

HOBBS OCD
MAY 05 2016
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COG Production LLC

Lea County, NM (NAD27 NME)

Sec. 29, T 24 S. , R 32E

Azores Federal #8H

Wellbore #1

Plan#1

Anticollision Report

11 March, 2016

MAY 10 2016

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27-NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Reference Site:	Sec. 29, T.24 S., R.32E	MD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Reference	Plan#1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.0 us
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	3/11/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,859.8	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. 29, T.24 S., R.32E						
Azores Federal #12H - Wellbore #1 - Plan#1	4,600.0	4,601.3	100.0	77.3	4.402	CC
Azores Federal #12H - Wellbore #1 - Plan#1	4,900.0	4,893.0	100.3	76.6	4.219	ES
Azores Federal #12H - Wellbore #1 - Plan#1	13,859.8	13,899.0	449.9	270.9	2.513	SF
Corvo Federal #3H - Wellbore #1 - Actual Wellbore	3,938.9	4,039.5	32.0	11.0	1.526	CC
Corvo Federal #3H - Wellbore #1 - Actual Wellbore	4,700.0	4,800.9	32.7	9.3	1.400	Level 3, ES, SF

Offset Design											Sec. 29, T 24 S. , R 32E - Azores Federal #12H - Wellbore #1 - Plan#1		Offset Site Error: 0.0 usft	
Survey Program: 0-MWD													Offset Well Error: 5.0 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	
0.0	0.0	1.3	1.3	5.0	5.0	-90.57	-1.0	-100.0	100.0					
100.0	100.0	101.3	101.3	5.0	5.0	-90.57	-1.0	-100.0	100.0	90.0	10.00	9.999		
200.0	200.0	201.3	201.3	5.0	5.0	-90.57	-1.0	-100.0	100.0	90.0	10.02	9.981		
300.0	300.0	301.3	301.3	5.0	5.0	-90.57	-1.0	-100.0	100.0	89.9	10.06	9.944		
400.0	400.0	401.3	401.3	5.1	5.1	-90.57	-1.0	-100.0	100.0	89.9	10.11	9.887		
500.0	500.0	501.3	501.3	5.1	5.1	-90.57	-1.0	-100.0	100.0	89.8	10.19	9.812		
600.0	600.0	601.3	601.3	5.1	5.1	-90.57	-1.0	-100.0	100.0	89.7	10.29	9.721		
700.0	700.0	701.3	701.3	5.2	5.2	-90.57	-1.0	-100.0	100.0	89.6	10.40	9.613		
800.0	800.0	801.3	801.3	5.3	5.3	-90.57	-1.0	-100.0	100.0	89.5	10.54	9.492		
900.0	900.0	901.3	901.3	5.3	5.3	-90.57	-1.0	-100.0	100.0	89.3	10.69	9.359		
1,000.0	1,000.0	1,001.3	1,001.3	5.4	5.4	-90.57	-1.0	-100.0	100.0	89.2	10.85	9.215		
1,100.0	1,100.0	1,101.3	1,101.3	5.5	5.5	-90.57	-1.0	-100.0	100.0	89.0	11.03	9.063		
1,200.0	1,200.0	1,201.3	1,201.3	5.6	5.6	-90.57	-1.0	-100.0	100.0	88.8	11.23	8.904		
1,300.0	1,300.0	1,301.3	1,301.3	5.7	5.7	-90.57	-1.0	-100.0	100.0	88.6	11.44	8.739		
1,400.0	1,400.0	1,401.3	1,401.3	5.8	5.8	-90.57	-1.0	-100.0	100.0	88.3	11.67	8.570		
1,500.0	1,500.0	1,501.3	1,501.3	6.0	6.0	-90.57	-1.0	-100.0	100.0	88.1	11.91	8.399		
1,600.0	1,600.0	1,601.3	1,601.3	6.1	6.1	-90.57	-1.0	-100.0	100.0	87.8	12.16	8.227		
1,700.0	1,700.0	1,701.3	1,701.3	6.2	6.2	-90.57	-1.0	-100.0	100.0	87.6	12.42	8.054		
1,800.0	1,800.0	1,801.3	1,801.3	6.3	6.3	-90.57	-1.0	-100.0	100.0	87.3	12.69	7.881		
1,900.0	1,900.0	1,901.3	1,901.3	6.5	6.5	-90.57	-1.0	-100.0	100.0	87.0	12.97	7.710		
2,000.0	2,000.0	2,001.3	2,001.3	6.6	6.6	-90.57	-1.0	-100.0	100.0	86.7	13.26	7.541		
2,100.0	2,100.0	2,101.3	2,101.3	6.8	6.8	-90.57	-1.0	-100.0	100.0	86.4	13.56	7.374		

