

RESERVOIR

Regional porosity verses depth profiles predict that the middle *M.diversus* will have an average porosity of 23% and the Palaeocene will have an average porosity of 22%. The high preserved porosities in the Palaeocene are due to its shallow depth of burial. Absence of the upper *M.diversus* at this location indicates that this are has been uplifted either in middle *M.diversus* time to prevent deposition of this unit or after upper *M.diversus* time to provide subcrop. In any case this enhances its likelihood of being also located on a migration pathway. There is no nearby well control in a similar structural setting to Clarke, therefore the predictions about reservoir quality could be inaccurate. The nearest well Bass 3 is located on a large basement high and only a thin Palaeocene section was intersected but with well developed sandstone units as seen in core 10. Thickening of these sandstones towards Clarke could provide excellent reservoir development at this lead. Reservoir risk is low to moderate.

SEAL

Vertical sealing is considered low risk and is dependent on intraformational seals. Lateral fault sealing of Palaeocene reservoirs is required by cross fault juxtaposition with Cretaceous rocks. Thinning of the middle *M.diversus* over Clarke could provide the development of a condensed shaly top seal to reservoir development in the Palaeocene. Sealing risk is rated as low to moderate.

STRUCTURE

The main structural risk is the continuity of the major bounding fault. Any fragmentation of this fault would lead to potential for updip leakage along fault relay zones. Additional seismic data recorded as part of the Rocky Cape Seismic Survey is designed to address the continuity of the bounding fault.

The trapping geometry at Clarke was established at the top of the middle *M.diversus* and therefore the lead has a long period in which to receive hydrocarbon charge from source areas.

Structural risk is rated as moderate to high.

ADDITIONAL WORK REQUIRED

Additional seismic data was acquired as part of the 1994 Rocky Cape Seismic Survey. Clarke will be remapped with the new data when processing is completed.