A satellite-style map of Southeast Asia, showing Thailand, Vietnam, Laos, Cambodia, and parts of Malaysia and Indonesia. The map is overlaid with a semi-transparent dark rectangle containing the title text. Numerous small red circles and white stars are scattered across the landmasses, likely indicating specific geological or exploration sites. The map is set against a dark blue background representing the ocean.

The Brief Exploration History and Petroleum Geology of the Mergui-North Sumatra Basin, Thailand

By: *Tananchai Mahattanachai*



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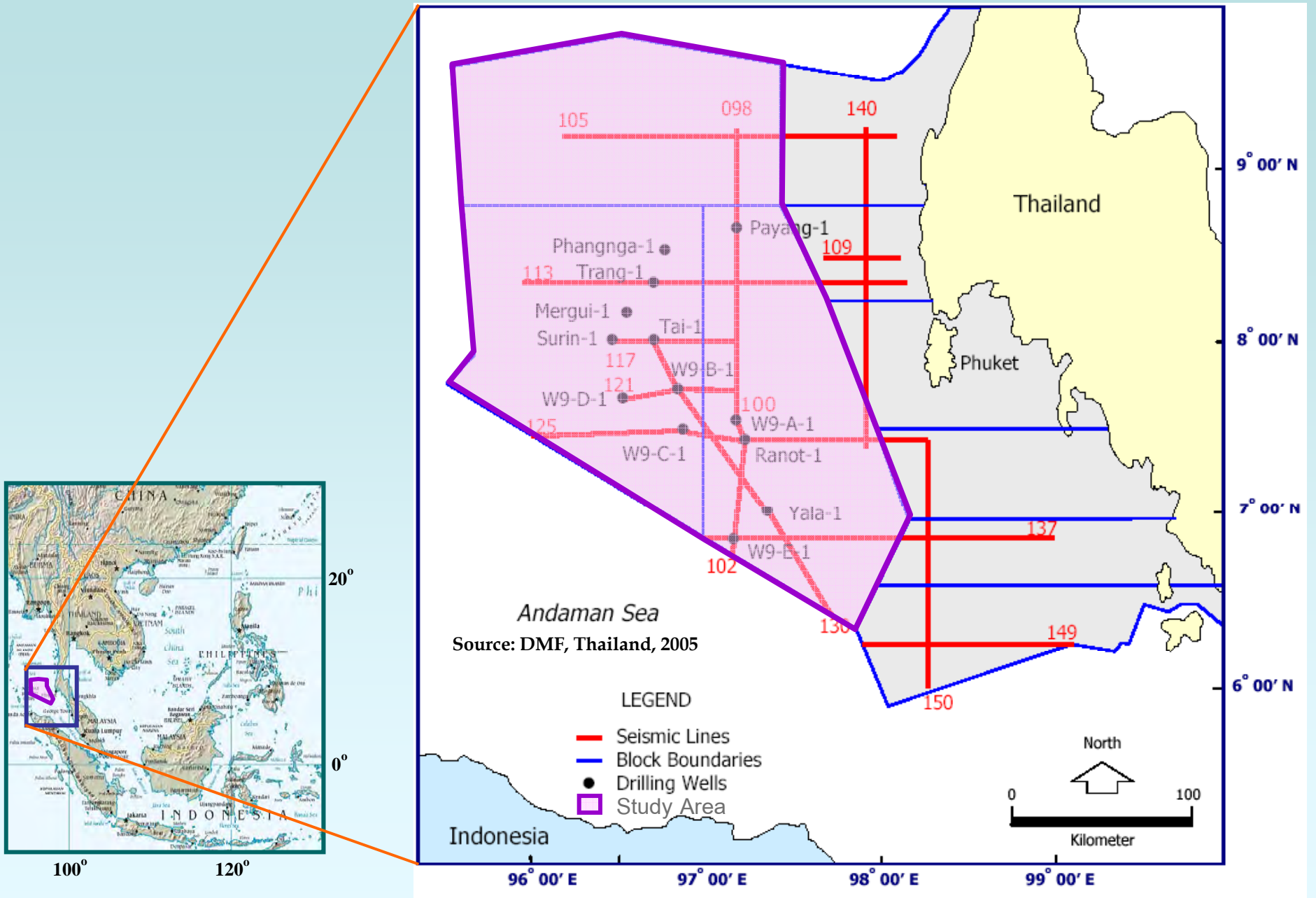
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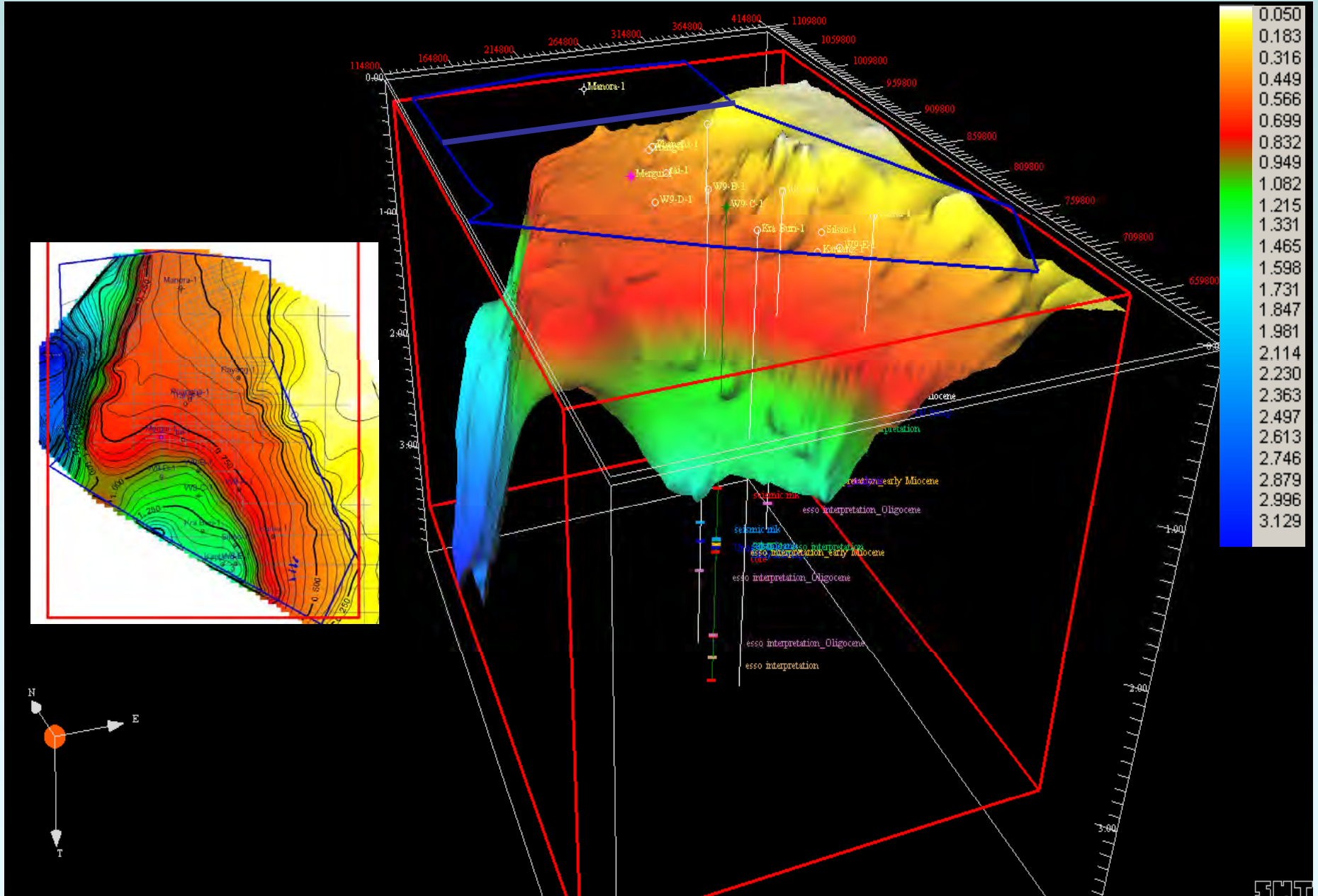
Contents of Presentation

1. Exploration History
2. General Geology & Hydrocarbon Potential
3. Current Activities
4. Challenges
5. Conclusion

Location Map of the Study Area



Seafloor Geometry



Exploration History



Seismic Data

The seismic data consist of more than 1,000 seismic lines, with total length of about 45,000 km. covering the area of Block W7/38, W9/38 and A4/43 (W8/38).

