

Foreland Basins, Assessment Unit 60450102
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	F95	F50	F5	Mean
Oil Fields	3	1.00	211	1,099	2,841	1,254	520	2,763	7,739	3,256	29	160	482	195	56	228	792	295
Gas Fields	18						602	3,587	9,383	4,119	21	128	364	152	183	725	2,291	903
Total		1.00	211	1,099	2,841	1,254	1,122	6,350	17,122	7,375	51	289	846	348				

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Forecast: Oil in Oil Fields

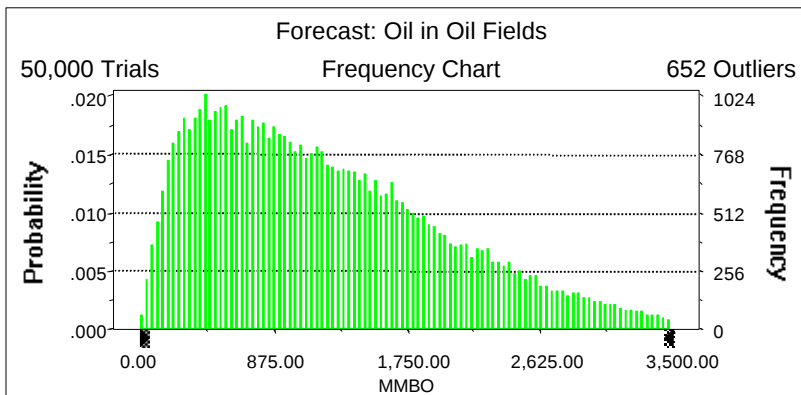
Summary:

Display range is from 0.00 to 3,500.00 MMBO

Entire range is from 12.83 to 6,580.71 MMBO

After 50,000 trials, the standard error of the mean is 3.71

Statistics:	Value
Trials	50000
Mean	1,253.82
Median	1,098.84
Mode	---
Standard Deviation	829.44
Variance	687,966.80
Skewness	0.89
Kurtosis	3.57
Coefficient of Variability	0.66
Range Minimum	12.83
Range Maximum	6,580.71
Range Width	6,567.88
Mean Standard Error	3.71



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	12.83
95%	211.27
90%	312.30
85%	408.14
80%	498.51
75%	589.57
70%	685.62
65%	786.01
60%	886.21
55%	988.43
50%	1,098.84
45%	1,213.62
40%	1,335.38
35%	1,465.12
30%	1,603.85
25%	1,754.63
20%	1,930.84
15%	2,151.18
10%	2,420.39
5%	2,841.30
0%	6,580.71

End of Forecast

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Forecast: Gas in Oil Fields

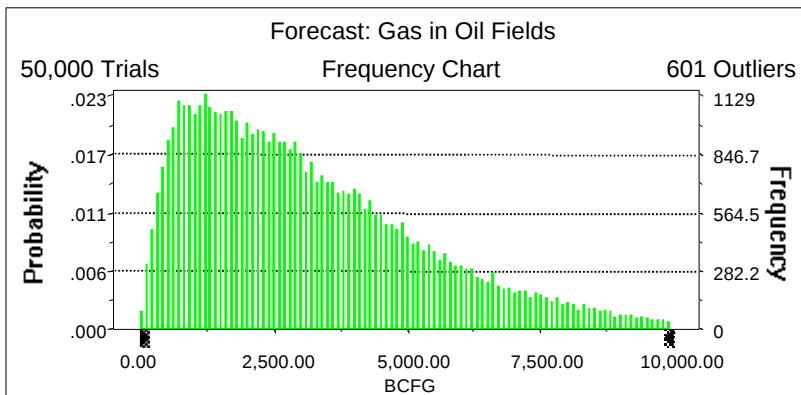
Summary:

Display range is from 0.00 to 10,000.00 BCFG

Entire range is from 29.97 to 22,585.16 BCFG

After 50,000 trials, the standard error of the mean is 10.28

Statistics:	Value
Trials	50000
Mean	3,255.91
Median	2,762.78
Mode	---
Standard Deviation	2,297.79
Variance	5,279,844.29
Skewness	1.13
Kurtosis	4.51
Coefficient of Variability	0.71
Range Minimum	29.97
Range Maximum	22,585.16
Range Width	22,555.19
Mean Standard Error	10.28



