

The Kinarut and Kamunsu fans: stratigraphy, architecture and remaining prospectivity in the Greater Keabangan area

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The potential for long term growth of the EP sector within Sabah hinges on the successful exploration and development of the deepwater Middle-Late Miocene turbidite play offshore west Sabah. This play was first tested successfully by the Kinarut-1 well (Exxon, 1972). It has been seven years since Sabah Shell Petroleum Company (SSPC) first ventured into this potentially prolific play with the Keabangan-1 discovery well in 1994. Currently, SSPC operates two deepwater blocks J and G in this arena in partnership with Conoco and Petronas Carigali.

Between 1997 and 2000, SSPC drilled two wildcat wells in Block G, both discoveries, and appraised the northern Block of the Keabangan gas field. As well as proving the existence of abundant charge, these wells have enabled the stratigraphy of the Miocene fan systems to be better understood.

One of the keys to further success in this challenging and expensive environment is a thorough understanding of the depositional architecture of the prospective fan systems. Early studies into this were based on the mapping of sequence boundaries from the shelf into the deepwater using 2D seismic data and the employment of a seismofacies scheme to forward predict reservoir distribution (Harvey, 2000). The future is to develop basin-wide 3D reservoir models for each prospective fan that will greatly facilitate both exploration and development well planning.

SSPC has now acquired some 5,500 km² of long-cable 3D over its deepwater acreage. Horizon and seismic attribute mapping on this high-fidelity 3-D data set has enabled a more detailed understanding of the complexity of the Kinarut and Kamunsu fans, the primary exploration targets in the greater Keabangan area. This paper will present the results of recent fan mapping and will discuss the implications with respect to the reservoir distribution and remaining prospectivity around the Keabangan and Kinarut gas fields.