



| Sangasanga Oilfield, lesson
learned from history

Outlines

- Oil and Gas Exploration at a glance
- Historical background, first exploration well in the world and Indonesia
- Operatorships History
- Louise and Nonny Field past and presents
- Lesson learned, New oil from the old field
- Link Between Sangasanga to Miri (Serawak/ Malaysian Borneo)
- Oil War
- Pertamina operatorships

Exploration geologist during survey in Iran (1907)

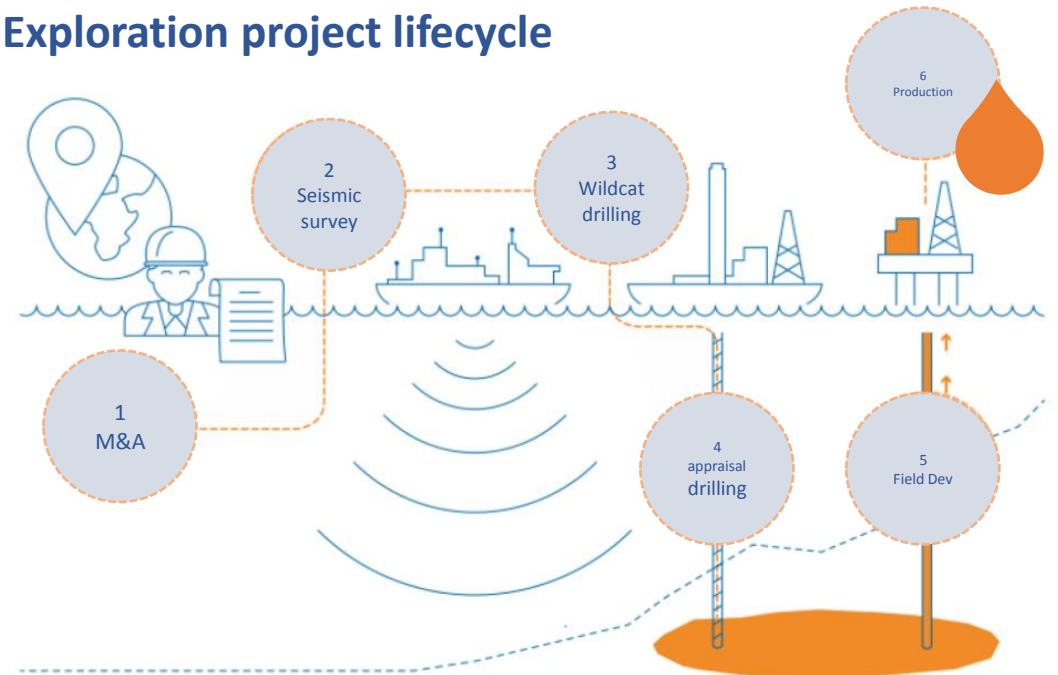


“Oil is first found in the minds of men”
Walter Pratt AAPG Bulletin (1972) 56 (9)

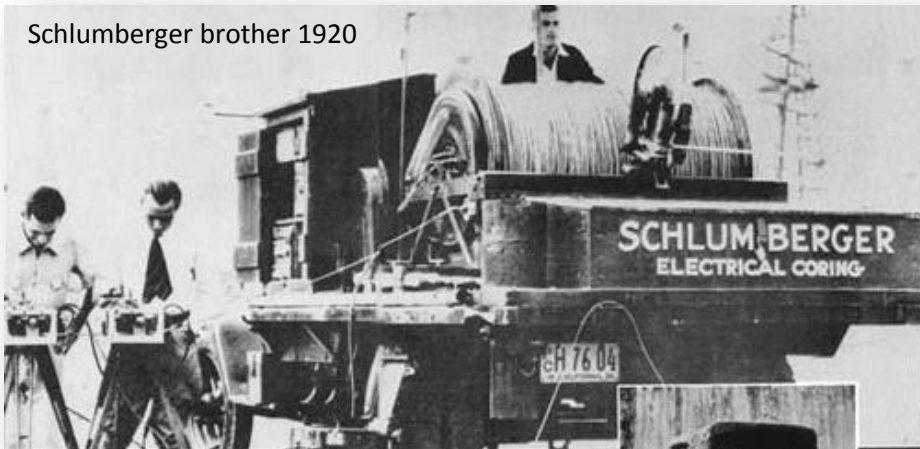
Eksplorasi memiliki faktor ketidakpastian yang tinggi
Kegiatan eksplorasi adalah **pertaruhan**

Jika kita tidak pernah **bertaruh**; kita tidak akan pernah Merasakan **kemenangan**

Exploration project lifecycle



Schlumberger brother 1920



First Exploration drilling in the world ?

347 AD in China (Zhejiang Province)

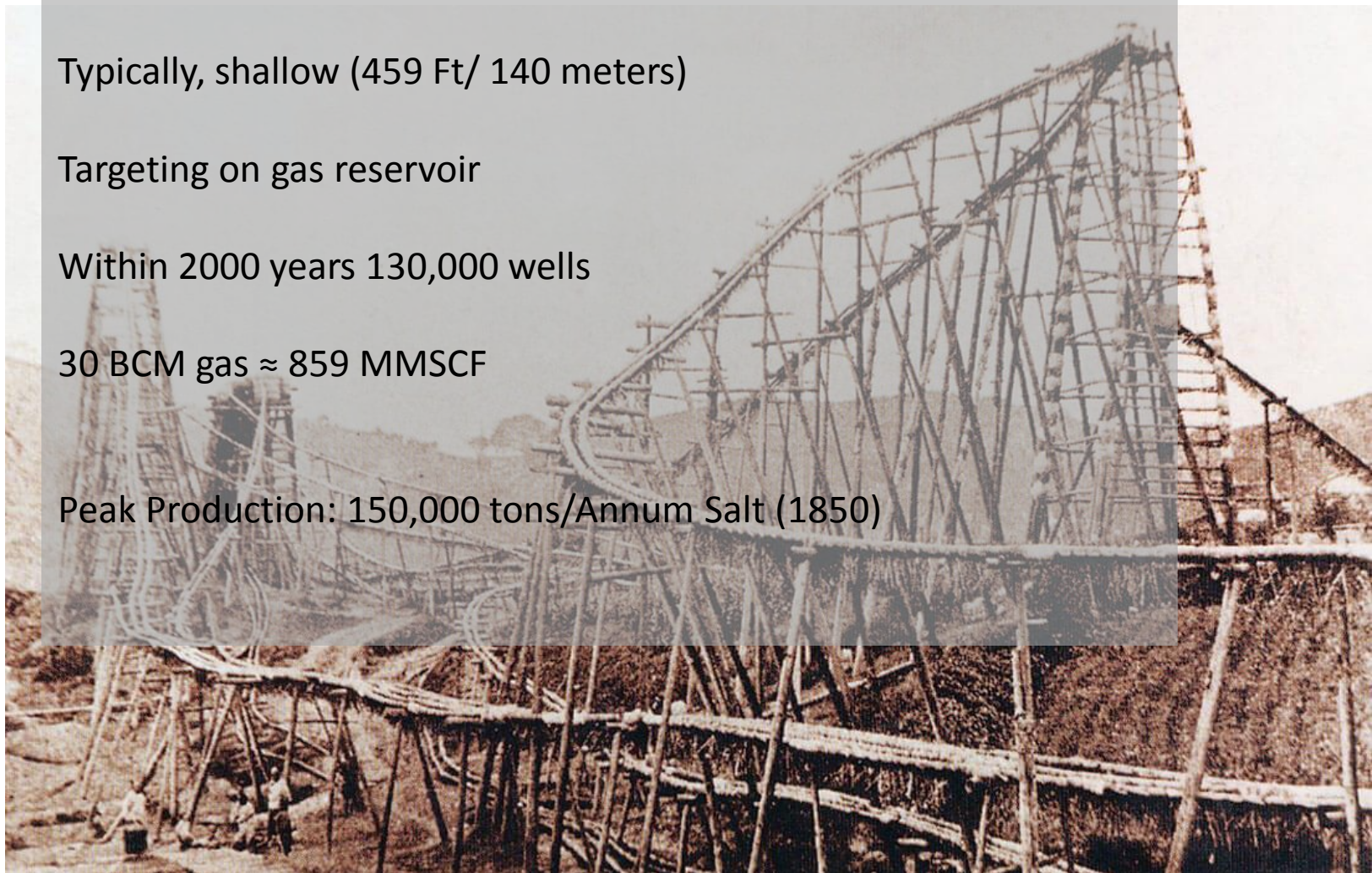
Typically, shallow (459 Ft/ 140 meters)

Targeting on gas reservoir

Within 2000 years 130,000 wells

30 BCM gas \approx 859 MMSCF

Peak Production: 150,000 tons/Annum Salt (1850)



First exploration drilling in Indonesia ?



Jan Reerink (Harlem, Netherland)
1836-1923

Anak Saudagar penggilingan beras HJ Reerink (Cirebon)
Pemilik toko kelontong HJ Reerink & Zonen

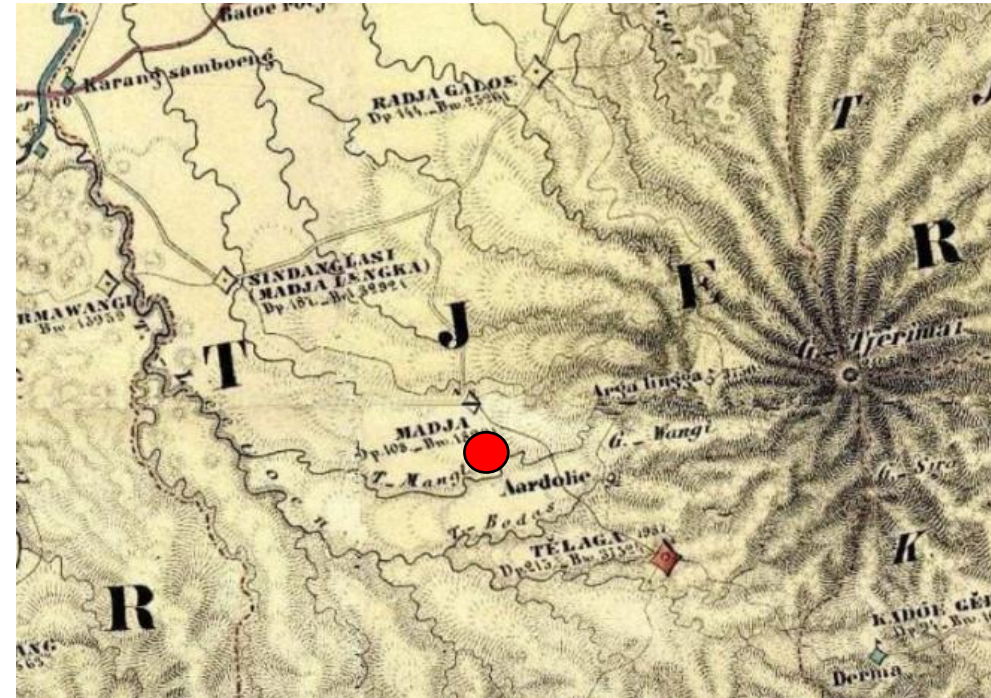
Rembesan minyak dilereng G Ciremai
Memotivasi dirinya untuk melakukan
Pemboran eksplorasi