Seismic Surveys in the Andaman Sea

Operator	Block	Duration	2D (km)
Amoco	W2	1974	452.00
DMR	Andaman Sea	28 Apr-23 May 1995	3,298.00
ESSO	W9	1974-1975	11,785.00
Kerr-McGee	W7/38	19 Apr - 10 May 1998	3,875.50
		9-19 Feb 1999	1,332.30
Oceanic	W7	1974	2,097.00
Pan Ocean	W3,W4	1970, 1972	1,390.00
Placid Oil	W8	1985	834.00
Union Oil	W8	1973	7,163.00
Unocal	W8/38, W9/38	29 Nov 1996-11 Feb 1997	11,737.00
Weeks	W1	1973	910.00
Shell			
Total			44,873.80

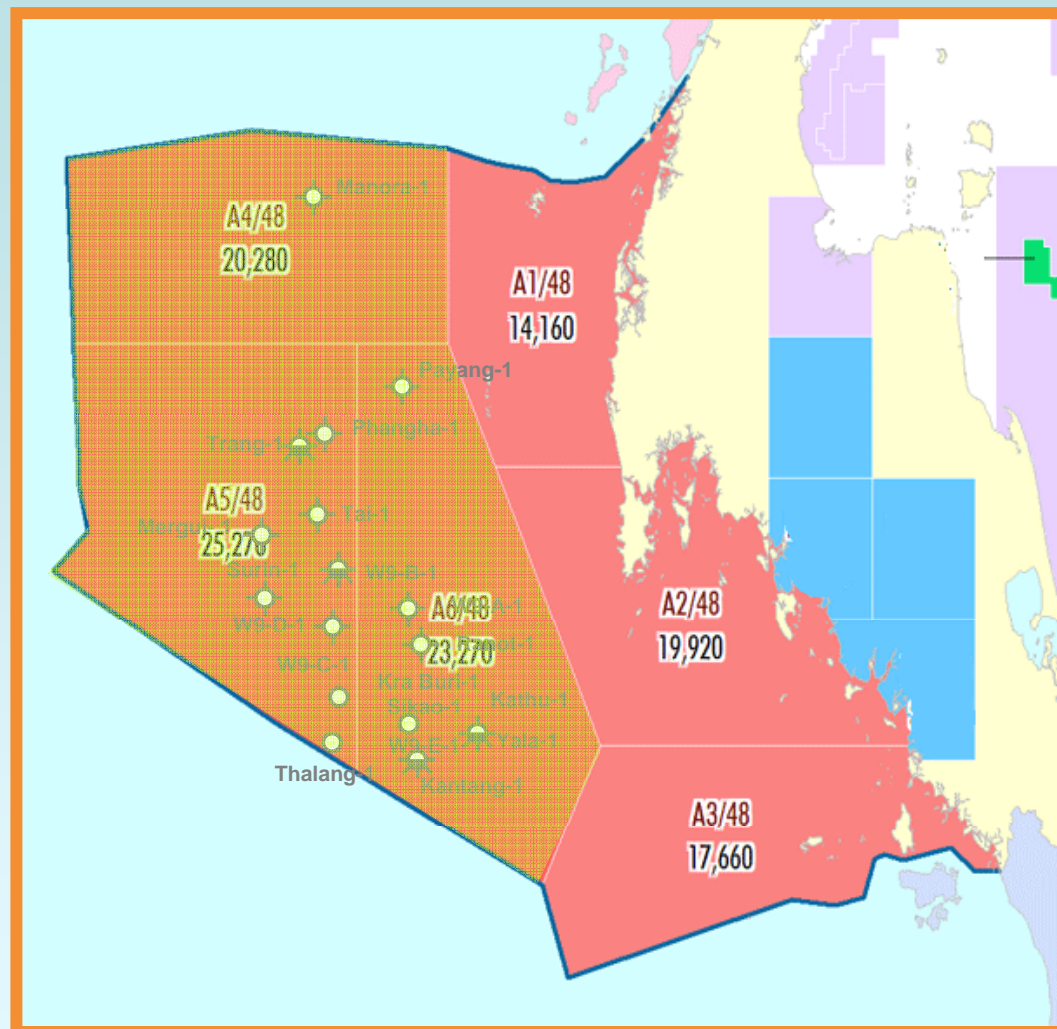
Magnetic Survey in the Andaman Sea

Kerr-McGee	W7/38	1998	3,820.40
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Exploration History

OPERATOR	WELL NAME	BLOCK	SPUD DATE	RELEASE DATE	RESULT
ESSO	W9-A-1	W9	15-Dec-75	01-Mar-76	DRY
ESSO	W9-B-1	W9	04-Mar-76	22-Mar-76	GAS&OIL SHOWS
ESSO	W9-C-1	W9	01-Jun-76	01-Sep-76	DRY
ESSO	W9-D-1	W9	03-Aug-76	02-Sep-76	DRY
ESSO	W9-E-1	W9	05-Sep-76	13-Nov-76	DRY?
UNOCAL	TRANG-1	W8	11-Mar-76	28-May-76	GAS&OIL SHOWS
UNOCAL	TAI-1	W8	28-May-76	28-Jun-76	DRY
UNOCAL	PHANGHA-1	W8	30-Jun-76	13-Jul-76	DRY
UNOCAL	MERGUI-1	W8	16-Jul-76	02-Sep-76	OIL SHOWS
UNOCAL	PAYANG-1	W8	04-Sep-76	17-Sep-76	DRY
UNOCAL	SURIN-1	W8	20-Sep-76	02-Oct-76	DRY
UNOCAL	THALANG-1	W9/38	11-Oct-97	29-Oct-97	DRY
UNOCAL	KANTANG-1	W8/38	25-Oct-97	05-Nov-97	DRY
UNOCAL	KRA BURI-1	W9/38	06-Nov-97	23-Nov-97	DRY
UNOCAL	SI KAO-1	W8/38	05-Nov-97	03-Dec-97	DRY
UNOCAL	KATHU-1	W8/38	06-Dec-97	10-Dec-97	DRY
PLACID	YALA-1	W8	20-Sep-76	20-Oct-76	GAS SHOWS
PLACID	RANOT-1	W8	28-Jan8-7	18-Feb-87	DRY
KERR-McGEE	MANORA-1	W7/38	22-Feb-00	13-Mar-00	DRY

