

STRATIGRAPHY

The stratigraphic sequence in the Bass Basin includes sediments which range in age from the Early Cretaceous to recent (Figure 7). A structural/stratigraphic section using wireline data illustrates the major stratigraphic units that have been intersected in T91-2 (Enclosure 7). The Early Cretaceous Otway Group contains the oldest sediments which rest unconformably on pre-rift Mesozoic and Palaeozoic rocks. The Otway Group has not been penetrated by wells in T91-2. The nearest control is provided by Durroon 1 located approximately 100km to the east of T91-2 which penetrated an Early Cretaceous sequence of clastic and volcanoclastic fluvial and deltaic sediments comprising sandstones, siltstones, shales and coals. The Otway Group has traditionally been viewed as being less prospective than the overlying Eastern View Coal Measures.

Overlying the Otway Group are the prospective Late Cretaceous to Late Eocene Eastern View Coal Measures (EVCN) which comprise a thick sequence of sandstones, siltstones, shales and coals deposited in predominantly fluvial, deltaic, and lacustrine environments occasionally subjected to marine inundation.

The EVCN are thickest in the centre of the major half grabens, such as the Pelican Trough in T91-2 and the Cormorant Trough to the north in T/18P. Seismic data suggest that the thickness of the EVCN in the centre of the Pelican half graben may exceed 5500m. The thickest drilled sequence is at Pelican 5 where 2507m was penetrated. The EVCN thins markedly towards the basin margins and exhibits both onlap onto basement and erosional truncation following uplift.

A lithological subdivision of the EVCN is possible locally, but is not achievable on a regional scale due to limited well control. Further difficulty is caused by rapid facies variations both between the major half grabens and due to the presence of condensed sequences over structural highs. A three fold stratigraphic subdivision of the EVCN is recognised based on palynological and microfossil assemblages and unconformities recognised as seismic (Figure 7). The unconformities are most apparent over basement highs and near to the basin margins and are not obvious in the centres of major troughs where continuous deposition is likely. Each of the unconformities corresponds to a period of structural movement accompanied by volcanic activity. The earliest major intra-EVCN unconformity occurs at the base of the *T. longus* palynological zone (Late Cretaceous), and the second intra-EVCN unconformity occurs at the base of the upper *M. diversus* palynological zone (Early Eocene).