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REPORT ON
GEOPHYSICAL SURVEY
OF
THE GOLDEN STAR MINE CLAIMS
MINE CENTRE AREA, ONTARIO,
For
P. I. R. P. HOLDINGS INC.
By
G. F. Ennis
Mining Engineer

July 23, 1982
Toronto, Ontario,

OM82-3-I-93

G. F. ENNIS
MINING ENGINEER

REFERENCES

1. Geophysical report on the Golden Star Mines claims by Dr. Michael Leppin, PhD. Geophysics.
2. Geological Map NO. 334A, Mine Centre Area, Rainey River District, Ontario, Canada Department Of Mines, 1936. Geology by T. L. Tanton 1934.

MAPS

1. Electromagnetic Survey of Golden Star Mine Claims accompanying report by Dr. Michael Leppin, on a scale of 200 feet to the inch.
2. Magnetometer Survey of Golden Star Mine Claims accompanying report by Dr. Michael Leppin, on a scale of 200 feet to the inch.
3. Surface geological map of the Golden Star Mine property by G. F. Ennis, on a scale of 500 feet to the inch.
4. Geophysical-geological map of the Golden Star Mine Claims, by G. F. Ennis, on a scale of 600 feet to the inch.

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INTRODUCTION

In December of 1981 electromagnetic and magnetic surveys were conducted on 7 of the 17 Golden Star Mine claims by Exchange Mining Holdings Limited for P.I.R.P. Holdings Inc. The field work was supervised by Paul Martin and the electromagnetic and magnetic readings were interpreted by Dr. Michael Leppin, PhD. Geophysics.

A grid of 12.23 miles of lines was established and approximately 11.5 miles were covered by the survey. The lines were spaced at 200 foot intervals and readings were taken at 50 foot intervals. The survey covered all or parts of claims 349062, 63, 64, 65, FF571, 202521 and AD3 (600 scale map).

PROPERTY AND LOCATION (600 scale map)

The claims are located along the southeast shore of Bad Vermillion lake, Mine Centre Area, Kenora Mining Division, Ontario. The claim numbers are as follows.

<u>CLAIM</u>	<u>STATUS</u>
FF570	Patented
FF571	"
AD2	"
AD3	"
AD4	"
44612 (AL114)	Surveyed for lease application
202521 (AL113)	" " " "
349062	" " " "
349063	" " " "
349064	" " " "
349065	" " " "
629053	Staked in December, 1981
629054	" "
629055	" "
629056	" "
629057	" "
237	Patented

ELECTROMAGNETIC (EM) SURVEY (200 scale EM and 600 scale maps)

The instrument used in the survey was a Geonics EM-16 receiver. A total of 9 anomalies were outlined. Dr. Leppin believes the anomalies are all due to overburden features and do not represent metallic conductors. Any deposits of disseminated sulphides may be masked by the overburden features and he recommends the application of either an induced potential (IP) or a self potential (SP) method. The SP method is less costly, simpler to operate and is not affected by overburden features. It is preferable to the IP method.

MAGNETIC SURVEY (200 scale Map and 600 scale maps)

A total of 13 magnetic anomalies were outlined. On the maps they are separated into three groups: A, B, and C.

Group A:-

Five anomalies were outlined, one located near the southwest corner of claim 349063 and four in the central part of claim AD3. All of the anomalies are underlain by Keewatin lavas.

The anomaly located near the southwest corner of claim 349063 has a strike of about S70E and is close to the edge of an area of outcrops. It probably represents a shear containing pyrrhotite as an accessory mineral.

The four anomalies located in claim AD3 occur in an area of shallow overburden and moss covered outcrops. They have a general strike comparable to No. 6 vein in AD3 and No. 7 and 8 veins in claim AD2. I believe they represent mineralized shears with quartz containing pyrrhotite and perhaps a small amount of magnetite as accessory minerals. There is also an airborne EM anomaly in line with the most southerly magnetic anomaly. I have studied this area on air photos but it has not been previously prospected.

