



COG Operating LLC

30-015-39406

Eddy County, NM (NAN27 NME)

Arabian 6 Fee #2H

Arabian 6 Fee #2H

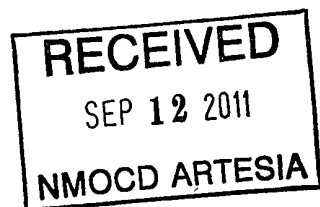
OH

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

SHL = 150' FSL & 1700' FWL

PP = 330' FSL & 1700' FWL

BHL = 330' FNL & 1700' FWL



Standard Planning Report

07 September, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling
Planning Report



Database:	EDM-Julio	Local Co-ordinate Reference:	Site Arabian 6 Fee #2H
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3373 00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3373 00usft
Site:	Arabian 6 Fee #2H	North Reference:	Grid
Well:	Arabian 6 Fee #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

Project	Eddy County, NM (NAN27 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	Arabian 6 Fee #2H		
Site Position:		Northing:	612,085 10 usft
From:	Map	Easting:	472,216 70 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 57 680 N
		Longitude:	104° 25' 25 082 W
		Grid Convergence:	-0 05 °

Well	Arabian 6 Fee #2H		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:
			3,373 00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2011/09/07	7 98
			Dip Angle
			(°)
			60 46
			Field Strength
			(nT)
			48,774

Design	Plan #1 8-3/4" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction
			(°)
			0 42

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
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	0 42	2,750 00	477 45	3 47	12 00	12 00	0 00	0 42	
7,341 20	90 00	0 42	2,750 00	4,796 00	34 90	0 00	0 00	0 00	0 00	PBHL-Arabian 6 Fee ;



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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)
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
KOP Start Build 12.00°/100'									
2,300 00	3 30	0 42	2,299 98	0 79	0 01	0 79	12 00	12 00	0 00
2,400 00	15 30	0 42	2,398 49	16 91	0 12	16 91	12 00	12 00	0 00
2,500 00	27 30	0 42	2,491 49	53 16	0 39	53 17	12 00	12 00	0 00
2,600 00	39 30	0 42	2,574 93	107 96	0 79	107 96	12 00	12 00	0 00
2,700 00	51 30	0 42	2,645 14	178 90	1 30	178 91	12 00	12 00	0 00
2,701 40	51 46	0 42	2,646 01	179 99	1 31	180 00	12 00	12 00	0 00
PP=330' FSL, Arabian 6 Fee #2H									
2,800 00	63 30	0 42	2,699 07	262 89	1 91	262 90	12 00	12 00	0 00
2,900 00	75 30	0 42	2,734 36	356 26	2 59	356 27	12 00	12 00	0 00
3,000 00	87 30	0 42	2,749 47	454 93	3 31	454 94	12 00	12 00	0 00
3,022 54	90 00	0 42	2,750 00	477 46	3 47	477 47	12 00	12 00	0 00
Land EOC hold 90.00°									
3,100 00	90 00	0 42	2,750 00	554 91	4 04	554 93	0 00	0 00	0 00
3,200 00	90 00	0 42	2,750 00	654 91	4 77	654 93	0 00	0 00	0 00
3,300 00	90 00	0 42	2,750 00	754 91	5 49	754 93	0 00	0 00	0 00
3,400 00	90 00	0 42	2,750 00	854 91	6 22	854 93	0 00	0 00	0 00
3,500 00	90 00	0 42	2,750 00	954 90	6 95	954 93	0 00	0 00	0 00
3,600 00	90 00	0 42	2,750 00	1,054 90	7 68	1,054 93	0 00	0 00	0 00
3,700 00	90 00	0 42	2,750 00	1,154 90	8 40	1,154 93	0 00	0 00	0 00
3,800 00	90 00	0 42	2,750 00	1,254 90	9 13	1,254 93	0 00	0 00	0 00
3,900 00	90 00	0 42	2,750 00	1,354 89	9 86	1,354 93	0 00	0 00	0 00
4,000 00	90 00	0 42	2,750 00	1,454 89	10 59	1,454 93	0 00	0 00	0 00
4,100 00	90 00	0 42	2,750 00	1,554 89	11 31	1,554 93	0 00	0 00	0 00
4,200 00	90 00	0 42	2,750 00	1,654 89	12 04	1,654 93	0 00	0 00	0 00
4,300 00	90 00	0 42	2,750 00	1,754 88	12 77	1,754 93	0 00	0 00	0 00
4,400 00	90 00	0 42	2,750 00	1,854 88	13 50	1,854 93	0 00	0 00	0 00
4,500 00	90 00	0 42	2,750 00	1,954 88	14 23	1,954 93	0 00	0 00	0 00
4,600 00	90 00	0 42	2,750 00	2,054 88	14 95	2,054 93	0 00	0 00	0 00
4,700 00	90 00	0 42	2,750 00	2,154 87	15 68	2,154 93	0 00	0 00	0 00
4,800 00	90 00	0 42	2,750 00	2,254 87	16 41	2,254 93	0 00	0 00	0 00
4,900 00	90 00	0 42	2,750 00	2,354 87	17 14	2,354 93	0 00	0 00	0 00
5,000 00	90 00	0 42	2,750 00	2,454 86	17 86	2,454 93	0 00	0 00	0 00
5,100 00	90 00	0 42	2,750 00	2,554 86	18 59	2,554 93	0 00	0 00	0 00
5,200 00	90 00	0 42	2,750 00	2,654 86	19 32	2,654 93	0 00	0 00	0 00
5,300 00	90 00	0 42	2,750 00	2,754 86	20 05	2,754 93	0 00	0 00	0 00
5,400 00	90 00	0 42	2,750 00	2,854 85	20 77	2,854 93	0 00	0 00	0 00
5,500 00	90 00	0 42	2,750 00	2,954 85	21 50	2,954 93	0 00	0 00	0 00
5,600 00	90 00	0 42	2,750 00	3,054 85	22 23	3,054 93	0 00	0 00	0 00
5,700 00	90 00	0 42	2,750 00	3,154 85	22 96	3,154 93	0 00	0 00	0 00
5,800 00	90 00	0 42	2,750 00	3,254 84	23 69	3,254 93	0 00	0 00	0 00
5,900 00	90 00	0 42	2,750 00	3,354 84	24 41	3,354 93	0 00	0 00	0 00
6,000 00	90 00	0 42	2,750 00	3,454 84	25 14	3,454 93	0 00	0 00	0 00
6,100 00	90 00	0 42	2,750 00	3,554 84	25 87	3,554 93	0 00	0 00	0 00
6,200 00	90 00	0 42	2,750 00	3,654 83	26 60	3,654 93	0 00	0 00	0 00
6,300 00	90 00	0 42	2,750 00	3,754 83	27 32	3,754 93	0 00	0 00	0 00
6,400 00	90 00	0 42	2,750 00	3,854 83	28 05	3,854 93	0 00	0 00	0 00
6,500 00	90 00	0 42	2,750 00	3,954 83	28 78	3,954 93	0 00	0 00	0 00
6,600 00	90 00	0 42	2,750 00	4,054 82	29 51	4,054 93	0 00	0 00	0 00
6,700 00	90 00	0 42	2,750 00	4,154 82	30 23	4,154 93	0 00	0 00	0 00
6,800 00	90 00	0 42	2,750 00	4,254 82	30 96	4,254 93	0 00	0 00	0 00



