

COG Operating, LLC

Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 3H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

07 July, 2015



FEB 11 2016



HP Well Planning Report



Database:	Compass	Local Co-ordinate Reference:	Well Smalls Federal 3H
Company:	COG Operating, LLC	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Project:	Lea County, NM	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site:	Sec 28, T22S, R34E	North Reference:	Grid
Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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 28, T22S, R34E						
Site Position:			Northing:		494,242.70 usft		Latitude:		32° 21' 20.947 N			
From:			Map		Easting:		767,268.60 usft		Longitude:		103° 28' 4.141 W	
Position Uncertainty:			0.0 usft		Slot Radius:		13-3/16 "		Grid Convergence:		0.46 °	

Well	Smalls Federal 3H					
Well Position	+N/-S	-23.0 usft	Northing:	494,219.70 usft	Latitude:	32° 21' 20.938 N
	+E/-W	-2,745.2 usft	Easting:	764,523.40 usft	Longitude:	103° 28' 36.144 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	0.0 usft	Ground Level:	3,410.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/7/2015	7.13	60.23	48,227

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.62

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,632.5	0.00	0.00	10,632.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,379.1	89.60	359.62	11,110.0	474.1	-3.2	12.00	12.00	-0.05	359.62	
15,661.4	89.60	359.62	11,140.0	4,756.2	-31.7	0.00	0.00	0.00	0.00	PBHL Smalls Federal



HP
Well Planning Report



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Wellbore:	Wellbore #1		
Design:	Design #1		

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)
KOP 12°/100'									
10,632.5	0.00	0.00	10,632.5	0.0	0.0	0.0	0.00	0.00	0.00
10,700.0	8.10	359.62	10,699.8	4.8	0.0	4.8	12.00	12.00	0.00
10,800.0	20.10	359.62	10,796.6	29.1	-0.2	29.1	12.00	12.00	0.00
10,900.0	32.10	359.62	10,886.2	73.0	-0.5	73.0	12.00	12.00	0.00
TBSG_sand									
10,929.4	35.63	359.62	10,910.6	89.4	-0.6	89.4	12.00	12.00	0.00
11,000.0	44.10	359.62	10,964.8	134.6	-0.9	134.6	12.00	12.00	0.00
11,100.0	56.10	359.62	11,028.8	211.2	-1.4	211.2	12.00	12.00	0.00
11,200.0	68.10	359.62	11,075.5	299.4	-2.0	299.4	12.00	12.00	0.00
11,300.0	80.10	359.62	11,102.9	395.4	-2.6	395.4	12.00	12.00	0.00
End of Curve / 89.6° Inc / 359.62° Azm / 11110' TVD									
11,379.1	89.60	359.62	11,110.0	474.1	-3.2	474.1	12.00	12.00	0.00
11,400.0	89.60	359.62	11,110.1	495.0	-3.3	495.0	0.00	0.00	0.00
11,500.0	89.60	359.62	11,110.8	594.9	-4.0	595.0	0.00	0.00	0.00
11,600.0	89.60	359.62	11,111.5	694.9	-4.6	695.0	0.00	0.00	0.00
11,700.0	89.60	359.62	11,112.2	794.9	-5.3	795.0	0.00	0.00	0.00
11,800.0	89.60	359.62	11,112.9	894.9	-6.0	895.0	0.00	0.00	0.00
11,900.0	89.60	359.62	11,113.6	994.9	-6.6	995.0	0.00	0.00	0.00
12,000.0	89.60	359.62	11,114.3	1,094.9	-7.3	1,094.9	0.00	0.00	0.00
12,100.0	89.60	359.62	11,115.0	1,194.9	-8.0	1,194.9	0.00	0.00	0.00
12,200.0	89.60	359.62	11,115.7	1,294.9	-8.6	1,294.9	0.00	0.00	0.00
12,300.0	89.60	359.62	11,116.4	1,394.9	-9.3	1,394.9	0.00	0.00	0.00
12,400.0	89.60	359.62	11,117.1	1,494.9	-10.0	1,494.9	0.00	0.00	0.00
12,500.0	89.60	359.62	11,117.8	1,594.9	-10.6	1,594.9	0.00	0.00	0.00
12,600.0	89.60	359.62	11,118.5	1,694.9	-11.3	1,694.9	0.00	0.00	0.00
12,700.0	89.60	359.62	11,119.2	1,794.9	-12.0	1,794.9	0.00	0.00	0.00
12,800.0	89.60	359.62	11,119.9	1,894.9	-12.6	1,894.9	0.00	0.00	0.00
12,900.0	89.60	359.62	11,120.6	1,994.9	-13.3	1,994.9	0.00	0.00	0.00
13,000.0	89.60	359.62	11,121.3	2,094.9	-14.0	2,094.9	0.00	0.00	0.00
13,100.0	89.60	359.62	11,122.0	2,194.9	-14.6	2,194.9	0.00	0.00	0.00
13,200.0	89.60	359.62	11,122.7	2,294.9	-15.3	2,294.9	0.00	0.00	0.00
13,300.0	89.60	359.62	11,123.4	2,394.9	-16.0	2,394.9	0.00	0.00	0.00
13,400.0	89.60	359.62	11,124.1	2,494.9	-16.6	2,494.9	0.00	0.00	0.00
13,500.0	89.60	359.62	11,124.8	2,594.9	-17.3	2,594.9	0.00	0.00	0.00
13,600.0	89.60	359.62	11,125.5	2,694.9	-18.0	2,694.9	0.00	0.00	0.00
13,700.0	89.60	359.62	11,126.2	2,794.8	-18.6	2,794.9	0.00	0.00	0.00
13,800.0	89.60	359.62	11,126.9	2,894.8	-19.3	2,894.9	0.00	0.00	0.00
13,900.0	89.60	359.62	11,127.6	2,994.8	-20.0	2,994.9	0.00	0.00	0.00
14,000.0	89.60	359.62	11,128.3	3,094.8	-20.6	3,094.9	0.00	0.00	0.00
14,100.0	89.60	359.62	11,129.0	3,194.8	-21.3	3,194.9	0.00	0.00	0.00
14,200.0	89.60	359.62	11,129.7	3,294.8	-22.0	3,294.9	0.00	0.00	0.00
14,300.0	89.60	359.62	11,130.4	3,394.8	-22.6	3,394.9	0.00	0.00	0.00
14,400.0	89.60	359.62	11,131.1	3,494.8	-23.3	3,494.9	0.00	0.00	0.00
14,500.0	89.60	359.62	11,131.9	3,594.8	-24.0	3,594.9	0.00	0.00	0.00
14,600.0	89.60	359.62	11,132.6	3,694.8	-24.6	3,694.9	0.00	0.00	0.00
14,700.0	89.60	359.62	11,133.3	3,794.8	-25.3	3,794.9	0.00	0.00	0.00
14,800.0	89.60	359.62	11,134.0	3,894.8	-26.0	3,894.9	0.00	0.00	0.00
14,900.0	89.60	359.62	11,134.7	3,994.8	-26.6	3,994.9	0.00	0.00	0.00
15,000.0	89.60	359.62	11,135.4	4,094.8	-27.3	4,094.9	0.00	0.00	0.00
15,100.0	89.60	359.62	11,136.1	4,194.8	-28.0	4,194.9	0.00	0.00	0.00
15,200.0	89.60	359.62	11,136.8	4,294.8	-28.6	4,294.9	0.00	0.00	0.00
15,300.0	89.60	359.62	11,137.5	4,394.8	-29.3	4,394.9	0.00	0.00	0.00



