



CONCHO

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 12 2018

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COG Operating L L C

Eddy County, NM (NAD 27 NME)

Sec. 31, T 26 S, R 28- E

Way South State Com 706H

Wellbore #1

Plan #1

30-015-45546

Anticollision Report

11 December, 2018



INTEGRITY
DIRECTIONAL



Anticollision Report



Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 19,999.96 u
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Circular Conic
Casing Method:	Not applied

Survey Tool Program Date 12/11/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	21,774.13	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec. 31, T 26 S, R 28- E						
Way South State Com 704H - Wellbore #1 - Plan #1	2,000.00	1,999.00	60.00	51.30	6.900	CC, ES
Way South State Com 704H - Wellbore #1 - Plan #1	21,774.88	21,783.75	670.04	215.75	1.475	Level 3, SF
Way South State Com 705H - Wellbore #1 - Plan #1	2,000.00	1,999.00	30.00	21.30	3.450	CC
Way South State Com 705H - Wellbore #1 - Plan #1	21,774.88	21,575.89	381.32	-73.58	0.838	Level 1, ES, SF

Offset Design Sec. 31, T 26 S, R 28- E - Way South State Com 704H - 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		Distance		Minimum Separation		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	60.00	60.01				
100.00	100.00	99.00	99.00	0.08	0.08	90.00	0.00	60.00	60.00	59.84	0.16	383.265	
200.00	200.00	199.00	199.00	0.30	0.30	90.00	0.00	60.00	60.00	59.40	0.60	99.236	
300.00	300.00	299.00	299.00	0.53	0.53	90.00	0.00	60.00	60.00	58.95	1.05	56.918	
400.00	400.00	399.00	399.00	0.75	0.75	90.00	0.00	60.00	60.00	58.50	1.50	39.902	
500.00	500.00	499.00	499.00	0.98	0.98	90.00	0.00	60.00	60.00	58.05	1.95	30.719	
600.00	600.00	599.00	599.00	1.20	1.20	90.00	0.00	60.00	60.00	57.60	2.40	24.971	
700.00	700.00	699.00	699.00	1.43	1.43	90.00	0.00	60.00	60.00	57.15	2.85	21.036	
800.00	800.00	799.00	799.00	1.65	1.65	90.00	0.00	60.00	60.00	56.70	3.30	18.172	
900.00	900.00	899.00	899.00	1.88	1.87	90.00	0.00	60.00	60.00	56.25	3.75	15.994	
1,000.00	1,000.00	999.00	999.00	2.10	2.10	90.00	0.00	60.00	60.00	55.80	4.20	14.283	
1,100.00	1,100.00	1,099.00	1,099.00	2.33	2.32	90.00	0.00	60.00	60.00	55.35	4.65	12.902	
1,200.00	1,200.00	1,199.00	1,199.00	2.55	2.55	90.00	0.00	60.00	60.00	54.90	5.10	11.765	
1,300.00	1,300.00	1,299.00	1,299.00	2.78	2.77	90.00	0.00	60.00	60.00	54.45	5.55	10.812	
1,400.00	1,400.00	1,399.00	1,399.00	3.00	3.00	90.00	0.00	60.00	60.00	54.00	6.00	10.002	
1,500.00	1,500.00	1,499.00	1,499.00	3.23	3.22	90.00	0.00	60.00	60.00	53.55	6.45	9.304	
1,600.00	1,600.00	1,599.00	1,599.00	3.45	3.45	90.00	0.00	60.00	60.00	53.10	6.90	8.698	
1,700.00	1,700.00	1,699.00	1,699.00	3.67	3.67	90.00	0.00	60.00	60.00	52.65	7.35	8.166	
1,800.00	1,800.00	1,799.00	1,799.00	3.90	3.90	90.00	0.00	60.00	60.00	52.20	7.80	7.695	
1,900.00	1,900.00	1,899.00	1,899.00	4.12	4.12	90.00	0.00	60.00	60.00	51.75	8.25	7.276	
2,000.00	2,000.00	1,999.00	1,999.00	4.35	4.35	90.00	0.00	60.00	60.00	51.30	8.70	6.900	CC, ES
2,050.00	2,050.00	2,049.00	2,049.00	4.45	4.46	-150.20	0.00	60.00	60.38	51.47	8.91	6.776	
2,100.00	2,099.99	2,098.99	2,098.99	4.54	4.57	-150.61	0.00	60.00	61.14	52.02	9.11	6.708	

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



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Offset Design Sec. 31, T 26 S, R 28- E - Way South State Com 704H - 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			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
2,200.00	2,199.97	2,198.97	2,198.97	4.73	4.80	-151.39	0.00	60.00	62.66	53.14	9.52	6.579		
2,300.00	2,299.96	2,298.96	2,298.96	4.92	5.02	-152.14	0.00	60.00	64.20	54.26	9.94	6.460		
2,400.00	2,399.94	2,398.94	2,398.94	5.11	5.25	-152.85	0.00	60.00	65.75	55.39	10.36	6.349		
2,500.00	2,499.93	2,498.93	2,498.93	5.30	5.47	-153.53	0.00	60.00	67.31	56.53	10.78	6.246		
2,600.00	2,599.91	2,598.91	2,598.91	5.50	5.70	-154.17	0.00	60.00	68.87	57.68	11.20	6.151		
2,700.00	2,699.90	2,698.90	2,698.90	5.70	5.92	-154.79	0.00	60.00	70.45	58.83	11.62	6.062		
2,800.00	2,799.88	2,798.88	2,798.88	5.90	6.14	-155.38	0.00	60.00	72.03	59.98	12.05	5.978		
2,900.00	2,899.87	2,898.87	2,898.87	6.11	6.37	-155.95	0.00	60.00	73.62	61.14	12.48	5.901		
3,000.00	2,999.85	2,998.85	2,998.85	6.31	6.59	-156.49	0.00	60.00	75.22	62.31	12.91	5.828		
3,100.00	3,099.84	3,098.84	3,098.84	6.52	6.82	-157.01	0.00	60.00	76.82	63.48	13.34	5.759		
3,200.00	3,199.82	3,198.82	3,198.82	6.73	7.04	-157.51	0.00	60.00	78.43	64.66	13.77	5.695		
3,300.00	3,299.81	3,298.81	3,298.81	6.94	7.27	-157.99	0.00	60.00	80.05	65.84	14.21	5.635		
3,400.00	3,399.79	3,398.79	3,398.79	7.15	7.49	-158.45	0.00	60.00	81.67	67.03	14.64	5.578		
3,500.00	3,499.78	3,498.78	3,498.78	7.36	7.72	-158.89	0.00	60.00	83.29	68.22	15.08	5.525		
3,600.00	3,599.76	3,598.76	3,598.76	7.57	7.94	-159.31	0.00	60.00	84.92	69.41	15.51	5.474		
3,700.00	3,699.75	3,698.75	3,698.75	7.78	8.17	-159.72	0.00	60.00	86.56	70.61	15.95	5.426		
3,800.00	3,799.73	3,798.73	3,798.73	8.00	8.39	-160.11	0.00	60.00	88.20	71.81	16.39	5.381		
3,900.00	3,899.72	3,898.72	3,898.72	8.21	8.62	-160.49	0.00	60.00	89.84	73.01	16.83	5.338		
4,000.00	3,999.70	3,998.70	3,998.70	8.43	8.84	-160.86	0.00	60.00	91.49	74.22	17.27	5.298		
4,100.00	4,099.69	4,098.69	4,098.69	8.64	9.07	-161.21	0.00	60.00	93.14	75.43	17.71	5.259		
4,200.00	4,199.67	4,198.67	4,198.67	8.86	9.29	-161.55	0.00	60.00	94.79	76.64	18.15	5.222		
4,300.00	4,299.65	4,298.65	4,298.65	9.08	9.52	-161.88	0.00	60.00	96.45	77.86	18.59	5.187		
4,400.00	4,399.64	4,398.64	4,398.64	9.30	9.74	-162.19	0.00	60.00	98.11	79.07	19.04	5.154		
4,500.00	4,499.62	4,498.62	4,498.62	9.51	9.97	-162.50	0.00	60.00	99.77	80.29	19.48	5.122		
4,600.00	4,599.61	4,598.61	4,598.61	9.73	10.19	-162.80	0.00	60.00	101.44	81.52	19.92	5.092		
4,700.00	4,699.59	4,698.59	4,698.59	9.95	10.41	-163.08	0.00	60.00	103.11	82.74	20.37	5.063		
4,800.00	4,799.58	4,798.58	4,798.58	10.17	10.64	-163.36	0.00	60.00	104.78	83.97	20.81	5.035		
4,900.00	4,899.56	4,898.56	4,898.56	10.39	10.86	-163.63	0.00	60.00	106.45	85.20	21.25	5.009		
5,000.00	4,999.55	4,998.55	4,998.55	10.61	11.09	-163.89	0.00	60.00	108.13	86.43	21.70	4.983		
5,100.00	5,099.53	5,098.53	5,098.53	10.83	11.31	-164.14	0.00	60.00	109.81	87.66	22.14	4.959		
5,200.00	5,199.52	5,198.52	5,198.52	11.05	11.54	-164.39	0.00	60.00	111.49	88.90	22.59	4.935		
5,300.00	5,299.50	5,298.50	5,298.50	11.27	11.76	-164.63	0.00	60.00	113.17	90.13	23.03	4.913		
5,400.00	5,399.49	5,398.49	5,398.49	11.49	11.99	-164.86	0.00	60.00	114.85	91.37	23.48	4.891		
5,500.00	5,499.47	5,498.47	5,498.47	11.71	12.21	-165.08	0.00	60.00	116.54	92.61	23.93	4.871		
5,600.00	5,599.46	5,598.46	5,598.46	11.94	12.44	-165.30	0.00	60.00	118.22	93.85	24.37	4.851		
5,700.00	5,699.39	5,698.53	5,698.51	12.16	12.63	-164.90	-1.65	60.39	121.54	96.75	24.79	4.902		
5,750.00	5,749.30	5,748.47	5,748.41	12.28	12.72	-164.26	-3.74	60.89	124.44	99.44	24.99	4.979		
5,800.00	5,799.18	5,798.34	5,798.19	12.39	12.80	-163.36	-6.60	61.56	127.76	102.57	25.20	5.071		
5,900.00	5,898.93	5,898.03	5,897.68	12.63	12.97	-161.58	-12.60	62.98	134.50	108.90	25.60	5.254		
6,000.00	5,998.69	5,997.72	5,997.18	12.86	13.14	-159.97	-18.60	64.40	141.36	115.36	26.01	5.436		
6,100.00	6,098.44	6,097.41	6,096.68	13.10	13.32	-158.51	-24.60	65.83	148.32	121.91	26.41	5.615		
6,200.00	6,198.20	6,197.10	6,196.18	13.33	13.49	-157.18	-30.59	67.25	155.37	128.54	26.83	5.792		
6,300.00	6,297.96	6,296.79	6,295.68	13.57	13.67	-155.96	-36.59	68.67	162.49	135.25	27.24	5.965		
6,400.00	6,397.71	6,396.47	6,395.18	13.81	13.85	-154.85	-42.59	70.09	169.68	142.02	27.66	6.135		
6,500.00	6,497.47	6,496.16	6,494.68	14.05	14.03	-153.83	-48.59	71.51	176.93	148.85	28.08	6.301		
6,600.00	6,597.23	6,595.85	6,594.17	14.29	14.22	-152.89	-54.58	72.93	184.23	155.73	28.51	6.463		
6,700.00	6,696.98	6,695.54	6,693.67	14.53	14.40	-152.02	-60.58	74.35	191.58	162.65	28.93	6.621		
6,800.00	6,796.74	6,795.23	6,793.17	14.77	14.59	-151.22	-66.58	75.77	198.97	169.60	29.36	6.776		
6,900.00	6,896.50	6,894.92	6,892.67	15.01	14.78	-150.47	-72.58	77.19	206.39	176.59	29.80	6.927		
7,000.00	6,996.25	6,994.61	6,992.17	15.25	14.98	-149.77	-78.58	78.61	213.85	183.61	30.23	7.074		
7,100.00	7,096.01	7,094.30	7,091.67	15.50	15.17	-149.13	-84.57	80.03	221.33	190.66	30.67	7.217		
7,200.00	7,195.76	7,193.99	7,191.17	15.74	15.37	-148.52	-90.57	81.45	228.84	197.73	31.11	7.356		

