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	Lat. 51° 56' N, Long. 121° 15	• W	
	AUTHOR: GLEN E. WHITE P.Eng. DATE OF WORK: Arp. 12-22, May July 27-Aug. 5,	- 3-27, 1988 12,Sept.1,/88	
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INTRODUCTION

During the winter of 1988 a program consisting of grid preparation magnetometer and VLF electromagnetic surveys was conducted over the Tim claims in the Spout Lake area near Lac La Hache, B.C.

The surveys were conducted on behalf of Liberty Gold Corp. by White Geophysical Inc. from April 12-22, May 3-27, July 27-Aug. 5, 12, and Sept. 1, 1988.

The purpose of the work was to explore the general area of a large magnetic high and a specific copper showing that was diamond drilled in 1983 and returned a zone of 10.7 meters which assayed 4.6% copper, 1.7 oz/ton silver and a 1.5m section with 0.119 oz/ton gold.

PROPERTY

CLAIM	[#UNITS	RECORD #	RECORD DATE
Tim		10	363	Aug. 2, 1979
Tim	1	18	677	Apr. 28, 1980
Tim	2	20	678	Apr. 28, 1980

The mineral claims are in the Clinton Mining Division B.C. and are in good standing through to 1992. Figure 1 outlines the claim block which consists of 48 contiguous units.



LOCATION AND ACCESS

The Tim claims are located some 21 kilometers northeasterly from the village of Lac La Hache, in the Cariboo region of British Columbia. A good gravel road enters the claims in the southwest corner of the block from the Timothy Mountain turnoff, a road distance of some 30 kilometers.

Access is also via the Spout Lake and Murphy Lake road, to Rail Lake where the "1700" secondary logging road turns eastward. This road gives access to the northern portion of the claims and all the early 1980's work. A 4X4 is required to traverse this road when on the Tim claims. The Spout Lake Murphy Lake road is kept open all though the year.

Lat. 51° 56' N, Long. 121° 15" W, N.T.S. 92 P/14W.

SURVEY GRID

The survey grid consists of lines turned off at right angles from a north to south baseline which was placed midway through the property length. The lines were spaced 100 meters apart and numbered at 50 meter intervals. Detail lines spaced 50 meters apart were established over the area of the Tim #1 showing where the diamond drilling was conducted.

Some 120 line kilometers of grid was established and surveyed.

- WHITE GEOPHYSICAL INC.-

REGIONAL GEOLOGY

The regional geology for the area is shown on Figure 2 as depicted by G.S.C. Map 1278A, Bonaparte Lake Map Area, 1972. The Tim claims are situated near the eastern edge of the Intermontane belt, a northwesterly trending assemblage of Upper Triassic-Lower Jurassic volcanic rocks. This belt of rocks comprises units of the Nicola, Takla and Stuhini Groups and is often referred to as the Quesnel Trough.

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Nicola volcanic rocks of Triassic age underlay the property. They have been mapped as augite, andesite flows and breccia; tuff, argillite, greywacke and grey limestone. The Takomkane granitic batholith of Triassic-Jurassic age lies to the east of this sequence of rocks. An extensive cover of Upper Tertiary (Miocene-Pliocene) basaltic lavas of the plateau type lie to the west.

The eastern edge of the Intermontane belt contains a linear band of alkalic stocks composed of diorite, monzonite and syenite. These stocks intrude the volcanic strata and commonly alter the country rocks. They are hosts for several alkalic suite porphyry mineral deposits such as Copper Mountain, Afton, Cariboo-Bell and the recently discovered QR gold Mine. The QR discovery is reported to contain some 6500 kilograms of gold reserves.



PROPERTY GEOLOGY

The claims lie on the southeastern nose of a large magnetic arc as shown on Figure 3. This feature forms an arc like pattern which curves eastward and is some 10 miles in length. Geological investigation has shown this anomaly to be caused by magnetite rich alkalic stocks and dikes. Initial investigations in the area began in the late 60's when regional soil sampling located extensive evidence of copper mineralization.