Th 1871 pemboran eksplorasi pertama
Di Indonesia

4 sumur pertama menghasilkan 6000 L

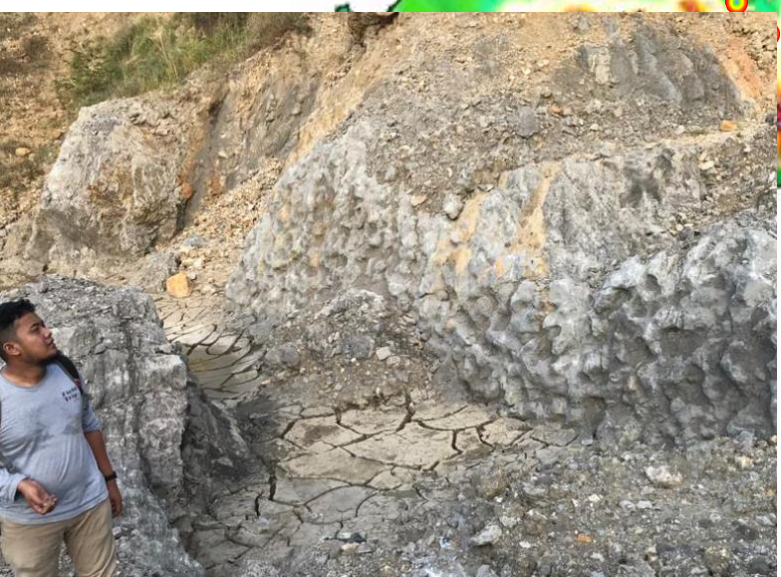
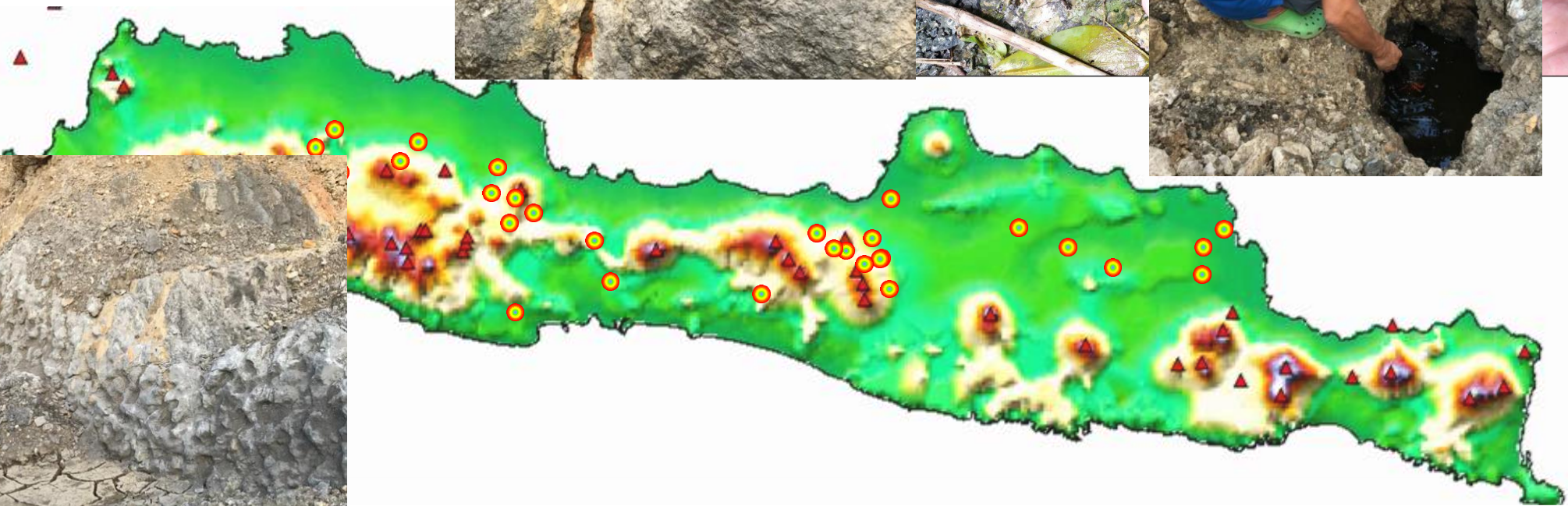
Pemboran berlanjut hingga 19 Sumur
(100,000 + 200,000 Gulden)

Pemodalan dari NHM (Nederlandsche Handel Maatschappij)





Maja-1 or Tjibodas Tangat-1 1871
Drilled by NHM and Jan Reerink co.
Produce 6000 liter oil from 4 wells



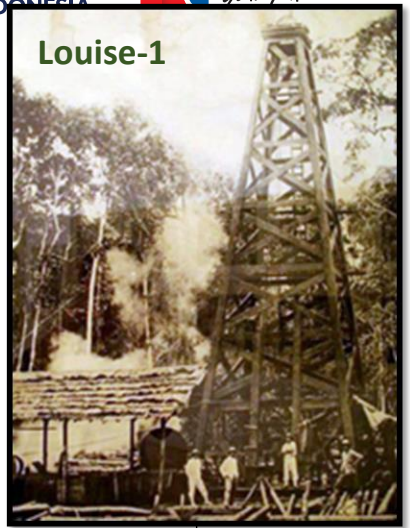
Evidence of Native Petroleum System in Bogor and Kendeng Trough



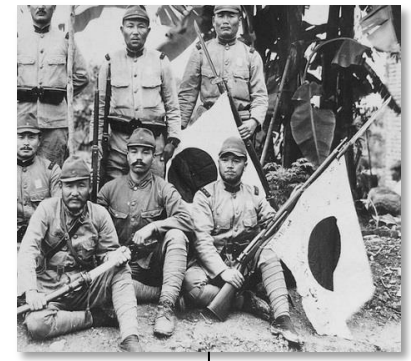
History of hydrocarbon E&P in Sangasanga



Operatorships history



Louise-1



(1897-1905)
Louise -1
Discovered by NIIHM

(1905-1942)

(1942-1945)

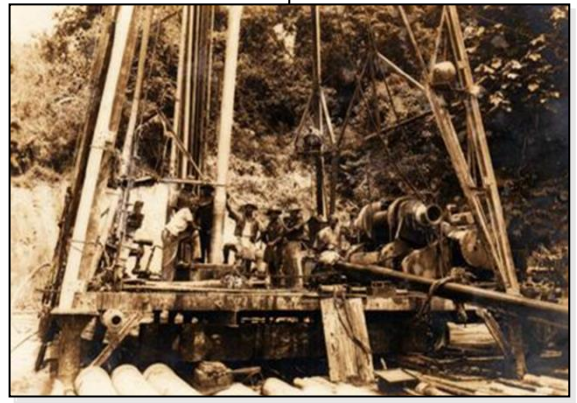
(1945-1972)

(1972-1992)

(1992-2008)

(2008-present)

TAC Medco-Pertamina
SS 943 -1009



BPM operatorships
LSE-2 - 519

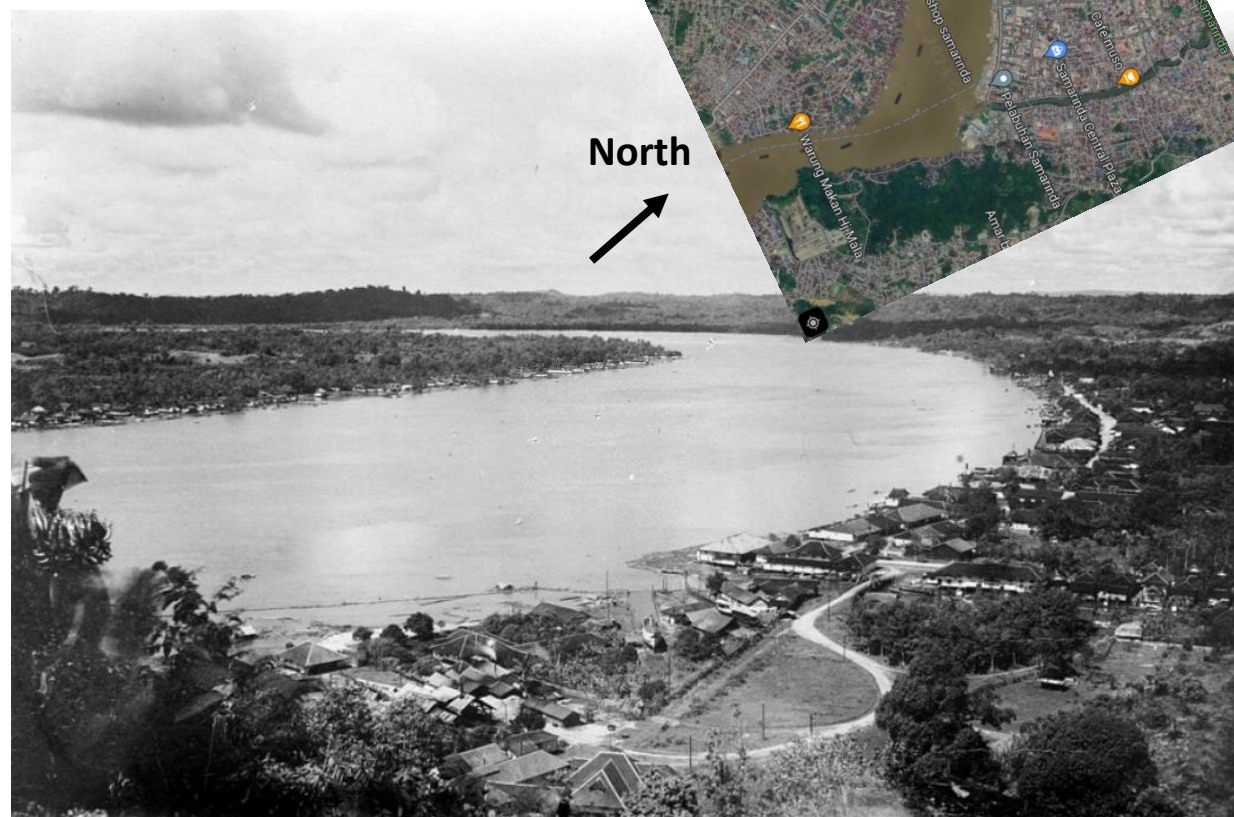
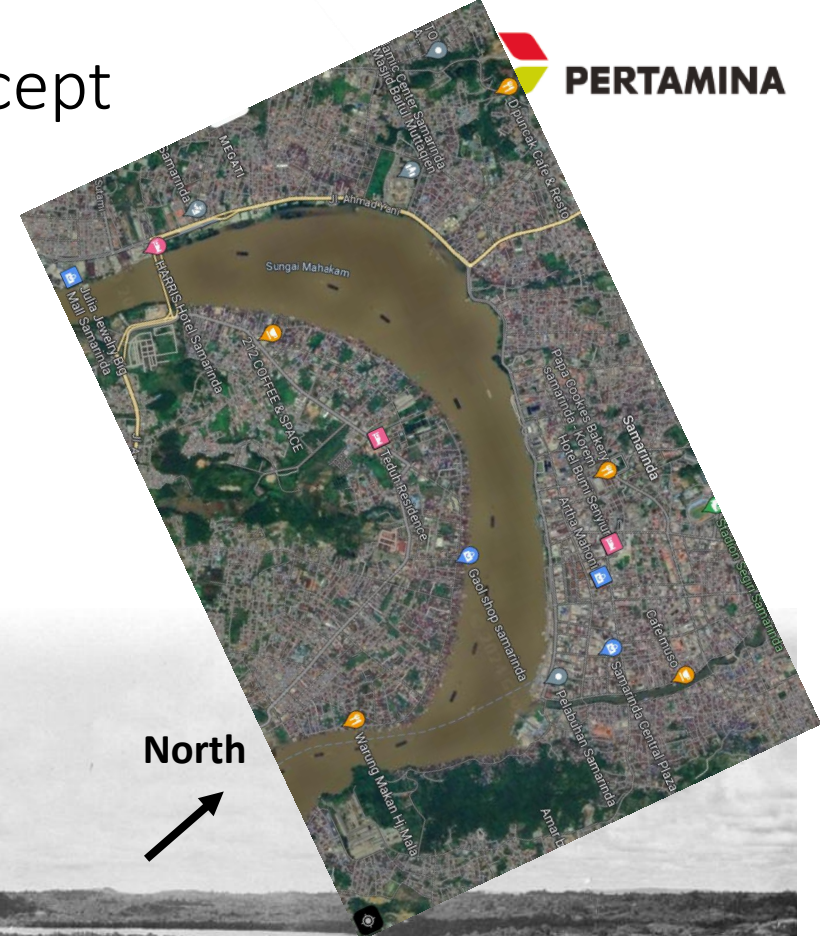
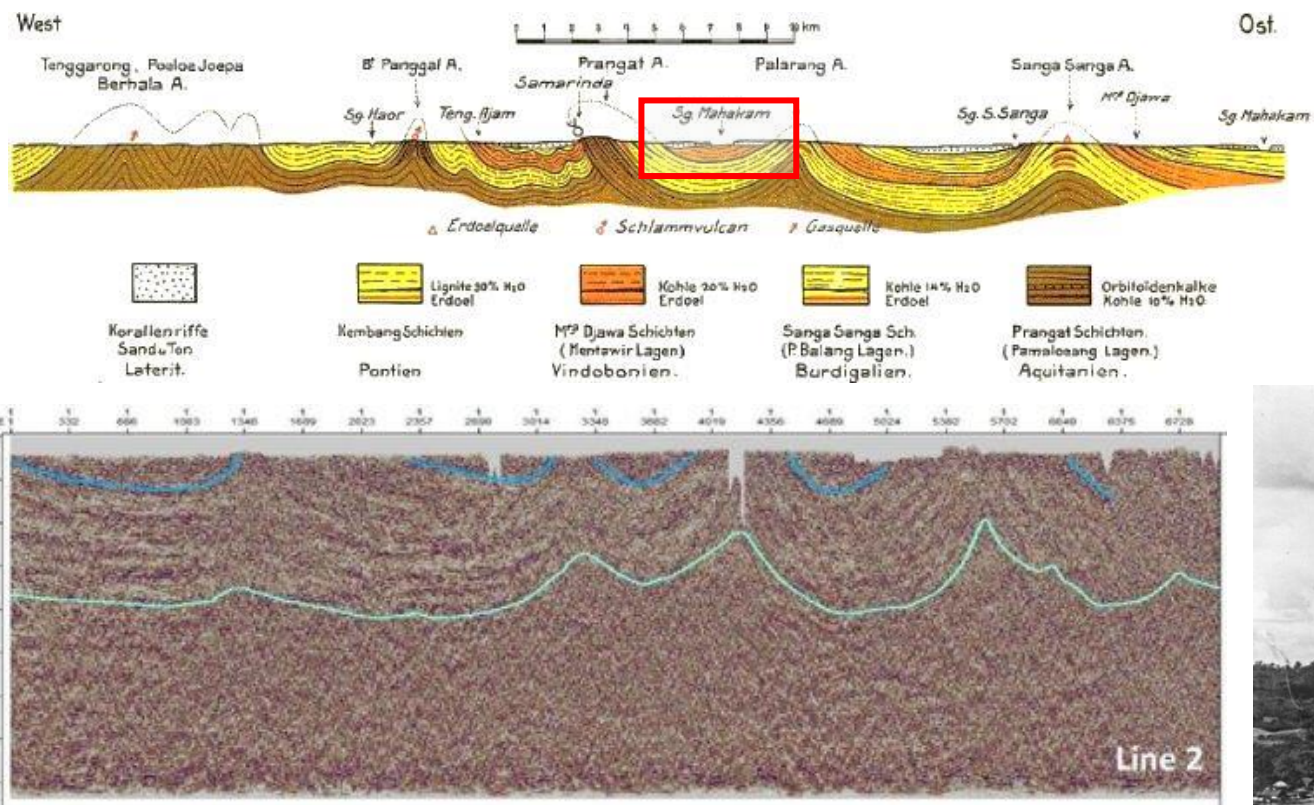


