

PLATA ENERGY

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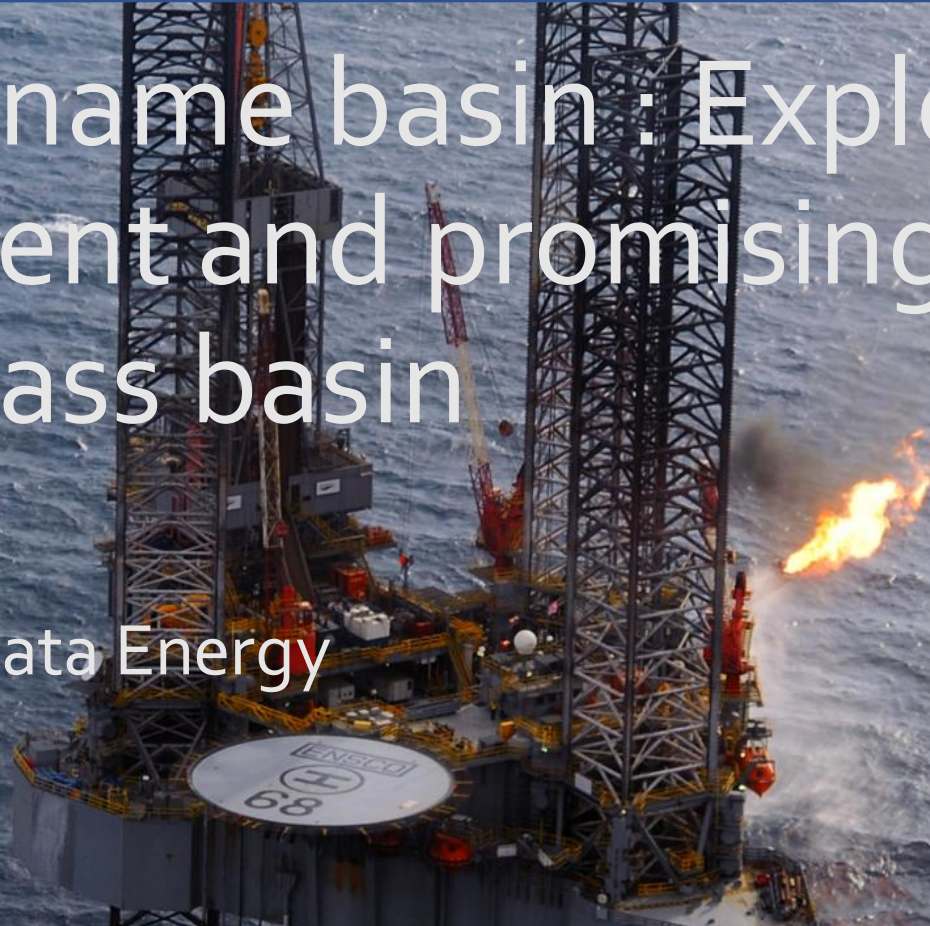
**SOUTHEAST CARIBBEAN &
GUIANA BASINS** 17-18 September 2020

Guyana Suriname basin : Exploration past, brilliant present and promising future of a new world class basin

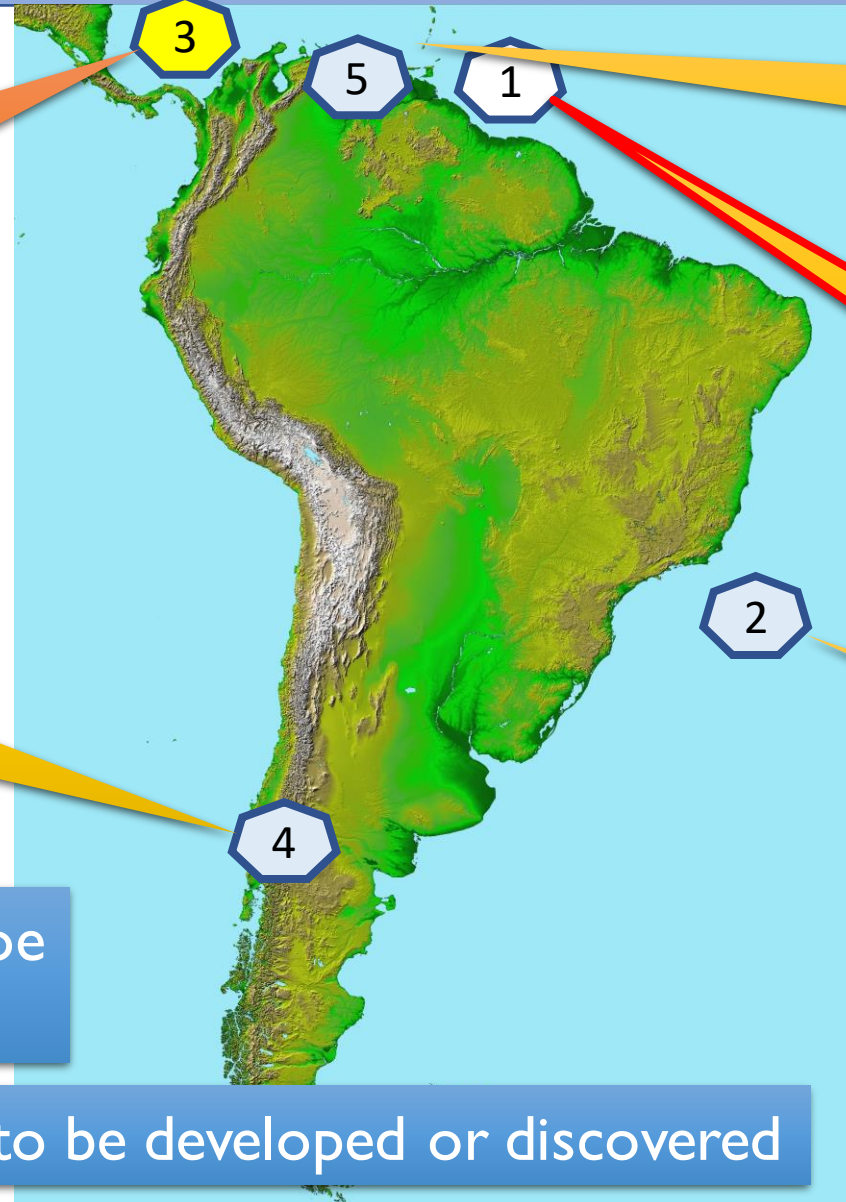
Max Torres

Managing Partner, Plata Energy

September 18, 2020



World class E&P plays in LatAm



Colombia Offshore
Production 0
Proved Reserves 6 Tcfg (T)
Resources 200 Tcfg?

Vaca Muerta Shale
Production
Proved Reserves 2.4 B
Resources 20 B

Proved reserves: 317 Bboe
Resources: 148 Bboe

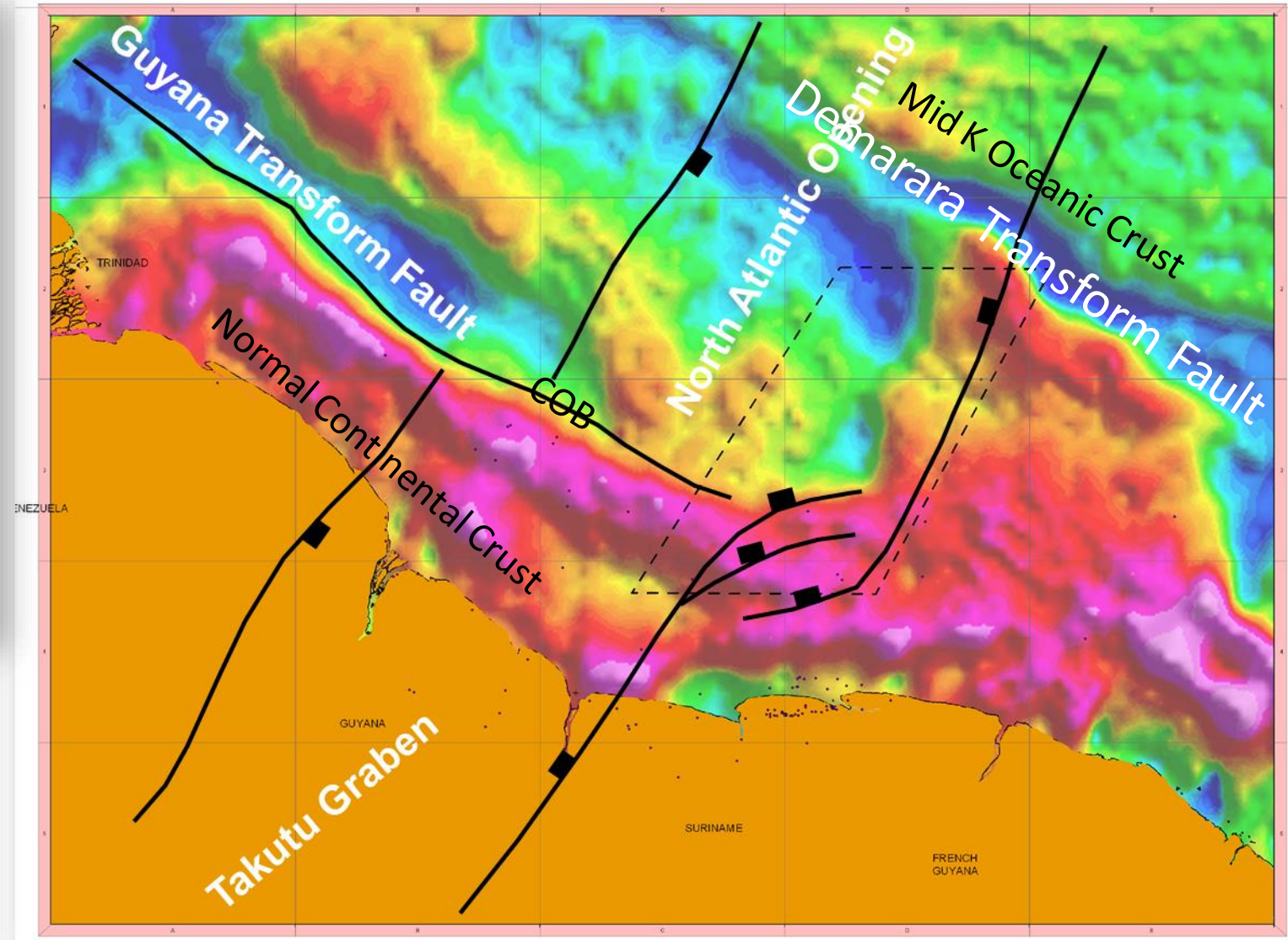
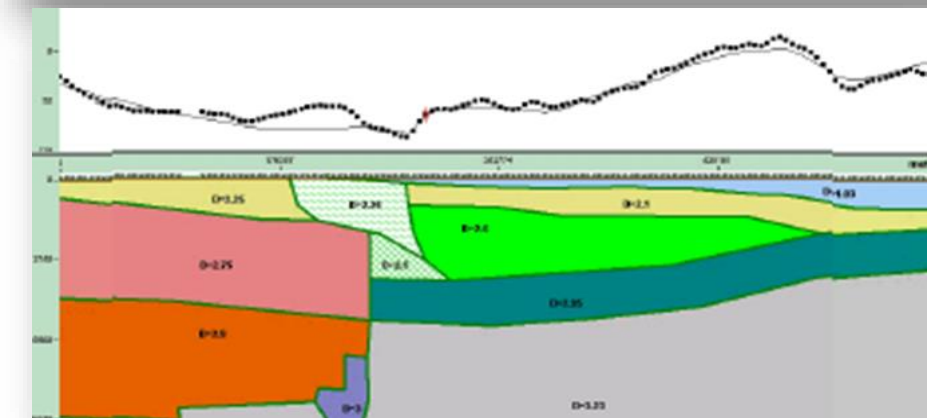
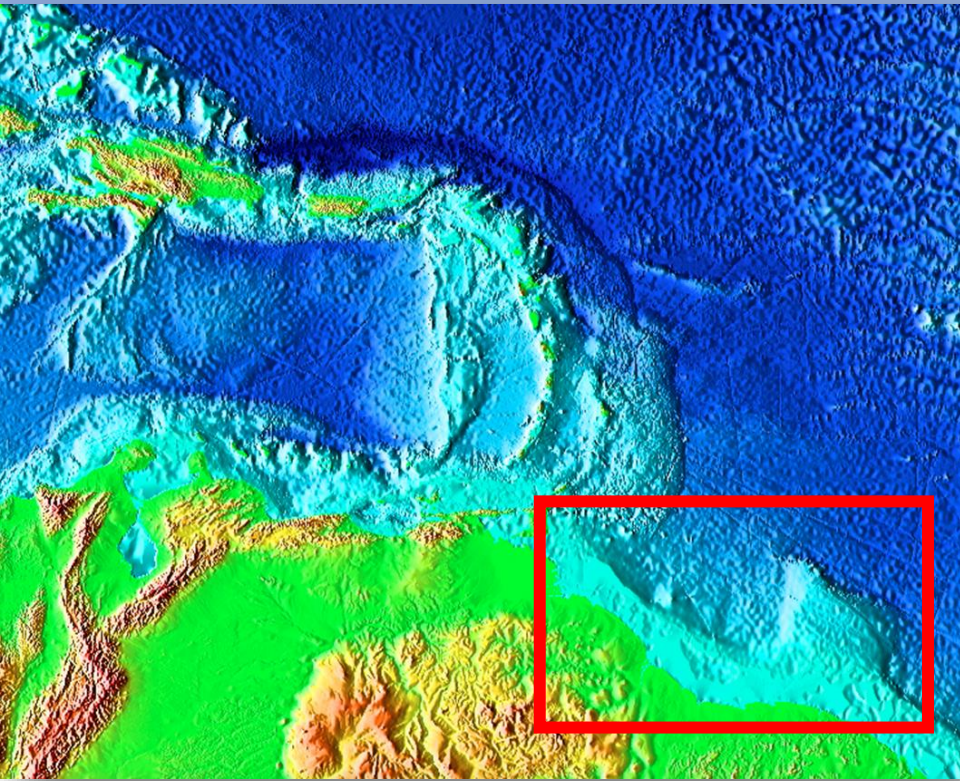
Large reserves volumes to be developed or discovered

Venezuela Faja HO
Production 0.1 Mbod
Proved Reserves 303 B
Resources

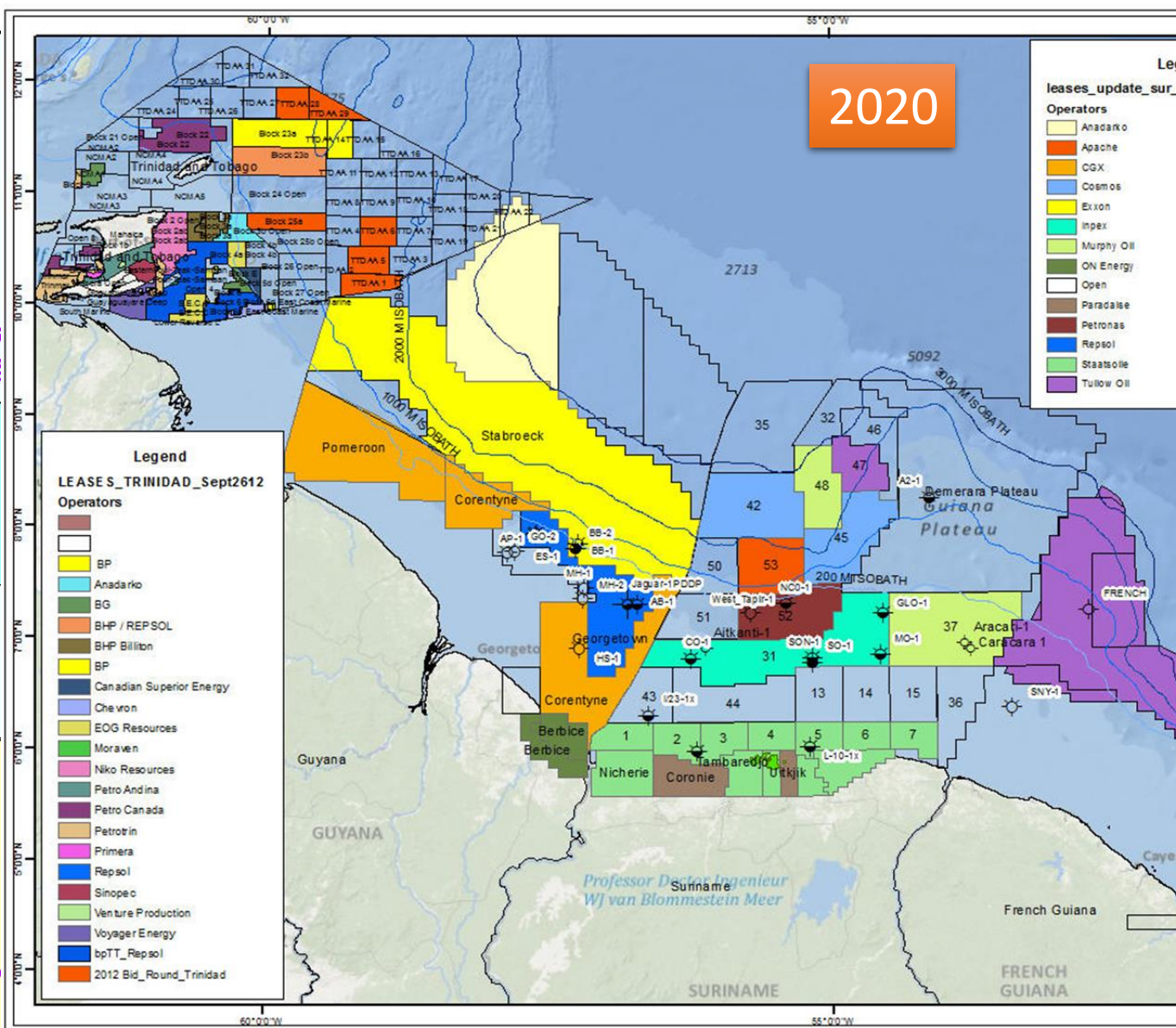
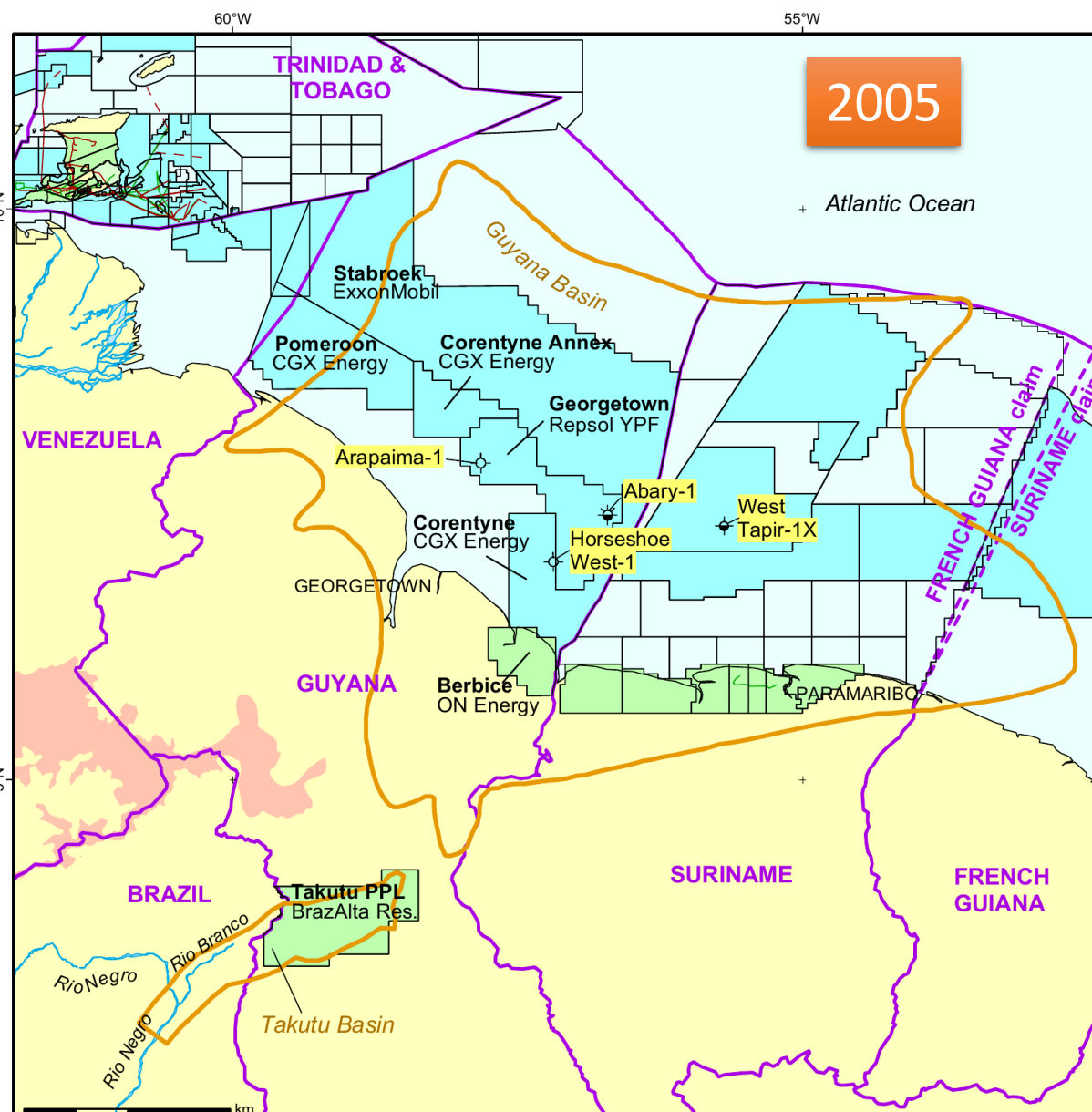
Guyana Suriname
Production 0.12 Mbod
Proved Reserves 1 Bbo
Resources 8 Bboe

