

Dorsal de Neuquen Structure, Assessment Unit 60550103
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
Oil Fields	1	1.00	27	87	180	93	51	169	381	187	0	2	4	2	6	17	49	21
Gas Fields	6						214	692	1,423	740	3	10	23	11	53	138	380	165
Total		1.00	27	87	180	93	264	860	1,805	927	3	12	27	13				

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Monte Carlo Results

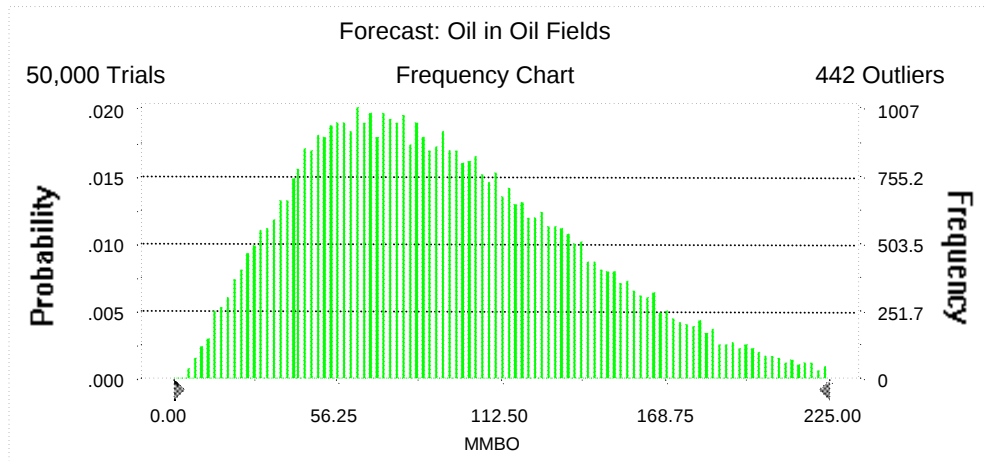
Forecast: Oil in Oil Fields

Summary:

Display range is from 0.00 to 225.00 MMBO
Entire range is from 3.11 to 388.12 MMBO
After 50,000 trials, the standard error of the mean is 0.21

Statistics:

	<u>Value</u>
Trials	50000
Mean	93.33
Median	87.07
Mode	---
Standard Deviation	47.16
Variance	2,224.15
Skewness	0.66
Kurtosis	3.24
Coefficient of Variability	0.51
Range Minimum	3.11
Range Maximum	388.12
Range Width	385.01
Mean Standard Error	0.21



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Forecast: Oil in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	3.11
95%	27.10
90%	37.04
85%	44.91
80%	51.35
75%	57.44
70%	63.34
65%	69.16
60%	75.02
55%	80.85
50%	87.07
45%	93.47
40%	100.05
35%	106.99
30%	114.73
25%	123.20
20%	132.81
15%	143.77
10%	158.16
5%	180.04
0%	388.12

End of Forecast

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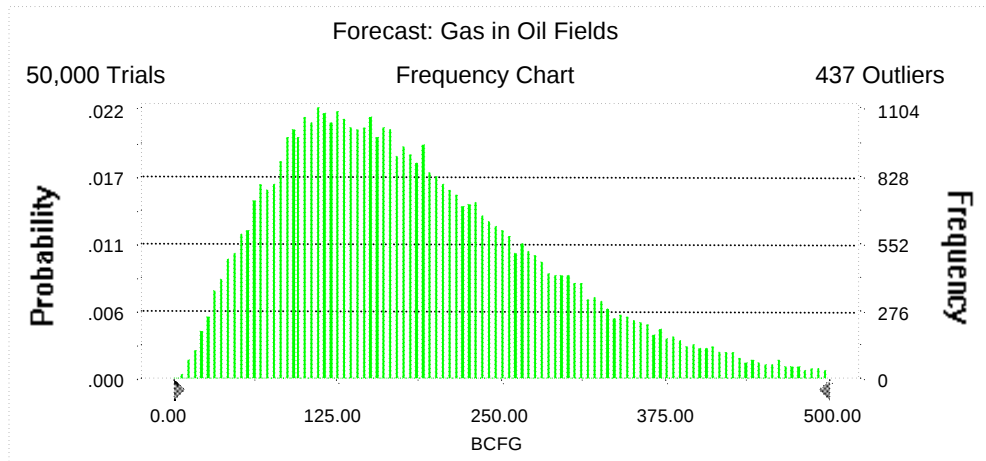
Forecast: Gas in Oil Fields

