

**Gograndag-Okarem Zone and Adjacent Shelf, Assessment Unit 11120103**  
**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	5	1.00	1,251	4,478	9,239	4,764	4,677	17,367	39,084	19,033	262	1,013	2,461	1,142	256	876	2,824	1,106
Gas Fields	30		1,251	4,478	9,239	4,764	7,463	26,744	55,133	28,482	306	1,143	2,571	1,254	1,524	5,196	16,677	6,578
Total		1.00	1,251	4,478	9,239	4,764	12,140	44,111	94,218	47,515	568	2,157	5,032	2,396				

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**Monte Carlo Results**

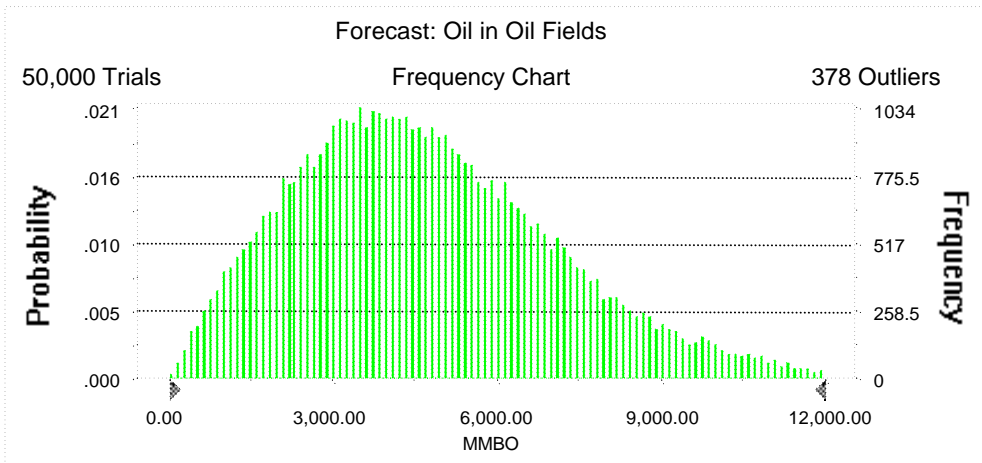
**Forecast: Oil in Oil Fields**

Summary:

Display range is from 0.00 to 12,000.00 MMBO  
 Entire range is from 55.81 to 18,730.71 MMBO  
 After 50,000 trials, the standard error of the mean is 10.96

Statistics:

	<u>Value</u>
Trials	50000
Mean	4,763.66
Median	4,478.32
Mode	---
Standard Deviation	2,449.71
Variance	6,001,081.53
Skewness	0.69
Kurtosis	3.56
Coefficient of Variability	0.51
Range Minimum	55.81
Range Maximum	18,730.71
Range Width	18,674.90
Mean Standard Error	10.96



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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	55.81
95%	1,251.03
90%	1,806.95
85%	2,240.38
80%	2,616.50
75%	2,967.26
70%	3,279.34
65%	3,580.07
60%	3,879.17
55%	4,176.44
50%	4,478.32
45%	4,797.28
40%	5,116.79
35%	5,460.06
30%	5,844.78
25%	6,257.86
20%	6,730.86
15%	7,287.01
10%	8,037.83
5%	9,239.11
0%	18,730.71