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

IDS

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Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Offset Design Sec. 29, T 24 S. R 32E - Azores Federal #12H - Wellbore #1 - Plan#1														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	5.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
2,200.0	2,200.0	2,201.3	2,201.3	6.9	6.9	-90.57	-1.0	-100.0	100.0	86.1	13.87	7.211			
2,300.0	2,300.0	2,301.3	2,301.3	7.1	7.1	-90.57	-1.0	-100.0	100.0	85.8	14.18	7.051			
2,400.0	2,400.0	2,401.3	2,401.3	7.3	7.3	-90.57	-1.0	-100.0	100.0	85.5	14.51	6.894			
2,500.0	2,500.0	2,501.3	2,501.3	7.4	7.4	-90.57	-1.0	-100.0	100.0	85.2	14.84	6.741			
2,600.0	2,600.0	2,601.3	2,601.3	7.6	7.6	-90.57	-1.0	-100.0	100.0	84.8	15.17	6.592			
2,700.0	2,700.0	2,701.3	2,701.3	7.8	7.8	-90.57	-1.0	-100.0	100.0	84.5	15.51	6.447			
2,800.0	2,800.0	2,801.3	2,801.3	7.9	7.9	-90.57	-1.0	-100.0	100.0	84.1	15.86	6.307			
2,900.0	2,900.0	2,901.3	2,901.3	8.1	8.1	-90.57	-1.0	-100.0	100.0	83.8	16.21	6.170			
3,000.0	3,000.0	3,001.3	3,001.3	8.3	8.3	-90.57	-1.0	-100.0	100.0	83.4	16.56	6.037			
3,100.0	3,100.0	3,101.3	3,101.3	8.5	8.5	-90.57	-1.0	-100.0	100.0	83.1	16.93	5.909			
3,200.0	3,200.0	3,201.3	3,201.3	8.6	8.6	-90.57	-1.0	-100.0	100.0	82.7	17.29	5.784			
3,300.0	3,300.0	3,301.3	3,301.3	8.8	8.8	-90.57	-1.0	-100.0	100.0	82.3	17.66	5.663			
3,400.0	3,400.0	3,401.3	3,401.3	9.0	9.0	-90.57	-1.0	-100.0	100.0	82.0	18.03	5.546			
3,500.0	3,500.0	3,501.3	3,501.3	9.2	9.2	-90.57	-1.0	-100.0	100.0	81.6	18.41	5.433			
3,600.0	3,600.0	3,601.3	3,601.3	9.4	9.4	-90.57	-1.0	-100.0	100.0	81.2	18.79	5.323			
3,700.0	3,700.0	3,701.3	3,701.3	9.6	9.6	-90.57	-1.0	-100.0	100.0	80.8	19.17	5.217			
3,800.0	3,800.0	3,801.3	3,801.3	9.8	9.8	-90.57	-1.0	-100.0	100.0	80.5	19.55	5.115			
3,900.0	3,900.0	3,901.3	3,901.3	10.0	10.0	-90.57	-1.0	-100.0	100.0	80.1	19.94	5.015			
4,000.0	4,000.0	4,001.3	4,001.3	10.2	10.2	-90.57	-1.0	-100.0	100.0	79.7	20.33	4.919			
4,100.0	4,100.0	4,101.3	4,101.3	10.4	10.4	-90.57	-1.0	-100.0	100.0	79.3	20.72	4.826			
4,200.0	4,200.0	4,201.3	4,201.3	10.6	10.6	-90.57	-1.0	-100.0	100.0	78.9	21.12	4.736			
4,300.0	4,300.0	4,301.3	4,301.3	10.8	10.8	-90.57	-1.0	-100.0	100.0	78.5	21.51	4.648			
4,400.0	4,400.0	4,401.3	4,401.3	11.0	11.0	-90.57	-1.0	-100.0	100.0	78.1	21.91	4.564			
4,500.0	4,500.0	4,501.3	4,501.3	11.2	11.2	-90.57	-1.0	-100.0	100.0	77.7	22.31	4.482			
4,600.0	4,600.0	4,601.3	4,601.3	11.4	11.4	-90.57	-1.0	-100.0	100.0	77.3	22.72	4.402 CC			
4,700.0	4,700.0	4,700.0	4,700.0	11.6	11.6	21.75	-1.1	-100.4	100.0	76.9	23.10	4.330			
4,717.8	4,717.8	4,716.8	4,716.8	11.6	11.6	21.78	-1.2	-100.8	100.0	76.9	23.16	4.320			
4,800.0	4,799.9	4,796.3	4,796.2	11.7	11.7	22.09	-1.8	-103.7	100.1	76.7	23.44	4.273			
4,900.0	4,899.7	4,893.0	4,892.7	11.9	11.9	22.77	-3.1	-110.1	100.3	76.6	23.78	4.219 ES			
5,000.0	4,999.3	4,989.6	4,988.8	12.1	12.1	23.49	-5.2	-119.7	101.9	77.8	24.13	4.222			
5,100.0	5,098.9	5,086.1	5,084.4	12.2	12.2	23.77	-7.9	-132.4	106.7	82.2	24.50	4.357			
5,200.0	5,198.4	5,183.9	5,180.9	12.4	12.4	23.68	-11.2	-148.2	114.5	89.6	24.88	4.602			
5,300.0	5,298.0	5,283.5	5,279.1	12.6	12.7	23.54	-14.7	-164.7	122.7	97.5	25.27	4.856			
5,400.0	5,397.6	5,383.2	5,377.3	12.8	12.9	23.43	-18.2	-181.2	131.0	105.3	25.68	5.100			
5,500.0	5,497.2	5,482.9	5,475.5	13.0	13.1	23.32	-21.7	-197.8	139.2	113.1	26.10	5.333			
5,600.0	5,596.8	5,582.5	5,573.7	13.2	13.3	23.23	-25.2	-214.3	147.4	120.9	26.53	5.558			
5,700.0	5,696.4	5,682.2	5,671.9	13.4	13.6	23.15	-28.7	-230.8	155.7	128.7	26.97	5.773			
5,800.0	5,796.0	5,781.8	5,770.2	13.6	13.8	23.08	-32.2	-247.4	163.9	136.5	27.42	5.979			
5,900.0	5,895.5	5,881.5	5,868.4	13.8	14.1	23.01	-35.7	-263.9	172.2	144.3	27.87	6.176			
6,000.0	5,995.1	5,981.2	5,966.6	14.0	14.3	22.95	-39.2	-280.4	180.4	152.1	28.34	6.365			
6,100.0	6,094.7	6,080.8	6,064.8	14.2	14.6	22.89	-42.6	-297.0	188.6	159.8	28.81	6.546			
6,200.0	6,194.3	6,180.5	6,163.0	14.4	14.8	22.84	-46.1	-313.5	196.9	167.6	29.30	6.720			
6,300.0	6,293.9	6,280.1	6,261.2	14.7	15.1	22.80	-49.6	-330.0	205.1	175.3	29.78	6.886			
6,400.0	6,393.5	6,379.8	6,359.5	14.9	15.4	22.75	-53.1	-346.6	213.3	183.1	30.28	7.046			
6,500.0	6,493.1	6,479.5	6,457.7	15.1	15.7	22.71	-56.6	-363.1	221.6	190.8	30.78	7.198			
6,600.0	6,592.7	6,579.1	6,555.9	15.3	16.0	22.68	-60.1	-379.7	229.8	198.5	31.29	7.344			
6,700.0	6,692.2	6,678.8	6,654.1	15.5	16.3	22.64	-63.6	-396.2	238.1	206.3	31.81	7.485			
6,800.0	6,791.8	6,778.4	6,752.3	15.8	16.6	22.61	-67.1	-412.7	246.3	214.0	32.33	7.619			
6,900.0	6,891.4	6,878.1	6,850.5	16.0	16.9	22.58	-70.6	-429.3	254.5	221.7	32.85	7.748			
7,000.0	6,991.0	6,977.8	6,948.8	16.2	17.2	22.55	-74.1	-445.8	262.8	229.4	33.38	7.871			
7,100.0	7,090.6	7,077.4	7,047.0	16.5	17.5	22.52	-77.6	-462.3	271.0	237.1	33.92	7.990			
7,200.0	7,190.2	7,177.1	7,145.2	16.7	17.8	22.50	-81.1	-478.9	279.3	244.8	34.46	8.104			

