

Sample: S 438; TSC34434

Location:

LS 8 at 250.6 m

Specimen:

A greyish-green, fine-grained rock with a weak schistosity. Slight variations in colour give the rock a patchy mottled appearance but there is no evidence of layering.

Staining with cobaltinitrite shows only a trace of potash feldspar.

Section:

A visual estimate of the minerals is as follows:

	<u>%</u>
Quartz	40-45
Sericite	35-40
Chlorite	15-20
Calcite (vein)	1-2
Opaque oxide and leucoxene	1-2
Apatite	trace

The rock now contains elongate masses of sericite, a few altered opaque oxide crystals and also a few small apatite crystals in a finer-grained groundmass or matrix which has recrystallized.

Many of the masses of sericite are between 1 mm and 4 mm long and a few of them show traces of former, sub-rectangular crystal shape suggesting that at least some were very probably phenocrysts of feldspar but no remnants of unaltered feldspar have been preserved. Some aggregates of sericite are associated with chlorite and opaque oxide and it is possible that there were once a few aggregates of phenocrysts in which feldspar could have been intergrown with mafic phenocrysts and opaque oxide crystals but textures are not sufficiently well preserved for this to be definitely confirmed. Crystals of opaque oxide 0.2 to 0.8 mm in size are scattered through the rock and although these have been largely replaced by leucoxene some still retain lamellar textures typical of ilmenite. There are a few apatite crystals between 0.4 and 0.8 mm long in the area sectioned. No evidence of quartz phenocrysts was found.

The groundmass or matrix now contains a high proportion of quartz much of which has a common grain size of 0.05 to 0.1 mm and this is intergrown with very fine-grained muscovite or sericite and lesser chlorite which tends to occur mainly along boundaries between the quartz grains. Some of the sericite shows preferred orientation but the schistosity is not strongly developed. Very fine-grained iron and titanium oxides are scattered through parts of the matrix and there are a few very small grains of calcite in some zones. Original textures are not preserved and therefore there is no definite evidence to show whether this was a pyroclastic or a lava flow.

There are a few veins containing calcite which has filled small fractures.

Conclusion:

Recrystallized and deformed acid volcanic rock which differs from samples of rhyodacite described above in that there is no evidence of quartz phenocrysts. It once contained feldspar phenocrysts (now sericite) and a few crystals of iron-titanium oxide and apatite in a fine-grained groundmass or matrix.