0195

SAMPLE NUMBER: MAC-10: 300.5m: 396705

SUMMARY:

This is a difficult sample: I suggest that it was a very glassy dacitic lava breccia, with at least one quite different almost holocrystalline andesite fragment. It has suffered variable but quite strong silica alteration and later calcite overprinting; the latter is of moderate intensity.

THIN SECTION DESCRIPTION:

This is a altered, heterogeneous-textured and probably polymict dacitic lava breccia. It is composed of a number (possibly five or six at least) of lava fragments, all of sparsely plagioclase-phyric formerly highly glassy dacitic lava and one or two slightly more crystal rich vitric crystal tuff fragments. Due to extensive devitrification and recrystallization of glass, plus superimposed quite strong calcite-sericite alteration, the margins of individual fragments are difficult to recognize in many instances, but rapid changes in groundmass texture and grainsize are taken to reflect fragment boundaries. Most fragments are composed of originally glassy dacite lava with about 2-5 modal% albitized plagioclase phenocrysts, most of them occurring as pale pink stubby laths, often intergrown with several other albite crystals in crystal clots to 2mm across. The recrystallized and strongly heterogeneous groundmass of these fragments consists dominantly of a mosaic intergrowth of secondary quartz and albite, trending to sugary silica-ricg areas of local silica metasomatism. Wispy pale green chlorite forms along fragment boundaries and dispersed sparsely through the rock. Calcite overprints the groundmass as tiny brown spots and patches, meandering veinlets, and common well-formed small rhombs. Concentrations of tiny altered FeTi oxide or pyrite grains occur along some fractures and in a few narrow veinlets, but are modally insignificant.

Several areas with significantly more phenocrystal material, including many broken and partially rounded crystals of albite, may be former crystal tuffs with a glassy matrix. One distinctive small fragment is almost holocrystalline, and composed of sparsely plagioclase-phyric andesite, in which abundant mafic plates now replaced by calcite occur intergrown in the groundmass with albite laths.

If it wasn't for the one very clear volcanic lithic (andesite) fragment in this sample, I would have had great trouble convincing myself that the texture of this rock could not have been an alteration-induced false pyroclastic texture. Probably the hand specimen would be useful to further support or refute this stance. Combined recrystallization following devitrification, and superimposed silica-alteration, followed by later calcite overprinting, have combined to produce a rock with a very 'fragmental' appearance. I have no doubt that the magma responsible for the bulk of this sample was dacitic in composition.