

Adding A New Exploration Opportunities in brown Fields

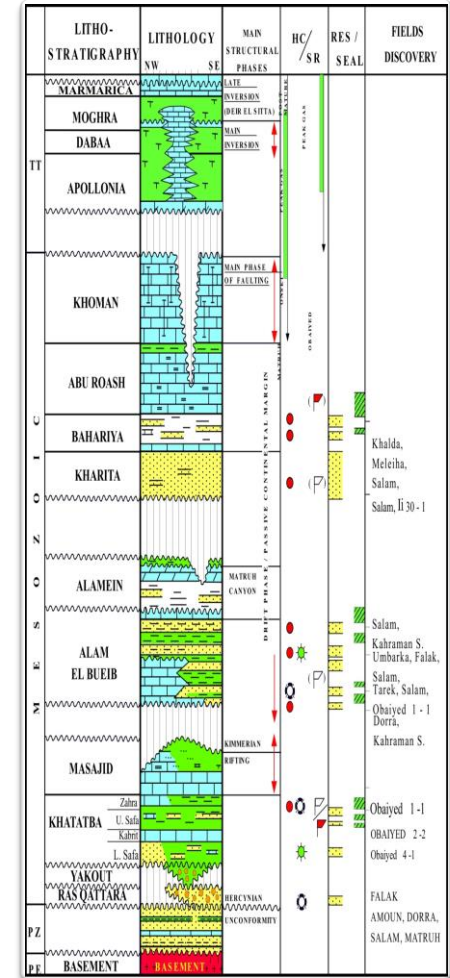
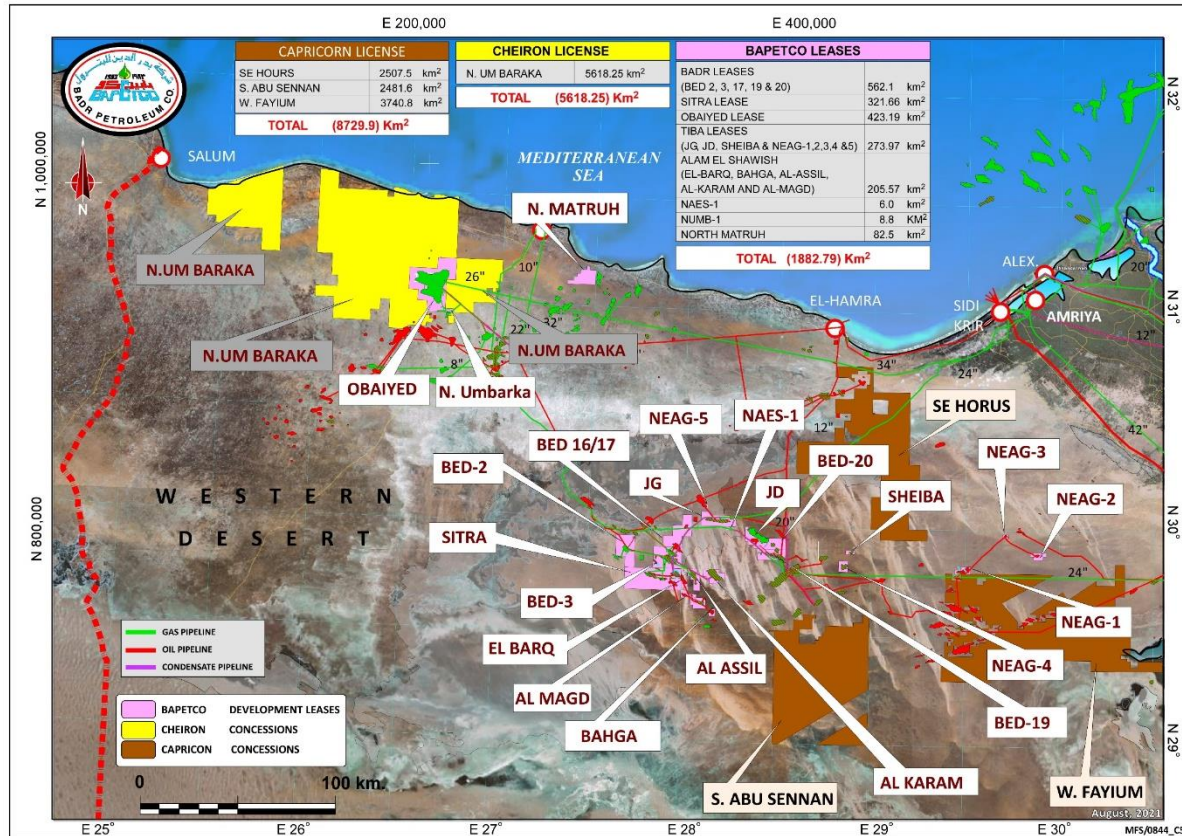
BED15-C2-1 Discovery

BED-3 Development Lease, Western Desert, Egypt.

