

Sample: S408; TSC33707

Specimen:

A pinkish-grey, porphyritic rock containing phenocrysts of quartz and also some which have been replaced by darker sericite and chlorite. The rock is cut by a vein about 5 mm thick containing quartz, pink feldspar and minor chlorite.

Staining with cobaltinitrite shows that the groundmass of the rock contains abundant potash feldspar.

Thin Section:

A visual estimate of the minerals is as follows (disregarding the vein):

	<u>%</u>
Quartz phenocrysts	5-10
Altered ?feldspar phenocrysts	5-10
Phenocrysts replaced by chlorite	2-3
Leucoxene grains	trace
Groundmass of quartz and potash feldspar with lesser sericite and chlorite	70-75

The rock contains scattered quartz phenocrysts mainly between 0.5 and 1 mm in size but there are several smaller quartz grains and a few up to 1.5 mm. Practically all of them appear embayed and corroded and the smaller ones appear to be remnants of extensively corroded larger crystals. The rock also once had feldspar phenocrysts 1 to 3 mm in size which have been completely or almost completely replaced by sericite or fine-grained muscovite and minor chlorite but in general the external shape of the former feldspar crystals has been moderately well preserved. There are a few phenocrysts which have been completely replaced by chlorite and some of these are roughly rectangular and about 1 mm long. Some show evidence of micaceous texture and these were probably biotite but the shapes of others are not sufficiently definitely for the former mineral to be identified. There are a few grains up to about 0.4 mm in size which have been replaced by leucoxene and some of these are associated with aggregates of chlorite.

The groundmass of the rock contains closely intergrown quartz and potash feldspar varying in grain size up to about 0.05 mm and it also has about 5 to 10% of sericite and also of chlorite. There are tiny grains of iron oxide, many of them between 0.01 and 0.02 mm in size and the shapes of some suggest magnetite. Throughout the section the groundmass has a uniform composition and texture which is interrupted only by the presence of small irregular veins which generally contain concentrations of sericite and chlorite. There is also the much larger vein noted in the hand specimen and this contains quartz and potash feldspar crystals which have grown out of the sides of the vein forming comb structure. In places there are aggregates of chlorite in interstices between some of the quartz crystals. The textures in the thin section suggest that the veins in this rock have formed as a result of tension.

Conclusion:

This is a rhyolite in which feldspar phenocrysts have been replaced by sericite and some other phenocrysts by chlorite. There is no evidence to suggest a pyroclastic and it is more likely to have been a lava flow.