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Site:	Sec 28, T22S, R34E	North Reference:	Grid
Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
15,400.0	89.60	359.62	11,138.2	4,494.8	-30.0	4,494.9	0.00	0.00	0.00
15,500.0	89.60	359.62	11,138.9	4,594.8	-30.6	4,594.9	0.00	0.00	0.00
15,600.0	89.60	359.62	11,139.6	4,694.8	-31.3	4,694.9	0.00	0.00	0.00
PBHL @ 15661' MD / 11140' TVD									
15,661.4	89.60	359.62	11,140.0	4,756.2	-31.7	4,756.3	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL Smalls Federal 3H	0.00	0.00	11,140.0	4,756.2	-31.7	498,975.90	764,491.70	32° 22' 8.003 N	103° 28' 36.070 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,396.0	2,396.0	Rustler		0.40	359.62	
2,659.0	2,659.0	TOS		0.40	359.62	
3,618.0	3,618.0	BOS / Tansill		0.40	359.62	
3,689.0	3,689.0	Yates		0.40	359.62	
3,824.0	3,824.0	Seven Rivers		0.40	359.62	
3,993.0	3,993.0	Captain Reef		0.40	359.62	
5,190.0	5,190.0	Base of Reef (BLCN)		0.40	359.62	
5,881.0	5,881.0	CYCN		0.40	359.62	
7,084.0	7,084.0	BYCN		0.40	359.62	
8,486.0	8,486.0	Bone Spring (BSGL)		0.40	359.62	
8,778.0	8,778.0	U Avalon Sh		0.40	359.62	
9,019.0	9,019.0	L Avalon Sh		0.40	359.62	
9,549.0	9,549.0	FBSG_sand		0.40	359.62	
10,015.0	10,015.0	SBSG_sand		0.40	359.62	
10,929.4	10,910.6	TBSG_sand		0.40	359.62	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,632.5	10,632.5	0.0	0.0	KOP 12°/100'
11,379.1	11,110.0	474.1	-3.2	End of Curve / 89.6° Inc / 359.62° Azm / 11110' TVD
15,661.4	11,140.0	4,756.2	-31.7	PBHL @ 15661' MD / 11140' TVD



COG Operating, LLC

**Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 3H**

**Wellbore #1
Design #1**

DDC Anticollision Report

07 July, 2015





HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program:		Date:	7/7/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,661.4	Design #1 (Wellbore #1)	MWD default	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 28, T22S, R34E						
Smalls Federal 7H - Wellbore #1 - Design #1	9,850.9	9,850.9	30.0	-14.0	0.682	Level 1, CC, ES, SF

Offset Design											Offset Site Error:	0.0 usft
Survey Program: 0-MWD default											Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.62	0.2	30.0	30.0			
100.0	100.0	100.0	100.0	0.1	0.1	89.62	0.2	30.0	30.0	29.8	193.442	
200.0	200.0	200.0	200.0	0.3	0.3	89.62	0.2	30.0	30.0	29.4	49.619	
300.0	300.0	300.0	300.0	0.5	0.5	89.62	0.2	30.0	30.0	28.9	28.460	
400.0	400.0	400.0	400.0	0.8	0.8	89.62	0.2	30.0	30.0	28.5	19.951	
500.0	500.0	500.0	500.0	1.0	1.0	89.62	0.2	30.0	30.0	28.0	15.360	
600.0	600.0	600.0	600.0	1.2	1.2	89.62	0.2	30.0	30.0	27.6	12.486	
700.0	700.0	700.0	700.0	1.4	1.4	89.62	0.2	30.0	30.0	27.1	10.518	
800.0	800.0	800.0	800.0	1.7	1.7	89.62	0.2	30.0	30.0	26.7	9.086	
900.0	900.0	900.0	900.0	1.9	1.9	89.62	0.2	30.0	30.0	26.2	7.997	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.62	0.2	30.0	30.0	25.8	7.142	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	89.62	0.2	30.0	30.0	25.4	6.451	
1,200.0	1,200.0	1,200.0	1,200.0	2.5	2.5	89.62	0.2	30.0	30.0	24.9	5.883	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	89.62	0.2	30.0	30.0	24.5	5.405	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	89.62	0.2	30.0	30.0	24.0	5.001	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	89.62	0.2	30.0	30.0	23.6	4.652	
1,600.0	1,600.0	1,600.0	1,600.0	3.4	3.4	89.62	0.2	30.0	30.0	23.1	4.349	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	89.62	0.2	30.0	30.0	22.7	4.083	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	89.62	0.2	30.0	30.0	22.2	3.848	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	89.62	0.2	30.0	30.0	21.8	3.638	
2,000.0	2,000.0	2,000.0	2,000.0	4.3	4.3	89.62	0.2	30.0	30.0	21.3	3.450	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	89.62	0.2	30.0	30.0	20.9	3.280	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	89.62	0.2	30.0	30.0	20.4	3.127	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	89.62	0.2	30.0	30.0	20.0	2.987	
2,400.0	2,400.0	2,400.0	2,400.0	5.2	5.2	89.62	0.2	30.0	30.0	19.5	2.859	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	89.62	0.2	30.0	30.0	19.1	2.741	