End of Forecast

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**Monte Carlo Results**

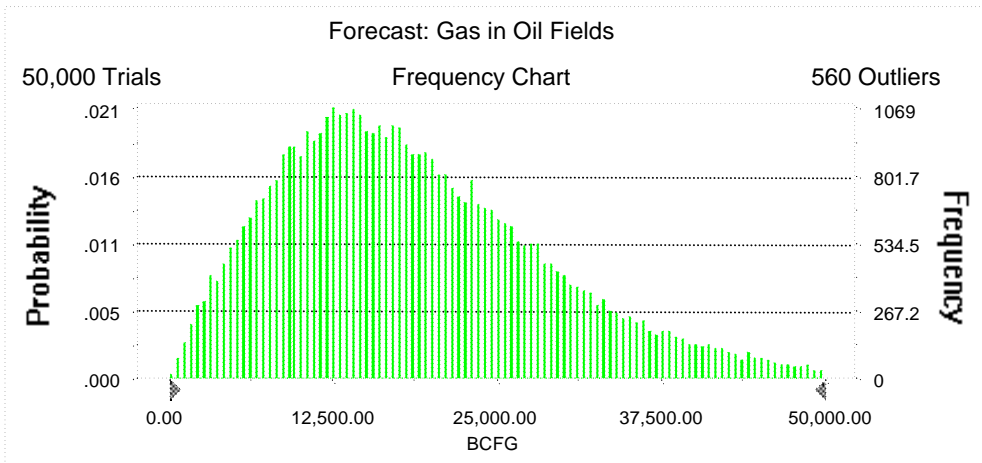
**Forecast: Gas in Oil Fields**

Summary:

Display range is from 0.00 to 50,000.00 BCFG  
 Entire range is from 150.77 to 97,716.80 BCFG  
 After 50,000 trials, the standard error of the mean is 47.81

Statistics:

	<u>Value</u>
Trials	50000
Mean	19,033.12
Median	17,367.05
Mode	---
Standard Deviation	10,690.76
Variance	114,292,417.18
Skewness	0.95
Kurtosis	4.30
Coefficient of Variability	0.56
Range Minimum	150.77
Range Maximum	97,716.80
Range Width	97,566.03
Mean Standard Error	47.81



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	150.77
95%	4,676.53
90%	6,772.83
85%	8,449.99
80%	9,823.91
75%	11,178.21
70%	12,438.79
65%	13,627.81
60%	14,799.51
55%	16,075.14
50%	17,367.05
45%	18,662.48
40%	20,079.89
35%	21,614.15
30%	23,289.22
25%	25,108.31
20%	27,271.09
15%	29,791.81
10%	33,358.79
5%	39,084.07
0%	97,716.80

End of Forecast

**11120103**  
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**Monte Carlo Results**

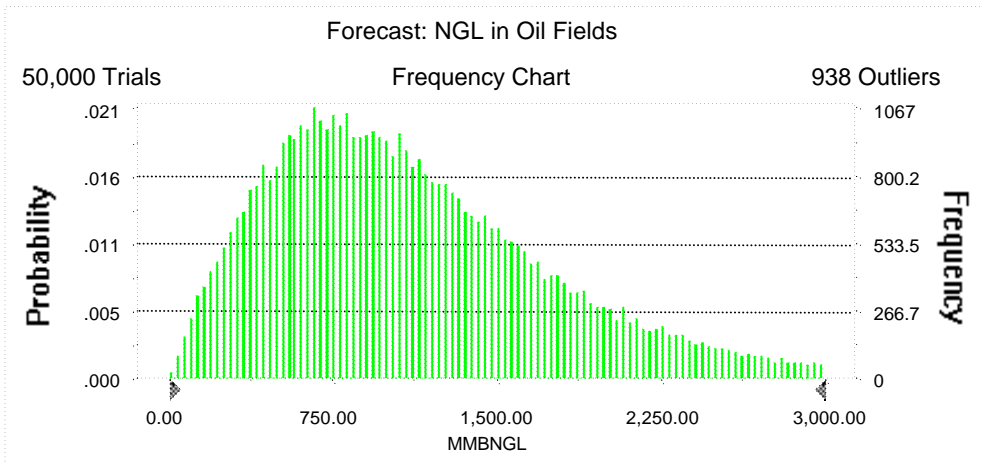
**Forecast: NGL in Oil Fields**

**Summary:**

Display range is from 0.00 to 3,000.00 MMBNGL  
 Entire range is from 7.33 to 6,845.31 MMBNGL  
 After 50,000 trials, the standard error of the mean is 3.11

**Statistics:**

	<u>Value</u>
Trials	50000
Mean	1,141.86
Median	1,013.32
Mode	---
Standard Deviation	695.72
Variance	484,022.37
Skewness	1.20
Kurtosis	5.26
Coefficient of Variability	0.61
Range Minimum	7.33
Range Maximum	6,845.31
Range Width	6,837.98
Mean Standard Error	3.11



