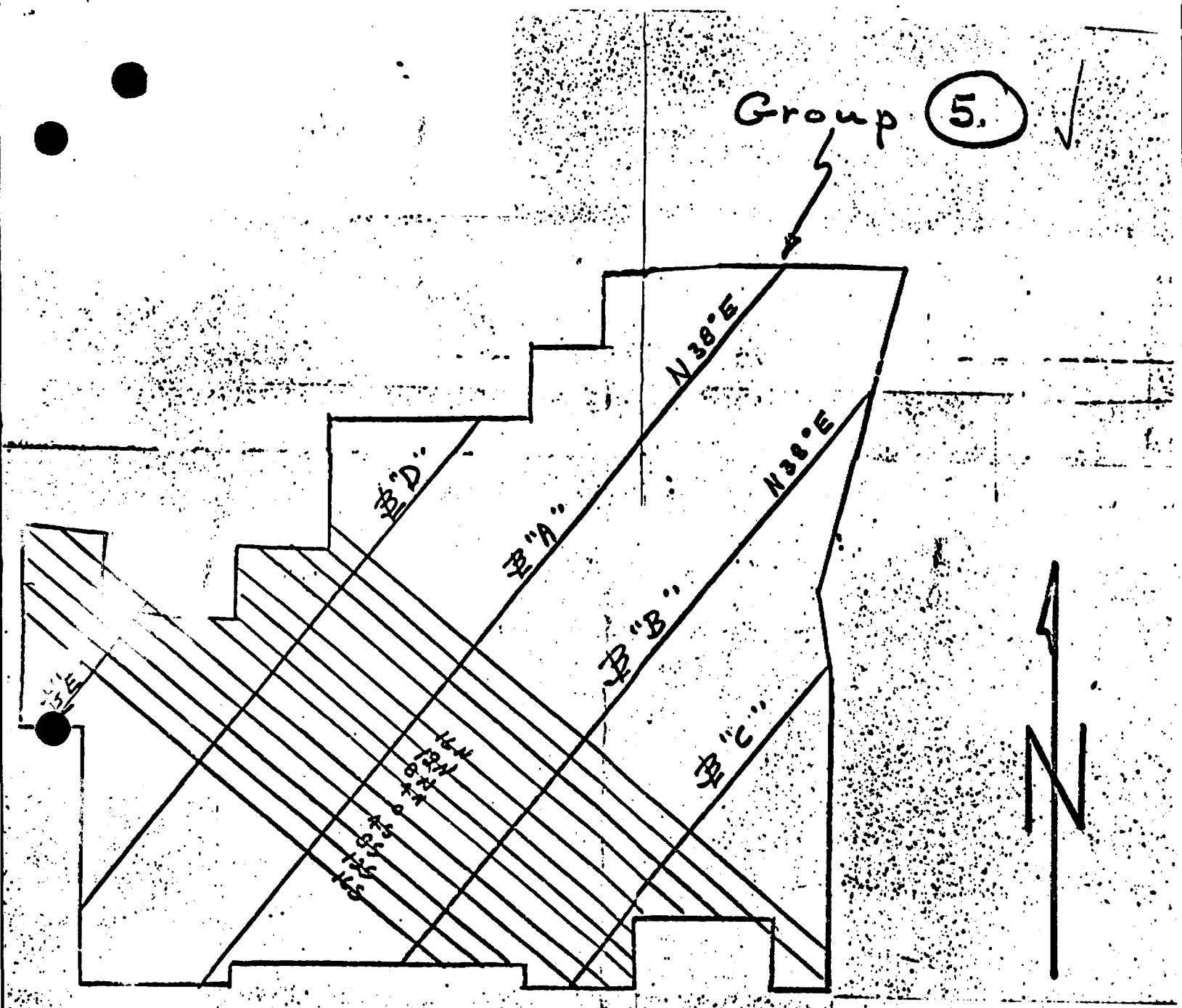
The anomaly located on claim KRL64629 extends from line 8 south to, and possibly beyond, line 16 south. The ratio generally is higher than those experienced in areas of conductive overburden and while the anomaly is of small magnitude, it would appear to arise from a considerable depth in excess of 100 feet.

The magnetics indicated over the area would tend to confirm these interpretations and indicate that the conductor arises from sulphide mineralization. It accordingly has been recommended that this anomaly be tested by diamond drilling after thorough investigation of the surface area surrounding the vicinity of the conductor.