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Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,300.00	7,295.52	7,293.68	7,290.66	15.98	15.57	-147.95	-96.57	82.87	236.38	204.83	31.55	7.492		
7,400.00	7,395.28	7,393.37	7,390.16	16.23	15.76	-147.42	-102.57	84.29	243.93	211.94	31.99	7.624		
7,500.00	7,495.03	7,493.06	7,489.66	16.47	15.97	-146.92	-108.56	85.71	251.51	219.07	32.44	7.753		
7,600.00	7,594.79	7,592.75	7,589.16	16.72	16.17	-146.45	-114.56	87.13	259.10	226.21	32.89	7.878		
7,700.00	7,694.55	7,692.44	7,688.66	16.97	16.37	-146.01	-120.56	88.55	266.71	233.38	33.34	8.000		
7,800.00	7,794.30	7,792.13	7,788.16	17.21	16.58	-145.59	-126.56	89.97	274.34	240.55	33.79	8.119		
7,900.00	7,894.06	7,891.81	7,887.66	17.46	16.78	-145.19	-132.55	91.39	281.98	247.74	34.24	8.235		
8,000.00	7,993.82	7,991.50	7,987.15	17.71	16.99	-144.82	-138.55	92.81	289.63	254.93	34.70	8.348		
8,100.00	8,093.57	8,091.19	8,086.65	17.95	17.20	-144.46	-144.55	94.24	297.29	262.14	35.15	8.457		
8,200.00	8,193.33	8,190.88	8,186.15	18.20	17.41	-144.12	-150.55	95.66	304.97	269.36	35.61	8.564		
8,300.00	8,293.09	8,290.57	8,285.65	18.45	17.62	-143.80	-156.55	97.08	312.65	276.58	36.07	8.668		
8,400.00	8,392.84	8,390.26	8,385.15	18.70	17.83	-143.49	-162.54	98.50	320.34	283.82	36.53	8.769		
8,500.00	8,492.60	8,489.95	8,484.65	18.95	18.05	-143.20	-168.54	99.92	328.05	291.06	36.99	8.868		
8,600.00	8,592.35	8,589.64	8,584.15	19.19	18.26	-142.92	-174.54	101.34	335.76	298.30	37.45	8.964		
8,700.00	8,692.11	8,689.33	8,683.64	19.44	18.48	-142.66	-180.54	102.76	343.48	305.56	37.92	9.058		
8,800.00	8,791.87	8,789.02	8,783.14	19.69	18.69	-142.40	-186.53	104.18	351.20	312.82	38.38	9.150		
8,864.37	8,856.08	8,853.78	8,847.78	19.85	18.83	-142.25	-190.39	105.10	356.17	317.49	38.69	9.207		
8,900.00	8,891.62	8,889.50	8,886.48	19.94	18.92	-142.10	-190.93	105.65	359.19	320.33	38.85	9.245		
8,950.00	8,941.28	8,946.73	8,940.57	20.04	19.02	-141.80	-187.29	106.43	364.48	325.41	39.07	9.329		
9,000.00	8,990.35	9,000.75	8,993.86	20.15	19.12	-131.25	-178.60	107.18	370.98	331.71	39.26	9.448		
9,050.00	9,038.47	9,054.49	9,045.83	20.25	19.20	-125.62	-165.01	107.92	378.65	339.21	39.44	9.600		
9,100.00	9,085.26	9,107.87	9,095.96	20.34	19.27	-121.76	-146.76	108.64	387.46	347.85	39.61	9.782		
9,150.00	9,130.37	9,160.83	9,143.82	20.44	19.33	-118.67	-124.11	109.32	397.35	357.58	39.77	9.992		
9,200.00	9,173.46	9,213.36	9,189.01	20.53	19.39	-115.97	-97.38	109.96	408.26	368.34	39.92	10.227		
9,250.00	9,214.19	9,265.43	9,231.21	20.62	19.45	-113.46	-66.92	110.55	420.11	380.04	40.07	10.484		
9,300.00	9,252.26	9,317.03	9,270.13	20.72	19.52	-111.07	-33.07	111.10	432.83	392.60	40.23	10.758		
9,350.00	9,287.38	9,368.19	9,305.56	20.82	19.60	-108.74	3.81	111.60	446.33	405.92	40.42	11.043		
9,400.00	9,319.28	9,418.93	9,337.31	20.95	19.70	-106.47	43.37	112.05	460.51	419.87	40.64	11.330		
9,450.00	9,347.72	9,469.30	9,365.25	21.10	19.82	-104.25	85.26	112.44	475.26	434.33	40.93	11.612		
9,500.00	9,372.48	9,519.34	9,389.25	21.30	19.98	-102.07	129.15	112.78	490.46	449.17	41.28	11.881		
9,550.00	9,393.37	9,569.11	9,409.24	21.55	20.16	-99.94	174.71	113.06	505.99	464.28	41.71	12.131		
9,600.00	9,410.24	9,618.68	9,425.15	21.85	20.37	-97.88	221.64	113.28	521.74	479.52	42.22	12.358		
9,650.00	9,422.96	9,668.10	9,436.91	22.20	20.61	-95.88	269.63	113.44	537.58	494.78	42.80	12.559		
9,700.00	9,431.42	9,717.45	9,444.48	22.58	20.88	-93.97	318.38	113.54	553.39	509.93	43.46	12.733		
9,750.00	9,435.56	9,766.79	9,447.84	23.00	21.17	-92.15	367.58	113.58	569.04	524.86	44.18	12.881		
9,768.64	9,436.00	9,784.90	9,448.06	23.17	21.29	-91.50	385.69	113.58	574.81	530.36	44.46	12.929		
9,800.00	9,436.22	9,814.83	9,448.27	23.45	21.50	-91.46	415.62	113.58	584.17	539.23	44.95	12.997		
9,900.00	9,436.93	9,911.51	9,448.97	24.37	22.23	-91.35	512.30	113.57	609.61	563.02	46.59	13.084		
10,000.00	9,437.65	10,009.74	9,449.67	25.34	23.08	-91.26	610.53	113.57	628.24	579.82	48.42	12.974		
10,100.00	9,438.36	10,109.03	9,450.38	26.36	24.05	-91.20	709.81	113.56	639.98	589.57	50.41	12.696		
10,200.00	9,439.07	10,208.89	9,451.09	27.39	25.12	-91.16	809.68	113.56	644.76	592.25	52.51	12.280		
10,215.44	9,439.18	10,224.34	9,451.20	27.55	25.29	-91.16	825.12	113.56	644.88	592.03	52.85	12.203		
10,300.00	9,439.78	10,308.89	9,451.81	28.45	26.27	-91.16	909.67	113.55	645.06	590.34	54.72	11.788		
10,400.00	9,440.49	10,408.89	9,452.52	29.58	27.50	-91.16	1,009.67	113.55	645.28	588.21	57.07	11.306		
10,500.00	9,441.20	10,508.89	9,453.24	30.76	28.79	-91.16	1,109.67	113.54	645.50	585.94	59.55	10.839		
10,600.00	9,441.91	10,608.89	9,453.96	32.01	30.13	-91.16	1,209.66	113.54	645.71	583.57	62.14	10.391		
10,700.00	9,442.61	10,708.89	9,454.67	33.31	31.52	-91.16	1,309.66	113.54	645.93	581.09	64.84	9.962		
10,800.00	9,443.32	10,808.89	9,455.39	34.66	32.96	-91.16	1,409.66	113.53	646.15	578.53	67.62	9.556		
10,900.00	9,444.03	10,908.89	9,456.10	36.05	34.43	-91.16	1,509.66	113.53	646.37	575.89	70.48	9.171		
11,000.00	9,444.74	11,008.89	9,456.82	37.47	35.94	-91.16	1,609.65	113.52	646.58	573.17	73.41	8.808		
11,100.00	9,445.44	11,108.89	9,457.53	38.93	37.47	-91.16	1,709.65	113.52	646.80	570.40	76.40	8.466		
11,200.00	9,446.15	11,208.89	9,458.25	40.42	39.03	-91.16	1,809.65	113.51	647.02	567.57	79.45	8.144		