Brazil PreSalt
Production 1.5 Mbod
Proved Reserves 12.7 B
Resources 60 Bboe

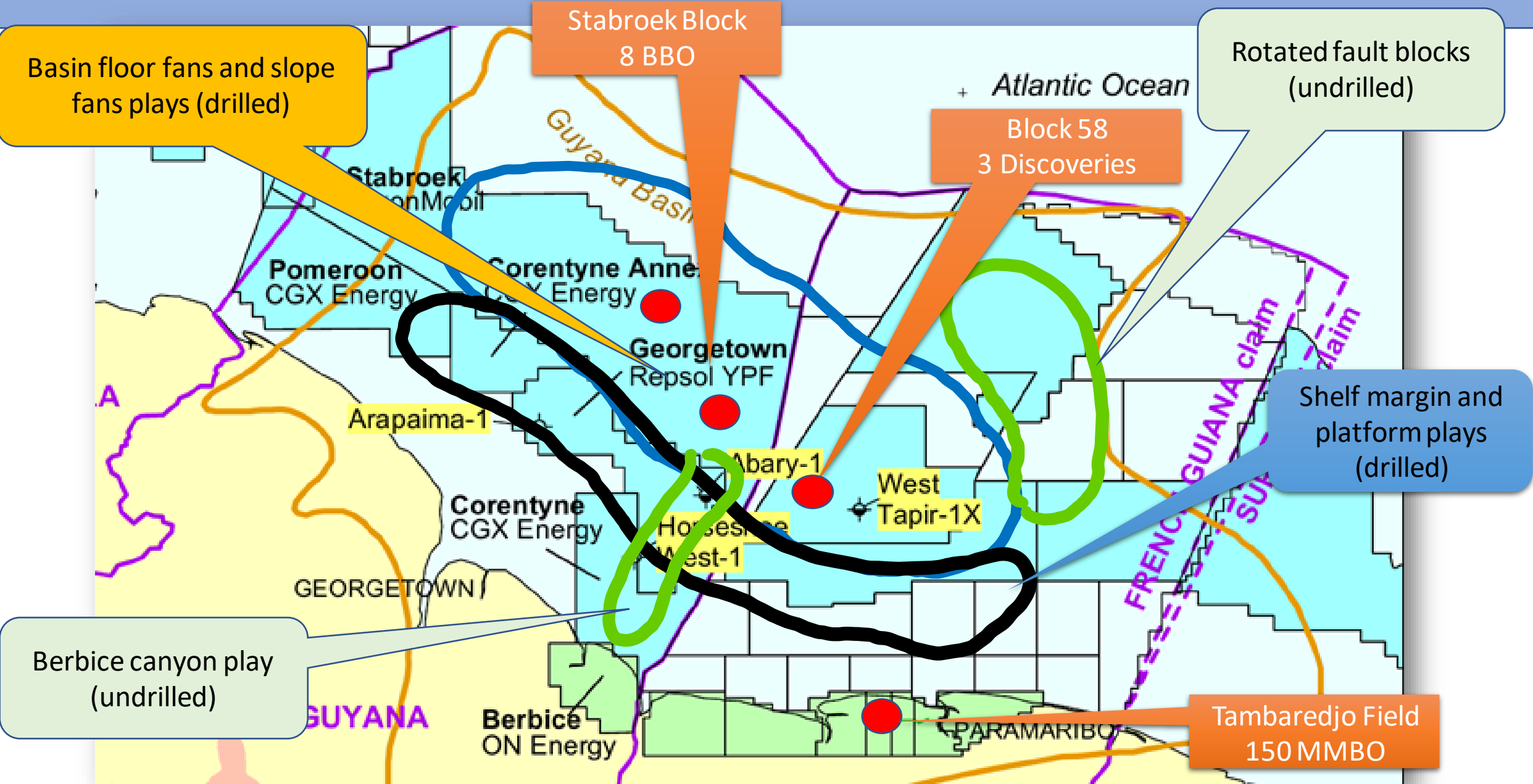
Basin configuration : Gravity map and crustal elements



Guyana Suriname contract evolution 15 years



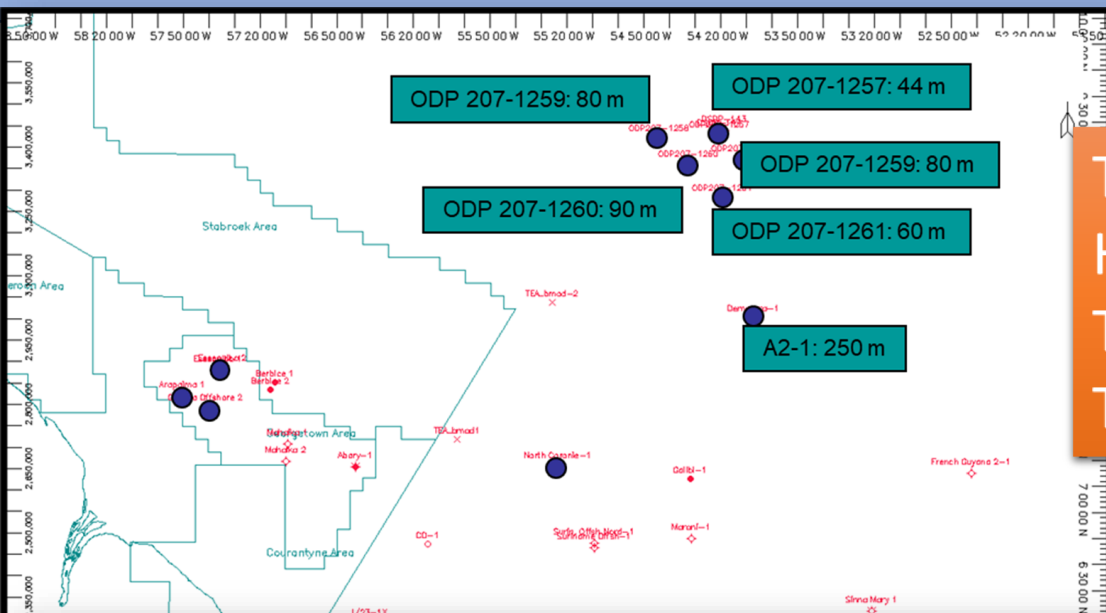
Guyana Suriname basin multiple play summary



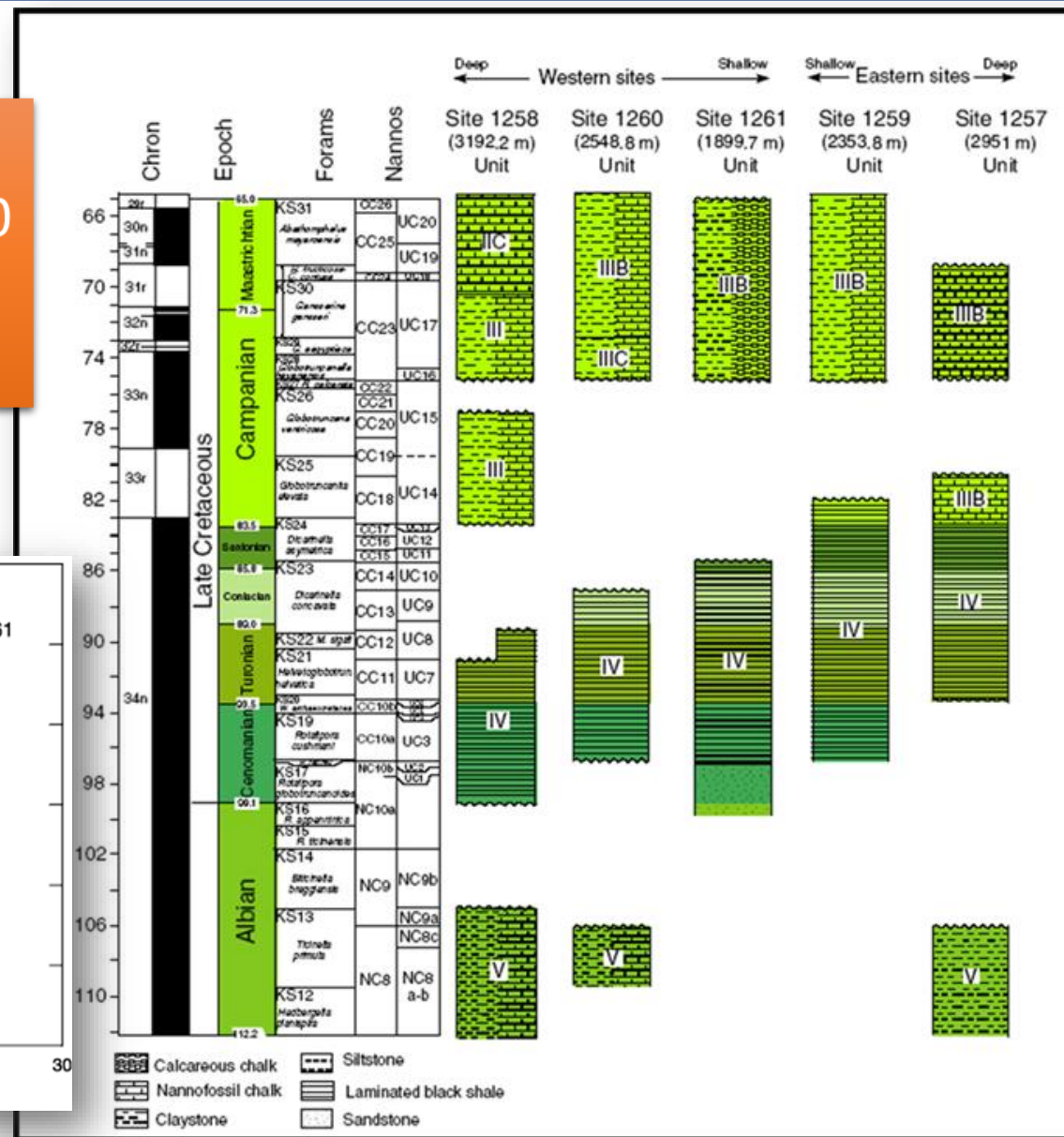
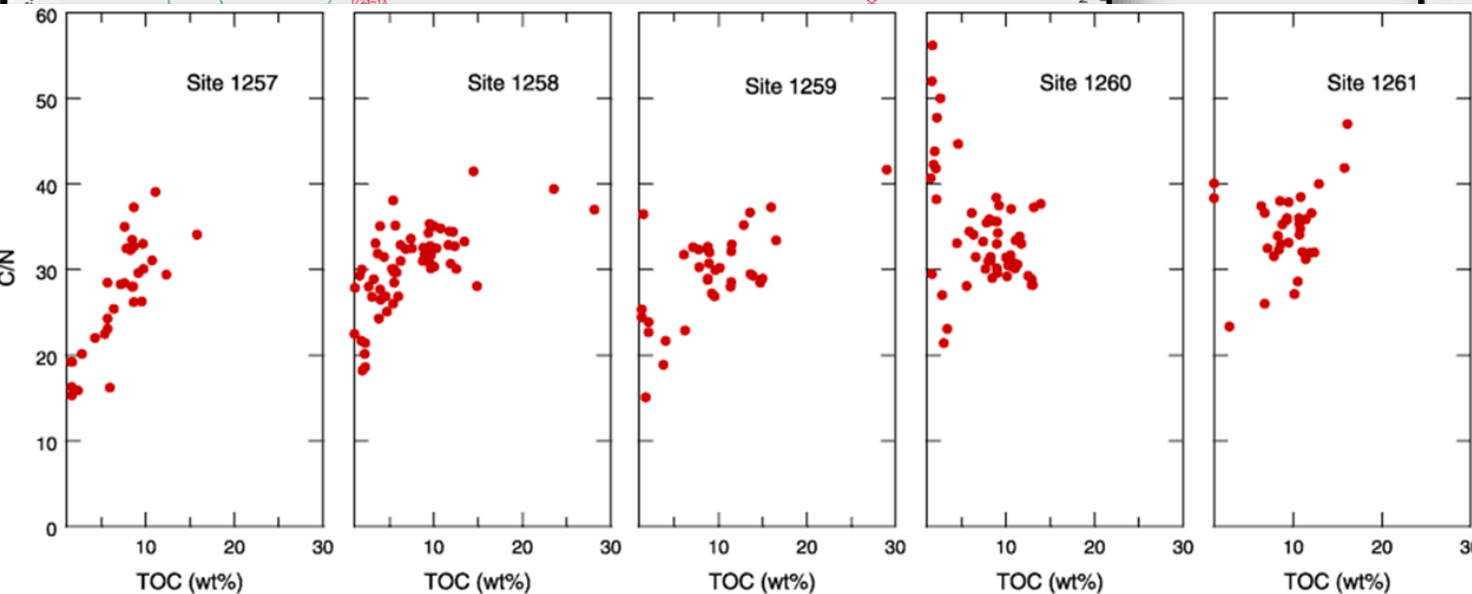
DSDP 144 (1970) and ODP 207 (2003)

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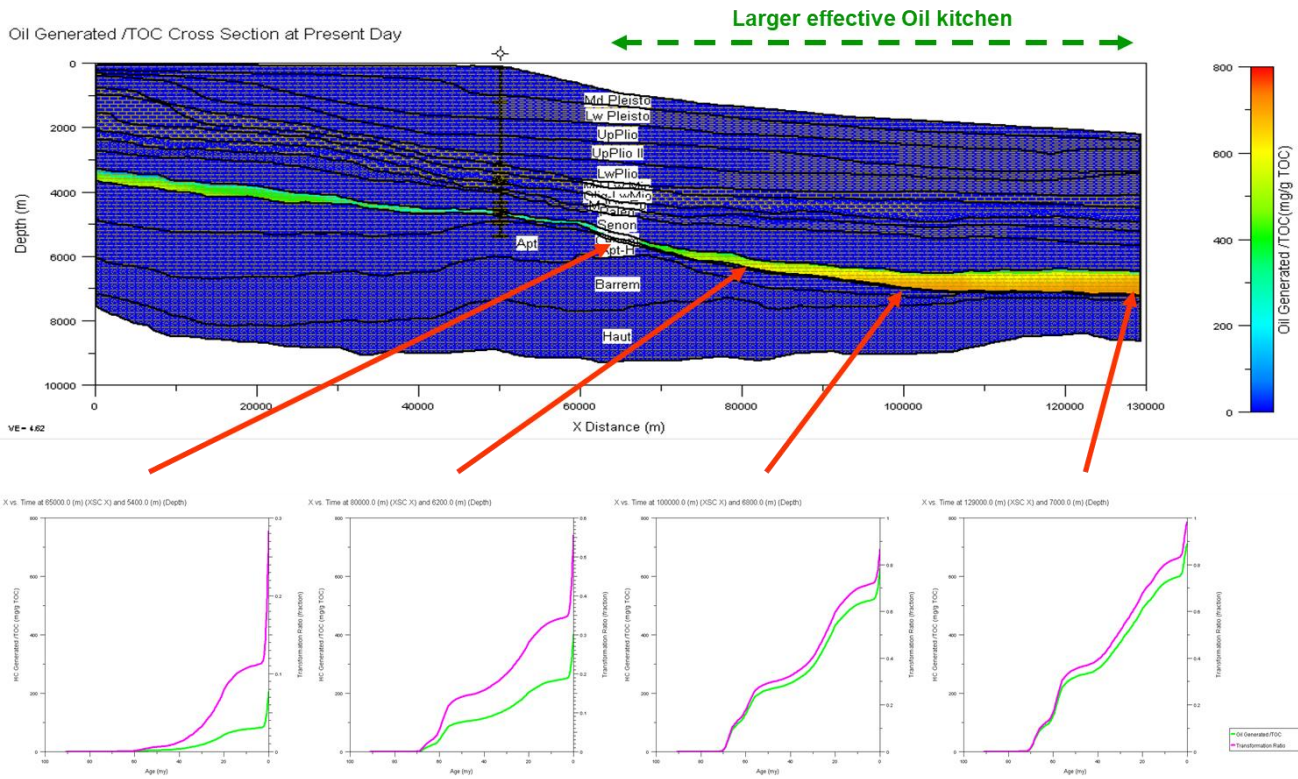
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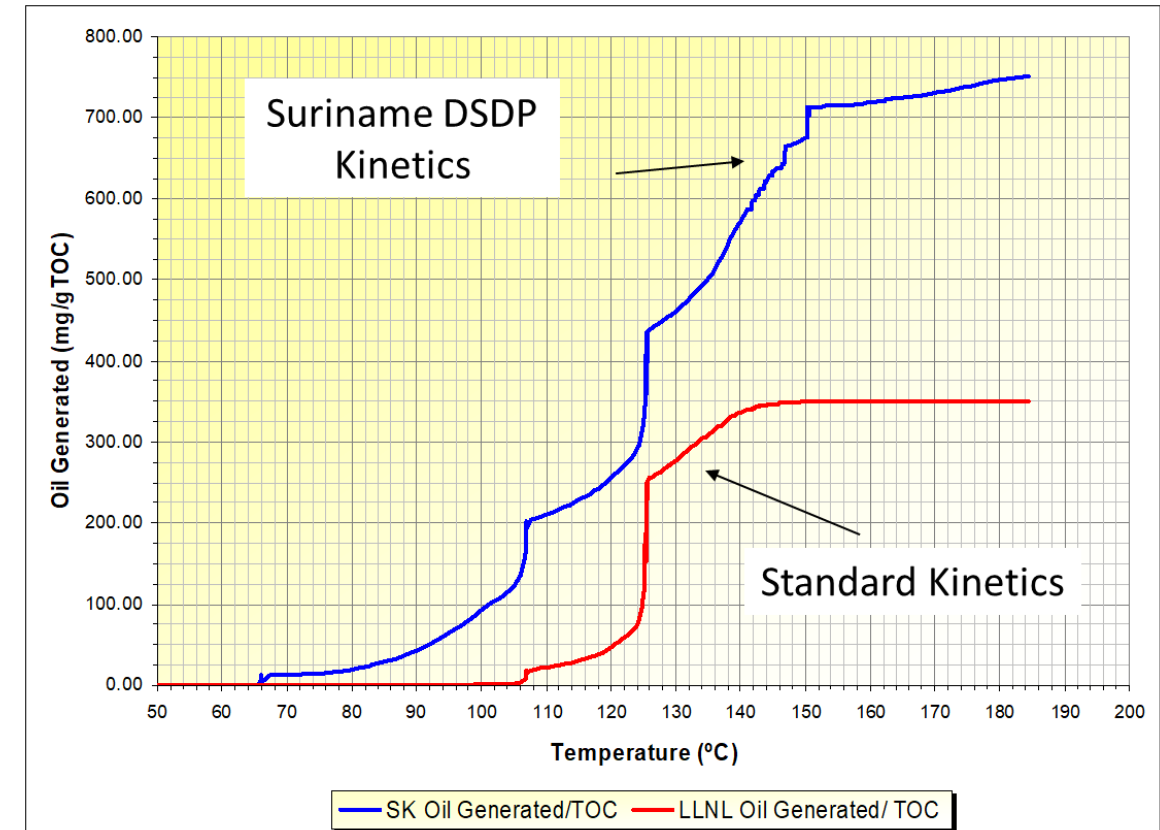
Type II
HI 500 – 600
T(Max) 400
TOC Av 10%



