Pore space reduction clays formed in deltaic and nearshore reservoirs of a humid tropical restricted to semi restricted basin

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Humid tropical terrain generates abundant clays during tropical weathering processes. These clays may eventually end up as general clay matrix in sandstones. Detrital clays will tend to accumulate in paleogeographic lows (e.g. inner bends of fluvial channels, interbar areas of nearshore and offshore bars) or be redistributed during sedimentation by organisms during bioturbation.

Sandstones with a higher proportion of mineralogically unstable grains (e.g. feldspars, glauconite, rock fragments) may, through diagenesis form a clay matrix called "altered grain matrix" due to the diagenetic alteration of unstable grains into clays and other associated minerals. The composition and structure of these altered grains provided for easy dispersion and migration of their alteration products. In addition to the clays formed diagenetically within pore space or on surfaces of framework grains, the alteration products in altered grain matrix could also be a source of permeability impairment due to pore plugging by the migration of fines.

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