

COG OPERATING LLC

Lea County, NM
Sec. 17, T 19S. , R 32 E
Stealth Fed Com #4H

Wellbore #1

Plan: Plan#1

Standard Survey Report

09 March, 2016

IDS Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Site:	Sec. 17, T 19S. , R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Well:	Stealth Fed Com #4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1	Database:	EDM 5000.1 Single User Db

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

Site	Sec. 17, T 19S. , R 32 E		
Site Position:		Northing:	602,059.80 usft
From:	Map	Easting:	669,581.10 usft
Position Uncertainty:	5.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 39' 14.236 N
		Longitude:	103° 46' 56.443 W
		Grid Convergence:	0.30 °

Well	Stealth Fed Com #4H		
Well Position	+N/-S	0.0 usft	Northing: 602,059.80 usft
	+E/-W	0.0 usft	Easting: 669,581.10 usft
Position Uncertainty	5.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	32° 39' 14.236 N
		Longitude:	103° 46' 56.443 W
		Ground Level:	3,592.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/9/2016	7.22
			Dip Angle (°) 60.44
			Field Strength (nT) 48,301

Design	Plan#1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°) 7.10

Survey Tool Program	Date 3/9/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
0.0	13,807.2	Plan#1 (Wellbore #1)	MWD
			Description MWD - Standard

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
825.0	0.00	0.00	825.0	0.0	0.0	0.0	0.00	0.00	0.00	
Rustler										

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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
915.0	0.00	0.00	915.0	0.0	0.0	0.0	0.00	0.00	0.00
TOS									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,412.0	0.00	0.00	2,412.0	0.0	0.0	0.0	0.00	0.00	0.00
Bottom Of Salt/Tansill									
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,683.0	0.00	0.00	2,683.0	0.0	0.0	0.0	0.00	0.00	0.00
Yates									
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,909.0	0.00	0.00	2,909.0	0.0	0.0	0.0	0.00	0.00	0.00
Seven Rivers									
2,975.0	0.00	0.00	2,975.0	0.0	0.0	0.0	0.00	0.00	0.00
Capitan Reef									
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,749.0	0.00	0.00	3,749.0	0.0	0.0	0.0	0.00	0.00	0.00
Base of reef (Queen)									
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00

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4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,561.0	0.00	0.00	4,561.0	0.0	0.0	0.0	0.00	0.00	0.00	
Delaware										
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,535.0	0.00	0.00	5,535.0	0.0	0.0	0.0	0.00	0.00	0.00	
Brushy Canyon										
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,175.0	0.00	0.00	7,175.0	0.0	0.0	0.0	0.00	0.00	0.00	
Bone Sprg (BSGL)										
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1	Database:	EDM 5000.1 Single User Db

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,433.0	0.00	0.00	8,433.0	0.0	0.0	0.0	0.00	0.00	0.00
FBSG_sand									
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,862.5	0.00	0.00	8,862.5	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 12.00									
8,900.0	4.50	7.10	8,900.0	1.5	0.2	1.5	12.00	12.00	0.00
9,000.0	16.50	7.10	8,998.1	19.5	2.4	19.7	12.00	12.00	0.00
9,100.0	28.50	7.10	9,090.3	57.4	7.2	57.9	12.00	12.00	0.00
9,158.6	35.53	7.10	9,140.0	88.2	11.0	88.9	12.00	12.00	0.00
SBSG_sand									
9,200.0	40.50	7.10	9,172.6	113.5	14.1	114.4	12.00	12.00	0.00
9,300.0	52.50	7.10	9,241.3	185.4	23.1	186.8	12.00	12.00	0.00
9,400.0	64.50	7.10	9,293.5	269.8	33.6	271.9	12.00	12.00	0.00
9,500.0	76.50	7.10	9,326.8	363.2	45.3	366.0	12.00	12.00	0.00
9,600.0	88.50	7.10	9,339.8	461.4	57.5	465.0	12.00	12.00	0.00
9,609.6	89.66	7.10	9,340.0	471.0	58.7	474.6	12.00	12.00	0.00
Start 4197.5 hold at 9609.6 MD									
9,700.0	89.66	7.10	9,340.5	560.6	69.9	565.0	0.00	0.00	0.00
9,800.0	89.66	7.10	9,341.1	659.9	82.2	665.0	0.00	0.00	0.00
9,900.0	89.66	7.10	9,341.7	759.1	94.6	765.0	0.00	0.00	0.00
10,000.0	89.66	7.10	9,342.3	858.3	107.0	865.0	0.00	0.00	0.00
10,100.0	89.66	7.10	9,342.9	957.6	119.3	965.0	0.00	0.00	0.00
10,200.0	89.66	7.10	9,343.5	1,056.8	131.7	1,065.0	0.00	0.00	0.00
10,300.0	89.66	7.10	9,344.1	1,156.0	144.0	1,165.0	0.00	0.00	0.00
10,400.0	89.66	7.10	9,344.7	1,255.2	156.4	1,265.0	0.00	0.00	0.00
10,500.0	89.66	7.10	9,345.3	1,354.5	168.8	1,364.9	0.00	0.00	0.00
10,600.0	89.66	7.10	9,345.9	1,453.7	181.1	1,464.9	0.00	0.00	0.00
10,700.0	89.66	7.10	9,346.5	1,552.9	193.5	1,564.9	0.00	0.00	0.00
10,800.0	89.66	7.10	9,347.1	1,652.2	205.9	1,664.9	0.00	0.00	0.00
10,900.0	89.66	7.10	9,347.7	1,751.4	218.2	1,764.9	0.00	0.00	0.00
11,000.0	89.66	7.10	9,348.3	1,850.6	230.6	1,864.9	0.00	0.00	0.00
11,100.0	89.66	7.10	9,348.9	1,949.9	243.0	1,964.9	0.00	0.00	0.00
11,200.0	89.66	7.10	9,349.5	2,049.1	255.3	2,064.9	0.00	0.00	0.00
11,300.0	89.66	7.10	9,350.1	2,148.3	267.7	2,164.9	0.00	0.00	0.00
11,400.0	89.66	7.10	9,350.7	2,247.6	280.1	2,264.9	0.00	0.00	0.00

