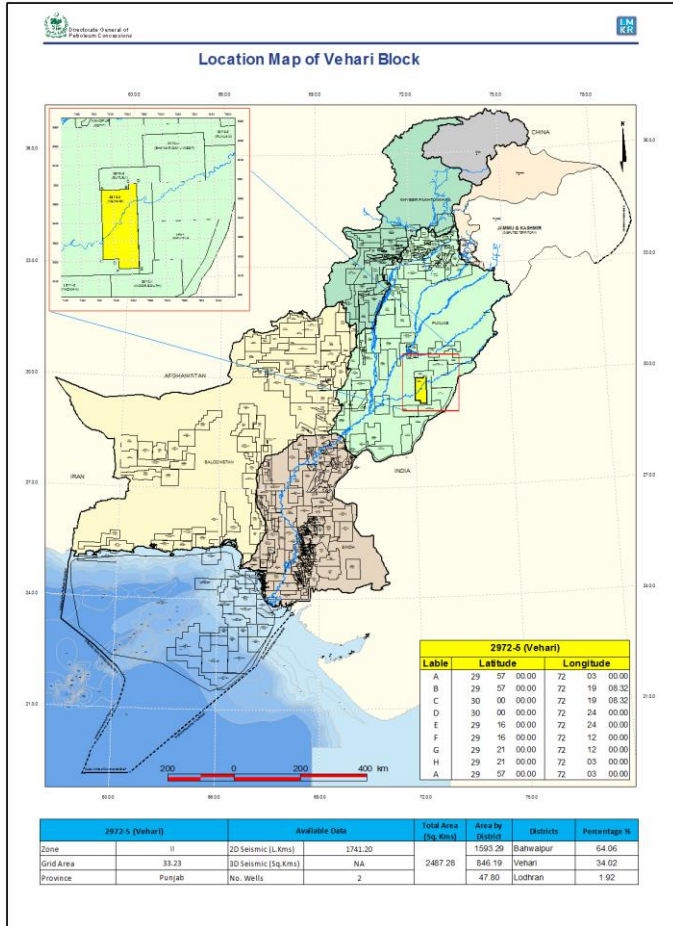


VEHARI BLOCK (2972-5)

Introduction

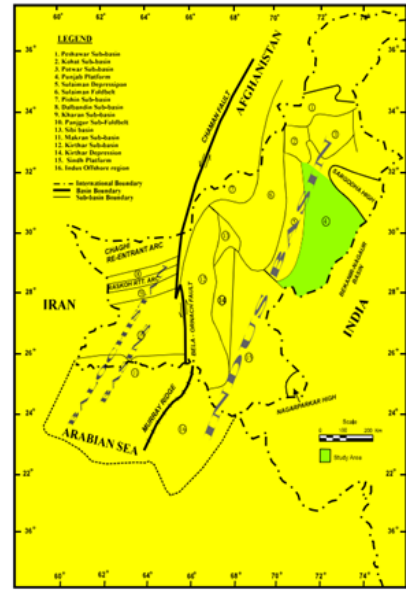
Vehari Block covers an area of 2487.28 sq km and is located in 1593.29 Bahawalpur, Vehari, and Lodhran districts of Punjab Pakistan. Geologically, it lies in the Central Indus Basin of Pakistan. The block falls in Prospectivity Zone II.



Geology and Tectonics

Tectonically the block lies in the Central Indus Platform Basin which is a broad monocline dipping gently towards west direction. The plate rifting (Precambrian, Late Jurassic and Cretaceous), salt diapirism, Himalayan transpression, and reactivation of basement structures control the structures in CIPB. The subsurface structural features mainly relate to phases of Precambrian to Cambrian and Mesozoic extension but also to the effect of the peripheral collisional orogenies and consequent foreland basin deposition, according to the seismic data.

