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Transgressive Successions of the Mahakam Delta Province, Indonesia

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Traditional views of deltaic systems assert that progradational deposits comprise nearly the entire stratigraphic succession, with transgressive strata forming only a minor component. Similarly, progradational units generally are regarded as having the best reservoir potential, especially in topset beds, and transgressive units are viewed as shale-prone and therefore downgraded. However, integration of regional seismic mapping with well log and core data plus concepts derived from modern sedimentary processes indicates that transgressive successions are an important component of the mid-Miocene and younger stratigraphy of the Mahakam Delta province and that they have considerable reservoir potential.

Seismic mapping identified eight horizons of regional extent that correspond to the boundaries of stratigraphic sequences; seven sequences were deposited by successive deltas since the 10.2 my mid-Miocene unconformity, with the axis of sedimentation shifting as each delta developed. Each sequence comprises progradational clastic successions at the axis of sedimentation, aggradational clastic successions deposited primarily during transgressive events and aggradational carbonate successions that developed along the shelf edge in areas with minimal clastic input.