Exploration History

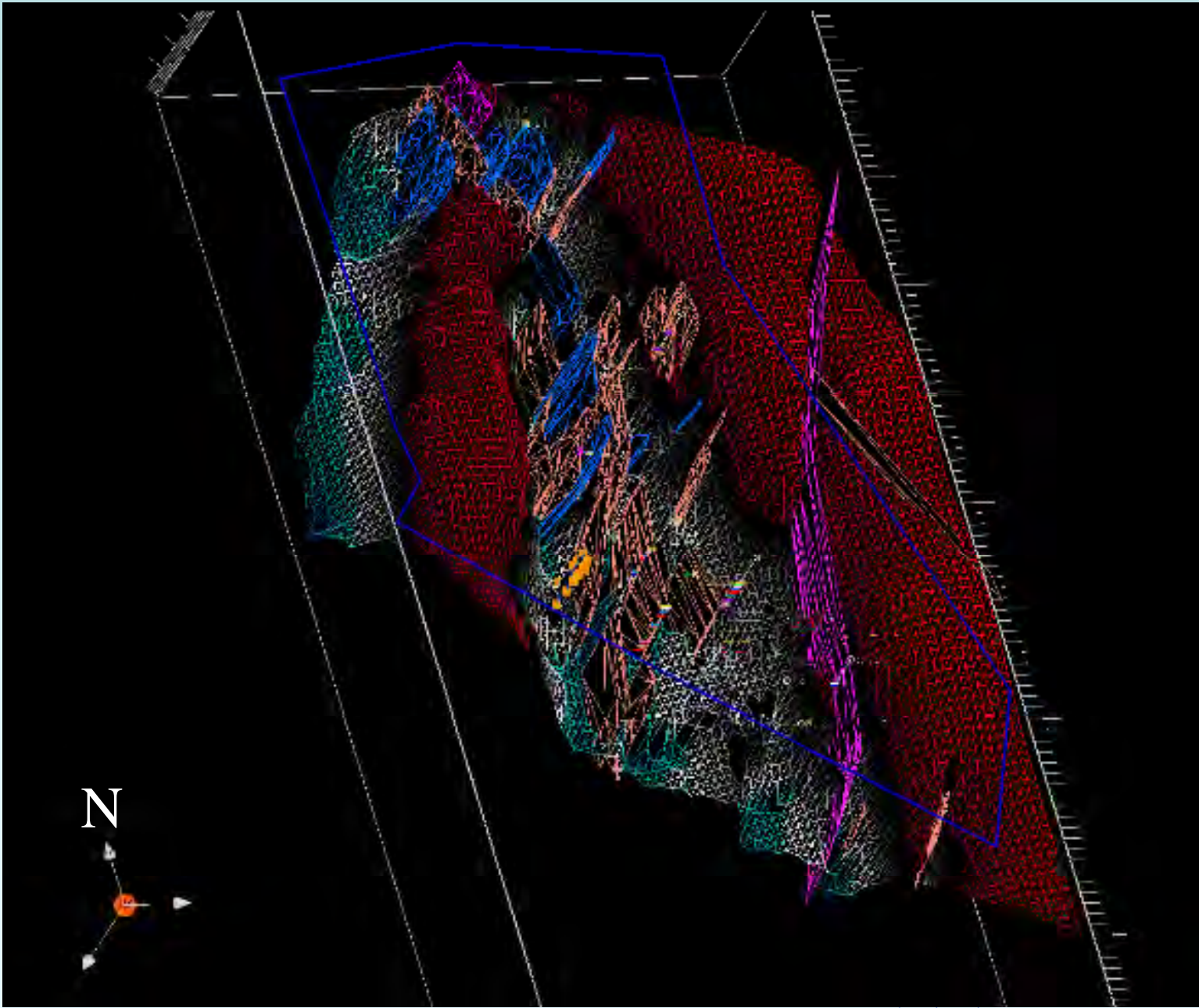


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Basin Architecture



Stratigraphic Correlation of the Mergui and N-Sumatra Basin

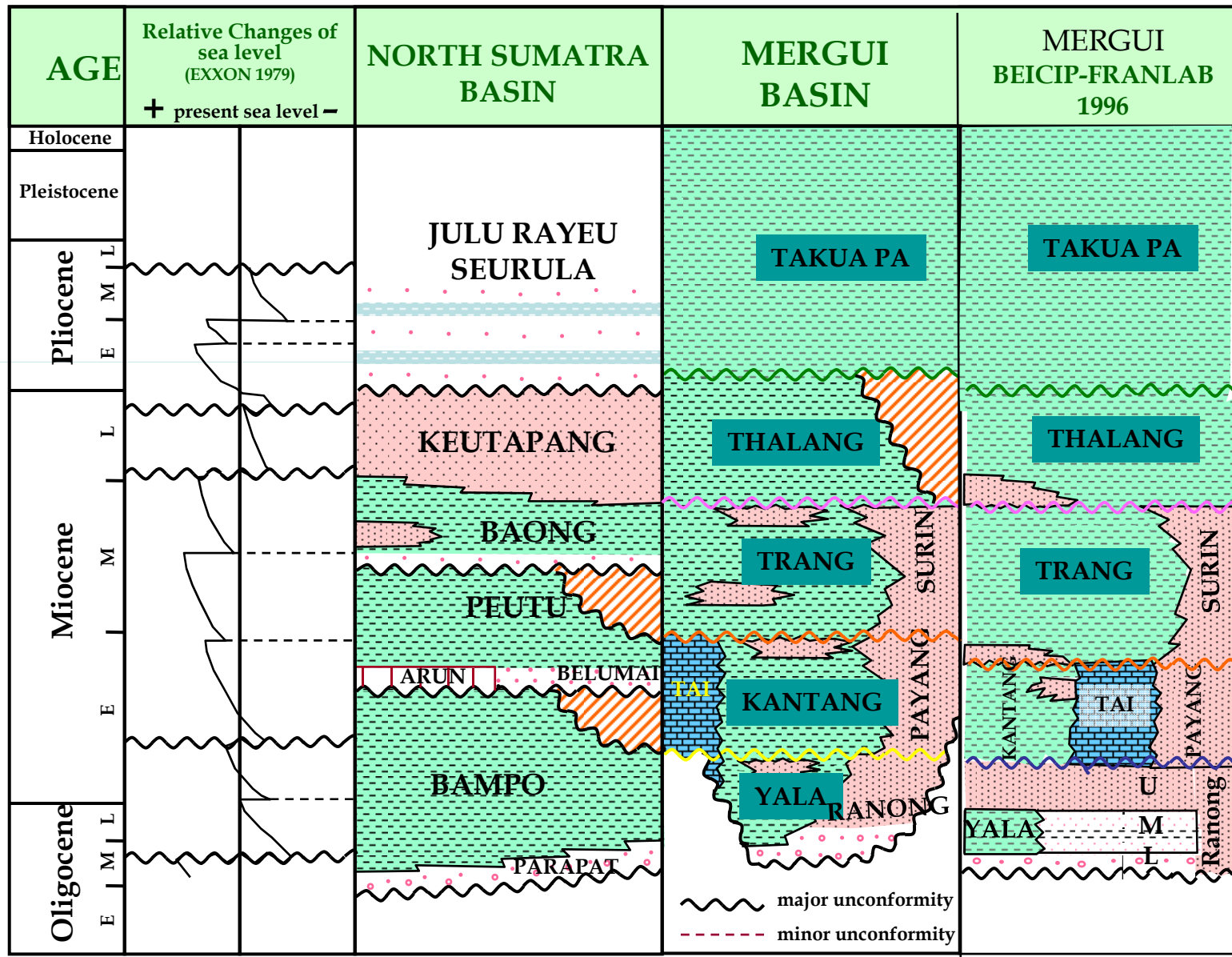
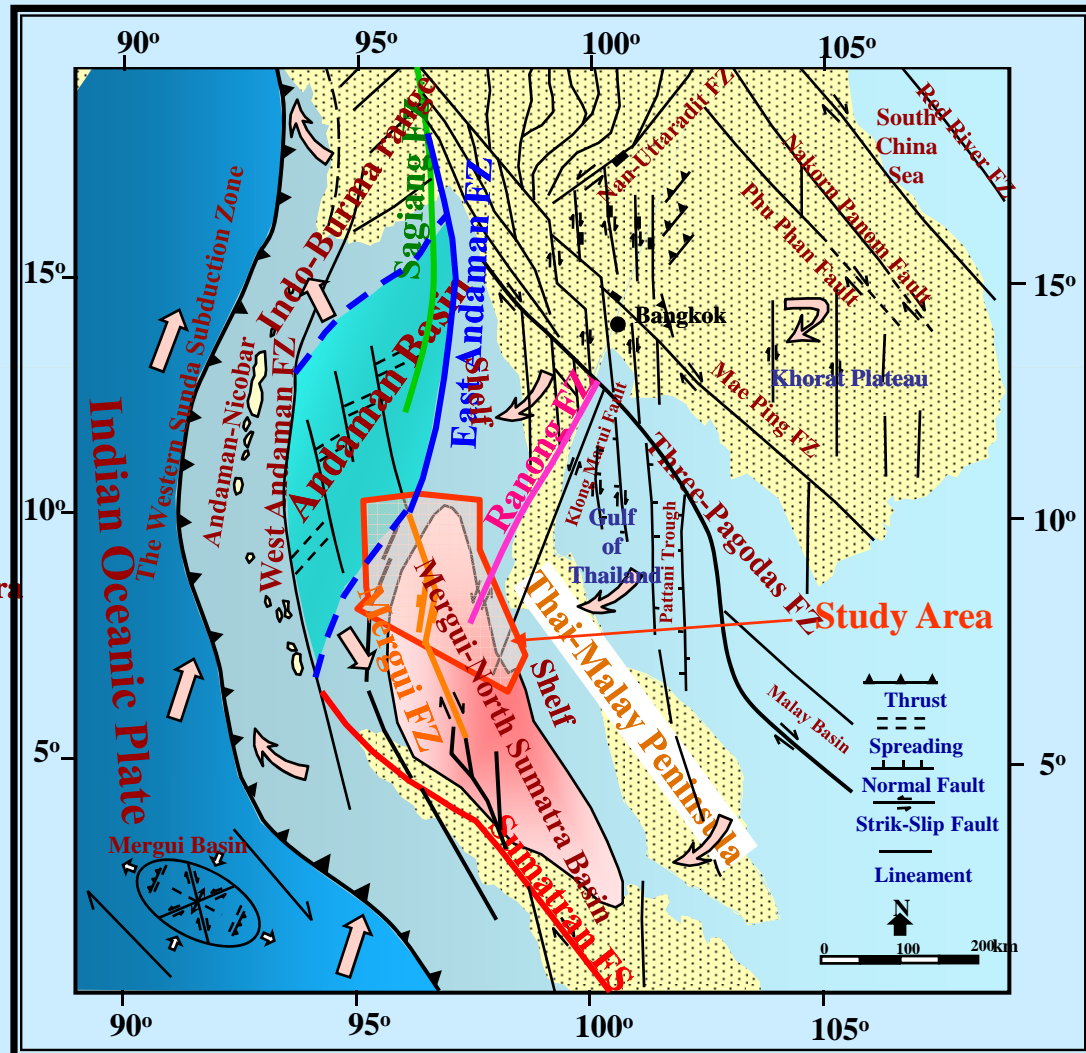


