

HESS-0024

LOAD: 16 mm

2.4379

REPORT ON SELF POTENTIAL SURVEY

JASPERSON CLAIM GROUP,

HESS TWP., SUDBURY AREA, ONTARIO

RECEIVED

DEC 8 1981

INTRODUCTION

MINING LANDS SECTION

In the fall of 1980, John Jasperson, owner of the claims, carried out a detailed geochemical survey over part of patented claim S6631, and outlined an interesting nickel anomaly. The anomaly was in low ground and trended in a general NE-SW direction. To the west was higher ground with an elevation some 50 to 60 feet higher. It was recommended that a self potential test be made. The writer accompanied John Jasperson on two occasions to the property to make these tests. No anomaly was found over the geochemical anomaly, nor on the higher ground to the northwest. Nevertheless, the writer recommended a self potential survey over the four-claim group.

Base and grid lines were picketed and chained (see Map), and the survey was conducted by John Jasperson between September 12 and 28, 1981.

PROPERTY, LOCATION, ACCESS

The property is in Hess Township, lying north of Sudbury, and consists of two patented claims: S6631, S6632, and two unpatented claims: 600759 and 600760, forming a square  $\frac{1}{2}$  mile by  $\frac{1}{2}$  mile.

The Key Map below shows the location. Access is by Highway 144, which joins Sudbury to Timmins. About 35 miles north of Sudbury, a gravel road (Geneva Lake Road) extends east past the Lake Geneva property (five miles) and across the southern part of the Jasperson property (six miles). Although apparently unimproved, it is still navigable by car.

KEY MAP. SCALE - 1: 1600000



## GEOLOGY AND TOPOGRAPHY

The rocks under the claim group are a part of the "Benny" greenstone belt, and consist of volcanics, mainly, ranging from acid to basic. These rocks have a general east-west strike and in places they are intruded by acid and basic rocks and dykes.

Elevation differences on the property range up to sixty feet, and, despite the general E-W strike of the formations, much of the topography has a NE-SW trend. Beaver activity is high in this area with some flooded roads, swamps turned into impassable marshes, and ponds enlarged into small lakes. As a result, although the lines and survey were extended as far as possible over the claim group, there are some blank stretches.

## SURVEY METHOD

The survey was carried out using a reel of wire (1700 feet) and two porcelain porous pots containing saturated copper sulphate solution and copper electrodes. The porous pots were placed in canvas sample bags containing the same kind of wet soil. This means that each pot is immersed in the same pH, which inhibits wide variations in potential which one finds when the pots make contact with soils of different acidity (i.e. when one pot is in a wet humus swamp and the other in a dry sandy soil, the potential variation can reach up to 110 millivolts). The instrument was a pocket-size "Multimeter" which has been checked against two different potentiometers.

The writer has checked the readings and assigned millivolt values taken by John Jasperson, and is satisfied the survey was carried out in a very competent manner, with tight control on the base and control stations.

## INTERPRETATION OF SURVEY RESULTS

The assigned values of the self potential readings vary from a minimum of +20 millivolts to a maximum of -132 millivolts. Even

without the visual evidence, this indicates that sulphides are present. The writer has used a -45 millivolt contour on the map to outline the stronger sulphide mineralization. However, he suspects that a -20 or -25 millivolt contour would outline weaker, more widespread mineralization.

In short, the many negative values supports the writer's observations of rock specimens from many parts of the property, that disseminated and fine stringers of sulphides are prevalent. Whether this mineralization is a "halo" around some orebody remains to be found. Nevertheless, it is encouraging.

The scale of the map is 1 inch to 2 chains (132 feet). Readings were taken at  $\frac{1}{2}$  chain intervals (33 feet). The grid lines are 6 chains (396 feet) apart. On the northern parts of Line 12W and Line 0+00, there are anomalous readings which might indicate more northerly-trending anomalies. These need to be confirmed, and if confirmed, detailed, probably with east-west traverses. A recommended magnetic survey over the present grid lines, may help to define the strike of the stratigraphy or anomalous zones.

Any interpretation linking up anomalous readings between lines some 400 feet apart, is, obviously, subjective. Nevertheless, acknowledging this difficulty, and stressing the need for more detailing between lines, the writer believes that five anomalous areas: "A", "B", "C", "D" and "E" deserve more detailing, not only with the S.P. but a magnetometer check and an E.M. check, to determine whether pyrrhotite or good-conducting (heavier) sulphides are present.

Anomaly "A", on the northern part of Line 12E, is close to an old pit from which dump rock samples have indicated interesting amounts of chalcopyrite and some sphalerite and galena. It appears to be a one-line anomaly, but, for lack of detailing, it may be part of the northeast-trending Anomaly "C". On Line 12W north, Anomaly "B" is the strongest so far found. Detecting this anomaly led to the discovery of another old trench from which samples showed pyrite, pyrrhotite and minor chalcopyrite. The pyrrhotite may explain the stronger S.P. anomaly. The rock from this trench is more acidic than the rock from Anomaly "A", suggesting, as the S.P. suggests, that they are not from the same stratigraphic horizon.

Anomaly "C" (if the interpretation is correct) is the longest of any of the anomalies - across three lines for a strike distance of some 1450 feet, with, possibly, as suggested above, a link-up with the old copper pit of Anomaly "A". Anomaly "D", south of "B", and Anomaly "E" in the southern part of claim 600579, also deserve more attention.

The most interesting anomaly in the writer's opinion is "C". It cuts across the general strike and suggests there may be some NE-SW structure, possibly faulting, folding or dyking, which involved or controlled mineralization. Certainly, the self potential survey indicates that more detailing and exploration is warranted.