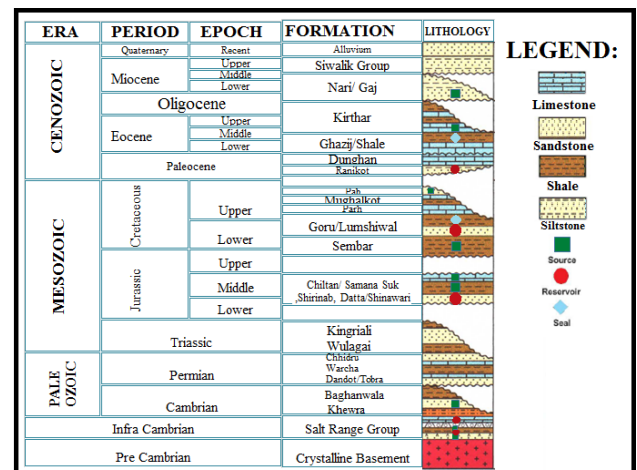
Geological Map (Modified after Ahmed et al, 1994)



Stratigraphic Sequence

The Salt Range Formation (Precambrian) is the oldest sedimentary horizon followed by Khewra Sandstone, Kussak Formation, Jutana Formation, and Baghanwala Formation (Cambrian). A large Paleozoic hiatus or erosion in the area is indicated by a major unconformity that exists at the top of the Cambrian sediments because of which the sediments of Ordovician to Carboniferous are missing. The clastics and carbonates represent the Permian and Mesozoic. The carbonates are dominant in Paleogene. The Mio-Pliocene molasses are the youngest sediments.

Generalized Stratigraphic Chart



Petroleum Play

The source rocks having good to very good potential with appropriate maturity levels to generate hydrocarbons are present in this area. Good potential reservoirs are present in the Paleocene and Eocene formations.. Effective seals along with structural as well as stratigraphic traps exist in the area.

Source

The potential source rocks of the area are the algal mudstones and rich dolomite horizons in the Salt Range Formation (Pre Cambrian). The dolomites present in the Salt Range Formation, drilled in nearby well shows good source rock potential. The potential source rocks in the Central Indus Basin is Bilara Formation (Infra-Cambrian) as this formation contains rich source rocks in the Punjab Platform. The Paleozoic and Mesozoic rocks also have some source potential.

Reservoir

The reservoirs of the area include Bilara and Jodhpur Formation (Infra-Cambrian), Khewra Sandstone (Cambrian), Permian sedimentary sequence, lower parts of Samanasuk Formation (Jurassic), sand intervals of Lumshiwai Formation (Cretaceous).

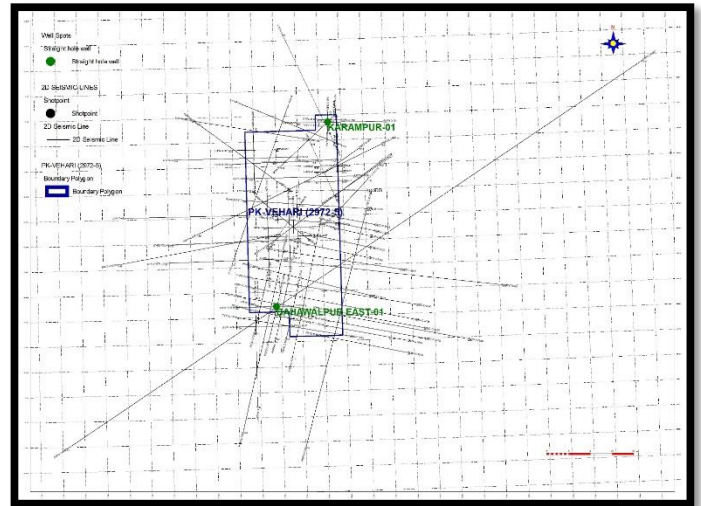
Seal

The cap rock of this area includes the interbedded shales occurring within the reservoir horizons of Salt Range Formation, Khewra and Permian Formations. For Samana Suk and Lumshiwai reservoirs, the shales of Chichali and Ranikot can act as effective seal respectively.

Trap

In this area Structural Traps drape anticlines along with stratigraphic traps (truncations) are possible to exist which will provide effective trapping mechanism for the accumulation of hydrocarbons.

Vehari Block Base Map



Well Data

WELL NAME	SPUD DATE	OPERATOR	WELL TD	TD FORMATION	PRIMARY TARGET
BAHAWALPUR EAST-01	19/12/1980	SHELL	3024 m		Salt Range Fm (Precambrian)
KARAMPUR-01	27/12/1958	SHELL	9955 ft	Metamorphic rocks (Basement)	To investigate the HC in Karampur Structure

Seismic Data

2D SEISMIC DATA	3D SEISMIC DATA
Line km = 1,741.20	3D data is not available