Plate Motions and Simplified Structural Framework of Cenozoic Basins in the Gulf of Thailand and the Andaman Sea

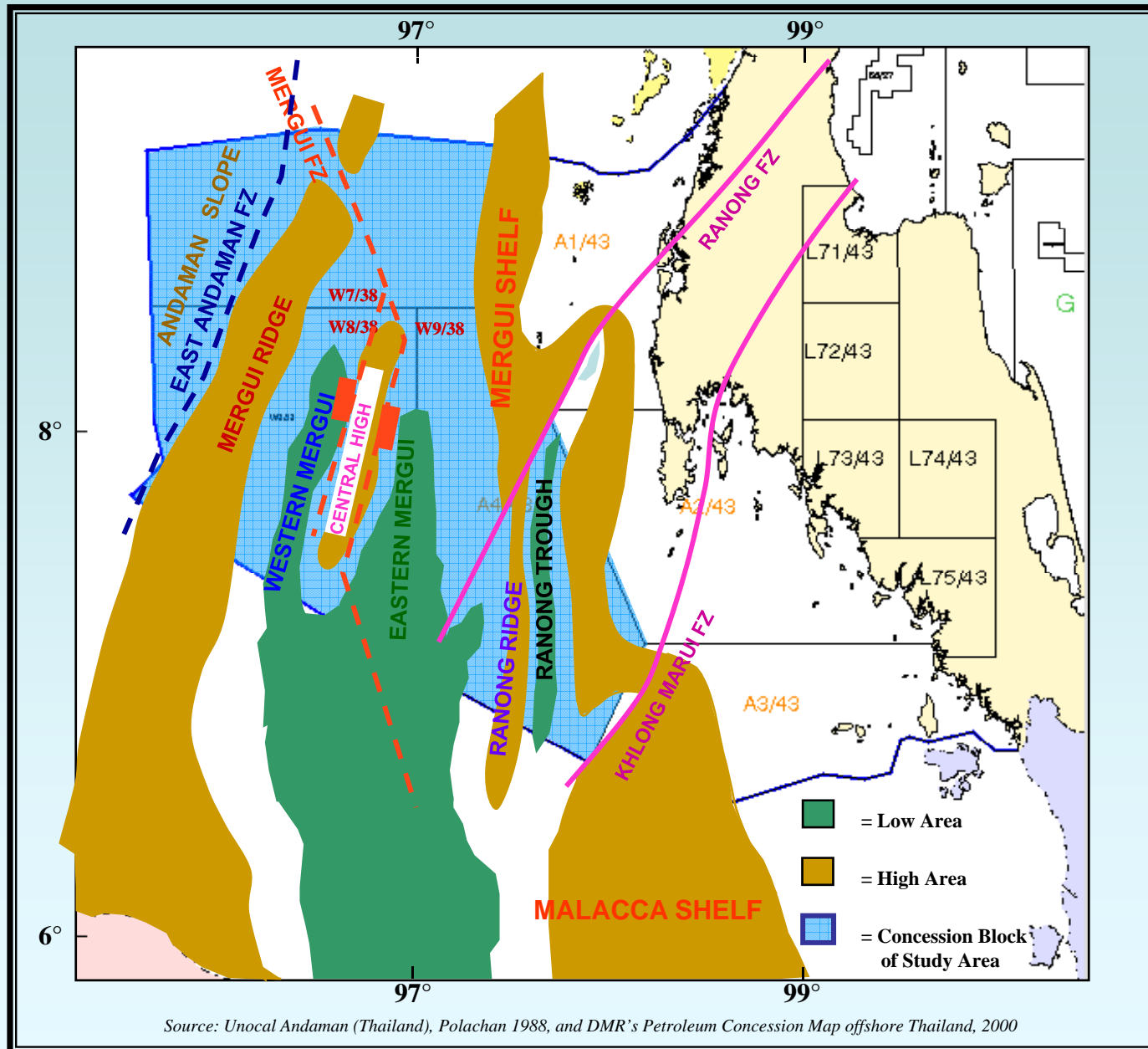
Legend

- East Andaman FZ
- Sagiang FZ
- Sumatran FS
- Ranong FZ
- Mergui FZ
- Andaman Basin
- Mergui - North Sumatra Basin
- Study Area
- Indian Oceanic Plate
- Sunda Continent
- Offshore area
- ➔ Plate Motion

