PROTON MAGNETOMETER SURVEY
EDWARDS GOLD SHOWING
POTVIN CLAIMS
Jacobson Township
District of Algoma, Ont.

RECEIVED
MAR 20 1982
MINING LANDS SECTION

by:
J.C. Potvin, B.Sc. Geologist
M.B.A.
March 17, 1982. Toronto
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Magnetometer Survey scale 1 inch = 200 feet contour 250 gamma int.
Summary-
This report covers the results of a proton magnetometer survey carried out over claims SSM 612647-48, 612553-56 in Jacobson Township, District of Algoma, during the months of January and February, 1982.

The purpose of the survey was to try and define the geological structure underlying the survey grid and to define any mineralized zones.

Some six miles of line was traversed during the survey, on lines spaced at 400 feet apart and on stations at 50 or 100 feet apart.

One area of strong magnetic signature underlies the northeast portion of the claims. This zone outlines a diorite intrusive stock which is elongated in an east-west direction, paralleling the regional geological strike. Many of the gold bearing shears in the vicinity of the claim group lie at the contact between the diorite intrusive and metavolcanic units.

A zone of weak magnetic signature is traced in an east-west direction and close to the south boundary of the surveyed claims. This zone outlines one or more bands of iron formation. Iron formation in the area has been found to have associated gold values.
Location and Access -

The property is located approximately 20 miles to the northeast of Wawa, in Jacobson Township of the District of Algoma, Ontario. The property is approximately 6 miles southwest of Lochalsh (on the C.P. Railway) and 12 miles northeast of Goudreau (on the A.C. Railway). A gravel-dirt road connects Goudreau and Lochalsh and cuts through the property. Another gravel road from Dubruilville, approximately 15 kilometers to the northwest, cuts through the west portion of the claims. Another gravel road, for some 20 miles, connects Dubruilville to the Trans Canada Highway # 17.

The property consists of six unpatented mining claims numbered as follows:

SSM 612553
SSM 612554
SSM 612555
SSM 612556
SSM 612647
SSM 612648

Topography -

The area encompassed by the claim group is generally flat lying with the odd low lying swampy area. Almost all of the claims are overlain by sand and boulder glacial till overburden. A few outcrops and knolls are found in the northeastern portion of the claim group.

The timber consists of mature jack pine, spruce, birch and poplar. Approximately one third of the area has been harvested for the spruce.
General Geology-

The oldest rocks are of Precambrian age. Archean metavolcanics and metasediments have been intruded by granodiorite, diorite, quartz porphyry, and diabase dykes. A series of east-west shears are found to bissect the area, paralleling the regional strike.

The diabase dykes cut at a discordant angle to the regional strike, at a northwest to southeast direction. Several periods of quartz veining are found, cutting in east-west, northwest-southeast, and northeast-southwest directions. Gold bearing quartz veins paralleling the east-west shears and the diorite-metavolcanic contacts are numerous.

Outcroppings on these claims are scarce. A few diorite outcrops are found in the northeast corner of this claim group.
Several past gold producers are located on the greenstone belt which crosses through the claim group. Several occurrences of silver, copper, zinc and iron are also located in the area.

The gold is found in quartz-carbonate veining and is also associated with pyrite within shear zones which cross the region in an east-west direction, paralleling the regional strike. Many of these zones lie close to the contact between granodiorite/diorite and basic metavolcanic units.

It is reported that gold producers within this metavolcanic belt, both to the east and west of the claim group, have collectively produced over 78,000 ounces of gold and 13,000 ounces of silver in the past. Between 1934 and 1937, a 75 ton amalgamation mill treated 1573 tons of ore from immediately to the south of these claims for a production of $14,977.00.

A drilling program in 1963 had outlined five zones to the south of the surveyed claims. The results are as outlined:

**Zone 1** - Six intersections of over 0.7 oz/gold per ton

**Zone 2** - Twenty percent of the intersections were over 0.69 oz/gold per ton (a zone which had in the past averaged 1.09 oz/gold per ton for a width of 2.0 feet and a length of 160 feet).

