



The Deepwater Gulf of Mexico Wilcox Plays: Suprasalt vs. Subsalt

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ABSTRACT

In the deepwater Gulf of Mexico Basin, some 375 fields have been discovered with reservoir ages ranging from Jurassic to Pleistocene. With the discovery of the BAHA Field in 1996, a new Wilcox play was established in the deepwater Gulf of Mexico. By end-2018, a total of 43 deepwater fields had been discovered in the Wilcox sands, containing about 25% reserves of the basin. The Wilcox sands are thick, amalgamated, and widely distributed in the deep water sector of the basin.

This study investigates all 57 Wilcox reservoirs in 43 fields in both U.S. and Mexico waters of the deepwater Gulf of Mexico Basin. Based on reservoir rocks, trap types, and salt position, the Wilcox plays are classified as the suprasalt Wilcox structural, suprasalt Wilcox stratigraphic-structural, and subsalt Wilcox structural plays. Among these Wilcox plays, the subsalt Wilcox structural play is the most prolific play, containing about 70% reserves of the Wilcox plays. The subsalt Wilcox stratigraphic-structural play remains prospective in the basin.

The suprasalt Wilcox structural play is recognized in the Alaminos Canyon, Keathley Canyon, and Walker Ridge protraction areas, and it extends into the Mexican waters. The suprasalt Wilcox stratigraphic-structural play is a newly established play, recognized in the Mexican waters. The subsalt Wilcox structural play, a prolific play, is recognized in the Walker Ridge, Keathley Canyon, Green Canyon, Alaminous Canyon, and Garden Banks areas. No subsalt Wilcox plays have been established by discoveries in the Mexican waters; however, the subsalt Wilcox structural play is very likely prospective in the Mexican waters along the Perdido and subsalt fold belts, where if a discovery is made, it would have 75% chance to be in the range of large to giant oil and gas fields.