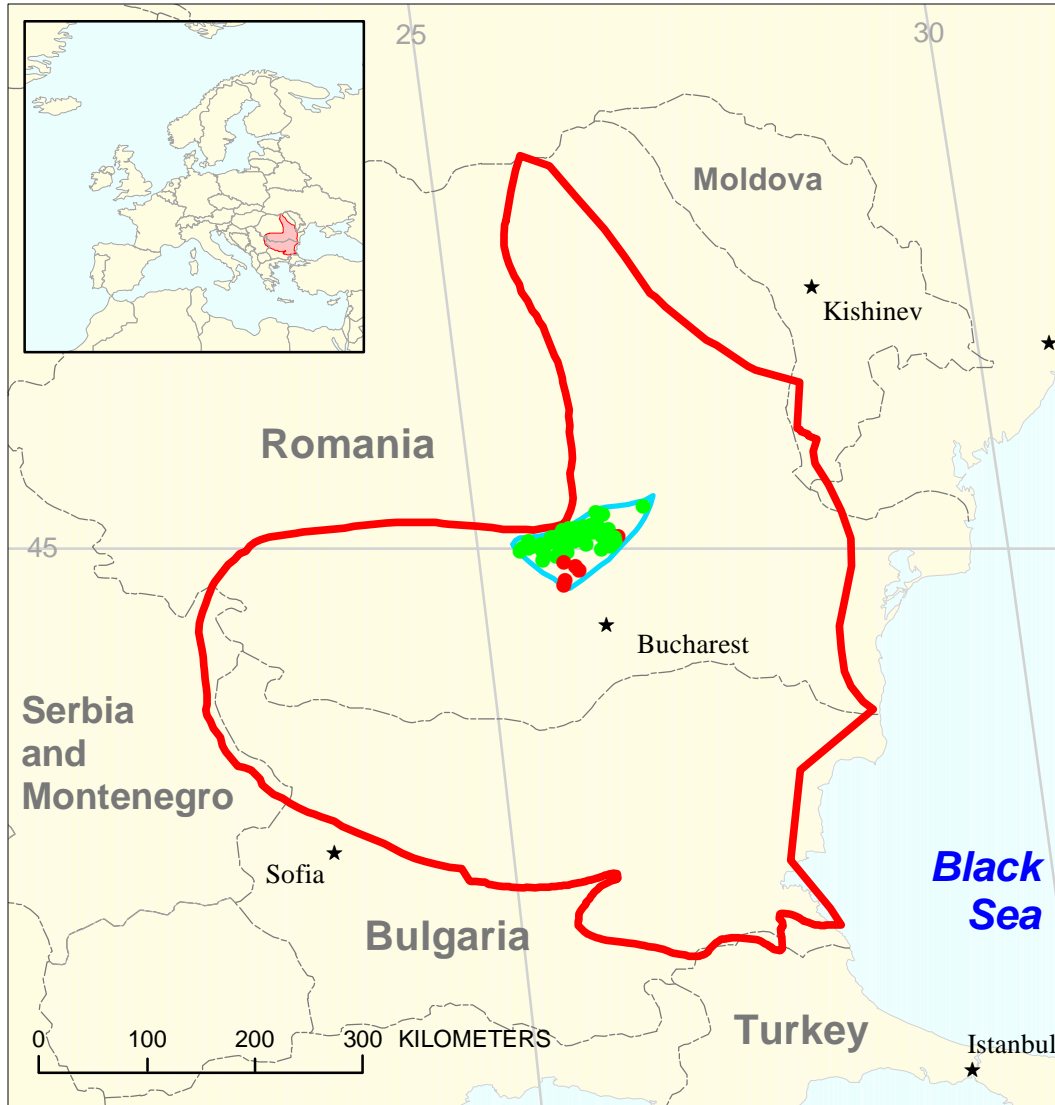



Romania Ploiesti Zone Assessment Unit 40610202



 Romania Ploiesti Zone 40610202

 Carpathian-Balkanian Basin Geologic Province 4061

USGS PROVINCE: Carpathian-Balkanian Basin (4061) **GEOLOGIST:** M.J. Pawlewicz

TOTAL PETROLEUM SYSTEM: Dysodile Schist-Tertiary (406102)

ASSESSMENT UNIT: Romania Ploiesti Zone (40610202)

DESCRIPTION: This unit, also known as the zone of diapir folds, lies between the Rimnicu Sarat and Dinibovita valleys and between the folds of the inner Carpathians and the external flanks of the foredeep. Due to depletion of shallow resources, deeper sub-salt targets to a depth of 6 km must be addressed.

