पेट्रोलियम एवं प्राकृतिक गैस मंत्रालय
MINISTRY OF PETROLEUM AND NATURAL GAS
Government of India

सत्यमेव जयते

Hydrocarbon Exploration & Licensing Policy

GEOSCIENTIFIC INFORMATION

OALP BID ROUND-X

25 Blocks on Offer | 13 Sedimentary Basins
Total : 191,986 Sq.km | Offshore Area : 175,115 Sq.km

DGH

Directorate General of Hydrocarbons
(Under Ministry of Petroleum & Natural Gas)

HOME PAGE

Blocks Offered Under OALP Bid Round-X

Index Map of Blocks on Offer

Geoscientific details of Andaman-Nicobar Basin

- ✓ Block : AN-UDWHP-2024/1
- ✓ Block : AN-UDWHP-2024/2
- ✓ Block : AN-UDWHP-2024/3
- ✓ Block : AN-UDWHP-2024/4

Geoscientific details of Bengal – Purnea Basin

- ✓ Block : BP-OSHP-2024/1
- ✓ Block : BP-UDWHP-2024/1

Geoscientific details of Cauvery Basin

- ✓ Block : CY-DWHP-2024/1

Geoscientific details of Krishna-Godavari Basin

- ✓ Block : KG-UDWHP-2024/1
- ✓ Block : KG-UDWHP-2024/2
- ✓ Block : KG-UDWHP-2024/3
- ✓ Block : KG-OSHP-2024/1

Geoscientific details of Mahanadi Basin

- ✓ Block : MN-UDWHP-2024/1
- ✓ Block : MN-UDWHP-2024/2
- ✓ Block : MN-UDWHP-2024/3

Geoscientific details of Mumbai Basin

- ✓ Block : MB-OSHP-2024/1
- ✓ Block : MB-OSHP-2024/2

Geoscientific details of Saurashtra Basin

- ✓ Block : GS-OSHP-2024/1
- ✓ Block : GS-OSHP-2024/2
- ✓ Block : GS-UDWHP-2024/1

Geoscientific details of Himalayan Foreland Basin

- ✓ Block : HF-ONHP-2024/1

Geoscientific details of Vindhyan Basin

- ✓ Block : VN-ONHP-2024/1

Geoscientific details of Rajasthan Basin

- ✓ Block : RJ-ONHP-2024/1

Geoscientific details of Karewa Basin

- ✓ Block : KR-ONHP-2024/1

Geoscientific details of Ganga-Punjab Basin

- ✓ Block : GP-ONHP-2024/1

Geoscientific details of Cambay Basin

- ✓ Block : CB-ONHP-2024/1

Overview of OALP Bid Rounds

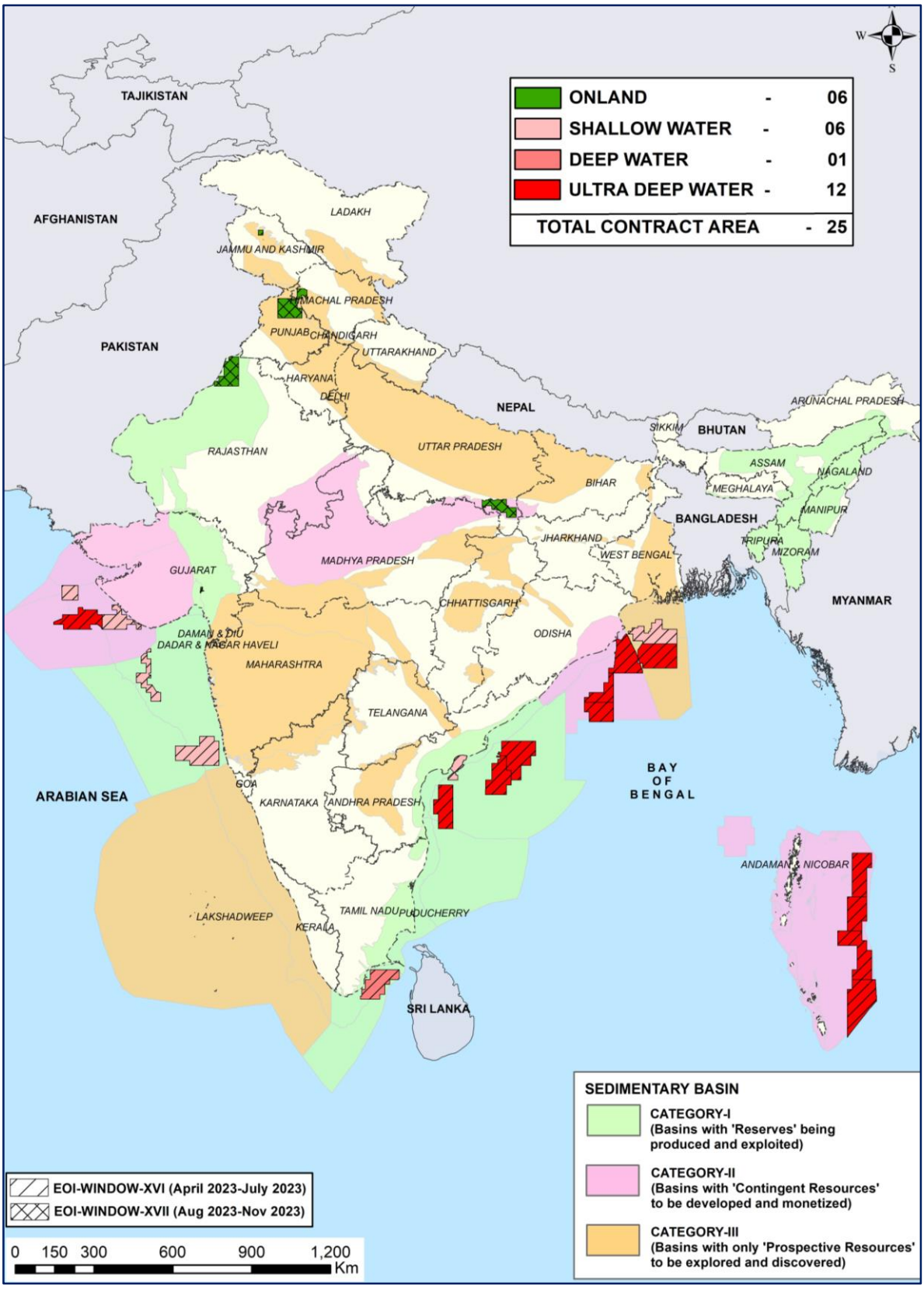
Blocks on offer
25

Area
1,91,986 Sq.km

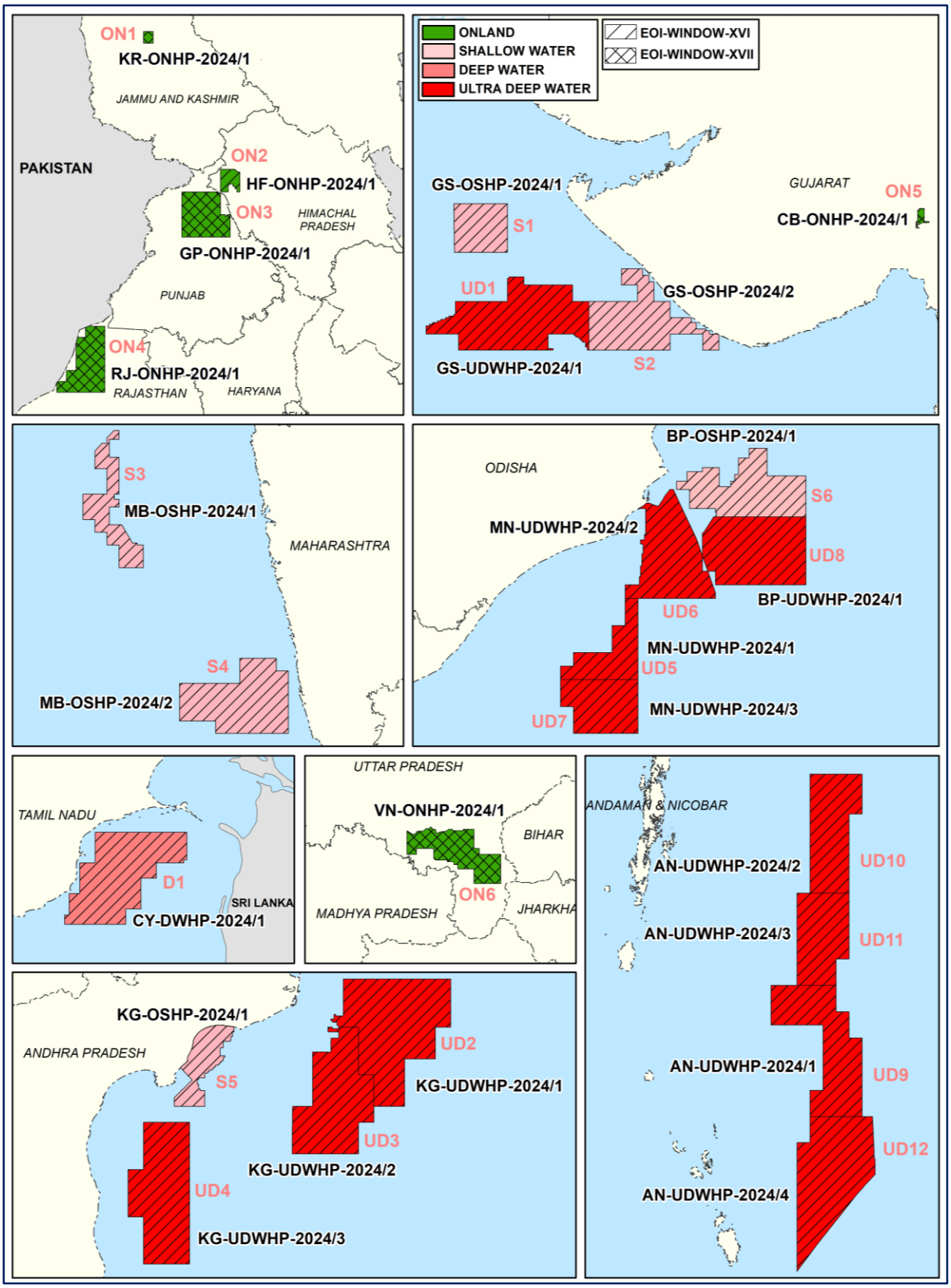
Sedimentary Basins
13

S. No.	BASIN NAME	BASIN CATEGORY	BLOCK NAME	MAP REF. No.	AREA (Sq. Km.)
ONLAND BLOCKS					
1	KAREWA	III	KR-ONHP-2024/1	ON1	283.83
2	HIMALAYAN FORELAND	III	HF-ONHP-2024/1	ON2	990.86
3	GANGA-PUNJAB	III	GP-ONHP-2024/1	ON3	5241.1
4	RAJASTHAN	I	RJ-ONHP-2024/1	ON4	5953.44
5	CAMBAY	I	CB-ONHP-2024/1	ON5	126.44
6	VINDHYAN	II	VN-ONHP-2024/1	ON6	4275.13
SHALLOW WATER BLOCK					
7	SAURASHTRA	II	GS-OSHP-2024/1	S1	3125.84
8	SAURASHTRA	II	GS-OSHP-2024/2	S2	6501.38
9	MUMBAI OFFSHORE	I	MB-OSHP-2024/1	S3	5838.03
10	MUMBAI OFFSHORE	I	MB-OSHP-2024/2	S4	13131.72
11	KRISHNA-GODAVARI	I	KG-OSHP-2024/1	S5	2967.83
12	BENGAL-PURNEA	III	BP-OSHP-2024/1	S6	9826.81
DEEP WATER BLOCK					
13	CAUVERY	I	CY-DWHP-2024/1	D1	9990.96
ULTRA DEEP WATER BLOCK					
14	SAURASHTRA	II	GS-UDWHP-2024/1	UD1	9059.6
15	KRISHNA-GODAVARI	I	KG-UDWHP-2024/1	UD2	12610.14
16	KRISHNA-GODAVARI	I	KG-UDWHP-2024/2	UD3	9511.65
17	KRISHNA-GODAVARI	I	KG-UDWHP-2024/3	UD4	9935.27
18	MAHANADI	II	MN-UDWHP-2024/1	UD5	5520.09
19	MAHANADI	II	MN-UDWHP-2024/2	UD6	10553.23
20	MAHANADI	II	MN-UDWHP-2024/3	UD7	7169.14
21	BENGAL-PURNEA	III	BP-UDWHP-2024/1	UD8	12315.99
22	ANDAMAN-NICOBAR	II	AN-UDWHP-2024/1	UD9	12816.65
23	ANDAMAN-NICOBAR	II	AN-UDWHP-2024/2	UD10	10027.90
24	ANDAMAN-NICOBAR	II	AN-UDWHP-2024/3	UD11	8732.15
25	ANDAMAN-NICOBAR	II	AN-UDWHP-2024/4	UD12	15481.03

Blocks Offered Under OALP Bid Round-X



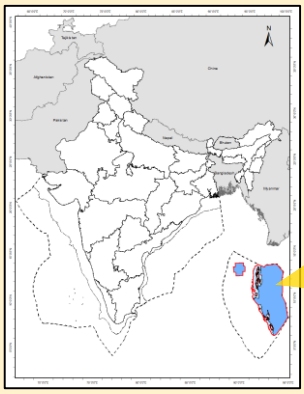
Index Map of Blocks on Offer

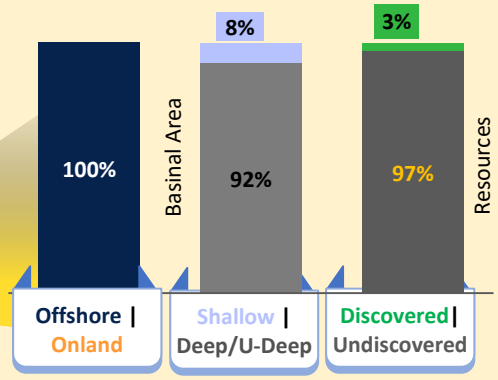


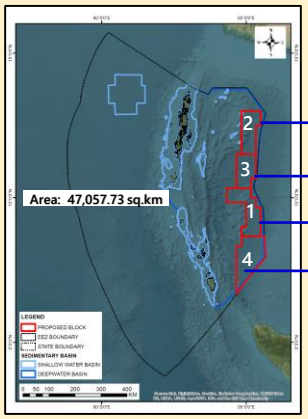
Andaman-Nicobar Basin

ANDAMAN-NICOBAR BASIN

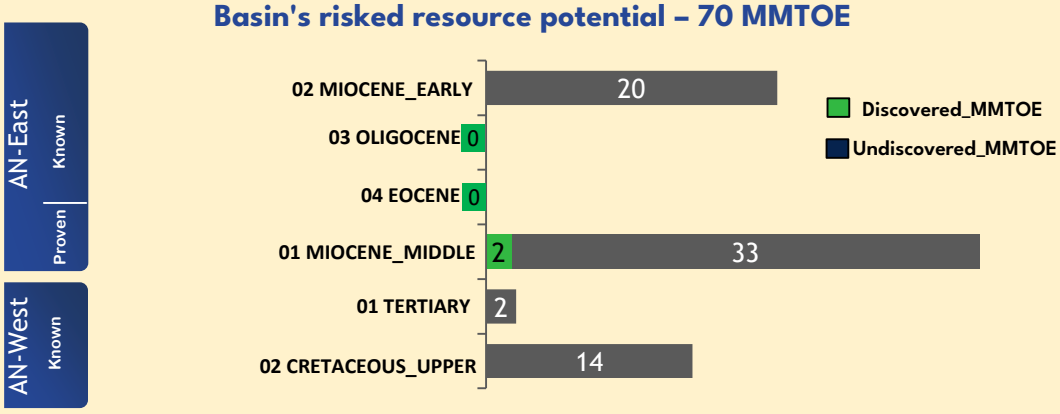
4 Blocks on Offer







Basin's risked resource potential – 70 MMTOE

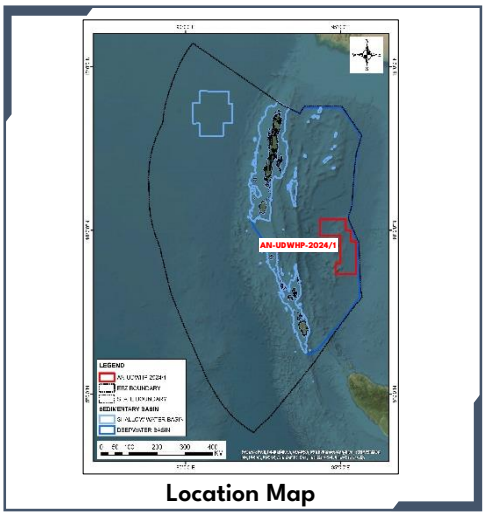


Key Characteristics

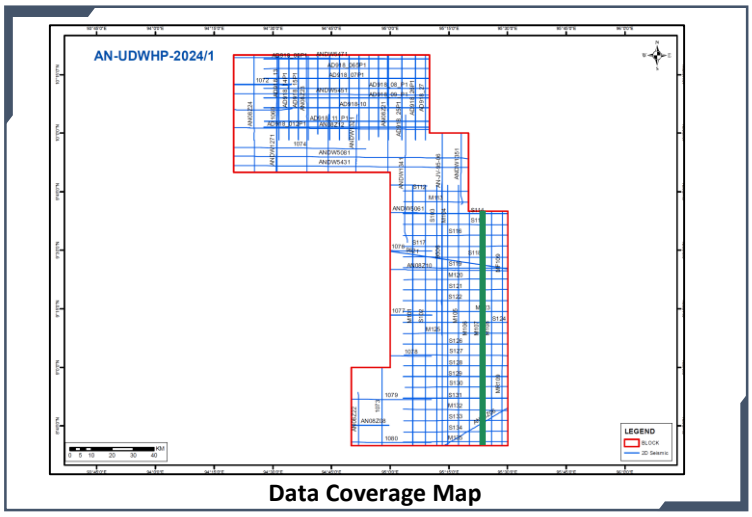
- Fore-arc has a significant **Gas discovery in Miocene**, analogous to producing reservoirs of Myanmar and Indonesia gas fields
- **Back-arc area** has sediments with significant prospectivity in the **Eastern Part**
- **Gas hydrate** is established in Fore-arc

Block Name : AN-UDWHP-2024/1
(UD9)

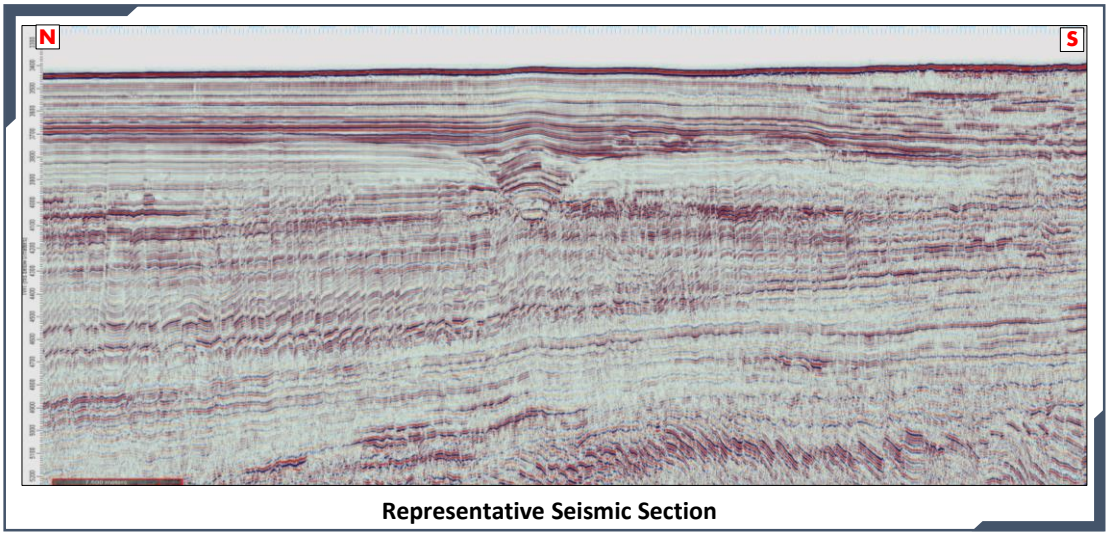
Block Area: 12,816.65 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
5206	0	0

Target Horizon: To explore prospectivity in Miocene clastic. Oligocene and Paleocene-Eocene formations may also be targeted as secondary plays.

Petroleum System:

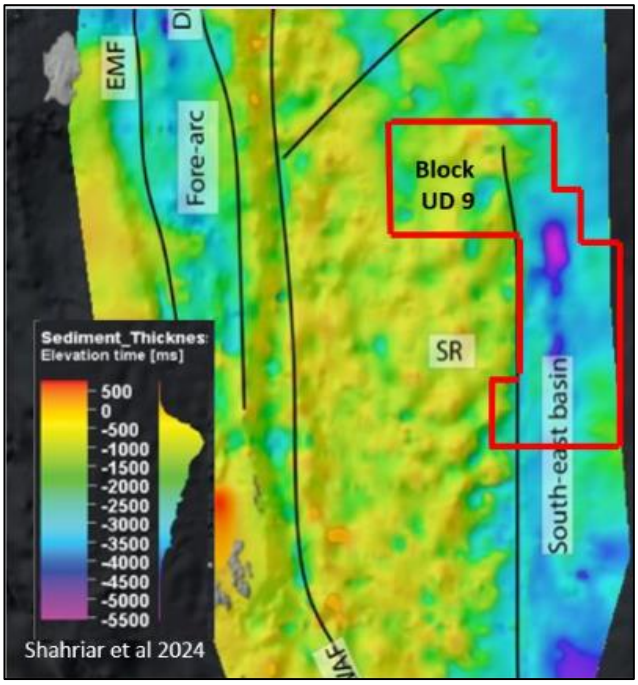
Source rock: Upper Cretaceous and Paleogene formations.

Reservoir: Dominantly Miocene clastic formations. Also evaluated in Oligocene and Paleocene-Eocene formations.

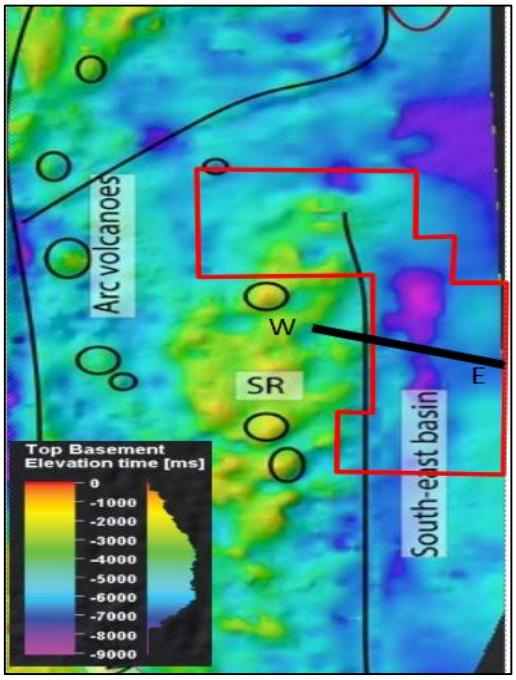
Entrapment mechanism: Structural and stratigraphic combinations.

Seal: Dominantly Miocene-Pliocene shales.

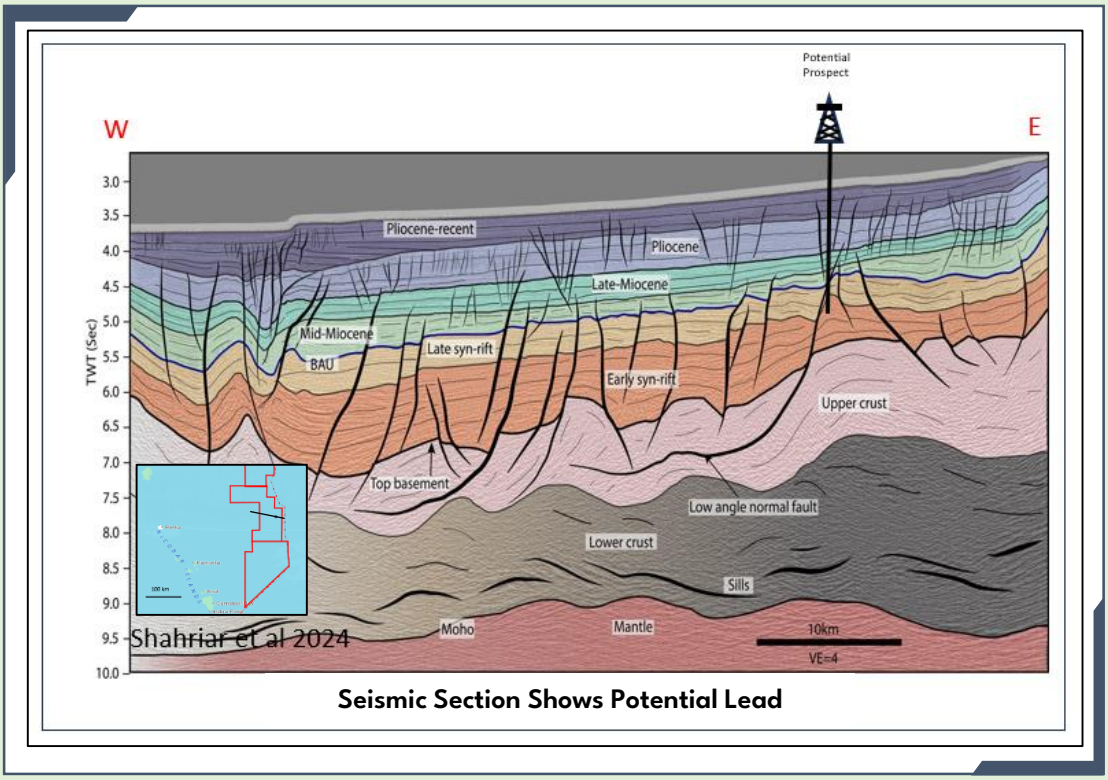
Envisaged plays: Middle Miocene, Early Miocene, Oligocene and Eocene.



Sediment Thickness Map



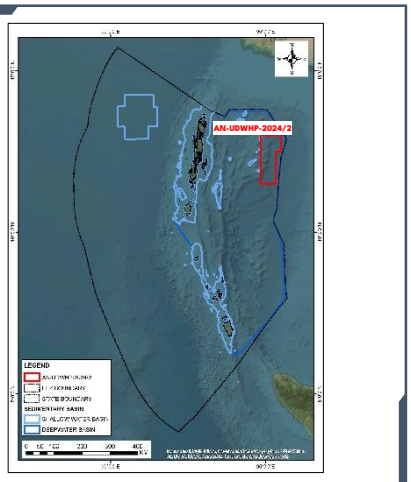
Basement Time Map



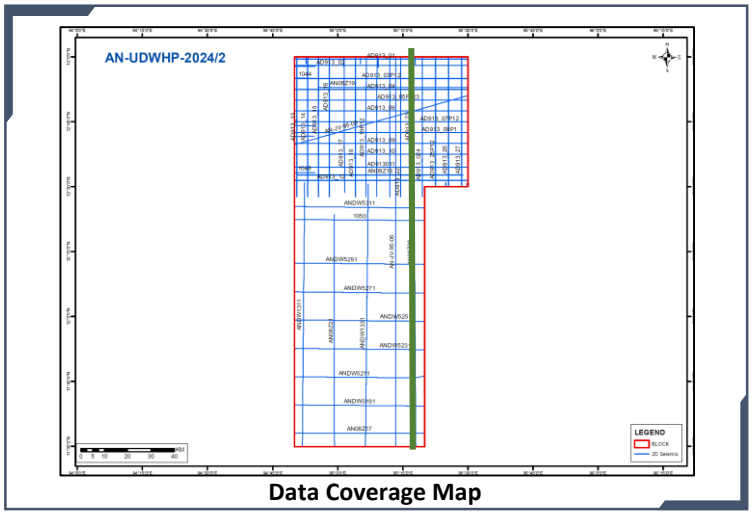
Seismic Section Shows Potential Lead

Block Name : AN-UDWHP-2024/2
(UD10)

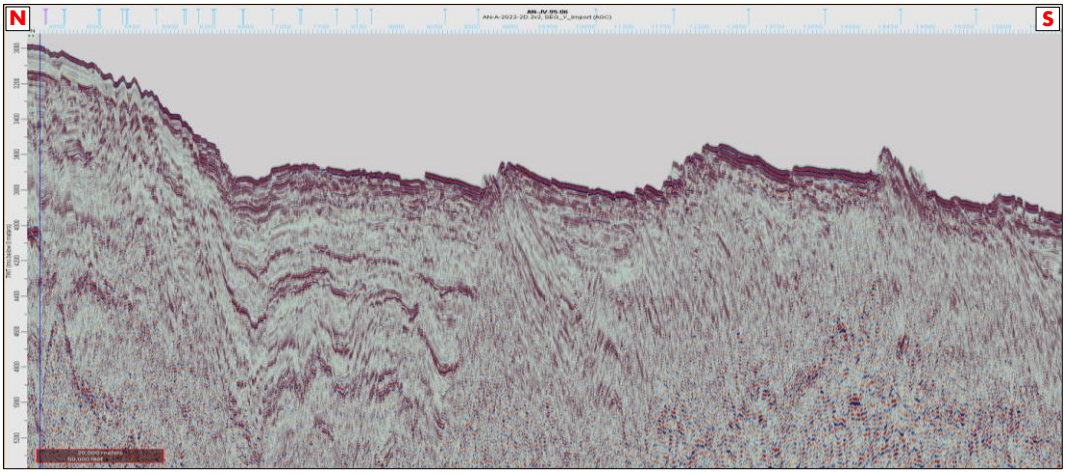
Block Area: 10,027.90 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
3168	0	0

Target Horizon: To explore prospectivity in Miocene clastic. Oligocene and Paleocene-Eocene formations may also be targeted as secondary plays.

Petroleum System:

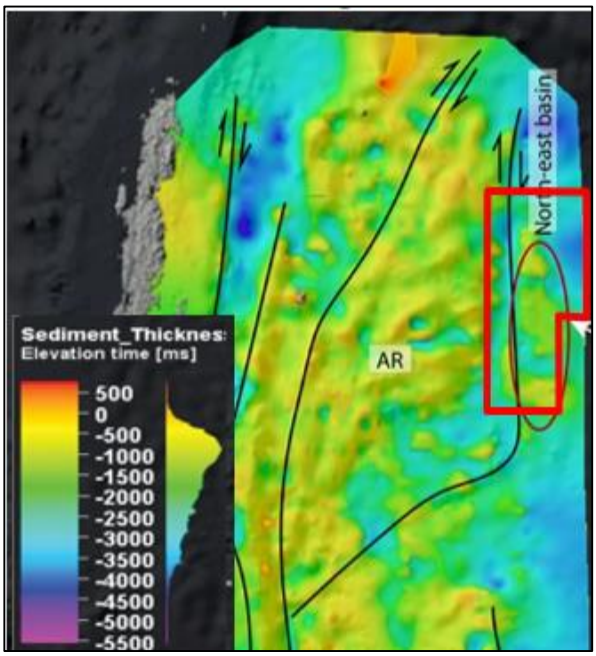
Source rock: Upper Cretaceous and Paleogene formations.

Reservoir: Dominantly Miocene clastic formations. Also evaluated in Oligocene and Paleocene-Eocene formations.

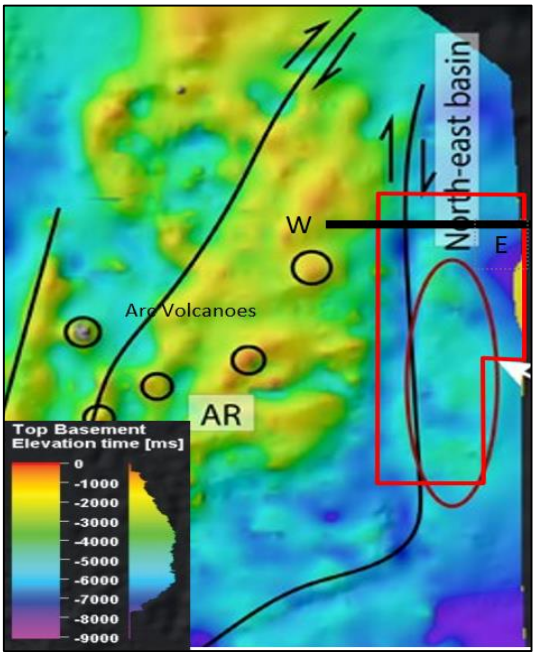
Entrapment mechanism: Structural and stratigraphic combinations.

Seal: Dominantly Miocene-Pliocene shales.

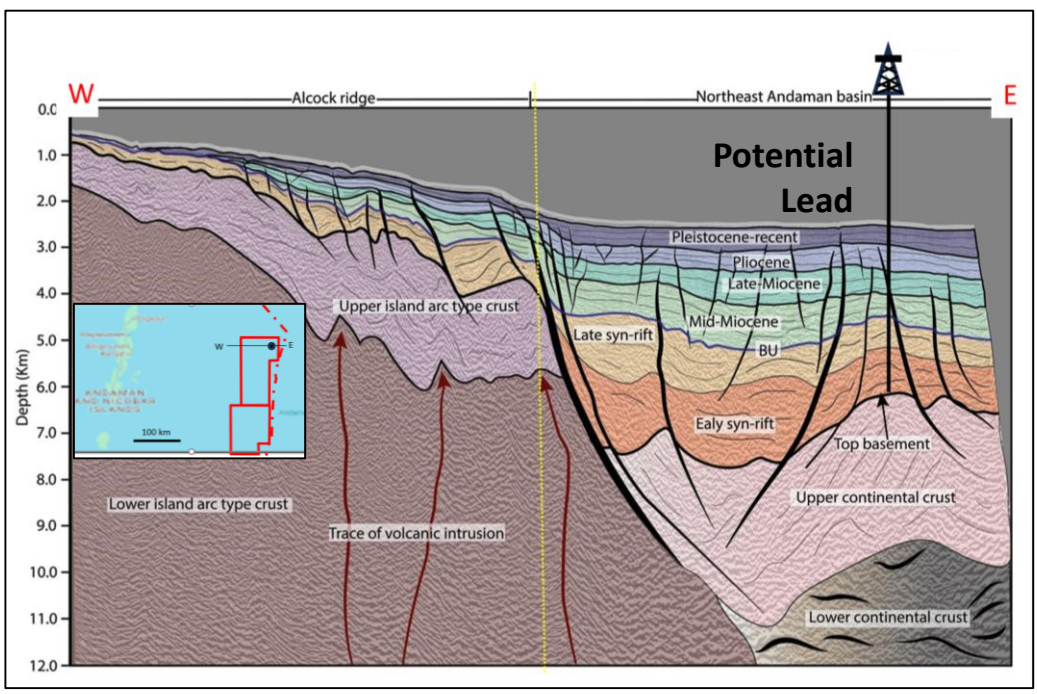
Envisaged plays: Middle Miocene, Early Miocene, Oligocene and Eocene.



