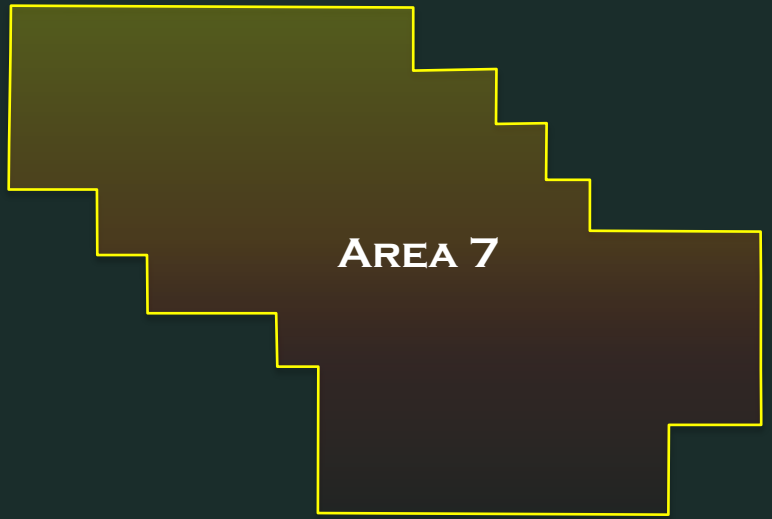
Sandakan Basin,
Sulu Sea – Revisited



THE PHILODRILL CORPORATION

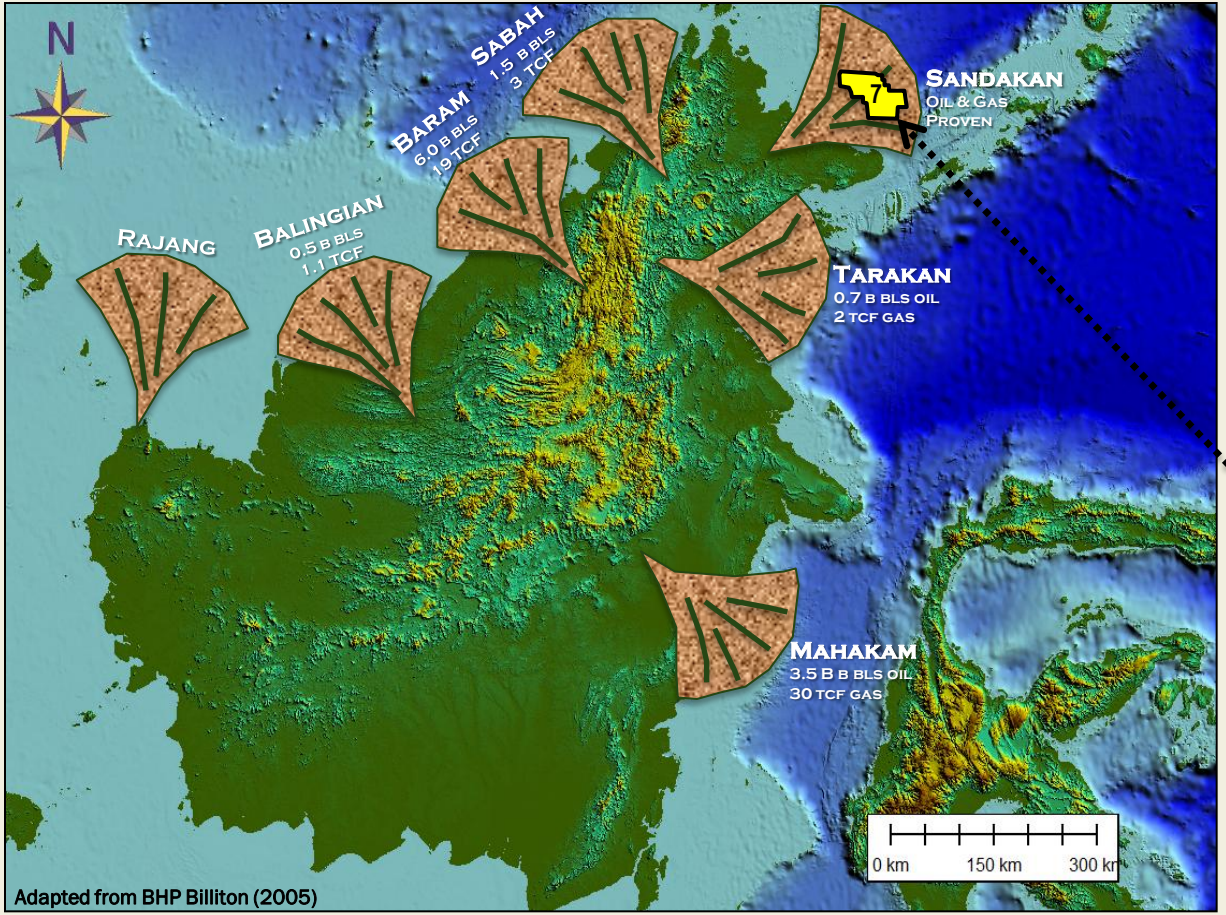
Manila Hotel, Philippines

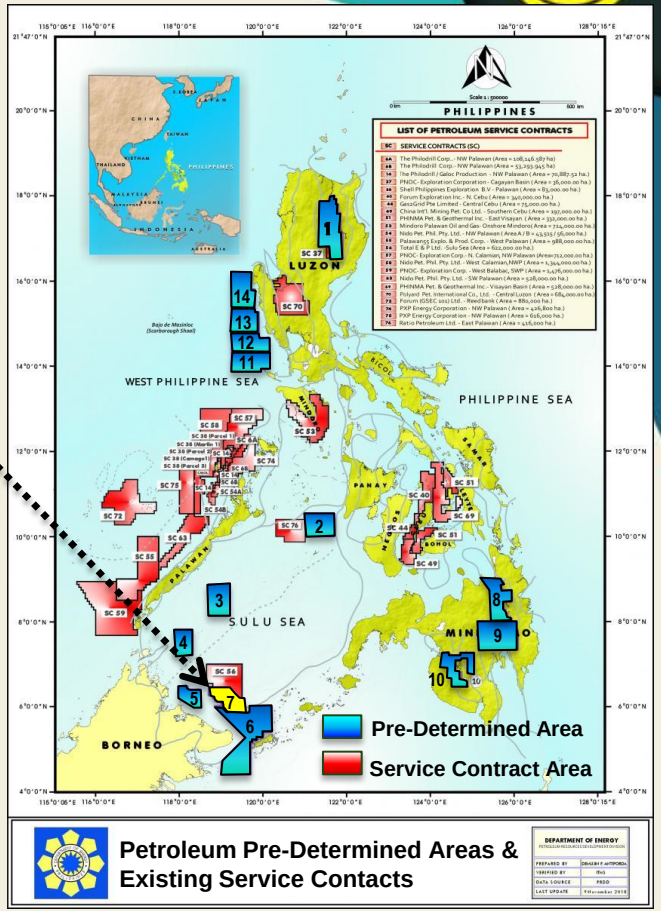
