

4.7 Palynology

No samples have been submitted for palynology because of the nearby palynological control at Cormorant 1 and the good wireline and lithological correlation.

4.8 Geochemistry

One core sample from King 1 was submitted for geochemical analysis and extraction of any recovered oil. Details are presented in Appendix 6 of this report.

No further samples were submitted for geochemical analysis.

4.9 Discussion

King 1 was drilled on a valid anticlinal structure. The target reservoirs were the shoreline to fluvio-deltaic sandstone beds within the upper EVCM of the lower base *N.asperus* zone.

Sand development and reservoir quality have always posed significant risks to Bass Basin exploration (Proposal to Drill: King 1 SAGASCO Resources Limited, June 1992). However the drilling of King 1 proved the overall porosity and permeability of the sandstones were better than expected with porosities ranging from 22-32% and permeability results from core plugs giving values from 0.7 mD to >1 Darcy.

Two potential reservoir facies emerged:

- 1 Coarse facies:
Coarse grained sands, moderately to well sorted with excellent porosity and permeabilities, thin (~0.5m) but likely to be laterally persistent, widely spaced with low clay content.
- 2 Fine facies:
Very fine to fine grained sands, well sorted with poor to excellent porosities and permeabilities beds are relatively thin (0.5-1.5m) and separated by siltstone beds but are numerous.

Encouraging hydrocarbon shows were encountered throughout the penetrated EVCM interval. These shows in King 1 and the recoveries observed in Cormorant 1 and Yolla 1 confirm that either the deeper part of the Cormorant Trough has generated oil and gas, which has migrated vertically to top EVCM closures presumably utilising fault conduits, or early mature oil is sourced from coals into adjacent permeable sands.

SFT on potential reservoir sands indicated all recovered samples to be water wet. All pressure plots were consistent with a continuous fresh water gradient. No oil or gas column was identified. Furthermore, log analysis indicated no net pay with water saturations typically in excess of 60% throughout the EVCM, with the exception of the interval 2049.1m-2057.3m where Sw values between 38-58% were calculated.