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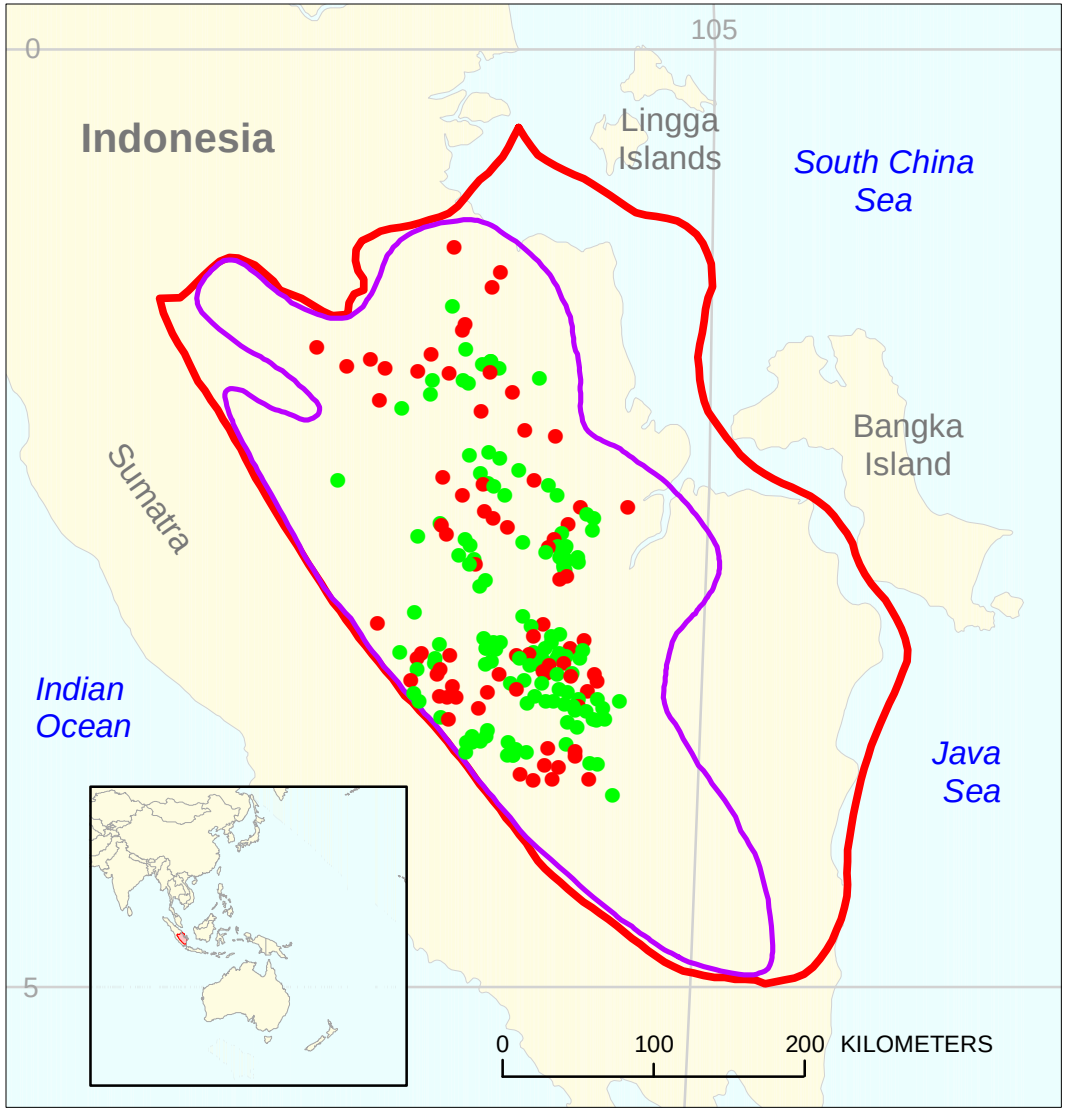
South Sumatra
Assessment Unit 38280101



