



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 12 2018

RECEIVED

COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 05, T 26 S. , R 28 E

SRO 5 State Com 505H

30-015-45532

Wellbore #1

Plan #1

Anticollision Report

10 December, 2018



INTEGRITY
DIRECTIONAL

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 505H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 505H
TVD Reference: KB=30' @ 3037.10usft (Nabors 894)
MD Reference: KB=30' @ 3037.10usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Offset Design Sec. 05, T 26 S. , R 28 E - SRO 5 State Com 504H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N-S (usft)	+E-W (usft)						
2,500.00	2,500.00	2,500.10	2,500.10	5.47	5.47	90.00	0.00	30.00	30.00	19.05	10.95	2.741		
2,600.00	2,600.00	2,600.10	2,600.10	5.70	5.70	90.00	0.00	30.00	30.00	18.60	11.40	2.633		
2,700.00	2,700.00	2,700.10	2,700.10	5.92	5.92	90.00	0.00	30.00	30.00	18.15	11.85	2.533		
2,800.00	2,800.00	2,800.10	2,800.10	6.15	6.15	90.00	0.00	30.00	30.00	17.71	12.29	2.440		
2,900.00	2,900.00	2,900.10	2,900.10	6.37	6.37	90.00	0.00	30.00	30.00	17.26	12.74	2.354		
3,000.00	3,000.00	3,000.10	3,000.10	6.60	6.60	90.00	0.00	30.00	30.00	16.81	13.19	2.274		
3,100.00	3,100.00	3,100.10	3,100.10	6.82	6.82	90.00	0.00	30.00	30.00	16.36	13.64	2.199		
3,200.00	3,200.00	3,200.10	3,200.10	7.05	7.05	90.00	0.00	30.00	30.00	15.91	14.09	2.129		
3,300.00	3,300.00	3,300.10	3,300.10	7.27	7.27	90.00	0.00	30.00	30.00	15.46	14.54	2.063		
3,400.00	3,400.00	3,400.10	3,400.10	7.50	7.50	90.00	0.00	30.00	30.00	15.01	14.99	2.001		
3,500.00	3,500.00	3,500.10	3,500.10	7.72	7.72	90.00	0.00	30.00	30.00	14.56	15.44	1.943		
3,600.00	3,600.00	3,600.10	3,600.10	7.95	7.95	90.00	0.00	30.00	30.00	14.11	15.89	1.888		
3,700.00	3,700.00	3,700.10	3,700.10	8.17	8.17	90.00	0.00	30.00	30.00	13.66	16.34	1.836		
3,800.00	3,800.00	3,800.10	3,800.10	8.40	8.40	90.00	0.00	30.00	30.00	13.21	16.79	1.787		
3,900.00	3,900.00	3,900.10	3,900.10	8.62	8.62	90.00	0.00	30.00	30.00	12.76	17.24	1.740		
4,000.00	4,000.00	4,000.10	4,000.10	8.84	8.84	90.00	0.00	30.00	30.00	12.31	17.69	1.696		
4,100.00	4,100.00	4,100.10	4,100.10	9.07	9.07	90.00	0.00	30.00	30.00	11.86	18.14	1.654		
4,200.00	4,200.00	4,200.10	4,200.10	9.29	9.29	90.00	0.00	30.00	30.00	11.41	18.59	1.614		
4,300.00	4,300.00	4,300.10	4,300.10	9.52	9.52	90.00	0.00	30.00	30.00	10.96	19.04	1.576		
4,400.00	4,400.00	4,400.10	4,400.10	9.74	9.74	90.00	0.00	30.00	30.00	10.51	19.49	1.539		
4,500.00	4,500.00	4,500.10	4,500.10	9.97	9.97	90.00	0.00	30.00	30.00	10.06	19.94	1.505		
4,600.00	4,600.00	4,600.10	4,600.10	10.19	10.19	90.00	0.00	30.00	30.00	9.61	20.39	1.472 Level 3		
4,700.00	4,700.00	4,700.10	4,700.10	10.42	10.42	90.00	0.00	30.00	30.00	9.16	20.84	1.440 Level 3		
4,800.00	4,800.00	4,800.10	4,800.10	10.64	10.64	90.00	0.00	30.00	30.00	8.71	21.29	1.409 Level 3		
4,900.00	4,900.00	4,900.10	4,900.10	10.87	10.87	90.00	0.00	30.00	30.00	8.26	21.74	1.380 Level 3		
5,000.00	5,000.00	5,000.10	5,000.10	11.09	11.09	90.00	0.00	30.00	30.00	7.82	22.18	1.352 Level 3		
5,100.00	5,100.00	5,100.10	5,100.10	11.32	11.32	90.00	0.00	30.00	30.00	7.37	22.63	1.325 Level 3		
5,200.00	5,200.00	5,200.10	5,200.10	11.54	11.54	90.00	0.00	30.00	30.00	6.92	23.08	1.300 Level 3		
5,300.00	5,300.00	5,300.10	5,300.10	11.77	11.77	90.00	0.00	30.00	30.00	6.47	23.53	1.275 Level 3		
5,400.00	5,400.00	5,400.10	5,400.10	11.99	11.99	90.00	0.00	30.00	30.00	6.02	23.98	1.251 Level 3		
5,500.00	5,500.00	5,500.10	5,500.10	12.22	12.22	90.00	0.00	30.00	30.00	5.57	24.43	1.228 Level 2		
5,566.63	5,566.63	5,566.73	5,566.73	12.37	12.37	90.00	0.00	30.00	30.00	5.27	24.73	1.213 Level 2, CC		
