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REPORT
ON
GEOPHYSICAL SURVEYS
ON PROPERTY OF
REPUBLIC ORES & MINING CORP. LTD.

INTRODUCTION

Geophysical surveys, including electromagnetic and magnetometer surveys, have been completed on the property of Republic Ores & Mining Corporation Ltd. in Sheraton and Bond townships, Ont.

The following report and accompanying maps describe the results of the surveys and give an interpretation of same. Included with the report are recommendations for the further exploration on the property.

PROPERTY AND LOCATION

The property consists of 32 claims of approximately 40 acres each in Sheraton and Bond townships, District of Cochrane, Porcupine Mining Division of Ontario. The claims are shown on the Key map and are registered with the

Department of Mines as follows:

Bond Township

Claims 214085 to 214104 inclusive in lots 4, 5, and 6,
Concession I.

Sheraton Township

Claims 214105 to 214116 inclusive in the north half of
lots 4, 5, and 6, Concession VI.

The property is readily accessible from the town of Porcupine, a distance of approximately 30 miles by road and then three miles by boat in the summer and Ski-doo in the winter.

GEOLOGY

The area generally, and the property in particular, is covered with a mantle of overburden and rock outcrops are extremely limited.

Map No. 2046, published by the Ontario Department of Mines, shows the geology of the area. This, combined with information from previous drilling, indicates that the property is underlain by both volcanic and sedimentary rocks. The volcanic rocks include rhyolite, andesite, and associated tuffs while the sedimentary rocks are largely

slates, generally schistose.

There are several northeast trending diabase dykes in the area and one of these appears to extend onto the Republic property near the east boundary. The drill holes in the central part of the property also intersected some fine grained diorite.

The ore deposit of Texas Gulf Sulphur which is located some thirty miles northwest of the Republic property is in the volcanic rocks and consists of both disseminated and massive sulphides. The ore minerals consist of chalcopryrite and sphalerite with rather high values in silver and it is worthy to note that these are associated to some extent with a graphitic schist. On the property of Republic Ores & Mining Corporation both chalcopryrite and sphalerite have been encountered in previous diamond drilling associated with graphitic tuffs and slate. This could be a similar geological environment to the Texas Gulf deposit and is discussed later in the report.

SURVEY AND INSTRUMENT DATA

A network of north-south lines were cut and chained on the property at 200 foot intervals, as shown on the

accompanying maps. Stations were at 100 foot intervals along the lines.

The electromagnetic survey was carried out using the Ronka Mark IV unit with a 200 foot coil interval. In the horizontal loop type of survey both the in-phase and out-of-phase components of the secondary field are measured, whose special characteristics make possible a fairly accurate evaluation of the conductivity. A conductor caused by sulphide mineralization will produce a curve going from positive readings through zero to negative and back again to positive. Both the in-phase and out-of-phase readings show the same general curve. The ratio between the in-phase and out-of-phase readings over a conductor is an indication of the conductivity of the body. A good conductor would cause a greater deviation of the in-phase component than the out-of-phase component. The opposite is true of a poor conductor.

The magnetic readings were taken over the same network of lines with a Sharpe MF-1 Fluxgate magnetometer measuring the variations of the vertical component of the earth's magnetic field. Readings were plotted as gammas

on a separate map after correction for diurnal variation.

RESULTS OF THE GEOPHYSICAL SURVEYS AND INTERPRETATION

The electromagnetic survey outlined two major conductive zones in the central part of the property with some minor parallel structures. The main zones are lettered "A" and "B" for reference purposes. The trend is slightly north of east and they have lengths of 1,600 and 1,400 feet. However, there is a suggestion that they may extend further to the northeast at a greater depth due either to plunge in that direction or greater overburden.

Some previous drilling has been to test this area and the drill holes were located in the field and are plotted on the accompanying maps.

These holes indicated that the conductivity was due to a combination of graphite and sulphides. The mineralization encountered consisted mainly of pyrite with some sphalerite and chalcopyrite. The mineralization appears to extend over good widths and "A" and "B" zones show widths up to 150 feet.

There is no magnetic anomaly associated with the conductor and this is another similarity to the Texas Gulf

anomaly.

The magnetometer survey indicated a number of north and northeast trending anomalies and these are probably due to basic dykes. One such dyke appears to cut across the east end of the conductive zones.