South Sumatra Assessment Unit 38280101

South Sumatra Basin Geologic Province 3828

Geologic Summary

Detailed map of this assessment unit

Exploration/Discovery-History Data

- Plots of Known Field Sizes
- Plots of Grown Resources
- Tables

Assessment Input Data

Assessment Results

- Assessment Unit Summary
- Detailed Assessment Results
- Undiscovered Field-Size Distributions

USGS PROVINCE: South Sumatra Basin (3828) **GEOLOGIST:** M.G. Bishop

TOTAL PETROLEUM SYSTEM: Lahat/Talang Akar-Cenozoic (382801)

ASSESSMENT UNIT: South Sumatra (38280101)

DESCRIPTION: Onshore oil and gas discoveries primarily in anticlines. Tertiary faulted basins with carbonate and clastic sedimentary rocks lying on an unconformity surface of pre-Tertiary metamorphic and igneous rocks.

SOURCE ROCKS: Paleocene to Early Oligocene Lahat Formation syn-rift lacustrine to brackish-water shales, thin coals and carbonates confined to half grabens with TOC of 0.5 to16 wt. % and HI of 130 to 290 followed by the transgressive Late Oligocene to Early Miocene Talang Akar Formation that onlaps the Lahat and pre-Tertiary basement and consists of late-rift lacustrine, marine, marginal marine and deltaic shales of Type I and II oil and gas prone organic matter with TOC of 0.5 to 50 wt. % and HI of 150 to 310.

MATURATION: Miocene to Late Miocene maturation continuing to the present.

MIGRATION: Fault migration during tectonic inversion and folding beginning in Late Miocene through Pleistocene and possible strike-slip tectonics. Local lateral migration to adjacent reservoirs.

RESERVOIR ROCKS: Paleocene to Early Oligocene coarse clastics of the Lahat Formation, Oligocene to Miocene deltaic and marine sandstones of the Talang Akar Formation, Early Miocene platform carbonates and local carbonate build-ups of the Batu Raja Limestone, Miocene transgressive shoreline sands of the Telisa Formation, and Late Miocene to Pliocene shallow marine to non-marine sandstones of the Lower and Middle Palembang Formations serve as reservoirs.