**Zone 3** - Averaged 0.11 oz/gold per ton for a width of
4.5 to 6.0 feet and a length of 200 feet.

Zone 4-three intersections averaging 0.26 ounces of gold per ton over 1.6 feet in width.

Zone 5-three intersections averaging 1.58 ounces of gold per ton over a width of 3.9 feet.
The survey was completed with the use of the Exploranium-Geometrics 'Unimag' Proton Magnetometer. It is a digital readout instrument with a sensitivity of $\pm 10$ gammas.

Station readings were taken at intervals of 100 feet on lines at 200 feet apart. On occasion, when abnormally high or low readings were encountered, stations were used at 50 foot intervals. Some forty eight and one half miles of lines were traversed during the survey.

The accuracy of the readings was increased by averaging two or three readings, especially in areas of high magnetic fluctuation, or until fluctuations decreased to a constant level. The range selector was changed during high fluctuations.

The 'world gamma range' setting on the instrument was brought down to a scale relative to the airborne magnetics of the area when plotting the final resultant readings. Results, after plotting corrections for diurnal drift, are plotted at 500 gamma intervals. Base plans are plotted at a scale of $1" = 200$ feet.

Actual field work was carried out during the months of January and February, 1982.
Results and Conclusions-

A zone of high magnetic signature is found to exist in the northeast section of the claim group. This outlines a weakly magnetic diorite intrusive stock/plug which is elongated in an east-west direction, parallel to the regional geological strike.

Low magnetic signature, probably underlain by basic metavolcanic units, is found in the southern portions of the claims.

A narrow zone of high and discontinuous magnetic signature is found along the south claim boundary. This probably corresponds to a pyrrhotite rich or banded iron formation shear zone.

The contact edge of the diorite intrusive, iron formation, and pyrrhotite-pyrite rich shears are all significant areas for the localization of gold. A closer grid spacing should be used to better define and to give a more defined analysis of the outlined zones.

March 20, 1982.
Toronto, Ontario.

J.C. Potvin, B.Sc. Geology, M.B.A.
V.L.F. ELECTROMAGNETIC SURVEY

EDWARDS GOLD SHOWING
POTVIN CLAIMS

Jacobson Township
District of Algoma
Ontario.

J.C. Potvin, B.Sc. Geologist
M.B.A.

March 17, 1982. Toronto
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## Appendix

### V.L.F. Electromagnetic Map - Dip Angle Measurements
1 inch = 200 feet

### V.L.F. Electromagnetic Map - Field Strength Measurements
1 inch = 200 feet
Summary-

This report covers the results of a Crone V.L.F. electromagnetic survey run over claims SSM 612647-48, 612553-56 in Jacobson Township, District of Algoma, during the months of January and February, 1982.

The purpose of this survey was to try and define any mineralized shear zones or fault zones which cross the area.

Some six miles of line was traversed during the survey on lines spaced at 400 foot intervals with stations at 100 feet apart.

A moderately strong anomaly was found crossing the south portion of the survey grid in an east-west direction. This anomaly outlines a banded iron formation with probably a high concentration of pyrrhotite mineralization. Many of the iron formations in the area contain gold values, thus further investigation of this anomaly is warranted.

A weak anomaly is found crossing the central portions of the survey grid in an east-west direction. This anomaly follows closely to the south contact of a diorite intrusive and the basic metavolcanic unit. Almost all of the gold occurrences in the area are found close to a diorite-metavolcanic contact zone.
Location and Access-

The property is located approximately 20 miles to the northeast of Wawa, in Jacobson Township of the District of Algoma, Ontario. The property is approximately 6 miles southwest of Lochalsh (on the C.P.Railway) and 12 miles northeast of Goudreau (on the A.C.Railway). A gravel-dirt road connects Goudreau and Lochalsh and cuts through the property. Another gravel road from Dubruilville, approximately 15 kilometers to the northwest, cuts through the west portion of the claims. Another gravel road, for some 20 miles, connects Dubruilville to the Trans Canada Highway # 17.

