A successful exploration case history in Western Desert, Egypt: Faghur Basin, from New Venture opportunity to production

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IEOC Exploration Concessions and Dev. Leases in Western Desert

Legend

- IEOC Exploration Concession
- IEOC Not certified
- IEOC Exploration Agiba Operator
- IEOC D.L. Operator Agiba

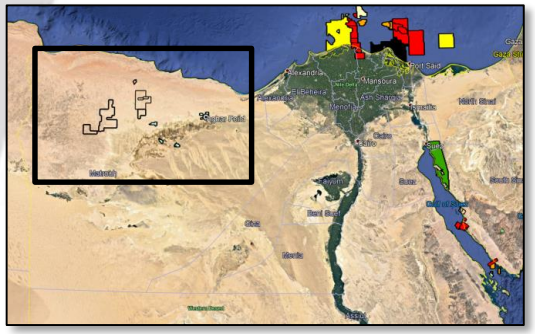
IHS Fields

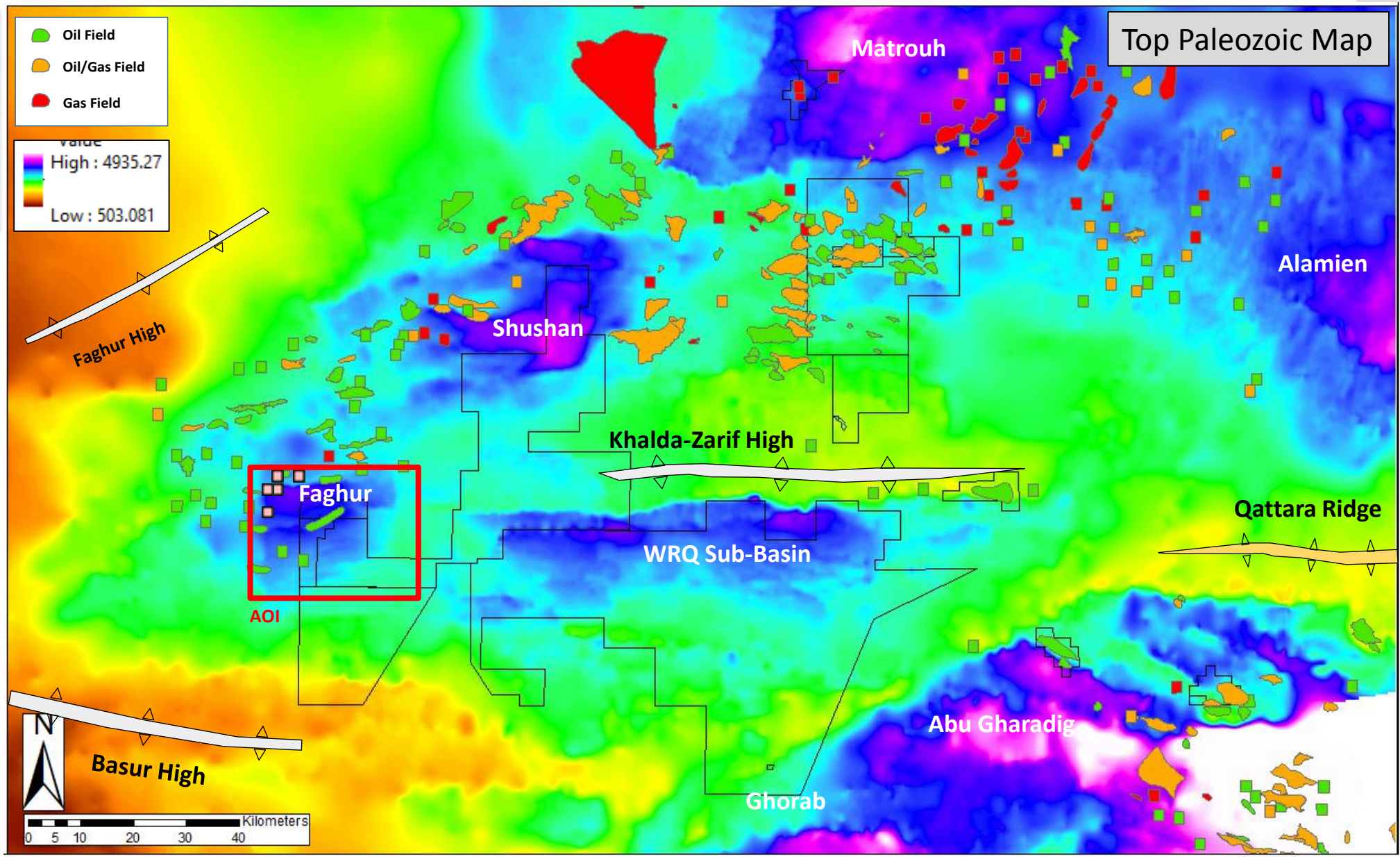
HC Type and Production Status

- Gas, Producing
- Gas, Non-Producing
- Gas, Abandoned
- Oil, Producing
- Oil, Non-Producing
- Oil, Abandoned

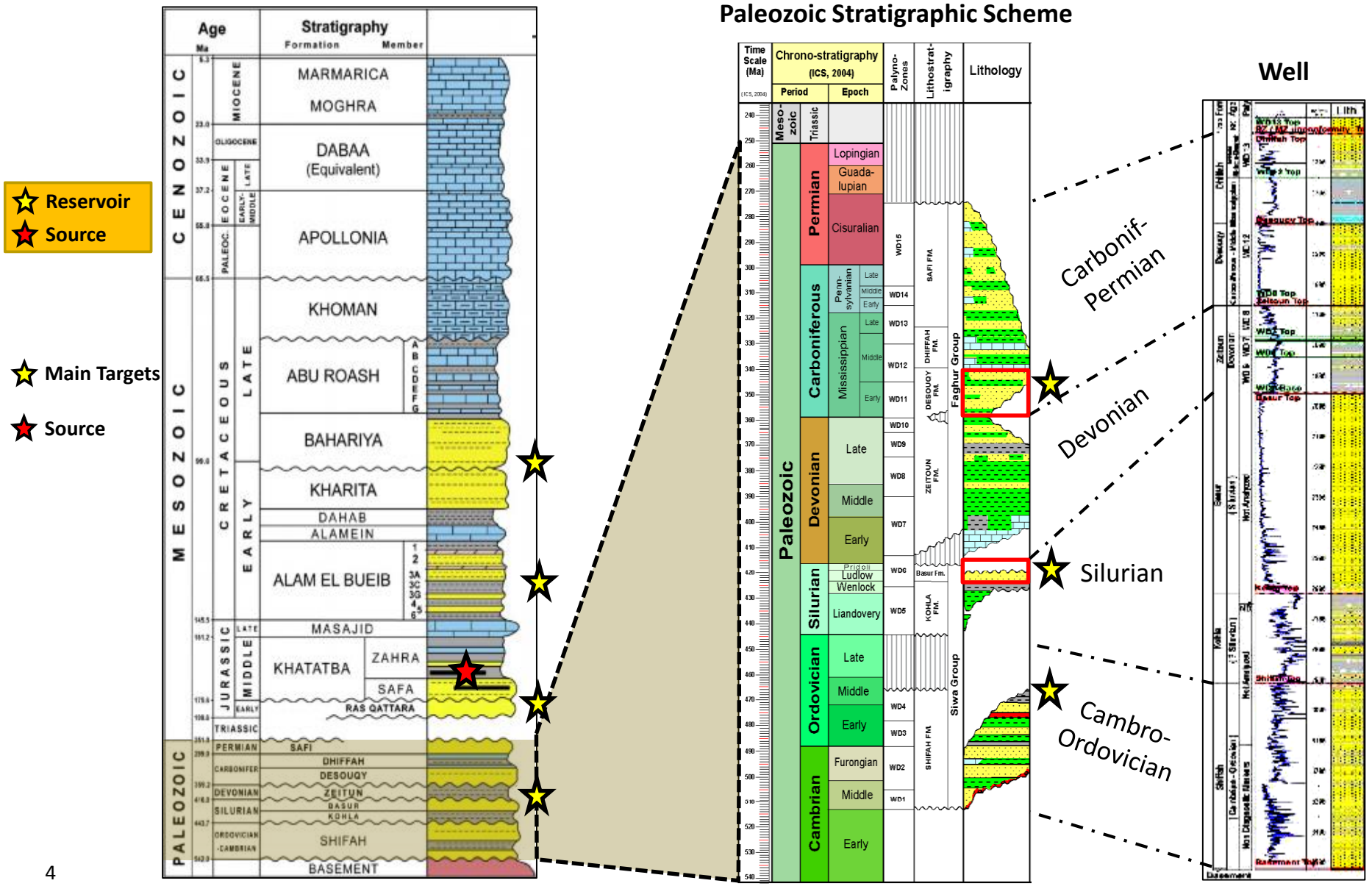
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Regional Framework- Major Tectonic Elements

