



CONCHO

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AUG 21 2017

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COG Operating L L C

Lea County, NM (NAD27 NME)

Sec. 16, T 25 S. , R 35 E

White Falcon 16 Federal Com 21H

Wellbore #1

Plan #1

Anticollision Report

21 March, 2017





Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S., R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.00 ft
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 3/21/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	22,438.40	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec. 16, T 25 S., R 35 E						
White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #	6,000.00	6,000.10	40.00	13.31	1.499	Level 3, CC, ES
White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #	22,438.52	22,209.98	396.69	23.31	1.062	Level 2, SF
White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #	5,966.60	5,966.80	80.04	53.50	3.016	CC
White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #	6,000.00	6,000.00	80.04	53.36	2.999	ES
White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #	22,438.52	22,456.21	660.42	286.71	1.767	SF

Offset Design Sec. 16, T 25 S., R 35 E - White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.10	0.10	0.00	0.00	-90.57	-0.40	-40.00	40.00				
100.00	100.00	100.10	100.10	0.08	0.08	-90.57	-0.40	-40.00	40.00	39.84	0.17	240.178	
200.00	200.00	200.10	200.10	0.31	0.31	-90.57	-0.40	-40.00	40.00	39.39	0.62	64.930	
300.00	300.00	300.10	300.10	0.53	0.53	-90.57	-0.40	-40.00	40.00	38.94	1.07	37.539	
400.00	400.00	400.10	400.10	0.76	0.76	-90.57	-0.40	-40.00	40.00	38.49	1.52	26.401	
500.00	500.00	500.10	500.10	0.98	0.98	-90.57	-0.40	-40.00	40.00	38.04	1.96	20.361	
600.00	600.00	600.10	600.10	1.21	1.21	-90.57	-0.40	-40.00	40.00	37.59	2.41	16.569	
700.00	700.00	700.10	700.10	1.43	1.43	-90.57	-0.40	-40.00	40.00	37.14	2.86	13.968	
800.00	800.00	800.10	800.10	1.66	1.66	-90.57	-0.40	-40.00	40.00	36.69	3.31	12.073	
900.00	900.00	900.10	900.10	1.88	1.88	-90.57	-0.40	-40.00	40.00	36.24	3.76	10.631	
1,000.00	1,000.00	1,000.10	1,000.10	2.11	2.11	-90.57	-0.40	-40.00	40.00	35.79	4.21	9.496	
1,100.00	1,100.00	1,100.10	1,100.10	2.33	2.33	-90.57	-0.40	-40.00	40.00	35.34	4.66	8.581	
1,200.00	1,200.00	1,200.10	1,200.10	2.56	2.56	-90.57	-0.40	-40.00	40.00	34.89	5.11	7.826	
1,300.00	1,300.00	1,300.10	1,300.10	2.78	2.78	-90.57	-0.40	-40.00	40.00	34.44	5.56	7.193	
1,400.00	1,400.00	1,400.10	1,400.10	3.01	3.01	-90.57	-0.40	-40.00	40.00	33.99	6.01	6.655	
1,500.00	1,500.00	1,500.10	1,500.10	3.23	3.23	-90.57	-0.40	-40.00	40.00	33.54	6.46	6.192	
1,600.00	1,600.00	1,600.10	1,600.10	3.45	3.45	-90.57	-0.40	-40.00	40.00	33.09	6.91	5.789	
1,700.00	1,700.00	1,700.10	1,700.10	3.68	3.68	-90.57	-0.40	-40.00	40.00	32.64	7.36	5.436	
1,800.00	1,800.00	1,800.10	1,800.10	3.90	3.90	-90.57	-0.40	-40.00	40.00	32.19	7.81	5.123	
1,900.00	1,900.00	1,900.10	1,900.10	4.13	4.13	-90.57	-0.40	-40.00	40.00	31.74	8.26	4.844	
2,000.00	2,000.00	2,000.10	2,000.10	4.35	4.35	-90.57	-0.40	-40.00	40.00	31.29	8.71	4.594	
2,100.00	2,100.00	2,100.10	2,100.10	4.58	4.58	-90.57	-0.40	-40.00	40.00	30.84	9.16	4.368	

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



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Offset Design Sec. 16, T 25 S., R 35 E - White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,200.00	2,200.00	2,200.10	2,200.10	4.80	4.80	-90.57	-0.40	-40.00	40.00	30.40	9.61	4.164		
2,300.00	2,300.00	2,300.10	2,300.10	5.03	5.03	-90.57	-0.40	-40.00	40.00	29.95	10.06	3.978		
2,400.00	2,400.00	2,400.10	2,400.10	5.25	5.25	-90.57	-0.40	-40.00	40.00	29.50	10.51	3.808		
2,500.00	2,500.00	2,500.10	2,500.10	5.48	5.48	-90.57	-0.40	-40.00	40.00	29.05	10.96	3.651		
2,600.00	2,600.00	2,600.10	2,600.10	5.70	5.70	-90.57	-0.40	-40.00	40.00	28.60	11.40	3.507		
2,700.00	2,700.00	2,700.10	2,700.10	5.93	5.93	-90.57	-0.40	-40.00	40.00	28.15	11.85	3.374		
2,800.00	2,800.00	2,800.10	2,800.10	6.15	6.15	-90.57	-0.40	-40.00	40.00	27.70	12.30	3.251		
2,900.00	2,900.00	2,900.10	2,900.10	6.38	6.38	-90.57	-0.40	-40.00	40.00	27.25	12.75	3.137		
3,000.00	3,000.00	3,000.10	3,000.10	6.60	6.60	-90.57	-0.40	-40.00	40.00	26.80	13.20	3.030		
3,100.00	3,100.00	3,100.10	3,100.10	6.83	6.83	-90.57	-0.40	-40.00	40.00	26.35	13.65	2.930		
3,200.00	3,200.00	3,200.10	3,200.10	7.05	7.05	-90.57	-0.40	-40.00	40.00	25.90	14.10	2.837		
3,300.00	3,300.00	3,300.10	3,300.10	7.28	7.28	-90.57	-0.40	-40.00	40.00	25.45	14.55	2.749		
3,400.00	3,400.00	3,400.10	3,400.10	7.50	7.50	-90.57	-0.40	-40.00	40.00	25.00	15.00	2.667		
3,500.00	3,500.00	3,500.10	3,500.10	7.73	7.73	-90.57	-0.40	-40.00	40.00	24.55	15.45	2.589		
3,600.00	3,600.00	3,600.10	3,600.10	7.95	7.95	-90.57	-0.40	-40.00	40.00	24.10	15.90	2.516		
3,700.00	3,700.00	3,700.10	3,700.10	8.17	8.17	-90.57	-0.40	-40.00	40.00	23.65	16.35	2.447		
3,800.00	3,800.00	3,800.10	3,800.10	8.40	8.40	-90.57	-0.40	-40.00	40.00	23.20	16.80	2.381		
3,900.00	3,900.00	3,900.10	3,900.10	8.62	8.62	-90.57	-0.40	-40.00	40.00	22.75	17.25	2.319		
4,000.00	4,000.00	4,000.10	4,000.10	8.85	8.85	-90.57	-0.40	-40.00	40.00	22.30	17.70	2.260		
4,100.00	4,100.00	4,100.10	4,100.10	9.07	9.07	-90.57	-0.40	-40.00	40.00	21.85	18.15	2.204		
4,200.00	4,200.00	4,200.10	4,200.10	9.30	9.30	-90.57	-0.40	-40.00	40.00	21.40	18.60	2.151		
4,300.00	4,300.00	4,300.10	4,300.10	9.52	9.52	-90.57	-0.40	-40.00	40.00	20.96	19.05	2.100		
4,400.00	4,400.00	4,400.10	4,400.10	9.75	9.75	-90.57	-0.40	-40.00	40.00	20.51	19.50	2.052		
4,500.00	4,500.00	4,500.10	4,500.10	9.97	9.97	-90.57	-0.40	-40.00	40.00	20.06	19.95	2.006		
4,600.00	4,600.00	4,600.10	4,600.10	10.20	10.20	-90.57	-0.40	-40.00	40.00	19.61	20.40	1.961		
4,700.00	4,700.00	4,700.10	4,700.10	10.42	10.42	-90.57	-0.40	-40.00	40.00	19.16	20.85	1.919		
4,800.00	4,800.00	4,800.10	4,800.10	10.65	10.65	-90.57	-0.40	-40.00	40.00	18.71	21.29	1.879		
4,900.00	4,900.00	4,900.10	4,900.10	10.87	10.87	-90.57	-0.40	-40.00	40.00	18.26	21.74	1.840		
5,000.00	5,000.00	5,000.10	5,000.10	11.10	11.10	-90.57	-0.40	-40.00	40.00	17.81	22.19	1.802		
5,100.00	5,100.00	5,100.10	5,100.10	11.32	11.32	-90.57	-0.40	-40.00	40.00	17.36	22.64	1.767		
5,200.00	5,200.00	5,200.10	5,200.10	11.55	11.55	-90.57	-0.40	-40.00	40.00	16.91	23.09	1.732		
5,300.00	5,300.00	5,300.10	5,300.10	11.77	11.77	-90.57	-0.40	-40.00	40.00	16.46	23.54	1.699		
5,400.00	5,400.00	5,400.10	5,400.10	12.00	12.00	-90.57	-0.40	-40.00	40.00	16.01	23.99	1.667		
5,500.00	5,500.00	5,500.10	5,500.10	12.22	12.22	-90.57	-0.40	-40.00	40.00	15.56	24.44	1.637		
5,600.00	5,600.00	5,600.10	5,600.10	12.45	12.45	-90.57	-0.40	-40.00	40.00	15.11	24.89	1.607		
5,700.00	5,700.00	5,700.10	5,700.10	12.67	12.67	-90.57	-0.40	-40.00	40.00	14.66	25.34	1.579		
5,800.00	5,800.00	5,800.10	5,800.10	12.89	12.90	-90.57	-0.40	-40.00	40.00	14.21	25.79	1.551		
5,900.00	5,900.00	5,900.10	5,900.10	13.12	13.12	-90.57	-0.40	-40.00	40.00	13.76	26.24	1.525		
6,000.00	6,000.00	6,000.10	6,000.10	13.34	13.34	-90.57	-0.40	-40.00	40.00	13.31	26.69	1.499	Level 3, CC, ES	
6,100.00	6,099.98	6,100.08	6,100.08	13.56	13.57	179.95	-0.40	-40.00	41.75	14.62	27.12	1.539		
6,200.00	6,199.89	6,199.99	6,199.99	13.75	13.79	179.95	-0.40	-40.00	46.09	18.54	27.55	1.673		
6,300.00	6,299.78	6,299.88	6,299.88	13.95	14.02	179.96	-0.40	-40.00	50.57	22.60	27.97	1.808		
6,400.00	6,399.68	6,399.78	6,399.78	14.16	14.24	179.96	-0.40	-40.00	55.06	26.66	28.40	1.939		
6,500.00	6,499.58	6,499.68	6,499.68	14.36	14.47	179.96	-0.40	-40.00	59.54	30.72	28.83	2.066		
6,600.00	6,599.48	6,599.58	6,599.58	14.56	14.69	179.97	-0.40	-40.00	64.03	34.77	29.25	2.189		
6,700.00	6,699.38	6,699.48	6,699.48	14.77	14.92	179.97	-0.40	-40.00	68.51	38.83	29.68	2.308		
6,800.00	6,799.28	6,799.38	6,799.38	14.97	15.14	179.97	-0.40	-40.00	72.99	42.88	30.11	2.424		
6,900.00	6,899.18	6,899.28	6,899.28	15.18	15.37	179.97	-0.40	-40.00	77.48	46.93	30.54	2.537		
7,000.00	6,999.08	6,999.18	6,999.18	15.39	15.59	179.97	-0.40	-40.00	81.96	50.99	30.98	2.646		
7,100.00	7,098.98	7,099.08	7,099.08	15.59	15.81	179.98	-0.40	-40.00	86.45	55.04	31.41	2.752		
7,200.00	7,198.88	7,198.98	7,198.98	15.80	16.04	179.98	-0.40	-40.00	90.93	59.09	31.84	2.856		
7,300.00	7,298.78	7,298.88	7,298.88	16.01	16.26	179.98	-0.40	-40.00	95.41	63.14	32.28	2.956		

