

**Tertiary Reservoirs, Assessment Unit 20300102
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	5,729	18,163	38,087	19,605	11,622	38,846	88,939	43,119	647	2,262	5,647	2,590	951	2,889	7,843	3,426
Gas Fields	60		5,729	18,163	38,087	19,605	14,710	46,903	96,797	50,380	605	2,003	4,505	2,213	2,475	6,402	15,474	7,312
Total		1.00	5,729	18,163	38,087	19,605	26,333	85,749	185,736	93,499	1,253	4,265	10,152	4,804				

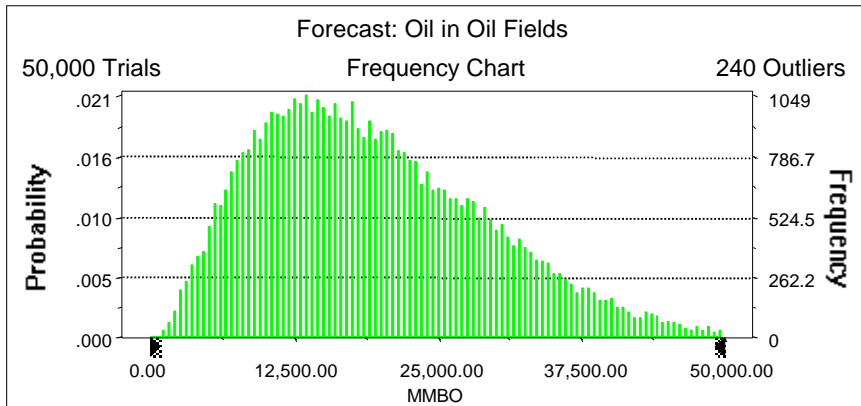
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Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 50,000.00 MMBO
Entire range is from 697.77 to 74,695.21 MMBO
After 50,000 trials, the standard error of the mean is 44.90

Statistics:	Value
Trials	50000
Mean	19,604.94
Median	18,163.41
Mode	---
Standard Deviation	10,039.18
Variance	100,785,191.55
Skewness	0.66
Kurtosis	3.13
Coefficient of Variability	0.51
Range Minimum	697.77
Range Maximum	74,695.21
Range Width	73,997.44
Mean Standard Error	44.90



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	697.77
95%	5,729.42
90%	7,681.03
85%	9,194.70
80%	10,596.44
75%	11,892.86
70%	13,120.32
65%	14,358.87
60%	15,585.40
55%	16,866.87
50%	18,163.41
45%	19,542.88
40%	20,945.05
35%	22,451.34
30%	24,162.94
25%	26,061.72
20%	28,194.44
15%	30,555.59
10%	33,540.45
5%	38,086.84
0%	74,695.21

End of Forecast

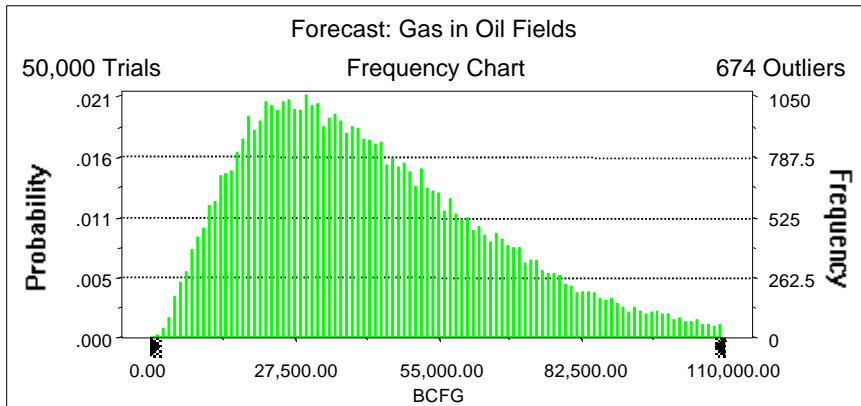
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Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 110,000.00 BCFG
Entire range is from 1,529.10 to 190,570.25 BCFG
After 50,000 trials, the standard error of the mean is 108.09

Statistics:	Value
Trials	50000
Mean	43,119.38
Median	38,845.90
Mode	---
Standard Deviation	24,169.98
Variance	584,187,720.19
Skewness	0.92
Kurtosis	3.89
Coefficient of Variability	0.56
Range Minimum	1,529.10
Range Maximum	190,570.25
Range Width	189,041.16
Mean Standard Error	108.09