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**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	7.33
95%	262.10
90%	379.97
85%	475.03
80%	558.77
75%	636.04
70%	708.06
65%	782.27
60%	855.89
55%	935.01
50%	1,013.32
45%	1,095.16
40%	1,182.78
35%	1,280.28
30%	1,385.40
25%	1,506.06
20%	1,644.49
15%	1,822.35
10%	2,069.69
5%	2,460.87
0%	6,845.31

End of Forecast

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**Monte Carlo Results**

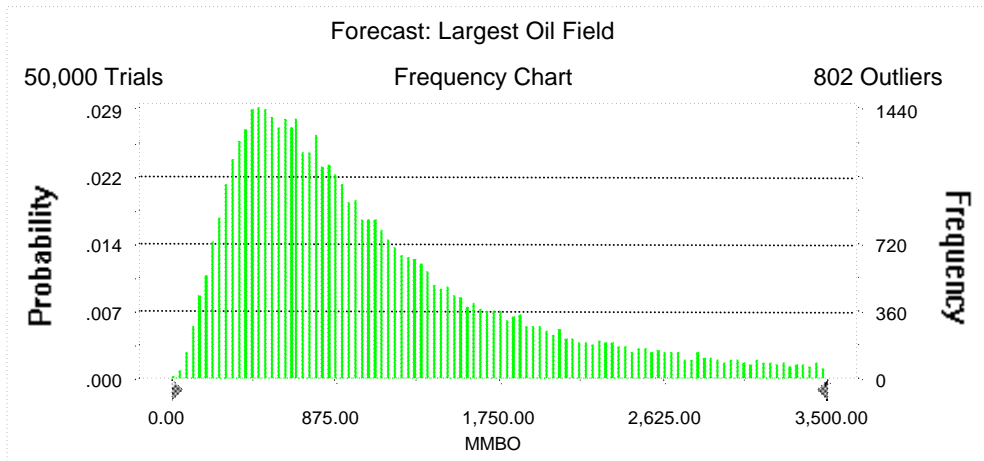
**Forecast: Largest Oil Field**

Summary:

Display range is from 0.00 to 3,500.00 MMBO  
Entire range is from 20.55 to 3,999.63 MMBO  
After 50,000 trials, the standard error of the mean is 3.53

Statistics:

	<u>Value</u>
Trials	50000
Mean	1,106.03
Median	875.55
Mode	---
Standard Deviation	788.68
Variance	622,020.83
Skewness	1.35
Kurtosis	4.51
Coefficient of Variability	0.71
Range Minimum	20.55
Range Maximum	3,999.63
Range Width	3,979.08
Mean Standard Error	3.53





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**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	20.55
95%	256.43
90%	342.82
85%	410.73
80%	472.43
75%	533.46
70%	597.22
65%	661.98
60%	728.19
55%	798.32
50%	875.55
45%	959.73
40%	1,056.24
35%	1,163.19
30%	1,290.64
25%	1,441.79
20%	1,640.33
15%	1,891.34
10%	2,258.38
5%	2,824.37
0%	3,999.63

End of Forecast

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**Monte Carlo Results**

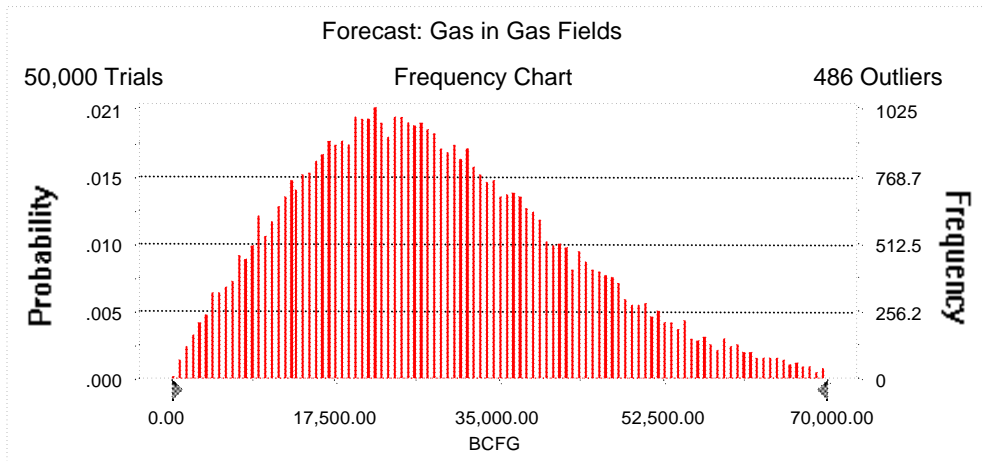
**Forecast: Gas in Gas Fields**

Summary:

Display range is from 0.00 to 70,000.00 BCFG  
 Entire range is from 289.41 to 111,859.37 BCFG  
 After 50,000 trials, the standard error of the mean is 65.80

Statistics:

	<u>Value</u>
Trials	50000
Mean	28,482.04
Median	26,744.45
Mode	---
Standard Deviation	14,713.85
Variance	216,497,464.17
Skewness	0.69
Kurtosis	3.52
Coefficient of Variability	0.52
Range Minimum	289.41
Range Maximum	111,859.37
Range Width	111,569.96
Mean Standard Error	65.80



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**Gograndag-Okarem Zone and Adjacent Shelf**  
**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	289.41
95%	7,463.07
90%	10,726.99
85%	13,314.77
80%	15,592.31
75%	17,632.68
70%	19,588.07
65%	21,366.88
60%	23,122.82
55%	24,932.76
50%	26,744.45
45%	28,592.96
40%	30,550.75
35%	32,663.73
30%	34,954.83
25%	37,438.25
20%	40,293.99
15%	43,880.40
10%	48,164.95
5%	55,133.47
0%	111,859.37

End of Forecast

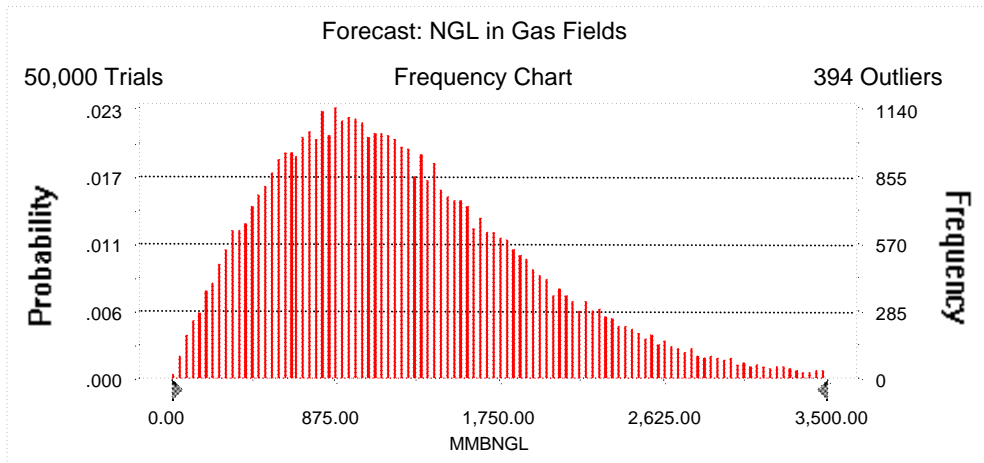
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**Gograndag-Okarem Zone and Adjacent Shelf**  
**Monte Carlo Results**

**Forecast: NGL in Gas Fields**

Summary:

Display range is from 0.00 to 3,500.00 MMBNGL  
 Entire range is from 11.70 to 6,323.25 MMBNGL  
 After 50,000 trials, the standard error of the mean is 3.17

Statistics:	<u>Value</u>
Trials	50000
Mean	1,253.82
Median	1,143.48
Mode	---
Standard Deviation	708.43
Variance	501,878.88
Skewness	0.97
Kurtosis	4.41
Coefficient of Variability	0.57
Range Minimum	11.70
Range Maximum	6,323.25
Range Width	6,311.55
Mean Standard Error	3.17



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**Monte Carlo Results**

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

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	11.70
95%	305.67
90%	443.11
85%	550.27
80%	644.75
75%	734.20
70%	818.09
65%	898.01
60%	977.66
55%	1,058.73
50%	1,143.48
45%	1,229.48
40%	1,322.48
35%	1,421.41
30%	1,531.33
25%	1,655.78
20%	1,797.71
15%	1,965.87
10%	2,207.43
5%	2,570.64
0%	6,323.25

