



COG Operating LLC

Eddy County, NM (NAN27 NME)

Skelly Unit #724

Skelly Unit #724

OH

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

SHL = 2272' FNL & 687' FWL

BHL = 2300' FNL & 980' FWL

Top of Paddock = 2300' FNL & 980' FWL @ 4800' TVD

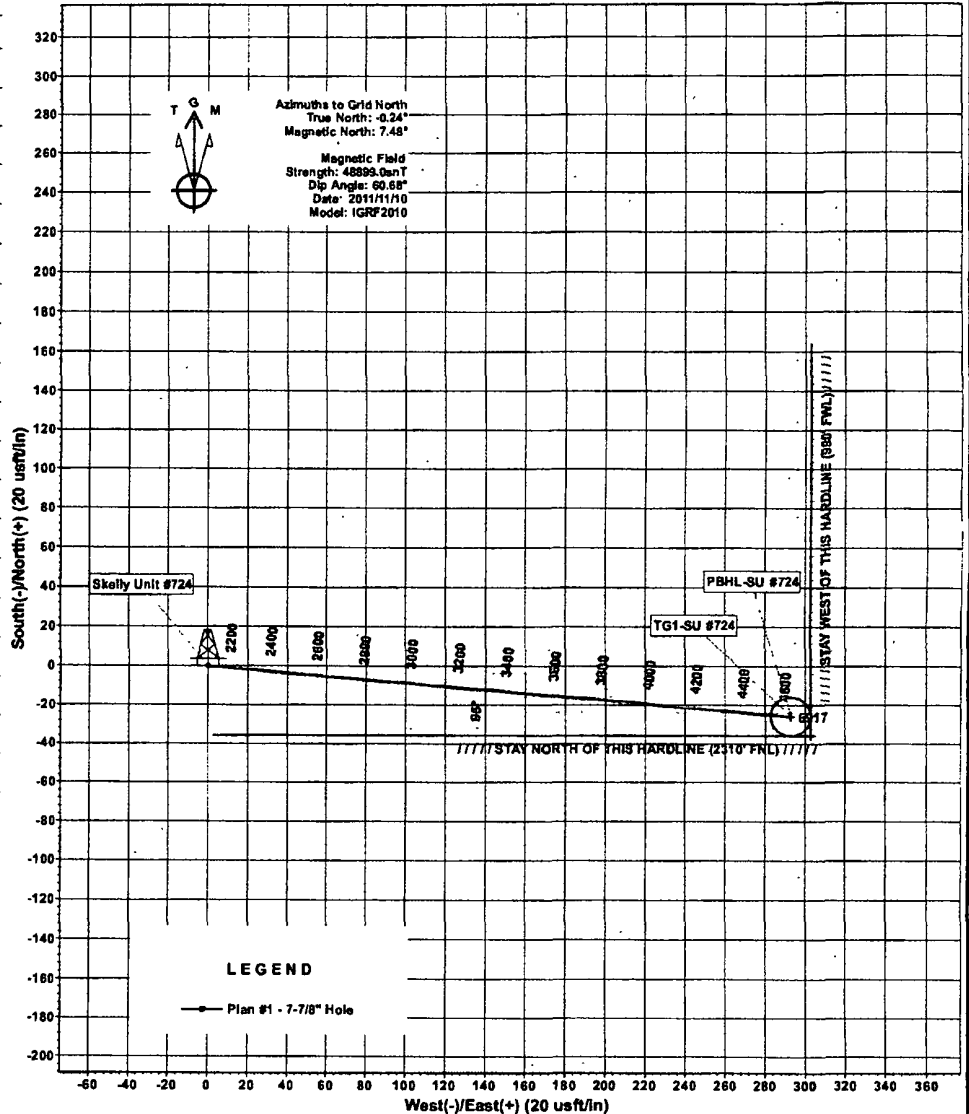
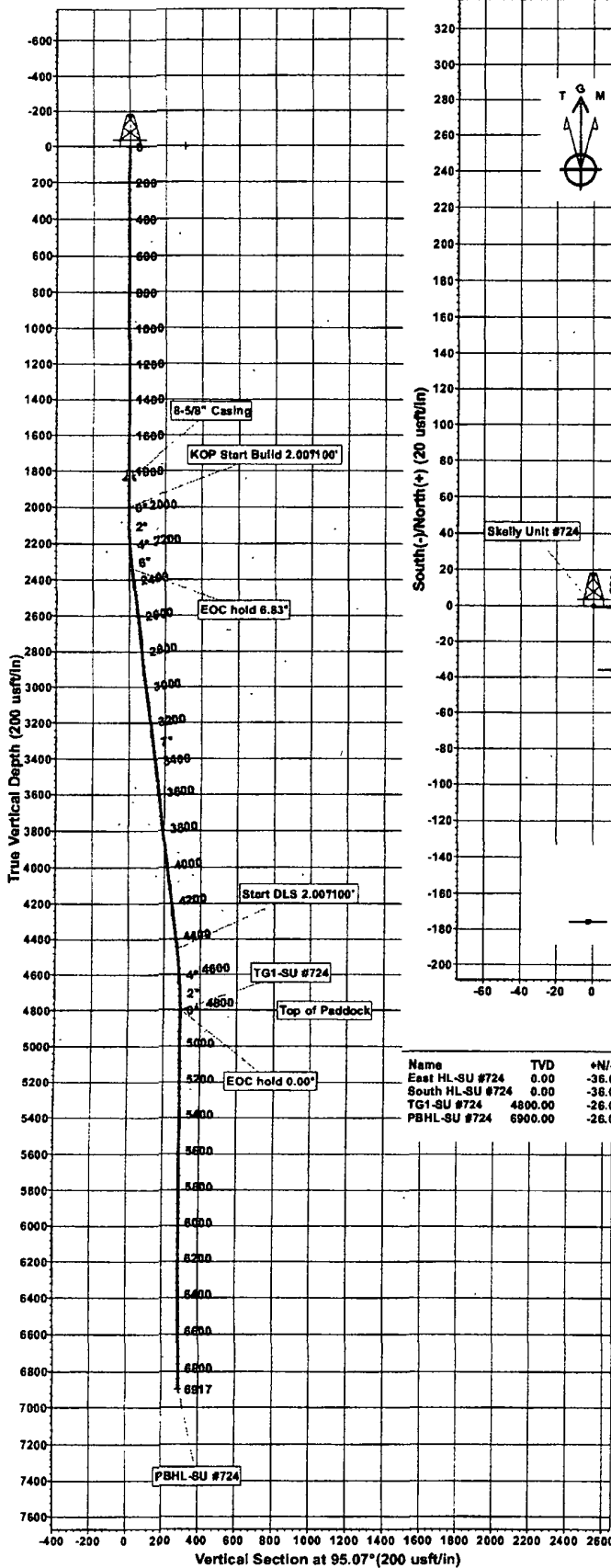
Standard Planning Report

