

**USGS WORLD PETROLEUM RESOURCES ASSESSMENT  
INPUT FORM FOR CONVENTIONAL ASSESSMENT UNITS (Version 6.0, September 2, 2008)**

**IDENTIFICATION INFORMATION**

Assessment Geologist:	<u>J.K. Pitman</u>	Date:	<u>3-May-11</u>
Region:	<u>Middle East and North Africa</u>	Number:	<u>2</u>
Province:	<u>Ma'Rib-Al Jawf/Masila Basin</u>	Number:	<u>2004</u>
Total Petroleum System:	<u>Madbi-Amran-Qishn</u>	Number:	<u>200401</u>
Assessment Unit:	<u>Ma'Rib-Al Jawf/Shabwah/Masila Grabens</u>	Number:	<u>20040101</u>
Scenario:		Number:	
Based on Data as of:	<u>IHS (2009)</u>		
Notes from Assessor:	<u>NRG Field Reserve Growth Factor, 30 yrs</u>		

**CHARACTERISTICS OF ASSESSMENT UNIT**

Area of assessment unit: 155,460 square kilometers

Minimum assessed accumulation size: 5 MMBOE (grown)

No. of discovered accumulations exceeding minimum size: Oil: 55 Gas: 19

<b>Uncertainty Class:</b>	Check One	Number
Producing fields	<u>X</u>	<u>          </u>
Discoveries	<u>          </u>	<u>          </u>
Wells	<u>          </u>	<u>          </u>
Seismic	<u>          </u>	<u>          </u>
No seismic	<u>          </u>	<u>          </u>

Median size (grown) of discovered oil accumulations (MMBO):			
	1st 3rd <u>44.4</u>	2nd 3rd <u>8.4</u>	3rd 3rd <u>5.3</u>
Median size (grown) of discovered gas accumulations (BCFG):			
	1st 3rd <u>568.2</u>	2nd 3rd <u>343.7</u>	3rd 3rd <u>108.8</u>

**ANALOGS USED IN ESTIMATING INPUT**

<u>Purpose</u>	<u>Analog or Analog Set</u>
1 <u>Numbers</u>	<u>Rifted passive margins</u>
2 <u>          </u>	<u>          </u>
3 <u>          </u>	<u>          </u>
4 <u>          </u>	<u>          </u>

Assessment Unit (name, no.)  
 Scenario (name, no.)

Ma'Rib-Al Jawf/Shabwah/Masila Grabens, 20040101

Probability of occurrence (0-1.0)

Scenario Probability:

Assessment-Unit Probabilities: (Adequacy for at least one undiscovered field of minimum size)

<u>Attribute</u>	<u>Probability of occurrence (0-1.0)</u>
1. <b>CHARGE:</b> Adequate petroleum charge:	<u>1.0</u>
2. <b>ROCKS:</b> Adequate reservoirs, traps, and seals:	<u>1.0</u>
3. <b>TIMING OF GEOLOGIC EVENTS:</b> Favorable timing:	<u>1.0</u>
<b>Assessment-Unit GEOLOGIC Probability</b> (Product of 1, 2, and 3):	<u>1.0</u>

### UNDISCOVERED ACCUMULATIONS

**Number of Undiscovered Accumulations:** How many undiscovered accumulations exist that are at least the minimum size?: (uncertainty of fixed but unknown values)

Total Accumulations:	minimum (>0) <u>          </u>	median <u>          </u>	maximum <u>          </u>
Oil/Gas Mix:	minimum <u>          </u>	mode <u>          </u>	maximum <u>          </u>
	<u>          </u> number of oil accumulations / number of total accumulations		
	<u>          </u> number of oil accumulations / number of gas accumulations		
	<u>          </u> number of gas accumulations / number of oil accumulations		
Oil Accumulations:	minimum <u>  1  </u>	median <u>  55  </u>	maximum <u>  135  </u>
Gas Accumulations:	minimum <u>  1  </u>	median <u>  20  </u>	maximum <u>  50  </u>

**Sizes of Undiscovered Accumulations:** What are the sizes (**grown**) of the above accumulations?: (variations in the sizes of undiscovered accumulations)

Oil in Oil Accumulations (MMBO):	minimum <u>  5  </u>	median <u>  12  </u>	maximum <u>  300  </u>
Gas in Gas Accumulations (BCFG):	minimum <u>  30  </u>	median <u>  72  </u>	maximum <u>  750  </u>

### RATIOS FOR UNDISCOVERED ACCUMULATIONS, TO ASSESS COPRODUCTS

(variations in the properties of undiscovered accumulations)