5,600.00	5,600.00	5,600.00	5,600.00	12.44	12.44	90.00	0.00	30.00	30.00	5.12	24.88	1.206 Level 2, ES, SF		
5,700.00	5,699.98	5,699.64	5,699.62	12.66	12.66	115.09	1.57	30.73	31.48	6.15	25.33	1.243 Level 2		
5,800.00	5,799.84	5,799.05	5,798.89	12.89	12.88	115.03	6.26	32.92	35.90	10.13	25.77	1.393 Level 3		
5,900.00	5,899.45	5,898.20	5,897.66	13.11	13.11	114.96	14.05	36.55	43.25	17.04	26.22	1.650		
6,000.00	5,998.70	5,996.97	5,995.70	13.34	13.33	114.85	24.89	41.60	53.52	26.86	26.66	2.008		
6,028.78	6,027.18	6,025.31	6,023.75	13.40	13.39	114.82	28.56	43.32	57.02	30.23	26.79	2.128		
6,100.00	6,097.60	6,095.60	6,093.16	13.56	13.55	114.36	38.58	47.99	66.24	39.13	27.11	2.443		
6,200.00	6,196.49	6,194.73	6,191.01	13.80	13.78	113.66	53.02	54.72	79.34	51.77	27.57	2.877		
6,300.00	6,295.37	6,293.87	6,288.86	14.03	14.01	113.17	67.46	61.45	92.46	64.41	28.05	3.296		
6,400.00	6,394.25	6,393.00	6,386.70	14.28	14.25	112.79	81.89	68.18	105.57	77.04	28.53	3.700		
6,500.00	6,493.13	6,492.14	6,484.55	14.52	14.50	112.50	96.33	74.91	118.69	89.67	29.02	4.090		
6,600.00	6,592.01	6,591.27	6,582.39	14.77	14.75	112.27	110.77	81.64	131.81	102.29	29.52	4.465		
6,700.00	6,590.90	6,590.40	6,580.24	15.03	15.00	112.08	125.20	88.37	144.94	114.91	30.03	4.826		
6,800.00	6,789.78	6,789.54	6,778.09	15.29	15.26	111.92	139.64	95.10	158.06	127.52	30.55	5.174		
6,900.00	6,888.66	6,888.67	6,875.93	15.55	15.53	111.79	154.08	101.83	171.19	140.12	31.07	5.509		
7,000.00	6,987.54	6,987.81	6,973.78	15.81	15.79	111.67	168.52	108.56	184.32	152.71	31.60	5.832		
7,100.00	7,086.42	7,086.94	7,071.62	16.08	16.06	111.57	182.95	115.29	197.45	165.30	32.14	6.143		
7,200.00	7,185.31	7,186.07	7,169.47	16.35	16.34	111.48	197.39	122.02	210.57	177.89	32.69	6.442		
7,300.00	7,284.19	7,285.21	7,267.32	16.62	16.61	111.40	211.83	128.75	223.70	190.47	33.24	6.730		
7,394.44	7,377.57	7,374.81	7,356.15	16.89	16.83	112.42	220.54	135.64	236.73	203.02	33.71	7.022		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
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7,400.00	7,383.07	7,379.96	7,361.28	16.90	16.84	115.06	220.64	136.11	237.57	203.83	33.73	7.042	
7,450.00	7,432.74	7,425.86	7,406.92	17.00	16.92	153.81	219.51	140.63	246.15	212.23	33.92	7.257	
7,500.00	7,482.50	7,470.99	7,451.53	17.10	16.99	-156.02	214.88	145.68	256.50	222.42	34.08	7.526	
7,550.00	7,531.96	7,515.37	7,494.83	17.18	17.04	-130.80	206.95	151.19	268.50	234.28	34.22	7.846	
7,600.00	7,580.76	7,559.01	7,536.63	17.25	17.09	-118.79	195.93	157.09	282.01	247.67	34.34	8.212	
7,650.00	7,628.53	7,600.00	7,574.97	17.30	17.13	-111.63	182.73	163.06	296.87	262.43	34.44	8.620	
7,700.00	7,674.89	7,644.20	7,615.07	17.36	17.17	-106.56	165.47	169.90	312.92	278.39	34.53	9.063	
7,750.00	7,719.50	7,685.86	7,651.48	17.40	17.20	-102.64	146.44	176.71	330.02	295.42	34.60	9.537	
7,800.00	7,762.02	7,726.97	7,685.92	17.44	17.23	-99.40	125.12	183.74	348.01	313.33	34.68	10.036	
7,850.00	7,802.12	7,767.62	7,718.31	17.49	17.27	-96.60	101.67	190.95	366.75	332.00	34.75	10.553	
7,900.00	7,839.50	7,807.88	7,748.62	17.53	17.30	-94.13	76.23	198.31	386.10	351.27	34.83	11.084	
7,950.00	7,873.87	7,850.00	7,778.29	17.59	17.34	-91.93	47.40	206.21	405.92	370.99	34.93	11.622	
8,000.00	7,904.98	7,887.60	7,802.86	17.65	17.39	-89.88	19.87	213.40	426.07	391.03	35.04	12.160	
8,050.00	7,932.58	7,927.27	7,826.72	17.75	17.45	-88.04	-10.86	221.08	446.43	411.24	35.19	12.685	
8,100.00	7,956.47	7,966.94	7,848.35	17.88	17.54	-86.36	-43.19	228.84	466.88	431.46	35.42	13.183	
8,150.00	7,976.46	8,006.73	7,867.70	18.05	17.66	-84.82	-77.06	236.65	487.30	451.59	35.71	13.646	