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



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Anticollision Report



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Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28, T22S, R34E - Smalls Federal 7H - Wellbore #1 - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD default												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning		
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	89.62	0.2	30.0	30.0	18.6	2.633		
2,700.0	2,700.0	2,700.0	2,700.0	5.9	5.9	89.62	0.2	30.0	30.0	18.2	2.533		
2,800.0	2,800.0	2,800.0	2,800.0	6.1	6.1	89.62	0.2	30.0	30.0	17.7	2.441		
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	89.62	0.2	30.0	30.0	17.3	2.354		
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	89.62	0.2	30.0	30.0	16.8	2.274		
3,100.0	3,100.0	3,100.0	3,100.0	6.8	6.8	89.62	0.2	30.0	30.0	16.4	2.199		
3,200.0	3,200.0	3,200.0	3,200.0	7.0	7.0	89.62	0.2	30.0	30.0	15.9	2.129		
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	89.62	0.2	30.0	30.0	15.5	2.063		
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	89.62	0.2	30.0	30.0	15.0	2.001		
3,500.0	3,500.0	3,500.0	3,500.0	7.7	7.7	89.62	0.2	30.0	30.0	14.6	1.943		
3,600.0	3,600.0	3,600.0	3,600.0	7.9	7.9	89.62	0.2	30.0	30.0	14.1	1.888		
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	89.62	0.2	30.0	30.0	13.7	1.836		
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	89.62	0.2	30.0	30.0	13.2	1.787		
3,900.0	3,900.0	3,900.0	3,900.0	8.6	8.6	89.62	0.2	30.0	30.0	12.8	1.740		
4,000.0	4,000.0	4,000.0	4,000.0	8.8	8.8	89.62	0.2	30.0	30.0	12.3	1.696		
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	89.62	0.2	30.0	30.0	11.9	1.654		
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	89.62	0.2	30.0	30.0	11.4	1.614		
4,300.0	4,300.0	4,300.0	4,300.0	9.5	9.5	89.62	0.2	30.0	30.0	11.0	1.576		
4,400.0	4,400.0	4,400.0	4,400.0	9.7	9.7	89.62	0.2	30.0	30.0	10.5	1.540		
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	89.62	0.2	30.0	30.0	10.1	1.505		
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	89.62	0.2	30.0	30.0	9.6	1.472	Level 3	
4,700.0	4,700.0	4,700.0	4,700.0	10.4	10.4	89.62	0.2	30.0	30.0	9.2	1.440	Level 3	
4,800.0	4,800.0	4,800.0	4,800.0	10.6	10.6	89.62	0.2	30.0	30.0	8.7	1.410	Level 3	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	89.62	0.2	30.0	30.0	8.3	1.380	Level 3	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	89.62	0.2	30.0	30.0	7.8	1.352	Level 3	
5,100.0	5,100.0	5,100.0	5,100.0	11.3	11.3	89.62	0.2	30.0	30.0	7.4	1.326	Level 3	
5,200.0	5,200.0	5,200.0	5,200.0	11.5	11.5	89.62	0.2	30.0	30.0	6.9	1.300	Level 3	
5,300.0	5,300.0	5,300.0	5,300.0	11.8	11.8	89.62	0.2	30.0	30.0	6.5	1.275	Level 3	
5,400.0	5,400.0	5,400.0	5,400.0	12.0	12.0	89.62	0.2	30.0	30.0	6.0	1.251	Level 3	
5,500.0	5,500.0	5,500.0	5,500.0	12.2	12.2	89.62	0.2	30.0	30.0	5.6	1.228	Level 2	
5,600.0	5,600.0	5,600.0	5,600.0	12.4	12.4	89.62	0.2	30.0	30.0	5.1	1.206	Level 2	
5,700.0	5,700.0	5,700.0	5,700.0	12.7	12.7	89.62	0.2	30.0	30.0	4.7	1.184	Level 2	
5,800.0	5,800.0	5,800.0	5,800.0	12.9	12.9	89.62	0.2	30.0	30.0	4.2	1.164	Level 2	
5,900.0	5,900.0	5,900.0	5,900.0	13.1	13.1	89.62	0.2	30.0	30.0	3.8	1.144	Level 2	
6,000.0	6,000.0	6,000.0	6,000.0	13.3	13.3	89.62	0.2	30.0	30.0	3.3	1.125	Level 2	
6,100.0	6,100.0	6,100.0	6,100.0	13.6	13.6	89.62	0.2	30.0	30.0	2.9	1.106	Level 2	
6,200.0	6,200.0	6,200.0	6,200.0	13.8	13.8	89.62	0.2	30.0	30.0	2.4	1.088	Level 2	
6,300.0	6,300.0	6,300.0	6,300.0	14.0	14.0	89.62	0.2	30.0	30.0	2.0	1.070	Level 2	
6,400.0	6,400.0	6,400.0	6,400.0	14.2	14.2	89.62	0.2	30.0	30.0	1.5	1.054	Level 2	
6,500.0	6,500.0	6,500.0	6,500.0	14.5	14.5	89.62	0.2	30.0	30.0	1.1	1.037	Level 2	
6,600.0	6,600.0	6,600.0	6,600.0	14.7	14.7	89.62	0.2	30.0	30.0	0.6	1.021	Level 2	
6,700.0	6,700.0	6,700.0	6,700.0	14.9	14.9	89.62	0.2	30.0	30.0	0.2	1.008	Level 2	
6,800.0	6,800.0	6,800.0	6,800.0	15.1	15.1	89.62	0.2	30.0	30.0	-0.3	0.991	Level 1	
6,900.0	6,900.0	6,900.0	6,900.0	15.4	15.4	89.62	0.2	30.0	30.0	-0.7	0.976	Level 1	
7,000.0	7,000.0	7,000.0	7,000.0	15.6	15.6	89.62	0.2	30.0	30.0	-1.2	0.962	Level 1	
7,100.0	7,100.0	7,100.0	7,100.0	15.8	15.8	89.62	0.2	30.0	30.0	-1.6	0.949	Level 1	
7,200.0	7,200.0	7,200.0	7,200.0	16.0	16.0	89.62	0.2	30.0	30.0	-2.1	0.935	Level 1	
7,300.0	7,300.0	7,300.0	7,300.0	16.3	16.3	89.62	0.2	30.0	30.0	-2.5	0.922	Level 1	
7,400.0	7,400.0	7,400.0	7,400.0	16.5	16.5	89.62	0.2	30.0	30.0	-3.0	0.910	Level 1	
7,500.0	7,500.0	7,500.0	7,500.0	16.7	16.7	89.62	0.2	30.0	30.0	-3.4	0.898	Level 1	
7,600.0	7,600.0	7,600.0	7,600.0	16.9	16.9	89.62	0.2	30.0	30.0	-3.9	0.886	Level 1	
7,700.0	7,700.0	7,700.0	7,700.0	17.2	17.2	89.62	0.2	30.0	30.0	-4.3	0.874	Level 1	

