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S.N. Charteris

REPORT ON

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NANAIMO MINING DIVISION

N.T.S. 92-K-4 ?

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Vancouver, B.C.
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S. N. Charteris

CONTENTS

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INTRODUCTION

A two-man exploration crew spent 16 days on geophysical surveys and collection of soil samples in late May, 1968. The writer mapped the exposures and examined the surrounding area May 25th to May 29th.

Results of the geophysical and geochemical surveys were analysed and plotted after the crew left the field.

PROPERTY, LOCATION AND ACCESS

The two claims, Davis No. 1 and Davis No. 2 are located in Gerald Creek, 45 miles due west of Campbell River. A good trail 1.3 miles long leads downstream from Gerald Lake, a widening of Gerald Creek showings - see accompanying map.

GEOLOGY

(1) General

Rock exposures are confined to the margins of Davis Creek and the north wall of the valley from 10:00 N. on the picket line grid to beyond the claim boundaries. No outcrops were noted south of Davis Creek. Cliffs up to 500 feet high of thick massive flat-lying dark green andesitic flows separated by wide-spaced, thin tuff beds outcrop along the north side of the valley and for two miles east of the property.

(2) Lithology

The following is a resume of the observations on the rock types.

(a) Argillites

Dark grey to black, laminae (beds) 1/8" or more thick; intercalated wider, light grey, slightly arenaceous beds, have a 1% - 2% pyrite content. Outcrops between G-5 and upstream from G-4 are well jointed at 305°.

(b) Greywacke

A five foot bed with thin bedded argillite above and below outcrops at G-5. It is an aggregate of feldspar, sericite and chloritic fragments with some argillaceous grains and fragments.

(c) Volcanics

(i) Massive dark green andesitic greenstone outcrops occur in Gerald Creek near the base line at 230 East. They are composed of 50% feldspar as a felt-like radiating mat 1 mm. long with interstitial subhedral ferromagnesium minerals less than 1 mm. long. This material also outcrops at 10:00 N., 10.00 W. and forms cliffs between 0 and 400 E. Prominent joints striking 345° cut the flows at intervals of four feet and more.

(ii) Schistose Volcanics - All other outcrops in the creek were light grey to light green, variably schistose volcanics with all primary textures destroyed. The matrix in places had white feldspar laths or fragments. Chlorite in places is up to 30 percent as dark green ovoids 2 mm. X 0.5 mm., lineated in the planes of schistosity.

(d) Chert

The largest outcrop is at 280 W., 90 N. to 130 N. of well bedded white and black layers - W. 3 mm. thick - striking 033° dipping 64° to the northeast. This strike is nearly normal to the bedding in the argillites suggesting an unconformity between the deposition of the argillites and volcanic-chert sequence.

(e) Quartz Veining

The outcrops near 0 on the base line and 120 E., 40 N. are of white brecciated quartz in dilation zones cutting the schistosity. The only chalcopyrite observed is shown on the 1" = 10' enlargement of the discovery zone. Note there is only chalcopyrite and, consequently, little weathering.

(f) Diorite or Dioritized Volcanics

These outcrop in the creek between 30E. and 80 E., 40 N. to 80 N. They are dark green, massive with feldspars up to 2 mm. long and interstitial subhedral mafics.

(3) Structure

(i) Folding - The argillites dip gently to the northeast and southwest suggesting gentle folding. There are no horizons in the volcanics to permit the determination of attitudes but from the altitude of the chert bed, I suspect they overlay the sediments unconformably.

(ii) Shearing - There is a strong vertical shear, 20 feet wide, cutting the argillites near 13 + 50 S., trending 300° from 160 E. to 550 W. All outcrops of volcanics are variably sheared, the schistosity trending 340° to 290°.

(4) Mineralization

The quartz veining appears to be a filling of a dilation zone formed by the diversion of the 340° shearing of 290° for a 300 ft. length. If the geophysics can detect any other strong diversions, larger mineralized masses might be located.