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7,300.0	7,289.8	7,276.7	7,243.4	16.9	18.1	22.48	-84.6	-495.4	287.5	252.5	35.01	8.213			
7,400.0	7,389.3	7,376.4	7,341.6	17.2	18.4	22.45	-88.1	-511.9	295.7	260.2	35.55	8.318			
7,500.0	7,488.9	7,476.1	7,439.8	17.4	18.7	22.43	-91.6	-528.5	304.0	267.9	36.11	8.419			
7,600.0	7,588.5	7,575.7	7,538.1	17.6	19.0	22.41	-95.1	-545.0	312.2	275.5	36.66	8.515			
7,700.0	7,688.1	7,675.4	7,636.3	17.9	19.4	22.39	-98.6	-561.5	320.4	283.2	37.22	8.609			
7,800.0	7,787.7	7,775.0	7,734.5	18.1	19.7	22.38	-102.1	-578.1	328.7	290.9	37.79	8.698			
7,900.0	7,887.3	7,874.7	7,832.7	18.4	20.0	22.36	-105.6	-594.6	336.9	298.6	38.36	8.784			
8,000.0	7,986.9	7,974.4	7,930.9	18.6	20.3	22.34	-109.1	-611.1	345.2	306.2	38.93	8.867			
8,100.0	8,086.4	8,074.0	8,029.1	18.8	20.7	22.33	-112.6	-627.7	353.4	313.9	39.50	8.947			
8,200.0	8,186.0	8,173.7	8,127.4	19.1	21.0	22.31	-116.1	-644.2	361.6	321.6	40.08	9.024			
8,300.0	8,285.6	8,273.3	8,225.6	19.3	21.3	22.30	-119.6	-660.7	369.9	329.2	40.66	9.098			
8,400.0	8,385.2	8,373.0	8,323.8	19.6	21.7	22.28	-123.1	-677.3	378.1	336.9	41.24	9.169			
8,500.0	8,484.8	8,472.7	8,422.0	19.8	22.0	22.27	-126.5	-693.8	386.4	344.5	41.82	9.238			
8,600.0	8,584.4	8,572.3	8,520.2	20.1	22.3	22.26	-130.0	-710.3	394.6	352.2	42.41	9.305			
8,700.0	8,684.0	8,672.0	8,618.4	20.3	22.7	20.82	-133.5	-726.9	402.8	359.8	43.00	9.369			
8,800.0	8,783.2	8,771.4	8,716.4	20.5	23.0	-64.75	-136.1	-743.4	411.1	367.6	43.55	9.440			
8,900.0	8,878.7	8,873.4	8,815.9	20.7	23.3	-78.76	-122.6	-760.1	419.6	375.6	44.04	9.528			
9,000.0	8,966.4	8,978.8	8,913.4	20.9	23.6	-83.80	-86.5	-776.5	427.9	383.4	44.45	9.625			
9,100.0	9,042.4	9,087.9	9,003.5	21.0	23.8	-86.52	-27.4	-791.7	435.4	390.6	44.81	9.717			
9,200.0	9,103.4	9,200.4	9,080.0	21.1	24.0	-88.21	53.7	-804.0	441.8	396.6	45.16	9.783			
9,300.0	9,146.7	9,315.7	9,136.9	21.3	24.2	-89.24	153.2	-814.1	446.4	400.9	45.58	9.795			
9,400.0	9,170.5	9,433.0	9,169.0	21.7	24.5	-89.76	265.6	-819.5	449.1	402.8	46.22	9.717			
9,500.0	9,175.0	9,544.6	9,175.0	22.2	24.9	-89.83	376.9	-820.5	449.5	402.4	47.11	9.541			
9,600.0	9,175.0	9,644.6	9,175.0	22.8	25.4	-89.83	476.9	-820.5	449.5	401.3	48.26	9.315			
9,700.0	9,175.0	9,744.6	9,175.0	23.6	26.1	-89.83	576.9	-820.5	449.5	399.9	49.68	9.049			
9,800.0	9,175.0	9,844.6	9,175.0	24.5	26.9	-89.83	676.9	-820.6	449.6	398.2	51.33	8.758			
9,900.0	9,175.0	9,944.6	9,175.0	25.5	27.7	-89.83	776.9	-820.6	449.6	396.4	53.20	8.451			
10,000.0	9,175.0	10,044.6	9,175.0	26.6	28.7	-89.83	876.9	-820.6	449.6	394.3	55.25	8.137			
10,100.0	9,175.0	10,144.6	9,175.0	27.7	29.8	-89.83	976.9	-820.6	449.6	392.1	57.47	7.823			
10,200.0	9,175.0	10,244.6	9,175.0	28.9	30.9	-89.83	1,076.9	-820.6	449.6	389.8	59.83	7.515			
10,300.0	9,175.0	10,344.6	9,175.0	30.2	32.1	-89.83	1,176.9	-820.6	449.6	387.3	62.32	7.215			
10,400.0	9,175.0	10,444.6	9,175.0	31.6	33.3	-89.83	1,276.9	-820.6	449.6	384.7	64.91	6.926			
10,500.0	9,175.0	10,544.6	9,175.0	33.0	34.7	-89.83	1,376.9	-820.6	449.6	382.0	67.61	6.650			
10,600.0	9,175.0	10,644.6	9,175.0	34.4	36.0	-89.83	1,476.9	-820.6	449.6	379.2	70.40	6.387			
10,700.0	9,175.0	10,744.6	9,175.0	35.8	37.4	-89.83	1,576.9	-820.6	449.6	376.4	73.26	6.138			
10,800.0	9,175.0	10,844.6	9,175.0	37.3	38.8	-89.83	1,676.9	-820.6	449.6	373.5	76.19	5.902			
10,900.0	9,175.0	10,944.6	9,175.0	38.9	40.3	-89.83	1,776.9	-820.6	449.7	370.5	79.18	5.679			
11,000.0	9,175.0	11,044.6	9,175.0	40.4	41.8	-89.83	1,876.9	-820.6	449.7	367.4	82.22	5.469			
11,100.0	9,175.0	11,144.6	9,175.0	42.0	43.3	-89.83	1,976.9	-820.6	449.7	364.4	85.31	5.271			
11,200.0	9,175.0	11,244.6	9,175.0	43.6	44.9	-89.83	2,076.9	-820.6	449.7	361.2	88.44	5.084			
11,300.0	9,175.0	11,344.6	9,175.0	45.2	46.4	-89.83	2,176.9	-820.6	449.7	358.1	91.62	4.908			
11,400.0	9,175.0	11,444.6	9,175.0	46.8	48.0	-89.83	2,276.9	-820.6	449.7	354.9	94.82	4.742			
11,500.0	9,175.0	11,544.6	9,175.0	48.5	49.6	-89.83	2,376.9	-820.6	449.7	351.6	98.06	4.586			
11,600.0	9,175.0	11,644.6	9,175.0	50.1	51.2	-89.83	2,476.9	-820.6	449.7	348.4	101.33	4.438			
11,700.0	9,175.0	11,744.6	9,175.0	51.8	52.8	-89.83	2,576.9	-820.6	449.7	345.1	104.62	4.299			
11,800.0	9,175.0	11,844.6	9,175.0	53.4	54.5	-89.83	2,676.9	-820.6	449.7	341.8	107.93	4.167			
11,900.0	9,175.0	11,944.6	9,175.0	55.1	56.1	-89.83	2,776.9	-820.6	449.7	338.5	111.27	4.042			
12,000.0	9,175.0	12,044.6	9,175.0	56.8	57.8	-89.83	2,876.9	-820.6	449.7	335.1	114.62	3.924			
12,100.0	9,175.0	12,144.6	9,175.0	58.5	59.5	-89.83	2,976.9	-820.6	449.8	331.8	118.00	3.812			
12,200.0	9,175.0	12,244.6	9,175.0	60.2	61.2	-89.83	3,076.9	-820.6	449.8	328.4	121.39	3.705			
12,300.0	9,175.0	12,344.6	9,175.0	61.9	62.8	-89.83	3,176.9	-820.6	449.8	325.0	124.79	3.604			
12,400.0	9,175.0	12,444.6	9,175.0	63.7	64.5	-89.83	3,276.9	-820.6	449.8	321.6	128.21	3.508			