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Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,400.00	7,398.68	7,398.78	7,398.78	16.22	16.49	179.98	-0.40	-40.00	99.90	67.19	32.71	3.054		
7,500.00	7,498.58	7,498.68	7,498.68	16.43	16.71	179.98	-0.40	-40.00	104.38	71.23	33.15	3.149		
7,600.00	7,598.48	7,598.58	7,598.58	16.65	16.94	179.98	-0.40	-40.00	108.87	75.28	33.58	3.242		
7,700.00	7,698.38	7,698.48	7,698.48	16.86	17.16	179.98	-0.40	-40.00	113.35	79.33	34.02	3.332		
7,800.00	7,798.28	7,798.38	7,798.38	17.07	17.39	179.98	-0.40	-40.00	117.83	83.37	34.46	3.419		
7,900.00	7,898.18	7,898.28	7,898.28	17.29	17.61	179.98	-0.40	-40.00	122.32	87.42	34.90	3.505		
8,000.00	7,998.07	7,998.17	7,998.17	17.50	17.84	179.98	-0.40	-40.00	126.80	91.46	35.34	3.588		
8,100.00	8,097.97	8,098.07	8,098.07	17.72	18.06	179.98	-0.40	-40.00	131.29	95.51	35.78	3.669		
8,200.00	8,197.87	8,197.97	8,197.97	17.93	18.28	179.98	-0.40	-40.00	135.77	99.55	36.22	3.749		
8,300.00	8,297.77	8,297.87	8,297.87	18.15	18.51	179.98	-0.40	-40.00	140.25	103.59	36.66	3.826		
8,400.00	8,397.67	8,397.77	8,397.77	18.37	18.73	179.99	-0.40	-40.00	144.74	107.64	37.10	3.901		
8,500.00	8,497.57	8,497.67	8,497.67	18.59	18.96	179.99	-0.40	-40.00	149.22	111.68	37.54	3.975		
8,600.00	8,597.47	8,597.57	8,597.57	18.80	19.18	179.99	-0.40	-40.00	153.71	115.72	37.99	4.046		
8,700.00	8,697.37	8,697.47	8,697.47	19.02	19.41	179.99	-0.40	-40.00	158.19	119.76	38.43	4.116		
8,800.00	8,797.27	8,797.37	8,797.37	19.24	19.63	179.99	-0.40	-40.00	162.67	123.80	38.87	4.185		
8,900.00	8,897.17	8,897.27	8,897.27	19.46	19.86	179.99	-0.40	-40.00	167.16	127.84	39.32	4.251		
9,000.00	8,997.07	8,997.17	8,997.17	19.68	20.08	179.99	-0.40	-40.00	171.64	131.88	39.76	4.317		
9,100.00	9,096.97	9,097.07	9,097.07	19.90	20.31	179.99	-0.40	-40.00	176.13	135.92	40.21	4.380		
9,200.00	9,196.87	9,196.97	9,196.97	20.12	20.53	179.99	-0.40	-40.00	180.61	139.96	40.65	4.443		
9,300.00	9,296.77	9,296.87	9,296.87	20.35	20.75	179.99	-0.40	-40.00	185.09	143.99	41.10	4.503		
9,400.00	9,396.67	9,396.77	9,396.77	20.57	20.98	179.99	-0.40	-40.00	189.58	148.03	41.55	4.563		
9,500.00	9,496.57	9,496.67	9,496.67	20.79	21.20	179.99	-0.40	-40.00	194.06	152.07	41.99	4.621		
9,600.00	9,596.47	9,596.57	9,596.57	21.01	21.43	179.99	-0.40	-40.00	198.55	156.11	42.44	4.678		
9,700.00	9,696.36	9,696.46	9,696.46	21.23	21.65	179.99	-0.40	-40.00	203.03	160.14	42.89	4.734		
9,800.00	9,796.26	9,796.36	9,796.36	21.46	21.88	179.99	-0.40	-40.00	207.51	164.18	43.34	4.789		
9,900.00	9,896.16	9,896.26	9,896.26	21.68	22.10	179.99	-0.40	-40.00	212.00	168.22	43.78	4.842		
10,000.00	9,996.06	9,996.16	9,996.16	21.91	22.33	179.99	-0.40	-40.00	216.48	172.25	44.23	4.894		
10,100.00	10,095.96	10,096.06	10,096.06	22.13	22.55	179.99	-0.40	-40.00	220.97	176.29	44.68	4.945		
10,200.00	10,195.86	10,195.96	10,195.96	22.35	22.78	179.99	-0.40	-40.00	225.45	180.32	45.13	4.996		
10,300.00	10,295.76	10,295.86	10,295.86	22.58	23.00	179.99	-0.40	-40.00	229.93	184.36	45.58	5.045		
10,400.00	10,395.66	10,395.76	10,395.76	22.80	23.22	179.99	-0.40	-40.00	234.42	188.39	46.03	5.093		
10,500.00	10,495.56	10,495.66	10,495.66	23.03	23.45	179.99	-0.40	-40.00	238.90	192.42	46.48	5.140		
10,600.00	10,595.46	10,595.56	10,595.56	23.25	23.67	179.99	-0.40	-40.00	243.39	196.46	46.93	5.186		
10,700.00	10,695.36	10,695.46	10,695.46	23.48	23.90	179.99	-0.40	-40.00	247.87	200.49	47.38	5.232		
10,800.00	10,795.26	10,795.36	10,795.36	23.71	24.12	179.99	-0.40	-40.00	252.35	204.53	47.83	5.276		
10,900.00	10,895.16	10,895.26	10,895.26	23.93	24.35	179.99	-0.40	-40.00	256.84	208.56	48.28	5.320		
11,000.00	10,995.06	10,995.16	10,995.16	24.16	24.57	179.99	-0.40	-40.00	261.32	212.59	48.73	5.363		
11,100.00	11,094.96	11,095.06	11,095.06	24.39	24.80	179.99	-0.40	-40.00	265.81	216.62	49.18	5.404		
11,200.00	11,194.86	11,194.96	11,194.96	24.61	25.02	179.99	-0.40	-40.00	270.29	220.66	49.63	5.446		
11,300.00	11,294.76	11,294.86	11,294.86	24.84	25.25	179.99	-0.40	-40.00	274.77	224.69	50.09	5.486		
11,400.00	11,394.65	11,394.75	11,394.75	25.07	25.47	179.99	-0.40	-40.00	279.26	228.72	50.54	5.526		
11,500.00	11,494.55	11,494.65	11,494.65	25.30	25.69	179.99	-0.40	-40.00	283.74	232.75	50.99	5.565		
11,600.00	11,594.45	11,594.55	11,594.55	25.52	25.92	179.99	-0.40	-40.00	288.23	236.78	51.44	5.603		
11,700.00	11,694.35	11,694.45	11,694.45	25.75	26.14	179.99	-0.40	-40.00	292.71	240.82	51.89	5.640		
11,800.00	11,794.25	11,794.35	11,794.35	25.98	26.37	179.99	-0.40	-40.00	297.19	244.85	52.35	5.677		
11,900.00	11,894.15	11,893.31	11,892.85	26.21	26.55	178.53	-8.08	-39.93	301.78	249.03	52.75	5.720		
12,000.00	11,994.05	11,985.42	11,981.34	26.44	26.70	173.87	-33.14	-39.70	308.18	255.04	53.14	5.800		
12,100.00	12,093.77	12,067.29	12,054.67	26.65	26.83	95.82	-69.31	-39.38	319.74	266.26	53.48	5.979		
12,200.00	12,190.71	12,144.41	12,117.16	26.85	26.94	78.02	-114.36	-38.97	334.83	281.04	53.80	6.224		
12,300.00	12,280.67	12,218.47	12,169.60	27.06	27.10	69.76	-166.55	-38.50	351.08	296.92	54.16	6.483		
12,400.00	12,359.72	12,290.30	12,212.16	27.28	27.28	64.19	-224.32	-37.98	366.58	312.02	54.56	6.719		
12,500.00	12,424.41	12,360.54	12,244.96	27.53	27.49	60.29	-286.36	-37.42	379.86	324.83	55.03	6.903		

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Sec. 16, T 25 S. , R 35 E - White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,600.00	12,471.90	12,429.70	12,268.02	27.86	27.75	57.70	-351.50	-36.83	389.85	334.24	55.61	7.011		
12,700.00	12,500.13	12,500.00	12,281.57	28.27	28.06	56.24	-420.41	-36.21	395.86	339.53	56.33	7.028		
12,800.00	12,508.24	12,573.43	12,285.29	28.77	28.43	55.86	-493.70	-35.55	397.50	340.31	57.20	6.950		
12,900.00	12,509.53	12,673.43	12,286.60	29.37	29.02	55.87	-593.68	-34.65	397.50	339.10	58.39	6.808		
13,000.00	12,510.81	12,773.43	12,287.92	30.07	29.71	55.87	-693.67	-33.74	397.49	337.71	59.78	6.649		
13,100.00	12,512.09	12,873.43	12,289.23	30.86	30.49	55.88	-793.66	-32.84	397.48	336.13	61.35	6.479		
13,200.00	12,513.38	12,973.43	12,290.55	31.74	31.36	55.88	-893.65	-31.94	397.47	334.37	63.10	6.299		
13,300.00	12,514.66	13,073.43	12,291.86	32.69	32.31	55.89	-993.63	-31.04	397.46	332.46	65.00	6.115		
13,400.00	12,515.95	13,173.43	12,293.18	33.72	33.33	55.89	-1,093.62	-30.13	397.45	330.40	67.05	5.927		
13,500.00	12,517.23	13,273.43	12,294.49	34.82	34.42	55.89	-1,193.61	-29.23	397.44	328.21	69.24	5.740		
13,600.00	12,518.51	13,373.43	12,295.81	35.97	35.57	55.90	-1,293.59	-28.33	397.44	325.89	71.54	5.555		
13,700.00	12,519.80	13,473.43	12,297.12	37.18	36.77	55.90	-1,393.58	-27.43	397.43	323.47	73.96	5.374		
13,800.00	12,521.08	13,573.43	12,298.44	38.44	38.03	55.91	-1,493.57	-26.53	397.42	320.95	76.47	5.197		
13,900.00	12,522.37	13,673.43	12,299.75	39.74	39.33	55.91	-1,593.56	-25.62	397.41	318.34	79.07	5.026		
14,000.00	12,523.65	13,773.43	12,301.07	41.08	40.67	55.92	-1,693.54	-24.72	397.40	315.65	81.75	4.861		
14,100.00	12,524.93	13,873.43	12,302.38	42.46	42.05	55.92	-1,793.53	-23.82	397.39	312.88	84.51	4.702		
14,200.00	12,526.22	13,973.43	12,303.70	43.87	43.46	55.93	-1,893.52	-22.92	397.38	310.05	87.33	4.550		
14,300.00	12,527.50	14,073.43	12,305.01	45.31	44.90	55.93	-1,993.51	-22.01	397.37	307.16	90.21	4.405		
14,400.00	12,528.79	14,173.43	12,306.33	46.78	46.36	55.94	-2,093.49	-21.11	397.37	304.22	93.15	4.266		
14,500.00	12,530.07	14,273.43	12,307.64	48.28	47.86	55.94	-2,193.48	-20.21	397.36	301.22	96.13	4.133		
14,600.00	12,531.35	14,373.43	12,308.96	49.79	49.37	55.94	-2,293.47	-19.31	397.35	298.18	99.16	4.007		
14,700.00	12,532.64	14,473.43	12,310.27	51.33	50.91	55.95	-2,393.45	-18.41	397.34	295.10	102.24	3.887		
14,800.00	12,533.92	14,573.43	12,311.59	52.88	52.46	55.95	-2,493.44	-17.50	397.33	291.99	105.34	3.772		
14,900.00	12,535.21	14,673.43	12,312.90	54.45	54.04	55.96	-2,593.43	-16.60	397.32	288.84	108.49	3.662		
15,000.00	12,536.49	14,773.43	12,314.22	56.04	55.62	55.96	-2,693.42	-15.70	397.31	285.65	111.66	3.558		
15,100.00	12,537.77	14,873.43	12,315.53	57.64	57.22	55.97	-2,793.40	-14.80	397.31	282.44	114.87	3.459		
15,200.00	12,539.06	14,973.43	12,316.85	59.26	58.84	55.97	-2,893.39	-13.89	397.30	279.20	118.10	3.364		
15,300.00	12,540.34	15,073.43	12,318.16	60.88	60.47	55.98	-2,993.38	-12.99	397.29	275.94	121.35	3.274		
15,400.00	12,541.63	15,173.43	12,319.48	62.52	62.11	55.98	-3,093.37	-12.09	397.28	272.65	124.63	3.188		
15,500.00	12,542.91	15,273.43	12,320.79	64.17	63.75	55.99	-3,193.35	-11.19	397.27	269.35	127.92	3.106		
15,600.00	12,544.19	15,373.43	12,322.11	65.82	65.41	55.99	-3,293.34	-10.28	397.26	266.03	131.24	3.027		
15,700.00	12,545.48	15,473.43	12,323.42	67.49	67.08	55.99	-3,393.33	-9.38	397.25	262.68	134.57	2.952		
15,800.00	12,546.76	15,573.43	12,324.74	69.17	68.76	56.00	-3,493.31	-8.48	397.25	259.32	137.92	2.880		
15,900.00	12,548.05	15,673.43	12,326.05	70.85	70.44	56.00	-3,593.30	-7.58	397.24	255.95	141.29	2.812		
16,000.00	12,549.33	15,773.43	12,327.37	72.54	72.13	56.01	-3,693.29	-6.68	397.23	252.56	144.67	2.746		
16,100.00	12,550.61	15,873.43	12,328.68	74.23	73.82	56.01	-3,793.28	-5.77	397.22	249.16	148.06	2.683		
16,200.00	12,551.90	15,973.43	12,330.00	75.93	75.53	56.02	-3,893.26	-4.87	397.21	245.75	151.46	2.623		
16,300.00	12,553.18	16,073.43	12,331.31	77.64	77.24	56.02	-3,993.25	-3.97	397.20	242.32	154.88	2.565		
16,400.00	12,554.47	16,173.43	12,332.63	79.36	78.95	56.03	-4,093.24	-3.07	397.19	238.89	158.31	2.509		
16,500.00	12,555.75	16,273.43	12,333.94	81.07	80.67	56.03	-4,193.23	-2.16	397.19	235.44	161.74	2.456		
16,600.00	12,557.03	16,373.43	12,335.26	82.80	82.39	56.03	-4,293.21	-1.26	397.18	231.99	165.19	2.404		
16,700.00	12,558.32	16,473.43	12,336.57	84.52	84.12	56.04	-4,393.20	-0.36	397.17	228.52	168.64	2.355		
16,800.00	12,559.60	16,573.43	12,337.89	86.26	85.85	56.04	-4,493.19	0.54	397.16	225.05	172.11	2.308		
16,900.00	12,560.89	16,673.43	12,339.20	87.99	87.59	56.05	-4,593.17	1.44	397.15	221.57	175.58	2.262		
17,000.00	12,562.17	16,773.43	12,340.52	89.73	89.33	56.05	-4,693.16	2.35	397.14	218.08	179.06	2.218		
17,100.00	12,563.45	16,873.43	12,341.83	91.47	91.07	56.06	-4,793.15	3.25	397.13	214.59	182.54	2.176		
17,200.00	12,564.74	16,973.43	12,343.15	93.22	92.82	56.06	-4,893.14	4.15	397.13	211.09	186.04	2.135		
17,300.00	12,566.02	17,073.43	12,344.46	94.97	94.57	56.07	-4,993.12	5.05	397.12	207.58	189.54	2.095		
17,400.00	12,567.31	17,173.43	12,345.78	96.72	96.32	56.07	-5,093.11	5.96	397.11	204.07	193.04	2.057		
17,500.00	12,568.59	17,273.43	12,347.09	98.47	98.08	56.08	-5,193.10	6.86	397.10	200.55	196.55	2.020		
17,600.00	12,569.87	17,373.43	12,348.40	100.23	99.83	56.08	-5,293.09	7.76	397.09	197.03	200.06	1.985		
17,700.00	12,571.16	17,473.43	12,349.72	101.99	101.59	56.08	-5,393.07	8.66	397.08	193.50	203.58	1.950		