GEOPHYSICAL RESULTS

The survey base line extends 295° and 115° from the discovery zone on the south bank of Davis Creek. Cross lines with 100 foot stations were cut at 200 foot intervals for 1,000 ft. north and south of the base line.

Geophysical observations were made every 50 feet on the lines. The small magnetic relief required the use of an Askania magnetometer. A V.P.-6 potentiometer and a Ronka E.M.-16 were used in the Self-potential and electromagnetic surveys.

(1) Magnetometer Survey

The three elongate magnetic anomalies north of the base line are probably due to concentrations of magnetite in the flow tops of the volcanics. There is no clear explanation for the anomalous area along the base line between 2 E. and 5 E.

(2) Self-potential

There are three Self-potential anomalies of interest, all south of the baseline. The strongest anomaly of up to 500 m.v. is indicated at the southeast end of the grid (lines 6 E. to 10 E. from 600 S. to 1,000 S.). A weak magnetic and an E.M.-16 anomaly correlate well with this Self-potential anomaly.

E.M.-16, Station 18.6 (after S. Presunka)

Several conductors striking approximately 300° are indicated south of the baseline. The "A" conductor in the southeast sector of the grid continues off the grid and correlates well with the Self-potential and the magnetics. It takes a turn to the north on lines 2 E. and 4 E.

The "B" conductor on the southwest end is similar and parallel to the 300° strike of the "A" anomaly.

The "C" conductor is over 1000 feet long and not delimited. It is weakly supported by Self-potential anomaly.

The "D" conductor which goes off the grid to the south should be followed up.

E.M.-16, Station 23.4 (after S. Presunka)

The conductors picked up using this station indicate a shear or a contact running approximately north-south across the property. The lesser, short weak conductors are most likely due to shears or possibly fractures. Because of the wide spacing between readings the locations of the conductors are approximate. The strong conductor running parallel to line 10 E., south of the baseline indicates a possible fault to the conductor "A" marked on the 18.6 grid.

GEOCHEMICAL (after I. L. Elliott)

Analyses

14th - 20th June	Copper	HNO_3 - A.A.
	Molybdenum	Fusion - Dithiol

Concentration Levels

	R.B.	L.B.	Average	Range	Mode
Copper ppm	0-60	61-120	>120	0-400	20-30
Molybdenum ppm	0-2	3-4	>4	0-15	2

Results

Copper at higher than local background levels occurs mainly on the north side of the creek and particularly in the northwest corner of the grid. (Lines 4 W. - 10 W., 900 ft. - 1,000 ft. north of the creek.) In contrast, molybdenum occurs mainly on the south side of the creek where local background values are widespread. Some concentration of Mo. values is seen on most of the lines 500 - 1,000 feet south of the creek. These above background areas are also indicated by the drainage samples. The soils adjacent to the showing in the creek are anomalous for both copper and molybdenum and only here is molybdenum found on the north bank.

The general absence of high metal values near the creek may reflect the deeper alluvial/colluvial overburden in the valley bottom as compared to higher up the sides.

Recommendations

The occurrence of molybdenum in anomalous amounts supports the idea of an acidic body not too far distant from the showing. If the veins themselves do not carry Mo. mineralization then the source of the Mo. should be sought on the south side of the creek.

More extensive drainage sampling and extension of the grid, particularly parallel to the creek, would be of interest.

The general level of Cu. and Mo. values is not in itself particularly exciting but the general setting of an acidic intrusive cutting the volcanics is attractive.

CONCLUSIONS

The weak coincident geochemical, Self-potential and E.M.-16 anomaly at 500 S. to 700 S. on line 10 E. should be delimited by a brief geophysical - geochemical survey. If the results are encouraging, only diamond drilling can give a conclusive answer for the overburden is too deep for trenching, and there are no outcrops in the vicinity.

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