

Sample: TSC47099; Location: Sidewall Core 54, 3098.5 m

Rock Name:

Compact lithic sandstone

Thin Section:

This is a relatively coarse grained sandstone and it appears to be well sorted about an average grain size of about 0.3 to possibly 0.4 mm. The rock shows considerable evidence of modifications of the detrital grains during compaction and there are places where sutured contacts are well developed and there is a tendency towards microstylolitic features. The rock contains about 15 to 20% of relatively birefringent clays (sericite, illite?) and these form both coherent patches and, more commonly, contiguous intergranular films. It is likely that these clays are derived from lithic fragments although this is less evident in this sample than in most others described from this well. For the most part the clay appears to be monomineralic material probably derived from original shales or mudstones but there are places where fine-grained quartz is intergrown with the illitic material. For the most part, therefore, the sample is a totally impervious aggregate of quartz grains with intervening patches and seams of this illitic material. Elsewhere in the thin section there are very small amounts of authigenic kaolinite and fine-grained ?dolomite. The rock does contain detrital feldspar and in one instance there appear to be overgrowths on a rather altered plagioclase grain.

Many fields of view contain no porosity which can be identified in the thin section but there are places where there are pores up to about 0.4 mm in size. Some of these may well be secondary pores which are integral to the rock as a whole and may be derived from the dissolution of particular kinds of lithic fragments. These pores are unlikely to be interconnected in three dimension.