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



HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design: Sec 28, T22S, R34E - Smalls Federal 7H - Wellbore #1 - Design #1											Offset Site Error:	0.0 usft
Survey Program: 0-MWD default											Offset Well Error:	0.0 usft
Reference:	Offset	Semi Major Axis		Reference		Highside	Offset Wellbore Centre		Distance		Separation	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Factor	
7,800.0	7,800.0	7,800.0	7,800.0	17.4	17.4	89.62	0.2	30.0	30.0	-4.8	0.863	Level 1
7,900.0	7,900.0	7,900.0	7,900.0	17.6	17.6	89.62	0.2	30.0	30.0	-5.2	0.852	Level 1
8,000.0	8,000.0	8,000.0	8,000.0	17.8	17.8	89.62	0.2	30.0	30.0	-5.7	0.841	Level 1
8,100.0	8,100.0	8,100.0	8,100.0	18.1	18.1	89.62	0.2	30.0	30.0	-6.1	0.831	Level 1
8,200.0	8,200.0	8,200.0	8,200.0	18.3	18.3	89.62	0.2	30.0	30.0	-6.6	0.820	Level 1
8,300.0	8,300.0	8,300.0	8,300.0	18.5	18.5	89.62	0.2	30.0	30.0	-7.0	0.810	Level 1
8,400.0	8,400.0	8,400.0	8,400.0	18.7	18.7	89.62	0.2	30.0	30.0	-7.5	0.801	Level 1
8,500.0	8,500.0	8,500.0	8,500.0	19.0	19.0	89.62	0.2	30.0	30.0	-7.9	0.791	Level 1
8,600.0	8,600.0	8,600.0	8,600.0	19.2	19.2	89.62	0.2	30.0	30.0	-8.4	0.782	Level 1
8,700.0	8,700.0	8,700.0	8,700.0	19.4	19.4	89.62	0.2	30.0	30.0	-8.8	0.773	Level 1
8,800.0	8,800.0	8,800.0	8,800.0	19.6	19.6	89.62	0.2	30.0	30.0	-9.3	0.764	Level 1
8,900.0	8,900.0	8,900.0	8,900.0	19.9	19.9	89.62	0.2	30.0	30.0	-9.7	0.755	Level 1
9,000.0	9,000.0	9,000.0	9,000.0	20.1	20.1	89.62	0.2	30.0	30.0	-10.2	0.747	Level 1
9,100.0	9,100.0	9,100.0	9,100.0	20.3	20.3	89.62	0.2	30.0	30.0	-10.6	0.739	Level 1
9,200.0	9,200.0	9,200.0	9,200.0	20.5	20.5	89.62	0.2	30.0	30.0	-11.1	0.731	Level 1
9,300.0	9,300.0	9,300.0	9,300.0	20.8	20.8	89.62	0.2	30.0	30.0	-11.5	0.723	Level 1
9,400.0	9,400.0	9,400.0	9,400.0	21.0	21.0	89.62	0.2	30.0	30.0	-12.0	0.715	Level 1
9,500.0	9,500.0	9,500.0	9,500.0	21.2	21.2	89.62	0.2	30.0	30.0	-12.4	0.707	Level 1
9,600.0	9,600.0	9,600.0	9,600.0	21.4	21.4	89.62	0.2	30.0	30.0	-12.9	0.700	Level 1
9,700.0	9,700.0	9,700.0	9,700.0	21.7	21.7	89.62	0.2	30.0	30.0	-13.3	0.693	Level 1
9,800.0	9,800.0	9,800.0	9,800.0	21.9	21.9	89.62	0.2	30.0	30.0	-13.8	0.686	Level 1
9,850.9	9,850.9	9,850.9	9,850.9	22.0	22.0	89.26	0.4	30.0	30.0	-14.0	0.682	Level 1, CC, ES, SF
9,900.0	9,900.0	9,899.7	9,899.5	22.1	22.1	81.94	4.2	29.9	30.3	-14.0	0.684	Level 1
10,000.0	10,000.0	9,994.2	9,991.4	22.3	22.3	49.13	25.7	29.7	40.2	-4.5	0.900	Level 1
10,100.0	10,100.0	10,077.6	10,067.6	22.6	22.5	26.24	59.3	29.2	73.6	28.6	1.635	
10,200.0	10,200.0	10,150.0	10,128.2	22.8	22.6	16.20	98.9	28.7	125.5	80.2	2.767	
10,300.0	10,300.0	10,205.0	10,169.8	23.0	22.8	11.84	134.8	28.3	189.5	143.9	4.150	
10,400.0	10,400.0	10,250.0	10,200.6	23.2	22.9	9.43	167.6	27.8	262.0	216.0	5.701	
10,500.0	10,500.0	10,289.4	10,224.9	23.5	23.0	7.86	198.6	27.4	340.4	294.2	7.365	
10,600.0	10,600.0	10,325.0	10,244.6	23.7	23.1	6.76	228.2	27.0	423.2	376.7	9.106	
10,632.5	10,632.5	10,325.0	10,244.6	23.8	23.1	6.76	228.2	27.0	450.8	404.3	9.686	
10,650.0	10,650.0	10,334.1	10,249.3	23.8	23.2	6.51	235.9	26.9	465.6	419.1	9.997	
10,675.0	10,674.9	10,341.0	10,252.7	23.8	23.2	5.88	241.9	26.9	486.4	439.9	10.458	
10,700.0	10,699.8	10,350.0	10,257.1	23.9	23.2	5.33	249.8	26.8	506.7	460.4	10.937	
10,725.0	10,724.4	10,350.0	10,257.1	24.0	23.2	4.98	249.8	26.8	526.4	480.4	11.441	
10,750.0	10,748.8	10,363.1	10,263.2	24.0	23.3	4.53	261.4	26.6	545.5	499.9	11.967	
10,775.0	10,772.9	10,375.0	10,268.5	24.1	23.3	4.17	272.1	26.5	564.1	519.0	12.525	
10,800.0	10,796.6	10,375.0	10,268.5	24.1	23.3	3.95	272.1	26.5	582.0	537.6	13.121	
10,825.0	10,819.8	10,386.8	10,273.4	24.2	23.4	3.68	282.8	26.3	599.2	555.7	13.755	
10,850.0	10,842.6	10,400.0	10,278.6	24.2	23.4	3.43	294.9	26.2	615.9	573.3	14.437	
10,875.0	10,864.7	10,400.0	10,278.6	24.3	23.4	3.29	294.9	26.2	631.9	590.2	15.176	
10,900.0	10,886.2	10,411.8	10,283.0	24.3	23.5	3.10	305.9	26.0	647.2	606.7	15.975	
10,925.0	10,907.0	10,425.0	10,287.6	24.4	23.5	2.94	318.3	25.9	661.8	622.5	16.848	
10,950.0	10,927.1	10,425.0	10,287.6	24.4	23.5	2.84	318.3	25.9	675.7	637.8	17.813	
10,975.0	10,946.4	10,437.8	10,291.7	24.5	23.6	2.71	330.3	25.7	688.9	652.4	18.872	
11,000.0	10,964.8	10,450.0	10,295.3	24.6	23.6	2.59	342.0	25.6	701.4	666.4	20.050	
11,025.0	10,982.3	10,450.0	10,295.3	24.6	23.6	2.52	342.0	25.6	713.1	679.8	21.379	
11,050.0	10,998.8	10,464.5	10,299.2	24.7	23.7	2.43	355.9	25.4	724.1	692.4	22.863	
11,075.0	11,014.3	10,475.0	10,301.8	24.8	23.8	2.35	366.2	25.3	734.3	704.4	24.555	
11,100.0	11,028.8	10,475.0	10,301.8	24.8	23.8	2.30	366.2	25.3	743.8	715.8	26.513	
11,125.0	11,042.2	10,491.7	10,305.4	24.9	23.9	2.23	382.5	25.0	752.4	726.3	28.744	
11,150.0	11,054.5	10,500.0	10,307.0	25.0	23.9	2.18	390.6	24.9	760.3	736.1	31.369	

