

More than Just the Eagle Ford: Additional Oil Opportunity in East Texas

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Abstract

The success of the Eagle Ford Resource Play has captivated the attention of operators and investors for over a decade, setting a high bar for future developments onshore on the Gulf Coast. Operators continue to push the same play concepts further east into Louisiana and Mississippi. While some have found elements of success, the best plays may share different characteristics of the Eagle Ford we know. Historically, researchers have shown multiple active source rocks charging multiple intervals, resulting in identifiably different oil families. While this highlights opportunity, the associated risks with each play are not the same. Here, we demonstrate criteria used to differentiate oil families of East Texas and apply them to the prospectivity of the East Texas Basin.

The carbon isotopes, SARA, and biomarkers of more than 250 oils were evaluated to characterize regional-scale oil families. The sample set included oils from Tertiary to Jurassic reservoirs oils. Focusing on the East Texas Basin, a series of core extracts were collected and tied to the regional oil families to determine the Lower Cretaceous source rock. The data show that the Lower Cretaceous source rock can generate more than 120 bbl/ acre-ft. Here, we use the identified organofacies characteristics of the source rock to create source facies maps to tie the depositional environment into a predictive hydrocarbon generation model. This model also impacts understanding the evolution of organofacies development around the Texas/Louisiana border area into the later Cretaceous time of Eagle Ford deposition. Further exploration of this area should account for the mixed source potential of reservoirs at Cretaceous and younger levels.