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Waha Reservoir Characterization and distribution in the Ralah Field, Concession 6, Sirte Basin, Libya**Fawzi S. F. Hamad**

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The Ralah Field is one of the concession 6 fields operated by Sirte Oil Company. It is located in the southern part of the Sirte Basin (Libya), approximately 200 km south of the Mediterranean Sea. Geographically it is located between latitude 28° 42' 12" and 28° 51' 40" North and longitude 19° 51' 58" and 19° 59' 57" East. The Upper Cretaceous Waha Formation is the main producer in the Ralah Field. The Waha reservoir ranges from zero thickness on the crests of the paleo-topographic highs to over 45 m on their flanks. The Ralah Field was discovered in June 1964 with the drilling of DD1-6 well through the Waha Formation and proved to be the most prolific reservoir in the area. Oil flowed on a drill stem test in the discovery well. 2D seismic surveys were done in the Ralah Field. In 2004 a 3D seismic survey of 340 km², which covered all the Ralah field area was completed to evaluate remaining and upside potential. The seismic interpretation has acquired new drillable well locations. Seismic and well data of nineteen wells have been used in this project. Waha reservoir was evaluated, analyzed and interpreted. Seismic interpretation and coherence attribute analysis were performed for the fault trend identification; and Property models were constructed in terms of clay volume, porosity, permeability and hydrocarbon saturation. The study concluded to show that; all of the faults in the Ralah Field are normal extension with modest throws and trending in NW-SE direction; Waha Reservoir is divided into four main facies (Wackestone, Rudstone, Dolomite Cemented Sandstone and Bioclastic Sandstone). Some of these facies are considered to be a tight non-productive facies (tight zone), and others have good reservoir properties (PHIE=13-25% & K=1-30mD).

Biography

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