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Planning Report



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Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3373 00usft
Site:	Arabian 6 Fee #2H	North Reference:	Grid
Well:	Arabian 6 Fee #2H	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	0 42	2,750 00	4,354 81	31 69	4,354.93	0 00	0 00	0 00
7,000 00	90 00	0 42	2,750 00	4,454 81	32 42	4,454.93	0 00	0 00	0 00
7,100 00	90 00	0 42	2,750 00	4,554 81	33 14	4,554.93	0 00	0 00	0 00
7,200 00	90 00	0 42	2,750 00	4,654 81	33 87	4,654.93	0 00	0 00	0 00
7,300 00	90 00	0 42	2,750 00	4,754 80	34 60	4,754.93	0 00	0 00	0 00
7,341 20	90 00	0 42	2,750 00	4,796 00	34 90	4,796.13	0 00	0 00	0 00
PBHL-Arabian 6 Fee #2H									

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, Arabian 6	0 00	360 00	2,646 02	180 00	1 31	612,265 10	472,218 01	32° 40' 59 461 N	104° 25' 25 068 W
- plan hits target center									
- Point									
PBHL-Arabian 6 Fee #2H	0 00	360 00	2,750 00	4,796 00	34 90	616,881 10	472,251 60	32° 41' 45 140 N	104° 25' 24 721 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	477 46	3 47	Land EOC hold 90 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Arabian 6 Fee #2H
Wellbore: OH
Design: Plan #1 8-3/4" Hole



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0 00	0 00	0.00	0 00	0 00	0 00	0 00	0.00	0.00	
2	2272.54	0 00	0.00	2272.54	0.00	0 00	0 00	0.00	0.00	
3	3022.54	90 00	0.42	2750 00	477.45	3 47	12 00	0.42	477.46	
4	7341 20	90 00	0.42	2750 00	4796.00	34 90	0 00	0 00	4796.13	PBHL-Arabian 6 Fee #2H

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PP=330' FSL, Arabian 6 Fee #2H	2646.02	180.00	1 31	612265.10	472218 01	32°40' 59 461 N104°25' 25 068 W	Poin t	
PBHL-Arabian 6 Fee #2H	2750.00	4796.00	34 90	616881.10	472251 60	32°41' 45 140 N104°25' 24 721 W	Point	

WELL DETAILS Arabian 6 Fee #2H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	612085 10	472216 70	32°40' 57 680 N 104°25' 25.082 W		

Arabian 6 Fee #2H

Created By: Julio Pina Date: 07-Sep-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

AZIMUTH CORRECTIONS
ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 8.03°
To convert a True Direction to a Grid Direction, Add 0.05°