10 November, 2011





Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Skelly Unit #724
Wellbore: OH
Design: Plan #1 - 7-7/8" Hole



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-SU #724	0.00	-35.00	303.10	662630.00	639413.00	32°49'15.005 N	103°52'46.288 W	Rectangle (Sides: L2 00.00 W0.00)
South HL-SU #724	0.00	-35.00	303.10	662630.00	639413.00	32°49'15.005 N	103°52'46.288 W	Rectangle (Sides: L 0.00 W300.00)
TG1-SU #724	4800.00	-26.00	293.10	662640.00	639403.00	32°49'15.104 N	103°52'46.385 W	Point
PBHL-SU #724	6900.00	-26.00	293.10	662640.00	639403.00	32°49'15.104 N	103°52'46.385 W	Circle (Radius: 10.0 0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2341.28	6.83	95.07	2340.47	-1.79	20.22	2.00	95.07	20.30	
4	4475.46	6.83	95.07	4459.53	-24.21	272.88	0.00	0.00	273.95	
5	4816.74	0.00	0.00	4800.00	-26.00	293.10	2.00	180.00	294.25	TG1-SU #724
6	6916.74	0.00	0.00	6900.00	-26.00	293.10	0.00	0.00	294.25	PBHL-SU #724

WELL DETAILS: Skelly Unit #724

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	662666.00	639109.00	32°49'15.374 N	103°52'49.818 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Plan Plan #1 - 7-7/8" Hole (Skelly Unit #724/OH)

Geodetic System: US State Plane 1927 (Exact solution)	Crested By: Julio Pina	Date: 10-Nov-11
Datum: NAD 1927 (NADCON CONUS)		
Ellipsoid: Clarke 1886	Checked: _____	Date: _____
Zone: New Mexico East 3001	Reviewed: _____	Date: _____
System Datum: Mean Sea Level	Approved: _____	Date: _____



Scientific Drilling
Planning Report



EDM-Julio
COG Operating LLC
Eddy County, NM (NAN27 NME)
Skelly Unit #724
Skelly Unit #724
OH
Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference
NAD Reference
NAD Reference
NAD Reference
NAD Reference

Site Skelly Unit #724
GL Elev @ 3745.00usft
GL Elev @ 3745.00usft
Grid
Minimum Curvature

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

Skelly Unit #724

Site Position: Northing: 662,666.00 usft Latitude: 32° 49' 15.374 N
From: Map Easting: 639,109.90 usft Longitude: 103° 52' 49.818 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16" Grid Convergence: 0.25°

Skelly Unit #724

Well Position +N/-S 0.00 usft Northing: 662,666.00 usft Latitude: 32° 49' 15.374 N
+E/-W 0.00 usft Easting: 639,109.90 usft Longitude: 103° 52' 49.818 W
Position Uncertainty 0.00 usft Wellhead Elevation: Ground Level: 3,745.00 usft

OH

IGRF2010 2011/11/10 7.72 60.68 48,899

Plan #1 - 7-7/8" Hole

Audit Notes:
Version: Phase: PLAN Tie On Depth: 0.00
0.00 0.00 0.00 95.07

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,341.28	6.83	95.07	2,340.47	-1.79	20.22	2.00	2.00	0.00	95.07
4,475.46	6.83	95.07	4,459.53	-24.21	272.88	0.00	0.00	0.00	0.00
4,816.74	0.00	0.00	4,800.00	-26.00	293.10	2.00	-2.00	0.00	180.00 TG1-SU #724
6,916.74	0.00	0.00	6,900.00	-26.00	293.10	0.00	0.00	0.00	0.00 PBHL-SU #724



Scientific Drilling
Planning Report



EDM-Julio
COG Operating LLC
Eddy County, NM (NAN27 NME)
Skelly Unit #724
Skelly Unit #724
OH
Plan #1 - 7-7/8" Hole

Site Skelly Unit #724
GL Elev @ 3745.00usft
GL Elev @ 3745.00usft
Grid
Minimum Curvature

