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Appendix v

Geophysical Report
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GEOPHYSICAL REPORT

ON

AIRBORNE MAGNETIC AND VLF-EM SURVEYS

OVER THE

NORTH MOYIE LAKE PROPERTY

NORTH MOYIE LAKE, CRANBROOK AREA

FORT STEELE MINING DIVISION

BRITISH COLUMBIA

PROPERTY : North Moyie Lake,
Southeastern British Columbia

: 49° 21' north latitude
: 115° 52' west longitude
: N.T.S. 82F/5W

WRITTEN FOR : OMEGA GOLD CORPORATION
Suite 307 - 475 Howe Street
Vancouver, B.C. V6C 2B3

SURVEYED BY : AIRBORNE GEOPHYSICAL SERVICES LTD.
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DATED : May 17, 1990

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SUMMARY

Airborne magnetic and VLF-EM surveys were carried out over the North Moyie Claim Group owned by Omega Gold Corporation, of Vancouver, British Columbia, February 23 and 24 1990. The property is located immediately west of Moyie Lake some 15 kilometers southwest of the city Cranbrook. Access to most portions of the property is easily gained four-wheel drive vehicle. The terrain ranges from rolling hills, in the central area of the property to steep and rugged slopes at the southern and northern areas. Forests at the lower elevations are moderately dense coniferous timber. The purpose of the survey was to aid in the mapping of geology as well as to locate possible sulphide mineralization.

The North Moyie Claims occurs with in the Kootenay Arc. It is underlain by sediments of the Kitchener, Creston and Aldridge Formations. Metadiorite and metagabbro dykes and sills of the Moyie Intrusions, as mapped by the G.S.C., intrude at various locations within the survey area.

The airborne surveys were flown at about a 50 meter terrain clearance on both straight and contour lines with a separation of 100-200 meters. The instruments used were a Sabre Electronics proton precession magnetometer and a Sabre Electronics VLF-EM receiver. The magnetic data were picked from the strip charts and hand contoured. The contours were drawn on a survey plan on which the VLF-EM anomalies were plotted as well.

CONCLUSIONS

1. The magnetic survey indicates the entire property is underlain by sediments of the Kitchener, Creston and Aldridge Formations as has been mapped by the G.S.C. It also indicates that portions of the property are intruded by gabbro dykes or sills of the Moyie Intrusions, some of which do not concur with previous geological mapping.

2. A strong magnetic high occurs in the southeastern portion of the survey area thought to be caused by an unmapped basic intrusive.

3. The VLF-EM surveys revealed 19 conductors, most of which are linear shaped suggesting a fault or a shear zone to be the causative. Any part of a conductor could be reflecting mineralization.

4. Both the VLF-EM and magnetic surveys revealed lineations within the survey area that are likely caused by fault, shear and/or contact zones. These can be important indicators of sulphide and gold mineralization especially where the lineations cross.

RECOMMENDATIONS

The airborne geophysical survey has revealed several target areas within the property such as magnetic highs and the VLF-EM highs. Follow up prospecting, detailed geological mapping and soil geochemistry work should be carried out to further define these areas. Soil geochemistry lines should be run in areas of interest, such as across the VLF-EM conductors. Advanced ground geophysics should be quite useful as well in finding and delineating more accurately the target areas.

It is not expected, however, that all gold-sulphide mineralization in the area has been reflected by this airborne survey. It is simply a step as far as defining and extending target areas, since the property is so large.

The following program is recommended to cover the property effectively:

1. Careful geological mapping and prospecting should be carried out. One large benefit of this will be a better interpretation of any geophysics that are carried out. Special attention should be paid to the VLF-EM conductors and magnetic highs and lows.

2. Soil sampling, ground VLF-EM surveys and magnetometer surveys should be carried out on micro-grids over each target area. The defined anomalies should be "cat" trenched, if access and terrain permit.

