Structural and Lithostratigraphic evolution of Al Baraka Oil field, Komombo Basin, Upper Egypt as deduce from 2D seismic lines and well logging data

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Abstract:

Twenty 2D seismic lines were interpreted with three well velocities and time-depth trace conversion to characterize the different stratigraphic tops of Komombo basin and to highlight the major structural elements. Five depth structure contour maps were constructed on the tops of Pre-Cambrian Basement, Neocomian, Aptian and Albian/Cenomanian sequences. The interpretations of depth structure contour maps show two main fault trends: NW-SE and NE to ENE directions. The NW-SE trend is the dominant one, creating a half-graben system with two major bounding faults. The northeast one is downthrown to the southwest, while the southwestern bounding fault is downthrown to the northeast. The restoration of the structure patterns and sediment fill evolution in Komombo basin is attempted using the 2D seismic lines in background, integrated with the well data (Al Baraka-1 and Komombo-3). A series of flattened profiles on top of Pre-Cambrian Basement, Neocomian, Barremian, Aptian, Albian/Cenomanian, Turonian, Coniacian/Santonian, and Campanian/Maastrichtian successions supported the identification of basin dimensions during its development through the main tectonic phases.

Keywords:

Komombo basin, Al Baraka Oil Field, Seismic Interpretation, Structure, Lithostratigraphic, Upper Egypt.

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