SOURCE ROCKS: The Oligocene dysodile schist is considered the main source rock and the Neogene blackish marls and clays are thought to make a large contribution. The TOC values for the schists are as high as 29.8 percent.

MATURATION: These rocks are now at their maximum thermal maturation. Expelling of hydrocarbons probably began in Late Sarmatian-Pliocene time.

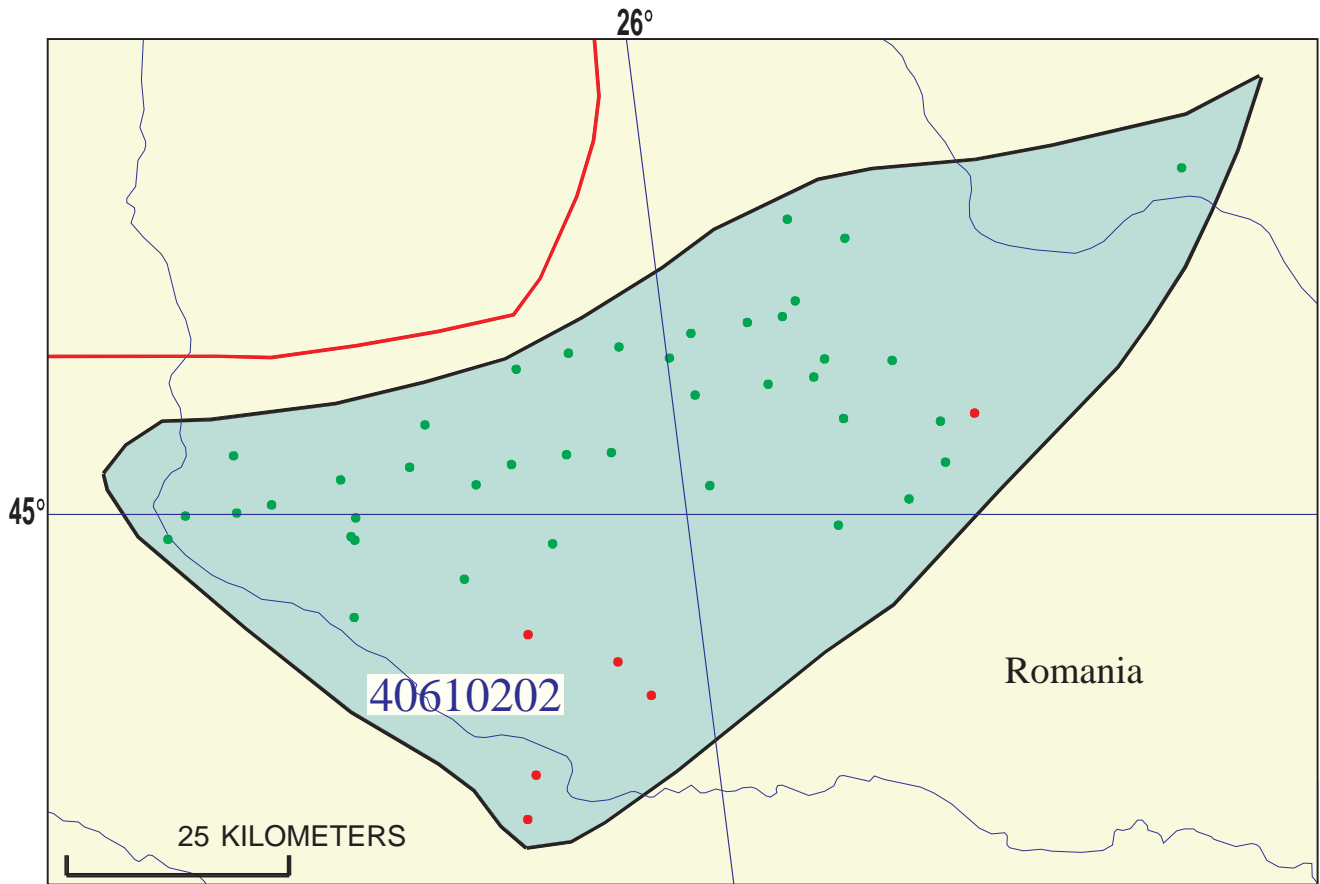
MIGRATION: Migration is along normal fault lines and those related to salt diapirism; also vertically into overlying sandstone reservoirs and laterally into the same.