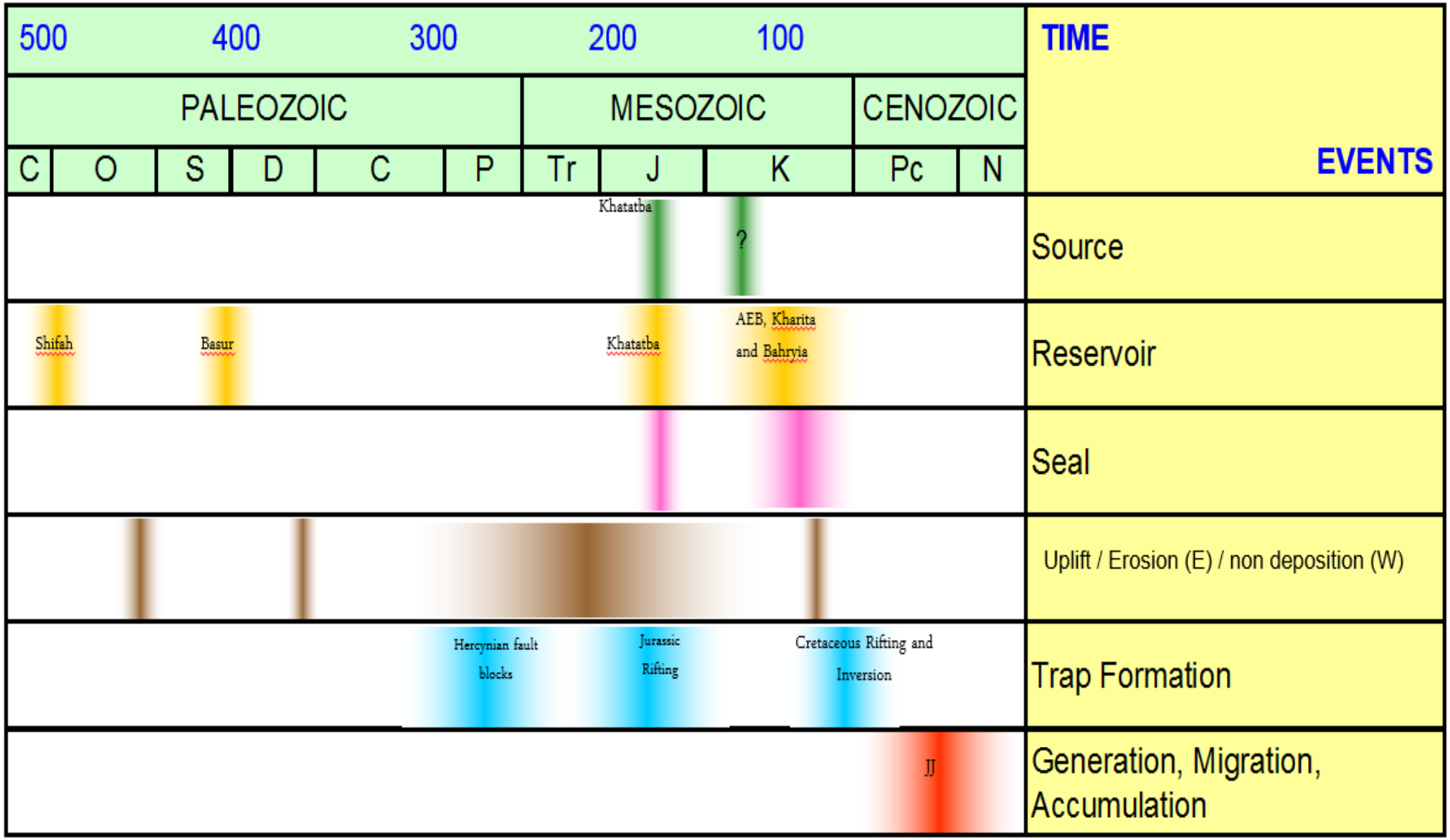




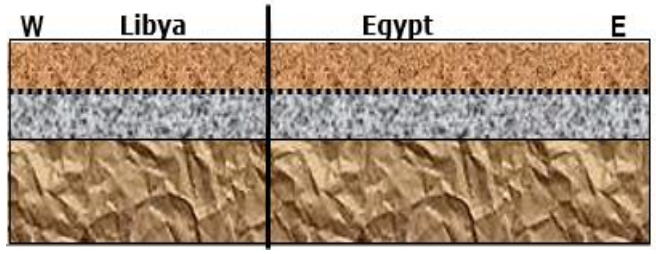
Western Desert Generalized Stratigraphic column and Play elements



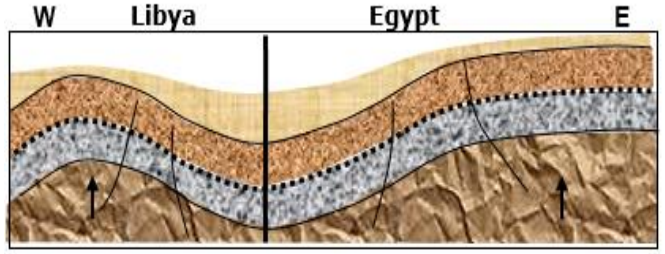
Western Desert, Generation and Migration/Accumulation Timing



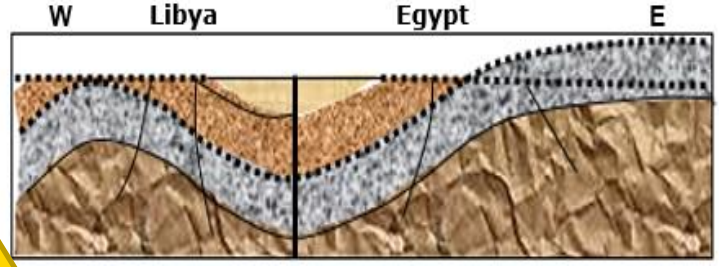
Western Desert, Basin Evolution E-W section