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	29.97
95%	519.55
90%	774.28
85%	1,003.69
80%	1,237.00
75%	1,471.69
70%	1,711.82
65%	1,960.97
60%	2,222.58
55%	2,489.48
50%	2,762.78
45%	3,045.84
40%	3,370.26
35%	3,717.32
30%	4,098.71
25%	4,516.75
20%	5,011.89
15%	5,624.79
10%	6,444.03
5%	7,739.21
0%	22,585.16

End of Forecast

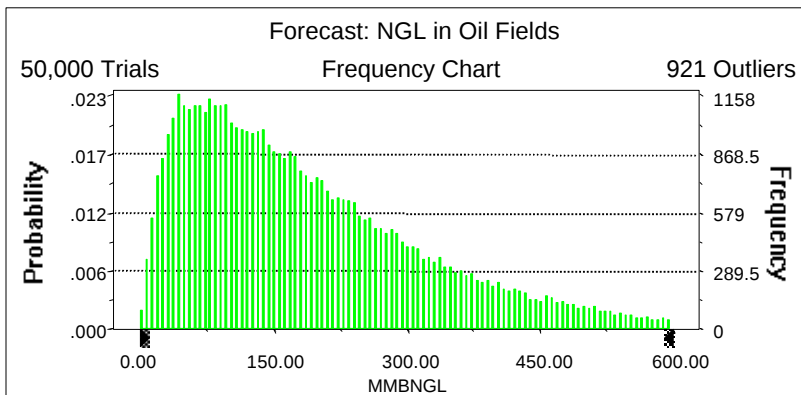
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Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 600.00 MMBNGL
Entire range is from 1.36 to 1,329.29 MMBNGL
After 50,000 trials, the standard error of the mean is 0.66

Statistics:	Value
Trials	50000
Mean	195.22
Median	160.44
Mode	---
Standard Deviation	146.52
Variance	21,467.17
Skewness	1.37
Kurtosis	5.57
Coefficient of Variability	0.75
Range Minimum	1.36
Range Maximum	1,329.29
Range Width	1,327.93
Mean Standard Error	0.66



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	1.36
95%	29.26
90%	44.16
85%	57.54
80%	71.15
75%	84.58
70%	98.18
65%	112.60
60%	128.06
55%	143.48
50%	160.44
45%	177.91
40%	197.27
35%	218.33
30%	241.77
25%	268.68
20%	300.47
15%	340.14
10%	395.24
5%	481.90
0%	1,329.29

End of Forecast

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Forecast: Largest Oil Field

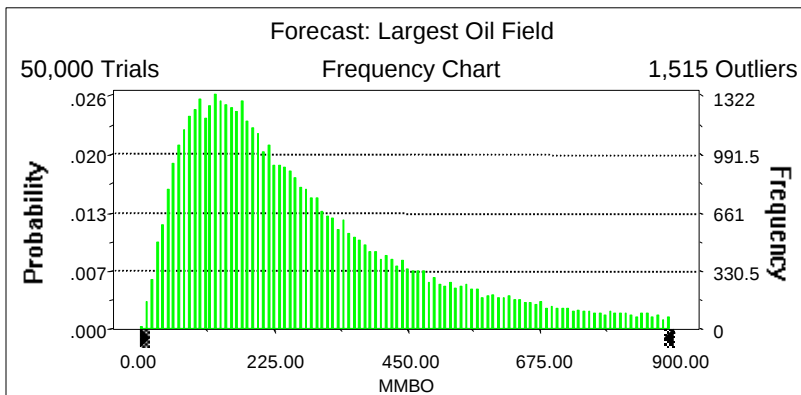
Summary:

Display range is from 0.00 to 900.00 MMBO

Entire range is from 4.90 to 1,199.97 MMBO

After 50,000 trials, the standard error of the mean is 1.02

Statistics:	Value
Trials	50000
Mean	295.15
Median	228.16
Mode	---
Standard Deviation	228.00
Variance	51,985.33
Skewness	1.47
Kurtosis	5.06
Coefficient of Variability	0.77
Range Minimum	4.90
Range Maximum	1,199.97
Range Width	1,195.07
Mean Standard Error	1.02



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	4.90
95%	55.75
90%	77.71
85%	96.59
80%	114.47
75%	132.11
70%	149.43
65%	167.40
60%	185.80
55%	205.63
50%	228.16
45%	252.56
40%	278.94
35%	309.07
30%	345.18
25%	388.13
20%	443.24
15%	514.92
10%	616.34
5%	791.84
0%	1,199.97

