



COG Operating LLC

Lea County, NM (NAD27 NME)

GC Federal #57

GC Federal #57

HOBBS OCD

JAN 23 2012

OH

RECEIVED

Plan: Plan #2 - 7-7/8" Hole

SHL = 1690' FSL & 1895' FWL

BHL = 1660' FSL & 1660' FWL

Top of Paddock = 1660' FSL & 1660' FWL @ 5260' TVD

Standard Planning Report

13 December, 2011



JAN 25 2012



SDI
Planning Report



Well Name:	EDM 5000.1 Single User Db	Well ID:	Well GC Federal #57
Company:	COG Operating LLC	GL Elev @ 3928.00usft	
Location:	Lea County, NM (NAD27 NME)	GL Elev @ 3928.00usft	
Well:	GC Federal #57	Grid	
Wellhead:	GC Federal #57	Minimum Curvature	
Wellhead:	OH		
Wellhead:	Plan #2 - 7-7/8" Hole		

Location:	Lea County, NM (NAD27 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		

Well:	GC Federal #57		
Site Position:		Northing:	661,495.70 usft
From:	Map	Easting:	661,448.40 usft
Position Uncertainty:	0.00 usft	Slot Radius:	0"
		Latitude:	32° 49' 2.771 N
		Longitude:	103° 48' 28.118 W
		Grid Convergence:	0.28 °

Well:	GC Federal #57					
Well Position	+N/-S	0.00 usft	Northing:	661,495.70 usft	Latitude:	32° 49' 2.771 N
	+E/-W	0.00 usft	Easting:	661,448.40 usft	Longitude:	103° 48' 28.118 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,928.00 usft

Wellhead:	OH				
Wellhead:	IGRF2010	2011/12/05	7.68	60.68	48,897

Design:	Plan #2 - 7-7/8" Hole			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Position:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	262.50

Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead	Wellhead
Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,440.04	4.80	262.50	2,439.76	-1.31	-9.96	2.00	2.00	0.00	262.50	
5,029.61	4.80	262.50	5,020.24	-29.59	-224.84	0.00	0.00	0.00	0.00	
5,269.65	0.00	0.01	5,260.00	-30.90	-234.80	2.00	-2.00	0.00	180.00	TG1-GC #57
7,009.65	0.00	0.01	7,000.00	-30.90	-234.80	0.00	0.00	0.00	0.01	PBHL-GC #57



SDI
Planning Report



EDM 5000.1 Single User Db
COG Operating LLC
Lea County, NM (NAD27 NME)
GC Federal #57
GC Federal #57
OH
Plan #2 - 7-7/8" Hole

Level Coordinates Reference
TYP: Horizontal
M: Feet
North Reference
Survey: Minimum Curvature

Well GC Federal #57
GL Elev @ 3928.00usft
GL Elev @ 3928.00usft
Grid
Minimum Curvature