BPM/Shell/Permina
operatorships
LSE 625-647



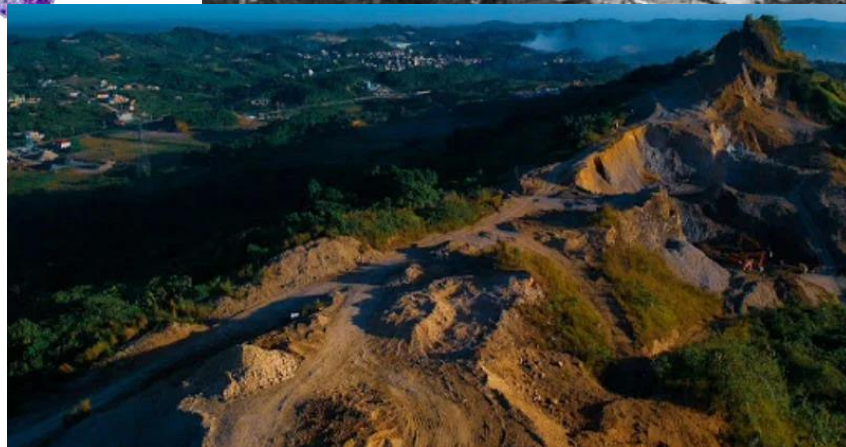
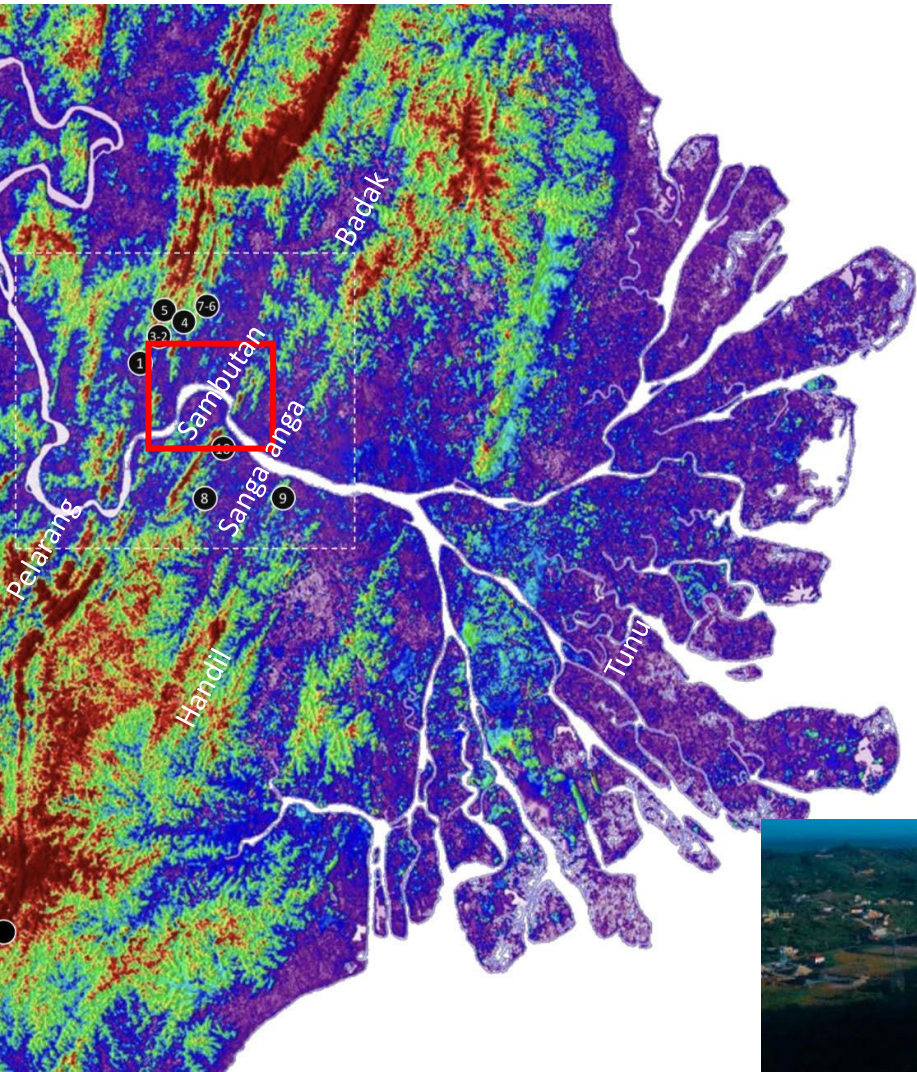
Pertamina – EP
NNY-1031, LSE-1054 & 1055

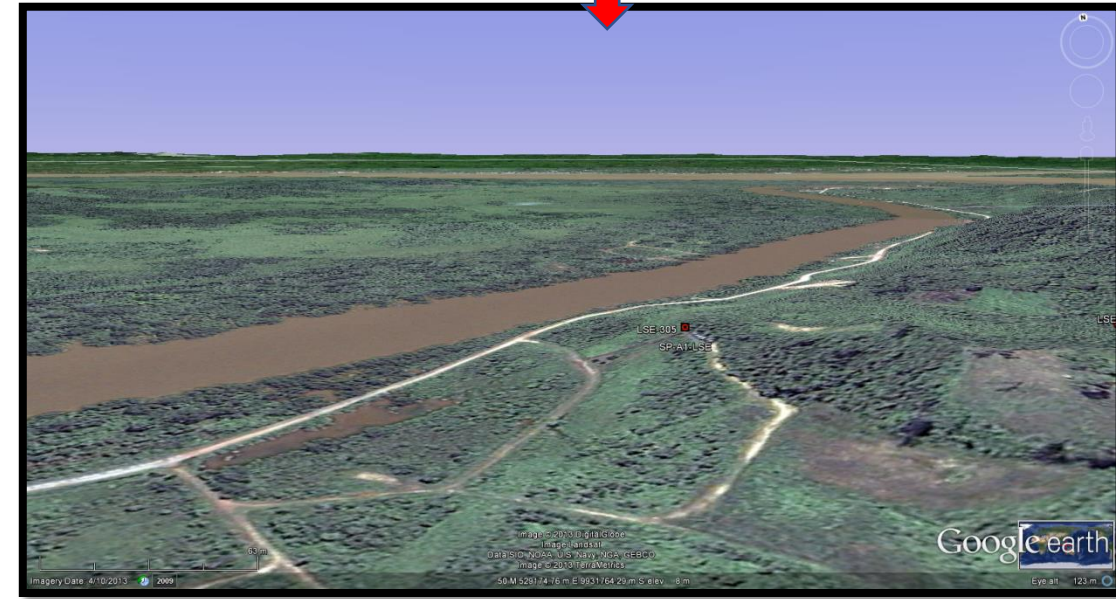
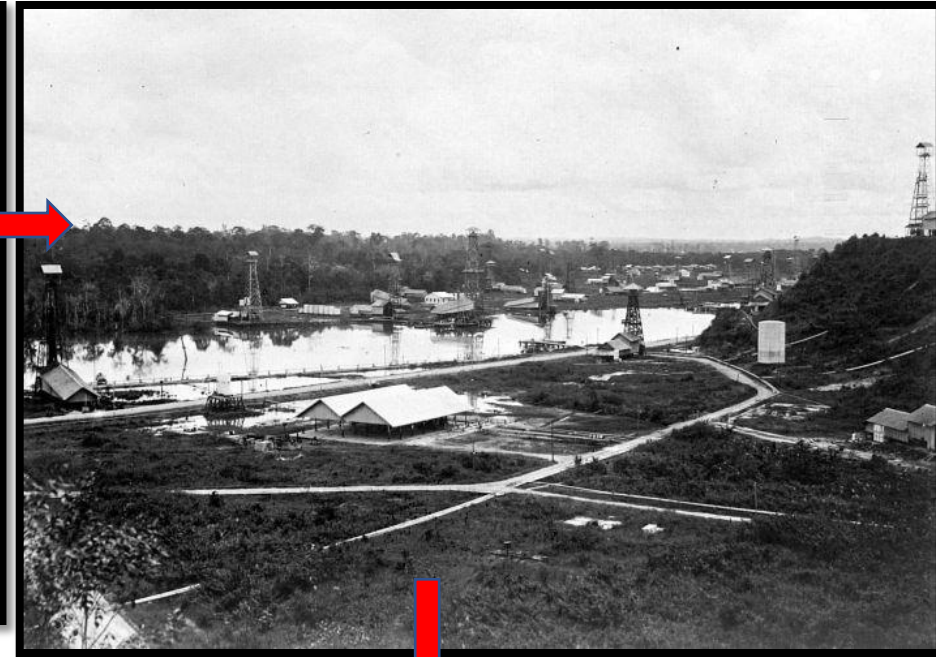
Anticlinorium trap concept