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	1,529.10
95%	11,622.37
90%	15,791.35
85%	19,154.27
80%	22,085.81
75%	24,840.33
70%	27,506.62
65%	30,259.17
60%	32,943.84
55%	35,864.22
50%	38,845.90
45%	41,942.37
40%	45,203.06
35%	48,826.17
30%	52,715.68
25%	57,166.78
20%	62,281.39
15%	68,394.53
10%	76,187.96
5%	88,938.77
0%	190,570.25

End of Forecast

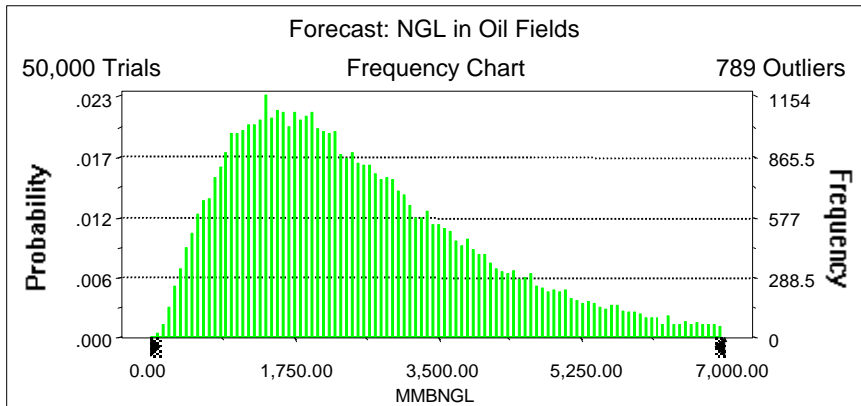
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Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 7,000.00 MMBNGL
 Entire range is from 69.08 to 12,841.65 MMBNGL
 After 50,000 trials, the standard error of the mean is 7.04

Statistics:	<u>Value</u>
Trials	50000
Mean	2,590.46
Median	2,261.97
Mode	---
Standard Deviation	1,573.79
Variance	2,476,809.15
Skewness	1.16
Kurtosis	4.71
Coefficient of Variability	0.61
Range Minimum	69.08
Range Maximum	12,841.65
Range Width	12,772.57
Mean Standard Error	7.04



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	69.08
95%	647.33
90%	891.74
85%	1,081.97
80%	1,255.55
75%	1,422.63
70%	1,584.96
65%	1,751.06
60%	1,916.22
55%	2,083.94
50%	2,261.97
45%	2,457.21
40%	2,667.04
35%	2,889.64
30%	3,131.18
25%	3,423.89
20%	3,758.00
15%	4,171.69
10%	4,740.85
5%	5,647.42
0%	12,841.65

End of Forecast

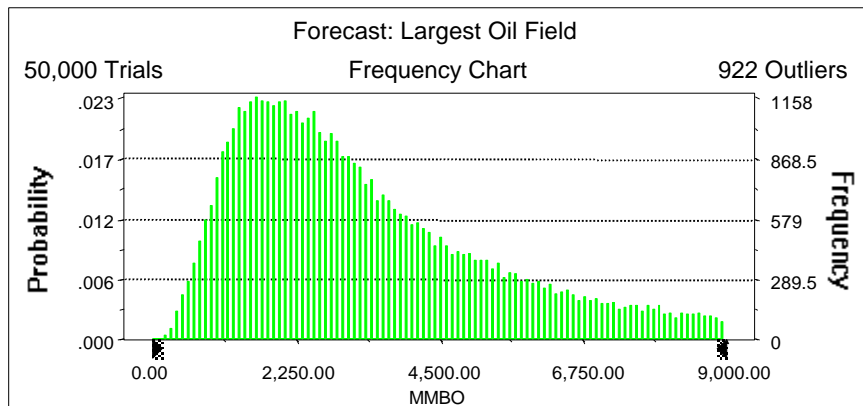
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Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 9,000.00 MMBO
Entire range is from 113.35 to 9,999.26 MMBO
After 50,000 trials, the standard error of the mean is 9.35

Statistics:	Value
Trials	50000
Mean	3,425.64
Median	2,888.95
Mode	---
Standard Deviation	2,091.68
Variance	4,375,141.51
Skewness	1.00
Kurtosis	3.42
Coefficient of Variability	0.61
Range Minimum	113.35
Range Maximum	9,999.26
Range Width	9,885.91
Mean Standard Error	9.35



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	113.35
95%	950.90
90%	1,221.48
85%	1,437.44
80%	1,639.69
75%	1,834.42
70%	2,034.06
65%	2,236.40
60%	2,446.57
55%	2,659.12
50%	2,888.95
45%	3,140.70
40%	3,419.55
35%	3,739.64
30%	4,112.43
25%	4,546.98
20%	5,069.93
15%	5,715.24
10%	6,561.66
5%	7,843.05
0%	9,999.26