Sediment Thickness Map



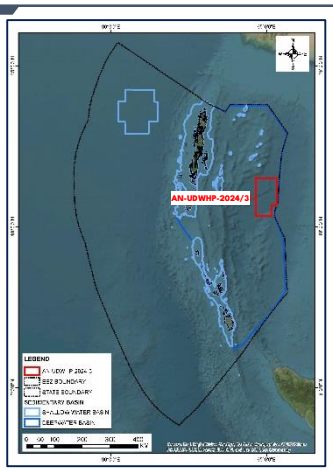
Basement Time Map



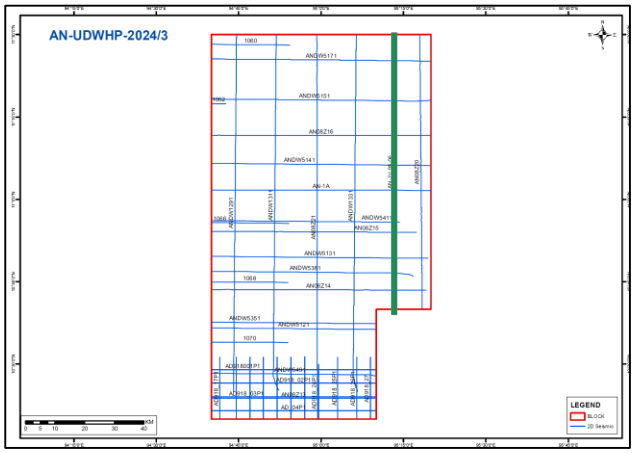
Seismo-Geological Section Showing Potential lead

Block Name : AN-UDWHP-2024/3
(UD11)

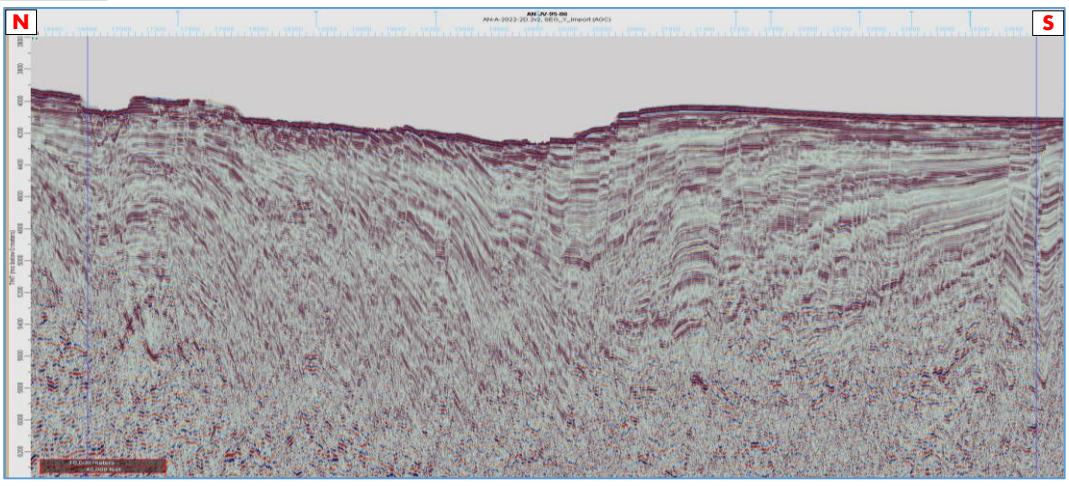
Block Area: 8732.15 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
2153	0	0

Target Horizon: To explore prospectivity in Miocene clastic. Oligocene and Paleocene-Eocene formations may also be targeted as secondary plays.

Petroleum System:

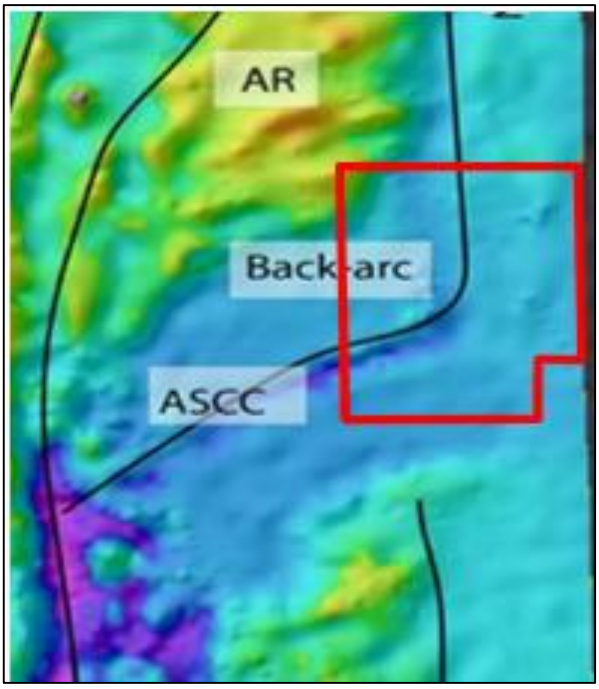
Source rock: Upper Cretaceous and Paleogene formations.

Reservoir: Dominantly Miocene clastic formations. Also evaluated in Oligocene and Paleocene-Eocene formations.

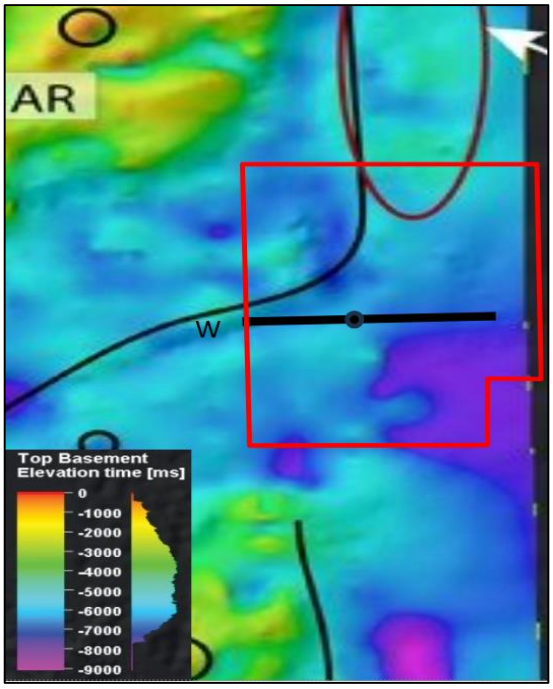
Entrapment mechanism: Structural and stratigraphic combinations.

Seal: Dominantly Miocene-Pliocene shales.

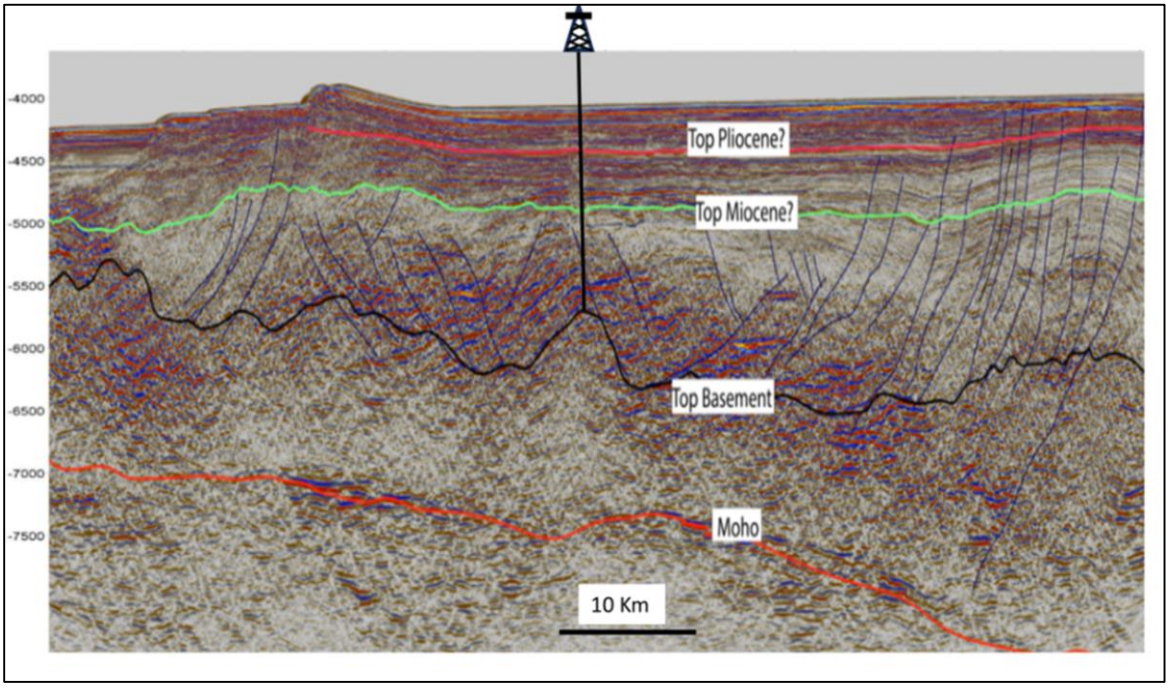
Envisaged plays: Middle Miocene, Early Miocene, Oligocene and Eocene.



Sediment Thickness Map



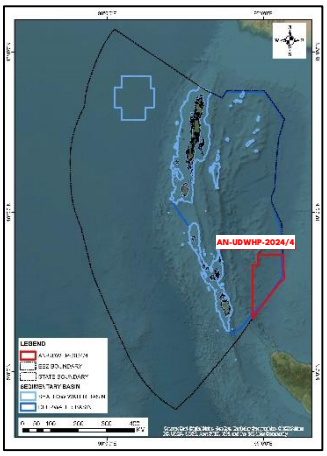
Basement Time Map



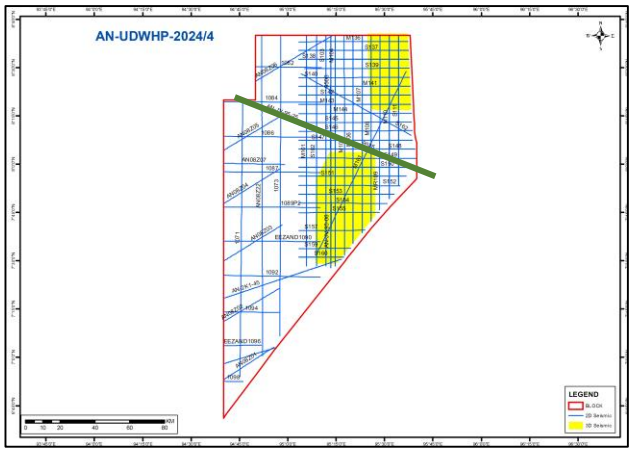
Seismo-Geological Section Showing Potential lead

Block Name : AN-UDWHP-2024/4
(UD12)

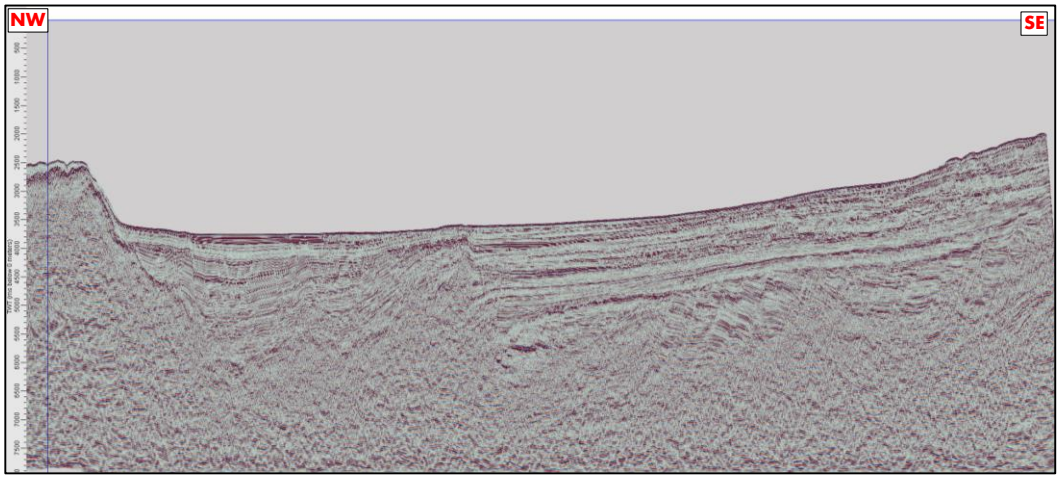
Block Area: 15,481.03 SKM



Location Map



Data Coverage Mao



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4557	2521	0

Target Horizon: To explore prospectivity in Miocene clastic. Oligocene formations may also be targeted as a secondary play.

Petroleum System:

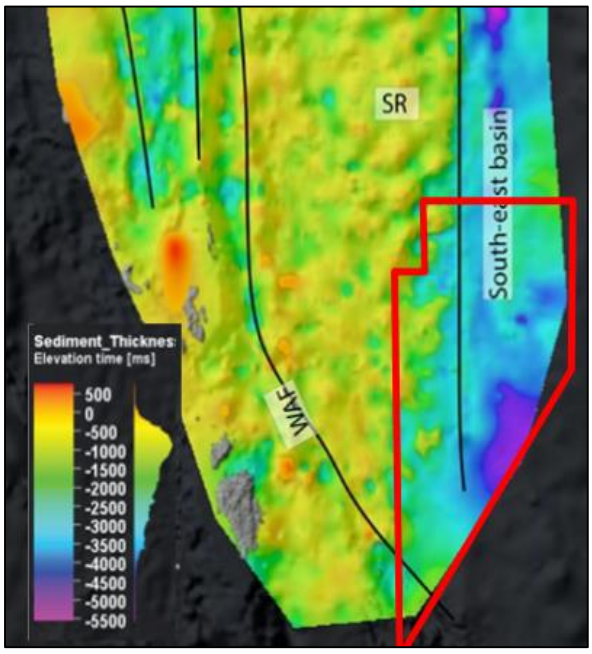
Source rock: Upper Cretaceous and Paleogene formations.

Reservoir: Dominantly Miocene clastic formations. Also evaluated in Oligocene and Paleocene-Eocene formations.

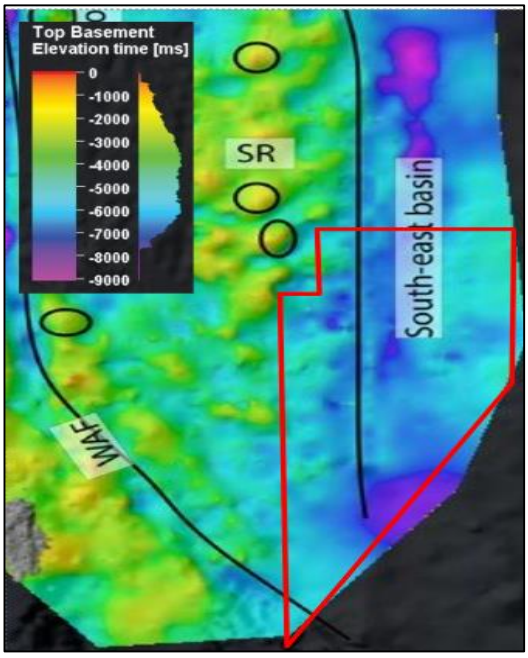
Entrapment mechanism: Structural and stratigraphic combinations.

Seal: Dominantly Miocene-Pliocene shales.

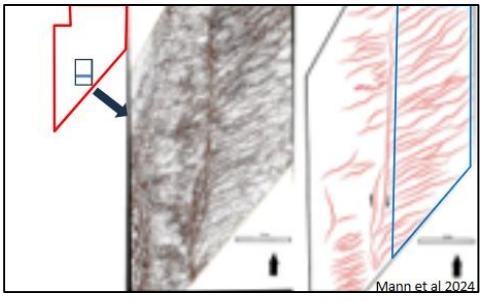
Envisaged plays: Middle Miocene, Early Miocene, Oligocene and Eocene.



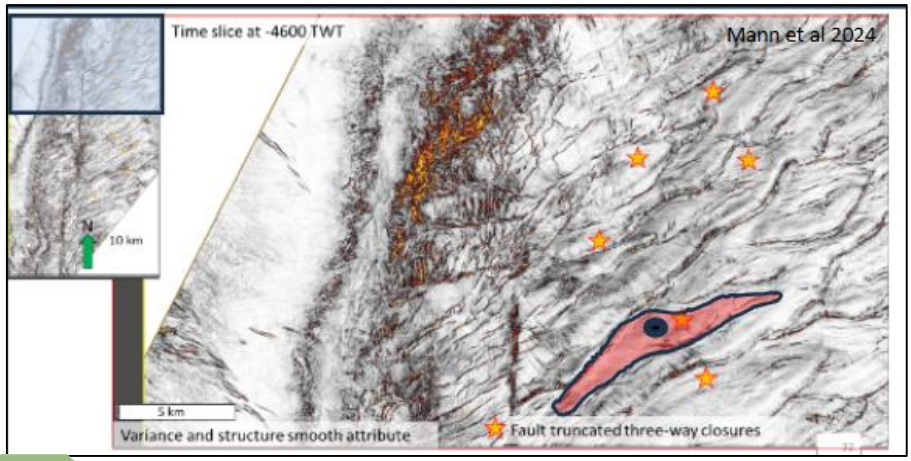
Sediment Thickness Map



Basement Time Map



3D extraction showing fault structure



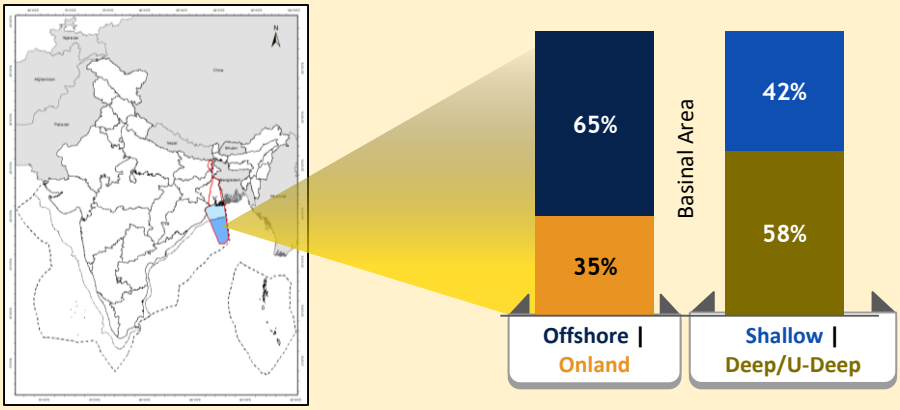
Potential Lead

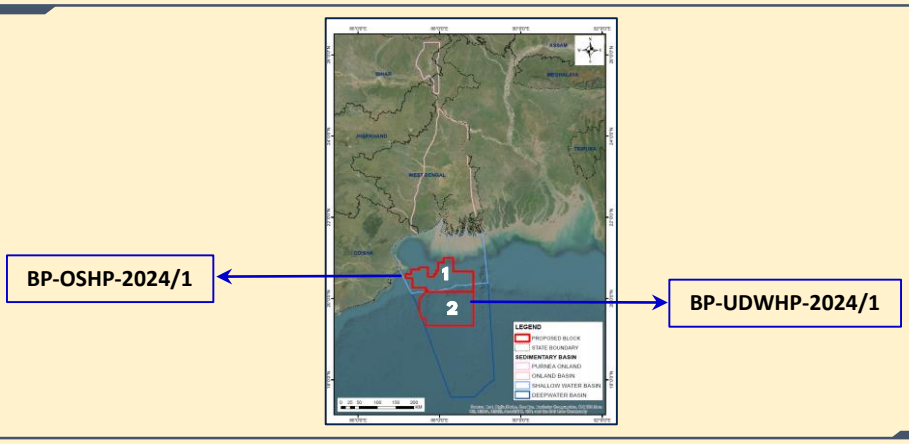
Bengal – Purnea Basin

BENGAL – PURNEA BASIN

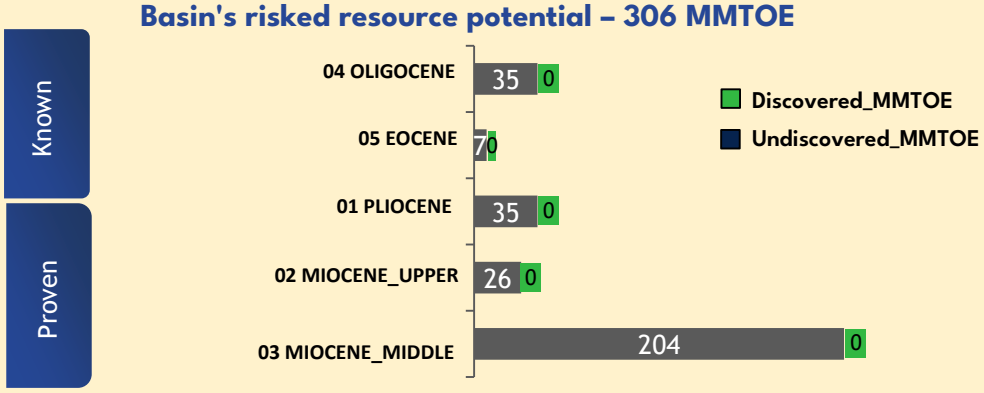
Significant Resource in Miocene

2 Blocks on Offer





Basin's risked resource potential – 306 MMTOE

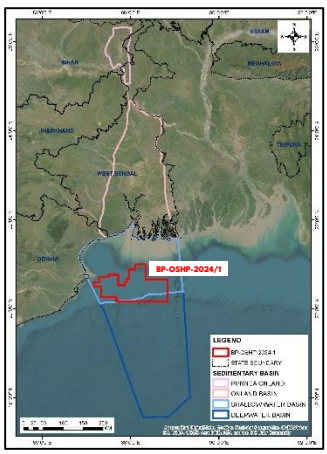


Key Characteristics

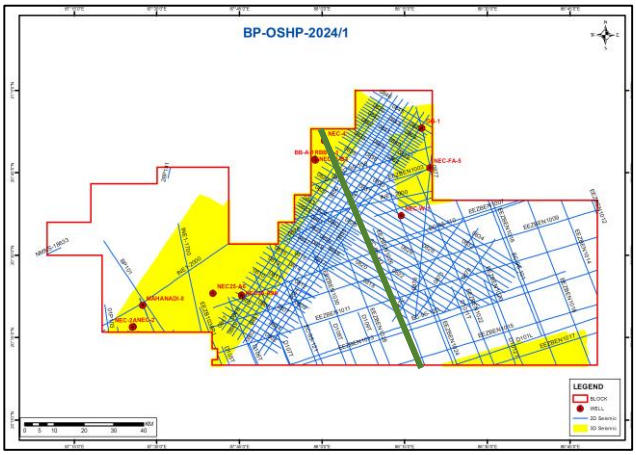
- 2/3rd potential lies in Middle Miocene play
- Blocks close to a contract area with 6 gas discoveries, contemplated for development
- Occurrence of channelized deposits associated to subtle structures in the east-central area

Block Name : BP-OSHP-2024/1
(S6)

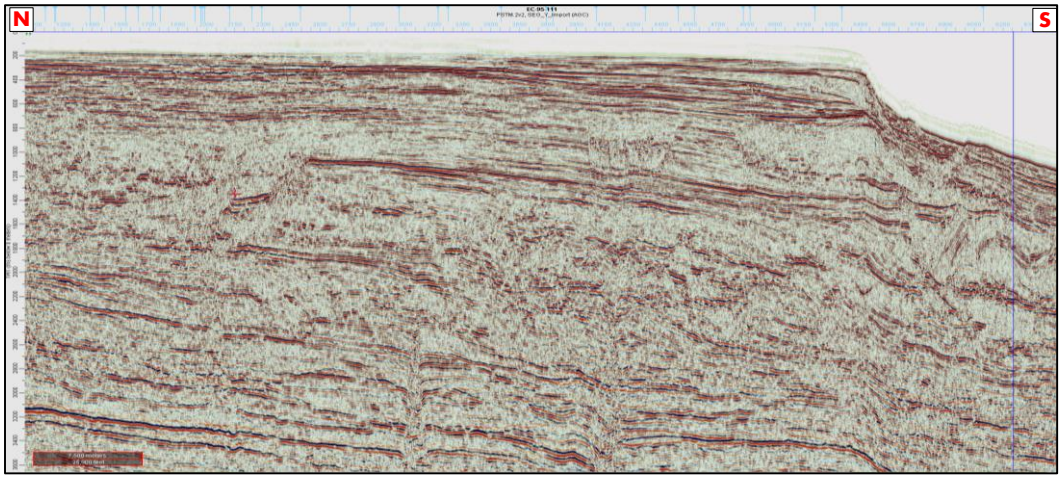
Block Area: 9,826.81 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
5204	2600	12

Target Horizon: To explore prospectivity in Mio-Pliocene Formation and Oligocene Formation in the block area.

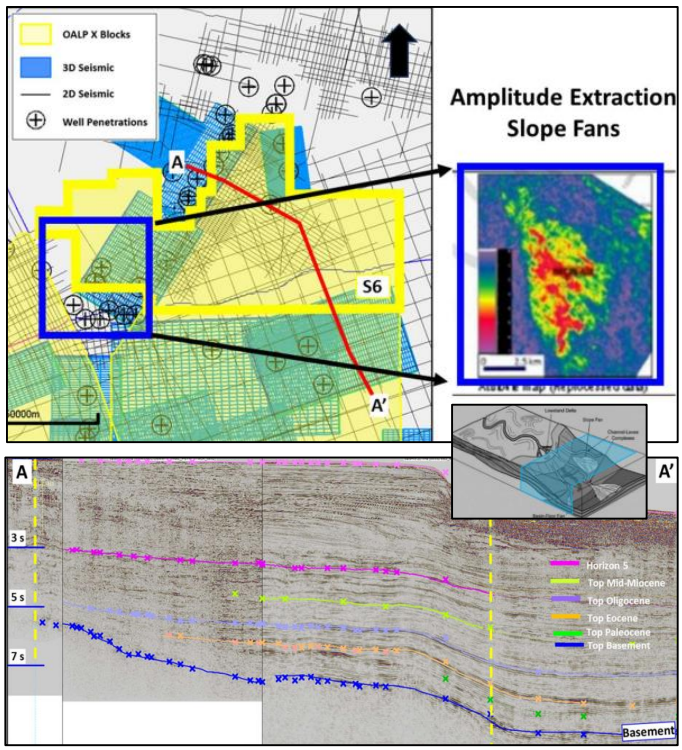
Petroleum System:

Source rock: Palaeogene and Cretaceous sediments (Thermogenic), Neogene (Biogenic)

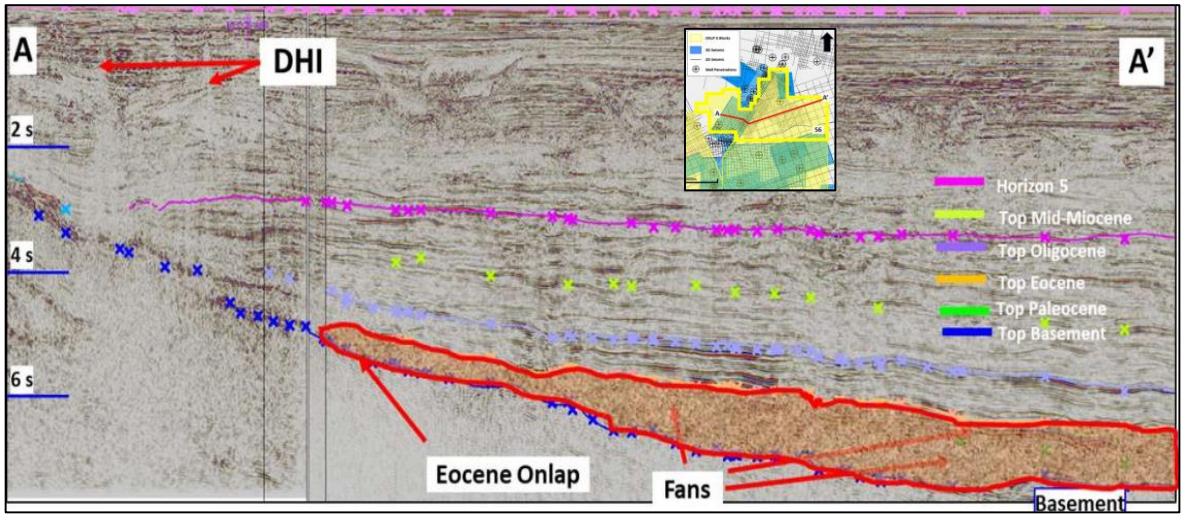
Reservoir: Mio-Pliocene Formation and Oligocene Formation

Entrapment mechanism: Structural, stratigraphic and strati-structural

Envisaged plays: Middle/Upper Miocene and Pliocene are proven plays, while Eocene and Oligocene are known but un-discovered.



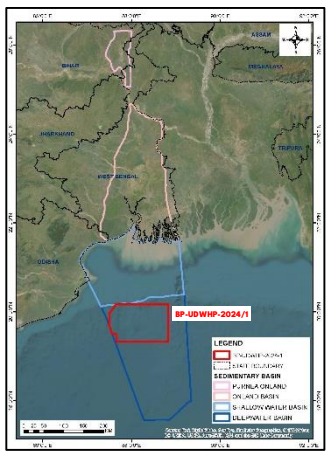
Seismic Extracted Depositional Features



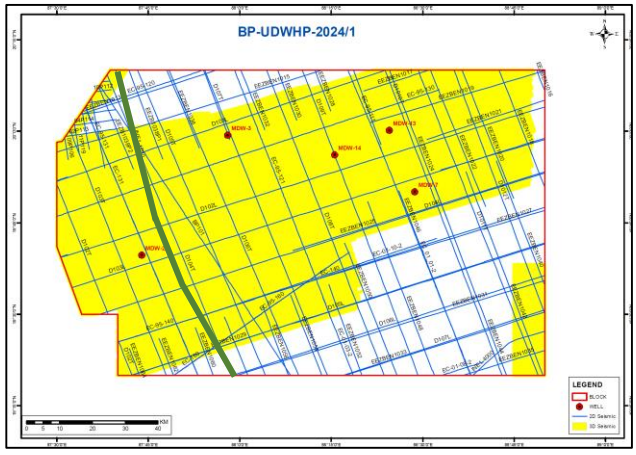
Subcrop Pinch Out Play

Block Name : BP-UDWHP-2024/1
(UD8)

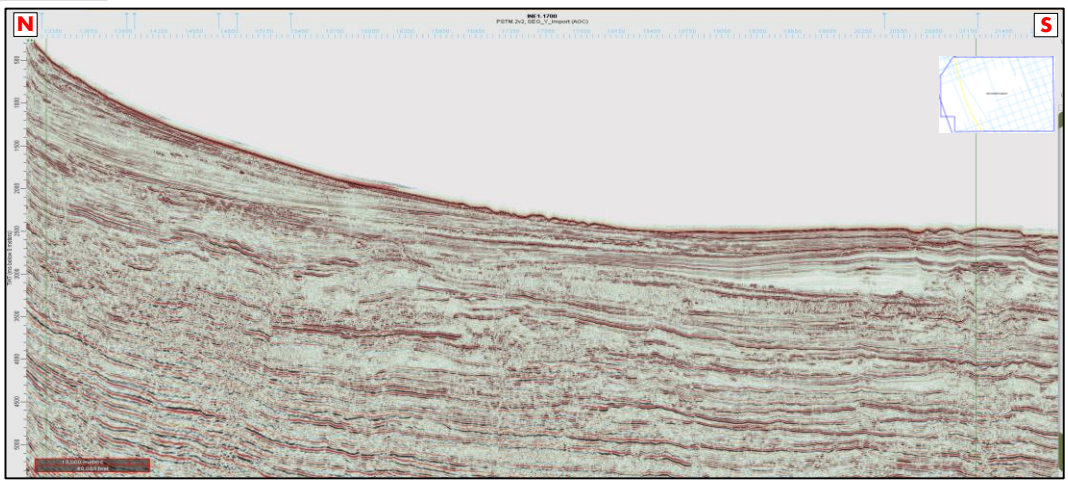
Block Area: 12,315.99 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4581	8392	5

Target Horizon: To explore prospectivity in Miocene-Pliocene clastic. Oligocene formations may also be targeted as a secondary reservoir.

