



NORTHEAST BRITISH COLUMBIA

MINERAL PROPERTY EXAMINATIONS

By T. G. Schroeter

RED (94D/3E)

The Red copper prospect owned by Canadian Superior Exploration Limited is situated 20 kilometres west-northwest from the north end of Bear Lake and 160 kilometres north of Smithers.

Work during 1972, 1973, and 1975 by Canadian Superior included geochemical and geophysical surveying, geologic mapping, and diamond drilling of nine holes totalling 906 metres. During 1976, three diamond-drill holes totalling 352.6 metres were completed.

The property is underlain mainly by volcanoclastic rocks including light green intermediate tuffs, maroon (hematitic) tuffs and flows of the Hazelton Group. A lens of intercalated, impure, bioclastic, reefoid limestone mineralized with disseminations and minor fracture fillings of chalcopryrite is contained within the volcanoclastic sequence. A gabbro sill and small microdiorite stock intrude the rocks east of this lens. Minor amounts of bornite and chalcocite have been noted in the limestone. Traces of barite also exist.

References: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1973, p. 404; Assessment Reports 4562, 5552.

IN (94D/3W, 6W)

The IN porphyry copper prospect owned by Canadian Superior Exploration Limited is located 30 kilometres west-northwest from the north end of Bear Lake, approximately 160 kilometres north of Smithers.

Previous work on the property during 1972 and 1973 included geochemical and geophysical surveys, geologic mapping, trenching, and 900 metres of diamond drilling. During 1976 Canadian Superior undertook a diamond drilling program consisting of two holes totalling 305 metres.

A prominent rust-stained mountain signifies an elongated, fractured, northerly trending pyritized zone developed within a Jura-Cretaceous sedimentary and volcanic sequence which has been intruded by essentially two types of Tertiary feldspar porphyry. The

intrusives appear to be dyke-like with irregular contacts suggesting a subvolcanic level. An earlier altered quartz feldspar porphyry belonging to the Kastberg Intrusions is cut by varieties of biotite feldspar porphyry (BFP) which closely resemble the porphyries of the Babine Lake area and as such represent the most northerly known such porphyries of this type. A hornfels zone with secondary biotite and abundant disseminated and fracture-filling pyrite and minor chalcopyrite envelopes the intrusive masses.

Pyrite is ubiquitous and abundant in all rock types and occurs as disseminations and in fracture and vein fillings. Chalcopyrite also occurs as disseminations and in fracture and vein fillings within both types of porphyries. Trace amounts of molybdenite also exist associated with the quartz veining. Several phases of veining exist including quartz + pyrite \pm chalcopyrite \pm calcite \pm fluorite. Magnetite and hematite occurring as blebs and as veinlets are also locally abundant.

Minor veinlets carrying sphalerite and galena were also noted.

Oxidation extends to depths of at least 45 metres.

References: *Minister of Mines, B.C.*, Ann. Rept., 1966, p. 81; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1972, p. 479; 1973, p. 405; Assessment Reports 3868, 4563.

KEMESS (94E/2W)

The Kemess copper property is located approximately 280 kilometres north of Smithers and 9 kilometres east of Thutade Lake. Kennco Explorations, (Western) Limited diamond drilled nine holes during 1968, 1969, and 1971. In 1975, under an option agreement with Kennco, Getty Mines, Limited diamond drilled over 600 metres of BQ core in six holes and during 1976, a further 1 475.8 metres of both BQ and NQ core in seven holes.

A northwest-trending belt of Takla Group volcanic rocks have been intruded by stocks of diorite, quartz monzonite porphyry, syenite porphyry, and a quartz feldspar porphyry, all presumably related to the same Omineca intrusion. The volcanic rocks, which consist of a massive chloritic andesite and a porphyritic chloritic andesite, have been subjected to intense structural disturbances including numerous faults, shears, and fractures. The intrusive rocks show less structural disturbance. Major faulting exists in an east-west direction with numerous transverse faults.

Mineralization is almost entirely confined to the volcanic rocks and in particular the porphyritic variety and its altered equivalents. Disseminated and fracture-filling pyrite is ubiquitous in amounts averaging 5 per cent. Chalcopyrite also occurs as disseminations and in fracture fillings within the andesite. Abundant anhydrite \pm quartz veins also carry varying amounts of disseminated and fracture-filling pyrite and chalcopyrite. Minor

amounts of molybdenite were also noted in the veins. Magnetite is locally abundant as veinlets or blebs associated with pyrite. Pyrite is the only sulphide observed in the syenite porphyry. Coatings of chalcocite and covellite were observed in oxidized specimens.

Alteration and veining are common, particularly in the volcanic rocks. Silicification is widespread and locally the andesite takes on a white colour. Epidote is also widespread and occurs in fractures as well as being pervasive. Pink laumontite is common along fractures. Hematite is present on some fractures. Most of the feldspars have been sericitized. The most significant veining is that of purple anhydrite with or without quartz. Chalcopyrite and pyrite and minor molybdenite appear to be always associated with this veining.

References: *Minister of Mines, B.C.*, Ann. Rept., 1968, p. 149; *B.C. Dept. of Mines & Pet. Res.*, GEM, 1969, p. 104; 1971, p. 64; Assessment Reports 1705, 5748.

CHAPPELLE (94E/6E)

DuPont of Canada Exploration Limited conducted an exploration program in 1976 to test the mineralized quartz vein which has a drill-outlined length of 330 metres and an average width of 3 metres. The program consisted of 56.02 metres of drifting, 140.8 metres of raising, 59.43 metres of underground drilling in seven holes, and 760.7 metres of surface diamond drilling in 13 holes. Mineralization consists of pyrite, electrum, argentite, polybasite, and chalcopyrite in a vuggy quartz host which has undergone extensive block faulting and fracturing.

DuPont continued the drift completed by Conwest Exploration Company Limited in 1973, picked up the mineralized vein, followed it, and then made an 86.25-metre raise with three fingers at the end termed the 5454 raise. A crosscut was extended 7.9 metres to the southwest at a point approximately 39.62 metres in on the main drift from where a 54.55-metre-high raise (5450) was made which broke through to surface on the vein. Minor faulting of the vein (up to 8 metres displacement) was common.

The workings were surveyed and sampled, and a 9-tonne bulk sample from underground rounds was taken for testing.

References: *B.C. Dept. of Mines & Pet. Res.*, GEM, 1970, p. 188; 1971, pp. 65-70; 1972, p. 484; 1973, pp. 458-460; 1974, p. 312; *B.C. Dept. of Mines & Pet. Res.*, Geological Fieldwork, 1974, p. 84; 1975, pp. 68, 69; Assessment Reports 2581, 2819, 3171, 3198, 3343, 3367, 3417, 3418, 3419, 4066, 5268, 5667.