



A COPPER-SILVER OCCURRENCE IN THE FALKLAND AREA

(82L/12E)

By G.P.E. White

A copper-silver showing on the Top claims owned by Don Campbell and under option during 1981 to Craigmont Explorations Limited is located at 50 degrees 31 minutes latitude, 119 degrees 36 minutes longitude, 1 190 metres elevation, approximately 3 kilometres northwest of Falkland.

Finely disseminated chalcopyrite, bornite, chalcocite, and possibly digenite are found in a coarse volcanic breccia. Fragments are predominately porphyritic green and buff lava, chert, micrite, and rhyolite, generally in a finer clastic crystal fragment-bearing green matrix. The porphyritic green phase is the most common rock type and, in mineralized areas, it has been altered predominately to calcite with 20 per cent albite and some chlorite, quartz, and K-feldspar. Phenocrysts are altered to vermiculite-hydrobiotite with small amounts of chlorite, calcite, and amphibole. Away from the mineralized area, the volcanic breccia consists of sericitic to kaolinitic altered porphyry and clasts of altered microlitic volcanic flows. In this unit, relatively fresh augite phenocrysts are present. Apatite is often present in the chert and veinlets of quartz, K-feldspar, and calcite are occasionally present.

This 'augite porphyry' breccia is interbanded with some rhyolite and light-coloured flow rocks; some of the rhyolites are flow banded.

South of the mineralized area, 1.5-metre green porphyry blocks are set in a fragmental green porphyry matrix. Occasional clasts are mineralized with copper and there are infrequent, well-rounded, 5-centimetre-diameter milled rock fragments.

To the north of the mineralized showing outcrops in a narrow stream valley show 'augite porphyry' and altered basalt breccia in faulted contact with a coarse conglomerate and interbedded calcite-cemented arkosic sandstone. The conglomerate and sandstone are cut by basaltic dykes. Above is basalt clast sandstone that grades upward into sandstone with plant fossils. It is suggested that the fault juxtaposes Triassic and Tertiary rocks.

The mineralization is proximal to a Triassic diatreme. The present topography is related to Tertiary vent systems and may in part represent coincident areas of crustal weakness which also served as volcanic centres during Triassic time.

Using this concept, Mount Martin to the northwest was investigated but so far only one outcrop of relatively unaltered augite porphyry has been found on the north side. However, it is interesting to note that

outcrops below 1 200 metres south and east of Mount Martin in Paxton Valley, along St. Laurent Creek, on Mail Creek, and on Bolean Creek are Permian-Pennsylvanian, not Tertiary. This interpretation is based on lithology, paleogeography, and fossil evidence. Cherty limestones contain productid brachiopods and schwagerinid fusulinids, possibly Parafusulina (Monger, pers. comm.). Monger suggested that these rocks are late Early to Middle Permian in age and may correlate with the Harper Ranch Group.

Prospector Don Campbell on the Ministry's Grant Program worked in this area off and on for several years before making this find. Thanks are extended to John Kwong who identified minerals, and Bill McMillan and Vic Preto for their interest and suggestions. M. Hanna made the initial suggestion that the fossils were Permian-Pennsylvanian and this was confirmed by J. Monger of the Geological Survey of Canada.