3. Resistivity - IP mapping and/or MaxMin EM should then be considered in order to optimize drill targets.

4. Diamond drilling should then be carried out using a large diameter drill and a face discharge bit.

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INTRODUCTION AND GENERAL REMARKS

This report discusses the survey procedure, compilation of data and the interpretation of a low-level airborne magnetic and two frequency VLF-EM surveys carried out over the North Moyie Lake Property within the Cranbrook area. These surveys were carried out on February 23 and 24, 1990, by Lloyd C. Brewer, instrument operator and project manager, and Chris P. Sywulsky, navigator, both of whom are of Airborne Geophysical Services Ltd. A total of 338.6 line kilometers of airborne surveys was done over the property and surrounding area.

The object of the surveys was to aid in the geological mapping of lithology and structure for the purpose of exploration of the type of base and gold mineralization as is found in the Moyie Lakes area. Magnetic surveys have been proven to be a good geological mapping tool. The VLF-EM has also responded to some of the mineralization in the area.

PROPERTY AND OWNERSHIP

The property consists of 21 metric claims totalling 152 units located in the Fort Steele Mining Division of British Columbia (Figure 2).

CLAIM	UNITS	RECORD #	EXPIRY DATE
Min #1	20	3931	Jan. 24, 1991
Min #2	20	3932	Jan. 24, 1991
Moy #1	4	3933	Jan. 21, 1991
Moy #2	4	3934	Jan. 21, 1991
Moy #3	1	3935	Jan. 22, 1991
Moy #4	1	3936	Jan. 22, 1991
Moy #5	1	3937	Jan. 22, 1991
Moy #6	1	3938	Jan. 22, 1991
Moy #7	1	3939	Jan. 22, 1991
Moy #8	1	3940	Jan. 22, 1991
Moy #9	1	3941	Jan. 22, 1991
Moy #10	1	3942	Jan. 22, 1991
Moy #11	1	3943	Jan. 22, 1991
Moy #12	1	3944	Jan. 22, 1991
Etna #1	20	3945	Jan. 23, 1991
Etna #2	1	3946	Jan. 23, 1991
Etna #3	1	3947	Jan. 23, 1991
Mug	16	3929	Jan. 20, 1991
Wump	20	3930	Jan. 23, 1991
Mr.	16	3035	Dec. 1, 1991
Leigh	20	3036	Dec. 1, 1991

The expiry dates shown do not take into account the survey under discussion as being accepted for assessment credits.

The property is owned/optioned by Omega Gold Corporation, of Vancouver, British Columbia.

LOCATION AND ACCESS

The Moyie Lake property is located 15 km south-southwest of Cranbrook in southeastern British Columbia to the west of, and adjoining, the western shore of North Moyie Lake (Figure 1). The property is centered on latitude 49° 21' N, longitude 115° 52' W within NTS map area 82F/5 west. Access to the property from Highway 3/95 between Cranbrook and Creston is via the Lamb Creek Road with secondary roads providing access to most areas of the claim group. The property is situated within the Moyie Range of the Purcell Mountains. Topography varies from moderate to steep slopes with elevations ranging from 900 m to 2000 m a.s.l. Vegetation at lower elevations is mature spruce, fir and pine whilst ridge tops support only alpine grasses. Annual precipitation averages about 100 cm with moderate winter snow pack.

HISTORY OF PREVIOUS WORK

Mining development of the district began with the discovery of the Zn-Pb-Ag ore showing on the North Star hill in 1891. The HU zone of the Sullivan orebody was discovered in 1892, four kilometers northeast of the North Star hill. From the date of acquisition in 1909 by the Consolidated Mining and Smelting Company to the end of 1985, the Sullivan Mine produced 135,500,000 tons of ore containing 6.7% lead, 5.8% zinc, and 2.4 oz/ton silver. In total the Sullivan orebody approached 180,000,000 tons of ore grading 12% Pb-Zn and 2 oz/ton Ag.

The St. Eugene vein orebody was located in 1893 some 50 kilometers south of the Sullivan Camp and 20 kilometers south of the Amy claim group (located to the immediate north of Omega's North Moyie Group).

The area has been under continuous exploration since the turn of the century and information pertaining to this is available through the facilities of the B.C.D.M. and G.S.C. libraries.

