



41P12SW0117 63.1866 CHESTER

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Report

ON  
GEOPHYSICAL SURVEYS  
ON THE PROPERTY OF  
GOGAMA GOLD MINES LTD.  
CHESTER TOWNSHIP, ONT.

INTRODUCTION

An electromagnetic survey was carried out over the entire property of Gogama Gold Mines Ltd. and a magnetic survey was also carried out over a portion of the property. At the same time electromagnetic surveys were carried out on the adjacent properties of Shannon Minerals Ltd. and Chester Minerals Ltd. These surveys were carried out in April and May, 1965, prior to break-up.

The results of the three surveys have been plotted on one map to aid in the interpretation, a copy of which accompanies this report.

The area is well known for its gold-bearing zones and since some of these are known to be associated with sulphide mineralization, the electromagnetic survey was

used in an effort to trace the known zones and locate others. The object of the magnetic survey was to outline the favorable volcanic rocks and possible dykes within the granite.

PROPERTY AND LOCATION

The property consists of 16 claims of approximately 40 acres each in Chester township, Ont., registered with the Department of Mines under the following numbers:

127451 to 127454 inclusive,

125071

19966

19970 to 19972 inclusive

19976

120299

20094 to 20096 inclusive

19999

20001

The property is accessible by a mining access road that connects to highway 560.

## GEOLOGY

The geology is well covered in a report on the property by W. Walker, F.G.A.C. and it is also described in the Annual Report of the Ontario Department of Mines, Vol. XLI, Part III, 1932.

The greater portion of the property is underlain by granite but within the granitic area are several remnants of the volcanic belt to the south.

Several occurrences of gold have been reported on the property, some of which are associated with sulphides. The main vein occurs in a narrow belt of volcanics and this appears to be the best host rock. This vein has been explored by diamond drilling and underground development with encouraging results.

## RESULTS OF THE GEOPHYSICAL SURVEYS AND INTERPRETATION

The geophysical surveys were carried out over a network of lines at 200 foot intervals, as shown on the accompanying maps. The electromagnetic survey covered all the property whereas the magnetic survey covered claim S19971 only.

The electromagnetic survey was carried out using

a Ronka Mark III unit with both the 300 foot and 200 foot coil interval. The 300 foot coil interval was used on the lakes and the 200 foot interval was used over the land portion of the property. A Sharpe MF-1 fluxgate magnetometer was used for the magnetic survey.

An examination of the electromagnetic map shows several weak responses that could be indicative of a conductor. They are all weak and in some cases on one line only but since we are looking for gold-bearing zones a strong conductor cannot be expected.

Near Bagsverd Lake there are two parallel conductors trending northwest and these would appear to be in the vicinity of a diabase dyke. It is quite possible they may be related to the dyke and thus warrant some further investigation. Further to the south is another weak response that may represent a northeast zone for a length of about 300 feet. This would appear to be in the granite and there is no other information available.

Still further to the south and a short distance north of the road there is a response on line 72E that has been interpreted as two conductors but since this is

on one line only it is difficult to make an accurate interpretation. It is possible this may be the extension of reported zones further to the east. It is also roughly in line with a projected northeast trending fault.

In the vicinity of the shaft and the main vein a weak response was obtained immediately east of the shaft but no extension was obtained further east. Another response was obtained on an island to the east in Three Duck Lakes. There are two drill holes reported on this island so correlation of the response with the drilling may provide further information.

A response was obtained at the north end of 112E but more information is required here to give an interpretation of this response.

The magnetic survey was carried out over one claim that was known to contain a narrow band of volcanic rocks. The object was to determine if this type of survey could

be useful in locating greenstone belts within the granite.

The survey showed a general area of magnetic high readings trending east of the shaft. This no doubt indicates the greenstone but the readings are quite erratic probably due to local concentrations of magnetite. It will be noted that there is a good magnetic anomaly extending immediately east of the shaft and since pyrrhotite is present with the gold-bearing vein, some of this may be due to the gold-bearing structure.