End of Forecast

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**Monte Carlo Results**

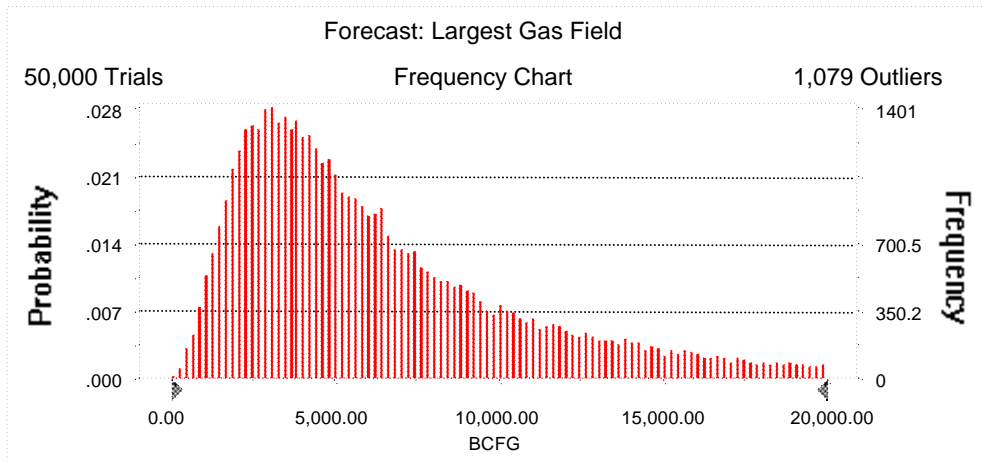
**Forecast: Largest Gas Field**

Summary:

Display range is from 0.00 to 20,000.00 BCFG  
Entire range is from 92.08 to 23,998.69 BCFG  
After 50,000 trials, the standard error of the mean is 20.97

Statistics:

	<u>Value</u>
Trials	50000
Mean	6,577.74
Median	5,195.79
Mode	---
Standard Deviation	4,689.07
Variance	21,987,369.15
Skewness	1.35
Kurtosis	4.54
Coefficient of Variability	0.71
Range Minimum	92.08
Range Maximum	23,998.69
Range Width	23,906.61
Mean Standard Error	20.97



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

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	92.08
95%	1,524.46
90%	2,028.15
85%	2,430.99
80%	2,814.15
75%	3,171.62
70%	3,547.62
65%	3,924.18
60%	4,317.08
55%	4,742.97
50%	5,195.79
45%	5,716.61
40%	6,294.75
35%	6,929.61
30%	7,691.14
25%	8,640.31
20%	9,778.18
15%	11,311.32
10%	13,394.78
5%	16,676.79
0%	23,998.69

End of Forecast

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**Monte Carlo Results**

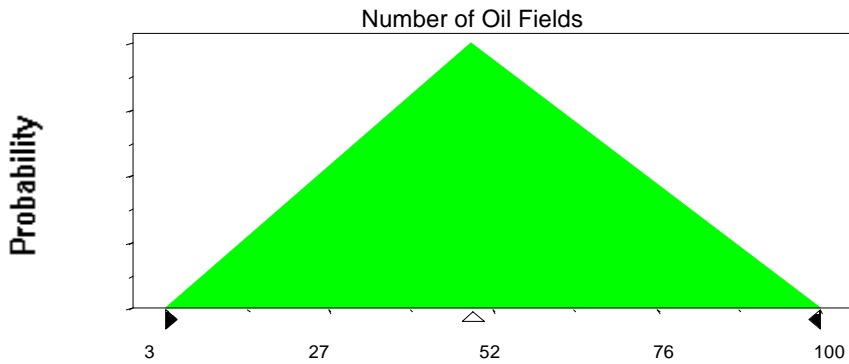
**Assumptions**

**Assumption: Number of Oil Fields**

Triangular distribution with parameters:

Minimum	3
Likeliest	48
Maximum	100

Selected range is from 3 to 100  
 Mean value in simulation was 50



**Assumption: Sizes of Oil Fields**

Lognormal distribution with parameters:

Mean	96.26
Standard Deviation	357.91

Shifted parameters

101.26
357.91

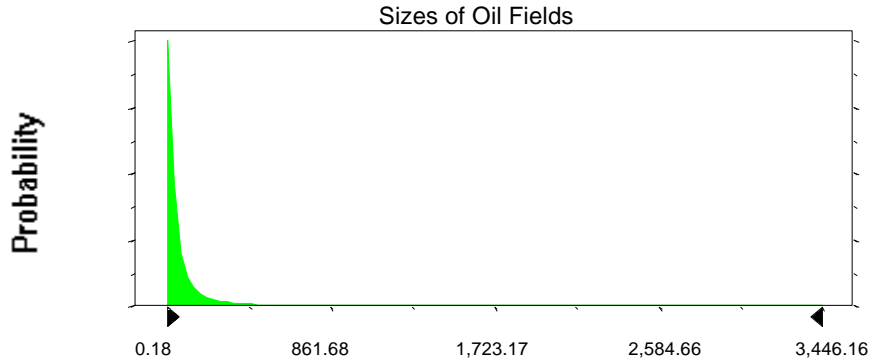
Selected range is from 0.00 to 3,995.00  
 Mean value in simulation was 87.63

5.00 to 4,000.00  
 92.63



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**Assumption: Sizes of Oil Fields (cont'd)**



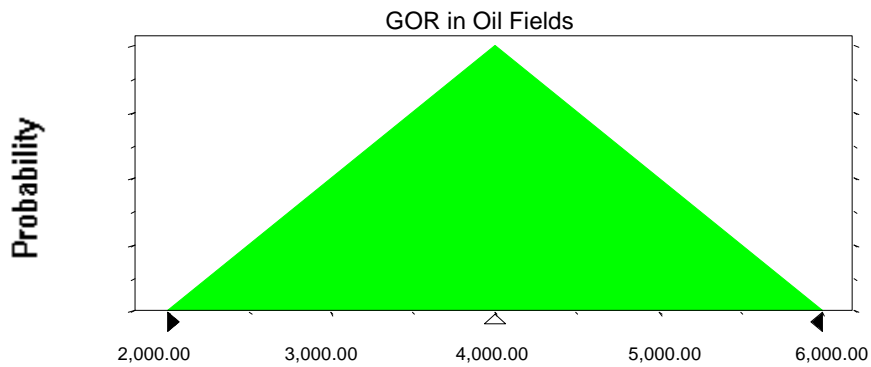
**Assumption: GOR in Oil Fields**

Triangular distribution with parameters:

Minimum	2,000.00
Likeliest	4,000.00
Maximum	6,000.00

Selected range is from 2,000.00 to 6,000.00

Mean value in simulation was 3,996.80



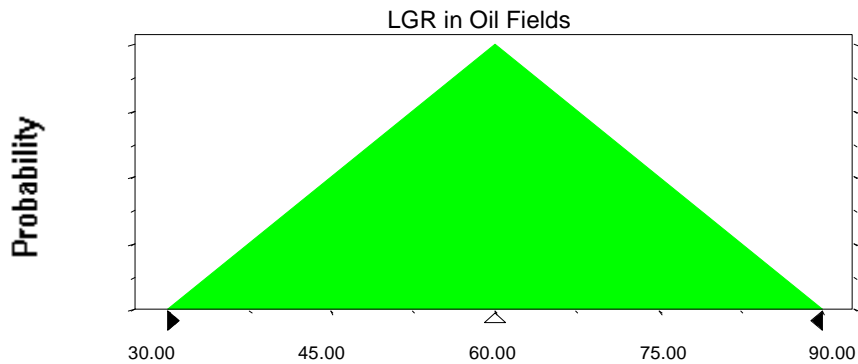
**11120103**  
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**Monte Carlo Results**