CONCLUSIONS AND RECOMMENDATIONS

The electromagnetic survey outlined two major conductive zones which apparently contain copper and zinc mineralization associated with graphitic tuffs and schists. Although preliminary drilling did not outline an ore deposit, the fact that both geophysical and geological conditions resemble those of the Texas Gulf deposit is encouraging.

More detailed drilling is recommended for the anomalies and it may also be advisable to re-survey the immediate area using a greater coil interval. This will obtain greater penetration and possibly lengthen the present zones and pick up any other zones that might be more deeply buried.

Respectfully submitted,

PROSPECTING GEOPHYSICS LTD.


H.J. Bergmann, P. Eng.

Montreal, Que.
February 17, 1971

MAGNETOMETER SURVEY

<u>Claim No.</u>	<u>Days</u>	<u>Claim No.</u>	<u>Days</u>
214085	20	214101	20
214086	20	214102	20
214087	20	214103	20
214088	20	214104	20
214089	20	214105	20
214090	20	214106	20
214091	20	214107	20
214092	20	214108	20
214093	20	214109	20
214094	20	214110	20
214095	20	214111	20
214096	20	214112	20
214097	20	214113	20
214098	20	214114	20
214099	20	214115	20
214100	20	214116	20
		Total:	640 days



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SPECIAL PROC

ASSESSMENT WORK DETAILS

Type of Survey MAGNETOMETER
A separate form is required for each type of survey

Chief Line Cutter or Contractor _____
Name Address

Party Chief J.R. Perrier, Ottawa, Ont.
Name Address

Consultant H.J. Bergmann, 3518 Vendome Ave., Montreal, Que.
Name Address

COVERING DATES Line Cutting _____

Field Geology or Geophysics Jan. 5, 1971 - Feb. 2, 1971

Office Feb. 8 - 17, 1971

INSTRUMENT DATA Make; Model and Type Sharpe MF-1 Fluxgate

Scale Constant or Sensitivity ± 50 gammas
Or provide copy of instrument data from Manufacturer's brochure.

Total Number of Stations Within Claim Group 2,821 Number of Miles of Line cut Within Claim Group 53.3

ASSESSMENT WORK CREDITS REQUESTED
Geological Survey _____ Days per Claim
Geophysical Survey 20 Days per Claim

MINING CLAIMS TRAVERSED
214085 to 214116 inclusive.

TOTAL 32

DATE Feb. 17, 1971 SIGNED H.J. Bergmann

Special provision credits do not apply to Radiometric Surveys.

SPECIAL PROVISION
ASSESSMENT WORK DETAILS

RECEIVED
JUN 11 1971

PROJECTS
SECTION

Type of Survey ELECTROMAGNETIC
A separate form is required for each type of survey

Chief Line Cutter or Contractor A. Mitto, Val d'Or, Que.
Name Address

Party Chief A. Lecouter, Val d'Or, Que.
Name Address

Consultant H.J. Bergmann, 3518 Vendome Ave., Montreal, Que.
Name Address

COVERING DATES Line Cutting Nov. 1-14, 1970 and Dec. 18, 1970 to Jan. 19, 1971.
Field Geology or Geophysics Jan. 5, 1971 - Feb. 2, 1971.
Office Feb. 8 - 17, 1971.

INSTRUMENT DATA Make, Model and Type Ronka Mark IV Horizontal Loop E.M. Unit
Scale Constant or Sensitivity + 2%
Or provide copy of instrument data from Manufacturer's brochure.

Total Number of Stations Within Claim Group 2,821 Number of Miles of Line cut Within Claim Group 53.3

ASSESSMENT WORK CREDITS REQUESTED Geological Survey _____ Days per Claim
Geophysical Survey 40 Days per Claim