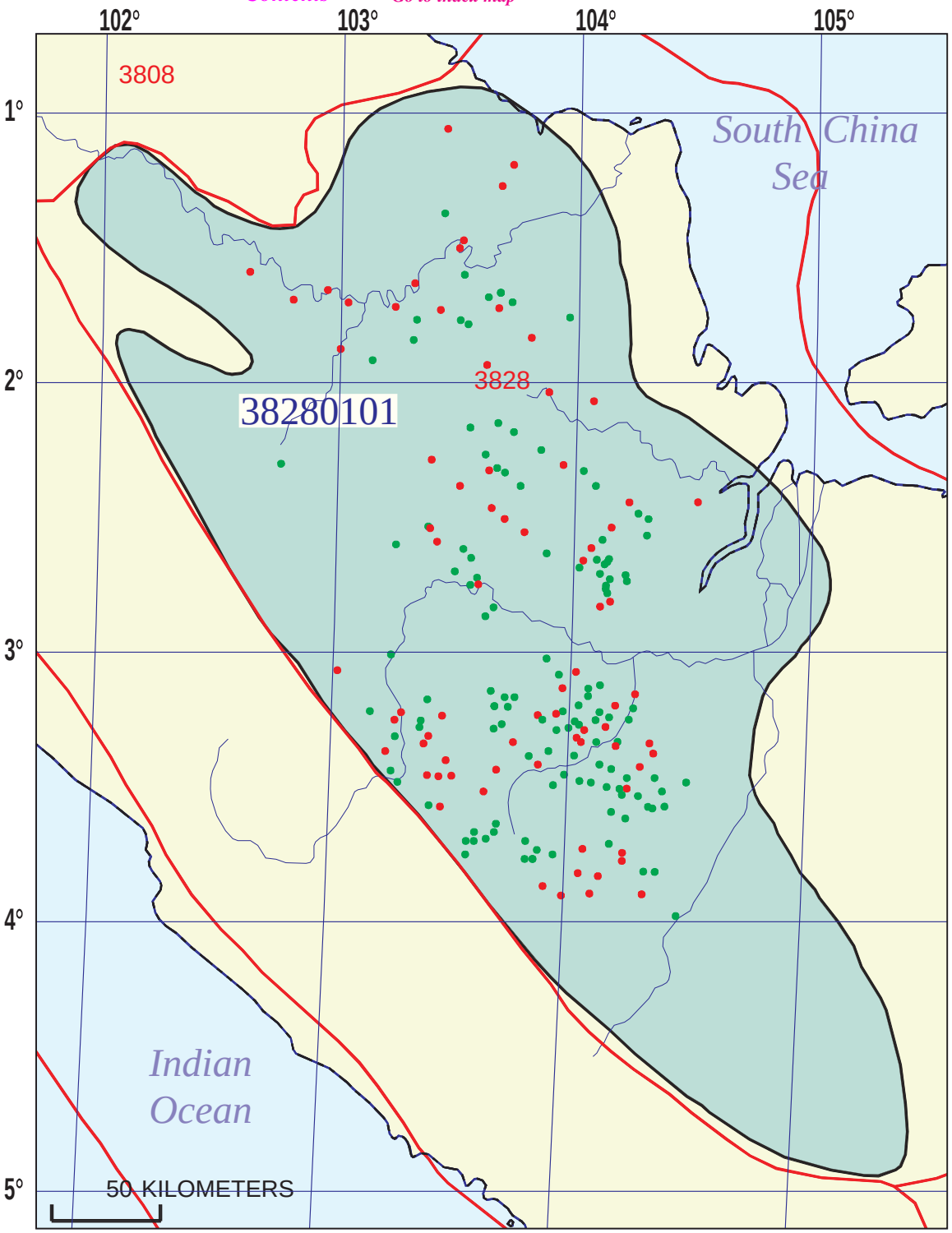
TRAPS AND SEALS: Anticlines are the primary trap followed by fault block and organic build-up stratigraphic traps. Local seals and the regional Gumai Shale seal.

REFERENCES:

Pulunggono, A., Haryo, S.A., and Kosuma, C.G., 1992, Pre-Tertiary and Tertiary fault systems as a framework of the South Sumatra Basin; a study of sar-maps: Proceedings, Indonesian Petroleum Association Twenty First Annual Convention, October, 1992, p. 339-360.

Suseno, P.H., Zakaria, Mujahidin, N., and Subroto, E.A., 1992, Contribution of Lahat Formation as hydrocarbon source rock in South Palembang area, South Sumatera, Indonesia: Proceedings, Indonesian Petroleum Association Twenty First Annual Convention, October, 1992, p. 325-337.

Tamtomo, B., Yuswar, I., and Widianto, E., 1997, Transgressive Talang Akar sands of the Duang area, south Sumatra basin–origin, distribution and implication for exploration play concept, *in* Howes, J.V.C., and Noble, R.A., eds., Indonesian Petroleum Association Proceedings of the Petroleum Systems of SE Asia and Australasia Conference May 1997: p. 699-708.



South Sumatra
Assessment Unit - 38280101

EXPLANATION

- Hydrography
- Shoreline
- 3828 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 38280101 Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

SEVENTH APPROXIMATION
NEW MILLENNIUM WORLD PETROLEUM ASSESSMENT
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS

Date:……..	5/26/99		
Assessment Geologist:……..	R.T. Ryder		
Region:……..	Asia Pacific	Number:	3
Province:……..	South Sumatra Basin	Number:	3828
Priority or Boutique……	Priority		
Total Petroleum System:……	Lahat/Talang Akar-Cenozoic	Number:	382801
Assessment Unit:……..	South Sumatra	Number:	38280101
* Notes from Assessor	MMS growth function. API gravities include some condensates.		

