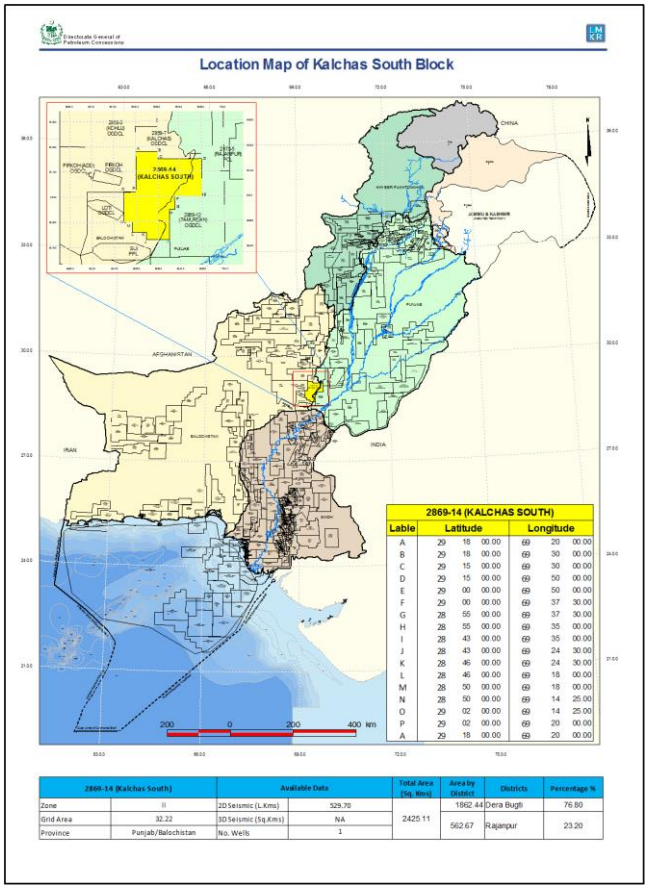
KALCHAS SOUTH BLOCK (2869-14)

Introduction

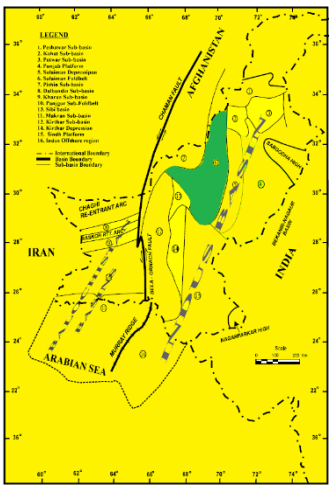
Kalchas South Block covers an area of 2425.11 sq km and is located in Dera Bugti and Rajanpur districts of Punjab and Balochistan Pakistan. Geologically, it lies in the Central Indus Platform Basin of Pakistan. The block falls in Prospectivity Zone II.



Geology and Tectonics

The Central Indus Platform Basin is divided into Sulaiman Fold belt and Sulaiman Fore deep. Sulaiman characterizes a blind thrust front which suggests that all frontal folds of the fold belt are cored by blind thrust. The passive roof duplex is represented by the deformation front of Sulaiman Lobe which is set beneath the frontal passive roof thrust. The passive roof thrust spreads into the interior of Fold belt having a back thrust sense of motion. Kingri Fault, which is left lateral, splits Eastern and Central Sulaiman fold belt. The deformation front moved further towards fore deep in Central Sulaiman fold belt as compared to Eastern Sulaiman. The trend of the structures is roughly towards east-west direction perpendicular to tectonic direction. In Eastern Sulaiman Range, the base is progressively dipping eastward beneath the deformation front.