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

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 704H - 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			Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
11,300.00	9,446.86	11,308.89	9,458.96	41.94	40.61	91.16	1,909.64	113.51	647.24	564.69	82.54	7.841			
11,400.00	9,447.57	11,408.89	9,459.68	43.48	42.21	91.16	2,009.64	113.50	647.45	561.77	85.68	7.556			
11,500.00	9,448.28	11,508.89	9,460.39	45.04	43.82	91.16	2,109.64	113.50	647.67	558.81	88.86	7.289			
11,600.00	9,448.98	11,608.89	9,461.11	46.61	45.46	91.16	2,209.64	113.49	647.89	555.82	92.07	7.037			
11,700.00	9,449.69	11,708.89	9,461.83	48.21	47.10	91.16	2,309.63	113.49	648.11	552.79	95.32	6.800			
11,800.00	9,450.40	11,808.89	9,462.54	49.82	48.76	91.16	2,409.63	113.48	648.33	549.74	98.59	6.576			
11,900.00	9,451.11	11,908.89	9,463.26	51.45	50.44	91.16	2,509.63	113.48	648.54	546.66	101.89	6.365			
12,000.00	9,451.82	12,008.89	9,463.97	53.09	52.12	91.16	2,609.62	113.47	648.76	543.56	105.21	6.167			
12,100.00	9,452.52	12,108.89	9,464.69	54.74	53.81	91.16	2,709.62	113.47	648.98	540.43	108.55	5.979			
12,200.00	9,453.23	12,208.89	9,465.40	56.40	55.51	91.16	2,809.62	113.46	649.20	537.29	111.91	5.801			
12,300.00	9,453.94	12,308.89	9,466.12	58.07	57.21	91.16	2,909.62	113.46	649.41	534.13	115.29	5.633			
12,400.00	9,454.65	12,408.89	9,466.83	59.75	58.93	91.16	3,009.61	113.45	649.63	530.95	118.68	5.474			
12,500.00	9,455.35	12,508.89	9,467.55	61.44	60.65	91.16	3,109.61	113.45	649.85	527.76	122.09	5.323			
12,600.00	9,456.06	12,608.89	9,468.26	63.14	62.38	91.16	3,209.61	113.44	650.07	524.55	125.51	5.179			
12,700.00	9,456.77	12,708.89	9,468.98	64.84	64.11	91.16	3,309.61	113.44	650.29	521.34	128.95	5.043			
12,800.00	9,457.48	12,808.89	9,469.70	66.55	65.84	91.17	3,409.60	113.43	650.50	518.11	132.40	4.913			
12,900.00	9,458.19	12,908.89	9,470.41	68.27	67.59	91.17	3,509.60	113.43	650.72	514.87	135.85	4.790			
13,000.00	9,458.89	13,008.89	9,471.13	69.99	69.33	91.17	3,609.60	113.42	650.94	511.62	139.32	4.672			
13,100.00	9,459.60	13,108.89	9,471.84	71.72	71.08	91.17	3,709.59	113.42	651.16	508.36	142.80	4.560			
13,200.00	9,460.31	13,208.89	9,472.56	73.45	72.83	91.17	3,809.59	113.41	651.37	505.09	146.28	4.453			
13,300.00	9,461.02	13,308.89	9,473.27	75.18	74.59	91.17	3,909.59	113.41	651.59	501.82	149.77	4.350			
13,400.00	9,461.72	13,408.89	9,473.99	76.92	76.35	91.17	4,009.59	113.40	651.81	498.53	153.27	4.253			
13,500.00	9,462.43	13,508.89	9,474.70	78.67	78.11	91.17	4,109.58	113.40	652.03	495.25	156.78	4.159			
13,600.00	9,463.14	13,608.89	9,475.42	80.42	79.88	91.17	4,209.58	113.40	652.24	491.95	160.29	4.069			
13,700.00	9,463.85	13,708.89	9,476.13	82.17	81.65	91.17	4,309.58	113.39	652.46	488.65	163.81	3.983			
13,800.00	9,464.56	13,808.89	9,476.85	83.92	83.42	91.17	4,409.57	113.39	652.68	485.34	167.34	3.900			
13,900.00	9,465.26	13,908.89	9,477.57	85.68	85.19	91.17	4,509.57	113.38	652.90	482.03	170.87	3.821			
14,000.00	9,465.97	14,008.89	9,478.28	87.44	86.97	91.17	4,609.57	113.38	653.12	478.71	174.40	3.745			
14,100.00	9,466.68	14,108.88	9,479.00	89.20	88.74	91.17	4,709.57	113.37	653.33	475.39	177.94	3.672			
14,200.00	9,467.39	14,208.88	9,479.71	90.96	90.52	91.17	4,809.56	113.37	653.55	472.07	181.49	3.601			
14,300.00	9,468.09	14,308.88	9,480.43	92.73	92.30	91.17	4,909.56	113.36	653.77	468.74	185.03	3.533			
14,400.00	9,468.80	14,408.88	9,481.14	94.50	94.09	91.17	5,009.56	113.36	653.99	465.40	188.59	3.468			
14,500.00	9,469.51	14,508.88	9,481.86	96.27	95.87	91.17	5,109.56	113.35	654.20	462.06	192.14	3.405			
14,600.00	9,470.22	14,608.88	9,482.57	98.05	97.66	91.17	5,209.55	113.35	654.42	458.72	195.70	3.344			
14,700.00	9,470.93	14,708.88	9,483.29	99.82	99.44	91.17	5,309.55	113.34	654.64	455.38	199.26	3.285			
14,800.00	9,471.63	14,808.88	9,484.00	101.60	101.23	91.17	5,409.55	113.34	654.86	452.03	202.83	3.229			
14,900.00	9,472.34	14,908.88	9,484.72	103.38	103.02	91.17	5,509.54	113.33	655.08	448.68	206.40	3.174			
15,000.00	9,473.05	15,008.88	9,485.44	105.16	104.81	91.17	5,609.54	113.33	655.29	445.33	209.97	3.121			
15,100.00	9,473.76	15,108.88	9,486.15	106.94	106.60	91.17	5,709.54	113.32	655.51	441.97	213.54	3.070			
15,200.00	9,474.46	15,208.88	9,486.87	108.72	108.40	91.17	5,809.54	113.32	655.73	438.61	217.12	3.020			
15,300.00	9,475.17	15,308.88	9,487.58	110.51	110.19	91.17	5,909.53	113.31	655.95	435.25	220.70	2.972			
15,400.00	9,475.88	15,408.88	9,488.30	112.29	111.98	91.17	6,009.53	113.31	656.16	431.89	224.28	2.926			
15,500.00	9,476.59	15,508.88	9,489.01	114.08	113.78	91.17	6,109.53	113.30	656.38	428.52	227.86	2.881			
15,600.00	9,477.30	15,608.88	9,489.73	115.87	115.58	91.17	6,209.52	113.30	656.60	425.15	231.45	2.837			
15,700.00	9,478.00	15,708.88	9,490.44	117.66	117.38	91.17	6,309.52	113.29	656.82	421.78	235.03	2.795			
15,800.00	9,478.71	15,808.88	9,491.16	119.45	119.17	91.17	6,409.52	113.29	657.04	418.41	238.62	2.753			
15,900.00	9,479.42	15,908.88	9,491.87	121.24	120.97	91.17	6,509.52	113.28	657.25	415.04	242.21	2.714			
16,000.00	9,480.13	16,008.88	9,492.59	123.03	122.77	91.17	6,609.51	113.28	657.47	411.66	245.81	2.675			
16,100.00	9,480.83	16,108.88	9,493.31	124.83	124.57	91.17	6,709.51	113.27	657.69	408.29	249.40	2.637			
16,200.00	9,481.54	16,208.88	9,494.02	126.62	126.38	91.17	6,809.51	113.27	657.91	404.91	253.00	2.600			
16,300.00	9,482.25	16,308.88	9,494.74	128.42	128.18	91.18	6,909.50	113.26	658.12	401.53	256.59	2.565			
16,400.00	9,482.96	16,408.88	9,495.45	130.21	129.98	91.18	7,009.50	113.26	658.34	398.15	260.19	2.530			