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



HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design											Offset Site Error: 0.0 usft	
Survey Program: 0-MWD default											Offset Well Error: 0.0 usft	
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
11,175.0	11,065.6	10,510.1	10,308.7	25.1	24.0	2.13	400.6	24.8	767.5	745.2	34.464	
11,200.0	11,075.5	10,525.0	10,310.9	25.2	24.0	2.08	415.3	24.6	773.8	753.5	38.135	
11,225.0	11,084.2	10,525.0	10,310.9	25.3	24.0	2.06	415.3	24.6	779.3	761.0	42.622	
11,250.0	11,091.7	10,538.0	10,312.4	25.4	24.1	2.03	428.2	24.4	784.0	767.7	47.992	
11,275.0	11,097.9	10,550.0	10,313.5	25.5	24.2	2.00	440.2	24.3	787.9	773.5	54.498	
11,300.0	11,102.9	10,550.0	10,313.5	25.6	24.2	1.99	440.2	24.3	791.1	778.4	62.438	
11,325.0	11,106.5	10,566.0	10,314.5	25.8	24.3	1.96	456.1	24.1	793.3	782.2	71.161	
11,350.0	11,108.9	10,575.0	10,314.8	25.9	24.3	1.95	465.1	24.0	794.8	784.8	79.960	
11,375.0	11,109.9	10,587.5	10,315.0	26.0	24.4	1.94	477.6	23.8	795.4	786.2	86.132	
11,379.1	11,110.0	10,587.5	10,315.0	26.0	24.4	1.94	477.6	23.8	795.5	786.3	86.782	
11,400.0	11,110.1	10,605.2	10,315.0	26.2	24.5	1.94	495.3	23.6	795.6	786.2	85.184	
11,500.0	11,110.8	10,705.2	10,315.0	26.8	25.2	1.89	595.3	22.3	796.3	786.0	77.213	
11,600.0	11,111.5	10,805.2	10,315.0	27.5	26.0	1.84	695.3	21.0	796.9	785.6	69.955	
11,700.0	11,112.2	10,905.2	10,315.0	28.4	26.9	1.80	795.3	19.7	797.6	785.1	63.549	
11,800.0	11,112.9	11,005.2	10,315.0	29.3	27.9	1.75	895.3	18.4	798.3	784.5	57.977	
11,900.0	11,113.6	11,105.2	10,315.0	30.3	28.9	1.70	995.2	17.1	799.0	784.0	53.152	
12,000.0	11,114.3	11,205.2	10,315.0	31.4	30.1	1.65	1,095.2	15.8	799.7	783.3	48.973	
12,100.0	11,115.0	11,305.2	10,315.0	32.6	31.3	1.61	1,195.2	14.5	800.4	782.7	45.339	
12,200.0	11,115.7	11,405.1	10,315.0	33.8	32.5	1.56	1,295.2	13.2	801.0	782.0	42.166	
12,300.0	11,116.4	11,505.1	10,315.0	35.0	33.8	1.52	1,395.2	11.9	801.7	781.4	39.380	
12,400.0	11,117.1	11,605.1	10,315.0	36.3	35.2	1.47	1,495.2	10.6	802.4	780.7	36.920	
12,500.0	11,117.8	11,705.1	10,315.0	37.7	36.6	1.42	1,595.2	9.3	803.1	780.0	34.736	
12,600.0	11,118.5	11,805.1	10,315.0	39.1	38.0	1.38	1,695.2	8.0	803.8	779.3	32.787	
12,700.0	11,119.2	11,905.1	10,315.0	40.5	39.5	1.33	1,795.1	6.7	804.5	778.5	31.038	
12,800.0	11,119.9	12,005.1	10,315.0	42.0	41.0	1.28	1,895.1	5.4	805.1	777.8	29.463	
12,900.0	11,120.6	12,105.1	10,315.0	43.5	42.5	1.24	1,995.1	4.1	805.8	777.1	28.036	
13,000.0	11,121.3	12,205.1	10,315.0	45.0	44.1	1.19	2,095.1	2.8	806.5	776.4	26.739	
13,100.0	11,122.0	12,305.1	10,315.0	46.5	45.6	1.15	2,195.1	1.5	807.2	775.6	25.555	
13,200.0	11,122.7	12,405.1	10,315.0	48.0	47.2	1.10	2,295.1	0.2	807.9	774.9	24.471	
13,300.0	11,123.4	12,505.1	10,315.0	49.6	48.8	1.06	2,395.1	-1.1	808.6	774.1	23.475	
13,400.0	11,124.1	12,605.1	10,315.0	51.2	50.4	1.01	2,495.1	-2.4	809.3	773.4	22.556	
13,500.0	11,124.8	12,705.1	10,315.0	52.8	52.1	0.96	2,595.0	-3.7	810.0	772.7	21.707	
13,600.0	11,125.5	12,805.1	10,315.0	54.4	53.7	0.92	2,695.0	-5.0	810.7	771.9	20.919	
13,700.0	11,126.2	12,905.1	10,315.0	56.1	55.4	0.87	2,795.0	-6.3	811.3	771.2	20.187	
13,800.0	11,126.9	13,005.1	10,315.0	57.7	57.0	0.83	2,895.0	-7.6	812.0	770.4	19.504	
13,900.0	11,127.6	13,105.1	10,315.0	59.3	58.7	0.78	2,995.0	-8.9	812.7	769.7	18.867	
14,000.0	11,128.3	13,205.1	10,315.0	61.0	60.4	0.74	3,095.0	-10.1	813.4	768.9	18.270	
14,100.0	11,129.0	13,305.1	10,315.0	62.7	62.1	0.69	3,195.0	-11.4	814.1	768.1	17.711	
14,200.0	11,129.7	13,405.1	10,315.0	64.4	63.8	0.65	3,294.9	-12.7	814.8	767.4	17.185	
14,300.0	11,130.4	13,505.1	10,315.0	66.0	65.5	0.60	3,394.9	-14.0	815.5	766.6	16.690	
14,400.0	11,131.1	13,605.1	10,315.0	67.7	67.2	0.56	3,494.9	-15.3	816.2	765.9	16.223	
14,500.0	11,131.9	13,705.0	10,315.0	69.4	68.9	0.51	3,594.9	-16.6	816.9	765.1	15.782	
14,600.0	11,132.6	13,805.0	10,315.0	71.1	70.6	0.47	3,694.9	-17.9	817.6	764.4	15.364	
14,700.0	11,133.3	13,905.0	10,315.0	72.9	72.4	0.42	3,794.9	-19.2	818.3	763.6	14.969	
14,800.0	11,134.0	14,005.0	10,315.0	74.6	74.1	0.38	3,894.9	-20.5	819.0	762.9	14.594	
14,900.0	11,134.7	14,105.0	10,315.0	76.3	75.8	0.34	3,994.9	-21.8	819.7	762.1	14.237	
15,000.0	11,135.4	14,205.0	10,315.0	78.0	77.6	0.29	4,094.8	-23.1	820.4	761.3	13.898	
15,100.0	11,136.1	14,305.0	10,315.0	79.8	79.3	0.25	4,194.8	-24.4	821.1	760.6	13.576	
15,200.0	11,136.8	14,405.0	10,315.0	81.5	81.1	0.20	4,294.8	-25.7	821.8	759.8	13.268	
15,300.0	11,137.5	14,505.0	10,315.0	83.2	82.8	0.16	4,394.8	-27.0	822.5	759.1	12.974	
15,400.0	11,138.2	14,605.0	10,315.0	85.0	84.6	0.11	4,494.8	-28.3	823.2	758.3	12.693	
15,500.0	11,138.9	14,705.0	10,315.0	86.7	86.3	0.07	4,594.8	-29.6	823.9	757.6	12.425	