Exceptional Cretaceous source rock

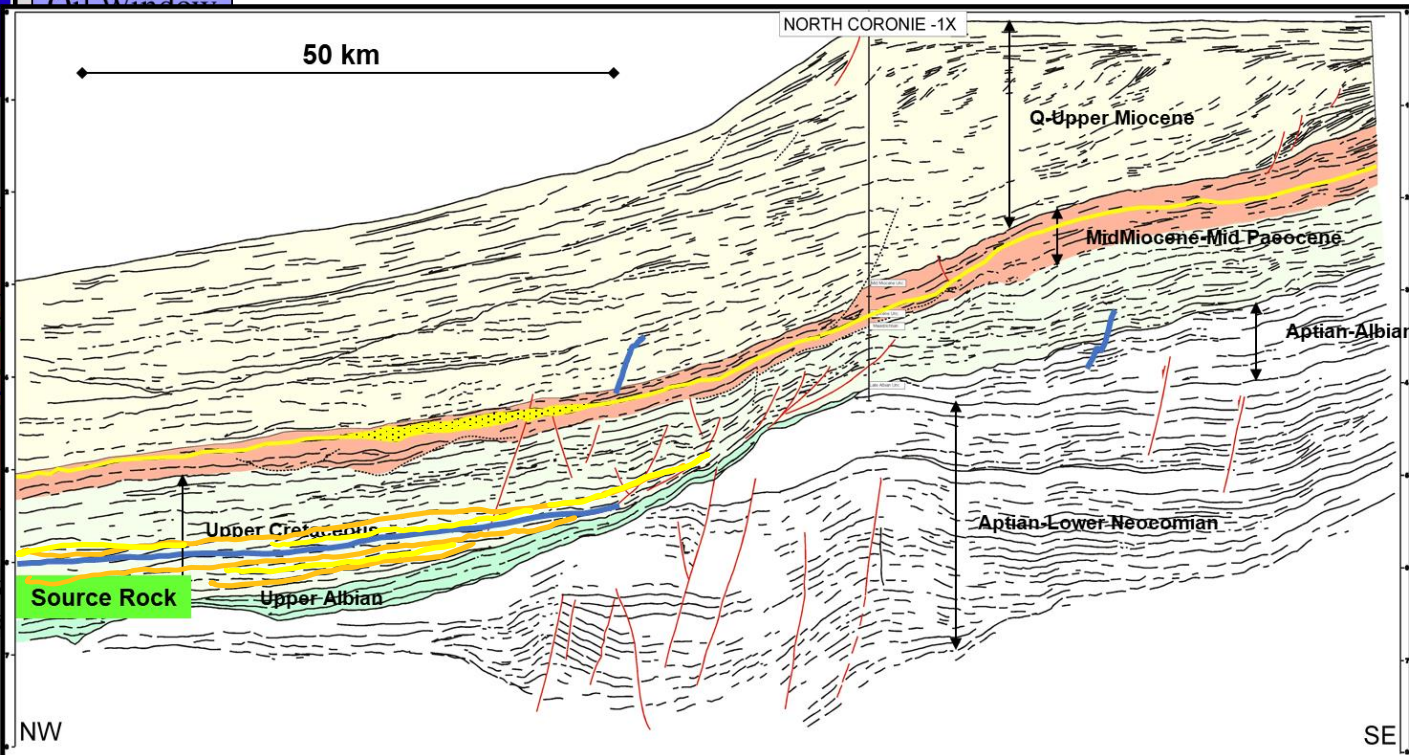
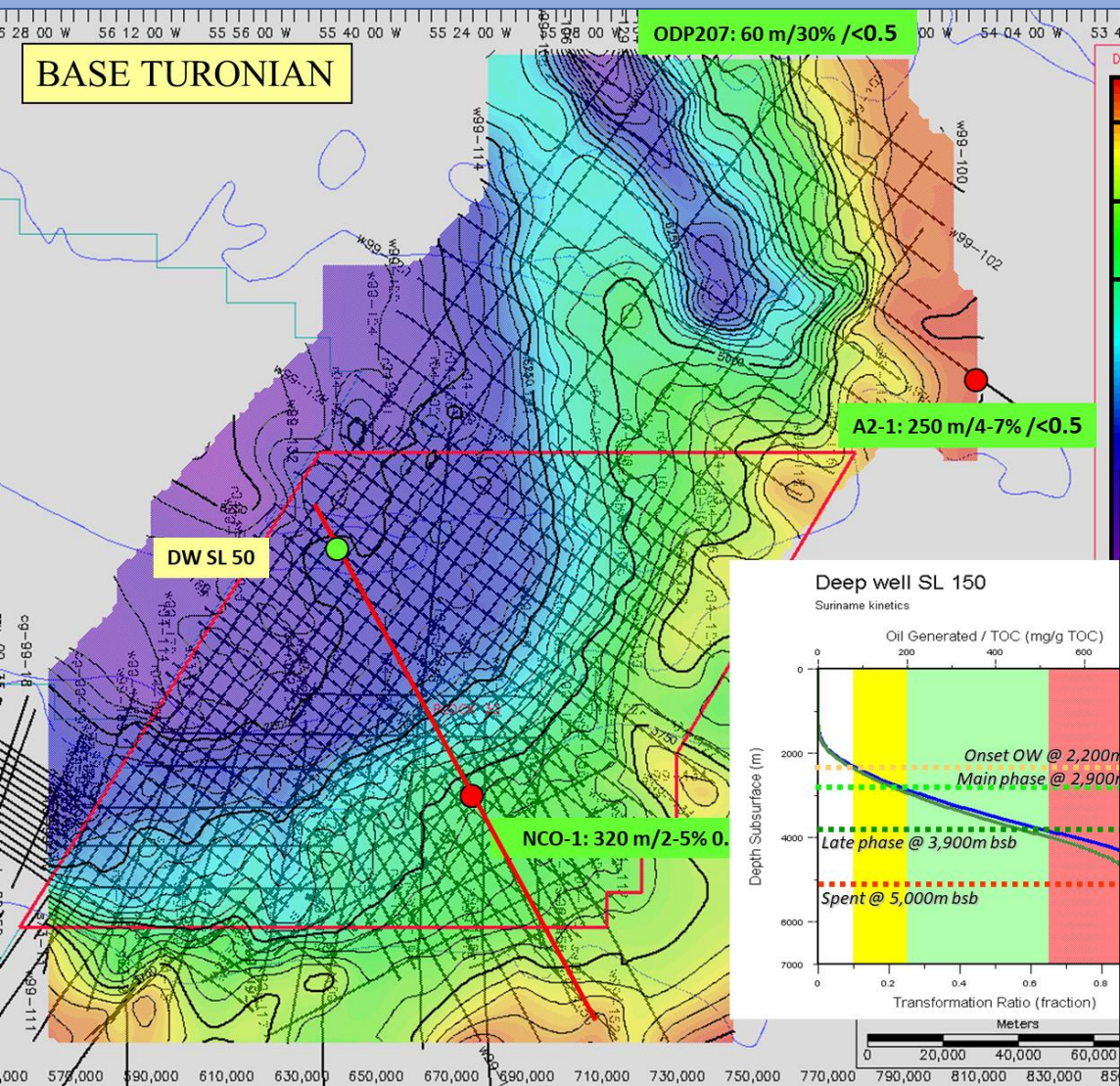


Oil generated vs Temperature

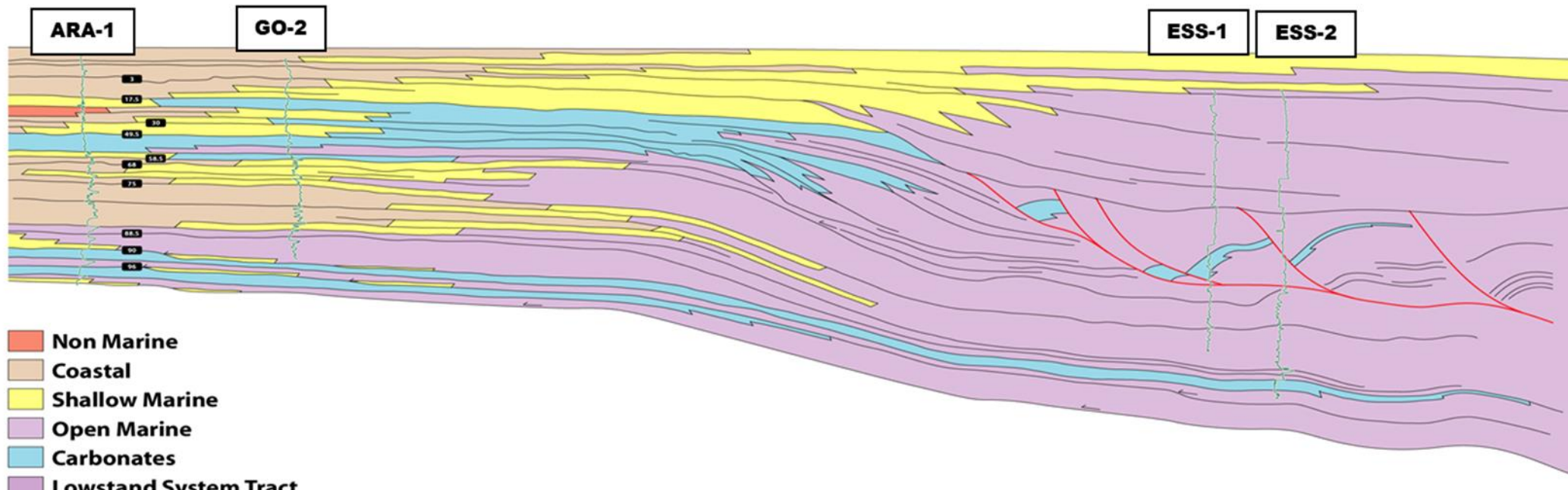
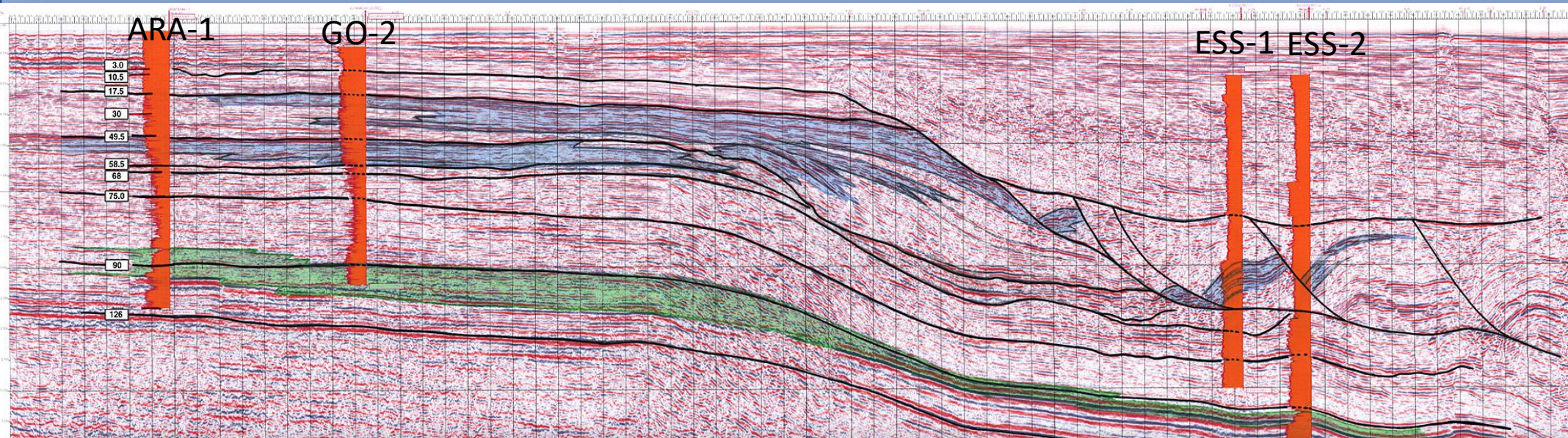


- Impact of the quality of the Suriname kerogen: 10% of TR is 33 mg/gTOC with the standard kerogen and is 81 mg/gTOC with the Suriname kinetics.
- More oil earlier (at any equivalent temperature) and more oil at the end of the process (eg: 150°C)

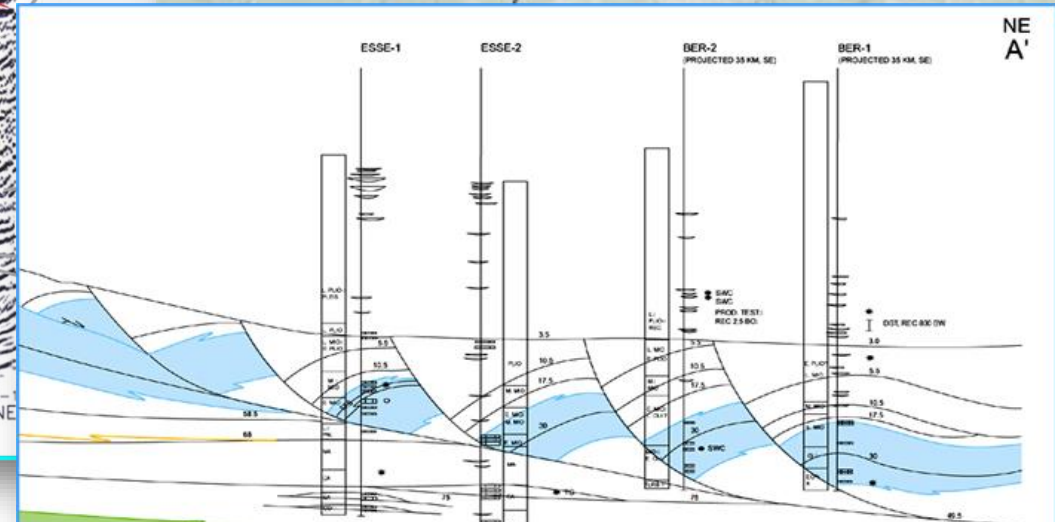
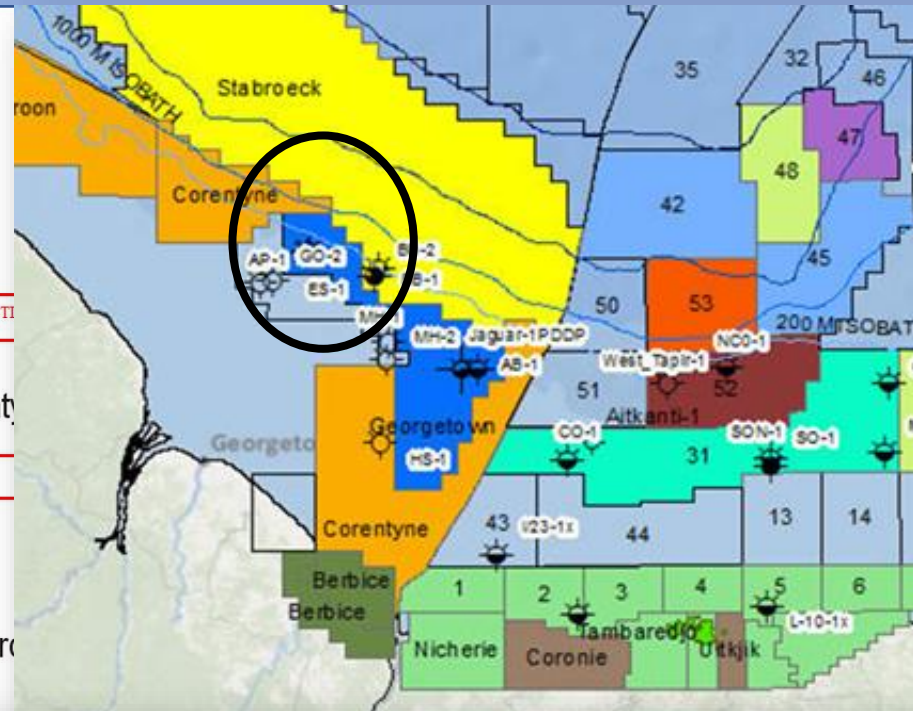
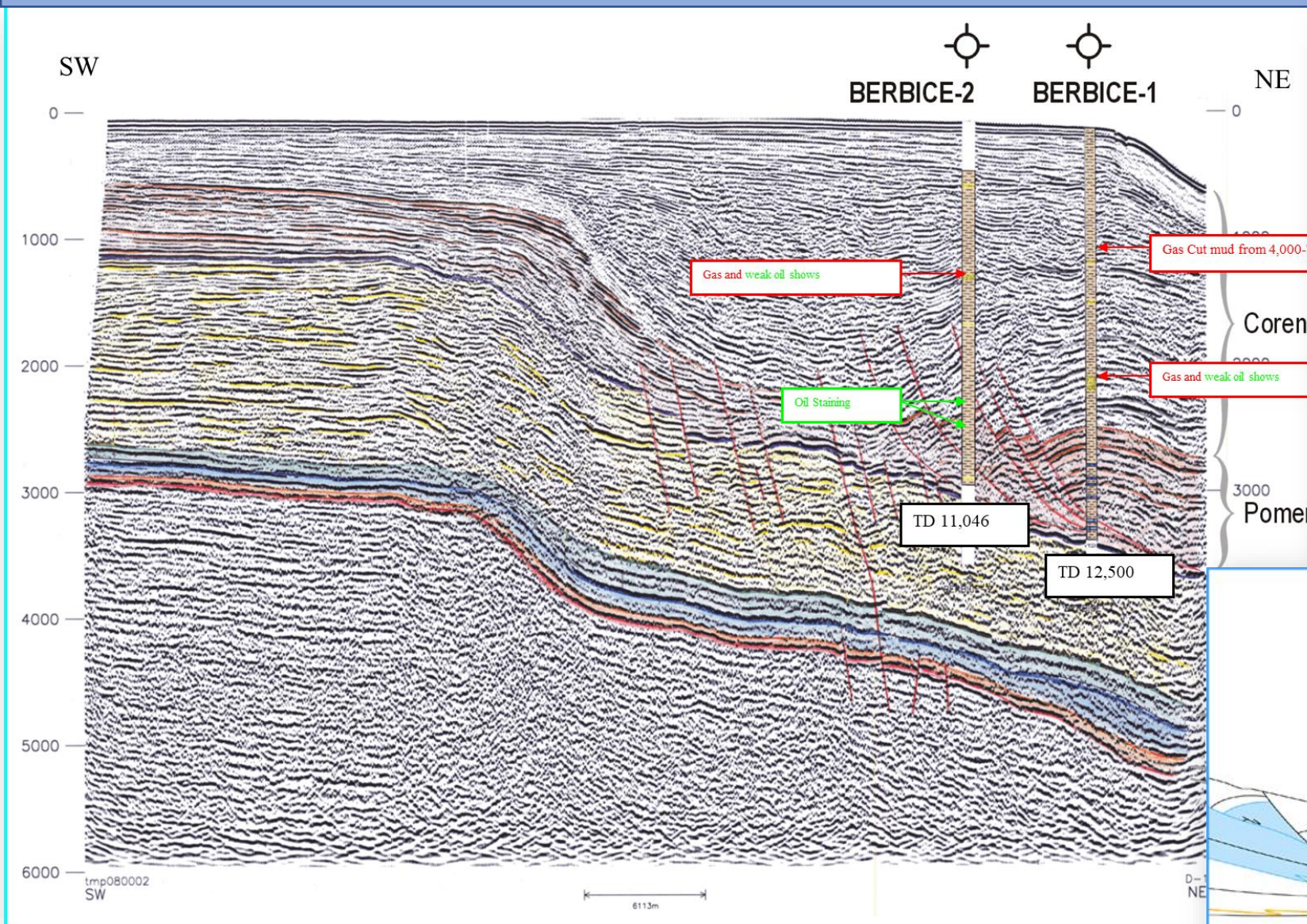
Geochemical signature Cretaceous source rock



