

Sample: S 431; TSC34428

Location:

LS 8 at 151.6 m

Specimen:

Part of the sample is a deformed porphyritic volcanic rock similar to the deformed rhyolites from shallower depths and this is in contact with a very fine-grained, pale grey rock which has a definite foliation. The pale grey, fine-grained rock has a uniform composition with no visible evidence of banding in the sample submitted. The boundary between the coarser- and finer-grained rocks is sharply defined and at a moderate angle to the direction of the drill hole.

Staining with cobaltinitrite shows minor potash feldspar in the coarser-grained, deformed volcanic rock but none in the finer-grained rock.

In Section:

A visual estimate of the minerals in the coarser-grained volcanic rock is as follows:

	<u>%</u>
Quartz	30-35
Sericite	30-35
Feldspar remnants	10-15
Chlorite	15-20
Calcite	3-5
Opaque oxide and leucoxene	1-2
Epidote	trace
Apatite and zircon	trace

The finer-grained rock contains a high proportion of sericite associated with chlorite and some very fine-grained quartz. It has a trace of leucoxene and a few very small patches of calcite.

The coarser-grained volcanic rock is similar to sample S 430. It contains numerous quartz phenocrysts, most of which were probably between 1 and 3 mm in size but some of the larger ones have been extensively fractured and the fragments displaced. These fractured phenocrysts have been invaded by calcite as in many of the other samples. There are also remnants of phenocrysts of both plagioclase and potash feldspar 1 to 2 mm in size and these have also been fractured and deformed and many have been extensively replaced by sericite. There are a few deformed opaque oxide grains and also a few small lenticular aggregates of very fine-grained iron oxide, leucoxene, chlorite and sericite.

The matrix is very fine-grained and is composed mainly of orientated sericite intergrown with varying concentrations of extremely fine-grained quartz, possibly a little feldspar and also some chlorite. Although original textures have not been preserved, the variations in composition suggest that the rock is more likely to have been a pyroclastic than a lava flow. There is a trace of apatite and there are also a few crystals of apatite included in at least one of the altered dark phenocrysts now composed mainly of secondary iron oxide leucoxene and chlorite. There are very few grains of zircon, the largest being 0.05 mm long and there is a trace of secondary, brownish epidote, some of it associated with partly altered plagioclase.

The boundary between the coarser-grained volcanic rock and the finer-grained