All of which is respectfully submitted,

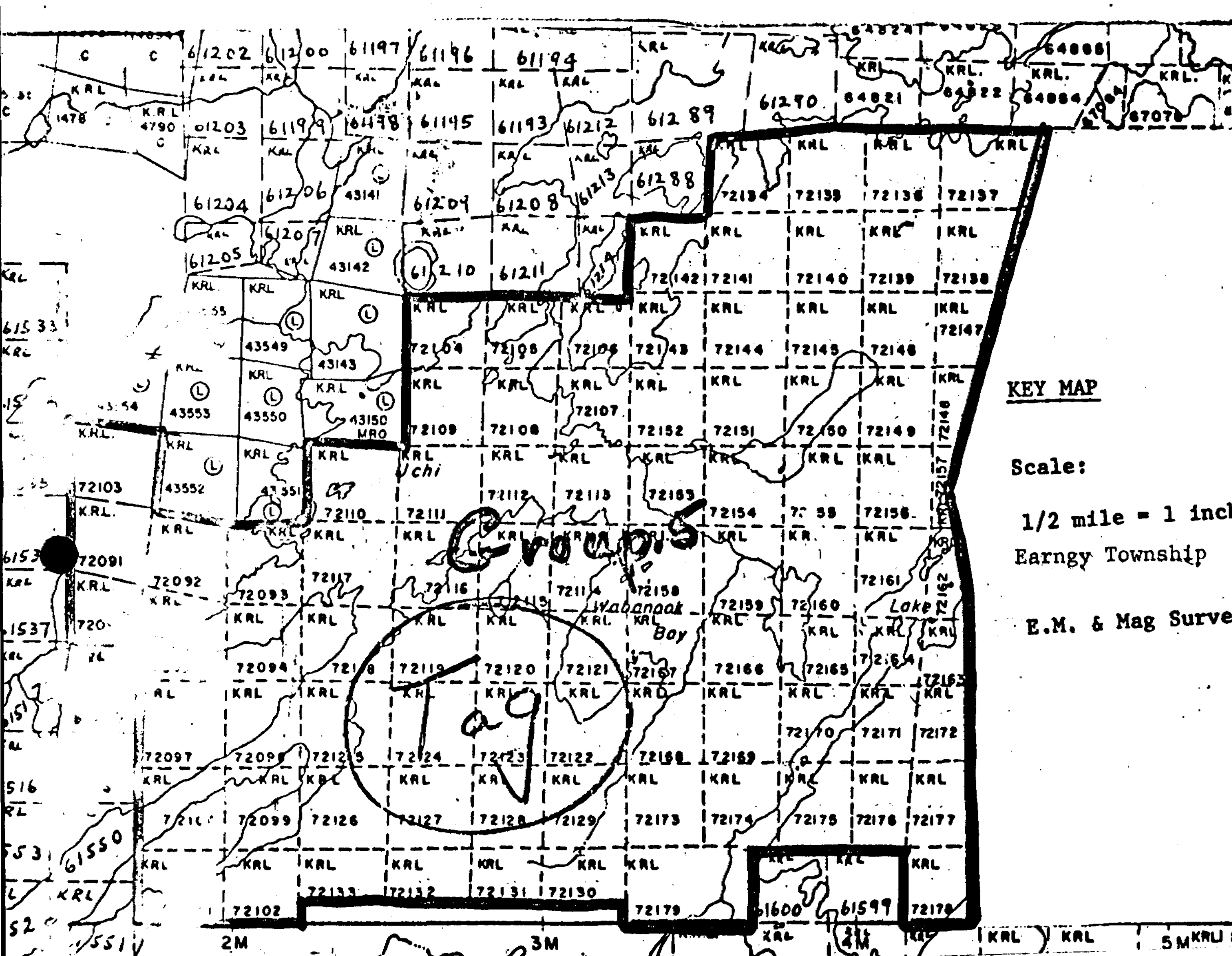
J. P.. Sheridan,, P.Eng.

Group 5. √



Scale 1" = ½ mile

Mag. decl. 5° East.