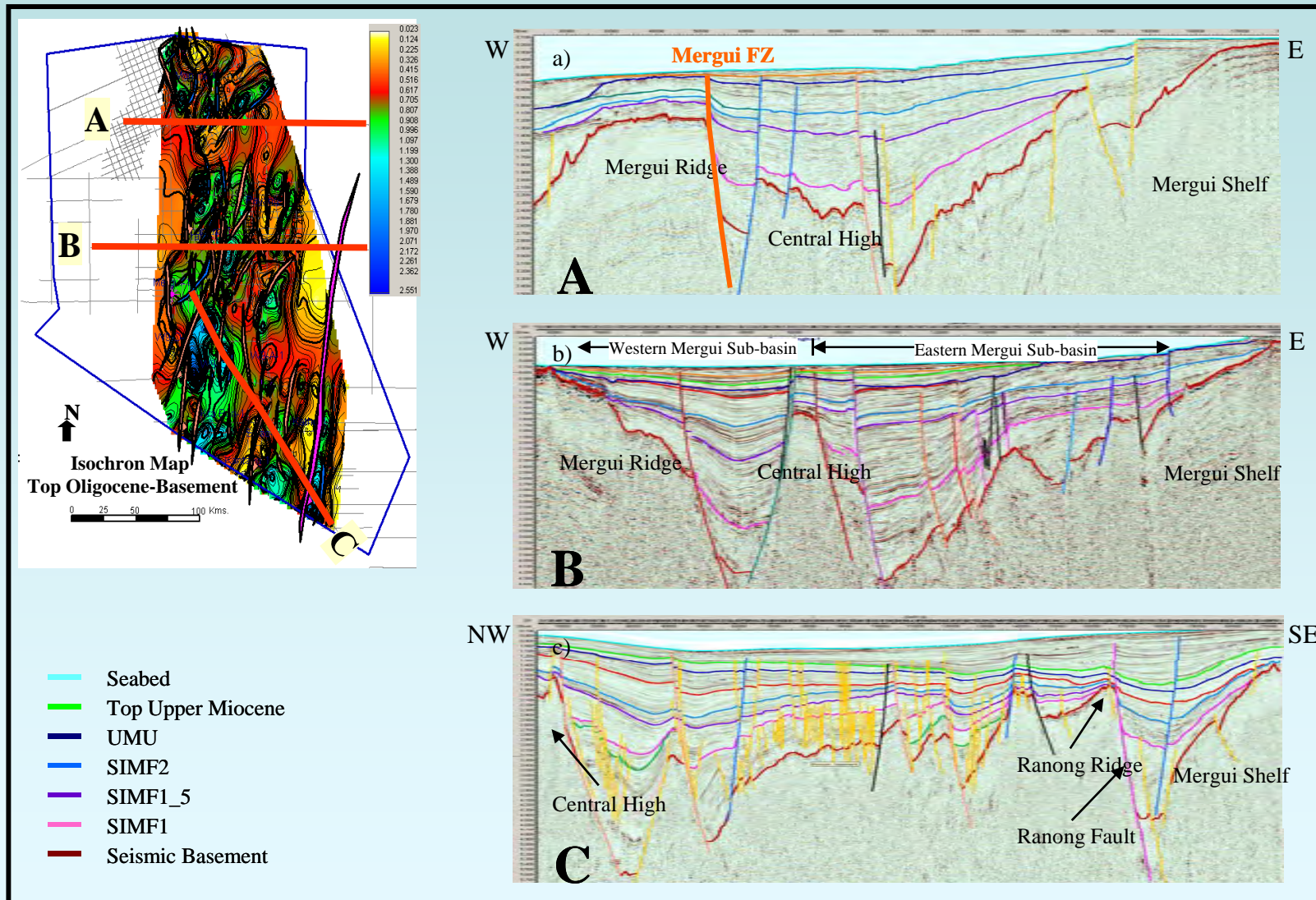


(Modified after Polachan, 1988)

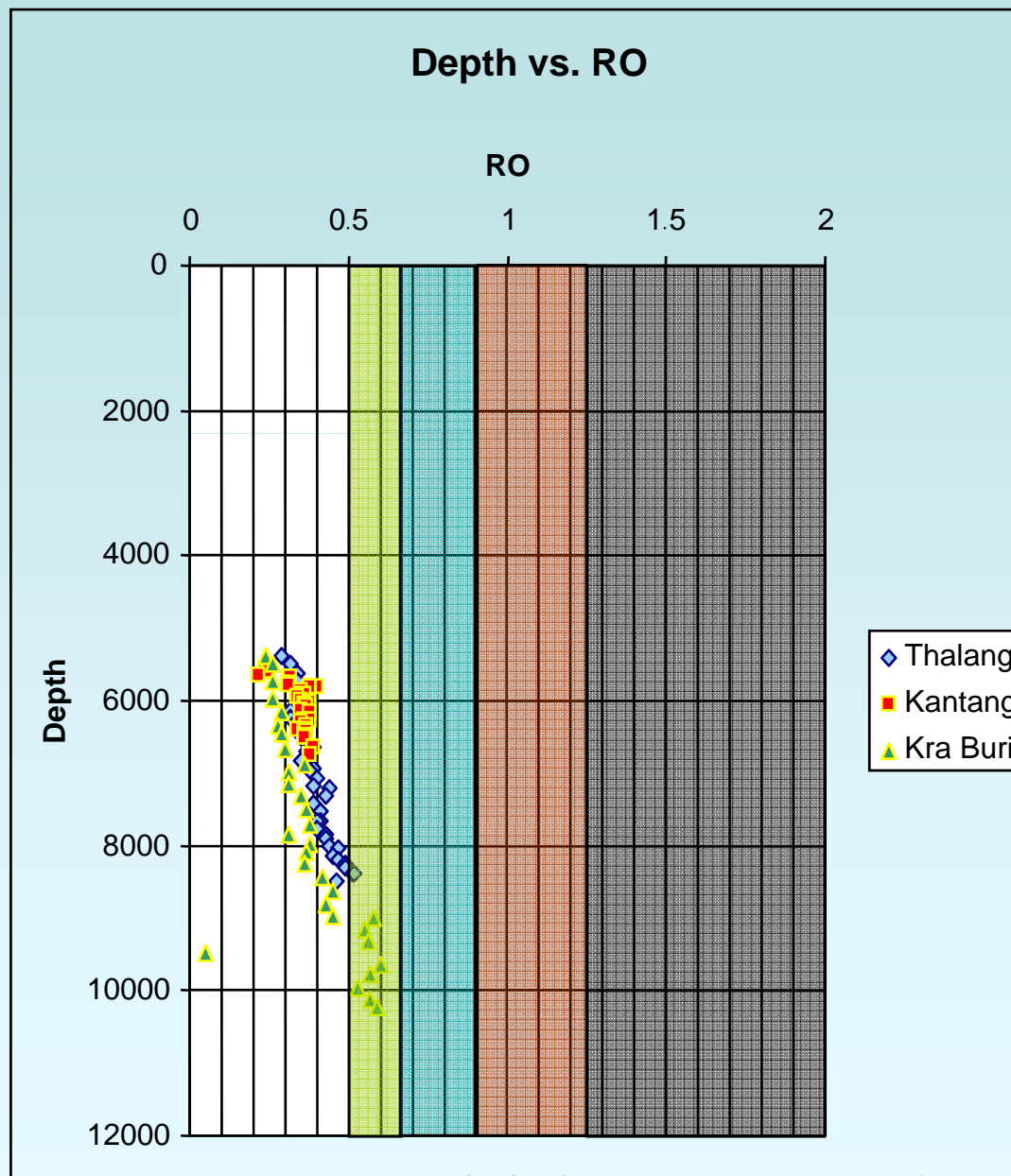
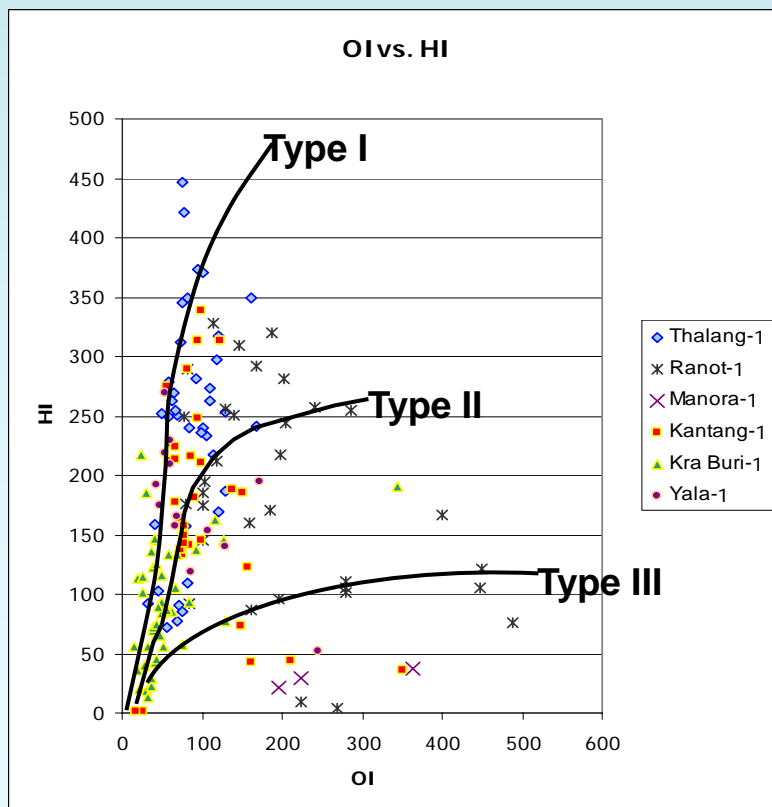
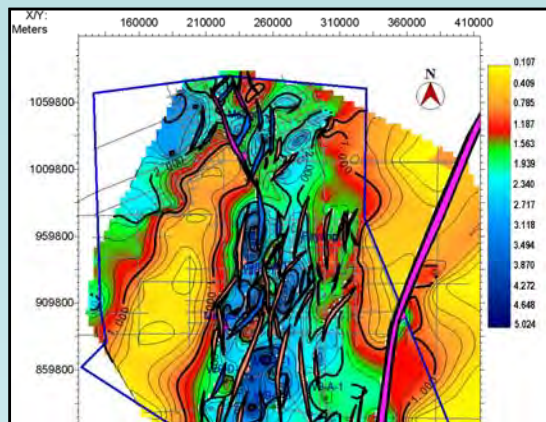
Physiographic Map of the Mergui Basin, Andaman Sea