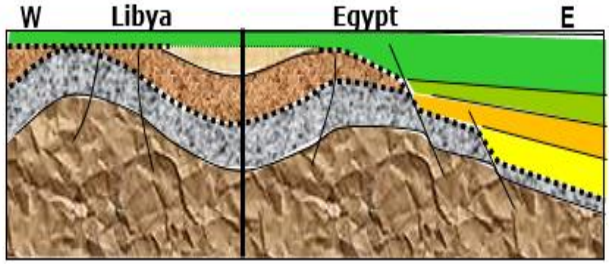
Paleozoic Basin



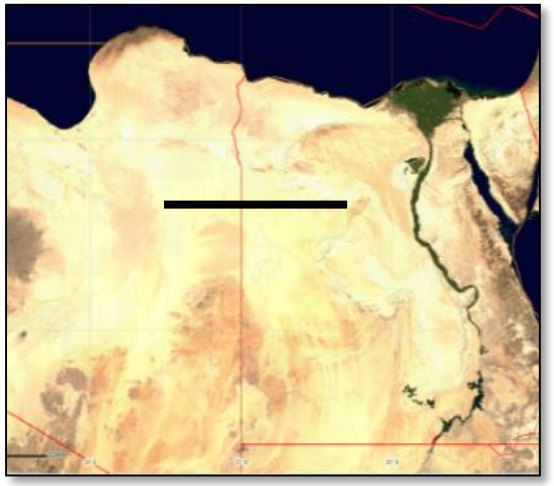
Hercynian tilting & Uplift



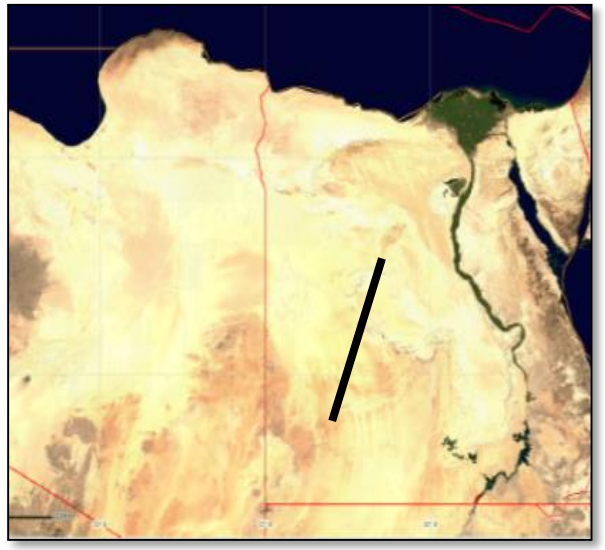
Post Hercynian Erosion

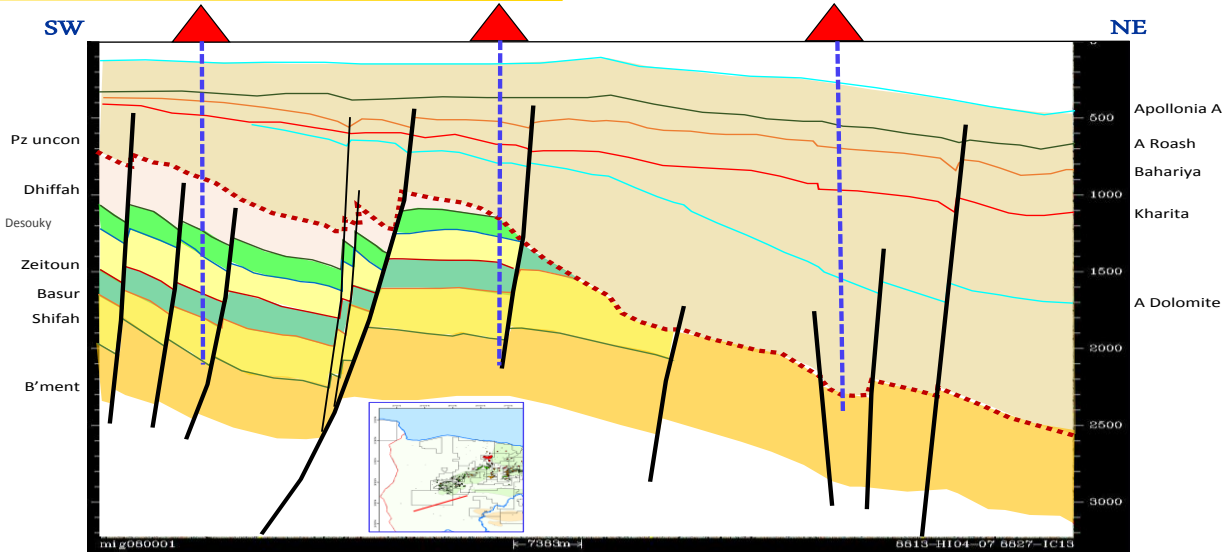


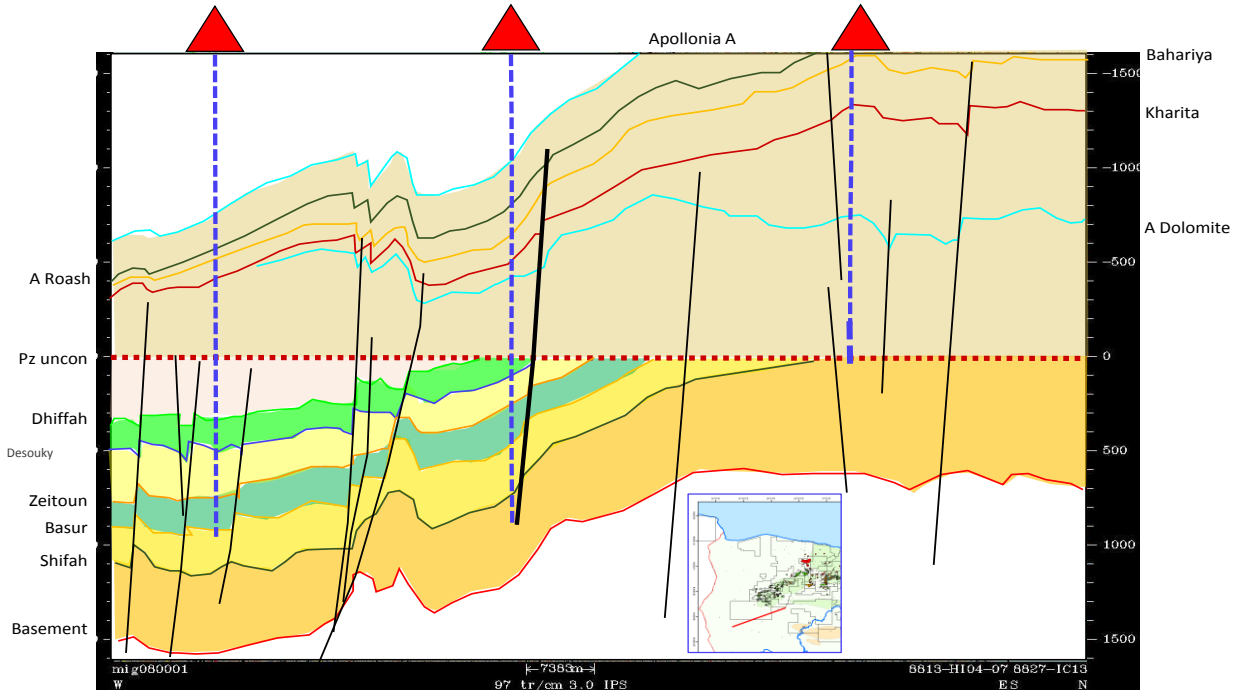
Syn-Deposition Subsidence JJ Rifting & Mesozoic Wedges



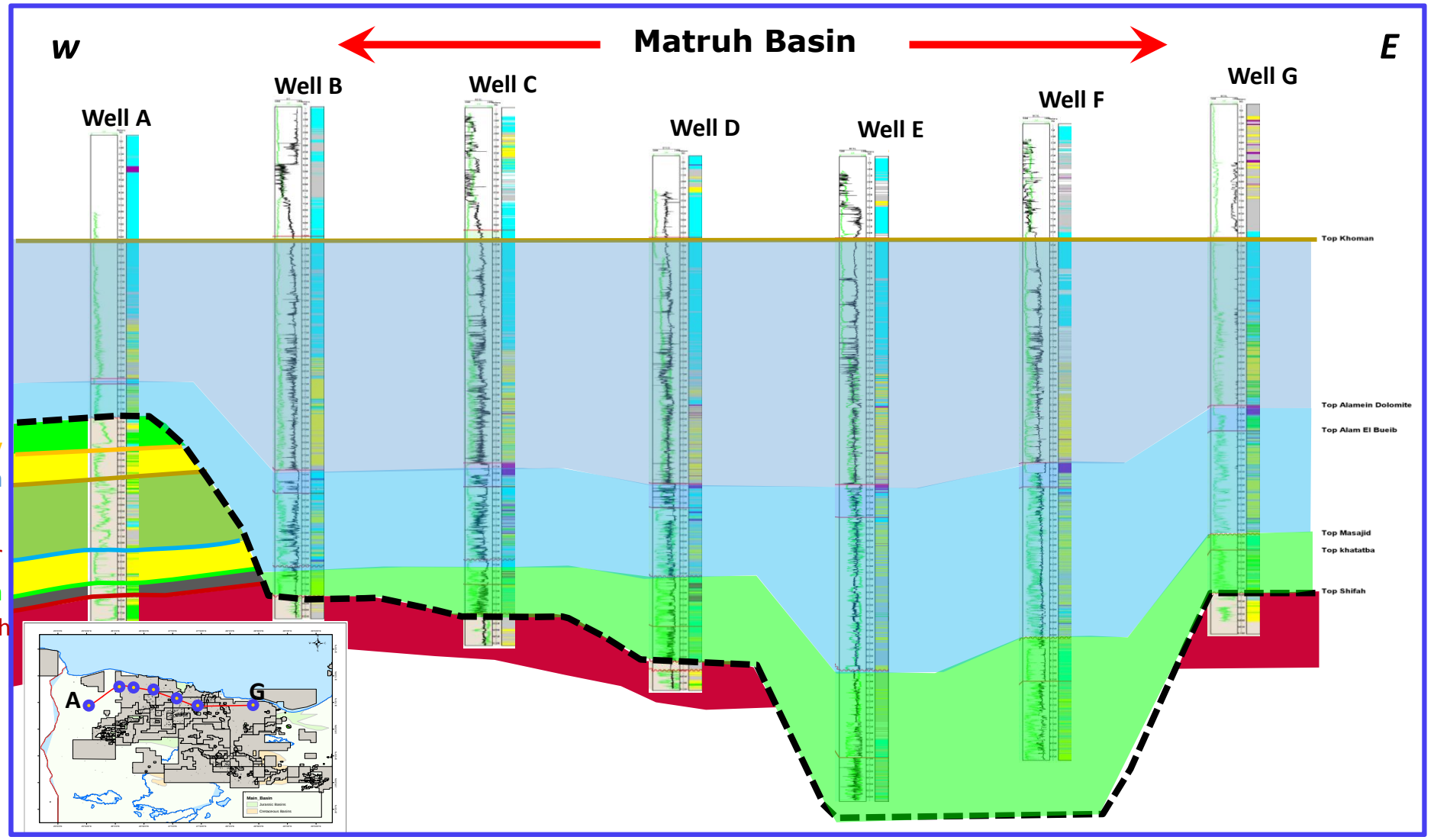
Western Desert, Basin Evolution NE-SW Regional Geo-Seismic sections