BED Area Team

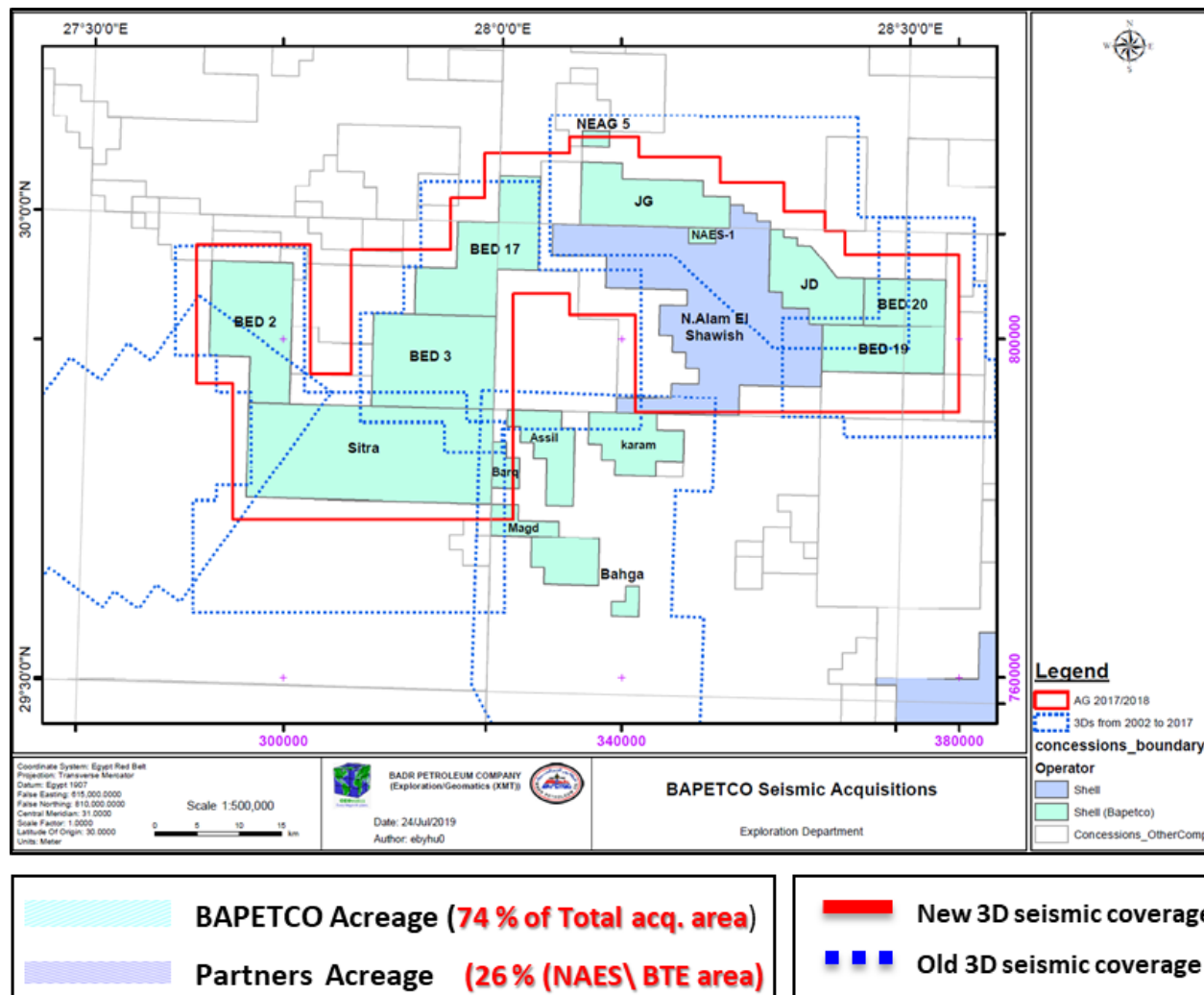
Presenter / Ahmed Mostafa

BAPETCO Development Leases, Western Desert, Egypt.



- BED 3 development lease located in the Western Desert, 65 Km west of GPC's Abu Gharadig Field.
- Cretaceous Reservoirs (AR/C,E, G – Bahariya – Kharita).

Geophysical Activities: BAPETCO 3D seismic (AG 2017)



Survey Objectives:

- Improve seismic imaging especially for the deeper targets & reduce fault uncertainties to help and support finding new Exploration & Development Opportunities using the up to date technologies.

