

A2.2 The Stratigraphy of Seal No. 1.

All depths are shown in metres and were measured from the Kelly bushing (mKB) which, in Seal No. 1 was 25.3m above mean sea level.

Undifferentiated Recent; seabed (89.9) to 357.0m; thickness 267.1m.

A 26" hole was drilled to 261.0m and 20" casing set at 232.0m. During the drilling of this section the B.O.P. stack had not been run and the riser was therefore not connected. This resulted in the samples from the seabed to 261.0m not being collected for examination as they were returned to the seabed. Although the 26" hole was not logged it is assumed from regional information that the lithologies are similar to those seen immediately below 261.0m, that is bioclastic limestones.

The first samples seen from Seal No. 1, from a depth of 270.0m, were mainly white, coarse to very coarse grained, bioclastic limestone. It is made up entirely of fragments of shells, corals, bryozoans and foramanifera with some friable accreted grains with a weak calcite cement and occasional coarse quartz sand grains. At 285.0m the bioclastic limestone gives way to a soft and friable, predominantly white, fine grained calcarenite. It is occasionally glauconitic and contains traces of echinoid spines and other fossil fragments as seen in the overlying limestone. The carbonates persist down to 357.0m at which point a more argillaceous lithology becomes dominant.

The electric logs over this section show a monotonous low Gamma Ray curve and a featureless SP curve indicating a massive section with little variation in rock type. This is borne out by the rate of penetration curve and the lithological descriptions.

Oligocene Torquay Group; 357.0m to 837.5m; thickness 480.5m

From 357.0m down to approximately 720.0m the lithologies are predominantly claystones with some calcilutites and occasional siltstones. Fossil fragments and pyrite are present throughout the section, and there are traces of glauconite mainly towards the base of this part of the section. From 720.0m down to 837.5m the sequence is essentially composed of light greenish grey, very soft and dispersive claystones. The Torquay Group in Seal No. 1 also contains light grey to light greenish grey very fine to fine sandstones. They are usually cemented with a calcareous cement and often contain glauconite. Thin beds of calcilutite are also present in this section, they are cream, grey and light green in colour, very soft to soft and occasionally glauconitic.

Oligocene Sand; 837.5m to 885.0m; thickness 47.5m.

The top of the basal Oligocene Sand is evident from the electric logs as a slight decrease in the Gamma Ray and SP curves and a separation of the three resistivity curves.