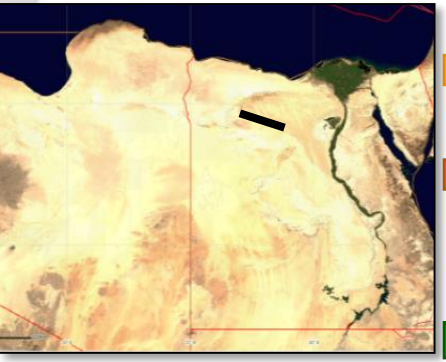
Northern Western Desert (Matruh Basin), E-W Regional wells correlation

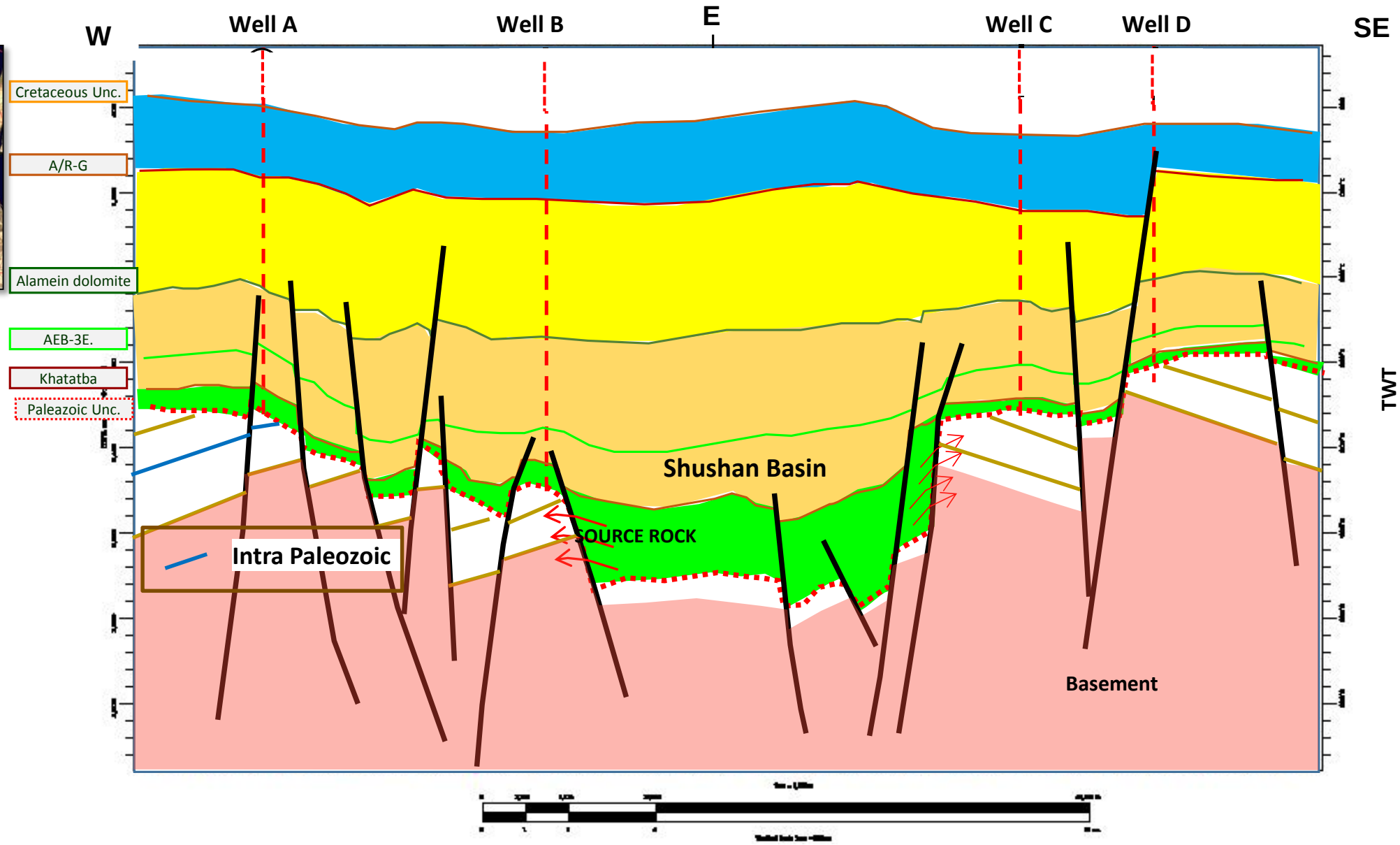


Both Jurassic and E. Cretaceous (AEB) Syn-Rift sediments thinning-out westward.

