

Sample: S409; TSC33708

Hand Specimen:

A pale greenish-grey, fine-grained schist which contains scattered larger grains of quartz and pale-coloured, altered ?feldspar giving the rock a porphyritic appearance.

Staining with cobaltinitrite shows that many of the small paler-coloured spots contain potash feldspar.

Thin Section:

A visual estimate of the minerals is as follows:

	<u>Z</u>
Quartz phenocrysts	15-20
Partly altered feldspar phenocrysts	10-15?
Leucoxene grains	1-2
Matrix of sericite and chlorite and probably extremely fine-grained quartz	65-70

The quartz phenocrysts vary in size from about 0.5 mm to 2.5 mm but there are also a few smaller grains or chips of quartz down to 0.1 mm in size. There are some phenocrysts of some partly altered feldspar, probably potash feldspar, 0.5 to 1 mm in size and there are also a few deformed and elongated patches of sericite which locally show some evidence of former crystal shape suggesting that they may have been plagioclase phenocrysts. There are a few scattered grains now composed of leucoxene but no definite evidence that there were ever any phenocrysts of mafic minerals. There are a few recognizable lithic grains or fragments up to about 2 mm long with moderately well defined boundaries and these are composed mainly of quartz, sericite and chlorite. The matrix is extremely fine-grained and is probably composed largely of sericite and chlorite but may also have some cryptocrystalline quartz, however, much of it is too fine-grained for individual minerals to be resolved microscopically. When this matrix is examined between crossed nicols there are variations in texture which suggest that the rock was originally composed largely of fragments, many of which were probably less than 1 mm in size but most of these are now elongated in the direction of schistosity and some are up to 2 mm long. There are also areas where a background mosaic of quartz and/or feldspar is crystallizing across the very fine-grained matrix. A few small zircon grains were found and one of these has been fractured and the fragments displaced.

There are a few irregular patches containing a little clear, migratory and/or recrystallized quartz associated with trace amounts of coarser-grained chlorite.

Conclusion:

This is a deformed rhyolite which was probably a pyroclastic originally containing a high proportion of vitric fragments.