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

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandrell Freedom)
Reference Site:	Sec. 29, T 24 S., R 32E	MD Reference:	KB=26' @ 3520.8usft (Scandrell Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	5.0 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)					
12,500.0	9,175.0	12,544.6	9,175.0	65.4	66.2	-89.83	3,376.9	-820.6	449.8	318.1	131.64	3.417			
12,600.0	9,175.0	12,644.6	9,175.0	67.1	68.0	-89.83	3,476.9	-820.6	449.8	314.7	135.08	3.330			
12,700.0	9,175.0	12,744.6	9,175.0	68.9	69.7	-89.83	3,576.9	-820.6	449.8	311.3	138.54	3.247			
12,800.0	9,175.0	12,844.6	9,175.0	70.6	71.4	-89.83	3,676.9	-820.6	449.8	307.8	142.00	3.168			
12,900.0	9,175.0	12,944.6	9,175.0	72.4	73.1	-89.83	3,776.9	-820.6	449.8	304.3	145.47	3.092			
13,000.0	9,175.0	13,044.6	9,175.0	74.1	74.8	-89.83	3,876.9	-820.6	449.8	300.9	148.95	3.020			
13,100.0	9,175.0	13,144.6	9,175.0	75.9	76.6	-89.83	3,976.9	-820.6	449.8	297.4	152.44	2.951			
13,200.0	9,175.0	13,244.6	9,175.0	77.6	78.3	-89.83	4,076.9	-820.6	449.8	293.9	155.94	2.885			
13,300.0	9,175.0	13,344.6	9,175.0	79.4	80.1	-89.83	4,176.9	-820.6	449.9	290.4	159.44	2.821			
13,400.0	9,175.0	13,444.6	9,175.0	81.1	81.8	-89.83	4,276.9	-820.6	449.9	286.9	162.95	2.761			
13,500.0	9,175.0	13,544.6	9,175.0	82.9	83.6	-89.83	4,376.9	-820.6	449.9	283.4	166.47	2.702			
13,600.0	9,175.0	13,644.6	9,175.0	84.7	85.3	-89.83	4,476.9	-820.6	449.9	279.9	169.99	2.646			
13,700.0	9,175.0	13,744.6	9,175.0	86.4	87.1	-89.83	4,576.9	-820.6	449.9	276.4	173.52	2.593			
13,800.0	9,175.0	13,844.6	9,175.0	88.2	88.8	-89.83	4,676.9	-820.6	449.9	272.8	177.05	2.541			
13,832.1	9,175.0	13,876.7	9,175.0	88.8	89.4	-89.83	4,709.0	-820.6	449.9	271.7	178.19	2.525			
13,859.8	9,175.0	13,899.0	9,175.0	89.3	89.8	-89.83	4,731.3	-820.6	449.9	270.9	179.07	2.513 SF			

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

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Reference Site:	Sec. 29, T 24 S., R 32E	MD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 usft
Sec. 29, T 24 S., R 32E - Corvo Federal #3H - Wellbore #1 - Actual Wellbore														Offset Well Error:	5.0 usft
Survey Program: 100-NS-GYRO-MS, 7852-MWD															
Reference		Offset		Semi Major Axis		Highside		Offset Wellbore Centre		Distance		Minimum		Separation	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	Warning	
0.0	0.0	100.3	100.3	5.0	5.0	100.61		-18.7	99.7	101.5					
100.0	100.0	200.0	200.0	5.0	5.0	100.60		-18.6	99.2	100.9	90.9	10.01	10.079		
200.0	200.0	300.8	300.8	5.0	5.0	100.23		-17.8	98.5	100.1	90.1	10.05	9.967		
300.0	300.0	401.4	401.4	5.0	5.1	99.74		-16.7	97.2	98.6	88.5	10.10	9.761		
400.0	400.0	501.4	501.4	5.1	5.1	99.34		-15.7	95.5	96.8	86.6	10.18	9.504		
500.0	500.0	602.1	602.1	5.1	5.2	98.78		-14.4	93.4	94.6	84.3	10.29	9.192		
600.0	600.0	702.2	702.1	5.1	5.3	97.77		-12.4	91.0	91.9	81.5	10.41	8.823		
700.0	700.0	802.0	801.8	5.2	5.4	96.59		-10.3	88.7	89.3	78.7	10.56	8.455		
800.0	800.0	901.6	901.4	5.3	5.5	95.64		-8.6	86.6	87.1	76.3	10.73	8.115		
900.0	900.0	1,001.1	1,000.9	5.3	5.6	94.78		-7.1	85.0	85.3	74.4	10.91	7.813		
1,000.0	1,000.0	1,100.8	1,100.5	5.4	5.7	93.95		-5.8	83.8	84.0	72.9	11.12	7.552		
1,100.0	1,100.0	1,200.8	1,200.5	5.5	5.8	93.13		-4.5	82.8	82.9	71.5	11.34	7.310		