Play (k)





Reconstruction by Google earth



Image © 2022 Maxar Technologies



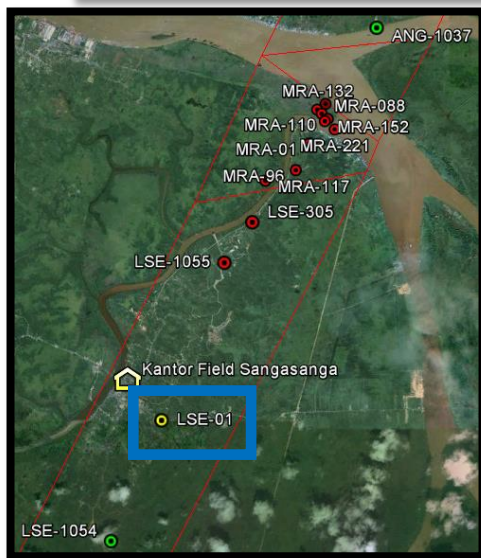
Google Earth





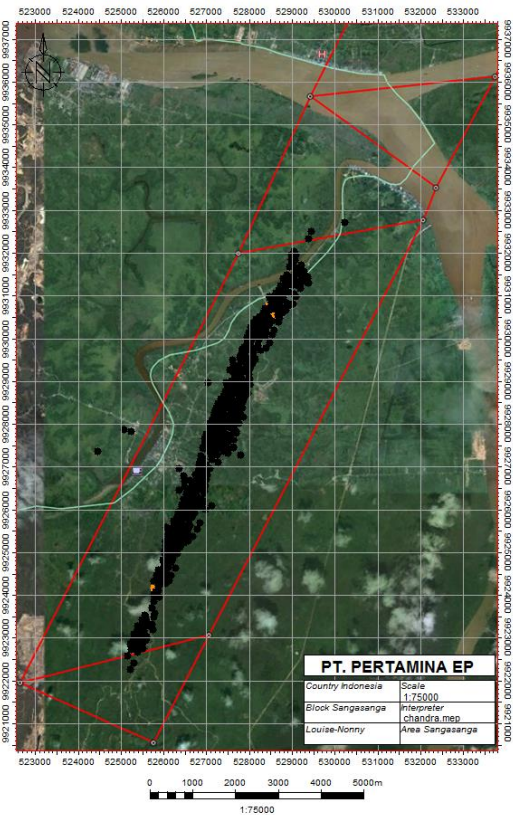
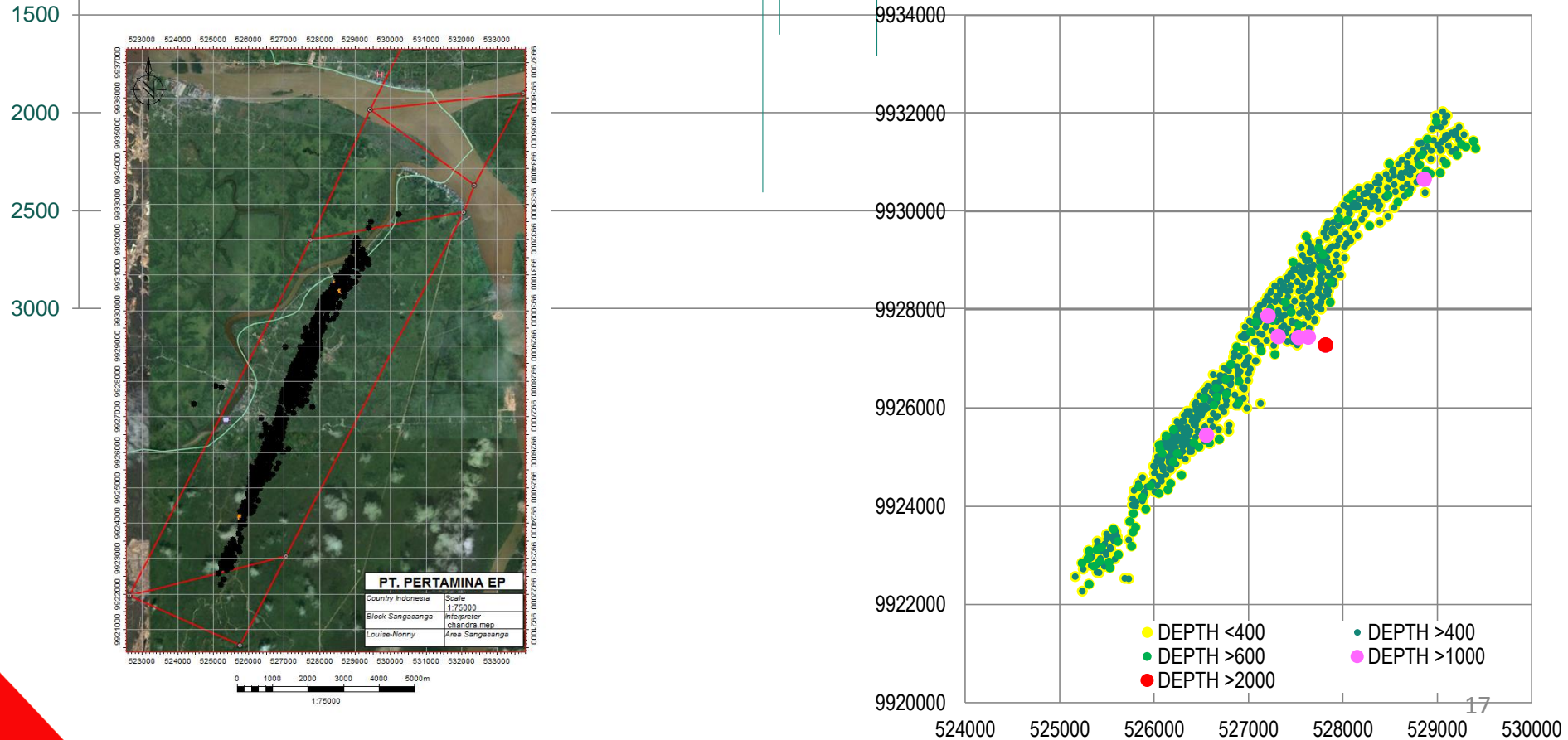


LOUISE-01

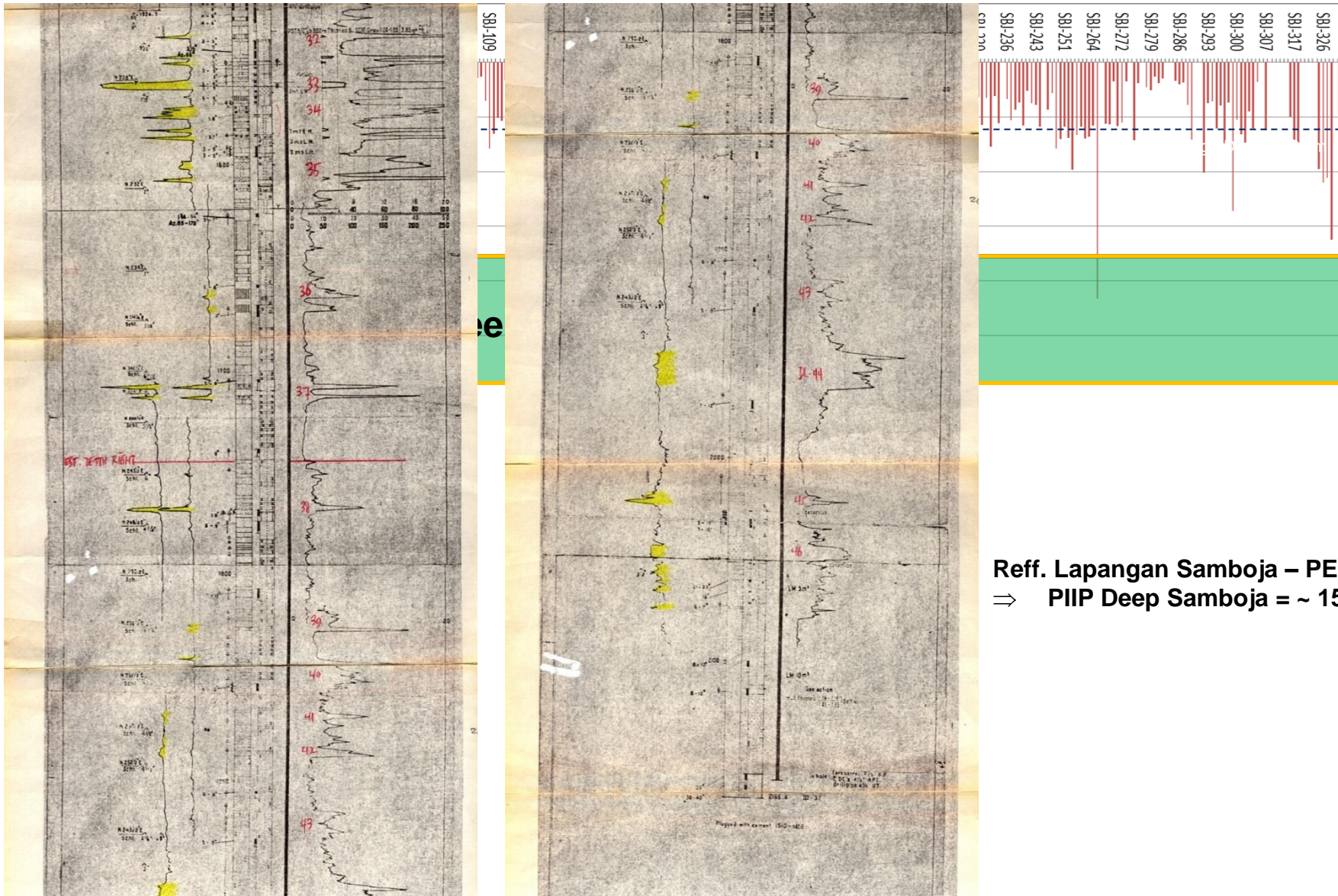


Louise-01 dibor pada bulan Januari tahun 1897.

Opportunity -1 : deep Zone

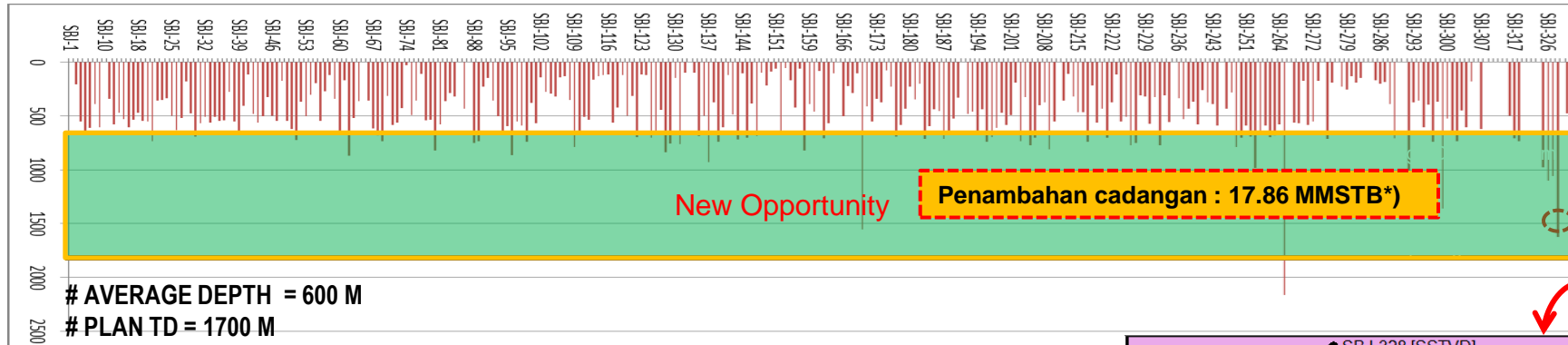


Deep Samboja (> 1,710 m; Ref. SBJ-264)



