

Poster 5

Sequence stratigraphy and reservoir distribution of the J-15 sequence in PM9, Malay Basin

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The J-15 sequence is one of several early Miocene aged stratigraphic units in the central portion of the Malay Basin associated with comparatively small magnitude relative sea level falls superimposed upon a higher order relative sea level rise. In the area of interest, the J-15 sequence is characterized by a stratal succession comprising offshore mudstones and siltstones abruptly overlain by more proximal lower shoreface sandstones. These lower shoreface sandstones are overlain in turn by distal lower shoreface and offshore sediments. The lower bounding surface of this unit, interpreted as the downdip correlative conformity of a sequence boundary, separates the lowstand systems tract of the J-15 sequence above, from the highstand systems tract of the preceding sequence below. The more distal lower shoreface to offshore sediments overlying the J-15 lowstand systems tract make up the transgressive and highstand systems tracts of the J-15 sequence. The sandstone of the J-15 lowstand form part of a strandline system deposited in a marginal marine setting. Hydrocarbons are only found in the sandstones of the lowstand systems tract of the J-15 sequence and are trapped in part by the pinchout of reservoir quality sandstones in a basinward direction as the depositional facies change rapidly from lower shoreface to an offshore environment. The recognition of the stratigraphic trap component of the J-15 and other similar sequences has positive economic implications for the current phase of exploration in PM-9.