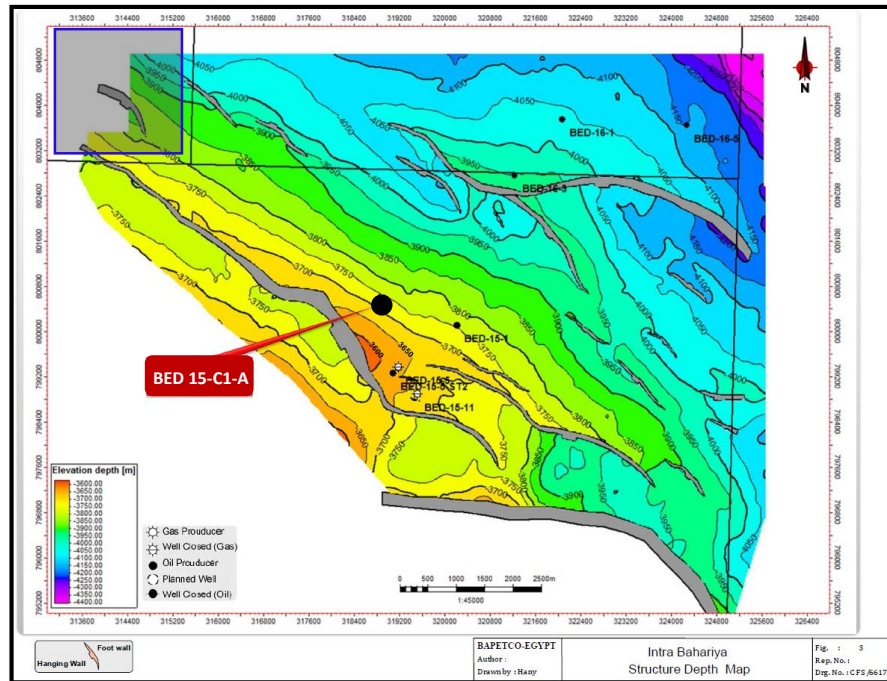
Case Study

BED15-C2-1 Discovery

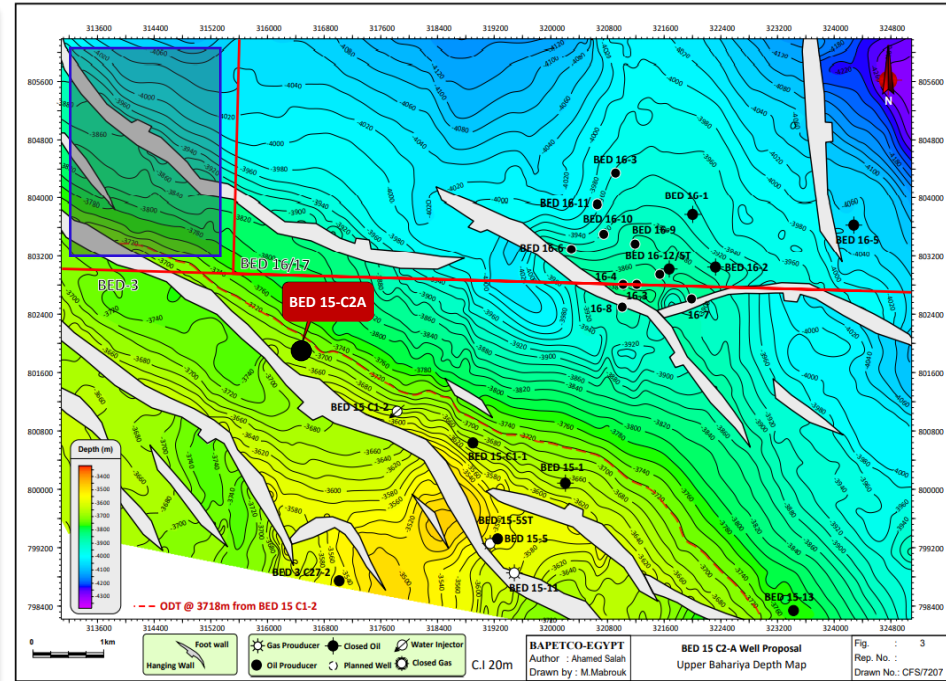
BED-3 Development lease, Wester Desert

BED 15 C2-1 Discovery

Bahariya Depth Maps 2006

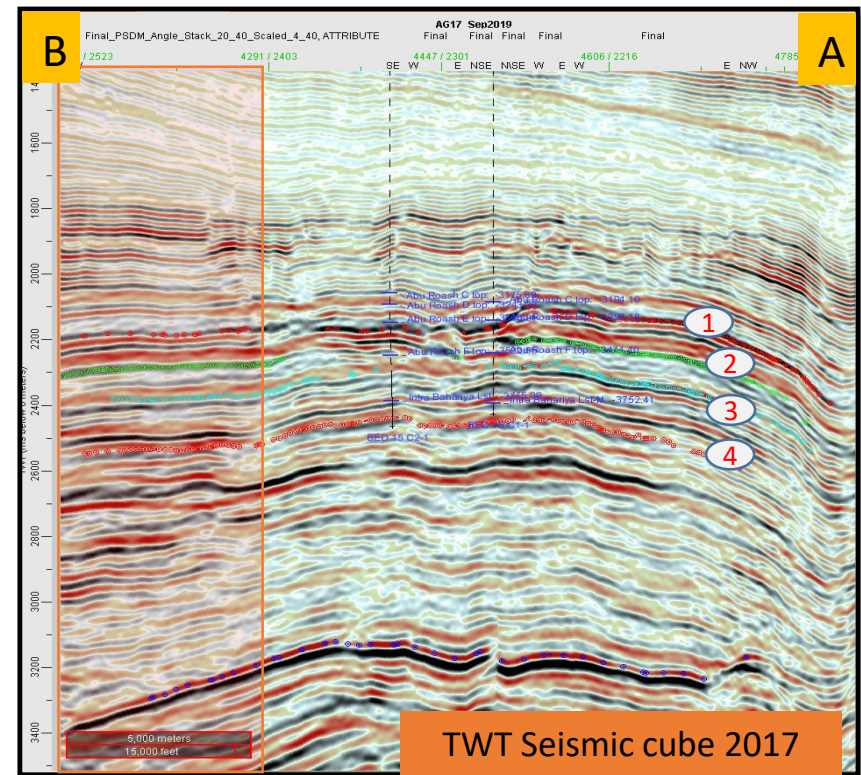
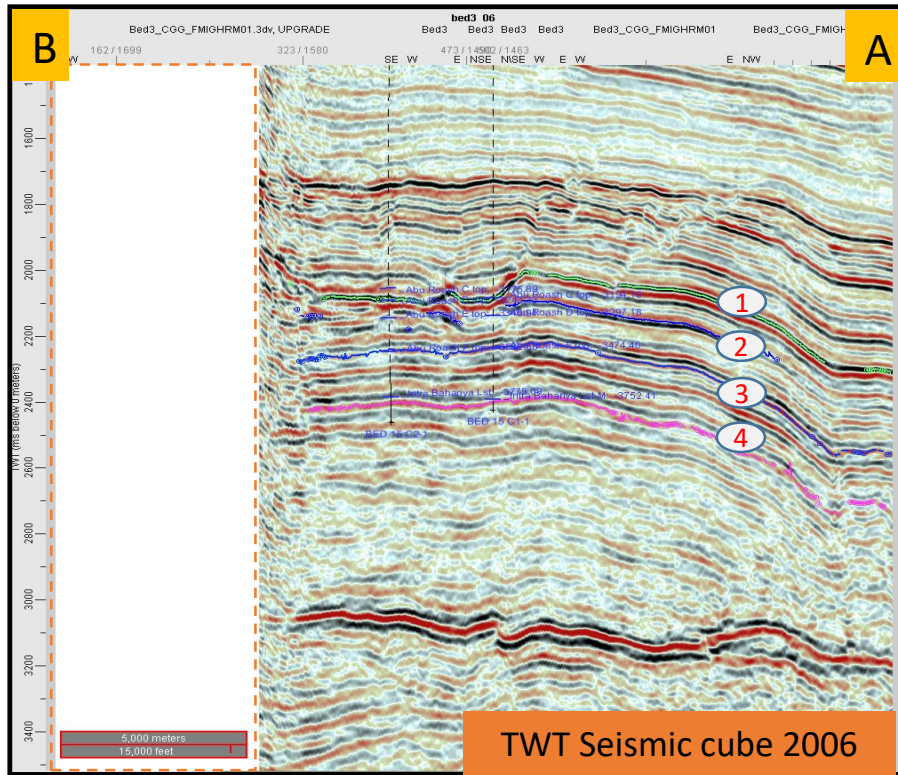


