

**Tanezzuft-Sbaa Structural/Stratigraphic, Assessment Unit 20580301**  
**Assessment Results Summary**

[MMBO, million barrels of oil. BCFG, billion cubic feet of gas. MMBNGL, million barrels of natural gas liquids. MFS, minimum field size assessed (MMBO or BCFG). Prob., probability (including both geologic and accessibility probabilities) of at least one field equal to or greater than the MFS. Results shown are fully risked estimates. For gas fields, all liquids are included under the NGL (natural gas liquids) category. F95 represents a 95 percent chance of at least the amount tabulated. Other fractiles are defined similarly. Fractiles are additive under the assumption of perfect positive correlation. Shading indicates not applicable]

Field Type	MFS	Prob. (0-1)	Undiscovered Resources												Largest Undiscovered Field (MMBO or BCFG)			
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)				F95	F50	F5	Mean
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean				
Oil Fields	10	1.00	45	146	334	162	23	78	194	89	1	5	12	5	25	55	132	63
Gas Fields	60						137	443	1,360	555	1	4	14	6	72	159	792	259
Total		1.00	45	146	334	162	160	521	1,553	645	3	9	26	11				

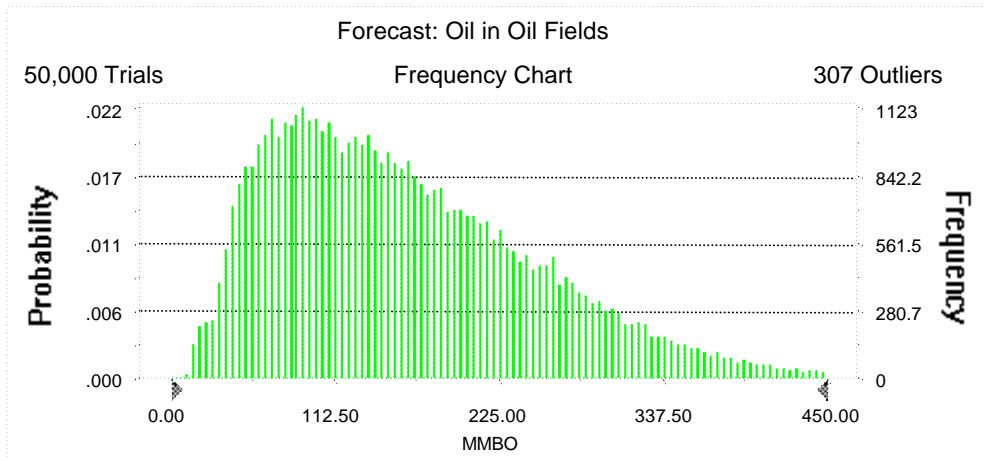
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**Tanezzuft-Sbaa Structural/Stratigraphic**  
**Monte Carlo Results**

**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 450.00 MMBO  
Entire range is from 11.62 to 616.03 MMBO  
After 50,000 trials, the standard error of the mean is 0.41

Statistics:	Value
Trials	50000
Mean	162.47
Median	146.14
Mode	---
Standard Deviation	91.65
Variance	8,399.92
Skewness	0.86
Kurtosis	3.57
Coefficient of Variability	0.56
Range Minimum	11.62
Range Maximum	616.03
Range Width	604.41
Mean Standard Error	0.41



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**Forecast: Oil in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	11.62
95%	44.97
90%	58.11
85%	69.27
80%	80.13
75%	90.65
70%	100.86
65%	111.71
60%	123.06
55%	134.50
50%	146.14
45%	158.53
40%	171.52
35%	185.88
30%	201.53
25%	218.43
20%	238.01
15%	261.46
10%	289.82
5%	334.48
0%	616.03