End of Forecast

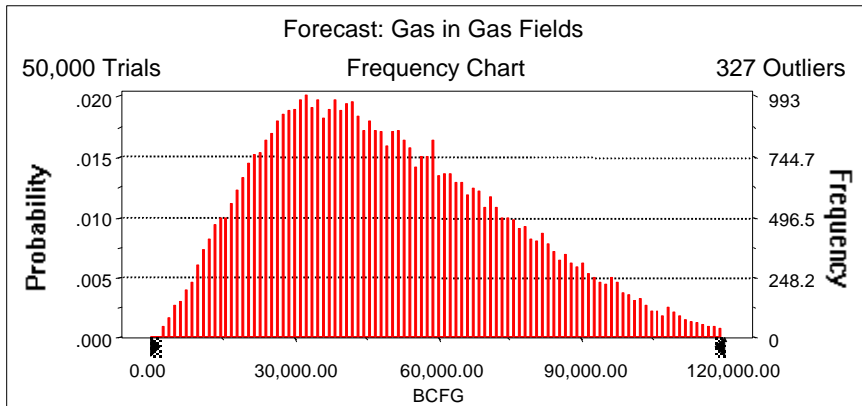
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Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 120,000.00 BCFG
 Entire range is from 1,487.00 to 158,424.11 BCFG
 After 50,000 trials, the standard error of the mean is 113.04

Statistics:	<u>Value</u>
Trials	50000
Mean	50,380.08
Median	46,903.36
Mode	---
Standard Deviation	25,275.76
Variance	638,864,124.95
Skewness	0.57
Kurtosis	2.88
Coefficient of Variability	0.50
Range Minimum	1,487.00
Range Maximum	158,424.11
Range Width	156,937.11
Mean Standard Error	113.04



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	1,487.00
95%	14,710.46
90%	20,075.24
85%	24,171.03
80%	27,688.25
75%	30,915.97
70%	33,997.99
65%	37,188.64
60%	40,341.05
55%	43,461.85
50%	46,903.36
45%	50,503.17
40%	54,100.73
35%	58,179.67
30%	62,352.34
25%	67,093.47
20%	72,297.42
15%	78,444.19
10%	85,991.70
5%	96,797.41
0%	158,424.11

End of Forecast

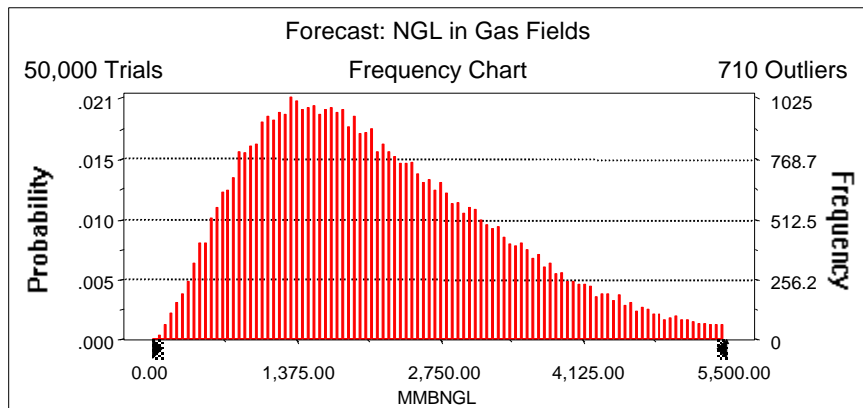
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Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 5,500.00 MMBNGL
Entire range is from 41.31 to 9,523.02 MMBNGL
After 50,000 trials, the standard error of the mean is 5.44

Statistics:	Value
Trials	50000
Mean	2,213.37
Median	2,002.99
Mode	---
Standard Deviation	1,217.23
Variance	1,481,659.46
Skewness	0.87
Kurtosis	3.72
Coefficient of Variability	0.55
Range Minimum	41.31
Range Maximum	9,523.02
Range Width	9,481.72
Mean Standard Error	5.44



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	41.31
95%	605.20
90%	825.10
85%	997.44
80%	1,149.01
75%	1,295.45
70%	1,431.15
65%	1,569.77
60%	1,710.63
55%	1,852.58
50%	2,002.99
45%	2,160.95
40%	2,329.61
35%	2,512.37
30%	2,713.88
25%	2,938.67
20%	3,190.74
15%	3,496.57
10%	3,888.70
5%	4,504.62
0%	9,523.02

