

Viking Graben, Assessment Unit 40250101
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	2	1.00	2,256	6,730	14,804	7,412	2,090	6,513	15,741	7,419	116	380	991	445	258	659	1,328	709
Gas Fields	12		2,256	6,730	14,804	7,412	4,700	13,513	28,785	14,773	173	528	1,226	592	712	1,893	4,721	2,185
Total		1.00	2,256	6,730	14,804	7,412	6,790	20,027	44,527	22,192	289	908	2,216	1,036				

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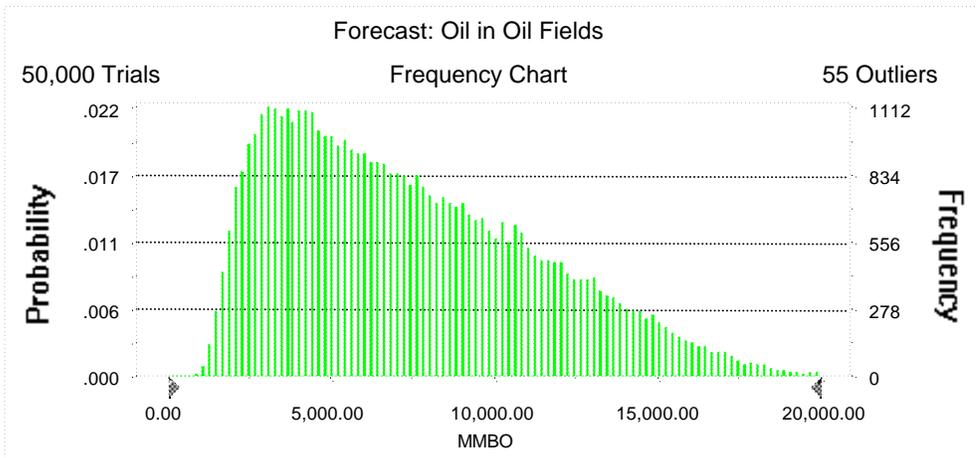
Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 20,000.00 MMBO
Entire range is from 843.76 to 25,006.30 MMBO
After 50,000 trials, the standard error of the mean is 17.68

Statistics:

	<u>Value</u>
Trials	50000
Mean	7,412.03
Median	6,729.76
Mode	---
Standard Deviation	3,952.91
Variance	15,625,490.52
Skewness	0.64
Kurtosis	2.69
Coefficient of Variability	0.53
Range Minimum	843.76
Range Maximum	25,006.30
Range Width	24,162.54
Mean Standard Error	17.68



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	843.76
95%	2,255.62
90%	2,778.63
85%	3,233.80
80%	3,688.69
75%	4,154.65
70%	4,613.12
65%	5,106.89
60%	5,628.96
55%	6,169.83
50%	6,729.76
45%	7,320.79
40%	7,942.72
35%	8,621.56
30%	9,327.93
25%	10,117.15
20%	10,958.43
15%	11,959.17
10%	13,142.47
5%	14,804.02
0%	25,006.30

End of Forecast

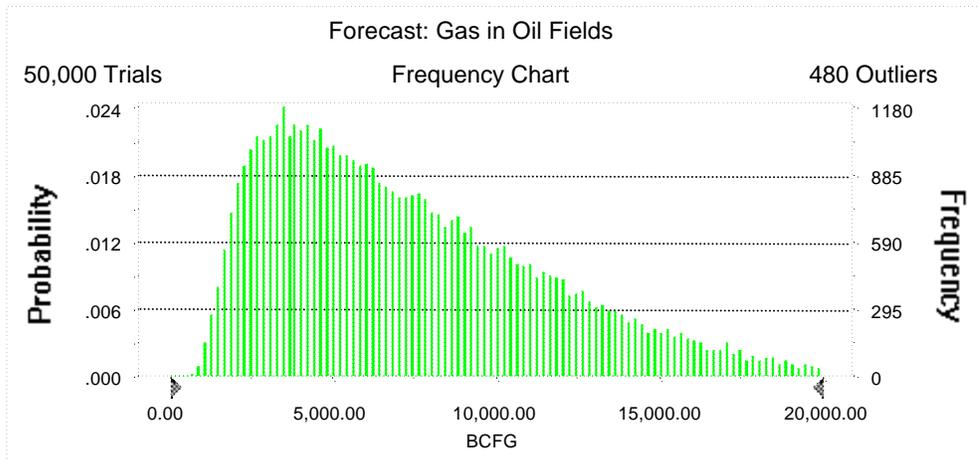
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Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 20,000.00 BCFG
 Entire range is from 632.40 to 28,453.32 BCFG
 After 50,000 trials, the standard error of the mean is 19.31