First wave: Shelf edge and platform plays



Shelf edge and platform plays – Listric rotated blocks



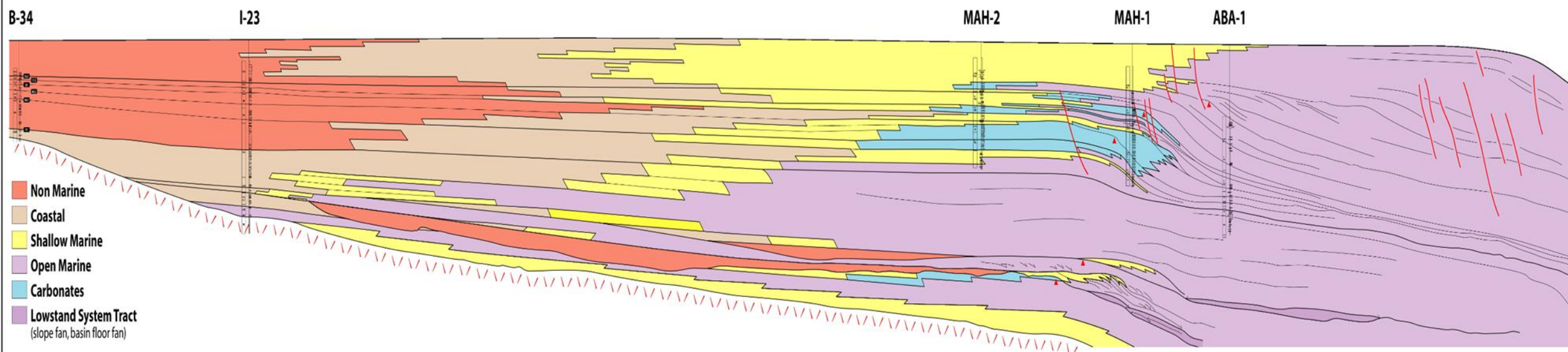
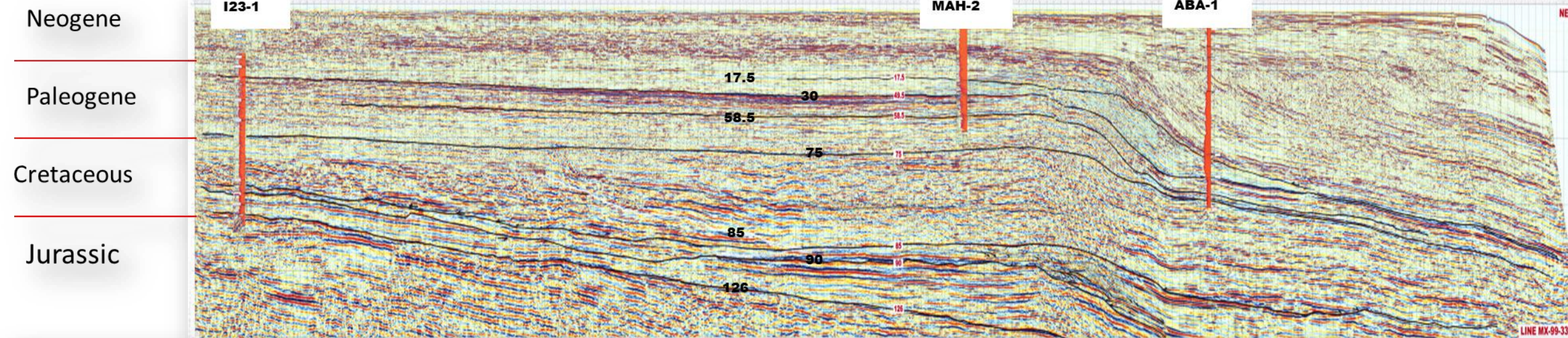
Shell, Deminex (1970, 1976)

First wave: Shelf edge and platform plays

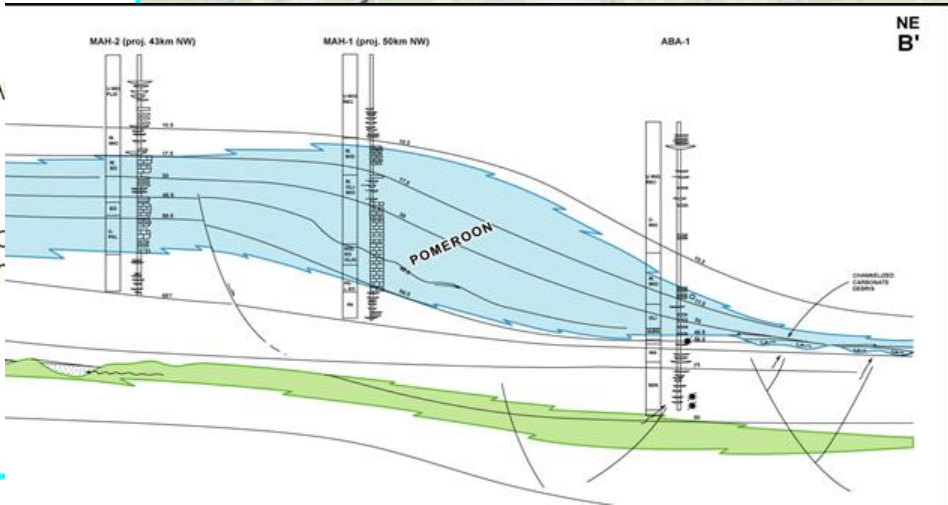
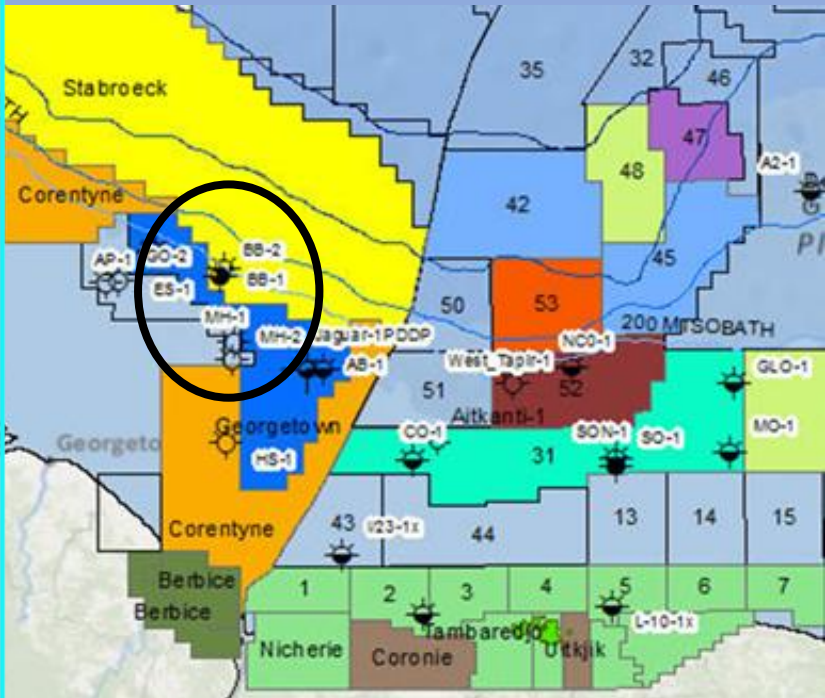
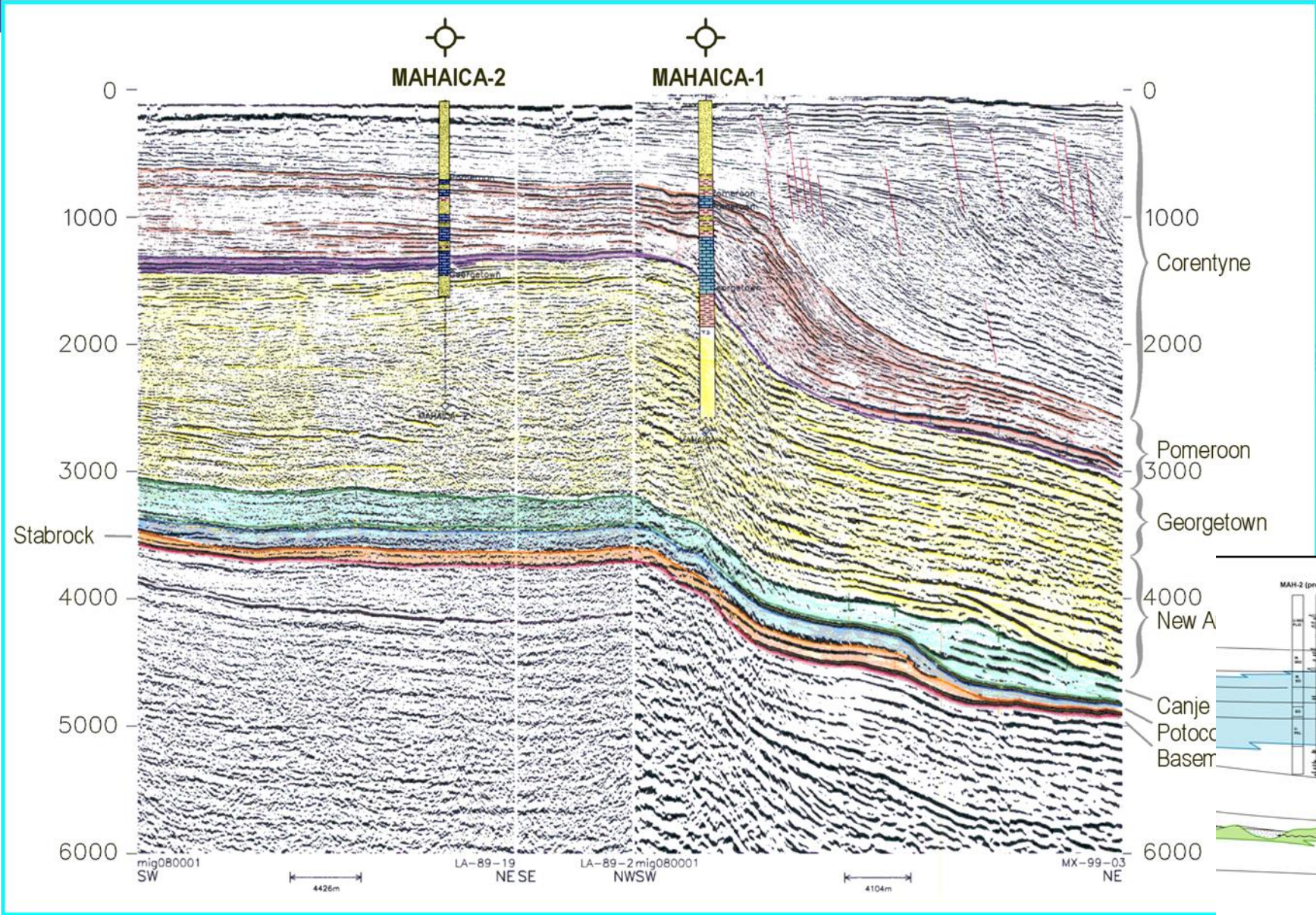
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SW

NE



Carbonate reservoirs: Reef, platform and patch reef

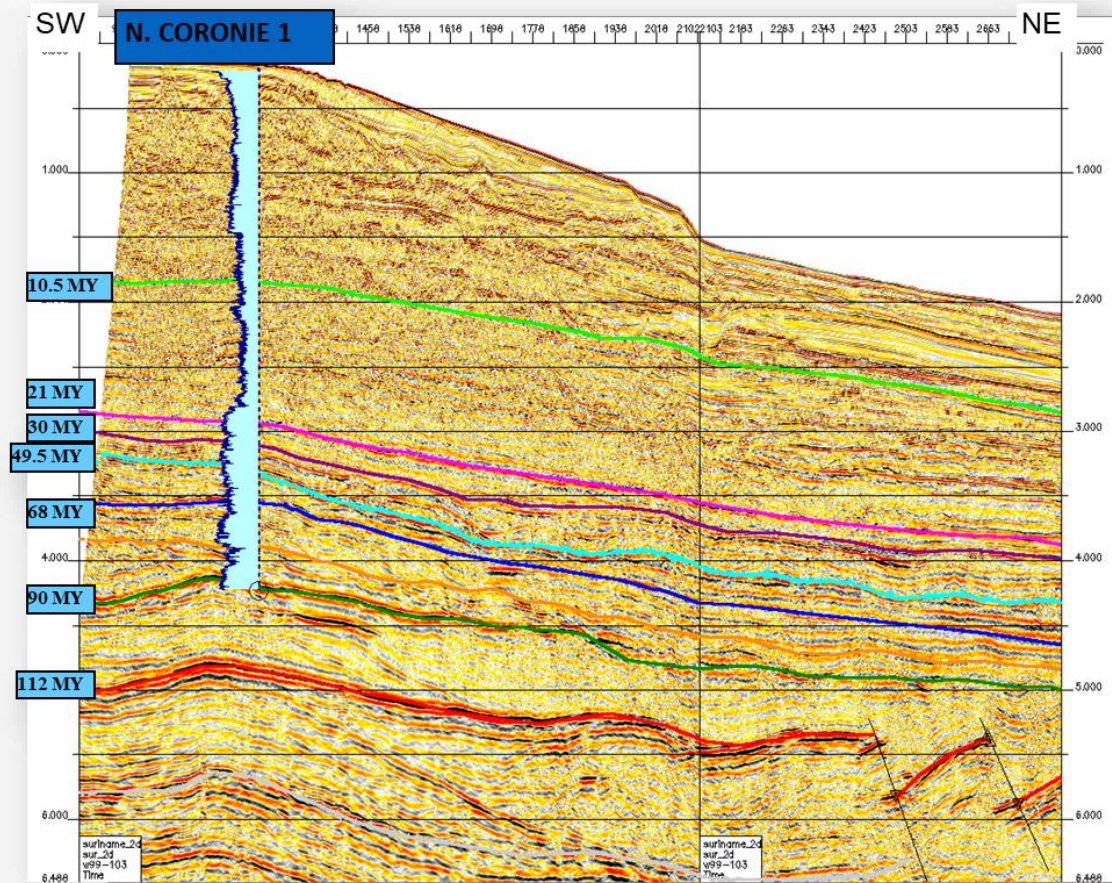


Shell (1974)

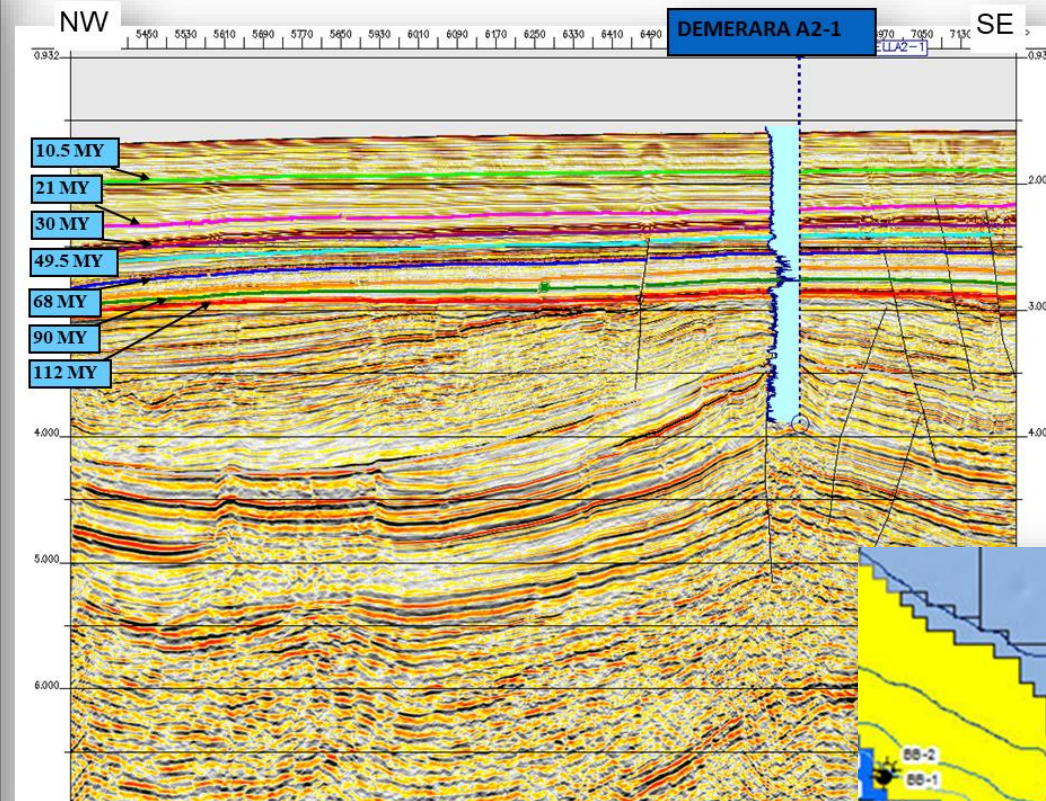
Subtle structural closures

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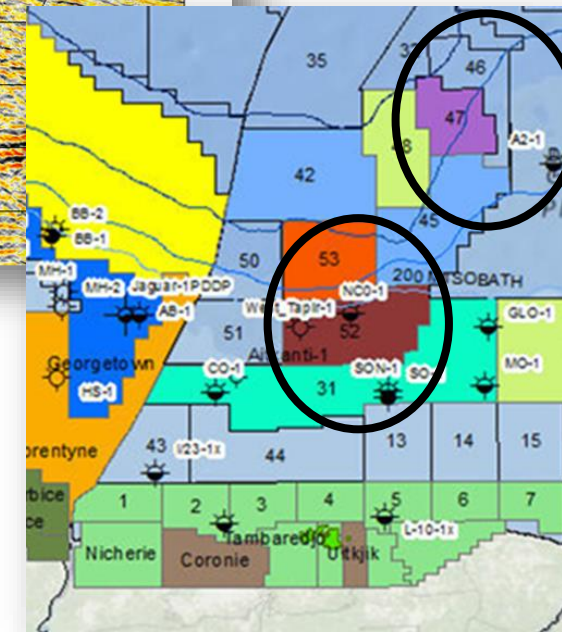
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Well name : North Coronie 1
 Water Depth : 130 ft
 Well TD : 5406 m Lower Cretaceous
 Objective : Lower Cretaceous anticline structure (primary)
 Upper Tertiary structure (secondary)
 Shows : Gas shows in Lower Cretaceous carbonate
 Result : Clastic reservoirs were absent in both objective interval. Gas shows in L. Cretaceous limestone



