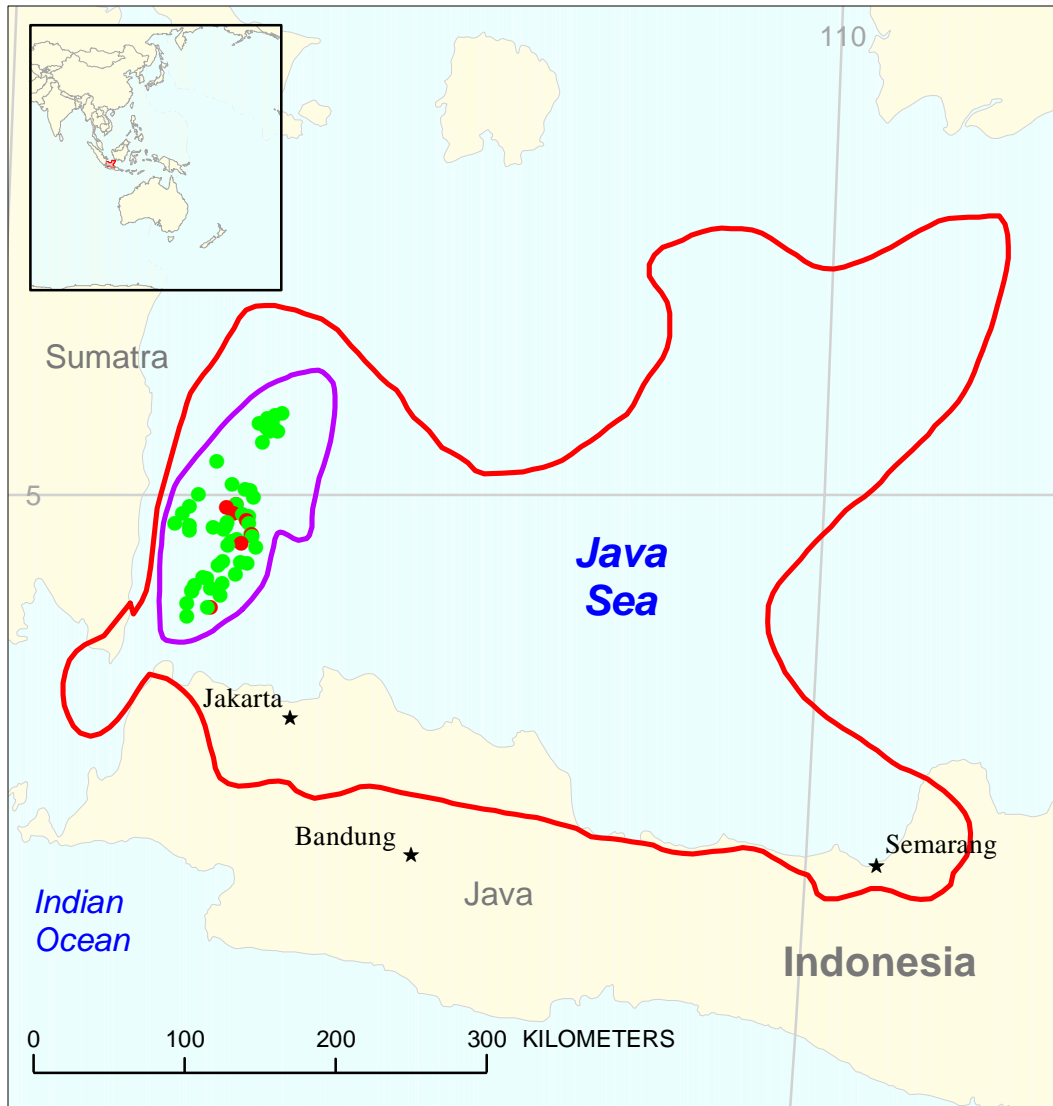




# Sunda/Asri Assessment Unit 38240101



-  Sunda/Asri Assessment Unit 38240101
-  Northwest Java Basin Geologic Province 3824

**USGS PROVINCE:** Northwest Java Basin (3824)

**GEOLOGIST:** M.G. Bishop

**TOTAL PETROLEUM SYSTEM:** Banuwati-Oligocene/Miocene (382401)

**ASSESSMENT UNIT:** Sunda/Asri (38240101)

**DESCRIPTION:** Faulted half-graben basins located offshore Java. Lacustrine shale source rocks for oils in syn-rift deep-water sandstone reservoirs, late- to post-rift deltaic and marine sandstones, and reef carbonates that formed on fault-block highs and flanking islands.