Group B:-

The "B" anomaly strikes approximately N10W near the east boundaries of claims AD3 and 349063. It follows the line of three of the most intense airborne EM anomalies outlined by the aerial survey conducted by the Ontario Department of Mines in 1980 and is also

within 200 feet of the Isabella NO. 2 vein, reported to have very high gold values.

The south part of the anomaly is on the north slope of a lava hill near the lava-porphry contact. The bedrock is covered by a thin mantle of moss and overburden. On the east boundary of claim 349063 an outcrop containing disseminated chalcopryite is exposed on the edge of the swamp. A quartz vein striking approximately N10E is partially exposed on the edge of the outcrop, near the anomaly.

Group C:-

The "C" group includes six short anomalies, two of which are on the projected strike of the Isabella NO. 1 vein. Two are located near the northwest corner of claim 202521 close to the edge of a shallow swamp. Another is an isolated occurrence in an area of rock outcrops on claim 349062.

A short magnetic anomaly on line 18W in claim FF571 crosses the eastward projection of the NO. 9 vein which I examined in 1980 when we were re-cutting the claim lines. The vein is exposed in the face of a cliff across a width of 12 feet and in a deep rock trench within a few feet of the anomaly. The vein in the pit is well mineralized with pyrite, chalcopryite and pyrrhotite, which I feel certain is the source of the anomaly. The outcrop dips steeply into heavy overburden a few feet to the east.

CONCLUSIONS

The electromagnetic anomalies do not appear to indicate the presence of sulphides but are considered the result of overburden conductive differences. An induced potential (IP) or selfpotential (SP) geophysical method is recommended by Dr. Leppin. The self potential method is preferable.

The magnetic anomalies near the Isabella NO. 1 vein and on the NO. 9 vein offer convincing evidence that some, if not all, of them on the Golden Star Mine claims represent mineralized zones lying under a thin mantle of moss or overburden. There should be no difficulty in locating them with a probe or trenching.

RECOMMENDATIONS

The following preliminary exploratory programme is recommended:

1. Prospect the magnetic anomalies with an iron probe and trenches to remove the overburden from any mineralized occurrence.
2. Drill and blast any exposed mineralization to provide fresh rock for samples. This includes the chalcopyrite mineralization of the east boundary of claim 349063.
3. Carefully map and sample the exposed mineralized areas for a later report.
4. Delay an electromagnetic survey until the prospecting has been completed so a feasibility study of a self potential survey can be done.

respectfully submitted

G. F. Ennis
 G. F. Ennis, P.Eng.



July 23, 1982
Toronto, Ontario

G. F. ENNIS
MINING ENGINEER



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REPORT ON
GEO-PHYSICAL SURVEYS
OF
THE SHGAL LAKE ROAD CLAIMS
MINE CENTRE AREA, ONTARIO
For
P. I. R. P. HOLDINGS INC.
By
G. F. Ennis
Mining Engineer

July 22, 1982
Toronto, Ontario

OM 82-3-I-93

G. F. ENNIS
MINING ENGINEER

REFERENCES

Geophysical report of Shoal Lake Road Claims by Dr. Michael Leppin, PhD. Geophysics.

MAPS

1. Electromagnetic survey of Shoal Lake Road Claims accompanying report by Dr. Michael Leppin, on a scale of 200 feet to the inch.
2. Magnetometer survey of the Shoal Lake Road Claims accompanying report by Dr. Michael Leppin, on a scale of 200 feet to the inch.
3. Surface geological map of the Golden Star Mine property by G. F. Ennis on a scale of 500 feet to the inch, dated November 1, 1981.
4. Geophysical-Geological map of the Shoal Lake Road Claims on a scale of 600 feet to the inch, by G. F. Ennis, dated July 12, 1982.

INTRODUCTION

In December of 1981, electromagnetic and magnetometer surveys were conducted on 12 of the Shoal Lake Road group of 19 claims by Exchange Mining Holdings Limited for P. I. R. P. Holdings Inc. An additional 12 adjoining claims were staked after the geophysical surveys were completed.