Bahariya Depth Maps 2017

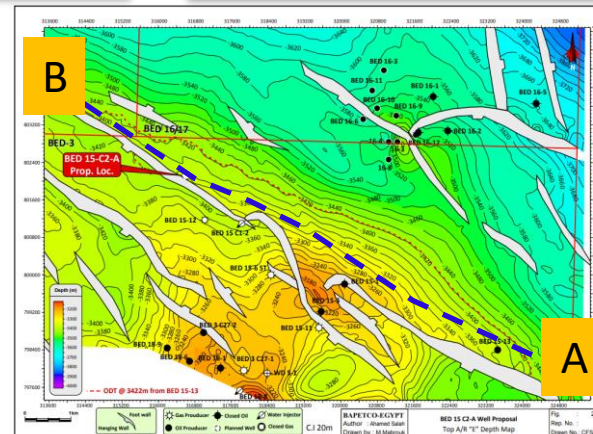


- The BED-3 Development Lease was covered by 3D seismic 1988.
- In 2006, a 750 km² 3D survey was acquired to cover the BED-3 greater area with fold data (200). The 3D seismic survey was processed by CGG in 2007.
- A new WAZ 3D seismic survey with higher fold data (2000) was acquired in 2017 covering BED3 Dev. as a part of a carpet survey covering most of BAPETCO development leases.
- The new survey covers larger area beyond the 2006 areal coverage.
- This enables mapping the NW closure of Bed 15 extending outside the development lease for the 1st time and supported the maturation of BED 15 C2-1 opportunity.

Seismic Section through BED15-C2-1 discovery



- The difference between two seismic sections shows the extended area covered by 2017 seismic cube toward the NW direction of the field.



LEGEND

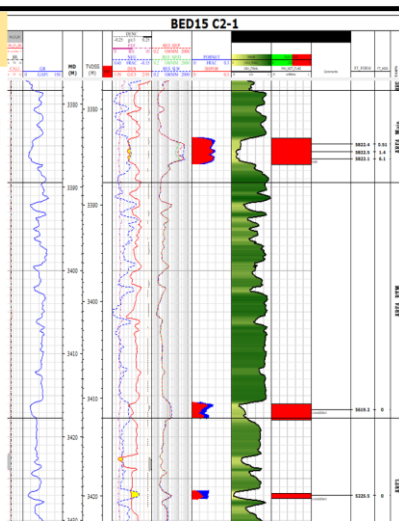
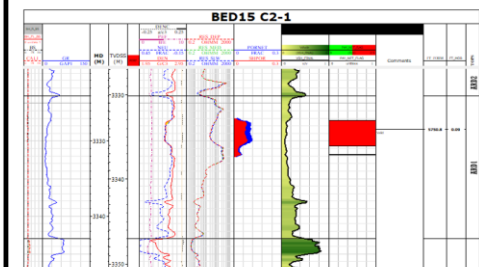
- 1 NT A/R'C'
- 2 NT A/R'E'
- 3 NT A/R'F'
- 4 NT Intra Bahariya L.S.

BED15-C2-1 Discovery Well Results



TechLog Plots ARD & ARE

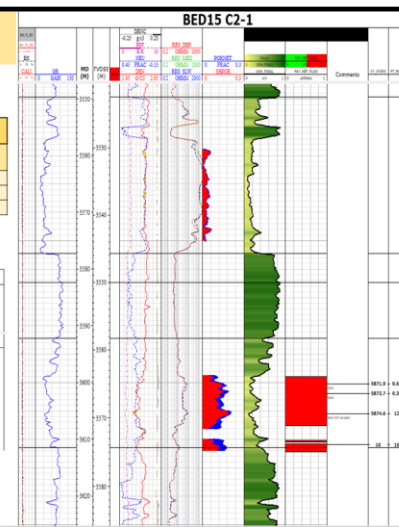
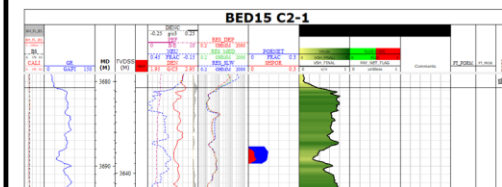
Zones	TOP.m	BTM.m	GRS.m	NET.m	N/G	POR.avg	SW.avg
ARD1	3330.1	3347.0	16.8	4.7	0.28	0.08	0.30
ARE4_Main	3378.1	3387.7	9.6	3	0.30	0.15	0.14
ARE4_BT	3387.7	3412.1	24.4	1.7	0.07	0.12	0.37
ARE3	3412.1	3439.5	27.5	1.2	0.04	0.12	0.53



- Test Results : 1,290 BBL/d
- Current production : 900 bbl./d
from Abu Roash G
- Cum. Production : 95,000 BBLS