End of Forecast

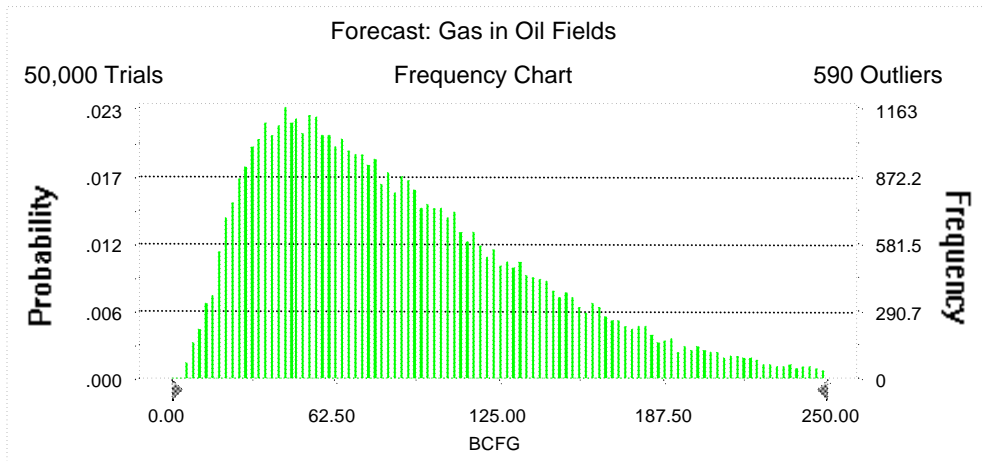
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**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 250.00 BCFG  
Entire range is from 4.21 to 439.47 BCFG  
After 50,000 trials, the standard error of the mean is 0.24

Statistics:	<u>Value</u>
Trials	50000
Mean	89.31
Median	77.97
Mode	---
Standard Deviation	54.49
Variance	2,969.53
Skewness	1.11
Kurtosis	4.49
Coefficient of Variability	0.61
Range Minimum	4.21
Range Maximum	439.47
Range Width	435.26
Mean Standard Error	0.24



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**Forecast: Gas in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	4.21
95%	22.97
90%	30.25
85%	36.32
80%	42.06
75%	47.64
70%	53.28
65%	59.00
60%	65.06
55%	71.36
50%	77.97
45%	85.00
40%	92.42
35%	100.57
30%	109.28
25%	119.54
20%	131.55
15%	145.44
10%	164.21
5%	193.53
0%	439.47

End of Forecast

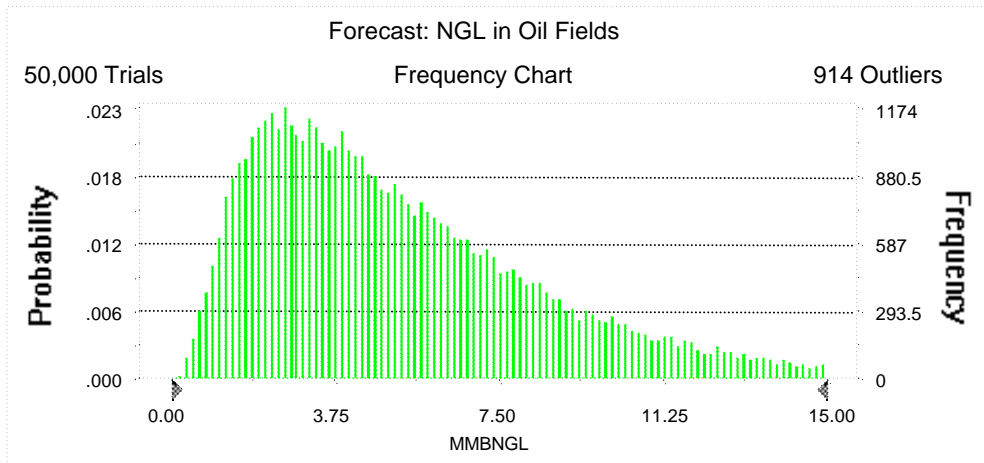
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**Forecast: NGL in Oil Fields**

Summary:

Display range is from 0.00 to 15.00 MMBNGL  
Entire range is from 0.20 to 35.90 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.02

