CONCHO

COG Operating, LLC

Lea County, NM
Sec 4, T25S, R33E
Monet Federal #3H

Wellbore #1
Design #1

30-025-42763

DDC Anticollision Report

22 December, 2015

DDC
The DIRECTIONAL DRILLING COMPANY

REVISED PROPOSED DD.

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Reference Site:	Sec 4, T25S, R33E	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Design #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 12/22/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,996.0	Design #1 (Wellbore #1)	MWD default	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Sec 4, T25S, R33E						
Monet Federal #8H - Wellbore #1 - Design #1	5,100.0	5,099.9	149.9	127.3	6.620	CC, ES
Monet Federal #8H - Wellbore #1 - Design #1	13,996.0	13,847.0	610.0	432.8	3.442	SF

Offset Design Sec 4, T25S, R33E - Monet Federal #8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD default — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.62	1.0	149.9	149.9			
100.0	100.0	99.9	99.9	0.1	0.1	89.62	1.0	149.9	149.9	149.7	901.707	
200.0	200.0	199.9	199.9	0.3	0.3	89.62	1.0	149.9	149.9	149.3	243.494	
300.0	300.0	299.9	299.9	0.5	0.5	89.62	1.0	149.9	149.9	148.8	140.732	
400.0	400.0	399.9	399.9	0.8	0.8	89.62	1.0	149.9	149.9	148.4	98.966	
500.0	500.0	499.9	499.9	1.0	1.0	89.62	1.0	149.9	149.9	147.9	76.317	
600.0	600.0	599.9	599.9	1.2	1.2	89.62	1.0	149.9	149.9	147.5	62.104	
700.0	700.0	699.9	699.9	1.4	1.4	89.62	1.0	149.9	149.9	147.0	52.353	
800.0	800.0	799.9	799.9	1.7	1.7	89.62	1.0	149.9	149.9	146.6	45.249	
900.0	900.0	899.9	899.9	1.9	1.9	89.62	1.0	149.9	149.9	146.1	39.843	
1,000.0	1,000.0	999.9	999.9	2.1	2.1	89.62	1.0	149.9	149.9	145.7	35.591	
1,100.0	1,100.0	1,099.9	1,099.9	2.3	2.3	89.62	1.0	149.9	149.9	145.2	32.158	
1,200.0	1,200.0	1,199.9	1,199.9	2.6	2.6	89.62	1.0	149.9	149.9	144.8	29.330	
1,300.0	1,300.0	1,299.9	1,299.9	2.8	2.8	89.62	1.0	149.9	149.9	144.3	26.959	
1,400.0	1,400.0	1,399.9	1,399.9	3.0	3.0	89.62	1.0	149.9	149.9	143.9	24.942	
1,500.0	1,500.0	1,499.9	1,499.9	3.2	3.2	89.62	1.0	149.9	149.9	143.4	23.206	
1,600.0	1,600.0	1,599.9	1,599.9	3.5	3.5	89.62	1.0	149.9	149.9	143.0	21.697	
1,700.0	1,700.0	1,699.9	1,699.9	3.7	3.7	89.62	1.0	149.9	149.9	142.5	20.371	
1,800.0	1,800.0	1,799.9	1,799.9	3.9	3.9	89.62	1.0	149.9	149.9	142.1	19.198	
1,900.0	1,900.0	1,899.9	1,899.9	4.1	4.1	89.62	1.0	149.9	149.9	141.6	18.153	
2,000.0	2,000.0	1,999.9	1,999.9	4.4	4.4	89.62	1.0	149.9	149.9	141.2	17.216	
2,100.0	2,100.0	2,099.9	2,099.9	4.6	4.6	89.62	1.0	149.9	149.9	140.7	16.371	
2,200.0	2,200.0	2,199.9	2,199.9	4.8	4.8	89.62	1.0	149.9	149.9	140.3	15.605	
2,300.0	2,300.0	2,299.9	2,299.9	5.0	5.0	89.62	1.0	149.9	149.9	139.8	14.907	
2,400.0	2,400.0	2,399.9	2,399.9	5.3	5.3	89.62	1.0	149.9	149.9	139.4	14.269	

