



# **E. Charters Property**

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Claim No. P1205090

**Turnbull and Robb Townships** 

**VLF** -EM Survey

June 02 1998

BY E. CHARTERS VUNE. MAY 03/98.

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GEOSCIENCE ASSESSMENT

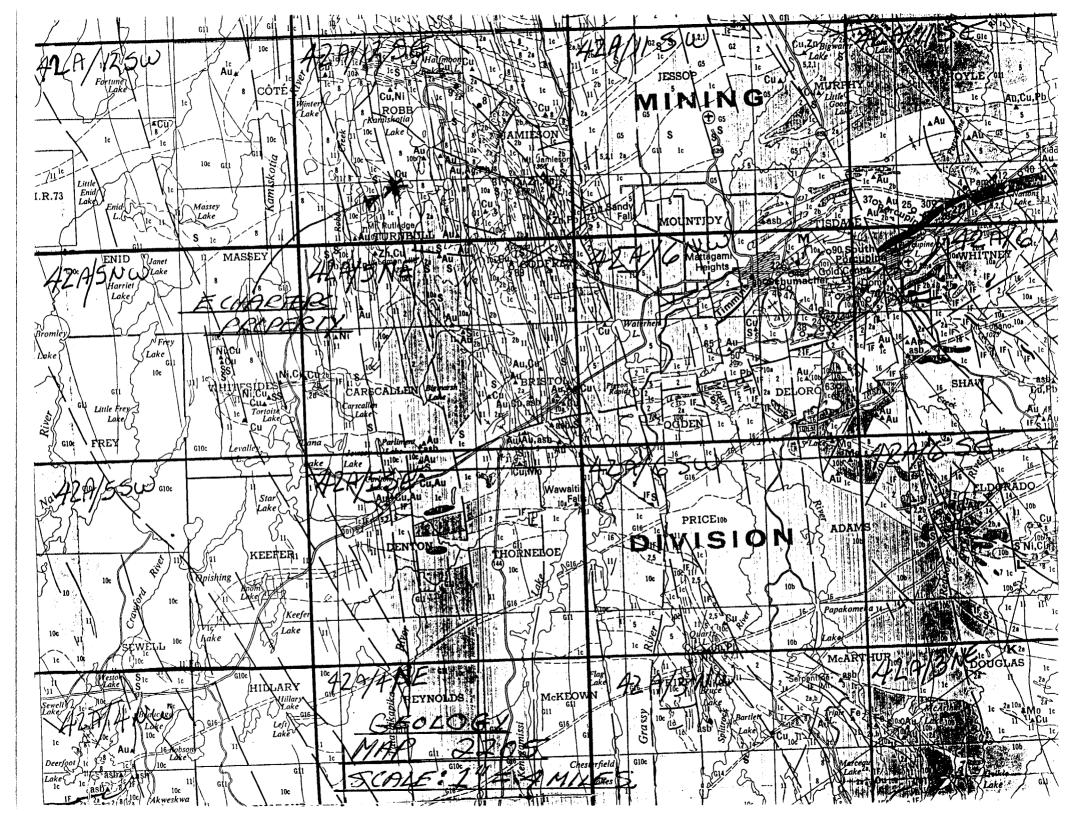


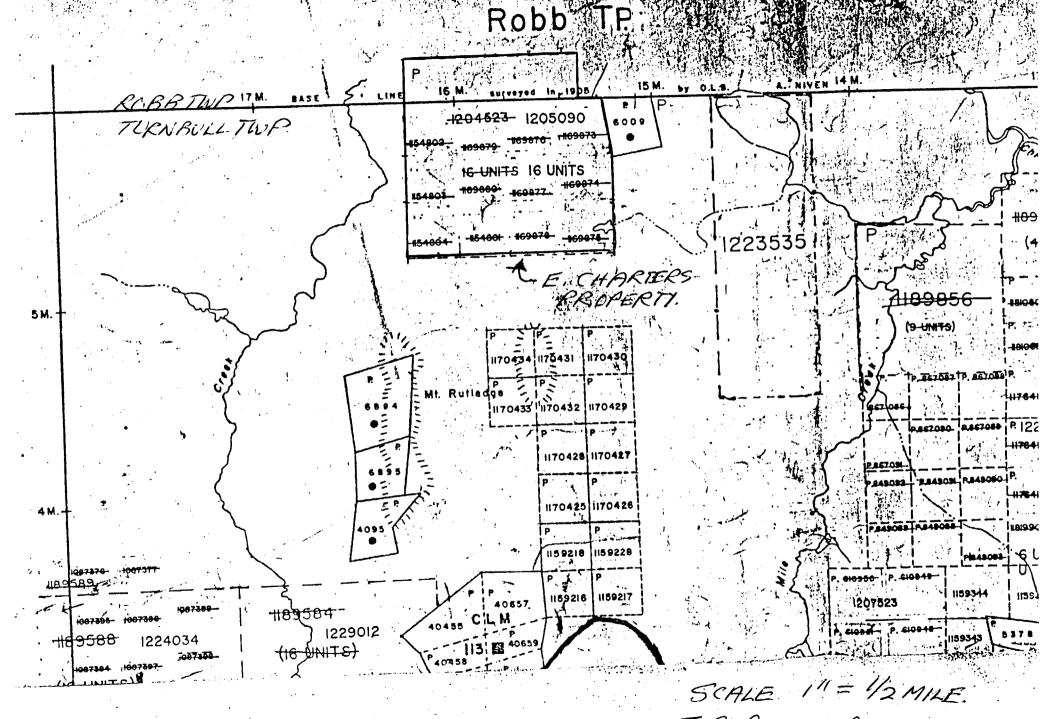
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SCALE IN = 12 MILE. TURNBULL TWP. CLAIM MAP SHOWING PROPERTY.

# PROPERTY, ACCESS AND LOCATION

The Property consists of one claim of 16 sixteen hectare units, no. P1205090 in the Porcupine Mining Division, Cochrane district, in Turnbull and Robb Townships. It is located on the north boundary of Turnbull township, 16 air miles from Timmins, Ontario. Access is by the highway to Folyet five miles west to the Cook's Lake road then north 12 miles to Leclair avenue which leads 3.5 miles around Kamiskotia Lake where an ATV trail leads 1.5 miles south to the mutual boundary of Turnbull and Robb townships.

Topography is variously swampy and flat giving way to low rocky hills where outcrop is plentiful. Soils vary between till to clay to clay- sand. Vegetation is poplar to jackpine/spruce/balsam to cedar in patches of differing topography.

#### **GEOLOGY, PREVIOUS WORK**

The area is underlain by sequences of archean volcanic rocks adjacent to the Kamiskotia gabbroic complex. Rhyolite, quartz porphyry, andesite and basalts dominate the mix which is cut by north west trending diabase dykes of the Hearst swarm. Similarities to the rocks surrounding the Kam Kotia mine have been noted by some investigators.

Previous work has been carried out by several companies and prospectors since 1928. Notably Dominion Gulf in 1955 did Vertical Loop EM geophysics and recommended drilling. Later Mespi Mines did Crone "Shoot-back" geophysics and limited drilling. Later a private syndicate did limited AQ drilling from early VLF work. It is believe that this later drilling missed its target. No significant work has been done since 1975 and no modern electromagnetic geophysics or gradient magnetics has been done to identify deep seated targets.

#### **SURVEY AND WORK PERFORMED**

Cut lines were established at nominally 100 metre intervals running north-south across the claim. A baseline was established which runs down the township line that separates Robb and Turnbull townships. Lines extended 400 metres north and 1200 metres south of the baseline and intersected tie lines cut at the north and south extents of the claim. Pickets were established at 25 metre intervals of all lines. A total distance of 19 and 3/8 miles of line was cut. An EM survey was conducted with a Geonics VLF EM designated EM-16, serial no. 52. A total of 1077 readings were taken on the north running lines.

#### **VLF-EM SURVEY**

The Geonics VLF -EM instrument is a hand held radio receiver that reads a low frequency air wave emanating from remote transmitter stations maintained by the naval military of some nations.