The field work was supervised by Paul Martin and the magnetic and electromagnetic readings were interpreted by Dr. Michael Leppin PhD. Geophysics.

A grid of 14.72 miles of lines (see 200 scale maps) was established with the lines spaced at 200 foot intervals. C-M and magnetometer readings were taken at 50 foot intervals. Approximately 18.1 miles of line were surveyed.

PROPERTY AND LOCATION (600 scale map)

The claims are located approximately 1.5 miles east of Bad Vermillion Lake along the Shoal Lake Road, Mine Centre Area, Kenora Mining Division, Ontario. A total of 33 claims comprises the group.

<u>Claim No.</u>	<u>Status</u>
FF572 (AL110)	Patented
FF607	"
349055	Surveyed for lease application
349056	" " " "
349057	" " " "
349058	" " " "
349059	" " " "
349060	" " " "
349061	" " " "
532134	60 days assessment work recorded
532135	" " " " "
532136	" " " " "
532137	" " " " "
532138	" " " " "

<u>Claim No.</u>	<u>Status</u>
532139	60 days assessment work recorded
532140	" " " " "
532141	" " " " "
532142 532143	" " " " "
649039	Staked in December, 1981
649040	" " "
649041	" " "
649042	" " "
649043	" " "
649044	" " "
649045	" " "
649046	" " "
649047	" " "
649048	" " "
649049	" " "
649050	" " "
649051	" " "
649052	" " "

ELECTROMAGNETIC (E-M) SURVEY (200 and 600 scale maps)

The electromagnetic instrument used in the survey was a Geonics EM-16 receiver. The anomalies are reported to be the result of overburden features and not due to the presence of sulphides. However, Dr. Leppin states that the overburden features may obscure the presence of disseminated sulphides and recommends the application of either a self potential (SP) or induced potential (IP) geophysical method. The flaw in the IP method, aside from its being costly and cumbersome, is that it responds to variable depths of overburden and wet, unmineralized faults and shear zones. The advantage of the SP method is that it does not respond to these conditions, as well as the lower cost of operation and convenience of handling.

Anomalies 5, 9, and 10 may be of interest. Anomaly 5 occurs across the southwest end of an outcrop on claim 532139. The outcrop was originally mapped as Keewatin lava but a specimen submitted by Paul

Martin and identified as siliceous tuff, an interflow sediment. The electromagnetic response may represent shearing along the tuff-lava contact which would offer a favorable horizon for the injection of mineralizing solutions. The location of a recommended diamond drill hole is shown on the maps.

Anomalies 9 and 10 are located in claim 532134 in an area of exposed rock and shallow overburden. They are also in the immediate vicinity of three magnetic anomalies near the Keewatin lava-conglomerate contact. It should not be difficult to determine their source in the field because of the shallow overburden and the number of rock exposures.

MAGNETIC TLR SURVEY (200 scale mag map and 600 scale map)

Four magnetic anomalies were outlined on the claims. All occur in areas of exposed rock or shallow overburden.

Anomaly NO. 1 is located in claim 532141 along a ridge of conglomerate where there is some exposed rock and the overburden is very shallow. It is doubtful that any iron formation (referred to in Dr. Leppin's report) would be found in the conglomerate. There is a reasonable possibility that a mineralized shear is present containing sufficient magnetic pyrrhotite to give a magnetic response.

Anomalies 2, 3, and 4 are located in claim 532134 parallel and adjacent to the projected Keewatin lava-conglomerate contact. Previous exploration in this area was confined to the known auriferous quartz veins and did not extend into claim 532134. It is of interest, however, that all of the veins tested in the area carry pyrrhotite along with pyrite and chalcopyrite. If present in sufficient amounts it will give a magnetic response.