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Reference Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 4, T25S, R33E - Monet Federal #8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD default — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
2,500.0	2,500.0	2,499.9	2,499.9	5.5	5.5	89.62	1.0	149.9	149.9	138.9	13.684	
2,600.0	2,600.0	2,599.9	2,599.9	5.7	5.7	89.62	1.0	149.9	149.9	138.5	13.144	
2,700.0	2,700.0	2,699.9	2,699.9	5.9	5.9	89.62	1.0	149.9	149.9	138.0	12.646	
2,800.0	2,800.0	2,799.9	2,799.9	6.2	6.2	89.62	1.0	149.9	149.9	137.6	12.184	
2,900.0	2,900.0	2,899.9	2,899.9	6.4	6.4	89.62	1.0	149.9	149.9	137.2	11.754	
3,000.0	3,000.0	2,999.9	2,999.9	6.6	6.6	89.62	1.0	149.9	149.9	136.7	11.354	
3,100.0	3,100.0	3,099.9	3,099.9	6.8	6.8	89.62	1.0	149.9	149.9	136.3	10.980	
3,200.0	3,200.0	3,199.9	3,199.9	7.1	7.1	89.62	1.0	149.9	149.9	135.8	10.630	
3,300.0	3,300.0	3,299.9	3,299.9	7.3	7.3	89.62	1.0	149.9	149.9	135.4	10.302	
3,400.0	3,400.0	3,399.9	3,399.9	7.5	7.5	89.62	1.0	149.9	149.9	134.9	9.993	
3,500.0	3,500.0	3,499.9	3,499.9	7.7	7.7	89.62	1.0	149.9	149.9	134.5	9.702	
3,600.0	3,600.0	3,599.9	3,599.9	7.9	7.9	89.62	1.0	149.9	149.9	134.0	9.428	
3,700.0	3,700.0	3,699.9	3,699.9	8.2	8.2	89.62	1.0	149.9	149.9	133.6	9.169	
3,800.0	3,800.0	3,799.9	3,799.9	8.4	8.4	89.62	1.0	149.9	149.9	133.1	8.923	
3,900.0	3,900.0	3,899.9	3,899.9	8.6	8.6	89.62	1.0	149.9	149.9	132.7	8.691	
4,000.0	4,000.0	3,999.9	3,999.9	8.8	8.8	89.62	1.0	149.9	149.9	132.2	8.470	
4,100.0	4,100.0	4,099.9	4,099.9	9.1	9.1	89.62	1.0	149.9	149.9	131.8	8.260	
4,200.0	4,200.0	4,199.9	4,199.9	9.3	9.3	89.62	1.0	149.9	149.9	131.3	8.061	
4,300.0	4,300.0	4,299.9	4,299.9	9.5	9.5	89.62	1.0	149.9	149.9	130.9	7.870	
4,400.0	4,400.0	4,399.9	4,399.9	9.7	9.7	89.62	1.0	149.9	149.9	130.4	7.689	
4,500.0	4,500.0	4,499.9	4,499.9	10.0	10.0	89.62	1.0	149.9	149.9	130.0	7.516	
4,600.0	4,600.0	4,599.9	4,599.9	10.2	10.2	89.62	1.0	149.9	149.9	129.5	7.350	
4,700.0	4,700.0	4,699.9	4,699.9	10.4	10.4	89.62	1.0	149.9	149.9	129.1	7.191	
4,800.0	4,800.0	4,799.9	4,799.9	10.6	10.6	89.62	1.0	149.9	149.9	128.6	7.040	
4,900.0	4,900.0	4,899.9	4,899.9	10.9	10.9	89.62	1.0	149.9	149.9	128.2	6.894	
5,000.0	5,000.0	4,999.9	4,999.9	11.1	11.1	89.62	1.0	149.9	149.9	127.7	6.754	
5,100.0	5,100.0	5,099.9	5,099.9	11.3	11.3	89.62	1.0	149.9	149.9	127.3	6.620	CC, ES
5,200.0	5,200.0	5,199.9	5,199.9	11.5	11.5	157.22	1.0	149.9	151.5	128.4	6.567	
5,300.0	5,299.8	5,299.7	5,299.7	11.7	11.8	157.92	1.0	149.9	156.3	132.9	6.663	
5,401.1	5,400.5	5,400.4	5,400.4	12.0	12.0	159.02	1.0	149.9	164.6	140.7	6.904	
5,500.0	5,498.9	5,498.8	5,498.8	12.2	12.2	160.24	1.0	149.9	174.3	150.0	7.184	
5,600.0	5,598.3	5,598.2	5,598.2	12.4	12.4	161.34	1.0	149.9	184.2	159.5	7.461	
5,700.0	5,697.8	5,697.7	5,697.7	12.6	12.7	162.33	1.0	149.9	194.2	169.1	7.730	
5,800.0	5,797.2	5,797.1	5,797.1	12.8	12.9	163.23	1.0	149.9	204.2	178.7	7.991	
5,900.0	5,896.7	5,896.6	5,896.6	13.1	13.1	164.03	1.0	149.9	214.3	188.3	8.245	
6,000.0	5,996.1	5,996.0	5,996.0	13.3	13.3	164.77	1.0	149.9	224.4	198.0	8.492	
6,100.0	6,095.6	6,095.5	6,095.5	13.5	13.6	165.44	1.0	149.9	234.5	207.7	8.732	
6,200.0	6,195.0	6,194.9	6,194.9	13.8	13.8	166.06	1.0	149.9	244.7	217.4	8.965	
6,300.0	6,294.5	6,294.4	6,294.4	14.0	14.0	166.63	1.0	149.9	254.9	227.2	9.192	
6,400.0	6,393.9	6,393.8	6,393.8	14.3	14.2	167.15	1.0	149.9	265.1	237.0	9.411	
6,500.0	6,493.4	6,493.3	6,493.3	14.5	14.5	167.64	1.0	149.9	275.4	246.8	9.625	
6,600.0	6,592.8	6,592.7	6,592.7	14.7	14.7	168.09	1.0	149.9	285.6	256.6	9.833	
6,700.0	6,692.3	6,692.2	6,692.2	15.0	14.9	168.51	1.0	149.9	295.9	266.4	10.035	
6,800.0	6,791.7	6,791.6	6,791.6	15.2	15.1	168.90	1.0	149.9	306.2	276.3	10.231	
6,900.0	6,891.2	6,891.1	6,891.1	15.5	15.3	169.26	1.0	149.9	316.5	286.1	10.421	
7,000.0	6,990.6	6,990.5	6,990.5	15.7	15.6	169.61	1.0	149.9	326.8	296.0	10.607	
7,100.0	7,090.1	7,090.0	7,090.0	16.0	15.8	169.93	1.0	149.9	337.1	305.9	10.787	
7,200.0	7,189.5	7,189.4	7,189.4	16.2	16.0	170.23	1.0	149.9	347.5	315.8	10.963	
7,300.0	7,289.0	7,288.9	7,288.9	16.5	16.2	170.52	1.0	149.9	357.8	325.7	11.133	
7,400.0	7,388.4	7,388.3	7,388.3	16.7	16.5	170.78	1.0	149.9	368.2	335.6	11.300	
7,500.0	7,487.9	7,487.8	7,487.8	17.0	16.7	171.04	1.0	149.9	378.5	345.5	11.461	
7,600.0	7,587.3	7,587.2	7,587.2	17.3	16.9	171.28	1.0	149.9	388.9	355.4	11.619	