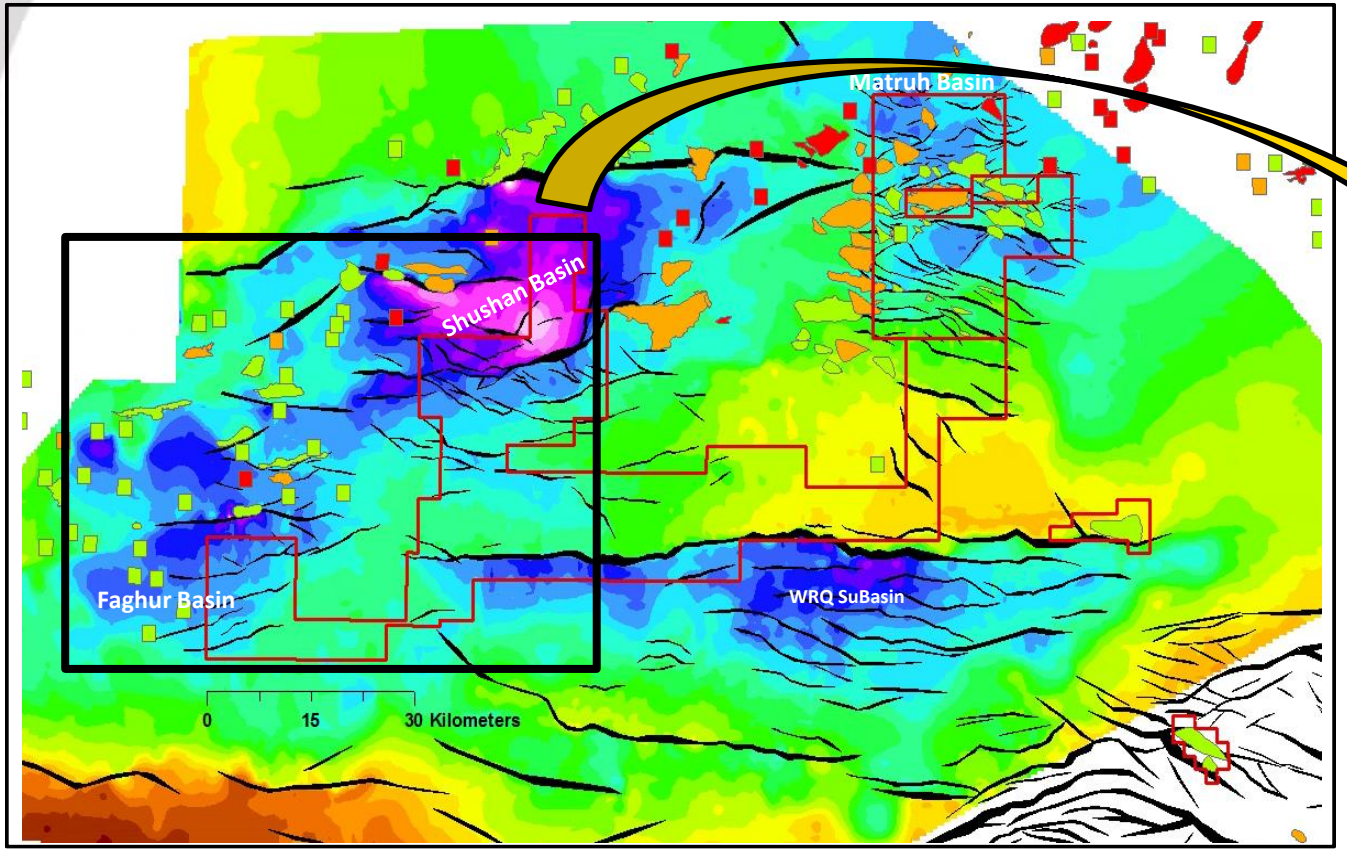
AEB is missing in the westernmost area

Shushan Basin, Geo-Seismic Cross Section



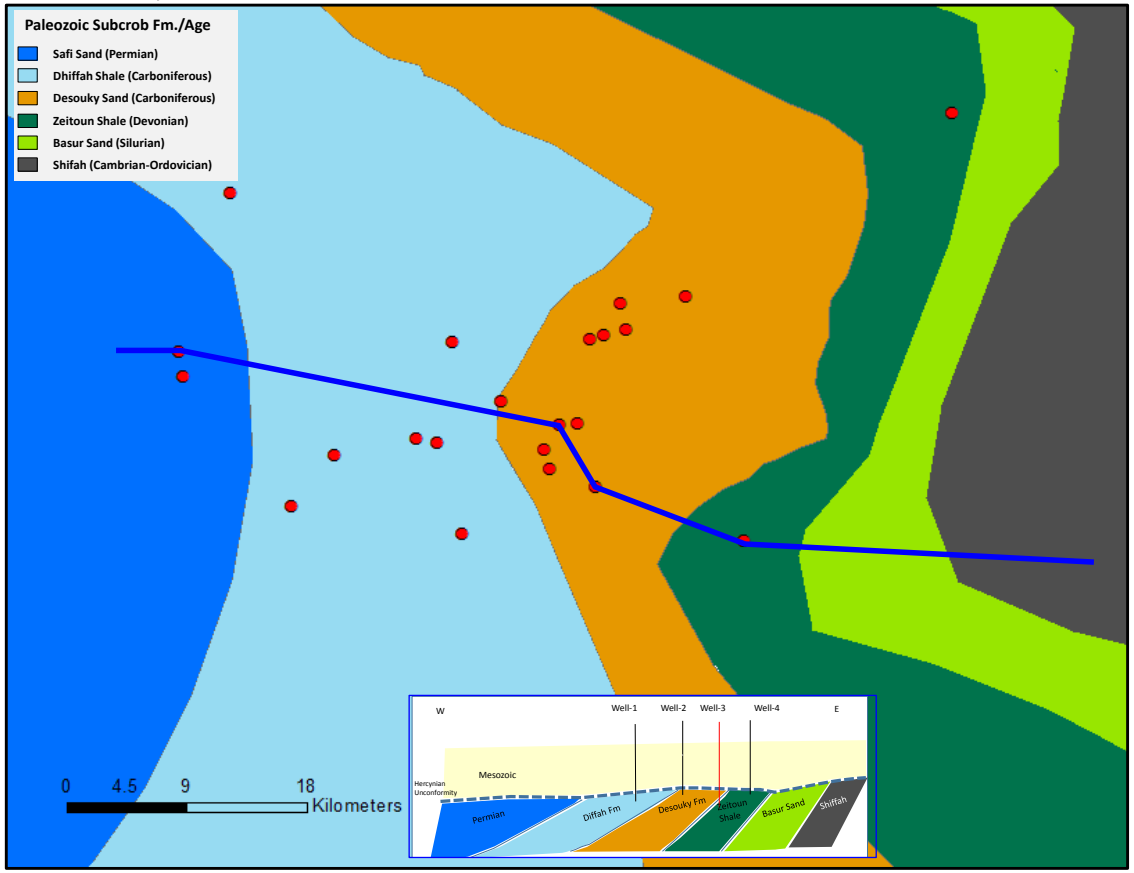


Top Paleozoic Unconformity Map & Paleozoic Sub-crop Map