The overburden is shallow and there is enough exposed rock that a prospecting program of trenching and probing with an iron point should reveal the source of the anomalies which will probably extend into claim 549040. The location of a proposed diamond drill hole to test anomalies 2 and 3 is shown on the maps.

CONCLUSIONS

As stated in Dr. Leppin's report the electromagnetic anomalies probably represent overburden features that can be more accurately investigated by a self potential geophysical method. The exceptions are anomalies 5, 9, and 10 which may represent mineralized shear structures.

The magnetic anomalies occur in areas with shallow overburden and rock exposures which have not been explored. They appear to represent shear zones or mineralized quartz veins carrying sufficient pyrrhotite to give a magnetic response.

RECOMMENDATIONS

The following exploratory program is recommended:

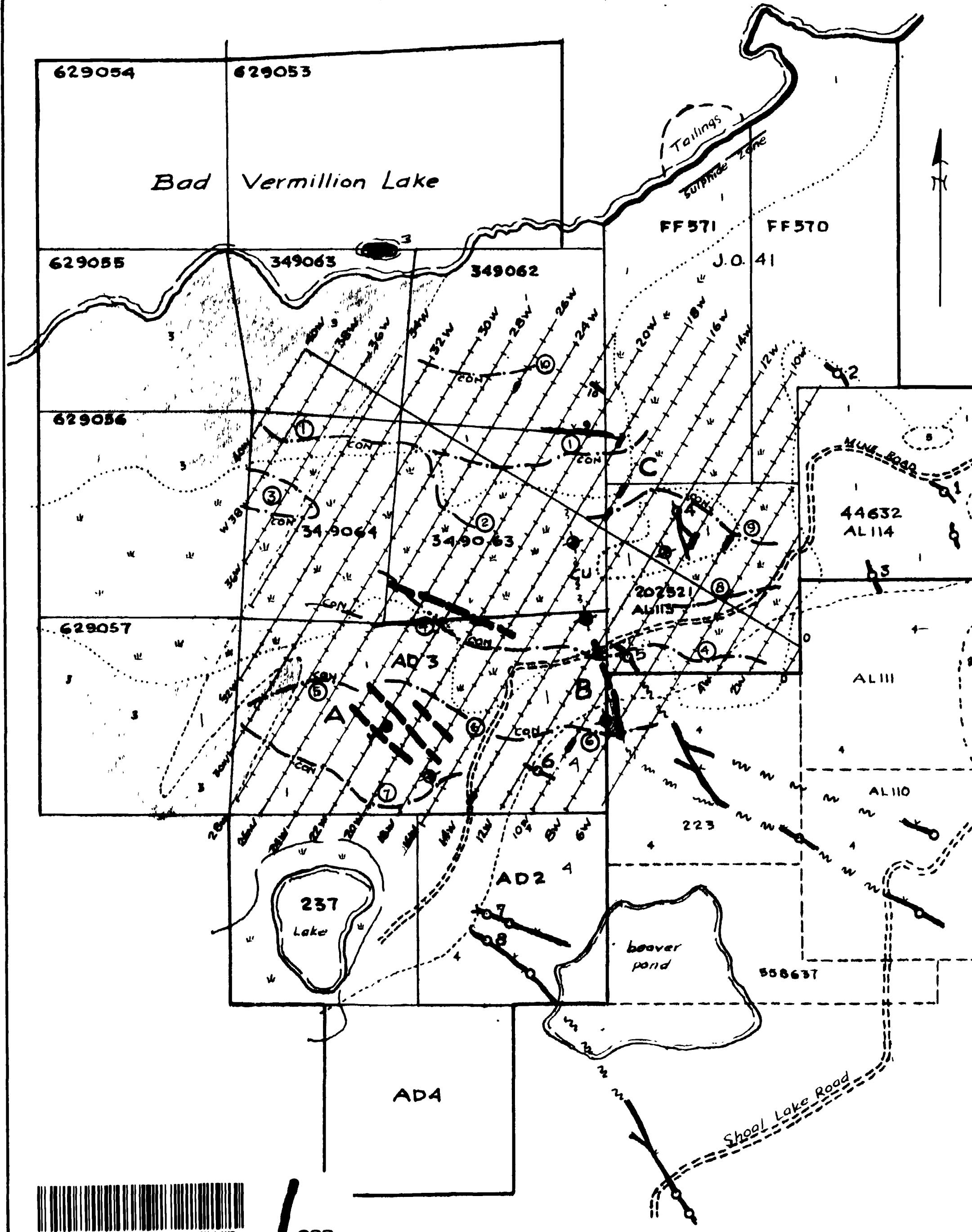
1. Examine and map the outcrop on electromagnetic anomaly NO. 5. The 200 scale map shows an old trench at the southwest end of the outcrop. If warranted it should be cleaned out and blasted for fresh samples.
2. Prospect the magnetic anomaly on claims 532142 and the magnetic and electromagnetic anomalies on claims 532134. A hand dip needle is available to pin point the magnetic anomalies. Map, blast open and sample any significant mineralized zones. Some shallow trenching will be necessary to remove the overburden.
3. Prospect the high ground areas along EM anomalies 2, 8, 9 and 10 for rock exposures or any visible evidence of their origin.
4. Make a feasibility study of the requirements for a self potential geophysical survey. As a preliminary procedure it may be practical to cover only the existing electromagnetic anomalies and selected lines across the grid to determine the efficiency of the method.

