

## 5. CONCLUSIONS

- 5.1 GC-MS analysis of both the aromatic and branched + cyclic components of the King-1 residual oil indicates that the oil was generated and expelled from a marginally mature source interval and may have undergone limited migration.
- 5.2 The oil is likely to have originally had a bulk composition typical of a paraffinic oil. However subsequent biodegradation has resulted in the oil having the composition of an aromatic-intermediate oil in its present state.
- 5.3 Most aspects of its molecular composition suggest that the King-1 residual oil was generated from a source containing predominantly terrestrially derived organic matter.
- 5.4 The alkane profile and low aromatics content suggest respectively that the oil has undergone extensive biodegradation and some degree of water washing. The two distinct naphthenic 'humps' visible in the saturates chromatogram indicate that at least two phases of oil accumulation and biodegradation may have taken place.