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Sec. 16, T 25 S. , R 35 E - White Falcon 16 Federal Com 11H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
17,800.00	12,572.44	17,573.43	12,351.03	103.75	103.36	56.09	-5,493.06	9.57	397.07	189.96	207.11	1.917		
17,900.00	12,573.73	17,673.43	12,352.35	105.52	105.12	56.09	-5,593.05	10.47	397.07	186.43	210.64	1.885		
18,000.00	12,575.01	17,773.43	12,353.66	107.28	106.89	56.10	-5,693.04	11.37	397.06	182.88	214.17	1.854		
18,100.00	12,576.29	17,873.43	12,354.98	109.05	108.66	56.10	-5,793.02	12.27	397.05	179.34	217.71	1.824		
18,200.00	12,577.58	17,973.43	12,356.29	110.82	110.43	56.11	-5,893.01	13.17	397.04	175.79	221.25	1.795		
18,300.00	12,578.86	18,073.43	12,357.61	112.60	112.20	56.11	-5,993.00	14.08	397.03	172.23	224.80	1.766		
18,400.00	12,580.15	18,173.43	12,358.92	114.37	113.98	56.12	-6,092.98	14.98	397.02	168.68	228.35	1.739		
18,500.00	12,581.43	18,273.43	12,360.24	116.15	115.75	56.12	-6,192.97	15.88	397.02	165.12	231.90	1.712		
18,600.00	12,582.71	18,373.43	12,361.55	117.92	117.53	56.13	-6,292.96	16.78	397.01	161.55	235.45	1.686		
18,700.00	12,584.00	18,473.43	12,362.87	119.70	119.31	56.13	-6,392.95	17.69	397.00	157.99	239.01	1.661		
18,800.00	12,585.28	18,573.43	12,364.18	121.48	121.09	56.13	-6,492.93	18.59	396.99	154.42	242.57	1.637		
18,900.00	12,586.57	18,673.43	12,365.50	123.26	122.87	56.14	-6,592.92	19.49	396.98	150.84	246.14	1.613		
19,000.00	12,587.85	18,773.43	12,366.81	125.05	124.66	56.14	-6,692.91	20.39	396.97	147.27	249.70	1.590		
19,100.00	12,589.13	18,873.43	12,368.13	126.83	126.44	56.15	-6,792.90	21.30	396.96	143.69	253.27	1.567		
19,200.00	12,590.42	18,973.43	12,369.44	128.62	128.23	56.15	-6,892.88	22.20	396.96	140.11	256.85	1.546		
19,300.00	12,591.70	19,073.43	12,370.76	130.40	130.02	56.16	-6,992.87	23.10	396.95	136.53	260.42	1.524		
19,400.00	12,592.99	19,173.43	12,372.07	132.19	131.80	56.16	-7,092.86	24.00	396.94	132.94	264.00	1.504		
19,500.00	12,594.27	19,273.43	12,373.39	133.98	133.59	56.17	-7,192.84	24.90	396.93	129.36	267.57	1.483 Level 3		
19,600.00	12,595.56	19,373.43	12,374.70	135.77	135.38	56.17	-7,292.83	25.81	396.92	125.77	271.16	1.464 Level 3		
19,700.00	12,596.84	19,473.43	12,376.02	137.56	137.18	56.18	-7,392.82	26.71	396.91	122.17	274.74	1.445 Level 3		
19,800.00	12,598.12	19,573.43	12,377.33	139.35	138.97	56.18	-7,492.81	27.61	396.90	118.58	278.32	1.426 Level 3		
19,900.00	12,599.41	19,673.43	12,378.65	141.15	140.76	56.18	-7,592.79	28.51	396.90	114.99	281.91	1.408 Level 3		
20,000.00	12,600.69	19,773.43	12,379.96	142.94	142.56	56.19	-7,692.78	29.42	396.89	111.39	285.50	1.390 Level 3		
20,100.00	12,601.98	19,873.43	12,381.28	144.74	144.35	56.19	-7,792.77	30.32	396.88	107.79	289.09	1.373 Level 3		
20,200.00	12,603.26	19,973.43	12,382.59	146.53	146.15	56.20	-7,892.76	31.22	396.87	104.19	292.68	1.356 Level 3		
20,300.00	12,604.54	20,073.43	12,383.91	148.33	147.94	56.20	-7,992.74	32.12	396.86	100.59	296.27	1.340 Level 3		
20,400.00	12,605.83	20,173.43	12,385.22	150.13	149.74	56.21	-8,092.73	33.02	396.85	96.99	299.87	1.323 Level 3		
20,500.00	12,607.11	20,273.43	12,386.54	151.92	151.54	56.21	-8,192.72	33.93	396.85	93.38	303.46	1.308 Level 3		
20,600.00	12,608.40	20,373.43	12,387.85	153.72	153.34	56.22	-8,292.70	34.83	396.84	89.78	307.06	1.292 Level 3		
20,700.00	12,609.68	20,473.43	12,389.17	155.52	155.14	56.22	-8,392.69	35.73	396.83	86.17	310.66	1.277 Level 3		
20,800.00	12,610.96	20,573.43	12,390.48	157.32	156.94	56.23	-8,492.68	36.63	396.82	82.56	314.26	1.263 Level 3		
20,900.00	12,612.25	20,673.43	12,391.80	159.12	158.74	56.23	-8,592.67	37.54	396.81	78.95	317.86	1.248 Level 2		
21,000.00	12,613.53	20,773.43	12,393.11	160.92	160.54	56.23	-8,692.65	38.44	396.80	75.34	321.46	1.234 Level 2		
21,100.00	12,614.82	20,873.43	12,394.43	162.72	162.34	56.24	-8,792.64	39.34	396.79	71.73	325.07	1.221 Level 2		
21,200.00	12,616.10	20,973.43	12,395.74	164.53	164.15	56.24	-8,892.63	40.24	396.79	68.11	328.67	1.207 Level 2		
21,300.00	12,617.38	21,073.43	12,397.06	166.33	165.95	56.25	-8,992.62	41.15	396.78	64.50	332.28	1.194 Level 2		
21,400.00	12,618.67	21,173.43	12,398.37	168.13	167.75	56.25	-9,092.60	42.05	396.77	60.88	335.89	1.181 Level 2		
21,500.00	12,619.95	21,273.43	12,399.69	169.94	169.56	56.26	-9,192.59	42.95	396.76	57.26	339.50	1.169 Level 2		
21,600.00	12,621.24	21,373.43	12,401.00	171.74	171.36	56.26	-9,292.58	43.85	396.75	53.65	343.11	1.156 Level 2		
21,700.00	12,622.52	21,473.43	12,402.32	173.55	173.17	56.27	-9,392.56	44.75	396.74	50.03	346.72	1.144 Level 2		
21,800.00	12,623.80	21,573.43	12,403.63	175.35	174.97	56.27	-9,492.55	45.66	396.74	46.41	350.33	1.132 Level 2		
21,900.00	12,625.09	21,673.43	12,404.95	177.16	176.78	56.28	-9,592.54	46.56	396.73	42.79	353.94	1.121 Level 2		
22,000.00	12,626.37	21,773.43	12,406.26	178.97	178.59	56.28	-9,692.53	47.46	396.72	39.17	357.55	1.110 Level 2		
22,100.00	12,627.66	21,873.43	12,407.58	180.77	180.39	56.29	-9,792.51	48.36	396.71	35.54	361.17	1.098 Level 2		
22,200.00	12,628.94	21,973.43	12,408.89	182.58	182.20	56.29	-9,892.50	49.27	396.70	31.92	364.78	1.088 Level 2		
22,300.00	12,630.22	22,073.43	12,410.20	184.39	184.01	56.29	-9,992.49	50.17	396.69	28.30	368.40	1.077 Level 2		
22,400.00	12,631.51	22,173.43	12,411.52	186.20	185.82	56.30	-10,092.48	51.07	396.68	24.67	372.01	1.066 Level 2		
22,430.39	12,631.90	22,203.81	12,411.92	186.75	186.37	56.30	-10,122.86	51.34	396.68	23.57	373.11	1.063 Level 2		
22,438.52	12,632.00	22,209.98	12,412.00	186.89	186.48	56.30	-10,129.02	51.40	396.69	23.31	373.37	1.062 Level 2, SF		