End of Forecast

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Forecast: Gas in Gas Fields

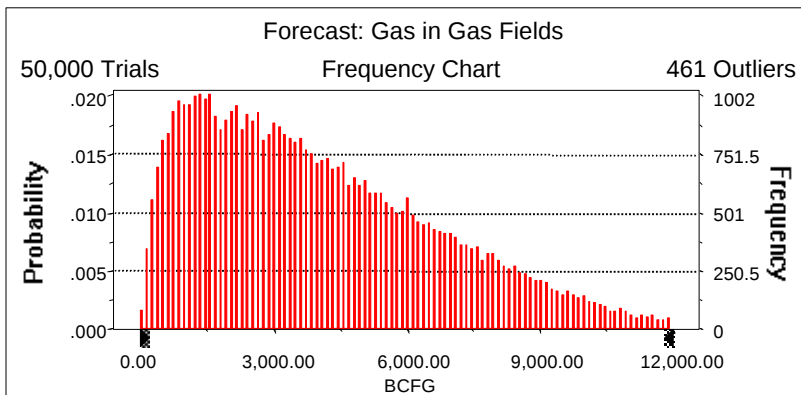
Summary:

Display range is from 0.00 to 12,000.00 BCFG

Entire range is from 30.75 to 20,185.33 BCFG

After 50,000 trials, the standard error of the mean is 12.47

Statistics:	Value
Trials	50000
Mean	4,119.47
Median	3,586.91
Mode	---
Standard Deviation	2,787.50
Variance	7,770,151.98
Skewness	0.83
Kurtosis	3.30
Coefficient of Variability	0.68
Range Minimum	30.75
Range Maximum	20,185.33
Range Width	20,154.58
Mean Standard Error	12.47



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	30.75
95%	602.14
90%	931.14
85%	1,244.61
80%	1,542.91
75%	1,863.88
70%	2,196.84
65%	2,527.15
60%	2,869.21
55%	3,222.36
50%	3,586.91
45%	3,972.70
40%	4,392.48
35%	4,841.47
30%	5,330.65
25%	5,888.47
20%	6,493.82
15%	7,205.78
10%	8,099.86
5%	9,382.63
0%	20,185.33

End of Forecast

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Forecast: NGL in Gas Fields

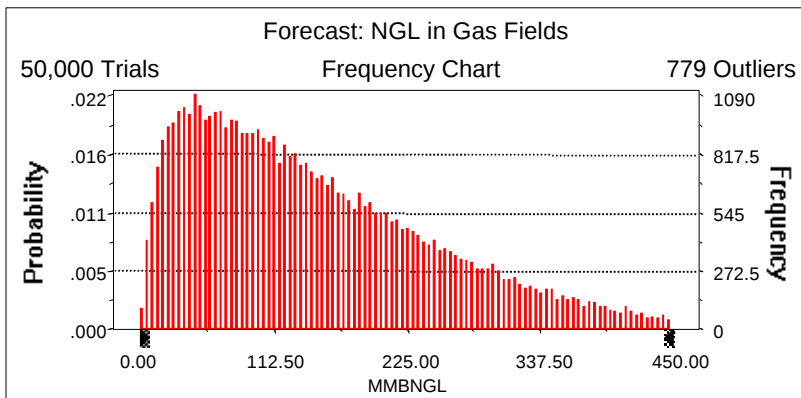
Summary:

Display range is from 0.00 to 450.00 MMBNGL

Entire range is from 0.82 to 878.87 MMBNGL

After 50,000 trials, the standard error of the mean is 0.49

Statistics:	Value
Trials	50000
Mean	152.42
Median	128.27
Mode	---
Standard Deviation	109.49
Variance	11,988.42
Skewness	1.06
Kurtosis	4.15
Coefficient of Variability	0.72
Range Minimum	0.82
Range Maximum	878.87
Range Width	878.04
Mean Standard Error	0.49



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.82
95%	21.42
90%	33.15
85%	44.31
80%	55.01
75%	66.27
70%	77.95
65%	89.67
60%	102.01
55%	114.59
50%	128.27
45%	142.60
40%	158.42
35%	175.51
30%	194.46
25%	214.93
20%	239.11
15%	268.45
10%	305.93
5%	364.44
0%	878.87