CHARACTERISTICS OF ASSESSMENT UNIT

Oil (<20,000 cfg/bo overall) **or** Gas (≥20,000 cfg/bo overall):… Oil

What is the minimum field size?……. 1 mmboe grown (≥1mmboe)
(the smallest field that has potential to be added to reserves in the next 30 years)

Number of discovered fields exceeding minimum size:…….. Oil: 90 Gas: 65
Established (>13 fields) X Frontier (1-13 fields) _____ Hypothetical (no fields) _____

Median size (grown) of discovered oil fields (mmboe):
1st 3rd 21 2nd 3rd 11 3rd 3rd 7
Median size (grown) of discovered gas fields (bcfg):
1st 3rd 64 2nd 3rd 29 3rd 3rd 56

Assessment-Unit Probabilities:

Attribute	Probability of occurrence (0-1.0)
1. **CHARGE:** Adequate petroleum charge for an undiscovered field ≥ minimum size……	1.0
2. **ROCKS:** Adequate reservoirs, traps, and seals for an undiscovered field ≥ minimum size……	1.0
3. **TIMING OF GEOLOGIC EVENTS:** Favorable timing for an undiscovered field ≥ minimum size	1.0

Assessment-Unit GEOLOGIC Probability (Product of 1, 2, and 3):…….. 1.0

4. **ACCESSIBILITY:** Adequate location to allow exploration for an undiscovered field ≥ minimum size…… 1.0

UNDISCOVERED FIELDS

Number of Undiscovered Fields: How many undiscovered fields exist that are ≥ minimum size?:
(uncertainty of fixed but unknown values)

Oil fields:……min. no. (>0)	20	median no.	50	max no.	100
Gas fields:……min. no. (>0)	20	median no.	100	max no.	200

Size of Undiscovered Fields: What are the anticipated sizes (**grown**) of the above fields?:
(variations in the sizes of undiscovered fields)

Oil in oil fields (mmbo)……min. size	1	median size	4	max. size	250
Gas in gas fields (bcfg):……min. size	6	median size	60	max. size	6000

Assessment Unit (name, no.)
South Sumatra, 38280101

AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS

(uncertainty of fixed but unknown values)

Oil Fields:	minimum	median	maximum
Gas/oil ratio (cfg/bo)……	1000	2000	3000
NGL/gas ratio (bngl/mmcfg)……	30	60	90

Gas fields:	minimum	median	maximum
Liquids/gas ratio (bngl/mmcfg)……	5	10	20
Oil/gas ratio (bo/mmcfg)……			

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

Oil Fields:	minimum	median	maximum
API gravity (degrees)……	20	36	55
Sulfur content of oil (%)……	0.1	0.12	0.38
Drilling Depth (m) ……	500	2000	3500
Depth (m) of water (if applicable)……			

Gas Fields:	minimum	median	maximum
Inert gas content (%)……	0.3	1	5
CO_2 content (%)……	0	20	90
Hydrogen-sulfide content (%)……	0	0	0
Drilling Depth (m)……	500	2000	4000
Depth (m) of water (if applicable)……			

Assessment Unit (name, no.)
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ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT TO COUNTRIES OR OTHER LAND PARCELS (uncertainty of fixed but unknown values)

1. Indonesia represents 100 areal % of the total assessment unit

Oil in Oil Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		100	
Portion of volume % that is offshore (0-100%)……		0	

Gas in Gas Fields:	minimum	median	maximum
Richness factor (unitless multiplier):……			
Volume % in parcel (areal % x richness factor):…		100	
Portion of volume % that is offshore (0-100%)……		0	

