

(a) Regional Geology Cont'd

the oil and gas occurrences in the Port Campbell Embayment. The Belfast Mudstone is also regarded as a possible source rock for the hydrocarbons. The regional distribution of the stratigraphic units of the Sherbrook Group has not been easy to determine from the five wells drilled and the correlation between them remains problematical in the area to the west of King Island. The geological link between Whelk-1, Prawn-A1 and Mussel-1 is confused in the Prawn area.

Previous geophysical interpretations in the Prawn area have not been able to satisfactorily reconcile the geophysical events with the recorded stratigraphy. On present seismic evidence, the sediments in Prawn-A1 may represent a localised development which shows evidence of thickening into a deep to the south-east but thinning again rapidly towards Whelk-1, where the Belfast is not developed and 420 feet of Waarre and Flaxmans may be present.

The Upper Cretaceous clastic suite in Prawn-A1 may be related to a rapidly subsiding fault controlled embayment which was filled equally rapidly by sediments derived from the north and east. The specific environmental conditions cannot be clearly established either from the sedimentary record or the recent seismic survey at this stage.

The Lower Tertiary cycle is represented by the Wangerrip Group, of similar overall lithology to the previous cycle. Deposits of up to 1,500 feet are known in the offshore area.

In the Port Campbell area, a minor sedimentation cycle comprising paralic and marine muds, marls and sandy limestone forms a transitional sequence between the Wangerrip Group and the overlying more marine Heytesbury Group.

The main Upper Tertiary cycle is represented by the Heytesbury Group, a normal marine carbonate suite consisting of limestones and marls. The total Tertiary section thickens to the south-west of the Port Campbell-King Island area with overall regional dip to the south-west. Thicknesses reach about 6000 feet.

Tectonic activity at the end of the Miocene culminated in the Kosciuskan Orogeny, causing further uplift of the Otway Ranges and regression and shallowing of the sea. In the Pliocene and possibly the early