

Sample Number : 10970

J.P.3 231-5m

Identification : Heavily chloritized porphyritic rhyolite with dense stockwork veining by calcite with late quartz, pyrite and chalcopyrite

Description :

The hand specimen is a small sample of drill core composed of dark greenish grey, chloritic, fine-grained rock with a stockwork of white carbonate veins which carry pyrite.

Surprisingly, a cobaltinitrite stain revealed abundant fine K-feldspar in the dark rock.

In thin section the sample is seen to be heavily chloritized and thoroughly disrupted by a stockwork of veins, up to several millimetres thick.

Within the chloritized host rock there are a few strained and partly recrystallized phenocrysts of quartz, up to 1mm in size, and careful inspection reveals several 1mm aggregates of chlorite and minor sericite in shapes which could represent former feldspar phenocrysts. The groundmass consists of microcrystalline (0.01 - 0.02mm) K-feldspar, chlorite, quartz and secondary opaque oxides. Some small clasts of host rock have been finely silicified. Inconspicuous fine stringers of sericite are developed in places.

The major stockwork of fissure veins which disrupt the rock consists dominantly of calcite, but there are patches of strained, "toothy" quartz, especially in the cores of calcite veins and enveloping subhedral pyrite grains which are as large as 1mm. Anhedral, finer chalcopyrite occurs with the quartz and pyrite.

An approximate mode is :

85-90%	host rock of heavily chloritized, weakly sericitized and silicified rhyolite
7-9%	calcite in veins
1-3%	quartz in veins
3-4%	pyrite in veins
0.1-0.3%	chalcopyrite in veins

Comments and Interpretation :

This sample is fairly confidently interpreted to have originated as sparsely porphyritic rhyolite which was either a lava or a subvolcanic intrusion. It was subsequently heavily chloritized and weakly sericitized and silicified, then densely brecciated and veined to produce a stockwork of calcite with late quartz, pyrite and chalcopyrite. Subsequent regional metamorphism strained both the host rock and the veins and produced minor recrystallization.