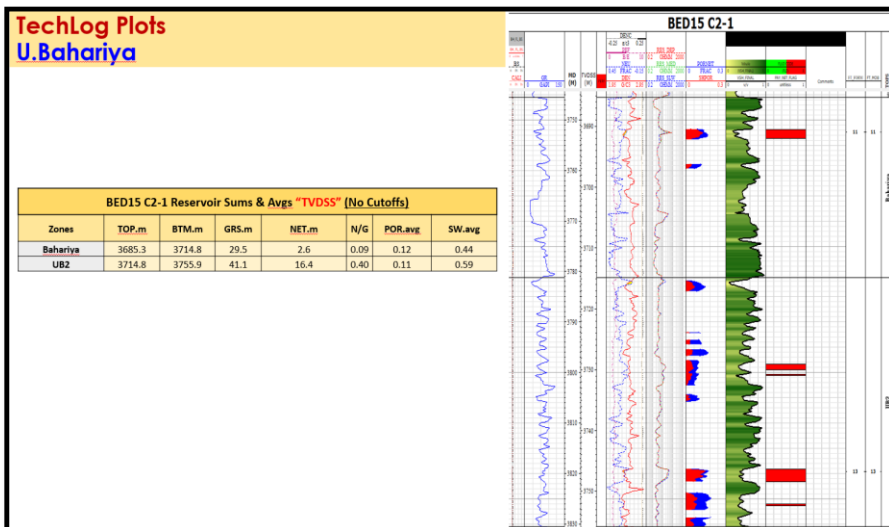
TechLog Plots ARF & ARG

Zones	TOP.m	BTM.m	GRS.m	NET.m	N/G	POR.avg	SW.avg
ARF	3522.5	3545.7	23.2	14	0.60	0.03	0.17
UPG3	3558.3	3574.3	16.0	9.3	0.58	0.14	0.28
B_IGL	3631.6	3653.8	22.2	1.7	0.08	0.10	0.77



TechLog Plots U.Bahariya

Zones	TOP.m	BTM.m	GRS.m	NET.m	N/G	POR.avg	SW.avg
Bahariya	3685.3	3714.8	29.5	2.6	0.09	0.12	0.44
UB2	3714.8	3755.9	41.1	16.4	0.40	0.11	0.59



BED-3 C-28-A

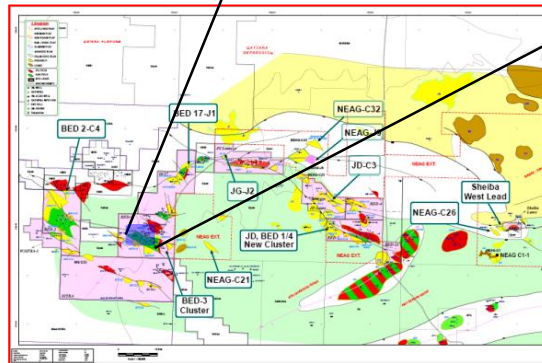
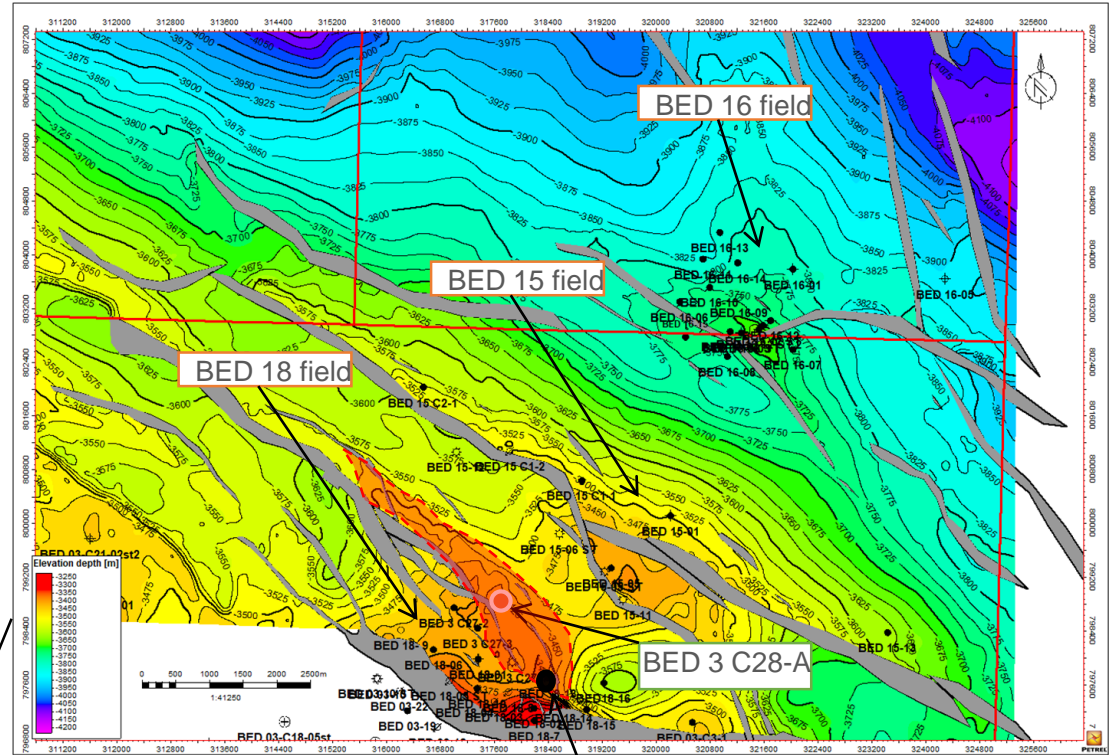
New Exploration Opportunity