**SOURCE ROCKS:** Eocene to Early Oligocene deep lacustrine, brown to black, oil prone shales deposited in a series of half graben; TOC of 1.87 to 8 wt. % and HI of 573 to 637.

**MATURATION:** The main phase of hydrocarbon generation from the Banuwati Shale occurred in the Middle Miocene.

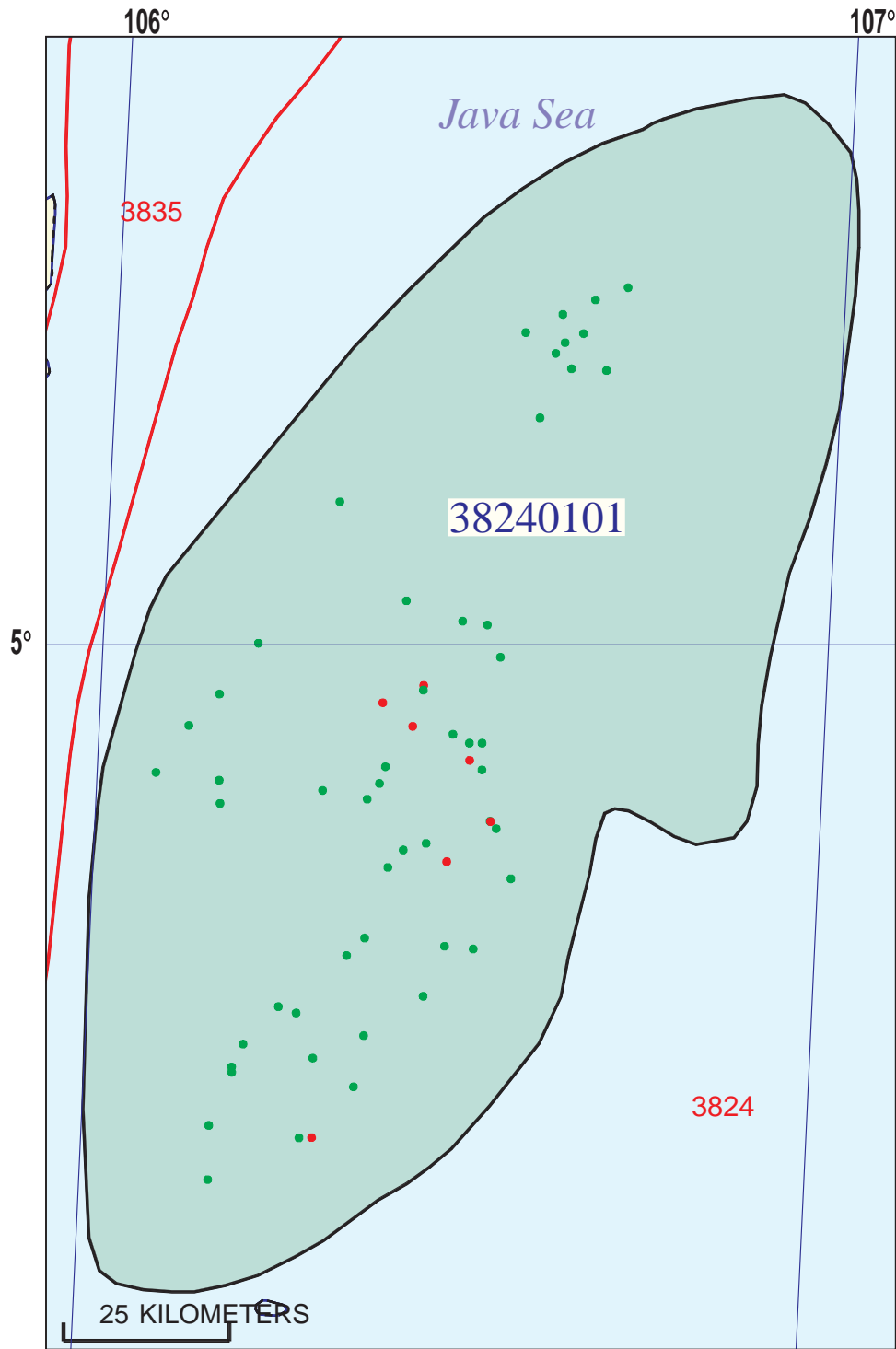
**MIGRATION:** Lateral migration into adjacent reservoirs, up-dip migration out of the half graben along weathered and fractured granite and other carrier beds, vertical migration along faults to overlying clastic and carbonate reservoirs on structural highs.

