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Process Stratigraphy of Upper Cretaceous Deepwater Systems: Lithofacies, Stratal Architecture and Morphodynamics

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ABSTRACT

Integrated analyses of subsurface data from the Upper Cretaceous strata that the deepwater reservoirs present were deposited by a sediment dispersal system that evolved on a relatively steep gradient on the lower slope. The lithofacies, stacking patterns and strata architecture reflect the morphodynamic response of the system to initially higher, then lower, gradients as the individual reservoirs, and the system, aggraded and evolved through time. The distribution of lithofacies and the stratal stacking pattern within these reservoirs can be related to the hydraulics and morphodynamics of supercritical, transcritical, and subcritical sediment gravity flows. A depositional model that includes genetically-related channel-fill and lobe environments of deposition will be presented.