

Sample Number : 3076

Identification : Sericitized, chloritized, finely recrystallized, vitric to pumiceous tuff with probable vein pyrite

Description :

The hand specimen is a moderately weathered sample of foliated rock with small, dark green, lenticular streaks and brown iron-stained grains and streaks within a greenish grey matrix. There are general textural similarities to Sample 3051.

A staining test revealed no K-feldspar.

In thin section the sample displays ghost textures very suggestive of a moderately welded ashflow tuff. Sericite distribution portrays many stringy clasts consistent with former pumice fragments 1 to 8mm in size and many smaller cusped to vermiform shapes suggestive of vitric shards. Chlorite delineates other small shard structures and a few larger 1 to 2mm cusped shapes. There are several 0.3mm, angular clasts of quartz and a small amount of fine quartz, but much of the rock consists of very finely crystalline, untwinned plagioclase.

Reddish limonite of weathering origin stains fractures and phyllosilicates, but there are several discordant veins with iron oxides which appear to indicate former subhedral pyrite.

An approximate mode is :

0.2-0.3%	quartz
65-75%	untwinned plagioclase
20-25%	sericite
5-8%	chlorite
0.3-0.5%	limonite

Comments and Interpretation :

The sample is interpreted confidently to have originated as a vitric to pumiceous tuff of probable moderately welded ashflow origin. This is likely to indicate a terrestrial site of deposition. The magma composition was apparently leucocratic intermediate, rather than acid, unless one invokes subsequent loss of silica.

Fine recrystallization and production of sericite and subordinate chlorite may reflect either low grade metamorphism or hydrothermal alteration. It seems that a little pyrite may have been present in veins prior to weathering.

This sample has similarities to 3051.