**RESERVOIR ROCKS:** More than three quarters of the discovered reserves are from late syn-rift Oligocene Talang Akar Formation thick, stacked, and sometimes amalgamated channel sandstones with braided stream, distributary and point bar facies. The Early Miocene Batu Raja carbonates are next in importance.

**TRAPS AND SEALS:** Primarily stratigraphic and fault bounded traps. The Gumai Shale is the regional seal. The Batu Raja Shale and intraformational seals in the Banuwati Shale, and the Talang Akar are also important.

**REFERENCES:**

- Wicaksono, P., Wight, A.W.R., Lodwick, W.R., Netherwood, R.E., Budiarto, B., and Hanggoro, D., 1995, Use of sequence stratigraphy in carbonate exploration--Sunda Basin, Java Sea, Indonesia, *in* Caughey, C. A., Carter, D.C., Clure, J., Gresko, M.J., Lowry, P., Park, R.K., and Wonders, A., eds., International Symposium on Sequence Stratigraphy in S. E. Asia: Proceedings of the Indonesian Petroleum Association, p. 197-229.
- Wright, A., Friestad, H., Anderson, I., Wicaksono, P., and Reminton, C.H., 1997, Exploration history of the offshore Southeast Sumatra PSC, Java Sea, Indonesia, *in* Fraser, A.J., Matthews, S.J., and Murphy, R.W., eds., Petroleum Geology of Southeast Asia: Geological Society Special Publication 126, p. 121-142.



**Sunda/Asri  
Assessment Unit - 38240101**

EXPLANATION

- Hydrography
- Shoreline
- 3824 Geologic province code and boundary
- - - Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 38240101 — 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:..... Northwest Java Basin Number: 3824  
 Priority or Boutique..... Priority  
 Total Petroleum System:..... Banuwati-Oligocene/Miocene Number: 382401  
 Assessment Unit:..... Sunda/Asri Number: 38240101  
 \* Notes from Assessor MMS growth function.

**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 mmmboe 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: 45 Gas: 7  
 Established (>13 fields) X Frontier (1-13 fields) Hypothetical (no fields)

Median size (grown) of discovered oil fields (mmboe):  
 1st 3rd 22 2nd 3rd 7 3rd 3rd 11  
 Median size (grown) of discovered gas fields (bcfg):  
 1st 3rd 18 2nd 3rd 21 3rd 3rd

**Assessment-Unit Probabilities:**

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

**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) 10 median no. 40 max no. 80  
 Gas fields:.....min. no. (>0) 2 median no. 12 max no. 30

**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 5 max. size 300  
 Gas in gas fields (bcfg):.....min. size 6 median size 25 max. size 900

**AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS**

(uncertainty of fixed but unknown values)

<u>Oil Fields:</u>	minimum	median	maximum
Gas/oil ratio (cfg/bo).....	300	600	900
NGL/gas ratio (bnl/mmcf).....	12	24	36
<u>Gas fields:</u>	minimum	median	maximum
Liquids/gas ratio (bnl/mmcf).....	10	20	30
Oil/gas ratio (bo/mmcf).....			

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**SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS**

(variations in the properties of undiscovered fields)

<u>Oil Fields:</u>	minimum	median	maximum
API gravity (degrees).....	15	35	49
Sulfur content of oil (%).....	0.04	0.1	0.25
Drilling Depth (m) .....	500	1500	3500
Depth (m) of water (if applicable).....	3	50	400
<u>Gas Fields:</u>	minimum	median	maximum
Inert gas content (%).....	0.3	1.2	2.5
CO <sub>2</sub> content (%).....	0.4	6.4	23.5
Hydrogen-sulfide content (%).....	0	0	0
Drilling Depth (m).....	900	2000	4000
Depth (m) of water (if applicable).....	3	50	400