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

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 704H - 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	Offset		Between Centres (usft)	Between Ellipses (usft)				Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset
16,500.00	9,483.67	16,508.88	9,496.17	132.01	131.78	91.18	7,109.50	113.26	658.56	394.77	2.497				
16,600.00	9,484.37	16,608.88	9,496.88	133.81	133.59	91.18	7,209.50	113.25	658.78	391.38	2.464				
16,700.00	9,485.08	16,708.88	9,497.60	135.61	135.39	91.18	7,309.49	113.25	658.99	388.00	2.432				
16,800.00	9,485.79	16,808.88	9,498.31	137.41	137.20	91.18	7,409.49	113.24	659.21	384.61	2.401				
16,900.00	9,486.50	16,908.88	9,499.03	139.20	139.00	91.18	7,509.49	113.24	659.43	381.22	2.370				
17,000.00	9,487.20	17,008.88	9,499.74	141.01	140.81	91.18	7,609.49	113.23	659.65	377.83	2.341				
17,100.00	9,487.91	17,108.88	9,500.46	142.81	142.61	91.18	7,709.48	113.23	659.87	374.44	2.312				
17,200.00	9,488.62	17,208.88	9,501.18	144.61	144.42	91.18	7,809.48	113.22	660.08	371.05	2.284				
17,300.00	9,489.33	17,308.88	9,501.89	146.41	146.23	91.18	7,909.48	113.22	660.30	367.66	2.256				
17,400.00	9,490.04	17,408.88	9,502.61	148.21	148.04	91.18	8,009.47	113.21	660.52	364.27	2.230				
17,500.00	9,490.74	17,508.88	9,503.32	150.02	149.84	91.18	8,109.47	113.21	660.74	360.88	2.203				
17,600.00	9,491.45	17,608.88	9,504.04	151.82	151.65	91.18	8,209.47	113.20	660.95	357.48	2.178				
17,700.00	9,492.16	17,708.88	9,504.75	153.63	153.46	91.18	8,309.47	113.20	661.17	354.08	2.153				
17,800.00	9,492.87	17,808.88	9,505.47	155.43	155.27	91.18	8,409.46	113.19	661.39	350.69	2.129				
17,900.00	9,493.57	17,908.88	9,506.18	157.24	157.08	91.18	8,509.46	113.19	661.61	347.29	2.105				
18,000.00	9,494.28	18,008.88	9,506.90	159.04	158.89	91.18	8,609.46	113.18	661.83	343.89	2.082				
18,100.00	9,494.99	18,108.88	9,507.61	160.85	160.70	91.18	8,709.45	113.18	662.04	340.49	2.059				
18,200.00	9,495.70	18,208.88	9,508.33	162.65	162.51	91.18	8,809.45	113.17	662.26	337.09	2.037				
18,300.00	9,496.41	18,308.88	9,509.05	164.46	164.32	91.18	8,909.45	113.17	662.48	333.69	2.015				
18,400.00	9,497.11	18,408.88	9,509.76	166.27	166.13	91.18	9,009.45	113.16	662.70	330.29	1.994				
18,500.00	9,497.82	18,508.88	9,510.48	168.08	167.95	91.18	9,109.44	113.16	662.91	326.89	1.973				
18,600.00	9,498.53	18,608.88	9,511.19	169.89	169.76	91.18	9,209.44	113.15	663.13	323.49	1.952				
18,700.00	9,499.24	18,708.88	9,511.91	171.69	171.57	91.18	9,309.44	113.15	663.35	320.09	1.932				
18,800.00	9,499.94	18,808.88	9,512.62	173.50	173.38	91.18	9,409.43	113.14	663.57	316.68	1.913				
18,900.00	9,500.65	18,908.88	9,513.34	175.31	175.19	91.18	9,509.43	113.14	663.79	313.28	1.894				
19,000.00	9,501.36	19,008.88	9,514.05	177.12	177.01	91.18	9,609.43	113.13	664.00	309.87	1.875				
19,100.00	9,502.07	19,108.88	9,514.77	178.93	178.82	91.18	9,709.43	113.13	664.22	306.47	1.857				
19,200.00	9,502.78	19,208.88	9,515.48	180.74	180.63	91.18	9,809.42	113.12	664.44	303.06	1.839				
19,300.00	9,503.48	19,308.88	9,516.20	182.55	182.45	91.18	9,909.42	113.12	664.66	299.66	1.821				
19,400.00	9,504.19	19,408.88	9,516.91	184.36	184.26	91.18	10,009.42	113.12	664.87	296.25	1.804				
19,500.00	9,504.90	19,508.88	9,517.63	186.18	186.07	91.18	10,109.42	113.11	665.09	292.84	1.787				
19,600.00	9,505.61	19,608.88	9,518.35	187.99	187.89	91.18	10,209.41	113.11	665.31	289.43	1.770				
19,700.00	9,506.31	19,708.88	9,519.06	189.80	189.70	91.18	10,309.41	113.10	665.53	286.03	1.754				
19,800.00	9,507.02	19,808.88	9,519.78	191.61	191.52	91.18	10,409.41	113.10	665.74	282.62	1.738				
19,900.00	9,507.73	19,908.88	9,520.49	193.42	193.33	91.19	10,509.40	113.09	665.96	279.21	1.722				
20,000.00	9,508.44	20,008.88	9,521.21	195.23	195.15	91.19	10,609.40	113.09	666.18	275.80	1.706				
20,100.00	9,509.15	20,108.88	9,521.92	197.05	196.96	91.19	10,709.40	113.08	666.40	272.39	1.691				
20,200.00	9,509.85	20,208.88	9,522.64	198.86	198.78	91.19	10,809.40	113.08	666.62	268.98	1.676				
20,300.00	9,510.56	20,308.88	9,523.35	200.67	200.59	91.19	10,909.39	113.07	666.83	265.57	1.662				
20,400.00	9,511.27	20,408.88	9,524.07	202.49	202.41	91.19	11,009.39	113.07	667.05	262.16	1.647				
20,500.00	9,511.98	20,508.88	9,524.78	204.30	204.22	91.19	11,109.39	113.06	667.27	258.74	1.633				
20,600.00	9,512.68	20,608.88	9,525.50	206.11	206.04	91.19	11,209.38	113.06	667.49	255.33	1.620				
20,700.00	9,513.39	20,708.88	9,526.22	207.93	207.86	91.19	11,309.38	113.05	667.70	251.92	1.606				
20,800.00	9,514.10	20,808.88	9,526.93	209.74	209.67	91.19	11,409.38	113.05	667.92	248.51	1.593				
20,900.00	9,514.81	20,908.88	9,527.65	211.56	211.49	91.19	11,509.38	113.04	668.14	245.09	1.579				
21,000.00	9,515.52	21,008.88	9,528.36	213.37	213.31	91.19	11,609.37	113.04	668.36	241.68	1.566				
21,100.00	9,516.22	21,108.88	9,529.08	215.19	215.12	91.19	11,709.37	113.03	668.58	238.27	1.554				
21,200.00	9,516.93	21,208.88	9,529.79	217.00	216.94	91.19	11,809.37	113.03	668.79	234.85	1.541				
21,300.00	9,517.64	21,308.88	9,530.51	218.82	218.76	91.19	11,909.37	113.02	669.01	231.44	1.529				
21,400.00	9,518.35	21,408.88	9,531.22	220.63	220.57	91.19	12,009.36	113.02	669.23	228.02	1.517				
21,500.00	9,519.05	21,508.88	9,531.94	222.45	222.39	91.19	12,109.36	113.01	669.45	224.61	1.505				
21,600.00	9,519.76	21,608.88	9,532.65	224.26	224.21	91.19	12,209.36	113.01	669.66	221.19	1.493 Level 3				

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. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 704H - 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			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
21,700.00	9,520.47	21,708.87	9,533.37	226.08	226.00	91.19	12,309.35	113.00	669.88	217.81	452.07	1.482 Level 3	
21,774.88	9,521.00	21,783.75	9,533.91	227.19	227.10	91.19	12,384.23	113.00	670.04	215.75	454.30	1.475 Level 3, SF	



Anticollision Report

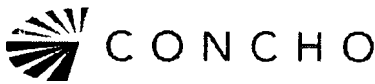


Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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													Offset Site Error:	0.00 usft
Survey Program: 0-MWVD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset +N/-S (usft)	Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	30.00	30.02					
100.00	100.00	99.00	99.00	0.08	0.08	90.00	0.00	30.00	30.00	29.84	0.16	191.632		
200.00	200.00	199.00	199.00	0.30	0.30	90.00	0.00	30.00	30.00	29.40	0.60	49.618		
300.00	300.00	299.00	299.00	0.53	0.53	90.00	0.00	30.00	30.00	28.95	1.05	28.459		
400.00	400.00	399.00	399.00	0.75	0.75	90.00	0.00	30.00	30.00	28.50	1.50	19.951		
500.00	500.00	499.00	499.00	0.98	0.98	90.00	0.00	30.00	30.00	28.05	1.95	15.359		
600.00	600.00	599.00	599.00	1.20	1.20	90.00	0.00	30.00	30.00	27.60	2.40	12.486		
700.00	700.00	699.00	699.00	1.43	1.43	90.00	0.00	30.00	30.00	27.15	2.85	10.518		
800.00	800.00	799.00	799.00	1.65	1.65	90.00	0.00	30.00	30.00	26.70	3.30	9.086		
900.00	900.00	899.00	899.00	1.88	1.87	90.00	0.00	30.00	30.00	26.25	3.75	7.997		
1,000.00	1,000.00	999.00	999.00	2.10	2.10	90.00	0.00	30.00	30.00	25.80	4.20	7.141		
1,100.00	1,100.00	1,099.00	1,099.00	2.33	2.32	90.00	0.00	30.00	30.00	25.35	4.65	6.451		
1,200.00	1,200.00	1,199.00	1,199.00	2.55	2.55	90.00	0.00	30.00	30.00	24.90	5.10	5.882		
1,300.00	1,300.00	1,299.00	1,299.00	2.78	2.77	90.00	0.00	30.00	30.00	24.45	5.55	5.406		
1,400.00	1,400.00	1,399.00	1,399.00	3.00	3.00	90.00	0.00	30.00	30.00	24.00	6.00	5.001		
1,500.00	1,500.00	1,499.00	1,499.00	3.23	3.22	90.00	0.00	30.00	30.00	23.55	6.45	4.652		
1,600.00	1,600.00	1,599.00	1,599.00	3.45	3.45	90.00	0.00	30.00	30.00	23.10	6.90	4.349		
1,700.00	1,700.00	1,699.00	1,699.00	3.67	3.67	90.00	0.00	30.00	30.00	22.65	7.35	4.083		
1,800.00	1,800.00	1,799.00	1,799.00	3.90	3.90	90.00	0.00	30.00	30.00	22.20	7.80	3.848		
1,900.00	1,900.00	1,899.00	1,899.00	4.12	4.12	90.00	0.00	30.00	30.00	21.75	8.25	3.638		
2,000.00	2,000.00	1,999.00	1,999.00	4.35	4.35	90.00	0.00	30.00	30.00	21.30	8.70	3.450 CC		
2,050.00	2,050.00	2,049.34	2,049.34	4.45	4.45	-149.81	-0.32	29.72	30.10	21.20	8.90	3.382		
2,100.00	2,099.99	2,099.35	2,099.34	4.54	4.54	-149.41	-0.97	29.14	30.28	21.20	9.08	3.335		
2,200.00	2,199.97	2,199.35	2,199.32	4.73	4.71	-148.60	-2.27	27.98	30.63	21.19	9.44	3.244		
2,300.00	2,299.96	2,299.34	2,299.30	4.92	4.90	-147.82	-3.58	26.82	31.00	21.19	9.81	3.159		
2,400.00	2,399.94	2,399.34	2,399.29	5.11	5.08	-147.06	-4.88	25.66	31.37	21.18	10.19	3.078		
2,500.00	2,499.93	2,499.34	2,499.27	5.30	5.27	-146.31	-6.19	24.50	31.75	21.17	10.58	3.001		
2,600.00	2,599.91	2,599.34	2,599.25	5.50	5.47	-145.58	-7.49	23.34	32.13	21.16	10.97	2.929		
2,700.00	2,699.90	2,699.34	2,699.24	5.70	5.66	-144.87	-8.80	22.18	32.52	21.15	11.36	2.862		
2,800.00	2,799.88	2,799.34	2,799.22	5.90	5.86	-144.18	-10.10	21.02	32.91	21.15	11.76	2.798		
2,900.00	2,899.87	2,899.33	2,899.20	6.11	6.06	-143.50	-11.41	19.86	33.30	21.14	12.16	2.738		
3,000.00	2,999.85	2,999.33	2,999.19	6.31	6.26	-142.84	-12.71	18.70	33.70	21.13	12.57	2.681		
3,100.00	3,099.84	3,099.33	3,099.17	6.52	6.46	-142.19	-14.01	17.54	34.11	21.13	12.98	2.628		
3,200.00	3,199.82	3,199.33	3,199.15	6.73	6.67	-141.56	-15.32	16.38	34.52	21.13	13.39	2.577		
3,300.00	3,299.81	3,299.33	3,299.14	6.94	6.87	-140.95	-16.62	15.23	34.93	21.12	13.81	2.530		
3,400.00	3,399.79	3,399.33	3,399.12	7.15	7.08	-140.35	-17.93	14.07	35.35	21.12	14.23	2.485		
3,500.00	3,499.78	3,499.33	3,499.10	7.36	7.29	-139.76	-19.23	12.91	35.77	21.12	14.65	2.442		
3,600.00	3,599.76	3,599.32	3,599.09	7.57	7.50	-139.18	-20.54	11.75	36.20	21.13	15.07	2.402		
3,700.00	3,699.75	3,699.32	3,699.07	7.78	7.71	-138.62	-21.84	10.59	36.63	21.13	15.49	2.364		
3,800.00	3,799.73	3,799.32	3,799.05	8.00	7.92	-138.08	-23.15	9.43	37.06	21.14	15.92	2.328		
3,900.00	3,899.72	3,899.32	3,899.03	8.21	8.13	-137.54	-24.45	8.27	37.49	21.15	16.35	2.294		
4,000.00	3,999.70	3,999.32	3,999.02	8.43	8.35	-137.02	-25.75	7.11	37.93	21.16	16.78	2.261		
4,100.00	4,099.69	4,099.32	4,099.00	8.64	8.56	-136.51	-27.06	5.95	38.37	21.17	17.21	2.230		
4,200.00	4,199.67	4,199.31	4,198.98	8.86	8.78	-136.01	-28.36	4.79	38.82	21.18	17.64	2.201		
4,300.00	4,299.65	4,299.31	4,298.97	9.08	8.99	-135.52	-29.67	3.63	39.26	21.20	18.07	2.173		
4,400.00	4,399.64	4,399.31	4,398.95	9.30	9.21	-135.05	-30.97	2.47	39.71	21.21	18.50	2.146		
4,500.00	4,499.62	4,499.31	4,498.93	9.51	9.42	-134.58	-32.28	1.31	40.17	21.23	18.94	2.121		
4,600.00	4,599.61	4,599.31	4,598.92	9.73	9.64	-134.13	-33.58	0.15	40.62	21.25	19.37	2.097		
4,700.00	4,699.59	4,699.31	4,698.90	9.95	9.86	-133.68	-34.89	-1.01	41.08	21.27	19.81	2.074		
4,800.00	4,799.58	4,799.31	4,798.88	10.17	10.08	-133.25	-36.19	-2.17	41.54	21.29	20.25	2.052		
4,900.00	4,899.56	4,899.30	4,898.87	10.39	10.30	-132.82	-37.49	-3.32	42.00	21.32	20.69	2.031		
5,000.00	4,999.55	4,999.30	4,998.85	10.61	10.51	-132.40	-38.80	-4.48	42.47	21.35	21.12	2.010		