Reff. Lapangan Samboja – PEP Aset 5
⇒ PIIP Deep Samboja = ~ 15 mmstb @ POS 14.4%

DEEP ZONE : Analog PEP Aset 5

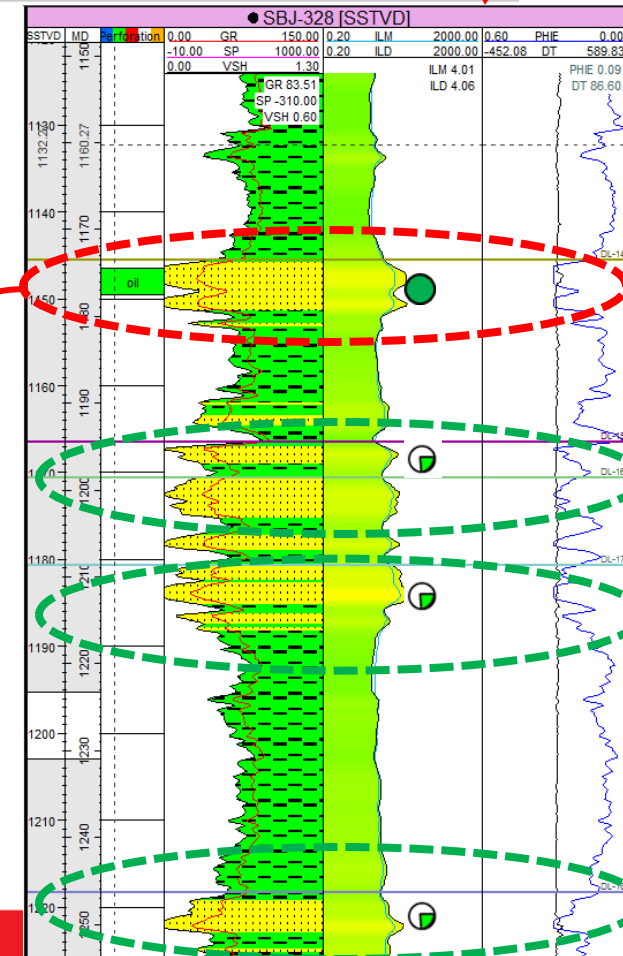
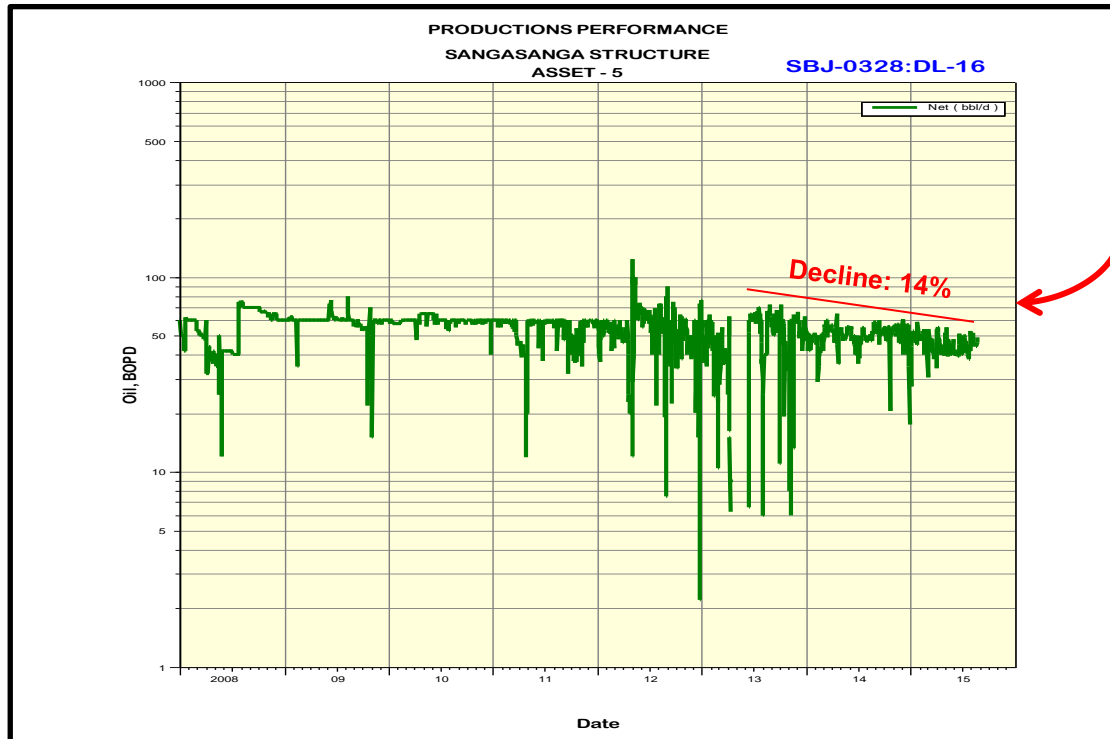


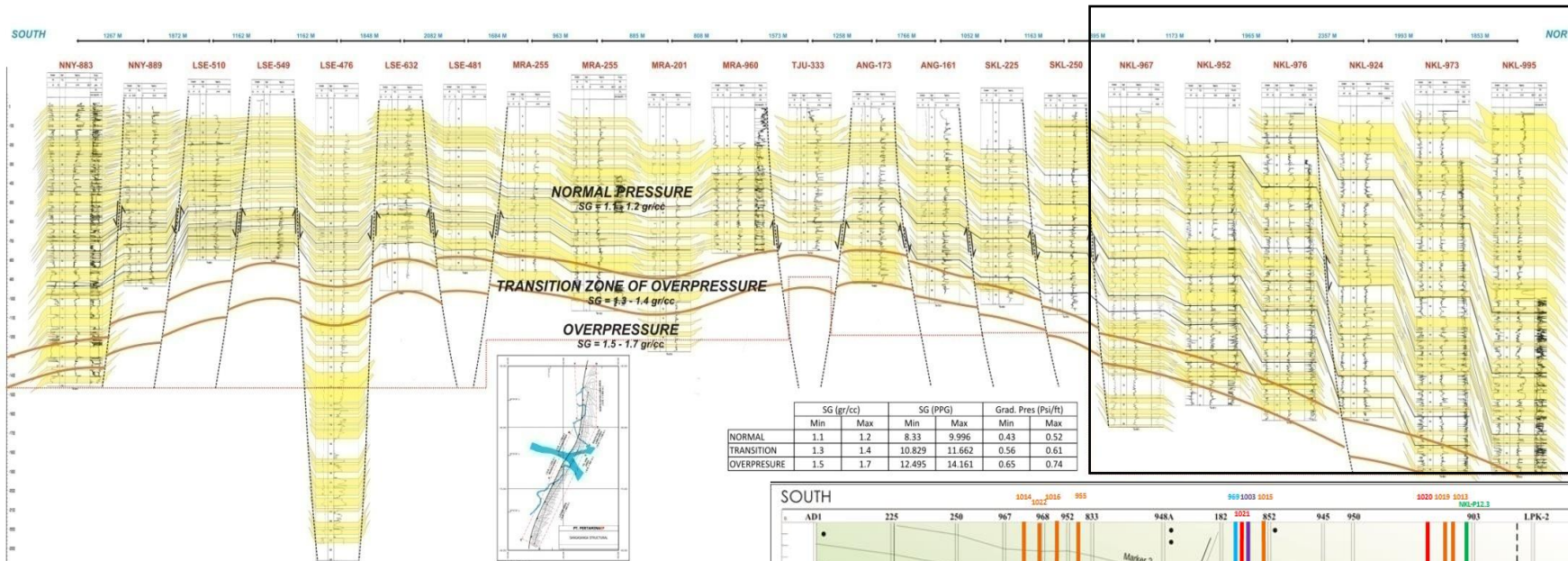
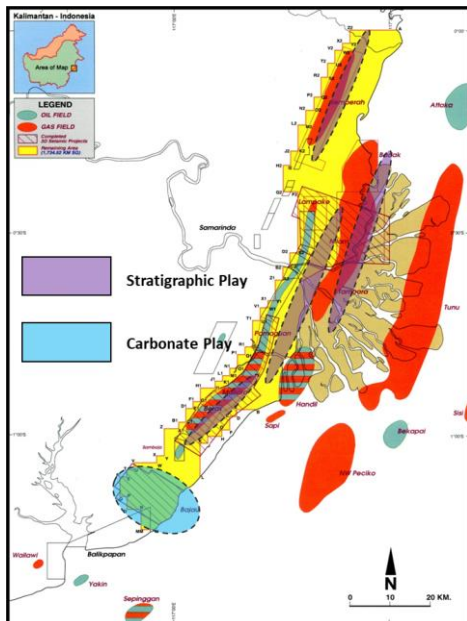
AVERAGE DEPTH = 600 M

PLAN TD = 1700 M

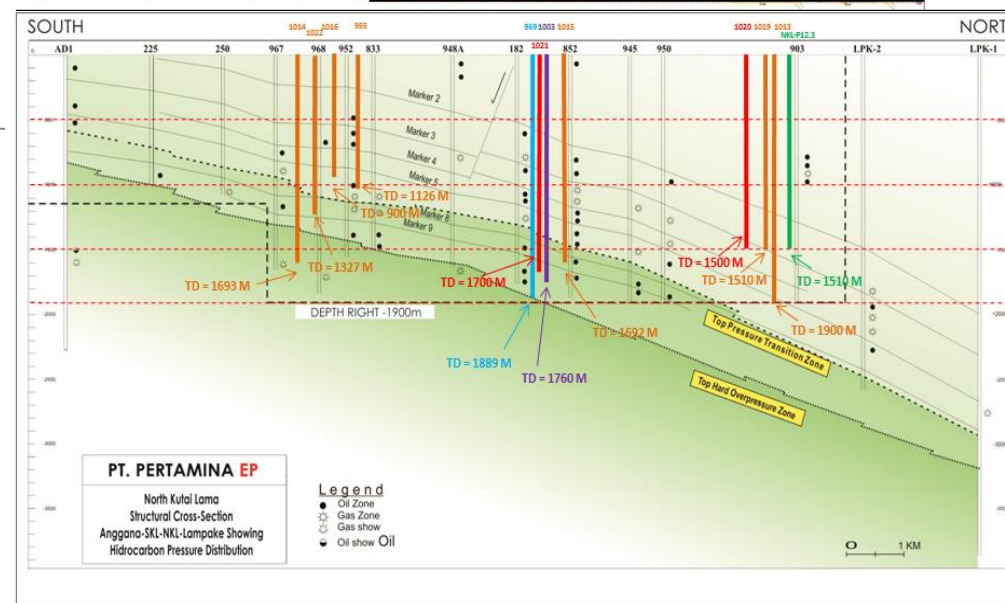
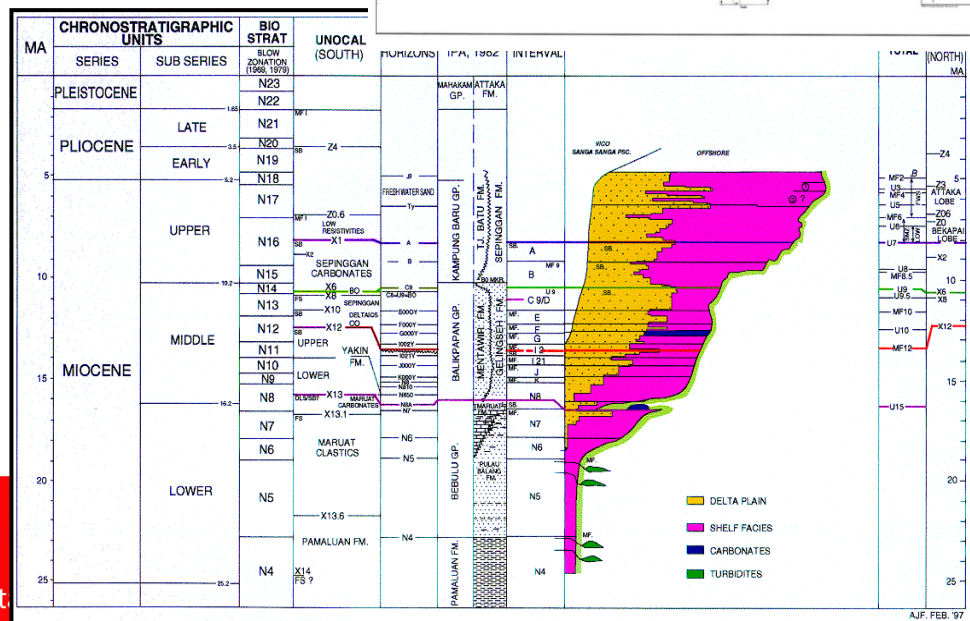
DEPTH RIGHT : 1710 M