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Offset Design Sec 4, T25S, R33E - Monet Federal #8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD default — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
7,700.0	7,686.8	7,686.7	7,686.7	17.5	17.1	171.51	1.0	149.9	399.3	365.3	11.773	
7,800.0	7,786.2	7,786.1	7,786.1	17.8	17.4	171.72	1.0	149.9	409.6	375.3	11.922	
7,900.0	7,885.7	7,885.6	7,885.6	18.0	17.6	171.93	1.0	149.9	420.0	385.2	12.068	
8,000.0	7,985.1	7,985.0	7,985.0	18.3	17.8	172.13	1.0	149.9	430.4	395.2	12.210	
8,100.0	8,084.6	8,084.5	8,084.5	18.6	18.0	172.31	1.0	149.9	440.8	405.1	12.349	
8,200.0	8,184.0	8,183.9	8,183.9	18.8	18.3	172.49	1.0	149.9	451.2	415.1	12.484	
8,300.0	8,283.5	8,283.4	8,283.4	19.1	18.5	172.66	1.0	149.9	461.6	425.0	12.616	
8,400.0	8,382.9	8,382.8	8,382.8	19.4	18.7	172.82	1.0	149.9	472.0	435.0	12.744	
8,500.0	8,482.3	8,482.2	8,482.2	19.6	18.9	172.98	1.0	149.9	482.4	444.9	12.870	
8,519.8	8,502.1	8,502.0	8,502.0	19.7	19.0	173.01	1.0	149.9	484.5	446.9	12.894	
8,600.0	8,581.9	8,581.8	8,581.8	19.9	19.1	173.13	1.0	149.9	491.7	453.7	12.944	
8,700.0	8,681.7	8,681.6	8,681.6	20.1	19.4	173.23	1.0	149.9	497.7	459.2	12.943	
8,800.0	8,781.7	8,781.6	8,781.6	20.3	19.6	173.27	1.0	149.9	500.1	461.3	12.868	
8,820.9	8,802.6	8,802.5	8,802.5	20.3	19.6	105.91	1.0	149.9	500.2	460.7	12.675	
8,825.0	8,806.7	8,802.6	8,802.6	20.3	19.6	-73.62	1.0	149.9	500.2	461.3	12.842	
8,850.0	8,831.7	8,825.0	8,825.0	20.3	19.7	-73.65	0.5	150.0	500.2	461.2	12.820	
8,852.8	8,834.5	8,825.0	8,825.0	20.3	19.7	-73.65	0.5	150.0	500.2	461.2	12.819	
8,875.0	8,856.6	8,839.3	8,839.3	20.4	19.7	-73.70	-0.4	150.2	500.3	461.2	12.808	
8,900.0	8,881.3	8,856.4	8,856.3	20.4	19.7	-73.79	-2.0	150.5	500.3	461.2	12.798	
8,925.0	8,905.9	8,875.0	8,874.7	20.4	19.8	-73.92	-4.4	150.9	500.5	461.3	12.791	
8,950.0	8,930.1	8,890.5	8,890.0	20.5	19.8	-74.06	-6.9	151.4	500.6	461.5	12.790	
8,975.0	8,954.0	8,907.5	8,906.7	20.5	19.8	-74.24	-10.3	152.0	500.8	461.6	12.790	
9,000.0	8,977.5	8,925.0	8,923.7	20.5	19.9	-74.45	-14.3	152.8	501.0	461.9	12.793	
9,025.0	9,000.5	8,941.8	8,939.8	20.5	19.9	-74.69	-18.8	153.6	501.3	462.2	12.798	
9,050.0	9,023.0	8,958.9	8,956.1	20.6	19.9	-74.95	-23.9	154.6	501.7	462.5	12.805	
9,075.0	9,044.9	8,975.0	8,971.3	20.6	19.9	-75.23	-29.3	155.6	502.1	462.9	12.813	
9,100.0	9,066.1	8,993.4	8,988.3	20.6	20.0	-75.57	-36.0	156.9	502.6	463.4	12.821	
9,125.0	9,086.5	9,010.7	9,004.1	20.6	20.0	-75.92	-42.8	158.2	503.1	463.9	12.830	
9,150.0	9,106.2	9,025.0	9,017.0	20.6	20.0	-76.21	-49.0	159.4	503.7	464.5	12.842	
9,175.0	9,125.1	9,045.4	9,035.1	20.7	20.0	-76.69	-58.4	161.1	504.5	465.2	12.846	
9,200.0	9,143.1	9,062.9	9,050.2	20.7	20.1	-77.10	-67.0	162.8	505.3	466.0	12.853	
9,225.0	9,160.1	9,080.5	9,065.0	20.7	20.1	-77.54	-76.2	164.5	506.2	466.8	12.858	
9,250.0	9,176.2	9,100.0	9,081.1	20.7	20.1	-78.06	-87.1	166.6	507.3	467.8	12.860	
9,275.0	9,191.3	9,115.8	9,093.8	20.7	20.2	-78.47	-96.4	168.3	508.4	468.9	12.866	
9,300.0	9,205.2	9,133.7	9,107.8	20.8	20.2	-78.95	-107.3	170.4	509.7	470.1	12.868	
9,325.0	9,218.1	9,150.0	9,120.1	20.8	20.3	-79.39	-117.8	172.4	511.2	471.5	12.871	
9,350.0	9,229.9	9,169.7	9,134.6	20.8	20.3	-79.97	-130.9	174.9	512.8	473.0	12.867	
9,375.0	9,240.4	9,187.9	9,147.4	20.9	20.3	-80.49	-143.6	177.3	514.6	474.6	12.866	
9,400.0	9,249.8	9,206.2	9,159.8	20.9	20.4	-81.03	-156.9	179.8	516.5	476.4	12.863	
9,425.0	9,257.9	9,225.0	9,172.0	21.0	20.5	-81.58	-170.9	182.4	518.6	478.3	12.860	
9,450.0	9,264.8	9,243.4	9,183.4	21.1	20.5	-82.12	-185.1	185.1	520.9	480.4	12.858	
9,475.0	9,270.5	9,262.3	9,194.5	21.2	20.6	-82.67	-200.1	188.0	523.4	482.7	12.856	
9,500.0	9,274.8	9,281.3	9,205.0	21.3	20.6	-83.23	-215.7	190.9	526.1	485.2	12.854	
9,525.0	9,277.9	9,300.0	9,214.8	21.4	20.7	-83.76	-231.4	193.9	529.0	487.8	12.855	
9,550.0	9,279.6	9,320.2	9,224.6	21.5	20.8	-84.35	-248.7	197.2	532.1	490.7	12.853	
9,567.1	9,280.0	9,333.7	9,230.8	21.6	20.8	-84.73	-260.5	199.4	534.3	492.7	12.854	
9,600.0	9,280.3	9,360.5	9,241.9	21.7	21.0	-85.95	-284.4	203.9	538.9	497.0	12.846	
9,700.0	9,281.1	9,449.6	9,269.0	22.4	21.4	-88.82	-367.7	219.7	555.3	512.1	12.856	
9,800.0	9,281.9	9,546.2	9,280.0	23.1	22.1	-89.90	-461.8	237.5	573.0	528.4	12.847	
9,900.0	9,282.7	9,669.4	9,281.0	24.0	23.0	-89.91	-583.3	257.9	588.7	542.3	12.688	
10,000.0	9,283.5	9,794.8	9,282.1	25.0	24.1	-89.92	-707.7	273.3	600.2	551.8	12.384	
10,100.0	9,284.3	9,921.2	9,283.1	26.1	25.3	-89.92	-833.7	283.3	607.3	556.5	11.952	