End of Forecast

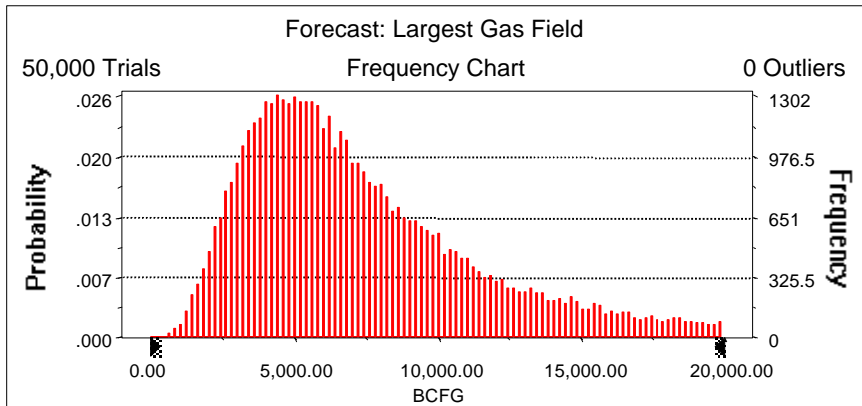
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Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 20,000.00 BCFG
Entire range is from 338.33 to 19,999.47 BCFG
After 50,000 trials, the standard error of the mean is 17.53

Statistics:	Value
Trials	50000
Mean	7,312.22
Median	6,401.73
Mode	---
Standard Deviation	3,919.01
Variance	15,358,676.94
Skewness	0.98
Kurtosis	3.52
Coefficient of Variability	0.54
Range Minimum	338.33
Range Maximum	19,999.47
Range Width	19,661.14
Mean Standard Error	17.53



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	338.33
95%	2,474.59
90%	3,101.39
85%	3,578.91
80%	4,005.15
75%	4,400.73
70%	4,788.63
65%	5,180.12
60%	5,574.31
55%	5,972.79
50%	6,401.73
45%	6,866.85
40%	7,385.32
35%	7,972.39
30%	8,641.87
25%	9,409.83
20%	10,296.92
15%	11,439.49
10%	13,086.36
5%	15,473.92
0%	19,999.47

End of Forecast

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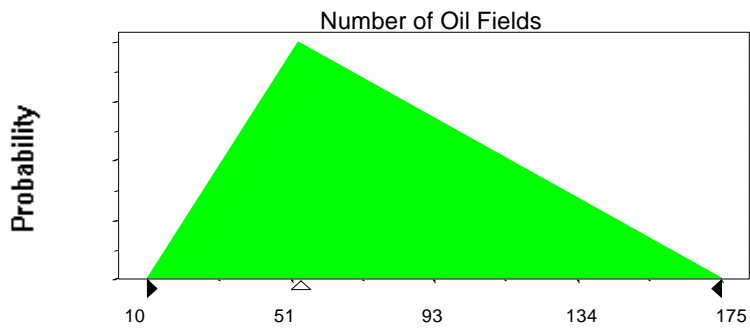
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	10
Likeliest	54
Maximum	175

Selected range is from 10 to 175
Mean value in simulation was 79



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	253.97
Standard Deviation	885.78

Shifted parameters

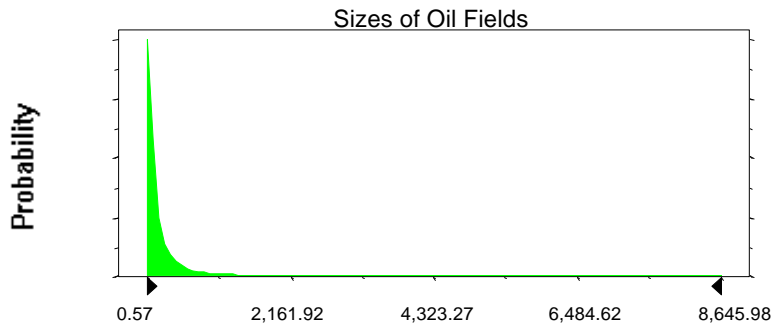
263.97
885.78

Selected range is from 0.00 to 9,990.00
Mean value in simulation was 236.16

10.00 to 10,000.00
246.16

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Assumption: Sizes of Oil Fields (cont'd)