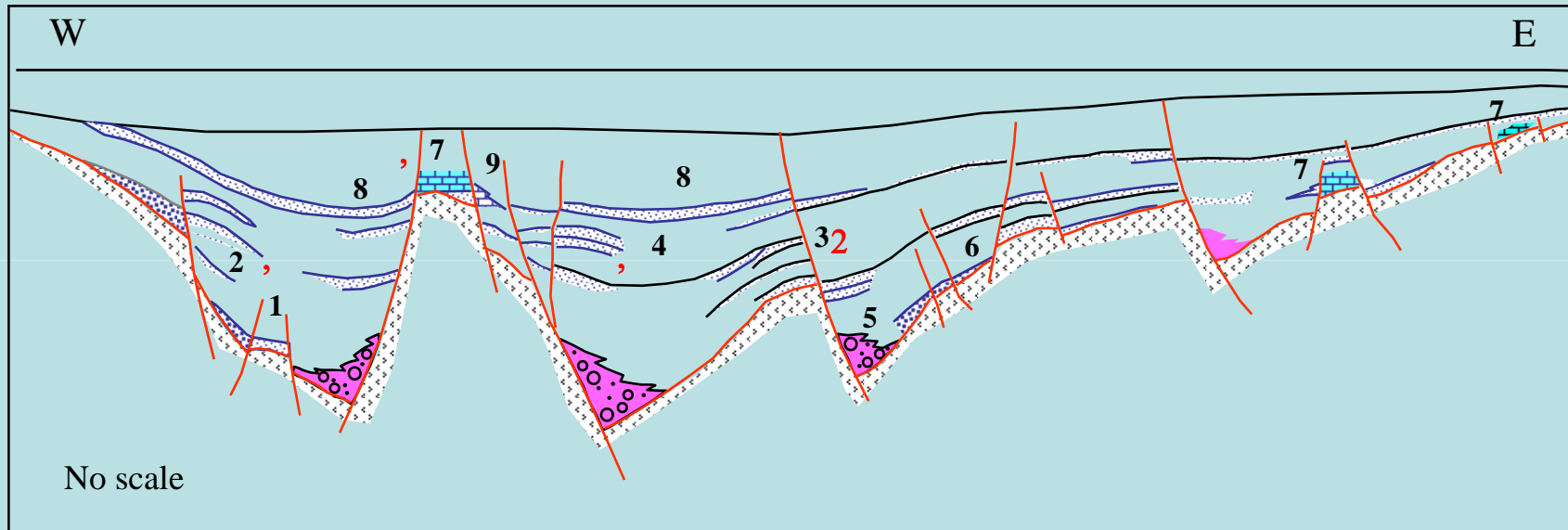
Seismic Vertical Sections across the Northern, the Central, and the Southern areas.