1,200.0	1,200.0	1,300.5	1,300.2	5.6	6.0	92.40		-3.4	81.9	82.0	70.4	11.57	7.082		
1,300.0	1,300.0	1,400.6	1,400.3	5.7	6.1	91.81		-2.6	81.1	81.2	69.3	11.83	6.863		
1,400.0	1,400.0	1,500.6	1,500.3	5.8	6.3	91.14		-1.6	80.3	80.3	68.2	12.10	6.638		
1,500.0	1,500.0	1,600.6	1,600.3	6.0	6.4	90.35		-0.5	79.4	79.4	67.0	12.38	6.415		
1,600.0	1,600.0	1,700.5	1,700.2	6.1	6.6	89.64		0.5	78.6	78.6	65.9	12.67	6.203		
1,700.0	1,700.0	1,800.6	1,800.3	6.2	6.8	89.10		1.2	77.8	77.8	64.8	12.97	5.997		
1,800.0	1,800.0	1,900.5	1,900.2	6.3	6.9	88.73		1.7	77.0	77.0	63.7	13.29	5.795		
1,900.0	1,900.0	2,000.6	2,000.2	6.5	7.1	88.41		2.1	76.2	76.2	62.6	13.61	5.598		
2,000.0	2,000.0	2,100.6	2,100.3	6.6	7.3	88.24		2.3	75.3	75.3	61.4	13.94	5.405		
2,100.0	2,100.0	2,200.5	2,200.2	6.8	7.5	88.36		2.1	74.4	74.5	60.2	14.24	5.229		
2,200.0	2,200.0	2,300.6	2,300.3	6.9	7.6	88.73		1.6	73.6	73.6	59.0	14.53	5.063		
2,300.0	2,300.0	2,400.8	2,400.5	7.1	7.7	89.18		1.0	72.5	72.5	57.6	14.83	4.886		
2,400.0	2,400.0	2,501.0	2,500.6	7.3	7.9	89.68		0.4	71.1	71.1	56.0	15.15	4.695		
2,500.0	2,500.0	2,601.2	2,600.8	7.4	8.1	90.25		-0.3	69.5	69.5	54.1	15.48	4.493		
2,600.0	2,600.0	2,701.3	2,700.9	7.6	8.2	91.03		-1.2	67.7	67.7	51.9	15.81	4.283		
2,700.0	2,700.0	2,801.6	2,801.1	7.8	8.4	91.78		-2.0	65.5	65.6	49.4	16.16	4.059		
2,800.0	2,800.0	2,901.7	2,901.2	7.9	8.6	92.30		-2.5	63.0	63.1	46.6	16.52	3.818		
2,900.0	2,900.0	3,001.8	3,001.3	8.1	8.8	92.78		-2.9	60.3	60.4	43.5	16.90	3.572		
3,000.0	3,000.0	3,102.2	3,101.6	8.3	9.0	92.82		-2.8	57.1	57.2	39.9	17.29	3.307		
3,100.0	3,100.0	3,202.3	3,201.7	8.5	9.2	92.19		-2.0	53.4	53.4	35.8	17.69	3.021		
3,200.0	3,200.0	3,302.2	3,301.5	8.6	9.5	91.33		-1.1	49.5	49.6	31.5	18.10	2.738		
3,300.0	3,300.0	3,402.0	3,401.3	8.8	9.7	90.49		-0.4	45.8	45.8	27.3	18.51	2.475		
3,400.0	3,400.0	3,501.9	3,501.0	9.0	9.9	89.48		0.4	42.2	42.3	23.3	18.92	2.233		
3,500.0	3,500.0	3,601.5	3,600.6	9.2	10.1	88.55		1.0	39.3	39.3	19.9	19.34	2.031		
3,600.0	3,600.0	3,701.3	3,700.4	9.4	10.4	88.40		1.0	36.9	36.9	17.2	19.75	1.870		
3,700.0	3,700.0	3,801.4	3,800.4	9.6	10.6	89.30		0.4	34.6	34.6	14.5	20.16	1.719		
3,800.0	3,800.0	3,900.9	3,900.0	9.8	10.8	90.91		-0.5	32.8	32.9	12.3	20.54	1.600		
3,900.0	3,900.0	4,000.7	3,999.7	10.0	10.9	93.45		-1.9	32.0	32.1	11.2	20.87	1.537		
3,938.9	3,938.9	4,039.5	4,038.5	10.0	10.9	94.60		-2.6	31.9	32.0	11.0	20.98	1.526 CC		
4,000.0	4,000.0	4,100.4	4,099.4	10.2	11.0	96.03		-3.4	32.0	32.2	11.0	21.15	1.522		
4,100.0	4,100.0	4,200.4	4,199.4	10.4	11.0	98.16		-4.6	32.4	32.7	11.3	21.40	1.528		
4,200.0	4,200.0	4,300.6	4,299.6	10.6	11.1	99.91		-5.7	32.5	33.0	11.3	21.68	1.521		
4,300.0	4,300.0	4,400.4	4,399.4	10.8	11.2	101.10		-6.4	32.7	33.3	11.4	21.95	1.517		
4,400.0	4,400.0	4,500.5	4,499.5	11.0	11.2	101.78		-6.9	33.1	33.8	11.6	22.18	1.522		
4,500.0	4,500.0	4,600.8	4,599.8	11.2	11.3	102.36		-7.2	32.9	33.6	11.1	22.50	1.495 Level 3		
4,600.0	4,600.0	4,700.8	4,699.8	11.4	11.6	103.19		-7.5	32.1	33.0	10.1	22.92	1.441 Level 3		
4,678.1	4,678.0	4,778.9	4,777.9	11.5	11.7	-144.43		-7.8	31.5	32.9	9.7	23.24	1.416 Level 3		
4,700.0	4,700.0	4,800.9	4,799.8	11.6	11.8	-144.13		-7.8	31.4	32.7	9.3	23.34	1.400 Level 3, ES, SF		
4,800.0	4,799.9	4,900.8	4,899.8	11.7	12.0	-146.59		-8.2	30.4	34.7	11.0	23.73	1.463 Level 3		
4,900.0	4,899.7	5,000.6	4,999.6	11.9	12.2	-151.71		-8.3	29.6	39.9	15.7	24.14	1.652		

