

## **Identification of Sweet Spot (Unconventional Reservoir) in Tal Block of Kohat Basin, Pakistan**

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### **Abstract**

The Kohat basin is rich in hydrocarbon resources. A proven hydrocarbon system from the Jurassic to the Paleocene age has been developed through Tal Block with a number of conventional reservoirs discovered within the region. With the advancement in the exploitation of unconventional reservoirs, the Cretaceous source rock of Tal Block has been perceived to hold the potential of shale gas. At this stage, available well data has been used for preliminary evaluation of shale gas within the region.

The objective of this paper is to establish the factors which may help in identifying the prospective Cretaceous shale in Tal Block. Sweet spots are identified by integrating Geochemical, Petrophysical and Geomechanical data. The guidelines are then established regarding the important factors involved in the characterization of Shale gas resources i.e. depth, thickness, maturity, gas-in-place, permeability, reserves, fracability etc. Within each of the above said factors, the properties that influence gas storage, flow capacity and the parameters affecting hydraulic fracturing are focused upon.

Being on a very early stage of shale gas play in Pakistan, we need to mitigate our risks and predict shale gas prospects using well established workflows available around the globe and utilize all the available data in Tal Block before we enter into the expensive game of shale gas exploration.