December 5, 2019

Presentation Outline

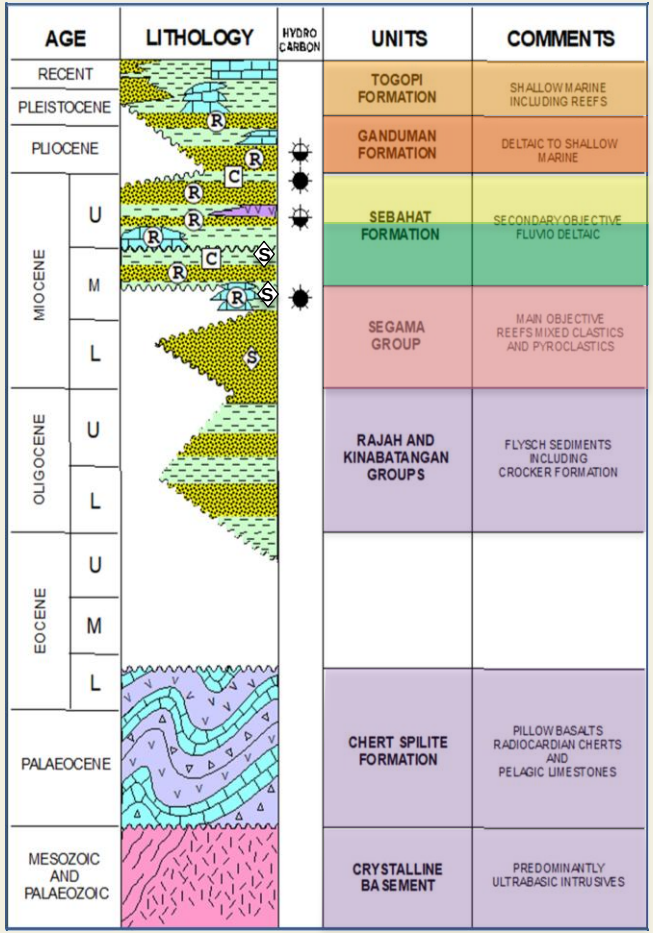
- Location and Setting
- Regional Stratigraphy
- Exploration History
- Prospects and Leads
- Petroleum System
- Exploration Plays
- Conclusion