Summary:

Display range is from 0.00 to 500.00 BCFG
Entire range is from 6.01 to 794.59 BCFG
After 50,000 trials, the standard error of the mean is 0.46

Statistics:

	<u>Value</u>
Trials	50000
Mean	186.61
Median	168.62
Mode	---
Standard Deviation	103.36
Variance	10,682.77
Skewness	0.92
Kurtosis	3.96
Coefficient of Variability	0.55
Range Minimum	6.01
Range Maximum	794.59
Range Width	788.58
Mean Standard Error	0.46



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Forecast: Gas in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	6.01
95%	50.64
90%	69.17
85%	84.45
80%	97.03
75%	109.07
70%	120.47
65%	132.28
60%	144.34
55%	156.40
50%	168.62
45%	182.05
40%	195.63
35%	210.96
30%	228.01
25%	246.65
20%	268.23
15%	294.46
10%	327.50
5%	381.42
0%	794.59

End of Forecast

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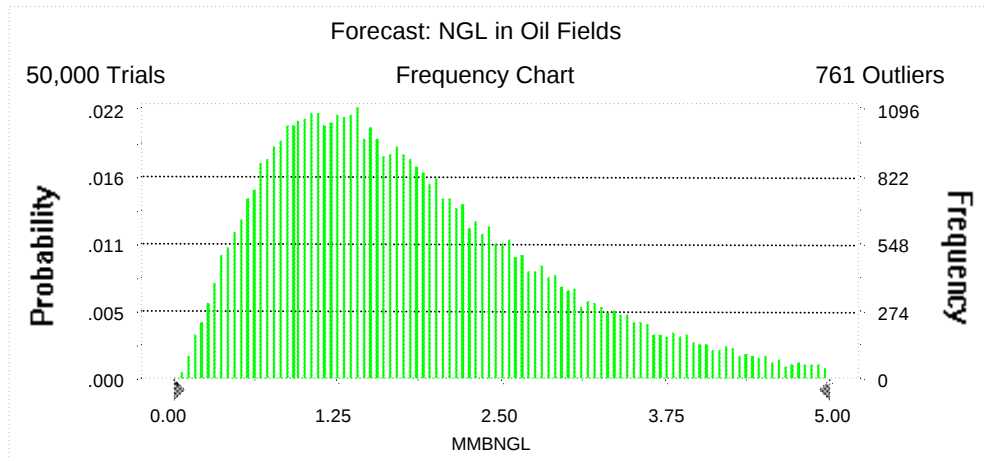
Forecast: NGL in Oil Fields

Summary:

Display range is from 0.00 to 5.00 MMBNGL
Entire range is from 0.05 to 10.16 MMBNGL
After 50,000 trials, the standard error of the mean is 0.01

Statistics:

	<u>Value</u>
Trials	50000
Mean	1.86
Median	1.64
Mode	---
Standard Deviation	1.12
Variance	1.26
Skewness	1.17
Kurtosis	4.97
Coefficient of Variability	0.60
Range Minimum	0.05
Range Maximum	10.16
Range Width	10.11
Mean Standard Error	0.01



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Forecast: NGL in Oil Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.05
95%	0.47
90%	0.65
85%	0.79
80%	0.92
75%	1.04
70%	1.15
65%	1.27
60%	1.39
55%	1.51
50%	1.64
45%	1.78
40%	1.92
35%	2.08
30%	2.25
25%	2.46
20%	2.69
15%	2.99
10%	3.39
5%	4.01
0%	10.16