Statistics:	Value
Trials	50000
Mean	5.37
Median	4.55
Mode	---
Standard Deviation	3.52
Variance	12.36
Skewness	1.32
Kurtosis	5.45
Coefficient of Variability	0.65
Range Minimum	0.20
Range Maximum	35.90
Range Width	35.70
Mean Standard Error	0.02



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**Forecast: NGL in Oil Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.20
95%	1.29
90%	1.70
85%	2.06
80%	2.40
75%	2.73
70%	3.08
65%	3.42
60%	3.79
55%	4.16
50%	4.55
45%	4.99
40%	5.45
35%	5.96
30%	6.52
25%	7.16
20%	7.91
15%	8.83
10%	10.16
5%	12.22
0%	35.90

End of Forecast

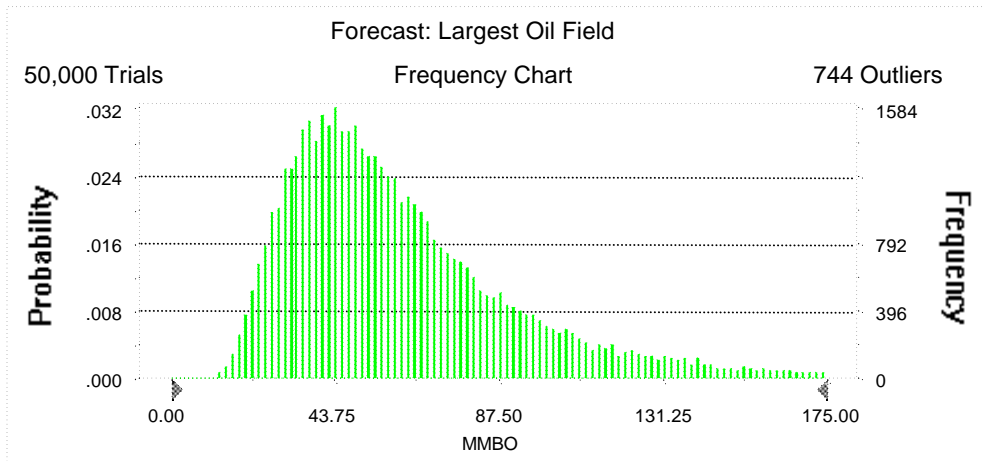
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**Forecast: Largest Oil Field**

Summary:

Display range is from 0.00 to 175.00 MMBO  
Entire range is from 11.62 to 249.82 MMBO  
After 50,000 trials, the standard error of the mean is 0.15

Statistics:	Value
Trials	50000
Mean	63.10
Median	54.70
Mode	---
Standard Deviation	34.18
Variance	1,168.21
Skewness	1.69
Kurtosis	6.86
Coefficient of Variability	0.54
Range Minimum	11.62
Range Maximum	249.82
Range Width	238.20
Mean Standard Error	0.15





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**Monte Carlo Results**

**Forecast: Largest Oil Field (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	11.62
95%	25.40
90%	29.93
85%	33.46
80%	36.64
75%	39.66
70%	42.55
65%	45.39
60%	48.40
55%	51.40
50%	54.70
45%	58.21
40%	62.04
35%	66.23
30%	70.93
25%	76.74
20%	83.91
15%	93.32
10%	106.65
5%	131.51
0%	249.82

