Paper 24

The pink fan: a classic deepmarine canyon-fill complex, Block G, NW Sabah

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The key risks for exploration in deepwater basins are reservoir, hydrocarbon charge and trap retention. Over the last two years SSPC's deepwater asset team has made a concerted effort to de-risk the NW Sabah deepwater prospect portfolio through large-scale 3D seismic acquisition, integrated basin analysis studies, greenfield exploration and deepwater field appraisal. This evaluation is allowing the main deepwater turbidite fan systems to be slowly unraveled and will in the future turn NW Sabah a classic area for the study of passive margin deepwater sedimentation.

The NW Sabah basin has a surprisingly rich sand fairway, with at least four fan depositional cycles being recognised within the Upper Miocene stratigraphy between 10.6 and 6.7 Tertiary boundaries, TB3.1–3.3, all coincident with uplift and erosion of the main Sabah Massif. The thickest and best known fans are those of the Kebabangan, Kinarut and Kamunsu, all named after the wells which discovered them.

The pink fan is the last of the major sand-prone Upper Miocene fans deposited in the Kamunsu basin and was deposited the furthest outboard, partly in response to the relentless progradation of the shelf edge across the passive Sabah margin and partly due to local tectonics which strongly influenced the contemporaneous seafloor profile. The older fan units within this tectonically active basin are all disconnected from their slope feeders by faulting and erosion. In the past, this hindered reservoir prediction and the generation of viable palaeogeographical reconstructions. The pink fan is still connected to its feeder canyon and, best of all, has been drilled twice in recent years. This well data in combination with detailed seismic evaluation has enabled the unraveling of this confined fan unit to a degree not yet achievable within the other major fans.