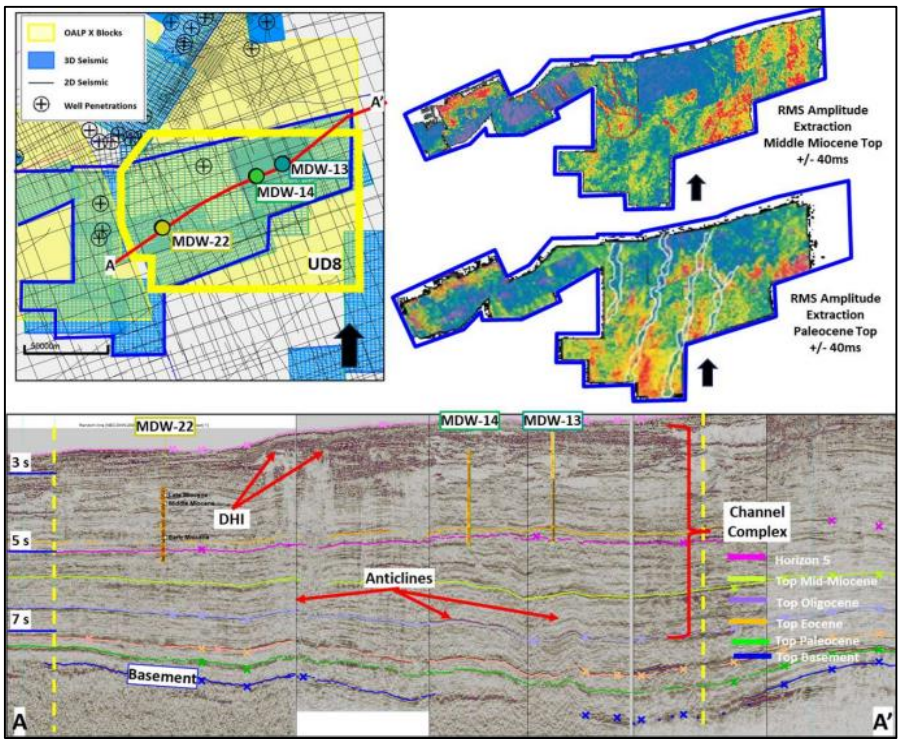
Petroleum System:

Source rock: Palaeogene and Cretaceous sediments (Thermogenic), Neogene (Biogenic)

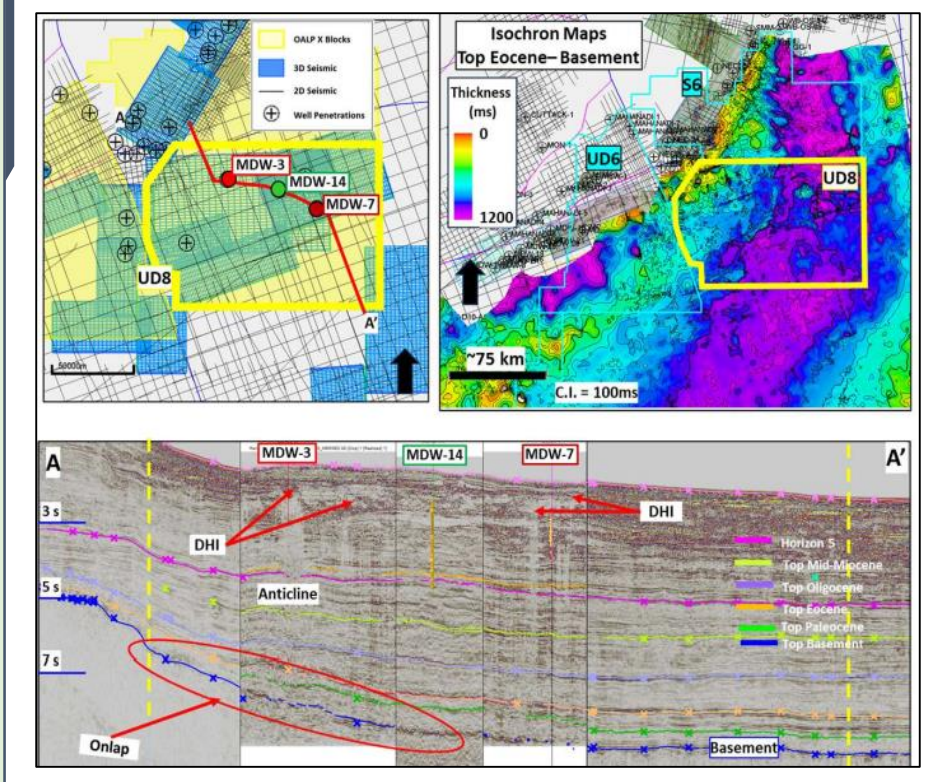
Reservoir: Mio-Pliocene Formation and Oligocene Formation

Entrapment mechanism: Structural (fault or small 4-way closures), stratigraphic (channel-levee complex) and strati-structural

Envisaged plays: Oligocene (thermogenic), Middle Miocene (Thermogenic), Upper Miocene (Biogenic) and Pliocene (Biogenic) play



Amplitude Extraction Showing Channel System

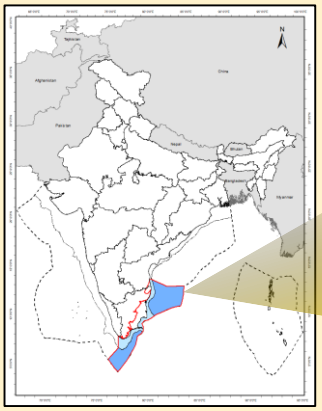


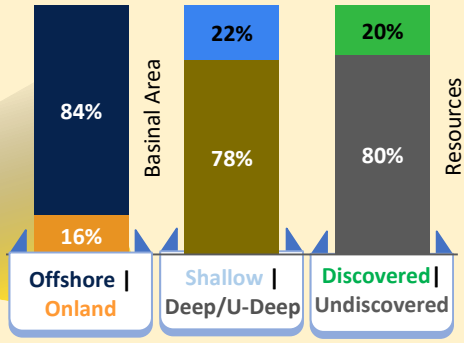
Cauvery Basin

CAUVERY BASIN

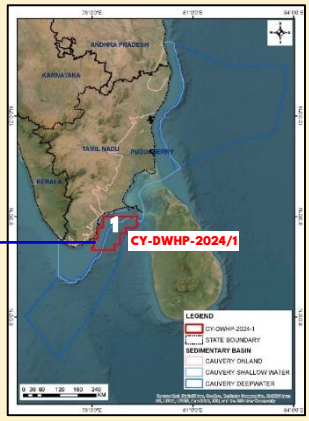
Proven resources in Mesozoic and Basement

1 Block on Offer

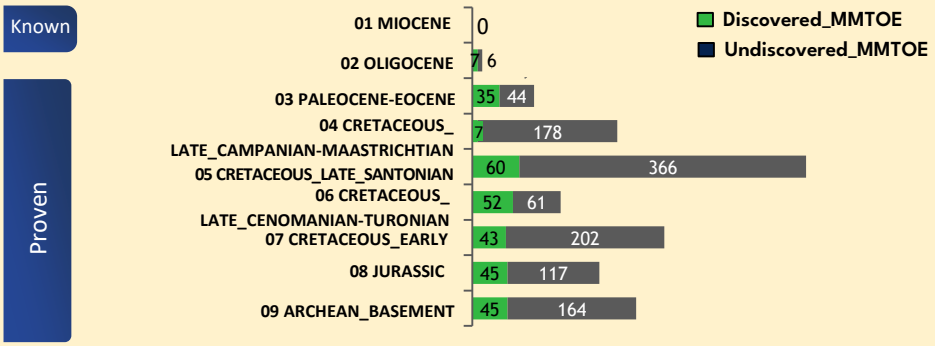




CY-DWHP-2024/1



Basin's risked resource potential – 1,139 MMTOE

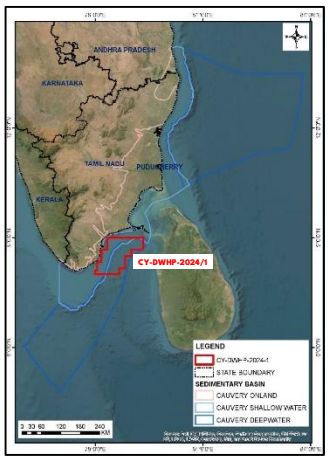


Key Characteristics

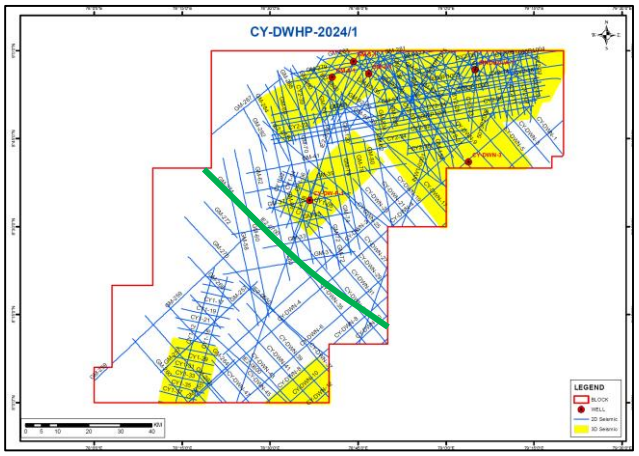
- Basin with significant production from Mesozoic and Basement
- Deep-to-Ultradeep water largely appraised but less explored
- Opportunity to explore Ultradeep in the north-east and southern part towards Gulf of Mannar

Block Name : CY-DWHP-2024/1
(D1)

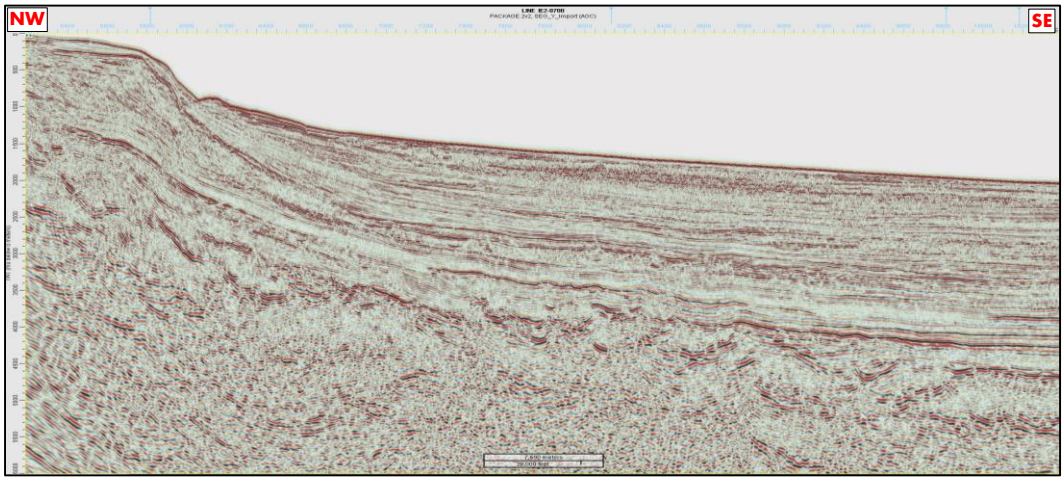
Block Area: 9990.96 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
7555	3345	6

Target Horizon: Paleocene, Cretaceous & Basement/ Technical basement

Petroleum System:

Source rock: Late Jurassic to Early Cretaceous sequences

Reservoir: Late synrift sequences, Lowstand sequences during Turonian, Late Coniacian-Santonian, Late Maastrichtian and Late Paleocene would result in the deposition of clastic reservoir facies in the Sub-Basin in the form of slope fans & basin floor fans.

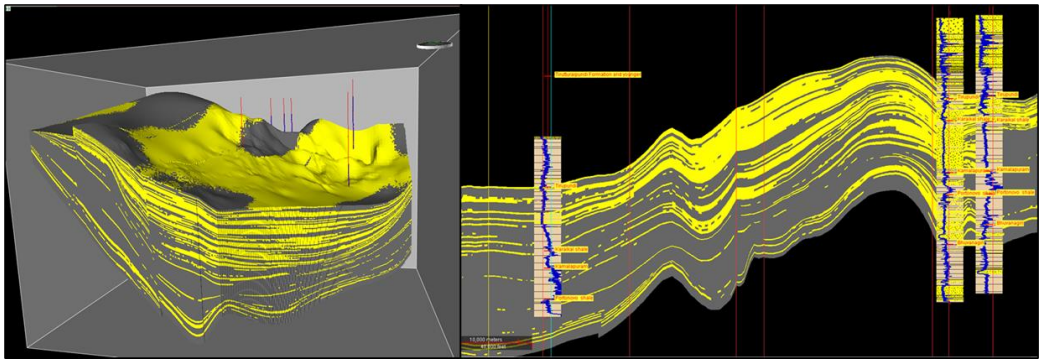
Entrapment Mechanism: Fault closure , stratigraphic drape over structural highs, pinch-out traps and channel fills.

Envisaged plays: Basement, Cretaceous & Older and Tertiary play.

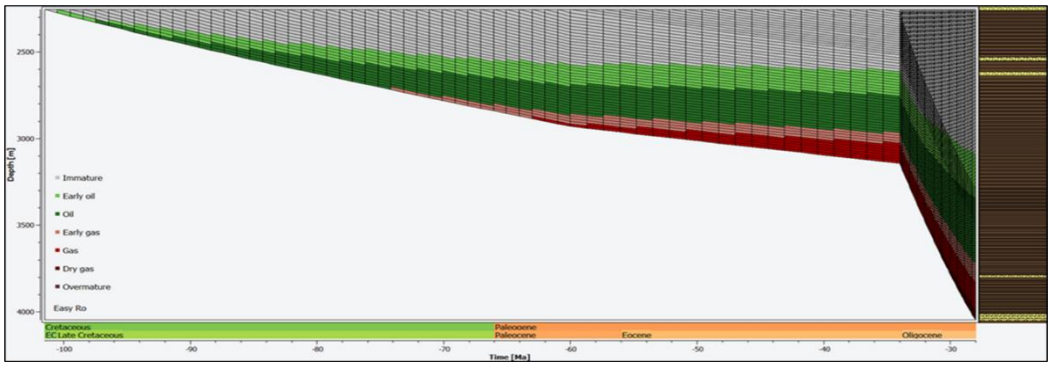
Thermogenic Petroleum System:

1. **Middle Jurassic –** Jurassic, Early Cretaceous, Late Cretaceous (?)
2. **Early Cretaceous –** Early Cretaceous, Late Cretaceous (?)
3. **Late Cretaceous –** Late Cretaceous (?)

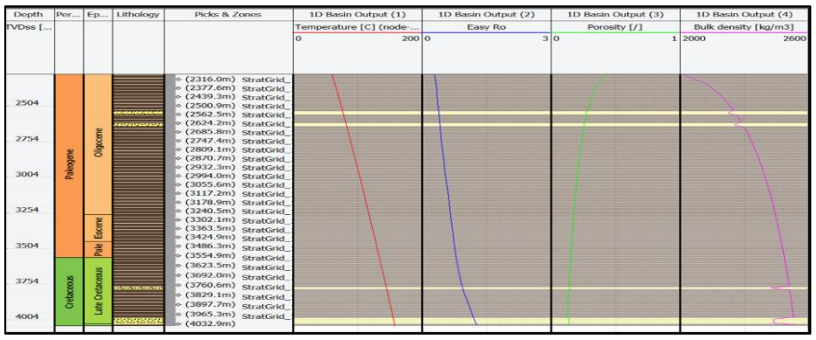
Biogenic Petroleum System: 1.Oligocene – Oligocene (?)



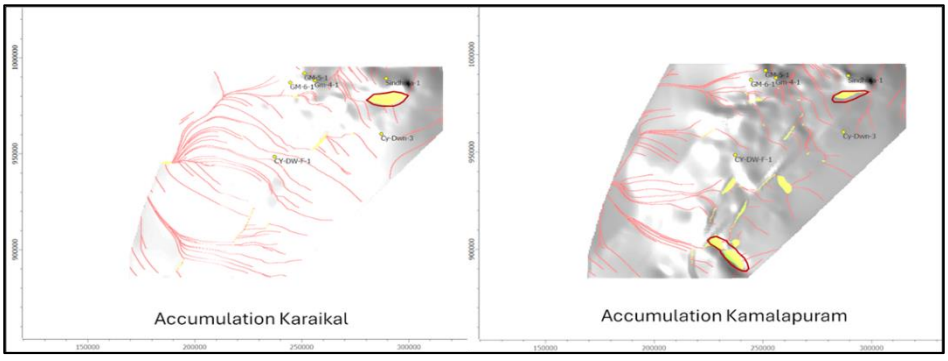
Facies Model



Burial History of CY_DWN-3 well



Thermal Maturity: CY_DWN-3



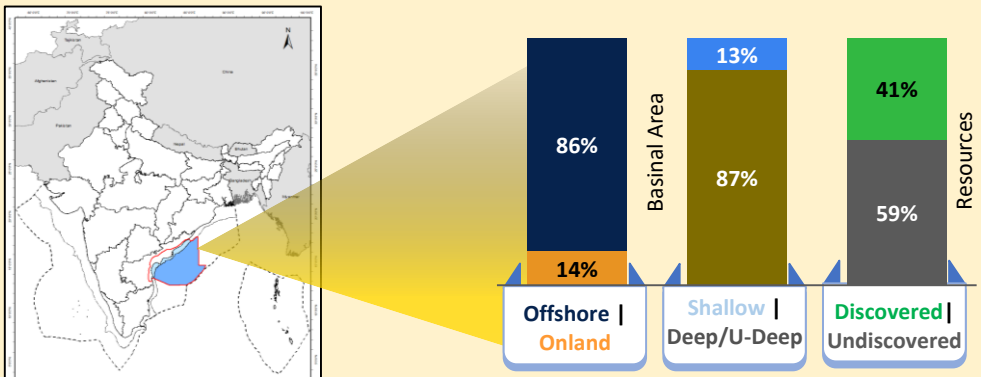
Encouraging leads

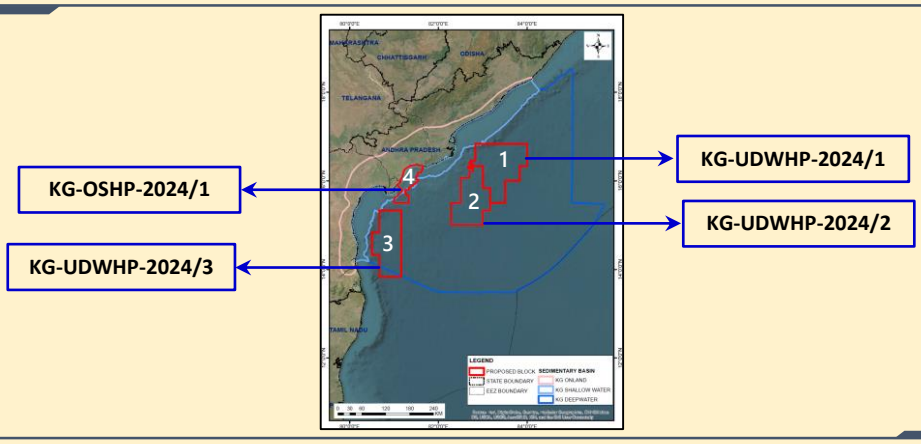
Krishna-Godavari Basin

KRISHNA-GODAVARI BASIN

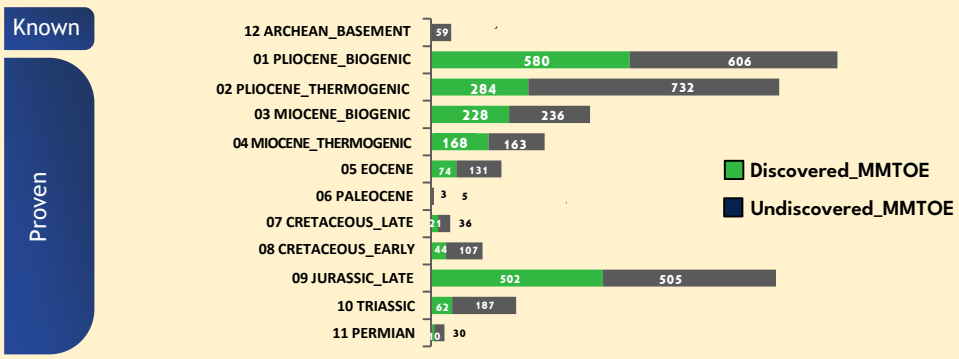
Most prospective, largely proven

4 Blocks on Offer





Basin's risked resource potential – 2,796 MMTOE

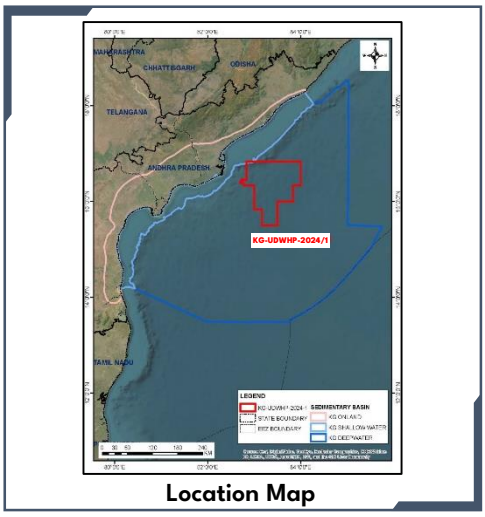


Key Characteristics

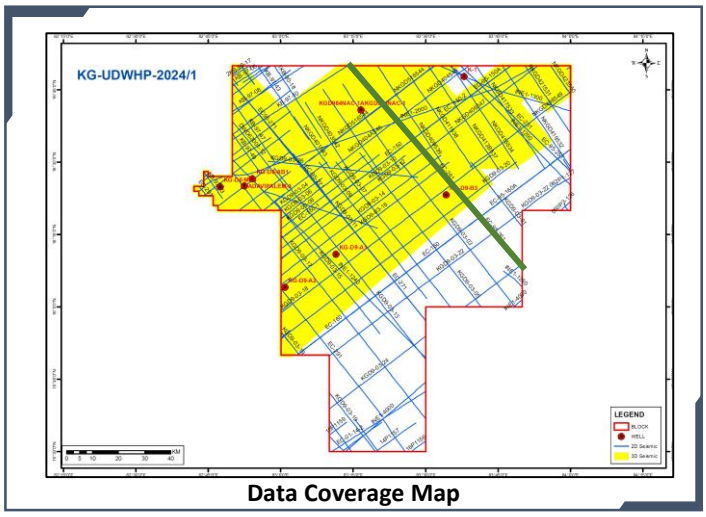
- Maximum resources, known for country's largest deepwater biogenic gas field
- With 2.0 BTOE resource established, proven plays have significant prospective resources
- Deep/shallow water extensively appraised with large-scale datasets, an opportunity for intensive exploration of channelized deposits

Block Name : KG-UDWHP-2024/1
(UD2)

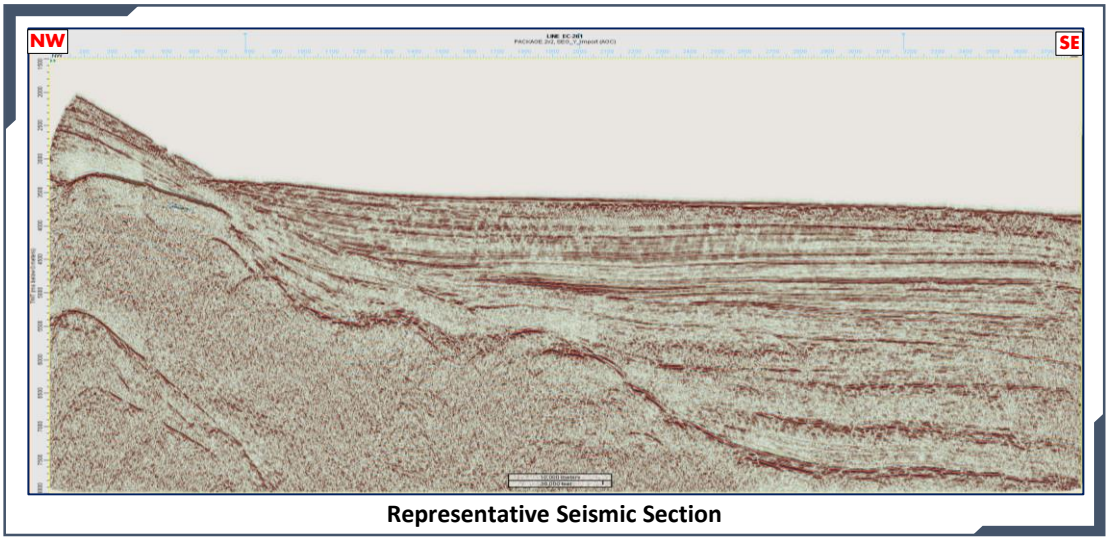
Block Area: 12,610.14 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4999	7714	9

Target Horizon: To explore prospectivity in Pliocene Deepwater channel complexes abutting against frontal thrust, Late Miocene channelized lobes on the slope created by the frontal thrust, Pleistocene Deepwater channel-lobe complexes.

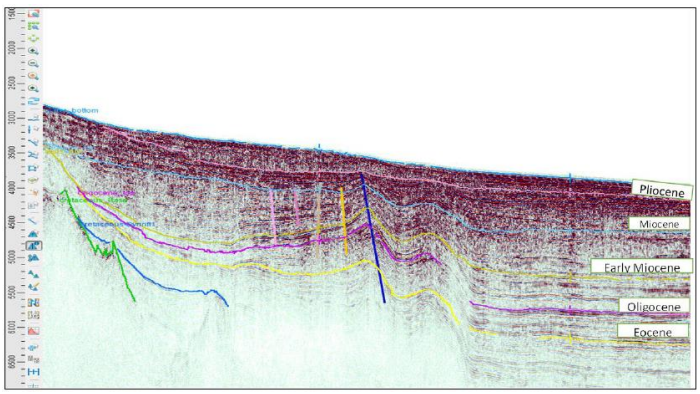
Petroleum System:

Source rock: Mesozoic / Eocene-Oligocene (Thermogenic), Mio-Pleistocene (Biogenic)

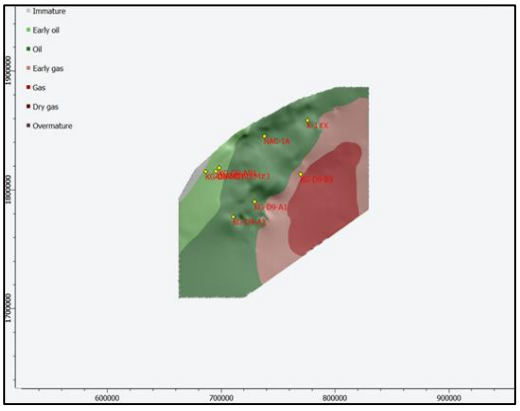
Reservoir: Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic and Strati-structural

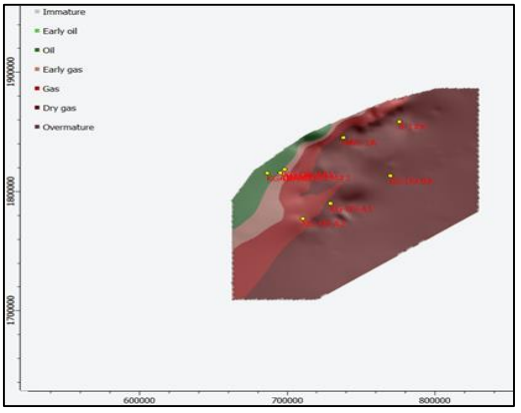
Envisaged plays: Pleistocene Deepwater channel-lobe complexes, Pliocene Deepwater channel complexes abutting against frontal thrust, Late Miocene channelized lobes on the slope created by the frontal thrust.



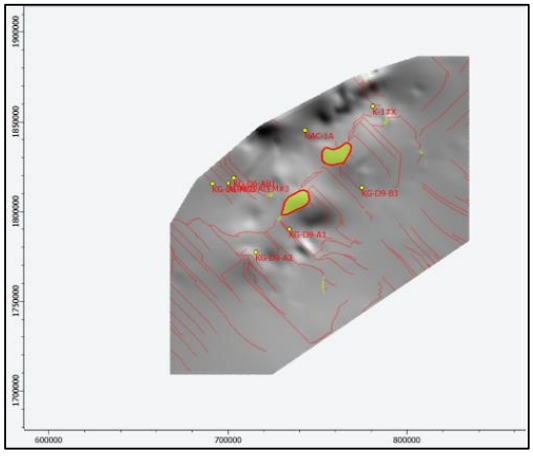
Representative Seismic Section



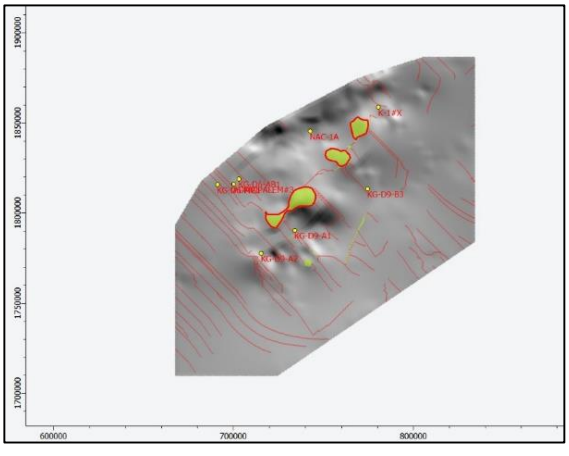
Maturity Map at Miocene



Maturity Map at Eocene



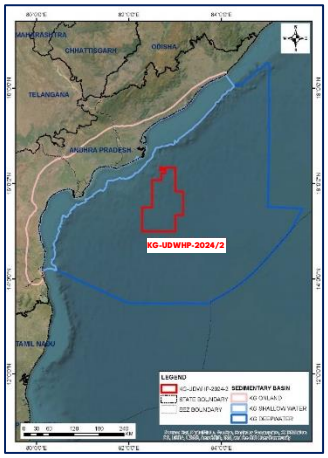
Identified Leads from Accumulation Map at Eocene Top



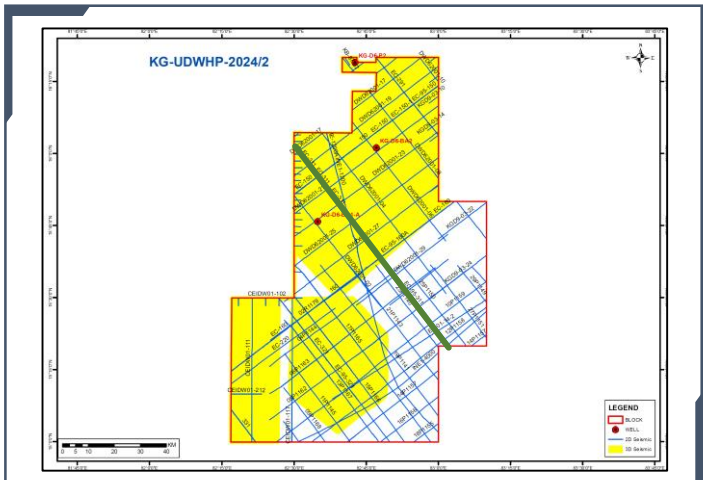
Identified Leads from Accumulation Map at Miocene Top

Block Name : KG-UDWHP-2024/2
(UD3)

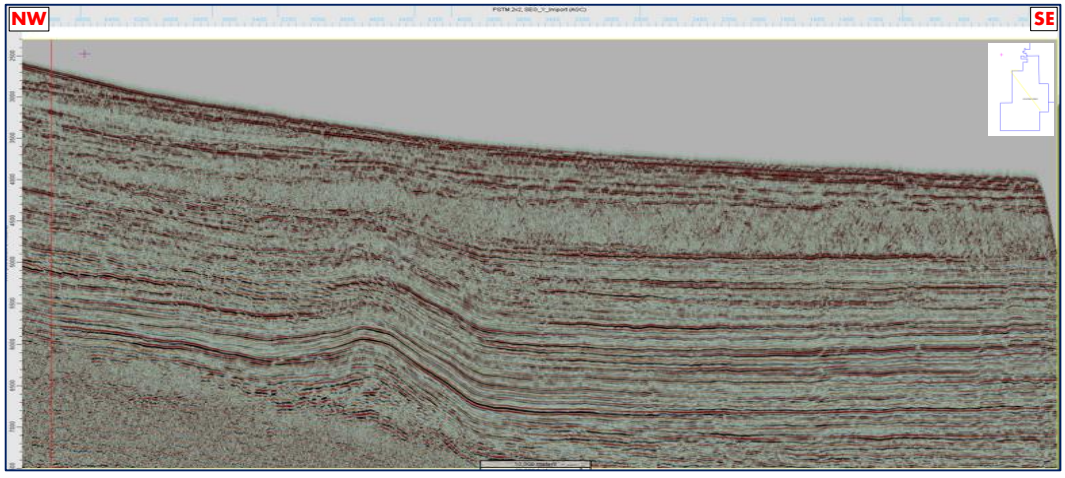
Block Area: 9,511.65 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
3996	6019	3

Target Horizon: To explore prospectivity in Pliocene deep-water channel complexes abutting against frontal thrust, Late Miocene channelized lobes on the slope created by the frontal thrust, Pleistocene deep-water channel-lobe complexes.