Another magnetic anomaly exists in the southeast corner of the area surveyed and this obviously extends further to the east. This may possibly represent some more greenstone and should be investigated further.

#### SURVEY METHODS AND INSTRUMENT DATA

The electromagnetic survey was carried out using a Ronka Mark III horizontal loop equipment with both the 300 and 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.

In some areas secondary currents are induced in swamps and lakes. These anomalies can usually be distinguished from a regular conductor as they cause a response of the out-of-phase component with little or no deviation of the in-phase component.

The magnetic readings were taken 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 and contoured on the accompanying map after correction for diurnal variation.

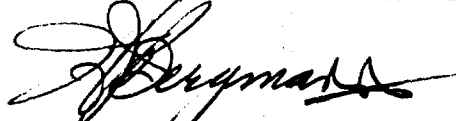
CONCLUSIONS AND RECOMMENDATIONS

The electromagnetic survey indicated several responses that may be due to mineralization and thus should be investigated further by prospecting and possibly trenching if feasible.

The magnetic survey has shown that it is possible to outline the areas of greenstone with this method and it may also prove very valuable in assisting in the interpretation of the possible conductive zones since pyrrhotite is a fairly prominent accessory mineral to the gold-bearing structures. Since the lines are already cut it would appear advisable to carry out a magnetic survey over the entire property prior to a drilling program. This should be done after freeze-up so that all the lake portions can be covered.

Respectfully submitted,

PROSPECTING GEOPHYSICS LTD.



H.J. Bergmann, P. Eng.

Montreal, Que.  
Aug. 23, 1965.





41P12SW0117 63.1866 CHESTER

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REP.

ON

GEOPHYSICAL SURVEYS

ON THE PROPERTY OF

CHESTER MINERALS LTD.

CHESTER TOWNSHIP, ONT.

INTRODUCTION

An electromagnetic survey was carried out over the entire property of Chester Minerals Ltd. At the same time electromagnetic surveys were carried out on the adjacent properties of Shannon Minerals Ltd. and Gogama Gold Mines Ltd. These surveys were carried out in April and May, 1965, prior to break-up.

The results of the three surveys have been plotted on one map to aid in the interpretation, a copy of which accompanies this report.

The area is well known for its gold-bearing zones and since some of these are known to be associated with sulphide mineralization, the electromagnetic survey was

used in an effort to trace the known zones and locate others. A magnetic survey carried out over one claim of Gogama Gold Mines as a test extended slightly onto the property of Chester Minerals Ltd., as shown on the accompanying map. The object of the magnetic survey was to outline the favorable volcanic rocks and possible dykes within the granite.

PROPERTY AND LOCATION

The property consists of 14 claims of approximately 40 acres each in Chester township, Sudbury Mining Division, Ont., registered with the Department of Mines under the following numbers:

S12304 to S12307 inclusive

S125067 to S125070 "

S16304

S31999

S19977

S19997 and S19998

S20000

The property is accessible by a mining access road that connects to highway 560.

## GEOLOGY

The geology is well covered in a report on the property by W. Walker, F.G.A.C. and it is also described in the Annual Report of the Ontario Department of Mines, Vol. XLI, Part III, 1932.

The greater portion of the property is underlain by granite but west of Clam Creek there is a narrow band of Keewatin greenstone presumably a roof pendant. This would belong to the belt of volcanics to the south.

Several occurrences of gold have been reported on the property, some of which are associated with sulphides. These have given good values in gold and they are reported in Mr. Walker's report.

## RESULTS OF THE GEOPHYSICAL SURVEYS AND INTERPRETATION

The geophysical surveys were carried out over a network of lines at 200 foot intervals, as shown on the accompanying maps. The area covered by the magnetic survey is also shown on the map.

The electromagnetic survey was carried out using a Ronka Mark III unit with both the 300 foot and 200 foot coil interval. The 300 foot coil interval was used on

the lakes and the 200 foot coil interval was used over the land portion of the property.