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Outcroppings on these claims are scarce. A few diorite outcrops are found in the northeast corner of this claim group.
Economic Geology-

Several past gold producers are located on the greenstone belt which crosses through the claim group. Several occurrences of silver, copper, zinc and iron are also located in the area.

The gold is found in quartz-carbonate veining and is also associated with pyrite within shear zones which cross the region in an east-west direction, paralleling the regional strike. Many of these zones lie close to the contact between granodiorite/diorite and basic metavolcanic units.

It is reported that gold producers within this metavolcanic belt, both to the east and west of the claim group, have collectively produced over 78,000 ounces of gold and 13,000 ounces of silver in the past. Between 1934 and 1937, a 75 ton amalgamation mill treated 1573 tons of ore from immediately to the south of these claims for a production of $14,977.00.

A drilling program in 1963 had outlined five zones to the south of the surveyed claims. The results are as outlined:

Zone 1- Six intersections of over 0.7 oz/gold per ton

Zone 2- Twenty percent of the intersections were over 0.69 oz/gold per ton (a zone which had in the past averaged 1.09 oz/gold per ton for a width of 2.0 feet and a length of 160 feet).

Zone 3- Averaged 0.11 oz/gold per ton for a width of
4.5 to 6.0 feet and a length of 200 feet.

Zone 4—three intersections averaging 0.26 ounces of gold per ton over 1.6 feet in width.

Zone 5—three intersections averaging 1.58 ounces of gold per ton over a width of 3.9 feet.
Discussion of Equipment:

The Crone Radem V.L.F.- Electromagnetic unit utilizes higher than normal frequencies and is capable of detecting small sulphide bodies and disseminated sulphide deposits. It accurately isolates banded conductors and operates through areas of high noise or interference levels.

This method is capable of deep penetration but due to the low frequency used, its penetration is limited in areas of clay and conductive overburden. The components of dip angle in degrees of the magnetic field component, field strength of the magnetic component of the V.L.F. field, and out of phase component of the magnetic field are measured at each station.

There are several channels or stations available, each with a different frequency. A channel to be used should be parallel to the general strike of the area. If this cannot be determined, then two orthogonal stations are used to define any possible conductors.

The dip angle measurement measures the angle of inclination from horizontal of the direction of the resultant V.L.F. or the amplitude of the major axis of the polarization ellipse. It is detected by a minimum on the field strength meter and is read from an inclinometer with a range of ± 90. A conductor is designated by a true crossover pattern of the readings. The measurement is taken from an audio null when the instrument is held in a vertical position, after turning perpendicular to the direction in alignment with the V.L.F. field. The V.L.F. field is found by an audio null or minimum field strength measurement when the instrument is held in a horizontal position.
The accuracy of the dip angle measurements is $\pm \frac{1}{2}^\circ$.

The field strength measurement defines the shape and the attitude of the conductor by the strength of the field in the horizontal plane or the amplitude of the major axis of the polarization ellipse. It is the maximum reading obtained from the field strength meter when the instrument is rotated in the horizontal plane, and is measured as a percent of normal field strength established at a base station. The field strength of the V.L.F. stations drifts with time, and must be adjusted with the base station every few hours. The field strength measurement has an accuracy of $\pm 2\%$.

The out of phase component of the magnetic field, as a percent of the normal primary field, is sensitive to a lower order of conductivity than the dip angle measurement and is used to locate conductors of a low order of magnitude. It is a measurement of the secondary field produced by a ground conductor which is in a different phase than the primary field. This is the minimum reading of the field strength meter obtained when measuring the dip angle. The measurement has an accuracy of $\pm 2\%$. 
Results and Conclusions-

Two anomalous zones were encountered during the survey. These anomalous trends run in an east-west direction, parallel to the regional geological strike.

Anomaly A is a moderately strong to strong conductive anomaly which is traced for approximately 4000 feet along the south portion of the claim group before it continues off of the claim group at both ends. This anomaly outlines a zone of banded iron formation or pyrrhotite rich shearing.