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

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Reference Site:	Sec. 29, T 24 S., R 32E	MD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 usft
Sec. 29, T 24 S., R 32E - Corvo Federal #3H - Wellbore #1 - Actual Wellbore														Offset Well Error:	5.0 usft
Survey Program: 100-NS-GYRO-MS, 7852-MWD															
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			
5,000.0	4,999.3	5,100.2	5,099.2	12.1	12.5	-157.39	-7.8	28.8	47.3	22.8	24.54	1.928			
5,100.0	5,098.9	5,199.6	5,198.6	12.2	12.7	-161.89	-6.9	28.3	55.3	30.4	24.91	2.220			
5,200.0	5,198.4	5,299.2	5,298.1	12.4	12.8	-165.19	-6.1	28.0	63.8	38.5	25.27	2.525			
5,300.0	5,298.0	5,398.7	5,397.7	12.6	13.0	-167.66	-5.3	27.7	72.5	46.9	25.63	2.831			
5,400.0	5,397.6	5,498.4	5,497.4	12.8	13.2	-169.70	-4.4	27.4	81.3	55.3	26.00	3.129			
5,500.0	5,497.2	5,598.2	5,597.1	13.0	13.4	-171.48	-3.3	26.9	90.0	63.6	26.39	3.412			
5,600.0	5,596.8	5,697.6	5,696.6	13.2	13.6	-173.02	-2.1	26.3	98.8	72.0	26.78	3.688			
5,700.0	5,696.4	5,797.7	5,796.7	13.4	13.8	-174.29	-1.0	25.6	107.4	80.2	27.19	3.949			
5,800.0	5,796.0	5,897.0	5,896.0	13.6	14.0	-175.35	0.0	24.7	115.9	88.3	27.61	4.199			
5,900.0	5,895.5	5,996.7	5,995.7	13.8	14.2	-176.22	1.0	24.0	124.6	96.6	28.04	4.445			
6,000.0	5,895.1	6,096.2	6,095.1	14.0	14.4	-176.98	2.0	23.3	133.3	104.9	28.46	4.685			
6,100.0	6,094.7	6,196.2	6,195.1	14.2	14.7	-177.83	3.4	22.4	142.0	113.1	28.89	4.916			
6,200.0	6,194.3	6,295.5	6,294.4	14.4	14.9	-178.59	4.8	21.4	150.7	121.4	29.32	5.139			
6,300.0	6,293.9	6,395.3	6,394.2	14.7	15.1	-179.14	5.9	20.6	159.4	129.6	29.76	5.355			
6,400.0	6,393.5	6,495.3	6,494.2	14.9	15.3	-179.63	6.9	19.6	167.9	137.7	30.22	5.558			
6,500.0	6,493.1	6,595.9	6,594.7	15.1	15.6	-179.96	7.6	18.3	176.1	145.4	30.68	5.741			
6,600.0	6,592.7	6,694.9	6,693.7	15.3	15.8	-179.70	8.0	17.1	184.2	153.1	31.15	5.914			
6,700.0	6,692.2	6,792.9	6,791.8	15.5	16.0	-179.51	8.5	16.5	192.9	161.3	31.59	6.106			
6,800.0	6,791.8	6,894.1	6,892.9	15.8	16.3	-179.34	9.0	15.9	201.7	169.7	32.04	6.295			
6,900.0	6,891.4	6,993.8	6,992.6	16.0	16.5	-179.28	9.0	15.1	210.0	177.5	32.50	6.462			
7,000.0	6,891.0	7,092.8	7,091.6	16.2	16.7	-179.32	8.7	14.5	218.5	185.5	32.94	6.631			
7,100.0	7,090.6	7,194.0	7,192.9	16.5	16.9	-179.40	8.2	13.9	226.8	193.4	33.38	6.793			
7,200.0	7,190.2	7,295.6	7,294.4	16.7	17.1	-179.60	6.9	12.7	234.3	200.5	33.80	6.932			
7,300.0	7,289.8	7,393.9	7,392.7	16.9	17.3	-179.90	5.2	11.6	241.7	207.5	34.19	7.068			
7,400.0	7,389.3	7,492.1	7,490.9	17.2	17.4	-179.82	3.7	11.0	249.7	215.1	34.56	7.224			
7,500.0	7,488.9	7,590.5	7,589.3	17.4	17.5	-179.60	2.5	10.9	258.2	223.3	34.90	7.399			
7,600.0	7,588.5	7,689.6	7,688.4	17.6	17.6	-179.35	1.4	11.2	267.1	231.9	35.22	7.585			
7,700.0	7,688.1	7,789.1	7,787.9	17.9	17.6	-179.06	-0.1	11.8	276.3	240.8	35.51	7.781			
7,800.0	7,787.7	7,889.3	7,888.0	18.1	17.7	-178.74	-1.8	12.1	285.0	249.3	35.77	7.970			
7,900.0	7,887.3	7,984.5	7,983.1	18.4	17.7	-179.46	2.4	13.1	297.5	261.5	36.01	8.262			
8,000.0	7,986.9	8,035.2	8,031.9	18.6	17.7	-178.02	18.0	15.8	318.9	282.6	36.27	8.793			
8,100.0	8,086.4	8,099.8	8,091.1	18.8	17.7	-174.16	43.4	18.4	349.9	313.4	36.54	9.577			
8,200.0	8,186.0	8,159.0	8,142.4	19.1	17.7	-170.21	72.9	21.4	390.4	353.6	36.80	10.607			
8,300.0	8,285.6	8,213.4	8,186.6	19.3	17.8	-166.48	104.3	24.6	439.4	402.3	37.09	11.847			
8,400.0	8,385.2	8,262.0	8,223.7	19.6	17.8	-163.13	135.6	27.1	495.8	458.4	37.41	13.254			
8,500.0	8,484.8	8,302.4	8,252.1	19.8	17.9	-160.32	164.2	28.5	558.9	521.1	37.74	14.809			
8,600.0	8,584.4	8,325.0	8,267.0	20.1	18.0	-158.74	181.3	29.0	628.0	590.0	38.04	16.509			
8,700.0	8,684.0	8,356.0	8,285.8	20.3	18.1	-155.04	205.9	29.4	702.1	663.7	38.38	18.293			
8,800.0	8,783.2	8,388.0	8,303.7	20.5	18.2	-150.11	232.4	30.0	775.0	736.2	38.71	20.020			
8,900.0	8,878.7	8,417.0	8,318.6	20.7	18.3	-141.02	257.3	30.4	839.4	800.4	39.01	21.519			
9,000.0	8,966.4	8,470.8	8,343.5	20.9	18.5	-132.68	305.0	30.6	893.1	853.7	39.40	22.664			
9,100.0	9,042.4	8,511.0	8,360.5	21.0	18.7	-128.30	341.4	30.0	933.6	893.8	39.74	23.492			
9,200.0	9,103.4	8,559.8	8,377.9	21.1	19.0	-125.73	386.9	28.3	961.0	920.8	40.17	23.925			
9,300.0	9,146.7	8,612.1	8,393.3	21.3	19.4	-124.45	436.8	26.3	974.4	933.7	40.71	23.935			
9,400.0	9,170.5	8,679.2	8,410.5	21.7	19.9	-124.26	501.7	24.0	972.2	930.7	41.56	23.394			
9,500.0	9,175.0	8,731.0	8,421.5	22.2	20.3	-124.76	552.3	22.4	955.7	913.2	42.49	22.490			
9,600.0	9,175.0	8,777.9	8,428.8	22.8	20.8	-124.89	598.6	21.4	940.3	896.7	43.57	21.581			
9,700.0	9,175.0	8,826.0	8,434.2	23.6	21.2	-125.00	646.4	20.9	929.8	885.0	44.81	20.750			
9,800.0	9,175.0	8,889.0	8,439.1	24.5	21.9	-125.17	709.2	21.6	923.7	877.3	46.34	19.932			
9,900.0	9,175.0	8,969.9	8,442.6	25.5	22.7	-125.40	790.0	24.0	921.1	872.9	48.20	19.111			
9,944.9	9,175.0	9,001.8	8,443.2	26.0	23.1	-125.46	821.8	24.8	920.8	871.7	49.05	18.773			
10,000.0	9,175.0	9,041.2	8,443.2	26.6	23.6	-125.50	861.3	25.6	921.2	871.1	50.11	18.382			