End of Forecast

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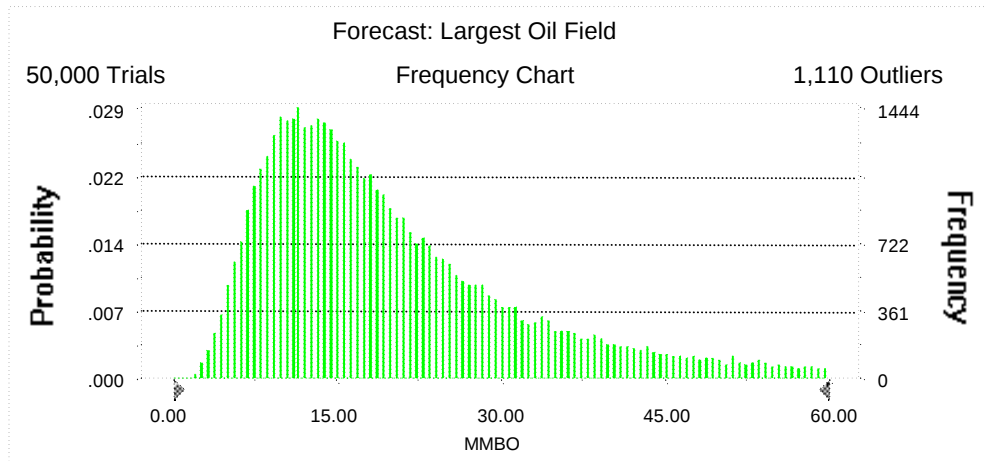
Forecast: Largest Oil Field

Summary:

Display range is from 0.00 to 60.00 MMBO
Entire range is from 1.58 to 79.99 MMBO
After 50,000 trials, the standard error of the mean is 0.06

Statistics:

	<u>Value</u>
Trials	50000
Mean	20.86
Median	17.14
Mode	---
Standard Deviation	13.46
Variance	181.19
Skewness	1.54
Kurtosis	5.59
Coefficient of Variability	0.65
Range Minimum	1.58
Range Maximum	79.99
Range Width	78.41
Mean Standard Error	0.06



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Forecast: Largest Oil Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBO</u>
100%	1.58
95%	6.42
90%	7.99
85%	9.25
80%	10.35
75%	11.43
70%	12.50
65%	13.60
60%	14.73
55%	15.87
50%	17.14
45%	18.53
40%	20.04
35%	21.79
30%	23.82
25%	26.23
20%	29.18
15%	33.38
10%	39.16
5%	49.46
0%	79.99

End of Forecast

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Monte Carlo Results

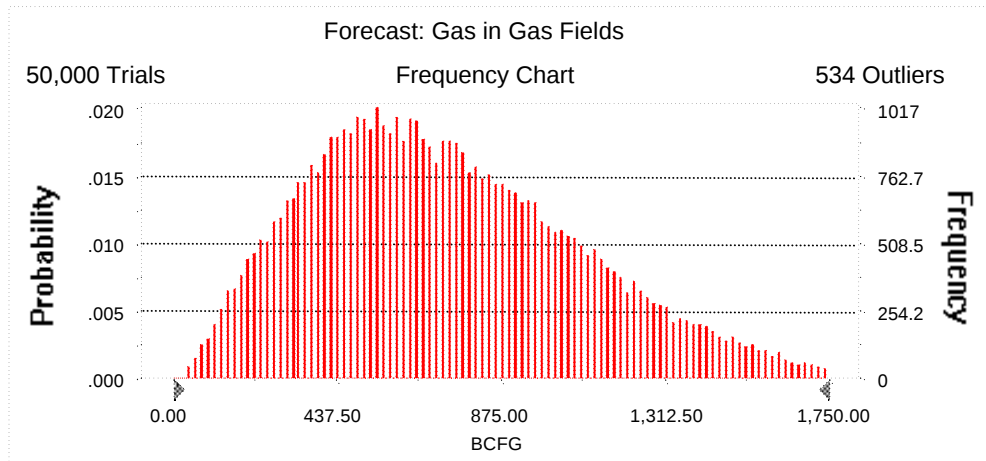
Forecast: Gas in Gas Fields

Summary:

Display range is from 0.00 to 1,750.00 BCFG
Entire range is from 23.49 to 2,629.94 BCFG
After 50,000 trials, the standard error of the mean is 1.66

Statistics:

	<u>Value</u>
Trials	50000
Mean	740.34
Median	691.55
Mode	---
Standard Deviation	371.56
Variance	138,059.15
Skewness	0.65
Kurtosis	3.24
Coefficient of Variability	0.50
Range Minimum	23.49
Range Maximum	2,629.94
Range Width	2,606.45
Mean Standard Error	1.66



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Forecast: Gas in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	23.49
95%	213.70
90%	294.72
85%	358.13
80%	412.67
75%	461.14
70%	507.16
65%	552.50
60%	598.03
55%	644.14
50%	691.55
45%	742.05
40%	793.25
35%	849.32
30%	909.36
25%	974.29
20%	1,049.63
15%	1,136.17
10%	1,248.49
5%	1,423.47
0%	2,629.94

End of Forecast

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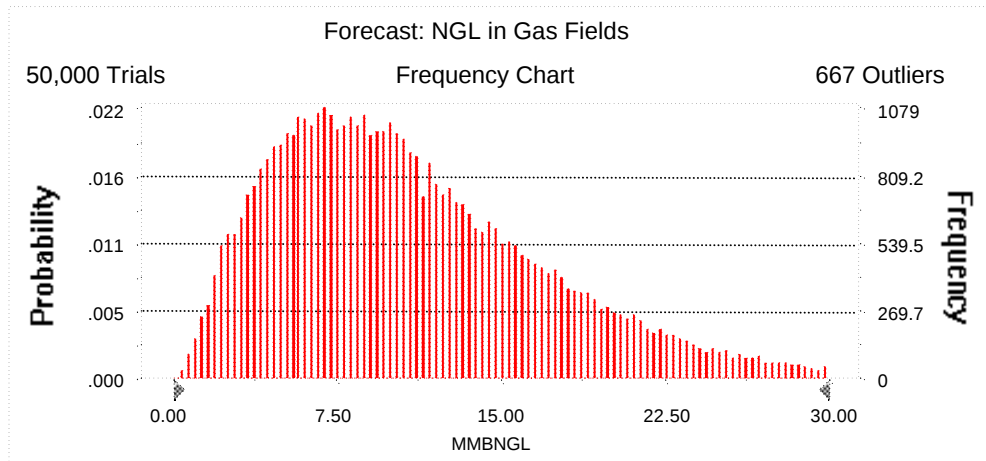
Forecast: NGL in Gas Fields

Summary:

Display range is from 0.00 to 30.00 MMBNGL
Entire range is from 0.16 to 50.33 MMBNGL
After 50,000 trials, the standard error of the mean is 0.03

Statistics:

	<u>Value</u>
Trials	50000
Mean	11.11
Median	9.91
Mode	---
Standard Deviation	6.53
Variance	42.68
Skewness	1.06
Kurtosis	4.44
Coefficient of Variability	0.59
Range Minimum	0.16
Range Maximum	50.33
Range Width	50.17
Mean Standard Error	0.03



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Forecast: NGL in Gas Fields (cont'd)

Percentiles:

<u>Percentile</u>	<u>MMBNGL</u>
100%	0.16
95%	2.77
90%	3.87
85%	4.73
80%	5.51
75%	6.25
70%	6.96
65%	7.69
60%	8.41
55%	9.15
50%	9.91
45%	10.66
40%	11.52
35%	12.47
30%	13.50
25%	14.72
20%	16.09
15%	17.77
10%	20.00
5%	23.47
0%	50.33