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S., R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Sec. 16, T 25 S., R 35 E - White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.20	0.20	0.00	0.00	-90.55	-0.77	-80.04	80.04				
100.00	100.00	100.20	100.20	0.08	0.08	-90.55	-0.77	-80.04	80.04	79.88	0.17	479.946	
200.00	200.00	200.20	200.20	0.31	0.31	-90.55	-0.77	-80.04	80.04	79.43	0.62	129.876	
300.00	300.00	300.20	300.20	0.53	0.53	-90.55	-0.77	-80.04	80.04	78.98	1.07	75.099	
400.00	400.00	400.20	400.20	0.76	0.76	-90.55	-0.77	-80.04	80.04	78.53	1.52	52.821	
500.00	500.00	500.20	500.20	0.98	0.98	-90.55	-0.77	-80.04	80.04	78.08	1.96	40.737	
600.00	600.00	600.20	600.20	1.21	1.21	-90.55	-0.77	-80.04	80.04	77.63	2.41	33.152	
700.00	700.00	700.20	700.20	1.43	1.43	-90.55	-0.77	-80.04	80.04	77.18	2.86	27.949	
800.00	800.00	800.20	800.20	1.66	1.66	-90.55	-0.77	-80.04	80.04	76.73	3.31	24.157	
900.00	900.00	900.20	900.20	1.88	1.88	-90.55	-0.77	-80.04	80.04	76.28	3.76	21.271	
1,000.00	1,000.00	1,000.20	1,000.20	2.11	2.11	-90.55	-0.77	-80.04	80.04	75.83	4.21	19.001	
1,100.00	1,100.00	1,100.20	1,100.20	2.33	2.33	-90.55	-0.77	-80.04	80.04	75.38	4.66	17.169	
1,200.00	1,200.00	1,200.20	1,200.20	2.56	2.56	-90.55	-0.77	-80.04	80.04	74.93	5.11	15.659	
1,300.00	1,300.00	1,300.20	1,300.20	2.78	2.78	-90.55	-0.77	-80.04	80.04	74.48	5.56	14.393	
1,400.00	1,400.00	1,400.20	1,400.20	3.01	3.01	-90.55	-0.77	-80.04	80.04	74.03	6.01	13.317	
1,500.00	1,500.00	1,500.20	1,500.20	3.23	3.23	-90.55	-0.77	-80.04	80.04	73.58	6.46	12.390	
1,600.00	1,600.00	1,600.20	1,600.20	3.45	3.46	-90.55	-0.77	-80.04	80.04	73.13	6.91	11.584	
1,700.00	1,700.00	1,700.20	1,700.20	3.68	3.68	-90.55	-0.77	-80.04	80.04	72.68	7.36	10.877	
1,800.00	1,800.00	1,800.20	1,800.20	3.90	3.90	-90.55	-0.77	-80.04	80.04	72.23	7.81	10.250	
1,900.00	1,900.00	1,900.20	1,900.20	4.13	4.13	-90.55	-0.77	-80.04	80.04	71.79	8.26	9.692	
2,000.00	2,000.00	2,000.20	2,000.20	4.35	4.35	-90.55	-0.77	-80.04	80.04	71.34	8.71	9.192	
2,100.00	2,100.00	2,100.20	2,100.20	4.58	4.58	-90.55	-0.77	-80.04	80.04	70.89	9.16	8.741	
2,200.00	2,200.00	2,200.20	2,200.20	4.80	4.80	-90.55	-0.77	-80.04	80.04	70.44	9.61	8.332	
2,300.00	2,300.00	2,300.20	2,300.20	5.03	5.03	-90.55	-0.77	-80.04	80.04	69.99	10.06	7.959	
2,400.00	2,400.00	2,400.20	2,400.20	5.25	5.25	-90.55	-0.77	-80.04	80.04	69.54	10.51	7.619	
2,500.00	2,500.00	2,500.20	2,500.20	5.48	5.48	-90.55	-0.77	-80.04	80.04	69.09	10.96	7.306	
2,600.00	2,600.00	2,600.20	2,600.20	5.70	5.70	-90.55	-0.77	-80.04	80.04	68.64	11.41	7.018	
2,700.00	2,700.00	2,700.20	2,700.20	5.93	5.93	-90.55	-0.77	-80.04	80.04	68.19	11.85	6.752	
2,800.00	2,800.00	2,800.20	2,800.20	6.15	6.15	-90.55	-0.77	-80.04	80.04	67.74	12.30	6.505	
2,900.00	2,900.00	2,900.20	2,900.20	6.38	6.38	-90.55	-0.77	-80.04	80.04	67.29	12.75	6.276	
3,000.00	3,000.00	3,000.20	3,000.20	6.60	6.60	-90.55	-0.77	-80.04	80.04	66.84	13.20	6.062	
3,100.00	3,100.00	3,100.20	3,100.20	6.83	6.83	-90.55	-0.77	-80.04	80.04	66.39	13.65	5.863	
3,200.00	3,200.00	3,200.20	3,200.20	7.05	7.05	-90.55	-0.77	-80.04	80.04	65.94	14.10	5.676	
3,300.00	3,300.00	3,300.20	3,300.20	7.28	7.28	-90.55	-0.77	-80.04	80.04	65.49	14.55	5.501	
3,400.00	3,400.00	3,400.20	3,400.20	7.50	7.50	-90.55	-0.77	-80.04	80.04	65.04	15.00	5.336	
3,500.00	3,500.00	3,500.20	3,500.20	7.73	7.73	-90.55	-0.77	-80.04	80.04	64.59	15.45	5.181	
3,600.00	3,600.00	3,600.20	3,600.20	7.95	7.95	-90.55	-0.77	-80.04	80.04	64.14	15.90	5.034	
3,700.00	3,700.00	3,700.20	3,700.20	8.17	8.18	-90.55	-0.77	-80.04	80.04	63.69	16.35	4.896	
3,800.00	3,800.00	3,800.20	3,800.20	8.40	8.40	-90.55	-0.77	-80.04	80.04	63.24	16.80	4.765	
3,900.00	3,900.00	3,900.20	3,900.20	8.62	8.62	-90.55	-0.77	-80.04	80.04	62.79	17.25	4.640	
4,000.00	4,000.00	4,000.20	4,000.20	8.85	8.85	-90.55	-0.77	-80.04	80.04	62.35	17.70	4.523	
4,100.00	4,100.00	4,100.20	4,100.20	9.07	9.07	-90.55	-0.77	-80.04	80.04	61.90	18.15	4.411	
4,200.00	4,200.00	4,200.20	4,200.20	9.30	9.30	-90.55	-0.77	-80.04	80.04	61.45	18.60	4.304	
4,300.00	4,300.00	4,300.20	4,300.20	9.52	9.52	-90.55	-0.77	-80.04	80.04	61.00	19.05	4.202	
4,400.00	4,400.00	4,400.20	4,400.20	9.75	9.75	-90.55	-0.77	-80.04	80.04	60.55	19.50	4.106	
4,500.00	4,500.00	4,500.20	4,500.20	9.97	9.97	-90.55	-0.77	-80.04	80.04	60.10	19.95	4.013	
4,600.00	4,600.00	4,600.20	4,600.20	10.20	10.20	-90.55	-0.77	-80.04	80.04	59.65	20.40	3.925	
4,700.00	4,700.00	4,700.20	4,700.20	10.42	10.42	-90.55	-0.77	-80.04	80.04	59.20	20.85	3.840	
4,800.00	4,800.00	4,800.20	4,800.20	10.65	10.65	-90.55	-0.77	-80.04	80.04	58.75	21.29	3.759	
4,900.00	4,900.00	4,900.20	4,900.20	10.87	10.87	-90.55	-0.77	-80.04	80.04	58.30	21.74	3.681	
5,000.00	5,000.00	5,000.20	5,000.20	11.10	11.10	-90.55	-0.77	-80.04	80.04	57.85	22.19	3.607	
5,100.00	5,100.00	5,100.20	5,100.20	11.32	11.32	-90.55	-0.77	-80.04	80.04	57.40	22.64	3.535	

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S., R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Sec. 16, T 25 S., R 35 E - White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,200.00	5,200.00	5,200.20	5,200.20	11.55	11.55	-90.55	-0.77	-80.04	80.04	56.95	23.09	3.466	
5,300.00	5,300.00	5,300.20	5,300.20	11.77	11.77	-90.55	-0.77	-80.04	80.04	56.50	23.54	3.400	
5,400.00	5,400.00	5,400.20	5,400.20	12.00	12.00	-90.55	-0.77	-80.04	80.04	56.05	23.99	3.336	
5,500.00	5,500.00	5,500.20	5,500.20	12.22	12.22	-90.55	-0.77	-80.04	80.04	55.60	24.44	3.275	
5,600.00	5,600.00	5,600.20	5,600.20	12.45	12.45	-90.55	-0.77	-80.04	80.04	55.15	24.89	3.216	
5,700.00	5,700.00	5,700.20	5,700.20	12.67	12.67	-90.55	-0.77	-80.04	80.04	54.70	25.34	3.159	
5,800.00	5,800.00	5,800.20	5,800.20	12.89	12.90	-90.55	-0.77	-80.04	80.04	54.25	25.79	3.104	
5,900.00	5,900.00	5,900.20	5,900.20	13.12	13.12	-90.55	-0.77	-80.04	80.04	53.80	26.24	3.050	
5,966.60	5,966.60	5,966.80	5,966.80	13.27	13.27	-90.55	-0.77	-80.04	80.04	53.50	26.54	3.016 CC	
6,000.00	6,000.00	6,000.00	6,000.00	13.34	13.34	-90.55	-0.77	-80.04	80.04	53.36	26.69	2.999 ES	
6,100.00	6,099.98	6,097.36	6,097.34	13.56	13.55	179.97	-0.78	-81.69	83.49	56.39	27.11	3.080	
6,200.00	6,199.89	6,196.06	6,195.95	13.75	13.75	179.98	-0.82	-85.95	92.13	64.64	27.50	3.350	
6,300.00	6,299.78	6,295.66	6,295.45	13.95	13.94	179.98	-0.86	-90.42	101.09	73.20	27.90	3.624	
6,400.00	6,399.68	6,395.26	6,394.95	14.16	14.14	179.98	-0.90	-94.88	110.05	81.75	28.30	3.889	
6,500.00	6,499.58	6,494.86	6,494.45	14.36	14.35	179.98	-0.94	-99.35	119.01	90.31	28.70	4.146	
6,600.00	6,599.48	6,594.46	6,593.94	14.56	14.55	179.98	-0.98	-103.81	127.97	98.86	29.11	4.396	
6,700.00	6,699.38	6,694.05	6,693.44	14.77	14.75	179.98	-1.02	-108.28	136.93	107.41	29.52	4.639	
6,800.00	6,799.28	6,793.65	6,792.94	14.97	14.95	179.98	-1.06	-112.75	145.89	115.96	29.93	4.875	
6,900.00	6,899.18	6,893.25	6,892.44	15.18	15.16	179.99	-1.10	-117.21	154.85	124.51	30.34	5.104	
7,000.00	6,999.08	6,992.85	6,991.94	15.39	15.37	179.99	-1.14	-121.68	163.81	133.06	30.75	5.327	
7,100.00	7,098.98	7,092.45	7,091.43	15.59	15.57	179.99	-1.18	-126.14	172.77	141.60	31.17	5.543	
7,200.00	7,198.88	7,192.04	7,190.93	15.80	15.78	179.99	-1.22	-130.61	181.72	150.14	31.58	5.754	
7,300.00	7,298.78	7,291.64	7,290.43	16.01	15.99	179.99	-1.27	-135.07	190.68	158.68	32.00	5.958	
7,400.00	7,398.68	7,391.24	7,389.93	16.22	16.20	179.99	-1.31	-139.54	199.64	167.22	32.42	6.157	
7,500.00	7,498.58	7,490.84	7,489.42	16.43	16.41	179.99	-1.35	-144.01	208.60	175.76	32.85	6.351	
7,600.00	7,598.48	7,590.44	7,588.92	16.65	16.62	179.99	-1.39	-148.47	217.56	184.29	33.27	6.540	
7,700.00	7,698.38	7,690.03	7,688.42	16.86	16.83	179.99	-1.43	-152.94	226.52	192.83	33.69	6.723	
7,800.00	7,798.28	7,789.63	7,787.92	17.07	17.05	179.99	-1.47	-157.40	235.48	201.36	34.12	6.902	
7,900.00	7,898.18	7,889.23	7,887.41	17.29	17.26	179.99	-1.51	-161.87	244.44	209.89	34.55	7.075	
8,000.00	7,998.07	7,988.83	7,986.91	17.50	17.47	179.99	-1.55	-166.33	253.40	218.42	34.98	7.245	
8,100.00	8,097.97	8,088.42	8,086.41	17.72	17.69	179.99	-1.59	-170.80	262.36	226.95	35.41	7.410	
8,200.00	8,197.87	8,188.02	8,185.91	17.93	17.90	179.99	-1.63	-175.27	271.31	235.48	35.84	7.571	
8,300.00	8,297.77	8,287.62	8,285.41	18.15	18.12	179.99	-1.67	-179.73	280.27	244.00	36.27	7.727	
8,400.00	8,397.67	8,387.22	8,384.90	18.37	18.33	179.99	-1.71	-184.20	289.23	252.53	36.70	7.880	
8,500.00	8,497.57	8,486.82	8,484.40	18.59	18.55	179.99	-1.75	-188.66	298.19	261.05	37.14	8.029	
8,600.00	8,597.47	8,586.41	8,583.90	18.80	18.77	179.99	-1.79	-193.13	307.15	269.58	37.57	8.175	
8,700.00	8,697.37	8,686.01	8,683.40	19.02	18.99	179.99	-1.83	-197.60	316.11	278.10	38.01	8.316	
8,800.00	8,797.27	8,785.61	8,782.89	19.24	19.21	179.99	-1.87	-202.06	325.07	286.62	38.45	8.455	
8,900.00	8,897.17	8,885.21	8,882.39	19.46	19.42	179.99	-1.91	-206.53	334.03	295.14	38.89	8.590	
9,000.00	8,997.07	8,984.81	8,981.89	19.68	19.64	179.99	-1.95	-210.99	342.99	303.66	39.33	8.722	
9,100.00	9,096.97	9,084.40	9,081.39	19.90	19.86	179.99	-1.99	-215.46	351.95	312.18	39.77	8.850	
9,200.00	9,196.87	9,184.00	9,180.88	20.12	20.08	179.99	-2.04	-219.92	360.90	320.70	40.21	8.976	
9,300.00	9,296.77	9,283.60	9,280.38	20.35	20.30	179.99	-2.08	-224.39	369.86	329.21	40.65	9.099	
9,400.00	9,396.67	9,383.20	9,379.88	20.57	20.52	179.99	-2.12	-228.86	378.82	337.73	41.09	9.219	
9,500.00	9,496.57	9,482.79	9,479.38	20.79	20.75	179.99	-2.16	-233.32	387.78	346.25	41.53	9.336	
9,600.00	9,596.47	9,582.39	9,578.88	21.01	20.97	179.99	-2.20	-237.79	396.74	354.76	41.98	9.451	
9,700.00	9,696.36	9,681.99	9,678.37	21.23	21.19	179.99	-2.24	-242.25	405.70	363.28	42.42	9.563	
9,800.00	9,796.26	9,781.59	9,777.87	21.46	21.41	179.99	-2.28	-246.72	414.66	371.79	42.87	9.673	
9,900.00	9,896.16	9,881.19	9,877.37	21.68	21.63	179.99	-2.32	-251.18	423.62	380.30	43.32	9.780	
10,000.00	9,996.06	9,980.78	9,976.87	21.91	21.86	179.99	-2.36	-255.65	432.58	388.81	43.76	9.885	
10,100.00	10,095.96	10,080.38	10,076.36	22.13	22.08	179.99	-2.40	-260.12	441.54	397.33	44.21	9.987	
10,200.00	10,195.86	10,179.98	10,175.86	22.35	22.30	179.99	-2.44	-264.58	450.49	405.84	44.66	10.088	