Statistics:	<u>Value</u>
Trials	50000
Mean	7,418.58
Median	6,513.41
Mode	---
Standard Deviation	4,318.52
Variance	18,649,617.12
Skewness	0.91
Kurtosis	3.53
Coefficient of Variability	0.58
Range Minimum	632.40
Range Maximum	28,453.32
Range Width	27,820.93
Mean Standard Error	19.31



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	632.40
95%	2,090.26
90%	2,621.06
85%	3,095.97
80%	3,536.29
75%	3,997.80
70%	4,459.07
65%	4,926.30
60%	5,437.11
55%	5,968.32
50%	6,513.41
45%	7,128.06
40%	7,760.11
35%	8,431.98
30%	9,183.02
25%	10,034.64
20%	10,985.76
15%	12,088.87
10%	13,544.96
5%	15,741.45
0%	28,453.32

End of Forecast

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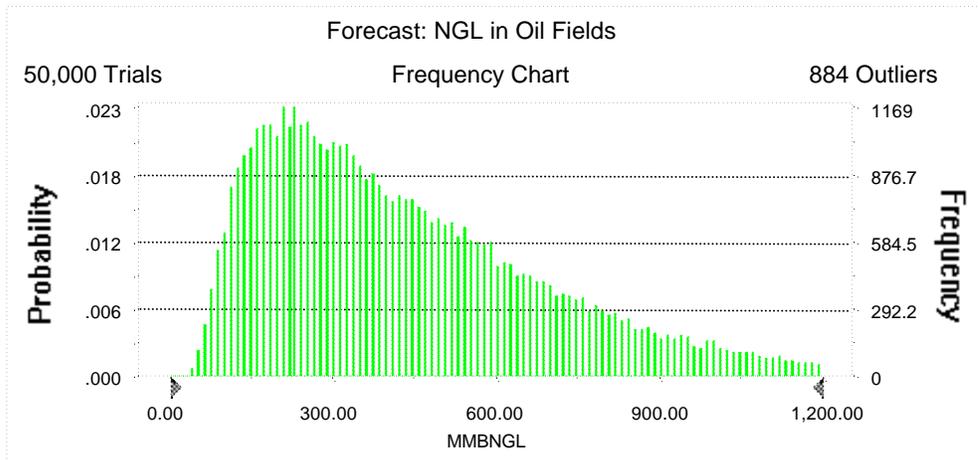
Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 1,200.00 MMBNGL
 Entire range is from 25.49 to 2,054.48 MMBNGL
 After 50,000 trials, the standard error of the mean is 1.24

Statistics:

	<u>Value</u>
Trials	50000
Mean	444.50
Median	380.18
Mode	---
Standard Deviation	278.36
Variance	77,481.57
Skewness	1.15
Kurtosis	4.46
Coefficient of Variability	0.63
Range Minimum	25.49
Range Maximum	2,054.48
Range Width	2,028.99
Mean Standard Error	1.24



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	25.49
95%	116.24
90%	148.12
85%	176.57
80%	204.47
75%	230.89
70%	257.66
65%	286.11
60%	316.25
55%	346.26
50%	380.18
45%	417.38
40%	455.96
35%	498.71
30%	544.42
25%	594.74
20%	657.55
15%	732.18
10%	830.28
5%	990.53
0%	2,054.48

