

**THIN SECTION:**

This sample is remarkably similar to sample 431487 in most respects, except that it was much less vesicular. It is composed of about 5-10 modal% of totally chloritized former olivine phenocrysts, some up to 2mm long, with occasional chromite inclusions, in a recrystallized formerly glassy groundmass. Vesicles are much smaller and less abundant than in similar sample 431487. The once glassy groundmass has been twice altered, first to fine-grained quartz and chlorite, and later it was totally overprinted by calcite, so that very little of the first stage of alteration is preserved. Disseminated pyrite grains to about 0.5mm across are not uncommon, and almost certainly are associated with the earlier stage of alteration. This sample could have been either a basaltic lava or a lava breccia; whichever was the case, it was certainly highly glassy.

**SAMPLE NUMBER: 431500**

**SUMMARY:**

This is a sparsely plagioclase+quartz-phyric formerly glassy rhyolitic lava breccia, probably monomict, with variably silica-sericite -altered fragments and disseminated pyrite.

**HAND SPECIMEN:**

This is probably a formerly glassy dacitic lava breccia with abundant clots and irregular veinlets of pyrite, a few calcite veinlets, and some dark clots of chlorite-rich material.

**THIN SECTION:**

This sample in thin section is clearly a felsic lava breccia, probably monomict, with the original texture still fairly well-preserved despite strong recrystallization after devitrification of the glassy groundmass. The sample contained around 3-5 modal% of albitized plagioclase phenocrysts, mainly single crystals less than 1mm long, that have been totally sericitized. Quartz phenocrysts are slightly less abundant, and show fairly strong reaction and rounding, and are also rarely larger than 1mm diameter. Small former FeTi oxide phenocrysts are leucoxenitized.

The groundmass of this sample is composed of recrystallized devitrified glass. However the texture of the groundmass varies from fragment to fragment depending on the degree of alteration. Some fragments have a weakly altered very fine-grained mosaic-textured quartz-feldspar intergrowth with minor sericite, whereas others are