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design Sec. 16, T 25 S. , R 35 E - White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,300.00	10,295.76	10,279.58	10,275.36	22.58	22.53	180.00	-2.48	-269.05	459.45	414.35	45.11	10.186		
10,400.00	10,395.66	10,379.18	10,374.86	22.80	22.75	180.00	-2.52	-273.51	468.41	422.86	45.56	10.282		
10,500.00	10,495.56	10,478.77	10,474.35	23.03	22.98	180.00	-2.56	-277.98	477.37	431.37	46.01	10.376		
10,600.00	10,595.46	10,578.37	10,573.85	23.25	23.20	180.00	-2.60	-282.45	486.33	439.87	46.46	10.469		
10,700.00	10,695.36	10,677.97	10,673.35	23.48	23.43	180.00	-2.64	-286.91	495.29	448.38	46.91	10.559		
10,800.00	10,795.26	10,777.57	10,772.85	23.71	23.65	180.00	-2.68	-291.38	504.25	456.89	47.36	10.647		
10,900.00	10,895.16	10,877.17	10,872.35	23.93	23.88	180.00	-2.72	-295.84	513.21	465.40	47.81	10.734		
11,000.00	10,995.06	10,976.76	10,971.84	24.16	24.10	180.00	-2.76	-300.31	522.17	473.90	48.26	10.819		
11,100.00	11,094.96	11,076.36	11,071.34	24.39	24.33	180.00	-2.81	-304.77	531.13	482.41	48.72	10.903		
11,200.00	11,194.86	11,175.96	11,170.84	24.61	24.56	180.00	-2.85	-309.24	540.08	490.92	49.17	10.984		
11,300.00	11,294.76	11,275.56	11,270.34	24.84	24.78	180.00	-2.89	-313.71	549.04	499.42	49.62	11.064		
11,400.00	11,394.65	11,375.15	11,369.83	25.07	25.01	180.00	-2.93	-318.17	558.00	507.93	50.08	11.143		
11,500.00	11,494.55	11,474.75	11,469.33	25.30	25.24	180.00	-2.97	-322.64	566.96	516.43	50.53	11.220		
11,600.00	11,594.45	11,574.35	11,568.83	25.52	25.46	180.00	-3.01	-327.10	575.92	524.93	50.99	11.296		
11,700.00	11,694.35	11,673.95	11,668.33	25.75	25.69	180.00	-3.05	-331.57	584.88	533.44	51.44	11.370		
11,800.00	11,794.25	11,773.55	11,767.82	25.98	25.92	180.00	-3.09	-336.03	593.84	541.94	51.90	11.443		
11,900.00	11,894.15	11,873.14	11,867.32	26.21	26.15	180.00	-3.13	-340.50	602.80	550.44	52.35	11.514		
12,000.00	11,994.05	11,972.74	11,966.82	26.44	26.37	180.00	-3.17	-344.97	611.76	558.95	52.81	11.584		
12,100.00	12,093.77	12,072.31	12,066.28	26.65	26.60	108.49	-3.52	-349.43	620.71	567.46	53.25	11.657		
12,200.00	12,190.71	12,173.33	12,166.01	26.85	26.80	97.10	-17.83	-353.77	629.52	575.86	53.65	11.733		
12,300.00	12,280.67	12,276.52	12,262.44	27.06	27.01	94.21	-53.74	-357.76	637.81	583.74	54.07	11.796		
12,400.00	12,359.72	12,381.88	12,350.64	27.28	27.23	92.90	-110.89	-361.18	645.19	590.68	54.51	11.837		
12,500.00	12,424.41	12,489.27	12,425.46	27.53	27.48	92.19	-187.57	-363.82	651.29	596.28	55.01	11.840		
12,600.00	12,471.90	12,598.37	12,482.03	27.86	27.80	91.79	-280.56	-365.48	655.79	600.14	55.65	11.784		
12,700.00	12,500.13	12,708.70	12,516.35	28.27	28.23	91.59	-385.16	-366.04	658.45	601.96	56.49	11.656		
12,800.00	12,508.24	12,817.77	12,526.15	28.77	28.77	91.54	-493.58	-365.46	659.15	601.61	57.54	11.456		
12,900.00	12,509.53	12,917.77	12,527.02	29.37	29.36	91.50	-593.57	-364.56	659.15	600.42	58.73	11.223		
13,000.00	12,510.81	13,017.77	12,527.89	30.07	30.06	91.47	-693.56	-363.66	659.15	599.02	60.13	10.963		
13,100.00	12,512.09	13,117.77	12,528.76	30.86	30.85	91.43	-793.55	-362.76	659.15	597.45	61.71	10.682		
13,200.00	12,513.38	13,217.77	12,529.63	31.74	31.72	91.40	-893.54	-361.86	659.15	595.69	63.46	10.387		
13,300.00	12,514.66	13,317.77	12,530.50	32.69	32.67	91.36	-993.53	-360.96	659.15	593.79	65.37	10.084		
13,400.00	12,515.95	13,417.77	12,531.37	33.72	33.70	91.32	-1,093.53	-360.06	659.16	591.73	67.42	9.777		
13,500.00	12,517.23	13,517.77	12,532.24	34.82	34.79	91.29	-1,193.52	-359.15	659.16	589.55	69.61	9.469		
13,600.00	12,518.51	13,617.77	12,533.11	35.97	35.94	91.25	-1,293.51	-358.25	659.16	587.25	71.91	9.166		
13,700.00	12,519.80	13,717.76	12,533.98	37.18	37.15	91.22	-1,393.50	-357.35	659.16	584.84	74.33	8.868		
13,800.00	12,521.08	13,817.76	12,534.85	38.44	38.40	91.18	-1,493.49	-356.45	659.17	582.33	76.84	8.578		
13,900.00	12,522.37	13,917.76	12,535.72	39.74	39.70	91.14	-1,593.48	-355.55	659.17	579.73	79.44	8.297		
14,000.00	12,523.65	14,017.76	12,536.59	41.08	41.04	91.11	-1,693.47	-354.65	659.17	577.05	82.13	8.026		
14,100.00	12,524.93	14,117.76	12,537.46	42.46	42.42	91.07	-1,793.46	-353.75	659.18	574.30	84.88	7.766		
14,200.00	12,526.22	14,217.76	12,538.33	43.87	43.83	91.04	-1,893.46	-352.85	659.18	571.48	87.70	7.516		
14,300.00	12,527.50	14,317.76	12,539.20	45.31	45.27	91.00	-1,993.45	-351.95	659.19	568.61	90.58	7.277		
14,400.00	12,528.79	14,417.76	12,540.07	46.78	46.73	90.96	-2,093.44	-351.05	659.19	565.67	93.52	7.049		
14,500.00	12,530.07	14,517.76	12,540.94	48.28	48.23	90.93	-2,193.43	-350.14	659.20	562.70	96.50	6.831		
14,600.00	12,531.35	14,617.76	12,541.81	49.79	49.74	90.89	-2,293.42	-349.24	659.20	559.67	99.53	6.623		
14,700.00	12,532.64	14,717.76	12,542.68	51.33	51.27	90.86	-2,393.41	-348.34	659.21	556.61	102.60	6.425		
14,800.00	12,533.92	14,817.76	12,543.55	52.88	52.83	90.82	-2,493.40	-347.44	659.21	553.51	105.71	6.236		
14,900.00	12,535.21	14,917.75	12,544.42	54.45	54.40	90.78	-2,593.40	-346.54	659.22	550.37	108.85	6.056		
15,000.00	12,536.49	15,017.75	12,545.29	56.04	55.98	90.75	-2,693.39	-345.64	659.23	547.20	112.02	5.885		
15,100.00	12,537.77	15,117.75	12,546.16	57.64	57.58	90.71	-2,793.38	-344.74	659.23	544.01	115.22	5.721		
15,200.00	12,539.06	15,217.75	12,547.03	59.26	59.20	90.68	-2,893.37	-343.84	659.24	540.79	118.45	5.565		
15,300.00	12,540.34	15,317.75	12,547.90	60.88	60.82	90.64	-2,993.36	-342.94	659.25	537.54	121.70	5.417		
15,400.00	12,541.63	15,417.75	12,548.77	62.52	62.46	90.60	-3,093.35	-342.04	659.25	534.27	124.98	5.275		

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design													Sec. 16, T 25 S. , R 35 E - White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD													Offset Well Error:		0.00 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
15,500.00	12,542.91	15,517.75	12,549.64	64.17	64.11	90.57	-3,193.34	-341.13	659.26	530.99	128.27	5.139					
15,600.00	12,544.19	15,617.75	12,550.51	65.82	65.76	90.53	-3,293.33	-340.23	659.27	527.68	131.59	5.010					
15,700.00	12,545.48	15,717.75	12,551.38	67.49	67.43	90.50	-3,393.33	-339.33	659.28	524.36	134.92	4.886					
15,800.00	12,546.76	15,817.75	12,552.25	69.17	69.10	90.46	-3,493.32	-338.43	659.28	521.02	138.27	4.768					
15,900.00	12,548.05	15,917.75	12,553.12	70.85	70.78	90.42	-3,593.31	-337.53	659.29	517.66	141.63	4.655					
16,000.00	12,549.33	16,017.74	12,553.99	72.54	72.47	90.39	-3,693.30	-336.63	659.30	514.29	145.01	4.547					
16,100.00	12,550.61	16,117.74	12,554.86	74.23	74.17	90.35	-3,793.29	-335.73	659.31	510.91	148.40	4.443					
16,200.00	12,551.90	16,217.74	12,555.73	75.93	75.87	90.32	-3,893.28	-334.83	659.32	507.52	151.81	4.343					
16,300.00	12,553.18	16,317.74	12,556.60	77.64	77.58	90.28	-3,993.27	-333.93	659.33	504.11	155.22	4.248					
16,400.00	12,554.47	16,417.74	12,557.47	79.36	79.29	90.24	-4,093.26	-333.03	659.34	500.69	158.65	4.156					
16,500.00	12,555.75	16,517.74	12,558.34	81.07	81.01	90.21	-4,193.26	-332.12	659.35	497.27	162.08	4.068					
16,600.00	12,557.03	16,617.74	12,559.21	82.80	82.73	90.17	-4,293.25	-331.22	659.36	493.83	165.53	3.983					
16,700.00	12,558.32	16,717.74	12,560.08	84.52	84.46	90.14	-4,393.24	-330.32	659.37	490.39	168.98	3.902					
16,800.00	12,559.60	16,817.74	12,560.95	86.26	86.19	90.10	-4,493.23	-329.42	659.38	486.94	172.44	3.824					
16,900.00	12,560.89	16,917.74	12,561.82	87.99	87.92	90.06	-4,593.22	-328.52	659.39	483.48	175.91	3.748					
17,000.00	12,562.17	17,017.74	12,562.69	89.73	89.66	90.03	-4,693.21	-327.62	659.41	480.01	179.39	3.676					
17,100.00	12,563.45	17,117.74	12,563.56	91.47	91.40	89.99	-4,793.20	-326.72	659.42	476.54	182.88	3.606					
17,200.00	12,564.74	17,217.73	12,564.43	93.22	93.15	89.96	-4,893.20	-325.82	659.43	473.06	186.37	3.538					
17,300.00	12,566.02	17,317.73	12,565.30	94.97	94.90	89.92	-4,993.19	-324.92	659.44	469.58	189.87	3.473					
17,400.00	12,567.31	17,417.73	12,566.16	96.72	96.65	89.88	-5,093.18	-324.01	659.45	466.08	193.37	3.410					
17,500.00	12,568.59	17,517.73	12,567.03	98.47	98.40	89.85	-5,193.17	-323.11	659.47	462.59	196.88	3.350					
17,600.00	12,569.87	17,617.73	12,567.90	100.23	100.16	89.81	-5,293.16	-322.21	659.48	459.09	200.39	3.291					
17,700.00	12,571.16	17,717.73	12,568.77	101.99	101.92	89.78	-5,393.15	-321.31	659.49	455.58	203.91	3.234					
17,800.00	12,572.44	17,817.73	12,569.64	103.75	103.68	89.74	-5,493.14	-320.41	659.51	452.07	207.44	3.179					
17,900.00	12,573.73	17,917.73	12,570.51	105.52	105.45	89.70	-5,593.13	-319.51	659.52	448.56	210.96	3.126					
18,000.00	12,575.01	18,017.73	12,571.38	107.28	107.21	89.67	-5,693.13	-318.61	659.53	445.04	214.50	3.075					
18,100.00	12,576.29	18,117.73	12,572.25	109.05	108.98	89.63	-5,793.12	-317.71	659.55	441.51	218.03	3.025					
18,200.00	12,577.58	18,217.73	12,573.12	110.82	110.75	89.60	-5,893.11	-316.81	659.56	437.99	221.57	2.977					
18,300.00	12,578.86	18,317.73	12,573.99	112.60	112.52	89.56	-5,993.10	-315.91	659.58	434.46	225.12	2.930					
18,400.00	12,580.15	18,417.72	12,574.86	114.37	114.30	89.52	-6,093.09	-315.00	659.59	430.93	228.67	2.885					
18,500.00	12,581.43	18,517.72	12,575.73	116.15	116.07	89.49	-6,193.08	-314.10	659.61	427.39	232.22	2.840					
18,600.00	12,582.71	18,617.72	12,576.60	117.92	117.85	89.45	-6,293.07	-313.20	659.62	423.85	235.77	2.798					
18,700.00	12,584.00	18,717.72	12,577.47	119.70	119.63	89.42	-6,393.06	-312.30	659.64	420.31	239.33	2.756					
18,800.00	12,585.28	18,817.72	12,578.34	121.48	121.41	89.38	-6,493.06	-311.40	659.66	416.76	242.89	2.716					
18,900.00	12,586.57	18,917.72	12,579.21	123.26	123.19	89.34	-6,593.05	-310.50	659.67	413.22	246.46	2.677					
19,000.00	12,587.85	19,017.72	12,580.08	125.05	124.98	89.31	-6,693.04	-309.60	659.69	409.67	250.02	2.639					
19,100.00	12,589.13	19,117.72	12,580.95	126.83	126.76	89.27	-6,793.03	-308.70	659.71	406.12	253.59	2.601					
19,200.00	12,590.42	19,217.72	12,581.82	128.62	128.54	89.24	-6,893.02	-307.80	659.72	402.56	257.16	2.565					
19,300.00	12,591.70	19,317.72	12,582.69	130.40	130.33	89.20	-6,993.01	-306.90	659.74	399.00	260.74	2.530					
19,400.00	12,592.99	19,417.72	12,583.56	132.19	132.12	89.16	-7,093.00	-305.99	659.76	395.45	264.31	2.496					
19,500.00	12,594.27	19,517.71	12,584.43	133.98	133.91	89.13	-7,192.99	-305.09	659.78	391.89	267.89	2.463					
19,600.00	12,595.56	19,617.71	12,585.30	135.77	135.70	89.09	-7,292.99	-304.19	659.79	388.32	271.47	2.430					
19,700.00	12,596.84	19,717.71	12,586.17	137.56	137.49	89.06	-7,392.98	-303.29	659.81	384.76	275.05	2.399					
19,800.00	12,598.12	19,817.71	12,587.04	139.35	139.28	89.02	-7,492.97	-302.39	659.83	381.20	278.64	2.368					
19,900.00	12,599.41	19,917.71	12,587.91	141.15	141.07	88.98	-7,592.96	-301.49	659.85	377.63	282.22	2.338					
20,000.00	12,600.69	20,017.71	12,588.78	142.94	142.87	88.95	-7,692.95	-300.59	659.87	374.06	285.81	2.309					
20,100.00	12,601.98	20,117.71	12,589.65	144.74	144.66	88.91	-7,792.94	-299.69	659.89	370.49	289.40	2.280					
20,200.00	12,603.26	20,217.71	12,590.52	146.53	146.46	88.88	-7,892.93	-298.79	659.91	366.92	292.99	2.252					
20,300.00	12,604.54	20,317.71	12,591.39	148.33	148.25	88.84	-7,992.93	-297.89	659.93	363.35	296.58	2.225					
20,400.00	12,605.83	20,417.71	12,592.26	150.13	150.05	88.80	-8,092.92	-296.98	659.95	359.77	300.18	2.199					
20,500.00	12,607.11	20,517.71	12,593.13	151.92	151.85	88.77	-8,192.91	-296.08	659.97	356.20	303.77	2.173					
20,600.00	12,608.40	20,617.71	12,594.00	153.72	153.65	88.73	-8,292.90	-295.18	659.99	352.62	307.37	2.147					