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11,500.0	89.66	7.10	9,351.3	2,346.8	292.4	2,364.9	0.00	0.00	0.00
11,600.0	89.66	7.10	9,351.9	2,446.0	304.8	2,464.9	0.00	0.00	0.00
11,700.0	89.66	7.10	9,352.5	2,545.2	317.2	2,564.9	0.00	0.00	0.00
11,800.0	89.66	7.10	9,353.0	2,644.5	329.5	2,664.9	0.00	0.00	0.00
11,900.0	89.66	7.10	9,353.6	2,743.7	341.9	2,764.9	0.00	0.00	0.00
12,000.0	89.66	7.10	9,354.2	2,842.9	354.2	2,864.9	0.00	0.00	0.00
12,100.0	89.66	7.10	9,354.8	2,942.2	366.6	2,964.9	0.00	0.00	0.00
12,200.0	89.66	7.10	9,355.4	3,041.4	379.0	3,064.9	0.00	0.00	0.00
12,300.0	89.66	7.10	9,356.0	3,140.6	391.3	3,164.9	0.00	0.00	0.00
12,400.0	89.66	7.10	9,356.6	3,239.9	403.7	3,264.9	0.00	0.00	0.00
12,500.0	89.66	7.10	9,357.2	3,339.1	416.1	3,364.9	0.00	0.00	0.00
12,600.0	89.66	7.10	9,357.8	3,438.3	428.4	3,464.9	0.00	0.00	0.00
12,700.0	89.66	7.10	9,358.4	3,537.6	440.8	3,564.9	0.00	0.00	0.00
12,800.0	89.66	7.10	9,359.0	3,636.8	453.2	3,664.9	0.00	0.00	0.00
12,900.0	89.66	7.10	9,359.6	3,736.0	465.5	3,764.9	0.00	0.00	0.00
13,000.0	89.66	7.10	9,360.2	3,835.2	477.9	3,864.9	0.00	0.00	0.00
13,100.0	89.66	7.10	9,360.8	3,934.5	490.3	3,964.9	0.00	0.00	0.00
13,200.0	89.66	7.10	9,361.4	4,033.7	502.6	4,064.9	0.00	0.00	0.00
13,300.0	89.66	7.10	9,362.0	4,132.9	515.0	4,164.9	0.00	0.00	0.00
13,400.0	89.66	7.10	9,362.6	4,232.2	527.4	4,264.9	0.00	0.00	0.00
13,500.0	89.66	7.10	9,363.2	4,331.4	539.7	4,364.9	0.00	0.00	0.00
13,600.0	89.66	7.10	9,363.8	4,430.6	552.1	4,464.9	0.00	0.00	0.00
13,700.0	89.66	7.10	9,364.4	4,529.9	564.4	4,564.9	0.00	0.00	0.00
13,800.0	89.66	7.10	9,365.0	4,629.1	576.8	4,664.9	0.00	0.00	0.00
13,807.2	89.66	7.10	9,365.0	4,636.2	577.7	4,672.1	0.00	0.00	0.00

TD at 13807.2

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Stealth Fed Com #4H	0.00	0.00	9,365.0	4,636.2	577.7	606,696.00	670,158.80	32° 40' 0.083 N	103° 46' 49.404 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

IDS Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Site:	Sec. 17, T 19S. , R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Well:	Stealth Fed Com #4H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1	Database:	EDM 5000.1 Single User Db

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
825.0	825.0	Rustler		0.00	
915.0	915.0	TOS		0.00	
2,412.0	2,412.0	Bottom Of Salt/Tansill		0.00	
2,683.0	2,683.0	Yates		0.00	
2,909.0	2,909.0	Seven Rivers		0.00	
2,975.0	2,975.0	Capitan Reef		0.00	
3,749.0	3,749.0	Base of reef (Queen)		0.00	
4,561.0	4,561.0	Delaware		0.00	
5,535.0	5,535.0	Brushy Canyon		0.00	
7,175.0	7,175.0	Bone Sprg (BSGL)		0.00	
8,433.0	8,433.0	FBSG_sand		0.00	
9,158.6	9,140.0	SBSG_sand		0.00	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8863	8863	0	0	Start Build 12.00
9610	9340	471	59	Start 4197.5 hold at 9609.6 MD
13,807	9365	4636	578	TD at 13807.2

Checked By: _____ Approved By: _____ Date: _____



COG OPERATING LLC
Project: Lea County, NM
Site: Sec. 17, T 19S., R 32 E
Well: Stealth Fed Com #4H
Wellbore: Wellbore #1
Plan: Plan#1 (Stealth Fed Com #4H /Wellbore #1)

