New exploration opportunities in the Mediterranean Sea and the Nile Delta, Egypt

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Outline

- **Introduction**

  - Why invest in Egypt
  - Available acreage
  - Exploration activities
  - Fields and discoveries

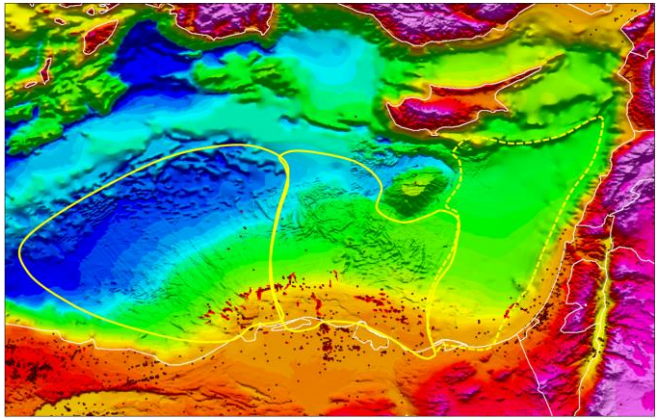
- **Egypt's West Mediterranean Sea Project**

  - Geological provinces
  - Shelf Area
  - Herodotus Basin
  - Seismic data examples of play types

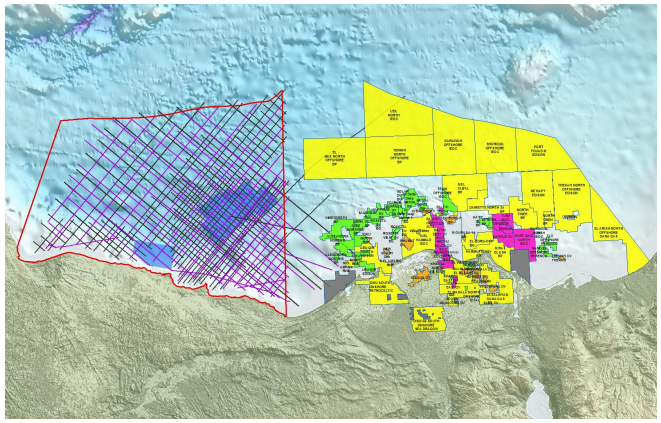
- **Summary**

- **Acknowledgements**

Why invest in Egypt?



- Large areas available for future exploration
- Western part open for exploration
- New strategy for energy sustainable to 2035
- Potential HC exporter in the future



- Mature province with proved petroleum systems and 7 play concepts
- Commercial success ratio of 69% offshore Mediterranean
- More than 40Tcf discovered last 2 years

- Zohr discovey – game changer
- Deep water exploration program 2017-18

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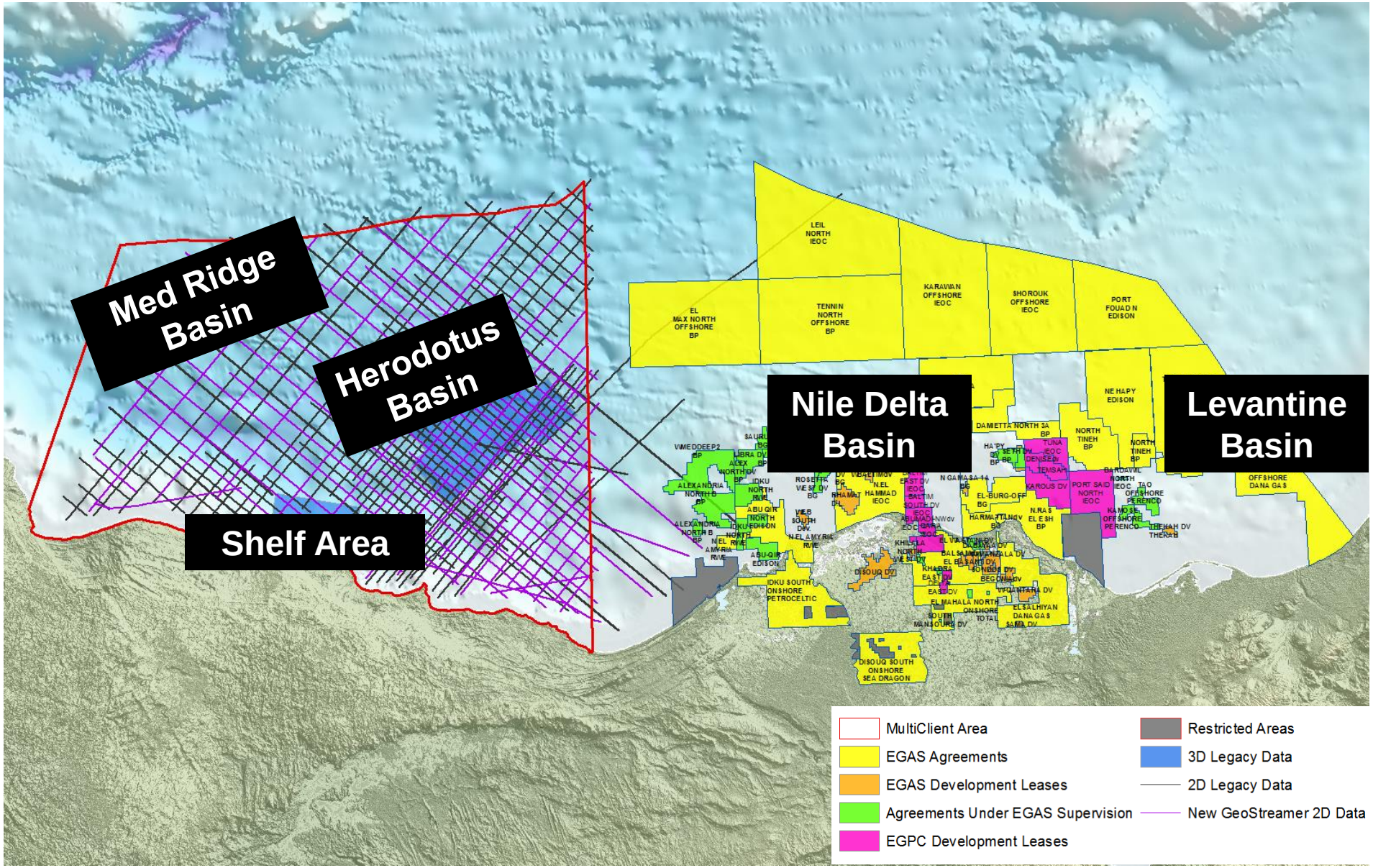
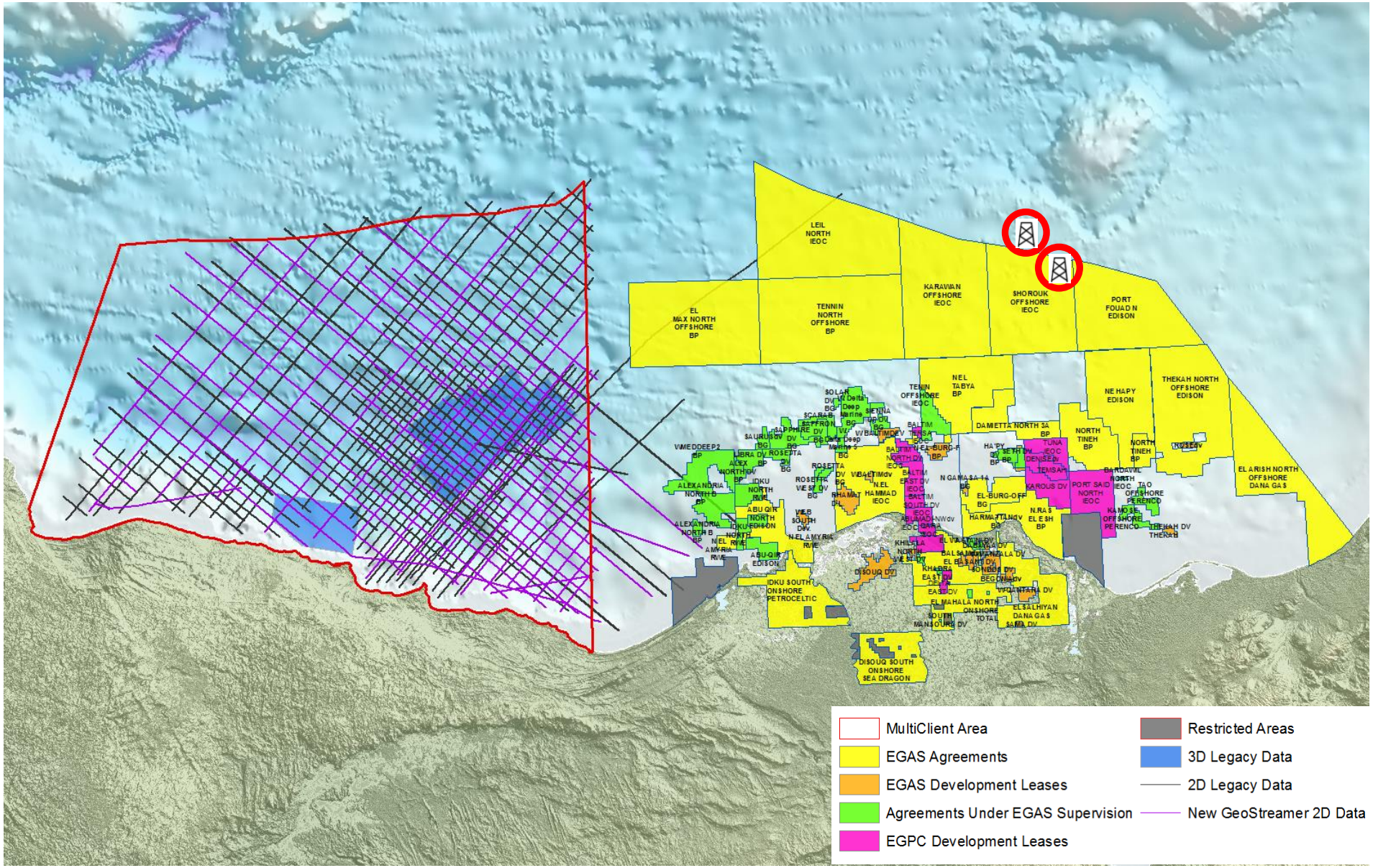
Regional setting & Exploration blocks



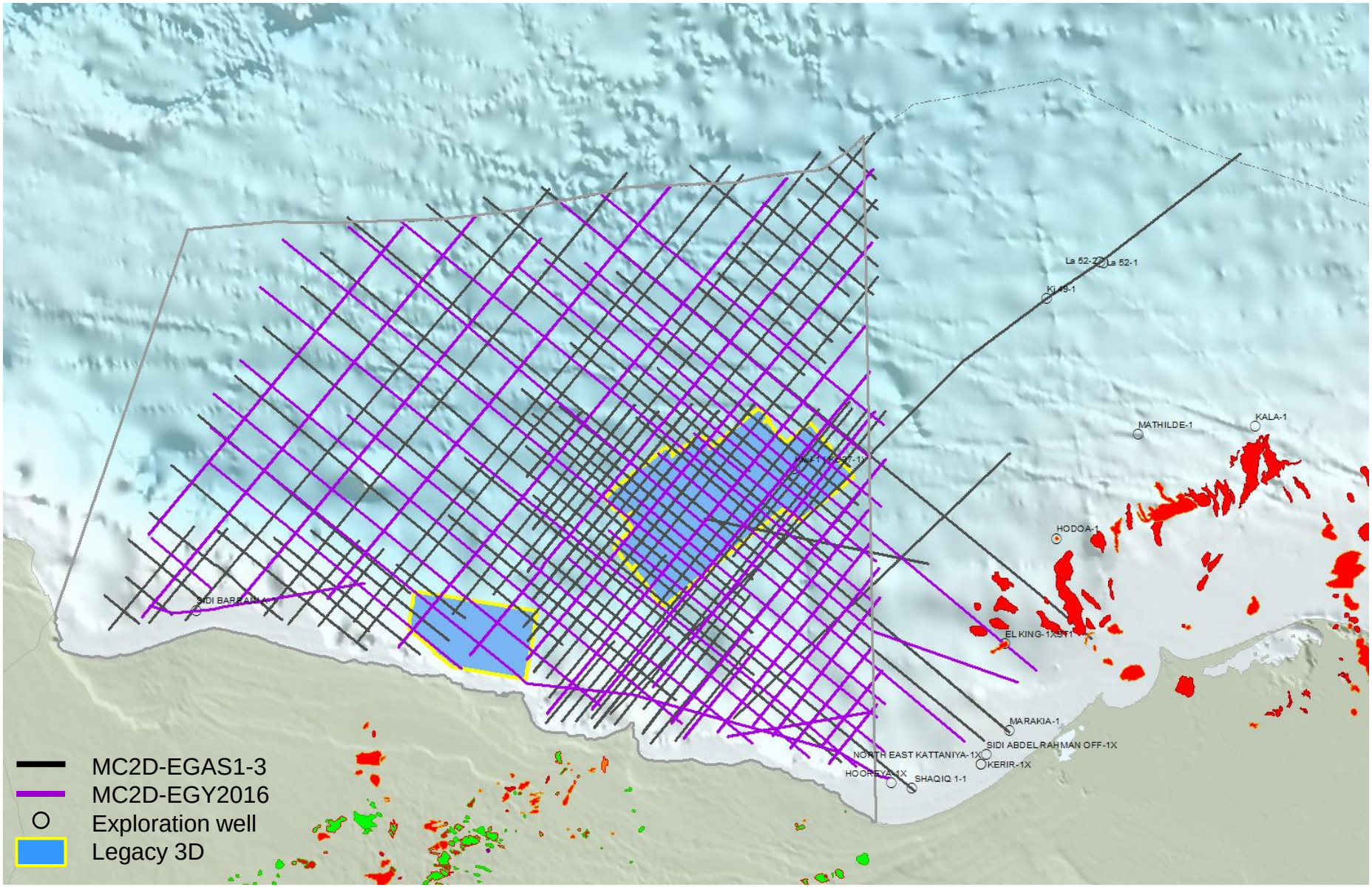
Exploration activities

Drilling program 2017-2018



Egypt's West Mediterranean Sea Project

Data coverage



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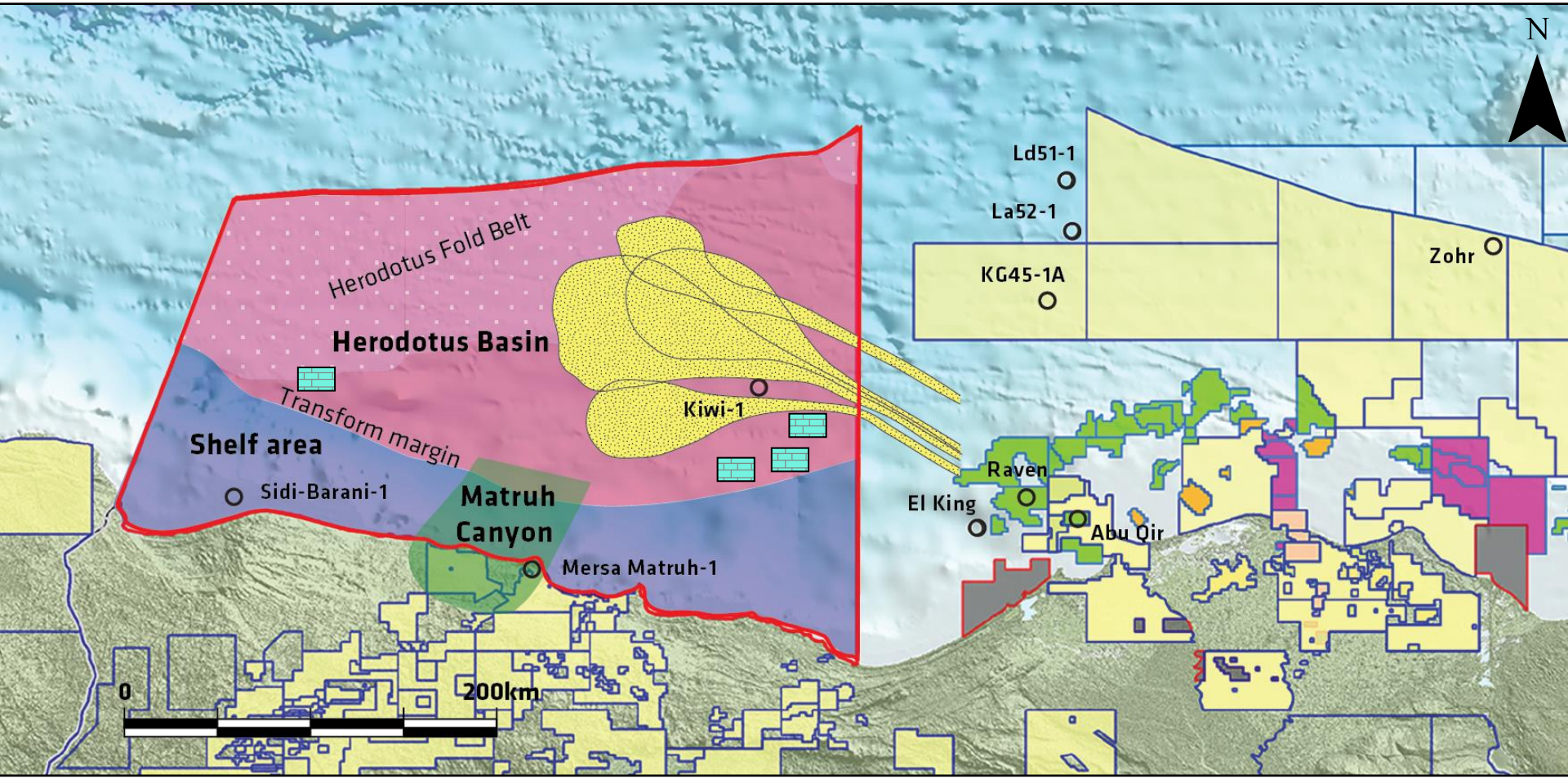
Geological provinces



Carbonates

Possible basin floor fan systems

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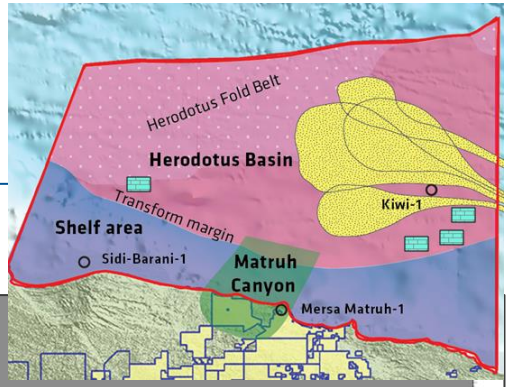
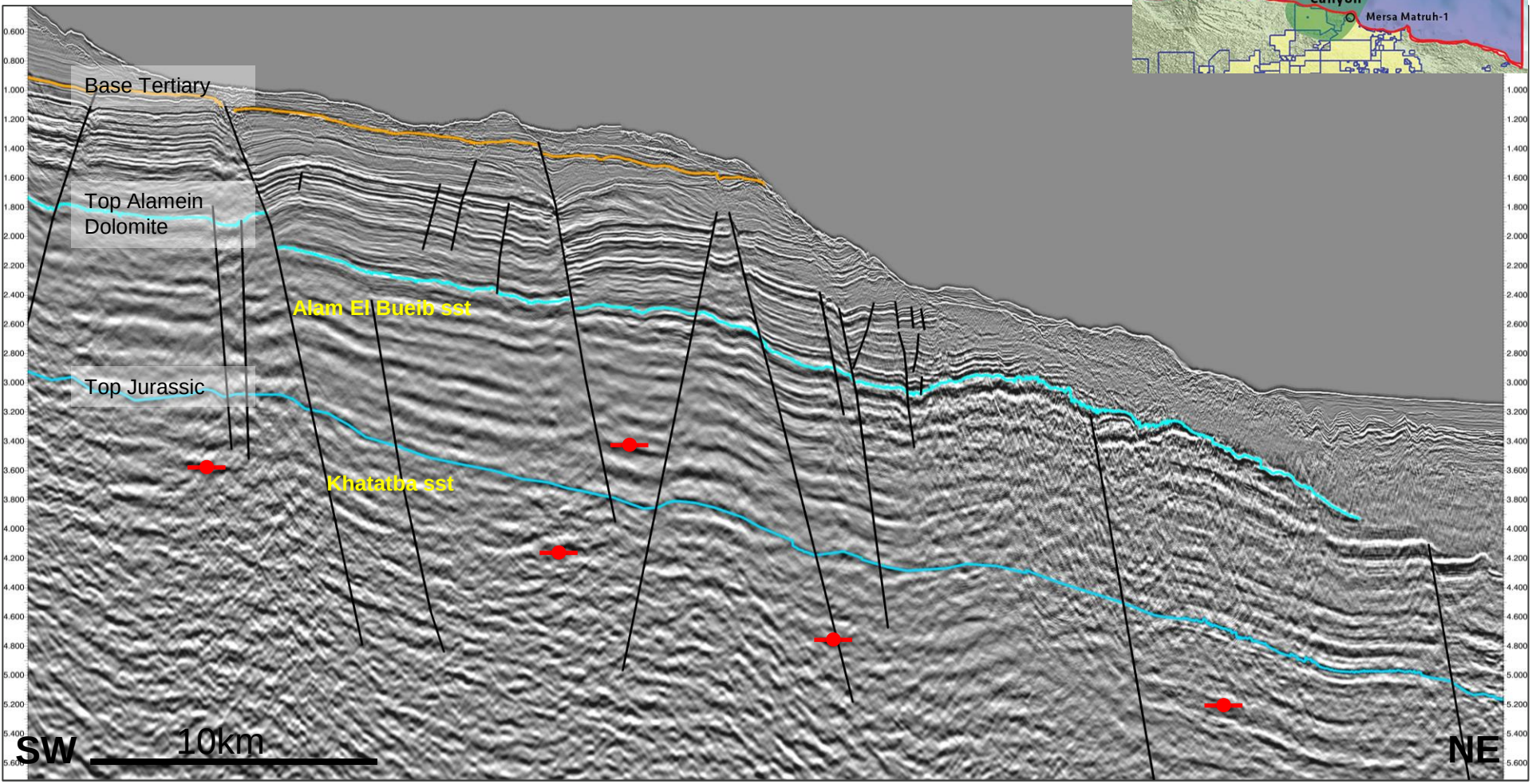
Shelf Area - Extension of onshore basin





Possible source rock

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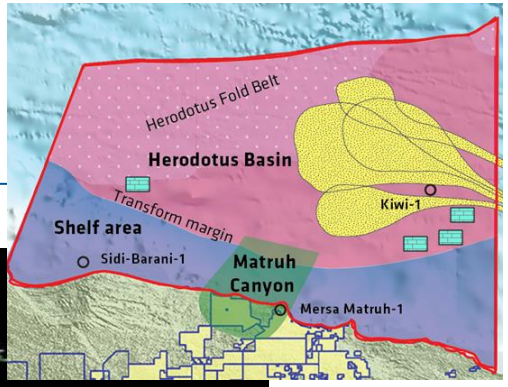
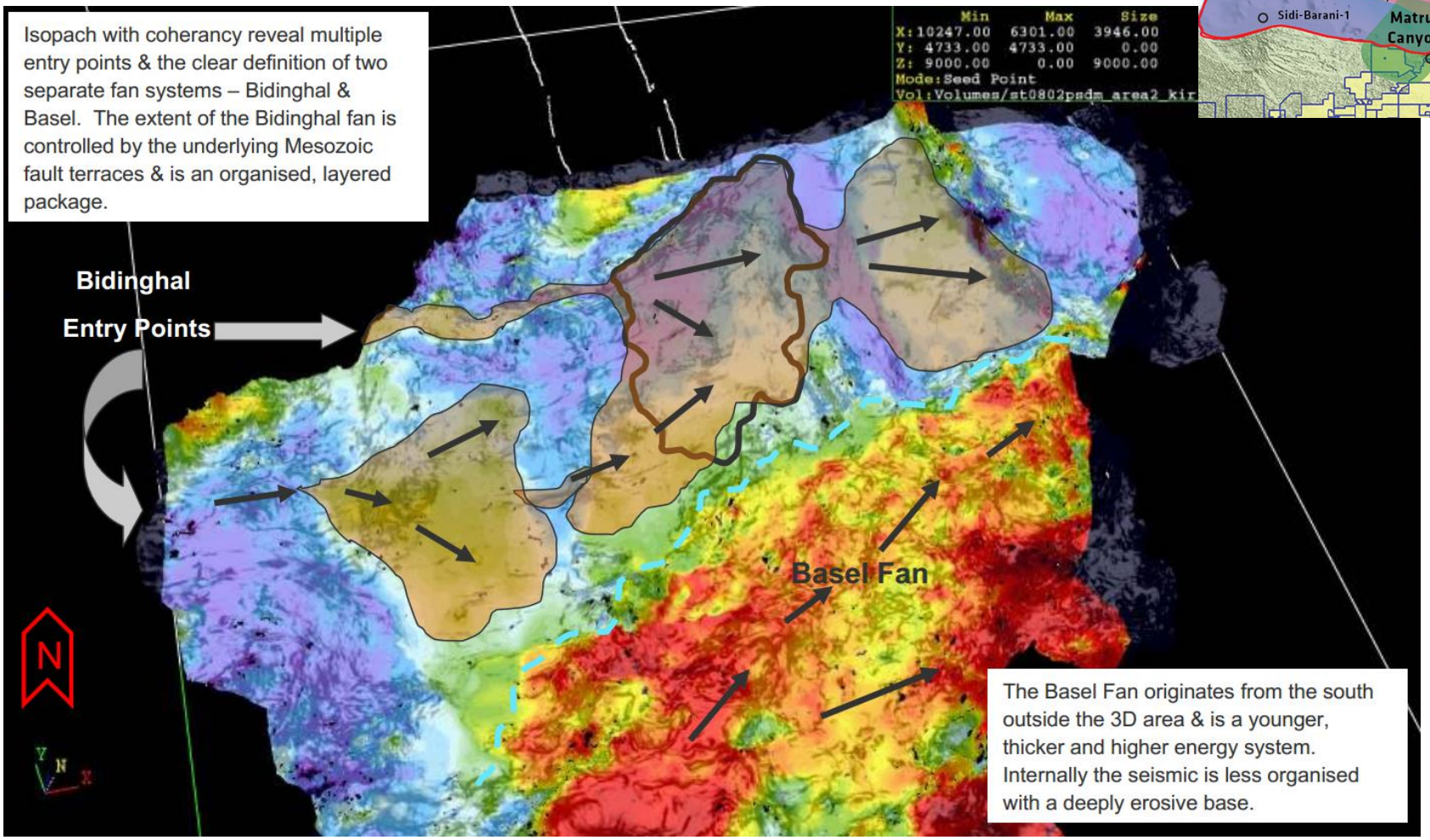
Herodotus Basin – Sub-salt fans



Isopach with coherancy reveal multiple entry points & the clear definition of two separate fan systems – Bidinghal & Basel. The extent of the Bidinghal fan is controlled by the underlying Mesozoic fault terraces & is an organised, layered package.



The Basel Fan originates from the south outside the 3D area & is a younger, thicker and higher energy system. Internally the seismic is less organised with a deeply erosive base.

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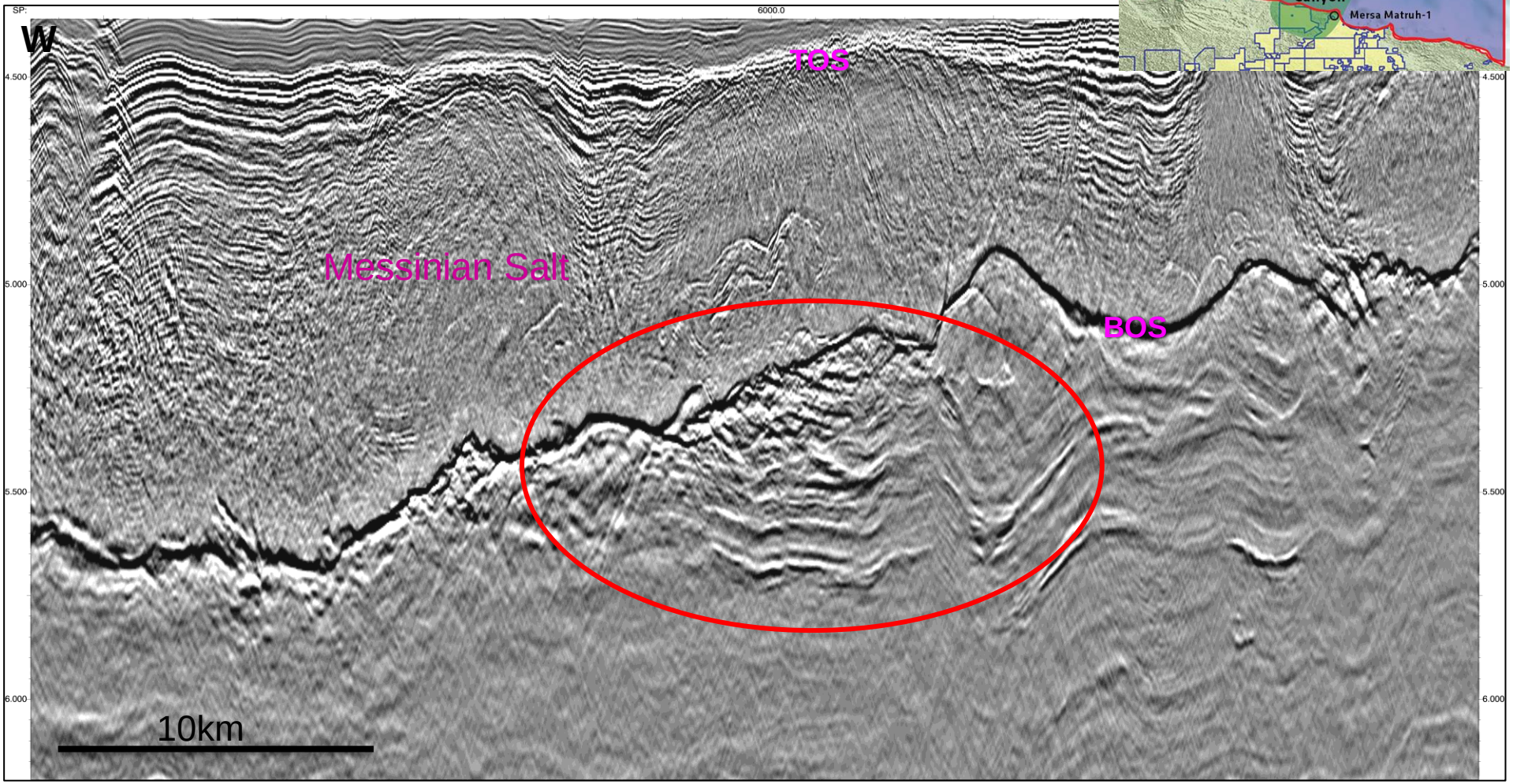
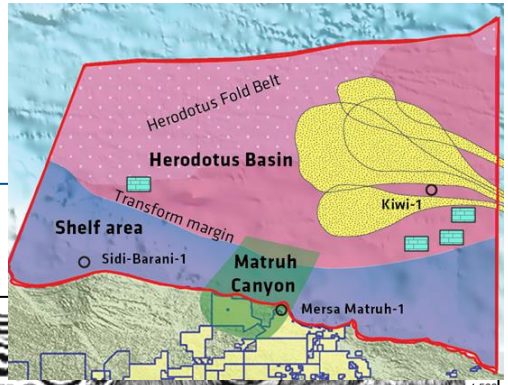
Herodotus Basin – Sub-salt Miocene anomalies





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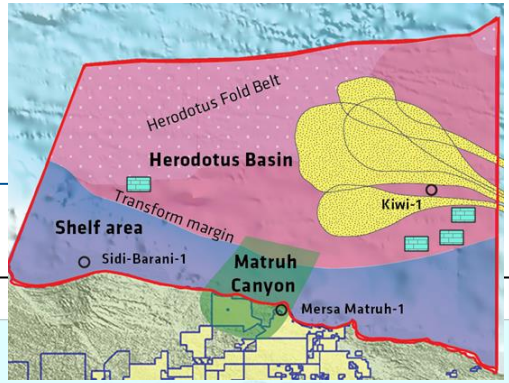
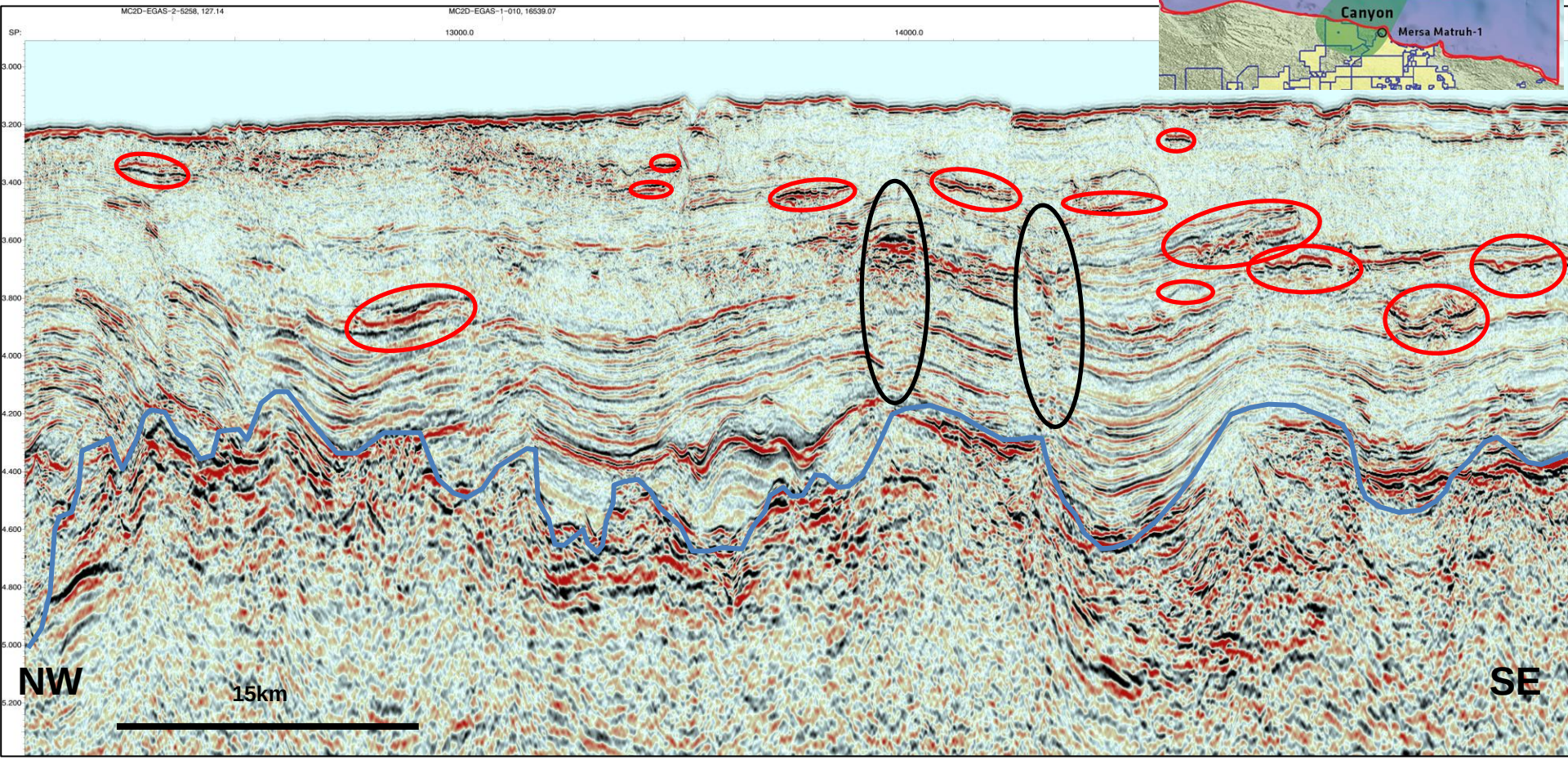
Herodotus Basin – Pliocene-Pleistocene play / Miocene Carbonate play





Possible gas pockets or channel systems

Possible gas chimneys

Possible carbonate structures

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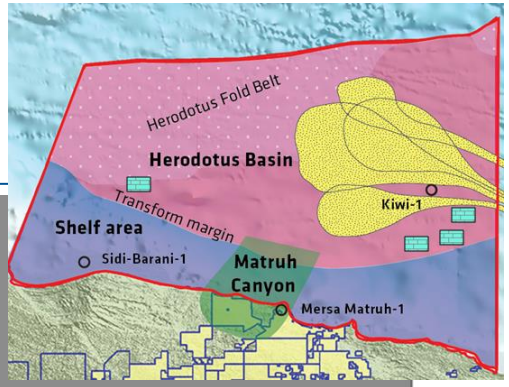
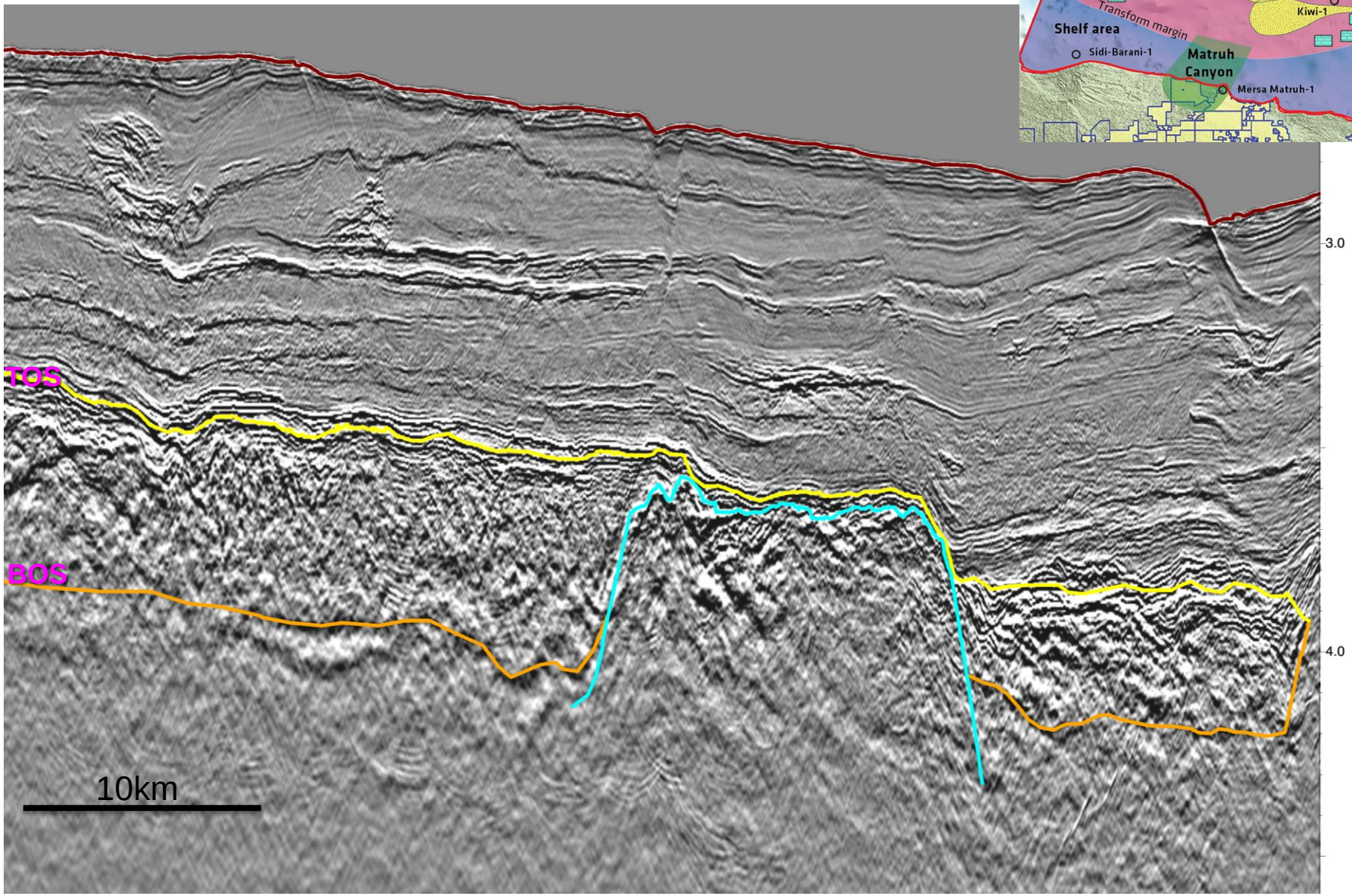
Herodotus Basin – Zohr analogues





Summary

- **Deepwater areas of the Mediterranean remain underexplored and hold a considerable HC potential.**
- **Egypt is the largest market in the Arab world and a potential HC exporter.**
- **Egypt's West Mediterranean Sea is regarded as Egypt's future.**
- **17,500km of new and reprocessed 2D data is now available.**
- **Several trends and leads have been revealed**
  - **Possible extension of the onshore discovery trend into the offshore shelf**
  - **Plio-Pleistocene play type in the Nile Delta vicinity**
  - **Sub-salt Miocene-Oligocene sandstones in the Herodotus Basin**
  - **Possible carbonate build ups (Zohr analogues) observed**

Acknowledgements

- Egyptian Natural Gas Holding Company (EGAS) for the good collaboration.
- PGS colleagues involved in the project.
- AAPG/APPEX organizers for giving us the opportunity to present.