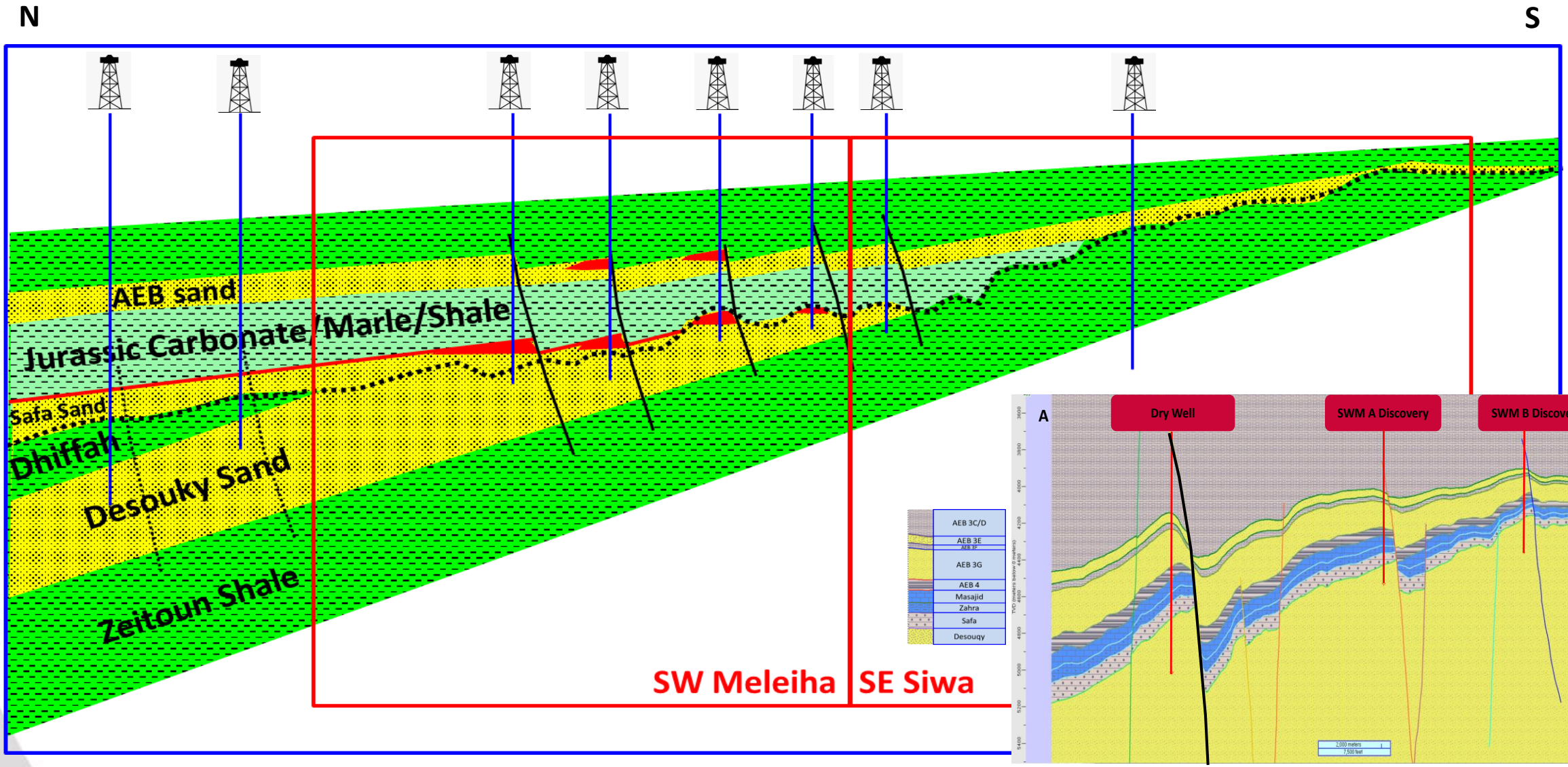


Top Paleozoic Unconformity Map

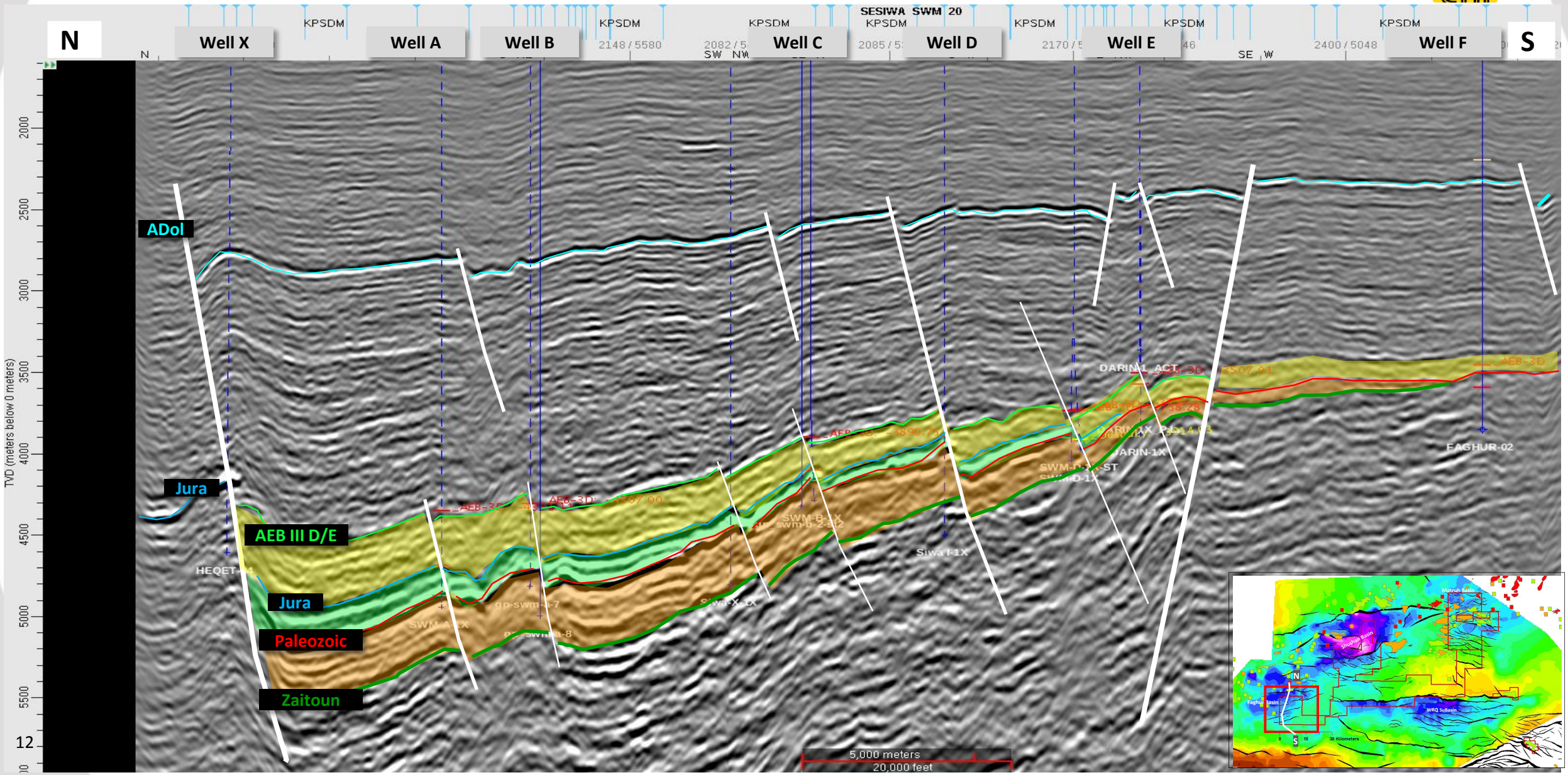
Paleozoic Sub-crop Map



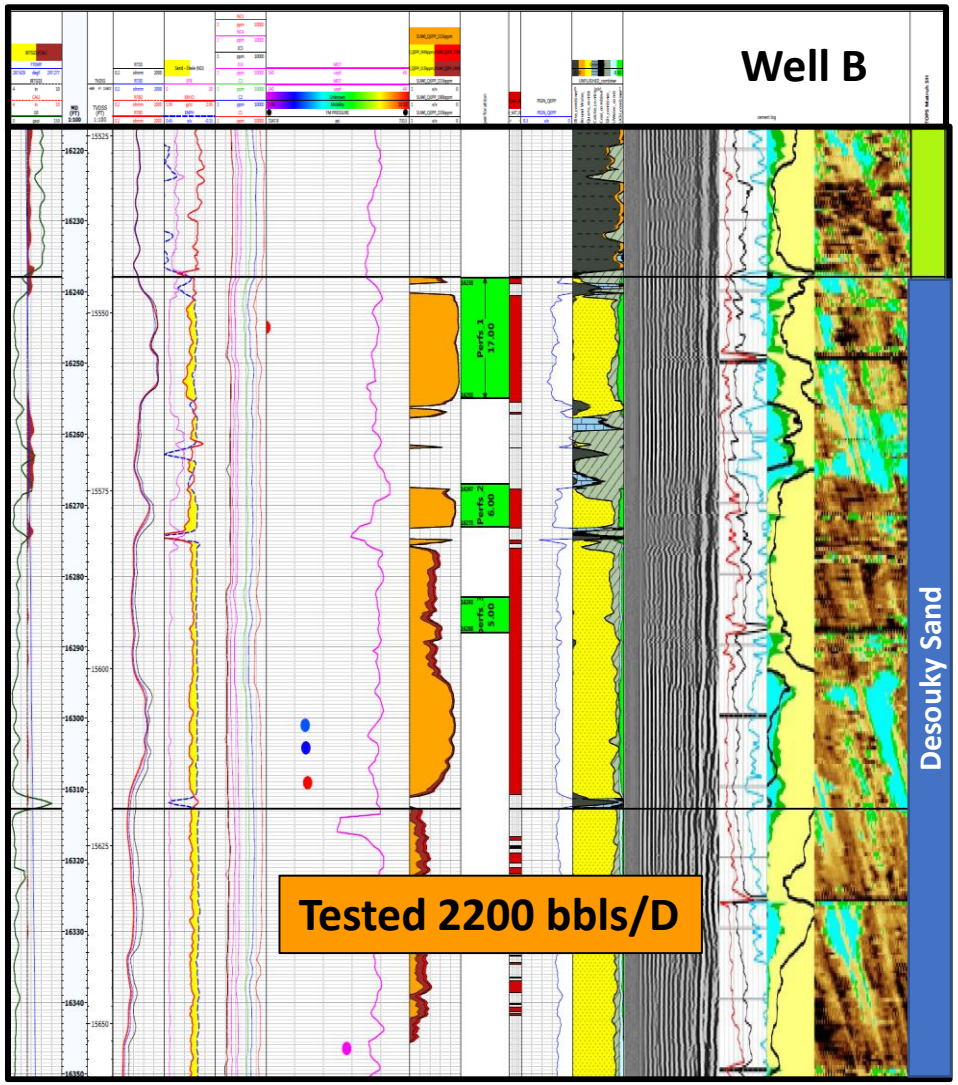
Mesozoic/Paleozoic reservoirs relationship and traps geometry