MINING CLAIMS TRAVERSED
214085 to 214116 inclusive

TOTAL 32

DATE Feb. 17, 1971

SIGNED H.J. Bergmann

BOND TOWNSHIP

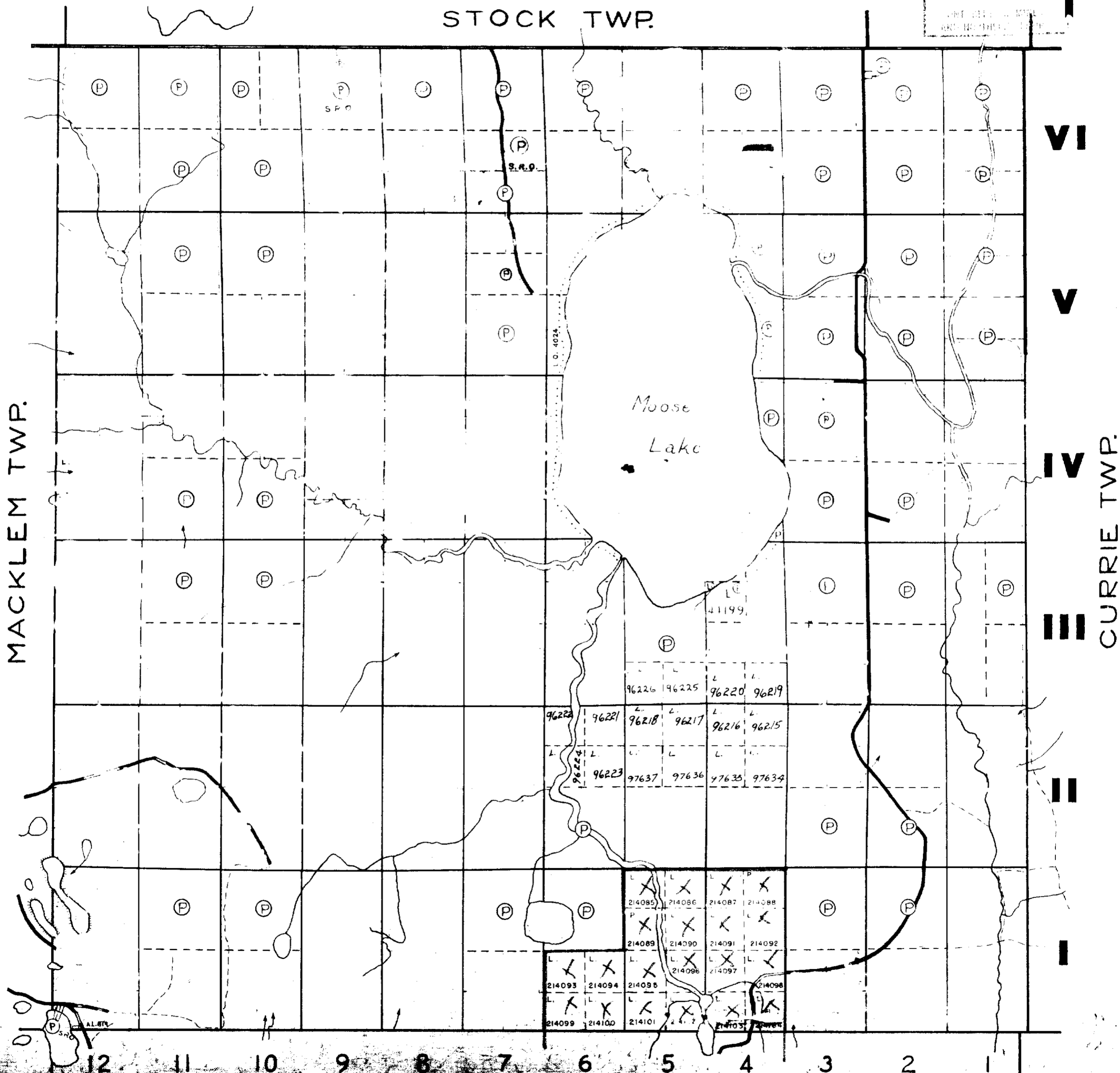
PORCUPINE MINING DIVISION

DISTRICT OF COCHRANE

M.331 DATE OF ISSUE

Claim map
SCALE 40 CHAINS TO ONE INCH
STOCK TWP.

JUN 3 1971
MINE REGISTRY
AND RECORDS DEPT.



MACKLEM TWP.

CURRIE TWP.