BED-3 Development lease, Wester Desert

Field History Background

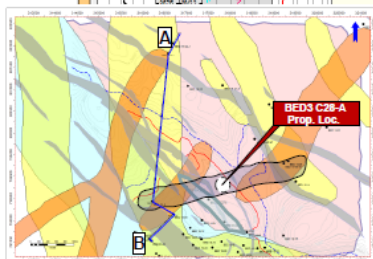
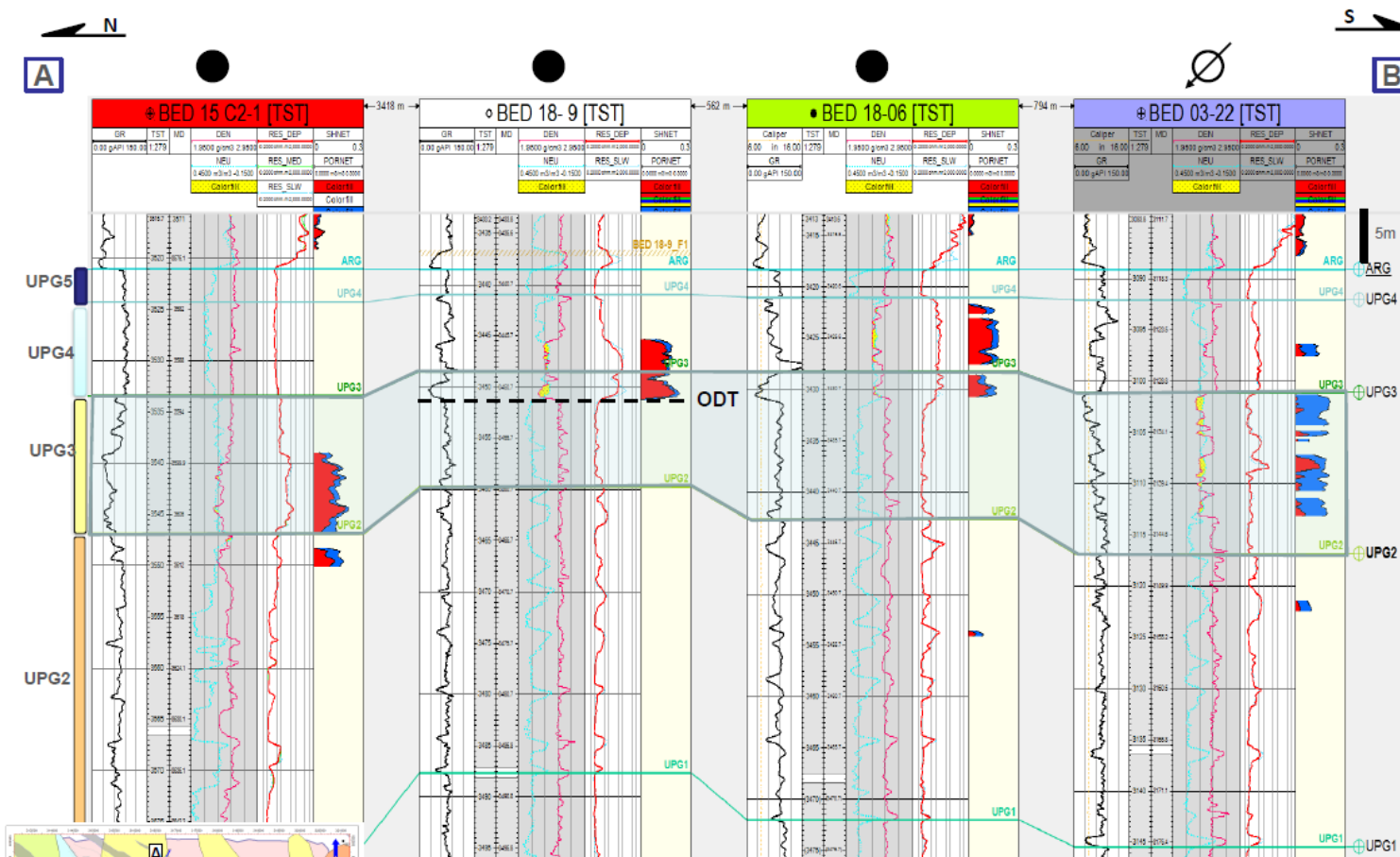
❖ History of BED 18 field.

- Bed 18 field located to the north of BED3 horst and southern of BED 15 field.
- BED18-1 drilled in 1990 which is First well drilled in BED 18 field.
- BED 18 produced about 3.7 MMBBLS as accumulative production from ARE & ARG reservoirs.
- BED 3-C27-1 drilled in 2019 targeting Bahariya reservoir but it found HC bearing reservoir in ARG which add a upside potentiality to BED18 field reflected by BED3 C28 prospect
- BED 3C-27 produced 0.25 MMbbls as accumulative production from ARE & ARG reservoirs.



