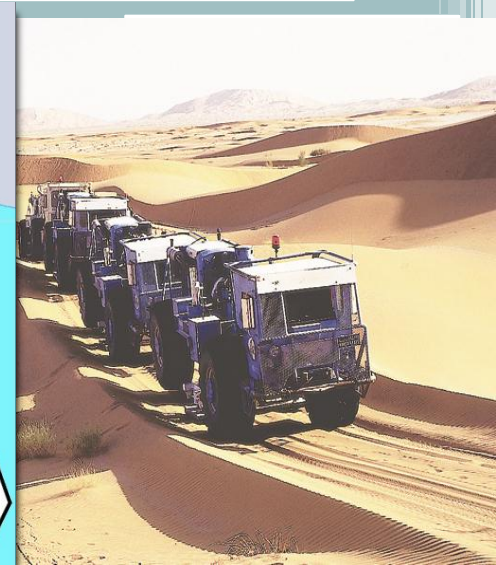
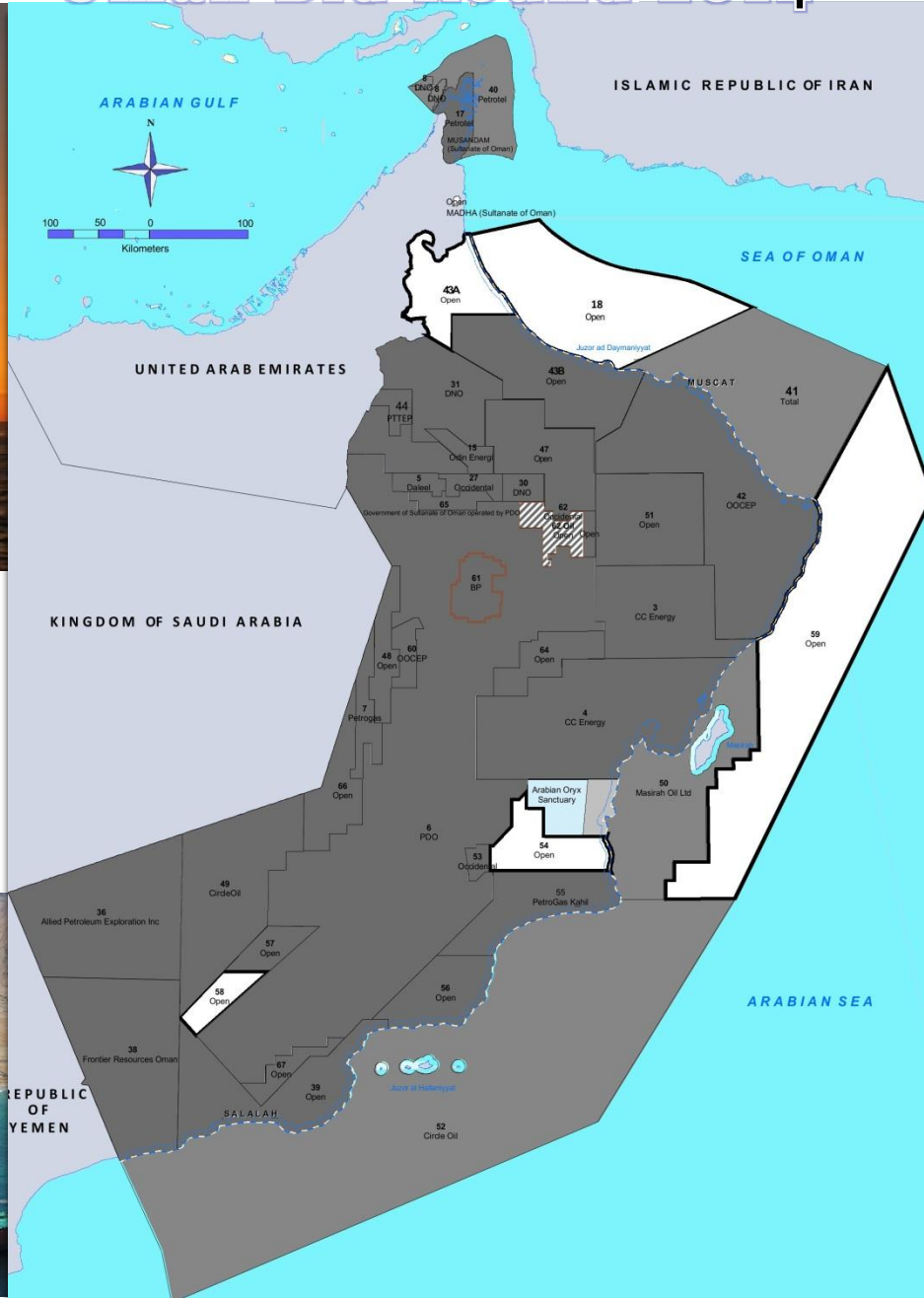


# Oman Bid Round 2014



Dear Sir

After Compliments,

**Sub: Invitation to participate in bid round**

The Ministry of Oil & Gas (MOG) is inviting Oil and Gas companies having experienced in upstream projects to participate in the forthcoming bid rounds for the offshore Blocks 18, 59 and onshore blocks 43A, 54, 58 in the Sultanate of Oman (brochures attached).

It is envisaged that the participating companies will have the relevant technical expertise financial resources to explore, appraise and develop potential hydrocarbon resources within these blocks.

To participate in this bid round, a company is required to deposit a non-refundable lump sum of US\$ One Hundred Thousand (US\$ 100,000) per block into a government bank account, which will be advised upon the receipt of your confirmation to participate in the bid round.

Interested companies having relevant technical and financial capabilities are welcomed to bid for the blocks and thereby requested to follow and fulfill the bid process as explained in the following order:

1. The company should provide MOG with a Letter of Interest (LOI) and a recent company profile.
2. Upon receipt of documents in (1), both Confidentiality Agreement and government bank account details will be provided, if the company meets the required technical and financial resources.
3. Sign the Confidentiality Agreement and send it to MOG and then deposit a non-refundable lump sum of US\$ One Hundred Thousand (US\$ 100,000) per block into the government bank account.
4. Should you require the available data package for the block, a request should be made to MOG following a completion of the above steps. Then, MOG will immediately dispatch the data to the company (as per the address provided) at no additional cost.
5. Submission of a sealed bid to MOG not later than 31<sup>st</sup> October, 2014.

The successful bidder will be contacted immediately after bids evaluation process is complete.

**Note: MOG is not bound or obliged to accept any bid.**

For any queries or information, please revert to:

Primary Contact –  
**Mr. Suleiman Al Ghunaimi**  
Department of Petroleum Concessions  
Tel: + 968 24640526  
Email : [s.alghunaimi@mog.gov.om](mailto:s.alghunaimi@mog.gov.om)

Secondary Contact –  
**Dr. Mohammed Ali Al-Balushi**  
Director of Regulating Petroleum Exploration Operations  
Tel: + 968 24640684  
Fax: + 968 24699469  
Email: [mbalushi@mog.gov.om](mailto:mbalushi@mog.gov.om)



### Opportunity Summary

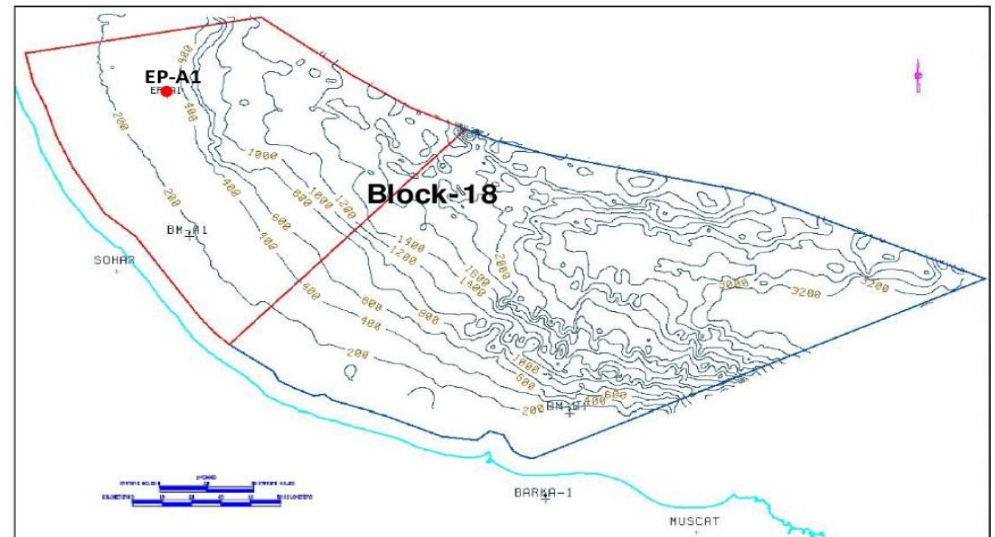
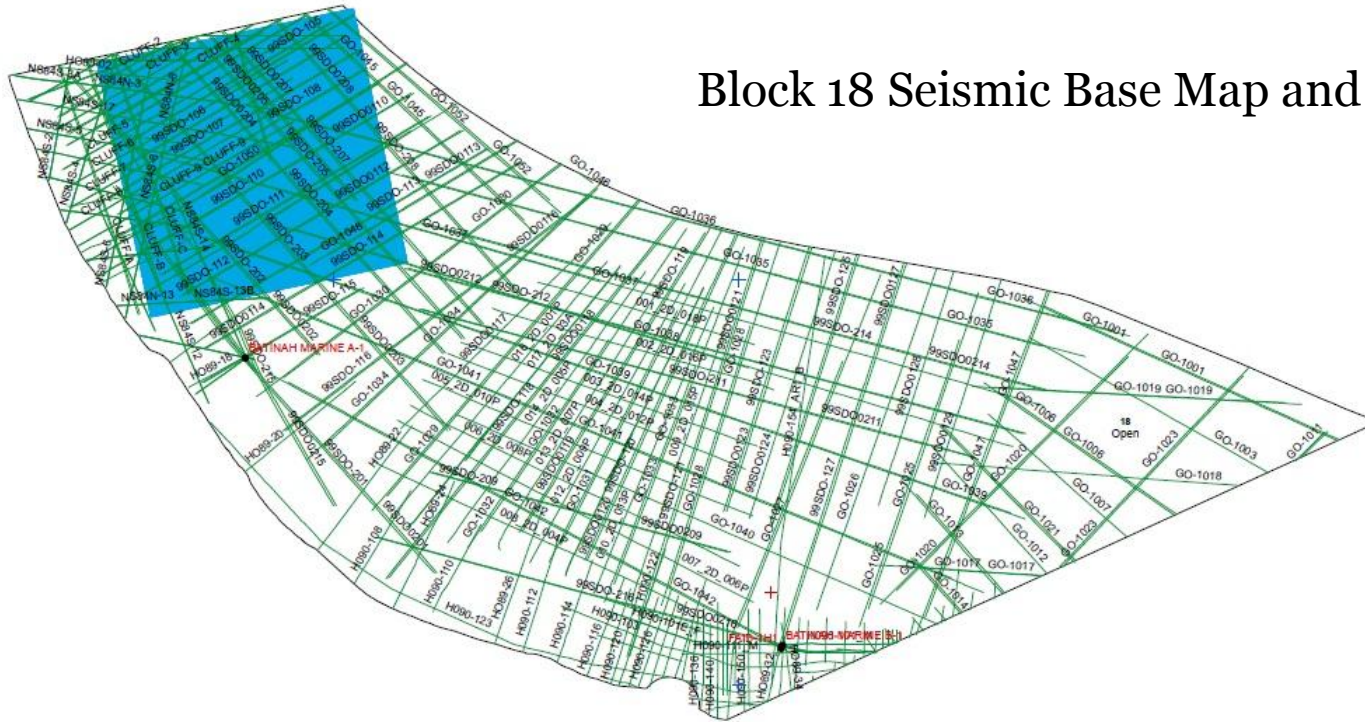
- The Block located in north Sohar basin between the Batinah Coast and Makran Accretionary prism.
- Cover an area of 21,140 km<sup>2</sup> with water depth ranging from 30-3000 m.
- About 10,000 km of 2D and 2048 km<sup>2</sup> of 3D acquired in the Block.
- Three wells been drilled in the Block.
- Number of Plays been identified .

### Petroleum System

- **Reservoirs:** Seven Reservoir level been identified in the Block; Campanian - Maastrichtian L.Thaqab fm, U.Thaqab fm, Palaeogene Carbonate, U. Palaeogene, Asmari and Makran marine sandstones.
- **Seals:** Upper Thaqab shale, Mio-Palaeocene deep water shale and Oligocene shale
- **Charge:** main source rock in the area are; Eocene Rusayl fm, Jafnyan fm and Thaqab fm .
- **Traps:** most of the structural trap conduct in the area are anticline folds associated with fault



## Block 18 Seismic Base Map and Wells location Map



Block 18 Bathymetry Map

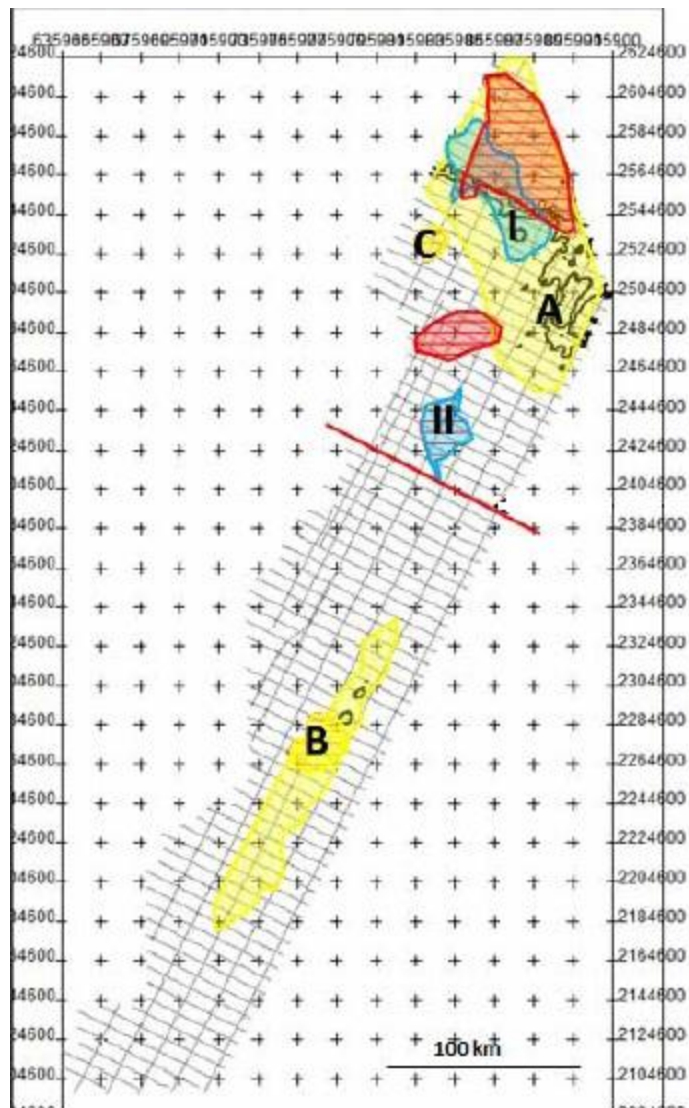


### Opportunity Summary

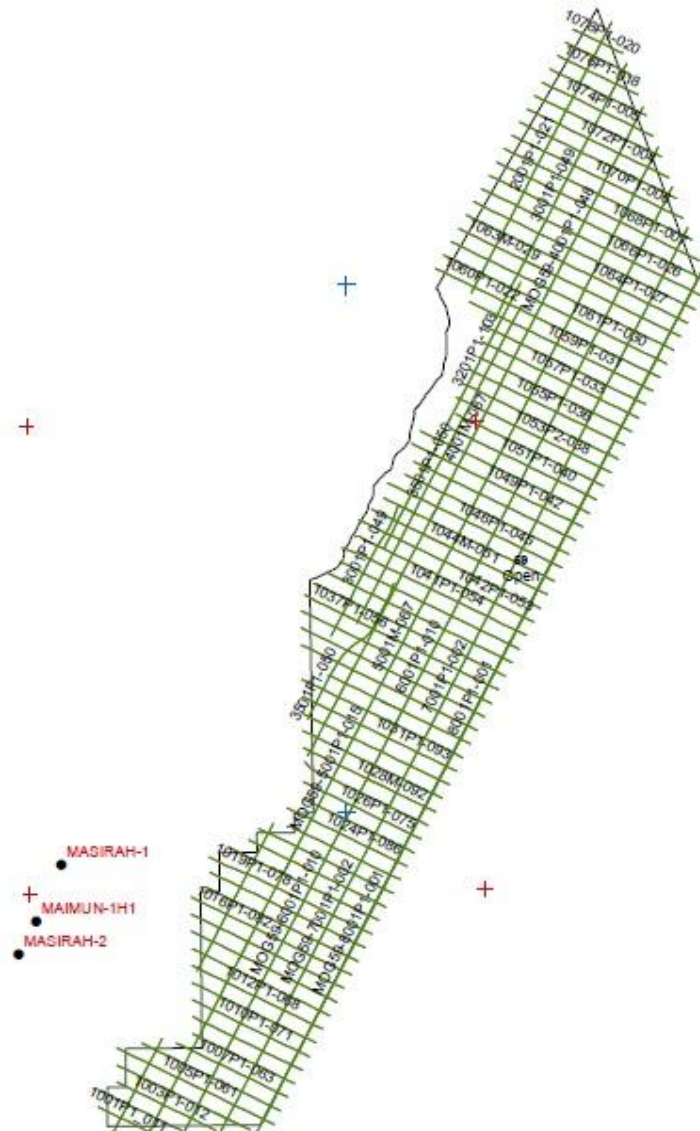
- The Block located east coast central Oman covering an Area of 40,488 km<sup>2</sup>
- The Block is an accommodate basin for deposition western clastic influx and delimited from east by own Basin with water depth ranging 0-3600 m.
- The Block covered with about 8000 km of 2D seismic.
- Several prospects and leads in the area have been mapped on high quality 2D-data

### Petroleum System

- **Reservoirs:** The objective reservoir rocks in the block Basin are to be found in the Tertiary turbidite sections.
- **Seals:** The reservoirs are sealed by intercalated shales. Minor channel features have been observed on seismic in the objective sequence, and based on the parallel layering.
- **Charge:** A Cenomanian-Turonian source rock, similar to the Natih source rocks and Tertiary source rock.
- **Traps:** Trapping mechanisms stratigraphic and possibly structural .



Block 59 Leads identified



Block 59 Seismic Base Map and Wells location Map



## Opportunity Summary

- The Block is covering an area of 5632 km sq and located south east Oman nearby PDO (Block 6) oilfields, Oxy Block 53 Mukhaizina field (>100,000 b/d oil) and south to Block 3 & 4 (>20,000 b/d oil).
- The Block flank world class 'South Oman Salt Basin' which has STOIP of 16.5 Bln bbls with daily production of 173,000 bbl.
- new discoveries in nearby blocks been made recently
- The Block is covered with about 7000 km of 2D and 400 km<sup>2</sup> of 3D seismic
- Seven wells been drilled within the block with HC show in some of the wells.

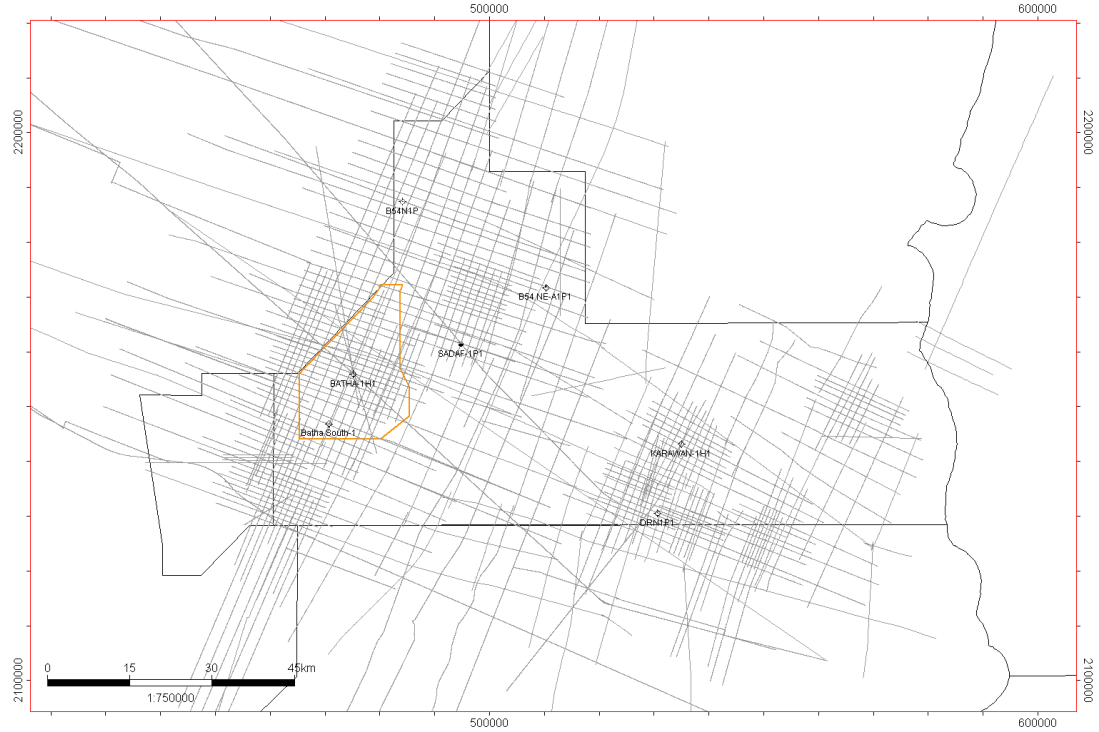
## Petroleum System

- **Reservoirs:** The traditional reservoirs in this domain are in Cambrian-Permian sandstones of the Haima and Haushi Groups sealed by the Early Cretaceous Nahr Umr shale. These reservoir units are highly productive within the nearby Eastern Flank trend of fields.
- **Seals:** The regional marine shale of the Early Cretaceous Nahr Umr blankets the area and provides the ultimate seal for most accumulations. Other seals in the Permian Khuff, Gharif and Al Khlata-Rahab often provide the side seals for traps and enhance their column lengths. Local seals are also present in the Haima.
- **Source:** The Huqf source rock is expected and active.
- **Traps:** Most traps are structural, possibly related to salt movement and removal with also stratigraphic rim unconformity traps abound exists