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



Integrity Directional Services, LLC

Anticollision Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Offset Design													Sec. 16, T 25 S. , R 35 E - White Falcon 16 Federal Com 22H - Wellbore #1 - Plan #1		Offset Site Error:		0.00 ft	
Survey Program: 0-MWD															Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor						
20,700.00	12,609.68	20,717.70	12,594.87	155.52	155.45	88.70	-8,392.89	-294.28	660.01	349.04	310.97	2.122						
20,800.00	12,610.96	20,817.70	12,595.74	157.32	157.25	88.66	-8,492.88	-293.38	660.03	345.46	314.57	2.098						
20,900.00	12,612.25	20,917.70	12,596.61	159.12	159.05	88.63	-8,592.87	-292.48	660.05	341.88	318.17	2.075						
21,000.00	12,613.53	21,017.70	12,597.48	160.92	160.85	88.59	-8,692.86	-291.58	660.08	338.30	321.77	2.051						
21,100.00	12,614.82	21,117.70	12,598.35	162.72	162.65	88.55	-8,792.86	-290.68	660.10	334.72	325.38	2.029						
21,200.00	12,616.10	21,217.70	12,599.22	164.53	164.45	88.52	-8,892.85	-289.78	660.12	331.14	328.98	2.007						
21,300.00	12,617.38	21,317.70	12,600.09	166.33	166.26	88.48	-8,992.84	-288.87	660.14	327.56	332.59	1.985						
21,400.00	12,618.67	21,417.70	12,600.96	168.13	168.06	88.45	-9,092.83	-287.97	660.17	323.97	336.19	1.964						
21,500.00	12,619.95	21,517.70	12,601.83	169.94	169.86	88.41	-9,192.82	-287.07	660.19	320.39	339.80	1.943						
21,600.00	12,621.24	21,617.70	12,602.70	171.74	171.67	88.37	-9,292.81	-286.17	660.21	316.80	343.41	1.923						
21,700.00	12,622.52	21,717.70	12,603.57	173.55	173.47	88.34	-9,392.80	-285.27	660.24	313.21	347.02	1.903						
21,800.00	12,623.80	21,817.70	12,604.44	175.35	175.28	88.30	-9,492.79	-284.37	660.26	309.63	350.63	1.883						
21,900.00	12,625.09	21,917.69	12,605.31	177.16	177.09	88.27	-9,592.79	-283.47	660.28	306.04	354.24	1.864						
22,000.00	12,626.37	22,017.69	12,606.18	178.97	178.89	88.23	-9,692.78	-282.57	660.31	302.45	357.86	1.845						
22,100.00	12,627.66	22,117.69	12,607.05	180.77	180.70	88.19	-9,792.77	-281.67	660.33	298.86	361.47	1.827						
22,200.00	12,628.94	22,217.69	12,607.92	182.58	182.51	88.16	-9,892.76	-280.77	660.36	295.27	365.09	1.809						
22,300.00	12,630.22	22,317.69	12,608.79	184.39	184.31	88.12	-9,992.75	-279.86	660.38	291.68	368.70	1.791						
22,400.00	12,631.51	22,417.69	12,609.66	186.20	186.12	88.09	-10,092.74	-278.96	660.41	288.09	372.32	1.774						
22,438.52	12,632.00	22,456.21	12,609.99	186.89	186.82	88.07	-10,131.26	-278.62	660.42	286.71	373.71	1.767 SF						

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

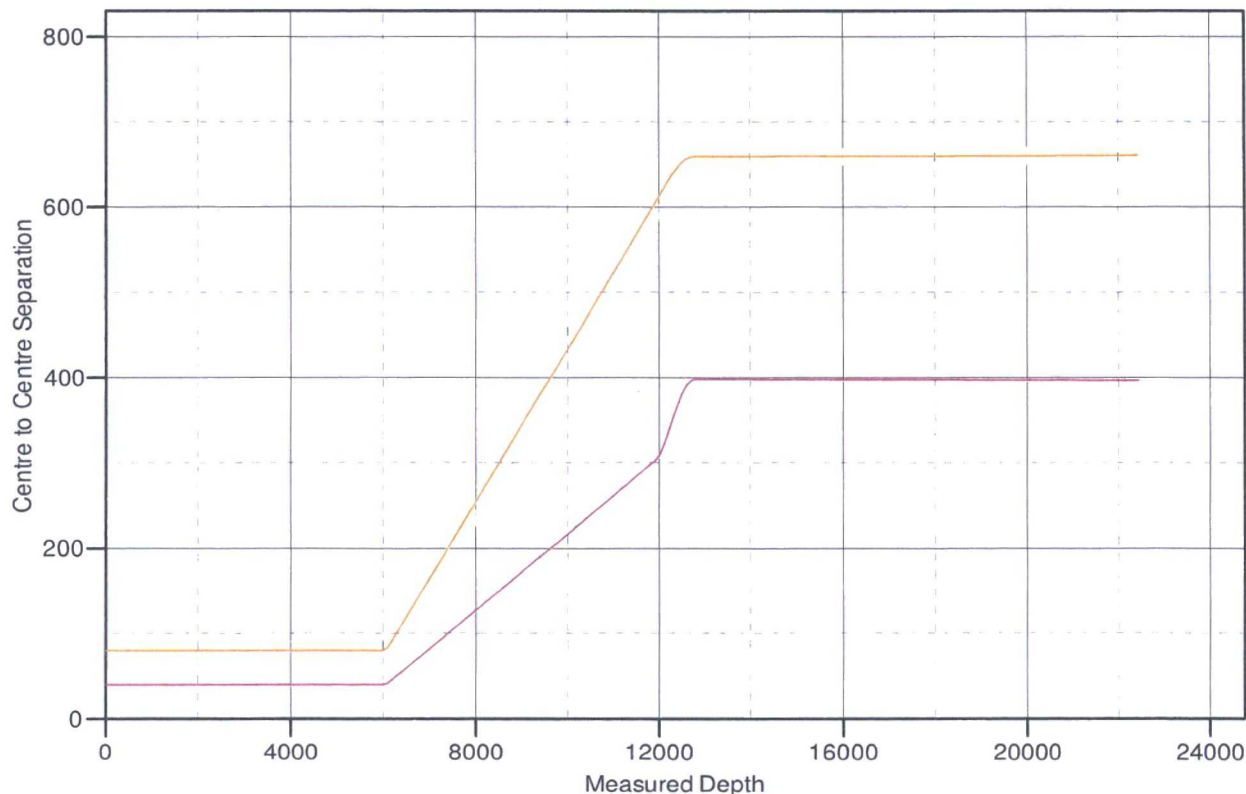
Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S., R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=26' @ 3272.40ft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: White Falcon 16 Federal Com 21H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.51°

Ladder Plot



LEGEND

6 Federal Com 11H, Wellbore #1, Plan #1 V0  White Falcon 16 Federal Com 22H, Wellbore #1, Plan #1 V0 

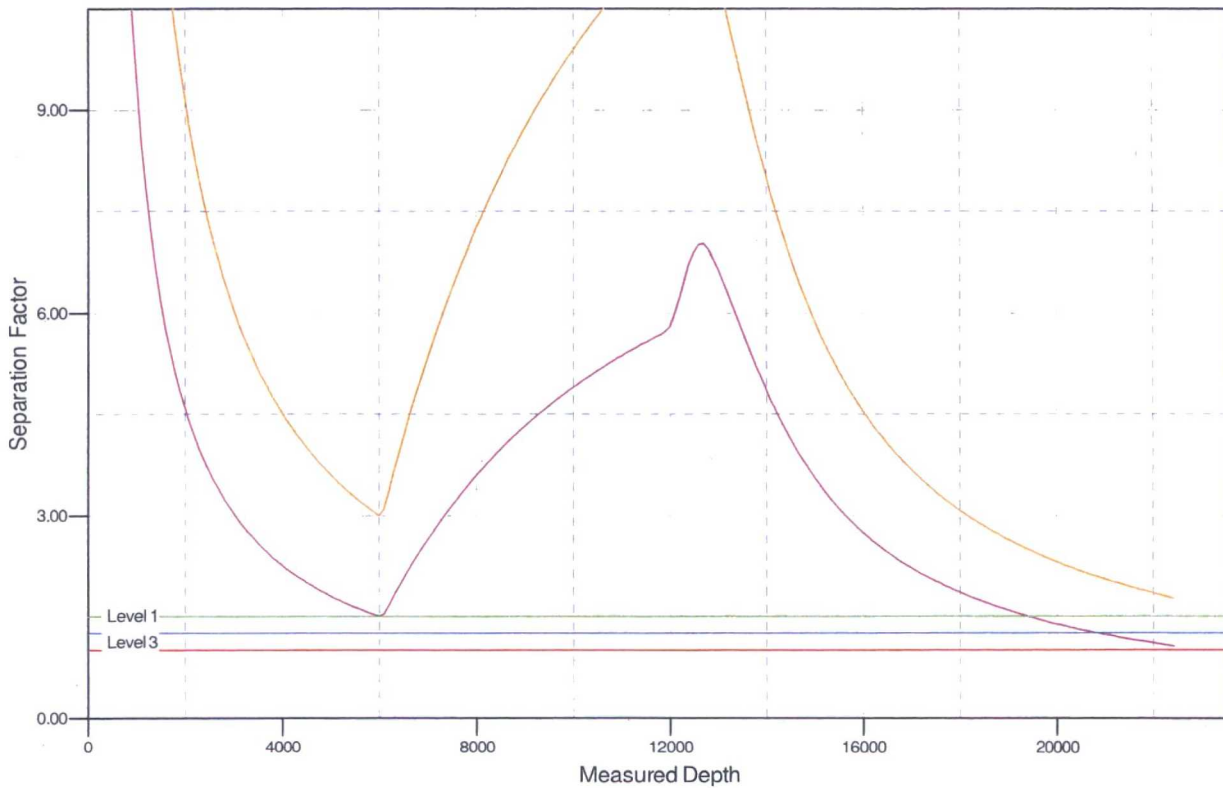
Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Reference Site: Sec. 16, T 25 S. , R 35 E
Site Error: 0.00 ft
Reference Well: White Falcon 16 Federal Com 21H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
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MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Multi User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=26' @ 3272.40ft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: White Falcon 16 Federal Com 21H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.51°

Separation Factor Plot



LEGEND

6 Federal Com 11H, Wellbore #1, Plan #1 V0  White Falcon 16 Federal Com 22H, Wellbore #1, Plan #1 V0 



COG Operating L L C
 Project: Lea County, NM (NAD27 NME)
 Site: Sec. 16, T 25 S., R 35 E
 Well: White Falcon 16 Federal Com 21H
 Wellbore: Wellbore #1
 Plan: Plan #1 (White Falcon 16 Federal Com 21H/Wellbore #1)



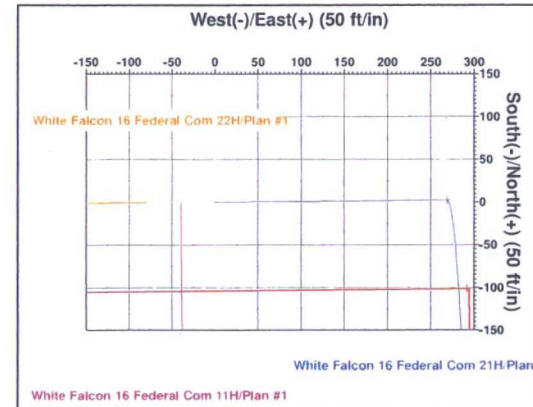
WELL DETAILS: White Falcon 16 Federal Com 21H