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Reference Site:	Sec 4, T25S, R33E	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec 4, T25S, R33E - Monet Federal #8H - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD default — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
10,200.0	9,285.0	10,048.1	9,284.1	27.2	26.7	-89.93	-960.6	287.7	610.0	556.7	11.431	
10,300.0	9,285.8	10,151.0	9,285.0	28.4	27.9	-89.93	-1,063.4	288.6	610.0	554.2	10.932	
10,400.0	9,286.6	10,251.0	9,285.8	29.7	29.1	-89.93	-1,163.4	289.4	610.0	551.7	10.461	
10,500.0	9,287.4	10,351.0	9,286.6	31.0	30.4	-89.93	-1,263.4	290.2	610.0	549.1	10.009	
10,600.0	9,288.2	10,451.0	9,287.4	32.4	31.7	-89.93	-1,363.4	291.0	610.0	546.4	9.580	
10,700.0	9,289.0	10,551.0	9,288.2	33.8	33.1	-89.94	-1,463.4	291.8	610.0	543.5	9.173	
10,800.0	9,289.8	10,651.0	9,289.0	35.3	34.5	-89.94	-1,563.4	292.6	610.0	540.6	8.790	
10,900.0	9,290.6	10,751.0	9,289.8	36.8	36.0	-89.94	-1,663.4	293.4	610.0	537.7	8.430	
11,000.0	9,291.4	10,851.0	9,290.7	38.3	37.5	-89.94	-1,763.4	294.2	610.0	534.6	8.092	
11,100.0	9,292.1	10,951.0	9,291.5	39.9	39.0	-89.95	-1,863.4	295.0	610.0	531.6	7.775	
11,200.0	9,292.9	11,051.0	9,292.3	41.4	40.5	-89.95	-1,963.4	295.8	610.0	528.4	7.477	
11,300.0	9,293.7	11,151.0	9,293.1	43.0	42.1	-89.95	-2,063.4	296.6	610.0	525.3	7.198	
11,400.0	9,294.5	11,251.0	9,293.9	44.6	43.7	-89.95	-2,163.4	297.4	610.0	522.1	6.936	
11,500.0	9,295.3	11,351.0	9,294.7	46.2	45.3	-89.95	-2,263.4	298.2	610.0	518.8	6.689	
11,600.0	9,296.1	11,451.0	9,295.5	47.9	46.9	-89.96	-2,363.4	299.0	610.0	515.6	6.458	
11,700.0	9,296.9	11,551.0	9,296.3	49.5	48.5	-89.96	-2,463.4	299.8	610.0	512.3	6.241	
11,800.0	9,297.7	11,651.0	9,297.1	51.2	50.2	-89.96	-2,563.4	300.6	610.0	509.0	6.036	
11,900.0	9,298.5	11,751.0	9,298.0	52.9	51.8	-89.96	-2,663.3	301.4	610.0	505.6	5.843	
12,000.0	9,299.2	11,851.0	9,298.8	54.5	53.5	-89.96	-2,763.3	302.2	610.0	502.3	5.660	
12,100.0	9,300.0	11,951.0	9,299.6	56.2	55.2	-89.97	-2,863.3	303.1	610.0	498.9	5.488	
12,200.0	9,300.8	12,051.0	9,300.4	57.9	56.9	-89.97	-2,963.3	303.9	610.0	495.5	5.326	
12,300.0	9,301.6	12,151.0	9,301.2	59.6	58.6	-89.97	-3,063.3	304.7	610.0	492.1	5.172	
12,400.0	9,302.4	12,251.0	9,302.0	61.4	60.3	-89.97	-3,163.3	305.5	610.0	488.6	5.026	
12,500.0	9,303.2	12,351.0	9,302.8	63.1	62.0	-89.98	-3,263.3	306.3	610.0	485.2	4.888	
12,600.0	9,304.0	12,451.0	9,303.6	64.8	63.7	-89.98	-3,363.3	307.1	610.0	481.8	4.756	
12,700.0	9,304.8	12,551.0	9,304.5	66.5	65.4	-89.98	-3,463.3	307.9	610.0	478.3	4.631	
12,800.0	9,305.6	12,651.0	9,305.3	68.3	67.1	-89.98	-3,563.3	308.7	610.0	474.8	4.513	
12,900.0	9,306.4	12,751.0	9,306.1	70.0	68.9	-89.98	-3,663.3	309.5	610.0	471.4	4.399	
13,000.0	9,307.1	12,851.0	9,306.9	71.7	70.6	-89.99	-3,763.3	310.3	610.0	467.9	4.292	
13,100.0	9,307.9	12,951.0	9,307.7	73.5	72.4	-89.99	-3,863.3	311.1	610.0	464.4	4.189	
13,200.0	9,308.7	13,051.0	9,308.5	75.2	74.1	-89.99	-3,963.3	311.9	610.0	460.9	4.090	
13,300.0	9,309.5	13,151.0	9,309.3	77.0	75.9	-89.99	-4,063.3	312.7	610.0	457.4	3.996	
13,400.0	9,310.3	13,251.0	9,310.1	78.8	77.6	-89.99	-4,163.2	313.5	610.0	453.8	3.906	
13,500.0	9,311.1	13,351.0	9,310.9	80.5	79.4	-90.00	-4,263.2	314.3	610.0	450.3	3.820	
13,600.0	9,311.9	13,451.0	9,311.8	82.3	81.1	-90.00	-4,363.2	315.1	610.0	446.8	3.738	
13,700.0	9,312.7	13,551.0	9,312.6	84.0	82.9	-90.00	-4,463.2	315.9	610.0	443.3	3.659	
13,800.0	9,313.5	13,651.0	9,313.4	85.8	84.6	-90.00	-4,563.2	316.7	610.0	439.7	3.583	
13,900.0	9,314.2	13,751.0	9,314.2	87.6	86.4	-90.00	-4,663.2	317.5	610.0	436.2	3.510	
13,996.0	9,315.0	13,847.0	9,315.0	89.3	88.1	-90.01	-4,759.2	318.3	610.0	432.8	3.442	SF