End of Forecast

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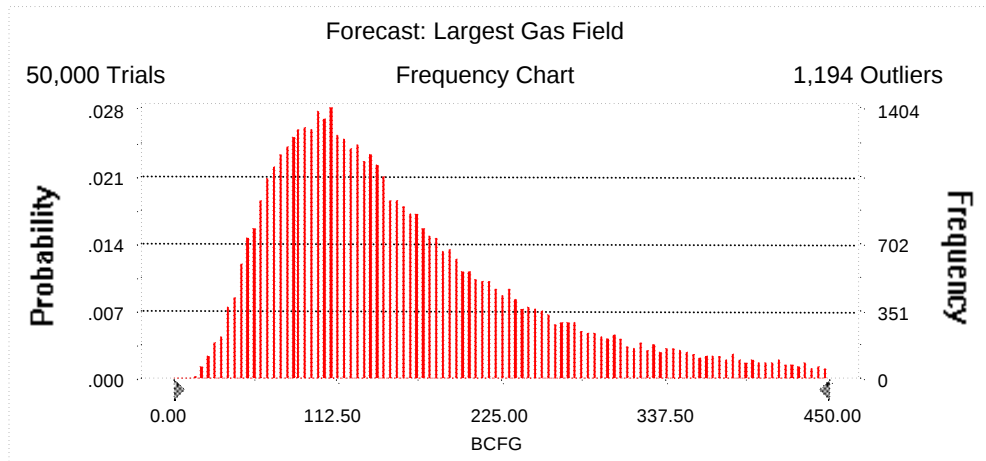
Forecast: Largest Gas Field

Summary:

Display range is from 0.00 to 450.00 BCFG
Entire range is from 11.28 to 599.80 BCFG
After 50,000 trials, the standard error of the mean is 0.46

Statistics:

	<u>Value</u>
Trials	50000
Mean	164.88
Median	137.61
Mode	---
Standard Deviation	101.91
Variance	10,385.86
Skewness	1.46
Kurtosis	5.28
Coefficient of Variability	0.62
Range Minimum	11.28
Range Maximum	599.80
Range Width	588.53
Mean Standard Error	0.46



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Forecast: Largest Gas Field (cont'd)

Percentiles:

<u>Percentile</u>	<u>BCFG</u>
100%	11.28
95%	52.59
90%	65.38
85%	75.52
80%	84.76
75%	93.35
70%	101.90
65%	109.96
60%	118.67
55%	128.01
50%	137.61
45%	147.93
40%	159.95
35%	173.30
30%	188.79
25%	207.56
20%	230.62
15%	260.38
10%	304.28
5%	379.80
0%	599.80

End of Forecast

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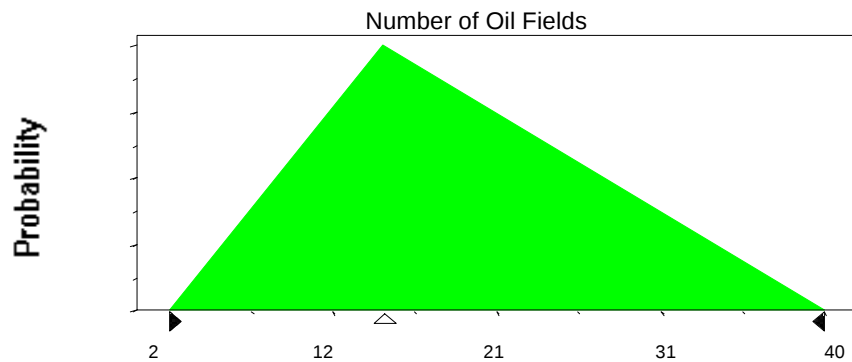
Assumptions

Assumption: Number of Oil Fields

Triangular distribution with parameters:

Minimum	2
Likeliest	15
Maximum	40

Selected range is from 2 to 40
Mean value in simulation was 19



Assumption: Sizes of Oil Fields

Lognormal distribution with parameters:

Mean	4.06
Standard Deviation	7.17

Shifted parameters

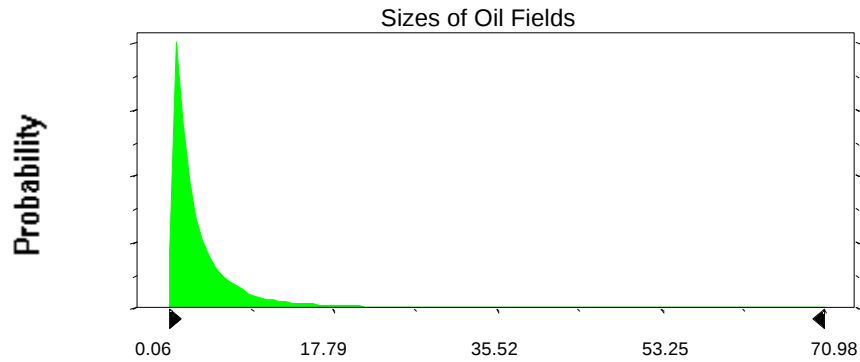
5.06
7.17

Selected range is from 0.00 to 79.00
Mean value in simulation was 3.94

1.00 to 80.00
4.94

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Assumption: Sizes of Oil Fields (cont'd)



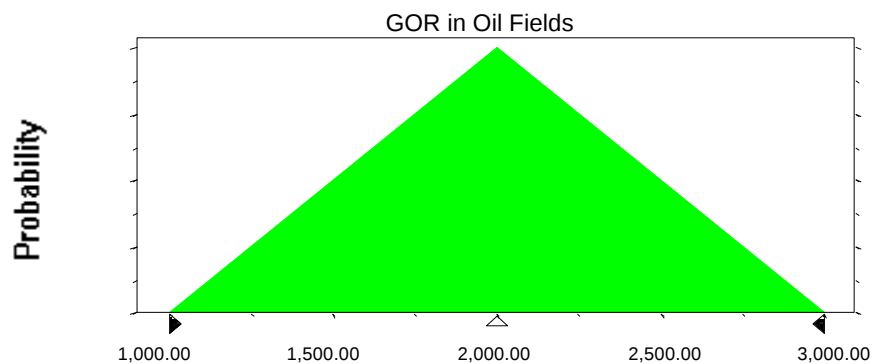
Assumption: GOR in Oil Fields

Triangular distribution with parameters:

Minimum	1,000.00
Likeliest	2,000.00
Maximum	3,000.00

Selected range is from 1,000.00 to 3,000.00

Mean value in simulation was 1,999.84



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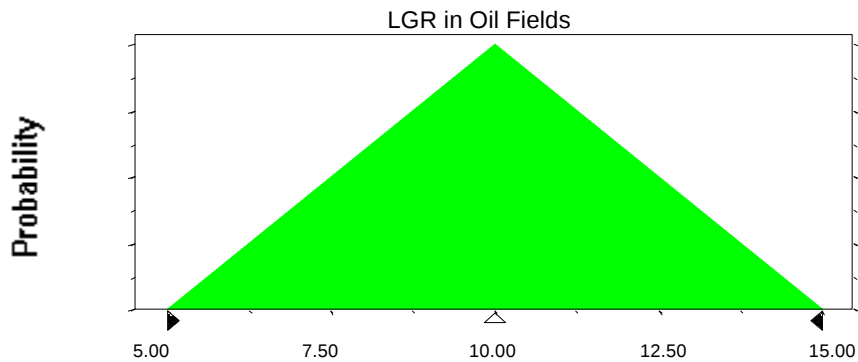
Assumption: LGR in Oil Fields