VI

V

IV

III

II

I

NOTE



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SHERATON TOWNSHIP

PORCUPINE MINING DIVISION

DATE OF ISSUE

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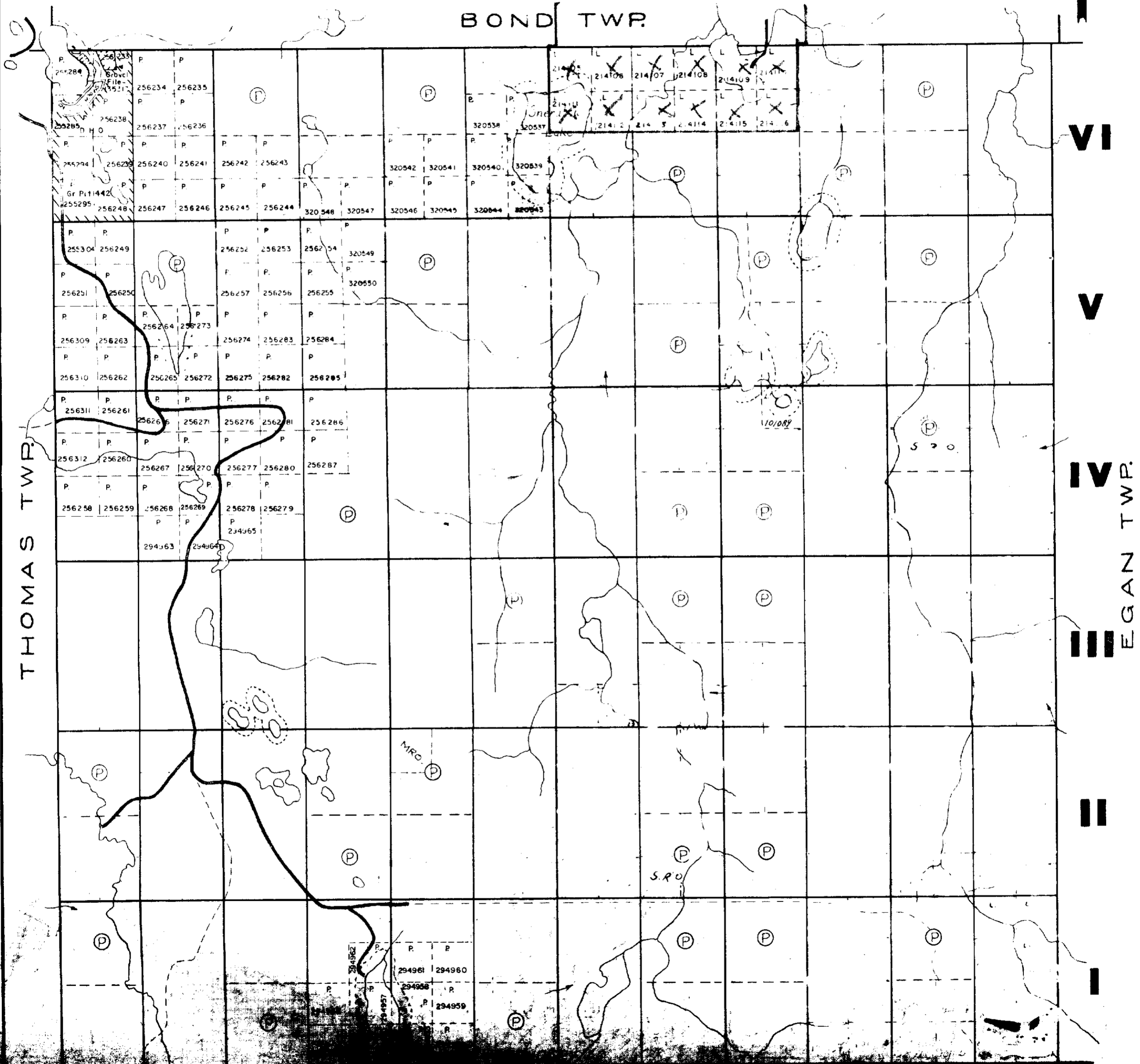
DISTRICT OF COCHRANE

M.386

Claim map

SCALE 40 CHAINS TO ONE INCH

BOND TWP.



THOMAS TWP.

