GEOLOGY POSTER 10

SEDIMENTARY FACIES, DEPOSITIONAL ENVIRONMENT AND SEQUENCE STRATIGRAPHY OF MIOCENE WEST BARAM DELTA CORE, OFFSHORE SARAWAK

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Sedimentological and high resolution sequence stratigraphy analysis was conducted on Cycle V Miocene sediment from West Baram Delta, Offshore Sarawak. The analysis focuses on characterizing the different sediment types, investigates the different depositional processes and environments which includes application of high resolution sequence stratigraphy. Seven lithofacies were identified based on the distinct characteristics shown in each facies. Using this lithofacies scheme, eight facies association were interpreted namely upper shoreface, middle to lower shoreface, lower shoreface, offshore, prodelta to delta front, lower estuary, distributary mouth bar and lagoon. It is interpreted that the cored intervals were deposited within a shallow water marginal marine to nearshore setting. Trace fossils are described as it forms an integral part of the main facies scheme and used as an aid to the characterization and interpretation of individual facies. Two parasequence sets were identified: (1) retrogradational parasequence set defined by eight coarsening and fining upwards parasequences; (2) a progradational parasequence set characterized by seven coarsening and fining upwards parasequences. The reservoir quality in the sediment is affected by factors such as clay content, bioturbation, sedimentological controls (lithology and grain size), thin laminations and also diagenetic factor such as siderite and calcite cementation. These factors can highly affect the reservoir properties and may increase or decrease the reservoir quality. Understanding the factors that control the reservoir quality and the heterogeneity of the facies, depositional environment and petrophysical properties is important in assessing the reservoir quality and distribution. This is to ensure a more accurate evaluation of the reservoir architecture, more precise modeling of the reservoirs and better prediction for future development of the field.

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