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 9.99



Assumption: Number of Gas Fields

Triangular distribution with parameters:

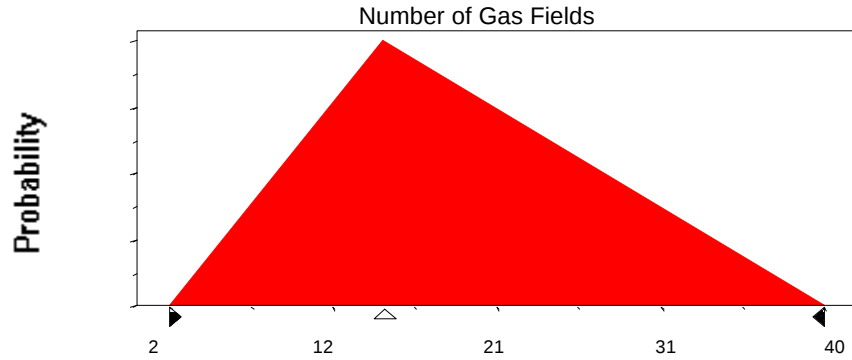
Minimum	2
Likeliest	15
Maximum	40

Selected range is from 2 to 40

Mean value in simulation was 19

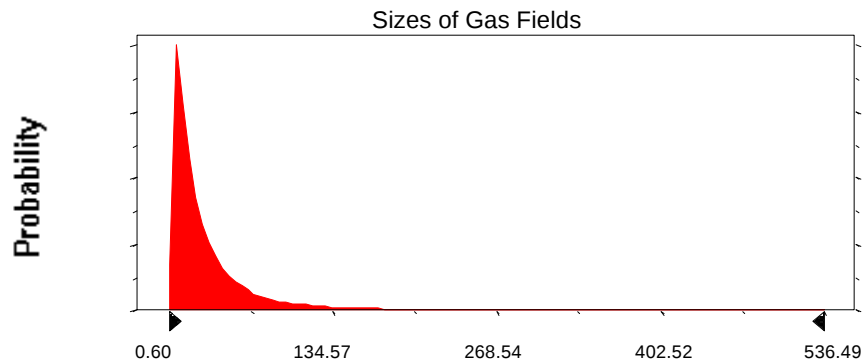
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Assumption: Number of Gas Fields (cont'd)



Assumption: Sizes of Gas Fields

Lognormal distribution with parameters:		Shifted parameters
Mean	34.14	40.14
Standard Deviation	55.04	55.04
Selected range is from 0.00 to 594.00		6.00 to 600.00
Mean value in simulation was 33.39		39.39



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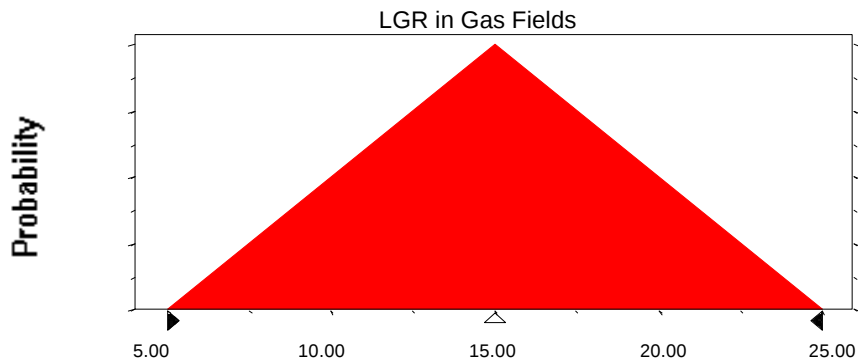
Assumption: LGR in Gas Fields

Triangular distribution with parameters:

Minimum	5.00
Likeliest	15.00
Maximum	25.00

Selected range is from 5.00 to 25.00

Mean value in simulation was 15.01



End of Assumptions

Simulation started on 2/25/99 at 9:40:13

Simulation stopped on 2/25/99 at 10:03:56