

Hydrocarbon Exploration Concepts for The Eastern Frontal Part of Sulaiman Fold Belt, Pakistan.

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Successful hydrocarbon exploration in a thrust and fold belt depends on the proper understanding of tectonic, structural deformation, hydrocarbon generation, migration, and accumulation.

The Zindapir Anticlinorium is the eastern frontal structure part of Sulaiman Fold Belt immediately adjacent to the Indus Foredeep - the hydrocarbon kitchen.

The tectonic evolution of the region has been previously interpreted both in terms of Thin-Skinned tectonics and Positive-Flower Structure. This paper focuses on which option is the more plausible. The timing of the folding and its implications on hydrocarbon prospects is also addressed, which in turn would impact the hydrocarbon prospectivity of the area.

It concludes that the Zindapir Anticlinorium, Sulaiman Fold Belt has been developed as a “Positive-Flower Structure” above a major strike-slip fault (the Sulaiman Basement Fault) in the basement of the Indian Plate. In the overlying sediments its up-ward movement can be substantiated only after deposition of the Upper Siwaliks that is not before 700, 000 years ago. The very young age and fast uplift rate of the Sulaiman Fold Belt are among the possible reasons for the mostly under filled and in some cases even the absence of hydrocarbon accumulation in some anticlines expected to be charged from the Indus Foredeep.