#### RECOMMENDATIONS

It is recommended that more self potential detailing, along with magnetic surveying and some check electro-magnetic, be carried out over the anomalies. Magnetic and E.M. could be conducted in the winter-time, but the S.P. should wait until after break-up.



S. V. Burr

November 23, 1981







**GEOPHYSICAL TECHNICAL DATA**

**GROUND SURVEYS** - If more than one survey, specify data for each type of survey

Number of Stations ABOUT 200 Number of Readings 215  
Station interval 33 FEET Line spacing 396 FEET  
Profile scale \_\_\_\_\_  
Contour interval -45 MV, -60 MV, -80 MV.

**MAGNETIC**

Instrument \_\_\_\_\_  
Accuracy - Scale constant \_\_\_\_\_  
Diurnal correction method \_\_\_\_\_  
Base Station check-in interval (hours) \_\_\_\_\_  
Base Station location and value \_\_\_\_\_

**ELECTROMAGNETIC**

Instrument \_\_\_\_\_  
Coil configuration \_\_\_\_\_  
Coil separation \_\_\_\_\_  
Accuracy \_\_\_\_\_  
Method:  Fixed transmitter  Shoot back  In line  Parallel line  
Frequency \_\_\_\_\_  
(specify V.L.F. station)  
Parameters measured \_\_\_\_\_

**GRAVITY**

Instrument \_\_\_\_\_  
Scale constant \_\_\_\_\_  
Corrections made \_\_\_\_\_  
Base station value and location \_\_\_\_\_  
Elevation accuracy \_\_\_\_\_

**RESISTIVITY**

Instrument \_\_\_\_\_  
Method  Time Domain  Frequency Domain  
Parameters - On time \_\_\_\_\_ Frequency \_\_\_\_\_  
- Off time \_\_\_\_\_ Range \_\_\_\_\_  
- Delay time \_\_\_\_\_  
- Integration time \_\_\_\_\_  
Power \_\_\_\_\_  
Electrode array \_\_\_\_\_  
Electrode spacing \_\_\_\_\_  
Type of electrode \_\_\_\_\_



**SELF POTENTIAL**

Instrument MULTIMETER Range 0-2000 MV.

Survey Method (SEE REPORT)

Corrections made POT DIFFERENCES (WHEN PRESENT)

**RADIOMETRIC**

Instrument \_\_\_\_\_

Values measured \_\_\_\_\_

Energy windows (levels) \_\_\_\_\_

Height of instrument \_\_\_\_\_ Background Count \_\_\_\_\_

Size of detector \_\_\_\_\_

Overburden \_\_\_\_\_

(type, depth - include outcrop map)

**OTHERS (SEISMIC, DRILL WELL LOGGING ETC)**

Type of survey \_\_\_\_\_

Instrument \_\_\_\_\_

Accuracy \_\_\_\_\_

Parameters measured \_\_\_\_\_

Additional information (for understanding results) \_\_\_\_\_

**AIRBORNE SURVEYS**

Type of survey(s) \_\_\_\_\_

Instrument(s) \_\_\_\_\_

(specify for each type of survey)

Accuracy \_\_\_\_\_

(specify for each type of survey)

Aircraft used \_\_\_\_\_

Sensor altitude \_\_\_\_\_

Navigation and flight path recovery method \_\_\_\_\_

Aircraft altitude \_\_\_\_\_ Line Spacing \_\_\_\_\_

Miles flown over total area \_\_\_\_\_ Over claims only \_\_\_\_\_





Mining Lands Comments

(MAP NOT SIGNED)

To: Geophysics *Mr. Barber.*

Comments

Approved     Wish to see again with corrections    Date *May 11/83*    Signature *R.R.L.*

To: Geology - Expenditures

Comments

Approved     Wish to see again with corrections    Date    Signature

To: Geochemistry

*L.O.*

Approved     Wish to see again with corrections    Date    Signature

To: Mining Lands Section, Room 8462, Whitney Block. (Tel: 5-1380)

December 18, 1981

2.4379

V.C. Miller  
Mining Recorder  
Ministry of Natural Resources  
199 Larch Street  
Sudbury, Ontario  
P3E 5P9

Dear Sir:

We have received reports and maps for a Self Potential Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims S.600759-60 in the Township of Hess.

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 1W3  
Phone: 416/965-1380

cc: S.V. Burr  
Toronto, Ontario

2.4379

June 6, 1983

Mr. John K. Jasperson  
182 Three Valleys Dr.  
Don Mills, Ontario  
M3A 3L8

Dear Sir:

Re: Geophysical (Self-Potential)  
Survey submitted on Mining Claims S 600759-60  
et al in the Township of Hess

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Enclosed is the plan, in duplicate, for the above mentioned survey. Please have the author of the report date and sign the plan and return it to this office.

For further information, please contact Mr. F.W. Matthews at 416/965-1380.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: 416-965-1380

R.Pichette:eib

encls.

cc: Mining Recorder  
Sudbury, Ontario



MUNSTER TWP. M.880

LEINSTER TWP. M.985

TOWNSHIP OF

# HESS

DISTRICT OF  
SUDBURY  
SUDBURY  
MINING DIVISION

SCALE : 1-INCH = 40 CHAINS

### LEGEND

- PATENTED LAND ● or (P)
- CROWN LAND SALE C.S.
- LEASES (L)
- 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.
- PATENTED FOR SURFACE RIGHTS ONLY (P)

TY TWP. M.920