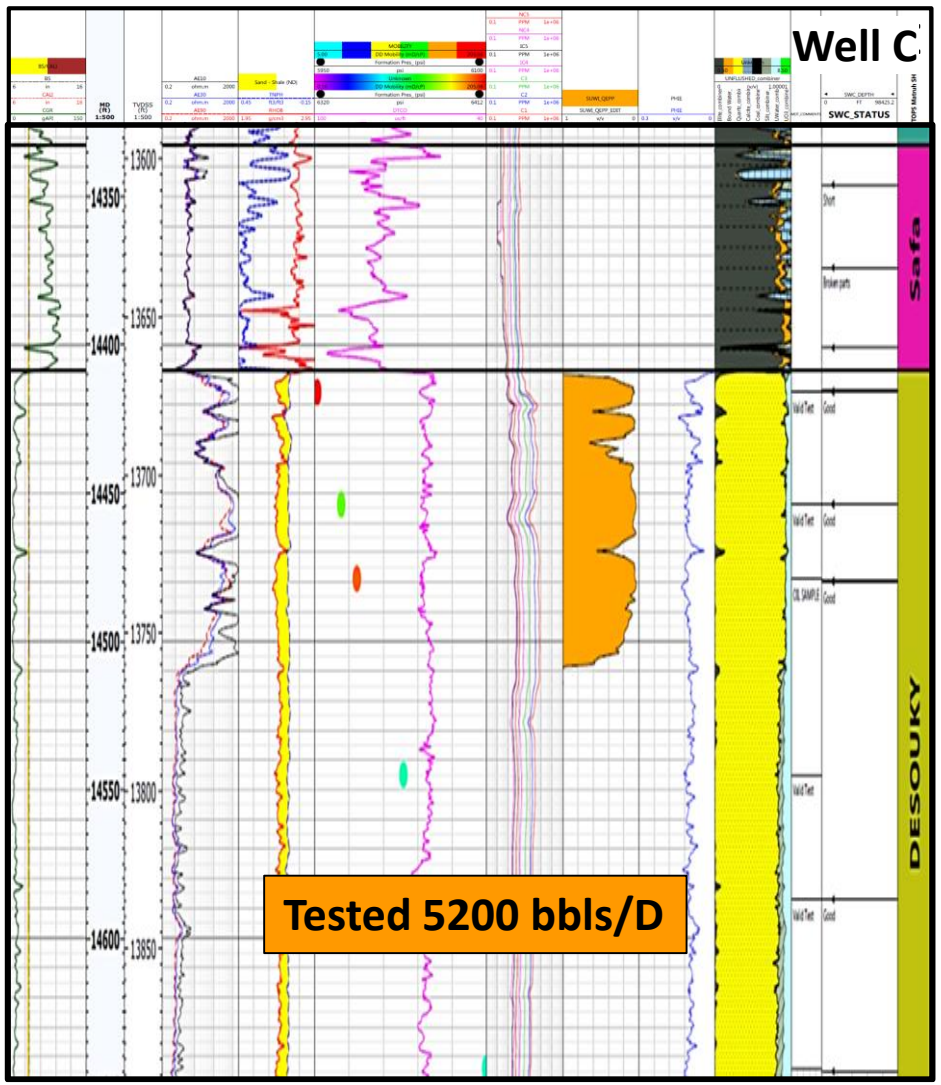


N-S Depth Seismic Line Through Faghur Basin

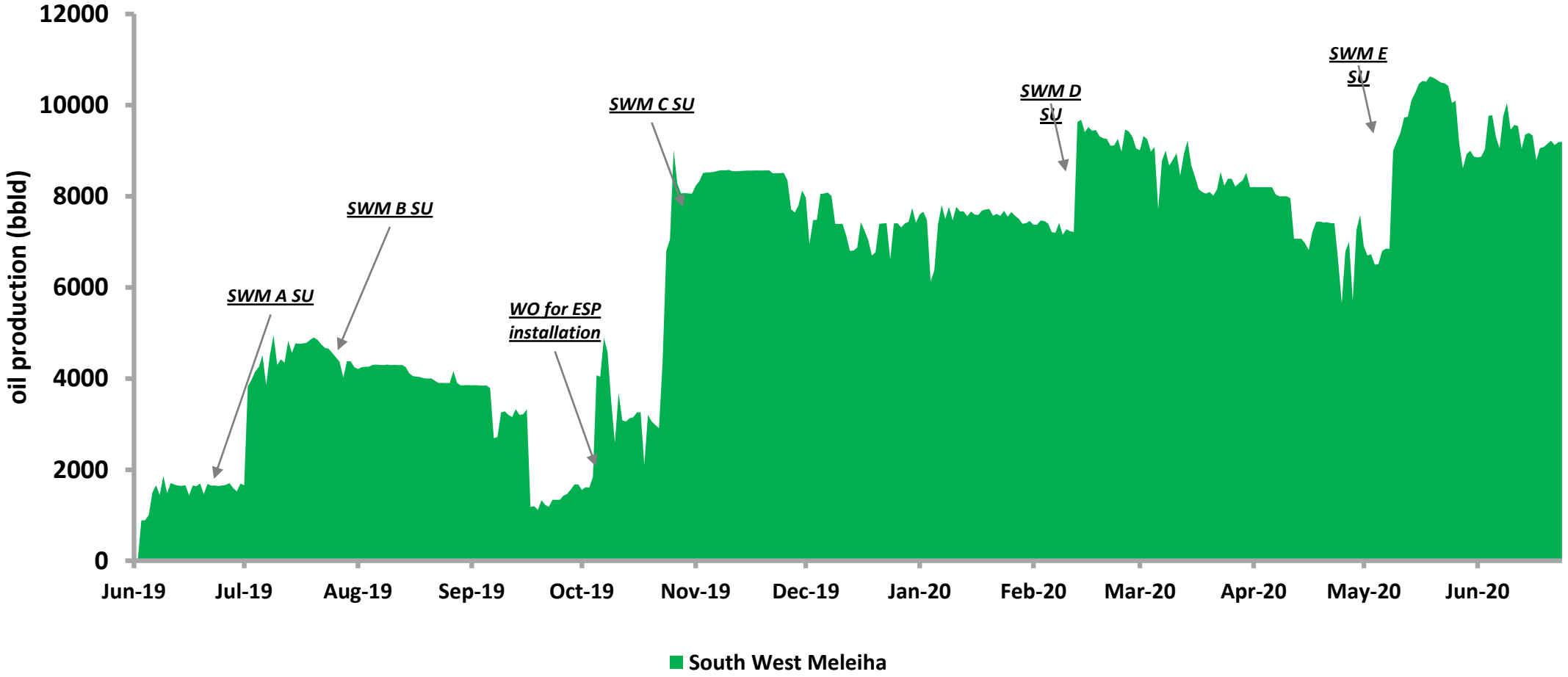


Wells B & C Paleozoic Reservoir CPI





IEOC South West Meleiha 2019-2020 Production



From discovery in 2018, production started up in June 2019.
In less than one year production reached more than 10,000 bbld with a new 130 km 10" P/L from new Production area to Main Production Facilities

Conclusion

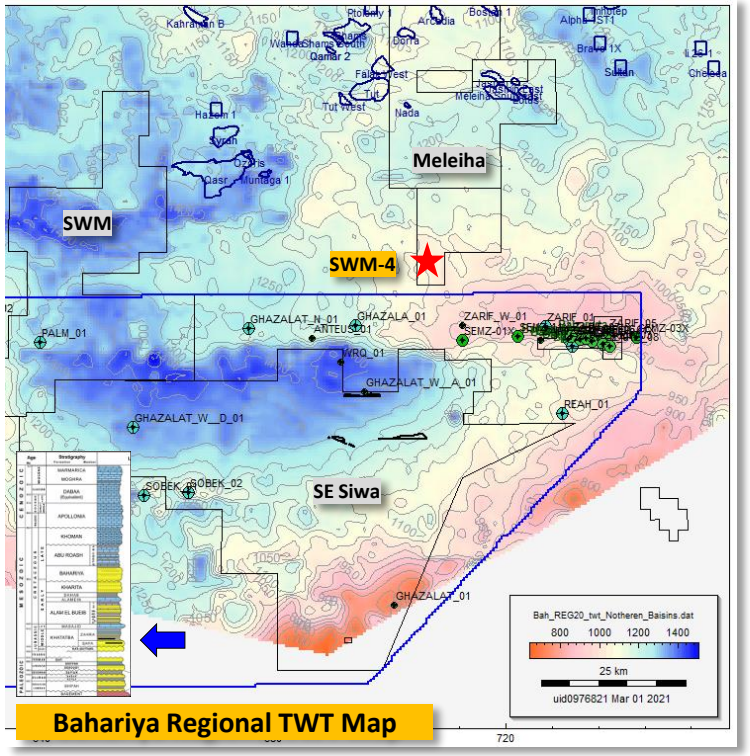
- The present day structural lineament of the Faghur Basin is **mainly reflecting the Mesozoic deformation history**. In the Western Desert the Paleozoic sequence increases in thickness westward while disappears to south and south east.
- The Paleozoic sandstones are **considered the present and future reservoir targets in northern Western Desert basins**. The porous and permeable Paleozoic sandstones are expected to trap large hydrocarbon volumes where they occur directly juxtaposed to the Jurassic source rock shales and/or are located in their proximity. **Such type of traps are proven** at certain locations in the Shushan and Faghur basins.
- **The future of exploration potential** in many of the more mature basins of Northern Western Desert **will increase by evaluating such older and more deeply-buried plays (Paleozoic)**. The Paleozoic plays represent an attractive challenge for future exploration in the Western Desert.
- As overall results, **the oil production has been increased**, reflecting **very good results of integration among Exploration, Drilling, Development and Reservoir management**

THANK YOU!

