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Sample Number : 3014 251120

Identification : Heavily pyritized, moderately sericitized dacite porphyry

Description :

The hand specimen is an essentially fresh sample of very light grey porphyry with abundant feldspar and quartz phenocrysts, up to 2mm in size, and with disseminations and thick streaks (up to 10mm thick) of fine pyrite.

A staining test revealed no K-feldspar.

In thin section the non-mineralized part of the sample is seen to have a simple porphyritic texture, with abundant smoothly corroded, subhedral phenocrysts, 0.5 to 3mm in size, set in an allotriomorphic fine groundmass, about 0.03mm in grain size.

The main phenocrysts are well twinned, lightly sericitized grains of plagioclase (oligoclase-andesine). Smoothly embayed phenocrysts of quartz with β -form are prominent. There are a few sericite-rutile aggregates after probable biotite.

The groundmass is untwinned feldspar, quartz and sericite.

Throughout the sample there are disseminated grains of anhedral to subhedral pyrite, commonly finer than 0.5mm. One part of the sample has an intensely pyritic and sericitic zone, perhaps related to shattering, since there are numerous, irregular replacement veinlets of sericite and pyrite adjacent to the heavily mineralized zone.

A crude mode of the bulk sample is :

10-12%	quartz
15-20%	lightly sericitized plagioclase
1-2%	sericite-rutile after biotite phenocrysts
30-40%	groundmass plagioclase
10-12%	groundmass quartz
10-15%	sericite
10-12%	pyrite

Comments and Interpretation :

This sample is confidently interpreted to be a dacite porphyry, crystallized probably within a subvolcanic intrusion, but just possibly as a lava. It was not tuffaceous.

Massive and disseminated, fine pyrite mineralization has accompanied pervasive and fracture-controlled sericitization which could have originated in the footwall of a syngenetic massive sulphide system.

The least altered parts of 3014 closely resemble 3055.