End of Forecast

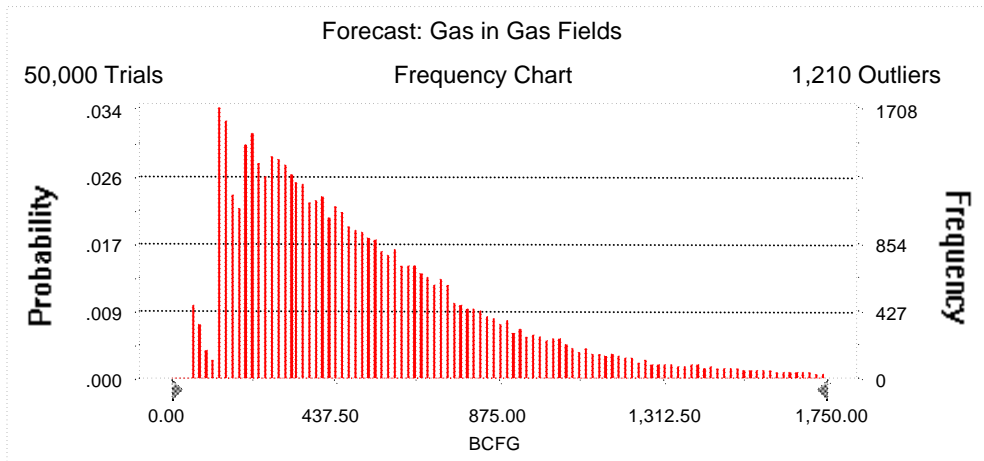
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**Monte Carlo Results**

**Forecast: Gas in Gas Fields**

Summary:

Display range is from 0.00 to 1,750.00 BCFG  
 Entire range is from 60.21 to 5,864.59 BCFG  
 After 50,000 trials, the standard error of the mean is 1.95

Statistics:	<u>Value</u>
Trials	50000
Mean	555.36
Median	442.80
Mode	---
Standard Deviation	436.92
Variance	190,898.36
Skewness	2.46
Kurtosis	12.75
Coefficient of Variability	0.79
Range Minimum	60.21
Range Maximum	5,864.59
Range Width	5,804.38
Mean Standard Error	1.95



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**Forecast: Gas in Gas Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	60.21
95%	137.03
90%	165.26
85%	202.76
80%	230.81
75%	264.33
70%	295.32
65%	328.66
60%	363.83
55%	402.54
50%	442.80
45%	484.62
40%	531.73
35%	583.65
30%	641.72
25%	706.63
20%	785.89
15%	894.13
10%	1,049.04
5%	1,359.74
0%	5,864.59

End of Forecast

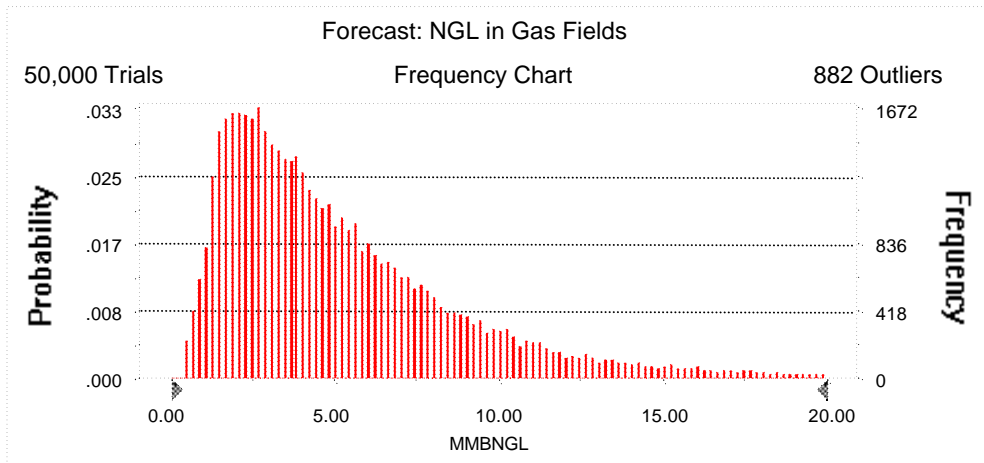
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**Monte Carlo Results**

**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 20.00 MMBNGL  
Entire range is from 0.34 to 64.56 MMBNGL  
After 50,000 trials, the standard error of the mean is 0.02

Statistics:	<u>Value</u>
Trials	50000
Mean	5.57
Median	4.30
Mode	---
Standard Deviation	4.62
Variance	21.35
Skewness	2.66
Kurtosis	15.02
Coefficient of Variability	0.83
Range Minimum	0.34
Range Maximum	64.56
Range Width	64.21
Mean Standard Error	0.02