Well name : Demerara A2-1
 Water Depth : 3937 ft
 Well TD : 16207 ft
 Objective : Early and Late cretaceous clastics and carbonates anticlinal closure
 Result : No clastic reservoirs encountered
 Carbonate section was tight and wet
 No significant hydrocarbon shows

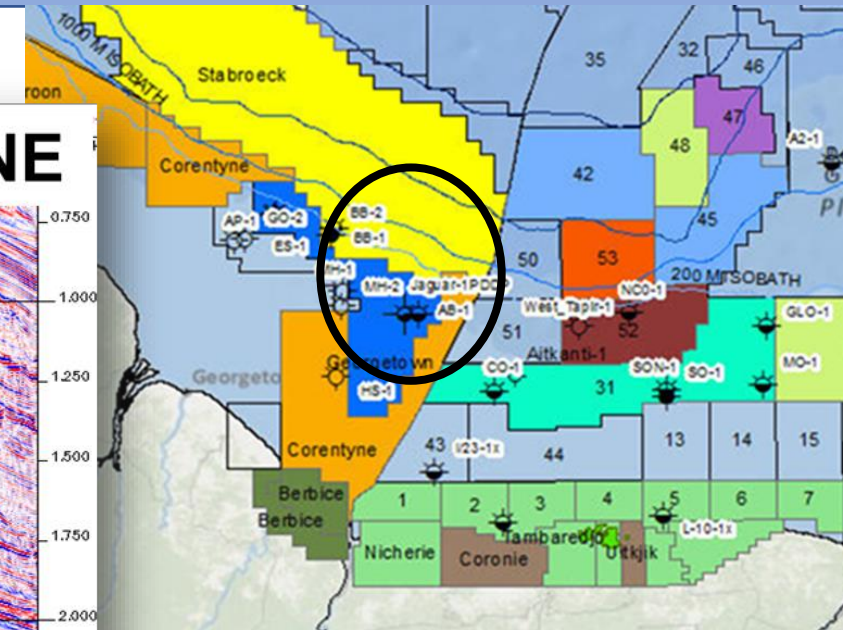
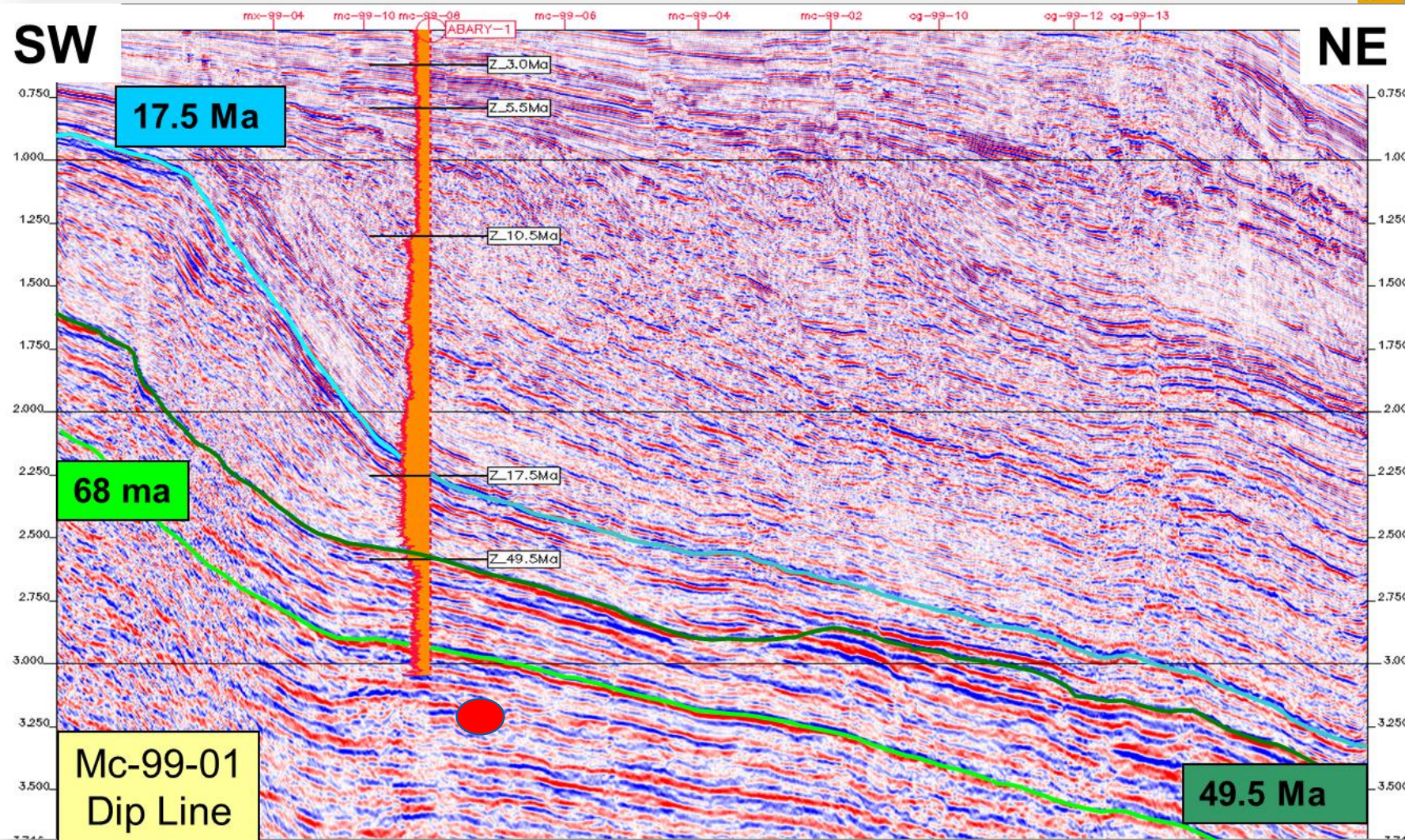


Subtle structural closures

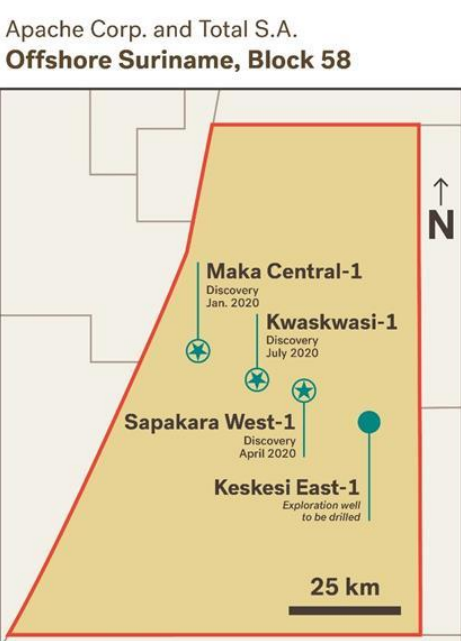
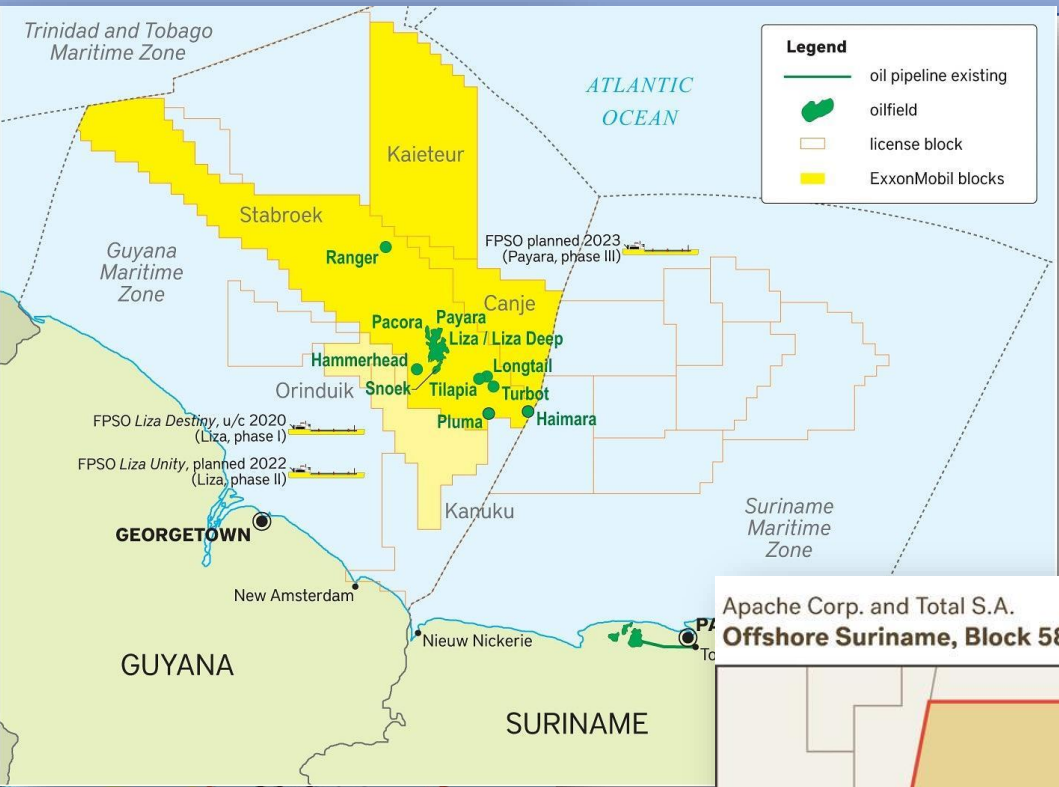
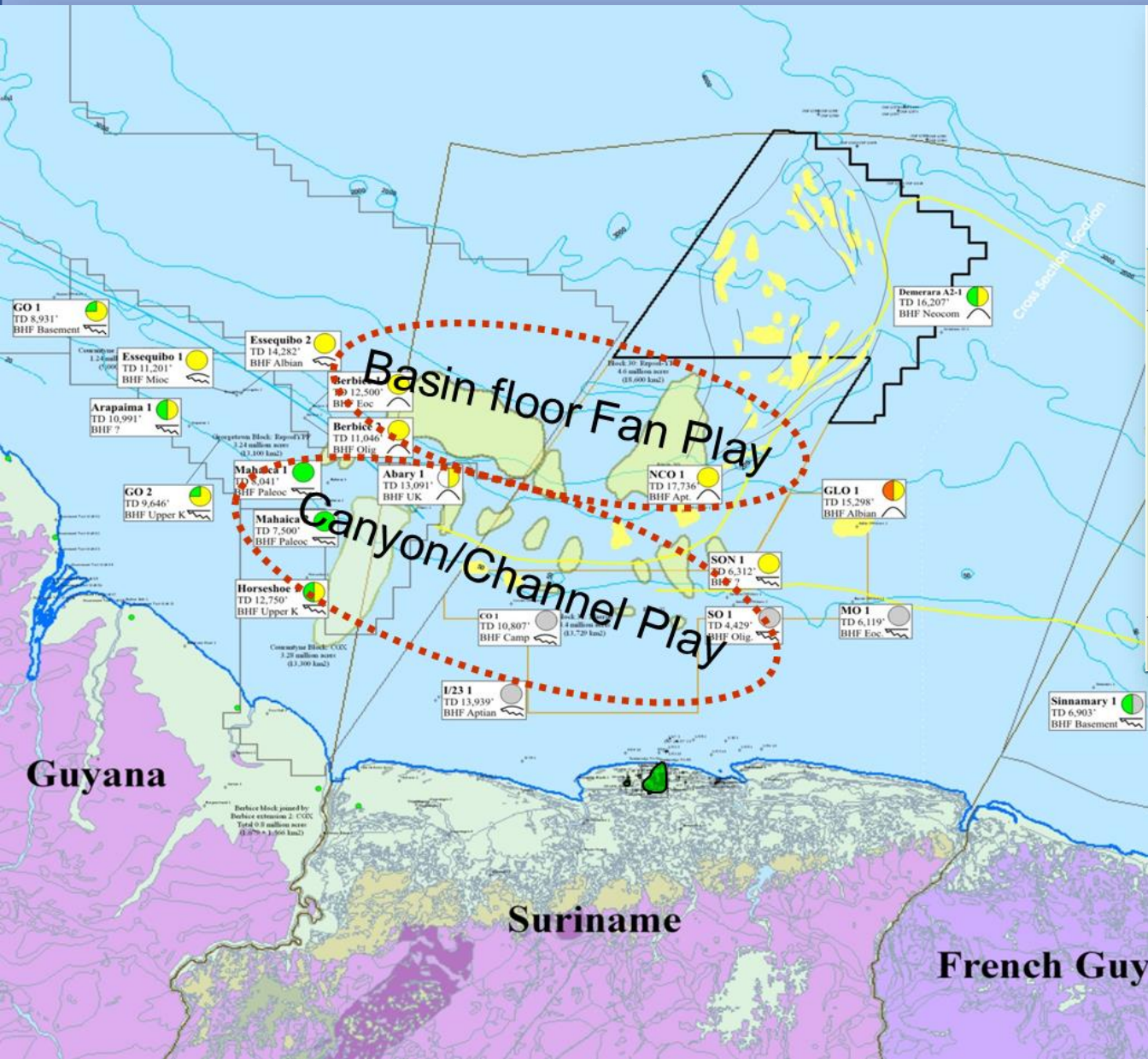
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Abary 1 (Shell, 1974) oil shows & gas kick-offs while drilling



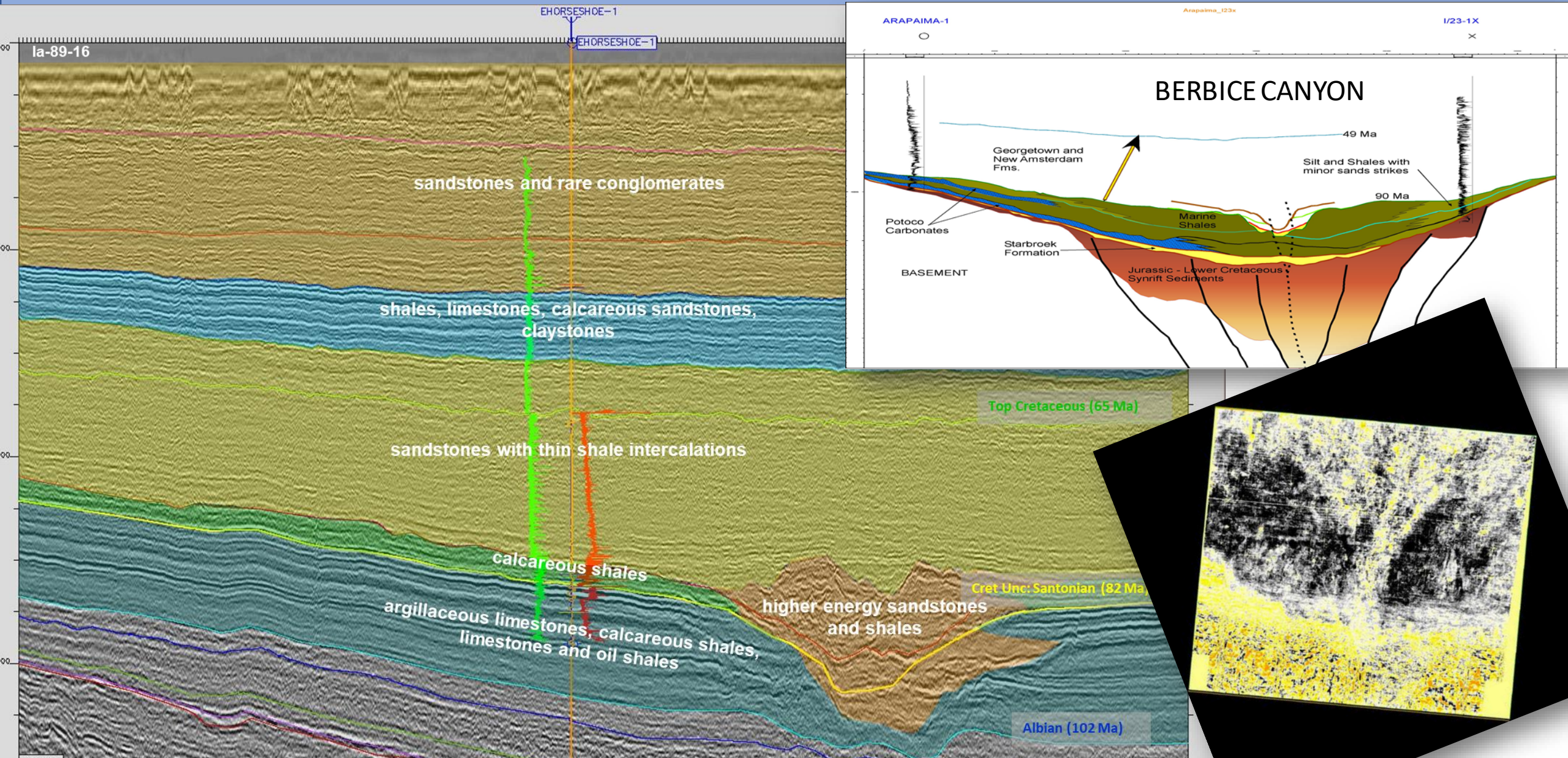
Second wave: Basin floor fans, slope fans and canyon plays



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Third Wave : Berbice canyon play - Shallow water plays



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Geological cross-section of the upper part of the Fort Belknap Formation. The section shows various facies and sample locations. The yellow area represents coarse-grained fluvial facies, and the orange area represents fine-grained fluvial facies. A dashed line indicates the top of the fluvial facies. Sample locations are marked with arrows and labels: SB5-90, mfs 5, SB7-87.5, SB8-85, SB9-83, SB10-80. A blue double-headed arrow indicates a distance of 2.032. An inset image shows a close-up of the fluvial facies with a red line and a scale bar of 2.250.