End of Forecast

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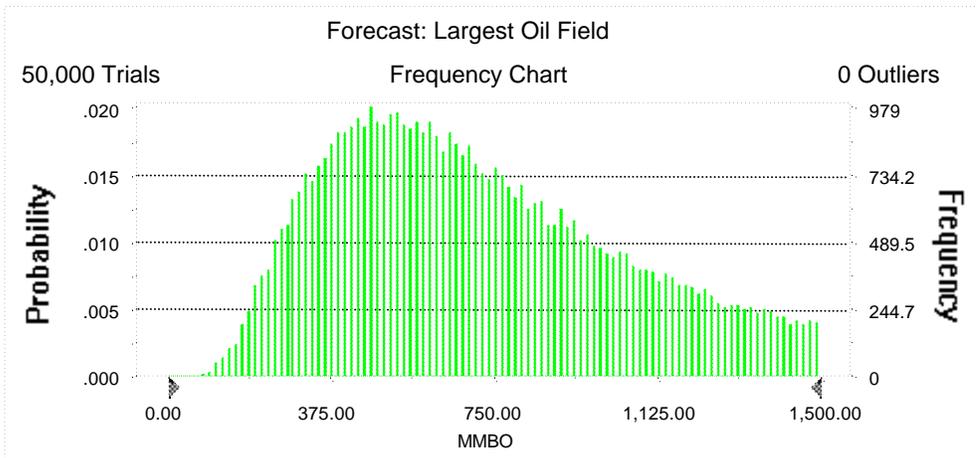
Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 1,500.00 MMBO
Entire range is from 63.64 to 1,499.95 MMBO
After 50,000 trials, the standard error of the mean is 1.45

Statistics:

	<u>Value</u>
Trials	50000
Mean	709.39
Median	658.93
Mode	---
Standard Deviation	324.16
Variance	105,081.41
Skewness	0.49
Kurtosis	2.41
Coefficient of Variability	0.46
Range Minimum	63.64
Range Maximum	1,499.95
Range Width	1,436.31
Mean Standard Error	1.45



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	63.64
95%	258.18
90%	319.22
85%	369.33
80%	412.34
75%	453.80
70%	493.69
65%	532.93
60%	574.27
55%	615.22
50%	658.93
45%	703.99
40%	754.32
35%	806.94
30%	865.76
25%	930.59
20%	1,005.04
15%	1,091.77
10%	1,196.58
5%	1,327.61
0%	1,499.95

End of Forecast

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Monte Carlo Results

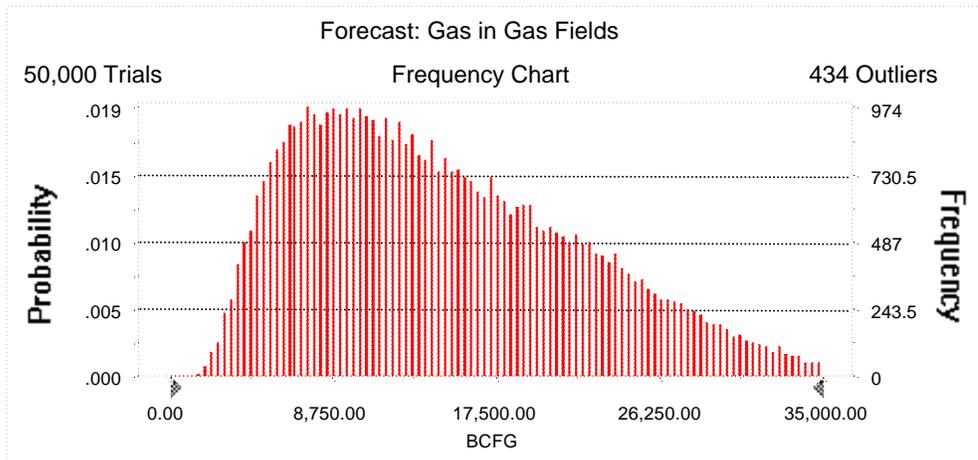
Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 35,000.00 BCFG
 Entire range is from 1,150.45 to 49,840.17 BCFG
 After 50,000 trials, the standard error of the mean is 33.84

Statistics:

	<u>Value</u>
Trials	50000
Mean	14,773.13
Median	13,513.47
Mode	---
Standard Deviation	7,566.61
Variance	57,253,653.78
Skewness	0.66
Kurtosis	2.91
Coefficient of Variability	0.51
Range Minimum	1,150.45
Range Maximum	49,840.17
Range Width	48,689.71
Mean Standard Error	33.84



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	1,150.45
95%	4,699.96
90%	5,871.00
85%	6,868.24
80%	7,793.66
75%	8,728.33
70%	9,634.68
65%	10,550.96
60%	11,512.36
55%	12,495.64
50%	13,513.47
45%	14,600.22
40%	15,758.48
35%	17,026.29
30%	18,342.25
25%	19,802.10
20%	21,472.51
15%	23,294.20
10%	25,527.22
5%	28,785.13
0%	49,840.17