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Two principle properties were located at that time; the WC claims around Spout Lake, and the Tim claims.

Craigmont Mines Ltd. diamond drilled on the WC claims and located a zone containing 20 feet of 2.47% copper, no assays were done for precious metals. The Tim claims were tested by Stallion Resources Ltd. in the fall of 1983, a zone of 10.7 meters assayed 4.6% copper, 1.7 oz/ton silver and a 1.5m section with 0.119 oz/ton gold.

A new showing, the Miracle showing, is located on the strong magnetic high in the adjoining Miracle claims to the west. It initially occurred as a minor exposure of heavy malachite stain along a new logging landing. Minor scraping exposed primary chalcopyrite in highly propylitized andesites. The author visited the property at that time and recommended further work. G W R Resources Inc. optioned the claims and completed a more extensive trenching program. Prospectors samples yielded over 1.5 oz/ton gold.



PREVIOUS WORK

Exploration in the region began in 1966 with a reconnaissance geochemical soil sampling program conducted by Coranex Limited under the direction of J.R. Woodcock, followed by Amax Asarco, Craigmont and others. BP-Selco conducted a broad scale soil sampling program in the early 80's and located several strong copper-gold geochemical anomalies that were not explored. Several of their geochemical anomalies were located on the adjoining Ann claims, though no follow up work was recorded.

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The 1967 work reported on Coranex and Amex describes some trenching and a minor amount of induced polarization work which located several good anomalies. The Tim 1, 2, 3 and 4 showings were located at this time.

MAGNETOMETER VLF ELECTROMAGNETIC SURVEYS

The VLF EM and Magnetic surveys were conducted simultaneously utilizing the Omni-Plus VLF/MAGNETOMETER System built by EDA Instruments Inc. This instrument contains several microprocessors and associated circuitry for monitoring, processing and storing data. The VLF EM portion of this instrument utilizes the VLF-electromagnetic fields generated by submarine navigation and communication stations which operate in the 15-30 khz frequency band.

The field generated by these stations is primarily horizontal. The instrument indicates the presence of a secondary field due to a conductor as a distortion in this horizontal field.

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The distortion of this field produces an anomaly in the tilt angle, quadrature and total field intensity readings. VLF EM data is corrected for facing direction during data processing and is edited for spurious noise spikes.

For maximum coupling, a transmitter station located in the same direction as the geological strike of interest should be selected, since the direction of the horizontal electromagnetic field is perpendicular to the direction from the transmitting station. The advantage of the Omni-Plus is that several stations can be recorded simultaneously since the instrument automatically orientates to the individual station direction.

The magnetics portion of this survey was conducted using the magnetometer system built into the Omni-Plus in conjunction with an EDA base magnetometer. The quartz clocks in the two instruments are synchronized in the morning. At the end of each survey day the field unit's readings are corrected using an RS232C interface and the built in microprocessors.

Following the diurnal correction procedure, data is dumped via the RS232C interface to a microprocessor which writes data to the disk for storage and later processing. The solid state memory of this instrument and the microprocessor give rapid data gathering at some 5 - 10 kilometers per day at 12.5m station intervals. Seattle, Washington and Annapolis Maine were used for the VLF EM portion of the survey. Some 115 kilometers were surveyed.

DISCUSSION OF RESULTS

The Interpretation map, Figure 9, shows the geophysical highlights superimposed upon the old geological mapping from the early 1970's. A search was made for old lines and roads which were tied into the present grid. Both the 1970 and 1980 grids by Coranex and Stallion Resources are indexed on the map.

The Tim 1, 2, 2A, 3 and 4 showings as well as the Stallion trenching were located and examined by this author. A general property excursion was made to try and determine the cause of various magnetic and electromagnetic features.

Magnetic data, Figure 4, shows very strongly contrasting magnetic highs and lows typical of an alkalic intrusive terrain. The property is cut by several pronounced magnetic lows which likely reflect major tectonic zones. A major break A - A' trends in a NW - SE direction from line 0 -300W to 3500S - 1400E.