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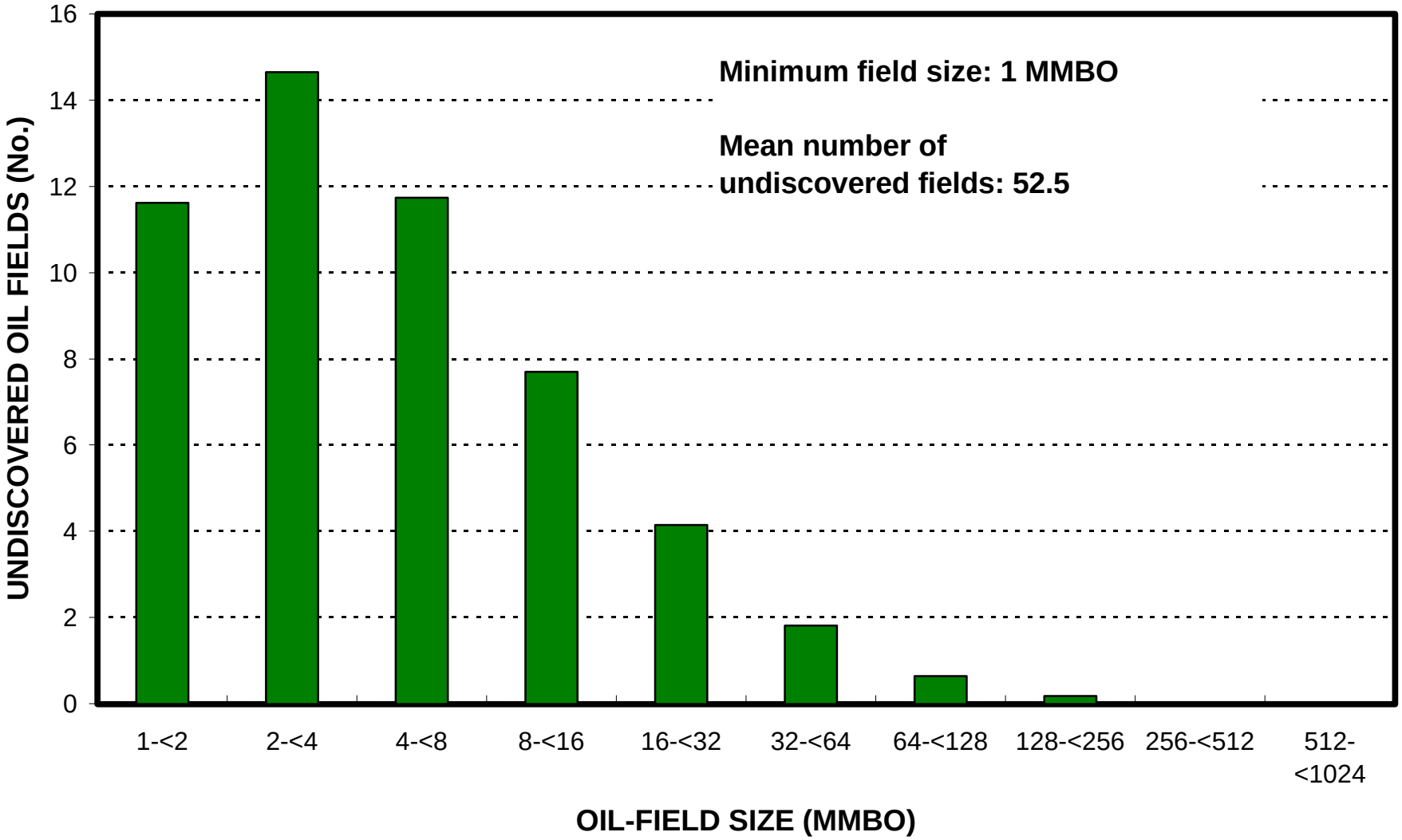
Undiscovered Field-Size Distribution



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Undiscovered Field-Size Distribution