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



HP
Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design:	Sec 28, T22S, R34E - Smalls Federal 7H - Wellbore #1 - Design #1										Offset Site Error:	0.0 usft
Survey Program:	0-MWD default										Offset Well Error:	0.0 usft
Reference	Vertical	Offset	Vertical	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)		
15,600.0	11,139.6	14,805.0	10,315.0	88.5	88.1	0.03	4,694.8	-30.9	824.6	756.8	12.168	
15,661.4	11,140.0	14,866.4	10,315.0	89.5	89.2	0.00	4,756.2	-31.7	825.0	756.3	12.015	
15,661.9	11,140.0	14,866.4	10,315.0	89.6	89.2	0.00	4,756.2	-31.7	825.0	756.3	12.015	



HP Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3441.0usft (Ensign #772)

Offset Depths are relative to Offset Datum

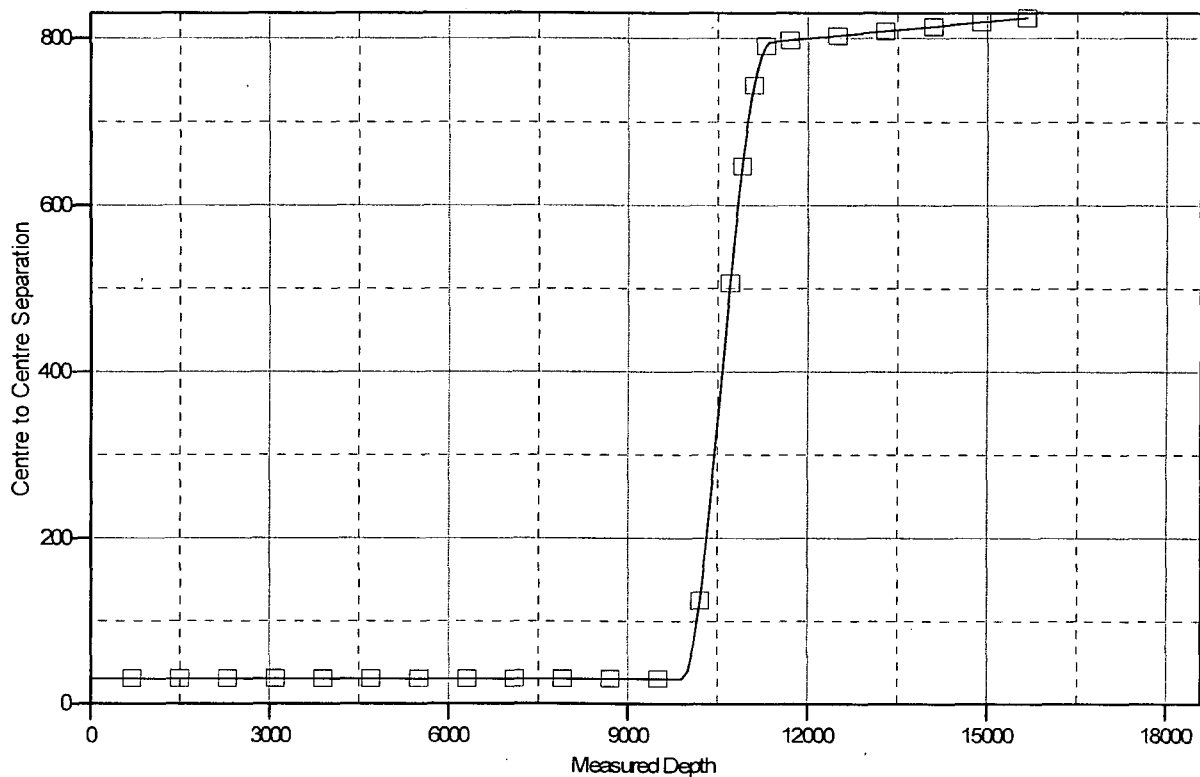
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Smalls Federal 3H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.46°

