
Exploration Potential of Lower Cretaceous Section in Raudhatain Field of Kuwait

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Raudhatain field, discovered during the mid-fifties, is an established structural closure with the major production from Mauddud, Burgan and Zubair reservoirs of the upper part of the Cretaceous section. Despite active exploration and production inputs for the past five decades in this field, very few wells have penetrated the entire Cretaceous section and consequently the understanding of Lower Cretaceous is limited.

Unconventional reservoirs associated with the presence of fractures in Lower Cretaceous in Raudhatain area are identified as potentially good candidates for pursuing additional exploration play. The few wells that have penetrations in the Lower Cretaceous section have given encouraging leads. Fracture development is presumed to be accentuated due to rapid structural growth of Raudhatain during post-Mishrif (Turonian) period. Detailed fault mapping using multiple attribute volumes and volume visualization techniques using 3-D seismic data was carried out in this area. Application of these techniques helped in understanding major fault trends and mapping subtle and minor lineaments, which could have bearing on fracture development. Integration of this seismic analysis with the unconstrained Geo-mechanical modeling lead to the identification of areas with relatively higher fracture potential. Results from some of the recently drilled wells targeted for deeper reservoirs, and falling in these potentially good fracture zones, have shown promising results. Dedicated exploratory test locations based on these studies have been identified and awaiting drilling.

Increased exploration and drilling of dedicated Lower Cretaceous wells in the future promise an exciting opportunity to open up new play in this otherwise mature oil province.