8,200.00	7,992.40	8,046.76	7,884.70	18.27	17.81	-83.43	-112.43	244.50	507.56	471.49	36.08	14.069	
8,250.00	8,004.17	8,087.15	7,899.25	18.52	17.99	-82.18	-149.27	252.38	527.56	491.05	36.51	14.448	
8,300.00	8,011.68	8,128.03	7,911.26	18.82	18.20	-81.08	-187.53	260.27	547.19	510.17	37.02	14.781	
8,350.00	8,014.88	8,169.53	7,920.58	19.14	18.44	-80.12	-227.18	268.15	566.33	528.74	37.59	15.066	
8,361.72	8,015.00	8,179.36	7,922.36	19.23	18.51	-79.91	-236.67	269.99	570.73	533.00	37.73	15.125	
8,400.00	8,015.01	8,212.09	7,927.09	19.48	18.72	-80.74	-268.49	276.05	584.71	546.50	38.21	15.304	
8,500.00	8,015.02	8,319.40	7,930.96	20.19	19.51	-81.86	-374.04	294.49	617.17	577.48	39.69	15.548	
8,600.00	8,015.04	8,493.04	7,930.83	20.99	20.89	-82.34	-546.92	309.44	635.12	593.24	41.88	15.164	
8,679.10	8,015.04	8,589.78	7,930.78	21.69	21.79	-82.40	-643.67	309.77	637.84	594.36	43.48	14.671	
8,700.00	8,015.05	8,610.68	7,930.77	21.88	22.00	-82.40	-664.57	309.72	637.90	594.01	43.89	14.535	
8,800.00	8,015.06	8,710.68	7,930.72	22.90	23.08	-82.40	-764.57	309.48	638.19	592.21	45.98	13.879	
8,900.00	8,015.07	8,810.68	7,930.67	24.01	24.25	-82.39	-864.56	309.24	638.49	590.23	48.26	13.231	
9,000.00	8,015.08	8,910.68	7,930.62	25.20	25.49	-82.39	-964.56	308.99	638.78	588.09	50.69	12.601	
9,100.00	8,015.09	9,010.68	7,930.57	26.46	26.80	-82.39	-1,064.56	308.75	639.08	585.81	53.27	11.998	
9,200.00	8,015.10	9,110.68	7,930.52	27.79	28.17	-82.39	-1,164.56	308.51	639.37	583.42	55.96	11.426	
9,300.00	8,015.11	9,210.68	7,930.47	29.17	29.59	-82.39	-1,264.56	308.27	639.67	580.92	58.75	10.888	
9,400.00	8,015.12	9,310.68	7,930.42	30.59	31.04	-82.39	-1,364.56	308.02	639.96	578.33	61.64	10.383	
9,500.00	8,015.13	9,410.68	7,930.37	32.06	32.54	-82.38	-1,464.56	307.78	640.26	575.66	64.60	9.912	
9,600.00	8,015.14	9,510.68	7,930.32	33.56	34.07	-82.38	-1,564.56	307.54	640.55	572.93	67.63	9.472	
9,700.00	8,015.15	9,610.68	7,930.27	35.09	35.62	-82.38	-1,664.56	307.30	640.85	570.14	70.71	9.063	
9,800.00	8,015.16	9,710.68	7,930.22	36.65	37.20	-82.38	-1,764.56	307.06	641.14	567.29	73.85	8.682	
9,900.00	8,015.17	9,810.68	7,930.17	38.23	38.80	-82.38	-1,864.56	306.81	641.44	564.41	77.03	8.327	
10,000.00	8,015.18	9,910.68	7,930.12	39.83	40.42	-82.37	-1,964.56	306.57	641.73	561.48	80.26	7.996	
10,100.00	8,015.19	10,010.68	7,930.07	41.45	42.06	-82.37	-2,064.56	306.33	642.03	558.52	83.51	7.688	
10,200.00	8,015.20	10,110.68	7,930.02	43.09	43.71	-82.37	-2,164.55	306.09	642.32	555.52	86.80	7.400	
10,300.00	8,015.21	10,210.68	7,929.97	44.74	45.38	-82.37	-2,264.55	305.85	642.62	552.50	90.12	7.131	
10,400.00	8,015.22	10,310.68	7,929.92	46.41	47.06	-82.37	-2,364.55	305.60	642.91	549.45	93.46	6.879	
10,500.00	8,015.23	10,410.68	7,929.87	48.08	48.74	-82.37	-2,464.55	305.36	643.21	546.38	96.83	6.643	
10,600.00	8,015.24	10,510.68	7,929.82	49.77	50.44	-82.36	-2,564.55	305.12	643.51	543.30	100.21	6.422	
10,700.00	8,015.25	10,610.68	7,929.77	51.46	52.15	-82.36	-2,664.55	304.88	643.80	540.19	103.61	6.214	
10,800.00	8,015.26	10,710.67	7,929.72	53.17	53.86	-82.36	-2,764.55	304.64	644.10	537.07	107.03	6.018	
10,900.00	8,015.27	10,810.67	7,929.67	54.88	55.58	-82.36	-2,864.55	304.39	644.39	533.93	110.46	5.834	
11,000.00	8,015.28	10,910.67	7,929.62	56.60	57.31	-82.36	-2,964.55	304.15	644.69	530.78	113.91	5.660	
11,100.00	8,015.29	11,010.67	7,929.57	58.33	59.04	-82.35	-3,064.55	303.91	644.98	527.61	117.37	5.495	
11,200.00	8,015.30	11,110.67	7,929.52	60.06	60.78	-82.35	-3,164.55	303.67	645.28	524.44	120.84	5.340	
11,300.00	8,015.31	11,210.67	7,929.47	61.79	62.52	-82.35	-3,264.55	303.42	645.57	521.25	124.32	5.193	