VI

V

IV

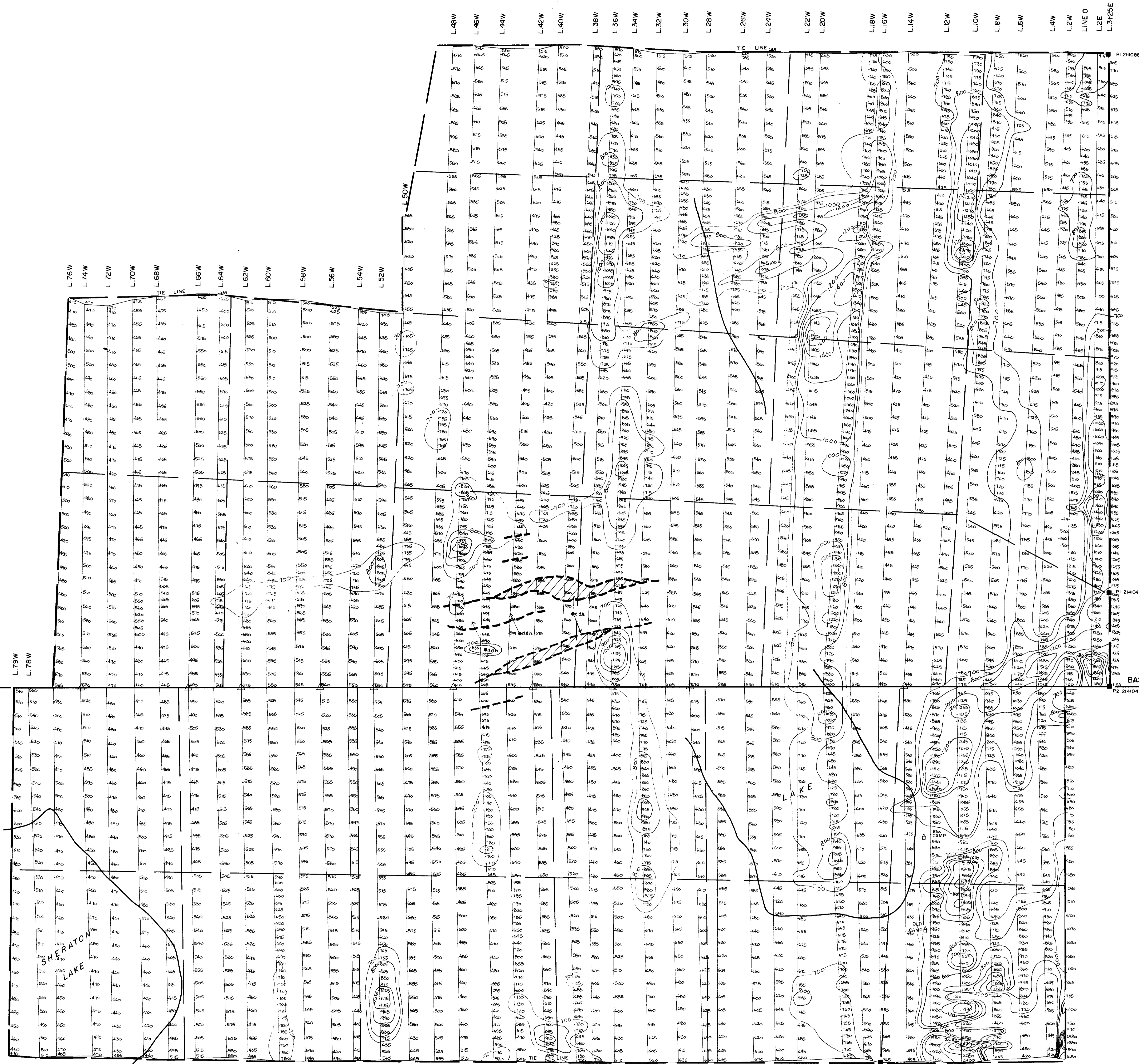
EGAN TWP.



