



30-015-39135

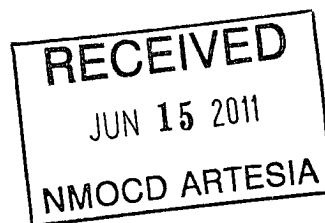
COG Operating LLC

Eddy County, NM (NAN27 NME)

Continental State #6

Continental State #6

OH



Plan: Plan #1 7-7/8" Hole

SHL = 797' FNL & 799' FWL

BHL = 980' FNL & 980' FWL

Top of Paddock = 980' FNL & 980' FWL @ 4000' TVD

Standard Planning Report

13 June, 2011





Scientific Drilling
Planning Report



Database:	EDM-Julio	Local Co-ordinate Reference:	Site Continental State #6
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3563 00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3563 00usft
Site:	Continental State #6	North Reference:	Grid
Well:	Continental State #6	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" 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	Continental State #6		
Site Position:	Map	Northings:	669,243 30 usft
From:		Easting:	581,443 60 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 22 396 N
		Longitude:	104° 4' 5 388 W
		Grid Convergence:	0 14 °

Well	Continental State #6		
Well Position	+N/-S	0 00 usft	Northings:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:
			3,563 00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2011/06/13	7 86
			Dip Angle
			(°)
			60 67
			Field Strength
			(nT)
			48,931

Design	Plan #1 7-7/8" 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
			(°)
			135 24

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	
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,436 64	5 73	135 24	1,436 17	-10 17	10 09	2 00	2 00	0 00	135 24	
3,725 76	5 73	135 24	3,713 83	-172 53	171 11	0 00	0 00	0 00	0 00	
4,012 41	0 00	0 00	4,000 00	-182 70	181 20	2 00	-2 00	0 00	180 00	TG1-Continental #6
5,812 41	0 00	0 00	5,800 00	-182 70	181 20	0 00	0 00	0 00	0 00	PBHL-Continental #6



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Wellbore:	OH		
Design:	Plan #1 7-7/8" 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
East HL-Continental #6 - South HL-Continental #6									
1,050 00	0 00	0 00	1,050 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
1,200 00	1 00	135 24	1,200 00	-0 31	0 31	0 44	2 00	2 00	0 00
1,300 00	3 00	135 24	1,299 93	-2 79	2 76	3 93	2 00	2 00	0 00
1,400 00	5 00	135 24	1,399 68	-7 74	7 68	10 90	2 00	2 00	0 00
1,436 64	5 73	135 24	1,436 16	-10 17	10 09	14 33	2 00	2 00	0 00
EOC hold 5.73°									
1,500 00	5 73	135 24	1,499 21	-14 67	14 55	20 66	0 00	0 00	0 00
1,600 00	5 73	135 24	1,598 70	-21 76	21 58	30 65	0 00	0 00	0 00
1,700 00	5 73	135 24	1,698 20	-28 85	28 61	40 64	0 00	0 00	0 00
1,800 00	5 73	135 24	1,797 70	-35 94	35 65	50 62	0 00	0 00	0 00
1,900 00	5 73	135 24	1,897 20	-43 04	42 68	60 61	0 00	0 00	0 00
2,000 00	5 73	135 24	1,996 70	-50 13	49 72	70 60	0 00	0 00	0 00
2,100 00	5 73	135 24	2,096 20	-57 22	56 75	80 59	0 00	0 00	0 00
2,200 00	5 73	135 24	2,195 70	-64 31	63 79	90 58	0 00	0 00	0 00
2,300 00	5 73	135 24	2,295 20	-71 41	70 82	100 57	0 00	0 00	0 00
2,400 00	5 73	135 24	2,394 70	-78 50	77 85	110 56	0 00	0 00	0 00
2,500 00	5 73	135 24	2,494 20	-85 59	84 89	120 55	0 00	0 00	0 00
2,600 00	5 73	135 24	2,593 70	-92 68	91 92	130 54	0 00	0 00	0 00
2,700 00	5 73	135 24	2,693 20	-99 78	98 96	140 53	0 00	0 00	0 00
2,800 00	5 73	135 24	2,792 70	-106 87	105 99	150 51	0 00	0 00	0 00
2,900 00	5 73	135 24	2,892 20	-113 96	113 02	160 50	0 00	0 00	0 00
3,000 00	5 73	135 24	2,991 70	-121 05	120 06	170 49	0 00	0 00	0 00
3,100 00	5 73	135 24	3,091 20	-128 15	127 09	180 48	0 00	0 00	0 00
3,200 00	5 73	135 24	3,190 70	-135 24	134 13	190 47	0 00	0 00	0 00
3,300 00	5 73	135 24	3,290 20	-142 33	141 16	200 46	0 00	0 00	0 00
3,400 00	5 73	135 24	3,389 70	-149 42	148 20	210 45	0 00	0 00	0 00
3,500 00	5 73	135 24	3,489 20	-156 51	155 23	220 44	0 00	0 00	0 00
3,600 00	5 73	135 24	3,588 70	-163 61	162 26	230 43	0 00	0 00	0 00
3,700 00	5 73	135 24	3,688 20	-170 70	169 30	240 42	0 00	0 00	0 00
3,725 73	5 73	135 24	3,713 80	-172 52	171 11	242 99	0 00	0 00	0 00
Start Drop 2.00°/100'									
3,725 76	5 73	135 24	3,713 83	-172 53	171 11	242 99	0 00	0 00	0 00
3,800 00	4 25	135 24	3,787 79	-177 11	175 66	249 45	2 00	-2 00	0 00
3,900 00	2 25	135 24	3,887 62	-181 13	179 65	255 11	2 00	-2 00	0 00
4,000 00	0 25	135 24	3,987 59	-182 68	181 18	257 29	2 00	-2 00	0 00
4,012 41	0 00	135 24	4,000 00	-182 70	181 20	257 32	2 00	-2 00	0 00
EOC hold 0.00° - TG1-Continental #6									
5,812 41	0 00	0 00	5,800 00	-182 70	181 20	257 32	0 00	0 00	0 00
PBHL-Continental #6									



