

Sample Number :

10982

H.A. 8 208-6m

Identification :Finely pyritic, heavily sericitized,
probable poorly welded ashflow tuff of
rhyolitic to rhyodacitic compositionDescription :

The hand specimen is a drill core sample of somewhat mottled light and medium grey, fine-grained rock with many phenocrysts or phenoclasts of quartz.

A cobaltinitrite staining test revealed abundant fine K-feldspar, but it is distributed inhomogeneously. There are 5 to 10mm mottles of (?) albitization enveloping some quartz phenocrysts or clasts and overprinting smaller scale (?) vitroclastic textures visible at low magnification.

In thin section the sample is seen to have poorly preserved textures which are consistent with an ashflow tuff. There are phenocrysts and phenoclasts, 0.1 to 4mm in size, altered probable vitric shards, about 1mm in size, larger irregular masses of altered probable pumice, and some probable porphyritic lithic clasts, up to 5mm in size, with quartz phenocrysts set in a cryptocrystalline groundmass.

Large quartz grains have deeply embayed phenocrystal forms, but smaller grains tend to be angular. There are a few intensely sericitized clasts with remnants of feldspar and a few clasts altered to sericite and rutile (possibly after biotite). Much of the rock is a vaguely vitroclastic to pumiceous web of sericite and minor carbonate and a cryptocrystalline feldspathic to quartzo-feldspathic matrix.

Pyrite occurs as very abundant fine, subhedral cubes, ranging from cryptocrystalline to about 0.2mm in size. They occur as disseminations and thin replacement veinlets.

An approximate mode is :

| | |
|----------|---|
| 10-12% | quartz phenocrysts and clasts |
| 0.1-0.3% | remnant feldspar in clasts |
| 20-30% | sericite |
| 60-70% | cryptocrystalline feldspar and minor quartz |
| 0.2-0.3% | calcite |
| 0.1-0.2% | rutile |
| rare | zircon |
| 1-2% | pyrite |

Comments and Interpretation :

The sample is interpreted with moderate confidence to have originated as a poorly welded ashflow tuff, possibly erupted in a terrestrial setting. The rock has experienced heavy sericitization and introduction of disseminated and vein pyrite which was very fine-grained. There may have been mottled albitization, although features suggested on the off-cut which was tested with cobaltinitrite stain are not obvious in thin section.

Regional metamorphism has produced a preferred orientation of sericite flakes and may have caused some very fine recrystallization of matrix components, but the rock does not appear substantially deformed.