

Diagenesis of Cenozoic Isolated Carbonates with Minor Clastic Influx: Kutai Basin, Kalimantan.

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Extensive Cenozoic carbonate platforms developed on structural highs away from areas of clastic input on the northern margins of the Kutai Basin in eastern Borneo. The Kedango Limestone was deposited across a broad area during the Late Eocene to Early Miocene. The Kedango limestone developed in a semi-enclosed basin, as shallow water platform and deeper water slope deposits, largely under low energy conditions at the platform margin and the platform interior. Key diagenetic features of basin and slope carbonate deposits are commonly extensive compaction and little cementation. The diagenesis of the Kedango limestone is characterized by early marine processes of grain micritization, marine cementation and minor grain fracturing. Later stage features include neomorphic replacement of aragonitic components and the precipitation of equant spars within dissolved molds. Fracturing, and chemical compaction features are burial related. An evaluation of how depositional and diagenetic conditions unique to the equatorial tropics, and common in Southeast Asia, influence regional reservoir development are needed. Petrographic analysis of the Kedango Limestone allows for investigation of diagenesis and the impacts of the paleohydrologic regime, on reservoir quality for a carbonate platform formed away from siliciclastic input from basin margin to platform interior deposits. Comparisons of Southeast Asian Cenozoic examples with better studied non-tropical and arid systems contribute to the understanding of global variability of carbonates formed in a range of settings.