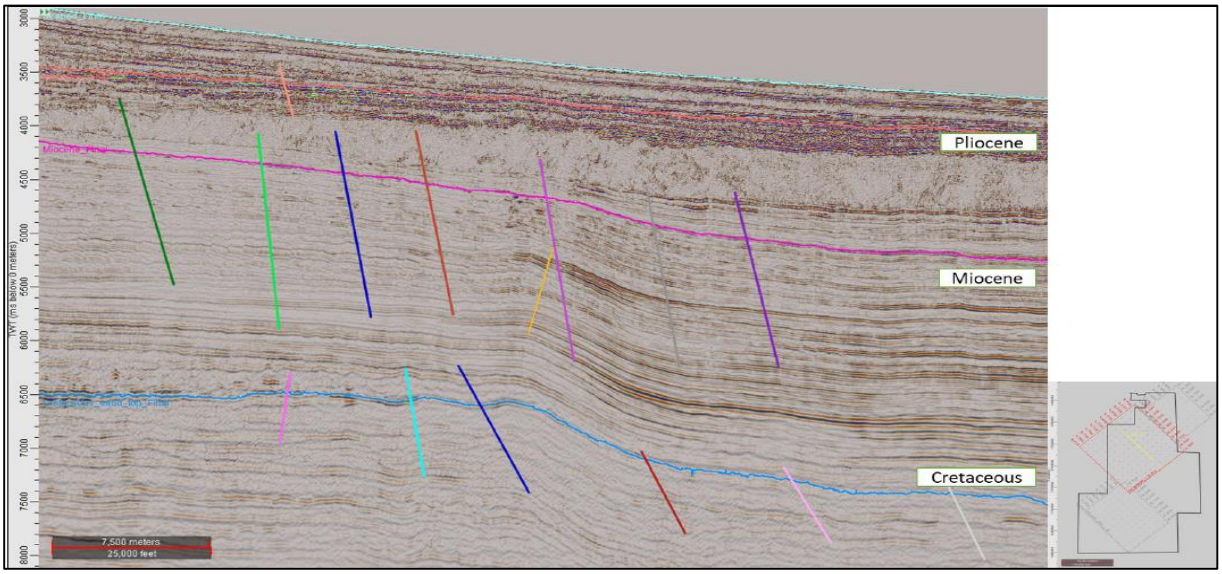
Petroleum System:

Source rock: Mesozoic/Eocene-Oligocene (Thermogenic), Mio-Pleistocene (Biogenic)

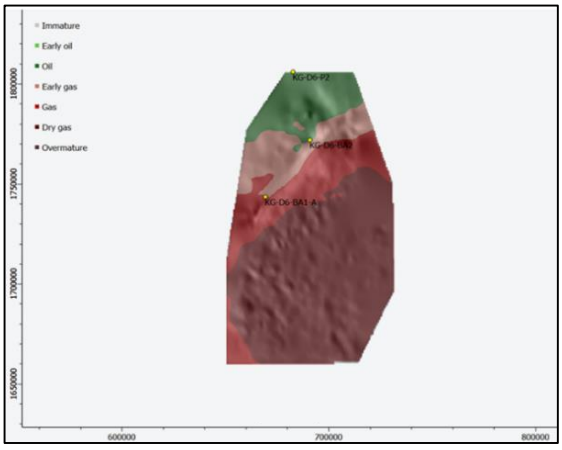
Reservoir: Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic and Strati-structural

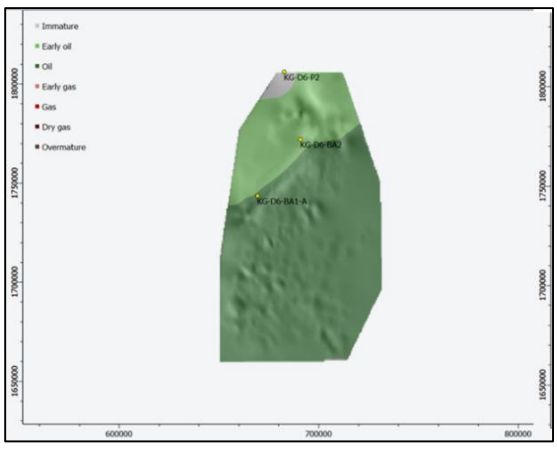
Envisaged plays: Pleistocene Deepwater channel-lobe complexes, Pliocene Deepwater channel complexes abutting against frontal thrust, Late Miocene channelized lobes on the slope created by the frontal thrust.



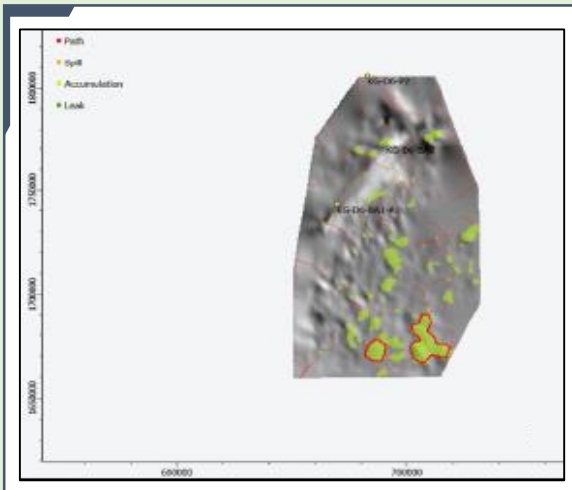
Representative Seismic Section



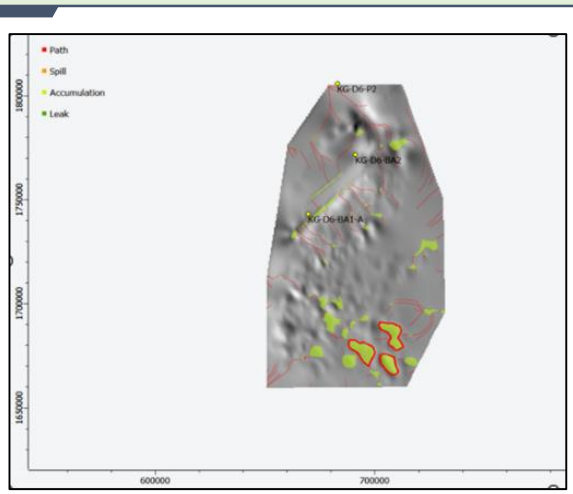
Maturity Map at Eocene



Maturity Map at Miocene



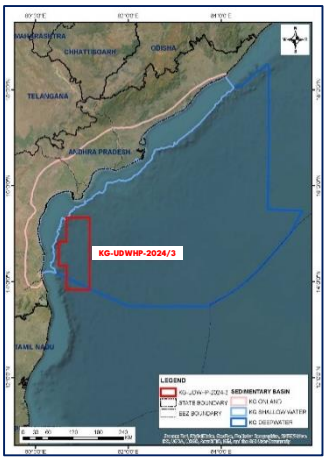
Identified Leads from Accumulation Map at Eocene Top



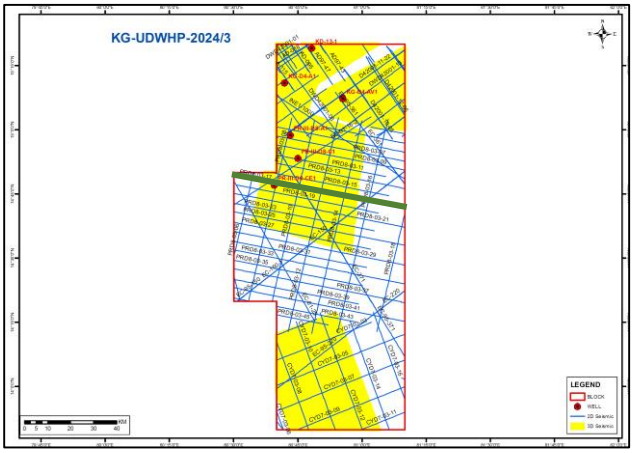
Identified Leads from Accumulation Map at Miocene Top

Block Name : KG-UDWHP-2024/3
(UD4)

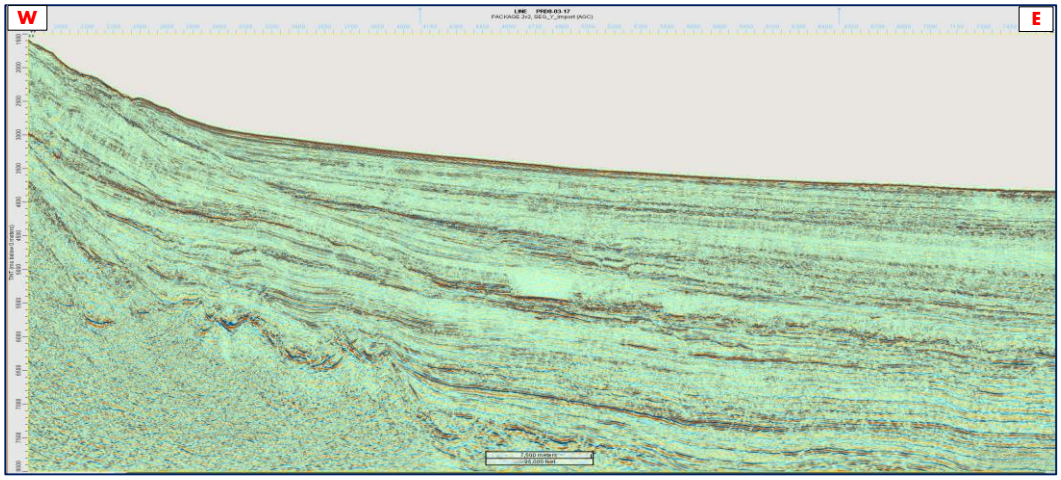
Block Area: 9,935.27 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4132	5035	6

Target Horizon: To explore prospectivity in Pliocene Deep-water channel complexes abutting against Frontal Thrust, Late Miocene channelized lobes on the slope created by the Frontal Thrust, Pleistocene Deep-water channel-lobe complexes.

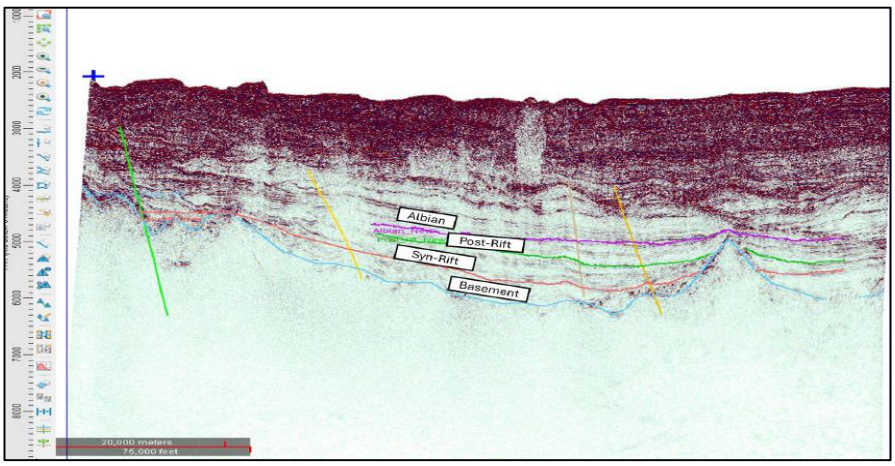
Petroleum System:

Source rock: Mesozoic/Eocene-Oligocene (Thermogenic), Mio-Pleistocene (Biogenic)

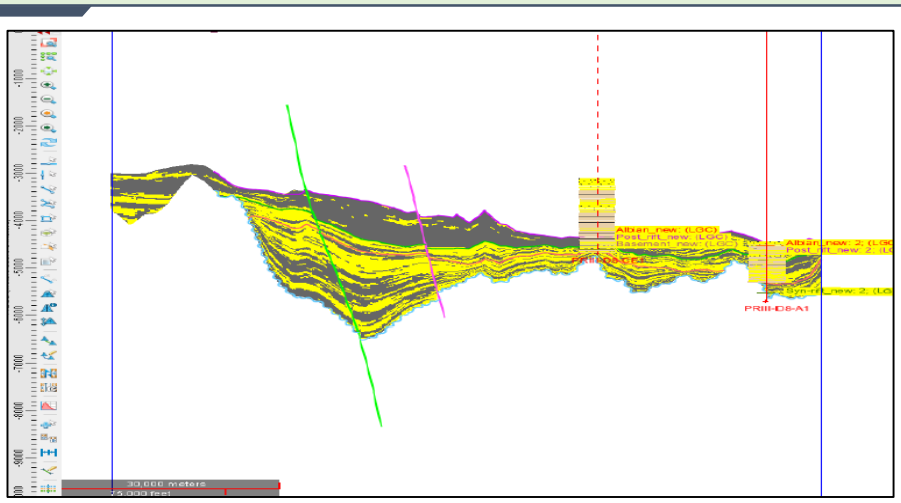
Reservoir: Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic and Strati-structural

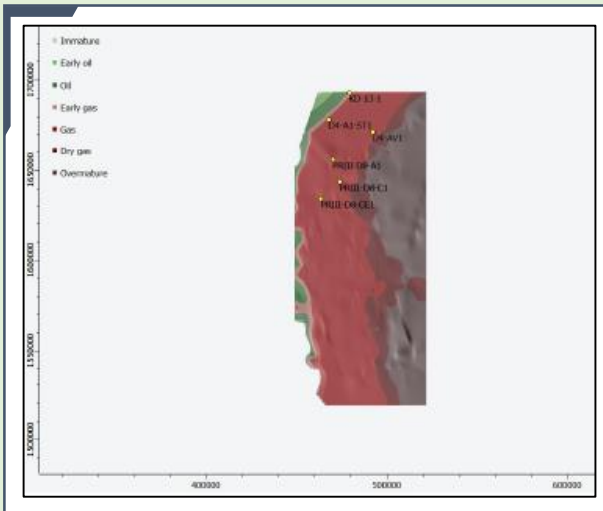
Envisaged plays: Pleistocene Deepwater channel-lobe complexes, Pliocene Deepwater channel complexes abutting against Frontal Thrust, Late Miocene channelized lobes on the slope created by the Frontal Thrust.



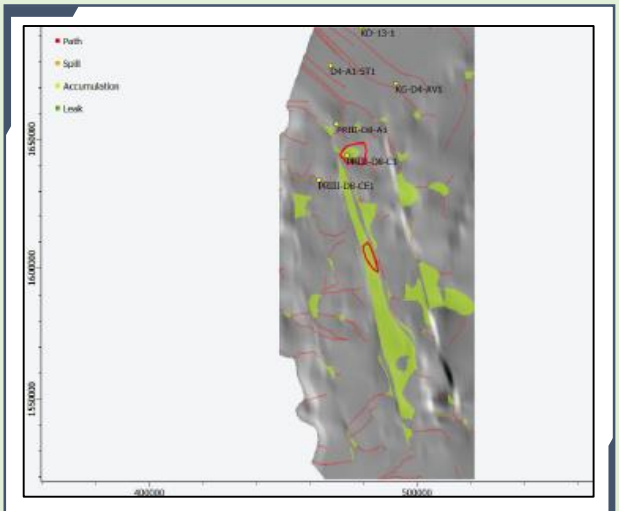
Representative Seismic Section



Facies Model



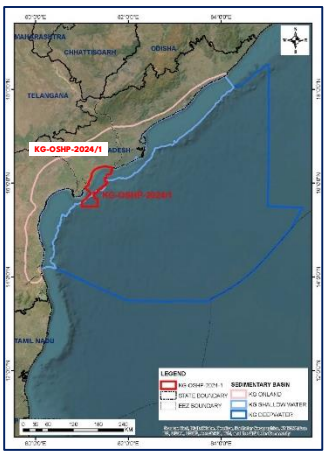
Hydrocarbon Maturation Map - Syn-Rift



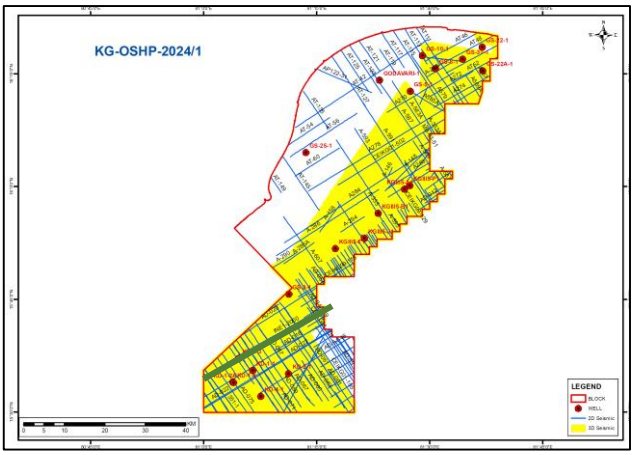
Hydrocarbon Accumulation Map of Syn Rift

Block Name : KG-OSHP-2024/1
(S5)

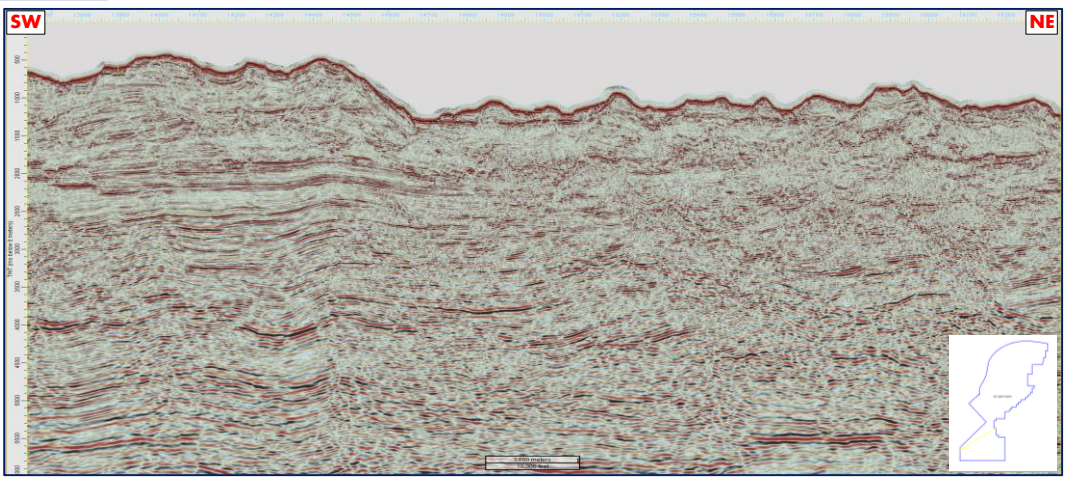
Block Area: 2,967.83 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
2014	1811	20

Target Horizon: To explore prospectivity in Miocene and Pliocene plays of offshore bars, channel and slope fans.

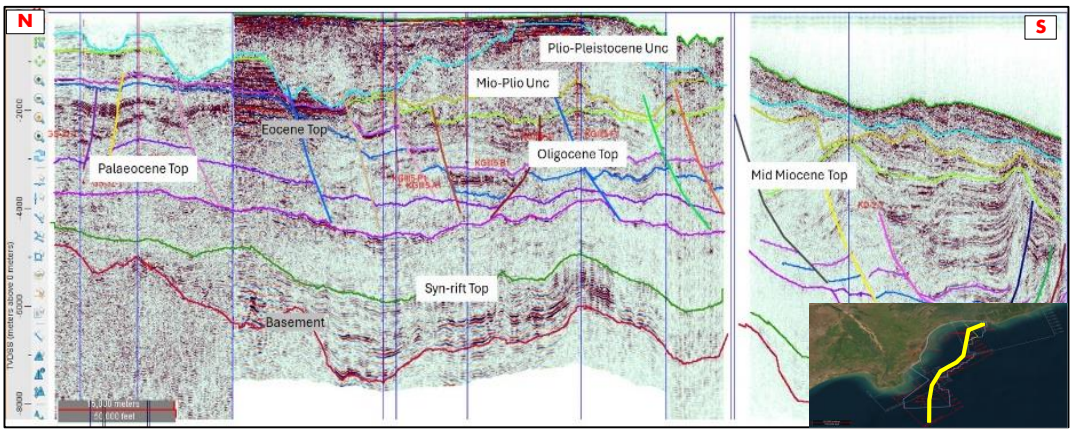
Petroleum System:

Source rock: Mesozoic / Eocene-Oligocene (Thermogenic), Mio-Pleistocene (Biogenic)

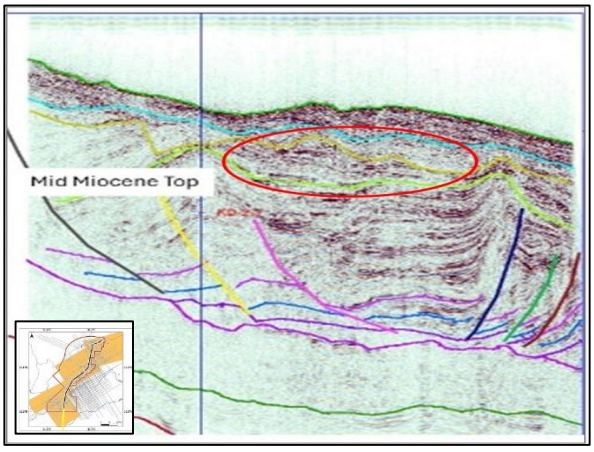
Reservoir: Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic and Strati-structural

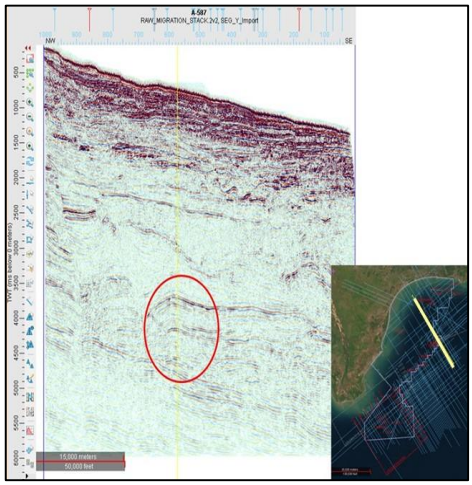
Envisaged plays: Pleistocene Deepwater channel-lobe complexes, Pliocene Deepwater channel complexes abutting against Frontal Thrust, Late Miocene channelized lobes on the slope created by the Frontal Thrust.



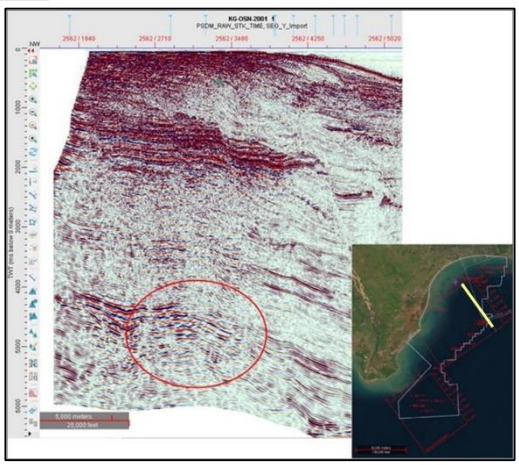
Representative Seismic Section



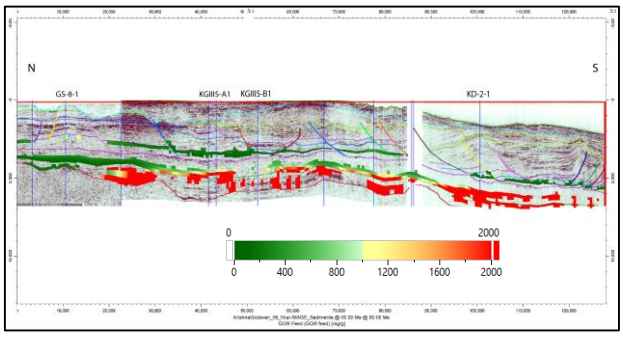
Neogene Play



Paleogene Play



Syn Rift Play



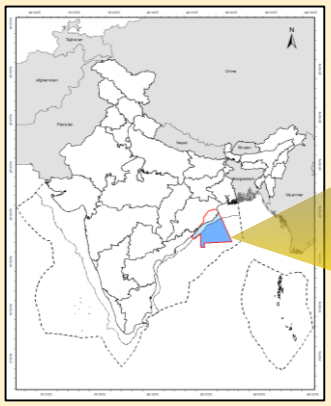
GOR feed (mg/g)

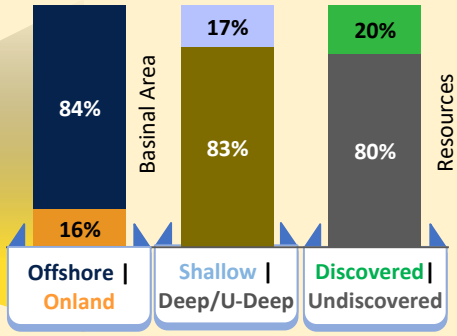
Mahanadi Basin

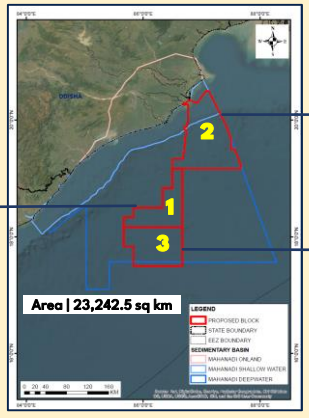
MAHANADI BASIN

Significant resource in Mio-Pliocene

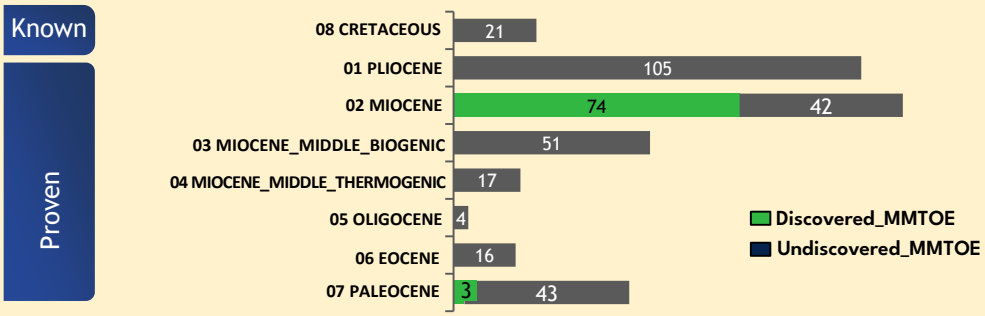
3 Blocks on Offer







Basin's risked resource potential – 299 MMTOE

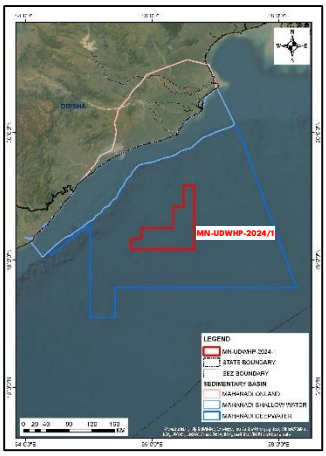


Key Characteristics

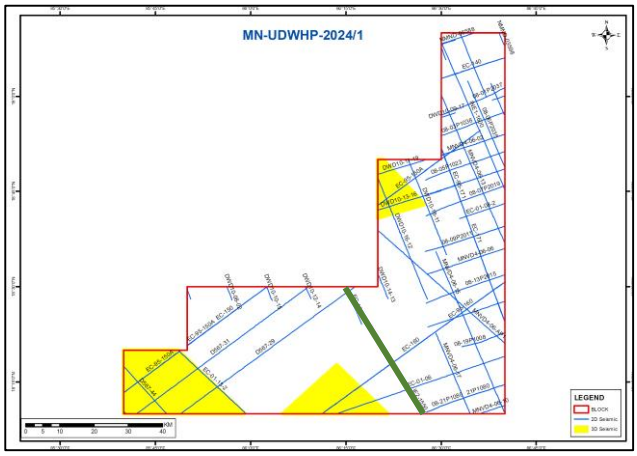
- **Strong analogy** with easterly **Bengal offshore** that has numerous **small-to-medium discoveries**
- Discovered **Miocene** play occurs as discrete and stacked reservoirs
- Opportunity to explore significant prospective resource of **Pliocene Play**

Block Name : MN-UDWHP-2024/1
(UD5)

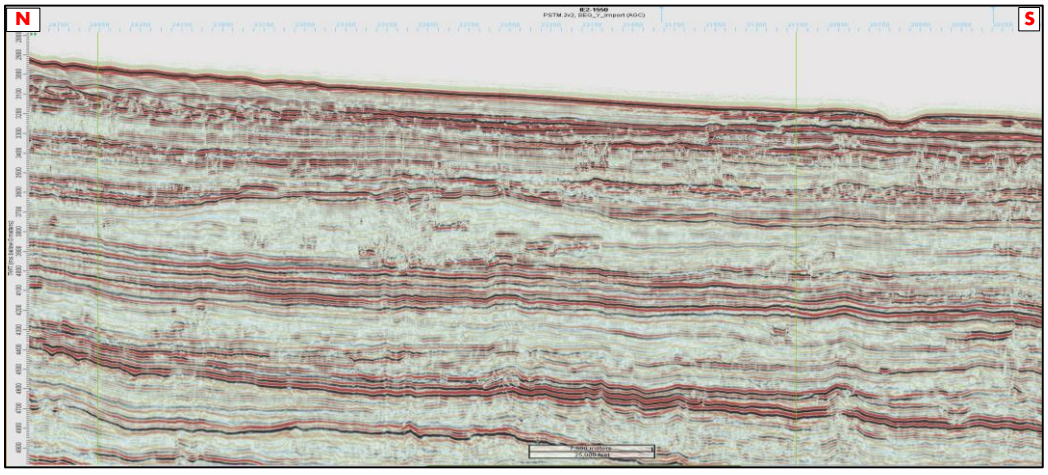
Block Area: 5,520.09 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
1496	759	0

Target Horizon: To explore prospectivity in Middle Miocene and Cretaceous plays.

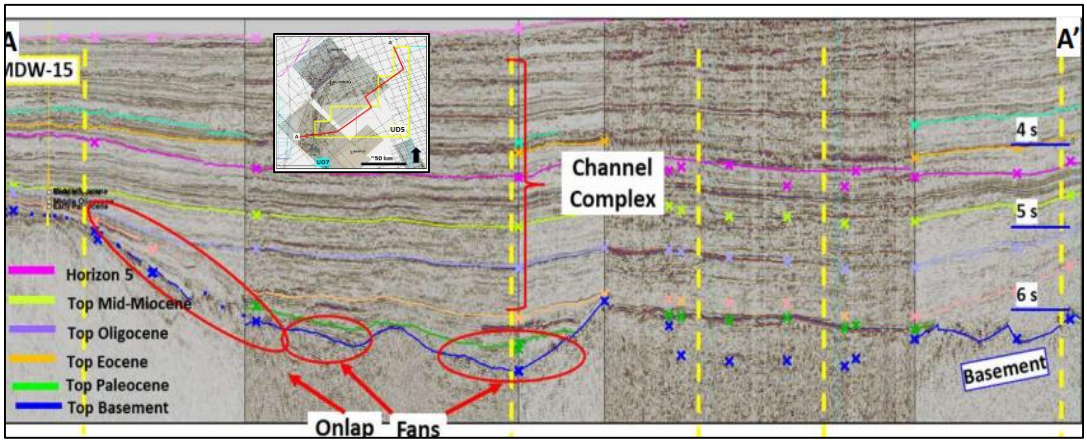
Petroleum System:

Source rock: Cretaceous / Paleogene (Thermogenic), Neogene (Biogenic)

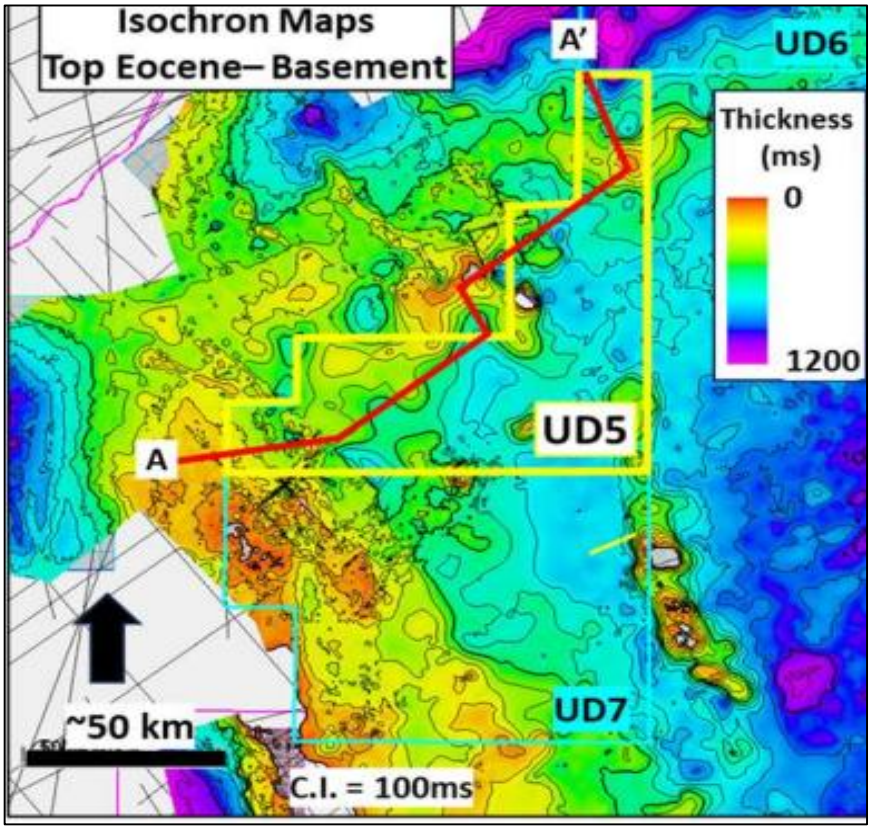
Reservoir: Cretaceous, Oligocene, Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic, Strati-structural

Envisaged plays: Paleogene and Neogene are proven plays , while Cretaceous is known but un-discovered play.