*) Study POFD 2013





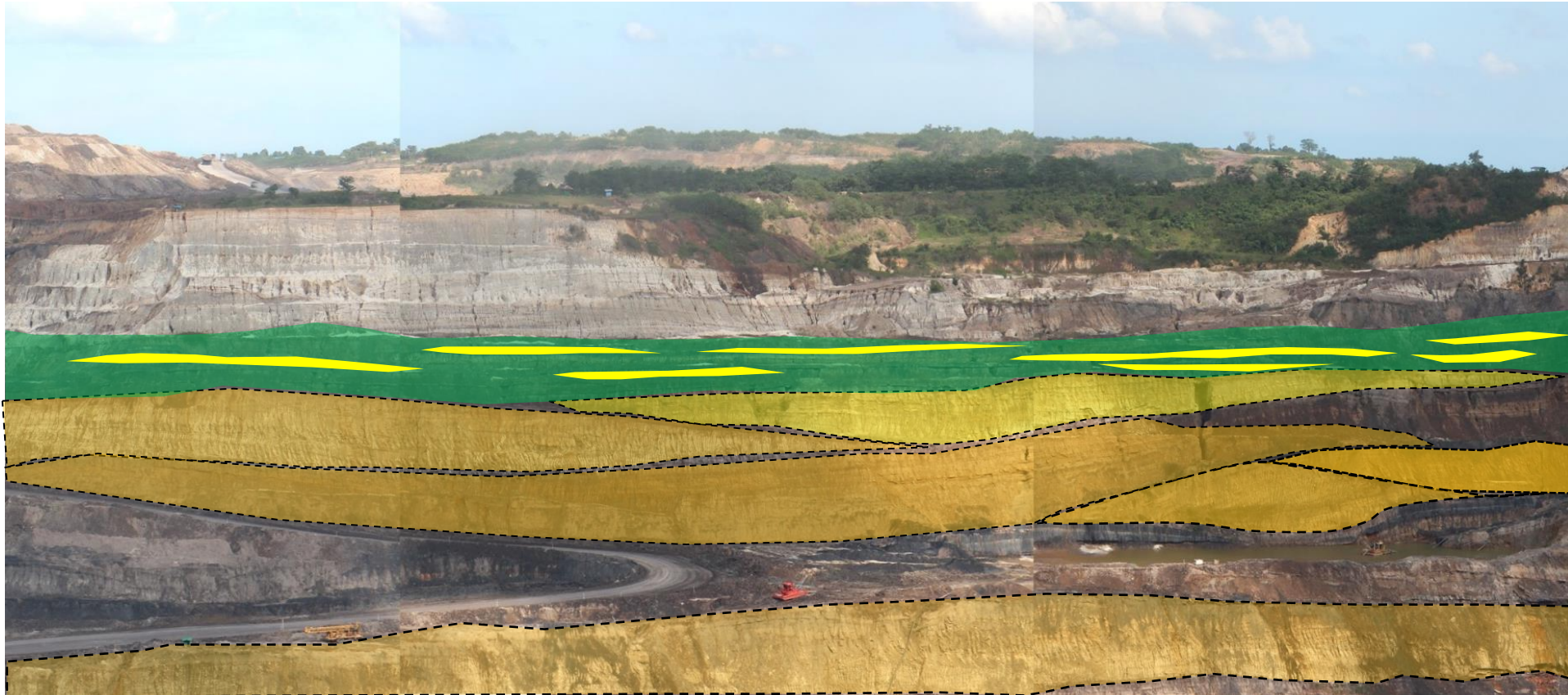
	SG (gr/cc)		SG (PPG)		Grad. Pres (Psi/ft)	
	Min	Max	Min	Max	Min	Max
NORMAL	1.1	1.2	8.33	9.996	0.43	0.52
TRANSITION	1.3	1.4	10.829	11.662	0.56	0.61
OVERPRESSURE	1.5	1.7	12.495	14.161	0.65	0.74



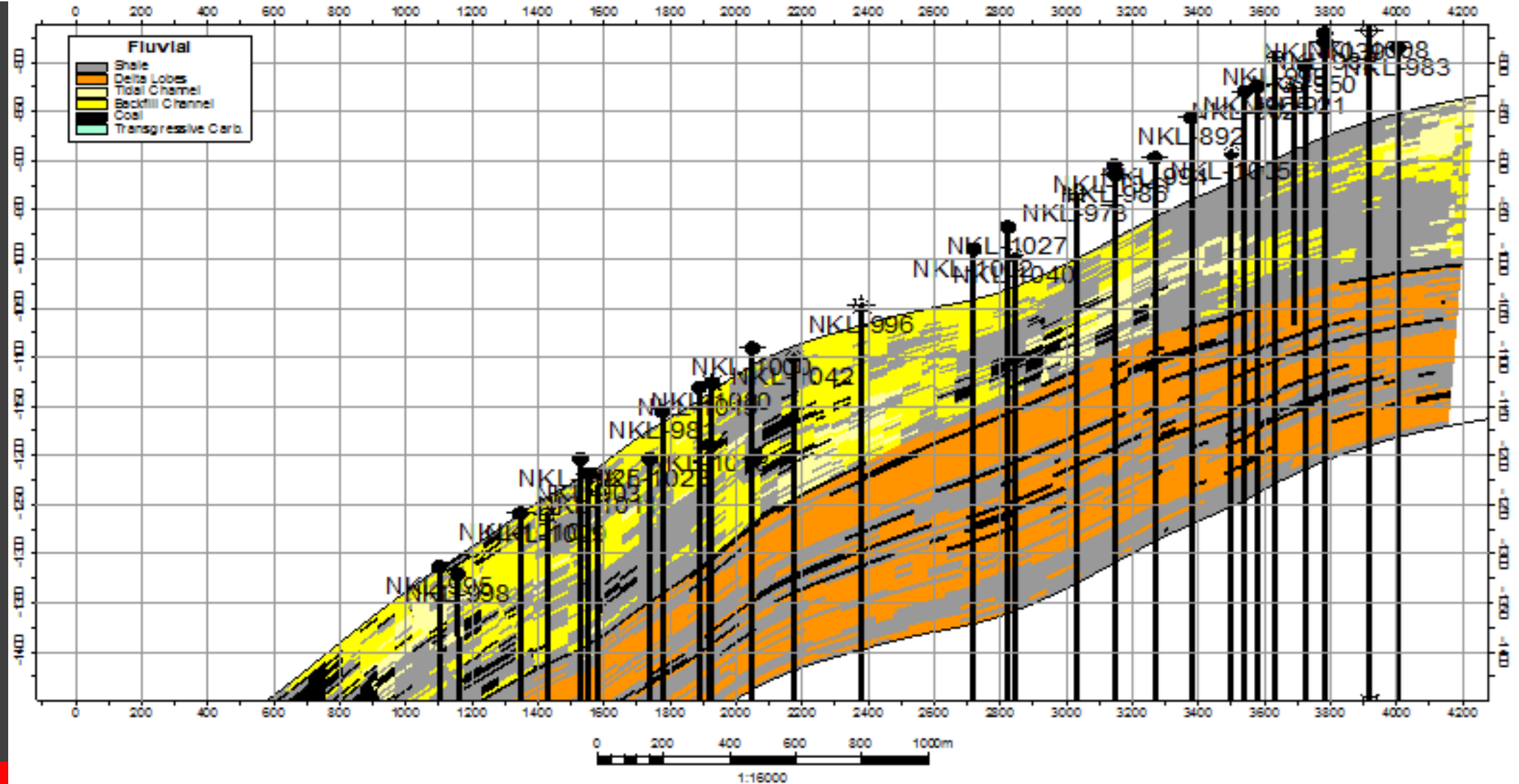
NOTES : Karena proses disequilibrium compaction tersebut lebih cenderung terjadi pada paket sedimen yang "shale-dominated" yang ditumpuki secara cepat oleh paket yang "interbedded shale-sand" diikuti oleh paket yang "sand-dominated", maka proses tersebut cenderung terjadi pada endapan delta di cekungan yang terus menerus turun dengan cepat seperti di Mahakam. "Shale-dominated" section di sistem Delta Mahakam tersebut asosiasinya adalah endapan prodelta. Kebetulan dari segi source quantity & quality endapan prodelta tersebut relatif paling miskin dan lebih gas-prone dibanding dengan endapan delta-front dan delta plain



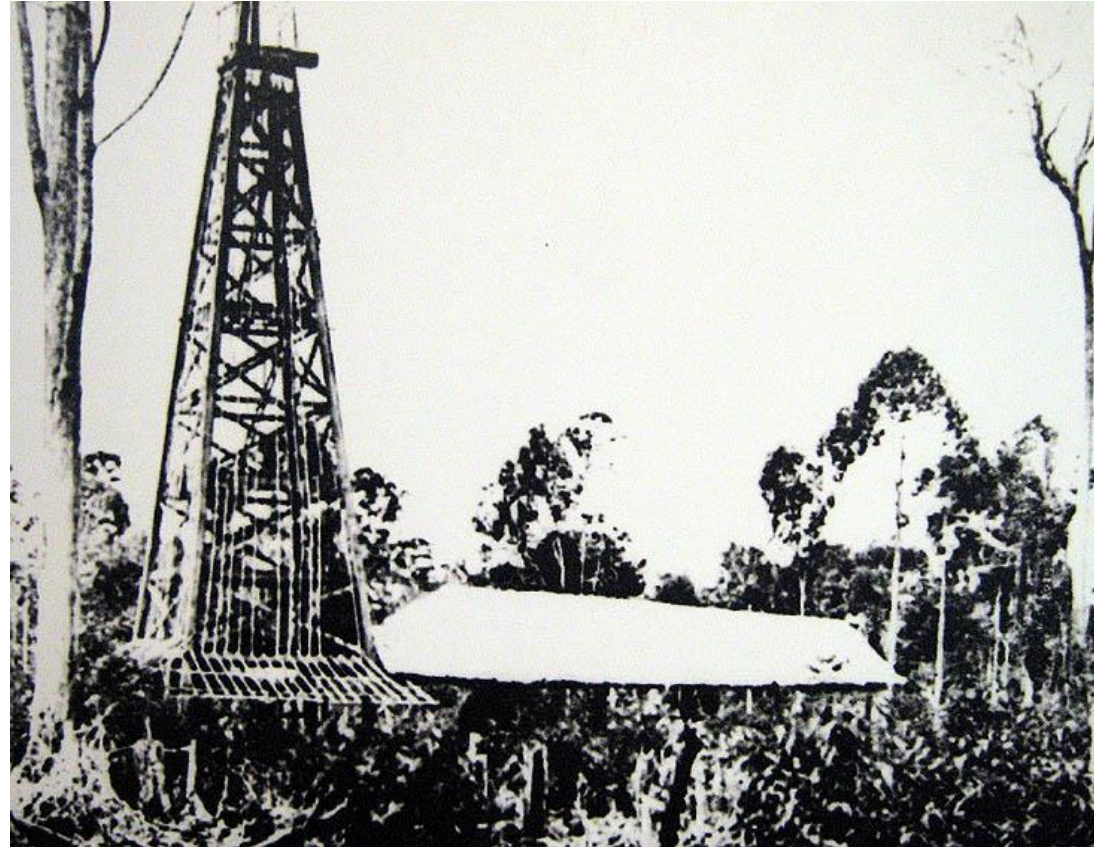
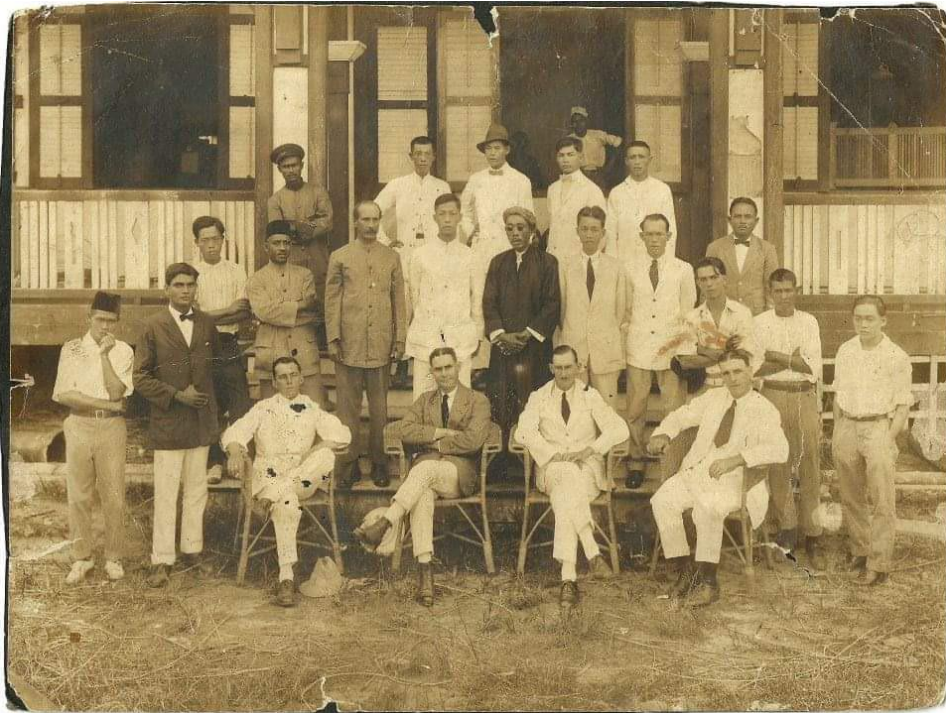
View toward West of ABN mining Site – Central Louise (interpretation)