### Block 54 Area Stratigraphic Column

| AGE            |                 | GROUP  | FORMATION / MEMBER   |                               |   |   |
|----------------|-----------------|--------|----------------------|-------------------------------|---|---|
| TERTIARY       | PAIS            |        |                      | Taqi                          |   |   |
|                |                 |        |                      |                               |   |   |
|                | HAJIRAMAUT      |        | Dammam<br>Rus<br>UeR | Upper<br>Middle<br>Lower      | Seal  |   |
| CRETACEOUS     | ARIMA           |        |                      | Fiqi                          | Seal  |   |
|                | WAGHA           |        |                      | Hath                          | Upper<br>Middle<br>Lower  |   |
|                |                 |        |                      | Nahr Umr<br>Shualba<br>Kharab |   | Seal - Nahr Umr Shale<br>Possible - Oil Shows at Mukhaizna Field  |
|                | KAMHAI          |        |                      | Lekhvair                      |   |   |
|                | PERMIAN         | HAUSHI |                      |                               | Khuff   | Upper<br>Lower  |
|                |                 |        |                      |                               |   |   |
|                |                 |        |                      | Gharif                        | Upper<br>Middle<br>Lower  | Seal - Low Perm Siltstones Encasing Channels<br>Primary Objective - Offsetting Mukhaizna<br>Seal - Inter Gharif Shales<br>Objective - Offsetting Heavy Oil Production |
|                |                 |        |                      |                               |   |   |
|                |                 |        |                      | Rahab                         | Upper<br>Middle<br>Lower<br>P 1<br>P 2<br>P 3                       | Seal - Rahab Shale<br>Objective - Offsetting Heavy Oil Completion   |
| PERMO-CARBONIF |                 |        |                      |                               |   |   |
| DEVONIAN       | MISFAR          |        |                      |                               | Seal - Misfar Shales<br>Objective - Offsetting Heavy Oil Completion |   |
| ORDOVICIAN     | HAWA SUPERGR.   |        |                      | Andam                         | Dark  |   |
|                |                 |        |                      | Mahwis / Migrat               |   | Seal - Migrat Siltstones  |
|                |                 |        |                      | Amin                          |   | Objective   |
| CAMBRIAN       | ASA             |        |                      | Dhababan<br>Al Hoar<br>Athel  |   |   |
|                |                 |        |                      | Birba                         |   | Seal - Ara Evaporites   |
|                |                 |        |                      |                               |   |   |
|                |                 |        |                      |                               |   |   |
| INFRA-CAMBRIAN | HAFU SUPERGROUP | HAFU   |                      |                               | Buah  | Objective - Heavy Oil Shows<br>Source   |
|                |                 |        |                      |                               | Shuram  | Source  |
|                |                 |        |                      |                               | Khufai  | Source  |
|                |                 |        |                      |                               | Masirah Bay   |   |
|                |                 |        |                      |                               |   |   |
|                | ADU MABAGA      |        |                      |                               |   |   |
|                |                 |        |                      | Basement                      |   |   |