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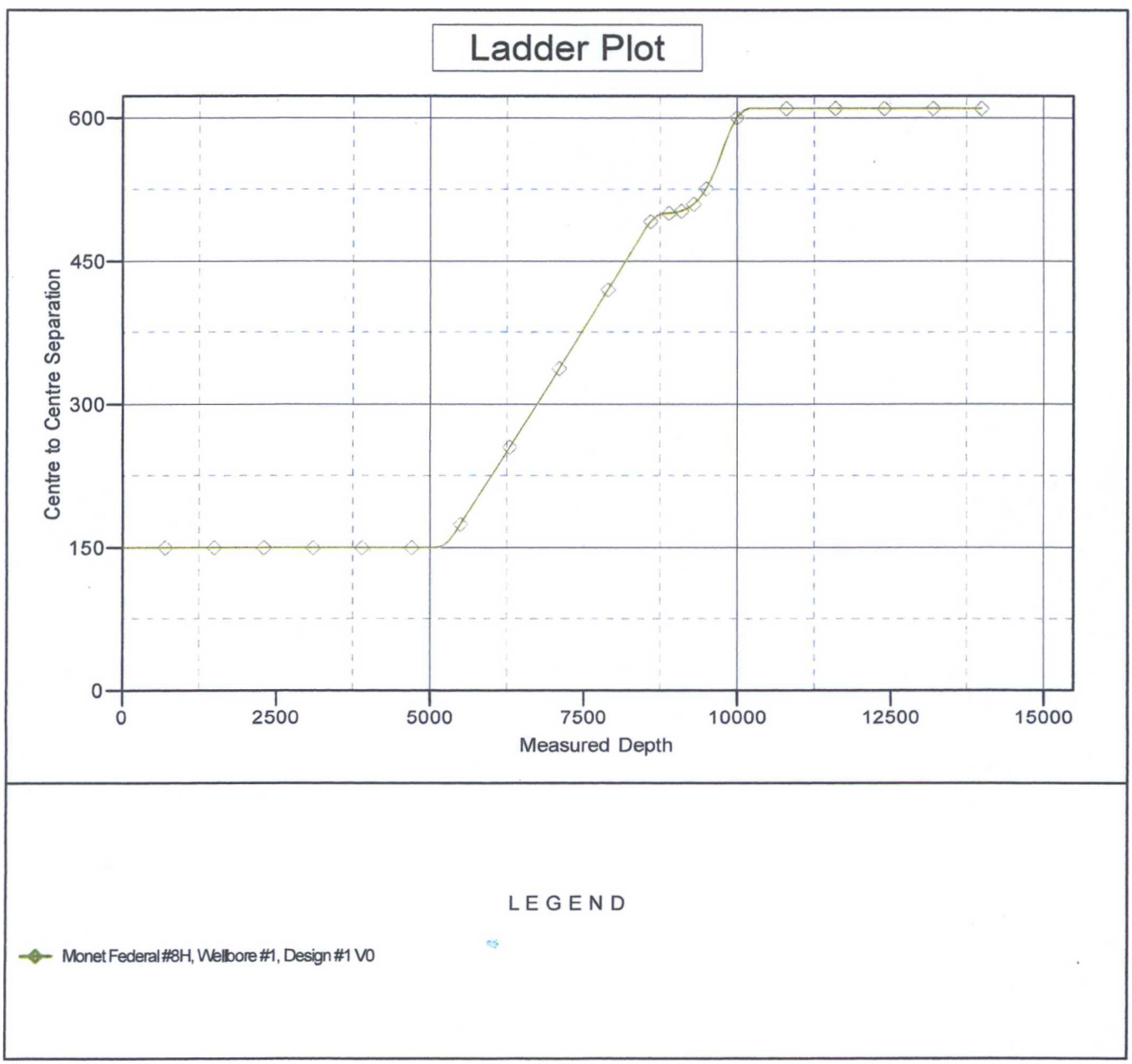
Reference Site:	Sec 4, T25S, R33E	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 3487.7usft (Scandrill FreedoCoordinates are relative to: Monet Federal #3H
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 20' 0.000 W Grid Convergence at Surface is: 0.40°



Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Reference Site:	Sec 4, T25S, R33E	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site Error:	0.0 usft	**North Reference:**	Grid
Reference Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 3487.7usft (Scandrill Freedo Coordinates are relative to: Monet Federal #3H
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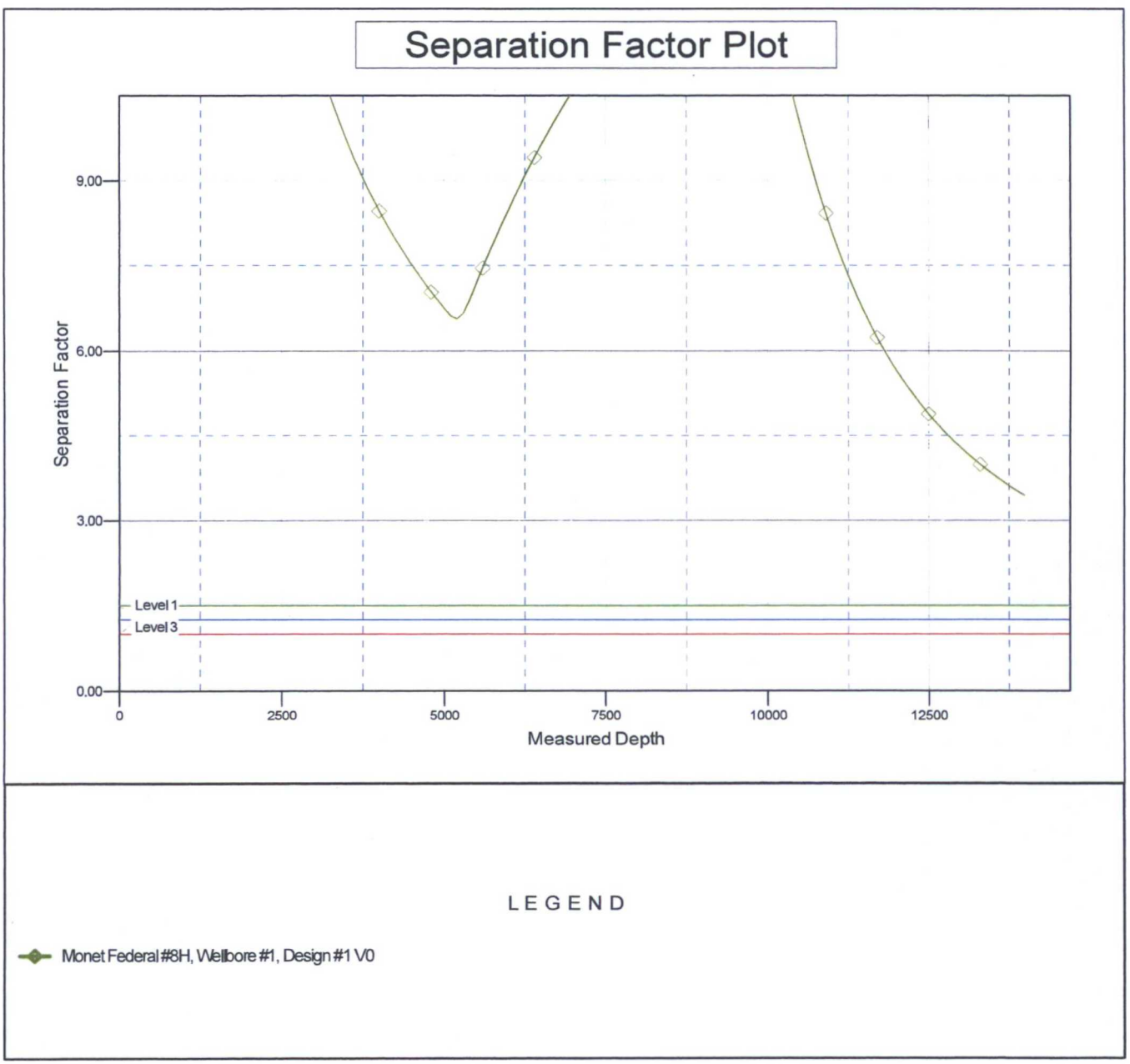

CONCHO

COG Operating, LLC

Lea County, NM
Sec 4, T25S, R33E
Monet Federal #3H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

22 December, 2015

DDC
The DIRECTIONAL DRILLING COMPANY

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Company:	COG Operating, LLC	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site:	Sec 4, T25S, R33E	**North Reference:**	Grid
Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Lea County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Sec 4, T25S, R33E

Site Position:		**Northing:**	424,999.76 usft	**Latitude:**	32° 9' 58.399 N
From:	Lat/Long	**Easting:**	731,880.25 usft	**Longitude:**	103° 35' 2.306 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well Monet Federal #3H

Well Position	**+N/-S**	9.3 usft	**Northing:**	425,009.10 usft	**Latitude:**	32° 9' 58.383 N
	+E/-W	1,569.6 usft	**Easting:**	733,449.90 usft	**Longitude:**	103° 34' 44.046 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,461.7 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/22/2015	7.11	60.03	48,055

Design Design #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	183.50

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,401.1	6.02	292.65	5,400.5	6.1	-14.6	2.00	2.00	0.00	292.65	
8,519.8	6.02	292.65	8,502.1	132.1	-316.5	0.00	0.00	0.00	0.00	
8,820.9	0.00	0.00	8,802.6	138.1	-331.1	2.00	-2.00	0.00	180.00	VP Monet Federal #
9,567.1	89.55	179.54	9,280.0	-335.5	-327.3	12.00	12.00	24.06	179.54	
13,996.0	89.55	179.54	9,315.0	-4,764.1	-291.7	0.00	0.00	0.00	0.00	PBHL Monet Feder

