

SAMPLE: Core 38, 2787m: TSC47282

Rock Name:  
Sandstone

Thin Section:

An optical estimate of the constituents gives the following :

	<u>%</u>
Quartz	65
Sericite/clay	20
Lithic and chert clasts	2
Feldspar	1
Siderite	1
Zircon	Tr
Opagues	1
Pores	10

This sample consists mainly of detrital quartz grains between 0.1 and 0.6 mm wide intergrown with smaller amounts of other minerals. Most of the quartz grains are below 0.3 mm in size with only a small proportion of larger grains. Overgrowth quartz is well developed and in some grains defined by a band of inclusions although in most cases the overgrowth quartz is difficult to distinguish from the original quartz grains. The development of overgrowth quartz has locally produced an interlocking quartz mosaic. Straight crystal faces occur where overgrowth quartz penetrates pores.

The interstitial areas between the quartz grains are generally filled with clay comprised of both very weakly birefringent clay believed to be kaolinite and intergrowths of a more birefringent, fibrous clay termed sericite which probably includes an interstratified clay. Some of the interstitial birefringent clay could represent deformed detrital clay particles and at least some moderately well developed clay particles of apparently detrital origin are present. Clay is also concentrated in very elongate discontinuous stringers up to 0.3 mm wide where it has a translucent, reddish-brown colour. These clay stringers also contain very finely granular intergrowths of siderite. Minor siderite is also intergrown with some of the other interstitial clay as small crystals below 0.05 mm wide.

The rock contains a moderate proportion of pores as angular interstitial voids between 0.1 and 0.5 mm wide. A small number of very much larger pore spaces up to a few millimetres wide are also present. Some of the larger pore spaces in particular could have been produced by fracturing associated with sampling.

Although quartz is the major detrital component minor feldspar and some lithic and chert clasts also form detrital grains. Some of the lithic clasts have fine foliated characters and are thought to represent low grade metamorphic rock clasts. Traces of zircon also form small detrital grains below 0.1 mm wide.

Opagues are disseminated through the rock as anhedral grains and aggregates up to 0.2 mm wide which typically occur interstitially between the detrital quartz grains.

This is a quartz-rich sandstone somewhat similar to the Core 37 sample.