GEOLOGY

Regionally the area is underlain by rocks of the Purcell Supergroup on the western flank of the Purcell Anti-clinorium, a broad slightly north plunging arch-like structure in Helikian and Hadrynian aged rocks. The oldest rocks exposed in the Purcell Anticlinorium are greenish, rusty weathering, thin bedded siltstones and quartzites of the Lower Aldridge formation. Overlying the Lower Aldridge is a minitinius section of the Middle Aldridge quartz wackes, subwackes and argillites some 3,000+ metres thick. Within the Middle Aldridge formation, fourteen varyed marker horizons can be correlated varye for varve over hundreds of kilometers. These represent the only accurate stratigraphic control. A number of areally extensive diorite sills are present within the Lower and Middle Aldridge Formations. The Middle Aldridge is overlain by Upper Aldridge 300 to 400 meters off thin fissile, rusty weathering argillite/siltite.

Conformably overlying the Aldridge Formation is the Creston Formation, comprising approximately 1800 meters of grey, green and maroon, cross bedded and ripple marked platformal quartzites and mudstones. The Kitchener/Siyeh Formation, which includes 1200 to 1600 meters of green/grey dolomitic mudstone and buff coloured mudstone are shallow water sediments overlying the Creston Formation and mark the end of the Lower Purcell time.

The upper portion of the Purcell Supergroup consists of the Dutch Creek and Mount Nelson formations. Dutch Creek formation consists of approximately 1200 meters of dark grey, calcareous dolomitic mudstones. Overlying the Dutch Creek formation is the Mount Nelson formation, 1000 meters of grey/green and maroon mudstone and calcarious mudstones. This marks the top of the Purcell Supergroup.

The Aldridge basin hosts the world class Sullivan Pb-Zn-Ag deposit. It is believed this basin evolved as a deep intercratonic trough analogous to the Guaymas Basin on the west coast of Mexico, as a result of tectonic activity along an ancient crustal spreading center. It is proposed that the Sullivan is situated at the junction of a major penecontemporaneous transform fault (i.e. the Kimberley Fault) and the oceanic spreading center (rift zone). Transform faults are generated to relieve stresses in the crust induced during spreading. Zones of spreading within the Aldridge are believed to be marked by albitization (sodium addition), gabbro feeder dykes, and tourmalinite, a mineral/rock type produced from replacement by boron-silica rich fluids of magmatic origin.

The area has been mapped on a regional scale most recently by Hoy and Diakow, B.C.D.M. Preliminary Map No. 49.

INSTRUMENTATION AND THEORY

a) Magnetic Survey

The magnetic data are detected using a nuclear free precession proton magnetometer, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. The magnetometer measures the total count of the earth's magnetic field intensity with a sensitivity of one gamma. The data are recorded on magnetic tape and 12 cm analog strip chart.

The magnetic patterns obtained from a regional airborne survey are directly related to the distribution of magnetite in the survey area. However, the geology cannot be deduced from isomagnetic maps by simply assuming that all magnetic highs are underlain by gabbro or ultramafic rocks, and that all magnetic lows are caused by limestone or chert. The problem with such a simplistic approach is that magnetite is not uniformly distributes in any type of rock. Other problems arise from the fact that most geologic terrains have rocks of high susceptibility superimposed on less 'magnetic' rocks, and vice versa. Cultural features such a powerlines, pipelines and railways also complicate matters. So many variables can be involved that it may be impossible to make a strictly accurate analysis of the geology of an area from magnetic data alone. It is preferable to use other information such as geological, photogeological and electromagnetic in combination with magnetic data to obtain a more accurate geological analysis.

b) VLF-EM Survey

A two-frequency omni-directional receiver unit, manufactured by Sabre Electronics Instruments Ltd., of Burnaby, B.C., was used for the VLF-EM survey. The transmitters used are NLK Arlington (Seattle), Washington, operating on 24.8 KHz, and Annapolis, Maryland, transmitting at 21.4 KHz. These signals are used due to their ideal orientation with respect to easterly and northwesterly geological structures, and their good signal strength.