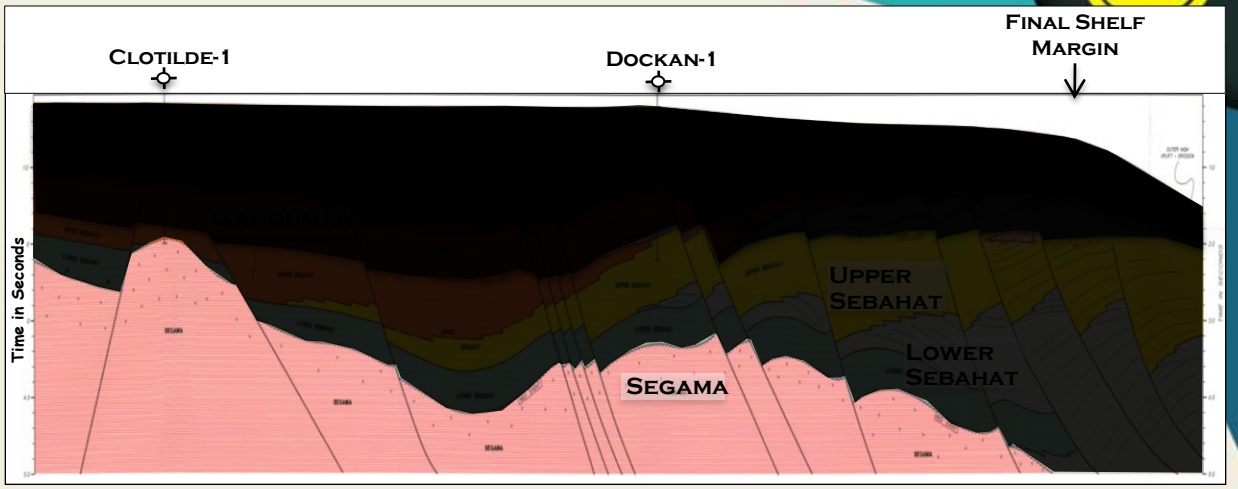
Location and Setting



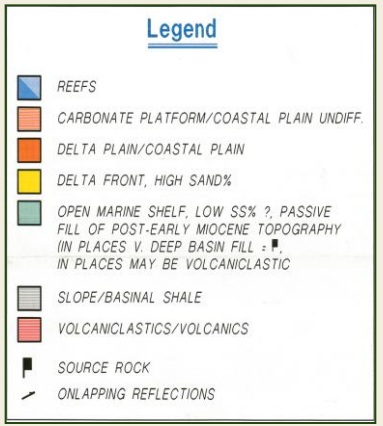


Regional Stratigraphy

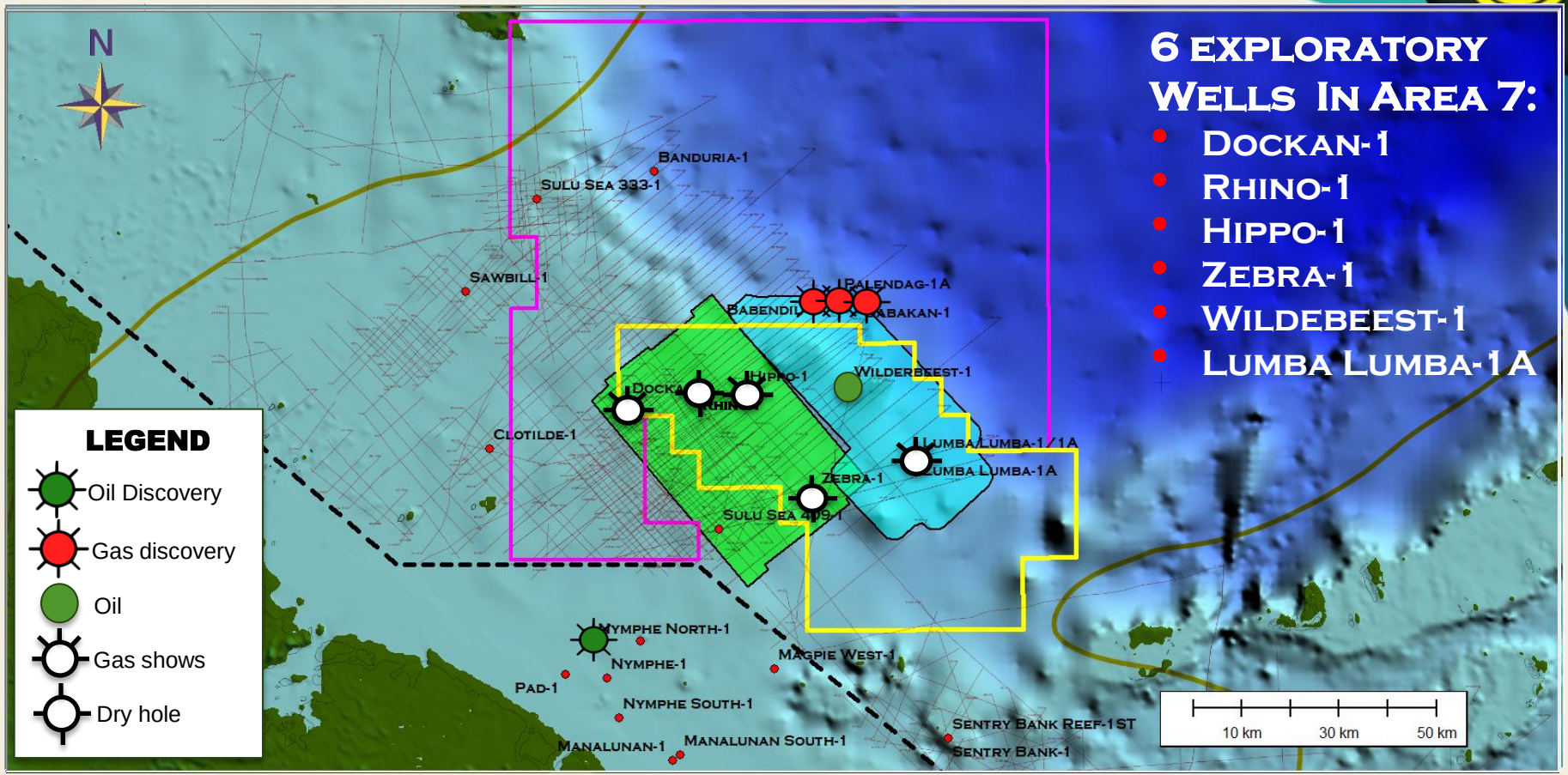




Taken from Sandakan Basin Study- OIEPC (1992)



