

## Investigation on Microfacies and Electrofacies of Upper Dalan and Kangan Formations in One of Coastal Fars Gas Fields

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**Abstract :** Kangan anticline is located in the Coastal Fars area, southwest of Nar and west of west Assaluyeh anticlines and north of Kangan harbor in Boushehr province. The Kangan anticline is nearly asymmetric and with 55Km long and 6Km wide base on structural map of Kangan Formation. The youngest and the oldest Formations on surface are Bakhtiyari (Pliocene) and Sarvak (Cenomanian) respectively. The highest dip angles of 30 and 40 degree were observed in north and south flanks of Kangan anticline respectively and two reverse faults cut these flanks parallel to structure strike. Existence of sweet gas in Kangan Fm. and Upper Dalan in this structure is confirmed with probable Silurian shales origin. Main facies belts in these formations include super tidal and intertidal flat, lagoon, oolitic-bioclastic shoals and open marine sub environments that expand in a homoclinal and shallow water carbonate ramp under the arid climates. Diagenetic processes studies, indicates the influence of all diagenetic environments (marine, meteoric, burial) in the reservoir succession. These processes sometimes has led to reservoir quality improvement (such as dolomitization and dissolution) but in many instances reservoir units has been destroyed (such as compaction, anhydrite and calcite cementation). In this study, petrophysical evaluation is made in Kangan and upper Dalan formations by using well log data of five selected wells. Probabilistic method is used for petrophysical evaluation by applying appropriate soft wares. According to this evaluation the lithology of Kangan and upper Dalan Formations mainly consist of limestone and dolomite with thin beds of Shale and evaporates. In these formations 11 Zones with different reservoir characteristic have been identified. Based on wire line data analyses, in some part of these formations, high porosity can be observed. The range of porosity (PHIE) and water saturation (Sw) are estimated around 10-20% and 20-30%, respectively.

**Keywords :** microfacies, electrofacies, petrophysics, diagenese, gas fields

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