End of Forecast

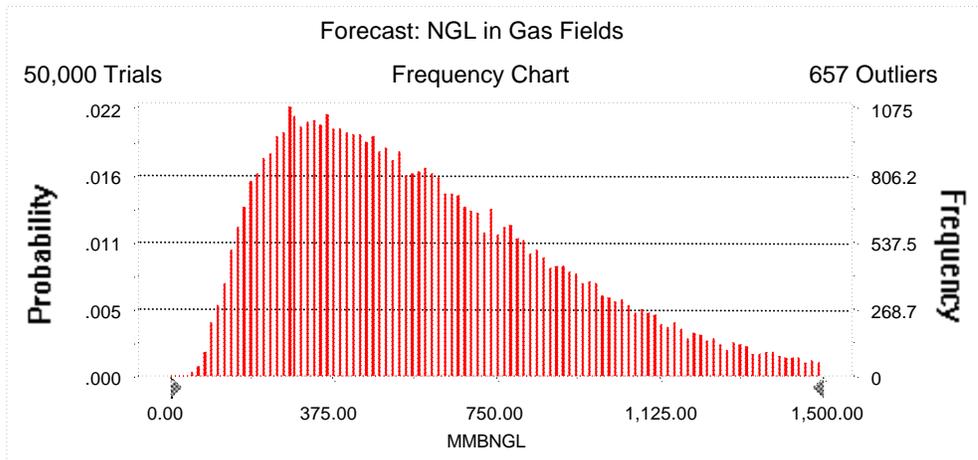
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Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 1,500.00 MMBNGL
Entire range is from 41.55 to 2,675.60 MMBNGL
After 50,000 trials, the standard error of the mean is 1.48

Statistics:	Value
Trials	50000
Mean	591.50
Median	527.84
Mode	---
Standard Deviation	331.44
Variance	109,850.97
Skewness	0.93
Kurtosis	3.77
Coefficient of Variability	0.56
Range Minimum	41.55
Range Maximum	2,675.60
Range Width	2,634.05
Mean Standard Error	1.48



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	41.55
95%	172.73
90%	220.06
85%	260.29
80%	296.45
75%	333.67
70%	370.45
65%	407.86
60%	446.59
55%	486.42
50%	527.84
45%	573.09
40%	618.59
35%	669.50
30%	725.54
25%	787.50
20%	858.41
15%	943.98
10%	1,054.78
5%	1,225.77
0%	2,675.60

End of Forecast

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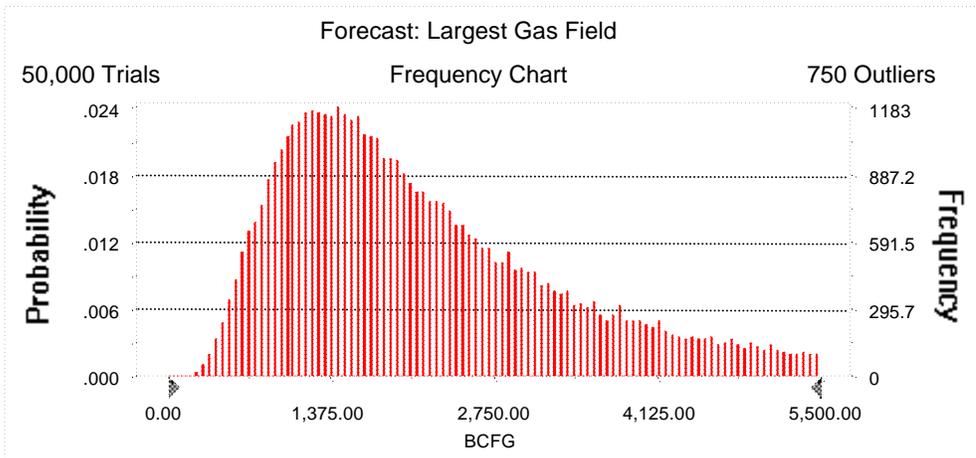
Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 5,500.00 BCFG
 Entire range is from 190.38 to 5,999.98 BCFG
 After 50,000 trials, the standard error of the mean is 5.41

Statistics:

	<u>Value</u>
Trials	50000
Mean	2,185.39
Median	1,893.29
Mode	---
Standard Deviation	1,210.00
Variance	1,464,088.67
Skewness	0.97
Kurtosis	3.39
Coefficient of Variability	0.55
Range Minimum	190.38
Range Maximum	5,999.98
Range Width	5,809.61
Mean Standard Error	5.41