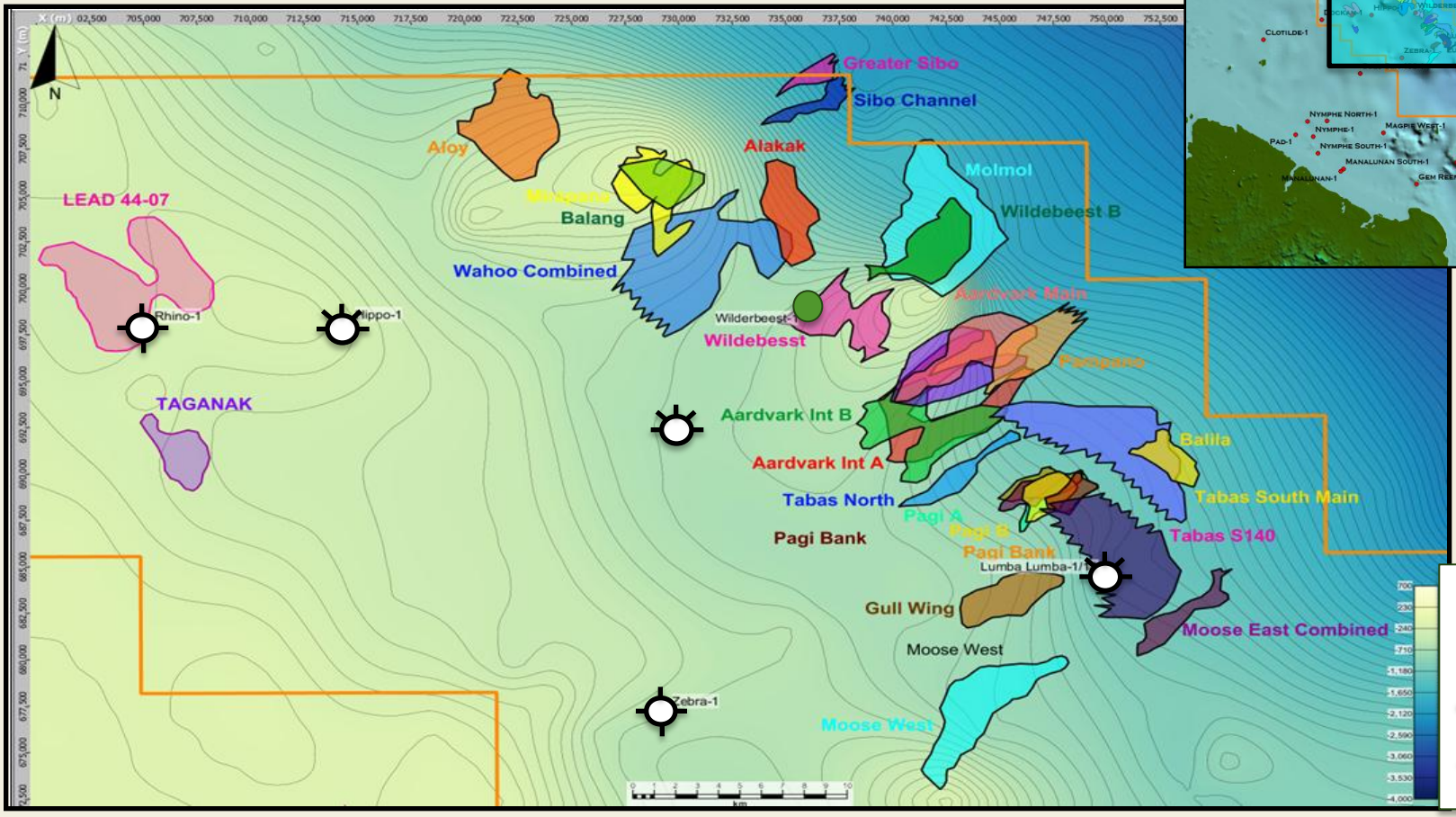
Exploration History

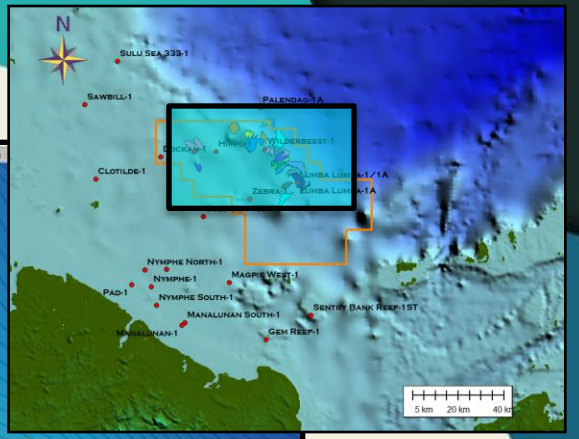


6 exploratory Wells In Area 7:

- Dockan-1
- Rhino-1
- Hippo-1
- Zebra-1
- Wildebeest-1
- Lumba Lumba-1A

Prospects and Leads



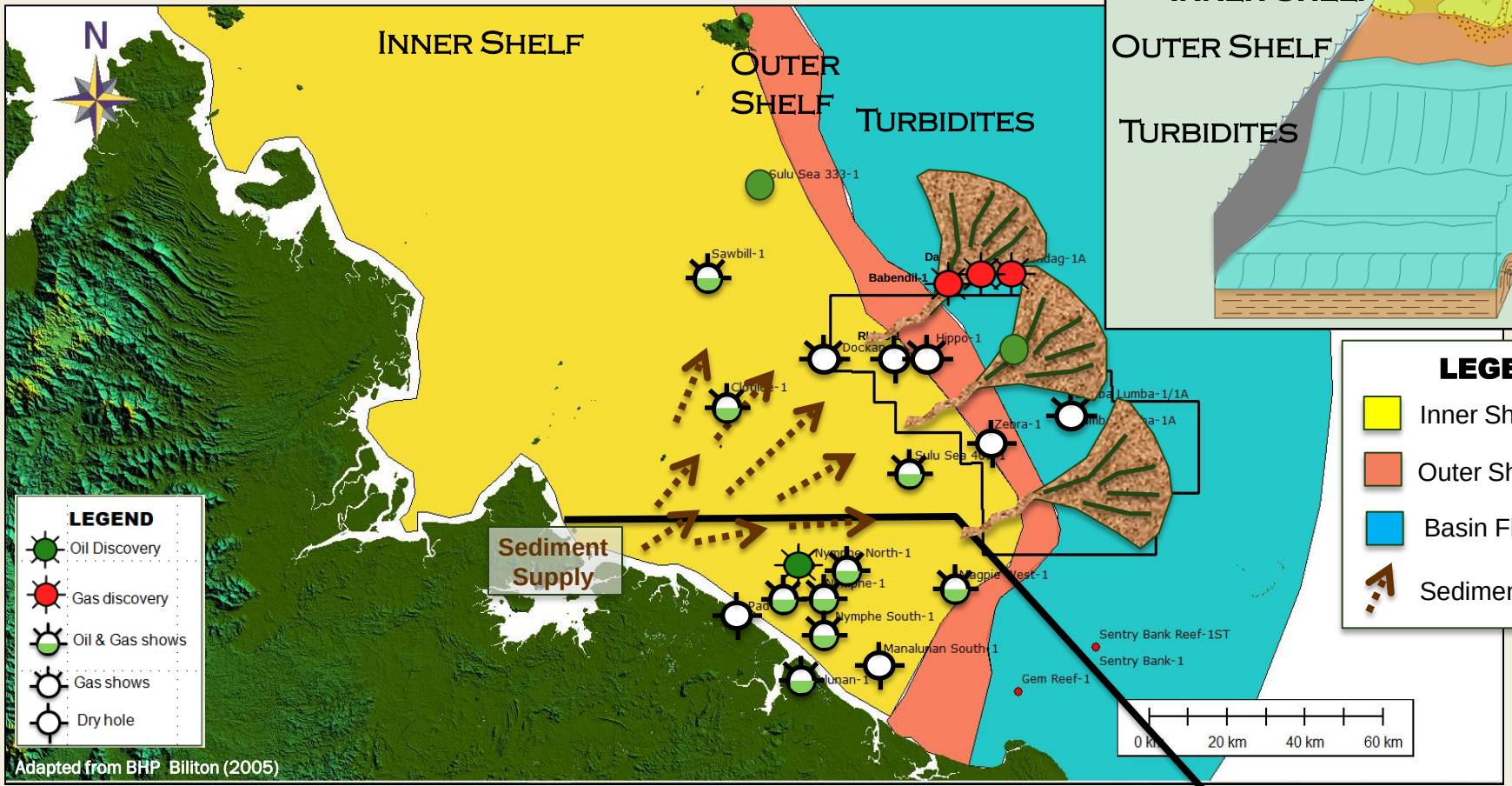


Exploration Challenges

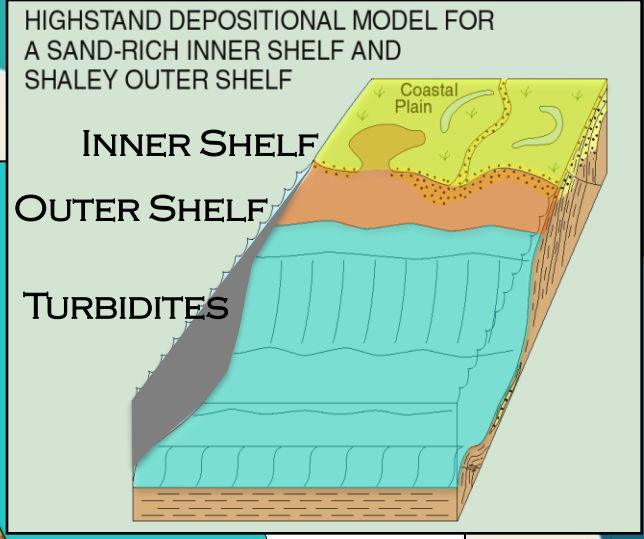
Two Main Problems:

1. Reservoir Fairway model failed to predict reservoir distribution.
2. Vertical migration of hydrocarbons to the reservoir targets was unsuccessful.