Ladder Plot



LEGEND

Smalls Federal 3H, Wellbore #1, Design #1 V0



HP Anticollision Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Smalls Federal 3H
Project:	Lea County, NM	TVD Reference:	Well @ 3441.0usft (Ensign #772)
Reference Site:	Sec 28, T22S, R34E	MD Reference:	Well @ 3441.0usft (Ensign #772)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Smalls Federal 3H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Compass
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 3441.0usft (Ensign #772)

Offset Depths are relative to Offset Datum

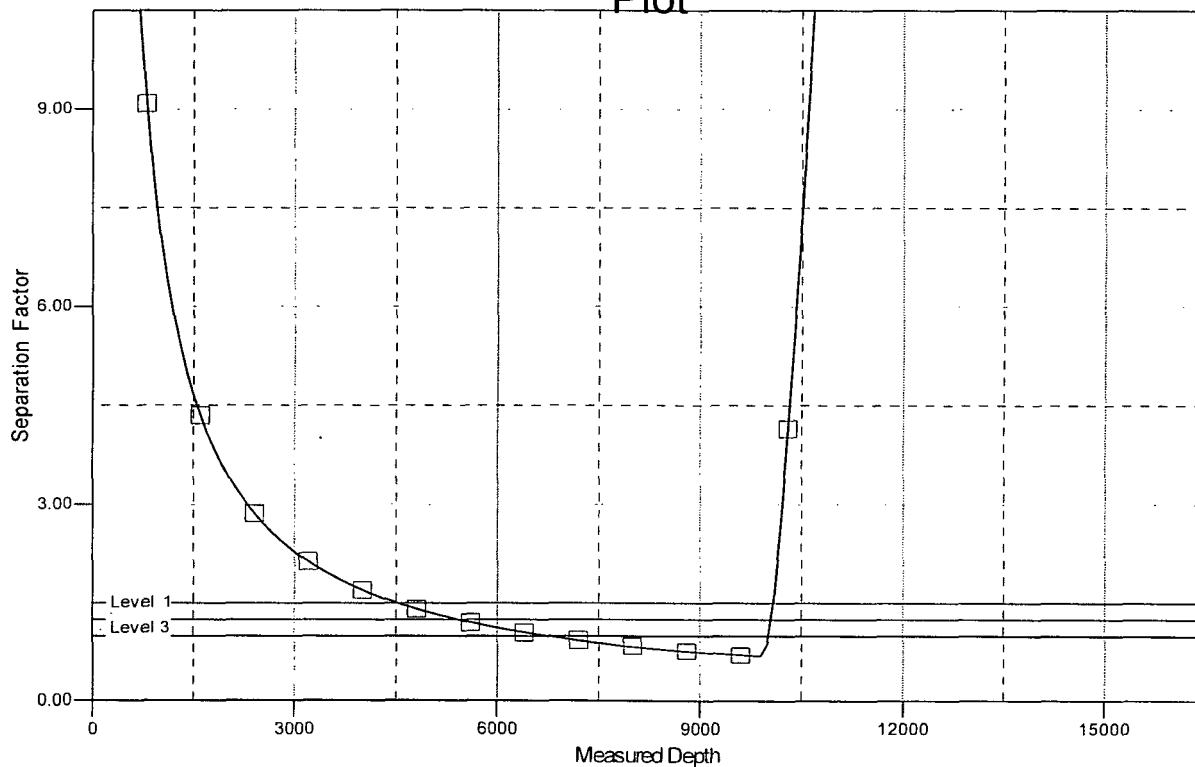
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Smalls Federal 3H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

