CAPOOSE PRECIOUS AND BASE METAL PROSPECT (93F/6)

By T. G. Schroeter

The Capoose precious and base metal prospect is situated a few kilometres north of Fawnie Nose, approximately 110 kilometres southeast of Burns Lake (Fig. 39). Access is by four-wheel-drive road off the main Kluskus logging road south of Vanderhoof or by helicopter.

During the 1980 season, Granges Exploration Aktiebolag completed approximately 3 962 metres of diamond drilling in 21 holes.

LOCAL GEOLOGY

The Fawnie Range in the vicinity of the Capoose property consists of a conformable sequence of interbedded greywacke, shales and pyroclastic rocks, and flows of rhyolitic and andesitic composition that unconformably overlie andesitic rocks of the Takla Group (Fig. 39). Tipper (1963) postulates that intermittent late Middle Jurassic volcanism took place in an unstable basin that was undergoing rapid changes. Finer sedimentary rocks were accumlating in a northwestery trending sedimentary trough bounded on the north and northeast by a landmass in which Topley Intrusions were beginning to be exposed. The pile of of Hazelton Group (or younger) rocks is estimated to be greater than 460 metres (Tipper, 1963, p. 32) in stratigraphic thickness. The east side of the Capoose property, a topographic low, is underlain by interbedded greywacke, maroon tuffs, and limy argillites of probable Late Jurassic (English Callovian) age (Upper Hazelton Group ?). Fossils found in limy argillite of this sequence have been identified by H. Frebold (Tipper, 1963, p. 29) as follows:

No. 4 GSC Locality 20116 – 2.4 kilometres from the north end of Fawnie Nose
Belemnites sp. indet.
'Rhynchonella' sp. indet.

Limestone blocks in argillite occur immediately below the contact with rhyolite. Unfortunately only a broad Jurassic or Cretaceous age can be inferred.

An acidic unit consisting of rhyolitic pyroclastic and flow rocks, with an attitude of 170 degrees/20 degrees west, unconformably overlies the limy argillite unit. Phenocrysts of highly embayed quartz are set in a cryptocrystalline groundmass of quartz and feldspar. Flow banding in the rhyolite averages 135 degrees/15 degrees west and there is a strong vertical jointing at 090 degrees parallel to the major structural zones. Local 'balling' or pisolitic formation in the rhyolite has produced beds with 'balls' up to 30 centimetres in diameter. Pisolites are actually nuclei growth phenomena and exhibit rare spherulitic radiating textures, indicative of rolling during or after growth. This unit has been garnetized to varying degrees (*see* Alteration and Texture).

X Garnets

ALTERATION AND TEXTURE

Amber-brown garnets are an ubiquitous feature in the rhyolitic and hornfelsed rocks. Some are fresh but others are totally altered or replaced by a mixture of quartz±sericite±opaques. Some garnets are highly poikilitic; they show no evidence of rolling during growth. Garnets occur as disseminations, fracture fillings, vein fillings in quartz, and replacement nuclei. Many garnets have been fractured and healed by sulphides (mainly pyrite).

The matrix of the rhyolite has been highly sericitized.

The predominant texture observed is one of nucleation and/or dispersion exhibited by pseudomorphs after garnet and dispersion rims of quartz and/or sericite are common. The textures suggest that crystallization took place rapidly under strong chemical or energy gradients. Dendritic growth textures are also exhibited. It is thus postulated that sulphide replacement of garnets was controlled by diffusion because the composition of the garnets differed appreciably from that of the groundmass (quartz and feldspar). The skeletal texture of garnets implies difficulty in nucleation.

Thus the process of garnetization is suggested to have been:

Growth → nucleation → dispersion → replacement and/or healing by sulphides.

Globular to botryoidal and fracture-filling hematite is common in rhyolite.

Epidote and chlorite are common alteration products in the andesitic rocks.

STRUCTURE

East-west faults are the predominant structures in the area. Fault traces are marked by small linear depressions on Fawnie Range and fault gouge has also been identified in several drill holes. Broad warping of thin bands in the argillite unit occur.

MINERALIZATION

Three zones of precious ('bulk silver') and base metal mineralization have been preliminarily identified:

- Zone 1 — area of most previous diamond drilling has defined a steep west-facing zone in garnetized rhyolite.
- Zone 2 — area to the west of Zone 1.
- Zone 3 — area to the north-northwest of Zone 1; characterized by more massive sphalerite, pyrrhotite, and chalcopyrite in rhyolite and hornfels.