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11,400.00	8,015.32	11,310.67	7,929.42	63.54	64.27	-82.35	-3,364.55	303.18	645.87	518.06	127.81	5.053		
11,500.00	8,015.33	11,410.67	7,929.37	65.28	66.02	-82.35	-3,464.55	302.94	646.16	514.86	131.31	4.921		
11,600.00	8,015.34	11,510.67	7,929.32	67.03	67.78	-82.34	-3,564.54	302.70	646.46	511.64	134.81	4.795		
11,700.00	8,015.35	11,610.67	7,929.27	68.79	69.54	-82.34	-3,664.54	302.46	646.75	508.43	138.33	4.676		
11,800.00	8,015.36	11,710.67	7,929.22	70.54	71.30	-82.34	-3,764.54	302.21	647.05	505.20	141.85	4.562		
11,900.00	8,015.37	11,810.67	7,929.17	72.31	73.07	-82.34	-3,864.54	301.97	647.34	501.97	145.37	4.453		
12,000.00	8,015.38	11,910.67	7,929.12	74.07	74.84	-82.34	-3,964.54	301.73	647.64	498.73	148.91	4.349		
12,100.00	8,015.39	12,010.67	7,929.07	75.84	76.61	-82.34	-4,064.54	301.49	647.93	495.49	152.45	4.250		
12,200.00	8,015.40	12,110.67	7,929.02	77.61	78.38	-82.33	-4,164.54	301.25	648.23	492.24	155.99	4.156		
12,300.00	8,015.41	12,210.67	7,928.97	79.38	80.16	-82.33	-4,264.54	301.00	648.52	488.99	159.54	4.065		
12,400.00	8,015.42	12,310.67	7,928.92	81.15	81.94	-82.33	-4,364.54	300.76	648.82	485.73	163.09	3.978		
12,500.00	8,015.43	12,410.67	7,928.87	82.93	83.72	-82.33	-4,464.54	300.52	649.11	482.47	166.65	3.895		
12,600.00	8,015.44	12,510.67	7,928.82	84.71	85.50	-82.33	-4,564.54	300.28	649.41	479.20	170.21	3.815		
12,700.00	8,015.45	12,610.67	7,928.77	86.49	87.28	-82.32	-4,664.54	300.04	649.70	475.93	173.77	3.739		
12,800.00	8,015.46	12,710.67	7,928.72	88.27	89.07	-82.32	-4,764.54	299.79	650.00	472.66	177.34	3.665		
12,900.00	8,015.47	12,810.67	7,928.67	90.06	90.86	-82.32	-4,864.53	299.55	650.29	469.38	180.91	3.595		
13,000.00	8,015.48	12,910.67	7,928.62	91.84	92.65	-82.32	-4,964.53	299.31	650.59	466.10	184.49	3.526		
13,100.00	8,015.49	13,010.66	7,928.57	93.63	94.44	-82.32	-5,064.53	299.07	650.89	462.82	188.06	3.461		
13,200.00	8,015.50	13,110.66	7,928.52	95.42	96.23	-82.32	-5,164.53	298.83	651.18	459.54	191.64	3.398		
13,300.00	8,015.51	13,210.66	7,928.47	97.21	98.02	-82.31	-5,264.53	298.58	651.48	456.25	195.23	3.337		
13,400.00	8,015.52	13,310.66	7,928.42	99.00	99.81	-82.31	-5,364.53	298.34	651.77	452.96	198.81	3.278		
13,500.00	8,015.53	13,410.66	7,928.37	100.79	101.61	-82.31	-5,464.53	298.10	652.07	449.67	202.40	3.222		
13,600.00	8,015.54	13,510.66	7,928.32	102.58	103.41	-82.31	-5,564.53	297.86	652.36	446.37	205.99	3.167		
13,700.00	8,015.55	13,610.66	7,928.27	104.38	105.20	-82.31	-5,664.53	297.61	652.66	443.08	209.58	3.114		
13,800.00	8,015.56	13,710.66	7,928.22	106.17	107.00	-82.30	-5,764.53	297.37	652.95	439.78	213.17	3.063		
13,900.00	8,015.57	13,810.66	7,928.17	107.97	108.80	-82.30	-5,864.53	297.13	653.25	436.48	216.77	3.014		
14,000.00	8,015.58	13,910.66	7,928.12	109.77	110.60	-82.30	-5,964.53	296.89	653.54	433.18	220.37	2.966		