Modelling the uncertainty



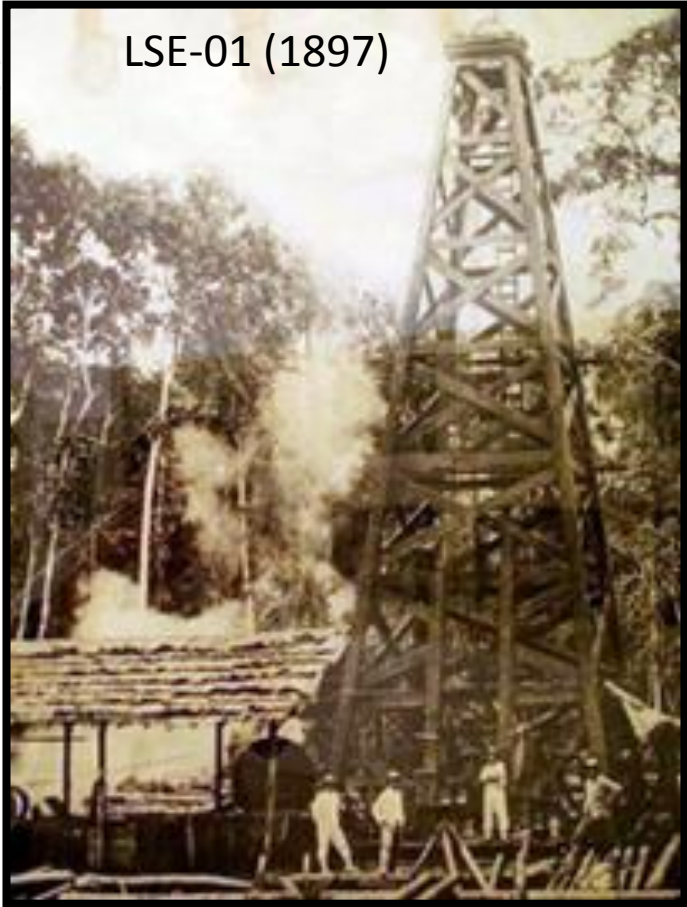
The success in Louise field inspired to explore the other giant



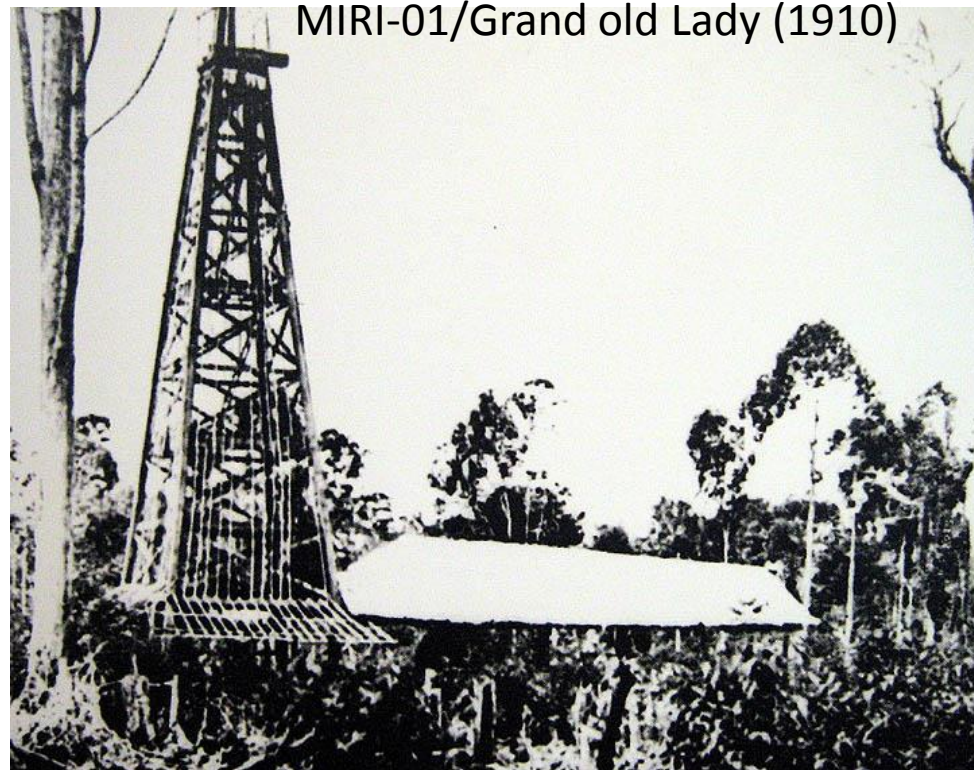
1892 Dr T. Posewitz published Borneo, it's geology and mineral resources

1897 (Louise discovery) classic anticlinal play, become analogue to others giant field in Borneo such as Miri

LSE-01 (1897)



MIRI-01/Grand old Lady (1910)



1910 Miri well no. 1 was spudded (10 August, 1910) using wooden derrick. December 22nd, 1910 discovery in 425 ft depth 83 BOPD

1910 onward, Total wells drilled : 597 wells

Cumulative of 80 million BBL has been produced until 1972

Oil war



Japanese Occupation in Borneo

Tarakan and Balikpapan raid by Allies

Hirosima & Nagasaki atomic bombing

Pearl Harbor Dec 7, 1941



Dec 8, 1941

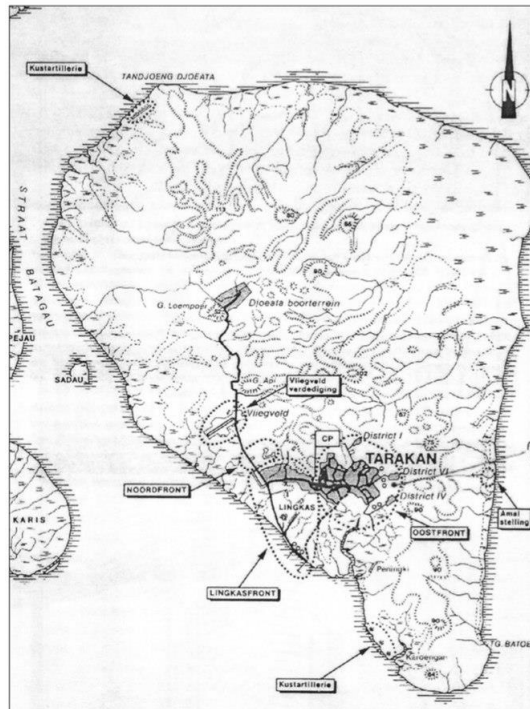


The Yomiuri Shimbun reports on the declaration of war on the United States and Britain (December 8 evening edition)

Penaklukan Tarakan



Jan 11-12, 1942



Balikipapan Battle 23-25 Januari 1942

通告

バリクパパン守備軍司令部
 其周圍邊境各種資源
 材ヲ破壊シタル場合司令官以下
 下屬人員及之ヲ捕虜ニシテ
 人全部一人殘スル者殺ス
 細部ニ關シテ司令官ノ指示
 下ニ依リテ行ハレシメ
 此旨各部隊長ニ傳ヘシメ
 照會スル旨各部隊長ニ傳ヘシメ
 司令官 倉本軍司令部

AFSCRIFTE

In geval het garnizoen van Balikpapan de
 aldaar en in de omgeving gelegen natuurlijke
 kuilbronnen en inrichtingen vernietigt, zullen
 de Nederlandse militairen, van de bevelhebber
 af, alsmede de met hen in verband staande Neder-
 landers, allen zonder uitzondering worden gedood.
 Betreffende details worden de Ept. Ko-ron (Colijn)
 en de Ept. Reuderhoof (Reinderhof) afgezonden om
 desz over te brengen.

20 Januari 1942

De Bevelhebber der Japanees Troepen

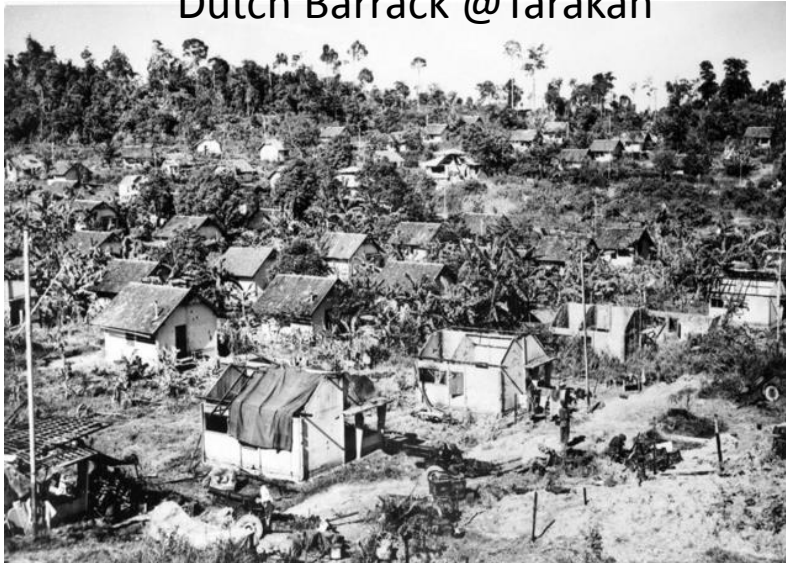
(rood zegel) Zegel van de Commandant
 van het Detachment No. 6733, Ryū (of: Raki)

Den Heere Bevelhebber
 van het Garnizoen van
 Balikpapan.