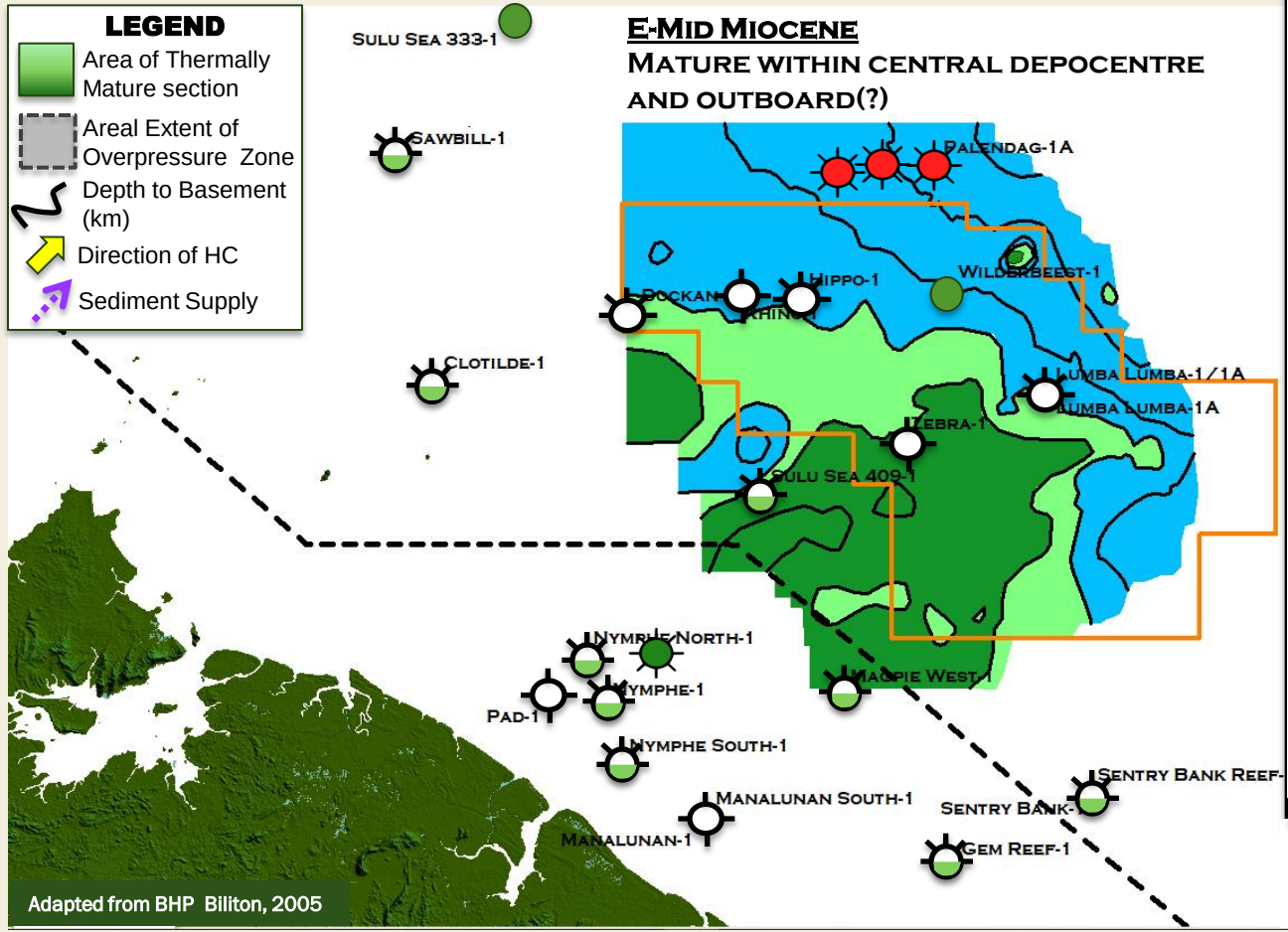
Reservoir Fairways

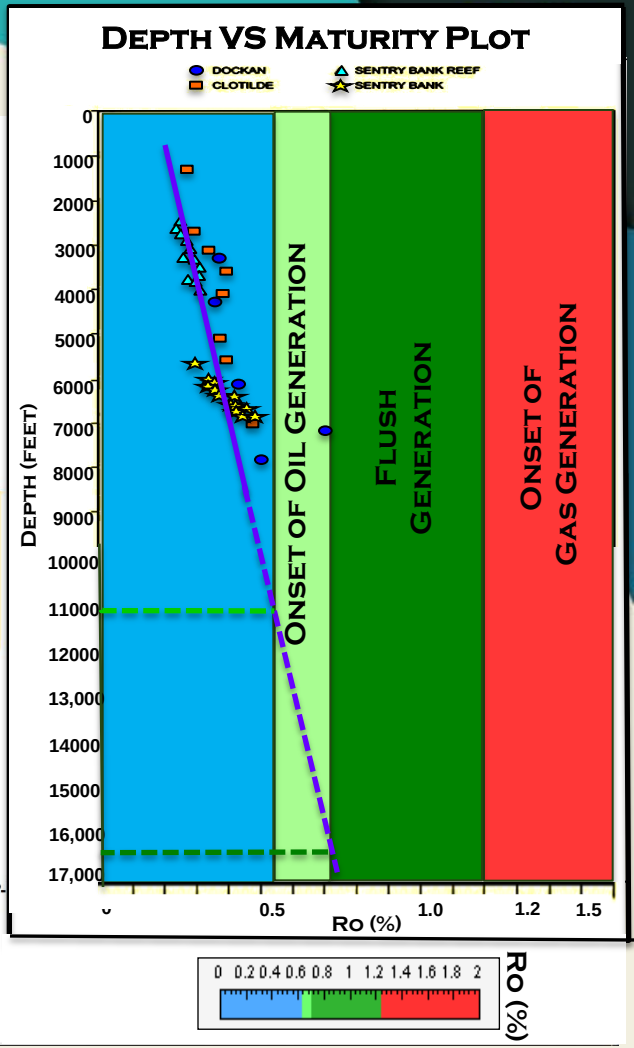


Adapted from BHP Biliton (2005)



