SEISMIC AND PETROPHYSICAL INTERPRETATION OF FORT ABBAS AREA, PUNJAB PLATFORM, CENTRAL INDUS BASIN, PAKISTAN

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ABSTRACT

The area of Fort Abbas which is licensed for exploration covers an area of about 7040sq.km in Bahawalpur and Bahawlnagar Districts of Punjab Province. Migrated seismic lines 931-FABS-33, 931-FABS-16A, 931-FABS-35, 921-FABS-04, of Fort Abbas area Punjab Platform were obtained from Directorate General of Petroleum Concessions (DGPC) for seismic interpretation and Well Logs of well Fort Abbas-01 were obtained for petrophysical evaluation. The basic purpose of this project four reflectors were marked with Top Paleocene, Top Cambrian, Top Precambrian, and Top Basement formation. Fault was marked, and then time contour maps were generated, and study the geology of the area and tectonics. The information we required was given within the time section, which was helpful in the conversion of the time section into depth section. After that time sections were converted into depth sections with the help of average velocity and finally depth contour maps were generated, this helped to know the basic mechanism of the tectonic movement in the area. There are Normal Faults in the area and form horst and graben structures. Hydrocarbon traps were most possibly developed in the horst & graben structure and are the prospective zones for hydrocarbon accumulation of the Fort Abbas area.

Petrophysical evaluation of well Fort Abbas-01 was carried out to highlight the reservoir area which included the selection of zone of interest followed by Log interpretation. The volume of shale, porosity was interpreted. On the basis of Petrophysical Evaluation it was noted that clastic reservoir of Cambrian (Khewra Sandstone) bare good porosity and permeability and the Pre-Cambrian (Salt Range Formation) the interval from 1450 to 1482 meters depth show fair good organic richness, the sediments at this depth are close to onset of zone of oil generation (Temp max. 434-435 degree C) but the reason the well has not produced any hydrocarbon can be assigned to the improper seal within, over and around the Cambrian reservior zones and to very thin and immature source intervals in Salt Range Formation.

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