ZONE 1

Galena, pyrite, pyrrhotite, chalcopyrite, arsenopyrite, and sphalerite occur as disseminations (especially galena), replace garnets (nuclei and attendant dispersion halos), and occur as fracture and/or vein fillings both in fine-grained rhyolite tuffs, breccias, and flows and in hornfelsed argillite. Tetrahedrite, pyrargyrite, electrum, native gold, and cubanite mineralization has been reported and precious metals also occur within galena and sphalerite. Pyrite is ubiquitous and may have formed throughout the mineralizing event. Garnet replacement and mineralization are closely related. Belemnites in limy argillites underlying the rhyolite unit have been locally replaced by pyrite and a sample of one collected previously by the author assayed 0.03 per cent molybdenum and 0.03 per cent tungsten (Schroeter, 1980, p. 123).

REFERENCES

Schroeter, T. G. (1980): Capoose Lake, 93F/6, *B.C. Ministry of Energy, Mines & Pet. Res.*, Geological Fieldwork, 1979, Paper 1980-1, p. 123.

Tipper, H. W. (1963): Nechako River Map-Area, British Columbia, *Geol. Surv., Canada*, Mem. 324.

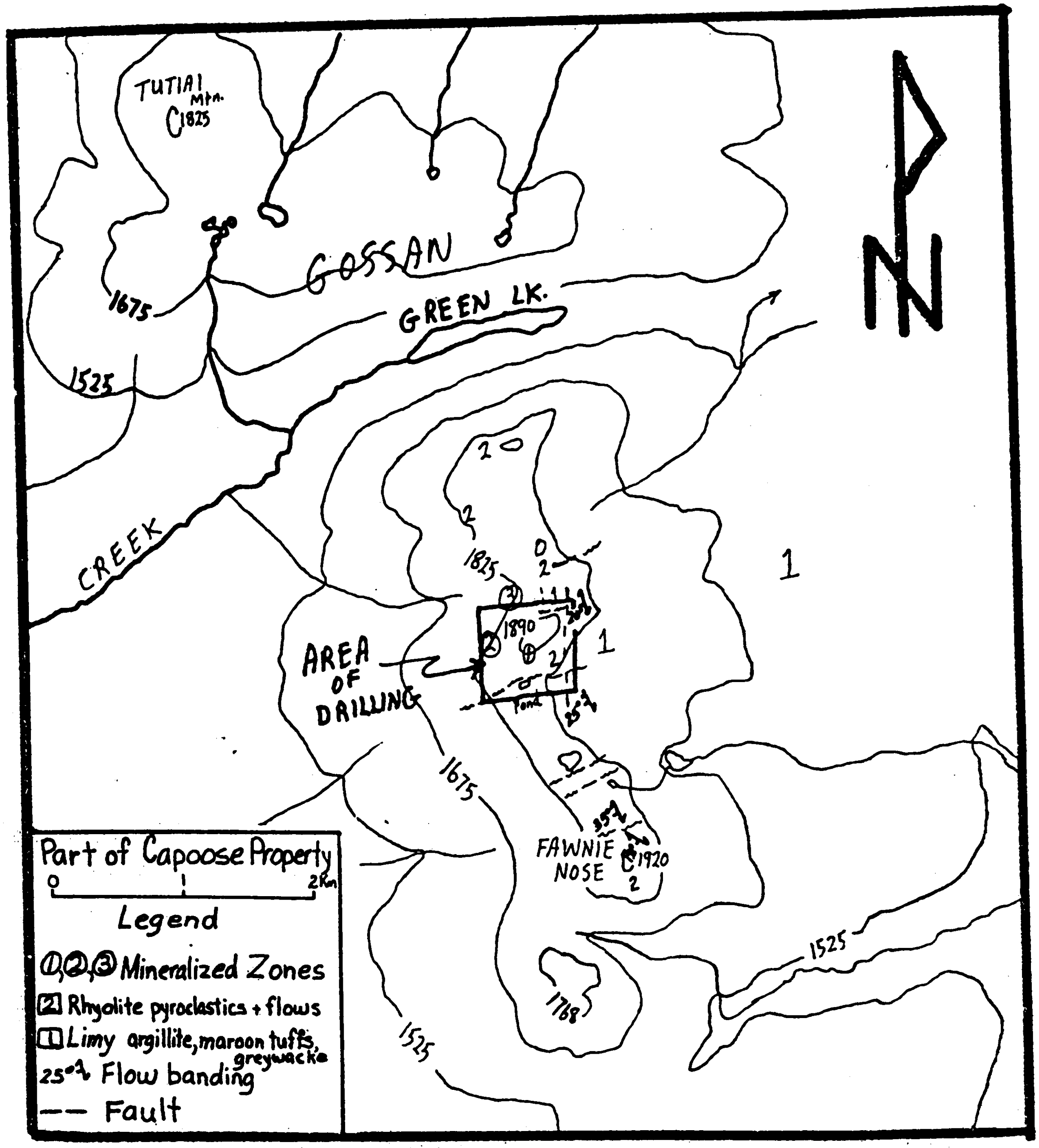

Figure 39. Sketch map of the Capoose property.