

4.7 CONCLUSIONS AND CONTRIBUTIONS TO GEOLOGICAL KNOWLEDGE

The Squid #1 exploratory well provided valuable structural and stratigraphic information towards the evaluation of the hydrocarbon potential of Exploration Permit T-15-P as well as the whole of the Bass Basin. The well tested the nature and potential of a lens shape anomaly within the Oligocene section as well as that of a major horst block located below an unconformity.

The Squid anomaly was originally recognized on seismic lines acquired in the 1960's and 1970's, by the previous permit holders, as a lens shape anomaly at the Oligocene seismic marker level. Associated with this lens is a zone of destructive interference, a major unconformity and a deeper horst block.

Additional seismic, magnetic and gravity data was acquired by Weaver Oil and Gas Corporation, Australia in 1981 and 1982. Specially designed long regional seismic lines were tied to the Dondu #1 and Pelican #1 wells for purposes of structural and stratigraphic control.

Four separate generations of diverse seismic modeling methods were applied to the Oligocene lens anomaly in order to gain a better understanding of its nature, hydrocarbon potential and effect on the underlying section.

In addition, the magnetic, gravity, aeromagnetic and seismic reflection data were also modeled.

Finally, seismic time structure maps and isochron maps were constructed at various key reflector levels.

Drilling results indicate that the formation boundaries came well within the resolution of modern seismic methods. The Oligocene lens recognized and described as an anomalous section of local development on seismic lines was shown to be a barren sand package overlying an unconformity surface. The Eastern View Coal Measures section was shown to consist of interbedded sands, shales, coals and volcanics. The occurrence of volcanics was not predicted.

Subject to the results of final palynological zonation and geochemical studies, it is concluded that this exploratory well failed to find hydrocarbon due to the lateral discontinuity of the sand bodies in addition to possibly the timing of the formation of the structure.