This air borne radio wave is subducted by various topography and subterranean conductive bodies and the angle of subduction of the wave and its field strength can be detected by two coils of the receiver which are at right angles to each other. The instrument's audible signal is minimized by orienting the main coil's loops tangential to the conductor's field by adjusting the tilt of the instrument as well as feeding back the non tangential coil to the tangential by adjusting the quadrature knob at the same time. Field strength is equivalent to the quadrature reading of this VLF instrument. The tilt angle of the instrument (in phase) at null is read by an attached optical inclinometer and the quadrature setting at its null as well. In part the tilt angle of the instrument is indicative of field strength as well as a highly conductive near surface conductor will subduct the air wave at a higher angle. A deeper and broader conductor may within the limits of the instrument's skin penetration capabilities create a broader curve. Interpretation of this instrument's readings has been established by Ronka in field studies as indicative of bed rock conductors by the shape of the curves and the relation of the quadrature to the in-phase readings of the main coil. The instrument is read facing north at right angles to the direction to the remote transmitting station which in order to couple optimally to a conductor should be at a low angle to the direction of any putative conductor. A positive angle of instrument tilt is above horizontal and a negative angle faces downward. Since the main coil is supposed to be tangential to the field a positive reading means the a conductor's field is being approached, a zero angle that it is below the instrument and a negative angle that it is south of the instrument or behind it. The readings of the in phase and quadrature are profile plotted along a plan of the lines with the positive values to the left of the line and the negative values to the right. In phase is a solid line in the plot, quadrature is dotted. In general a bed rock conductor is indicated if the quadrature moves opposite to in opposite sign to the in phase according to Ronka's type-curves and the curve of plotted values descends to the north or crosses over the line to the negative from a high positive reading. In addition the presence of patterns of conductivity from line to line is a powerful correlative indication. Anomalies are selected at a point midway between the highest positive and the lowest negative in a north direction.

The stations were read facing north at 25 metre intervals using the Cutler, Maine naval station at 24.0 kilohertz as transmitter. The direction to the station intersects the east west to north east and north east geological strike of the area's known mineralization, seen on surface, within 15 to 40 degrees. The direction to the station is determined by turning the instrument on its side and nulling the signal by swinging it horizontally through compass direction.

#### VLF-EM (continued)

Profile plotting of the readings was done in plan at a scale of 1 to 2500. The scale of the curve plot of the tilt angle and quadrature is 1 centimetre to 25% of tilt or % quadrature. Battery strength is audibly tested at the beginning and end of the survey by a test button. No significant difference in strength was detected.

#### RESULT

Anomalies were noted where the profiles indicated "crossovers" from positive to negative facing north or significant deflection to the negative particularly on several adjacent lines. Several conductors were noted that plotted east-west in trends on several lines.

Anomaly A: From line 900 West, 250 metres south to line 1600 west 125 metres south. Maximum deflection is +110 % tilt, maximum quadrature is maximum -34%. This coincides with Strangway's VEM anomaly of 1955 for Dominion Gulf. Strangway suggested it could be sulphides in a shear zone and should be drilled. This has not been done. It is at the interface of an outcrop and swamp to the north and could be a clay layer.

**Anomaly B:** From line 1400, 425 metres south to line 1600 west, 375 metres south. In an area of outcrop but not considered a strong conductor,

**Anomaly C:** From line 1000 west, 475 metres south to line 1600 west, 575 metres south. A strong 40 degree conductor in an area of outcrop.

Anomaly D: From line 1400 west, 775 metres south to line 1500 west, 750 metres south. A weaker anomaly with no quadrature correlation may be significant in that it lines up with anomaly F which is coincident with a 12 channel Questor Input anomaly seen on line 1200 west, 675 metres south.

Anomaly E and H: From line 1200 west, 900 metres south to line 1600 west, 775 metres south. Strong deflection to the negative of in phase and reflection positive of the quadrature may represent a fault or shear in bedrock which is near surface here.

Anomaly F and G: Parallel features from line 900 west, 575 metres south, to line 1300 west, 750 metres south trend north east and are coincident with anomaly D and an aerial Questor Input 12 channel conductivity anomaly from a survey flown in 1987. They are also coincident with a series of two other Questor Input anomalies on this north east trend. These three anomalies are mapped with a square symbol with vertical bars. They appear near lines 600 West, 275 metres south, line 800 west, 400 metres south and line 1200 west, 675 metres south. The centre anomaly was drilled and pyrite stringers in a high silica basalt were found but due to the shallow depth the drilling may have overshot the target.

Anomaly I: From line 200 west, 100 metres north to line 450 west, 75 metres north a strong crossover weakens in a westward direction. The overburden deepens to the north and west from a high rock outcrop so the anomaly may be clay layers contacting the rock. The quadrature moves weakly in opposition so the truncation of the feature may be attenuation of the anomaly by conductive overburden.

Anomalies J and K: Parallel features the southernmost one of which (K) runs from line 0, 325 metres south to line 450 west, 175 metres south. J is 150 metres north. J parallels a trend of known stringer sulphide mineralization containing chalcopyrite and pyrrhotite which is exposed on the surface for a distance of 800 feet. This mineralization is highly magnetic and can be traced by its magnetic signature for some distance. The mineralization is on the south contact of a rhyolitic quartz porphyry which is quite extensive and has been compared to the Kam Kotia rhyolite. The behaviour of the quadrature in this case being in step with the in phase for anomaly J cannot be satisfactorily explained as this is normally an indication of overburden or topography conductance whereas the conductor here is definitely bedrock with ample exposure.