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

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandill Freedom)
Reference Site:	Sec. 29, T 24 S., R 32E	MD Reference:	KB=26' @ 3520.8usft (Scandill Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 usft
Sec. 29, T 24 S., R 32E - Corvo Federal #3H - Wellbore #1 - Actual Wellbore													Offset Well Error:	5.0 usft
Survey Program: 100-NS-GYRO-MS, 7852-MWD														
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		
10,100.0	9,175.0	9,173.0	8,442.2	27.7	25.1	25.51	993.0	26.3	922.4	869.6	52.81	17.466		
10,188.4	9,175.0	9,245.3	8,442.6	28.8	26.0	25.45	1,065.3	24.9	921.4	866.6	54.78	16.818		
10,200.0	9,175.0	9,253.9	8,442.5	28.9	26.1	25.43	1,073.9	24.7	921.4	866.3	55.03	16.742		
10,300.0	9,175.0	9,378.3	8,442.3	30.2	27.7	25.23	1,198.2	21.3	920.3	862.4	57.90	15.895		
10,386.1	9,175.0	9,443.6	8,442.6	31.4	28.5	25.17	1,263.5	20.0	919.3	859.4	59.90	15.346		
10,400.0	9,175.0	9,455.0	8,442.5	31.6	28.7	25.16	1,274.9	19.9	919.3	859.0	60.24	15.261		
10,500.0	9,175.0	9,573.8	8,442.8	33.0	30.3	25.03	1,393.7	17.4	918.1	854.9	63.25	14.515		
10,600.0	9,175.0	9,665.8	8,443.2	34.4	31.6	24.92	1,485.7	15.3	916.7	850.7	65.98	13.893		
10,700.0	9,175.0	9,757.1	8,443.1	35.8	33.0	24.85	1,577.0	14.1	916.3	847.5	68.80	13.318		
10,701.7	9,175.0	9,758.7	8,443.1	35.9	33.0	24.84	1,578.5	14.1	916.3	847.4	68.85	13.308		
10,800.0	9,175.0	9,858.2	8,442.6	37.3	34.5	24.81	1,678.0	13.6	916.5	844.7	71.80	12.764		
10,900.0	9,175.0	9,964.9	8,444.9	38.9	36.0	24.98	1,784.7	15.6	915.3	840.4	74.88	12.224		
10,936.8	9,175.0	9,993.9	8,445.4	39.4	36.4	25.04	1,813.7	16.5	915.2	839.3	75.88	12.061		
11,000.0	9,175.0	10,049.1	8,445.9	40.4	37.3	25.15	1,868.9	18.2	915.5	837.9	77.68	11.785		
11,100.0	9,175.0	10,144.1	8,446.6	42.0	38.7	25.38	1,963.8	21.9	916.5	835.8	80.70	11.358		
11,200.0	9,175.0	10,233.3	8,447.0	43.6	40.1	25.70	2,052.8	27.3	918.7	835.1	83.64	10.984		
11,300.0	9,175.0	10,330.6	8,446.4	45.2	41.6	25.93	2,150.0	31.7	921.2	834.5	86.74	10.620		
11,400.0	9,175.0	10,413.6	8,443.8	46.8	42.9	25.98	2,233.0	33.9	925.2	835.5	89.67	10.318		
11,500.0	9,175.0	10,524.6	8,439.7	48.5	44.6	26.04	2,343.9	37.1	929.8	836.7	93.02	9.995		
11,600.0	9,175.0	10,643.9	8,439.5	50.1	46.4	26.27	2,463.0	41.3	931.4	834.9	96.48	9.653		
11,700.0	9,175.0	10,786.5	8,443.1	51.8	48.6	26.76	2,605.3	48.5	931.6	831.3	100.35	9.284		
11,800.0	9,175.0	10,874.0	8,447.2	53.4	50.0	27.03	2,692.7	51.3	929.0	825.6	103.40	8.984		
11,899.6	9,175.0	10,957.8	8,449.2	55.1	51.3	27.17	2,776.4	52.9	927.8	821.4	106.45	8.716		
11,900.0	9,175.0	10,958.1	8,449.2	55.1	51.3	27.17	2,776.8	52.9	927.8	821.4	106.46	8.715		
12,000.0	9,175.0	11,038.3	8,448.4	56.8	52.7	27.18	2,857.0	53.4	928.9	819.4	109.48	8.485		
12,100.0	9,175.0	11,133.8	8,445.5	58.5	54.2	27.09	2,952.4	53.2	931.5	818.8	112.74	8.262		
12,200.0	9,175.0	11,257.9	8,443.3	60.2	56.2	27.02	3,076.5	53.2	933.1	816.7	116.42	8.015		
12,300.0	9,175.0	11,371.7	8,445.0	61.9	58.0	27.12	3,190.3	54.1	932.1	812.2	119.94	7.772		
12,400.0	9,175.0	11,464.3	8,446.2	63.7	59.5	27.16	3,282.9	54.2	931.1	807.9	123.18	7.558		
12,456.2	9,175.0	11,514.5	8,445.9	64.6	60.4	27.10	3,333.1	53.3	930.9	805.9	124.99	7.447		
12,500.0	9,175.0	11,555.4	8,445.2	65.4	61.0	27.02	3,373.9	52.1	931.0	804.5	126.43	7.363		
12,600.0	9,175.0	11,652.0	8,443.9	67.1	62.6	26.90	3,470.5	50.6	931.4	801.6	129.77	7.177		
12,700.0	9,175.0	11,742.9	8,443.5	68.9	64.1	26.96	3,561.4	51.9	932.6	799.5	133.01	7.011		
12,800.0	9,175.0	11,834.3	8,443.8	70.6	65.6	27.24	3,652.6	57.0	934.8	798.5	136.25	6.861		
12,900.0	9,175.0	11,932.4	8,444.5	72.4	67.2	27.63	3,750.6	63.7	937.2	797.6	139.59	6.714		
13,000.0	9,175.0	12,013.7	8,443.5	74.1	68.6	27.86	3,831.7	68.5	941.1	798.5	142.68	6.596		
13,100.0	9,175.0	12,182.7	8,443.6	75.9	71.3	28.25	4,000.5	75.7	943.7	796.5	147.18	6.412		
13,200.0	9,175.0	12,276.1	8,447.4	77.6	72.9	28.46	4,093.8	77.5	941.0	790.5	150.47	6.253		
13,276.2	9,175.0	12,335.4	8,448.4	79.0	73.9	28.52	4,153.1	78.2	940.2	787.4	152.82	6.153		
13,300.0	9,175.0	12,353.5	8,448.4	79.4	74.2	28.52	4,171.2	78.2	940.3	786.8	153.55	6.124		
13,400.0	9,175.0	12,488.1	8,448.3	81.1	76.4	28.46	4,305.8	77.3	940.4	782.8	157.57	5.968		
13,500.0	9,175.0	12,596.6	8,452.1	82.9	78.2	28.49	4,414.2	75.7	936.5	775.4	161.13	5.812		
13,600.0	9,175.0	12,671.0	8,454.0	84.7	79.5	28.46	4,488.5	74.1	933.5	769.3	164.15	5.687		
13,664.9	9,175.0	12,723.0	8,453.9	85.8	80.4	28.38	4,540.5	72.7	932.8	766.6	166.19	5.613		
13,700.0	9,175.0	12,747.1	8,453.4	86.4	80.8	28.34	4,564.6	72.1	933.1	765.8	167.23	5.579		
13,800.0	9,175.0	12,829.9	8,450.0	88.2	82.2	28.13	4,647.3	70.2	935.5	765.1	170.43	5.489		
13,859.8	9,175.0	12,885.5	8,446.9	89.3	83.2	27.95	4,702.8	68.5	937.6	765.1	172.45	5.437		

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

IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandriil Freedom)
Reference Site:	Sec. 29, T.24 S., R.32E	MD Reference:	KB=26' @ 3520.8usft (Scandriil Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2:00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000:1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