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Company:	COG Operating, LLC	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site:	Sec 4, T25S, R33E	**North Reference:**	Grid
Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 2°/100'									
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	2.00	292.65	5,200.0	0.7	-1.6	-0.6	2.00	2.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Company:	COG Operating, LLC	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site:	Sec 4, T25S, R33E	**North Reference:**	Grid
Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	4.00	292.65	5,299.8	2.7	-6.4	-2.3	2.00	2.00	0.00
5,400.0	6.00	292.65	5,399.5	6.0	-14.5	-5.1	2.00	2.00	0.00
EOB @ 6.02° Inc / 292.65° Azm									
5,401.1	6.02	292.65	5,400.5	6.1	-14.6	-5.2	2.00	2.00	0.00
5,500.0	6.02	292.65	5,498.9	10.1	-24.2	-8.6	0.00	0.00	0.00
5,600.0	6.02	292.65	5,598.3	14.1	-33.8	-12.0	0.00	0.00	0.00
5,700.0	6.02	292.65	5,697.8	18.2	-43.5	-15.5	0.00	0.00	0.00
5,800.0	6.02	292.65	5,797.2	22.2	-53.2	-18.9	0.00	0.00	0.00
5,900.0	6.02	292.65	5,896.7	26.2	-62.9	-22.3	0.00	0.00	0.00
6,000.0	6.02	292.65	5,996.1	30.3	-72.6	-25.8	0.00	0.00	0.00
6,100.0	6.02	292.65	6,095.6	34.3	-82.3	-29.2	0.00	0.00	0.00
6,200.0	6.02	292.65	6,195.0	38.4	-91.9	-32.7	0.00	0.00	0.00
6,300.0	6.02	292.65	6,294.5	42.4	-101.6	-36.1	0.00	0.00	0.00
6,400.0	6.02	292.65	6,393.9	46.4	-111.3	-39.5	0.00	0.00	0.00
6,500.0	6.02	292.65	6,493.4	50.5	-121.0	-43.0	0.00	0.00	0.00
6,600.0	6.02	292.65	6,592.8	54.5	-130.7	-46.4	0.00	0.00	0.00
6,700.0	6.02	292.65	6,692.3	58.6	-140.3	-49.9	0.00	0.00	0.00
6,800.0	6.02	292.65	6,791.7	62.6	-150.0	-53.3	0.00	0.00	0.00
6,900.0	6.02	292.65	6,891.2	66.6	-159.7	-56.7	0.00	0.00	0.00
7,000.0	6.02	292.65	6,990.6	70.7	-169.4	-60.2	0.00	0.00	0.00
7,100.0	6.02	292.65	7,090.1	74.7	-179.1	-63.6	0.00	0.00	0.00
7,200.0	6.02	292.65	7,189.5	78.7	-188.8	-67.1	0.00	0.00	0.00
7,300.0	6.02	292.65	7,289.0	82.8	-198.4	-70.5	0.00	0.00	0.00
7,400.0	6.02	292.65	7,388.4	86.8	-208.1	-73.9	0.00	0.00	0.00
7,500.0	6.02	292.65	7,487.9	90.9	-217.8	-77.4	0.00	0.00	0.00
7,600.0	6.02	292.65	7,587.3	94.9	-227.5	-80.8	0.00	0.00	0.00
7,700.0	6.02	292.65	7,686.8	98.9	-237.2	-84.3	0.00	0.00	0.00
7,800.0	6.02	292.65	7,786.2	103.0	-246.8	-87.7	0.00	0.00	0.00
7,900.0	6.02	292.65	7,885.7	107.0	-256.5	-91.1	0.00	0.00	0.00
8,000.0	6.02	292.65	7,985.1	111.1	-266.2	-94.6	0.00	0.00	0.00
8,100.0	6.02	292.65	8,084.6	115.1	-275.9	-98.0	0.00	0.00	0.00
8,200.0	6.02	292.65	8,184.0	119.1	-285.6	-101.5	0.00	0.00	0.00
8,300.0	6.02	292.65	8,283.5	123.2	-295.3	-104.9	0.00	0.00	0.00
8,400.0	6.02	292.65	8,382.9	127.2	-304.9	-108.3	0.00	0.00	0.00
8,500.0	6.02	292.65	8,482.3	131.3	-314.6	-111.8	0.00	0.00	0.00
Drop 2°/100'									
8,519.8	6.02	292.65	8,502.1	132.1	-316.5	-112.5	0.00	0.00	0.00
8,600.0	4.42	292.65	8,581.9	134.9	-323.3	-114.9	2.00	-2.00	0.00
8,700.0	2.42	292.65	8,681.7	137.2	-328.8	-116.8	2.00	-2.00	0.00
8,800.0	0.42	292.65	8,781.7	138.1	-331.1	-117.6	2.00	-2.00	0.00
EOD Vertical / Build 12°/100'									
8,820.9	0.00	0.00	8,802.6	138.1	-331.1	-117.7	2.00	-2.00	0.00
8,900.0	9.49	179.54	8,881.3	131.6	-331.1	-111.1	12.00	12.00	0.00
9,000.0	21.49	179.54	8,977.5	105.0	-330.9	-84.5	12.00	12.00	0.00
9,100.0	33.49	179.54	9,066.1	58.9	-330.5	-38.6	12.00	12.00	0.00
9,200.0	45.49	179.54	9,143.1	-4.6	-330.0	24.8	12.00	12.00	0.00
9,300.0	57.49	179.54	9,205.2	-82.7	-329.3	102.7	12.00	12.00	0.00
9,400.0	69.49	179.54	9,249.8	-172.0	-328.6	191.8	12.00	12.00	0.00
9,500.0	81.49	179.54	9,274.8	-268.6	-327.9	288.2	12.00	12.00	0.00
EOB @ 89.55° Inc / 179.54° Azm / 9280' TVD									
9,567.1	89.55	179.54	9,280.0	-335.5	-327.3	354.9	12.00	12.00	0.00
9,600.0	89.55	179.54	9,280.3	-368.4	-327.0	387.7	0.00	0.00	0.00
9,700.0	89.55	179.54	9,281.1	-468.4	-326.2	487.4	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Company:	COG Operating, LLC	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site:	Sec 4, T25S, R33E	**North Reference:**	Grid
Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.0	89.55	179.54	9,281.9	-568.4	-325.4	587.2	0.00	0.00	0.00
9,900.0	89.55	179.54	9,282.7	-668.4	-324.6	687.0	0.00	0.00	0.00
10,000.0	89.55	179.54	9,283.5	-768.4	-323.8	786.7	0.00	0.00	0.00
10,100.0	89.55	179.54	9,284.3	-868.4	-323.0	886.5	0.00	0.00	0.00
10,200.0	89.55	179.54	9,285.0	-968.3	-322.2	986.2	0.00	0.00	0.00
10,300.0	89.55	179.54	9,285.8	-1,068.3	-321.4	1,086.0	0.00	0.00	0.00
10,400.0	89.55	179.54	9,286.6	-1,168.3	-320.6	1,185.7	0.00	0.00	0.00
10,500.0	89.55	179.54	9,287.4	-1,268.3	-319.8	1,285.5	0.00	0.00	0.00
10,600.0	89.55	179.54	9,288.2	-1,368.3	-319.0	1,385.3	0.00	0.00	0.00
10,700.0	89.55	179.54	9,289.0	-1,468.3	-318.2	1,485.0	0.00	0.00	0.00
10,800.0	89.55	179.54	9,289.8	-1,568.3	-317.4	1,584.8	0.00	0.00	0.00
10,900.0	89.55	179.54	9,290.6	-1,668.3	-316.6	1,684.5	0.00	0.00	0.00
11,000.0	89.55	179.54	9,291.4	-1,768.3	-315.8	1,784.3	0.00	0.00	0.00
11,100.0	89.55	179.54	9,292.1	-1,868.3	-315.0	1,884.0	0.00	0.00	0.00
11,200.0	89.55	179.54	9,292.9	-1,968.3	-314.2	1,983.8	0.00	0.00	0.00
11,300.0	89.55	179.54	9,293.7	-2,068.3	-313.4	2,083.6	0.00	0.00	0.00
11,400.0	89.55	179.54	9,294.5	-2,168.3	-312.6	2,183.3	0.00	0.00	0.00
11,500.0	89.55	179.54	9,295.3	-2,268.3	-311.8	2,283.1	0.00	0.00	0.00
11,600.0	89.55	179.54	9,296.1	-2,368.3	-311.0	2,382.8	0.00	0.00	0.00
11,700.0	89.55	179.54	9,296.9	-2,468.3	-310.2	2,482.6	0.00	0.00	0.00
11,800.0	89.55	179.54	9,297.7	-2,568.2	-309.4	2,582.4	0.00	0.00	0.00
11,900.0	89.55	179.54	9,298.5	-2,668.2	-308.6	2,682.1	0.00	0.00	0.00
12,000.0	89.55	179.54	9,299.2	-2,768.2	-307.8	2,781.9	0.00	0.00	0.00
12,100.0	89.55	179.54	9,300.0	-2,868.2	-306.9	2,881.6	0.00	0.00	0.00
12,200.0	89.55	179.54	9,300.8	-2,968.2	-306.1	2,981.4	0.00	0.00	0.00
12,300.0	89.55	179.54	9,301.6	-3,068.2	-305.3	3,081.1	0.00	0.00	0.00
12,400.0	89.55	179.54	9,302.4	-3,168.2	-304.5	3,180.9	0.00	0.00	0.00
12,500.0	89.55	179.54	9,303.2	-3,268.2	-303.7	3,280.7	0.00	0.00	0.00
12,600.0	89.55	179.54	9,304.0	-3,368.2	-302.9	3,380.4	0.00	0.00	0.00
12,700.0	89.55	179.54	9,304.8	-3,468.2	-302.1	3,480.2	0.00	0.00	0.00
12,800.0	89.55	179.54	9,305.6	-3,568.2	-301.3	3,579.9	0.00	0.00	0.00
12,900.0	89.55	179.54	9,306.4	-3,668.2	-300.5	3,679.7	0.00	0.00	0.00
13,000.0	89.55	179.54	9,307.1	-3,768.2	-299.7	3,779.4	0.00	0.00	0.00
13,100.0	89.55	179.54	9,307.9	-3,868.2	-298.9	3,879.2	0.00	0.00	0.00
13,200.0	89.55	179.54	9,308.7	-3,968.2	-298.1	3,979.0	0.00	0.00	0.00
13,300.0	89.55	179.54	9,309.5	-4,068.1	-297.3	4,078.7	0.00	0.00	0.00
13,400.0	89.55	179.54	9,310.3	-4,168.1	-296.5	4,178.5	0.00	0.00	0.00
13,500.0	89.55	179.54	9,311.1	-4,268.1	-295.7	4,278.2	0.00	0.00	0.00
13,600.0	89.55	179.54	9,311.9	-4,368.1	-294.9	4,378.0	0.00	0.00	0.00
13,700.0	89.55	179.54	9,312.7	-4,468.1	-294.1	4,477.7	0.00	0.00	0.00
13,800.0	89.55	179.54	9,313.5	-4,568.1	-293.3	4,577.5	0.00	0.00	0.00
13,900.0	89.55	179.54	9,314.2	-4,668.1	-292.5	4,677.3	0.00	0.00	0.00
TD @ 13996' MD / 9315' TVD									
13,996.0	89.55	179.54	9,315.0	-4,764.1	-291.7	4,773.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Monet Federal #3H
Company:	COG Operating, LLC	**TVD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3487.7usft (Scandrill Freedom)
Site:	Sec 4, T25S, R33E	**North Reference:**	Grid
Well:	Monet Federal #3H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
VP Monet Federal #3I - plan hits target center - Point	0.00	0.00	8,802.6	138.1	-331.1	425,147.25	733,118.77	32° 9' 59.773 N	103° 34' 47.886 W
PBHL Monet Federal - plan hits target center - Rectangle (sides W100.0 H0.0 D4,428.8)	90.45	179.54	9,315.0	-4,764.1	-291.7	420,245.00	733,158.20	32° 9' 11.260 N	103° 34' 47.827 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,100.0	5,100.0	0.0	0.0	Build 2°/100'
5,401.1	5,400.5	6.1	-14.6	EOB @ 6.02° Inc / 292.65° Azm
8,519.8	8,502.1	132.1	-316.5	Drop 2°/100'
8,820.9	8,802.6	138.1	-331.1	EOD Vertical / Build 12°/100'
9,567.1	9,280.0	-335.5	-327.3	EOB @ 89.55° Inc / 179.54° Azm / 9280' TVD
13,996.0	9,315.0	-4,764.1	-291.7	TD @ 13996' MD / 9315' TVD