Anomaly B parallels anomaly A, and is found between line 16+00 West and line 24+00 West. It is a moderately strong to strongly conductive zone which outlines either banded iron formation or pyrrhotite/pyrite rich shearing. This zone is found approximately 100 to 250 feet south of anomaly A.

Anomaly C is a discontinuous and weakly conductive zone which cuts across the central portion of the claim group. This zone is strongest between lines 36+00 West and 40+00 West where it has been accentuated by 'swamp' effect or conductive overburden. It lies just south of a diorite intrusive plug in the northeast of the claim group.

Gold in the area has been found to be associated with pyrite-pyrrhotite and quartz rich shear zones as well as with iron formation. Most of the gold occurrences are also found along or close to the contacts between diorite/granodiorite intrusives and metavolcanic units. It is felt that these anomalies are significant and that further attention is warranted.

March 20, 1982.

Yorkton, Ontario.

J.C. Potvin, B.Sc. Geology, M.B.A.
To: Geophysics

Mr. Barlow

Key maps needed
Consider extending delay in approval at least one
from Dec 27/82

Approved  Wish to see again with corrections

To: Geology - Expenditures

Comments

Approved  Wish to see again with corrections

To: Geochemistry

Comments

Approved  Wish to see again with corrections

To: Mining Lands Section, Room 6462, Whitney Block.  (Tel: 5-1360)
Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer) survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims SSM 612647 et al in the Township of Jacobson.

This material will be examined and assessed and a statement of assessment work credits will be issued.

Yours very truly,

E.F. Anderson
Director
Land Management Branch
Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1V3
Phone: 416/965-1316

J. Skura/amc

cc: J.C. Potvin
Toronto, Ontario

cc: F.T. Archibald
Toronto, Ontario
### Magnetic Geophysics

**Claim Holder:** J.C. POTVIN  
**Survey Date:** JACOBSON

### Type of Survey:

- **Magnetometer**
- **Geophysics**
- **Airborne**
- Electromagnetic
- Magnetometer
- Radiometric
- Other

### Mining Claim Traversed (List in numerical sequence)

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### Special Provisions Credits Requested

- Instr.: For first survey: Enter 40 days. (This includes line cutting)
- Instr.: For each additional survey: using the same grid: Enter 20 days (for each)

### Man Days

- Complete reverse side and enter totals here

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### Expenditures

- Geophysical $60
- Total Mileage of Line Cut: 6.0

### Total Mileage of Line Cut

- 6.0

### Note!
- Only days credits calculated in the "Expenditure Days Credit" section may be entered in the "Expended Days Credit" columns.
- Do not use shaded areas below.

---

F.T. ARCHIBALD 701 - 100 ADELAIDE ST., W.
TORONTO, ONTARIO M5H-1S3

Date Certified: MARCH 22, 1982

Certified by (Signature): F.T. ARCHIBALD
See accompanying map(s) identified as

\[ \text{JACOBSON-0046} \quad \#1 \]

\[ 2 \]

\[ 3 \]

Located in the map channel in the following sequence (x)
POTVIN CLAIMS
MAGNETOMETER
SURVEY
JACOBSON TOWNSHIP; ONTARIO

SCALE - 1" = 200 FEET
CONTOUR INTERVAL - 250 GAMMAS
LEGEND
-120
120 - 140
140 - 160
160 - 180
180 - 200
200 +

CONTOUR INTERVALS

POTVIN CLAIMS
VLF-EM SURVEY
RESULTANT FIELD STRENGTH
JACOBSON TOWNSHIP, ONTARIO
SCALE - 1 INCH: 200 FEET

JACOBSON-0246 #3
LEGEND

ANOMALY/ CROSSOVER
POSSIBLE ANOMALY
1 cm = 5 degrees CONTOUR SCALE

Station = SEATTLE, WASHINGTON 17.6 Khz

POTVIN CLAIM GROUP
VLF-EM SURVEY
DIP ANGLES
JACOBSON TOWNSHIP: ONTARIO
SCALE = 1 INCH: 200 FEET

JACOBSON-0046 #2