Source in th

75 ma

HST

MFS

90 ma

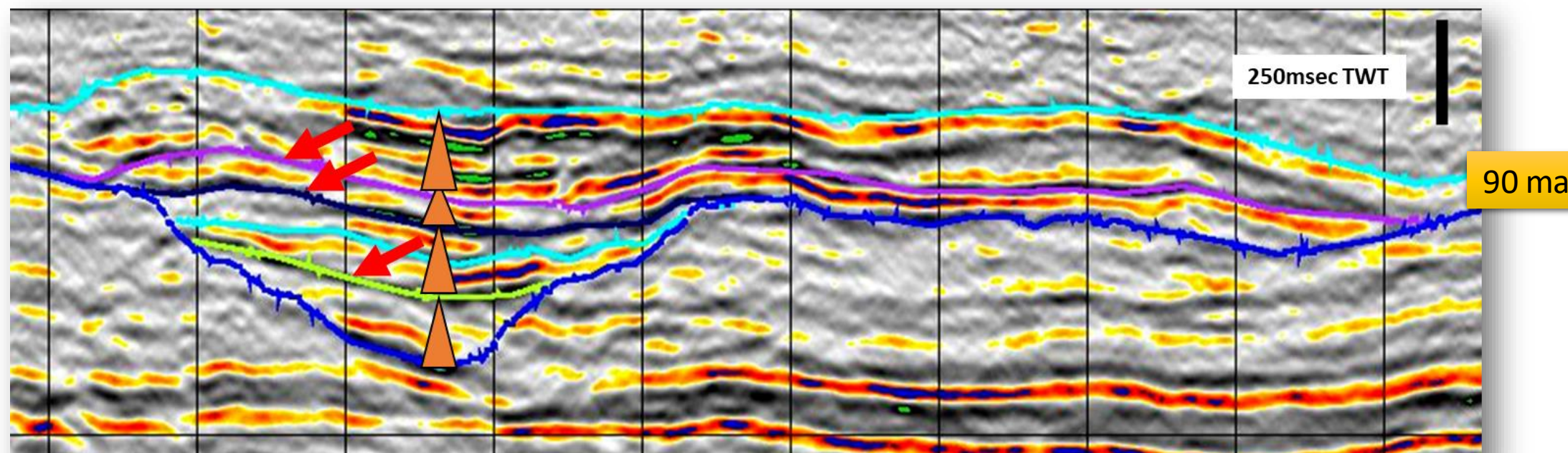
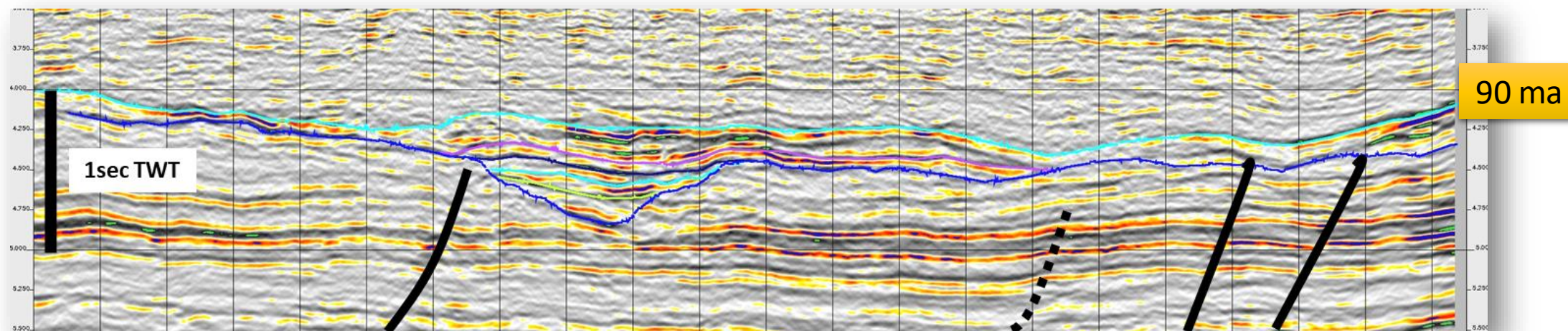
Line-11e

Time

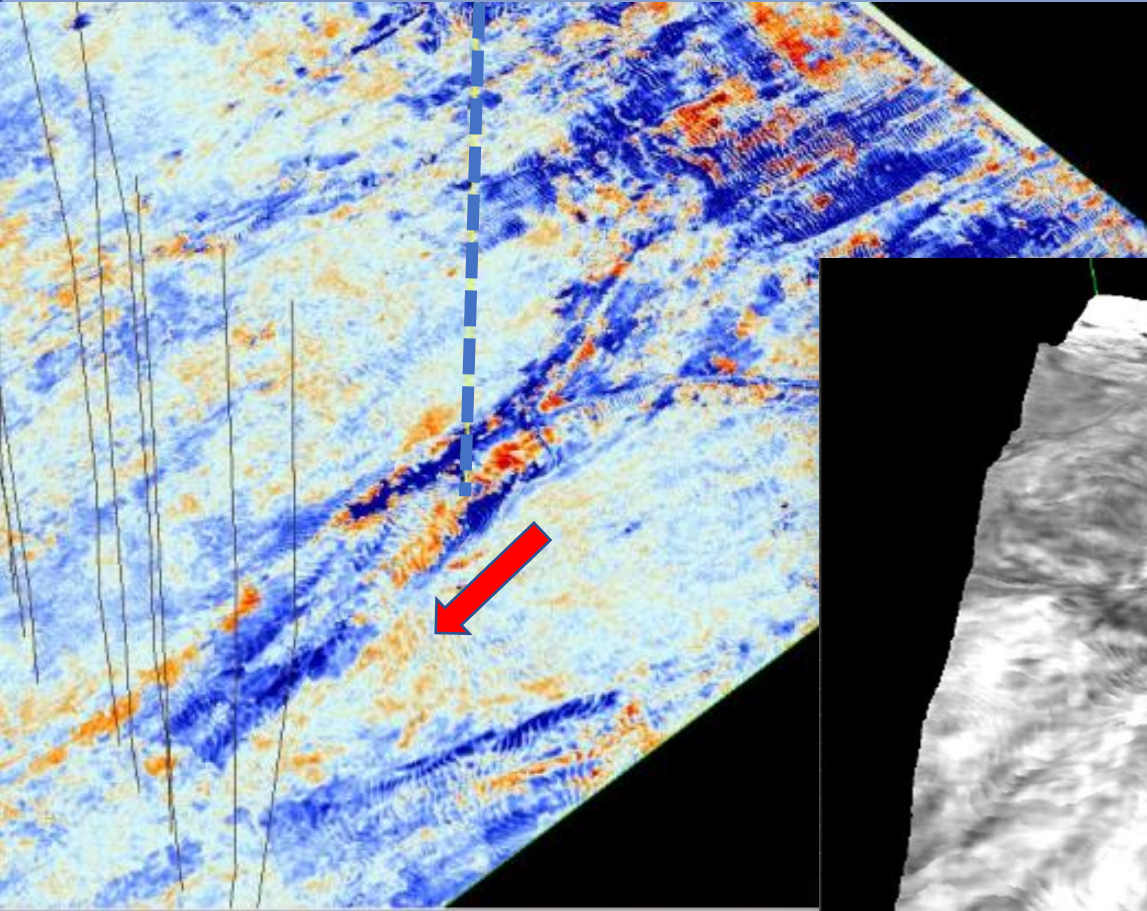
Berbice canyon deep water play

BERBICE CANYON SYSTEM 3dr Order Sequences

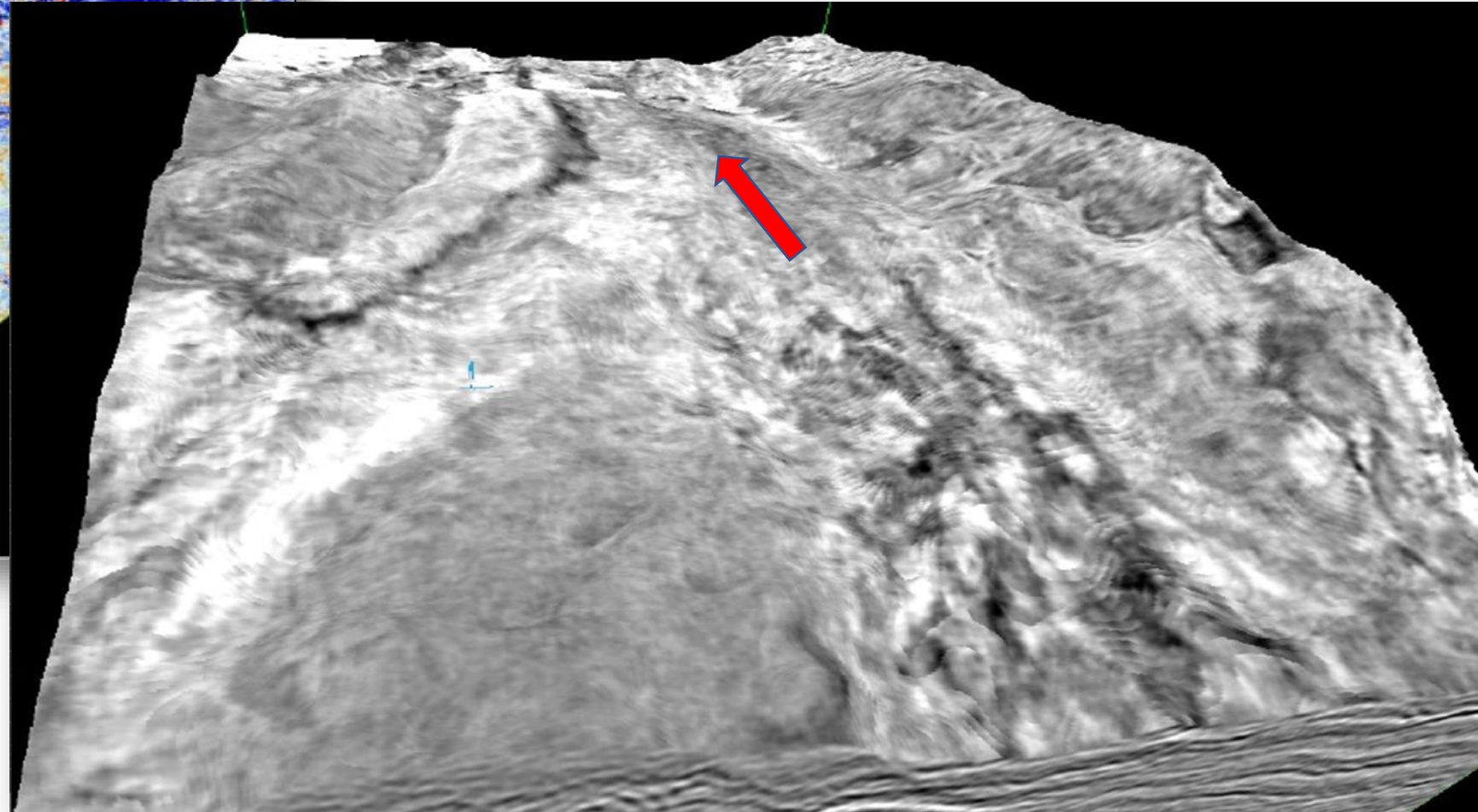
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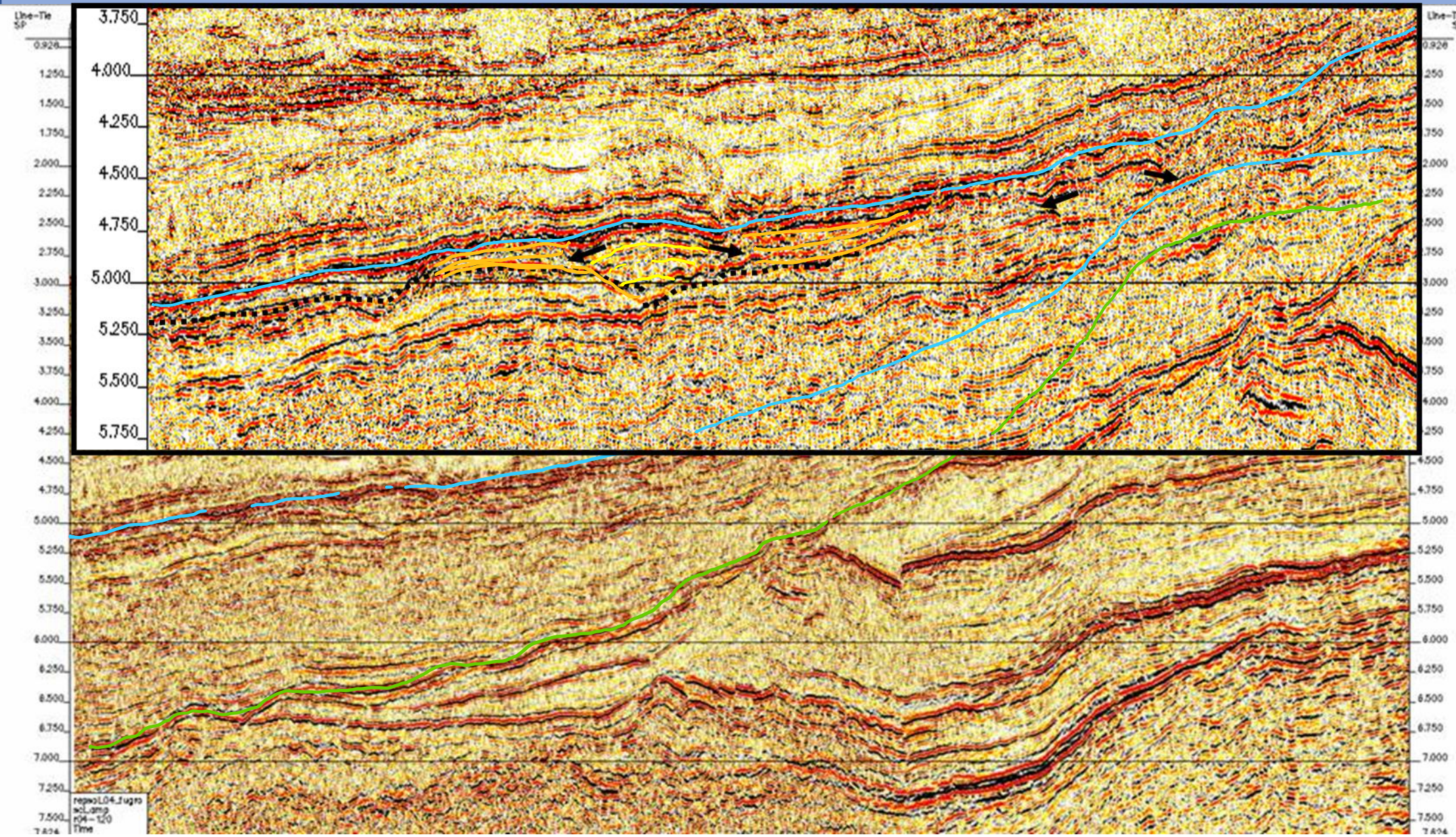
Oligocene West Tapir slope canyon play



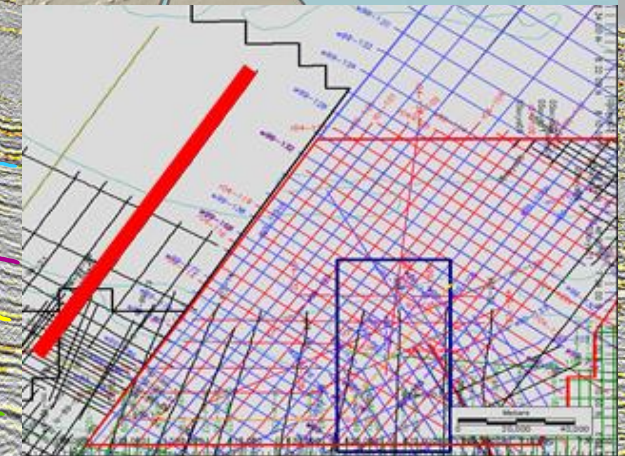
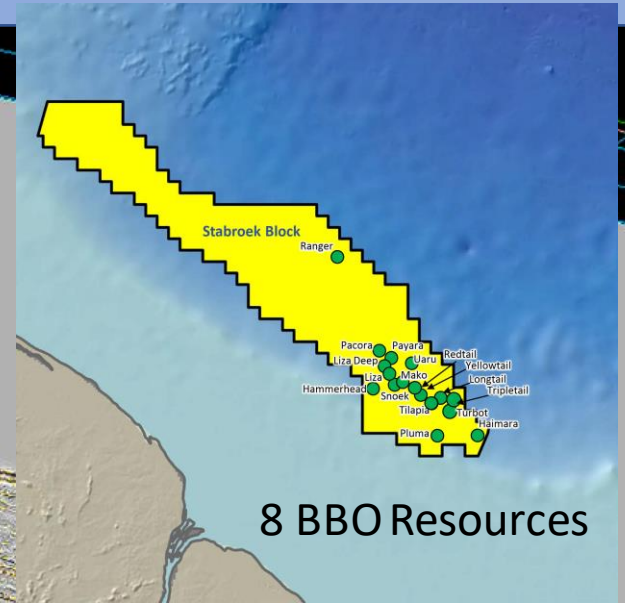
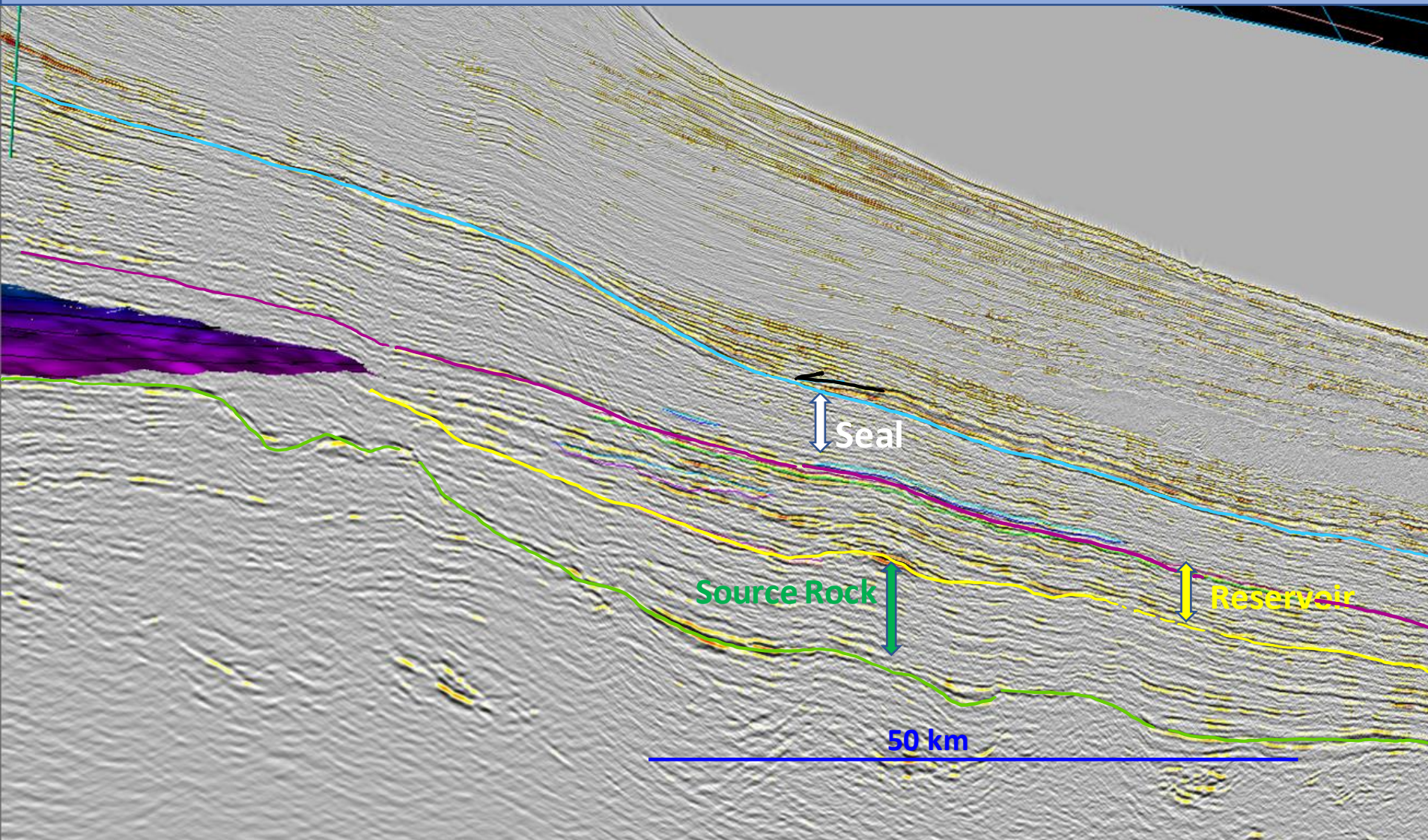
OLIGOCENE WEST TAPIR CANYON PLAY



