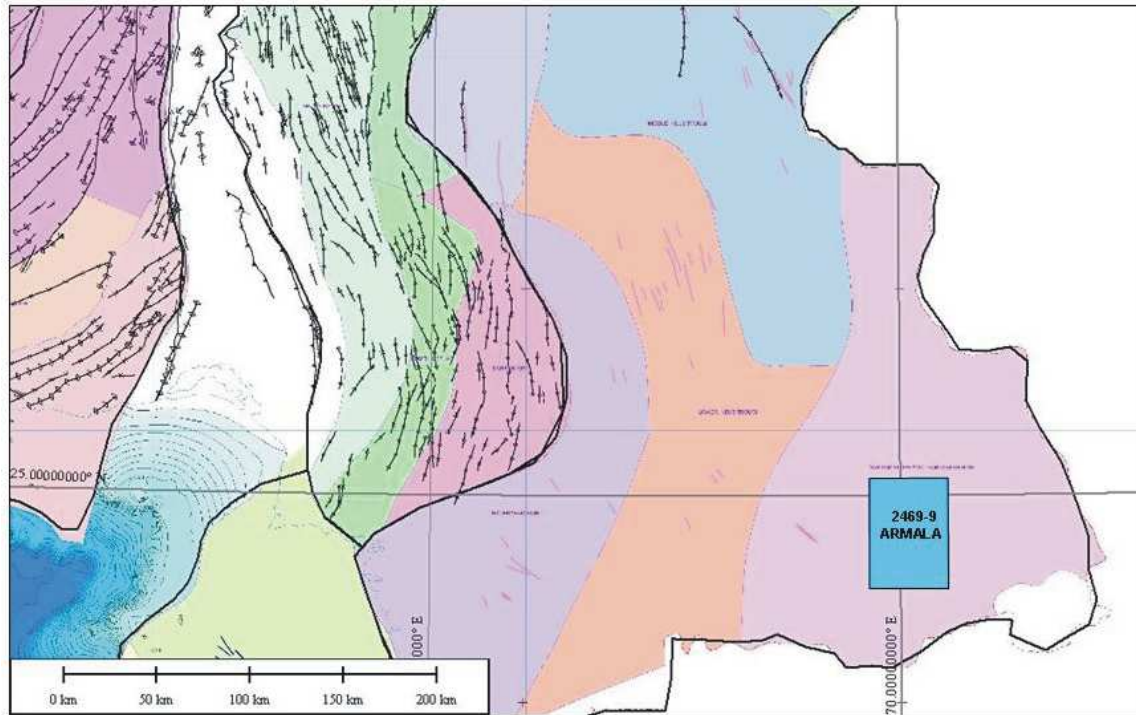


# LOWER INDUS PLATFORM BASIN

## INTRODUCTION

The Armala block falls in Lower Indus Platform basin located in the Sind Province.



## GEOLOGICAL FRAMEWORK

The Lower Indus Platform Basin is bounded to the north by the Central Indus Basin, to the northwest by the Sulaiman Foldbelt Basin and the Kirthar Fold Belt Basin in the south west.

The main tectonic events which have controlled the structures and sedimentology of the Lower Indus Basin are rifting of the Indian Plate from Gondwanaland (Jurassic or Early Cretaceous) which probably created NE-SW to N-S rift systems, isostatic uplift or ridge-push at the margins of the newly developed ocean probably caused uplift and eastwards tilting at the start of the Cretaceous. Separation of the Madagascan and Indian plates in the Mid to Late Cretaceous which may have caused some sinistral strike-slip faulting in the region, hotspot activity and thermal doming at the Cretaceous-Tertiary boundary. This in turn caused uplift, erosion, extrusion of the

Deccan flood basalts and probably the NNW-striking normal faults. Palaeocene-Eocene emplacement of the Bela Ophiolites may have caused gentle folding, Eocene passive margin conditions caused structural quiescence and carbonate deposition, Oligocene to present-day Himalayan collision caused sinistral transpression in the west of the Lower Indus Basin, with fold-thrust structures overprinted by sinistral flower structures.

**STRATIGRAPHY**

This tectonic province is underlain by infra-Cambrian to Recent clastics and carbonates. It remained passive margin until the Late Cretaceous, then became part of the complex suture between the Indian Plate and the Afghan Block.

The stratigraphic succession changes from east to west. Precambrian basement is exposed in the south-eastern corner of the basin. The thickness of the sediments increases westward. Important unconformities occur at base Permian and base Tertiary. In the eastern part of the basin, Tertiary has direct contact with the Jurassic sequence.

**PETROELUM GEOLOGY**

Six proven and viable plays are identified in the Lower Indus Platform Basin, where perfect petroleum system exists.