**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 59.98



**Assumption: Number of Gas Fields**

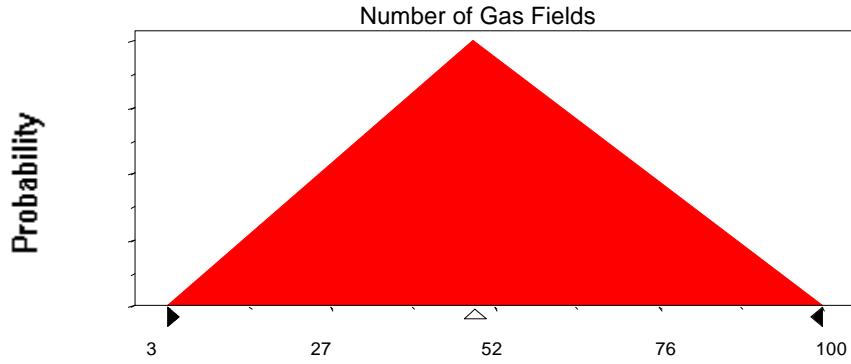
Triangular distribution with parameters:

Minimum	3
Likeliest	48
Maximum	100

Selected range is from 3 to 100  
Mean value in simulation was 50

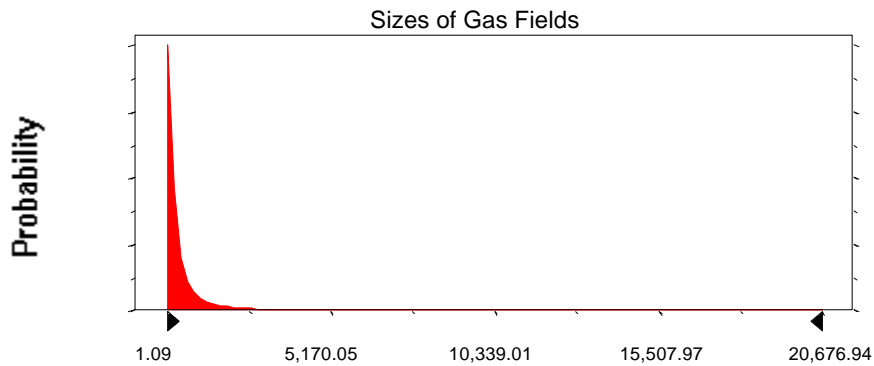
**11120103**  
**Gograndag-Okarem Zone and Adjacent Shelf**  
**Monte Carlo Results**

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



**Assumption: Sizes of Gas Fields**

Lognormal distribution with parameters:		Shifted parameters
Mean	577.55	607.55
Standard Deviation	2,147.44	2,147.44
Selected range is from 0.00 to 23,970.00		30.00 to 24,000.00
Mean value in simulation was 538.67		568.67



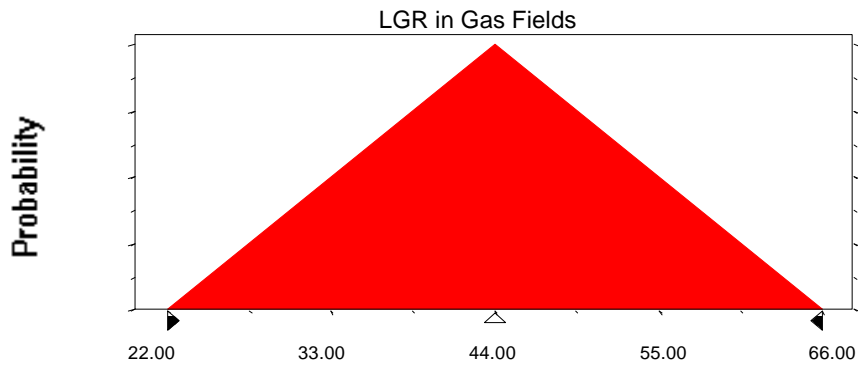
**11120103**  
**Gograndag-Okarem Zone and Adjacent Shelf**  
**Monte Carlo Results**

**Assumption: LGR in Gas Fields**

Triangular distribution with parameters:

Minimum	22.00
Likeliest	44.00
Maximum	66.00

Selected range is from 22.00 to 66.00  
Mean value in simulation was 44.04



End of Assumptions

Simulation started on 1/18/00 at 10:21:27  
Simulation stopped on 1/18/00 at 11:11:24