<u>Oil Accumulations:</u>	minimum	median	maximum
Gas/oil ratio (CFG/BO):	<u>  2  </u>	<u>  60  </u>	<u> 15000  </u>
NGL/gas ratio (BNGL/MMCFG):	<u>  3  </u>	<u>  27  </u>	<u>  46  </u>
 <u>Gas Accumulations:</u>	 minimum	 median	 maximum
Liquids/gas ratio (BLIQ/MMCFG):	<u>  3  </u>	<u>  23  </u>	<u>  76  </u>

**SELECTED ANCILLARY DATA FOR UNDISCOVERED ACCUMULATIONS**

(variations in the properties of undiscovered accumulations)

Oil Accumulations:

	minimum	median	maximum
API gravity (degrees):	15	35	45
Viscosity (centipoise):	0.4	2.7	7
Sulfur content of oil (%):	0.1	0.4	1.6
Depth (m) of water (if applicable):	0	5	10

	minimum	F75	median	F25	maximum
Drilling Depth (m):	500		2000		3600

Gas Accumulations:

	minimum	median	maximum
Inert gas content (%):			
Carbon dioxide content (%):			
Hydrogen sulfide content (%):			
Depth (m) of water (if applicable):	0	5	10

	minimum	F75	median	F25	maximum
Drilling Depth (m):	500		1700		3200

Assessment Unit (name, no.)  
Scenario (name, no.)

Ma'Rib-Al Jawf/Shabwah/Masila Grabens, 20040101

---

---

### ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO COUNTRIES

1 Offshore

17.13 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

2 Onshore portion of:

Yemen

---

82.87 area % of the AU

Oil in Oil Accumulations: 100 volume % of the AU  
Gas in Gas Accumulations: 100 volume % of the AU

3 Onshore portion of:

           area % of the AU

Oil in Oil Accumulations:            volume % of the AU  
Gas in Gas Accumulations:            volume % of the AU

4 Onshore portion of:

           area % of the AU

Oil in Oil Accumulations:            volume % of the AU  
Gas in Gas Accumulations:            volume % of the AU

5 Onshore portion of:

           area % of the AU

Oil in Oil Accumulations:            volume % of the AU  
Gas in Gas Accumulations:            volume % of the AU

6 Onshore portion of:

           area % of the AU

Oil in Oil Accumulations:            volume % of the AU  
Gas in Gas Accumulations:            volume % of the AU

**ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO PROVINCES**

1 ONSHORE portion of: Ma'Rib-Al Jawf/Masila Basin, 2004

10.58 area % of the AU

Oil in Oil Accumulations: 40.00 volume % of the AU  
Gas in Gas Accumulations: 80.00 volume % of the AU

OFFSHORE portion of: \_\_\_\_\_

\_\_\_\_\_ area % of the AU

Oil in Oil Accumulations: \_\_\_\_\_ volume % of the AU  
Gas in Gas Accumulations: \_\_\_\_\_ volume % of the AU

2 ONSHORE portion of: Shabwah Basin, 2006

13.88 area % of the AU

Oil in Oil Accumulations: 10.00 volume % of the AU  
Gas in Gas Accumulations: 10.00 volume % of the AU

OFFSHORE portion of: Shabwah Basin, 2006

7.32 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

3 ONSHORE portion of: Sharmah Rift Basin, 2007

4.52 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

OFFSHORE portion of: Sharmah Rift Basin, 2007

7.47 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

**ALLOCATIONS OF POTENTIAL ADDITIONS TO RESERVES TO PROVINCES**

4 ONSHORE portion of: Masirah Trough, 2008

0.87 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

OFFSHORE portion of: Masirah Trough, 2008

1.57 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

5 ONSHORE portion of: Masila-Jeza Basin, 2009

52.98 area % of the AU

Oil in Oil Accumulations: 50.00 volume % of the AU  
Gas in Gas Accumulations: 10.00 volume % of the AU

OFFSHORE portion of: Masila-Jeza Basin, 2009

0.77 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

6 ONSHORE portion of: Ghudun-Khasfeh Flank, 2010

0.05 area % of the AU

Oil in Oil Accumulations: 0 volume % of the AU  
Gas in Gas Accumulations: 0 volume % of the AU

OFFSHORE portion of: \_\_\_\_\_

\_\_\_\_\_ area % of the AU

Oil in Oil Accumulations: \_\_\_\_\_ volume % of the AU  
Gas in Gas Accumulations: \_\_\_\_\_ volume % of the AU