## Block 54 seismic base map & well locations

## Block 54 stratigraphic column



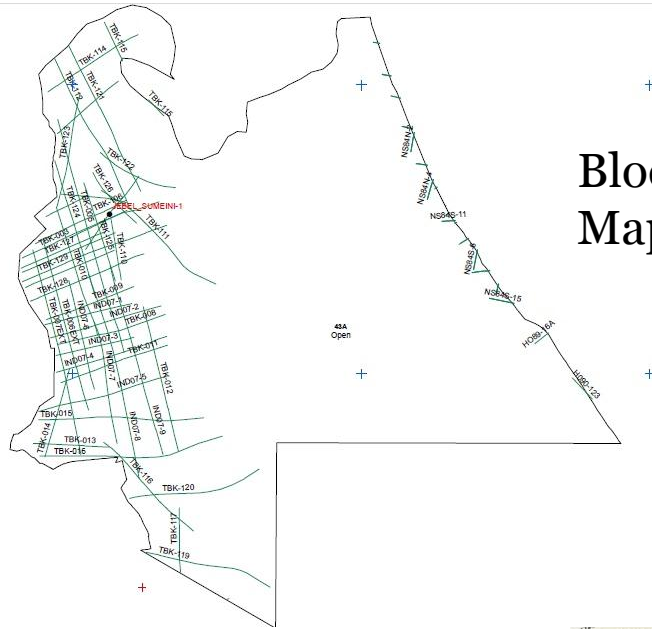


## Opportunity Summary

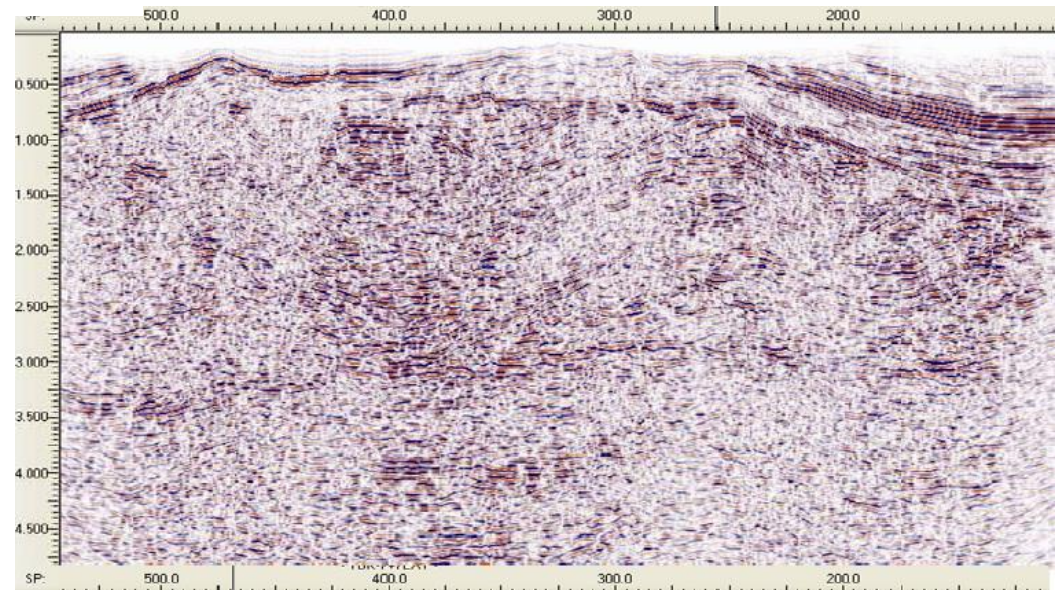
- The Block is located in the north of Oman mountains covering an area about 6879 km<sup>2</sup> in Area
- The Block is under explored with only one old well and about 1200 km of 2D seismic of various vintages.

## Petroleum System

- **Reservoirs:** mid Cretaceous Natih formation and lower Cretaceous (Kharib and Shuaiba) formations
- **Seals:** Proven seal within the block are the Nhr Umar shale the regional seal for Kahma Group North and South Oman. The Kuff and Fiqa shale also presents in the area
- **Source:** Source rock which been encountered in the Block represented by upper/lower Cretaceous Hanifa fm , Shuaiba fm (bab member) and Natih fm (B+E) units.
- **Traps:** mainly structural with possibility of stratigraphic trap as well.



Block 43A Seismic Base Map and Wells location Map.



Seismic line from block 43A.



## Opportunity Summary

- The Block is situated in south edge of the Western Flank covering an area of 2277 km<sup>2</sup> between the South Oman Salt Basin and Rub Al Khali Basin .
- The block is covered by around 2500 km of multi-quality 2D.
- Only one exploration well penetrated the block with TD 4275 m.
- The block position along the Western Margin where world class hydrocarbon producing South Oman salt Basin present.
- The block considered as under-explored giving it a unique setting to explore and develop its deep.