Ground Elevation:: 3246.40
 RKB Elevation: KB=26' @ 3272.40ft
 Rig Name:

Northing	Easting	Latitude	Longitude
414844.6000	796941.6000	32° 8' 12.801 N	103° 22' 26.517 W

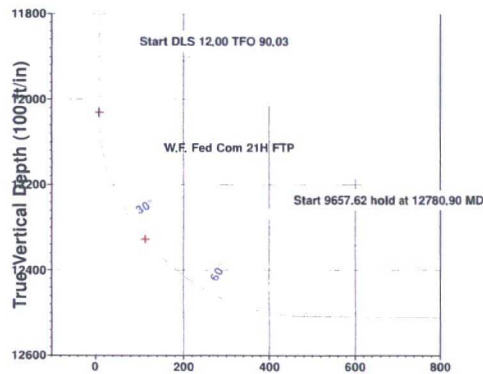
Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6000.00	0.00	0.00	6000.00	0.00	0.00	0.00	0.00	0.00
3	6128.50	2.57	89.48	6128.46	0.03	2.88	2.00	89.48	0.08
4	12037.03	2.57	89.48	12031.04	2.43	267.81	0.00	0.00	7.65
5	12780.90	89.26	179.48	12508.00	-468.70	293.25	12.00	90.03	479.40
6	22438.52	89.26	179.48	12632.00	-10125.12	381.40	0.00	0.00	10132.30

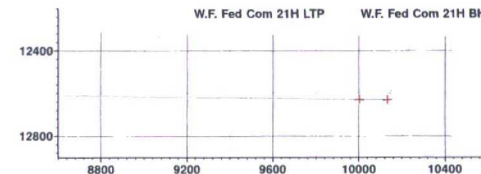


PROJECT DETAILS: Lea County, NM (NAD27 NME)
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level
 Local North: Grid

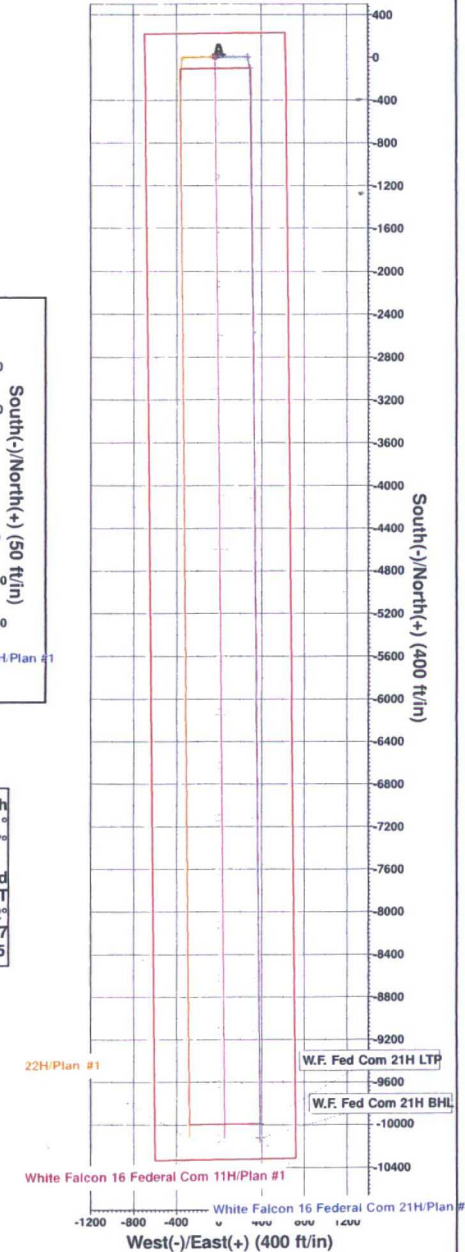
Magnetic Field
 Strength: 47933.2snT
 Dip Angle: 60.02°
 Date: 3/21/2017
 Model: IGRF2015



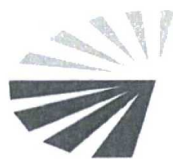
Vertical Section at 177.84° (100 ft/in)



Vertical Section at 177.84° (200 ft/in)



Vertical Section at 177.84° (200 ft/in)



CONCHO

HOBBS OCD

AUG 21 2017

RECEIVED

COG Operating L L C

Lea County, NM (NAD27 NME)

Sec. 16, T 25 S. , R 35 E

White Falcon 16 Federal Com 21H

Wellbore #1

Plan: Plan #1

Standard Survey Report

21 March, 2017





Integrity Directional Services, LLC

Survey Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 16, T 25 S. , R 35 E
Well: White Falcon 16 Federal Com 21H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Sec. 16, T 25 S. , R 35 E

Site Position:		Northing:	414,844.2000 usft	Latitude:	32° 8' 12.800 N
From:	Map	Easting:	796,901.6000 usft	Longitude:	103° 22' 26.982 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.51 °

Well White Falcon 16 Federal Com 21H

Well Position	+N/-S	0.00 ft	Northing:	414,844.6000 usft	Latitude:	32° 8' 12.801 N
	+E/-W	0.00 ft	Easting:	796,941.6000 usft	Longitude:	103° 22' 26.517 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,246.40 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/21/2017	6.88	60.02	47,933

Design Plan #1

Audit Notes:

Version: **Phase:** PLAN **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	177.84

Survey Tool Program **Date** 3/21/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	22,438.40	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 16, T 25 S. , R 35 E
Well: White Falcon 16 Federal Com 21H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 16, T 25 S. , R 35 E
Well: White Falcon 16 Federal Com 21H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
6,100.00	2.00	89.48	6,099.98	0.02	1.75	0.05	2.00	2.00	0.00
6,128.50	2.57	89.48	6,128.46	0.03	2.88	0.08	2.00	2.00	0.00
Start 5908.52 hold at 6128.50 MD									
6,200.00	2.57	89.48	6,199.89	0.06	6.09	0.17	0.00	0.00	0.00
6,300.00	2.57	89.48	6,299.78	0.10	10.57	0.30	0.00	0.00	0.00
6,400.00	2.57	89.48	6,399.68	0.14	15.05	0.43	0.00	0.00	0.00
6,500.00	2.57	89.48	6,499.58	0.18	19.54	0.56	0.00	0.00	0.00
6,600.00	2.57	89.48	6,599.48	0.22	24.02	0.69	0.00	0.00	0.00
6,700.00	2.57	89.48	6,699.38	0.26	28.51	0.81	0.00	0.00	0.00
6,800.00	2.57	89.48	6,799.28	0.30	32.99	0.94	0.00	0.00	0.00
6,900.00	2.57	89.48	6,899.18	0.34	37.47	1.07	0.00	0.00	0.00
7,000.00	2.57	89.48	6,999.08	0.38	41.96	1.20	0.00	0.00	0.00
7,100.00	2.57	89.48	7,098.98	0.42	46.44	1.33	0.00	0.00	0.00
7,200.00	2.57	89.48	7,198.88	0.46	50.93	1.46	0.00	0.00	0.00
7,300.00	2.57	89.48	7,298.78	0.50	55.41	1.58	0.00	0.00	0.00
7,400.00	2.57	89.48	7,398.68	0.54	59.89	1.71	0.00	0.00	0.00
7,500.00	2.57	89.48	7,498.58	0.58	64.38	1.84	0.00	0.00	0.00
7,600.00	2.57	89.48	7,598.48	0.62	68.86	1.97	0.00	0.00	0.00
7,700.00	2.57	89.48	7,698.38	0.67	73.34	2.10	0.00	0.00	0.00
7,800.00	2.57	89.48	7,798.28	0.71	77.83	2.22	0.00	0.00	0.00
7,900.00	2.57	89.48	7,898.18	0.75	82.31	2.35	0.00	0.00	0.00
8,000.00	2.57	89.48	7,998.07	0.79	86.80	2.48	0.00	0.00	0.00
8,100.00	2.57	89.48	8,097.97	0.83	91.28	2.61	0.00	0.00	0.00
8,200.00	2.57	89.48	8,197.87	0.87	95.76	2.74	0.00	0.00	0.00
8,300.00	2.57	89.48	8,297.77	0.91	100.25	2.86	0.00	0.00	0.00
8,400.00	2.57	89.48	8,397.67	0.95	104.73	2.99	0.00	0.00	0.00
8,500.00	2.57	89.48	8,497.57	0.99	109.22	3.12	0.00	0.00	0.00
8,600.00	2.57	89.48	8,597.47	1.03	113.70	3.25	0.00	0.00	0.00
8,700.00	2.57	89.48	8,697.37	1.07	118.18	3.38	0.00	0.00	0.00
8,800.00	2.57	89.48	8,797.27	1.11	122.67	3.51	0.00	0.00	0.00
8,900.00	2.57	89.48	8,897.17	1.15	127.15	3.63	0.00	0.00	0.00
9,000.00	2.57	89.48	8,997.07	1.19	131.63	3.76	0.00	0.00	0.00
9,100.00	2.57	89.48	9,096.97	1.24	136.12	3.89	0.00	0.00	0.00
9,200.00	2.57	89.48	9,196.87	1.28	140.60	4.02	0.00	0.00	0.00
9,300.00	2.57	89.48	9,296.77	1.32	145.09	4.15	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 16, T 25 S. , R 35 E
Well: White Falcon 16 Federal Com 21H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,400.00	2.57	89.48	9,396.67	1.36	149.57	4.27	0.00	0.00	0.00
9,500.00	2.57	89.48	9,496.57	1.40	154.05	4.40	0.00	0.00	0.00
9,600.00	2.57	89.48	9,596.47	1.44	158.54	4.53	0.00	0.00	0.00
9,700.00	2.57	89.48	9,696.36	1.48	163.02	4.66	0.00	0.00	0.00
9,800.00	2.57	89.48	9,796.26	1.52	167.51	4.79	0.00	0.00	0.00
9,900.00	2.57	89.48	9,896.16	1.56	171.99	4.91	0.00	0.00	0.00
10,000.00	2.57	89.48	9,996.06	1.60	176.47	5.04	0.00	0.00	0.00
10,100.00	2.57	89.48	10,095.96	1.64	180.96	5.17	0.00	0.00	0.00
10,200.00	2.57	89.48	10,195.86	1.68	185.44	5.30	0.00	0.00	0.00
10,300.00	2.57	89.48	10,295.76	1.72	189.92	5.43	0.00	0.00	0.00
10,400.00	2.57	89.48	10,395.66	1.76	194.41	5.56	0.00	0.00	0.00
10,500.00	2.57	89.48	10,495.56	1.80	198.89	5.68	0.00	0.00	0.00
10,600.00	2.57	89.48	10,595.46	1.85	203.38	5.81	0.00	0.00	0.00
10,700.00	2.57	89.48	10,695.36	1.89	207.86	5.94	0.00	0.00	0.00
10,800.00	2.57	89.48	10,795.26	1.93	212.34	6.07	0.00	0.00	0.00
10,900.00	2.57	89.48	10,895.16	1.97	216.83	6.20	0.00	0.00	0.00
11,000.00	2.57	89.48	10,995.06	2.01	221.31	6.32	0.00	0.00	0.00
11,100.00	2.57	89.48	11,094.96	2.05	225.80	6.45	0.00	0.00	0.00
11,200.00	2.57	89.48	11,194.86	2.09	230.28	6.58	0.00	0.00	0.00
11,300.00	2.57	89.48	11,294.76	2.13	234.76	6.71	0.00	0.00	0.00
11,400.00	2.57	89.48	11,394.65	2.17	239.25	6.84	0.00	0.00	0.00
11,500.00	2.57	89.48	11,494.55	2.21	243.73	6.96	0.00	0.00	0.00
11,600.00	2.57	89.48	11,594.45	2.25	248.21	7.09	0.00	0.00	0.00
11,700.00	2.57	89.48	11,694.35	2.29	252.70	7.22	0.00	0.00	0.00
11,800.00	2.57	89.48	11,794.25	2.33	257.18	7.35	0.00	0.00	0.00
11,900.00	2.57	89.48	11,894.15	2.37	261.67	7.48	0.00	0.00	0.00
12,000.00	2.57	89.48	11,994.05	2.41	266.15	7.61	0.00	0.00	0.00
12,037.03	2.57	89.48	12,031.04	2.43	267.81	7.65	0.00	0.00	0.00
Start DLS 12.00 TFO 90.03									
12,100.00	7.98	160.83	12,093.77	-1.69	270.66	11.88	12.00	8.59	113.30
12,200.00	19.72	172.32	12,190.71	-25.05	275.21	35.39	12.00	11.74	11.48
12,300.00	31.65	175.33	12,280.67	-68.07	279.62	78.55	12.00	11.93	3.02
12,400.00	43.62	176.81	12,359.72	-128.88	283.69	139.47	12.00	11.97	1.48
12,500.00	55.59	177.75	12,424.41	-204.82	287.24	215.49	12.00	11.98	0.94
12,600.00	67.58	178.45	12,471.90	-292.56	290.12	303.28	12.00	11.98	0.70
12,700.00	79.57	179.04	12,500.13	-388.28	292.21	399.01	12.00	11.99	0.59
12,780.90	89.26	179.48	12,508.00	-468.70	293.25	479.40	12.00	11.99	0.54
Start 9657.62 hold at 12780.90 MD									
12,800.00	89.26	179.48	12,508.24	-487.79	293.42	498.49	0.00	0.00	0.00
12,900.00	89.26	179.48	12,509.53	-587.78	294.34	598.44	0.00	0.00	0.00
13,000.00	89.26	179.48	12,510.81	-687.77	295.25	698.40	0.00	0.00	0.00
13,100.00	89.26	179.48	12,512.09	-787.76	296.16	798.35	0.00	0.00	0.00
13,200.00	89.26	179.48	12,513.38	-887.74	297.07	898.30	0.00	0.00	0.00
13,300.00	89.26	179.48	12,514.66	-987.73	297.99	998.25	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