Station	Depth (ft)	Production (°)	Azimuth (°)	Vertical Depth (ft)	NE-S (usft)	EW-S (usft)	Vertical Depth (usft)	Drilling Time (min:sec)	Survey Time (min:sec)	Team Time (min:sec)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
South HL-GC #57 - West HL-GC #57										
	2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8-5/8" Casing										
	2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 2.00°/100'										
	2,300.00	2.00	262.50	2,299.98	-0.23	-1.73	1.75	2.00	2.00	0.00
	2,400.00	4.00	262.50	2,399.84	-0.91	-6.92	6.98	2.00	2.00	0.00
	2,440.04	4.80	262.50	2,439.76	-1.31	-9.96	10.05	2.00	2.00	0.00
EOC Hold 4.80°										
	2,500.00	4.80	262.50	2,499.51	-1.97	-14.94	15.07	0.00	0.00	0.00
	2,600.00	4.80	262.50	2,599.16	-3.06	-23.24	23.44	0.00	0.00	0.00
	2,700.00	4.80	262.50	2,698.81	-4.15	-31.53	31.81	0.00	0.00	0.00
	2,800.00	4.80	262.50	2,798.46	-5.24	-39.83	40.18	0.00	0.00	0.00
	2,900.00	4.80	262.50	2,898.11	-6.33	-48.13	48.55	0.00	0.00	0.00
	3,000.00	4.80	262.50	2,997.75	-7.43	-56.43	56.91	0.00	0.00	0.00
	3,100.00	4.80	262.50	3,097.40	-8.52	-64.73	65.28	0.00	0.00	0.00
	3,200.00	4.80	262.50	3,197.05	-9.61	-73.02	73.65	0.00	0.00	0.00
	3,300.00	4.80	262.50	3,296.70	-10.70	-81.32	82.02	0.00	0.00	0.00
	3,400.00	4.80	262.50	3,396.35	-11.79	-89.62	90.39	0.00	0.00	0.00
	3,500.00	4.80	262.50	3,496.00	-12.89	-97.92	98.76	0.00	0.00	0.00
	3,600.00	4.80	262.50	3,595.65	-13.98	-106.21	107.13	0.00	0.00	0.00
	3,700.00	4.80	262.50	3,695.30	-15.07	-114.51	115.50	0.00	0.00	0.00
	3,800.00	4.80	262.50	3,794.95	-16.16	-122.81	123.87	0.00	0.00	0.00
	3,900.00	4.80	262.50	3,894.60	-17.25	-131.11	132.24	0.00	0.00	0.00
	4,000.00	4.80	262.50	3,994.25	-18.35	-139.40	140.61	0.00	0.00	0.00
	4,100.00	4.80	262.50	4,093.90	-19.44	-147.70	148.97	0.00	0.00	0.00
	4,200.00	4.80	262.50	4,193.54	-20.53	-156.00	157.34	0.00	0.00	0.00
	4,300.00	4.80	262.50	4,293.19	-21.62	-164.30	165.71	0.00	0.00	0.00
	4,400.00	4.80	262.50	4,392.84	-22.71	-172.59	174.08	0.00	0.00	0.00
	4,500.00	4.80	262.50	4,492.49	-23.81	-180.89	182.45	0.00	0.00	0.00
	4,600.00	4.80	262.50	4,592.14	-24.90	-189.19	190.82	0.00	0.00	0.00
	4,700.00	4.80	262.50	4,691.79	-25.99	-197.49	199.19	0.00	0.00	0.00
	4,800.00	4.80	262.50	4,791.44	-27.08	-205.78	207.56	0.00	0.00	0.00
	4,900.00	4.80	262.50	4,891.09	-28.17	-214.08	215.93	0.00	0.00	0.00
	5,000.00	4.80	262.50	4,990.74	-29.27	-222.38	224.30	0.00	0.00	0.00
	5,029.61	4.80	262.50	5,020.24	-29.59	-224.84	226.77	0.00	0.00	0.00
Start DLS 2.00°/100'										
	5,100.00	3.39	262.50	5,090.45	-30.24	-229.82	231.80	2.00	-2.00	0.00
	5,200.00	1.39	262.50	5,190.36	-30.79	-233.96	235.98	2.00	-2.00	0.00
	5,269.65	0.00	0.01	5,260.00	-30.90	-234.80	236.82	2.00	-2.00	0.00
EOC Hold 0.00° - Top of Paddock - TG1-GC #57										
	7,009.65	0.00	0.01	7,000.00	-30.90	-234.80	236.82	0.00	0.00	0.00
PBHL-GC #57										



SDI
Planning Report



EDM 5000.1 Single User Db
COG Operating LLC
Lea County, NM (NAD27 NME)
GC Federal #57
GC Federal #57
OH
Plan #2 - 7-7/8" Hole

Well GC Federal #57
GL Elev @ 3928.00usft
GL Elev @ 3928.00usft
Grid
Minimum Curvature

Station	Offset (ft)	Depth (ft)	True (usft)	Angle (usft)	Depth (usft)	Offset (usft)	Depth (usft)	Latitude	Longitude
South HL-GC #57	0.00	0.00	0.00	-40.90	-244.80	661,454.80	661,203.60	32° 49' 2.378 N	103° 48' 30.989 W
- plan misses target center by 248.19usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W200.00 H0.00 D0.00)									
West HL-GC #57	0.00	0.00	0.00	-40.90	-244.80	661,454.80	661,203.60	32° 49' 2.378 N	103° 48' 30.989 W
- plan misses target center by 248.19usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Rectangle (sides W0.00 H100.00 D0.00)									
TG1-GC #57	0.00	0.00	5,260.00	-30.90	-234.80	661,464.80	661,213.60	32° 49' 2.477 N	103° 48' 30.871 W
- plan hits target center									
- Point									
PBHL-GC #57	0.00	0.01	7,000.00	-30.90	-234.80	661,464.80	661,213.60	32° 49' 2.477 N	103° 48' 30.871 W
- plan hits target center									
- Circle (radius 10.00)									

