Tanezzuft-Timimoun Structural/Stratigraphic Assessment Unit 20580101

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: Grand Erg/Ahnet Basin (2058)          GEOLOGIST: T.R. Klett

TOTAL PETROLEUM SYSTEM: Tanezzuft-Timimoun (205801)

ASSESSMENT UNIT: Tanezzuft-Timimoun Structural/Stratigraphic (20580101)

DESCRIPTION: This total petroleum system and corresponding assessment unit coincide with the Timimoun Basin, bounded on the north by the Tilrhemt-Oued Namous-Maharez structural axis; on the east by the Idjerane-M‘Zab structural axis; on the south by the Djoua Saddle, Azzene High, and Ougarta Range; and on the west by the Enselllement Beni Abbes (or Beni Abbes Saddle).

SOURCE ROCKS: The primary source rocks are Silurian (laterally equivalent to the Tanezzuft Formation) and Middle to Upper Devonian mudstone.

MATURATION: Petroleum is presumed to have been generated during the Carboniferous, but was halted during uplift associated with Hercynian deformation. A later phase of dry gas generation may have occurred in the Late Triassic.

MIGRATION: Migration and charge occurred during the early stages of Hercynian deformation, prior to major uplift and erosion. Petroleum migrated vertically along faults or fractures and laterally into adjacent or juxtaposed reservoirs.

RESERVOIR ROCKS: The known reservoir rocks are Ordovician marine and glacial sandstone, Devonian shallow marine sandstone, and Carboniferous deltaic to marine sandstone.

TRAPS AND SEALS: Most of the known accumulations are in high-amplitude anticlines and faulted anticlines. Intraformational Paleozoic marine mudstone is the primary seal.

REFERENCES:


Tanezzuft-Timimoun Structural/Stratigraphic Assessment Unit - 20580101

EXPLANATION

- Hydrography
- Shoreline
- Geologic province code and boundary
- Country boundary
  - Gas field centerpoint
  - Oil field centerpoint

Assessment unit code and boundary

Projection: Robinson. Central meridian: 0
SEVENTH APPROXIMATION
NEW MILLENNIUM WORLD PETROLEUM ASSESSMENT
DATA FORM FOR CONVENTIONAL ASSESSMENT UNITS

Date:………………………….. 12/4/98
Assessment Geologist:…….. T.R. Klett
Region:……………………….. Middle East and North Africa Number: 2
Province:……………………… Grand Erg/Annet Basin Number: 2058
Priority or Boutique:……….. Priority
Total Petroleum System:…….. Tanezzuft-Timimoun Number: 205801
Assessment Unit:…………… Tanezzuft-Timimoun Structural/Stratigraphic Number: 20580101

* Notes from Assessor

CHARACTERISTICS OF ASSESSMENT UNIT

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

What is the minimum field size?………. 4 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: 0 Gas: 10
Established (>13 fields) Frontier (1-13 fields) Hypothetical (no fields)
Median size (grown) of discovered oil fields (mmboe):
1st 3rd 2nd 3rd 3rd 3rd
Median size (grown) of discovered gas fields (bcfg):
1st 3rd 943 2nd 3rd 139 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) 1 median no. 2 max no. 4
Gas fields:………………………….. min. no. (>0) 4 median no. 10 max no. 20

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 4 median size 10 max. size 200
Gas in gas fields (bcfg):………………… min. size 24 median size 60 max. size 1500
**AVERAGE RATIOS FOR UNDISCOVERED FIELDS, TO ASSESS COPRODUCTS**  
(uncertainty of fixed but unknown values)

<table>
<thead>
<tr>
<th></th>
<th>Oil Fields:</th>
<th>Gas fields:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minimum</td>
<td>median</td>
</tr>
<tr>
<td>Gas/oil ratio (cfg/bo)</td>
<td>1875</td>
<td>3750</td>
</tr>
<tr>
<td>NGL/gas ratio (bngl/mmcfg)</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Liquids/gas ratio (bngl/mmcfg)</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Oil/gas ratio (bo/mmcfg)</td>
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</tbody>
</table>

**SELECTED ANCILLARY DATA FOR UNDISCOVERED FIELDS**  
(variations in the properties of undiscovered fields)

<table>
<thead>
<tr>
<th></th>
<th>Oil Fields:</th>
<th>Gas Fields:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>minimum</td>
<td>median</td>
</tr>
<tr>
<td>API gravity (degrees)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfur content of oil (%)</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Drilling Depth (m)</td>
<td>430</td>
<td>1500</td>
</tr>
<tr>
<td>Depth (m) of water (if applicable)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inert gas content (%)</td>
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<tr>
<td>CO₂ content (%)</td>
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<td></td>
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<tr>
<td>Hydrogen-sulfide content (%)</td>
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<td></td>
</tr>
<tr>
<td>Drilling Depth (m)</td>
<td>1500</td>
<td>2500</td>
</tr>
<tr>
<td>Depth (m) of water (if applicable)</td>
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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. Algeria represents 100 areal % of the total assessment unit

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<thead>
<tr>
<th></th>
<th>minimum</th>
<th>median</th>
<th>maximum</th>
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</thead>
<tbody>
<tr>
<td><strong>Oil in Oil Fields:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richness factor (unitless multiplier):</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Volume % in parcel (areal % x richness factor):</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Portion of volume % that is offshore (0-100%):</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Gas in Gas Fields:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richness factor (unitless multiplier):</td>
<td></td>
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<td>0</td>
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Tanezzuft-Timimoun Structural/Stratigraphic, AU 20580101
Undiscovered Field-Size Distribution

Minimum field size: 4 MMBO
Mean number of undiscovered fields: 2.1
Tanezzuft-Timimoun Structural/Stratigraphic, AU 20580101
Undiscovered Field-Size Distribution

Minimum field size: 24 BCFG
Mean number of undiscovered fields: 10.5