BED 3 C27-1

Upper A/R "G" Correlation Panel

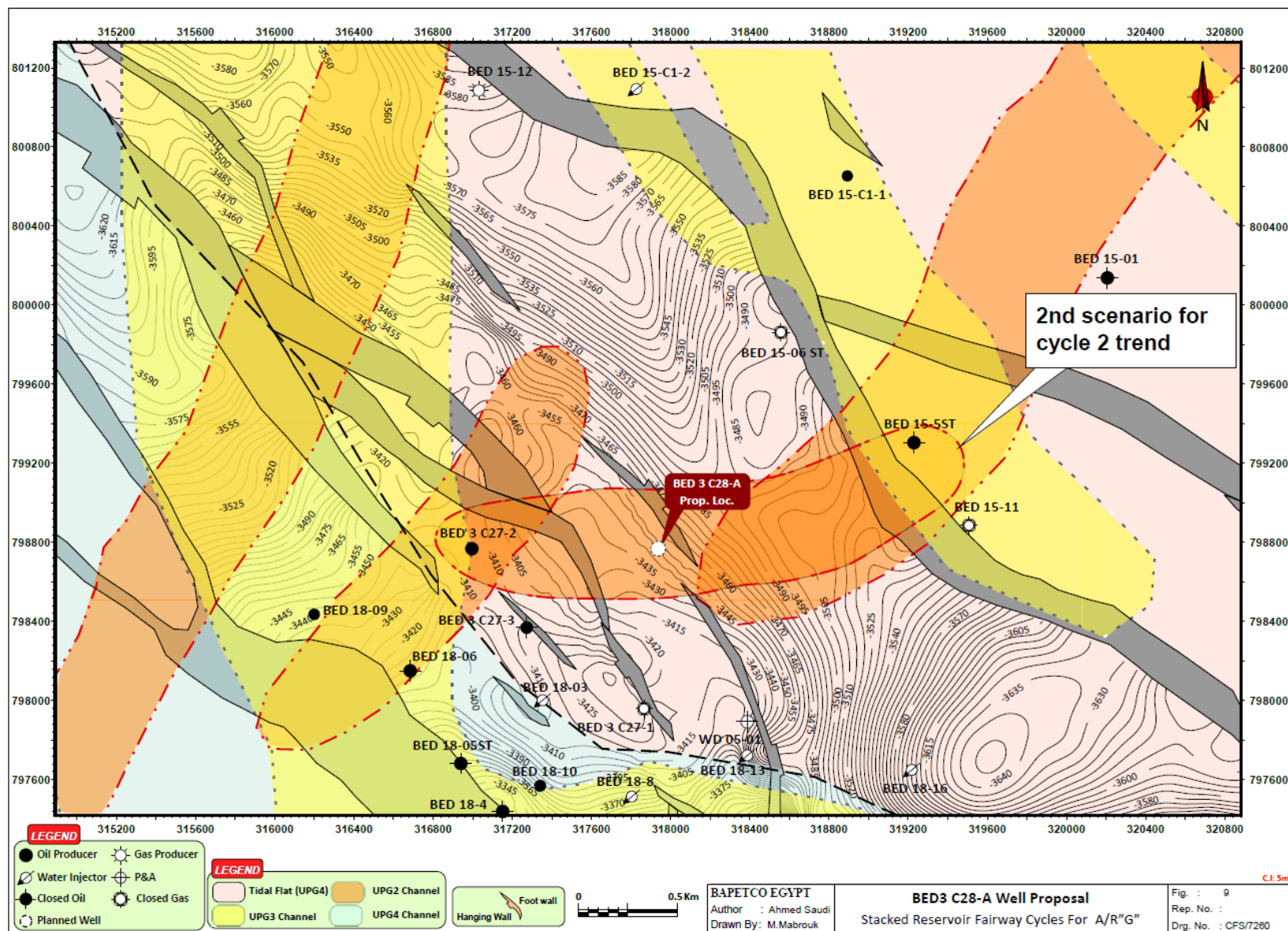


Main Target UPG3 and upside UPG2 (localized),
Average sand thickness 3m for UPG3 and 10m for UPG2