respectfully submitted


G. F. Ennis P.Eng.



G. F. ENNIS
MINING ENGINEER



- GEOPHYSICS**
- Magnetic dyke anomaly location
 - Zone of increased magnetic response
 - Contact between areas of different electrical conductivities (con=high conductivity) anomaly designation
 - Airborne E-M anomaly

- LEGEND**
- Auriferous quartz vein
 - Algonian qtz-feldspar porphyry
 - Laurentian qtz-feldspar porphyry
 - Anorthosite gabbro etc.
 - Conglomerate
 - Keewatin basalts and andesite lavas

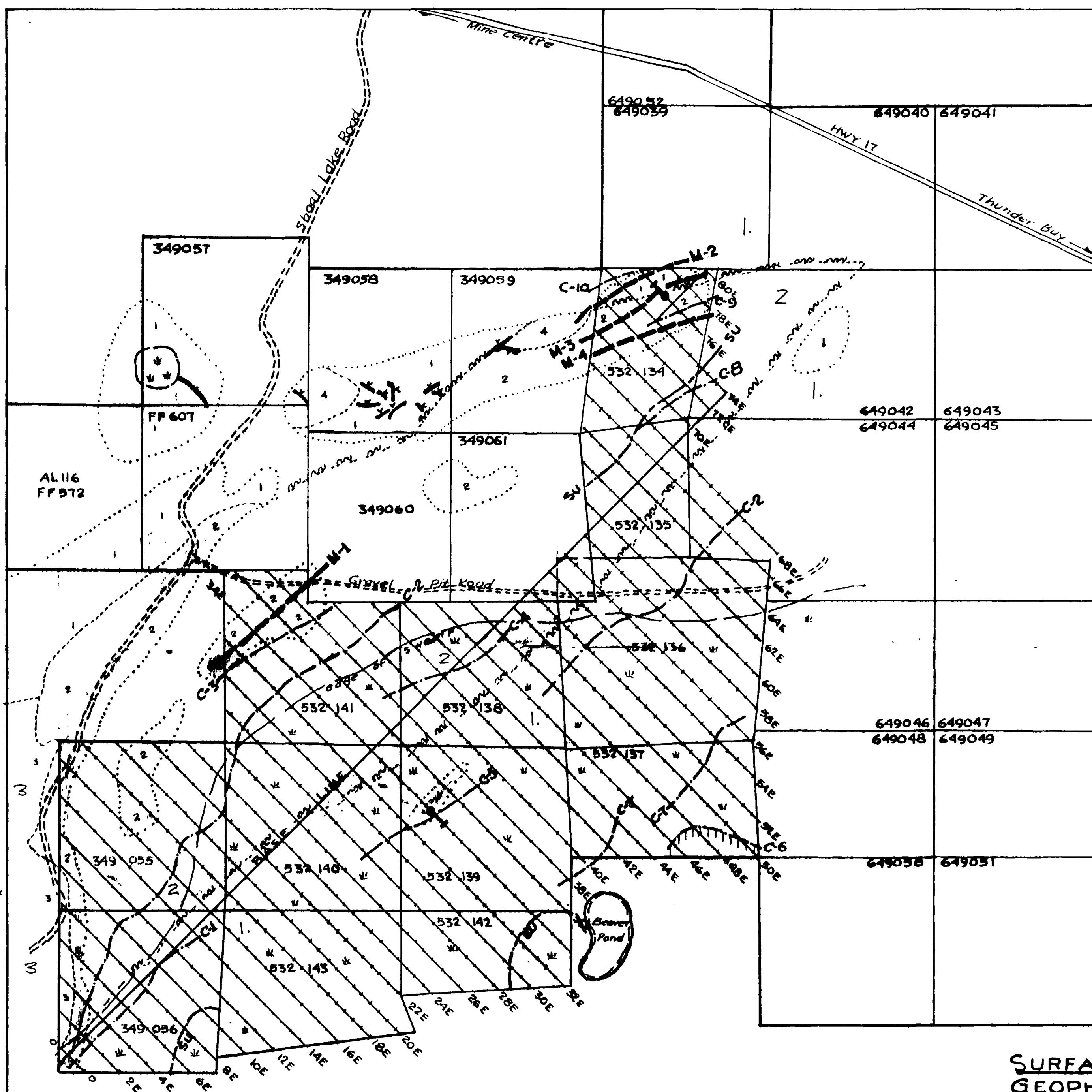
- SYMBOLS**
- Tunnel
 - Outline of outcrop areas
 - Geological contact
 - Geological contact assumed
 - Fault - assumed
 - Swamp
 - CU Disseminated chalcopyrite

- SHAFTS**
- 1 Golden Star Mine No.1 vein
 - 2 " " " No.2 vein
 - 3 " " " No.3 vein
 - 4 Isabella No.1 vein
 - 5 " No.2 vein
 - 6 Golden Crescent Vein
 - 7 Moose Vein-shafts
 - 8 Gem Vein
 - Proposed diamond shaft



SURFACE MAP
GEOPHYSICAL- GEOLOGICAL
P.I.R.P. HOLDINGS INC. OMB2-3-I-93
