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## **Sedimentary facies and clay minerals study of the Upper Miocene strata of the Tembungo Field, offshore Sabah**

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Sedimentary strata in the producing zone of the Tembungo field are being interpreted as deep marine turbidites based on their faunal and sedimentary features. Isopach and isolith maps of different horizons and sand units show fan-shaped lobes. Based on gamma ray log shapes, the strata are divided into several sedimentary facies, interpreted as deposits of a deep marine turbidite fan complex. The succession shows a change from basin plain facies to middle fan facies and, to slope shade facies at the top. These deep marine strata are overlain by shallow marine sediments. The overall progradation of the sequence suggests lowering of sea level during early late Miocene.

Clay mineral analysis was carried out on claystones samples from five wells. A plot of illite + expandable clay to kaolinite + chlorite (I+Ex/K+C) ratio shows a trend that reflects changes in depositional environment. A consistently low ratio around 5000 feet depth indicates abundant continental sediment influx, which coincides with a drastic change of depositional environment from bathyal to shallow marine.