Hydrocarbon prospects and reserves in Salt Range/Potwar Plateau

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Hydrocarbons are being explored in the Salt Range and Potwar Plateau (SRPP), the Himalayan foreland in North Pakistan, since more than a hundred years. The exploration for hydrocarbons and geological mapping over the time has generated tremendous amount of surface geology and subsurface borehole and seismic reflection data which has been interpreted recently through several publications. We have used this data for delineation of structural geometry of oil-fields and their characterization in the SRPP. In general, the prospects are interpreted as thin-skinned structures over a decollement, developed as fault-related anticlines. Eleven oil fields are structurally classified and characterized as 2 detachment folds, 2 fault-propagation folds, 5 pop-up structures, and a triangle zone. Subsequently, information regarding hydrocarbon production and recoverable reserves are analyzed and compared with the structural styles to assess the petroleum potential of particular prospects. Accordingly, 44, 46, 08, and 44 million US barrels of oil has been produced till 1995 from the structures listed above respectively. Whereas, the balance recoverable reserves are estimated as 6, 016, 15, and 7 US billion barrels respectively. The analysis has helped us understand the structural styles of oil-fields as fault-related structures over blind thrusts and show the triangle zone, as the most prolific prospect so far, in the SR/PP.