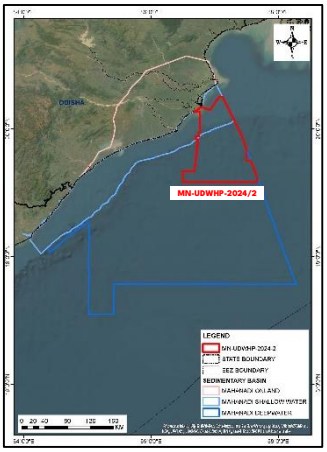
Seismic Section Showing Onlap & Channel



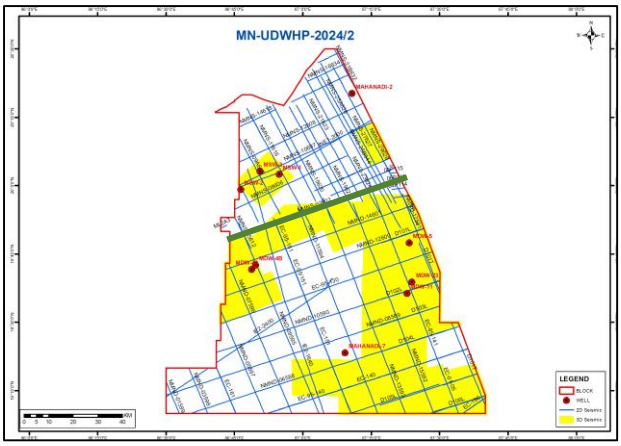
Isochron Map

Block Name : MN-UDWHP-2024/2 (UD6)

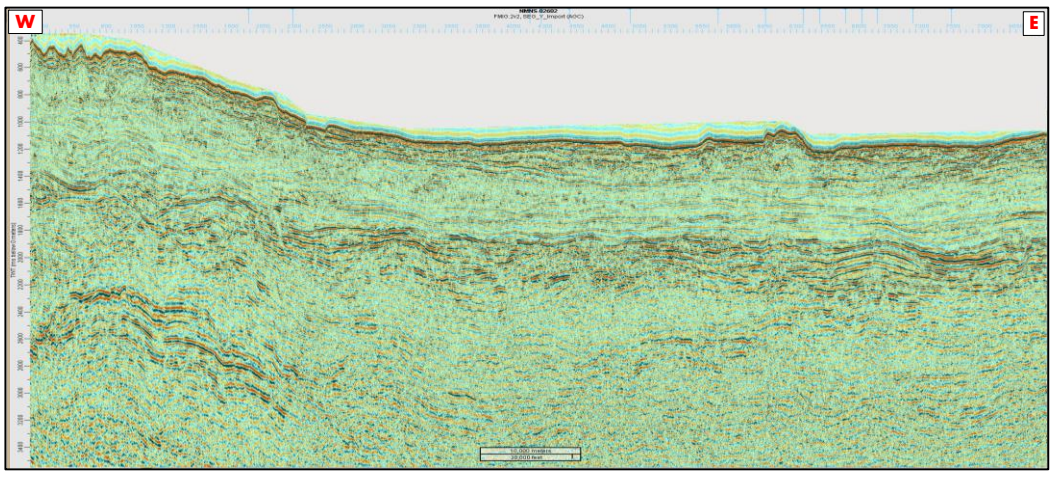
Block Area: 10,553.23 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
3359	4541	10

Target Horizon: To explore prospectivity in Middle Miocene and Cretaceous

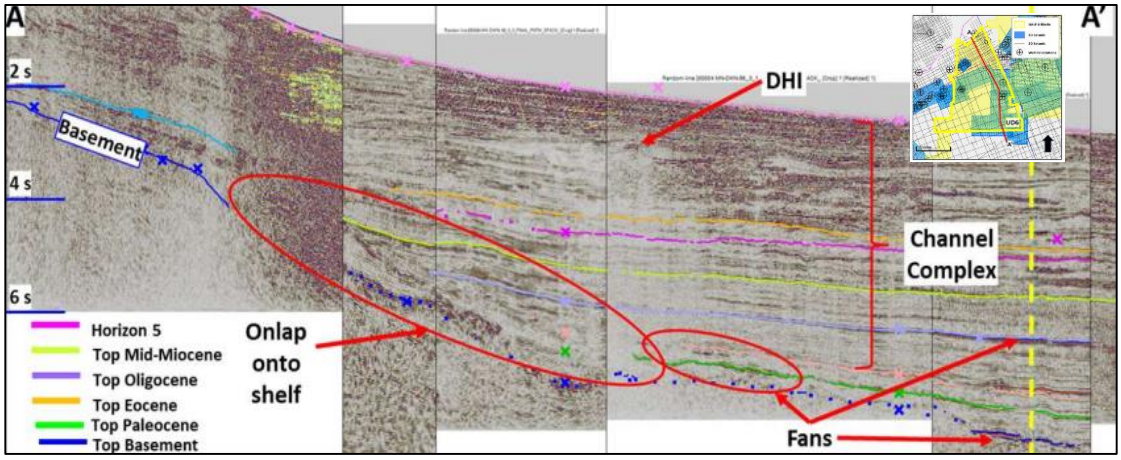
Petroleum System:

Source rock: Cretaceous /Paleogene (Thermogenic), Neogene (Biogenic)

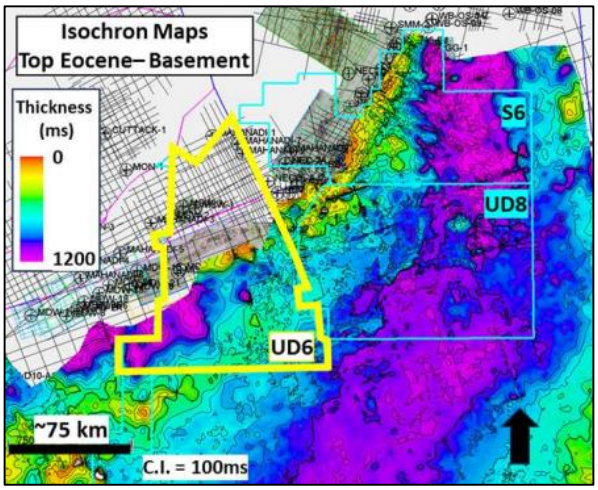
Reservoir: Cretaceous, Oligocene, Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic, Strati-structural

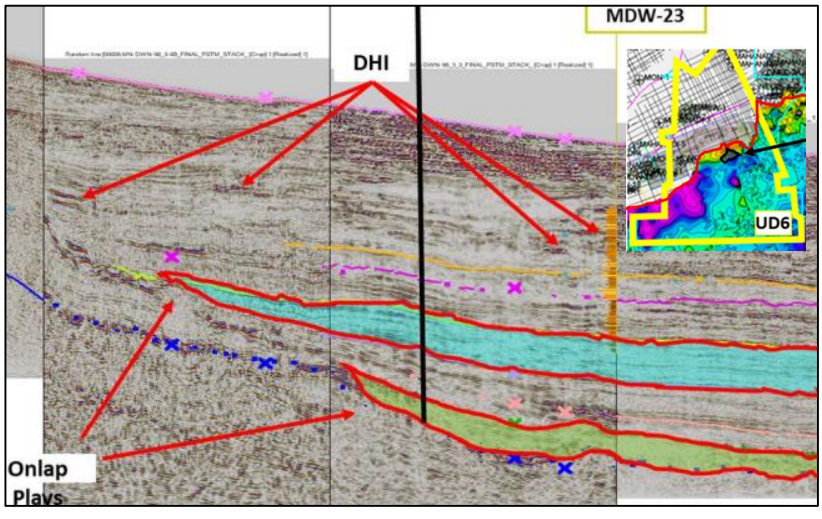
Envisaged plays: Paleogene and Neogene are proven plays , while Cretaceous is known but un-discovered play.



Seismic Section Showing Onlap & Channel



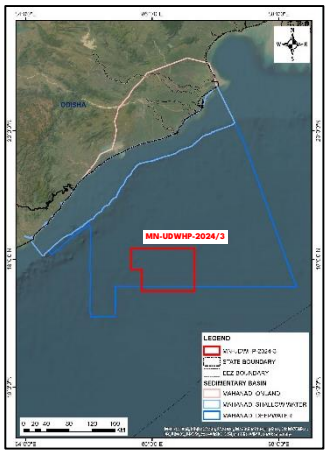
Isochron Map



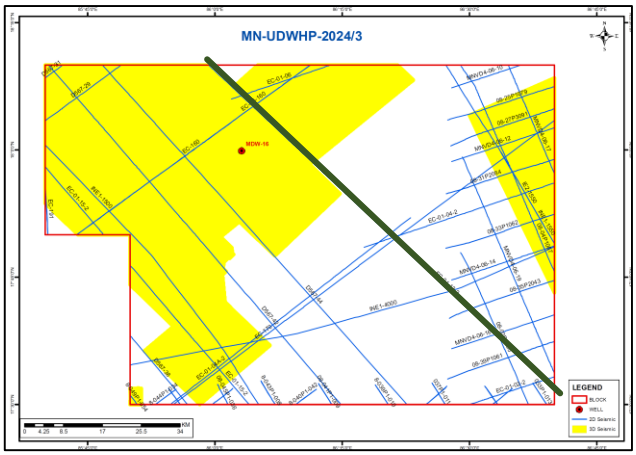
Seismic Section Showing Potential Lead

Block Name : MN-UDWHP-2024/3
(UD7)

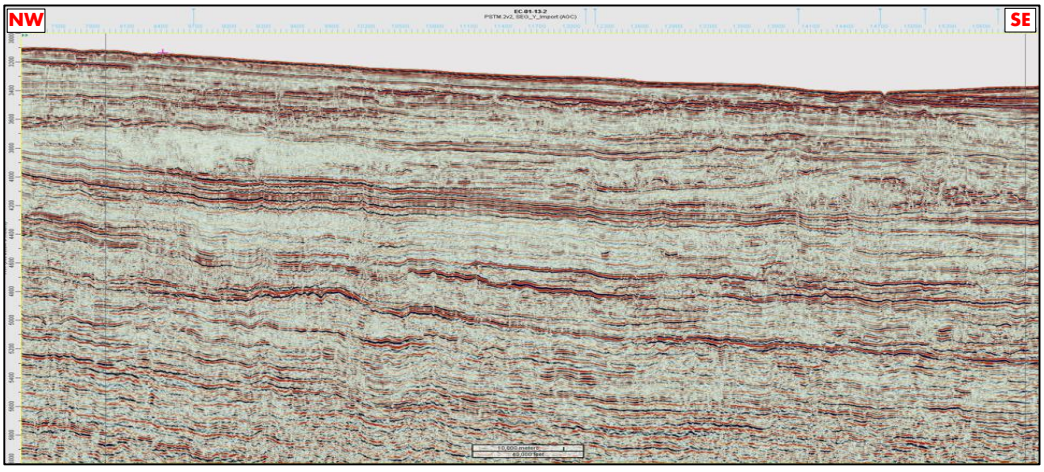
Block Area: 7,169.14 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
1749	6019	1

Target Horizon: To explore prospectivity in Middle Miocene and Cretaceous plays.

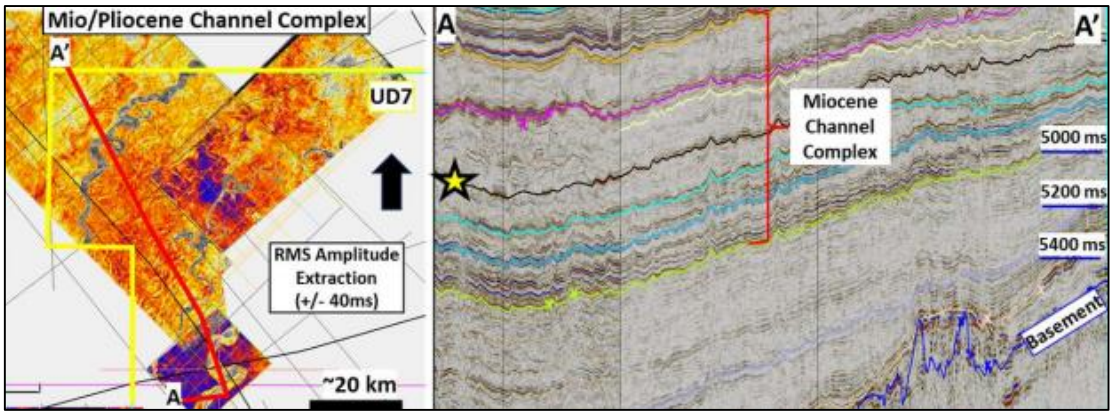
Petroleum System:

Source rock: Cretaceous/Paleogene (Thermogenic), Neogene (Biogenic)

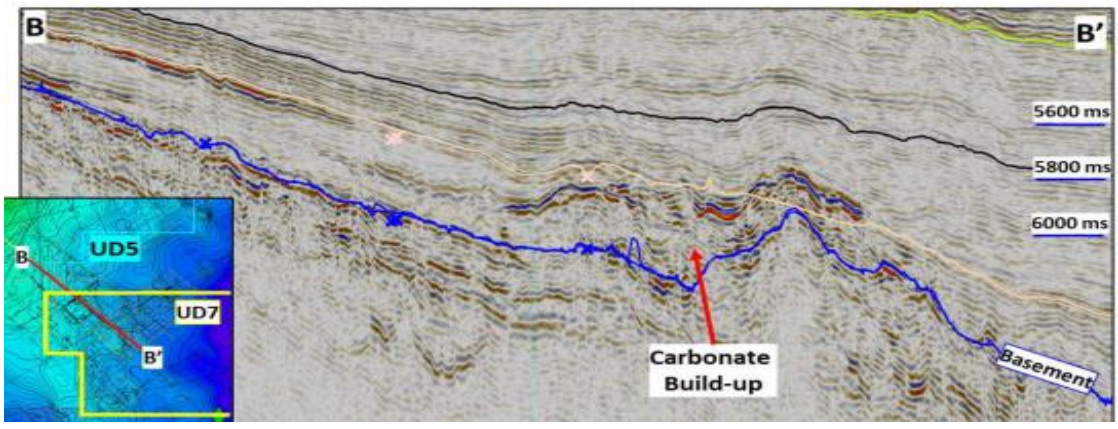
Reservoir: Cretaceous, Oligocene, Mio-Pliocene and Pleistocene

Entrapment Mechanism: Stratigraphic, Strati - structural

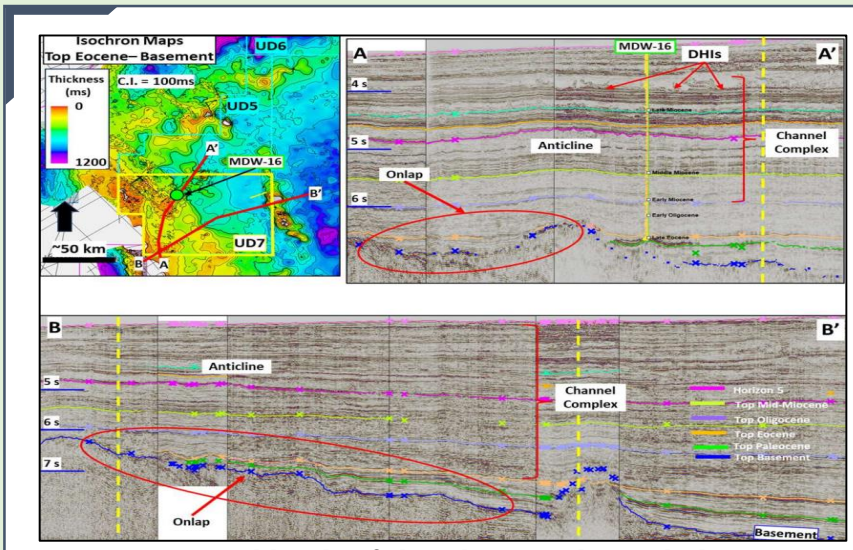
Envisaged plays: Paleogene and Neogene are proven plays , while Cretaceous is known but un-discovered play.



Seismic Section Channel Complex



Section Showing Carbonate Build-up



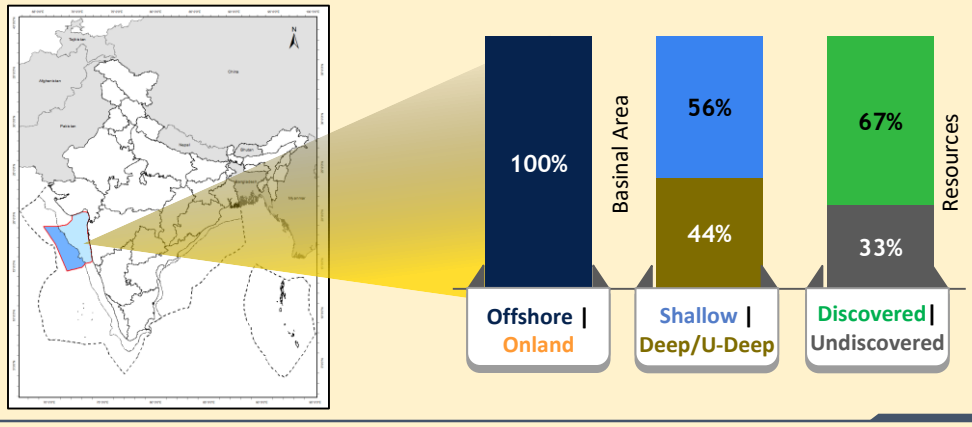
Potential leads of distributary channel Plays

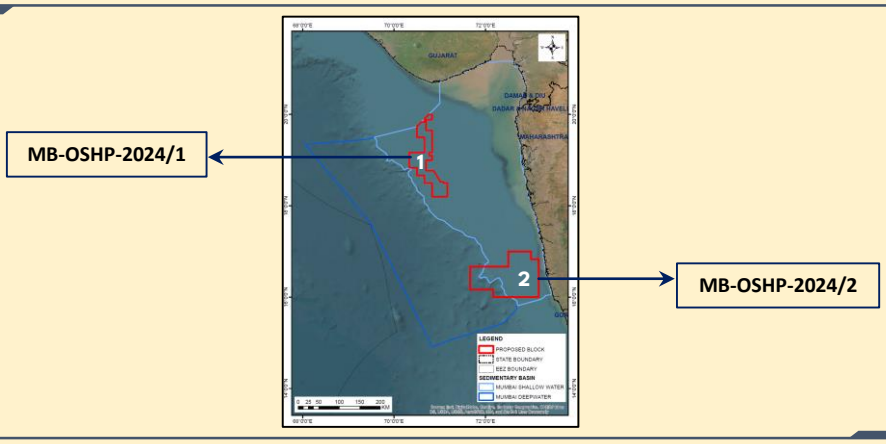
Mumbai Basin

MUMBAI BASIN

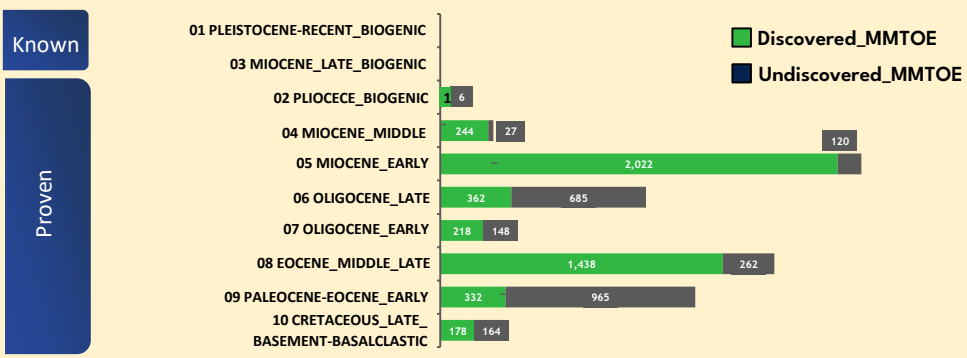
Mostly discovered, Mesozoic an opportunity

2 Blocks on Offer





Basin's risked resource potential – 2,377 MMTOE

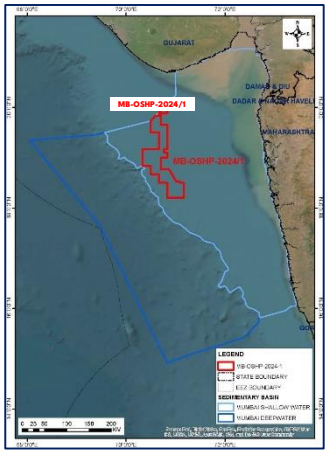


Key Characteristics

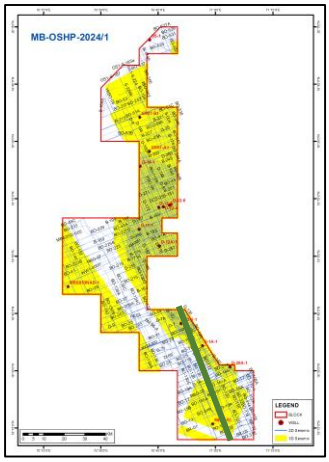
- The basin has discovered resources of 4.8 BTOE, producing half of country's oil and gas
- Opportunity to chase prospective plays (Paleocene and Eocene) towards Deepwater
- Opportunity to explore Sub-basalt Mesozoic Play at a deeper depth (3,000m+)

Block Name : MB-OSHP-2024/1
(S3)

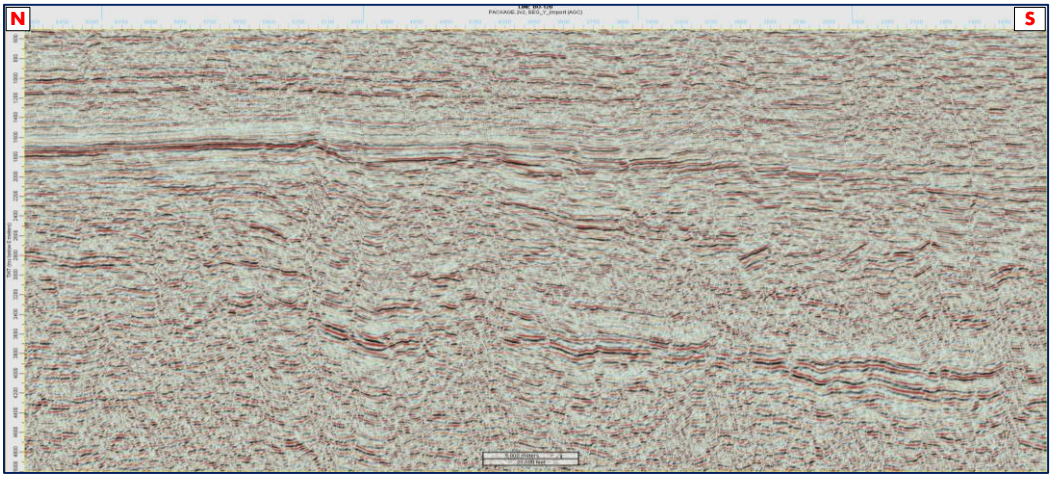
Block Area: 5,838.03 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
19764	3596	15

Target Horizon: To explore prospectivity of Early Miocene and Middle Miocene

Petroleum System:

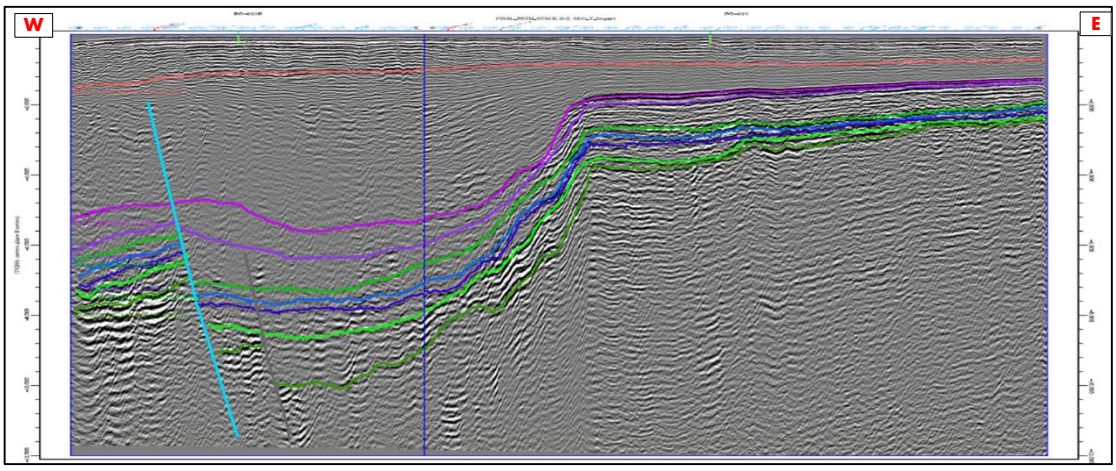
Source rock: Paleocene to Early Eocene

Reservoir: Panna Clastic (Paleocene), Devgarh Carbonate (Early Eocene), Bassein Limestone (Middle-to-Late Eocene), Mukta Limestone (Early Oligocene) and Miocene carbonates

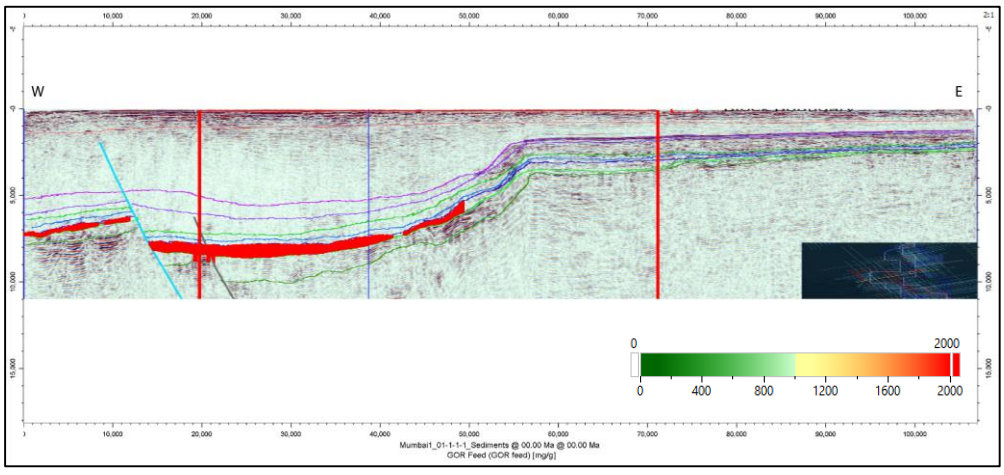
Seal: Panna

Entrapment mechanism: Structural (Fault-bound closures)

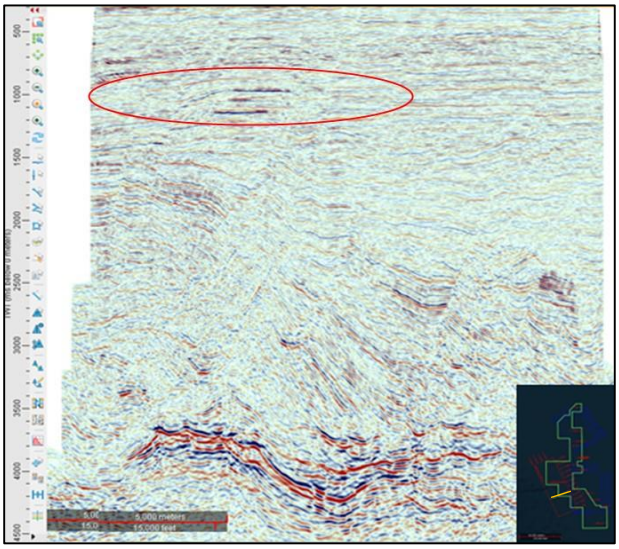
Envisaged play: Paleocene Clastic, Early Eocene Carbonate, Middle-Late Eocene Carbonate, Early Oligocene Carbonate and Miocene Carbonate



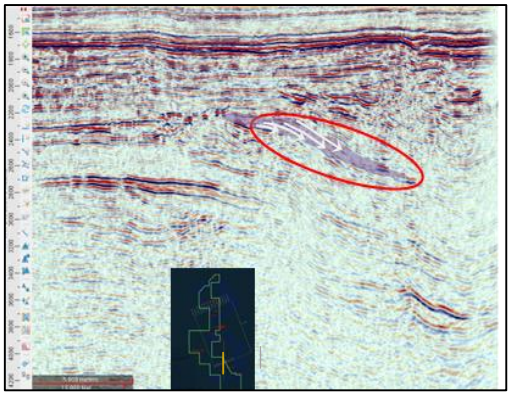
Seismic section showing monoclinal Mumbai platform and shelf margin



GOR feed (mg/g)



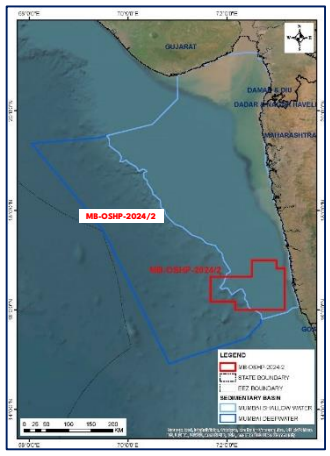
Seismic Lines Showing Shallow Amplitude Anomalies and roll over Anticlinal Structures in Mio-Pliocene Sequence



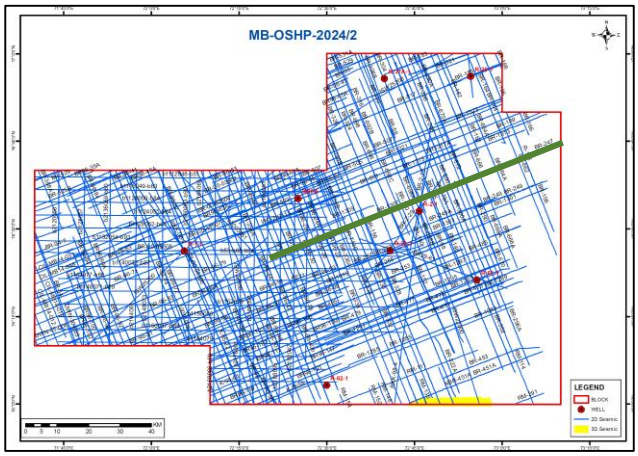
Seismic Lines Showing Potential Slope fans in Palaeogene Carbonates

Block Name : MB-OSHP-2024/2
(S4)

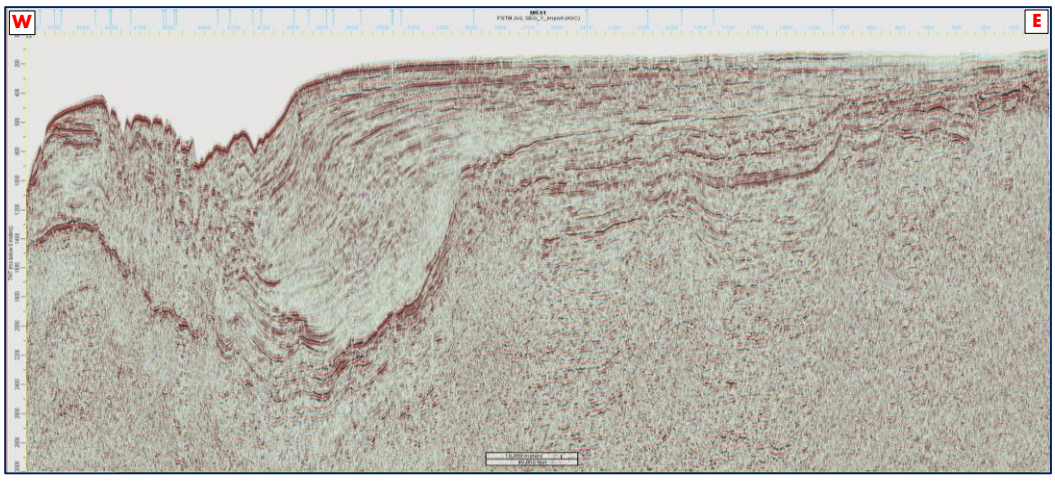
Block Area: 13,131.72 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability		
2D (LKM)	3D (SKM)	Well
23106	42	8

Target Horizon: To explore prospectivity of Cretaceous, additionally play of Late Miocene (Biogenic)

Petroleum System:

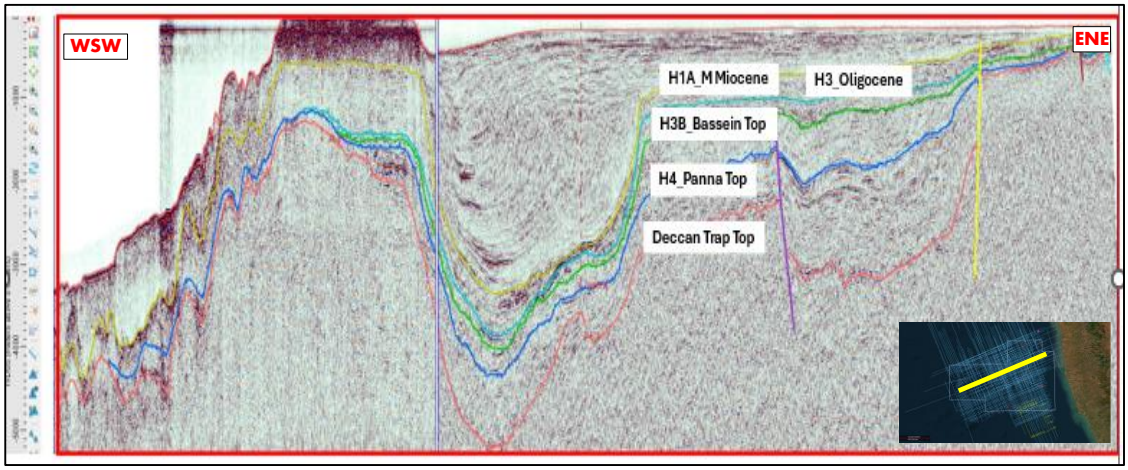
Source rock: Paleocene to Early Eocene

Reservoir: Panna Clastic (Paleocene), Devgarh Carbonate (Early Eocene), Bassein Limestone (Middle-to-Late Eocene), Mukta Limestone (Early Oligocene) and Miocene carbonates

