

Pelican Type

The Pelican type diagenetic pattern is typical of sandstones below 2000 metres and overprints Bass type diagenetic effects. At shallow levels there is widespread dissolution of carbonate cement, lithic fragments and feldspar grains. Later diagenetic changes relate to the destruction of this secondary porosity and include mechanical compaction, quartz overgrowth cementation, and kaolinite precipitation and alteration. With increased depth intense quartz overgrowths, local quartz solution and reprecipitation are observed, whilst authigenic illite becomes more dominant than kaolinite in the pore space.

Meszoly et al (1986) also observed that log derived porosity-depth profiles for Eastern View Coal Measure sandstones show marked variation (0-36%). However there is a general trend of higher porosity in the upper EVCM declining at a rate of approximately 5.7% per 1000 metres.

Studies of the stable carbon isotope data for the carbonate cements indicated organic sourcing rather than from fluid migration from the marine carbonate sequences of the overlying Torquay Group.

Finally, Meszoly et al (1986) concluded that potential reservoir quality is greatest between 1900 and 2700 metres.

Suttill et al (1987) reported on a sedimentological analysis of most of the core from the EVCM. The objective of the study was to interpret sufficient core in order to construct a depositional model of reservoir distribution which could be used to assist in evaluation of the prospectivity of the Bass Basin. The study involved the logging of core identifying sedimentological facies, grouping these into facies associations and then developing a depositional model. The facies logs were depth matched as closely as possible to wireline data and displayed together with core analysis data.