

Sample: S 433; TSC34429

Location:

LS 8 at 171.1 m

and Specimen:

A porphyritic rock containing numerous phenocrysts of quartz and at least a few of pink feldspar in a very fine-grained pinkish-brown to greyish-brown groundmass.

Staining with cobaltinitrite after etching with hydrofluoric acid shows relatively minor potash feldspar, some of it in phenocrysts and this staining also shows a few elongate streaks of finer-grained material parallel to a weak foliation which is at a low angle to the direction of the drill hole.

Thin Section:

A visual estimate of the minerals is as follows:

	<u>%</u>
Quartz phenocrysts	30-35
Remnants of altered feldspar phenocrysts	20-25 (?)
Opaque oxide grains	1-2
Matrix of sericite, fine- grained quartz and chlorite	45-50 (?)
Calcite	2-3
Apatite and zircon	trace

This volcanic rock originally contained at least 50% of quartz and feldspar phenocrysts, many of them between 1 mm and 3 mm in size and the feldspars included both potash feldspar and plagioclase. There are a few partly altered, opaque oxide crystals about 0.5 mm in size and relict textures suggest that there were a few other dark phenocrysts possibly biotite now replaced by secondary muscovite, chlorite and very fine-grained iron and titanium oxides. A few of the quartz phenocrysts have been fractured but in general they show very little evidence of deformation other than undulose extinction between crossed nicols. Feldspar phenocrysts have been extensively replaced by sericite and other turbid, very fine-grained secondary alteration products and, except for rectangular areas of darker staining some have been almost completely obliterated. In this section there are two grains or phenocrysts about 0.8 mm in size which show micrographic intergrowths of quartz and potash feldspar.

The matrix is now a very fine-grained, sericite-quartz schist which contains a little chlorite in places and also varying but generally little more than trace amounts of very fine-grained iron oxide. There are variations in composition, texture and grain size which suggest that the rock originally contained fragments, some of them several millimetres in size and there are a few streaks or elongate patches of sericite which could have been fragments of pumice or similar volcanic glass. There are a few small grains of apatite and one or two small zircon grains.

Calcite has invaded parts of the rock and forms a few small discontinuous veins, some of which are at a high angle to the schistosity and some of the calcite has crystallized either in fractures in quartz phenocrysts or in pressure shadows at the ends of quartz and feldspar phenocrysts.

Conclusion:

Deformed rhyolite or rhyodacite which was probably a crystal-vitric tuff.