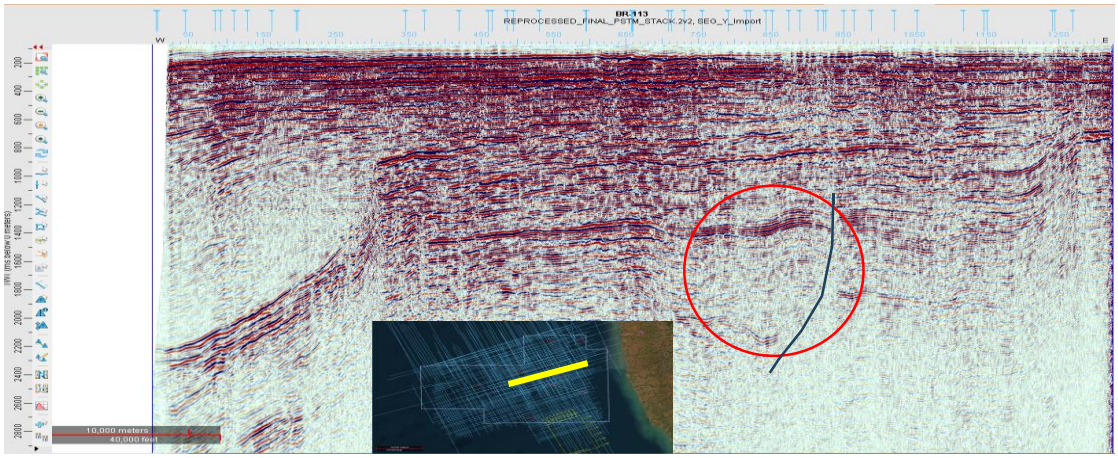
Seal: Panna

Entrapment mechanism: Structural (Fault-bound closures)

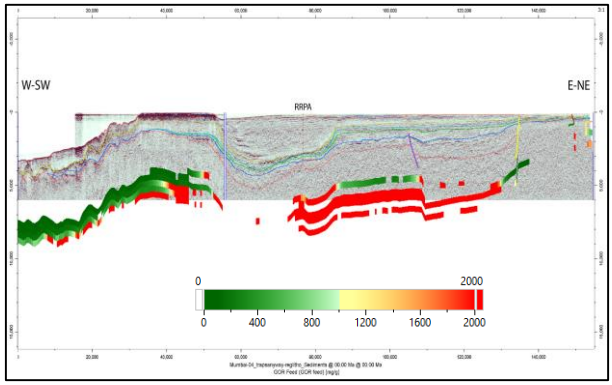
Envisaged play: Paleocene Clastic, Early Eocene Carbonate, Middle-Late Eocene Carbonate, Early Oligocene Carbonate and Miocene Carbonate



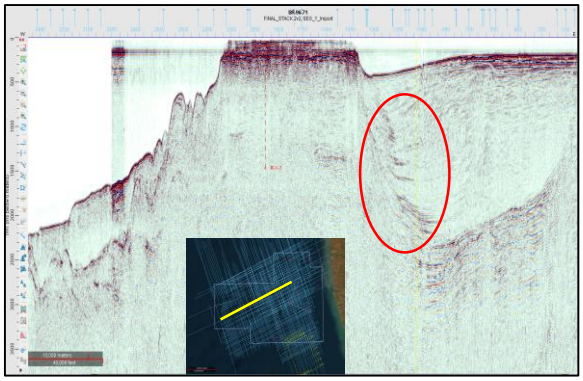
Representative Geological section



Seismic line showing potential trap in Panna Formation



GOR feed (mg/g)



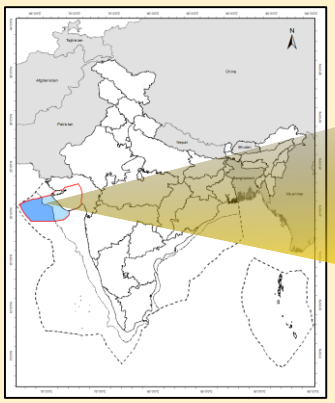
Seismic line showing bright events along the flank of Angaria bank in mid to late Miocene sedimentary packages

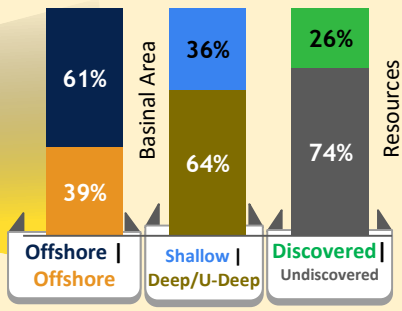
Saurashtra Basin

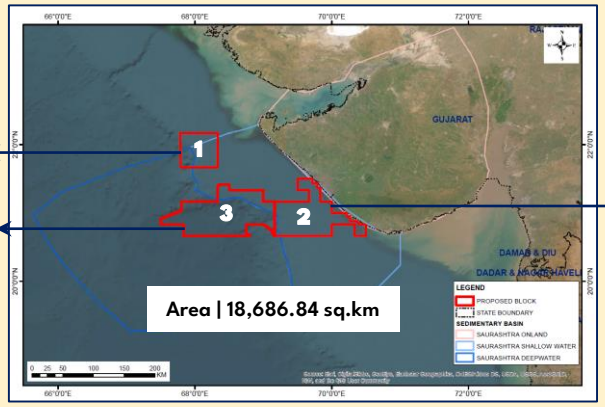
SAURASHTRA BASIN

Significant sub-basalt Mesozoic discovery

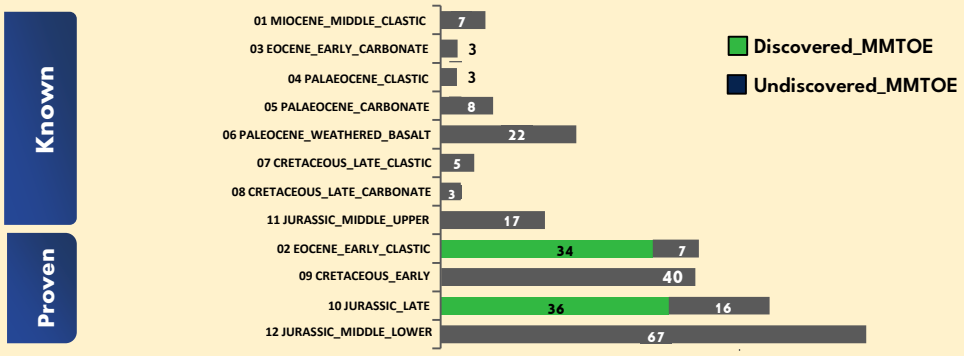
3 Blocks on Offer







Basin's risked resource potential – 198 MMTOE

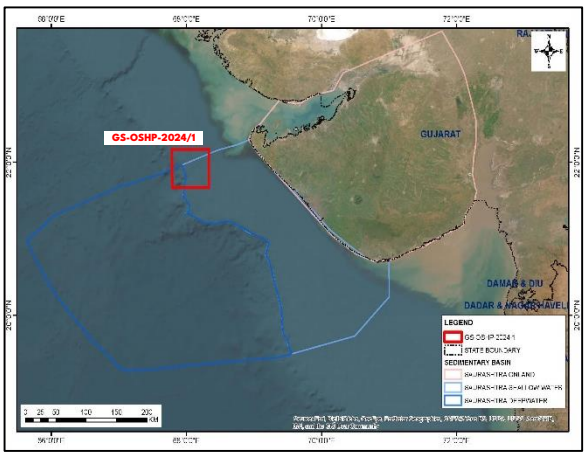


Key Characteristics

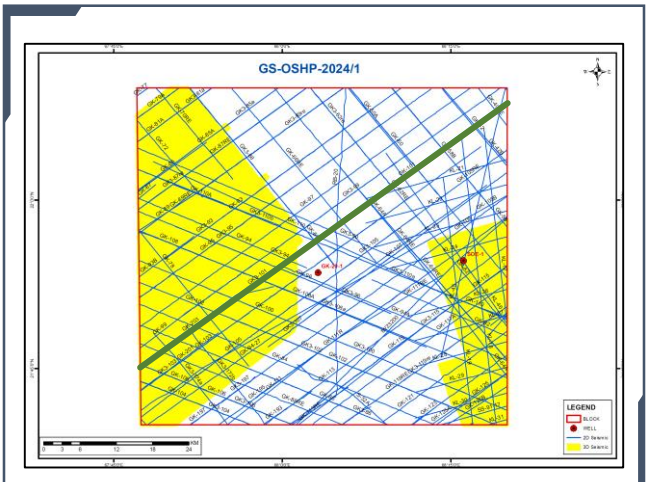
- Presence of prospective plays of Middle Jurassic to Early Cretaceous
- A significant gas discovery in Early Cretaceous reservoirs at 4,500m depth, below 2,500m thick weathered basalt
- Extended proven Tertiary Plays of Kutch basin are potential target

Block Name : GS-OSHP-2024/1
(S1)

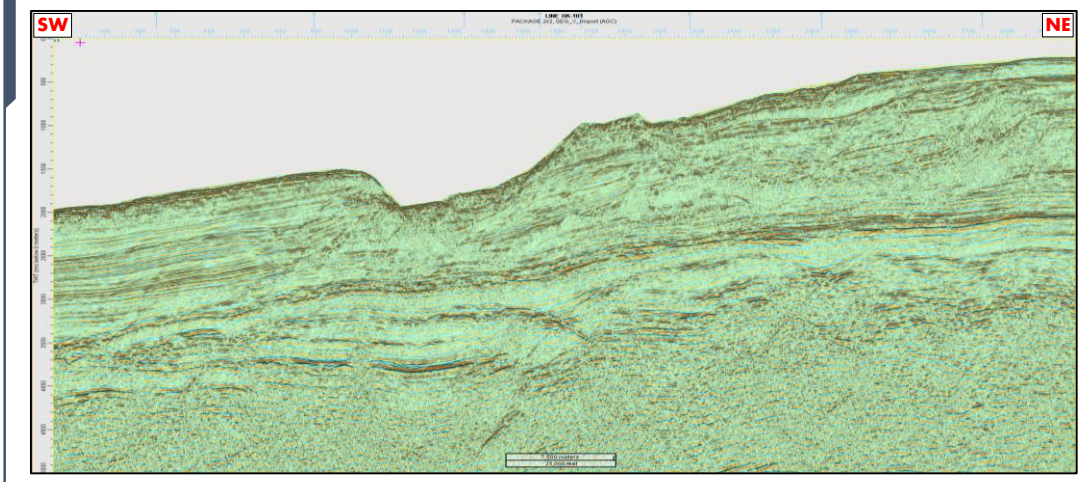
Block Area: 3125.84 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4252	1317	2

Target Horizon: To probe prospectivity in Middle Jurassic with Early Cretaceous.

Petroleum System:

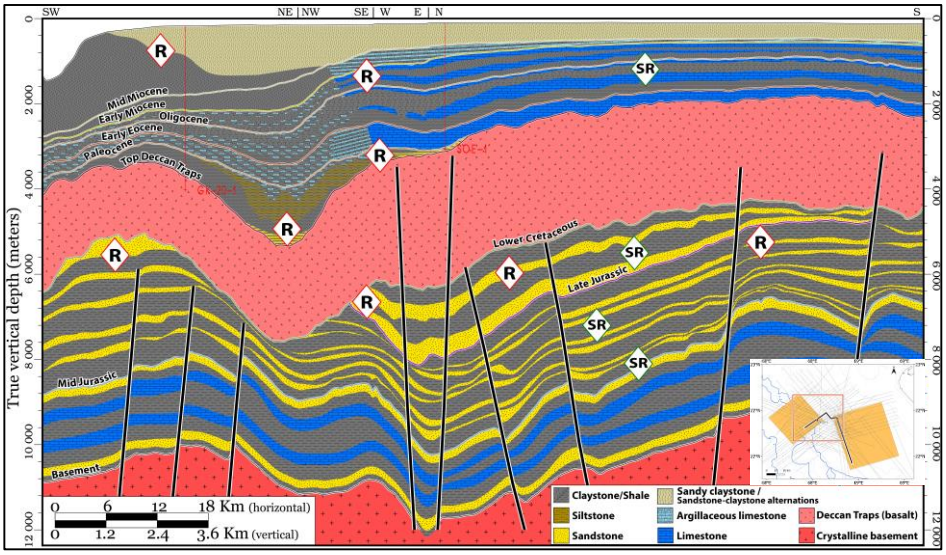
Source rock: Mesozoic

Reservoir: Late Jurassic, Cretaceous, Eocene-Early Miocene, Fractured Basalt

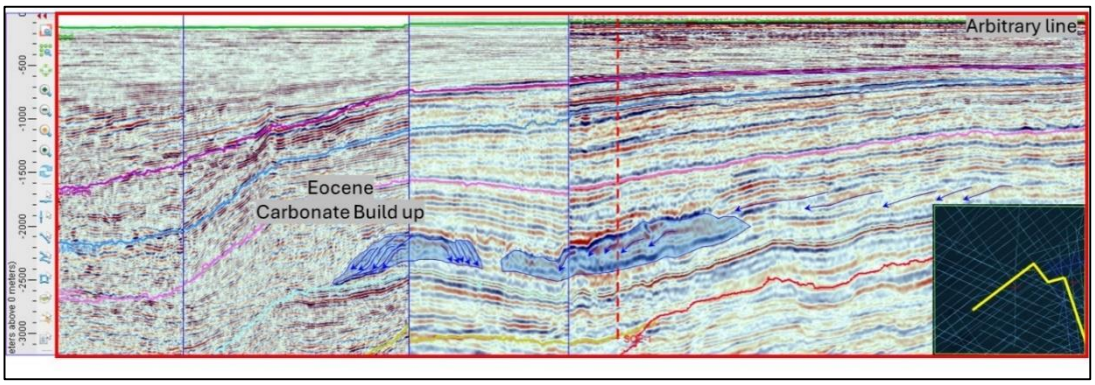
Seal: Basalt/Shale

Entrapment Mechanism: Strati-Structural & Structural

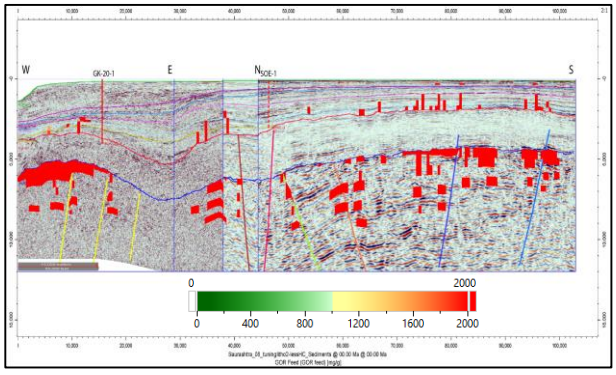
Envisaged plays: Jurassic, Cretaceous Plays



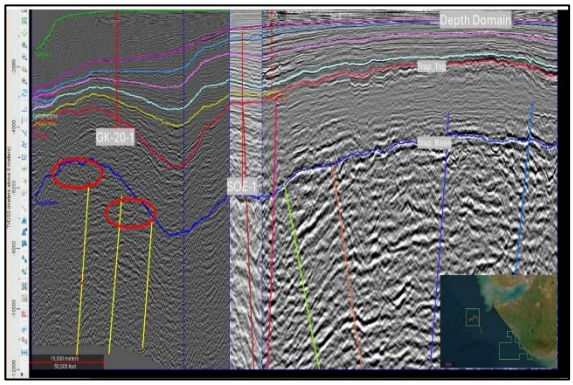
Representative Geological Section



Paleo-Eocene carbonate build ups above traps



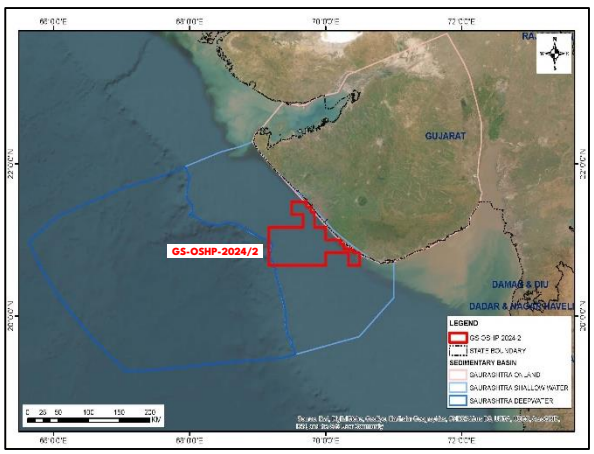
GOR feed (mg/g)



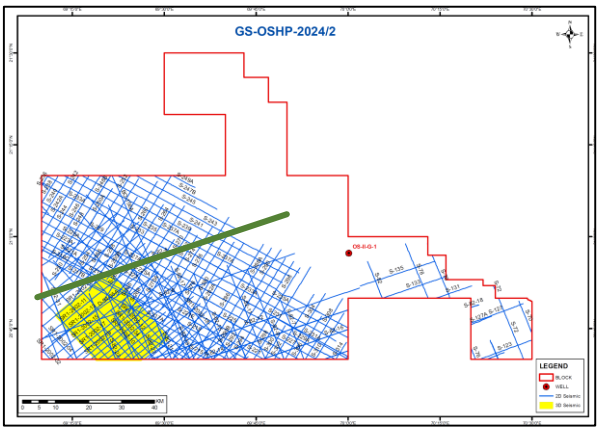
Seismic line showing potential traps below Deccan Traps

Block Name : GS-OSHP-2024/2 (S2)

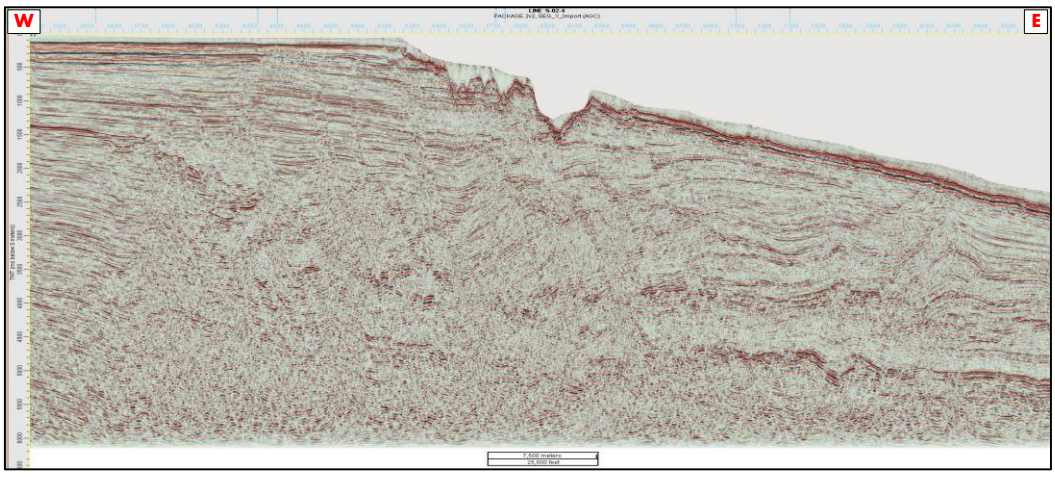
Block Area: 6,501.38 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
5222	459	1

Target Horizon: To probe prospectivity in Middle Jurassic with Early Cretaceous.

Petroleum System:

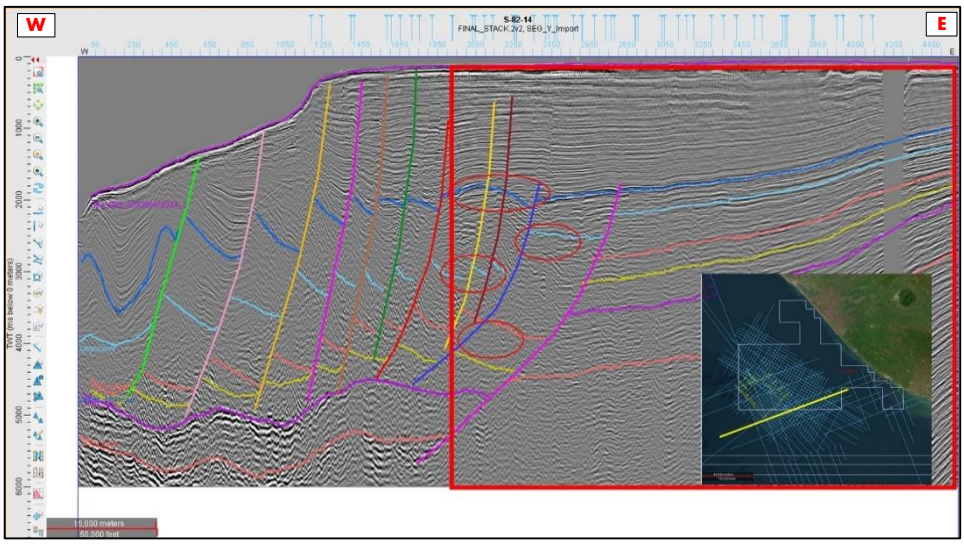
Source rock: Mesozoic

Reservoir: Late Jurassic, Cretaceous, Eocene-Early Miocene, Fractured Basalt

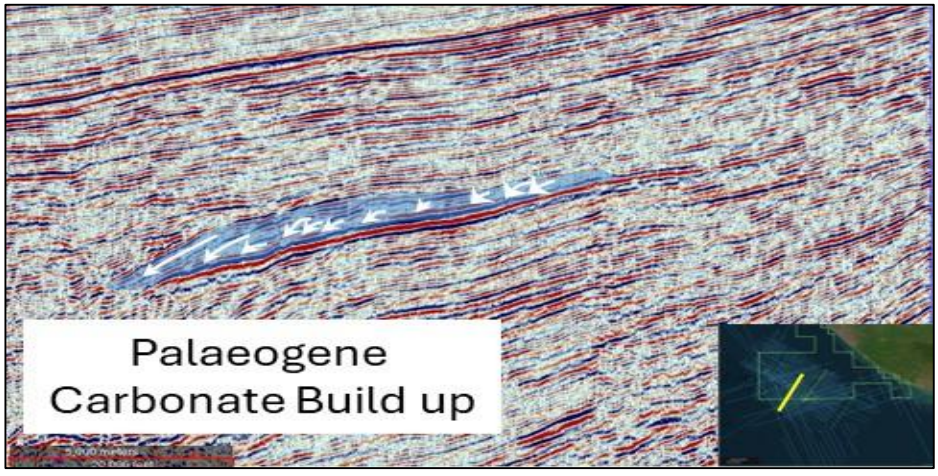
Seal: Basalt/Shale

Entrapment Mechanism: Strati-Structural & Structural

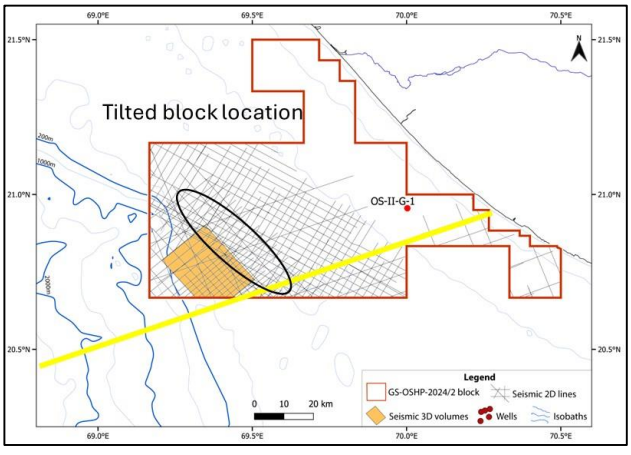
Envisaged plays: Jurassic, Cretaceous Plays



Seismic Line Showing Potential Traps



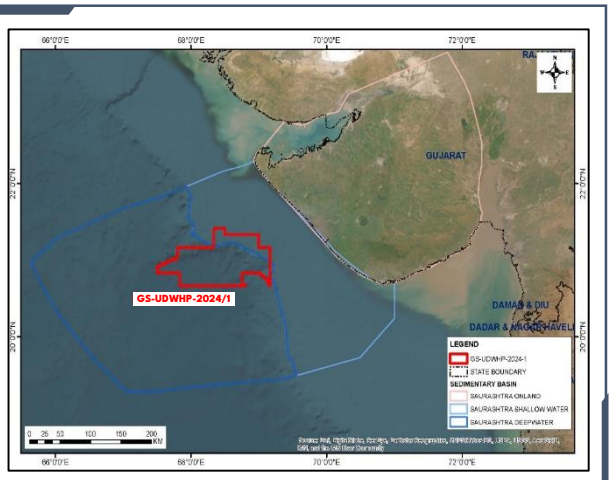
Representative Section for Carbonate Build up



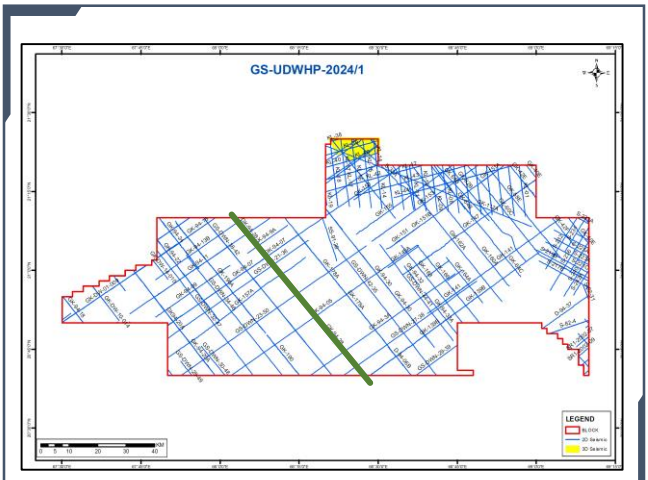
Tertiary Lead Location

Block Name : GS-UDWHP-2024/1
(UD1)

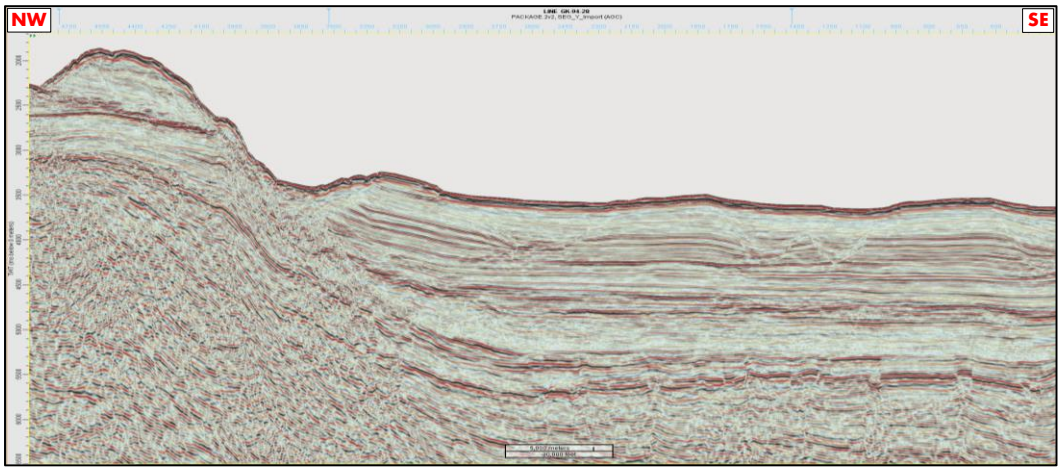
Block Area: 9,059.6 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
4677	78	0

Target Horizon: Prominent play is middle Jurassic with additional targets in Early Cretaceous

Petroleum System:

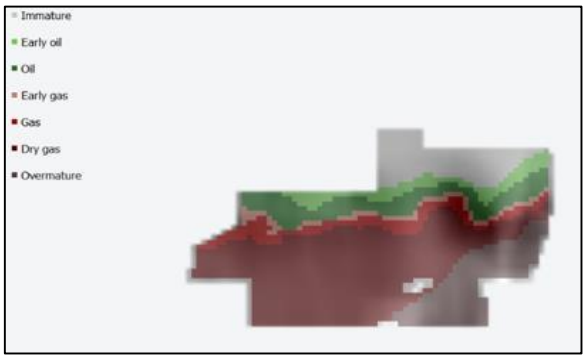
Source rock: Mesozoic

Reservoir: Late Jurassic, Cretaceous, Eocene-Early Miocene, Fractured Basalt

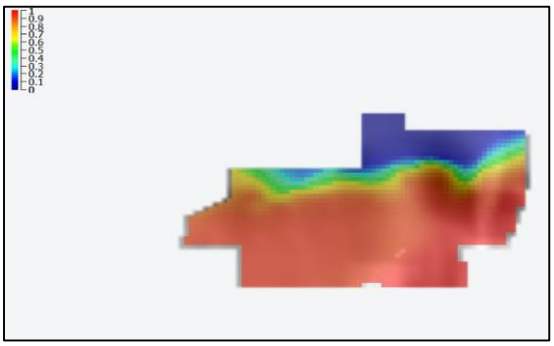
Seal: Basalt/Shale

Entrapment Mechanism: Strati-Structural & Structural

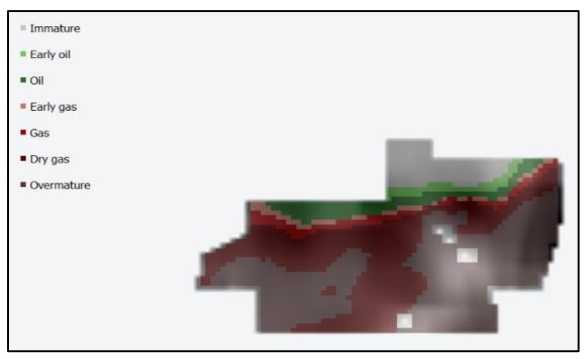
Envisaged plays: Jurassic, Cretaceous Plays



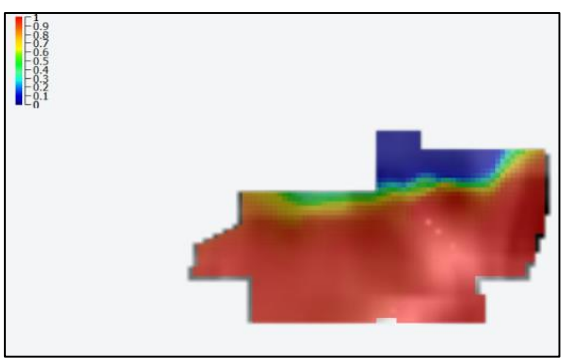
Thermal Maturity of Early Eocene



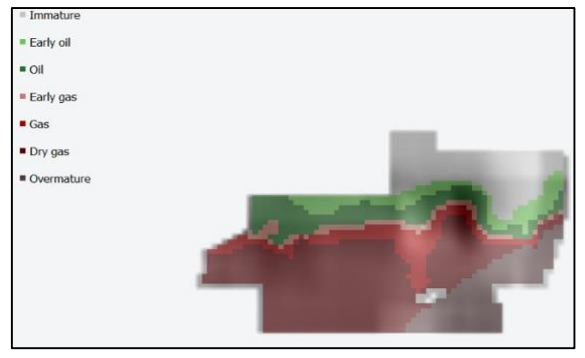
Transformation Ratio of Early Eocene



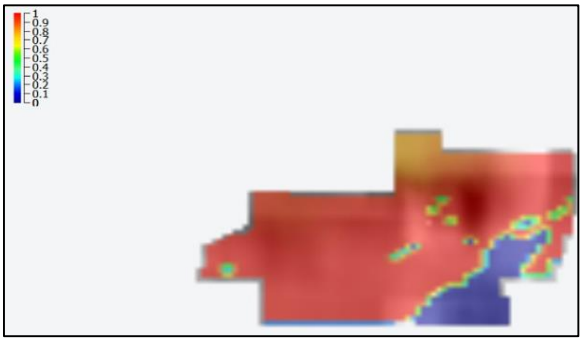
Thermal Maturity of Paleocene



Transformation Ratio of Paleocene



Thermal Maturity of Cretaceous



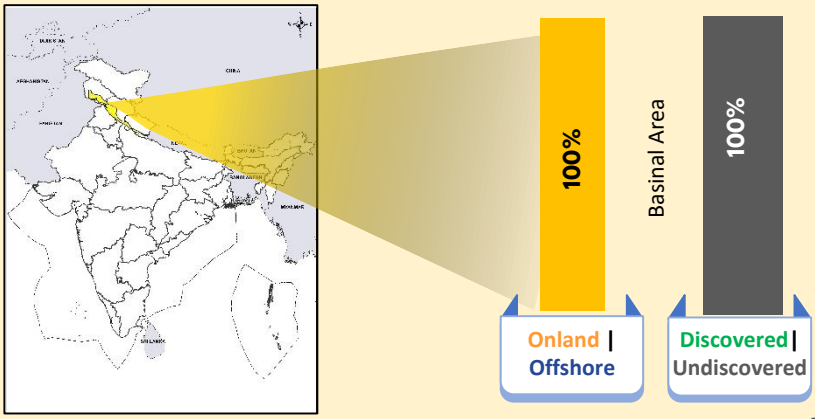
Transformation Ratio of Cretaceous

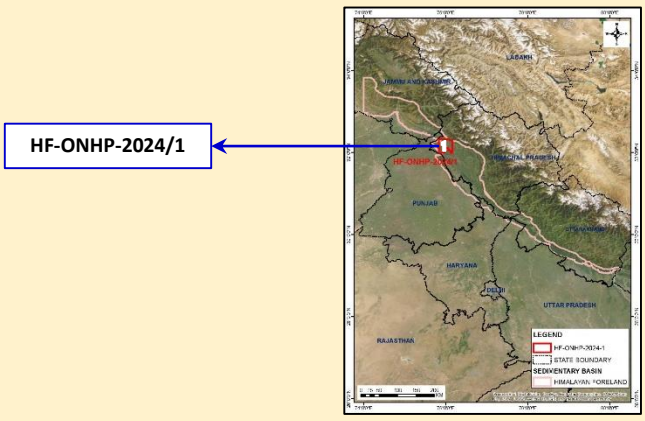
Himalayan Foreland Basin

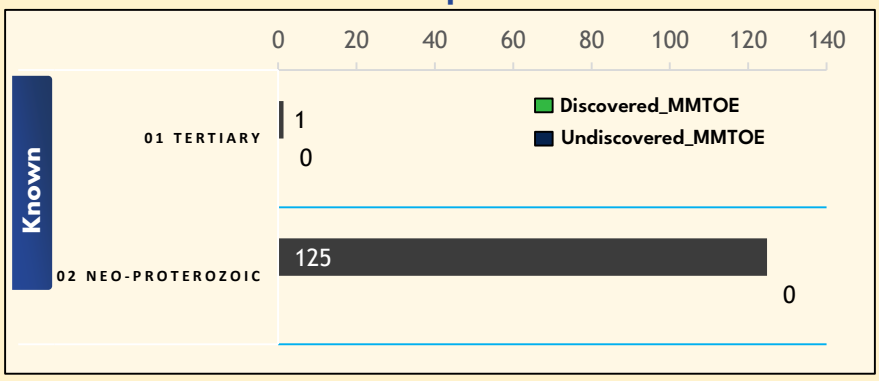
HIMALAYAN FORELAND

Strong analogy with Potwar Basin

1 Block on Offer





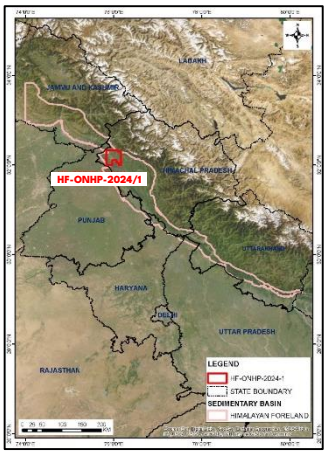


Key Characteristics

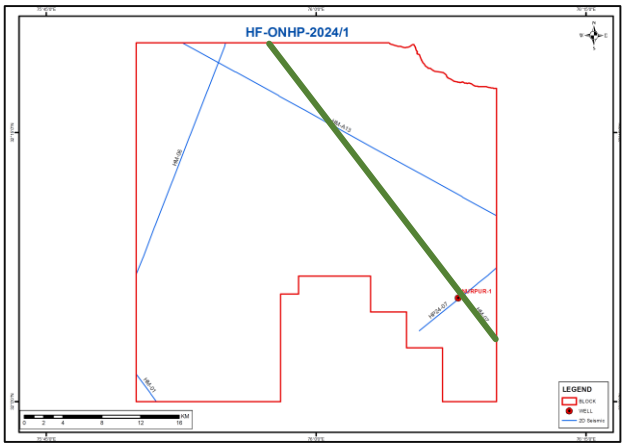
- Basin area 30,110 sq km
- Hydrocarbon shows during drilling and testing
- Target plays are Tertiary & Neo-Proterozoic
- Analogy to producing Potwar basin, Pakistan
- 1,564 LKM new 2D seismic data under NSP