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**Forecast: NGL in Gas Fields (cont'd)**

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.34
95%	1.27
90%	1.61
85%	1.92
80%	2.23
75%	2.53
70%	2.84
65%	3.18
60%	3.53
55%	3.90
50%	4.30
45%	4.74
40%	5.25
35%	5.76
30%	6.38
25%	7.09
20%	7.95
15%	9.11
10%	10.74
5%	14.08
0%	64.56

End of Forecast

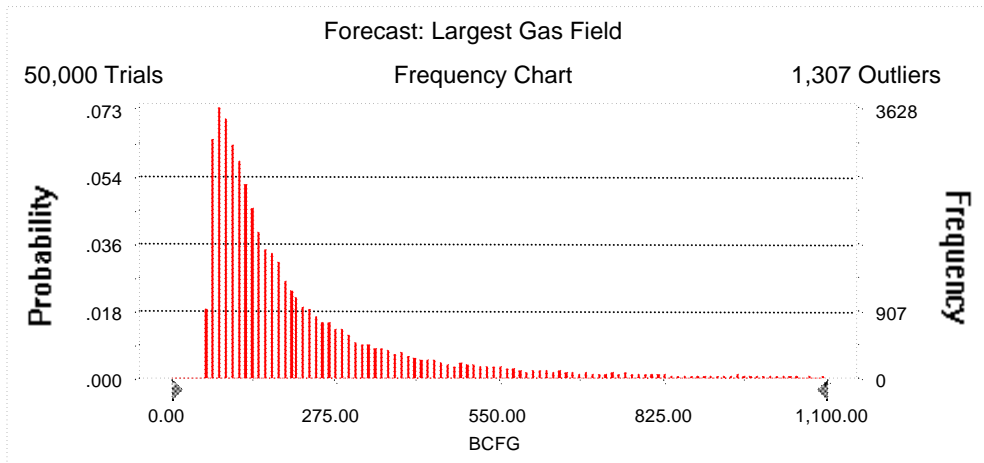
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**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 1,100.00 BCFG  
 Entire range is from 60.21 to 2,997.10 BCFG  
 After 50,000 trials, the standard error of the mean is 1.34

Statistics:	<u>Value</u>
Trials	50000
Mean	258.86
Median	159.28
Mode	---
Standard Deviation	299.61
Variance	89,765.97
Skewness	3.92
Kurtosis	23.62
Coefficient of Variability	1.16
Range Minimum	60.21
Range Maximum	2,997.10
Range Width	2,936.89
Mean Standard Error	1.34



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**Forecast: Largest Gas Field (cont'd)**

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	60.21
95%	71.56
90%	79.44
85%	87.16
80%	95.02
75%	103.18
70%	112.17
65%	121.72
60%	132.36
55%	144.66
50%	159.28
45%	175.39
40%	193.82
35%	217.33
30%	246.03
25%	282.11
20%	331.81
15%	404.54
10%	528.39
5%	791.65
0%	2,997.10

End of Forecast

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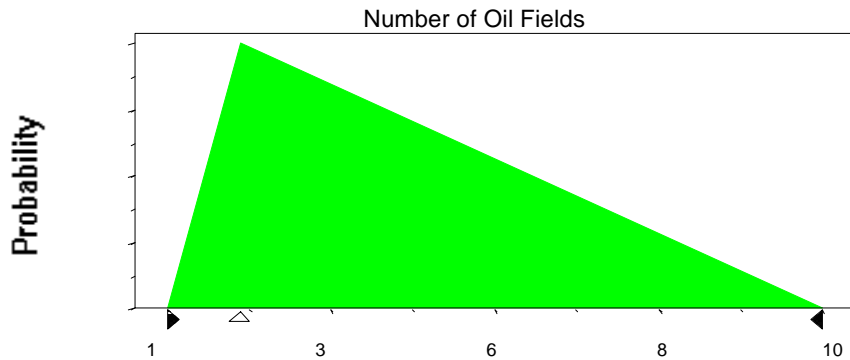
**Assumptions**

