

INTRODUCTION:

The Summit Copper prospect is owned by M. H. Chapman of 4068 Third Avenue in Smithers, B.C. In June, 1973, Mr. Chapman contacted A.J. Schmidt for Hudson's Bay Oil and Gas Company Limited and showed him samples of altered, mineralized intrusive rock from the prospect. On June 21st, Schmidt, accompanied by Chapman, conducted a field examination. As a result of this examination, an option to purchase the prospect was concluded between Chapman and Hudson's Bay Oil and Gas Company Limited. Field work on the property began June 23, 1973, and terminated September 20, 1973.

LOCATION AND ACCESS:

The Summit Copper prospect is located 12 miles east of Telkwa, B.C., and is readily accessible by a 4-wheel drive vehicle along the old Dome Mountain wagon road, which leaves Highway No. 16 at Telkwa, B.C.

Coordinates of the main area of interest are: $126^{\circ}45'W$, $54^{\circ}43'N$, which are immediately south of Burbridge Lake, at elevation 3800 feet.

PROPERTY:

At the time of the initial examination, the property consisted of eight full-sized Summit claims, all owned outright by Mr. Chapman.

Subsequent to the examination, the claim group was enlarged to a total of 35 full-sized claims and 5 fractions. The additional claims (HB Group) were staked by Hudson's Bay Oil and Gas Company Limited as agent for Mr. Chapman.

All claims, and their expiry dates are listed in Appendix A.

REGIONAL GEOLOGY:

This region is underlain by Lower-Middle Jurassic rocks of the Hazelton Group, principally andesitic flows and tuffs, with minor intercalated sediments. The area has undergone regional metamorphism, as epidote and chlorite are common in most rocks.

No major regional structures are known in the immediate area, but major NW-trending horst and graben structures are well displayed to the east (Babine Lake) and west (Bulkley Valley).

Small granitic and porphyritic intrusions are common in the area and often form mineralized centres. The Summit prospect lies 26 miles SW of the Granisle-Newman porphyry copper camp, and 12 miles SE of the Big Onion porphyry Cu/Mo prospect.

PROPERTY GEOLOGY:

A blazed and flagged grid was established over the area of interest and was used for geological mapping on a scale of 1"=500'.

Much of the area mapped (8000' x 5000') is underlain by Hazelton andesites, with minor tuffs, agglomerates, and rhyolitic members. Invariably, these rocks contain epidote blotches and veinlets. Narrow, (1/2" - 2") quartz stringers are also common. Close to the diorite contact, the andesite is weakly pyritized (1%).

No stratigraphic data was obtained as the regional metamorphism and local hydrothermal effects have obliterated the original bedding. However, a fairly strong NE trending foliation and schistosity is apparent, with an attendant steep SE dip.

The Hazelton volcanics have been intruded by a small dioritic stock measuring approximately 5000' by 1400' and elongated east-west. The stock is weakly pyritized (1-3%), usually silicified, and usually fine-grained. Except on its southern flank, the degree of hydrothermal alteration is not high, only to the propylitic stage (chlorite, epidote).

Several small outliers of diorite were discovered SE of the main showing. They are of essentially the same composition as the main mass, and are probably connected with it at depth.

Along the southern flank of the diorite, bulldozer trenches and several outcrops expose what was initially thought to be a second intrusive phase. This rock was tentatively mapped as a quartz-feldspar porphyry. However, additional data gathered from drill core indicates fairly conclusively that it is a well-altered phase of the main diorite. A fairly strong quartz-carbonate-type of alteration is indicated and is superimposed over fairly strong ENE-trending shearing and foliation. Within this area of alteration, pyrite content increases dramatically to 5-20%, both as disseminations and fracture fillings.

The bulk of the copper mineralization on surface is malachite and tenorite, although some good chalcopyrite and magnetite occurs in the old adit at the SE end of the zone.

GEOCHEMISTRY:

The first phase of the geochemical evaluation of the area consisted of silt sampling in the immediate area of the prospect. Twelve silt samples were taken from all available creeks, and these clearly indicated that the small creek draining the original showing, the Adit area, was the only one carrying any significant copper-molybdenum mineralization. Values of 115 ppm Cu and 6 ppm Mo were obtained just below the adit, and this anomalous condition persisted for several miles downstream. All other creeks returned values of 15 to 50 ppm Cu, and 1 to 3 ppm Mo.

The grid lines were soil sampled with samples taken on most lines at 200 foot intervals. 206 useable soil samples were gathered from "B" horizon material. Samples were analyzed by Bondar-Clegg and Co. Ltd. in Vancouver for four elements - copper, molybdenum, zinc and silver. Histograms were prepared for each element which allowed the meaningful contouring of the data by the selection of appropriate levels of anomalism for each metal.

Copper:

An excellent soil anomaly was obtained which corresponded well with known mineralization, although slightly downhill from it. The main portion of the soil anomaly measured 3000' x 600', with a smaller lobe to the SE, and another lobe to the SW. The SW lobe is puzzling and has not been explained, as it is apparently underlain by barren andesites. The main anomaly was tested during the drilling programme.

Molybdenum:

A small, well defined soil anomaly was found to occur immediately

south of Burbridge Lake, coincident with the best part of the copper anomaly. The molybdenum soil anomaly measured approximately 1500' x 700', although a weak extension stretched well to the east to the Adit area.

Zinc:

A peripheral soil anomaly in zinc was found to occur. This zone of anomalous values neatly circumscribed the main area of copper-molybdenum interest, and was interpreted as reflecting mineral zoning around the central diorite stock.

Silver:

The patterns of anomalous soils in silver also indicated mineral zoning around the central copper zone, with a small, well-defined anomaly also occurring centrally, within the main molybdenum-copper anomaly.

GEOPHYSICS:

A ground magnetometer survey was completed over the grid area utilizing a Geometrics nuclear precession instrument, Model G-817. Generally, the ground survey confirmed the Government airborne data for the area, i.e., a small NW-trending mag-high occurs just NE of Burbridge Lake, and is bounded on the SW by a large area of 'flat' magnetic relief. The magnetite in the Adit area causes a small EW trending mag-high, and is the only mag feature in the centre of the grid.

A small, but prominent mag-high also occurs in the SW corner of the grid, and coincides with the high copper in soil anomaly. These two features may indicate a NNE striking fault passing through 45E, 70S, and may indicate that the mineralized and altered zone has been faulted off to the SW. However,

as stated before, outcrops observed in the area are barren andesites.

DIAMOND DRILL PROGRAMME:

D.W. Coates Enterprises Ltd. was awarded a contract for the follow-up drilling on the Burbridge Lake prospect. A BBS-1 drill with a hydraulic head and equipped to drill BQ core was mobilized onto the property on August 29, 1973, although drilling did not commence until September 3, 1973. Drilling continued on a one-shift basis until three 400 foot holes had been completed. The drill was demobilized on September 20, 1973.

Three holes were drilled at -45° angles, due south across the zones of interest, at approximately 800 foot centres. (See Appendix B). The two eastern-most holes were essentially barren of any significant copper mineralization, although they contained abundant pyrite (up to 15%, both disseminated and in small veinlets). The western-most hole, drilled under the best mineralization exposed by trenching, did encounter significant copper values: 90 feet of 0.48% Cu, or 160 feet of 0.38% Cu.

All core was logged and split in Smithers and was assayed in 10 foot sample intervals by Bondar-Clegg in Vancouver. Core recovery was excellent. Composite samples covering 50 feet of core were subsequently prepared and assayed for molybdenum, gold and silver. No significant values were obtained for these metals.