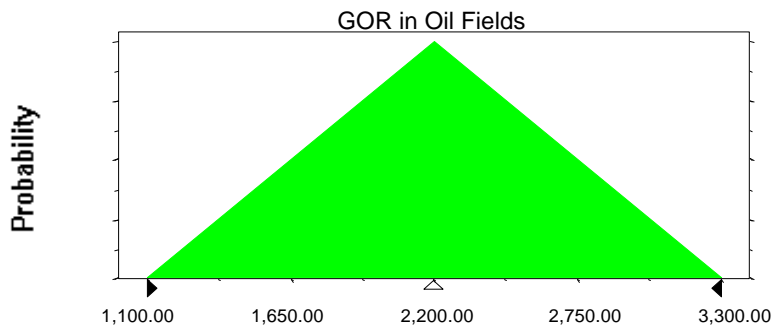
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	1,100.00
Likeliest	2,200.00
Maximum	3,300.00

Selected range is from 1,100.00 to 3,300.00

Mean value in simulation was 2,199.66



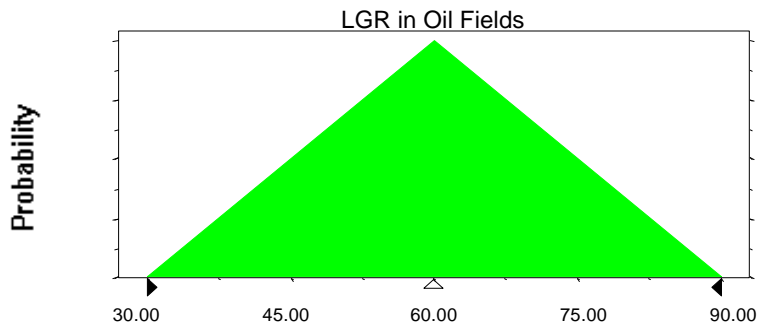
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Assumption: LGR in Oil Fields

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 60.06



Assumption: Number of Gas Fields

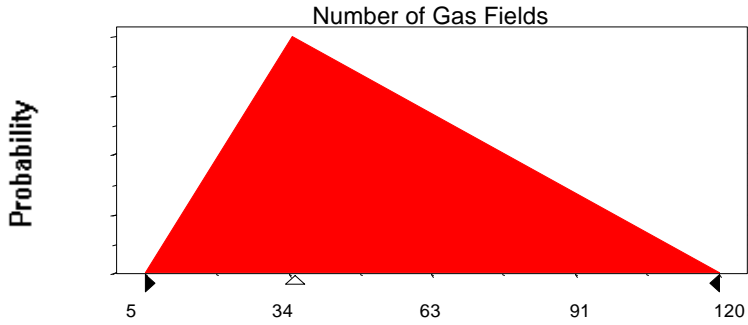
Triangular distribution with parameters:

Minimum	5
Likeliest	35
Maximum	120

Selected range is from 5 to 120
Mean value in simulation was 53

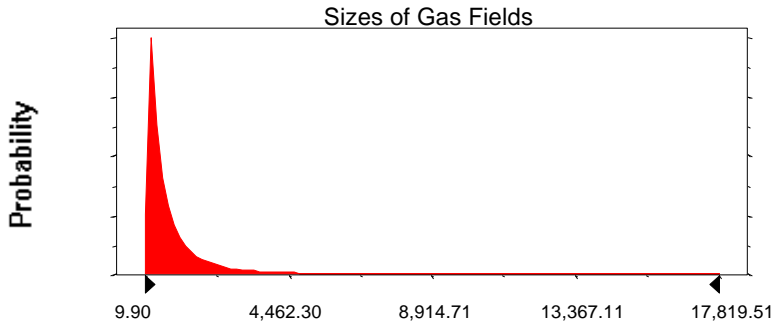
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	916.52	976.52
Standard Deviation	1,777.67	1,777.67
Selected range is from 0.00 to 19,940.00		60.00 to 20,000.00
Mean value in simulation was 880.72		940.72



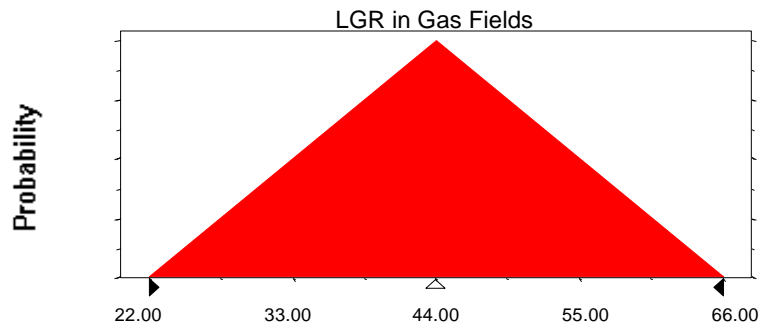
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Assumption: LGR in Gas Fields

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 43.97



End of Assumptions

Simulation started on 11/18/99 at 16:20:18
Simulation stopped on 11/18/99 at 17:28:57