



COG Operating LLC

Eddy County, NM (NAN27 NME)

GJ West Coop Unit #306

GJ #306

OH

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

SHL = 1345' FNL & 1550' FEL

BHL = 1650' FNL & 1330' FEL

Top of Paddock = 1650' FNL & 1330' FEL @ 3850' TVD

Standard Planning Report

09 April, 2010



Scientific Drilling
Directional Drilling Operations

mm



Scientific Drilling
Planning Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site GJ West Coop Unit #306
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3584 00ft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3584 00ft
Site:	GJ West Coop Unit #306	North Reference:	Grid
Well:	GJ #306	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	GJ West Coop Unit #306		
Site Position:		Northing:	663,402 50 ft
From:	Map	Easting:	579,113.90 ft
Position Uncertainty:	0 00 ft	Slot Radius:	0 "
		Latitude:	32° 49' 24 657 N
		Longitude:	104° 4' 32 862 W
		Grid Convergence:	0.14 °

Well	GJ #306		
Well Position	+N/-S	0 00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0 00 ft	Wellhead Elevation:	Ground Level:
			3,584 00 ft

Wellbore	OH		
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Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	2010/04/09	(°)	(°)	(nT)
			7.99	60 70	49,070

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
	(ft)	(ft)	(ft)
	0 00	0 00	0 00
			143 93

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,000 00	0 00	0 00	1,000 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,444 12	8 88	143 93	1,442 35	-27 77	20 23	2 00	2 00	0 00	143 93	
3,433 29	8 88	143 93	3,407 65	-276.03	201 07	0 00	0 00	0.00	0 00	
3,877 41	0 00	0 00	3,850 00	-303 80	221 30	2 00	-2 00	0 00	180 00	TG1-GJ #306
5,627 41	0 00	0 00	5,600 00	-303 80	221 30	0 00	0 00	0.00	0 00	PBHL-GJ #306



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Wellbore:	OH		
Design:	Plan #1 - 7-7-/8" Hole		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
900 00	0 00	0 00	900 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,000 00	0 00	0 00	1,000 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
1,100 00	2 00	143 93	1,099 98	-1 41	1 03	1 75	2 00	2 00	0 00
1,200 00	4 00	143 93	1,199 84	-5 64	4 11	6 98	2 00	2 00	0 00
1,300 00	6 00	143 93	1,299 45	-12 68	9 24	15 69	2 00	2 00	0 00
1,400 00	8 00	143 93	1,398 70	-22 53	16 42	27 88	2 00	2 00	0 00
1,444 12	8 88	143 93	1,442 35	-27 77	20 23	34 36	2 00	2 00	0 00
EOC hold 8.88°									
1,500 00	8 88	143 93	1,497 55	-34 74	25 31	42 98	0 00	0 00	0 00
1,600 00	8 88	143 93	1,596 35	-47 22	34 40	58 43	0 00	0 00	0 00
1,700 00	8 88	143 93	1,695 15	-59 71	43 49	73 87	0 00	0 00	0 00
1,800 00	8 88	143 93	1,793 96	-72 19	52 58	89 31	0 00	0 00	0 00
1,900 00	8 88	143 93	1,892 76	-84 67	61 67	104 75	0 00	0 00	0 00
2,000 00	8 88	143 93	1,991 56	-97 15	70 77	120 19	0 00	0 00	0 00
2,100 00	8 88	143 93	2,090 36	-109 63	79 86	135 63	0 00	0 00	0 00
2,200 00	8 88	143 93	2,189 16	-122 11	88 95	151 07	0 00	0 00	0 00
2,300 00	8 88	143 93	2,287 96	-134 59	98 04	166 51	0 00	0 00	0 00
2,400 00	8 88	143 93	2,386 76	-147 07	107 13	181 95	0 00	0 00	0 00
2,500 00	8 88	143 93	2,485 56	-159 55	116 22	197 39	0 00	0 00	0 00
2,600 00	8 88	143 93	2,584 36	-172 03	125 31	212 83	0 00	0 00	0 00
2,700 00	8 88	143 93	2,683 16	-184 51	134 41	228 27	0 00	0 00	0 00
2,800 00	8 88	143 93	2,781 96	-196 99	143 50	243 72	0 00	0 00	0 00
2,900 00	8 88	143 93	2,880 76	-209 47	152 59	259 16	0 00	0 00	0 00
3,000 00	8 88	143 93	2,979 56	-221 95	161 68	274 60	0 00	0 00	0 00
3,100 00	8 88	143 93	3,078 36	-234 43	170 77	290 04	0 00	0 00	0 00
3,200 00	8 88	143 93	3,177 17	-246 91	179 86	305 48	0 00	0 00	0 00
3,300 00	8 88	143 93	3,275 97	-259 39	188 95	320 92	0 00	0 00	0 00
3,400 00	8 88	143 93	3,374 77	-271 88	198 04	336 36	0 00	0 00	0 00
3,433 29	8 88	143 93	3,407 65	-276 03	201 07	341 50	0 00	0 00	0 00
Start Drop 2.00°/100'									
3,500 00	7 55	143 93	3,473 68	-283 73	206 68	351 03	2 00	-2 00	0 00
3,600 00	5 55	143 93	3,573 02	-292 95	213 40	362 44	2 00	-2 00	0 00
3,700 00	3 55	143 93	3,672 70	-299 36	218 07	370 37	2 00	-2 00	0 00
3,800 00	1 55	143 93	3,772 60	-302 95	220 68	374 81	2 00	-2 00	0 00
3,877 41	0 00	0 00	3,850 00	-303 80	221 30	375 86	2 00	-2 00	0 00
EOC hold 0.00° - TG1-GJ #306									
5,627 41	0 00	0 00	5,600 00	-303 80	221 30	375 86	0 00	0 00	0 00
PBHL-GJ #306									



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Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
TG1-GJ #306	0 00	0 00	3,850 00	-303 80	221 30	663,098 70	579,335 20	32° 49' 21 645 N	104° 4' 30 277 W
- plan hits target center									
- Point									
PBHL-GJ #306	0 00	0 00	5,600 00	-303 80	221 30	663,098 70	579,335 20	32° 49' 21 645 N	104° 4' 30 277 W
- plan hits target center									
- Circle (radius 10 00)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
900 00	900 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,000 00	1,000 00	0 00	0.00	KOP Start Build 2 00°/100'
1,444 12	1,442 35	-27 77	20 23	EOC hold 8 88°
3,433 29	3,407 65	-276 03	201 07	Start Drop 2 00°/100'
3,877 41	3,850 00	-303 80	221 30	EOC hold 0 00°



Geodetic System:	US State Plane 1927 (Exact solution)	Created By:	Julio Pina	Date:	09-Apr-10
Datum:	NAD 1927 (NADCON CONUS)				
Ellipsoid:	Clarke 1866	Checked:	_____	Date:	_____
Zone:	New Mexico East 3001				
System Datum:	Mean Sea Level	Reviewed	_____	Date	_____
		Approved	_____	Date:	_____