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	1
Likeliest	2
Maximum	10

Selected range is from 1 to 10  
Mean value in simulation was 4



**Assumption: Sizes of Oil Fields**

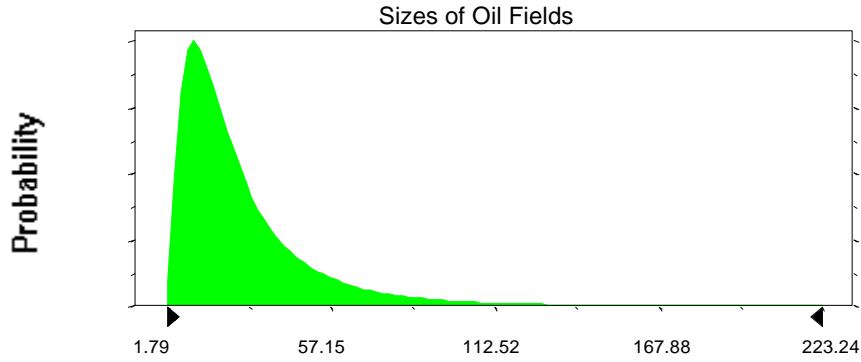
Lognormal distribution with parameters:		Shifted parameters
Mean	27.63	37.63
Standard Deviation	26.35	26.35

Selected range is from 0.00 to 240.00                      10.00 to 250.00  
Mean value in simulation was 27.62                                      37.62



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Assumption: Sizes of Oil Fields (cont'd)



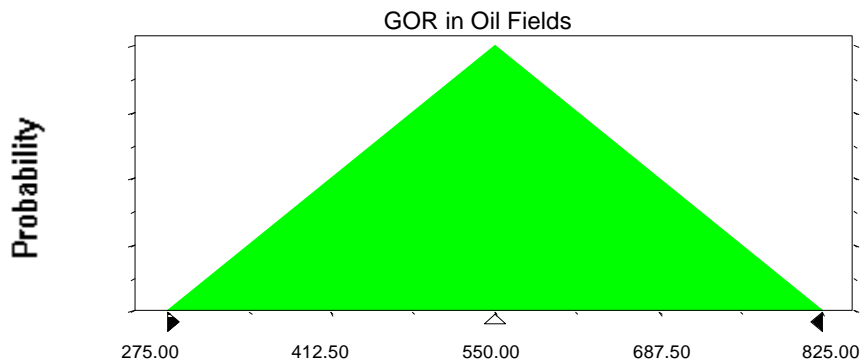
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	275.00
Likeliest	550.00
Maximum	825.00

Selected range is from 275.00 to 825.00

Mean value in simulation was 549.91



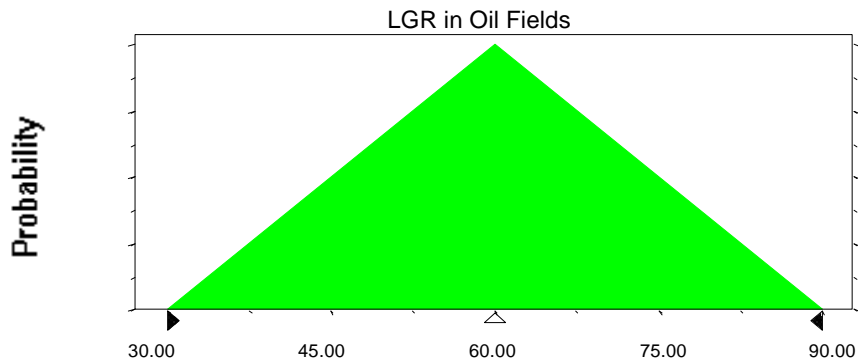
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**Assumption: LGR in Oil Fields**

Triangular distribution with parameters:

Minimum	30.00
Likeliest	60.00
Maximum	90.00

Selected range is from 30.00 to 90.00  
Mean value in simulation was 60.07



**Assumption: Number of Gas Fields**

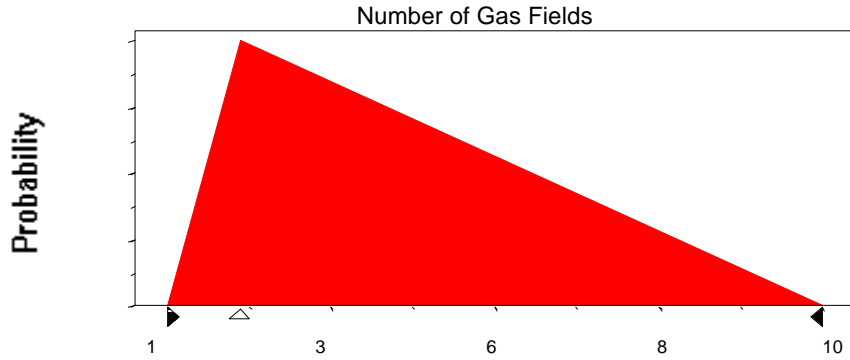
Triangular distribution with parameters:

Minimum	1
Likeliest	2
Maximum	10

Selected range is from 1 to 10  
Mean value in simulation was 4

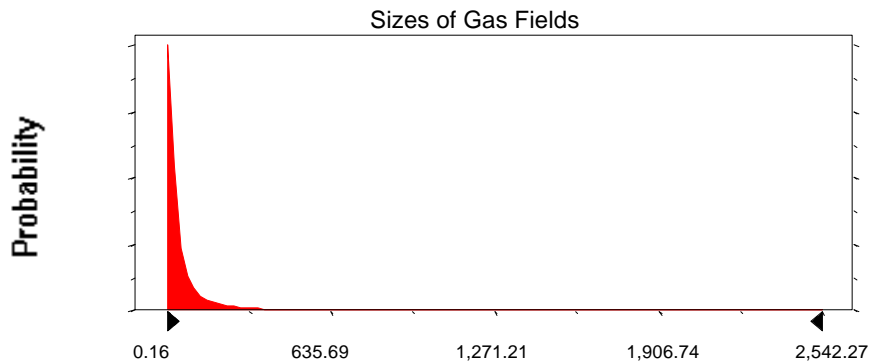
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**Monte Carlo Results**

**Assumption: Number of Gas Fields (cont'd)**



**Assumption: Sizes of Gas Fields**

Lognormal distribution with parameters:		Shifted parameters
Mean	73.69	133.69
Standard Deviation	261.33	261.33
Selected range is from 0.00 to 2,940.00		60.00 to 3,000.00
Mean value in simulation was 68.73		128.73



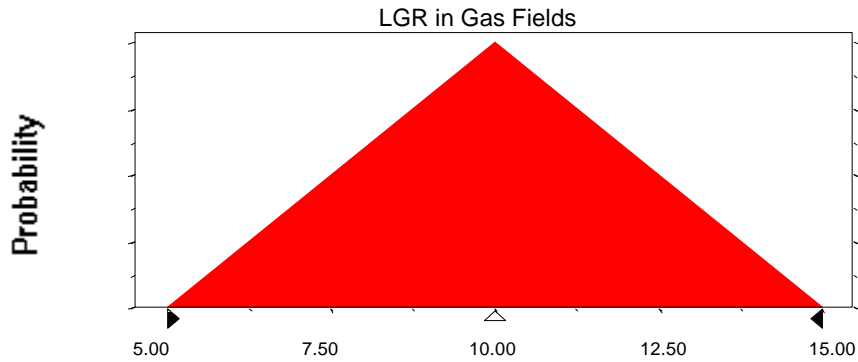
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**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	5.00
Likeliest	10.00
Maximum	15.00

Selected range is from 5.00 to 15.00  
Mean value in simulation was 10.02



End of Assumptions

Simulation started on 12/2/98 at 17:50:59  
Simulation stopped on 12/2/98 at 18:04:03