The VLF (Very Low Frequency) method uses powerful radio transmitters set up in various parts of the world for military communications. These powerful transmitters can induce electric currents in conductive bodies thousands of kilometers away from the radio source. The induced currents set up secondary magnetic fields which can be detected at surface through deviations in the normal VLF field. The VLF method is inexpensive and can be a useful initial tool for mapping structure and prospecting.

Successful use of the VLF requires that the strike if the conductor be in the direction of the transmitting station so that the lines of magnetic field from the transmitter cut the conductor. Thus, conductors with northeasterly to southwesterly strikes should respond to Annapolis transmissions, while conductors with northwesterly to southerly strikes should respond to Seattle transmissions. Some conductors respond to both stations, giving coincident field strength peaks.

It is impossible to determine the quality of conductors with any reliability, using field strength data alone. The question of linearity is in doubt if the conductor does not appear to cross the adjacent flight lines. The relatively high frequency results in a multitude of anomalies from unwanted sources such as swamps, creeks and cultural debris. However, the same characteristic also results in the detection of poor conductors such as faults, shear zones, and rock contacts, making the VLF-EM a powerful mapping tool.

SURVEY PROCEDURE

A two-meter bird was fitted with a magnetometer coil and two omni-directional EM receivers and towed beneath the helicopter on a 10-meter cable. The mean terrain clearance for the bird was 50 m.

The survey was both straight line and contour-line flown at an average line spacing of 200 m. Navigation was visual, using 1:50,000 scale topographical maps blown up to 1:10,000.

The aircraft used to conduct this survey was a Canadian Helicopter Ltd., Bell 206 Jet Ranger helicopter. Airspeeed was a constant 60 KPH so that creek valleys and canyons were penetrated thoroughly. The slow airspeed provided safety, detailed coverage of boxed-in areas, and consistency of data retrieval, which is critical in rugged terrain, such as within portions of this survey.

The number of line km flown as shown on Map 3 is 338.6.

The co-author and project supervisor has over 10 years of experience in conducting aerial magnetic and electromagnetic surveys from rotary-wing aircraft, under all types of terrain conditions.

DATA REDUCTION AND COMPILATION

The observant magnetic total field was recorded on analogue strip charts. These were played-back together with audio recordings containing fiducial markers, and the fiducial markers were transferred to the strip charts. The fiducial markers were identified with the topographical features along the flight lines.

The magnetic data were taken from the strip charts and plotted at a scale of 1:10,000 (1 cm = 100 m). The data were then contoured at 50 gamma interval above a magnetic base of 53,000 gammas, onto Map 3.

DISCUSSION OF RESULTS

a) Magnetics

The magnetic field over almost the entire survey area is very quiet which is typical of sediments. The general intensity is 3400 to 3800 gammas which can be considered as the magnetic background. The sediments, as mentioned above, are mainly those of the Creston, Kitchener and Aldridge Formations. The magnetics does not delineate between these different rock groups.

The magnetic field within the survey has a general northeasterly strike, this phenomena coincides with the strike of the underlying rock units.

The magnetic survey has produced a number if anomalous highs and sub-anomalous lows throughout the survey area. The most prominent high is located within the southern most boundary of the Etna #1 and Etna #2 claims. It reaches a high of 4,000 gammas which is 300 gammas above background. It strikes northeasterly into the Wump claim where the intensity diminishes to the background level, the intensity begins to increase again easterly along the strike of the anomaly to 3,800 gammas off of the eastern edge of the Min #1 claim. The "break" in this ridge of magnetic highs is indicative of faulting across the strike of the magnetic high.

The most likely causative source is intrusive stocks (metadiorite to metagabbro sills and dykes) of the Moyie Intrusions. In the writers experience, these rocks in this area have a magnetic field typical of this anomaly. However, according to published G.S.C. and B.C.D.M. maps, no Moyie Intrusions are shown in the area of the high.