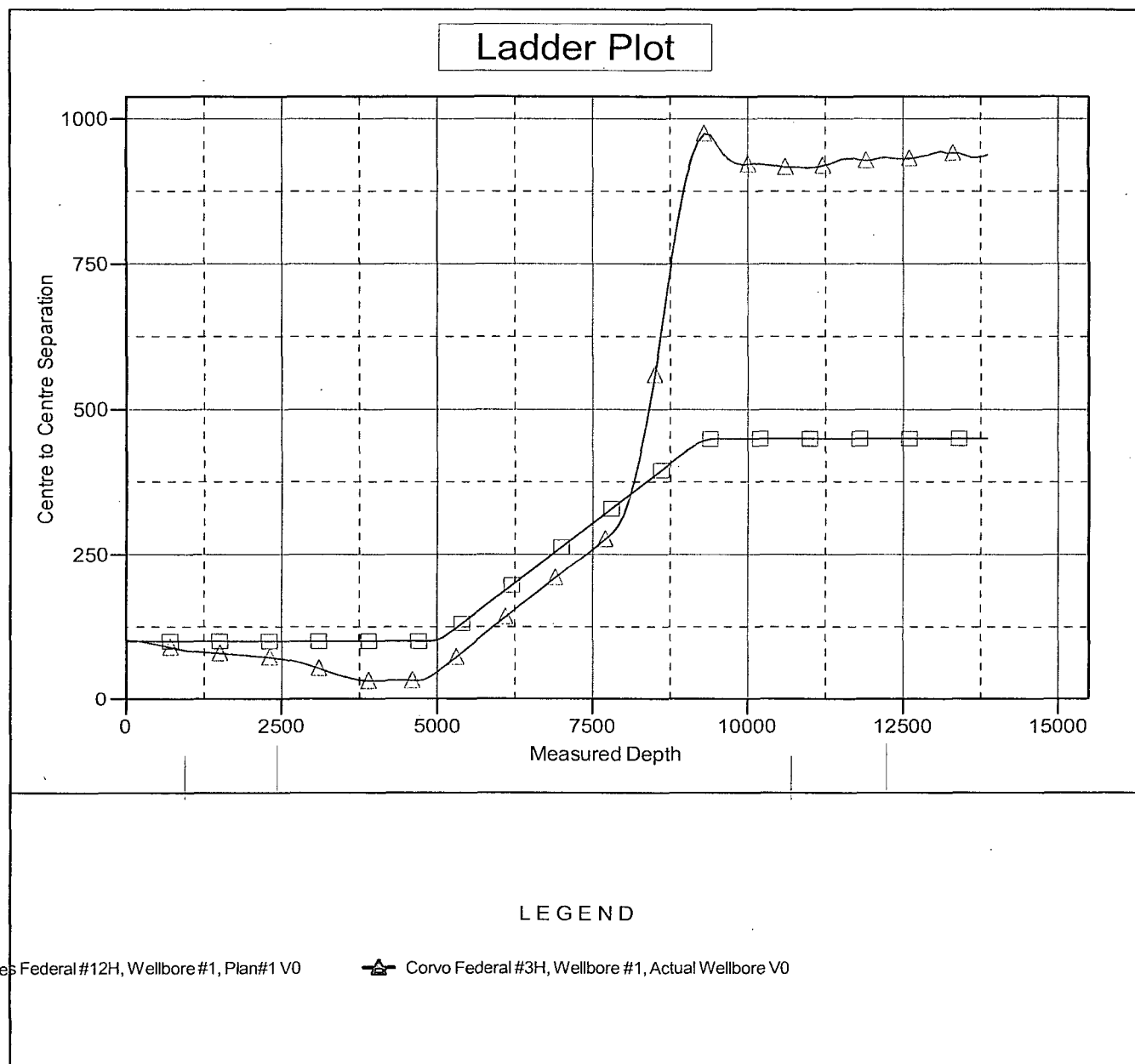
Reference Depths are relative to KB=26' @ 3520.8usft (Scandriil FreedCoordinates are relative to: Azores Federal #8H

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: 0.34°



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

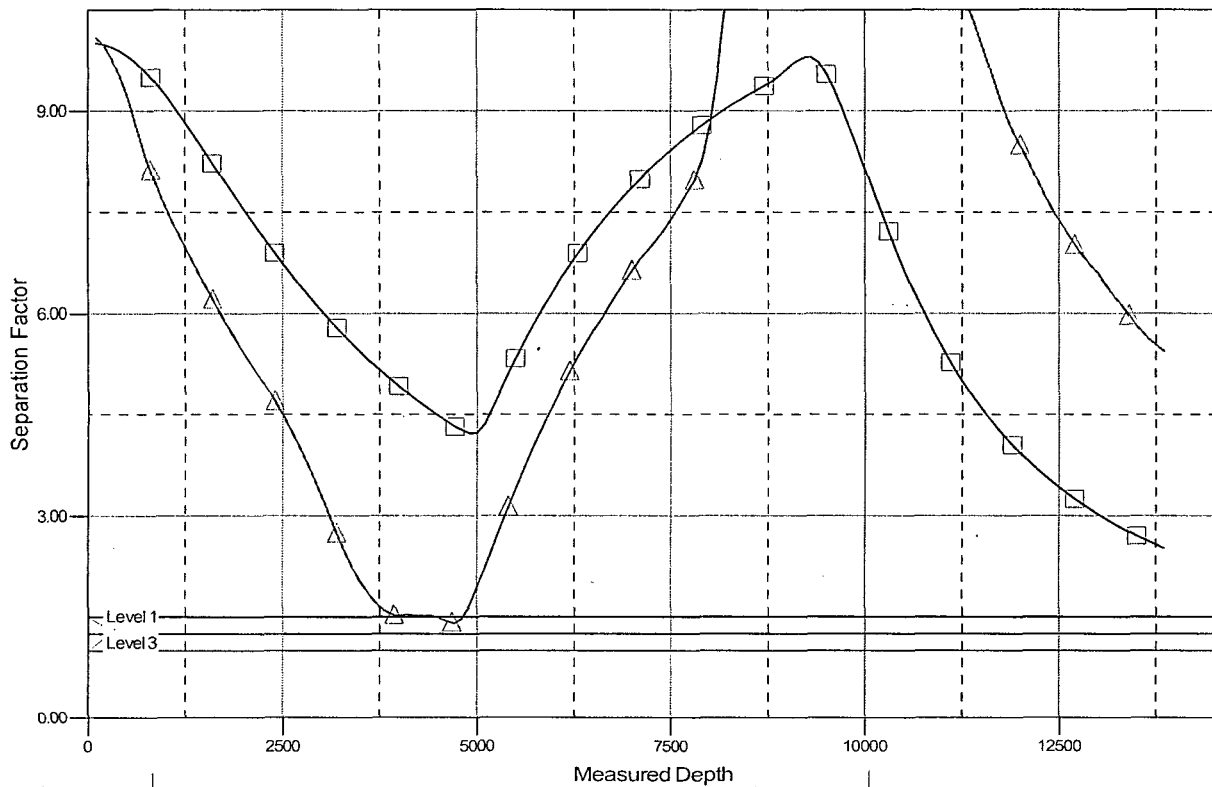
IDS

Anticollision Report

Company:	COG Production LLC	Local Co-ordinate Reference:	Well Azores Federal #8H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Reference Site:	Sec. 29, T 24 S., R 32E	MD Reference:	KB=26' @ 3520.8usft (Scandril Freedom)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Azores Federal #8H	Survey Calculation Method:	Minimum Curvature
Well Error:	5.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM.5000.1 Single User Db
Reference Design:	Plan#1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=26' @ 3520.8usft (Scandril Freedom) Coordinates are relative to: Azores Federal #8H
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.34°

Separation Factor Plot



LEGEND

res Federal #12H, Wellbore #1, Plan#1 V0

▲ Corvo Federal #3H, Wellbore #1, Actual Wellbore V0