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. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 705H - 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)		Between Centres (usft)	Between Ellipses (usft)					
5,100.00	5,099.53	5,099.30	5,098.83	10.83	10.73	-132.00	-40.10	-5.64	42.94	21.37	21.56	1.991	
5,200.00	5,199.52	5,199.30	5,198.82	11.05	10.95	-131.60	-41.41	-6.80	43.41	21.40	22.00	1.973	
5,300.00	5,299.50	5,299.30	5,298.80	11.27	11.17	-131.21	-42.71	-7.96	43.88	21.43	22.44	1.955	
5,400.00	5,399.49	5,399.30	5,398.78	11.49	11.39	-130.83	-44.02	-9.12	44.35	21.46	22.89	1.938	
5,500.00	5,499.47	5,499.29	5,498.77	11.71	11.61	-130.45	-45.32	-10.28	44.83	21.50	23.33	1.922	
5,600.00	5,599.46	5,599.29	5,598.75	11.94	11.83	-130.09	-46.63	-11.44	45.30	21.53	23.77	1.906	
5,700.00	5,699.39	5,699.27	5,698.75	12.16	12.06	-129.73	-47.94	-12.69	45.77	21.56	24.21	1.891	
5,750.00	5,749.30	5,749.27	5,748.75	12.28	12.17	-129.55	-49.14	-13.89	46.17	21.59	24.65	1.876	
5,800.00	5,799.18	5,799.06	5,798.54	12.39	12.29	-129.37	-50.34	-15.14	46.58	21.62	25.09	1.861	
5,900.00	5,898.93	5,898.80	5,898.28	12.63	12.52	-128.74	-51.54	-16.39	46.99	21.65	25.53	1.846	
6,000.00	5,998.69	5,998.56	5,998.04	12.86	12.75	-128.62	-52.74	-17.59	47.40	21.68	25.97	1.831	
6,100.00	6,098.44	6,098.31	6,097.79	13.10	12.98	-128.51	-53.94	-18.79	47.81	21.71	26.41	1.816	
6,200.00	6,198.20	6,198.07	6,197.55	13.33	13.22	-128.41	-55.14	-19.99	48.22	21.74	26.85	1.801	
6,300.00	6,297.96	6,297.83	6,297.31	13.57	13.45	-128.31	-56.34	-21.19	48.63	21.77	27.29	1.786	
6,400.00	6,397.71	6,397.58	6,397.06	13.81	13.68	-128.23	-57.54	-22.39	49.04	21.80	27.73	1.771	
6,500.00	6,497.47	6,497.34	6,496.82	14.05	13.92	-128.15	-58.74	-23.59	49.45	21.83	28.17	1.756	
6,600.00	6,597.23	6,597.10	6,596.58	14.29	14.15	-128.07	-59.94	-24.79	49.86	21.86	28.61	1.741	
6,700.00	6,696.98	6,696.85	6,696.33	14.53	14.39	-128.00	-61.14	-25.99	50.27	21.89	29.05	1.726	
6,800.00	6,796.74	6,796.61	6,796.09	14.77	14.63	-127.93	-62.34	-27.19	50.68	21.92	29.49	1.711	
6,900.00	6,896.50	6,896.37	6,895.85	15.01	14.86	-127.87	-63.54	-28.39	51.09	21.95	29.93	1.696	
7,000.00	6,996.25	6,996.12	6,995.60	15.25	15.10	-127.81	-64.74	-29.59	51.50	21.98	30.37	1.681	
7,100.00	7,096.01	7,095.88	7,095.36	15.50	15.34	-127.76	-65.94	-30.79	51.91	22.01	30.81	1.666	
7,200.00	7,195.76	7,195.63	7,195.11	15.74	15.58	-127.71	-67.14	-31.99	52.32	22.04	31.25	1.651	
7,300.00	7,295.52	7,295.39	7,294.87	15.98	15.81	-127.66	-68.34	-33.19	52.73	22.07	31.69	1.636	
7,400.00	7,395.28	7,395.15	7,394.63	16.23	16.05	-127.61	-69.54	-34.39	53.14	22.10	32.13	1.621	
7,500.00	7,495.03	7,494.90	7,494.38	16.47	16.29	-127.57	-70.74	-35.59	53.55	22.13	32.57	1.606	
7,600.00	7,594.79	7,594.66	7,594.14	16.72	16.53	-127.53	-71.94	-36.79	53.96	22.16	33.01	1.591	
7,700.00	7,694.55	7,694.42	7,693.90	16.97	16.77	-127.49	-73.14	-37.99	54.37	22.19	33.45	1.576	
7,800.00	7,794.30	7,794.17	7,793.65	17.21	17.01	-127.45	-74.34	-39.19	54.78	22.22	33.89	1.561	
7,900.00	7,894.06	7,893.93	7,893.41	17.46	17.25	-127.42	-75.54	-40.39	55.19	22.25	34.33	1.546	
8,000.00	7,993.82	7,993.69	7,993.17	17.71	17.49	-127.38	-76.74	-41.59	55.60	22.28	34.77	1.531	
8,100.00	8,093.57	8,093.44	8,092.92	17.95	17.73	-127.35	-77.94	-42.79	56.01	22.31	35.21	1.516	
8,200.00	8,193.33	8,193.20	8,192.68	18.20	17.98	-127.32	-79.14	-43.99	56.42	22.34	35.65	1.501	
8,300.00	8,293.09	8,292.96	8,292.44	18.45	18.22	-127.29	-80.34	-45.19	56.83	22.37	36.09	1.486	
8,400.00	8,392.84	8,392.71	8,392.19	18.70	18.46	-127.26	-81.54	-46.39	57.24	22.40	36.53	1.471	
8,500.00	8,492.60	8,492.47	8,491.95	18.95	18.70	-127.23	-82.74	-47.59	57.65	22.43	36.97	1.456	
8,600.00	8,592.35	8,592.22	8,591.70	19.19	18.94	-127.21	-83.94	-48.79	58.06	22.46	37.41	1.441	
8,700.00	8,692.11	8,691.98	8,691.46	19.44	19.18	-128.14	-85.14	-50.00	58.47	22.49	37.85	1.426	
8,800.00	8,791.87	8,791.74	8,791.22	19.69	19.36	-137.04	-86.34	-51.20	58.88	22.52	38.29	1.411	
8,864.37	8,856.08	8,855.95	8,855.43	19.85	19.45	-147.55	-87.54	-52.40	59.29	22.55	38.73	1.396	
8,883.07	8,874.74	8,874.61	8,874.09	19.90	19.48	-177.85	-88.74	-53.60	59.70	22.58	39.17	1.381	
8,900.00	8,891.62	8,891.49	8,890.97	19.94	19.50	158.97	-89.94	-54.80	60.11	22.61	39.61	1.366	
8,950.00	8,941.28	8,941.15	8,940.63	20.04	19.55	121.66	-91.14	-56.00	60.52	22.64	40.05	1.351	
9,000.00	8,990.35	8,990.22	8,989.70	20.15	19.60	103.37	-92.34	-57.20	60.93	22.67	40.49	1.336	
9,050.00	9,038.47	9,038.34	9,037.82	20.25	19.64	91.65	-93.54	-58.40	61.34	22.70	40.93	1.321	
9,100.00	9,085.26	9,085.13	9,084.61	20.34	19.67	82.87	-94.74	-59.60	61.75	22.73	41.37	1.306	
9,150.00	9,130.37	9,130.24	9,129.72	20.44	19.71	76.10	-95.94	-60.80	62.16	22.76	41.81	1.291	
9,200.00	9,173.46	9,173.33	9,172.81	20.53	19.74	70.80	-97.14	-62.00	62.57	22.79	42.25	1.276	
9,250.00	9,214.19	9,214.06	9,213.57	20.62	19.76	66.60	-98.34	-63.20	62.98	22.82	42.69	1.261	
9,300.00	9,252.26	9,252.13	9,251.64	20.72	19.84	63.12	-99.54	-64.40	63.39	22.85	43.13	1.246	
9,350.00	9,287.38	9,287.25	9,286.76	20.82	19.96	60.56	-100.74	-65.60	63.80	22.88	43.57	1.231	
9,400.00	9,319.28	9,319.15	9,318.66	20.95	20.11	58.41	-101.94	-66.80	64.21	22.91	44.01	1.216	