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210

Drawn around all lakes and rivers



MAGNETOMETER SURVEY

- for -

REPUBLIC ORES & MINING CORPORATION LTD

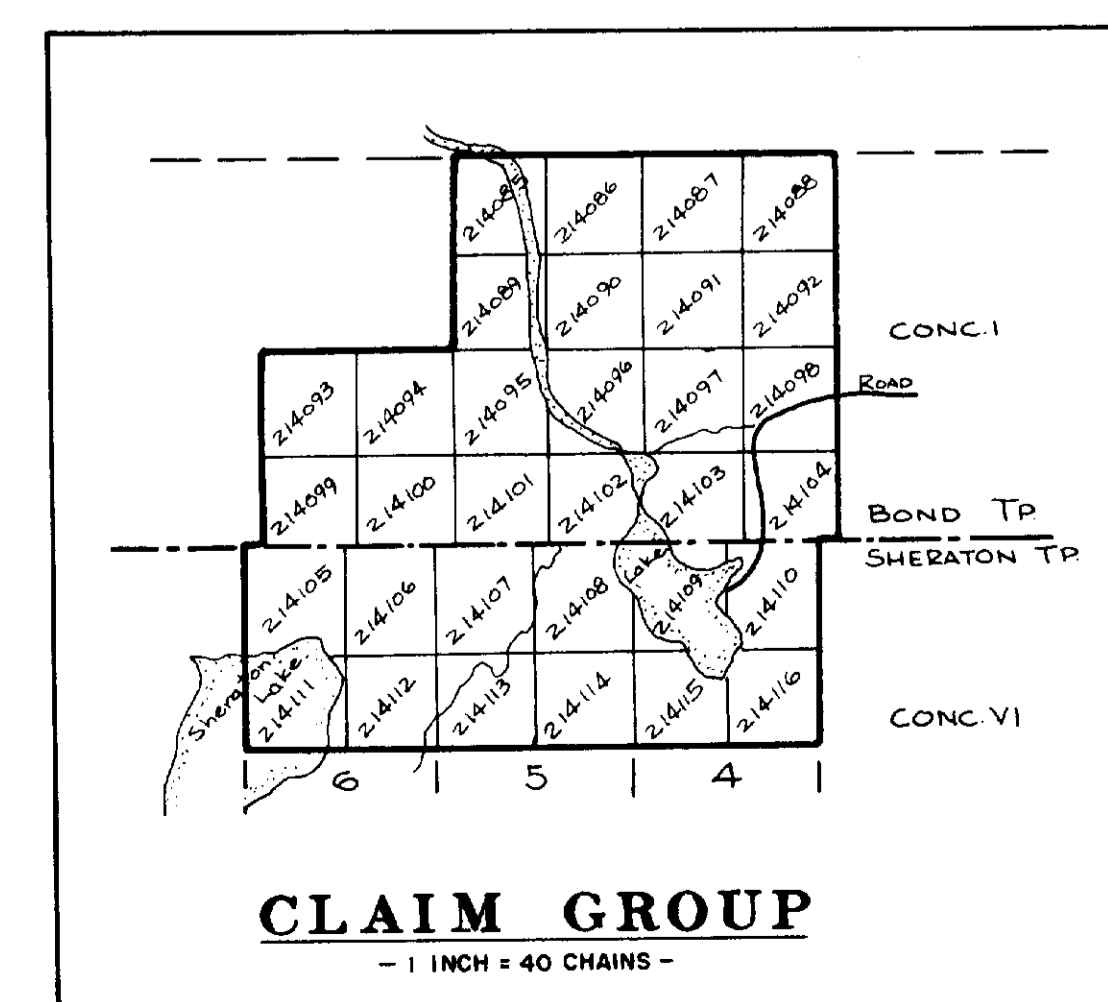
BOND - SHERATON TOWNSHIPS, ONTARIO

SCALE 0 300 600 900 FEET

JAN 1971

LEGEND

- ▲ MEASUREMENT STATIONS ALONG PICKET LINES
- ▲ RELATIVE VALUES OF THE VERTICAL COMPONENT FORCE OF THE EARTH'S MAGNETIC FIELD (in Gauss)
- MAGNETIC CONTOURS
- △ BASE STATION
- ELECTRICAL CONDUCTOR



CLAIM GROUP
- 1 INCH = 40 CHAINS -



PROSPECTING GEOPHYSICS LTD.

Abeymanne



BOND TWP
SHERATON TWP

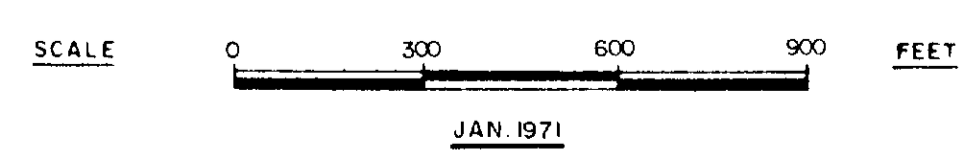
BASE LINE

HORIZONTAL LOOP
ELECTROMAGNETIC SURVEY

- for -

REPUBLIC ORES & MINING
CORPORATION LTD.

