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INTERPRETATION OF AN
AIRBORNE GEOPHYSICAL SURVEY
OF THE
SPARK 37 to SPARK 56
MINERAL CLAIMS & ADJACENT AREAS
MORRISON LAKE, B.C.
R. WOOLVERTON April 30, '69

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INTERPRETATION OF AN
AIRBORNE GEOPHYSICAL SURVEY

FOR

DAVID MINERALS LTD.,

of the

SPARK 37 to SPARK 56

Mineral Claims and Adjacent Areas

Near the North End of

MORRISON LAKE, B. C.,

55° 126° S E,

by

R. WOOLVERTON,

Geologist,

April 30, 1969.

Vancouver, B. C.

May 26, 1969.

INTRODUCTION

On April 30, 1969, Evergreen Explorations Ltd. under contract to David Minerals Ltd. conducted a 38 line mile Airborne magnetic and electromagnetic survey of about 10 square miles near the north end of Morrison Lake, B. C. The survey area included the Spark 37 to Spark 56 mineral claims as well as others held by David Minerals Ltd. The equipment and crew were supplied by Lockwood Survey Corporation Limited of Toronto.

Readings of the in and out of phase components of the resultant electromagnetic field plus the vertical magnetic intensity were taken from a helicopter platform. The equipment included a 4300 c.p.s. electromagnetic system and a Gulf type magnetometer. The receiving coils and magnetometer head were carried in a 30 foot bird. Flying height was maintained at about 220 feet above the ground and the bird travelled at about 100 feet above the ground. Terrain clearance was measured by a radio altimeter and recorded on the E.M. tapes.

Flight lines were oriented east west and flown at about 1000 foot intervals. A continuous film record was kept of the flight lines.

RESULTS

Two areas of magnetic complexity indicating possible porphyry mineralization were outlined by the survey. One of these anomalies is near the north boundary of the survey area. A 500 gamma high is present which, depending on overburden depth, should prove to be a 5000 gamma high on the ground. This is a somewhat more intense mag high than is usually associated with porphyry deposits in this area.

The second magnetic complex is in the southern third of the survey area and has magnetic relief of about 200 gammas. This should give about a 2000 gamma anomaly on the ground. Of the two magnetic anomalies, the southern one is most likely to be an expression of porphyry mineralization.

The edge of a possible third magnetic complexity is indicated at the southeast corner of the survey area.

Twenty seven conductors were identified on the E.M. tapes. Porphyry deposits are only weakly conductive and so the resulting conductors are difficult to distinguish from a variety of natural phenomenon such as conductive clay, wet shattered shale horizons, and wet faults. However, some of the conductors appear to be

definitely of uneconomic interest and have been shown on the accompanying map as surficial (clay) or formational (graphitic shales) conductors. The remaining conductors have been divided into a group of primary interest and a group of secondary interest firstly on the basis of their proximity to the two magnetic complexities and secondly on their electric characteristics.

Of the 27 conductors, numbers 2,3,8, and 19 are of primary interest, 1,5,7,13,15,16,20,21,23, and 25 are of secondary interest and the remainder are of no economic importance. Conductors 12, 14, and 15 may be caused by a fault.

A conductive sedimentary horizon appears to be the cause of most of the formational conductors and possibly many of the conductors of secondary interest. As indicated by the assumed conductor axes these sediments probably strike northwesterly.

CONCLUSIONS AND RECOMMENDATIONS

Two areas of possible porphyry mineralization apparently intruding sediments were outlined by the survey. These two areas should be investigated on the ground by:

- 1) a magnetometer survey,

- 2) an E.M. survey (EM16 used in conjunction with one of the other E. M. systems helps distinguish sulfide conductors from clay or formational conductors),
- 3) a soil geochemical survey if the overburden is not too deep, and
- 4) an I. P. survey of anomalies outlined by the preceding surveys.

A possible third magnetic complexity near the southeast corner of the survey area should be investigated by ground magnetics. Estimated cost of the above program is \$25,000 to \$30,000.



R. Woolverton.
Geologist.

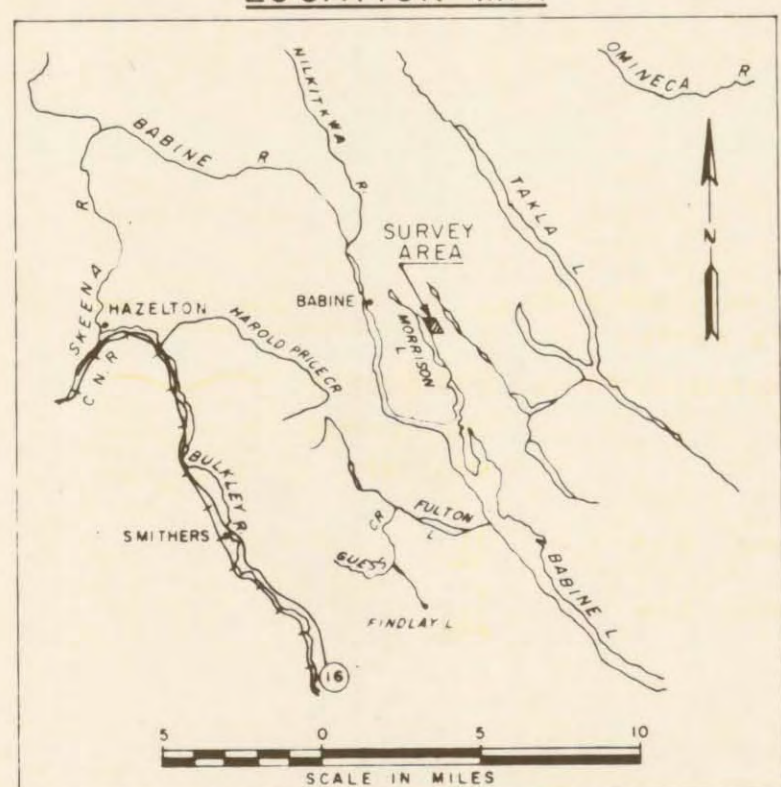
Vancouver, B. C.

May 26, 1969.

The writer is a 1960 Geology graduate of the University of British Columbia. He has worked continuously since graduation for Mining Companies in both field and supervisory capacities on Exploration projects. Most of his career has been spent in B. C., four years of it managing Noranda's Smithers operation. He is enrolled as an Engineer In Training with the B. C. Association of Professional Engineers.



LOCATION MAP



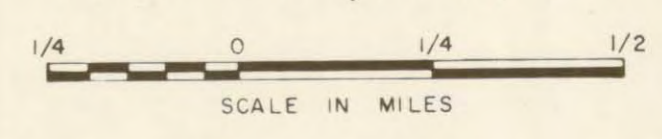
LEGEND

CONDUCTORS

- Primary interest
- Secondary interest
- Surficial or formational
- Probable conductor axis

- Flight lines and photo identity points
- Isomagnetic Contours: 600 Gammas
- 100 Gammas
- Mag Dep.
- Magnetic High
- Magnetic Low

EVERGREEN EXPLORATIONS LTD.
 DAVID MINERALS PROPERTY
 HELICOPTER MAGNETIC AND
 ELECTRO MAGNETIC SURVEYS
 OMINECA, M. D., B.C.



CONTOUR INTERVAL - 100 GAMMAS

TO ACCOMPANY REPORT BY R. WOOLVERTON,
 May 26, 1969.

R. Woolbert
 26 May 1969