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

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 705H - 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)						
9,450.00	9,347.72	9,359.74	9,203.20	21.10	20.28	56.69	176.57	-185.11	240.31	198.92	41.39	5.806		
9,500.00	9,372.48	9,400.00	9,216.79	21.30	20.48	55.34	214.26	-188.99	254.34	212.55	41.79	6.086		
9,550.00	9,393.37	9,433.67	9,226.09	21.55	20.67	54.28	246.45	-192.20	267.77	225.55	42.23	6.341		
9,600.00	9,410.24	9,470.19	9,234.02	21.85	20.88	53.48	281.94	-195.64	280.62	237.88	42.74	6.566		
9,650.00	9,422.96	9,506.50	9,239.63	22.20	21.11	52.92	317.65	-198.99	292.80	249.49	43.32	6.760		
9,700.00	9,431.42	9,542.65	9,242.96	22.58	21.36	52.56	353.49	-202.26	304.26	260.32	43.95	6.923		
9,750.00	9,435.56	9,579.49	9,244.04	23.00	21.62	52.40	390.16	-205.49	314.96	270.33	44.63	7.057		
9,768.64	9,436.00	9,594.88	9,244.15	23.17	21.73	52.49	405.51	-206.69	318.64	273.74	44.90	7.096		
9,800.00	9,436.22	9,620.69	9,244.33	23.45	21.91	53.30	431.26	-208.32	324.65	279.28	45.37	7.156		
9,900.00	9,436.93	9,703.58	9,244.91	24.37	22.53	55.65	514.11	-210.43	343.48	296.59	46.89	7.325		
10,000.00	9,437.65	9,801.83	9,245.61	25.34	23.40	57.62	612.36	-210.57	359.02	310.28	48.74	7.366		
10,100.00	9,438.36	9,901.14	9,246.31	26.36	24.38	58.76	711.67	-210.71	368.90	318.17	50.74	7.271		
10,200.00	9,439.07	10,001.01	9,247.02	27.39	25.46	59.18	811.53	-210.85	372.89	320.05	52.85	7.056		
10,215.44	9,439.18	10,016.45	9,247.13	27.55	25.64	59.19	826.98	-210.87	372.97	319.79	53.19	7.012		
10,300.00	9,439.78	10,101.01	9,247.73	28.45	26.62	59.19	911.53	-210.98	373.04	317.97	55.07	6.774		
10,400.00	9,440.49	10,201.01	9,248.43	29.58	27.85	59.20	1,011.53	-211.12	373.11	315.68	57.42	6.498		
10,500.00	9,441.20	10,301.01	9,249.14	30.76	29.14	59.20	1,111.53	-211.26	373.18	313.27	59.90	6.230		
10,600.00	9,441.91	10,401.01	9,249.85	32.01	30.49	59.21	1,211.52	-211.40	373.25	310.75	62.50	5.972		
10,700.00	9,442.61	10,501.01	9,250.56	33.31	31.88	59.22	1,311.52	-211.54	373.32	308.13	65.19	5.726		
10,800.00	9,443.32	10,601.01	9,251.27	34.66	33.32	59.22	1,411.52	-211.68	373.39	305.42	67.98	5.493		
10,900.00	9,444.03	10,701.01	9,251.97	36.05	34.79	59.23	1,511.52	-211.82	373.47	302.63	70.84	5.272		
11,000.00	9,444.74	10,801.01	9,252.68	37.47	36.29	59.24	1,611.51	-211.95	373.54	299.77	73.77	5.064		
11,100.00	9,445.44	10,901.01	9,253.39	38.93	37.82	59.24	1,711.51	-212.09	373.61	296.85	76.76	4.867		
11,200.00	9,446.15	11,001.01	9,254.10	40.42	39.38	59.25	1,811.51	-212.23	373.68	293.88	79.80	4.683		
11,300.00	9,446.86	11,101.01	9,254.81	41.94	40.96	59.26	1,911.51	-212.37	373.75	290.86	82.90	4.509		
11,400.00	9,447.57	11,201.01	9,255.51	43.48	42.56	59.26	2,011.50	-212.51	373.83	287.79	86.03	4.345		
11,500.00	9,448.28	11,301.01	9,256.22	45.04	44.17	59.27	2,111.50	-212.65	373.90	284.69	89.21	4.191		
11,600.00	9,448.98	11,401.01	9,256.93	46.61	45.81	59.28	2,211.50	-212.79	373.97	281.55	92.42	4.046		
11,700.00	9,449.69	11,501.01	9,257.64	48.21	47.45	59.28	2,311.49	-212.93	374.04	278.38	95.66	3.910		
11,800.00	9,450.40	11,601.01	9,258.35	49.82	49.11	59.29	2,411.49	-213.06	374.11	275.18	98.93	3.781		
11,900.00	9,451.11	11,701.01	9,259.05	51.45	50.78	59.30	2,511.49	-213.20	374.19	271.96	102.23	3.660		
12,000.00	9,451.82	11,801.01	9,259.76	53.09	52.46	59.30	2,611.49	-213.34	374.26	268.71	105.55	3.546		
12,100.00	9,452.52	11,901.01	9,260.47	54.74	54.15	59.31	2,711.48	-213.48	374.33	265.44	108.89	3.438		
12,200.00	9,453.23	12,001.01	9,261.18	56.40	55.85	59.32	2,811.48	-213.62	374.40	262.15	112.25	3.335		
12,300.00	9,453.94	12,101.01	9,261.89	58.07	57.55	59.32	2,911.48	-213.76	374.47	258.85	115.63	3.239		
12,400.00	9,454.65	12,201.01	9,262.59	59.75	59.27	59.33	3,011.48	-213.90	374.55	255.53	119.02	3.147		
12,500.00	9,455.35	12,301.01	9,263.30	61.44	60.98	59.34	3,111.47	-214.03	374.62	252.19	122.43	3.060		
12,600.00	9,456.06	12,401.01	9,264.01	63.14	62.71	59.34	3,211.47	-214.17	374.69	248.84	125.85	2.977		
12,700.00	9,456.77	12,501.01	9,264.72	64.84	64.44	59.35	3,311.47	-214.31	374.76	245.48	129.28	2.899		
12,800.00	9,457.48	12,601.01	9,265.43	66.55	66.18	59.36	3,411.47	-214.45	374.83	242.10	132.73	2.824		
12,900.00	9,458.19	12,701.01	9,266.13	68.27	67.92	59.36	3,511.46	-214.59	374.91	238.72	136.19	2.753		
13,000.00	9,458.89	12,801.01	9,266.84	69.99	69.66	59.37	3,611.46	-214.73	374.98	235.33	139.65	2.685		
13,100.00	9,459.60	12,901.01	9,267.55	71.72	71.41	59.38	3,711.46	-214.87	375.05	231.92	143.13	2.620		
13,200.00	9,460.31	13,001.01	9,268.26	73.45	73.16	59.38	3,811.45	-215.01	375.12	228.51	146.61	2.559		
13,300.00	9,461.02	13,101.01	9,268.97	75.18	74.92	59.39	3,911.45	-215.14	375.19	225.09	150.10	2.500		
13,400.00	9,461.72	13,201.01	9,269.67	76.92	76.68	59.40	4,011.45	-215.28	375.27	221.66	153.60	2.443		
13,500.00	9,462.43	13,301.01	9,270.38	78.67	78.44	59.40	4,111.45	-215.42	375.34	218.23	157.11	2.389		
13,600.00	9,463.14	13,401.01	9,271.09	80.42	80.21	59.41	4,211.44	-215.56	375.41	214.79	160.62	2.337		
13,700.00	9,463.85	13,501.01	9,271.80	82.17	81.97	59.41	4,311.44	-215.70	375.48	211.34	164.14	2.288		
13,800.00	9,464.56	13,601.01	9,272.51	83.92	83.74	59.42	4,411.44	-215.84	375.55	207.89	167.66	2.240		
13,900.00	9,465.26	13,701.01	9,273.21	85.68	85.52	59.43	4,511.44	-215.98	375.63	204.43	171.19	2.194		
14,000.00	9,465.97	13,801.01	9,273.92	87.44	87.29	59.43	4,611.43	-216.11	375.70	200.97	174.73	2.150		

