



COG Operating LLC

Eddy County, NM (NAN27 NME)

Bradley 8 Fee #4H

Bradley 8 Fee #4H

OH

Plan: Plan #1 8-3/4" Hole

SHL = 160' FSL & 1040' FEL

PP = 330' FSL & 1040' FEL

BHL = 330' FNL & 1040' FEL

Standard Planning Report

13 December, 2011



Scientific Drilling
Directional Drilling Operations



SDI
Planning Report



Database: EDM 5000 1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Bradley 8 Fee #4H
Well: Bradley 8 Fee #4H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference: Site Bradley 8 Fee #4H
TVD Reference: GL Elev @ 3370 00usft
MD Reference: GL Elev @ 3370 00usft
North Reference: Grd
Survey Calculation Method: Minimum Curvature

Project: Eddy County, NM (NAN27 NME)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site: Bradley 8 Fee #4H

Site Position: Northing: 606,800 00 usft Latitude: 32° 40' 5 437 N
From: Map Easting: 480,067 80 usft Longitude: 104° 23' 53 181 W
Position Uncertainty: 0 00 usft Slot Radius: 13-3/16 " Grid Convergence: -0.03 °

Well: Bradley 8 Fee #4H

Well Position: +N/-S 0 00 usft Northing: 606,800 00 usft Latitude: 32° 40' 5 437 N
+E/-W 0 00 usft Easting: 480,067 80 usft Longitude: 104° 23' 53 181 W
Position Uncertainty: 0 00 usft Wellhead Elevation: Ground Level: 3,370.00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/12/12	7.94	60 44	48,742

Design: Plan #1 8-3/4" Hole

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0 00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0 00	358 80

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 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,272 54	0 00	0 00	2,272 54	0 00	0 00	0 00	0 00	0 00	0 00	
3,022 54	90 00	358 80	2,750 00	477 36	-10 02	12 00	12 00	0 00	358 80	
7,390 34	90 00	358 80	2,750 00	4,844 20	-101 70	0 00	0 00	0 00	0 00	PBHL-Bradley 8 Fee 1



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Bradley 8 Fee #4H
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3370 00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3370 00usft
Site:	Bradley 8 Fee #4H	North Reference:	Grid
Well:	Bradley 8 Fee #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

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)
6,900 00	90 00	358 80	2,750 00	4,353 97	-91 41	4,354.93	0 00	0 00	0 00
7,000 00	90 00	358 80	2,750 00	4,453 95	-93 51	4,454.93	0 00	0 00	0 00
7,100 00	90 00	358 80	2,750 00	4,553 93	-95.61	4,554.93	0 00	0 00	0 00
7,200 00	90 00	358 80	2,750 00	4,653.90	-97 70	4,654.93	0 00	0 00	0 00
7,300 00	90 00	358 80	2,750 00	4,753.88	-99 80	4,754.93	0 00	0.00	0 00
7,390 34	90 00	358 80	2,750 00	4,844 20	-101 70	4,845 27	0.00	0 00	0 00
PBHL-Bradley 8 Fee #4H									

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									
PP=330' FSL Bradley 8 I	0 00	360 00	2,637 86	170.00	-3 57	606,970 01	480,064 23	32° 40' 7 119 N	104° 23' 53 224 W
- plan hits target center									
- Point									
PBHL-Bradley 8 Fee #4I	0 00	0 00	2,750 00	4,844 20	-101 70	611,644.20	479,966 10	32° 40' 53 373 N	104° 23' 54 406 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,272 54	2,272.54	0 00	0.00	KOP Start Build 12 00"/100'
3,022 54	2,750.00	322 72	-351 89	Land EOC hold 90 00°



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SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	22272.54	0.00	0.00	2272.54	0.00	0.00	0.00	0.00	0.00	
	33022.54	90.00	358.80	2750.00	477.36	-10.02	12.00	358.80	477.46	
	47390.34	90.00	358.80	2750.00	4844.20	-101.70	0.00	0.00	4845.27	PBHL-Bradley 8 Fee #4H

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PP=330' FSL Bradley 8 Fee #4H	2637.86	170.00	-3.57	606970.00	480064.23	32° 40' 7.119 N 04° 23' 53.224 W	Point	
PBHL-Bradley 8 Fee #4H	2750.00	4844.20	-101.70	611644.20	479966.10	32° 40' 53.373 N 04° 23' 54.406 W	Point	

WELL DETAILS: Bradley 8 Fee #4H

	Ground Level	3370.00
+N-S	Northing	606900.00
+E-W	Easting	480067.80
	Latitude	32° 40' 5.437 N 104° 23' 53 181 W

Bradley 8 Fee #4H

Created By: Julio Pina Date: 12-Dec-11

Checked: _____ Date: _____

Reviewed: _____ Date: _____

PROJECT DETAILS: Eddy County, NM (NAN27 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