GOLDEN STAR MINE CLAIMS
MINE CENTRE AREA, ONT.
 scale: - 1" = 600' July 17, 1982
 63.4188 G.F. ENNIS M.E.





LEGEND

- 4 [Symbol] Auriferous quartz vein
- 3 [Symbol] Algonquin quartz porphyry
- 2 [Symbol] Laurentian quartz porphyry
- 1 [Symbol] Conglomerate
- [Symbol] Keswatin lavas

SYMBOLS

- [Symbol] Edge of outcrop
- [Symbol] Geological Contact
- [Symbol] Geological contact assumed
- [Symbol] Fault (assumed)
- [Symbol] Swamp
- [Symbol] M- Dike shaped magnetic body. Anomaly designation
- [Symbol] SU Contact between areas of different magnetic susceptibilities (High susceptibility)
- [Symbol] C- Contact between areas of different electrical conductivities (High conductivity, anomaly designation)
- [Symbol] Proposed diamond drill hole



0MB2-3-I-93
SURFACE PLAN
GEOPHYSICAL- GEOLOGICAL
P. I. R. P. HOLDINGS INC.
SHOAL LAKE ROAD CLAIMS
MINE CENTRE AREA, ONT.
 Scale: - 1" = 600' July 12, 1982

G.F. Ennis M.E.

[Signature]

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