An examination of the electromagnetic map shows several weak responses that could be indicative of a conductor. They are all weak and in most cases on one line only but since we are looking for gold-bearing zones a strong conductor cannot be expected.

There was no response obtained in the vicinity of the shaft on Shannon Island and it must thus be assumed that there are not sufficient sulphides to cause a conductor. The one line conductors do not appear to be related to any known mineral occurrences and thus should be investigated by prospecting.

A broad weak response was obtained on the west boundary of claim S19977. This is a very weak response but since it could be within the Keewatin volcanics it has added significance.

#### SURVEY METHODS AND INSTRUMENT DATA

The electromagnetic survey was carried out using a Ronka Mark III horizontal loop equipment with both the

300 and 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.

#### CONCLUSIONS AND RECOMMENDATIONS

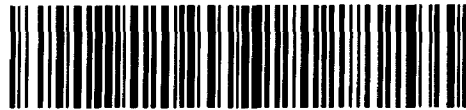
The electromagnetic survey indicated several responses that may indicate a conductive zone but most of them were limited to one line only. The one zone on the boundary that has some continuity and may be in the volcanics warrants further investigation.

The magnetic survey carried out on the property of Gogama Gold Mines indicates that this method will outline the areas of greenstone and will also pick up pyrrhotite which is a fairly prominent accessory mineral to the gold-bearing structures. Since the lines are already cut, it is recommended that a magnetic survey be carried out over the entire property prior to a drilling program. This should be done after freeze-up so that all the lake portions can be covered.

Respectfully submitted,  
PROSPECTING GEOPHYSICS LTD.

  
H. J. Bergmann, P. Eng.

Montreal, Que.,  
Aug. 23, 1965.



41P12SW0117 63.1866 CHESTER

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Report

ON

GEOPHYSICAL SURVEYS

ON THE PROPERTY OF

SHANNON MINERALS LTD.

CHESTER TOWNSHIP, ONT.

INTRODUCTION

An electromagnetic survey was carried out over the entire property of Shannon Minerals Ltd. At the same time electromagnetic surveys were carried out on the adjacent properties of Gogama Gold Mines Ltd. and Chester Minerals Ltd. These surveys were carried out in April and May, 1965, prior to break-up.

The results of the three surveys have been plotted on one map to aid in the interpretation, a copy of which accompanies this report.

The area is well known for its gold-bearing zones and since some of these are known to be associated with sulphide mineralization, the electromagnetic survey was used in an effort to trace the known zones and locate others.

A test magnetic survey was also carried out on one claim of the Gogama Gold property to see if it would outline the favorable volcanic rocks and possible dykes within the granite.

PROPERTY AND LOCATION

The property consists of ten mining claims in Chester township, Sudbury Mining Division of Ontario, as follows:

S 8995, S 8996, S 8997 and S 19995,  
S 120300 to 120303 inclusive,  
S 125066,  
S 127455.

The property is about 75 miles west of Gowganda via highway 560. An access road to the property is presently being rehabilitated.

GEOLOGY

The geology of the property is well covered in a report by W. Walker, F.G.A.C. and it is also described in the Annual Report of the Ontario Department of Mines, Vol. XLI, Part III, 1932.



It would appear that the north part of the north claims are underlain by Temiskaming sediments. The greater portion of the balance of the property is underlain by granite and associated rocks.

A couple of remnants of altered Keewatin volcanics are known on the property, one on the eastern boundary and one on the southern boundary.

Gold is the most important mineral in the area and several occurrences have been reported on the property. These are described in detail in Walker's report.

#### RESULTS OF THE GEOPHYSICAL SURVEYS AND INTERPRETATION

The geophysical surveys were carried out over a network of lines at 200 foot intervals, as shown on the accompanying maps. The area covered by the magnetic survey is also shown on the map.