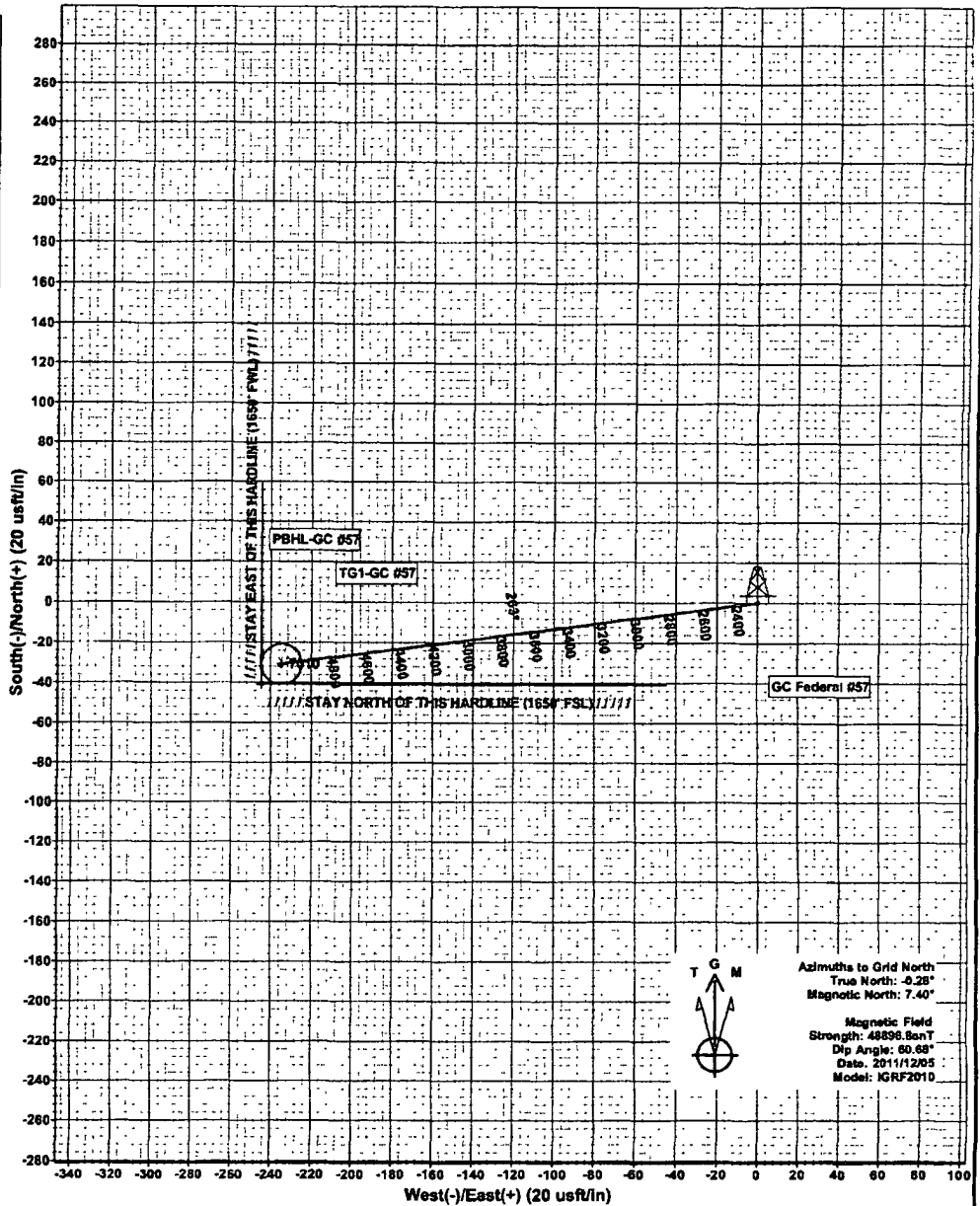
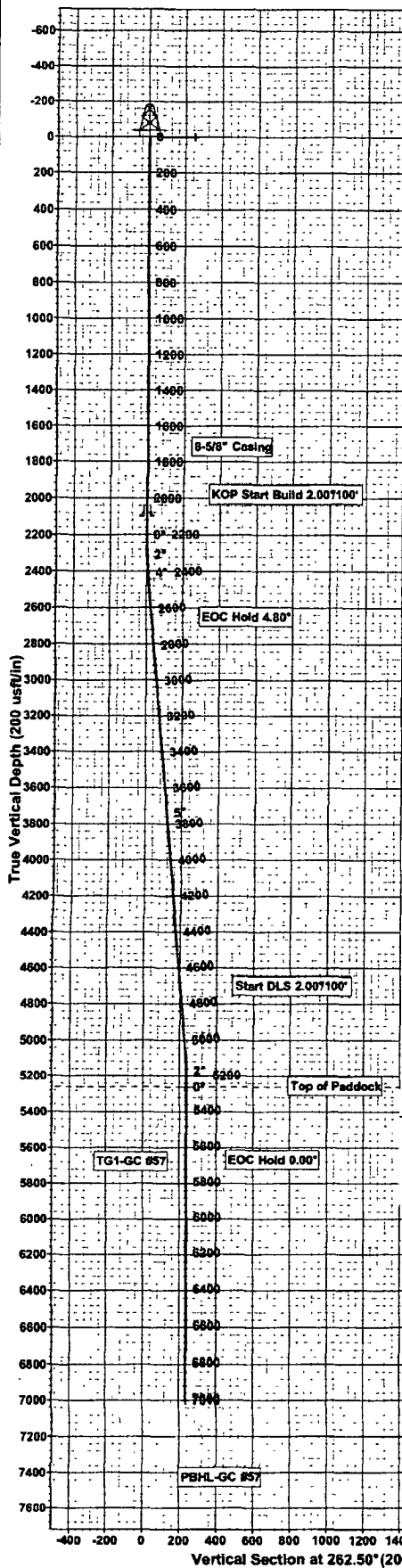
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing	Depth (ft)	Depth (ft)
2,100.00	2,100.00	8-5/8" Casing		8-5/8	12-1/4