Two magnetic lows of moderate intensity are located within the western portions of the survey area, these are likely reflecting the Moyie Fault and its associated splay faults/shears. Magnetic lows often occur along creek valleys, and/or areas of low topography. The reasons for this are as follows:

(i) Valleys almost always contain deeper overburden which means detecting element is further from the bedrock causing the magnetic field.

(ii) If the survey is flown across the valley or gully, then the detecting element is also further from the bedrock.

(iii) Gullies and valleys are often caused by faults or shear zones which are often reflected by magnetic lows.

b) VLF-EM

The major cause of VLF-EM anomalies, as a rule, are geological structure such as fault, shear and breccia zones. It is therefore logical to interpret VLF-EM anomalies to likely be caused by these structural zones. Of course, sulphides may also be a causative source. But in the writer's experience, when VLF-EM anomalies correlate with sulphide mineralization, the anomalies are usually reflecting the structure associated with the mineralization rather than the mineralization itself.

There is some variation in the intensity from one VLF-EM anomaly to the next. This is not only due to the conductivity of a causative source, but also the direction it strikes relative to the direction to the transmitter. In other words, those conductors lying close to the same direction as the direction to the transmitter can be picked up easier than those that are lying at a greater angle. Depending upon its conductivity, a conductor may not be picked up at all if it is at too great an angle.

Portions of the North Moyie property occurs in extremely rough topography which adversely affects the VLF-EM results. The noise level is increased which can thus distort from EM conductors such as geological structure and/or mineral zones. Therefore, the VLF-EM system may have responded to some of the known mineral zones but the signal may have been masked by the increased noise level.

However, 19 EM conductors have been mapped within the property and immediate area. These have been labelled by lower case letters "a" to "s", randomly. Since there are so many conductors, the description of each one has been limited to point form. The conductor is first named, and then followed by the length in meters, the strike and, as best can be determined, the underlying rock. The letters "min" in front of the length, means minimum length indicating at least one end of the conductor is open. Any other comments are then given below.

Conductor a	750 m, northwest, striking through a magnetic "break" within the Creston Formation.
Conductor b	500 m, northeast, this anomaly appears to be reflecting the contact between sediments of the Creston Formation and the Kitchener Formation.
Conductor c	650 m, northwest, occurring within a topographical break in the Kitchener Formation.

Conductor d	580 m, northeast, occurs at the approximate division of the Kitchener Formation between pEc and pEc-1.
Conductor e	350 m, northwest, within Creston sediments.
Conductor f	900 m, northwest. The southeastern end of the anomaly occurs within a magnetic high. The anomaly continues through a topographical break within the Creston sediments.
Conductor g	750 m, northwest, occurs off of the southeast corner of the Etna 1 claim. This anomaly, striking perpendicular to country rocks, is thought to be reflecting structure(s) associated with the St. Eugene/Aurora deposits.
Conductor h	min 350 m, east/west strike, within Kitchener sediments. This anomaly could be reflecting either a geological structure or most likely a cultural source.
Conductor i	min 550 m, northwest. This strong anomaly coincides with the contact between the Little Lamb Creek Fault and the Moyie Fault. Moyie Intrusions and sediments of the Aldridge Formation contact in this area.
Conductor j	600 m, northwest, occurs on the western shore of Monroe Lake within an area underlying predominently by Lower Aldridge Formation sediments.
Conductor k	min 250 m, northwest, striking through Conductors l and m. The causative source is most likely a fault/shear zone occurring within Lower Aldridge Formation.
Conductor l	750 m, northwest, varying from a moderate strength conductor on the eastern end to a very weak conductor on the western end.
Conductor m	300 m, northwest, occurs within a topographical break in the Aldridge Formation.
Conductor n	a conductive zone a minimum of 500 m by 300 m, occurring to the west of the Moyie 1 claim. Most likely reflecting intrusive units of the Moyie Intrusions.

Conductor o — 600 m, north/south. It appears to be reflecting the approximate subdivision between pEk and pEk 1 sediments.

Conductor p — 400 m, east/northeast, within Creston Formation sediments in both a topographical and magnetic low.