End of Forecast

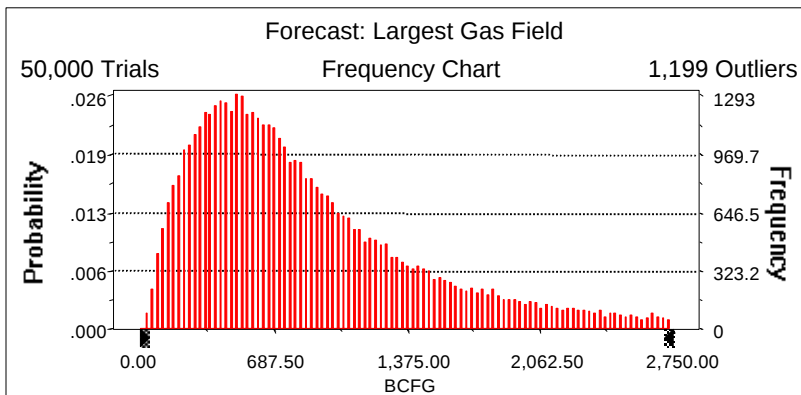
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Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 2,750.00 BCFG
Entire range is from 22.52 to 3,599.89 BCFG
After 50,000 trials, the standard error of the mean is 2.94

Statistics:	Value
Trials	50000
Mean	903.27
Median	724.70
Mode	---
Standard Deviation	657.42
Variance	432,205.81
Skewness	1.46
Kurtosis	5.18
Coefficient of Variability	0.73
Range Minimum	22.52
Range Maximum	3,599.89
Range Width	3,577.37
Mean Standard Error	2.94



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	22.52
95%	182.87
90%	257.94
85%	322.38
80%	380.15
75%	436.05
70%	491.10
65%	544.67
60%	602.01
55%	661.87
50%	724.70
45%	793.88
40%	869.59
35%	957.15
30%	1,056.95
25%	1,179.57
20%	1,325.93
15%	1,524.57
10%	1,814.79
5%	2,290.91
0%	3,599.89

End of Forecast

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Assumptions

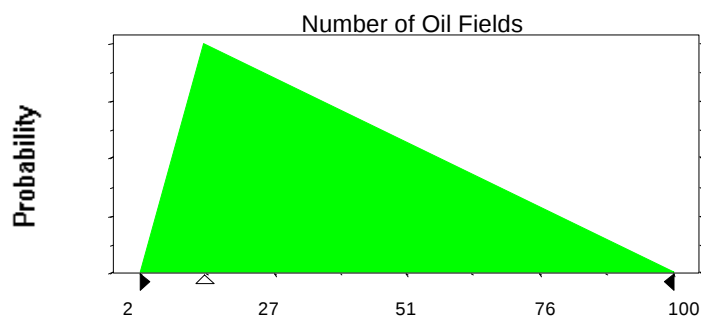
Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	2
Likeliest	14
Maximum	100

Selected range is from 2 to 100

Mean value in simulation was 39



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	31.49
Standard Deviation	105.57

Shifted parameters

34.49
105.57

Selected range is from 0.00 to 1,197.00

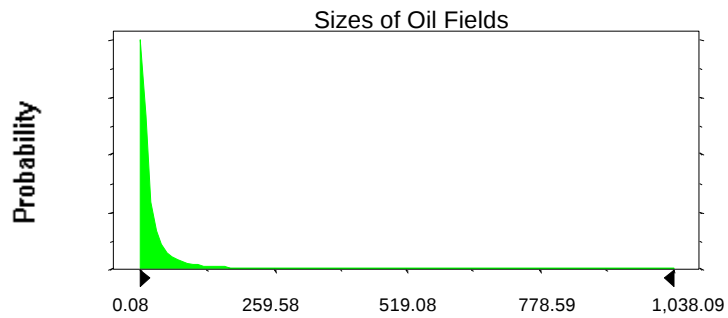
Mean value in simulation was 29.20

3.00 to 1,200.00

32.2

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Assumption: Sizes of Oil Fields (cont'd)



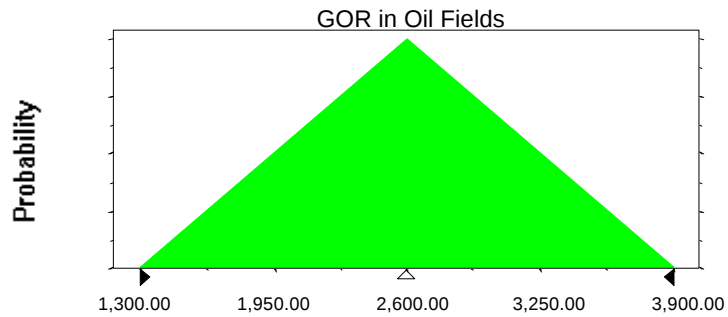
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	1,300.00
Likeliest	2,600.00
Maximum	3,900.00