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Planning Report



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Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3563 00usft
Site:	Continental State #6	North Reference:	Grid
Well:	Continental State #6	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 7-7/8" Hole		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
East HL-Continental #6 - plan misses target center by 271 46usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H100 00 D0 00)	0 00	0 00	0 00	-192 70	191 20	669,050 60	581,634 80	32° 50' 20 485 N	104° 4' 3 153 W
South HL-Continental #6 - plan misses target center by 271 46usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W100 00 H0 00 D0 00)	0 00	0 00	0 00	-192 70	191 20	669,050 60	581,634 80	32° 50' 20 485 N	104° 4' 3 153 W
TG1-Continental #6 - plan hits target center - Point	0 00	0 00	4,000 00	-182 70	181 20	669,060 60	581,624 80	32° 50' 20 584 N	104° 4' 3 270 W
PBHL-Continental #6 - plan hits target center - Circle (radius 10 00)	0 00	0 01	5,800 00	-182 70	181 20	669,060 60	581,624 80	32° 50' 20 584 N	104° 4' 3 270 W

Casing Points

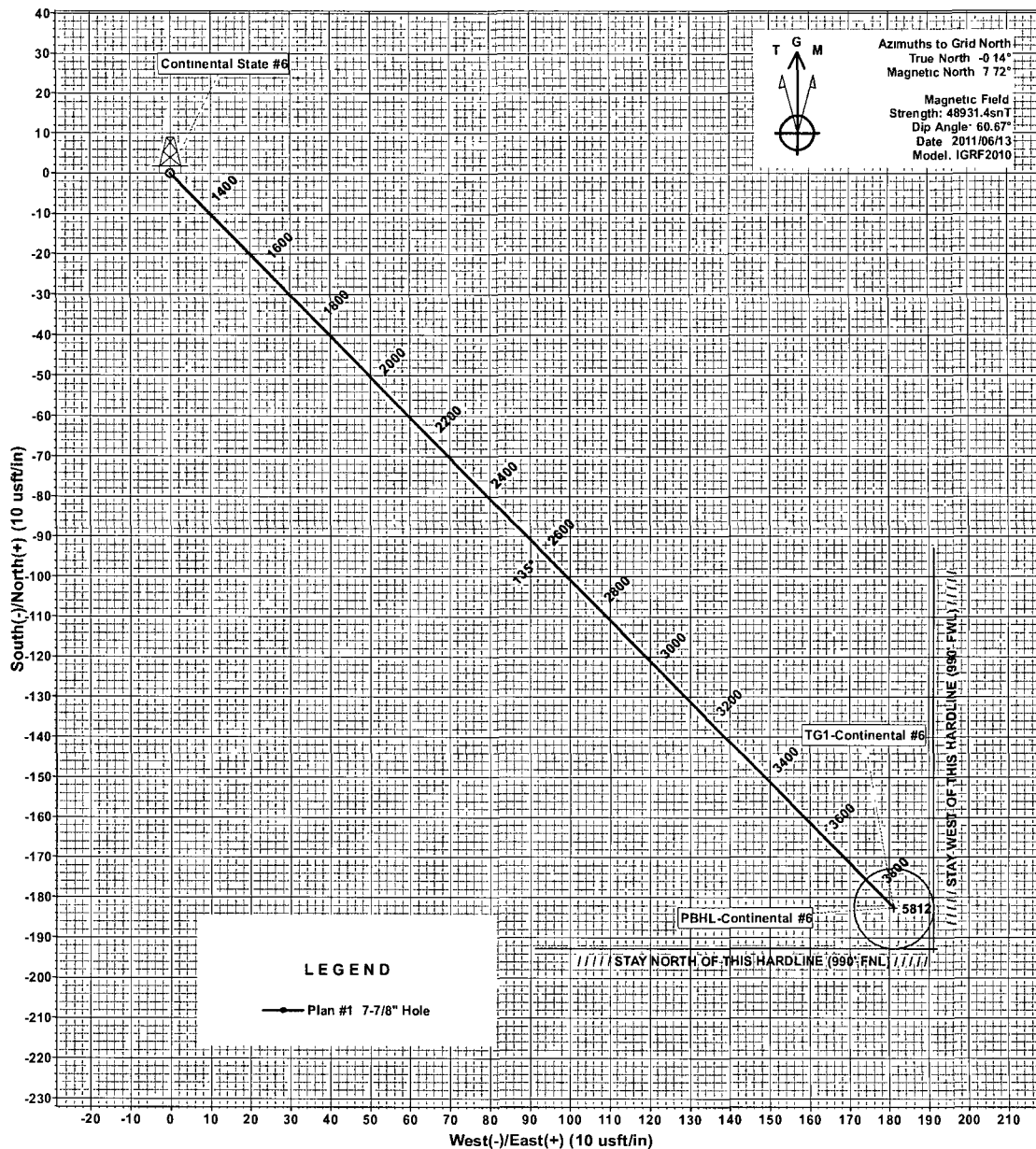
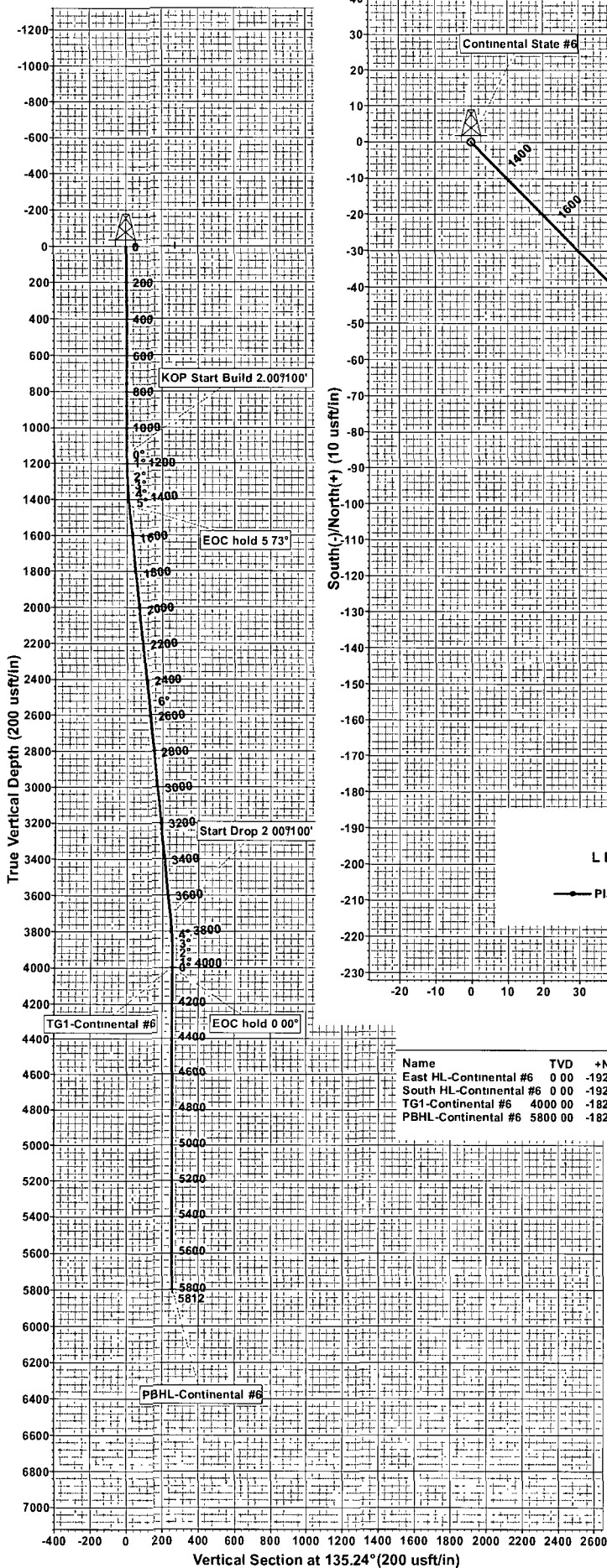
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050 00	1,050 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0 00	KOP Start Build 2 00°/100'
1,436 64	1,436 16	-10 17	10 09	EOC hold 5 73°
3,725 73	3,713 80	-172 52	171 11	Start Drop 2 00°/100'
4,012 41	4,000 00	-182 70	181 20	EOC hold 0 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Continental State #6
Wellbore: OH
Design: Plan #1 7-7/8" Hole