Conductor q — min 600 m, northwest, coincidental with the Kokanee sulfide zone. This conductor, occurring near the base of the Middle Aldridge Formation, is classified as a weak anomaly only because of its low amplitude relative to other conductors within the survey area.

Conductor r — 1200 m, northeast, occurring coincidentally with the Moyie Fault and the contact between sediments of the Kitchener and Aldridge Formations.

Conductor s — 900 m, north/northwest, a weak to very weak conductor occurring within in both pEk and pEk 1 sediments.

There are also a number of single-line anomalies, any of which could easily be reflecting bedrock conductors associated with mineralization. For each anomaly, the strike of the causative source is unknown.

c) <u>Lineations</u>

Lineal trends considered indicative of geological structure have been drawn on Figure 3 taking into account:

(i) Magnetic lows which are often caused by the magnetite within the rocks being altered by geological structural processes.

(ii) VLF-EM anomalies which more often than not are reflecting structure.

(iii) Topographical depressions such as creek valleys which are usually caused by structure.

Several lineations that are indicative of faults and contacts have been mapped across the property striking in different directions but most commonly northwesterly and northeasterly This is not surprising since the predominant trend of the geological structure in the general area are in these directions. Some or parts of the lineations in other areas have been known to correlate directly with lithological contacts or shear zones.

The lineations cross each other on the property in different areas. Structure is often important for the emplacement of mineralizing fluids especially where lineations intersect. Thus, these areas may have greater exploration interest.

Respectfully submitted,

AIRBORNE GEOPHYSICAL
SERVICES LTD.

Per: ____________________

May 17, 1990

CERTIFICATION

I, Lloyd C. Brewer, of the City of Vancouver, in the Province of British Columbia, Canada, do hereby certify:

That I am owner and President of Airborne Geophysical Services Ltd., with offices located at #611 - 470 Granville Street, Vancouver, B.C.

I further certify:

1. I am President of Stryder Explorations Ltd., and have been employed full time in the mineral exploration industry for the past ten years in Canada, United States and Mexico.

2. I was project manager and instrument operator for this airborne magnetic survey over the North Moyie Lake property.

3. This report was compiled from data obtained by Airborne Geophysical Services Ltd, under my direct supervision on the 23rd and 24th of February, 1989.

4. I have no direct or indirect interest in any of the properties mentioned within this report, nor in Omega Gold Corporation, nor do I expect to receive any interest as a result of writing this report.

Lloyd C. Brewer

Dated at:
#611-470 Granville Street,
Vancouver, B.C.
May 17, 1990

CERTIFICATION

I, Gyan Chand Singhai, of 5620 Clearwater Drive, in the municipality of Richmond, in the Province of British Columbia, Canada, do hereby certify:

1. I am a member of the Association of Professional Engineers of British Columbia since 1969, and a member of the Canadian Institute of Mining and Metallurgy.

2. I am a post-graduate in Applied Geology (1959) from the University of Saugor, Sagar, Madhya Pradesh, India and have been practicing my profession since that time.

3. I was teaching in the University of Saugor, Sagar, and Ravishankar University, Raipur, India, and practiced my profession in India, Canada, West Indies, Mexico, Peru and U.S.A.

4. This report is based on data recovered by Airborne Geophysical Services Ltd., from surveys flown the 23rd and 24th of February, 1990.

5. I have no interest directly or indirectly in the property described, nor in any other properties of Omega Gold Corporation.

G. C. Singhai

G.C. SINGHAI, M.Tech.,P.Eng.

Dated at:
5620 Clearwater Drive
Richmond, B.C.
May 17, 1990

AFFIDAVIT OF COSTS

I, Lloyd C. Brewer, President of Airborne Geophysical Services Ltd., certify that the airborne magnetic and VLF-EM surveys were flown on the 23rd and 24th of February 1990, and that they were flown at an all inclusive cost of $ 107.80/km, the total number of kilometers being 338.6 to give a total cost of $ 36,500.00.

LLOYD C. BREWER
President

AIRBORNE GEOPHYSICAL
SERVICES LTD.

May 17, 1990