14,100.00	8,015.59	14,010.66	7,928.07	111.57	112.40	-82.30	-6,064.53	296.65	653.84	429.87	223.96	2.919		
14,200.00	8,015.60	14,110.66	7,928.02	113.36	114.20	-82.30	-6,164.53	296.40	654.13	426.57	227.57	2.874		
14,300.00	8,015.61	14,210.66	7,927.97	115.16	116.00	-82.30	-6,264.52	296.16	654.43	423.26	231.17	2.831		
14,400.00	8,015.62	14,310.66	7,927.92	116.97	117.81	-82.29	-6,364.52	295.92	654.72	419.95	234.77	2.789		
14,500.00	8,015.63	14,410.66	7,927.87	118.77	119.61	-82.29	-6,464.52	295.68	655.02	416.64	238.38	2.748		
14,600.00	8,015.64	14,510.66	7,927.82	120.57	121.41	-82.29	-6,564.52	295.44	655.31	413.33	241.98	2.708		
14,700.00	8,015.65	14,610.66	7,927.77	122.37	123.22	-82.29	-6,664.52	295.19	655.61	410.02	245.59	2.670		
14,800.00	8,015.66	14,710.66	7,927.72	124.17	125.02	-82.29	-6,764.52	294.95	655.90	406.70	249.20	2.632		
14,900.00	8,015.67	14,810.66	7,927.67	125.98	126.83	-82.28	-6,864.52	294.71	656.20	403.39	252.81	2.596		
15,000.00	8,015.68	14,910.66	7,927.62	127.78	128.64	-82.28	-6,964.52	294.47	656.49	400.07	256.42	2.560		
15,100.00	8,015.68	15,010.66	7,927.57	129.59	130.44	-82.28	-7,064.52	294.23	656.79	396.76	260.03	2.526		
15,200.00	8,015.69	15,110.66	7,927.52	131.39	132.25	-82.28	-7,164.52	293.98	657.08	393.44	263.65	2.492		
15,300.00	8,015.70	15,210.66	7,927.47	133.20	134.06	-82.28	-7,264.52	293.74	657.38	390.12	267.26	2.460		
15,400.00	8,015.71	15,310.65	7,927.42	135.01	135.87	-82.28	-7,364.52	293.50	657.67	386.80	270.87	2.428		
15,500.00	8,015.72	15,410.65	7,927.37	136.81	137.68	-82.27	-7,464.52	293.26	657.97	383.48	274.49	2.397		
15,600.00	8,015.73	15,510.65	7,927.32	138.62	139.49	-82.27	-7,564.51	293.01	658.27	380.16	278.11	2.367		
15,700.00	8,015.74	15,610.65	7,927.27	140.43	141.30	-82.27	-7,664.51	292.77	658.56	376.84	281.73	2.338		
15,800.00	8,015.75	15,710.65	7,927.22	142.24	143.11	-82.27	-7,764.51	292.53	658.86	373.51	285.34	2.309		
15,900.00	8,015.76	15,810.65	7,927.17	144.05	144.92	-82.27	-7,864.51	292.29	659.15	370.19	288.96	2.281		
16,000.00	8,015.77	15,910.65	7,927.12	145.86	146.73	-82.27	-7,964.51	292.05	659.45	366.86	292.58	2.254		
16,100.00	8,015.78	16,010.65	7,927.07	147.67	148.54	-82.26	-8,064.51	291.80	659.74	363.54	296.20	2.227		
16,200.00	8,015.79	16,110.65	7,927.02	149.48	150.35	-82.26	-8,164.51	291.56	660.04	360.21	299.83	2.201		
16,300.00	8,015.80	16,210.65	7,926.97	151.29	152.16	-82.26	-8,264.51	291.32	660.33	356.88	303.45	2.176		
16,400.00	8,015.81	16,310.65	7,926.92	153.10	153.97	-82.26	-8,364.51	291.08	660.63	353.56	307.07	2.151		
16,500.00	8,015.82	16,410.65	7,926.87	154.91	155.79	-82.26	-8,464.51	290.84	660.92	350.23	310.69	2.127		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S. , R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 505H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