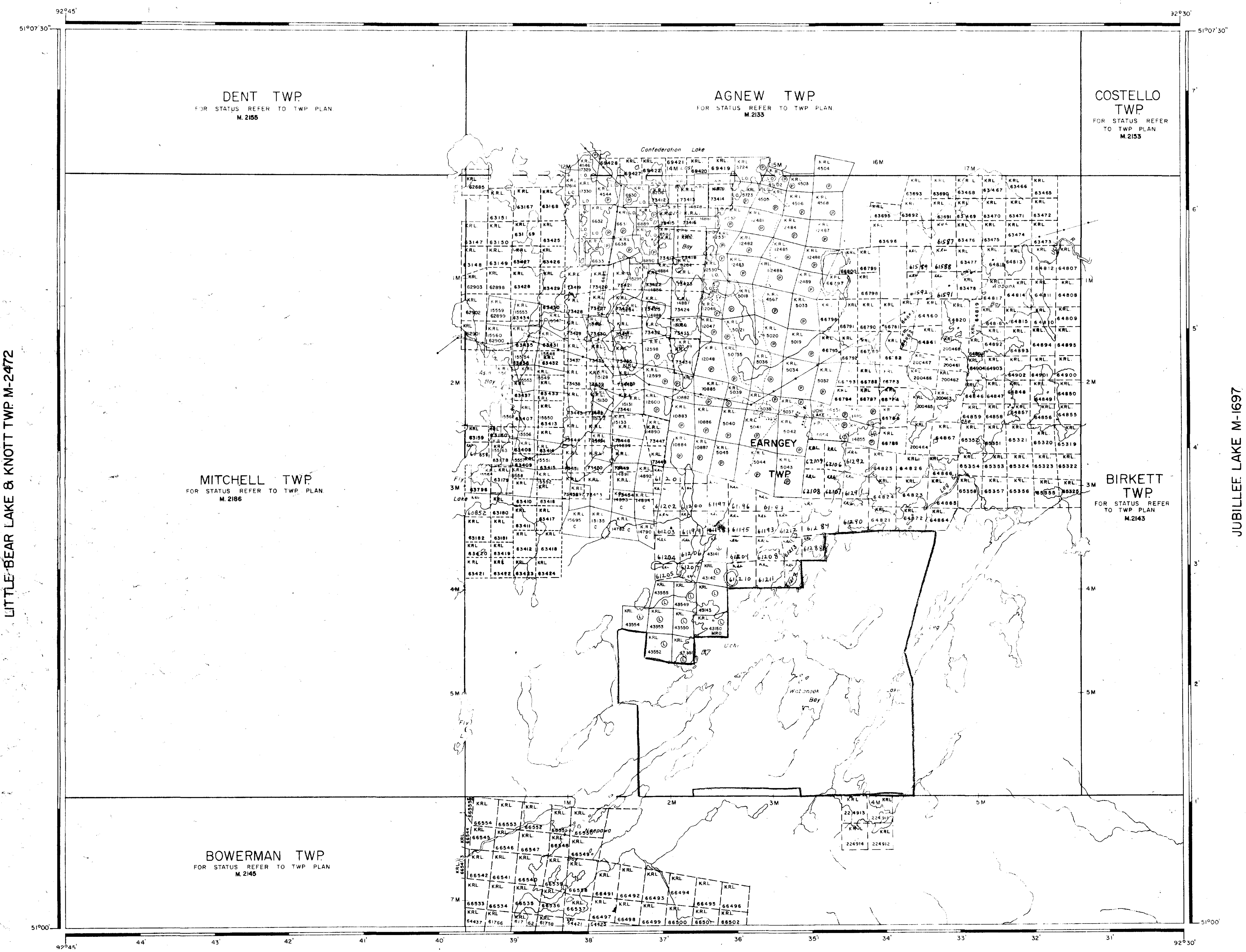
KEY MAP

Scale:

1/2 mile = 1 inch

Earngy Township

E.M. & Mag Surveys



AREA OF

CLAIM MAP

UCHI LAKE

& EARNGEY TWP.

DISTRICT OF
KENORA
PATRICIA PORTION

RED LAKE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
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 around all Lakes and Rivers.