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

Company: COG Operating L L C
Project: Eddy County, NM (NAD 27 NME)
Reference Site: Sec. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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. 31, T 26 S, R 28- E - Way South State Com 705H - Wellbore #1 - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-MWD														Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
14,100.00	9,466.68	13,901.01	9,274.63	89.20	89.07	59.44		4,711.43	-216.25	375.77	197.50	178.27	2.108		
14,200.00	9,467.39	14,001.01	9,275.34	90.96	90.84	59.45		4,811.43	-216.39	375.84	194.03	181.81	2.067		
14,300.00	9,468.09	14,101.01	9,276.05	92.73	92.63	59.45		4,911.43	-216.53	375.91	190.56	185.36	2.028		
14,400.00	9,468.80	14,201.01	9,276.75	94.50	94.41	59.46		5,011.42	-216.67	375.99	187.08	188.91	1.990		
14,500.00	9,469.51	14,301.01	9,277.46	96.27	96.19	59.47		5,111.42	-216.81	376.06	183.60	192.46	1.954		
14,600.00	9,470.22	14,401.01	9,278.17	98.05	97.98	59.47		5,211.42	-216.95	376.13	180.11	196.02	1.919		
14,700.00	9,470.93	14,501.01	9,278.88	99.82	99.76	59.48		5,311.42	-217.08	376.20	176.62	199.58	1.885		
14,800.00	9,471.63	14,601.01	9,279.59	101.60	101.55	59.49		5,411.41	-217.22	376.27	173.13	203.15	1.852		
14,900.00	9,472.34	14,701.01	9,280.29	103.38	103.34	59.49		5,511.41	-217.36	376.35	169.63	206.72	1.821		
15,000.00	9,473.05	14,801.01	9,281.00	105.16	105.13	59.50		5,611.41	-217.50	376.42	166.13	210.29	1.790		
15,100.00	9,473.76	14,901.01	9,281.71	106.94	106.92	59.51		5,711.40	-217.64	376.49	162.63	213.86	1.760		
15,200.00	9,474.46	15,001.01	9,282.42	108.72	108.71	59.51		5,811.40	-217.78	376.56	159.13	217.44	1.732		
15,300.00	9,475.17	15,101.01	9,283.13	110.51	110.51	59.52		5,911.40	-217.92	376.64	155.62	221.01	1.704		
15,400.00	9,475.88	15,201.01	9,283.83	112.29	112.30	59.53		6,011.40	-218.06	376.71	152.11	224.60	1.677		
15,500.00	9,476.59	15,301.01	9,284.54	114.08	114.10	59.53		6,111.39	-218.19	376.78	148.60	228.18	1.651		
15,600.00	9,477.30	15,401.01	9,285.25	115.87	115.90	59.54		6,211.39	-218.33	376.85	145.09	231.76	1.626		
15,700.00	9,478.00	15,501.01	9,285.96	117.66	117.69	59.54		6,311.39	-218.47	376.92	141.57	235.35	1.602		
15,800.00	9,478.71	15,601.01	9,286.67	119.45	119.49	59.55		6,411.39	-218.61	377.00	138.06	238.94	1.578		
15,900.00	9,479.42	15,701.01	9,287.37	121.24	121.29	59.56		6,511.38	-218.75	377.07	134.54	242.53	1.555		
16,000.00	9,480.13	15,801.01	9,288.08	123.03	123.09	59.56		6,611.38	-218.89	377.14	131.02	246.12	1.532		
16,100.00	9,480.83	15,901.01	9,288.79	124.83	124.89	59.57		6,711.38	-219.03	377.21	127.50	249.72	1.511		
16,200.00	9,481.54	16,001.01	9,289.50	126.62	126.69	59.58		6,811.38	-219.16	377.28	123.97	253.31	1.489 Level 3		
16,300.00	9,482.25	16,101.01	9,290.21	128.42	128.49	59.58		6,911.37	-219.30	377.36	120.45	256.91	1.469 Level 3		
16,400.00	9,482.96	16,201.01	9,290.91	130.21	130.30	59.59		7,011.37	-219.44	377.43	116.92	260.51	1.449 Level 3		
16,500.00	9,483.67	16,301.01	9,291.62	132.01	132.10	59.60		7,111.37	-219.58	377.50	113.39	264.11	1.429 Level 3		
16,600.00	9,484.37	16,401.01	9,292.33	133.81	133.90	59.60		7,211.37	-219.72	377.57	109.86	267.71	1.410 Level 3		
16,700.00	9,485.08	16,501.01	9,293.04	135.61	135.71	59.61		7,311.36	-219.86	377.65	106.33	271.31	1.392 Level 3		
16,800.00	9,485.79	16,601.01	9,293.75	137.41	137.51	59.62		7,411.36	-220.00	377.72	102.80	274.92	1.374 Level 3		
16,900.00	9,486.50	16,701.01	9,294.45	139.20	139.32	59.62		7,511.36	-220.13	377.79	99.27	278.52	1.356 Level 3		
17,000.00	9,487.20	16,801.01	9,295.16	141.01	141.12	59.63		7,611.35	-220.27	377.86	95.73	282.13	1.339 Level 3		
17,100.00	9,487.91	16,901.01	9,295.87	142.81	142.93	59.64		7,711.35	-220.41	377.93	92.20	285.74	1.323 Level 3		
17,200.00	9,488.62	17,001.01	9,296.58	144.61	144.74	59.64		7,811.35	-220.55	378.01	88.66	289.35	1.306 Level 3		
17,300.00	9,489.33	17,101.01	9,297.29	146.41	146.55	59.65		7,911.35	-220.69	378.08	85.12	292.96	1.291 Level 3		
17,400.00	9,490.04	17,201.01	9,297.99	148.21	148.35	59.65		8,011.34	-220.83	378.15	81.58	296.57	1.275 Level 3		
17,500.00	9,490.74	17,301.01	9,298.70	150.02	150.16	59.66		8,111.34	-220.97	378.22	78.04	300.18	1.260 Level 3		
17,600.00	9,491.45	17,401.01	9,299.41	151.82	151.97	59.67		8,211.34	-221.11	378.30	74.50	303.79	1.245 Level 2		
17,700.00	9,492.16	17,501.01	9,300.12	153.63	153.78	59.67		8,311.34	-221.24	378.37	70.96	307.40	1.231 Level 2		
17,800.00	9,492.87	17,601.01	9,300.83	155.43	155.59	59.68		8,411.33	-221.38	378.44	67.42	311.02	1.217 Level 2		
17,900.00	9,493.57	17,701.01	9,301.53	157.24	157.40	59.69		8,511.33	-221.52	378.51	63.88	314.63	1.203 Level 2		
18,000.00	9,494.28	17,801.01	9,302.24	159.04	159.21	59.69		8,611.33	-221.66	378.58	60.33	318.25	1.190 Level 2		
18,100.00	9,494.99	17,901.01	9,302.95	160.85	161.02	59.70		8,711.33	-221.80	378.66	56.79	321.87	1.176 Level 2		
18,200.00	9,495.70	18,001.01	9,303.66	162.65	162.83	59.71		8,811.32	-221.94	378.73	53.25	325.48	1.164 Level 2		
18,300.00	9,496.41	18,101.00	9,304.37	164.46	164.64	59.71		8,911.32	-222.08	378.80	49.70	329.10	1.151 Level 2		
18,400.00	9,497.11	18,201.00	9,305.07	166.27	166.45	59.72		9,011.32	-222.21	378.87	46.15	332.72	1.139 Level 2		
18,500.00	9,497.82	18,301.00	9,305.78	168.08	168.26	59.73		9,111.32	-222.35	378.95	42.61	336.34	1.127 Level 2		
18,600.00	9,498.53	18,401.00	9,306.49	169.89	170.07	59.73		9,211.31	-222.49	379.02	39.06	339.96	1.115 Level 2		
18,700.00	9,499.24	18,501.00	9,307.20	171.69	171.89	59.74		9,311.31	-222.63	379.09	35.51	343.58	1.103 Level 2		
18,800.00	9,499.94	18,601.00	9,307.91	173.50	173.70	59.74		9,411.31	-222.77	379.16	31.96	347.20	1.092 Level 2		
18,900.00	9,500.65	18,701.00	9,308.61	175.31	175.51	59.75		9,511.30	-222.91	379.23	28.41	350.82	1.081 Level 2		
19,000.00	9,501.36	18,801.00	9,309.32	177.12	177.32	59.76		9,611.30	-223.05	379.31	24.86	354.45	1.070 Level 2		
19,100.00	9,502.07	18,901.00	9,310.03	178.93	179.14	59.76		9,711.30	-223.18	379.38	21.31	358.07	1.060 Level 2		
19,200.00	9,502.78	19,001.00	9,310.74	180.74	180.95	59.77		9,811.30	-223.32	379.45	17.76	361.69	1.049 Level 2		

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. 31, T 26 S, R 28- E
Site Error: 0.00 usft
Reference Well: Way South State Com 706H
Well Error: 0.00 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well Way South State Com 706H
TVD Reference: KB=30' @ 3130.00usft (Nabors 894)
MD Reference: KB=30' @ 3130.00usft (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