Block Name : HF-ONHP-2024/1
(ON2)

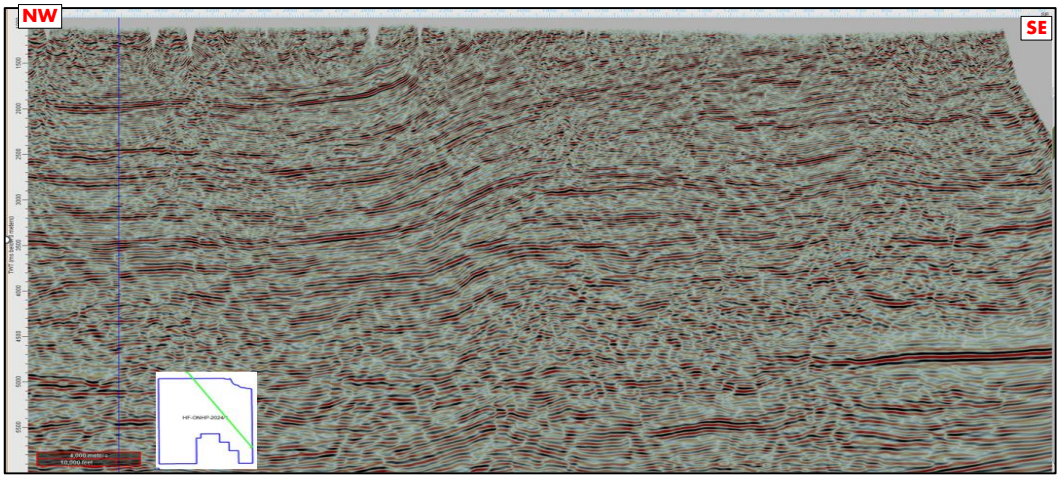
Block Area: 990.86 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
107	0	1

Target Horizon: Lower Subathu, Dharmashala Formation and Upper sequence of Middle to Lower Siwalik Units

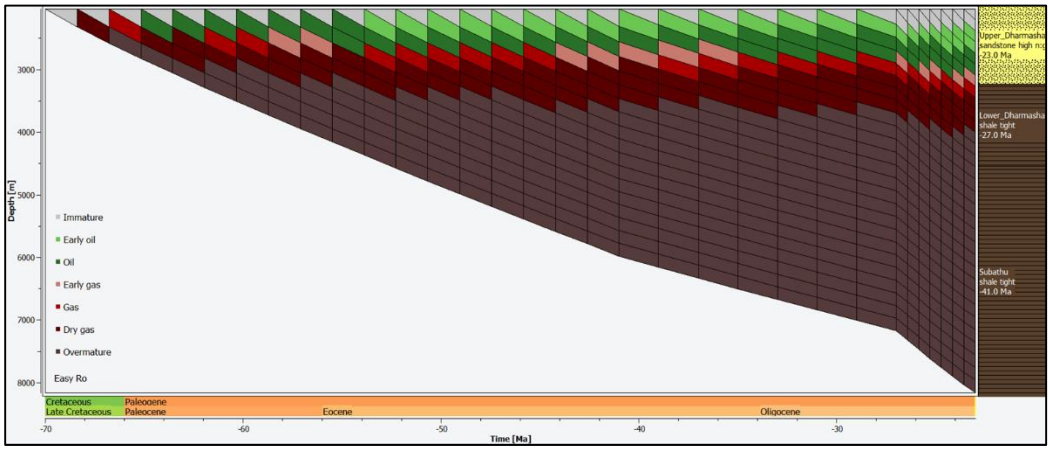
Petroleum System:

Source rock: Subathu Formation (Paleocene to Lr Eocene) & Lr. Dharmashala Formation.

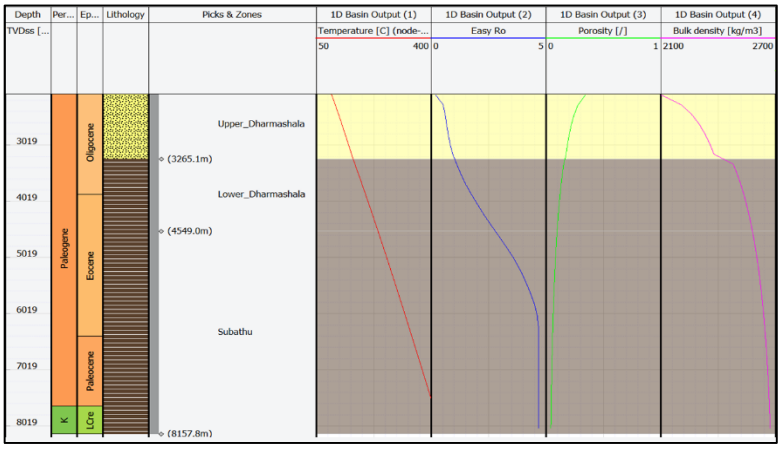
Reservoir: Lr Subathu & Dharmashala Formation and Upper sequence of Mid-Lower Siwali Unit

Entrapment Mechanism: Strati- Structural

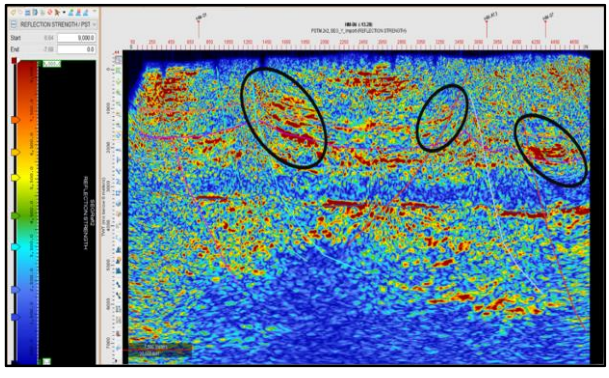
Envisaged plays: Paleozoic- Mesozoic, Paleocene to Eocene (Patala, Nammal, Sakesar & Chorgali lime Stone) ,Oligocene – Miocene (Murraee and Lower Siwalik)



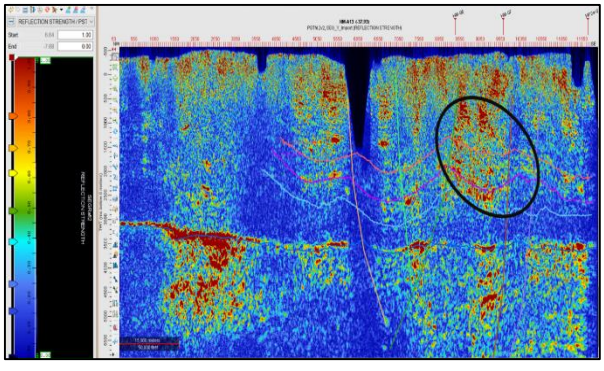
2D Burial History and Maturity



Thermal Maturity of Nurpur-1 well



Reflection Strength Attribute on Interpreted Section



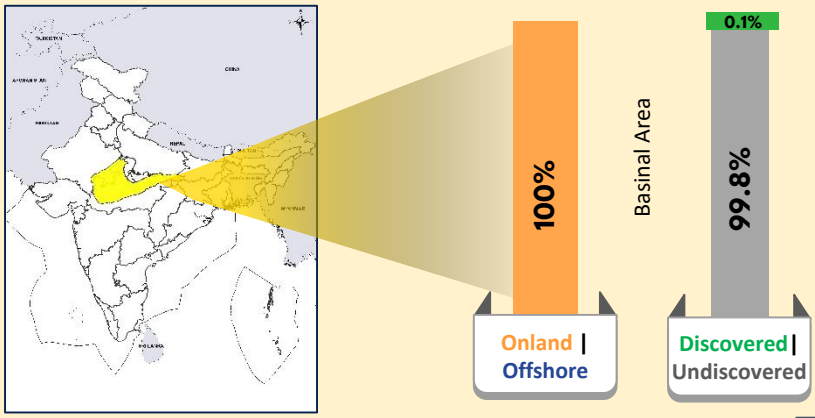
Reflection Strength Attribute on Interpreted Section

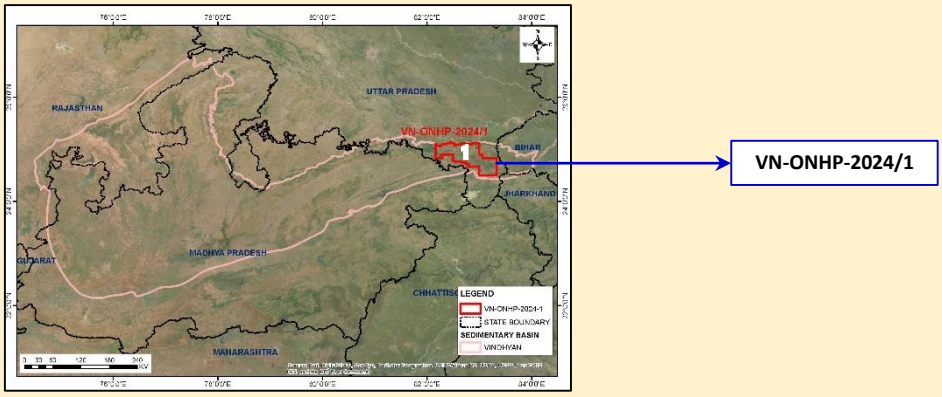
Vindhyan Basin

VINDHYAN BASIN

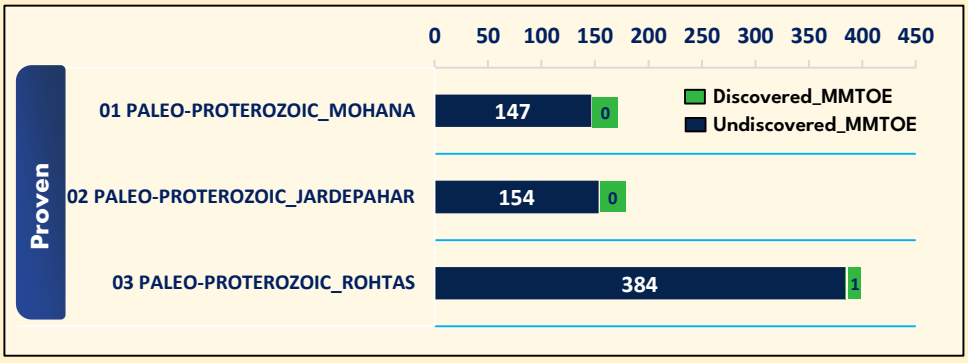
Largest Proterozoic basin with Gas discovery

1 Block on Offer





Basin's risked resource potential – 684 MMTOE

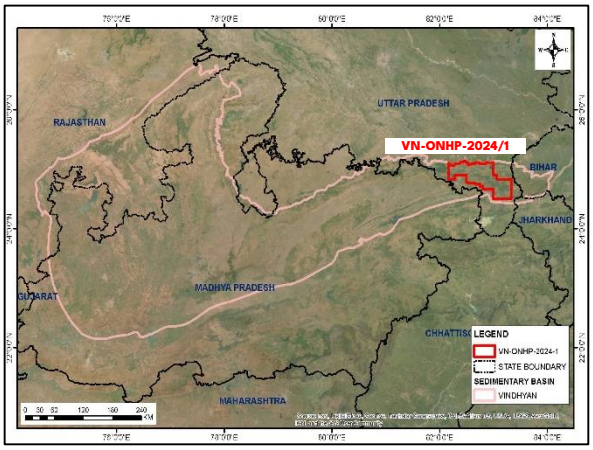


Key Characteristics

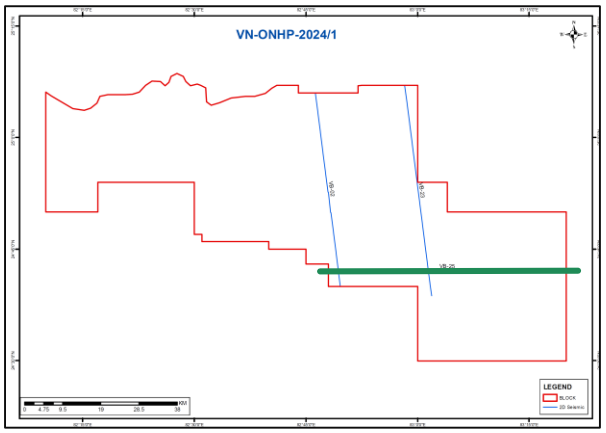
- Basin area 202,888 sq km
- Gas discovered in Tight clastic plays, first such instance in India's Proterozoic basin
- 5,373 LKM new 2D seismic data under NSP available
- RGIPT had conducted a basin research study

Block Name : VN-ONHP-2024/1
(ON6)

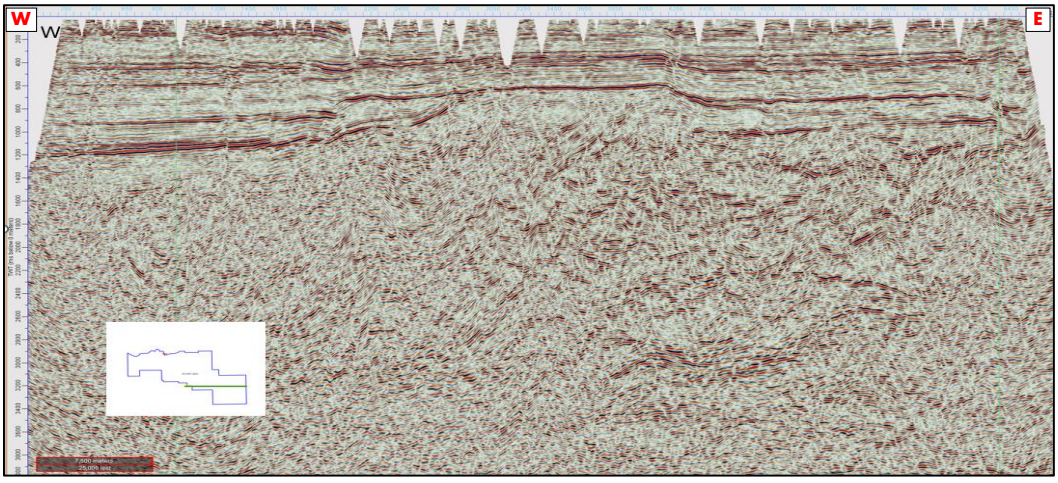
Block Area: 4275.13 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
155	0	0

Target Horizon : The fractured clastic reservoirs within Jardepahar Porcellanite Formation and Kajrahat Limestone at shallower depth

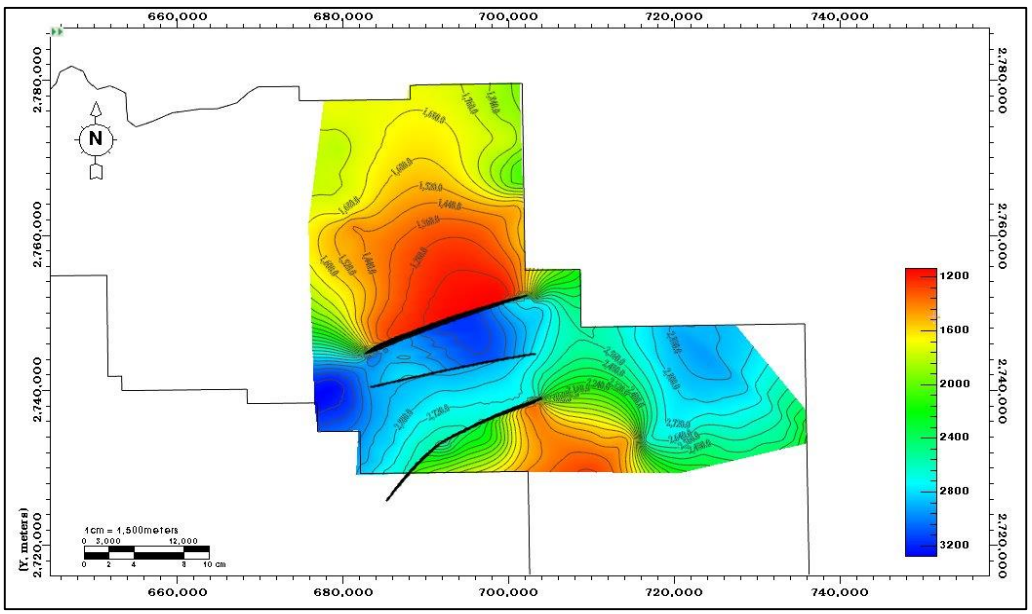
Petroleum System:

Source rock: Deeper Arangi source sequence &

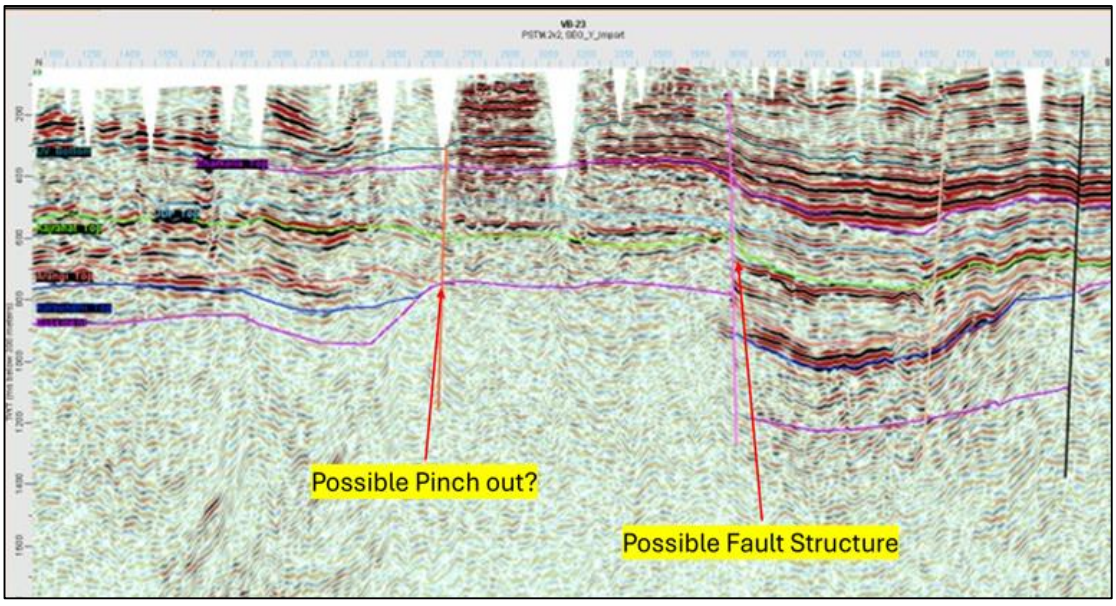
Reservoir: Fractured clastic reservoirs within Jardepahar Porcellanite Formation & Kajrahat Limestone

Entrapment Mechanism: Structural

Envisaged plays: Jardepahar and Kajrahat



Basement Depth map



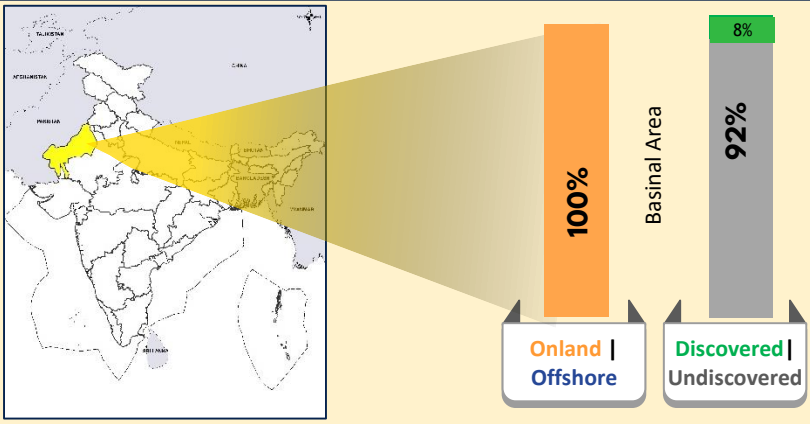
Seismic Section Showing Potential Leads

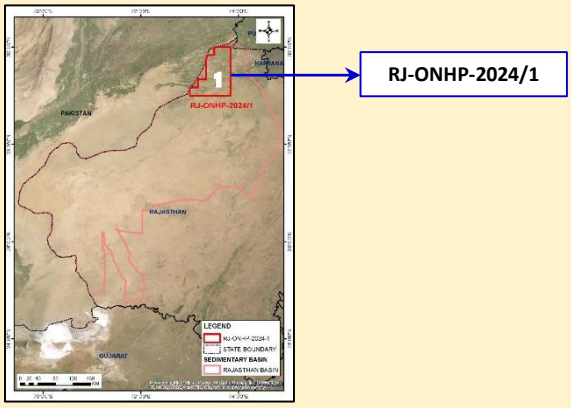
Rajasthan Basin

RAJASTHAN: BIKANER NAGAUR SUB BASIN

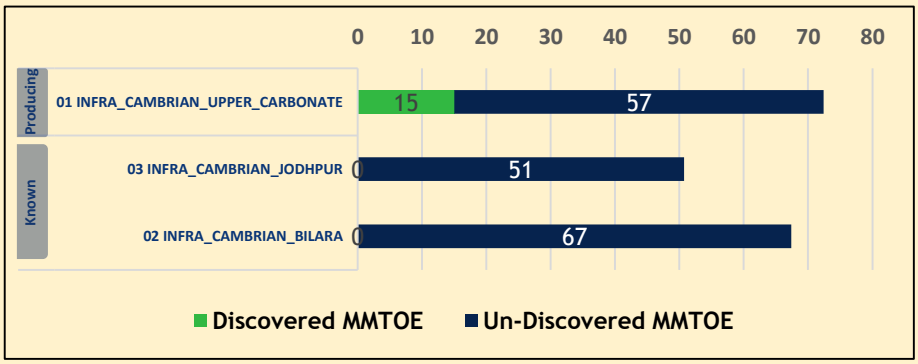
Infra-Cambrian basin with Oil produced

1 Block on Offer





Basin's risked resource potential – 176 MMTOE

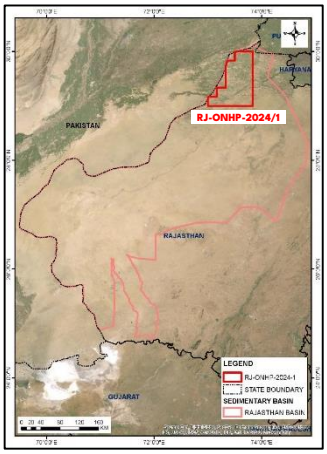


Key Characteristics

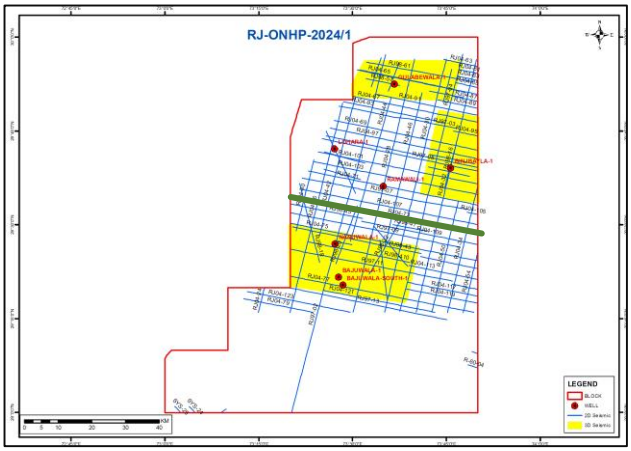
- Infra-Cambrian petroleum systems
- Analogy with the South Oman salt basin
- Baghewala field produced heavy oils
- New 2D seismic data available under NSP, more to be acquired under Mission Anveshan

Block Name : RJ-ONHP-2024/1
(ON4)

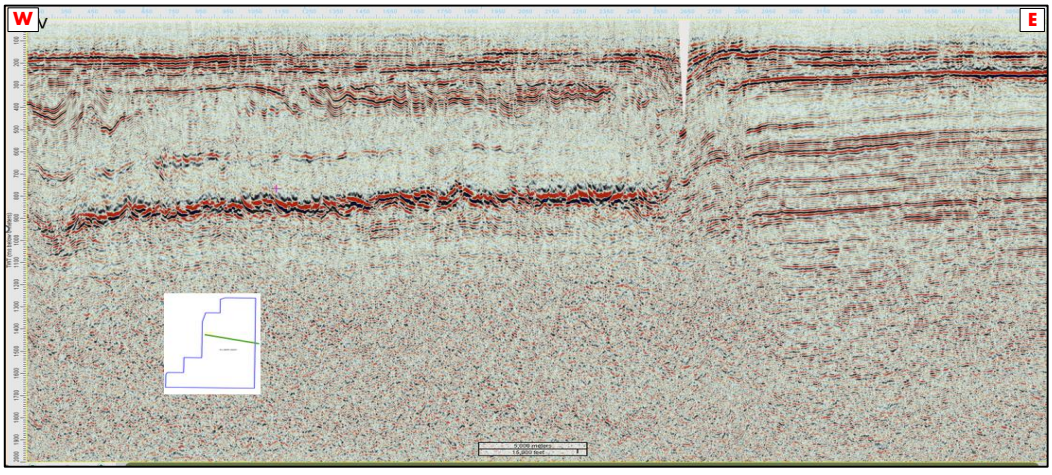
Block Area: 5953.44 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
2149	1112	7

Target Horizon: Dolomitic limestone within HEG

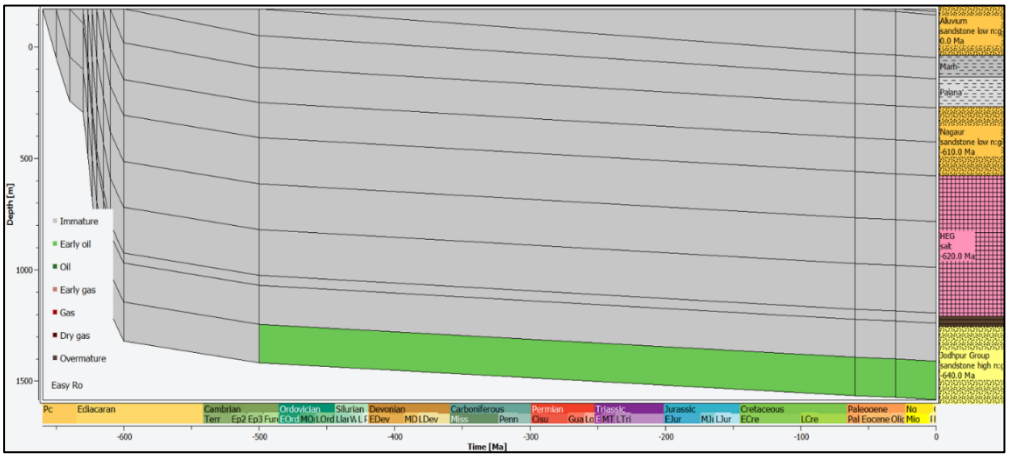
Petroleum System:

Source rock: Insitu generation in the stromatolitic dolomites within HEG of infra-Cambrian age.

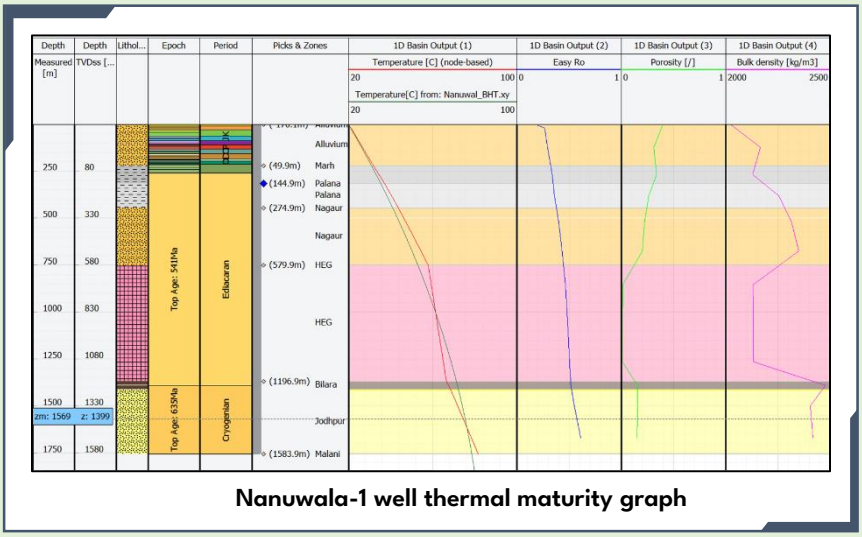
Reservoir: Dolomitic limestone within HEG

Entrapment Mechanism: structural & stratigraphic

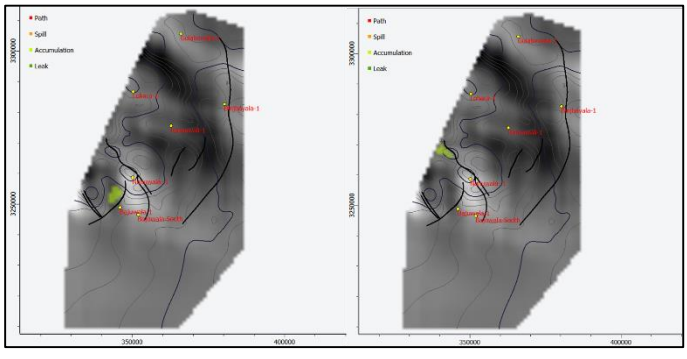
Envisaged plays: Carbonate play within HEG.