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	190.38
95%	711.51
90%	889.65
85%	1,026.84
80%	1,151.41
75%	1,270.46
70%	1,388.55
65%	1,506.98
60%	1,628.35
55%	1,754.67
50%	1,893.29
45%	2,041.66
40%	2,206.73
35%	2,386.15
30%	2,597.90
25%	2,848.99
20%	3,129.43
15%	3,499.28
10%	3,993.02
5%	4,720.73
0%	5,999.98

End of Forecast

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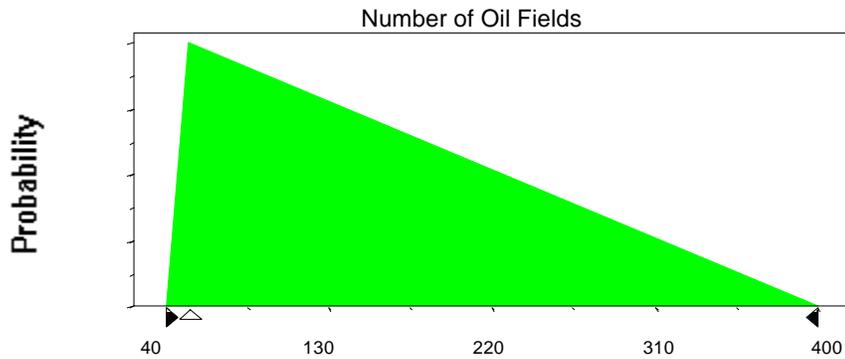
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	40
Likeliest	53
Maximum	400

Selected range is from 40 to 400
Mean value in simulation was 164



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	45.51
Standard Deviation	130.37

Shifted parameters

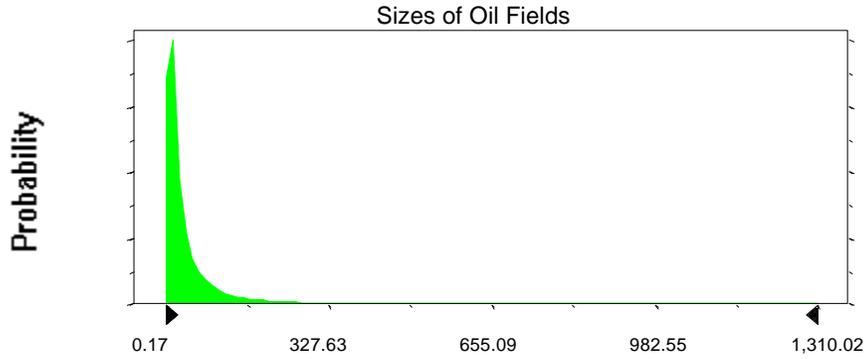
47.51
130.37

Selected range is from 0.00 to 1,498.00
Mean value in simulation was 42.99

2.00 to 1,500.00
44.99

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Assumption: Sizes of Oil Fields (cont'd)



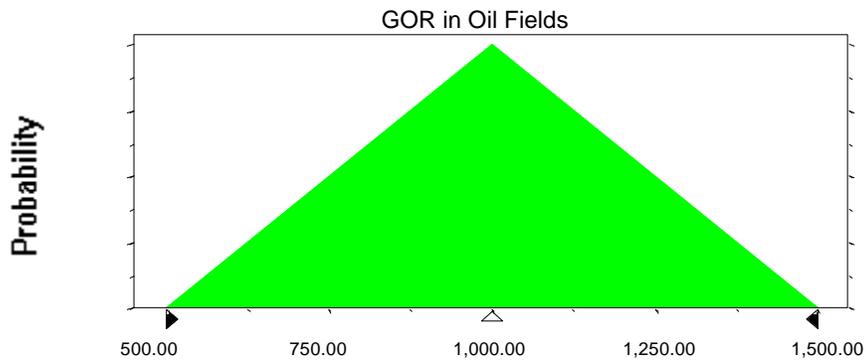
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	500.00
Likeliest	1,000.00
Maximum	1,500.00