WELL DETAILS: Stealth Fed Com #4H

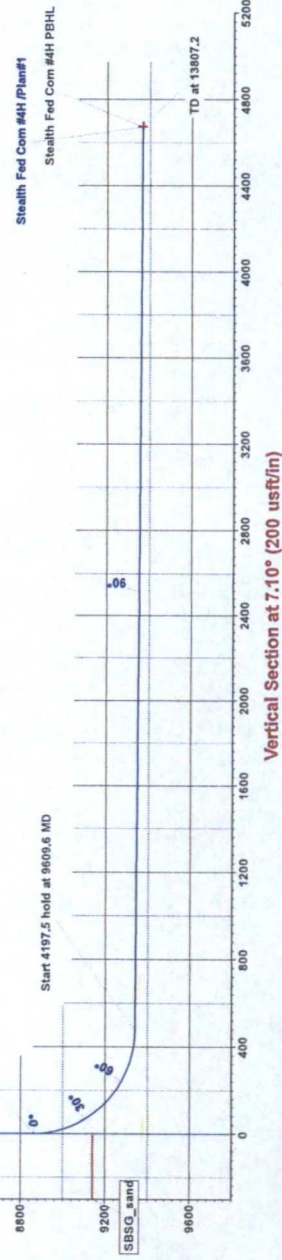
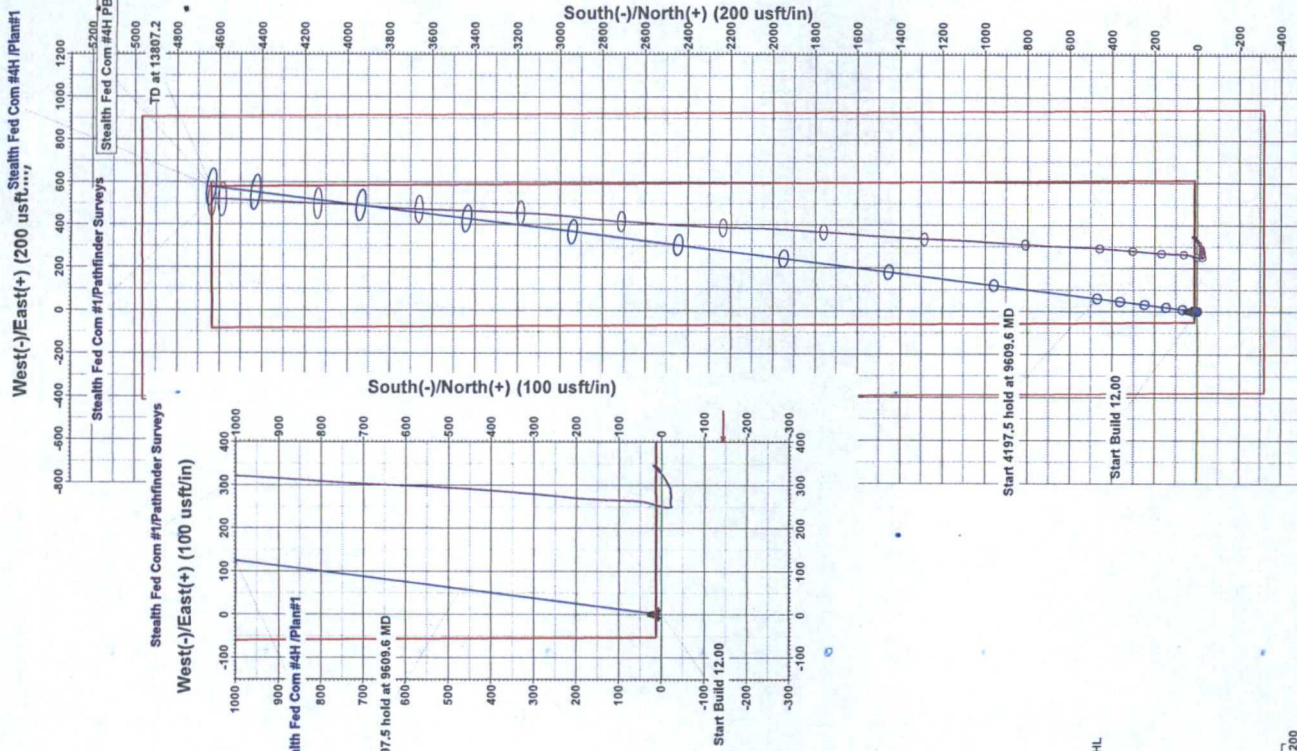
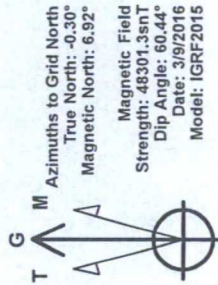
Ground Elevation: 3592.0
RKB Elevation: KB=18' @ 3610.0usft (UNK)
Rig Name: UNK

Northing 602059.80
Easting 669581.10
Latitude 32° 39' 14.236 N
Longitude 103° 46' 56.443 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	8862.5	0.00	0.00	8862.5	0.0	0.0	0.00	0.00	0.0
3	9609.6	89.66	7.10	9340.0	471.0	58.7	12.00	7.10	474.6
4	13807.2	89.66	7.10	9365.0	4636.2	577.7	0.00	0.00	4672.1

Stealth Fed Com #4H PBHL
Stealth Fed Com #4H PBHL



PROJECT DETAILS: Lea County, NM
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

Integrity Directional Services



COG OPERATING LLC

Lea County, NM
Sec. 17, T 19S. , R 32 E
Stealth Fed Com #4H

Wellbore #1
Plan#1

Anticollision Report

09 March, 2016

IDS

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Reference Site:	Sec. 17, T 19S. , R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Stealth Fed Com #4H	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:	Elliptical Conic
Casing Method:	Not applied

Survey Tool Program		Date	3/9/2016		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,807.2	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. 17, T 19S. , R 32 E						
Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surve	8,097.1	8,099.0	247.8	211.5	6.822	CC
Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surve	8,100.0	8,101.0	247.8	211.5	6.820	ES, SF