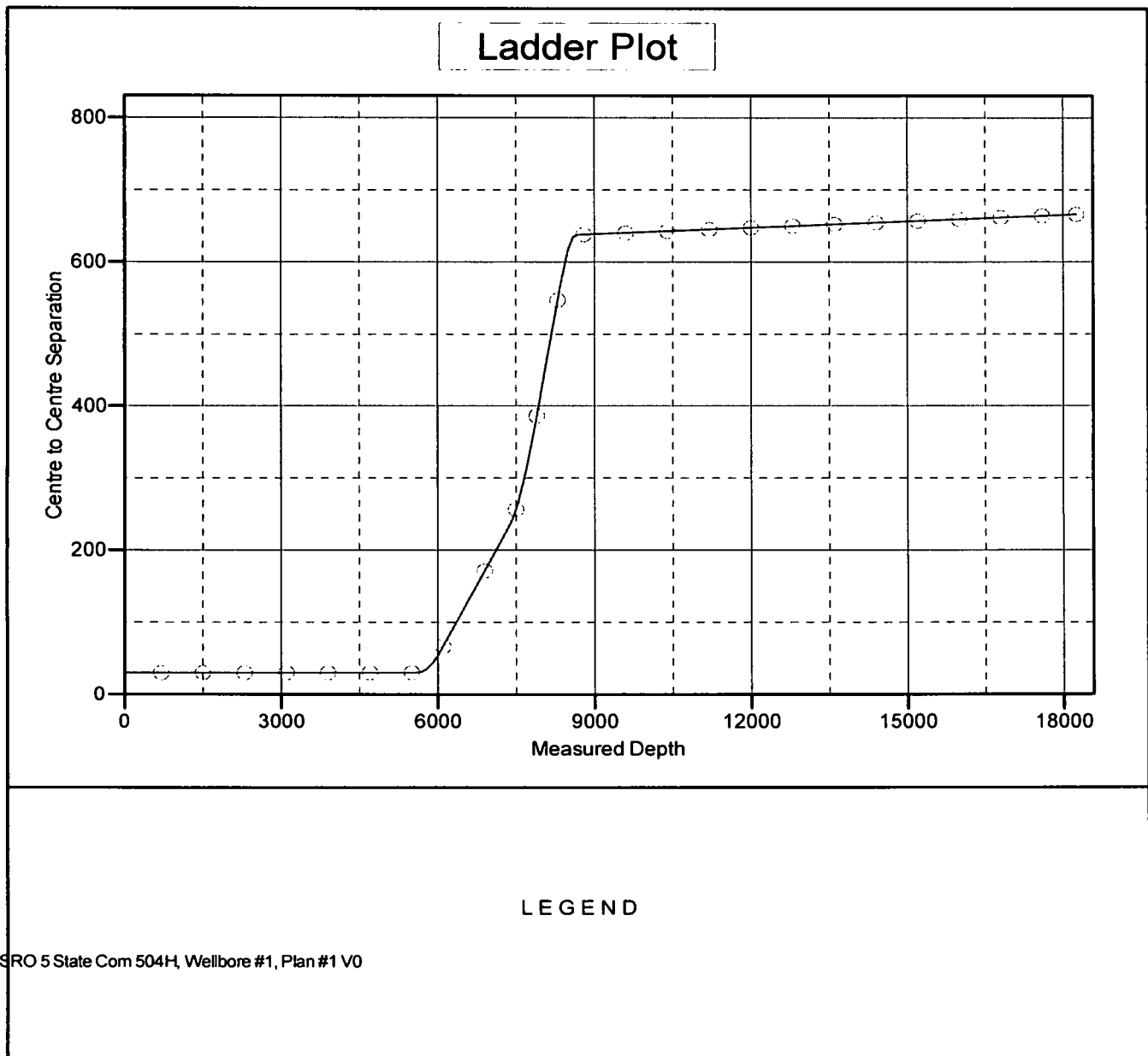
Local Co-ordinate Reference: Well SRO 5 State Com 505H
TVD Reference: KB=30' @ 3037.10usft (Nabors 894)
MD Reference: KB=30' @ 3037.10usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Offset Design Sec. 05, T 26 S. , R 28 E - SRO 5 State Com 504H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
16,600.00	8,015.83	16,510.65	7,926.82	156.72	157.60	-82.25	-8,564.51	290.59	661.22	346.90	314.32	2.104		
16,700.00	8,015.84	16,610.65	7,926.77	158.53	159.41	-82.25	-8,664.51	290.35	661.51	343.57	317.94	2.081		
16,800.00	8,015.85	16,710.65	7,926.72	160.34	161.23	-82.25	-8,764.51	290.11	661.81	340.24	321.57	2.058		
16,900.00	8,015.86	16,810.65	7,926.67	162.15	163.04	-82.25	-8,864.50	289.87	662.10	336.91	325.19	2.036		
17,000.00	8,015.87	16,910.65	7,926.62	163.97	164.85	-82.25	-8,964.50	289.63	662.40	333.58	328.82	2.014		
17,100.00	8,015.88	17,010.65	7,926.57	165.78	166.67	-82.25	-9,064.50	289.38	662.69	330.25	332.45	1.993		
17,200.00	8,015.89	17,110.65	7,926.52	167.59	168.48	-82.24	-9,164.50	289.14	662.99	326.91	336.07	1.973		
17,300.00	8,015.90	17,210.65	7,926.47	169.41	170.30	-82.24	-9,264.50	288.90	663.28	323.58	339.70	1.953		
17,400.00	8,015.91	17,310.65	7,926.42	171.22	172.11	-82.24	-9,364.50	288.66	663.58	320.25	343.33	1.933		
17,500.00	8,015.92	17,410.65	7,926.37	173.03	173.93	-82.24	-9,464.50	288.42	663.87	316.92	346.96	1.913		
17,600.00	8,015.93	17,510.65	7,926.32	174.85	175.74	-82.24	-9,564.50	288.17	664.17	313.58	350.59	1.894		
17,700.00	8,015.94	17,610.64	7,926.27	176.66	177.56	-82.24	-9,664.50	287.93	664.46	310.25	354.22	1.876		
17,800.00	8,015.95	17,710.64	7,926.22	178.47	179.37	-82.23	-9,764.50	287.69	664.76	306.91	357.85	1.858		
17,900.00	8,015.96	17,810.64	7,926.17	180.29	181.19	-82.23	-9,864.50	287.45	665.06	303.58	361.48	1.840		
18,000.00	8,015.97	17,910.64	7,926.12	182.10	183.00	-82.23	-9,964.50	287.20	665.35	300.24	365.11	1.822		
18,100.00	8,015.98	18,010.64	7,926.07	183.92	184.82	-82.23	-10,064.50	286.96	665.65	296.91	368.74	1.805		
18,200.00	8,015.99	18,110.64	7,926.02	185.73	186.64	-82.23	-10,164.50	286.72	665.94	293.57	372.37	1.788		
18,256.46	8,016.00	18,160.35	7,926.00	186.76	187.54	-82.23	-10,214.20	286.60	666.14	291.84	374.30	1.780		
18,256.86	8,016.00	18,160.35	7,926.00	186.77	187.54	-82.23	-10,214.20	286.60	666.15	291.84	374.31	1.780		