Selected range is from 500.00 to 1,500.00

Mean value in simulation was 1,000.30



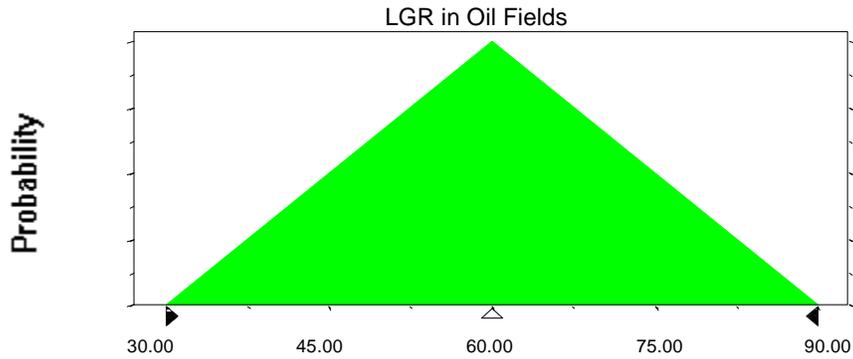
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Assumption: LGR in Oil Fields

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 59.97



Assumption: Number of Gas Fields

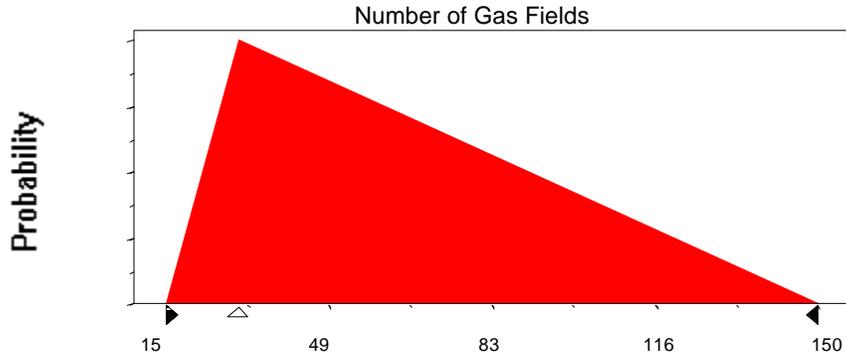
Triangular distribution with parameters:

Minimum	15
Likeliest	30
Maximum	150

Selected range is from 15 to 150
Mean value in simulation was 65

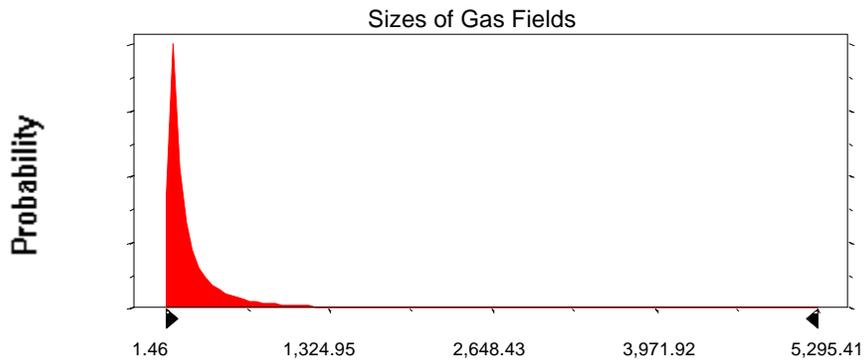
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	223.63	235.63
Standard Deviation	522.43	522.43
Selected range is from 0.00 to 5,988.00		12.00 to 6,000.00
Mean value in simulation was 213.67		225.67



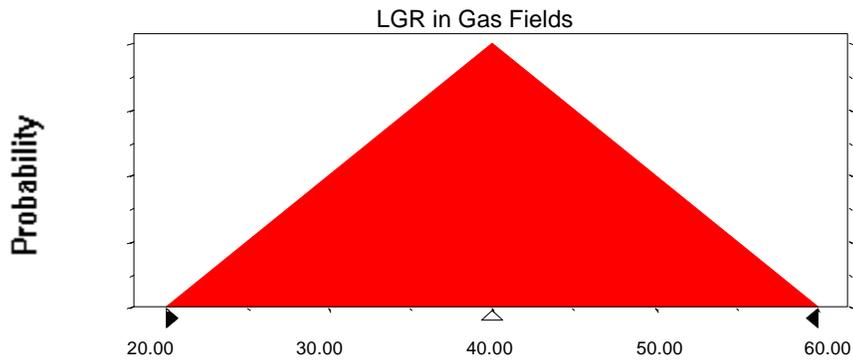
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Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	20.00
Likeliest	40.00
Maximum	60.00

Selected range is from 20.00 to 60.00
Mean value in simulation was 40.03



End of Assumptions

Simulation started on 8/4/99 at 15:40:17
Simulation stopped on 8/4/99 at 17:34:11