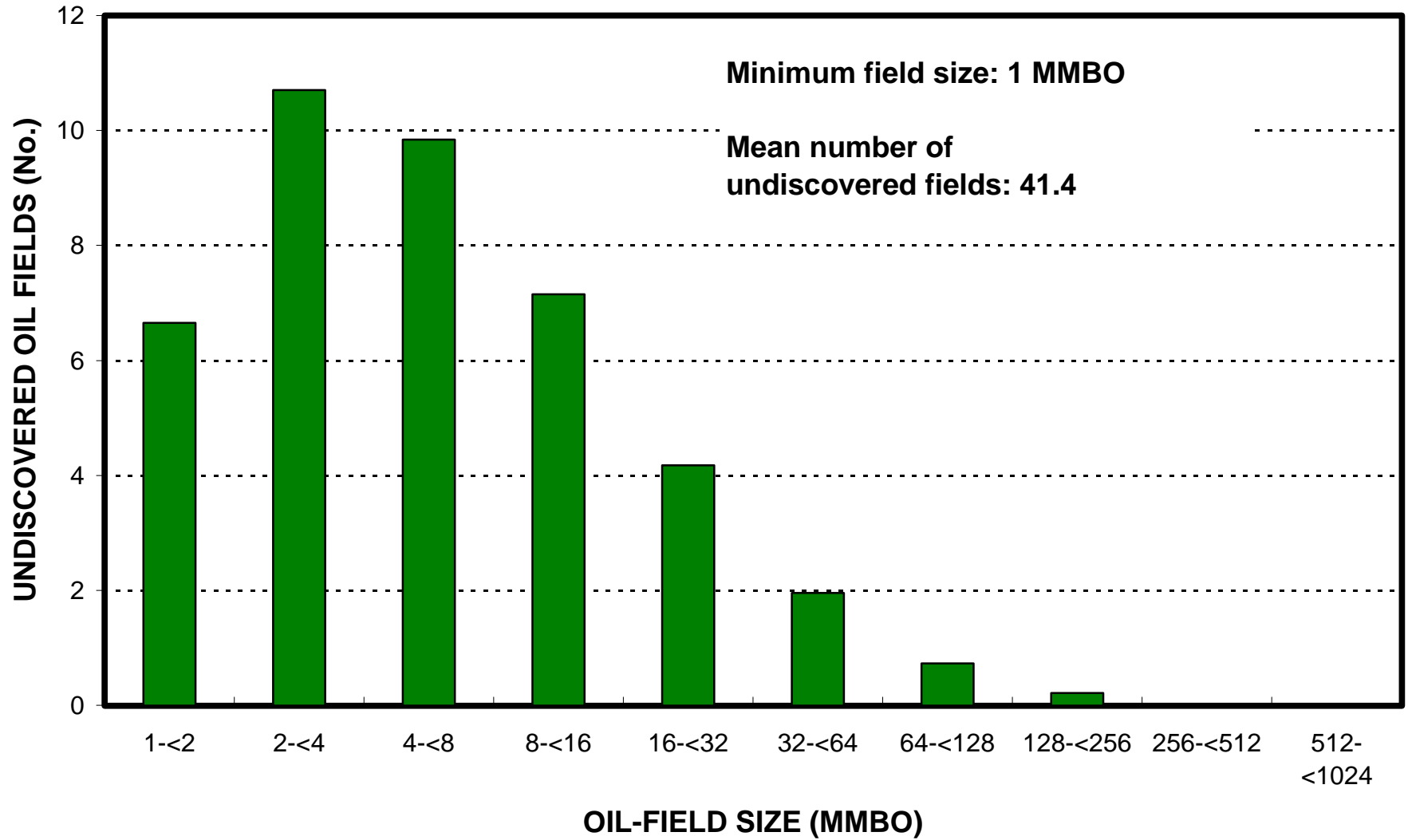
**ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT  
 TO COUNTRIES OR OTHER LAND PARCELS** (uncertainty of fixed but unknown values)

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

<u>Oil in Oil Fields:</u>	minimum	median	maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	100	_____
Portion of volume % that is offshore (0-100%).....	_____	100	_____
 <u>Gas in Gas Fields:</u>	 minimum	 median	 maximum
Richness factor (unitless multiplier):.....	_____	_____	_____
Volume % in parcel (areal % x richness factor):...	_____	100	_____
Portion of volume % that is offshore (0-100%).....	_____	100	_____

# Sunda/Asri, AU 38240101

## Undiscovered Field-Size Distribution



# Sunda/Asri, AU 38240101

## Undiscovered Field-Size Distribution