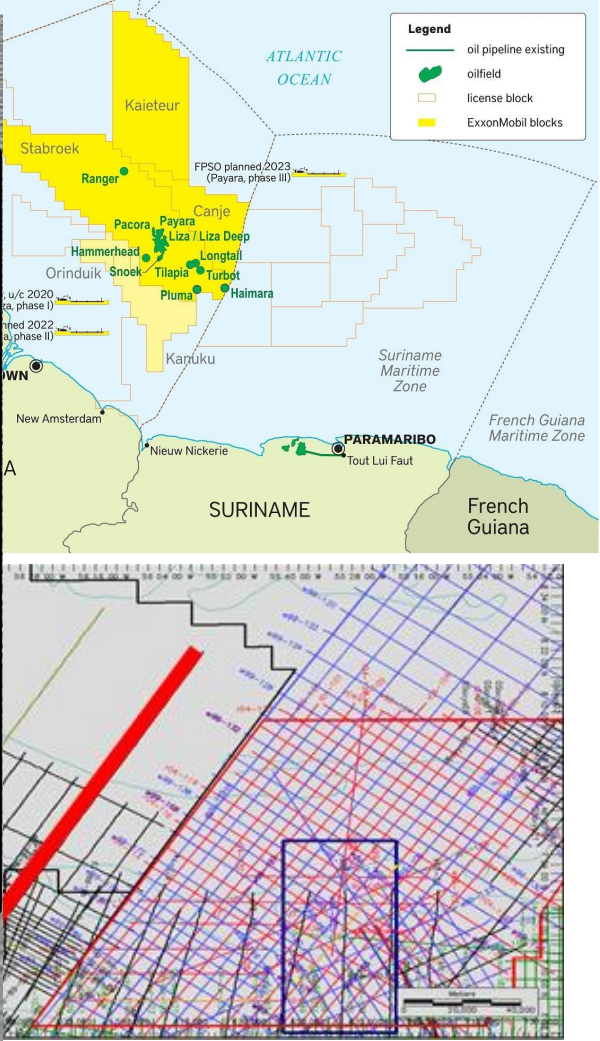
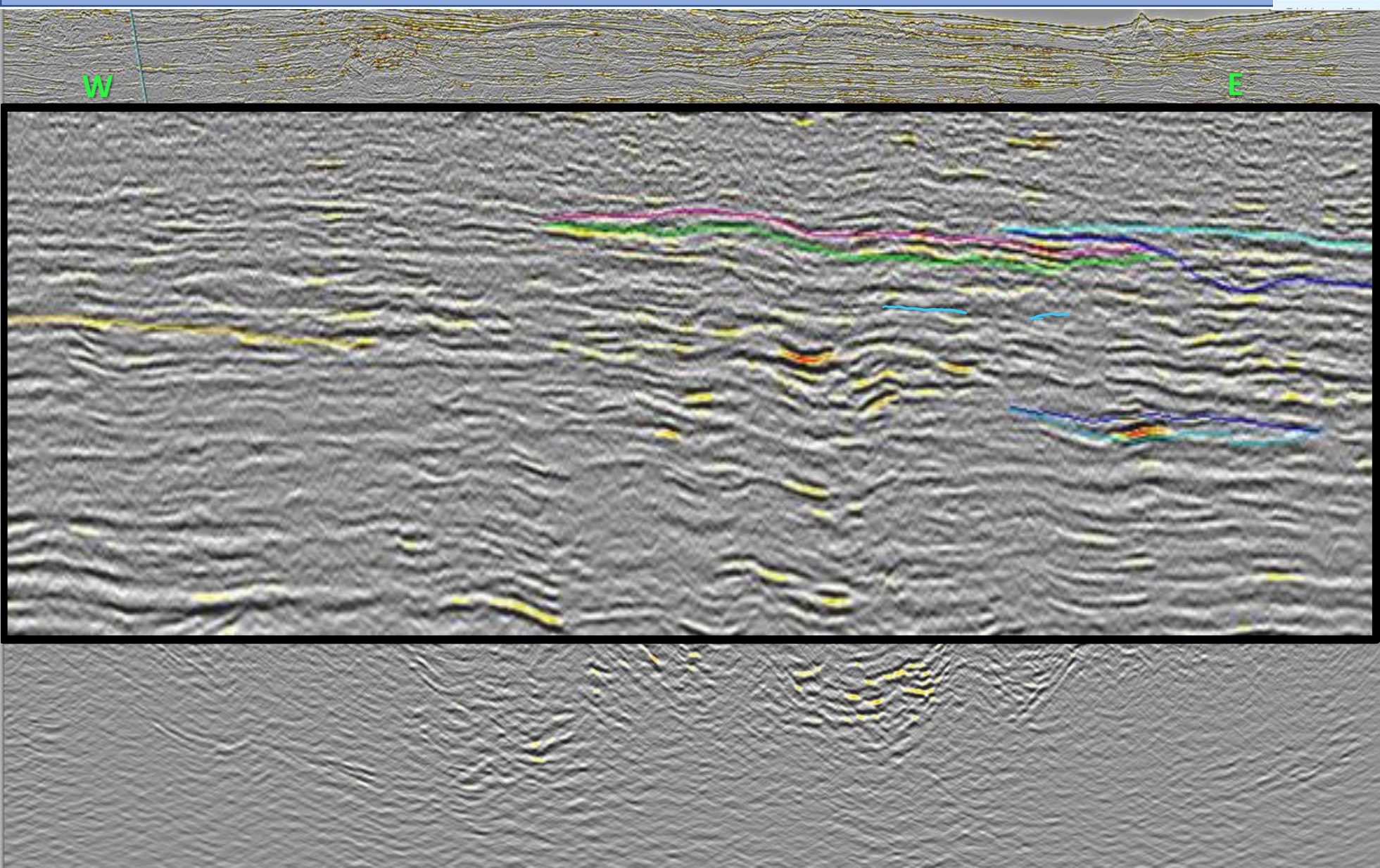
Oligocene slope fans deep water play



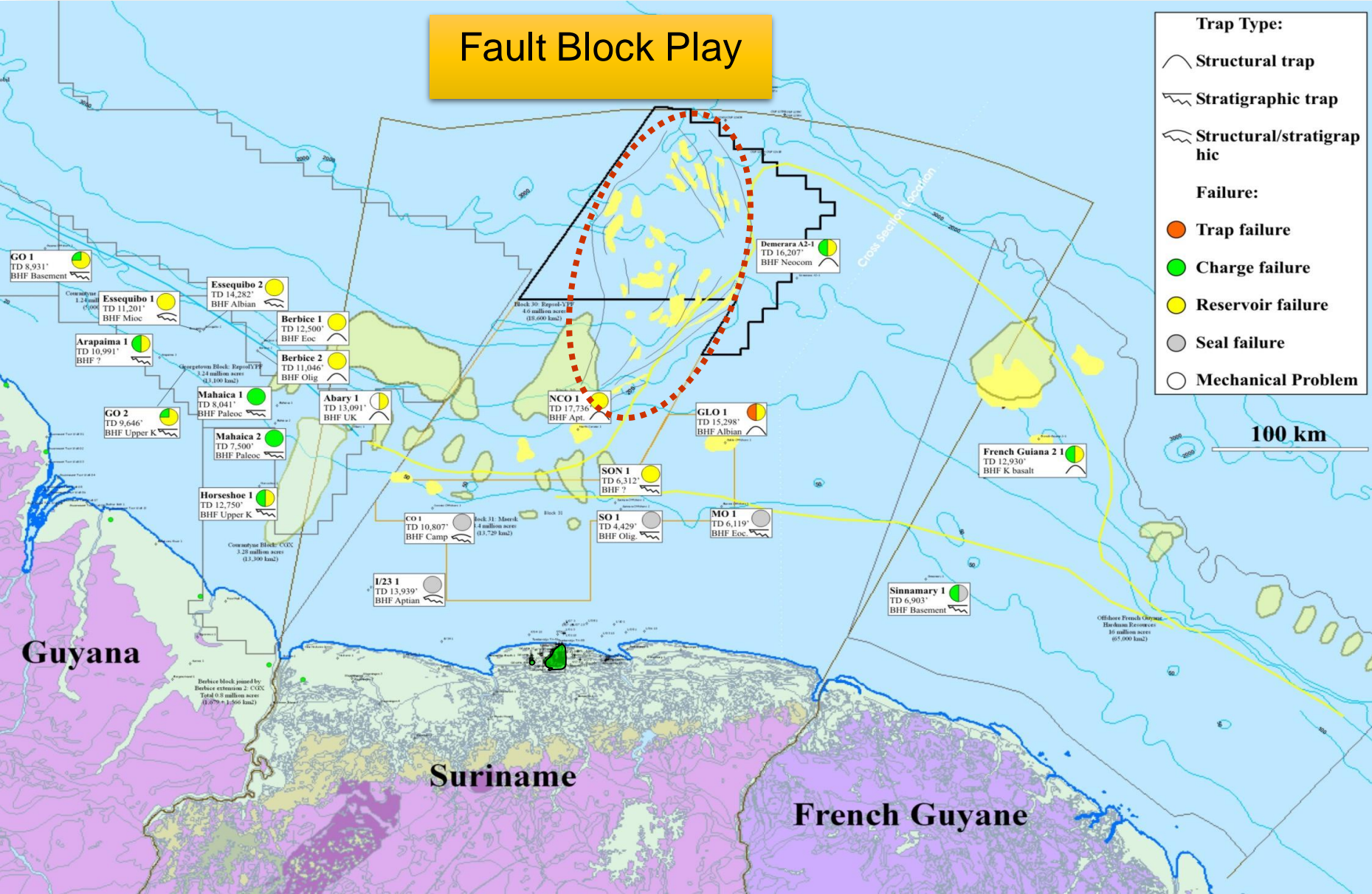
Second wave: Basin floor fans and slope canyon plays



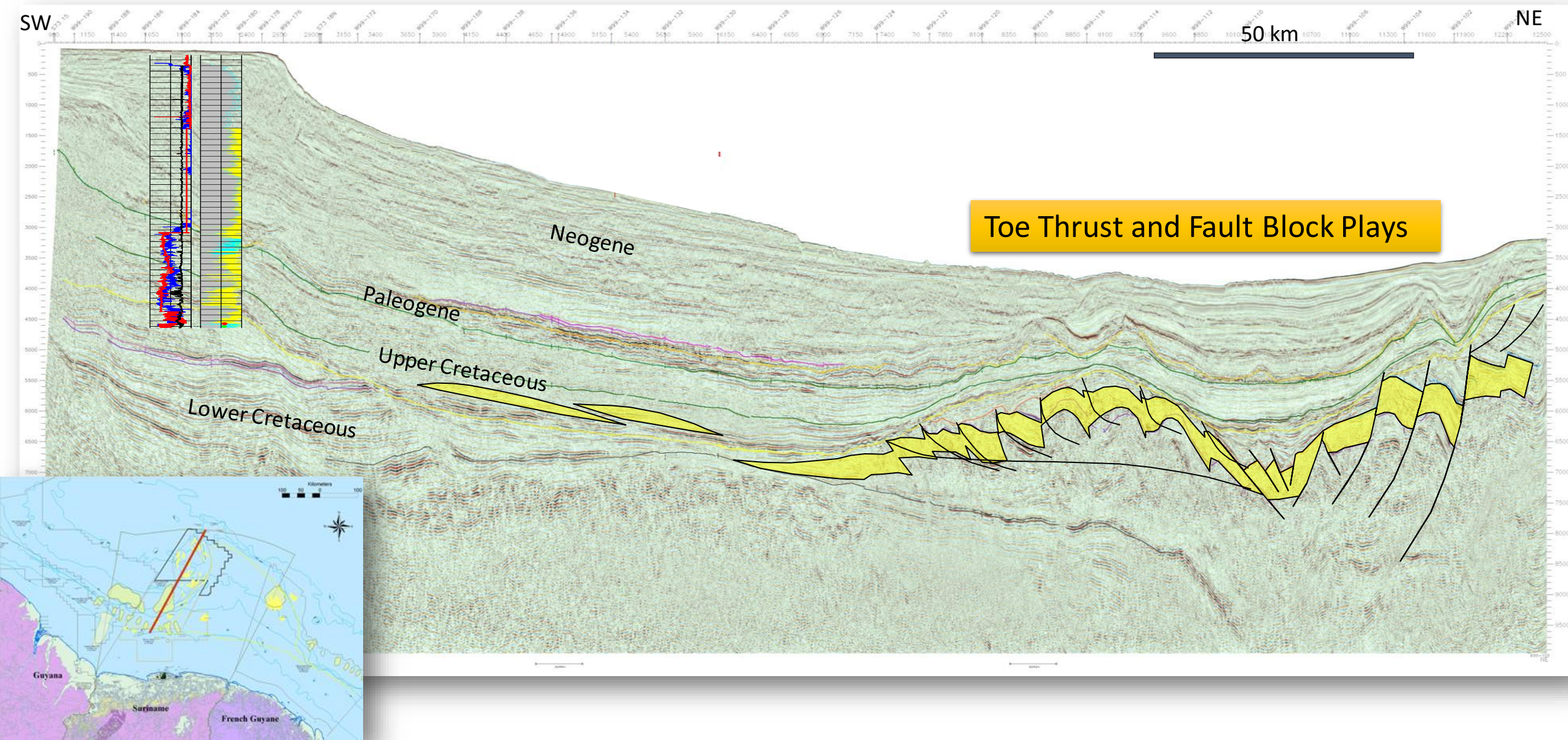
Second wave: Basin floor fans and slope canyon plays



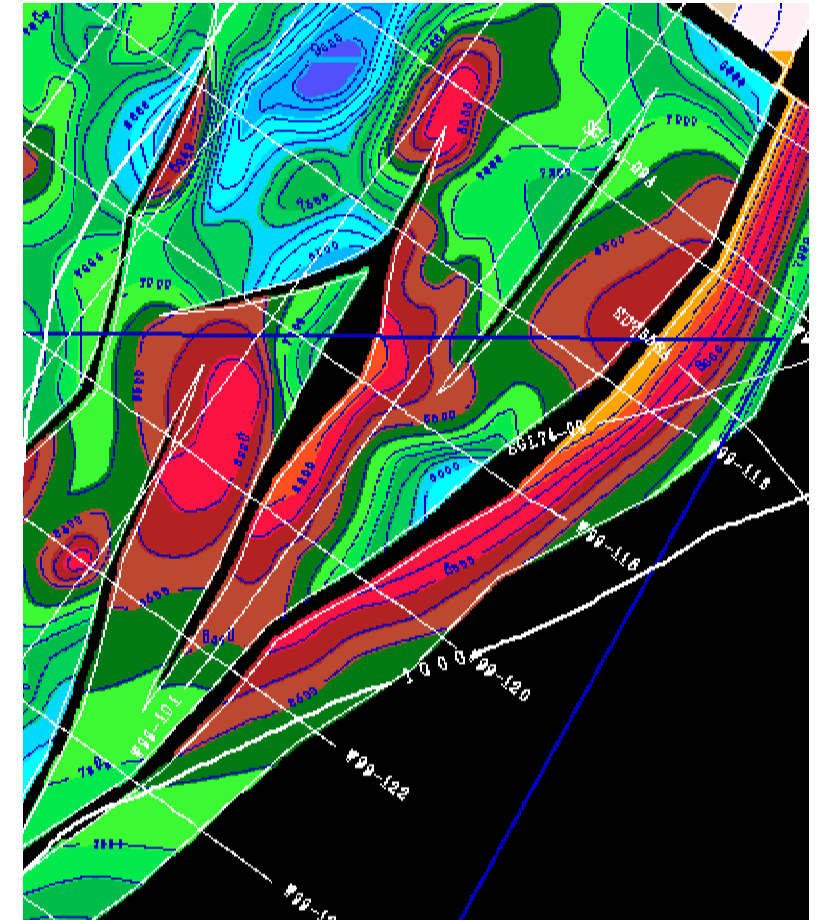
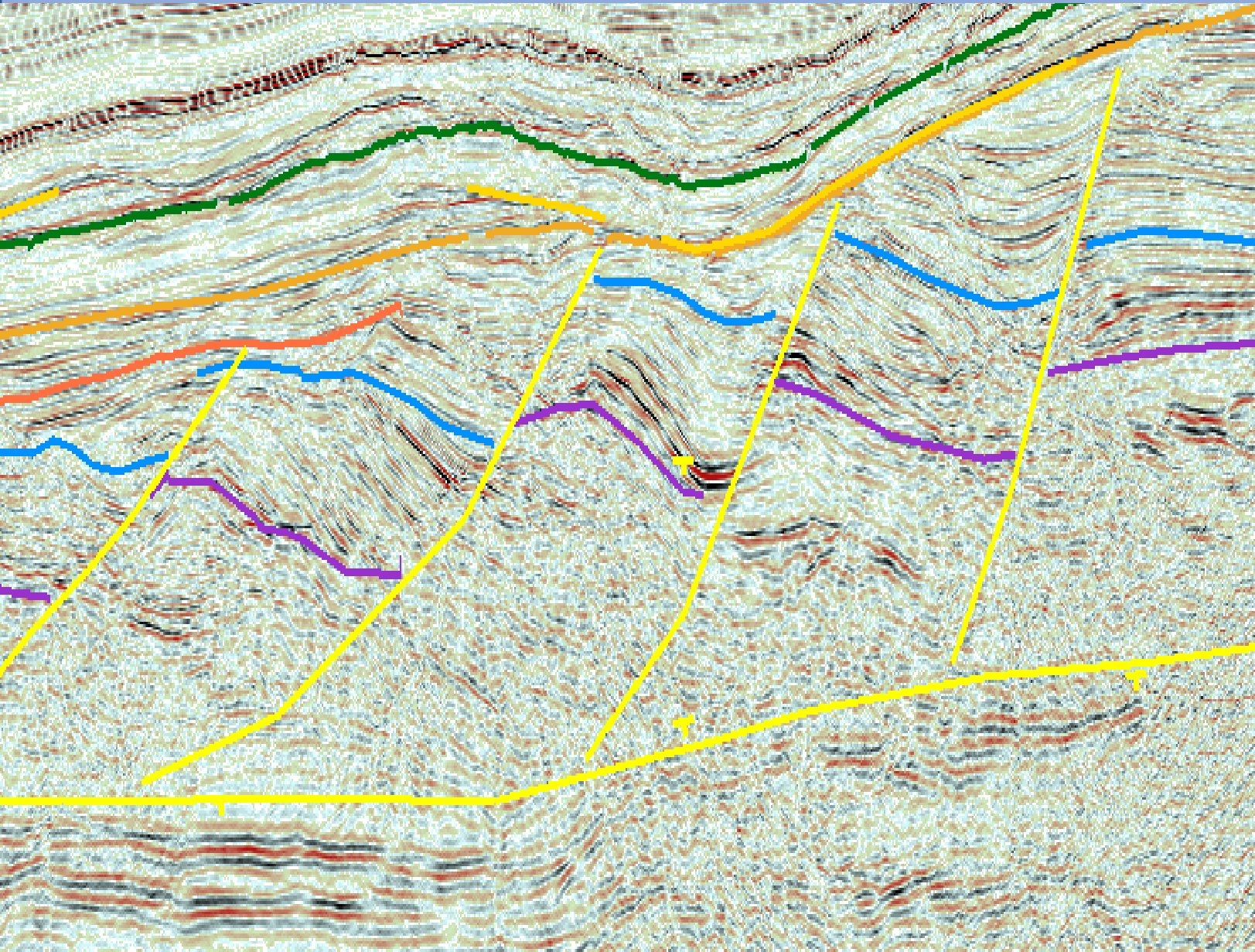
Ultra deep water plays : Aptian rotated fault block play