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S., R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 505H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well SRO 5 State Com 505H
TVD Reference: KB=30' @ 3037.10usft (Nabors 894)
MD Reference: KB=30' @ 3037.10usft (Nabors 894)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=30' @ 3037.10usft (Nabors 894) Coordinates are relative to: SRO 5 State Com 505H
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Central Meridian is -104.33334 Grid Convergence at Surface is: 0.12°

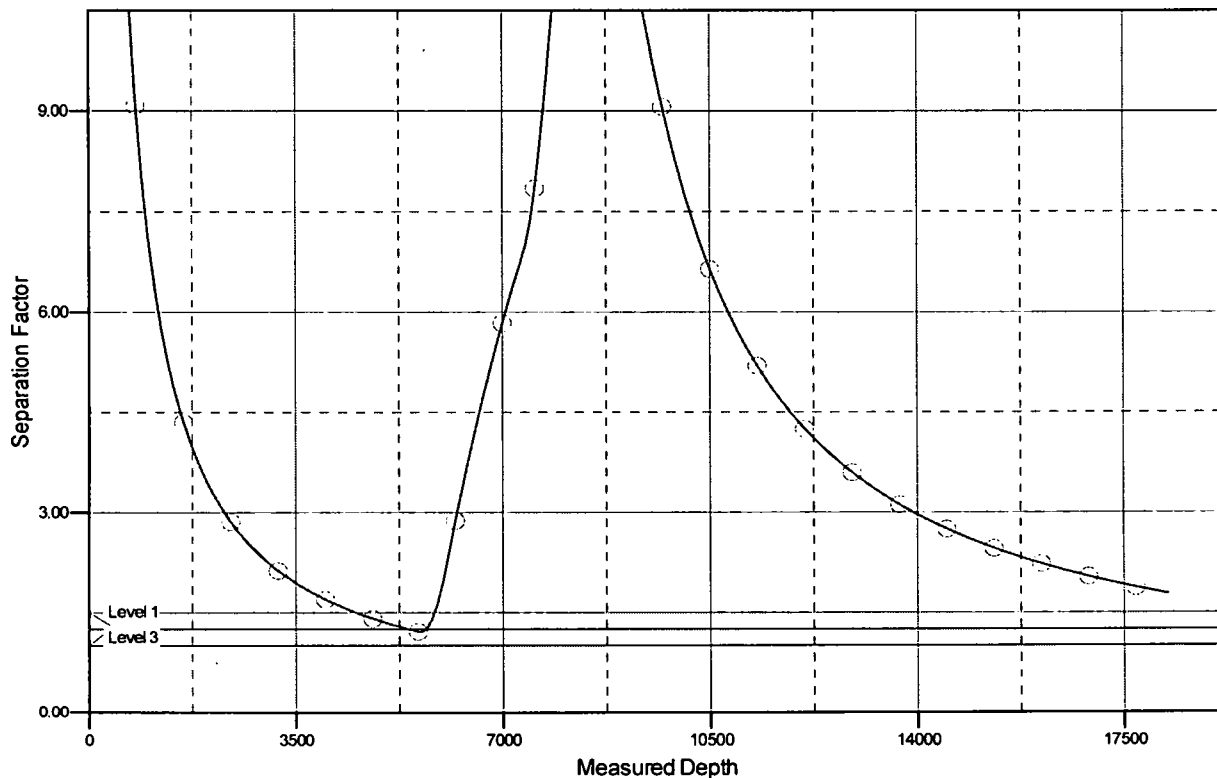


Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 05, T 26 S., R 28 E
Site Error: 0.00 usft
Reference Well: SRO 5 State Com 505H
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Output errors are at 2.00 sigma
Database: EDM 5000.1
Offset TVD Reference: Offset Datum