A/R "G" Well Status Legend

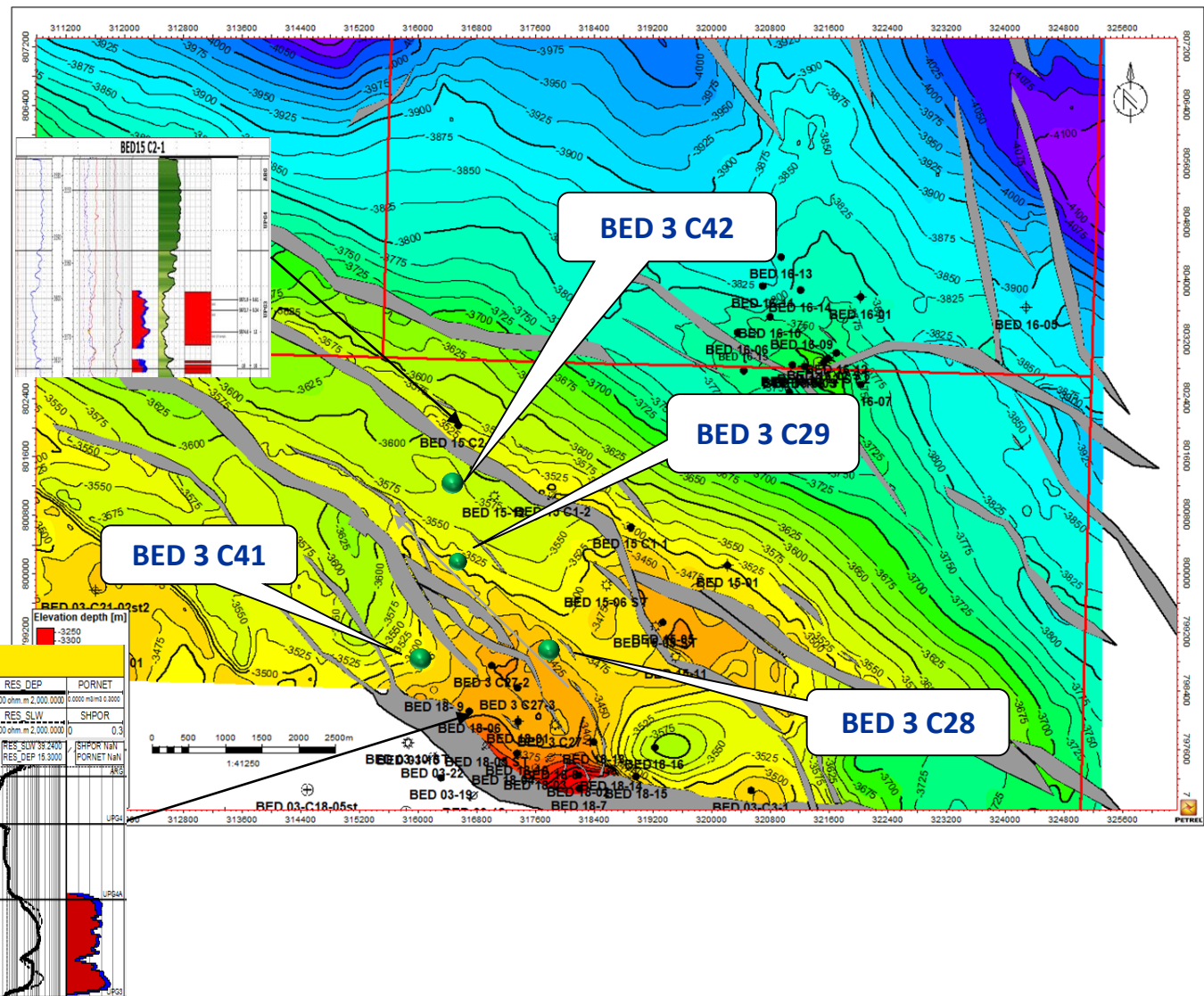
- Water Injector
- Oil producer

Upper A/R " G" Stacked Reservoir Fairway Cycles



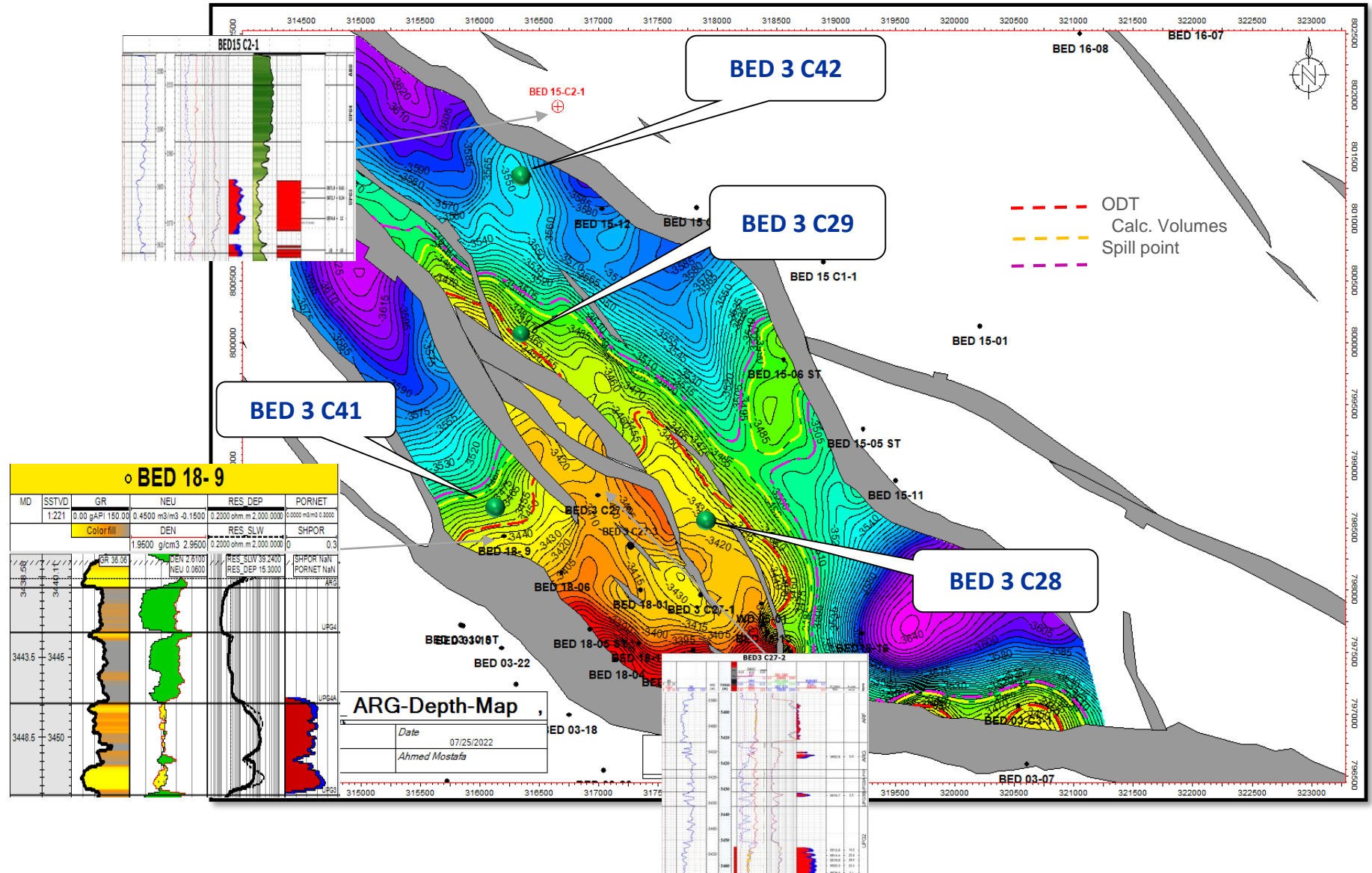
BED 3-C27 & BED 15 C2-1

Follow up Exploration Opportunities



• BED 18-9

MD	SSTVD	GR	NEU	RES DEP	PORNET
1.221	0.00	gAPI 150.00	0.4800 m3/m3 -0.1500	0.2000 ohm.m 2.000.0000	0.0000 m3/m3 0.2000
		Colorfill	DEN	RES SLW	SHPOR
			1.9500 g/cm3 2.9500	0.2000 ohm.m 2.000.0000	0.3
		GR 38.05	DEN 2.8100	RES SUV 35.2400	SHPOR NAN
			NEU 0.0600	RES DEF 15.3000	PORNET NAN
					AR
3443.5 - 3445					UP24
3448.5 - 3450					UP24



Conclusion and Recommendation



- Applying new technologies in the 3D seismic acquisition survey and processing is not a luxury, it is a mandatory to unlock the hidden opportunities in the brown fields (e.g. Stratigraphic, dev. lease boundaries, deep portfolio).
- Extending the current ODT of such a Field will support optimizing the Field FDP with the right number of producers/injectors to realize the field potential and maximize recovery.



Thank you