Petroleum Source Rocks



Conceptual Play Types in the Mergui Basin



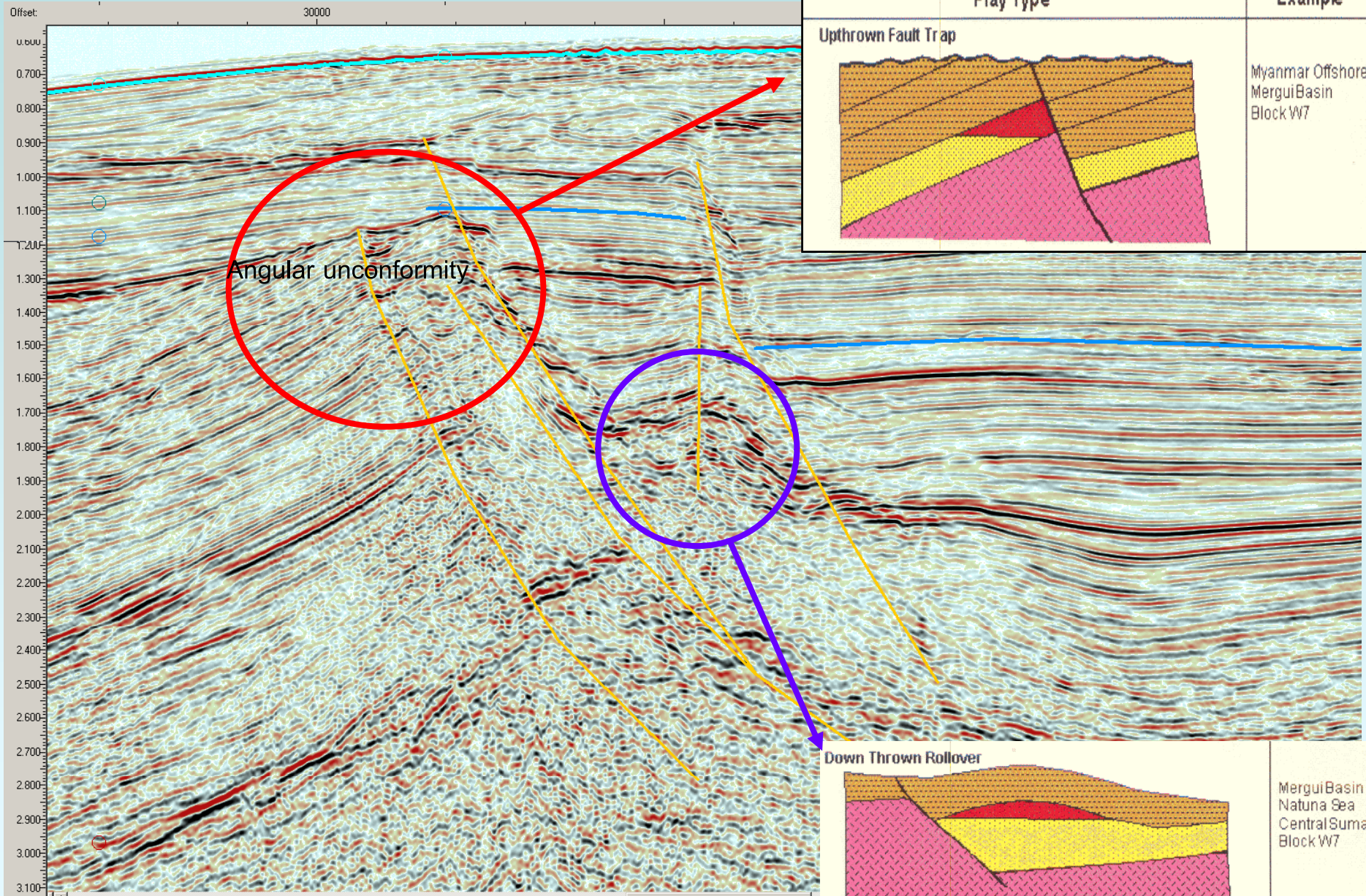
Structural Traps

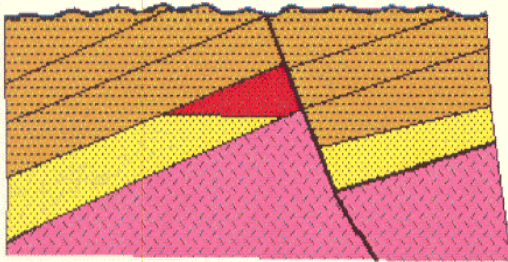
- 1) Drape over Basement High of Lower Oligocene Deltaic sand
- 2) Roll-over of Upper Oligocene sand
- 3) Crest of block of Oligocene sand
- 4) Drag fold of Lower Miocene sand

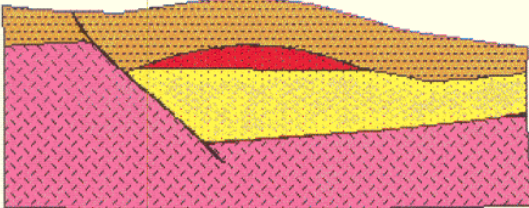
Stratigraphic Traps

- 5) Oligocene Basin Floor Fan
- 6) Pinch-out of Lower Oligocene Deltaic sand
- 7) Lower Miocene Carbonate Buildups
- 8) Mid-fan Turbidite of Lower Miocene sand
- 9) Miocene Conglomerate reef

Petroleum Play Type



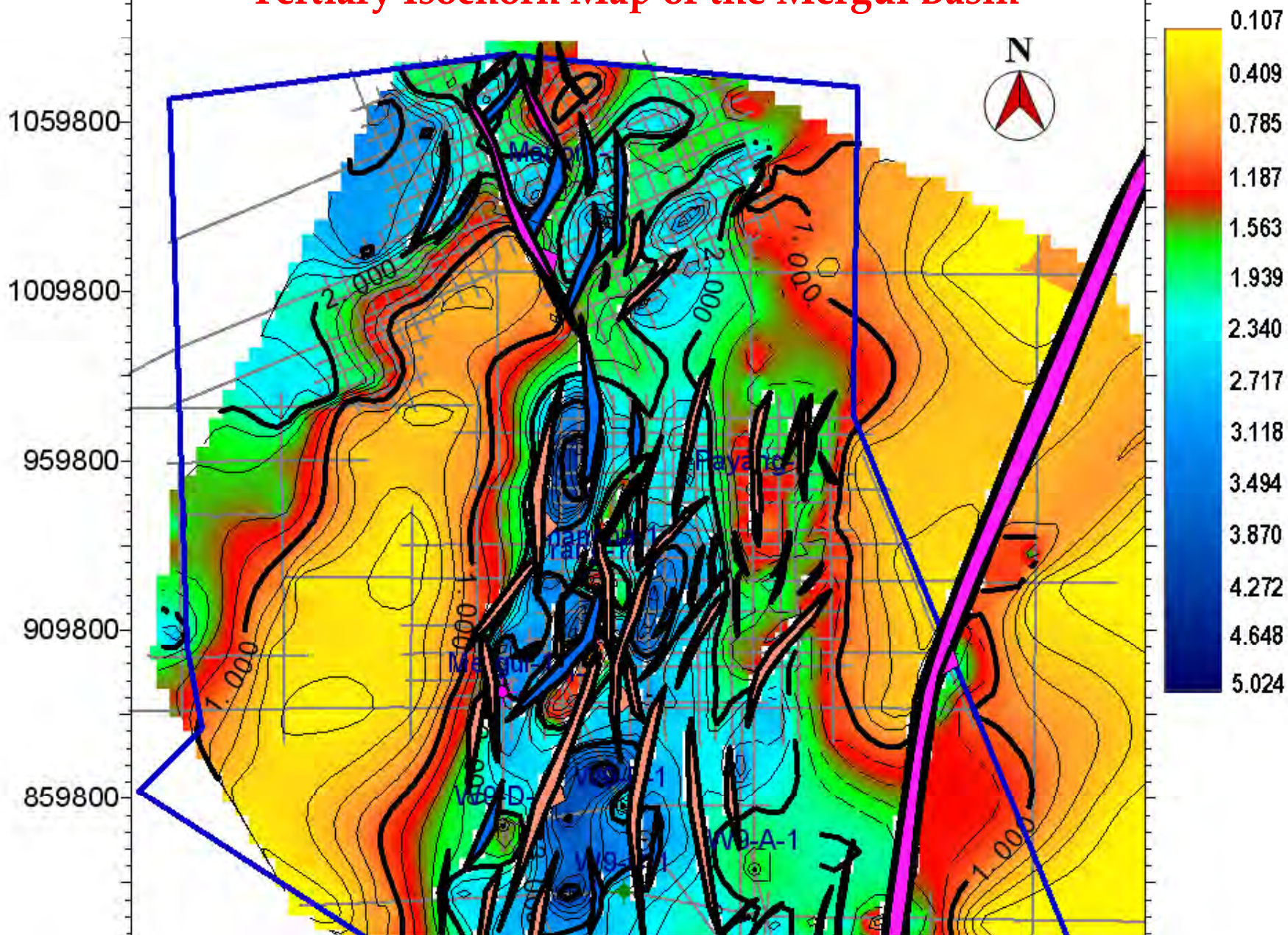
Play Type	Example
<p>Uplthrown Fault Trap</p> 	<p>Myanmar Offshore Mergui Basin Block W7</p>

<p>Down Thrown Rollover</p> 	<p>Mergui Basin Natuna Sea Central Sumatra Block W7</p>
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XY:
Meters

160000 210000 260000 310000 360000 410000

Tertiary Isochor Map of the Mergui Basin



A 3D geological model of a subsurface structure, likely a reservoir or basin, with a color-coded topography overlay. The model shows various geological layers and structures, with colors ranging from green to red. The topography is shown in a perspective view, with a blue sky and a dark ground surface. The model is set against a dark background with a grid pattern.

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Exploration Activities Block A4, A5 & A6/48

- Acquiring 2D Seismic
- G&G studying
- Prospect area ranking

Block

Area (Km2)

A 4/48

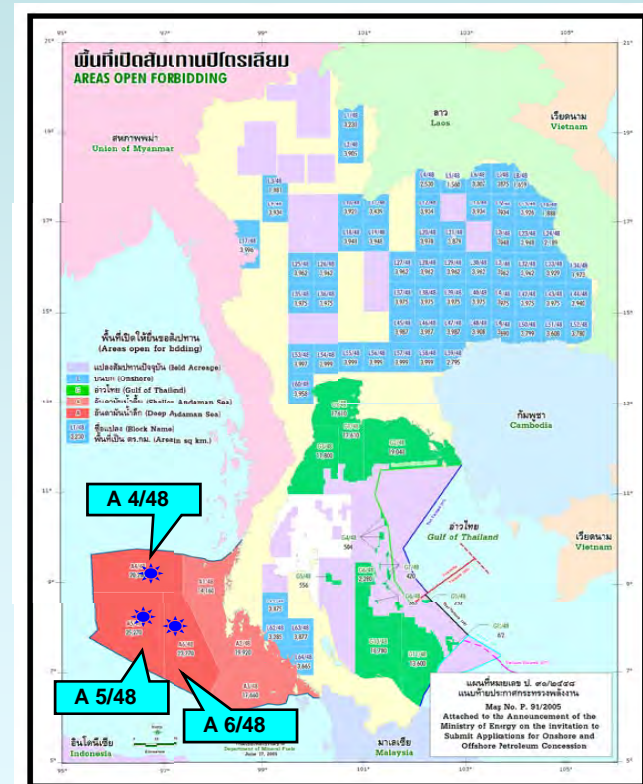
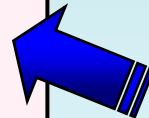
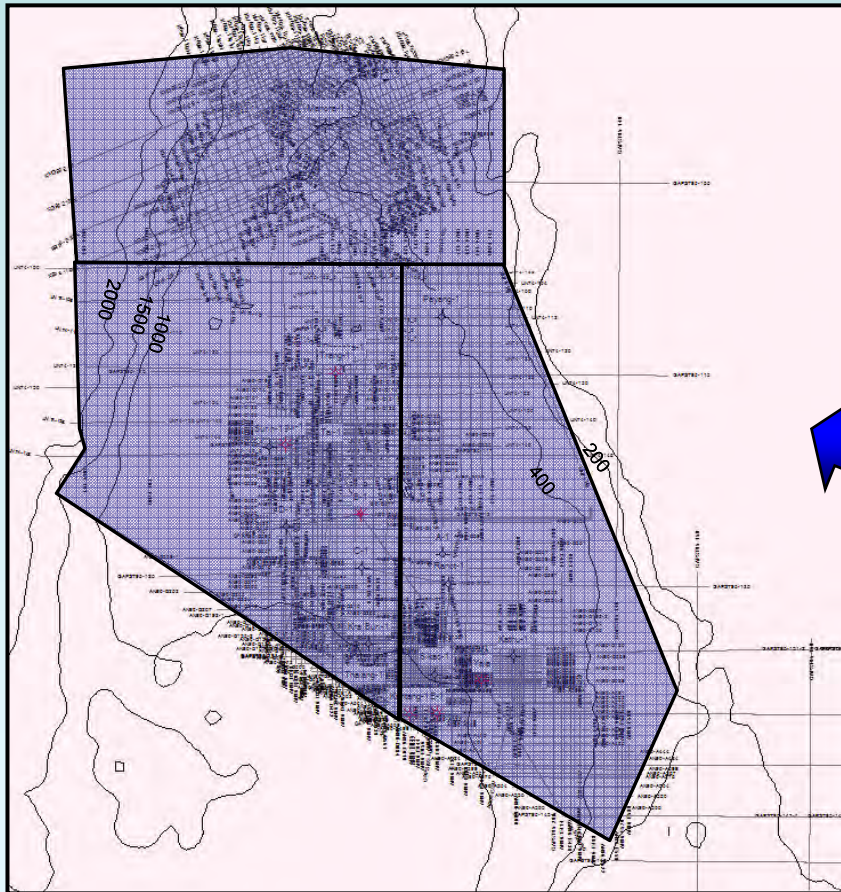
20,280

A 5/48

25,270

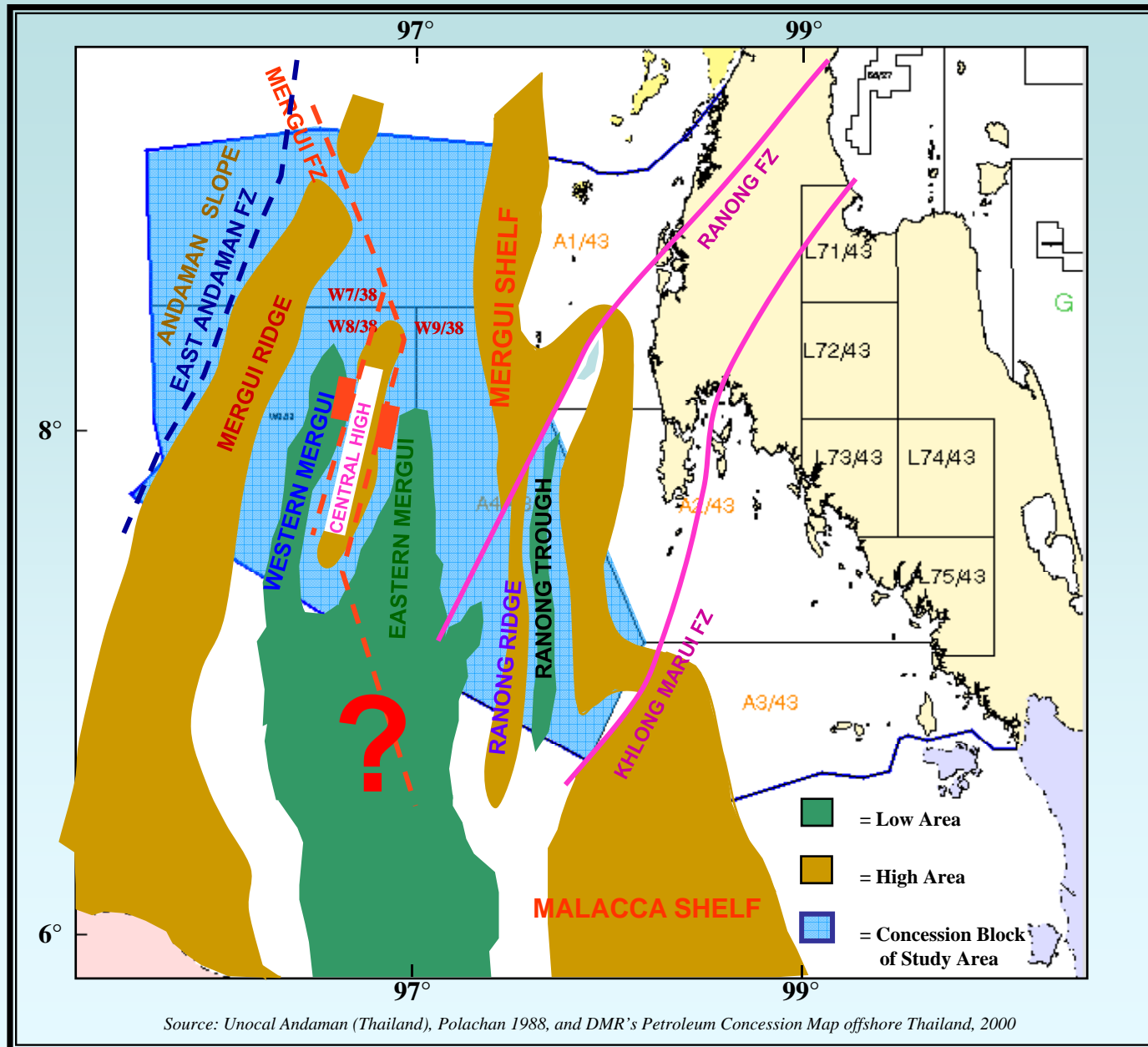
A 6/48

23,270



- Feasibility Studying

Physiographic Map of the Mergui Basin, Andaman Sea



Challenges

1. Quantitative Petroleum potential assessment
2. Additional Resource in the north
3. Strengthen academic connection among geo-scientists
4. New exploration technology in deep water and New Oil Era

Conclusions

1. Reviewing of exploration history indicates petroleum potential in this area
2. Outstanding petroleum reservoir was noticed by amount of sedimentary supply
3. Petroleum charging from source to traps is expected and needed to be carried on the study
4. Challenging in petroleum field development