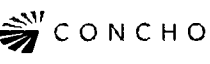
Reference Depths are relative to KB=30' @ 3037.10usft (Nabors 894) Coordinates are relative to: SRO 5 State Com 505H
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Central Meridian is -104.33334 Grid Convergence at Surface is: 0.12°

Separation Factor Plot



LEGEND

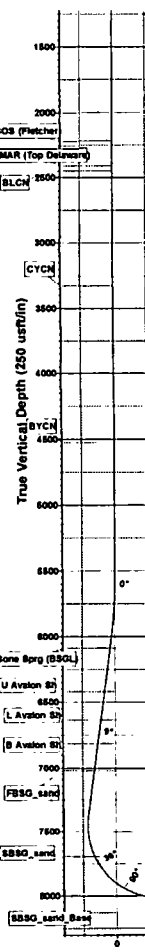
SRO 5 State Com 504H, Wellbore #1, Plan #1 V0



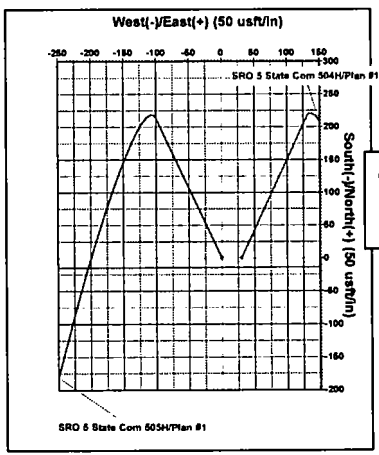
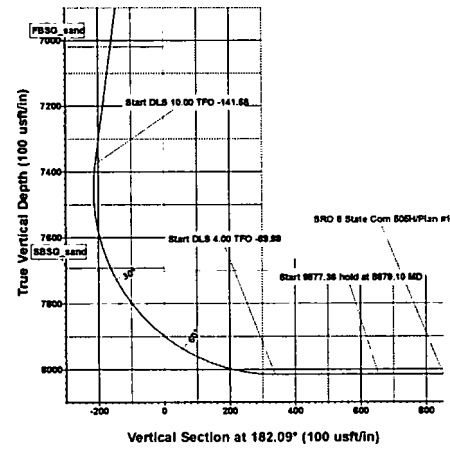
COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Site: Sec. 05, T 28 S., R 28 E
Well: SRO 5 State Com 505H
Wellbore: Wellbore #1
Plan: Plan #1 (SRO 5 State Com 505H/Wellbore #1)
Nabors 894

WELL DETAILS: SRO 5 State Com 505H
Ground Elevation: 3007.10
RKB Elevation: KB=30' @ 3037.10usft (Nabors 894)
Rig Name: Nabors 894

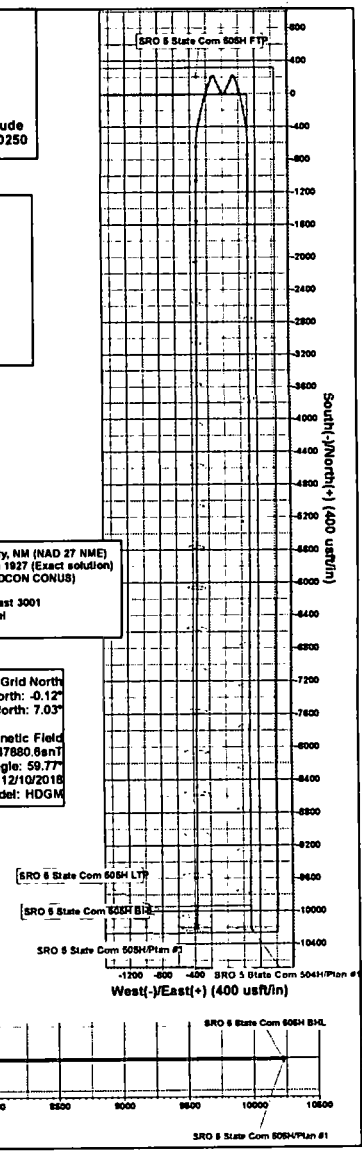
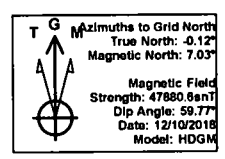
Northing 392156.60 Easting 571495.70 Latitude 32.07794 Longitude -104.10250



Planned Section Details											Annotation
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect		
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00		Start DLS 10.00 TFO -141.58
3	6028.78	8.58	334.89	6027.18	29.00	-13.59	2.00	334.89	-28.49		Start DLS 4.00 TFO -89.98
4	7394.44	8.58	334.89	7377.57	213.40	-100.00	0.00	0.00	-209.61		Start 9577.38 hold at 8679.10 MD
5	8361.72	89.99	193.00	8015.00	-327.58	-285.77	10.00	-141.58	337.79		TD at 18256.48
6	8679.10	89.99	180.30	8015.04	-642.18	-322.46	4.00	-89.98	653.52		
7	18256.48	89.99	180.30	8016.00	-10219.40	-373.40	0.00	0.00	10226.22		



PROJECT DETAILS: Eddy County, NM (NAD 27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid



Vertical Section at 182.09° (250 usft/in)