The electromagnetic survey was carried out using a Ronka Mark III unit with both the 300 foot and 200 foot coil interval. The 300 foot coil interval was used on the lakes and the 200 foot coil interval was used over the land portion of the property.

An examination of the map shows several weak

responses that may be indicative of conductive zones. These conductive responses do not appear to be related to any of the known gold-bearing zones but may be related to some of the probable faults that occur on the property.

The responses are all weak but since any gold-bearing zone cannot be expected to produce a strong conductor, they warrant investigation. One broad weak response on the boundary between Chester Minerals and Shannon Minerals may be within a remnant of volcanics and thus should be investigated.

There is a fair response just off the property on claim 106451, just west of Clam Lake. This is more or less in line with the main showing on the property and there may be a major structure trending roughly east-west in this vicinity.

#### SURVEY METHODS AND INSTRUMENT DATA

The electromagnetic survey was carried out using a Ronka Mark III horizontal loop equipment with both the 300 and 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.

#### CONCLUSIONS AND RECOMMENDATIONS

The electromagnetic survey indicated several responses that may be due to mineralization and thus should be investigated further by prospecting and possibly trenching, if feasible.

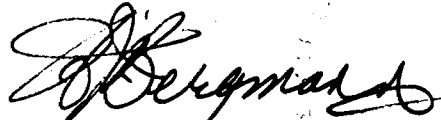
The test magnetic survey carried out on the property of Gogama Minerals Ltd. showed that it was possible to outline the areas of volcanics. It also may prove valuable in locating pyrrhotite which is a fairly prominent

accessory mineral to the gold-bearing structures.

Since the lines are already cut, it is recommended that a magnetic survey be completed over the network of lines prior to any drilling program. This should be done after freeze-up so that all the lake portions can be covered.

Respectfully submitted,

PROSPECTING GEOPHYSICS LTD.



H.J. Bergmann, P. Eng.

Montreal, Que.  
Aug. 23, 1965.