Ultra deep water plays : Aptian rotated fault block play

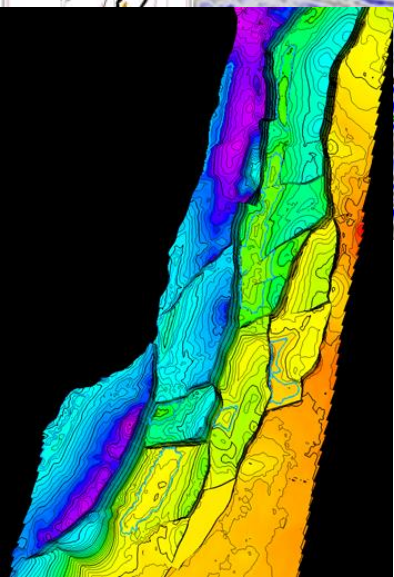
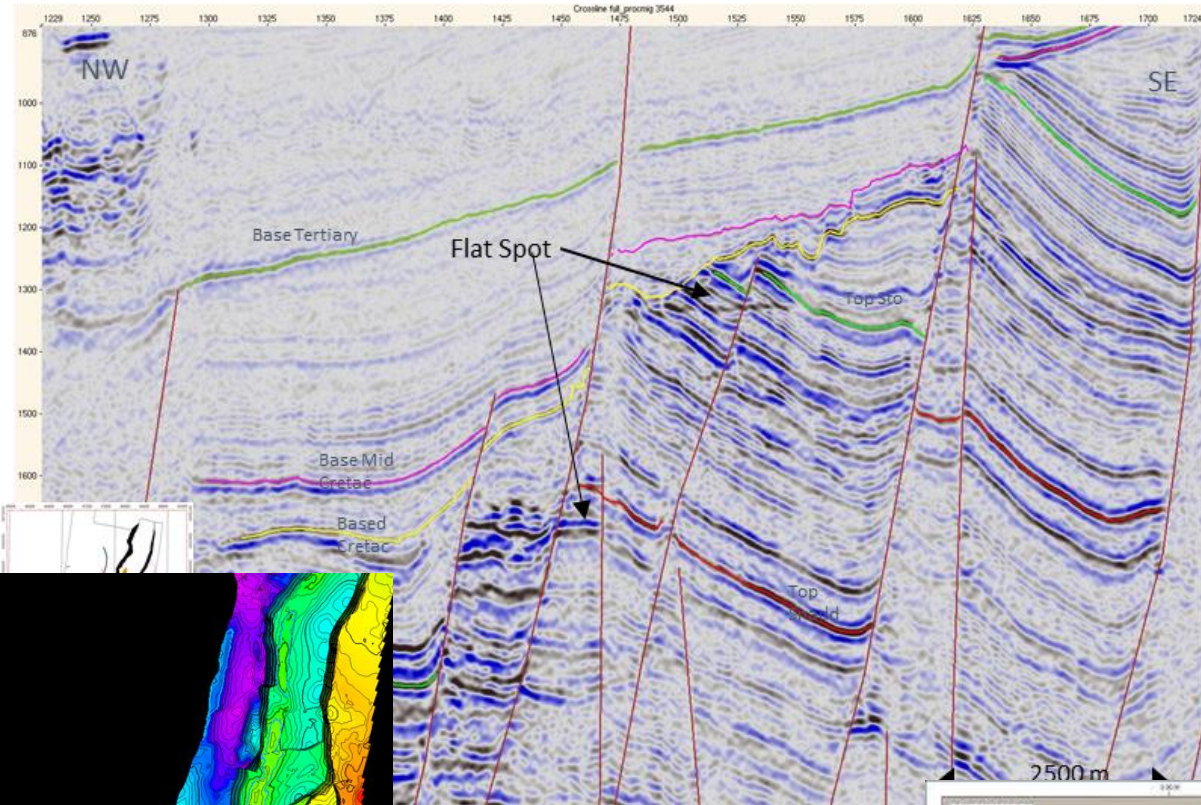


Ultra deep water plays : Aptian rotated fault block play

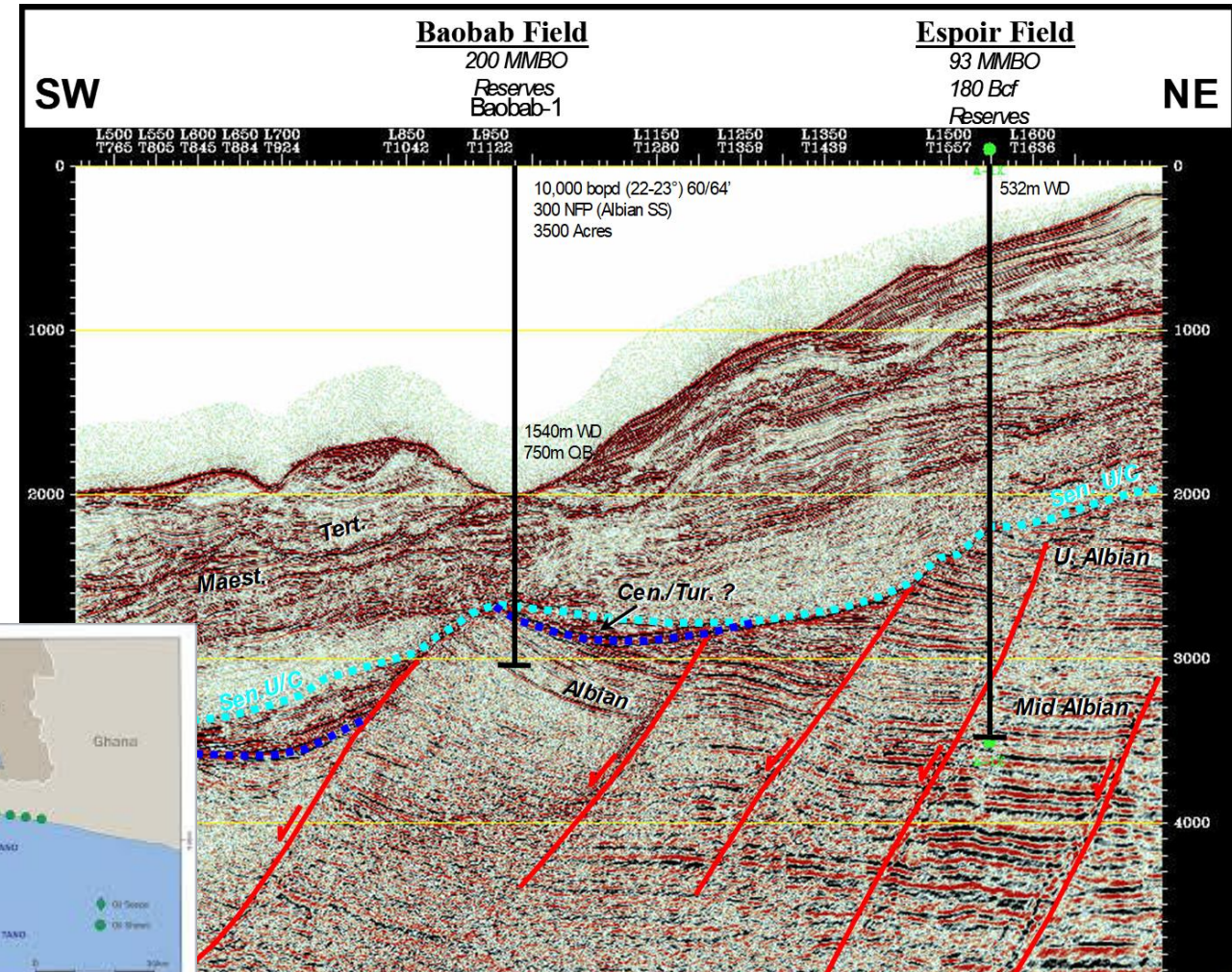


Ultra deep water plays : Aptian rotated fault block play analogs

Norway Barents Sea : Skrugard Discovery (2012)



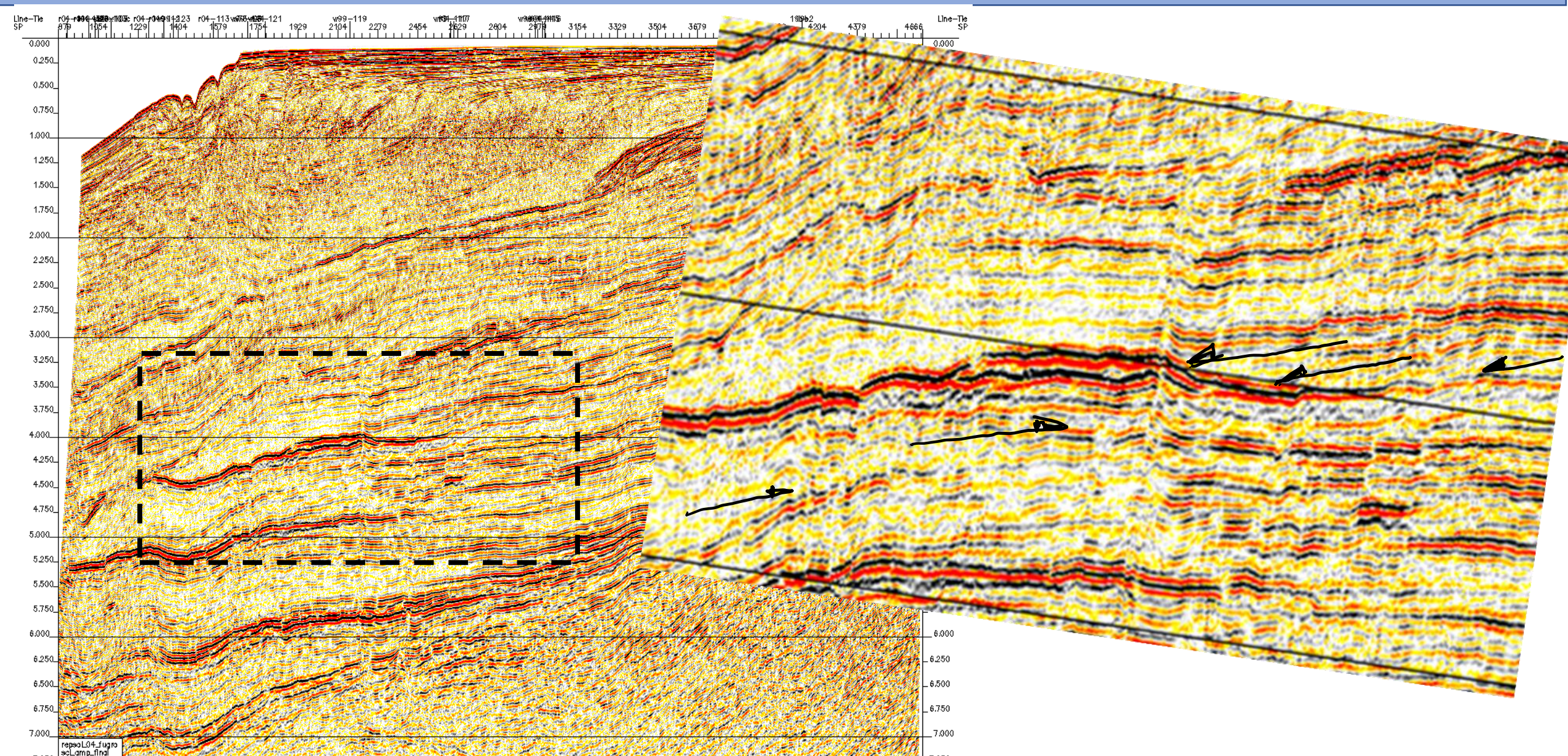
Cote d'Ivoire Baobab Field (2001)

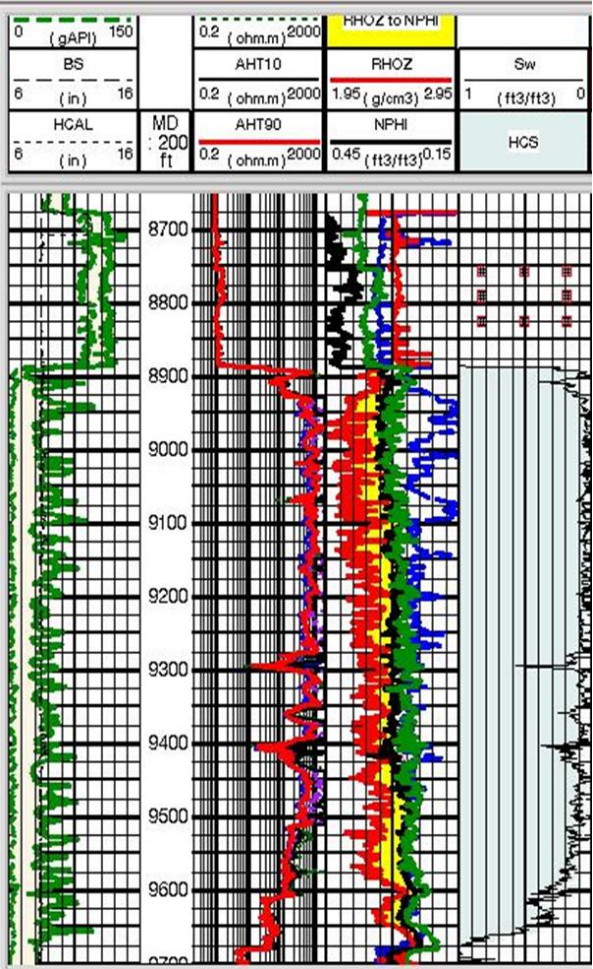
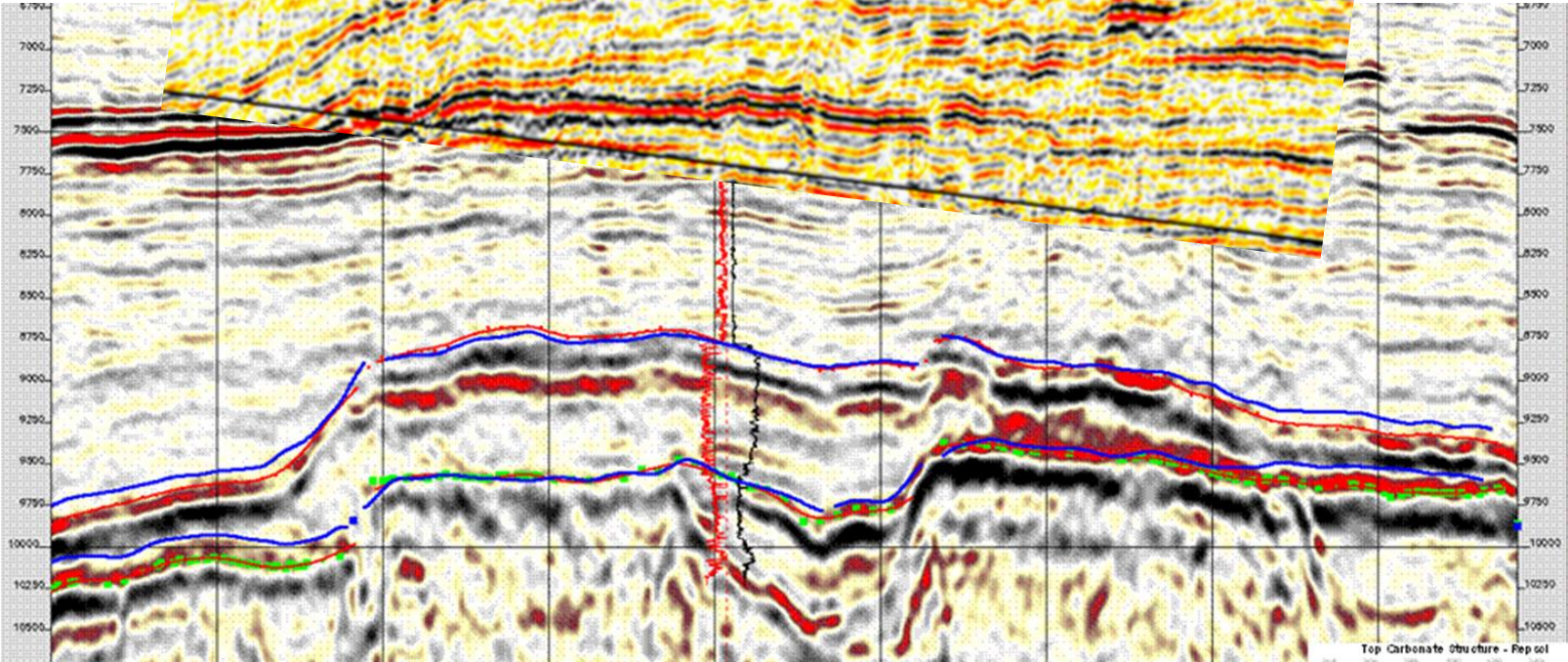


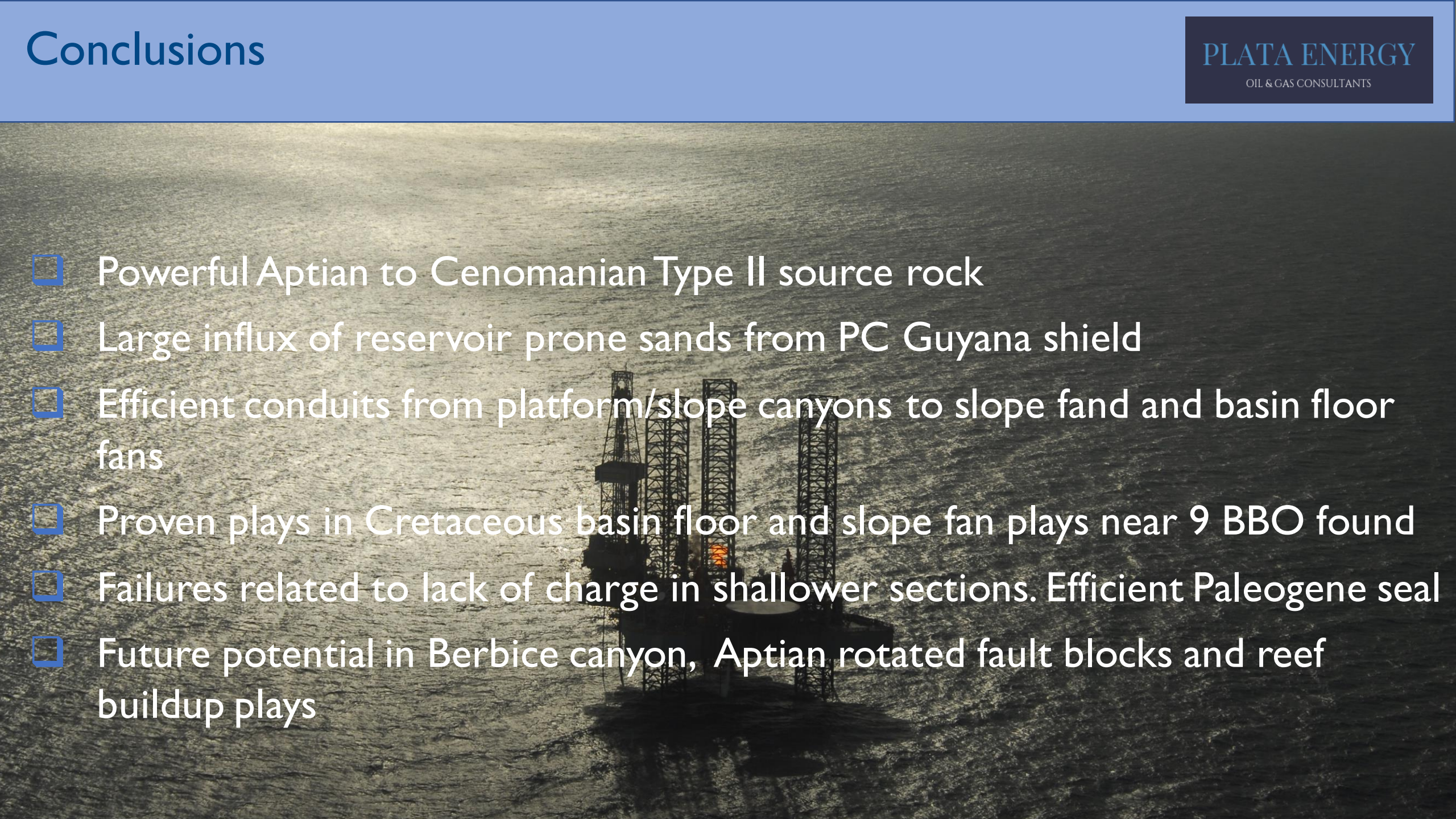
Guyana Suriname plays : Suriname Aptian reef build up

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- ❑ Powerful Aptian to Cenomanian Type II source rock
 - ❑ Large influx of reservoir prone sands from PC Guyana shield
 - ❑ Efficient conduits from platform/slope canyons to slope fan and basin floor fans
 - ❑ Proven plays in Cretaceous basin floor and slope fan plays near 9 BBO found
 - ❑ Failures related to lack of charge in shallower sections. Efficient Paleogene seal
 - ❑ Future potential in Berbice canyon, Aptian rotated fault blocks and reef buildup plays

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