

Sample Number : TO78

Identification : Sericitic, sheared, porphyritic andesite

Description :

The sample is a moderately weathered hand specimen which displays feldspar grains, up to 3mm in size, in a strongly foliated greenish grey matrix with some dark greenish grey streaks.

A staining test revealed no K-feldspar but gave some spurious absorption in weathered regimes.

In thin section the sample displays textures which seem to be consistent with rolled phenocrysts in a sheared, sericitic groundmass.

Plagioclase occurs as twinned, zoned, tabular, optically positive grains and a few aggregates. They are deformed, but do not resemble phenocrysts. Minor sericite occurs in the grains, but associated mainly with fractures. Chlorite-calcite aggregates, some iron-stained, seem to reflect mafic silicate phenocrysts. There are rare small grains of quartz (about 0.05 to 0.4mm). The groundmass consists of sericite and anhedral specks and clusters of (?)sphene.

An approximate mode is :

10-12%	plagioclase phenocrysts
4-5%	chlorite-carbonate aggregates after mafic phenocrysts
rare	quartz
80-85%	groundmass sericite
1-2%	groundmass (?)sphene

Comments and Interpretations :

It seems that this sample may represent a sericitic, sheared porphyritic andesite lava. There is scope for error in interpreting the primary textures now that they have been deformed, but there seems to be only a slight possibility of an alternative interpretation that the rock could have been tuffaceous.

Because the plagioclase phenocrysts are not sericitized, and because there are no sulphides, the rock is thought to be largely or wholly free of hydrothermal alteration and the sericite, chlorite and carbonate are attributed to dynamothermal metamorphism. Other interpretations are possible.