Offset Design											Sec. 17, T 19S. , R 32 E - Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surveys		Offset Site Error: 0.0 usft	
Survey Program: 100-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	0.0	0.0	5.0	5.0	87.69	13.7	340.3	340.6					
100.0	100.0	97.6	97.6	5.0	5.0	87.80	13.1	340.5	340.8	330.8	10.00	34.072		
200.0	200.0	199.6	199.6	5.0	5.0	87.97	12.0	340.7	340.9	330.9	10.02	34.026		
300.0	300.0	300.0	300.0	5.0	5.0	88.10	11.3	340.5	340.7	330.6	10.06	33.879		
400.0	400.0	401.1	401.1	5.1	5.1	88.24	10.4	340.1	340.2	330.1	10.11	33.644		
500.0	500.0	501.4	501.4	5.1	5.1	88.38	9.6	339.4	339.6	329.4	10.19	33.329		
600.0	600.0	601.2	601.1	5.1	5.1	88.51	8.8	338.8	338.9	328.6	10.28	32.970		
700.0	700.0	705.3	705.3	5.2	5.2	88.64	8.0	337.5	337.6	327.2	10.39	32.495		
800.0	800.0	807.3	807.2	5.3	5.3	88.77	7.2	335.3	335.4	324.9	10.52	31.884		
900.0	900.0	906.5	906.4	5.3	5.3	88.92	6.3	332.9	333.1	322.4	10.66	31.239		
1,000.0	1,000.0	1,003.8	1,003.7	5.4	5.4	89.04	5.6	331.2	331.3	320.4	10.81	30.633		
1,100.0	1,100.0	1,102.1	1,102.0	5.5	5.5	89.14	5.0	330.1	330.1	319.1	10.98	30.059		
1,200.0	1,200.0	1,201.8	1,201.7	5.6	5.6	89.21	4.5	329.2	329.2	318.1	11.17	29.484		
1,300.0	1,300.0	1,300.0	1,299.9	5.7	5.6	89.25	4.3	328.7	328.7	317.3	11.36	28.921		
1,400.0	1,400.0	1,399.1	1,399.0	5.8	5.7	89.26	4.2	328.5	328.5	317.0	11.58	28.378		
1,433.6	1,433.6	1,432.8	1,432.6	5.9	5.8	89.26	4.2	328.5	328.5	316.9	11.65	28.198		
1,500.0	1,500.0	1,499.1	1,499.0	6.0	5.8	89.26	4.2	328.5	328.5	316.7	11.80	27.839		
1,600.0	1,600.0	1,598.7	1,598.6	6.1	6.0	89.25	4.3	328.6	328.6	316.6	12.04	27.299		
1,700.0	1,700.0	1,696.7	1,696.6	6.2	6.1	89.18	4.7	329.0	329.0	316.7	12.28	26.789		
1,800.0	1,800.0	1,794.0	1,793.8	6.3	6.2	89.01	5.7	330.1	330.2	317.6	12.54	26.335		
1,900.0	1,900.0	1,891.4	1,891.2	6.5	6.3	88.76	7.2	332.0	332.1	319.3	12.80	25.941		
2,000.0	2,000.0	1,992.2	1,991.9	6.6	6.4	88.43	9.1	334.2	334.4	321.3	13.08	25.563		
2,100.0	2,100.0	2,092.3	2,092.0	6.8	6.6	88.07	11.3	336.2	336.5	323.1	13.37	25.176		
2,200.0	2,200.0	2,192.1	2,191.8	6.9	6.7	87.73	13.4	338.2	338.6	324.9	13.66	24.795		
2,300.0	2,300.0	2,292.3	2,291.9	7.1	6.9	87.40	15.4	340.3	340.7	326.7	13.95	24.414		

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

IDS Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Reference Site:	Sec. 17, T 19S, R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Stealth Fed Com #4H	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 Sec. 17, T 19S, R 32 E - Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surveys													Offset Site Error:	0.0 usft	
Survey Program: 100-MWD													Offset Well Error:	5.0 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)		
2,400.0	2,400.0	2,391.8	2,391.4	7.3	7.0	87.08	17.5	342.3	342.8	328.6	14.26	24.041			
2,500.0	2,500.0	2,494.7	2,494.3	7.4	7.2	86.81	19.2	344.1	344.6	330.1	14.57	23.648			
2,600.0	2,600.0	2,597.0	2,596.5	7.6	7.3	86.68	20.0	345.1	345.7	330.8	14.89	23.209			
2,700.0	2,700.0	2,699.7	2,699.2	7.8	7.5	86.75	19.6	345.5	346.0	330.8	15.22	22.733			
2,739.6	2,739.6	2,739.0	2,738.6	7.8	7.5	86.81	19.3	345.5	346.0	330.6	15.35	22.540			
2,800.0	2,800.0	2,799.1	2,798.6	7.9	7.6	86.92	18.6	345.5	346.0	330.5	15.55	22.254			
2,900.0	2,900.0	2,899.5	2,899.0	8.1	7.8	87.16	17.1	345.7	346.1	330.2	15.88	21.787			
3,000.0	3,000.0	3,001.1	3,000.6	8.3	7.9	87.47	15.3	345.5	345.8	329.6	16.23	21.313			
3,100.0	3,100.0	3,103.2	3,102.8	8.5	8.1	87.76	13.5	344.8	345.0	328.5	16.57	20.818			
3,200.0	3,200.0	3,204.0	3,203.5	8.7	8.3	88.01	12.0	343.6	343.8	326.9	16.92	20.316			
3,300.0	3,300.0	3,304.7	3,304.2	8.8	8.4	88.22	10.6	342.2	342.4	325.1	17.28	19.817			