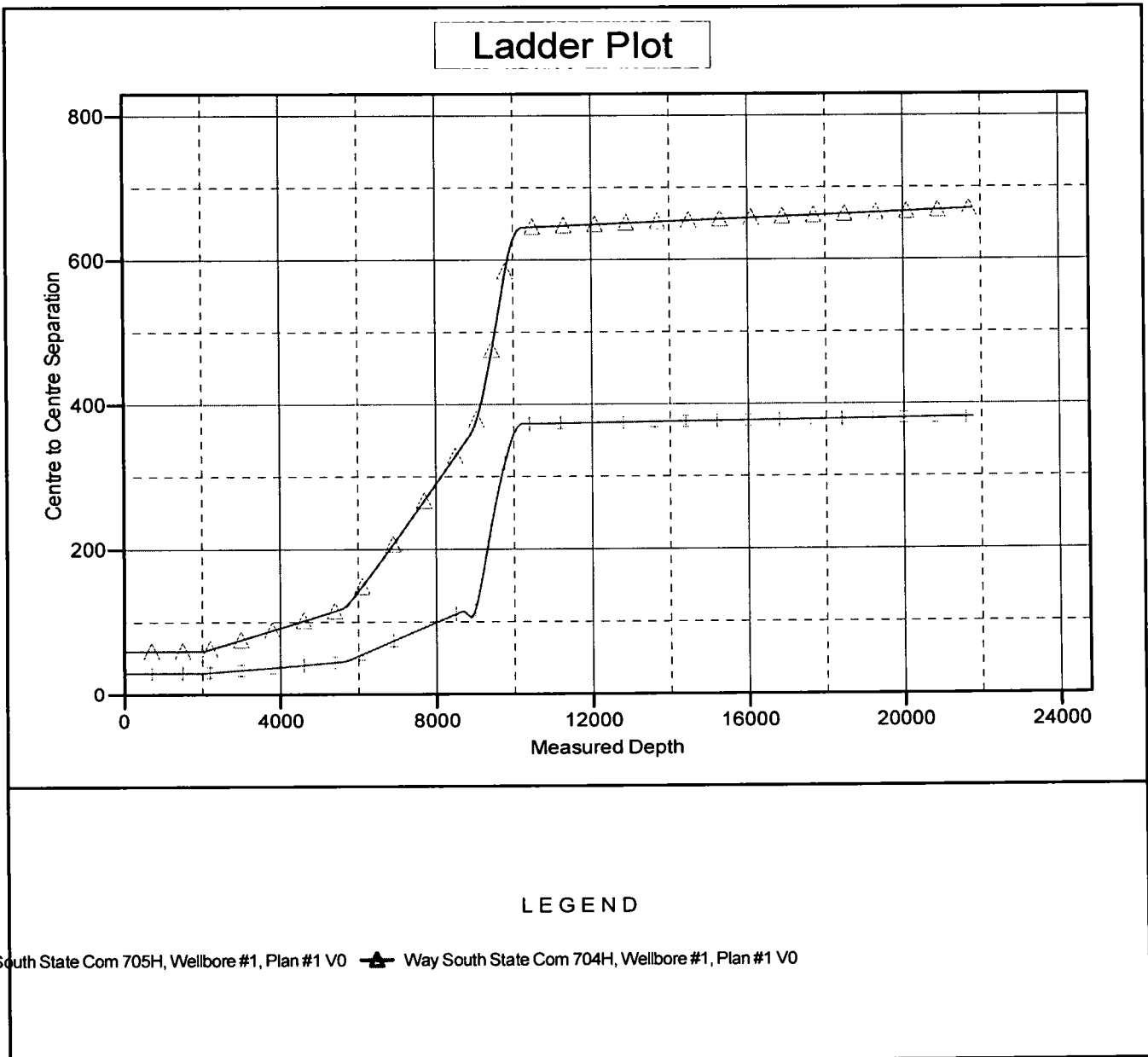
Offset Design Sec. 31, T 26 S, R 28- E - Way South State Com 705H - Wellbore #1 - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
19,300.00	9,503.48	19,101.00	9,311.45	182.55	182.77	59.78	9,911.29	-223.46	379.52	14.21	365.32	1.039 Level 2	
19,400.00	9,504.19	19,201.00	9,312.15	184.36	184.58	59.78	10,011.29	-223.60	379.60	10.65	368.94	1.029 Level 2	
19,500.00	9,504.90	19,301.00	9,312.86	186.18	186.39	59.79	10,111.29	-223.74	379.67	7.10	372.57	1.019 Level 2	
19,600.00	9,505.61	19,401.00	9,313.57	187.99	188.21	59.80	10,211.29	-223.88	379.74	3.55	376.19	1.009 Level 2	
19,700.00	9,506.31	19,501.00	9,314.28	189.80	190.02	59.80	10,311.28	-224.02	379.81	-0.01	379.82	1.000 Level 1	
19,800.00	9,507.02	19,601.00	9,314.99	191.61	191.84	59.81	10,411.28	-224.16	379.89	-3.56	383.45	0.991 Level 1	
19,900.00	9,507.73	19,701.00	9,315.69	193.42	193.65	59.82	10,511.28	-224.29	379.96	-7.12	387.07	0.982 Level 1	
20,000.00	9,508.44	19,801.00	9,316.40	195.23	195.47	59.82	10,611.28	-224.43	380.03	-10.67	390.70	0.973 Level 1	
20,100.00	9,509.15	19,901.00	9,317.11	197.05	197.28	59.83	10,711.27	-224.57	380.10	-14.23	394.33	0.964 Level 1	
20,200.00	9,509.85	20,001.00	9,317.82	198.86	199.10	59.83	10,811.27	-224.71	380.18	-17.78	397.96	0.955 Level 1	
20,300.00	9,510.56	20,101.00	9,318.52	200.67	200.91	59.84	10,911.27	-224.85	380.25	-21.34	401.59	0.947 Level 1	
20,400.00	9,511.27	20,201.00	9,319.23	202.49	202.73	59.85	11,011.27	-224.99	380.32	-24.90	405.22	0.939 Level 1	
20,500.00	9,511.98	20,301.00	9,319.94	204.30	204.54	59.85	11,111.26	-225.13	380.39	-28.45	408.85	0.930 Level 1	
20,600.00	9,512.68	20,401.00	9,320.65	206.11	206.36	59.86	11,211.26	-225.26	380.46	-32.01	412.48	0.922 Level 1	
20,700.00	9,513.39	20,501.00	9,321.36	207.93	208.18	59.87	11,311.26	-225.40	380.54	-35.57	416.11	0.915 Level 1	
20,800.00	9,514.10	20,601.00	9,322.06	209.74	209.99	59.87	11,411.25	-225.54	380.61	-39.13	419.74	0.907 Level 1	
20,900.00	9,514.81	20,701.00	9,322.77	211.56	211.81	59.88	11,511.25	-225.68	380.68	-42.69	423.37	0.899 Level 1	
21,000.00	9,515.52	20,801.00	9,323.48	213.37	213.63	59.89	11,611.25	-225.82	380.75	-46.24	427.00	0.892 Level 1	
21,100.00	9,516.22	20,901.00	9,324.19	215.19	215.44	59.89	11,711.25	-225.96	380.83	-49.80	430.63	0.884 Level 1	
21,200.00	9,516.93	21,001.00	9,324.90	217.00	217.26	59.90	11,811.24	-226.10	380.90	-53.36	434.26	0.877 Level 1	
21,300.00	9,517.64	21,101.00	9,325.60	218.82	219.08	59.90	11,911.24	-226.24	380.97	-56.92	437.89	0.870 Level 1	
21,400.00	9,518.35	21,201.00	9,326.31	220.63	220.90	59.91	12,011.24	-226.37	381.04	-60.48	441.53	0.863 Level 1	
21,500.00	9,519.05	21,301.00	9,327.02	222.45	222.71	59.92	12,111.24	-226.51	381.12	-64.04	445.16	0.856 Level 1	
21,600.00	9,519.76	21,401.00	9,327.73	224.26	224.53	59.92	12,211.23	-226.65	381.19	-67.60	448.79	0.849 Level 1	
21,700.00	9,520.47	21,501.00	9,328.44	226.08	226.35	59.93	12,311.23	-226.79	381.26	-71.16	452.43	0.843 Level 1	
21,774.88	9,521.00	21,575.89	9,328.97	227.19	227.71	59.93	12,386.11	-226.89	381.32	-73.58	454.90	0.838 Level 1, ES, SF	

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Well Error: 0.00 usft
Reference Wellbore Wellbore #1
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MD Reference: KB=30' @ 3130.00usft (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' @ 3130.00usft (Nabors 894) Coordinates are relative to: Way South State Com 706H
 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: 0.11°

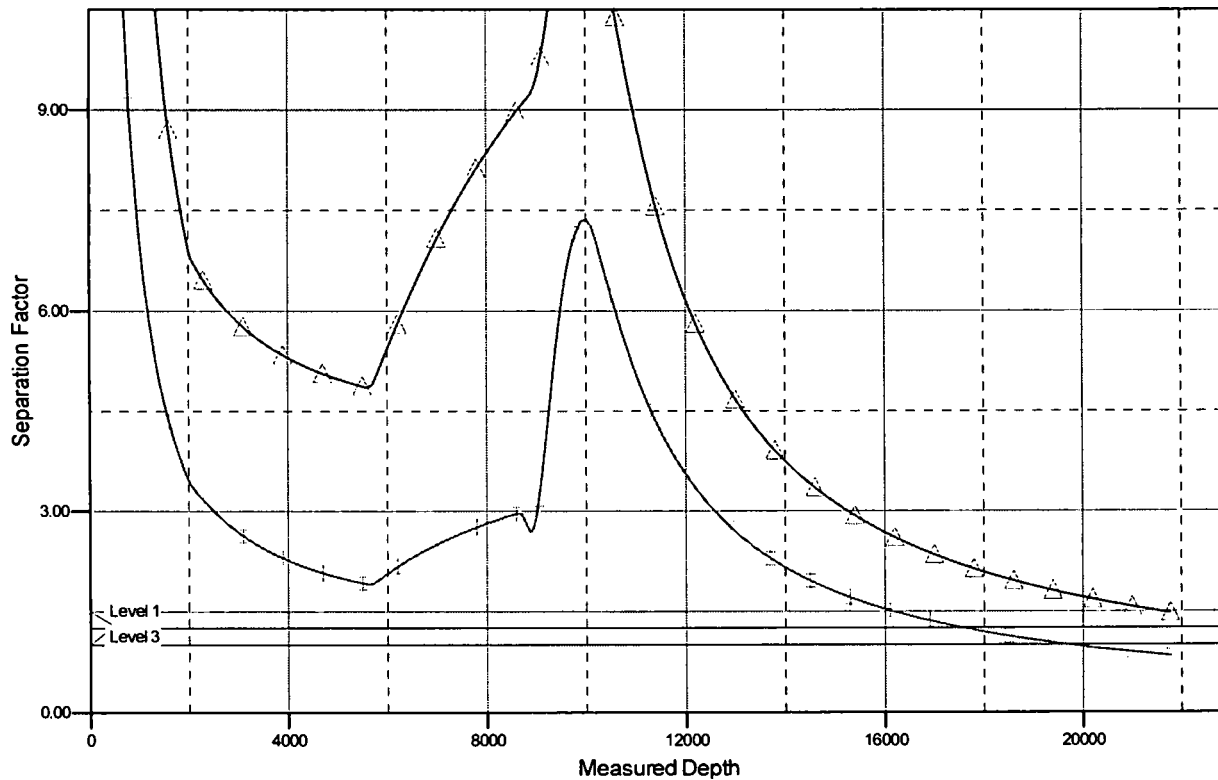


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Separation Factor Plot



LEGEND

South State Com 705H, Wellbore #1, Plan #1 V0  Way South State Com 704H, Wellbore #1, Plan #1 V0