South West Quadrant, Multi-line Anomaly: Although not outlined completely by the survey a persistent feature is seen from line 450 west, 1075 metres south to line 800 west, 950 metres south to line 1500 west, 925 metres south. It is a broad anomaly taking up to 150 metres to "cross over" to negative readings. The quadrature behaves in mirror opposition indicating a bedrock conductor. Bedrock is not far from the surface in this area. The high in phase readings at the end of the lines were taken on high ground and this passes into lower ground before rising again to outcrop so topographic effects may be operative here, but the persistence and quadrature behaviour indicates that the instrument may be mapping a fault, shear zone or contact with differing rock types. Clay predominates in the south east quadrant so anomaly attenuation is expected here and the feature may well persist as a bedrock conductor through here as well.

# **CONCLUSION AND RECOMMENDATION**

The VLF geophysics did not correlate definitively with surface mineralization and therefore cannot be trusted by itself to determine the nature of the conductors here. Nevertheless its correlation although weak in distinction is an indicator of probable bedrock effects underlying the conductivity feature indicated, particularly where the conductors are multi-line. It is thought that were conductivity and magnetics and surface mineralization coincide that the mapping of mineralization zones reaches high probability. A methodology of geophysics that penetrates conductive overburden such as TDEM or IP and can reveal the topology of a conductor is therefore called for as well as a magnetic gradient survey to detect the depth co-efficient of any magnetic conductor. Some form of geochemical survey could be successful in producing powerful correlation with such feature as anomaly A which has a coincident VEM conductor already interpreted as disseminated sulphides by competent authority (Strangway). On the other hand exploratory drilling may be just as cheap as other programs and justifiable where there is a known mineralization trend

S. Charto.

REFERENCES! ASSESSMENT FILES TIMMINS ONTARIO.

#### **STATEMENT OF QUALIFICATIONS:**

This is to attest that I, E. Charters am a graduate of Haileybury School of Mines in 1978 with a technical certificate and have 19 years field experience in mineral exploration and mining. I am the person who carried out the survey in its entirety and am solely responsible for the execution of the plotting and the interpretation therefrom. This work is done to the standards established in the industry which I became familiar with in the course of my work on many similar surveys carried out by exploration companies I was employed with throughout Canada and from my training I received at post secondary educational institutions in mining exploration technology and geology.

E. Charters

May 29 1998

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E. CHARTERS BOX 1555 TIMMINS,ON

P4N-7W7.



## **Declaration of Assessment Work** Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) 49860, 00567 Assessment Files Research Imaging



sections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this nt work and correspond with the mining land holder. Questions about this collection and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 685.

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<ol> <li>Person or companies who p</li> </ol>	repared the technical report (Attach a list if	necessary) Telephone Number
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# Statement of Costs for Assessment Credit

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,1al information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining his Information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this tion should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E

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Work Type	Units of work  Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
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Ministry of Northern Development and Mines

Ministère du Développement du Nord et des Mines

August 28, 1998

ERIC CRAIG CHARTERS
P.O. BOX 1555, 27 MAPLE ST. SOUTH
APT2
TIMMINS, Ontario
P4N-7W7

Geoscience Assessment Office

933 Ramsey Lake Road 6th Floor Sudbury, Ontario P3E 6B5

Telephone: (888) 415-9846 Fax: (877) 670-1555

Visit our website at:

www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Dear Sir or Madam:

Submission Number: 2.18531

**Status** 

Subject: Transaction Number(s):

W9860.00567 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Steve Beneteau by e-mail at benetest@epo.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

ORIGINAL SIGNED BY

Blair Kite

Supervisor, Geoscience Assessment Office

Mining Lands Section

# **Work Report Assessment Results**

**Submission Number:** 

2.18531

Date Correspondence Sent: August 28, 1998

Assessor: Steve Beneteau

Transaction Number First Claim

Number

Township(s) / Area(s)

Status

**Approval Date** 

W9860.00567

1205090

TURNBULL, ROBB

Deemed Approval

August 27, 1998

Section:

14 Geophysical VLF

Correspondence to:

Resident Geologist South Porcupine, ON

Assessment Files Library Sudbury, ON

Recorded Holder(s) and/or Agent(s):

ERIC CRAIG CHARTERS

TIMMINS, Ontario