PERIOD	EPOCH	T-R CYCLES	GEOLOGICAL PROCESSES	UNIT
NEO-GENE	MIOCENE	[Yellow and Blue triangles]	HIMALIYAN COLLISION LOADING FROM NORTH. DEVELOPMENT OF FORELAND BASIN.	SIWALIS
	OLIGOCENE			GAJ NARI
PALEOGENE	Eocene	[Yellow and Blue triangles]	THERMAL SUBSIDENCE ALONG THE NORTHWESTERN MARGIN OF INDIA	KIRTHAR
	PALEOCENE			GHAZIJ LAKSUJI DUNGPHAN RANI KOT PAB FORT MUNRO MUGHAL KOT
CRETACEOUS	LATE	[Yellow and Blue triangles]	EXTENSIONAL FAULT-CONTROLLED SUBSIDENCE IN SOUTHWEST WITH MOVEMENT ALONG PRE-EXISTING LINEAMENTS	PARH
	EARLY			UPPER GROU LOWER GROU
JURASSIC	LATE	[Yellow and Blue triangles]	CONTINUED THERMAL SUBSIDENCE ALONG THE NORTHWESTERN MARGIN OF INDIA	SAMBER
	MIDDLE			CHILTAN
	EARLY			SHIRINAB
TRIASSIC	LATE	[Yellow and Blue triangles]	THERMAL SUBSIDENCE ALONG SOUTHERN MARGIN OF MESO-TETHYS	WALGAI
	MIDDLE			
	EARLY			
PERMIAN				
NEOPROTEROZOIC	CAMBRIAN		THERMAL SUBSIDENCE ALONG NORTHERN MARGIN OF GONDWANA	BAGHANWALA JUTTANA KUSSAK KHEWRA
	VENDIAN		EXTENSION ALONG MAJOR STRIKE SLIP FAULTS	SALTRANGE JODHPUR

**SOURCE ROCKS**

Early Cretaceous rocks are considered to be the potential source rocks for the hydrocarbon generation in the Lower Indus Platform basin. Trap formation coincides with peak stages of oil and gas generation.

**RESERVOIR ROCKS**

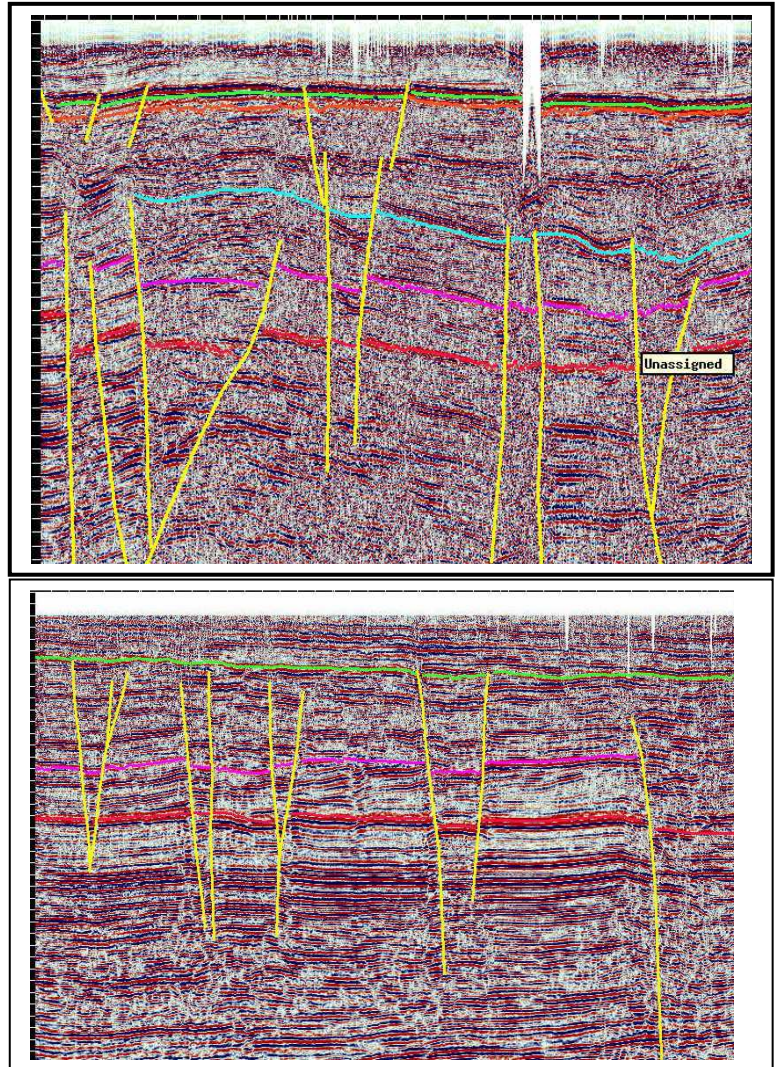
Cretaceous to Eocene clastics and carbonates are the proven reservoirs in the basin.

**SEAL ROCKS**

Sealing intervals are present for all potential reservoirs in the platform area, especially intra-formational shale for Lower Cretaceous reservoirs.

**TRAPPING MECHANISM**

Trapping mechanism in the southern Lower Indus Basin and in the Jacobabad-Mari-Kandkot High areas, consists of the tilted fault blocks, faulted gentle role-overs. Stratigraphic traps are also present.



<b>LOWER INDUS BASIN CO-ORDINATES FOR NEW BLOCKS</b>				
<b>VERTICES</b>	<b>LONG_DMS</b>	<b>LAT_DMS</b>	<b>BLOCK NAME</b>	<b>AREA COVERED</b>
A	69°50' 00"	25°05' 00"	<b>2469-9 ARMALA</b>	<b>2488.98 Sq.Kms</b>
B	70°15' 00"	25°05' 00"		
C	70 15' 00"	24 33' 00"		
D	69 50' 00"	24 33' 00"		
A	69 50' 00"	25 05' 00"		