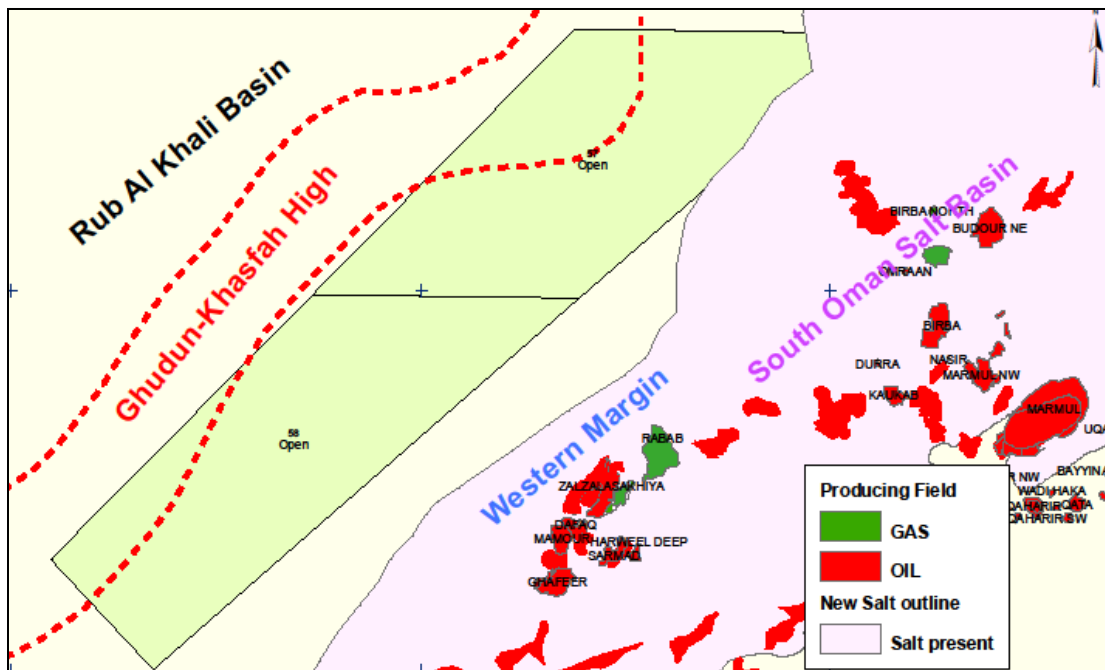
## Petroleum System

**RESERVOIRS:** Multiple reservoirs expected in the area, the Ara carbonate stringers, Haima and Haushi sandstones, the Khuff carbonates and possibly even the Jurassic Mafraq sandstones. Gas and oil shows have been particularly noted in the Ordovician Safiq-Ghudun sandstones in a number of wells in the west of the Block 58.

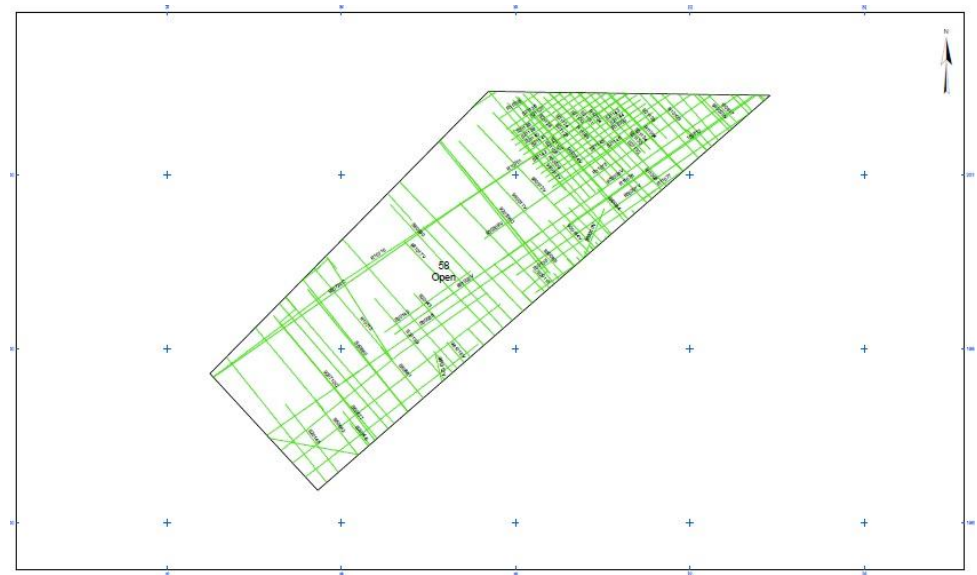
**SEALS :**Regional seals are present in the Early Cretaceous Nahr Umr shale, the basal Khuff carbonates and in various Ordovician and Silurian marine shales of the Safiq. More local seals occur within the Haushi, Khuff and Sahtan. In the South Oman Salt Basin the Ara Stringers are normally encased in salt and vary from highly over-pressured to hydrostatically-pressured.

**CHARGE:** The South Oman Salt Basin contains world class source rocks in Ara and in the pre-Ara Huqf that have reached varying states of maturity since the Cambrian. The early Silurian Qusaiba/Sahmah source rocks occur extensively in Saudi Arabia and the Gulf. They extend into western Oman where they are currently mature for oil or gas generation.

**TRAPS :**Stratigraphic pinch-out traps and complex structural such as pop-up and thrust remain undrilled along the Western Margin of the South Oman Salt Basin.



## SUMMARY OF PLAYS ALONG THE WESTERN FLANK OF THE SOUTH OMAN SALT BASIN



Block 58 Seismic Base Map.