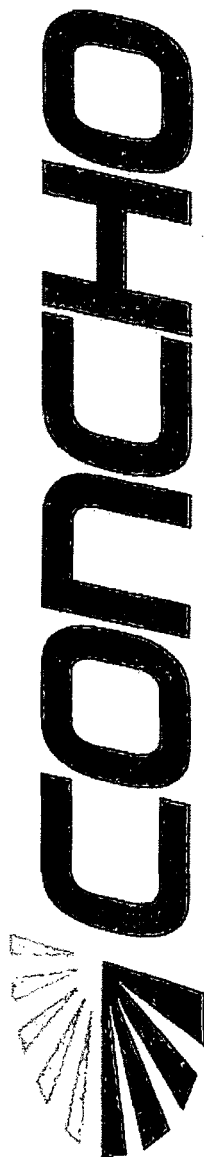
Grid Convergence at Surface is: 0.46°

Separation Factor Plot

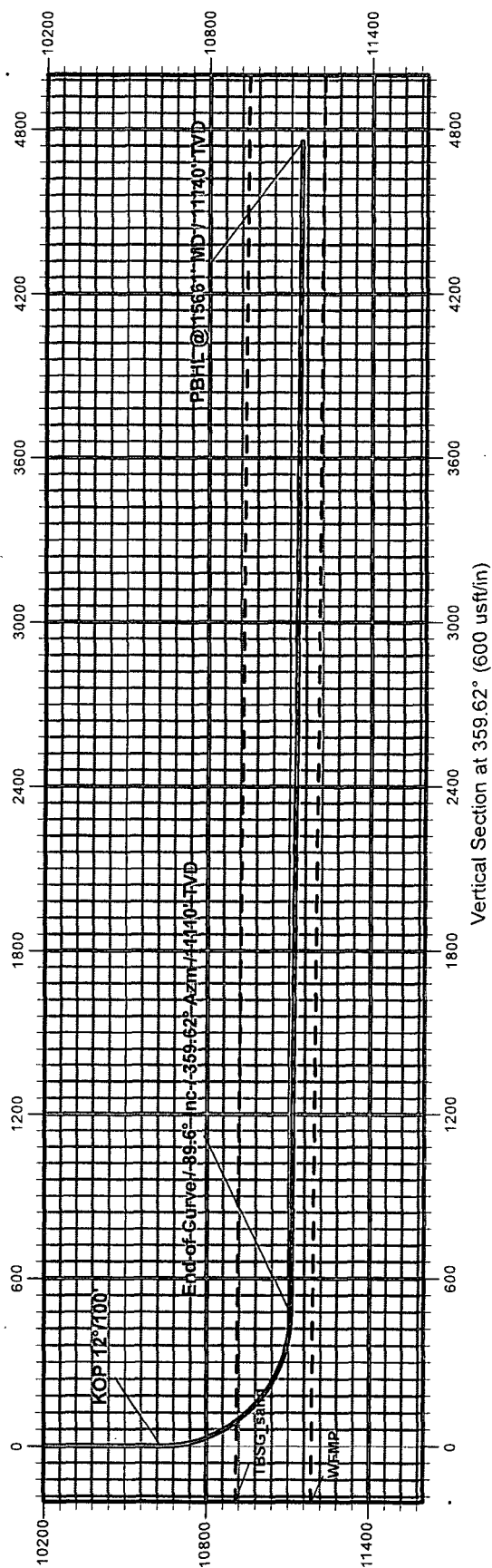


LEGEND

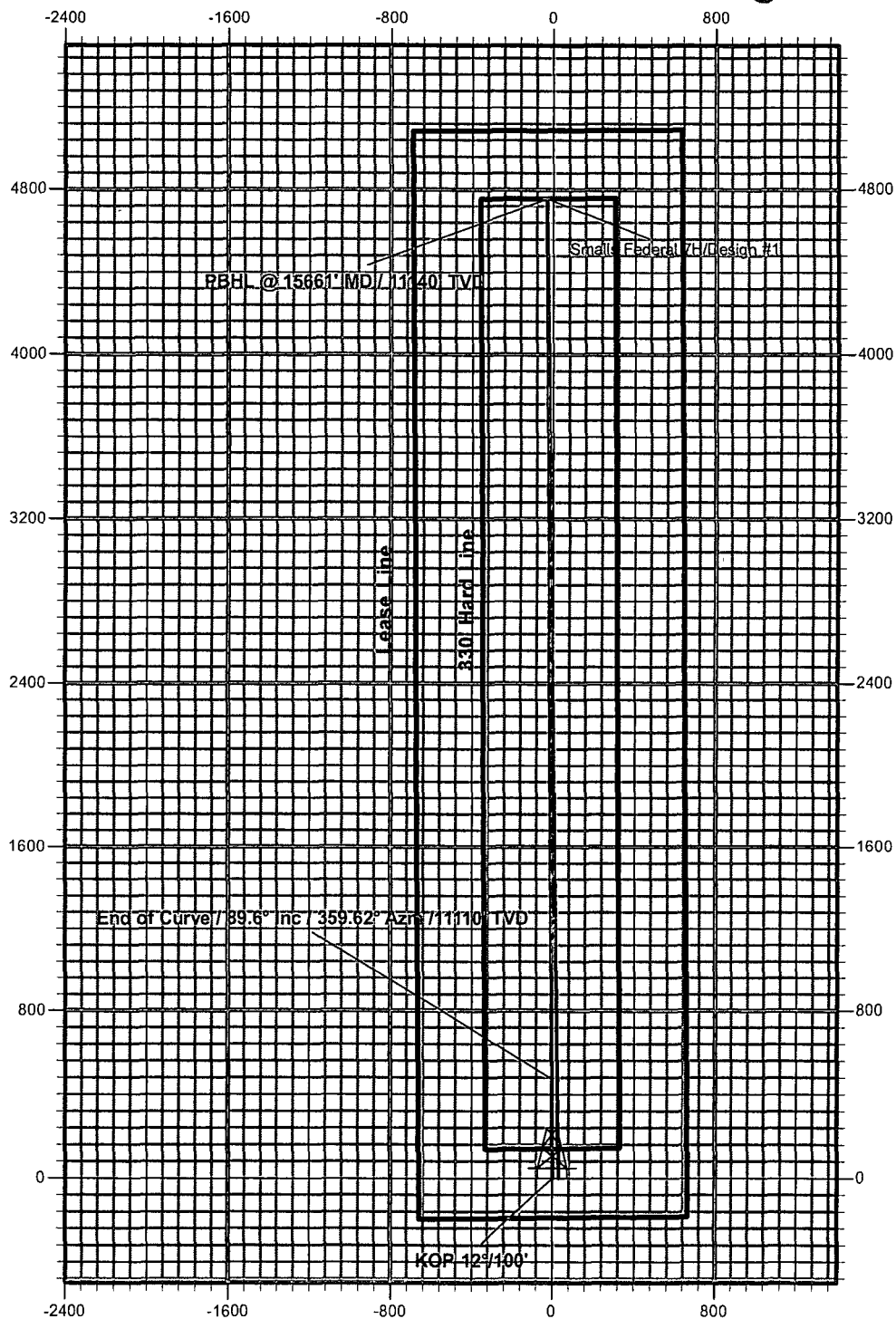
Smalls Federal 7H, Wellbore #1, Design #1 V0



Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 3H
Design #1



Lea County, NM
Sec 28, T22S, R34E
Smalls Federal 3H
Design #1





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

No records found.

PLSS Search:

Section(s): 28

Township: 22S

Range: 34E



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	County	Q Q Q						X	Y	Depth Well	Depth Water	Water Column	
	Sub-Code		basin	64	16	4	Sec	Tws						Rng
<u>CP 00380</u>		LE	4	2	11	22S	34E	647245	3586739*		45	30	15	
<u>CP 00596</u>		LE	4	2	11	22S	34E	647245	3586739*		50			
<u>CP 00597</u>		LE	2	2	08	22S	34E	642410	3587074*		35			
<u>CP 00598</u>		LE	4	1	23	22S	34E	646480	3583511*		70			
<u>CP 00599</u>		LE	1	1	12	22S	34E	647642	3587147*		62	50	12	
<u>CP 00604</u>		LE	1	4	4	01	22S	34E	648743	3587666*		135		
<u>CP 00704</u>		LE	2	4	22	22S	34E	645681	3583097*		600			
<u>CP 00744</u>		LE	1	2	09	22S	34E	643618	3587091*		460			
<u>CP 00751</u>		LE	4	2	11	22S	34E	647245	3586739*			45		
<u>CP 00865</u>		LE	4	1	3	20	22S	34E	641957	3583146		885	605	280
<u>CP 00933</u>		LE	1	1	1	12	22S	34E	647541	3587246*		60		
<u>CP 00934</u>		LE	2	1	2	01	22S	34E	648682	3588822		60	42	18
<u>CP 01362 POD1</u>		LE	3	4	4	18	22S	34E	640809	3584182		1032	613	419
<u>CP 01455 POD1</u>		LE	4	1	4	18	22S	34E	640574	3584515		1033	615	418

Average Depth to Water: **285 feet**

Minimum Depth: **30 feet**

Maximum Depth: **615 feet**

Record Count: 14

PLSS Search:

Township: 22S

Range: 34E

*UTM location was derived from PLSS - see Help

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