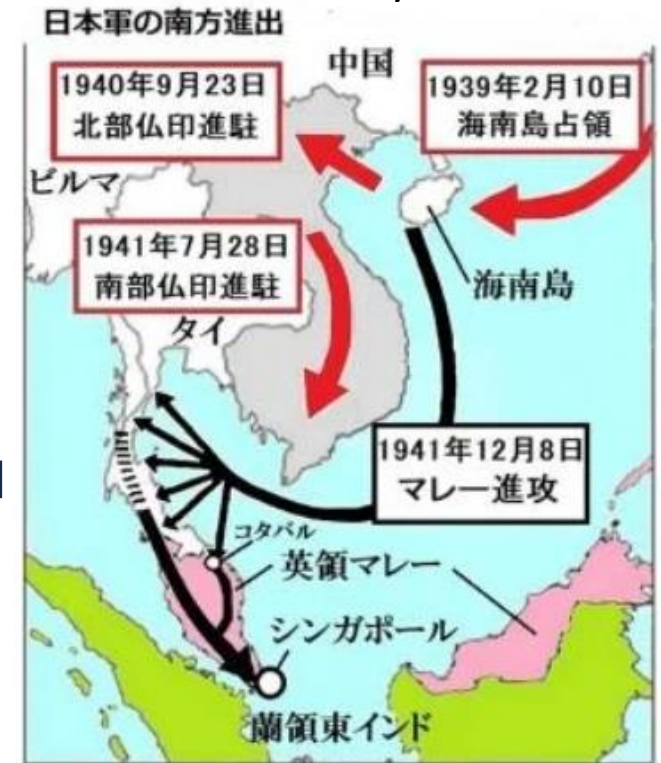
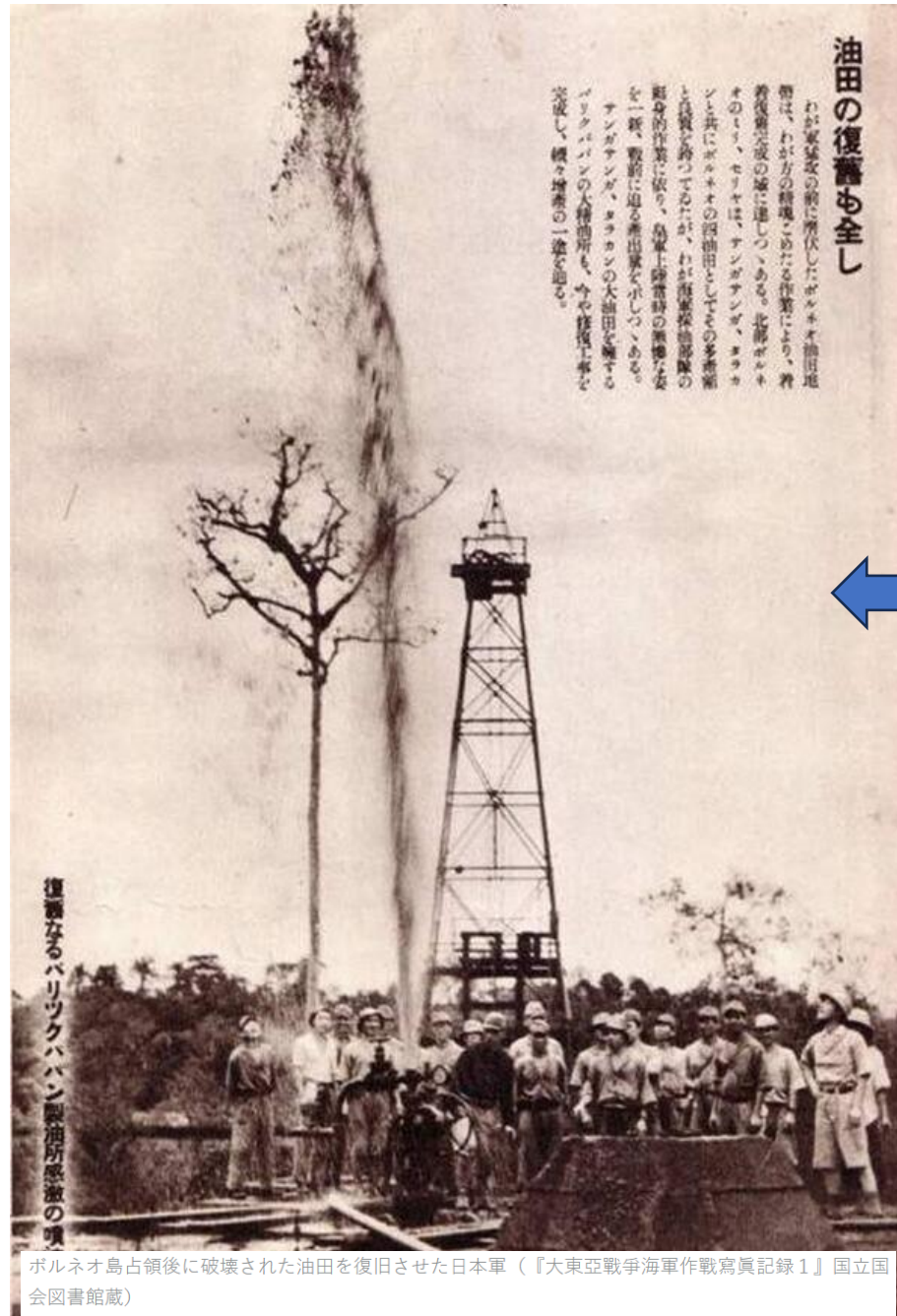
Ultimatum eksekusi
20 Jan 1942

February, 7-15 1942

Dutch Barrack @Tarakan



AUSTRALIAN WAR MEMORIAL 018464



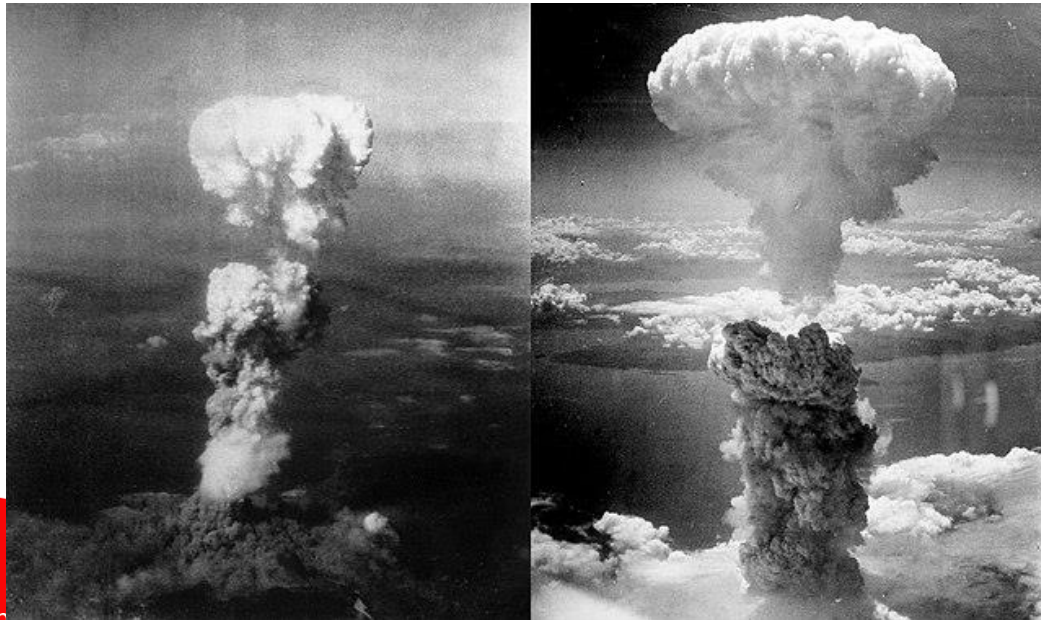
The main reason for the Japan army's haste to capture Singapore was to secure oil fields in the Dutch East Indies (Dutch India), including the island of Borneo.

Japan forces restored oil fields destroyed after the occupation of Borneo (大東亞戦争Navy作戦寫真 Record 1, National Diet Library Collection) Jun 1942 – Aug 1943



May, 1st 1945





Penyerahan Jepang, 2 Sep 1945

After Independence day



1957 PERMINA (PT Perusahaan Minyak Nasional)

1971 UU no. 8 th 1971 mengolah migas dan menyediakan BBM

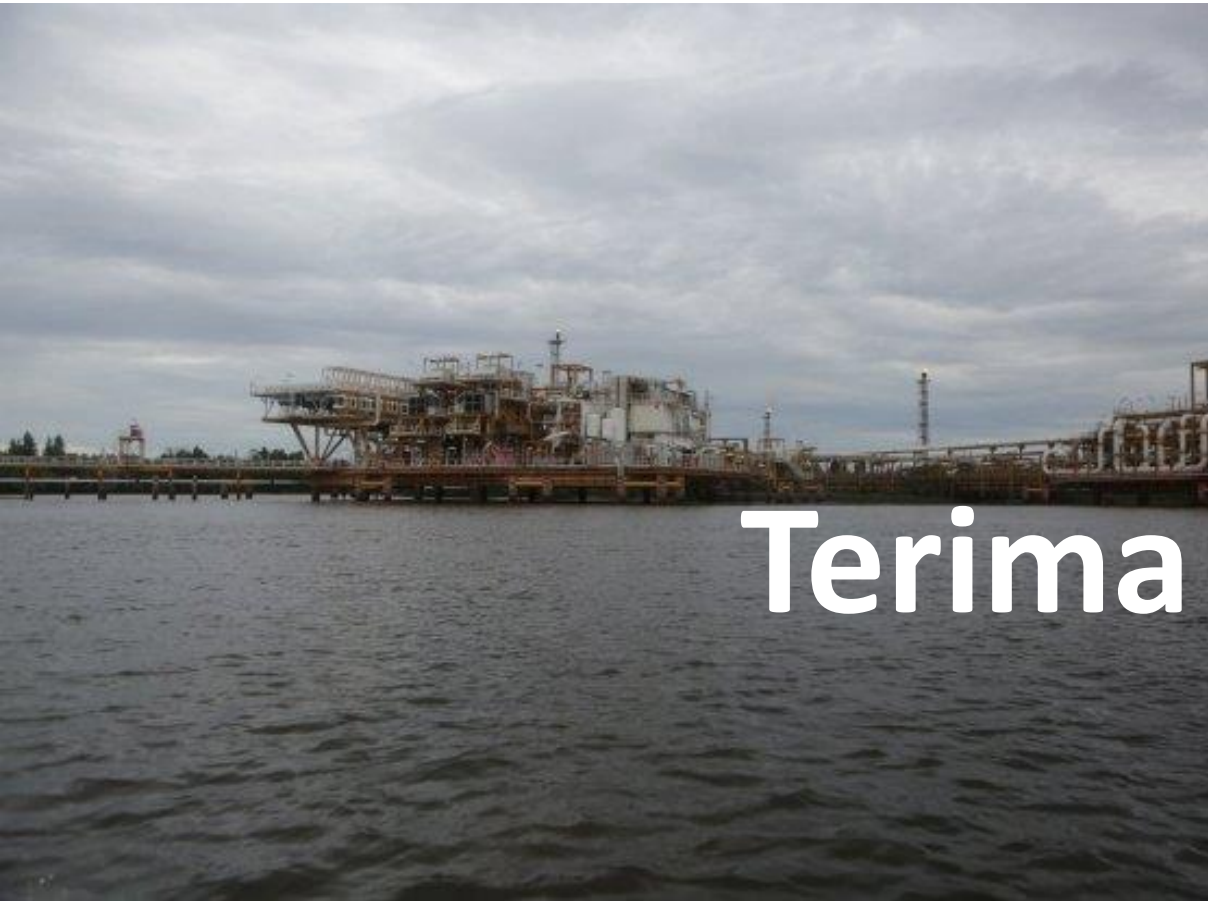


2001 UU no. 22 th 2001 penyelenggara PSO



2003 PP no. 31 th 2003 tgl 18 Juni 2003 PT. Pertamina (Persero) kegiatan usaha migas hulu ke hilir





Terima Kasih