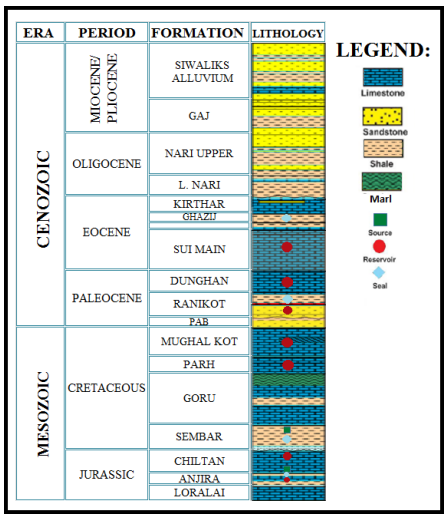
Geological Map (Modified after Ahmed et al, 1994)



Stratigraphic Sequence

In this block area Permian to Recent clastics and carbonates sediments are present, and probably the Cambrian succession is similar to the one that occurs in the Kohat-Potwar Fold Belt. In southeast, the succession is younger as compared to northwest direction. In Permian and Jurassic there is a distinct break in the intraformational sediments, while there is regional unconformity in Cretaceous and Tertiary strata. Jurassic rocks are exposed in some part of the basin because of intense erosion.

Generalized Stratigraphic Chart



Petroleum Geology

A proven petroleum system is present in Sulaiman Fold belt region. The carbonates and sandstones of Jurassic to Eocene age are mainly gas reservoirs, whereas in some parts of the basin Cretaceous and Eocene reservoirs are gas or condensate producers. The proven hydrocarbon traps in fold belt region are the thrust anticlines of Oligocene and younger strata but in the fore deep region none of the identified structures is a commercial producer.

Source Rock

The main source intervals revealed by the results of outcrops and well cuttings geochemistry are Sembar, Mughal Kot (Cretaceous), Ranikot shale (Paleocene), and Ghazij shales (Eocene). Sembar Formation is found throughout most of the Sulaiman region and its source quality varies widely.

Reservoirs

The primary reservoirs are Pab (Cretaceous) and Ranikot (Paleocene) sands. Secondary targets may include Chiltan (M. Jurassic), Goru (Cretaceous), and Sembar (Cretaceous). Mughal Kot sandstone (Cretaceous) and Parh limestone (Cretaceous) can also act as reservoir.

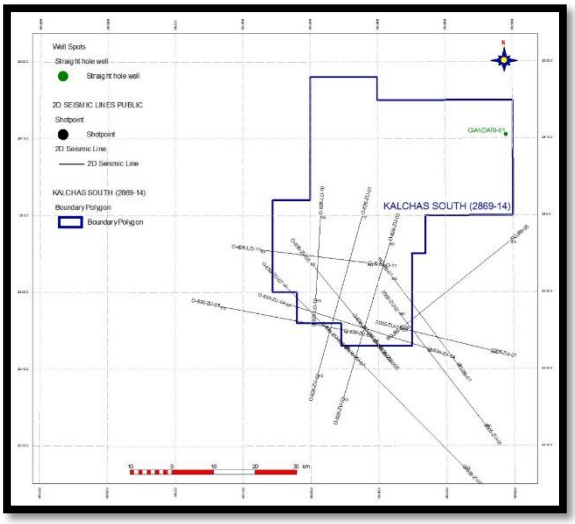
Seal

In Sulaiman fore belt region, major shale/claystone intervals exist which can act as effective top seal in their respective plays. For the Chiltan Play, the proven seal is Sembar shale in the entire region. Besides this, Ranikot shale, intraformational shales in Mughal Kot, transition zones over Parh Formation, Ghazij Formation, Goru Formation, and Chiltan Formation act as seal.

Traps

The structural traps (thrust anticlines) are trending in NE-SW direction with four way closure formed by compressional as well as transpressional forces resulting from the Indian Plate collision with the Eurasian Plate. The faults are considered as migration pathway. Fault bounded anticlines may also provide trapping mechanism in this area.

Kalchas South Block Base Map



Well Data

WELL NAME	SPUD DATE	OPERATOR	WELL TD(ft)	TD FORMATION	PRIMRY TARGET
GIANDARI-01	26/02/1958	PSOC	12007	Dunghan	Sulaiman (Cretaceous & Jurassic)

Seismic Data

2D SEISMIC DATA	3D SEISMIC DATA
Line km = 529.70	3D data is not available