3,400.0	3,400.0	3,406.0	3,405.5	9.0	8.6	88.43	9.3	340.5	340.7	323.1	17.64	19.315			
3,500.0	3,500.0	3,505.1	3,504.5	9.2	8.8	88.64	8.0	338.8	339.0	321.0	18.00	18.834			
3,600.0	3,600.0	3,607.3	3,606.7	9.4	9.0	88.88	6.6	336.8	337.0	318.6	18.36	18.351			
3,700.0	3,700.0	3,708.3	3,707.7	9.6	9.1	89.12	5.1	334.4	334.5	315.8	18.73	17.857			
3,800.0	3,800.0	3,808.4	3,807.7	9.8	9.3	89.36	3.7	331.8	331.9	312.8	19.11	17.374			
3,900.0	3,900.0	3,907.9	3,907.2	10.0	9.5	89.58	2.4	329.3	329.4	309.9	19.48	16.912			
4,000.0	4,000.0	4,007.7	4,006.9	10.2	9.7	89.85	0.9	326.8	326.9	307.1	19.85	16.472			
4,100.0	4,100.0	4,108.0	4,107.2	10.4	9.9	90.17	-1.0	324.4	324.5	304.2	20.23	16.042			
4,200.0	4,200.0	4,208.8	4,208.0	10.6	10.0	90.53	-3.0	321.7	321.8	301.2	20.61	15.615			
4,300.0	4,300.0	4,308.8	4,307.9	10.8	10.2	90.91	-5.1	318.8	319.0	298.0	20.99	15.196			
4,400.0	4,400.0	4,408.7	4,407.7	11.0	10.4	91.30	-7.2	316.1	316.3	294.9	21.38	14.795			
4,500.0	4,500.0	4,509.4	4,508.3	11.2	10.6	91.66	-9.1	313.1	313.4	291.6	21.76	14.400			
4,600.0	4,600.0	4,609.3	4,608.1	11.4	10.8	92.00	-10.8	310.1	310.4	288.3	22.15	14.015			
4,700.0	4,700.0	4,709.6	4,708.5	11.6	11.0	92.32	-12.4	307.0	307.4	284.9	22.54	13.638			
4,800.0	4,800.0	4,809.2	4,808.0	11.8	11.2	92.64	-14.0	303.9	304.4	281.4	22.93	13.274			
4,900.0	4,900.0	4,907.8	4,906.5	12.0	11.4	92.95	-15.5	301.1	301.6	278.3	23.32	12.937			
5,000.0	5,000.0	5,007.0	5,005.7	12.2	11.5	93.22	-16.8	298.7	299.3	275.6	23.71	12.625			
5,100.0	5,100.0	5,106.3	5,105.0	12.4	11.7	93.48	-18.0	296.5	297.2	273.1	24.10	12.331			
5,200.0	5,200.0	5,205.5	5,204.1	12.6	11.9	93.75	-19.3	294.6	295.3	270.8	24.49	12.057			
5,300.0	5,300.0	5,304.6	5,303.2	12.8	12.1	93.94	-20.2	293.0	293.7	268.8	24.89	11.802			
5,400.0	5,400.0	5,404.8	5,403.4	13.0	12.3	94.05	-20.6	291.5	292.2	266.9	25.28	11.558			
5,500.0	5,500.0	5,503.9	5,502.5	13.2	12.5	94.11	-20.8	290.1	290.9	265.2	25.68	11.326			
5,600.0	5,600.0	5,603.5	5,602.0	13.4	12.7	94.14	-20.9	289.0	289.8	263.7	26.08	11.110			
5,700.0	5,700.0	5,704.0	5,702.5	13.6	12.9	94.16	-20.9	287.9	288.6	262.2	26.48	10.898			
5,800.0	5,800.0	5,804.9	5,803.5	13.8	13.1	94.19	-21.0	286.4	287.2	260.3	26.89	10.682			
5,900.0	5,900.0	5,904.9	5,903.5	14.0	13.3	94.21	-21.0	284.9	285.7	258.4	27.29	10.466			
6,000.0	6,000.0	6,004.3	6,002.9	14.3	13.5	94.25	-21.0	283.4	284.2	256.5	27.70	10.262			
6,100.0	6,100.0	6,104.8	6,103.3	14.5	13.7	94.32	-21.3	281.9	282.8	254.7	28.10	10.062			
6,200.0	6,200.0	6,205.3	6,203.8	14.7	13.9	94.39	-21.5	280.3	281.1	252.6	28.51	9.860			
6,300.0	6,300.0	6,304.8	6,303.3	14.9	14.1	94.45	-21.7	278.6	279.5	250.6	28.92	9.666			
6,400.0	6,400.0	6,404.9	6,403.4	15.1	14.3	94.48	-21.7	277.1	278.0	248.6	29.33	9.479			
6,500.0	6,500.0	6,504.8	6,503.3	15.3	14.5	94.50	-21.7	275.5	276.4	246.7	29.73	9.296			
6,600.0	6,600.0	6,604.8	6,603.3	15.5	14.7	94.51	-21.6	274.0	274.8	244.7	30.14	9.118			
6,700.0	6,700.0	6,704.7	6,703.1	15.7	14.9	94.55	-21.7	272.4	273.3	242.8	30.55	8.945			
6,800.0	6,800.0	6,804.7	6,803.1	16.0	15.0	94.64	-22.0	270.9	271.8	240.8	30.96	8.778			
6,900.0	6,900.0	6,905.2	6,903.7	16.2	15.2	94.66	-21.9	269.2	270.2	238.8	31.38	8.610			
7,000.0	7,000.0	7,004.9	7,003.3	16.4	15.4	94.56	-21.3	267.6	268.5	236.7	31.79	8.447			
7,100.0	7,100.0	7,104.7	7,103.1	16.6	15.6	94.46	-20.8	266.1	266.9	234.7	32.20	8.290			
7,200.0	7,200.0	7,204.3	7,202.7	16.8	15.8	94.45	-20.6	264.6	265.5	232.8	32.61	8.141			
7,300.0	7,300.0	7,304.1	7,302.5	17.0	16.0	94.51	-20.8	263.3	264.1	231.1	33.02	7.998			
7,400.0	7,400.0	7,403.8	7,402.2	17.2	16.2	94.58	-21.0	262.0	262.8	229.4	33.44	7.861			

