

Lowry (1987) suggested the existence of a Durroon Basin (nee Bass Basin) correlate for the Golden Beach Formation. Recent work by Morgan (1991) substantiates Lowry's work by drawing clear comparisons between the Durroon Mudstone of Durroon-1 in the Durroon Basin and the Golden Beach Formation of the Kipper Gas Field in the Gippsland Basin.

The results of drilling Cretaceous targets in the Gippsland Basin by a Petrofina lead consortium (Duff et al, 1991) substantiates the possibility of commercial quantities of hydrocarbons in rocks of Cretaceous age (in particular the Golden Beach Megasequence) within the basins of the Bass Strait.

The incorporation of the 1988 BMR seismic survey by Edgerley and Taylor (1990) into the data base of T/15P has since lead to the development of a new geo-tectonic model of the Durroon Basin. This report tends to support that model.

As a result of its proximity to the Otway and Tasman rift areas the Bark Sub-basin is geometrically dissimilar to the Anderson and Boobyalla Sub-basins. The Boobyalla and the Bark Sub-basins appear to be rejuvenated half-grabens while the Anderson Sub-basin is a simple rotated half-graben.

The Bark Sub-basin contains three structural entities that result from the phases of tectonism that Edgerley describes in Appendix V of this report.

This interpretation concludes that the synthetic fault systems of the Batman Block were initially created during the Australia-Antarctica rift period at approximately 100 Ma. The collapsed anticline appearance of the Batman block is interpreted to be the result of Otway Rift period synthetic fault systems over printed by antithetic faults that were created during the Tasman Rift period. The sub-basin, being in extension, acquired the rotated half-graben geometry. In particular; the Ross Block was a narrow half-graben through the Otway Rift period into the time of the opening of the Tasman Sea at 80 Ma. Its western bounding fault is the eastern side of the Strathroy Block, its eastern hinge is the western bounding fault of the Anderson Sub-basin. The western side the Strathroy Block forms the eastern boundary of the Batman Block.

The Strathroy Block is a northwesterly dipping uplifted basement horst bounded on the west, north and east by antithetic faults that are the interpreted result of the early stages of the Tasman Rift period. The Durroon Megasequence of the Bark Sub-basin is interpreted to terminate on the northward dipping Otway Group by onlap.

IV GEOPHYSICAL INTERPRETATIONS: