

## 11 PROSPECTIVITY

### 11.1 Play Types

Regional seismic mapping (Chapter 5) has identified 22 leads. These leads are rated as strong leads (requiring minimal seismic data to mature them to prospect status), leads (requiring infill seismic data to confirm closure) and weak leads (which require additional regional seismic data to confirm the presence or size of the structures). No drillable prospects are identified in this study, but it is hoped that some of the leads will be promoted to prospect status following interpretation of newly reprocessed seismic data and in particular data from the Rocky Cape Seismic Survey.

The leads identified can be categorised into the following six play types:

- High side fault closures against NW-SE trending faults
- High side fault closures bounded by NW-SE trending faults and relay ramp faulting in the strike direction
- Low side fault closures against NW-SE trending faults (eg Clarke)
- Low side fault closures bounded by NW-SE trending faults and relay ramp faulting in the strike direction (eg Peron)
- Faulted anticlines
- Stratigraphic onlap/truncation/pinchout plays.

Potential reservoirs occur at all levels within the EVCN, although the most prospective targets occur in the middle *M.diversus* and Palaeocene. Other targets occur at the top of the EVCN beneath the regional sealing unit of the Demons Bluff Formation, the upper *M.diversus* which contains abundant quality reservoir but its prospectivity is low because of tortuous vertical migration routes and the integrity of its intraformational seals, and in the Cretaceous part of the basal EVCN, which is deeply buried in most of the permit except near the basin margin.

Extensive wireline testing in Pelican 1, 2 and 4, cased hole testing in Pelican 5, source rock data and maturity modelling has identified the Pelican Trough as an established source of condensate-rich gas. Therefore the prospects most favoured occur in, or are adjacent to, the Pelican Trough.