H.E.P.C. Transmission Line - File 11940 - 100' wide

DATE OF ISSUE
DEC 16 1970

NATIONAL TOPOGRAPHIC SERIES 52 N

PLAN NO. M-2157

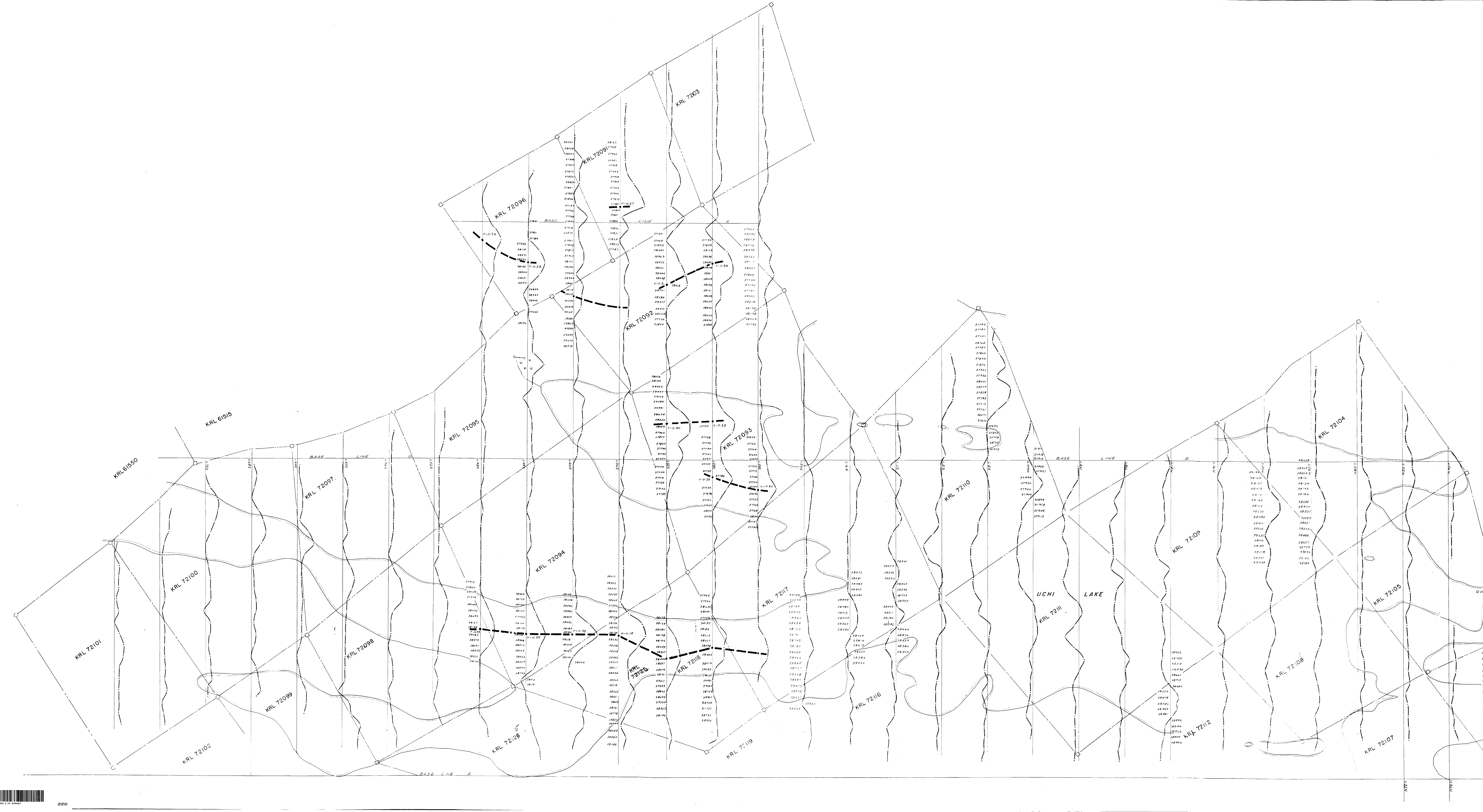
ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

511923

B.Ch.

52N02SE9902 2.22 EARNGEY

200



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E. M. MAGNIPHASE SURVEY
BY

SHERIDAN GEOPHYSICS LTD.

CLAIM GROUP NO. 5
Map #2

EARNGY TWP. RED LAKE MINING DIVISION

ONTARIO

LEGEND

SCALE: 1" = 50 UNITS

+50 0 -50

High Freq. Phase

Conductor

r = 0.33 → Conductivity Ratio $\frac{\text{Low Freq. Phase}}{\text{High Freq. Phase}}$

Coil Separation = 300 Ft.

Scale: 1" = 200'

MAP 2

SHERIDAN GEOPHYSICS LTD.

E M MAGNAPHASE SURVEY
for

CLAIM GROUP NO. 5

EARNEY TWP. RED LAKE MINING DIVISION
ONTARIO

MAP 1

E. M. MAGNIPHASE SURVEY
BY
SHERIDAN GEOPHYSICS LTD.

CLAIM GROUP NO. 5
Map # 3

EARNGY TWP. RED LAKE MINING DIVISION

ONTARIO

LEGEND

SCALE: 1" = 50 UNITS

High Freq. Phase
Conductor
F.I: 0.58 → Conductivity Ratio = Low Freq. Phase / High Freq. Phase
Coil Separation : 300 ft.
Scale: 1" = 200 ft.

EARNGY TOWNSHIP
CLAIM GROUP 5

KEY MAP
Scale: 1" = 1/2 mile

230

MAP 3