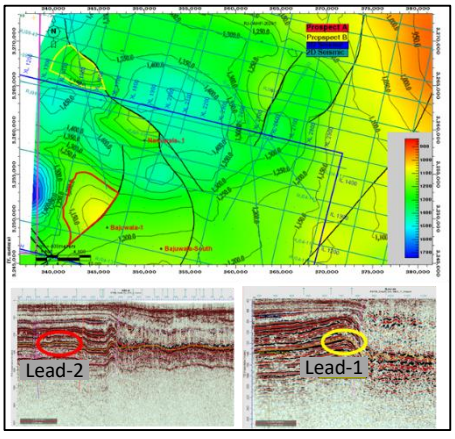
Hydrocarbon Maturity at Jodhpur Formation



Nanuwala-1 well thermal maturity graph



Accumulation Map at Jodhpur Level



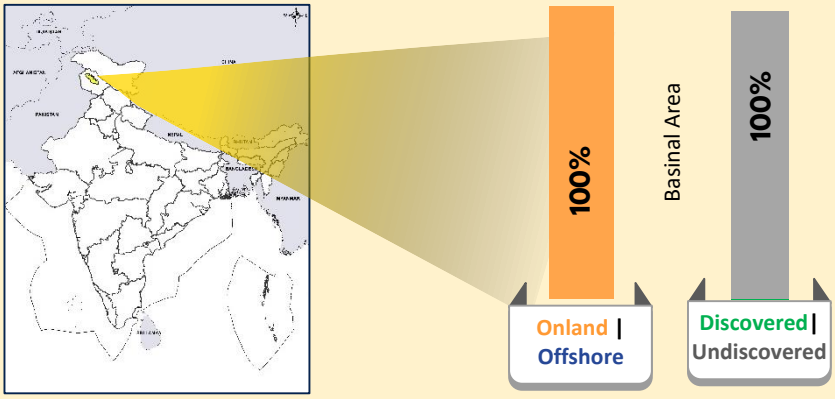
Seismic Section Showing Potential Leads

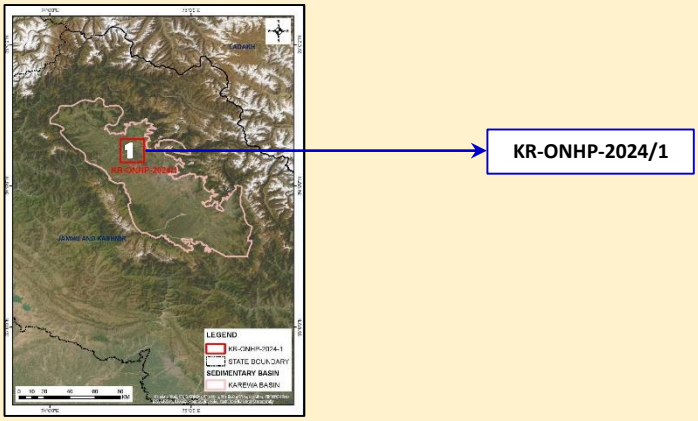
Karewa Basin

KAREWA BASIN

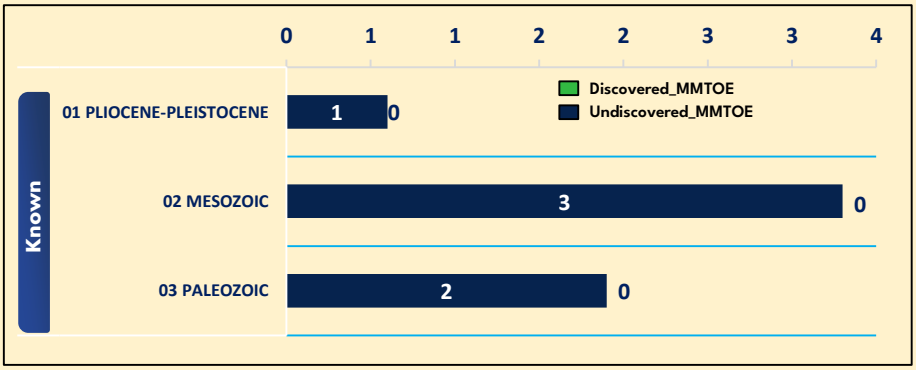
Intermontane basin with thick sequence

1 Block on Offer





Basin's risked resource potential – 6 MMTOE

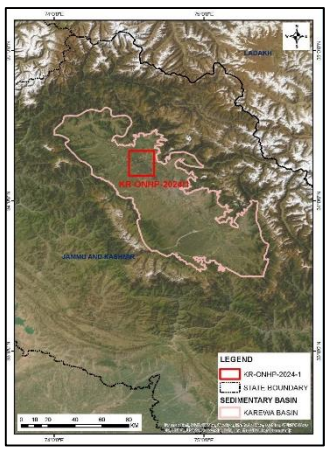


Key Characteristics

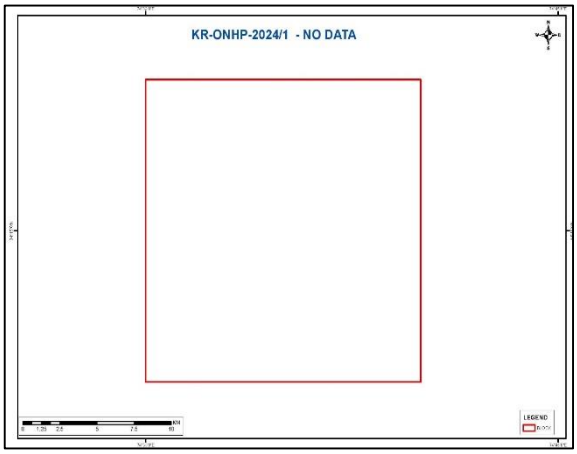
- More than 10,000m of sedimentary thickness
- Analogous to producing Potwar basin of Pakistan
- Paleozoic and Mesozoic are potential plays
- Under AGG survey, 1,817 FLKM data were acquired

Block Name : KR-ONHP-2024/1
(ON1)

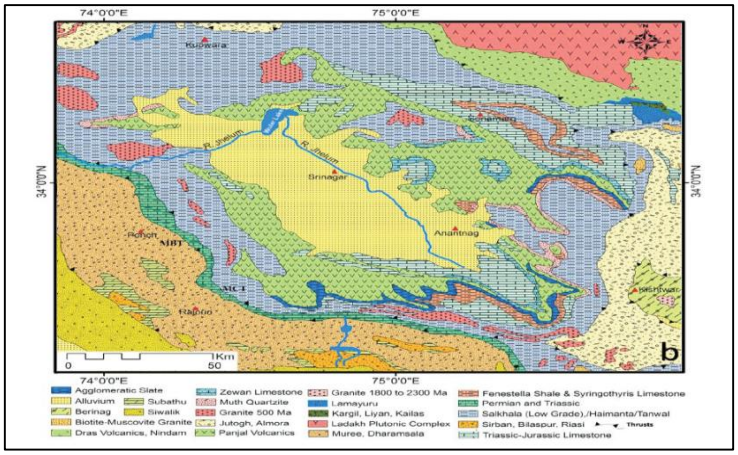
Block Area: 283.83 SKM



Location Map



Base Map



Geological Map of Karewa Basin

Data Availability

2D (LKM)	3D (SKM)	Well
0	0	0

Target Horizon: Pliocene fluvial sand in Karewa Formation

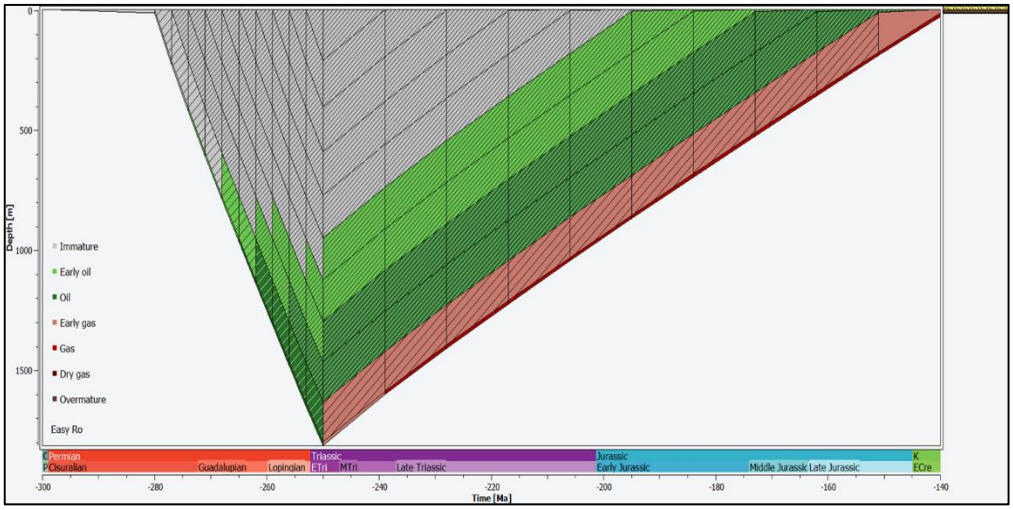
Petroleum System:

Source rock: Carbonaceous clays and lignite of Karewa group

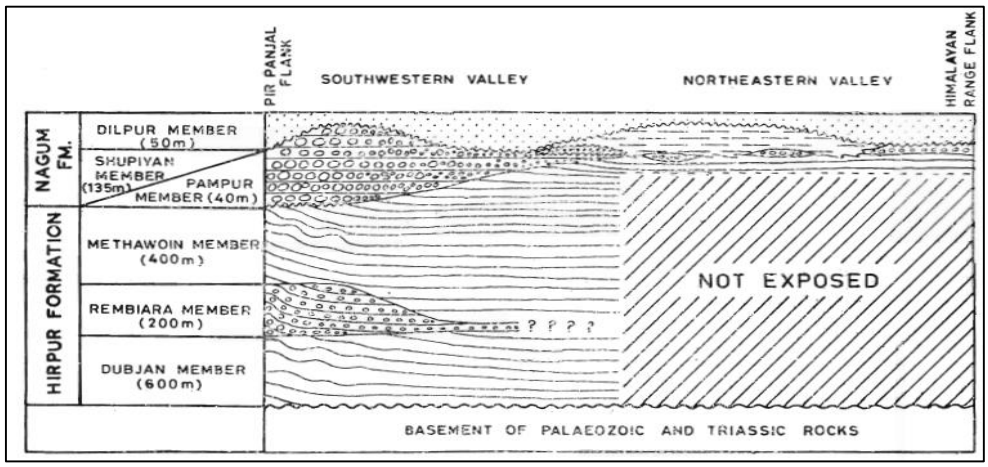
Reservoir: Pliocene fluvial sand within Karewa section

Entrapment Mechanism: Mainly stratigraphic associated with unconformities

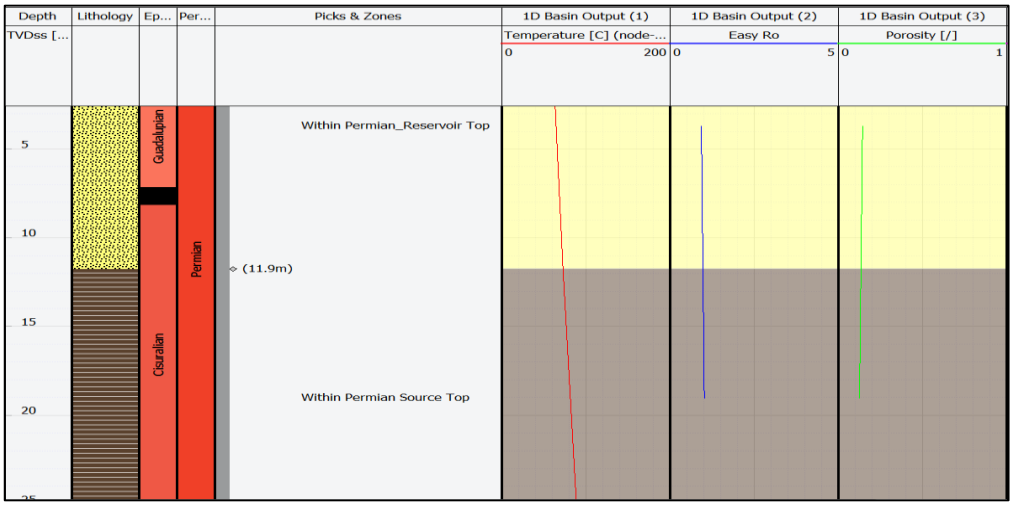
Envisaged plays: Plio-Pleistocene



Conceptual Burial History



Lithostratigraphy of Karewa Group



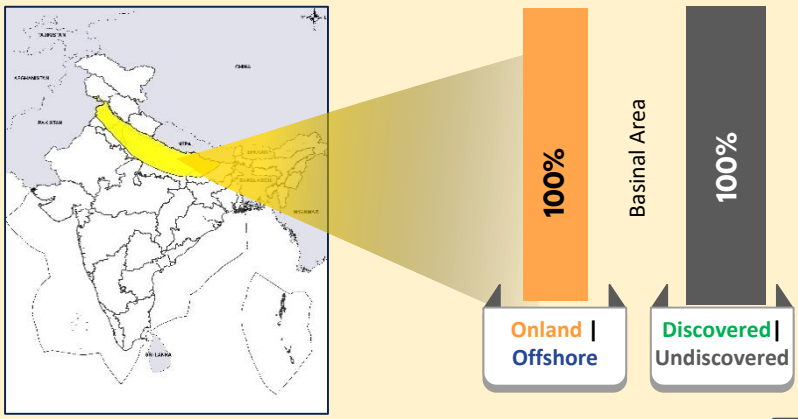
Conceptual 1D Thermal Model (Permian)

Ganga-Punjab Basin

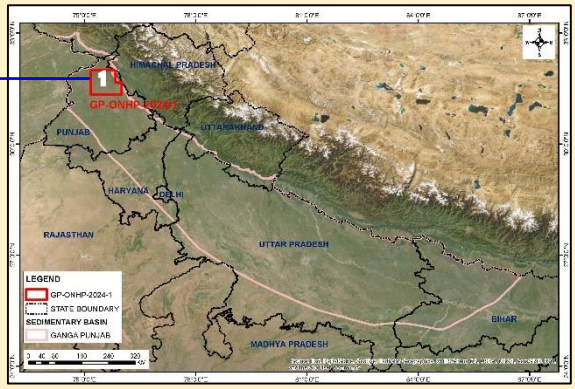
GANGA-PUNJAB BASIN

Largest onland basin

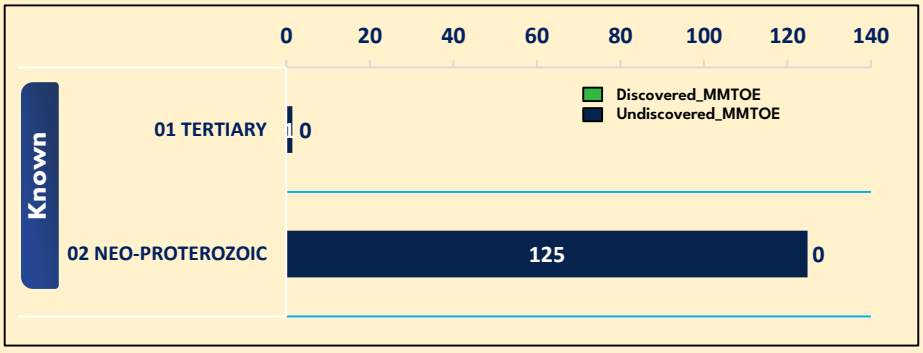
1 Block on Offer



GP-ONHP-2024/1



Basin's risked resource potential – 126 MMTOE

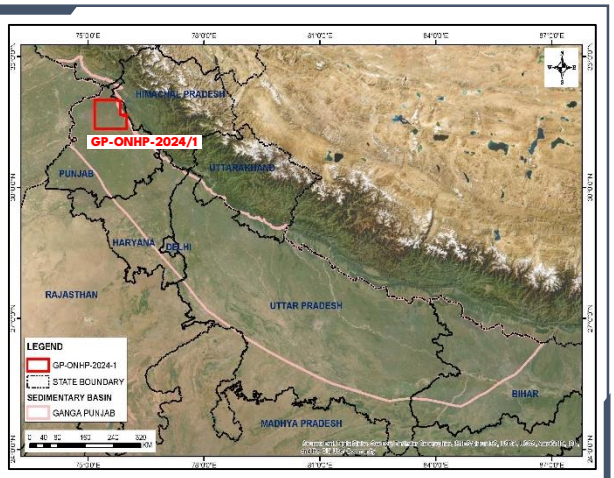


Key Characteristics

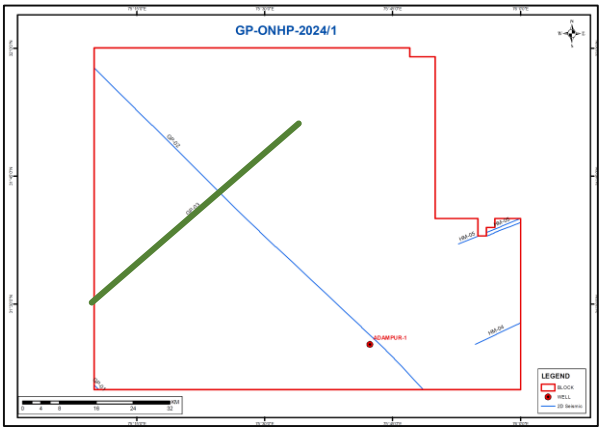
- Basin area 304,000 sq km
- Hydrocarbon shows during drilling and testing
- Major play, Neo-Proterozoic has tight gas sequence akin to Vindhyan basin
- 3,858 LKM new 2D seismic data under NSP available, new 5,100 LKM data planned under Mission Anveshan
- RGIPT had conducted a basin research study

Block Name : GP-ONHP-2024/1
(ON3)

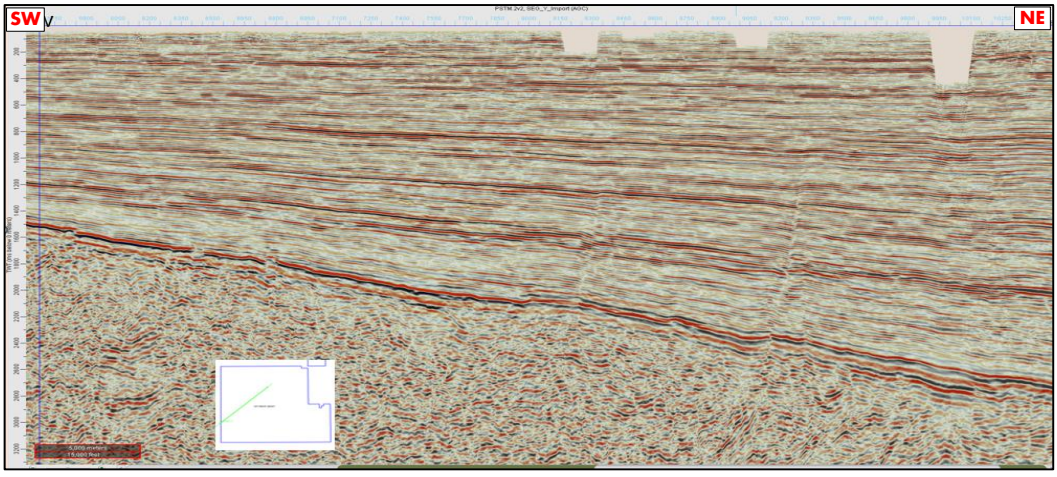
Block Area: 5241.1 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
176	0	1

Target Horizon: Karnapur, Siwalik Sandstones & Vaishnodevi Limestone

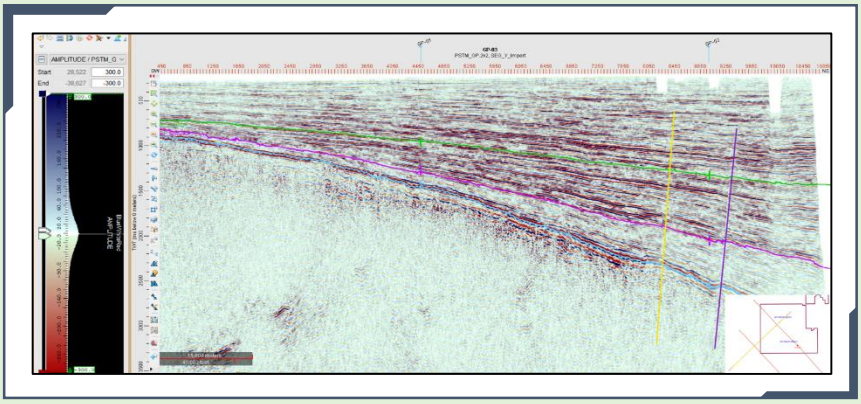
Petroleum System:

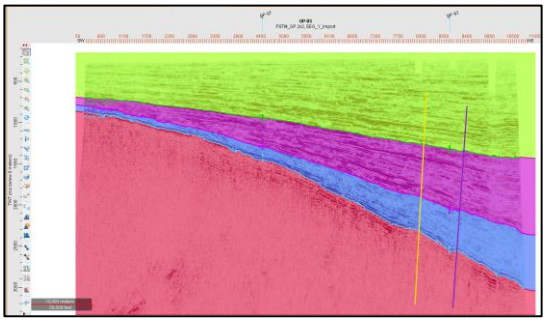
Source rock: Lower Siwalik, carbonate dominated Proterozoic (Vaishnodevi) & carbonaceous shale rich Palaeozoic (Agglomeratic Group)

Reservoir: Siwalik sandstones, Vaishnodevi limestone

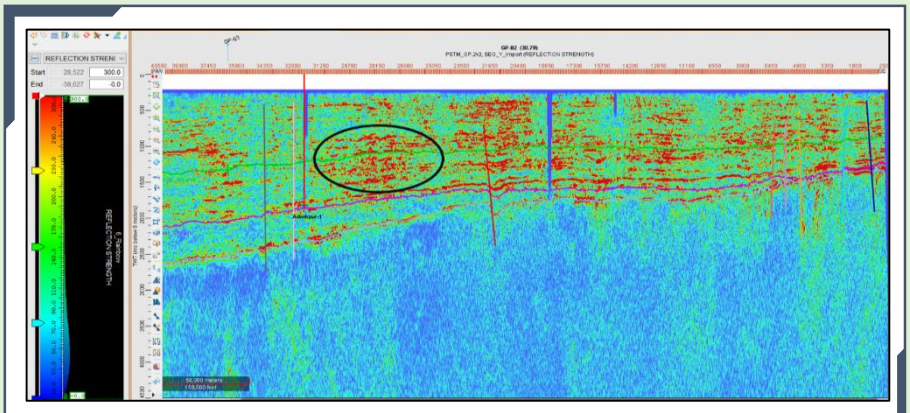
Entrapment Mechanism: Structural and strati-structural

Envisaged plays: Karnapur and Karnapur-Dharamsala-Lower Siwalik

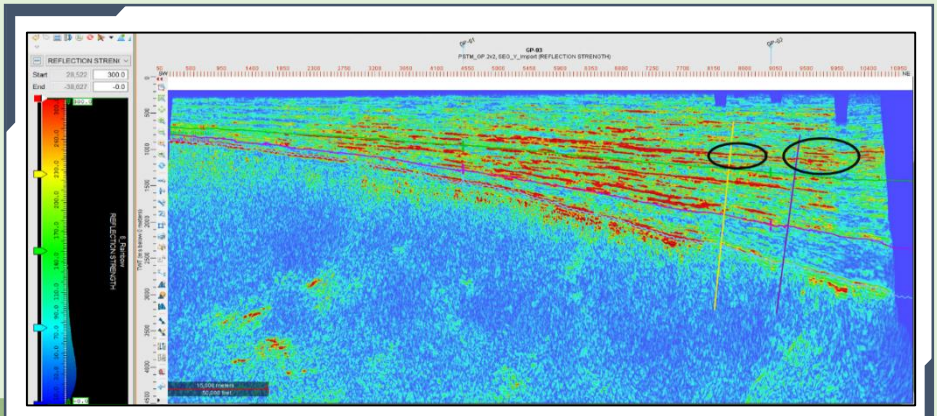




Seismo-Geological Section of Ganga-Punjab Basin



Reflection Strength Attribute on Interpreted Section



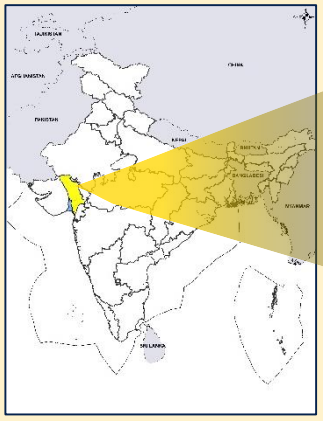
Reflection Strength Attribute on Interpreted Section

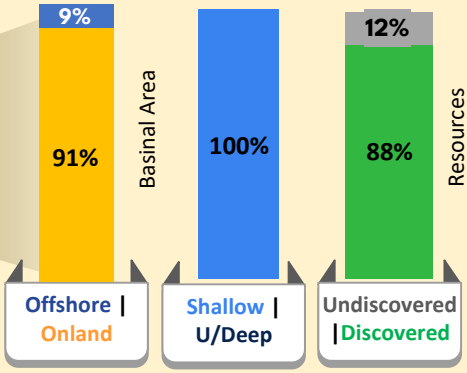
Cambay Basin

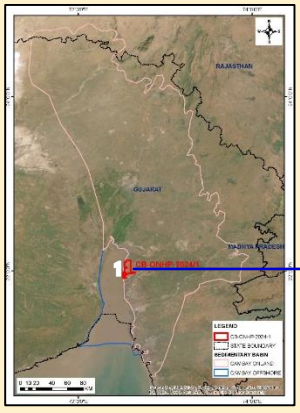
CAMBAY BASIN

Most discovered resources

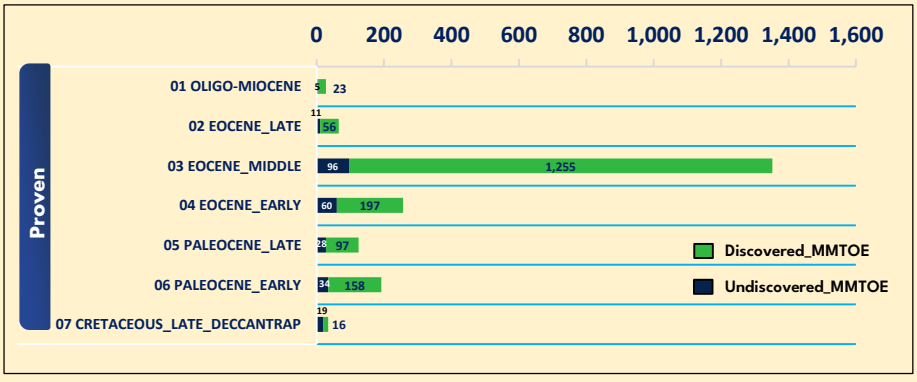
1 Block on Offer







Basin's risked resource potential – 254 MMTOE

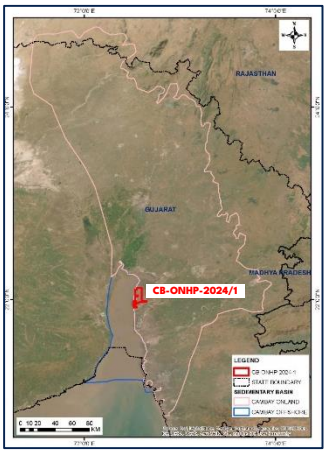


Key Characteristics

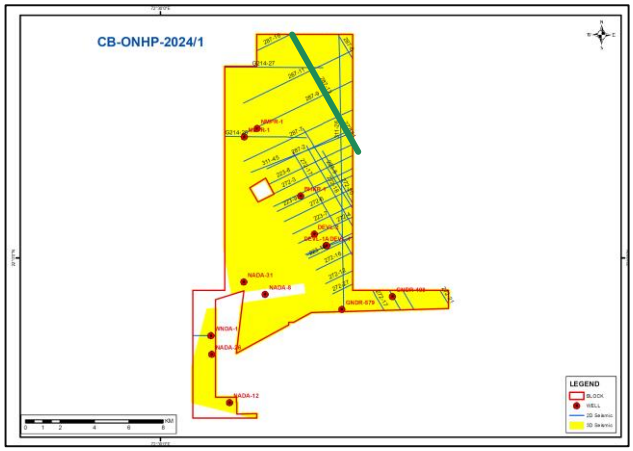
- 7 plays – all proven and producing
- 'Middle Eocene' is the most prolific reservoir, developed by 2 major proto-deltas ('Kalol' in the north-central part and 'Hazad' in the south)
- Deeper Mesozoic plays are largely unexplored
- Largest field Gandhar cumulatively produced (>40 MMT Oil, 40 BCM gas)

Block Name : CB-ONHP-2024/1
(ON5)

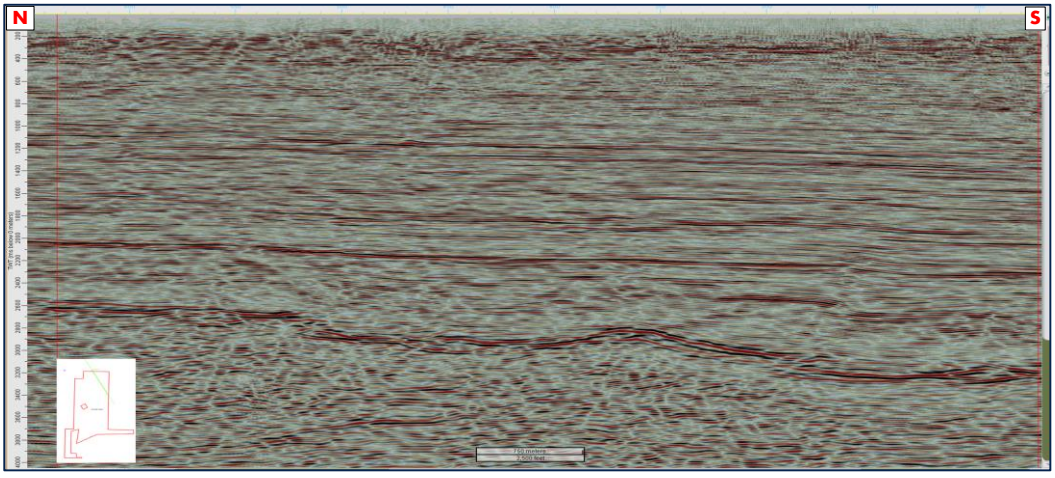
Block Area: 126.44 SKM



Location Map



Data Coverage Map



Representative Seismic Section

Data Availability

2D (LKM)	3D (SKM)	Well
140	119	13

Target Horizon: Sands of Mid. & Late Eocene age , Silts within YCS of Early Eocene &Different Hazad sands (Middle Eocene)

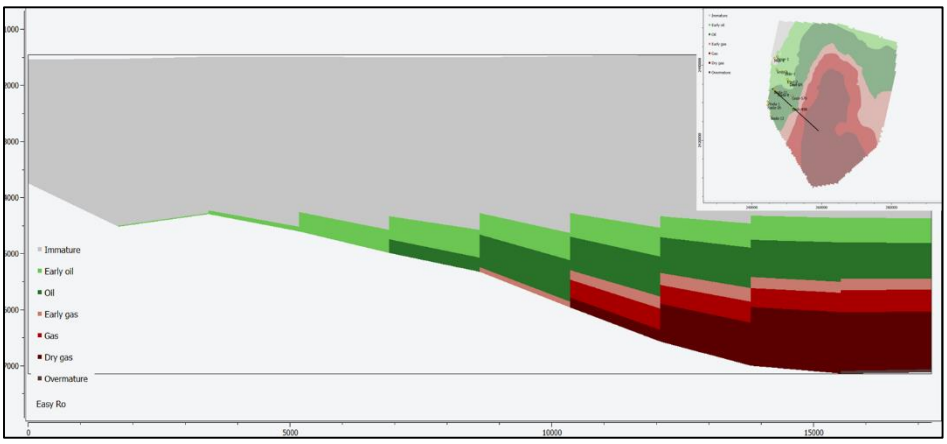
Petroleum System:

Source rock: Cambay Shale, Middle Eocene Hazad intervening shale and Kanwa Shales

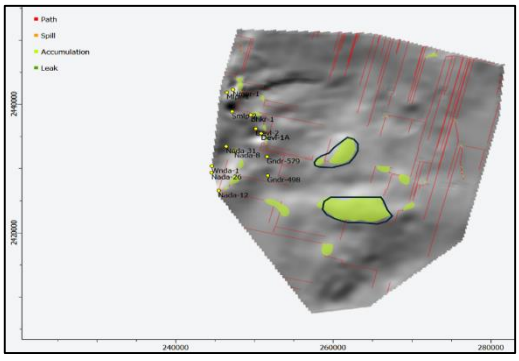
Reservoir: Sands of Mid. & Late Eocene age , Hazad Sands

Entrapment Mechanism: Structural and strati-structural

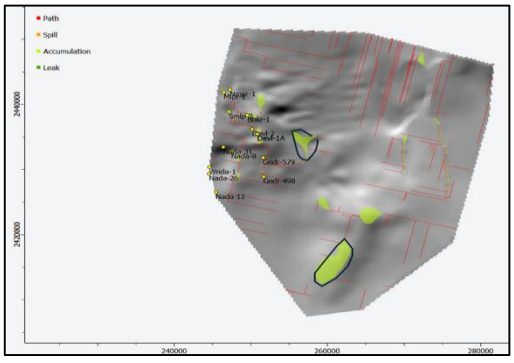
Envisaged plays: Early Eocene (sand/silt in YCS) & Paleocene sequences (sand/silt in OCS & Olpad Fm)



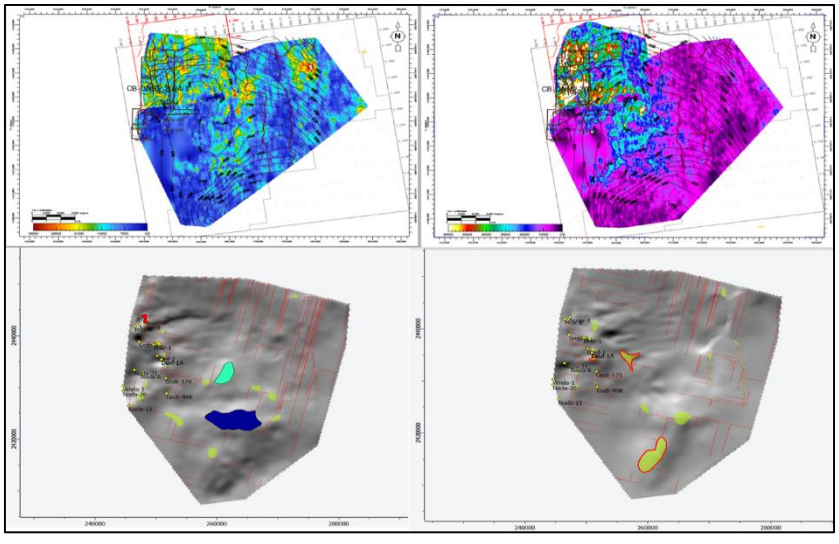
Hydro Carbon Maturity – Olpad Play



Accumulation Map at Hazad Level



Accumulation Map at Olpad Level



Potential Leads at Hazad and Olpad level

Overview of OALP Bid Rounds

DISCLAIMER

The Technical Brochure is a Geoscientific Information Outlook of the Exploration Blocks on Offer under OALP Bid Round-X. The Brochure has been prepared based on the data available with National Data Repository (NDR), specific to those purchased by the Originator Company as a part of Expression of Interest (EoI). DGH has brought out this Brochure pursuant to the subsurface study by international technical service providers. It is intended to guide and support the prospective bidders through the bidding process, including viewing of data at NDR. The opinions on prospectivity of the blocks are limited to one of several possibilities envisaged by the service providers. Hence the bidders should conduct their own scrutiny of data sets and assessment to build an independent view for a commercial decision

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