RESERVOIR ROCKS: Oligocene and Middle Miocene sands and sandstones. These have porosity ranging from 14 to 25 percent and permeability from 10 to 500 mD. At least 14 fields exceed 4 km in depth, and several are deeper than 7 km.

TRAPS AND SEALS: Trap types are normal and faulted anticlines related to salt diapirism, pinch-outs and unconformities. Average size of structure is 6 to 30 km².

REFERENCES:

- Ionescu, N., 1994, Exploration history and hydrocarbon prospects in Romania, *in* Popescu, B.M., ed., Hydrocarbons of Eastern Central Europe—Habitat, exploration, and production history: Berlin, Springer-Verlag, p. 217-248.
- Stefanescu, M.O., and Popescu, B.M., 1993, Romania's petroleum systems: American Association of Petroleum Geologists Bulletin, v. 77, no. 9, p. 1668.



Romania Ploiesti Zone Assessment Unit - 40610202

EXPLANATION

- Hydrography
- Shoreline
- 4061 Geologic province code and boundary
- Country boundary
- Gas field centerpoint
- Oil field centerpoint
- 40610202 — Assessment unit code and boundary

Projection: Robinson. Central meridian: 0

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

Date:..... 5/20/99
 Assessment Geologist:..... M.J. Pawlewicz
 Region:..... Europe Number: 4
 Province:..... Carpathian-Balkanian Basin Number: 4061
 Priority or Boutique..... Priority
 Total Petroleum System:..... Dysodile Schist-Tertiary Number: 406102
 Assessment Unit:..... Romania Ploiesti Zone Number: 40610202
 * Notes from Assessor Lower 48 growth factor.

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: 26 Gas: 1
 Established (>13 fields) X Frontier (1-13 fields) Hypothetical (no fields)

Median size (grown) of discovered oil fields (mmboe):
 1st 3rd 22 2nd 3rd 33 3rd 3rd 15
 Median size (grown) of discovered gas fields (bcfg):
 1st 3rd 205 2nd 3rd 3rd 3rd

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) 3 median no. 13 max no. 35
 Gas fields:.....min. no. (>0) 1 median no. 3 max no. 5

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 10 max. size 400
 Gas in gas fields (bcfg):.....min. size 6 median size 30 max. size 200

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).....	600	1200	1800
NGL/gas ratio (bnl/mmcf).....	15	30	45
<u>Gas fields:</u>	minimum	median	maximum
Liquids/gas ratio (bnl/mmcf).....	20	40	60
Oil/gas ratio (bo/mmcf).....			

SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS

(variations in the properties of undiscovered fields)

<u>Oil Fields:</u>	minimum	median	maximum
API gravity (degrees).....	20	35	49
Sulfur content of oil (%).....	0.1	0.2	0.3
Drilling Depth (m)	500	3000	6000
Depth (m) of water (if applicable).....			
<u>Gas Fields:</u>	minimum	median	maximum
Inert gas content (%).....			
CO ₂ content (%).....			
Hydrogen-sulfide content (%).....			
Drilling Depth (m).....	500	3000	6000
Depth (m) of water (if applicable).....			