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

IDS

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Reference Site:	Sec. 17, T 19S. , R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Stealth Fed Com #4H	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 Sec. 17, T 19S. , R 32 E - Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surveys														Offset Site Error:	0.0 usft
Survey Program: 100-MWVD														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)					
7,500.0	7,500.0	7,504.4	7,502.7	17.5	16.4	94.60	-21.0	260.7	261.5	227.7	33.85	7.726			
7,600.0	7,600.0	7,605.7	7,604.0	17.7	16.6	94.58	-20.8	259.0	259.8	225.6	34.27	7.582			
7,700.0	7,700.0	7,706.8	7,705.1	17.9	16.9	94.65	-20.9	256.8	257.7	223.0	34.69	7.428			
7,800.0	7,800.0	7,807.3	7,805.6	18.1	17.1	94.73	-21.0	254.2	255.2	220.1	35.11	7.268			
7,900.0	7,900.0	7,906.7	7,904.9	18.3	17.3	94.93	-21.7	251.7	252.7	217.2	35.52	7.114			
8,000.0	8,000.0	8,007.6	8,005.8	18.5	17.5	95.34	-23.3	249.2	250.4	214.4	35.94	6.966			
8,097.1	8,097.1	8,099.0	8,096.1	18.7	17.6	92.56	-11.1	247.6	247.8	211.5	36.33	6.822 CC			
8,100.0	8,100.0	8,101.0	8,098.1	18.8	17.7	92.45	-10.6	247.6	247.8	211.5	36.34	6.820 ES, SF			
8,200.0	8,200.0	8,173.8	8,167.3	19.0	17.8	87.42	11.4	253.0	255.2	218.5	36.69	6.955			
8,300.0	8,300.0	8,271.9	8,258.0	19.2	18.0	79.70	47.5	261.3	268.8	231.6	37.11	7.242			
8,400.0	8,400.0	8,351.2	8,325.3	19.4	18.1	71.33	89.1	263.8	288.1	250.5	37.52	7.677			
8,500.0	8,500.0	8,403.0	8,364.9	19.6	18.3	65.19	122.5	264.9	321.2	283.3	37.87	8.480			
8,600.0	8,600.0	8,452.6	8,399.0	19.8	18.4	59.27	158.4	266.4	368.9	330.7	38.23	9.651			
8,700.0	8,700.0	8,490.8	8,423.1	20.1	18.5	55.00	188.0	268.5	428.5	389.9	38.54	11.117			
8,800.0	8,800.0	8,520.6	8,440.3	20.3	18.6	51.90	212.2	270.6	496.9	458.1	38.83	12.797			
8,900.0	8,900.0	8,547.9	8,454.6	20.5	18.8	38.85	235.4	272.7	571.4	532.3	39.07	14.625			
9,000.0	8,998.1	8,579.7	8,469.8	20.7	18.9	30.17	263.1	275.3	641.8	603.5	38.32	16.750			
9,100.0	9,090.3	8,612.0	8,483.5	20.9	19.1	24.60	292.4	277.9	704.0	667.7	36.22	19.435			
9,200.0	9,172.6	8,641.5	8,494.0	21.1	19.2	21.02	319.8	280.3	756.6	723.7	32.89	23.002			
9,300.0	9,241.3	8,677.3	8,503.9	21.4	19.4	18.58	354.0	283.1	798.9	770.3	28.67	27.863			
9,400.0	9,293.5	8,721.0	8,513.9	21.8	19.7	16.98	396.4	286.5	828.3	804.2	24.14	34.309			
9,500.0	9,326.8	8,765.5	8,521.2	22.2	20.0	16.10	440.2	289.6	844.3	824.1	20.26	41.679			
9,600.0	9,339.8	8,808.1	8,524.3	22.8	20.3	15.77	482.6	292.3	847.9	829.5	18.38	46.124			
9,700.0	9,340.5	8,883.8	8,526.1	23.5	20.9	15.45	558.2	296.1	844.2	825.4	18.80	44.903			
9,800.0	9,341.1	8,964.1	8,525.7	24.3	21.6	14.99	638.4	299.4	843.1	823.8	19.34	43.606			
9,900.0	9,341.7	9,071.2	8,524.3	25.2	22.6	14.43	745.4	304.6	843.1	823.1	20.03	42.081			
10,000.0	9,342.3	9,191.5	8,526.4	26.2	23.8	14.00	865.4	312.6	840.5	819.5	20.94	40.133			
10,100.0	9,342.9	9,280.4	8,528.2	27.3	24.8	13.63	954.1	317.7	837.5	815.7	21.79	38.428			
10,200.0	9,343.5	9,366.9	8,528.2	28.5	25.8	13.25	1,040.5	322.9	836.6	813.9	22.69	36.877			
10,261.7	9,343.9	9,426.2	8,527.6	29.2	26.5	12.94	1,099.6	325.8	836.5	813.3	23.27	35.956			
10,300.0	9,344.1	9,461.9	8,527.1	29.7	27.0	12.74	1,135.4	327.4	836.6	813.0	23.62	35.418			
10,400.0	9,344.7	9,562.1	8,525.3	31.0	28.3	12.15	1,235.4	331.5	837.2	812.6	24.59	34.043			
10,500.0	9,345.3	9,674.3	8,524.5	32.3	29.7	11.54	1,347.5	336.6	836.9	811.2	25.66	32.612			
10,600.0	9,345.9	9,780.2	8,525.3	33.7	31.1	11.07	1,453.2	342.6	835.3	808.5	26.78	31.195			
10,700.0	9,346.5	9,869.1	8,525.9	35.1	32.3	10.69	1,542.0	348.0	834.1	806.2	27.85	29.948			
10,722.5	9,346.6	9,888.3	8,525.9	35.4	32.6	10.63	1,561.1	349.6	834.0	805.9	28.10	29.681			
10,800.0	9,347.1	9,964.7	8,525.6	36.5	33.6	10.39	1,637.3	355.7	834.1	805.1	29.02	28.742			
10,900.0	9,347.7	10,066.0	8,525.1	38.0	35.1	10.00	1,738.3	362.6	834.2	804.0	30.21	27.616			
11,000.0	9,348.3	10,170.8	8,524.9	39.5	36.6	9.56	1,842.9	369.1	834.0	802.6	31.41	26.554			
11,100.0	9,348.9	10,280.2	8,525.5	41.1	38.2	9.04	1,952.2	375.1	832.9	800.3	32.62	25.531			
11,200.0	9,349.5	10,388.3	8,527.2	42.6	39.8	8.47	2,060.1	380.0	830.7	796.9	33.82	24.560			
11,300.0	9,350.1	10,484.9	8,528.8	44.2	41.3	7.85	2,166.6	382.8	828.4	793.4	34.93	23.713			
11,400.0	9,350.7	10,579.0	8,529.9	45.8	42.7	7.24	2,250.7	385.4	826.5	790.4	36.04	22.932			
11,452.6	9,351.0	10,620.5	8,530.0	46.7	43.4	6.99	2,292.2	386.9	826.1	789.5	36.60	22.572			
11,500.0	9,351.3	10,660.0	8,529.6	47.4	44.0	6.77	2,331.7	388.8	826.4	789.3	37.12	22.262			
11,600.0	9,351.9	10,737.4	8,527.5	49.0	45.2	6.36	2,408.9	392.7	828.9	790.7	38.21	21.695			
11,700.0	9,352.5	10,832.9	8,523.3	50.7	46.7	5.90	2,504.2	398.3	833.1	793.7	39.41	21.141			
11,800.0	9,353.0	10,960.7	8,519.9	52.3	48.7	5.53	2,631.5	409.0	836.0	795.2	40.88	20.453			
11,900.0	9,353.6	11,079.9	8,520.6	54.0	50.6	4.98	2,750.5	415.8	835.4	793.1	42.24	19.776			
12,000.0	9,354.2	11,173.3	8,521.9	55.7	52.1	4.78	2,843.5	424.3	834.3	790.8	43.54	19.163			
12,024.6	9,354.4	11,194.8	8,522.1	56.1	52.4	4.76	2,864.8	426.7	834.2	790.4	43.86	19.021			
12,100.0	9,354.8	11,273.4	8,522.4	57.3	53.6	4.71	2,942.9	435.7	834.3	789.4	44.93	18.570			