This break is very evident on the Regional Aeromagnetic Map, Figure 3. A second dominant feature is the east - west break B -B' from 1400S - 1500W to 1200S - 200E. This break aligns with a similar low on the Miracle claims to the west. Siliceous and carbonatized volcanics were noted in the area. The feature was determined to be a major fault zone. Its

continuation onto the Tim claims where it crosses several rock types would support the major shear zone hypothesis; where it terminates against A - A' may be a focal point for hydrothermal mineralization.

The 1967 induced polarization work located a strong chargeability anomaly in this area. The author examined the 1980 Stallion trenches covering this anomaly. No cause for the anomaly was evident in the surface rock, though several chunks of highly pyritic float were found.

Two other NW - SE breaks are evident, these have been designated $C - C^{*}$ and $D - D^{*}$. Break $D - D^{*}$ is associated with mineralization in several places.

The magnetic highs appear to be caused by a high magnetite content in the metamorphosed volcanics. The late plateau basalt flows are also highly magnetic. They appear to be the cause of the magnetic high on the western side of lines 1400S to 2200S.

The VLF electromagnetic data is shown in profile form on Figures 5 and 6. Figure 7 outlines the contoured second separation Fraser filter data. Figure 8 depicts the reverse Fraser filter of the second separation quadrature information. A number of strong VLF EM conductors were detected. The strongest and longest is E - E' for which no lithological explanation could be found. A tectonic one is most likely since limonite and hydrothermally altered rocks were found in the logging area around lines 1100S to 1600S. Con-

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ductors F - F' appear to be a weaker parallel feature. A pronounced North - South break is inferred on the Regional Aeromagnetic Map, Figure 3.

The VLF conductors follow the general pattern of the magnetic lows, with conductors 1 to 6 being in the strong category and 7 to 14 of moderate intensity.

Tim 1 showing has a narrow mineralized potassium The feldspar, epidote and chalcopyrite seam trending N 40 E while the induced polarization chargeability and VLF EM data trend Several lines of detail magnetics and VLF EM were com-NW. pleted as shown on Figures 10 - 12. The showing, were the drilling was done is a small magnetic high. The mineralizaintersected in drill hole 1 does not show as a conduction tor, yet some 10 feet of 14.93% copper, 4.5 oz/t silver and .058 oz/t gold was outlined. It would appear from the electromagnetic and 1967 IP data that the hole was drilled parallel to the mineralization and possibly to the east the main source. Analysis of the EM data suggest a causative source a depth of 80 meters. Both the IP anomalies M and O lie at. on the major break A - A', as well as EM conductor 7 which is strongest south of the trenching.

Trend D -D' is associated with Tim showings 2 and 2A; both of which follow a sharp topographic ravine, suggesting that this break is in fact a major shear zone. Conductors 8 and 9 follow this break. Old trenching just west of the baseline on 1900S exposed good argillic alteration with manganese











dentritics and malacite stain. Two small chargeability highs are also along this trend.

Tim 2 trench shows a narrow high grade chalcopyrite vein dipping some 20 degrees to the west. This dip is into conductor 8. The andesites were highly fractured and also contained mineralized vertical seams of chalcopyrite with potassium feldspar and epidote. The old sample results show up to 3.5 feet of 4.17% copper with anomalous indications of gold, (70 cents at 37.50 dollar gold), though no indication of how the sample was taken could be found.

Trenching by Stallion in 1980 on the Tim 1 showing located 0.076 oz/t gold. Later drilling returned 0.119 oz/t over 5 feet indicating that gold mineralization is present and appears to be associated with the chalcopyrite. Good copper mineralization was noted over 200 meters between the Tim 2 and 2A trenches. The mineralization in the northern showing also dipped west with an increase of chloritic alteration in the rocks. Likewise the andesites were highly fractured with strong epidote, k feldspar and some quartz.

