

Sample Number : 3062
Identification : Epidotized, leucocratic andesite with
quartz-filled vesicles

Description :

The hand specimen is a slightly weathered sample of porphyry, displaying abundant yellowish grey phenocrysts of feldspar set in a dark greenish grey groundmass.

A staining test revealed no K-feldspar.

In thin section this sample is seen to have a well-preserved, abundantly porphyritic volcanic texture, modified mainly by epidotization of plagioclase phenocrysts. Phenocrysts were 0.5 to 3mm in size and the groundmass grain size is about 0.02mm. There are also irregular, somewhat cusped vesicle structures, up to 5mm in size, filled with fine-grained, strained, sutured quartz, commonly with an incomplete outer lining of chlorite and in some cases epidote.

The phenocrysts are mainly tabular, well twinned grains of plagioclase, heavily altered to relatively coarse epidote. Optical properties are consistent with sodic andesine (about An_{34}). There are a few 0.5mm phenocrysts of opaque oxides, heavily altered to sphene, and sparse chlorite aggregates possibly after mafic phenocrysts.

The groundmass has a sutured, finely recrystallized appearance and consists of untwinned plagioclase, chlorite and minor epidote.

One thin fissure vein of epidote and quartz cuts the sample.

An approximate mode is :

5-10%	remnants of unaltered andesine in phenocrysts
0.1-0.3%	opaque oxide phenocrysts, heavily altered to sphene
70-80%	fine-grained plagioclase
5-10%	chlorite
5-10%	epidote
1-3%	quartz (restricted to vesicles and veins)

Comments and Interpretation :

There are well preserved primary textures consistent with a sparsely vesicular, abundantly porphyritic leucocratic intermediate lava, probably andesitic in composition.

Low grade regional metamorphism may account for the fine recrystallization of the groundmass and the production of chlorite, but hydrothermal activity may be involved in the production of the relatively coarse epidote replacing plagioclase phenocrysts, in the filling of vesicles by quartz and in the production of a few quartz-epidote fissure veins. There has been no metallic mineralization.

The original rock type represented by this sample may correlate with 3045.