

A New Chronostratigraphy for the Upper Tertiary of Offshore Sabah, Northwest Borneo, Malaysia

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Graphic correlation analysis of biostratigraphic data from the Upper Tertiary of more than 70 wells in offshore Sabah, northwest Borneo, has revealed the presence of at least 13 major hiatuses (SBH10 to 110) that separate 14 sequences (SBS10 to 120). These widespread hiatuses tend to merge inboard and on-structure and diverge outboard and off-structure. Although all seven Shell Sabah seismic horizons correspond to biostratigraphic hiatuses, graphic correlation has defined an additional six major sequences within the Upper Tertiary.

This enhanced resolution reveals that seismic horizons may consist of several merged hiatuses that can be easily confused unless identified by biostratigraphy. Maps, depositional models, and estimates of hydrocarbon expulsion based on misidentified seismic horizons are inaccurate and misleading. The results prove that graphic correlation can be applied in active tectonic basins with reworked sediments and can provide stratigraphic resolution beyond that obtained from seismic data alone. This new chronostratigraphy for the Upper Tertiary of offshore Sabah facilitates the accurate correlations that will be essential for successful exploration in that region.