Selected range is from 1,300.00 to 3,900.00

Mean value in simulation was 2,596.17



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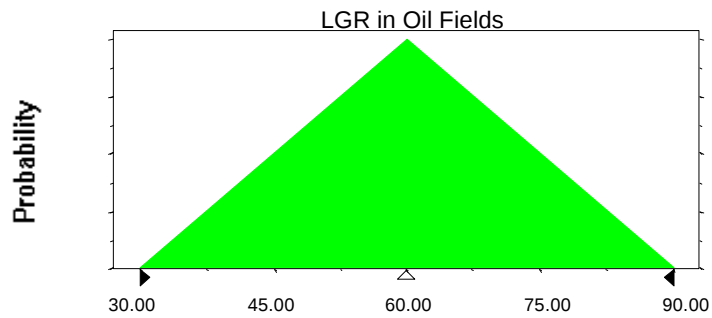
Assumption: LGR in Oil Fields

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 59.92



Assumption: Number of Gas Fields

Triangular distribution with parameters:

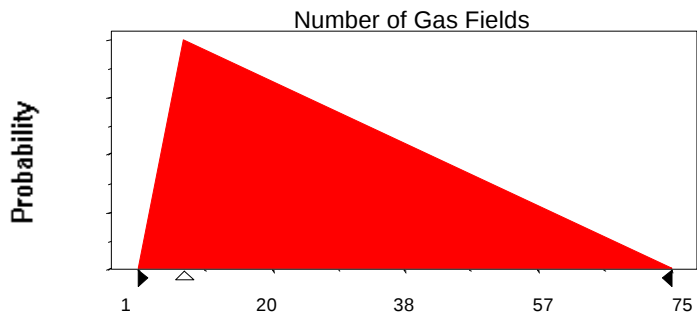
Minimum	1
Likeliest	7
Maximum	75

Selected range is from 1 to 75

Mean value in simulation was 28

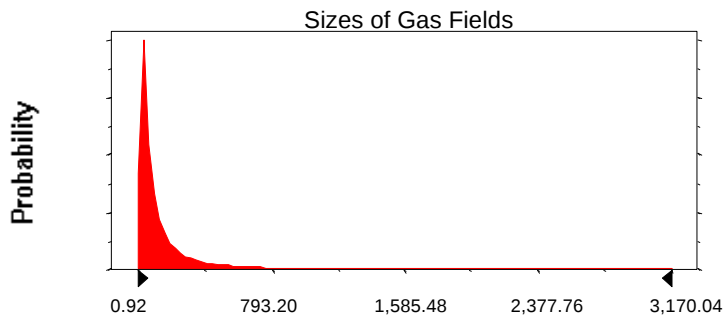
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:	Shifted parameters	
Mean	135.69	153.69
Standard Deviation	312.81	312.81
Selected range is from 0.00 to 3,582.00	18.00 to 3,600.00	
Mean value in simulation was 128.56	146.56	



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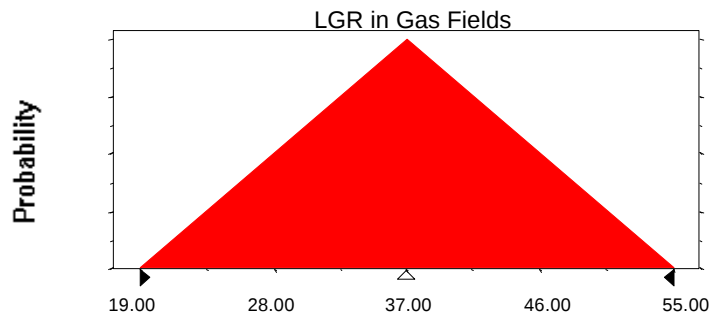
Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	19.00
Likeliest	37.00
Maximum	55.00

Selected range is from 19.00 to 55.00

Mean value in simulation was 37.01



End of Assumptions

Simulation started on 3/16/99 at 14:27:49
Simulation stopped on 3/16/99 at 15:14:12