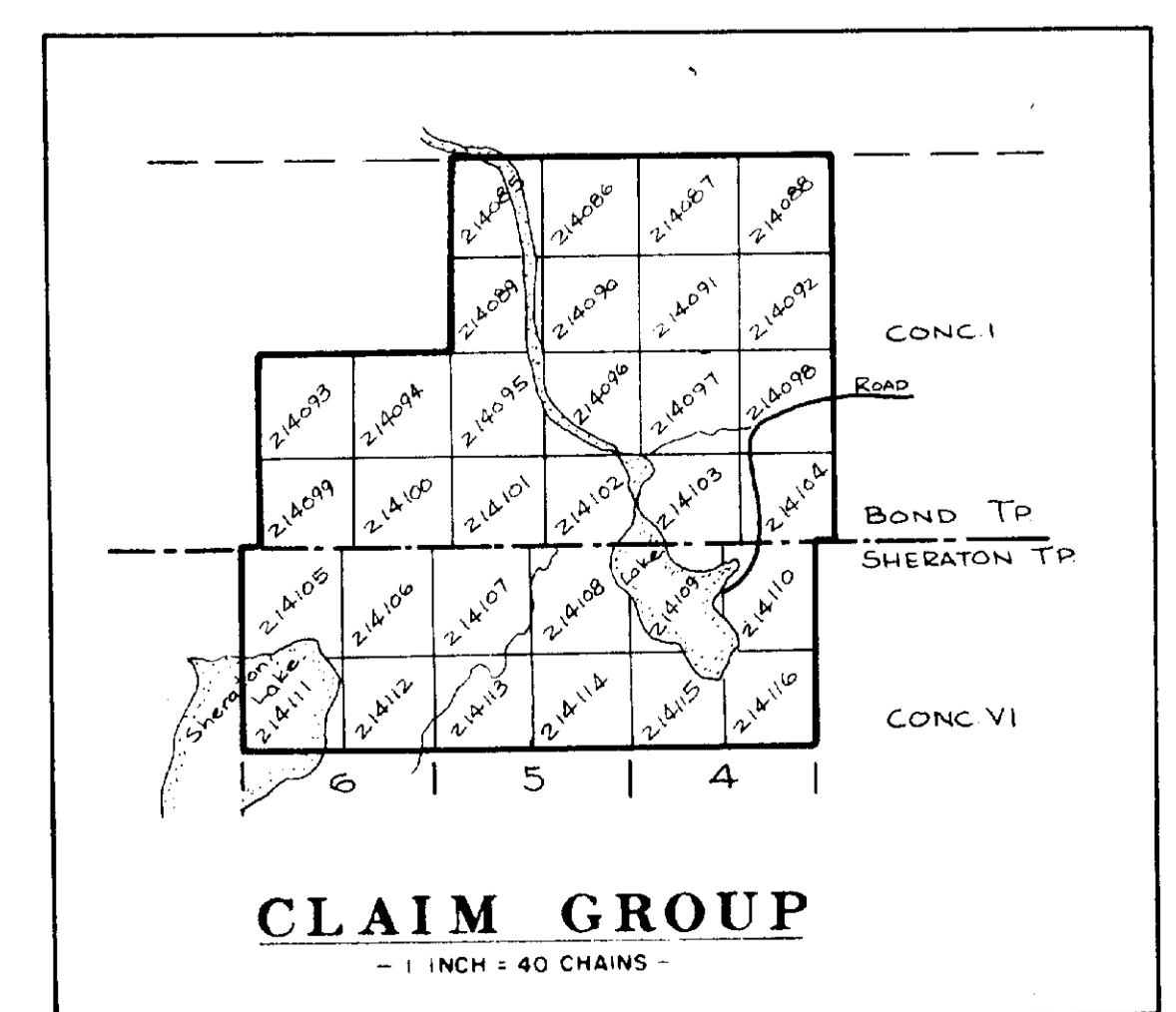
BOND - SHERATON TOWNSHIPS, ONTARIO



JAN. 1971

LEGEND

- MEASUREMENT STATIONS ALONG PICKET LINES
- ELECTROMAGNETIC READINGS - In Phase Component (%)
- ELECTROMAGNETIC READINGS - Out of Phase Component (%)
- PROFILE - In Phase Component (Scale 1" = 20%)
- PROFILE - Out of Phase Component (Scale 1" = 20%)
- COIL SEPARATION - 200 Feet
- INSTRUMENT - Ronka Mk IV
- ELECTRICAL CONDUCTOR



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