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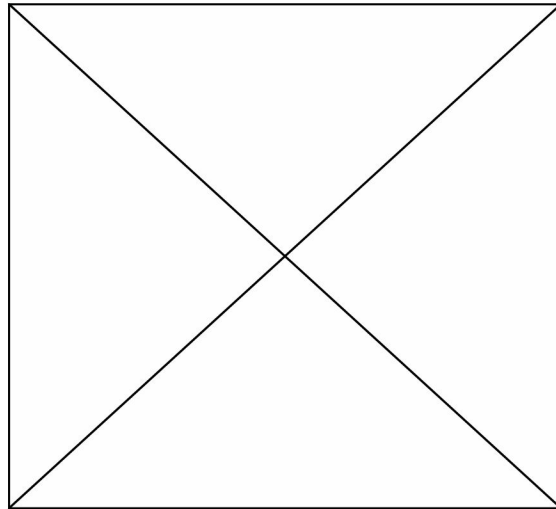
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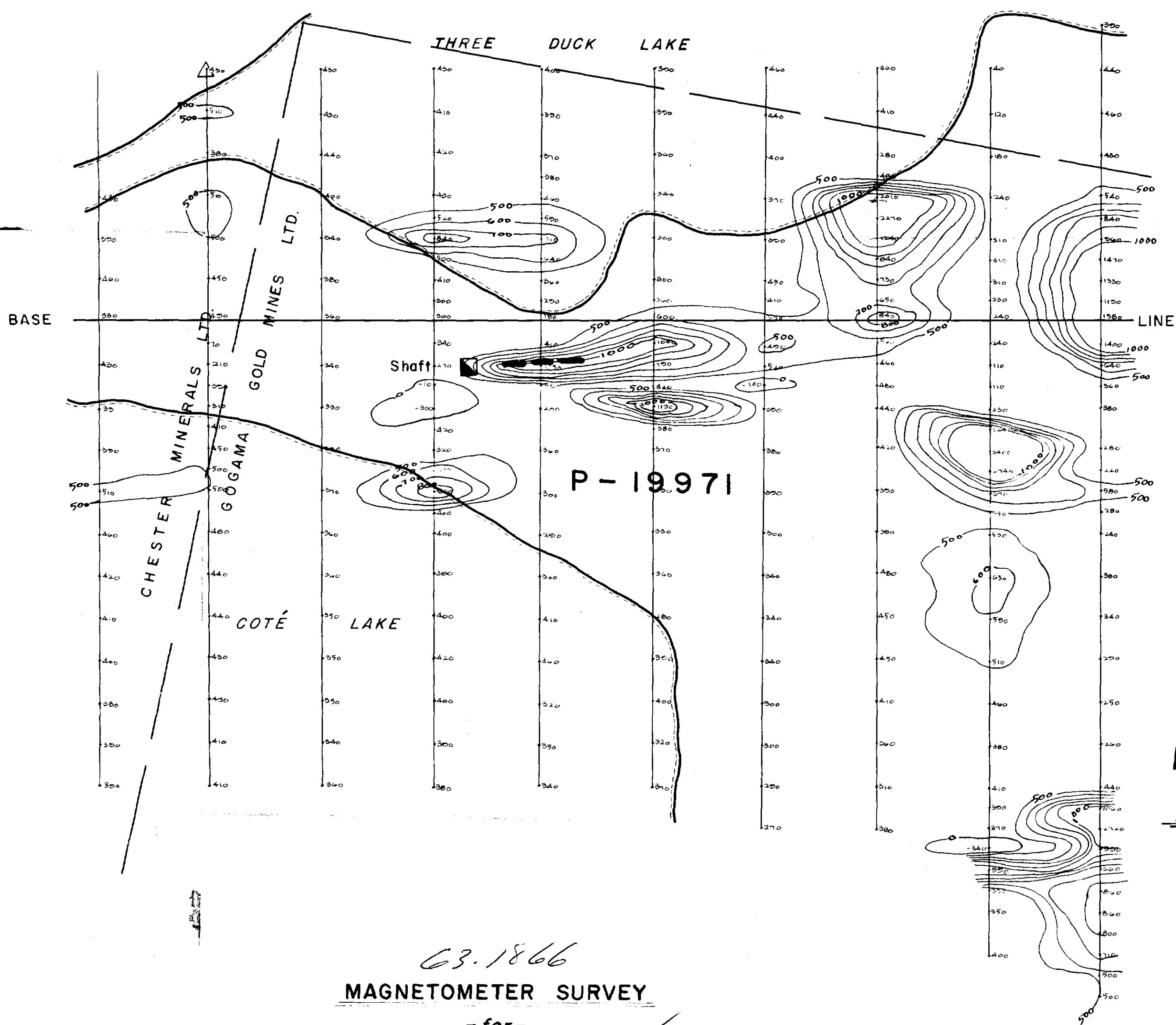
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**MAGNETOMETER SURVEY**

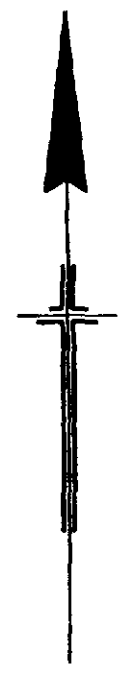
- for -

GOGAMA GOLD MINES LTD.
SHANNON MINERALS LTD.
CHESTER MINERALS LTD.