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Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,400.00	89.26	179.48	12,515.95	-1,087.72	298.90	1,098.20	0.00	0.00	0.00
13,500.00	89.26	179.48	12,517.23	-1,187.71	299.81	1,198.15	0.00	0.00	0.00
13,600.00	89.26	179.48	12,518.51	-1,287.70	300.73	1,298.10	0.00	0.00	0.00
13,700.00	89.26	179.48	12,519.80	-1,387.68	301.64	1,398.05	0.00	0.00	0.00
13,800.00	89.26	179.48	12,521.08	-1,487.67	302.55	1,498.00	0.00	0.00	0.00
13,900.00	89.26	179.48	12,522.37	-1,587.66	303.46	1,597.96	0.00	0.00	0.00
14,000.00	89.26	179.48	12,523.65	-1,687.65	304.38	1,697.91	0.00	0.00	0.00
14,100.00	89.26	179.48	12,524.93	-1,787.63	305.29	1,797.86	0.00	0.00	0.00
14,200.00	89.26	179.48	12,526.22	-1,887.62	306.20	1,897.81	0.00	0.00	0.00
14,300.00	89.26	179.48	12,527.50	-1,987.61	307.11	1,997.76	0.00	0.00	0.00
14,400.00	89.26	179.48	12,528.79	-2,087.60	308.03	2,097.71	0.00	0.00	0.00
14,500.00	89.26	179.48	12,530.07	-2,187.58	308.94	2,197.66	0.00	0.00	0.00
14,600.00	89.26	179.48	12,531.35	-2,287.57	309.85	2,297.61	0.00	0.00	0.00
14,700.00	89.26	179.48	12,532.64	-2,387.56	310.77	2,397.56	0.00	0.00	0.00
14,800.00	89.26	179.48	12,533.92	-2,487.55	311.68	2,497.52	0.00	0.00	0.00
14,900.00	89.26	179.48	12,535.21	-2,587.53	312.59	2,597.47	0.00	0.00	0.00
15,000.00	89.26	179.48	12,536.49	-2,687.52	313.50	2,697.42	0.00	0.00	0.00
15,100.00	89.26	179.48	12,537.77	-2,787.51	314.42	2,797.37	0.00	0.00	0.00
15,200.00	89.26	179.48	12,539.06	-2,887.50	315.33	2,897.32	0.00	0.00	0.00
15,300.00	89.26	179.48	12,540.34	-2,987.48	316.24	2,997.27	0.00	0.00	0.00
15,400.00	89.26	179.48	12,541.63	-3,087.47	317.15	3,097.22	0.00	0.00	0.00
15,500.00	89.26	179.48	12,542.91	-3,187.46	318.07	3,197.17	0.00	0.00	0.00
15,600.00	89.26	179.48	12,544.19	-3,287.45	318.98	3,297.12	0.00	0.00	0.00
15,700.00	89.26	179.48	12,545.48	-3,387.43	319.89	3,397.08	0.00	0.00	0.00
15,800.00	89.26	179.48	12,546.76	-3,487.42	320.81	3,497.03	0.00	0.00	0.00
15,900.00	89.26	179.48	12,548.05	-3,587.41	321.72	3,596.98	0.00	0.00	0.00
16,000.00	89.26	179.48	12,549.33	-3,687.40	322.63	3,696.93	0.00	0.00	0.00
16,100.00	89.26	179.48	12,550.61	-3,787.39	323.54	3,796.88	0.00	0.00	0.00
16,200.00	89.26	179.48	12,551.90	-3,887.37	324.46	3,896.83	0.00	0.00	0.00
16,300.00	89.26	179.48	12,553.18	-3,987.36	325.37	3,996.78	0.00	0.00	0.00
16,400.00	89.26	179.48	12,554.47	-4,087.35	326.28	4,096.73	0.00	0.00	0.00
16,500.00	89.26	179.48	12,555.75	-4,187.34	327.20	4,196.68	0.00	0.00	0.00
16,600.00	89.26	179.48	12,557.03	-4,287.32	328.11	4,296.64	0.00	0.00	0.00
16,700.00	89.26	179.48	12,558.32	-4,387.31	329.02	4,396.59	0.00	0.00	0.00
16,800.00	89.26	179.48	12,559.60	-4,487.30	329.93	4,496.54	0.00	0.00	0.00
16,900.00	89.26	179.48	12,560.89	-4,587.29	330.85	4,596.49	0.00	0.00	0.00
17,000.00	89.26	179.48	12,562.17	-4,687.27	331.76	4,696.44	0.00	0.00	0.00
17,100.00	89.26	179.48	12,563.45	-4,787.26	332.67	4,796.39	0.00	0.00	0.00
17,200.00	89.26	179.48	12,564.74	-4,887.25	333.58	4,896.34	0.00	0.00	0.00
17,300.00	89.26	179.48	12,566.02	-4,987.24	334.50	4,996.29	0.00	0.00	0.00
17,400.00	89.26	179.48	12,567.31	-5,087.22	335.41	5,096.24	0.00	0.00	0.00
17,500.00	89.26	179.48	12,568.59	-5,187.21	336.32	5,196.20	0.00	0.00	0.00
17,600.00	89.26	179.48	12,569.87	-5,287.20	337.24	5,296.15	0.00	0.00	0.00



Integrity Directional Services, LLC

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17,700.00	89.26	179.48	12,571.16	-5,387.19	338.15	5,396.10	0.00	0.00	0.00
17,800.00	89.26	179.48	12,572.44	-5,487.17	339.06	5,496.05	0.00	0.00	0.00
17,900.00	89.26	179.48	12,573.73	-5,587.16	339.97	5,596.00	0.00	0.00	0.00
18,000.00	89.26	179.48	12,575.01	-5,687.15	340.89	5,695.95	0.00	0.00	0.00
18,100.00	89.26	179.48	12,576.29	-5,787.14	341.80	5,795.90	0.00	0.00	0.00
18,200.00	89.26	179.48	12,577.58	-5,887.12	342.71	5,895.85	0.00	0.00	0.00
18,300.00	89.26	179.48	12,578.86	-5,987.11	343.63	5,995.80	0.00	0.00	0.00
18,400.00	89.26	179.48	12,580.15	-6,087.10	344.54	6,095.75	0.00	0.00	0.00
18,500.00	89.26	179.48	12,581.43	-6,187.09	345.45	6,195.71	0.00	0.00	0.00
18,600.00	89.26	179.48	12,582.71	-6,287.07	346.36	6,295.66	0.00	0.00	0.00
18,700.00	89.26	179.48	12,584.00	-6,387.06	347.28	6,395.61	0.00	0.00	0.00
18,800.00	89.26	179.48	12,585.28	-6,487.05	348.19	6,495.56	0.00	0.00	0.00
18,900.00	89.26	179.48	12,586.57	-6,587.04	349.10	6,595.51	0.00	0.00	0.00
19,000.00	89.26	179.48	12,587.85	-6,687.03	350.01	6,695.46	0.00	0.00	0.00
19,100.00	89.26	179.48	12,589.13	-6,787.01	350.93	6,795.41	0.00	0.00	0.00
19,200.00	89.26	179.48	12,590.42	-6,887.00	351.84	6,895.36	0.00	0.00	0.00
19,300.00	89.26	179.48	12,591.70	-6,986.99	352.75	6,995.31	0.00	0.00	0.00
19,400.00	89.26	179.48	12,592.99	-7,086.98	353.67	7,095.27	0.00	0.00	0.00
19,500.00	89.26	179.48	12,594.27	-7,186.96	354.58	7,195.22	0.00	0.00	0.00
19,600.00	89.26	179.48	12,595.56	-7,286.95	355.49	7,295.17	0.00	0.00	0.00
19,700.00	89.26	179.48	12,596.84	-7,386.94	356.40	7,395.12	0.00	0.00	0.00
19,800.00	89.26	179.48	12,598.12	-7,486.93	357.32	7,495.07	0.00	0.00	0.00
19,900.00	89.26	179.48	12,599.41	-7,586.91	358.23	7,595.02	0.00	0.00	0.00
20,000.00	89.26	179.48	12,600.69	-7,686.90	359.14	7,694.97	0.00	0.00	0.00
20,100.00	89.26	179.48	12,601.98	-7,786.89	360.06	7,794.92	0.00	0.00	0.00
20,200.00	89.26	179.48	12,603.26	-7,886.88	360.97	7,894.87	0.00	0.00	0.00
20,300.00	89.26	179.48	12,604.54	-7,986.86	361.88	7,994.83	0.00	0.00	0.00
20,400.00	89.26	179.48	12,605.83	-8,086.85	362.79	8,094.78	0.00	0.00	0.00
20,500.00	89.26	179.48	12,607.11	-8,186.84	363.71	8,194.73	0.00	0.00	0.00
20,600.00	89.26	179.48	12,608.40	-8,286.83	364.62	8,294.68	0.00	0.00	0.00
20,700.00	89.26	179.48	12,609.68	-8,386.81	365.53	8,394.63	0.00	0.00	0.00
20,800.00	89.26	179.48	12,610.96	-8,486.80	366.44	8,494.58	0.00	0.00	0.00
20,900.00	89.26	179.48	12,612.25	-8,586.79	367.36	8,594.53	0.00	0.00	0.00
21,000.00	89.26	179.48	12,613.53	-8,686.78	368.27	8,694.48	0.00	0.00	0.00
21,100.00	89.26	179.48	12,614.82	-8,786.76	369.18	8,794.43	0.00	0.00	0.00
21,200.00	89.26	179.48	12,616.10	-8,886.75	370.10	8,894.39	0.00	0.00	0.00
21,300.00	89.26	179.48	12,617.38	-8,986.74	371.01	8,994.34	0.00	0.00	0.00
21,400.00	89.26	179.48	12,618.67	-9,086.73	371.92	9,094.29	0.00	0.00	0.00
21,500.00	89.26	179.48	12,619.95	-9,186.72	372.83	9,194.24	0.00	0.00	0.00
21,600.00	89.26	179.48	12,621.24	-9,286.70	373.75	9,294.19	0.00	0.00	0.00
21,700.00	89.26	179.48	12,622.52	-9,386.69	374.66	9,394.14	0.00	0.00	0.00
21,800.00	89.26	179.48	12,623.80	-9,486.68	375.57	9,494.09	0.00	0.00	0.00
21,900.00	89.26	179.48	12,625.09	-9,586.67	376.49	9,594.04	0.00	0.00	0.00
22,000.00	89.26	179.48	12,626.37	-9,686.65	377.40	9,693.99	0.00	0.00	0.00



Integrity Directional Services, LLC

Survey Report



Company: COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 16, T 25 S. , R 35 E
Well: White Falcon 16 Federal Com 21H
Wellbore: Wellbore #1
Design: Plan #1

Local Co-ordinate Reference: Well White Falcon 16 Federal Com 21H
TVD Reference: KB=26' @ 3272.40ft
MD Reference: KB=26' @ 3272.40ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22,100.00	89.26	179.48	12,627.66	-9,786.64	378.31	9,793.95	0.00	0.00	0.00
22,200.00	89.26	179.48	12,628.94	-9,886.63	379.22	9,893.90	0.00	0.00	0.00
22,300.00	89.26	179.48	12,630.22	-9,986.62	380.14	9,993.85	0.00	0.00	0.00
22,400.00	89.26	179.48	12,631.51	-10,086.60	381.05	10,093.80	0.00	0.00	0.00
22,438.52	89.26	179.48	12,632.00	-10,125.12	381.40	10,132.30	0.00	0.00	0.00
TD at 22438.52									

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
W.F. Fed Com 21H K	0.00	0.00	12,031.04	2.43	267.81	414,847.0300	797,209.4095	32° 8' 12.801 N	103° 22' 23.402 W
- plan hits target center - Point									
W.F. Fed Com 21H F	0.00	0.00	12,328.31	-101.51	291.11	414,743.0903	797,232.7123	32° 8' 11.771 N	103° 22' 23.142 W
- plan misses target center by 9.06ft at 12358.68ft MD (12328.61 TVD, -101.75 N, 282.06 E) - Point									
W.F. Fed Com 21H L	0.00	0.00	12,630.33	-9,995.04	380.22	404,849.5814	797,321.8164	32° 6' 33.865 N	103° 22' 23.131 W
- plan hits target center - Point									
W.F. Fed Com 21H B	0.00	0.00	12,632.00	-10,125.12	381.40	404,719.5000	797,323.0000	32° 6' 32.578 N	103° 22' 23.131 W
- plan hits target center - Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6000	6000	0	0	Start Build 2.00
6129	6128	0	3	Start 5908.52 hold at 6128.50 MD
12,037	12,031	2	268	Start DLS 12.00 TFO 90.03
12,781	12,508	-469	293	Start 9657.62 hold at 12780.90 MD
22,439	12,632	-10,125	381	TD at 22438.52

Checked By: _____ Approved By: _____ Date: _____