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

IDS

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Reference Site:	Sec. 17, T 19S. , R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Stealth Fed Com #4H	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 Sec. 17, T 19S. , R 32 E - Stealth Fed Com #1 - Actual Wellbore - Pathfinder Surveys													Offset Site Error:	0.0 usft
Survey Program: 100-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		
12,200.0	9,355.4	11,377.7	8,524.1	59.0	55.3	4.47	3,046.7	445.1	832.9	786.6	46.30	17.989		
12,267.6	9,355.8	11,436.9	8,524.5	60.2	56.3	4.27	3,105.8	449.4	832.6	785.5	47.14	17.663		
12,300.0	9,356.0	11,466.4	8,524.5	60.7	56.8	4.14	3,135.3	451.3	832.7	785.1	47.54	17.515		
12,400.0	9,356.6	11,559.0	8,523.8	62.4	58.3	3.68	3,227.7	456.0	833.5	784.8	48.78	17.089		
12,500.0	9,357.2	11,669.3	8,522.7	64.1	60.1	3.05	3,337.8	460.7	834.8	784.6	50.11	16.657		
12,600.0	9,357.8	11,781.0	8,523.9	65.8	61.9	2.37	3,449.5	464.5	833.8	782.3	51.48	16.197		
12,700.0	9,358.4	11,879.2	8,525.3	67.5	63.5	1.73	3,547.7	467.4	832.6	779.8	52.78	15.774		
12,800.0	9,359.0	11,995.0	8,528.0	69.3	65.5	1.02	3,663.4	471.3	830.7	776.4	54.24	15.314		
12,900.0	9,359.6	12,077.9	8,530.1	71.0	66.8	0.58	3,746.1	475.3	828.6	773.1	55.51	14.926		
12,919.4	9,359.7	12,091.0	8,530.3	71.3	67.0	0.52	3,759.2	475.9	828.5	772.8	55.74	14.864		
13,000.0	9,360.2	12,147.5	8,529.8	72.7	68.0	0.27	3,815.6	479.4	829.6	772.9	56.71	14.629		
13,100.0	9,360.8	12,237.8	8,526.4	74.5	69.5	0.02	3,905.5	487.0	833.9	775.8	58.06	14.362		
13,200.0	9,361.4	12,365.2	8,523.9	76.2	71.5	-0.49	4,032.6	495.2	836.5	776.8	59.70	14.012		
13,300.0	9,362.0	12,475.4	8,524.6	77.9	73.4	-1.18	4,142.8	498.9	836.7	775.4	61.26	13.657		
13,400.0	9,362.6	12,595.7	8,527.7	79.7	75.4	-1.88	4,262.9	503.7	834.8	771.9	62.95	13.262		
13,500.0	9,363.2	12,689.8	8,531.0	81.4	76.9	-2.38	4,356.8	508.1	832.2	767.8	64.45	12.912		
13,584.4	9,363.7	12,758.0	8,532.3	82.9	78.1	-2.75	4,425.0	511.2	831.4	765.8	65.65	12.665		
13,600.0	9,363.8	12,769.8	8,532.3	83.2	78.3	-2.81	4,436.8	511.8	831.5	765.6	65.87	12.624		
13,700.0	9,364.4	12,854.0	8,531.7	84.9	79.7	-3.23	4,520.8	516.0	833.2	765.9	67.33	12.375		
13,800.0	9,365.0	12,927.2	8,529.1	86.7	80.9	-3.59	4,593.9	519.7	837.5	768.8	68.71	12.190		
13,807.2	9,365.0	12,934.4	8,528.8	86.8	81.0	-3.62	4,601.0	520.0	837.9	769.1	68.82	12.175		