Source Rocks and Maturity

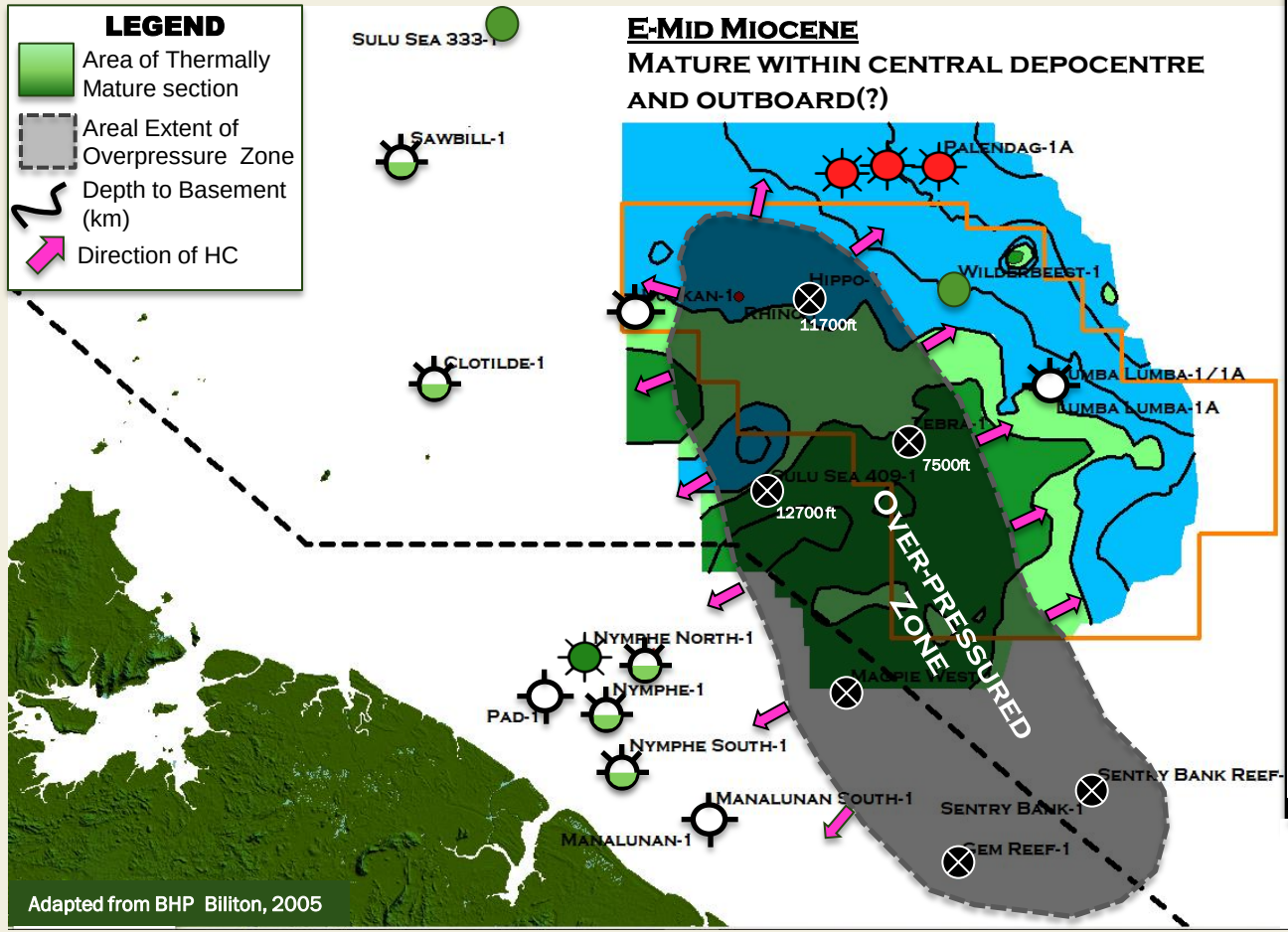


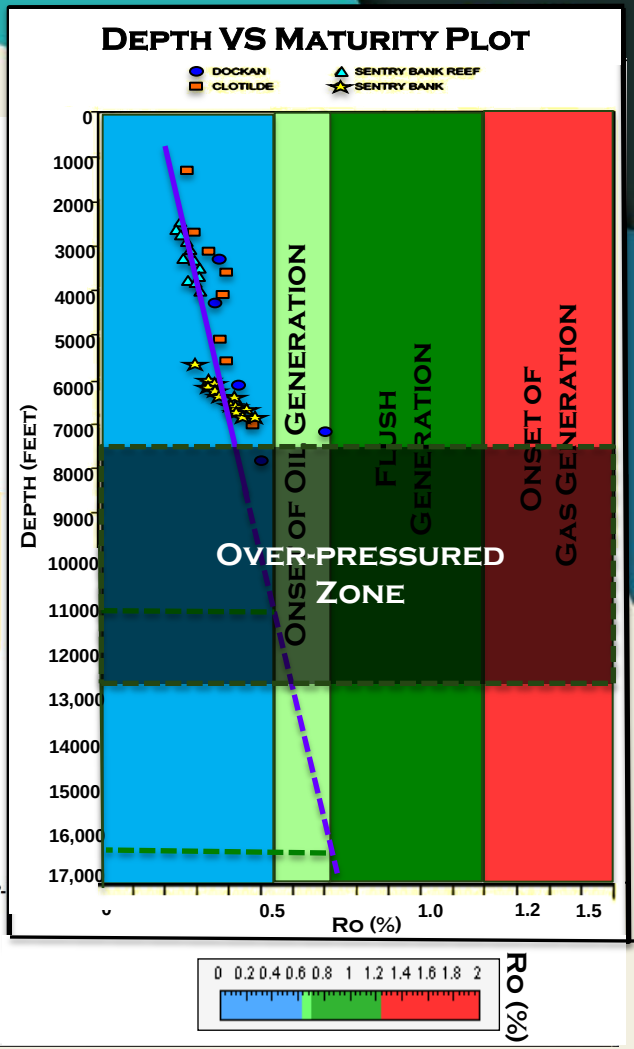


Overpressured Zones

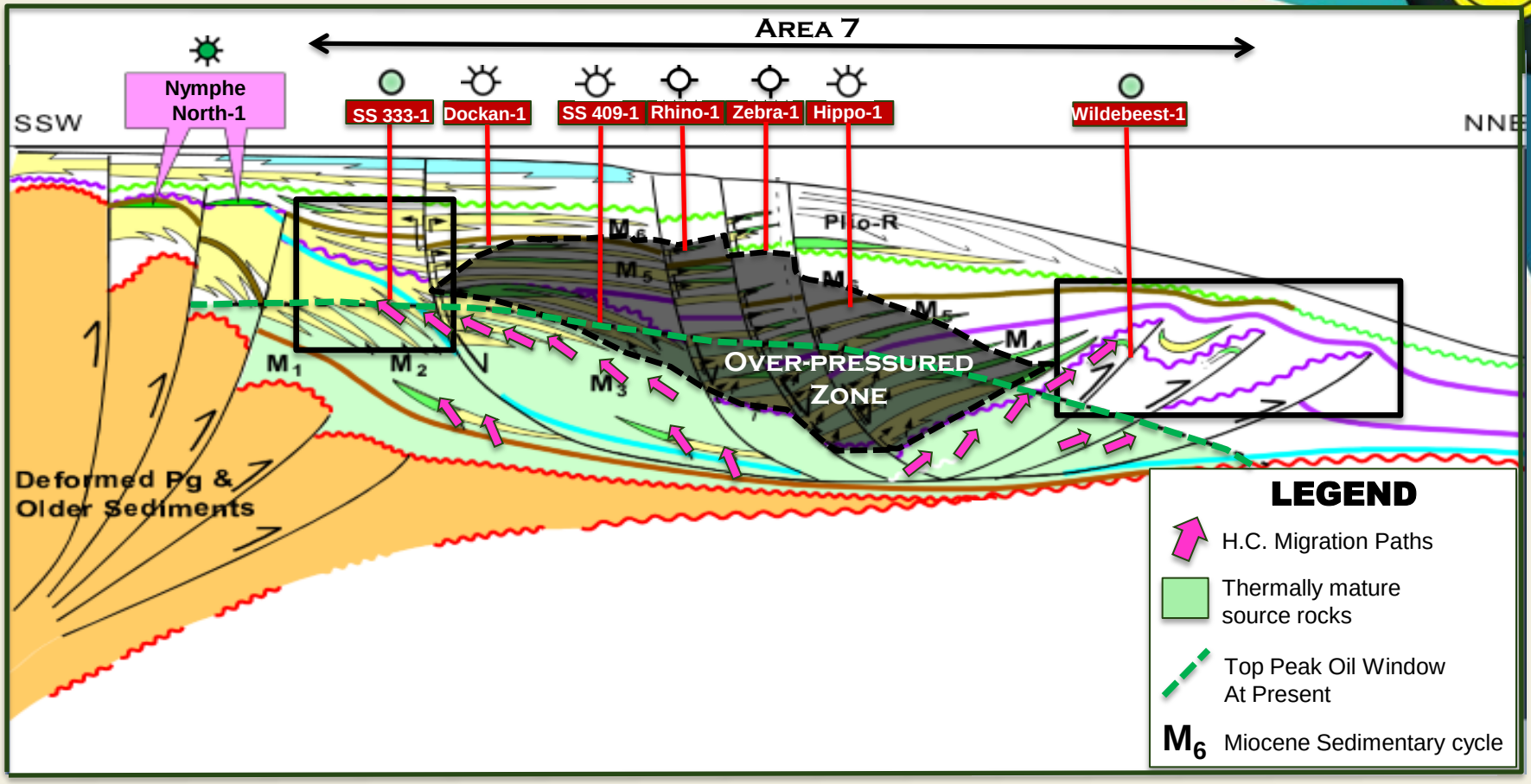
WELLS	Over pressured Zones
Dockan-1	No overpressure observed.
Rhino-1	No mention of overpressure.
Hippo-1	High-pressured sands at 11,700 to 11,740 feet
Wildebeest-1	Not much data available.
Sulu Sea 409-1	High-pressured shale at 12,700 to 13,700 feet
Zebra-1	Gopressure zones at 7,500 feet below.
Lumba Lumba 1/1A	No formation pressure test was attempted.
Nymphe North-1	High pressure reservoirs were found from 10,160 feet.
Sentry Bank-1	Geo-pressure zones observed.
Gem-Reef-1	High pressured zones are encountered in this well.
Manalunan-1	No mention of overpressure.
Magpie West-1	High pressured zones as observed from the Borehole Compensated Sonic logs.

Source Rocks and Maturity





Exploration Plays



Conclusion

- 2 Main Exploration Challenges in the study area:

1. Reservoir Fairway model failed to predict reservoir distribution.
   - ❑ Attribute Analysis and Spectral Decomposition

2. Vertical migration of hydrocarbons to the reservoir targets was unsuccessful - Over-pressured section acts as a vertical barrier
   - ❑ Mapping of the over-pressured zone through in the 3D seismic volume velocity data

Thank You