

Sample: S396; TSC33702A

**Hand Specimen:**

A pale greenish-grey, fine-grained rock with a weak foliation. Close examination of a freshly cut surface shows numerous small paler-coloured grains and also darker-coloured patches.

**Thin Section:**

Staining with cobaltinitrite shows very minor potash feldspar.

**Thin Section:**

A visual estimate of the minerals is as follows:

	<u>Z</u>
Quartz phenocrysts and smaller grains	15-20
Chloritic aggregates and patches	15-20
Leucoxene grains	1-2
Potash feldspar	2-3
Matrix of sericite, chlorite and quartz in varying proportions	60-65
Pyrite	trace

Quartz phenocrysts which are scattered throughout the rock vary in size from about 0.5 mm to 1 mm and show embayed and corroded shapes typical of those in acid volcanic rocks. There are also numerous smaller grains and chips of quartz varying in size from 0.05 mm to 0.5 mm. No definite evidence of feldspar phenocrysts was found in the section but there are numerous irregular and elongate patches or aggregates generally between 0.5 and 1 mm long which are composed mainly of chlorite and a few of these show some evidence of former crystal shape suggesting that there may have been phenocrysts of a mafic mineral. There are also a few grains about 0.5 mm in size now composed mainly of porous leucoxene generally, but not invariably, associated with a little chlorite and at least some of these were almost certainly crystals of an iron-titanium oxide mineral.

The matrix consists mainly of very fine-grained sericite intergrown with chlorite and varying proportions of fine-grained quartz and both sericite and chlorite show a preferred orientation parallel to the schistosity. There are no definite relict textures but patchy variations in composition and grain size suggest that the rock originally contained numerous small fragments probably less than 1 mm in size. There is, however, one larger patch composed predominantly of sericite and this is now about 5 to 6 mm long. It contains remnants of a few small phenocrysts and a few small grains now composed of leucoxene.

There are a few crystals and crystalline aggregates of pyrite, some of which occur on small fractures and some are in patches of recrystallized and/or migratory quartz and chlorite. In one area of fairly massive sericite there is a group or concentration of pyrite crystals about 3 mm across.

**Conclusion:**

Partly recrystallized, foliated acid volcanic rock which is more likely to have been a pyroclastic than a lava flow. It contains minor pyrite.