Measured Depth (usft)	Vertical Depth (usft)	Name	Latitude	Dip (°)	Dip Direction (°)
5,269.65	5,260.00	Top of Paddock		0.00	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Constant
2,200.00	2,200.00	0.00	0.00
2,440.04	2,439.76	-1.31	-9.98
5,029.61	5,020.24	-29.59	-224.84
5,269.65	5,260.00	-30.90	-234.80
KOP Start Build 2.00°/100'			
EOC Hold 4.80°			
Start DLS 2.00°/100'			
EOC Hold 0.00°			



Scientific Drilling for COG Operating LLC
Site: Lea County, NM (NAD27 NME)
Well: GC Federal #57
Wellbore: OH
Design: Plan #2 - 7-7/8" Hole



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
South HL-GC #57	0.00	-48.90	-244.80	661454.80	661203.60	32° 48' 2.378 N	103° 48' 30.989 W	Rectangle (Sides: L0.00 W200.00)
West HL-GC #57	0.00	-48.90	-244.80	661454.80	661203.60	32° 48' 2.378 N	103° 48' 30.989 W	Rectangle (Sides: L100.00 W0.00)
TG1-GC #57	5260.00	-30.90	-234.80	661484.80	661213.60	32° 48' 2.477 N	103° 48' 30.871 W	Point
PBHL-GC #57	7000.00	-30.90	-234.80	661484.80	661213.60	32° 48' 2.477 N	103° 48' 30.871 W	Circle (Radius: 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSSct	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2440.04	4.80	262.50	2439.76	-1.31	-9.96	2.00	262.50	10.05	
4	5029.61	4.80	262.50	5029.24	-29.59	-224.84	0.00	0.00	226.77	
5	5269.65	0.00	0.00	5260.00	-30.90	-234.80	2.00	180.00	236.82	TG1-GC #57
6	7009.65	0.00	0.00	7000.00	-30.90	-234.80	0.00	0.00	236.82	PBHL-GC #57

WELL DETAILS: GC Federal #57

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	661485.70	661448.40	32° 48' 2.771 N	103° 48' 28.118 W	

PROJECT DETAILS: Lea County, NM (NAD27 NME) Plan: Plan #2 - 7-7/8" Hole (GC Federal #57/OH)

Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina Date: 05-Dec-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: