

Sample Number : 10971

J.P.3 2772m

Identification : Quartz-trachyte subvolcanic intrusion or
lava with a stockwork of calcite-quartz-
magnetite-chlorite-sulphide veins

Description :

The hand specimen is a drill core sample of fine-grained, greyish red rock with a stockwork of fine, white veins which carry some chlorite, brassy sulphide and magnetite.

A staining test revealed that the rock is dominated by fine K-feldspar.

In thin section the host rock is seen to have a sparsely glomerophyritic texture, with lightly altered phenocrysts, up to 1.5mm in size, set in a micrographic groundmass with grainsizes of about 0.1 to 0.2mm. The phenocrysts are poorly twinned plagioclase with moderate clouding by (?)illite and chlorite. The groundmass consists of a few grains of poorly twinned plagioclase, micrographic intergrowths of K-feldspar and quartz, disseminated subhedral grains of magnetite (0.02 to 0.05mm in size) and a dusting of very fine hematite, some of it apparently after fine magnetite. Chlorite and calcite are very minor components.

The prominent stockwork involves mainly fissure style veins, 0.02 to several millimetres thick, but there are some replacement types. The most common vein minerals are calcite and minor quartz, but magnetite is prominent in some and chlorite and brassy sulphides occur from place to place. Some of the sulphide is subhedral pyrite, about 0.03mm in grainsize, but some is anhedral and seems to be chalcopryrite. The precise mineralogy of the opaques cannot be determined without a polished section.

An approximate mode of the section is :

1-3%	plagioclase phenocrysts (moderately clouded by ?illite and chlorite)
3-5%	groundmass plagioclase
75-85%	groundmass K-feldspar
7-8%	groundmass quartz
2-3%	groundmass magnetite and hematite
2-3%	vein calcite
0.5-1%	vein quartz
0.3-0.4%	vein magnetite
0.1-0.2%	vein chlorite
0.2-0.3%	vein sulphides (apparently chalcopryrite and pyrite)

Comments and Interpretation :

This sample is confidently interpreted to have originated as a subvolcanic intrusion or lava flow of quartz-trachyte composition. The existing grainsize of the groundmass favours interpretation as a subvolcanic intrusion, but it is known that fine-grained felsitic to glassy lavas can undergo diagenetic or annealing modification to produce spherulitic then micrographic textures similar to those observed.