

Onshore Louisiana Salt-Withdrawal Minibasins: A New Frontier?

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Preliminary subsurface research focused on several regions of onshore Louisiana, including Calcasieu Lake (Cameron Parish) and the Chacahoula area (Assumption Parish), reveals the existence of salt-withdrawal minibasins that share remarkable similarities to offshore examples. Salt-withdrawal minibasins are circular to elliptical minibasins that are formed by intricately related processes of sedimentation and salt deformation. Sedimentary loading drives the underlying salt upward and basinward, in effect creating local depocenters. Additional minibasins are created as sediments prograde basinward onto previously mobilized salt, causing renewed mobilization and basinal development.

The most active province for domestic hydrocarbon exploration is the northern Gulf of Mexico (GOM) Basin,

with primary exploration efforts focused in the offshore regions, especially offshore Louisiana. A principal target involves sediments and structures associated with offshore salt-withdrawal minibasins. Despite intense research activities offshore, little to no work has been published on onshore examples. Onshore minibasins may represent an important exploration frontier, with drilling costs an order of magnitude or more less than offshore. Therefore, results from comparing onshore minibasins such as those at Calcasieu Lake and Chacahoula, with offshore examples and determining their temporal and spatial relations are expected to represent a significant contribution to the understanding of the overall northern GOM Basin salt province.

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