

0569

**SAMPLE NUMBER: 562457**

**SUMMARY:**

This is a tuffaceous epiclastic fine sandstone with an intensely carbonate altered matrix; detrital volcanic quartz grains are a notable but not abundant component of this sample.

**HAND SPECIMEN:**

This sample is an altered massive pale grey-green weakly foliated or laminated lithic tuff or quartz-poor sandstone.

**THIN SECTION:**

This sample in thin section is clearly an epiclastic tuffaceous sediment that has suffered intense carbonate alteration. Framework grains, mainly in the fine sand range, are dominantly volcanic quartz and sericitized albite phenocrysts, often still with original crystal shapes. These make up only about 15 modal% of the rock, which was dominantly fine-grained matrix material. Quite abundant angular small voids are filled by secondary quartz, and less frequently, chlorite. Calcite rhombs in the carbonate-rich matrix, and also chlorite-filled voids, are quite drawn out into a weak foliation. Much of the matrix may have been dacitic glassy ash that was readily altered to calcite. Small euhedral pyrite grains are disseminated sparsely through the rock, mainly in association with the secondary quartz filling small voids.

The extensive carbonate alteration and weak foliation of the matrix of this sample render a positive identification difficult, but I am sure the sample was a tuffaceous epiclastic sediment derived from felsic volcanics. The presence of indisputable quartz phenocrysts as detrital grains in this sample is notable, and implies some input from beyond the local dacite source, in which quartz phenocrysts have not been seen (either here or west of the hwy). The intense all-pervading calcite alteration also clearly implies a porous and reactive sediment rather than a massive glassy lava or vitric tuff.