Azimuths to Grid North
True North -0 14°
Magnetic North 7 72°
Magnetic Field
Strength: 48931.45nT
Dip Angle: 60.67°
Date: 2011/06/13
Model: IGRF2010

LEGEND

Plan #1 7-7/8" Hole

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-Continental #6	0.00	-192.70	191.20	669050.60	581634.80	32°50'20.485 N	104°4'3.153 W	Rectangle (Sid es. L100.00 W0.00)
South HL-Continental #6	0.00	-192.70	191.20	669050.60	581634.80	32°50'20.485 N	104°4'3.153 W	Rectangle (Si des. L0.00 W100.00)
TG1-Continental #6	4000.00	-182.70	181.20	669060.60	581624.80	32°50'20.584 N	104°4'3.270 W	Point
PBHL-Continental #6	5800.00	-182.70	181.20	669060.60	581624.80	32°50'20.584 N	104°4'3.270 W	Circle (Radius : 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	
3	1436.64	5.73	135.24	1436.17	-10.17	10.09	2.00	135.24	14.33	
4	3725.76	5.73	135.24	3713.83	-172.53	171.11	0.00	0.00	242.99	
5	5402.41	0.00	0.00	4000.00	-182.70	181.20	2.00	180.00	257.32	TG1-Continental #6
6	5812.41	0.00	0.00	5800.00	-182.70	181.20	0.00	0.00	257.32	PBHL-Continental #6

WELL DETAILS. Continental State #6

+N/-S	+E/-W	Ground Level	3563.00
0.00	0.00	Northing	669243.30
		Easting	581443.60
		Latitude	32°50'22.396 N
		Longitude	104°4'5.388 W

PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan. Plan #1 7-7/8" Hole (Continental State #6/OH)

Geodetic System: US State Plane 1927 (Exact solution)	Created By: Julio Pina	Date: 13-Jun-11
Datum: NAD 1927 (NADCON CONUS)		
Ellipsoid: Clarke 1866	Checked: _____	Date: _____
Zone: New Mexico East 3001	Reviewed: _____	Date: _____
System Datum: Mean Sea Level	Approved: _____	Date: _____