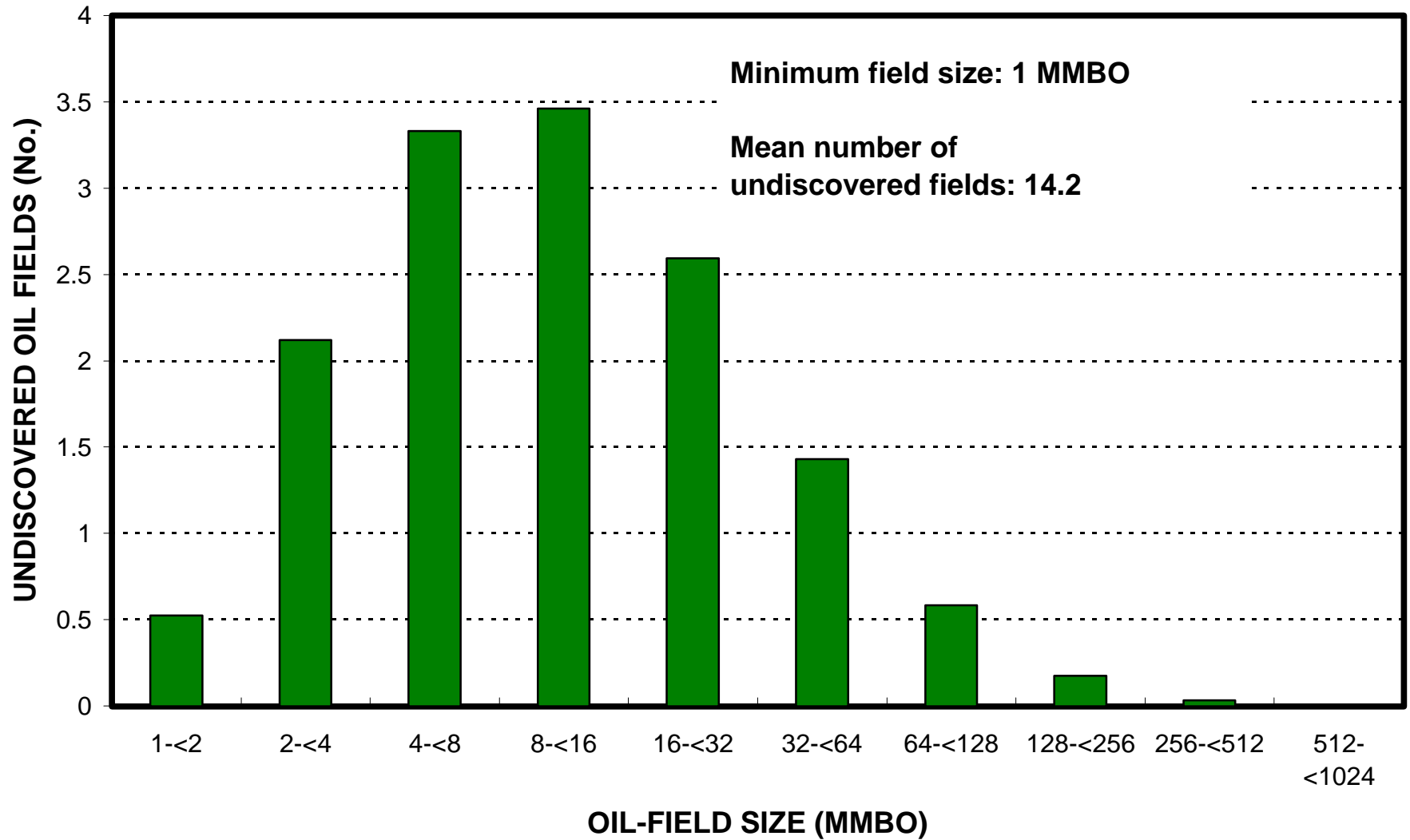
**ALLOCATION OF UNDISCOVERED RESOURCES IN THE ASSESSMENT UNIT
 TO COUNTRIES OR OTHER LAND PARCELS** (uncertainty of fixed but unknown values)

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

Romania Ploiesti Zone, AU 40610202

Undiscovered Field-Size Distribution



Romania Ploiesti Zone, AU 40610202

Undiscovered Field-Size Distribution