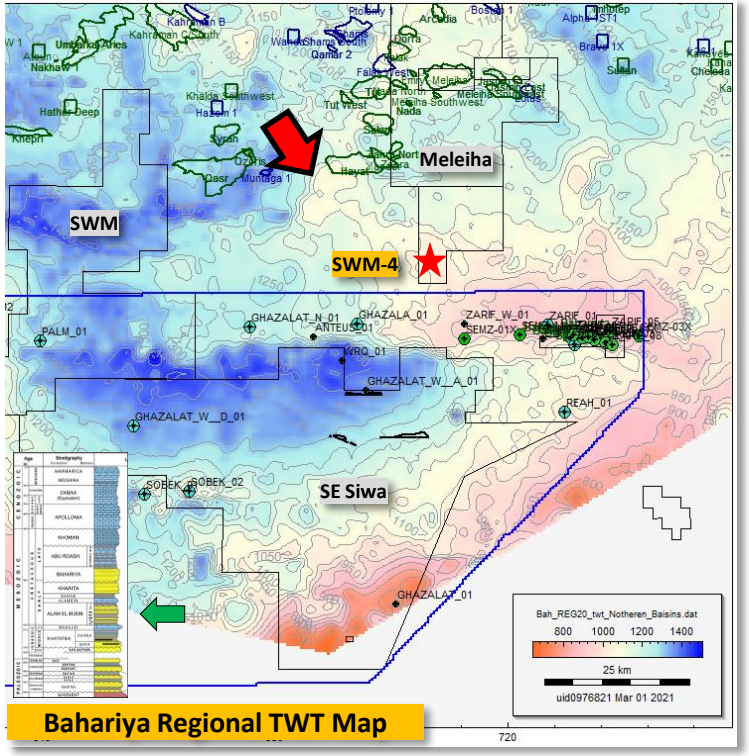
ANY QUESTIONS?

PSM STUDY: STAIR OF MIGRATION

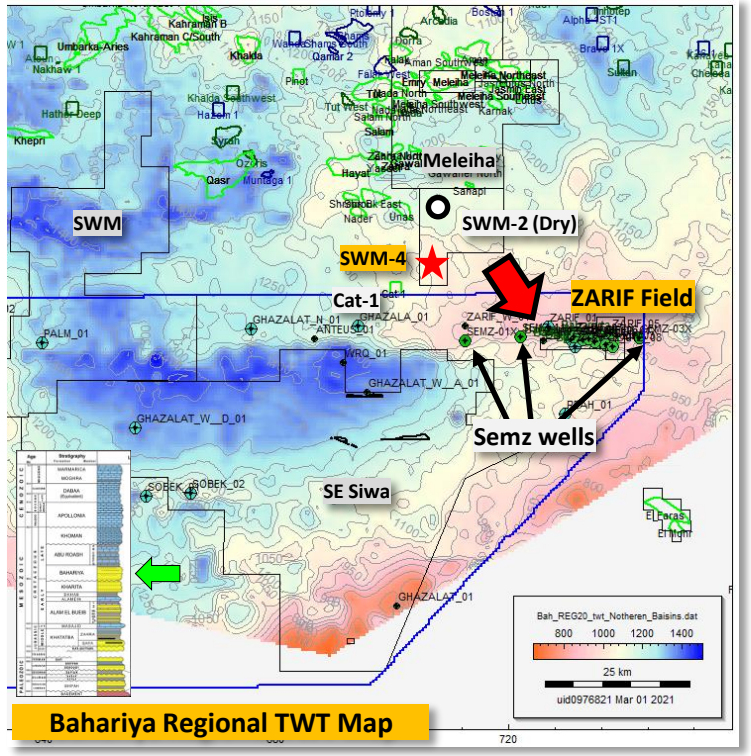
GEBA 2021- PSM Study



Khatatba Fields
JURASSIC



AEB Fields
LOWER CRETACEOUS

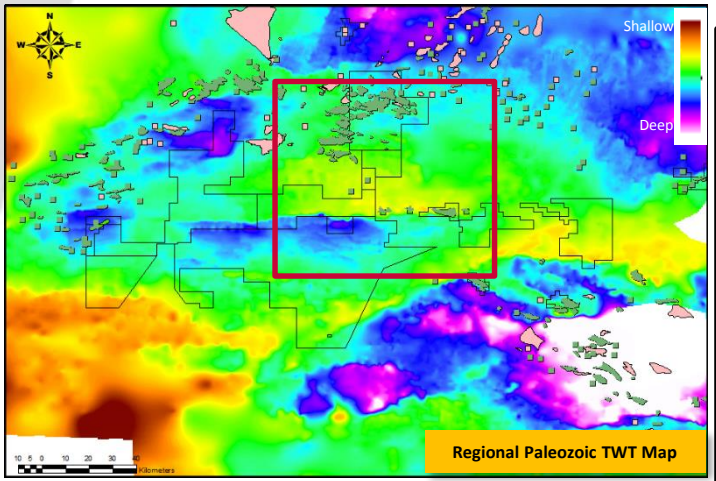


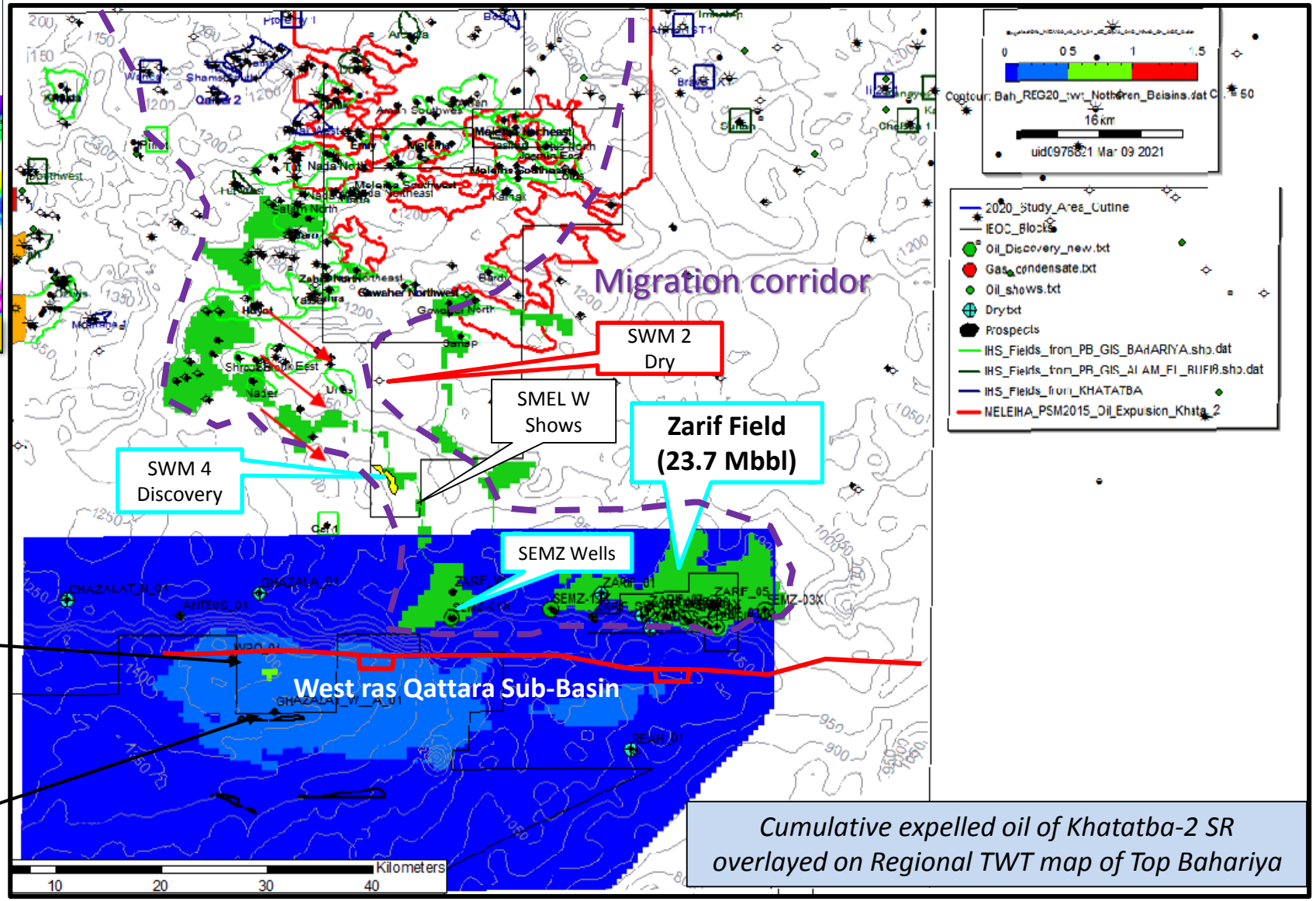
Bahariya Fields
UPPER CRETACEOUS

- *The discoveries distribution suggests an upward migration, though a fill to spill mechanism*
- *The HC is present in shallower target moving to the South*

SE SIWA: West Ras Qattara Sub-Basin PSM (Geba 2021)

GEBA 2021- PSM Study





Cumulative expelled oil of Khatatba-2 SR overlayed on Regional TWT map of Top Bahariya