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Facies analyses of core conclude that the sandstones of the lower to middle *M.diversus* zones were deposited in deltaic, fluvial and lacustrine environments and typically comprise fluvial channel fills and shoreface sandstones.

**MATURITY:**

The maximum mean vitrinite reflectance of 0.86% recorded in Pelican 1 was near total depth at 3167.5m in the upper *L.balmei* sediments which are therefore near peak maturity for oil. The start of the oil window occurs at approximately 2600m (0.7% vitrinite reflectance), near the top of the middle *M.diversus* zone reservoir section.

**SOURCE ROCK:**

A sequence of eight samples between 1783.3m and 3074.2m (upper EVCM to lower *M.diversus*) yielded total organic carbon contents of 0.63% for a light brown silty clay to 58.40% for a coal. Detailed analyses were undertaken on three samples, 1783.3m light brown silty clay, 2170.8m a very dark coaly shale or shaly coal, and at 2825.2m a dark laminated shale.

The light brown silty clay (1783.3m) has poor genetic potential (0.8mg/g) a low hydrogen index of 73 and a TMax. of 405 (immature). The very dark coaly shale (2170.8m) had a high generic potential of 67.28 mg/g, a hydrogen index of 225 and was marginally to moderately mature. The dark laminated shale has a moderate source rock potential and a hydrogen index indicative of gas and some oil generation.

Total extracts yielded are fair for sample 1783.3, very high for 2170.8m and good for 2825.2m. The coaly sample at 2170.8m is believed to contain migrated hydrocarbons as indicated by the high amount of total extract at a relatively moderate level of maturity.

Samples from 1783.3m and 2170.3m are rich in aromatics indicative of a coaly source and both have a high pristane/phytane ratio indicating a land plant origin for the kerogen.

**POST MORTEM:**

Pelican 1 established the presence of excellent quality reservoirs in the upper EVCM, but they were water bearing.

In the lower to middle *M.diversus* zone condensate charged reservoirs were encountered within closure with good porosity. The deliverability characteristics of these reservoirs was not established by testing and the disappointing results from equivalent zones at Pelican 5 are cause for concern.

Recent mapping confirms the presence of closure at Pelican 1 and shows that this has existed since the Late Cretaceous but was enhanced possibly at the end of Upper *M.diversus* deposition and also after Miocene compressional tectonics. Closure at the reservoir level may be due to, in part, lowside fault trapping.