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The Sembar Cretaceous Shale Gas Bearing Formation at Hajipur

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Abstract : This research encompasses the study of Cretaceous Sembar Formation Shale Gas potential at Hajipur area. This study has been done with the approach of geophysical data integration. The structure is NE – SW trending anticline with two map able compartments at Cretaceous Sembar level. The study area is located within proven petroleum system. Cretaceous Sembar/Goru formation is in a Wet gas window and Tertiary source is possibly in the oil window. Potential seals are present in Upper Ranikot shale beds and Intra-Lower Ranikot shales. The effectiveness and presence of source and reservoir rocks are favorable in the area of interest. Cretaceous Sembar Shale and Goru Shale beds with good organic content (TOC upto 4%, Type II/III) are currently in gas generation window in the area. Source rock intervals are also reported in Eocene Kirthar Group (TOC upto 8%, Type –II). Good reservoir quality Paleocene Lower Ranikot and Cretaceous Sembar shale beds exist in the area. The collision between Indian and Eurasian Plates during Tertiary initiated folding and thrusting. The first phase of thrusting involved ophiolite emplacement along the western margins of the Indian Plate (west of the area under review). The main phase of thrusting in the Sulaiman region was from Late Miocene to the present. The study area contains Permian to Recent clastics and carbonates. The succession generally is younger in the southeast than in northwest. Intraformational sedimentation breaks are pronounced in Permian and Jurassic. Sulaiman Range is bounded by the Western Sulaiman Transform Fault Zone (of which the Kingri Fault is the major fault) to the west and by the Domanda Fault to the east. The Domanda Fault also constitutes the western boundary of the Sulaiman Foredeep, lies in sulaiman foredeep where subsurface having prominent independent closure. Several reservoir horizons of Jurassic to Eocene are established hydrocarbon producers in the Hajipur area.

Keywords : enough size, good potential, shale gas, structure closure
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