**CHESTER TOWNSHIP, ONTARIO**

- by -

**PROSPECTING GEOPHYSICS LTD.**

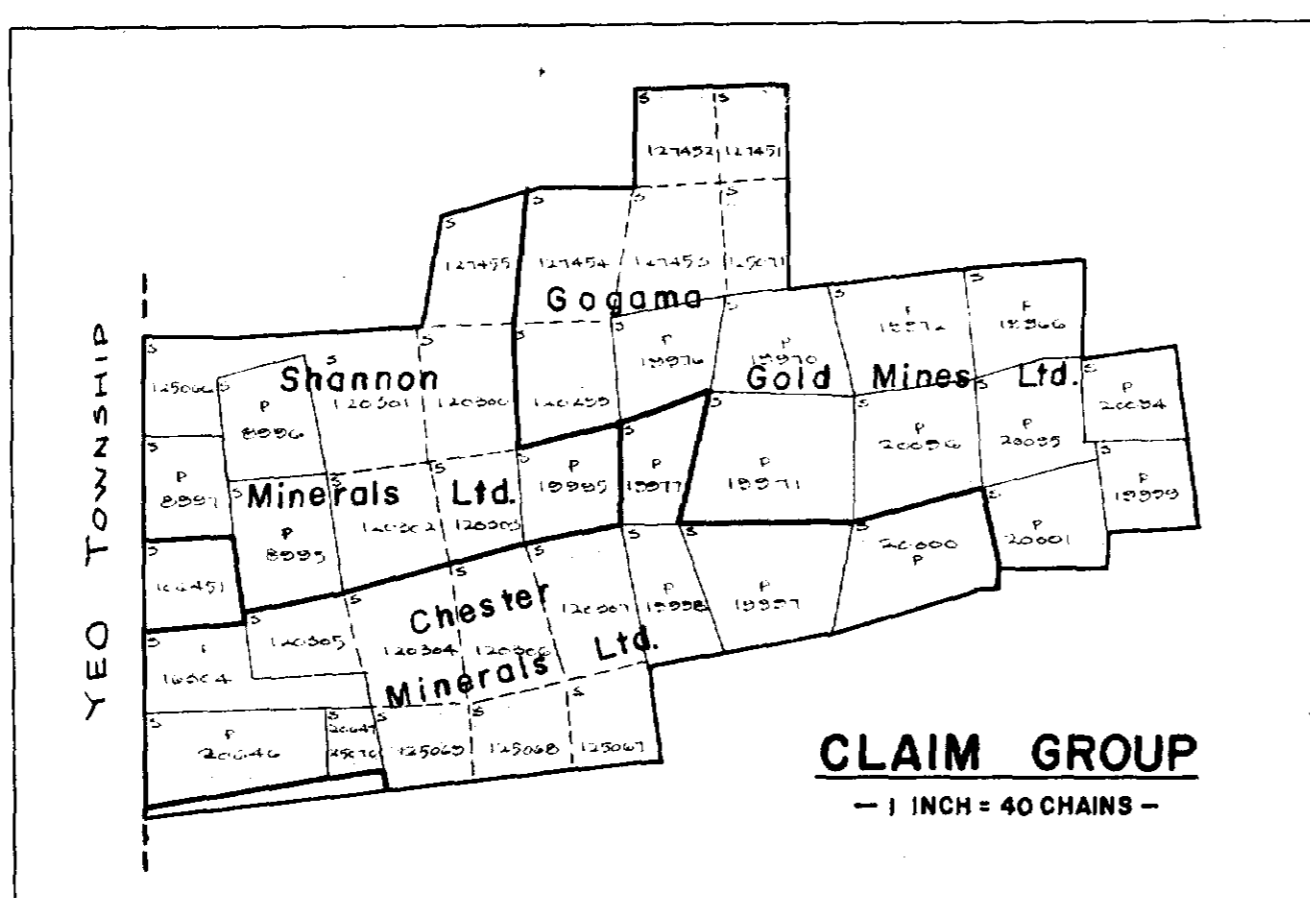
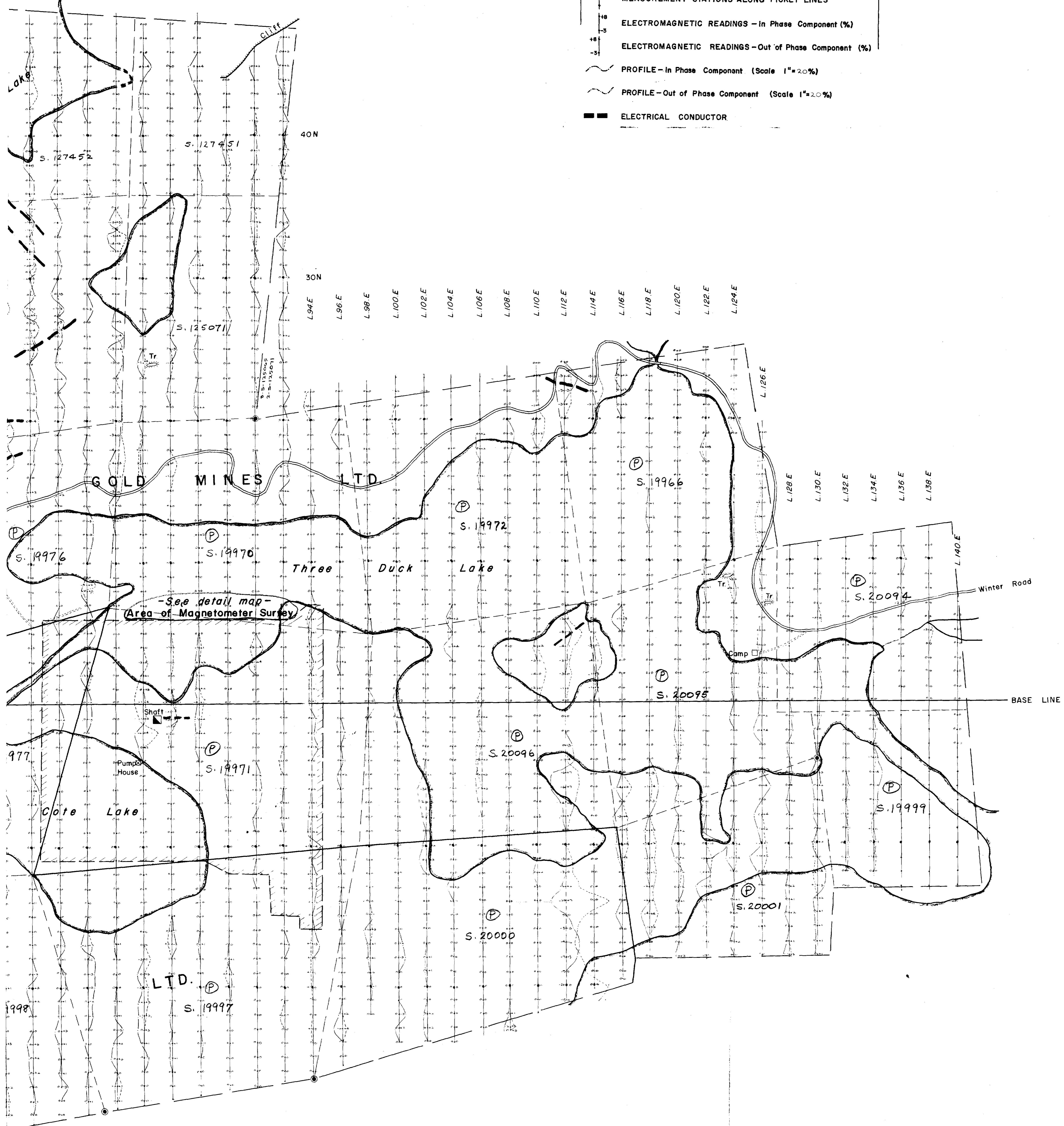


*Shannon*

L74.E  
L76.E  
L78.E  
L80.E  
L82.E  
L84.E  
L86.E  
L88.E  
L90.E  
L92.E

**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%)
- ELECTRICAL CONDUCTOR



63.1866  
**ELECTROMAGNETIC SURVEY**  
- for -  
GOGAMA GOLD MINES LTD.  
SHANNON MINERALS LTD.  
CHESTER MINERALS LTD.  
**CHESTER TOWNSHIP, ONTARIO**

- by -  
**PROSPECTING GEOPHYSICS LTD.**



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