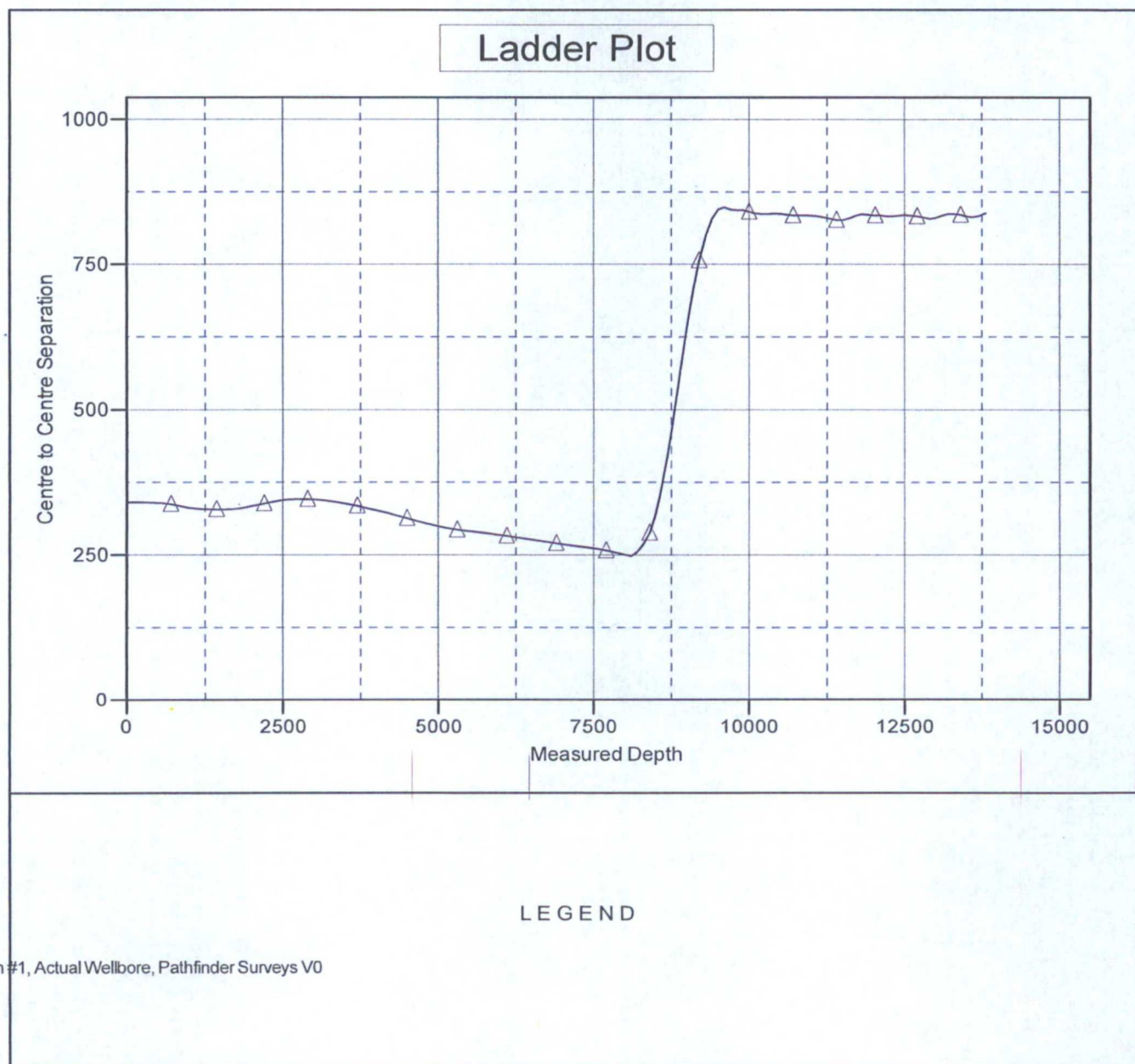
IDS

Anticollision Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Stealth Fed Com #4H
Project:	Lea County, NM	TVD Reference:	KB=18' @ 3610.0usft (UNK)
Reference Site:	Sec. 17, T 19S, R 32 E	MD Reference:	KB=18' @ 3610.0usft (UNK)
Site Error:	5.0 usft	North Reference:	Grid
Reference Well:	Stealth Fed Com #4H	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=18' @ 3610.0usft (UNK)
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Stealth Fed Com #4H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.30°



IDS
Anticollision Report

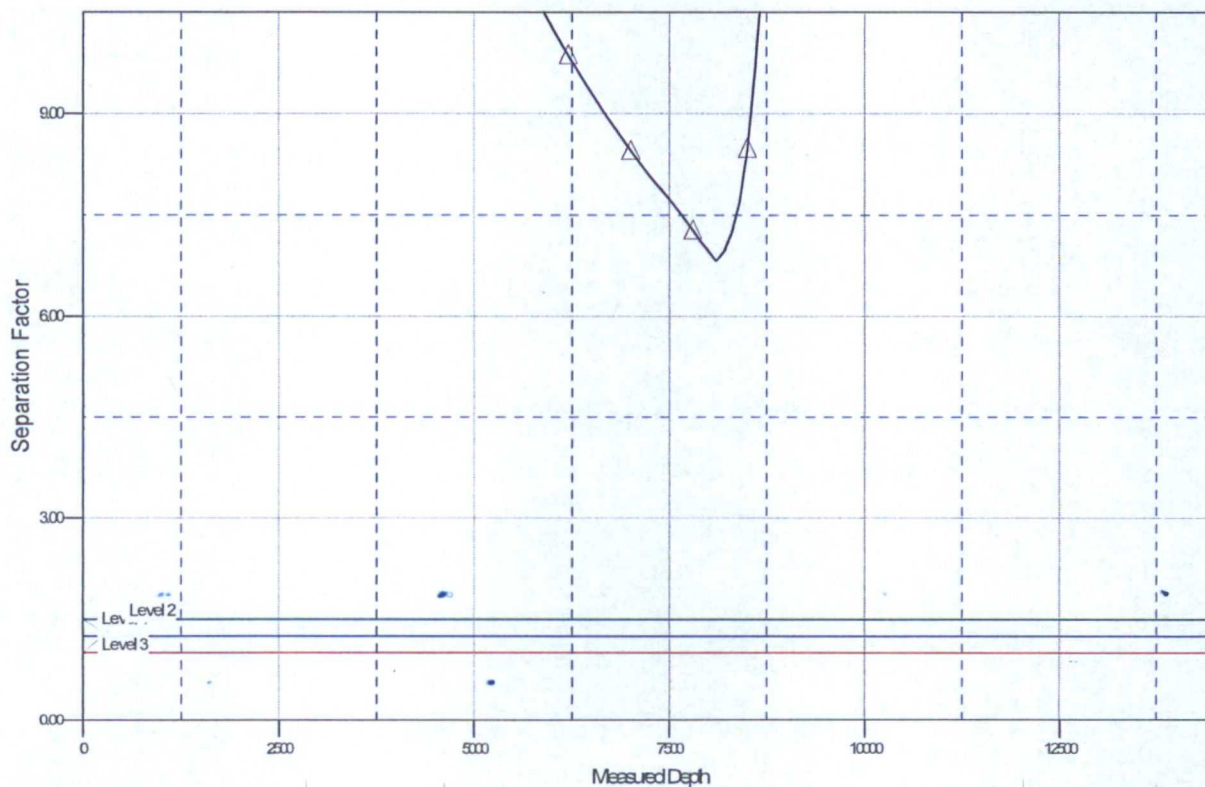
Company: COG Operating LLC
Project: Lea County, NM
Reference Site: Sec. 17, T 19S., R 32 E
Site Error: 5.0 usft
Reference Well: Stealth Fed Com #4H
Well Error: 5.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Plan#1

Local Co-ordinate Reference: Well Stealth Fed Com #4H
TVD Reference: KB=18' @ 3610.0usft (UNK)
MD Reference: KB=18' @ 3610.0usft (UNK)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB=18' @ 3610.0usft (UNK)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Stealth Fed Com #4H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.30°

Separation Factor Plot



LEGEND

n #1, Actual Wellbore, Pathfinder Surveys V0



New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 17

Township: 19S

Range: 32E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

3/18/16 9:22 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00073			LE	2	4	34	19S	32E		617502	3609301	575		
CP 00075			LE	2	4	34	19S	32E		617502	3609301	575		
CP 00563			LE	1	1	2	19	19S	32E	612118	3613376*	300		
CP 00639			LE	3	1	20	19S	32E		613029	3612880*	350	345	5
CP 00640			LE	2	2	19	19S	32E		612621	3613280*	260	102	158
CP 00812			LE	4	4	01	19S	32E		620623	3616973*	200		

Average Depth to Water: **223 feet**

Minimum Depth: **102 feet**

Maximum Depth: **345 feet**

Record Count: 6

PLSS Search:

Township: 19S

Range: 32E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.