A traverse along line 2700S located good malacite stain with chalcopyrite, k feldspar and epidote in hornblende altered andesites. This mineralization lies just up-slope from the strong VLF EM conductor 5. A deep quadrature anomaly is also indicated in this area. Rust seepage was noted in the logging landing at the north end of the conductor trend.

Conductor 3 lies in a swamp. Malacite in association with a north easterly trending felsite dike was found in the logging landing. This mineralization is on break C - C'. Conductor 4 is covered by a consistent layer of overburden.

The old Tim 4 showing has a good chargeability response. Little could be determined as the old trench was in an area of deep overburden and was filled with water. The old work located 100 feet of .02% copper, thus further work is required.

CONCLUSIONS

Liberty Gold Corp. has established an extensive grid across the Tim claim group to locate and map the old work. A detailed program of ground magnetometer and vlf electromagnetic surveys was conducted to assist in determining rock types and outlining any structural features.

Correlation of the available data show that the property is traversed by several major fault or shear zones which may possibly be associated with gold and or copper mineralization. The Tim 1 showing which contains the excellent diamond drill results, did not respond as an electromagnetic conductor. Thus detailed induced polarization work is required.

RECOMMENDATIONS

It is recommended that detailed geology to define alteration and structures, with emphasis on argillic alteration in the volcanics, be undertaken. Geochemistry and multiple seperation induced polarization work with , a=50 m n=1,2 and 3 be conducted over the areas of intersecting structures and stronger VLF electromagnetic anomalies.

A test with the deep penetrating pulse electromagnetic method should be completed, particularly on conductor 5, since the VLF EM and 1967 induced polarization data suggest that the amount of mineralization increases with depth.

RESPECTIVELY SUBMITTED,

Glen E. White P.Eng.

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Singhai, G. C., P.Eng. Report on the Tim claims, Stallion Resources Ltd., Decemper 27, 1980 STATEMENT OF QUALIFICATIONS

I, Glen E. White, with a business address of 11751 Bridgeport Road, Richmond B.C. do hereby certify that:

1) I am a consulting geophysicist registered with the Association of Professional Engineers of British Columbia since 1977.

2) I am an Associate Member of the Society of Exploration Geophysicists.

3) I hold a B.Sc. degree (1966) in geology and geophysics from the University of British Columbia.

4) I have been practising my profession as a geophysicist-geologist for over 20 years.

5) I have practical geological geophysical experience in all the geological provinces of Canada and the southwestern United States.

6) I have based this report on a review of available Geological publications and exploration reports.

7) A letter of consent is required before this report can be used in whole or in part for publication or any filing statement or Statement of Material Facts.

8) This report is for exploration and assessment credits only since the author owns an unspecified amount of Liberty Gold Corp. securities.

GLEN E. WHITE B.Sc. P.Eng.

COST BREAKDOWN

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PART I Assessme Grid Pre	nt Filed April/ peration	88	
PERSONNEL	DATE	COST	TOTAL
D. Power K. Kirby M. Niedzwiecki	April 12-22/88 April 12-22/88 April 12-22/88	185 185 275	\$2,035 2,035 3,025
Meals and accomm Vehicles and sno	odations wmobiles		2,145 $\frac{1,290}{530}$ 10,530
PART II Assessm Grid pr	ent for 1989 eperation Magne	tics and VLF EM	
PERSONNEL	DATE	COST	TOTAL
B. Robertson M T. Purcell M L. Torheden M J. Twomey M M. Seyward M	lay 3-26/88 lay 3-10,14,18- lay 3-10, 18-26 lay 3-12/88 lay 1-30 Geophy	375 27 325 , Aug 1: 375 225 sicist	\$9,000 6,500 6,000 2,025 1,800
Meals and accomo Vehicles 2 (4x4) Instruments 2 pl Materials G. White P.Eng. Vehicle and A Data Reductio Computer plottin Interpretation a	\$5,175 \$5,760 \$7,500 \$1,060 \$2,500 \$ 925 \$4,500 \$2,500 \$3,600 \$58 845		







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