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
South HL-SU #724 - East HL-SU #724									
1,850.00	0.00	0.00	1,850.00	0.00	0.00	0.00	0.00	0.00	0.00
8-5/8" Casing									
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Start Build 2.00°/100'									
2,100.00	2.00	95.07	2,099.98	-0.15	1.74	1.75	2.00	2.00	0.00
2,200.00	4.00	95.07	2,199.84	-0.62	6.95	6.98	2.00	2.00	0.00
2,300.00	6.00	95.07	2,299.45	-1.39	15.63	15.69	2.00	2.00	0.00
2,341.28	6.83	95.07	2,340.47	-1.79	20.22	20.30	2.00	2.00	0.00
EOC hold 8.83°									
2,400.00	6.83	95.07	2,398.78	-2.41	27.18	27.28	0.00	0.00	0.00
2,500.00	6.83	95.07	2,498.07	-3.46	39.01	39.17	0.00	0.00	0.00
2,600.00	6.83	95.07	2,597.36	-4.51	50.85	51.05	0.00	0.00	0.00
2,700.00	6.83	95.07	2,696.65	-5.56	62.69	62.94	0.00	0.00	0.00
2,800.00	6.83	95.07	2,795.94	-6.61	74.53	74.82	0.00	0.00	0.00
2,900.00	6.83	95.07	2,895.23	-7.66	86.37	86.71	0.00	0.00	0.00
3,000.00	6.83	95.07	2,994.52	-8.71	98.21	98.59	0.00	0.00	0.00
3,100.00	6.83	95.07	3,093.82	-9.76	110.04	110.48	0.00	0.00	0.00
3,200.00	6.83	95.07	3,193.11	-10.81	121.88	122.36	0.00	0.00	0.00
3,300.00	6.83	95.07	3,292.40	-11.86	133.72	134.25	0.00	0.00	0.00
3,400.00	6.83	95.07	3,391.69	-12.91	145.56	146.13	0.00	0.00	0.00
3,500.00	6.83	95.07	3,490.98	-13.96	157.40	158.02	0.00	0.00	0.00
3,600.00	6.83	95.07	3,590.27	-15.01	169.24	169.90	0.00	0.00	0.00
3,700.00	6.83	95.07	3,689.56	-16.06	181.07	181.79	0.00	0.00	0.00
3,800.00	6.83	95.07	3,788.85	-17.11	192.91	193.67	0.00	0.00	0.00
3,900.00	6.83	95.07	3,888.15	-18.16	204.75	205.55	0.00	0.00	0.00
4,000.00	6.83	95.07	3,987.44	-19.21	216.59	217.44	0.00	0.00	0.00
4,100.00	6.83	95.07	4,086.73	-20.26	228.43	229.32	0.00	0.00	0.00
4,200.00	6.83	95.07	4,186.02	-21.31	240.27	241.21	0.00	0.00	0.00
4,300.00	6.83	95.07	4,285.31	-22.36	252.10	253.09	0.00	0.00	0.00
4,400.00	6.83	95.07	4,384.60	-23.41	263.94	264.98	0.00	0.00	0.00
4,475.46	6.83	95.07	4,459.53	-24.21	272.88	273.95	0.00	0.00	0.00
Start DLS 2.00°/100'									
4,500.00	6.33	95.07	4,483.91	-24.45	275.68	276.76	2.00	-2.00	0.00
4,600.00	4.33	95.07	4,583.47	-25.28	284.94	286.06	2.00	-2.00	0.00
4,700.00	2.33	95.07	4,683.29	-25.79	290.73	291.87	2.00	-2.00	0.00
4,800.00	0.33	95.07	4,783.26	-26.00	293.05	294.20	2.00	-2.00	0.00
4,816.74	0.00	0.00	4,800.00	-26.00	293.10	294.25	2.00	-2.00	0.00
EOC hold 0.00° - Top of Paddock - TG1-SU #724									
6,916.74	0.00	0.00	6,900.00	-26.00	293.10	294.25	0.00	0.00	0.00
PBHL-SU #724									



Scientific Drilling
Planning Report



EDM-Julio
COG Operating LLC
Eddy County, NM (NAN27 NME)
Skelly Unit #724
Skelly Unit #724
OH
Plan #1 - 7-7/8" Hole

Local Co-ordinate Reference
TVD Reference
MD Reference
North Reference
Survey Orientation Reference

Site Skelly Unit #724
GL Elev @ 3745.00usft
GL Elev @ 3745.00usft
Grid
Minimum Curvature

	True	Surf	MD	TV	Surf	MD	TV	Surf	MD	TV
South HL-SU #724	0.00	0.00	0.00	-36.00	303.10	662,630.00	639,413.00	32° 49' 15.005 N	103° 52' 46.268 W	
- plan misses target center by 305.23usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Rectangle (sides W300.00 H0.00 D0.00)										
East HL-SU #724	0.00	0.00	0.00	-36.00	303.10	662,630.00	639,413.00	32° 49' 15.005 N	103° 52' 46.268 W	
- plan misses target center by 305.23usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Rectangle (sides W0.00 H200.00 D0.00)										
TG1-SU #724	0.00	0.01	4,800.00	-26.00	293.10	662,640.00	639,403.00	32° 49' 15.104 N	103° 52' 46.385 W	
- plan hits target center										
- Point										
PBHL-SU #724	0.00	0.00	6,900.00	-26.00	293.10	662,640.00	639,403.00	32° 49' 15.104 N	103° 52' 46.385 W	
- plan hits target center										
- Circle (radius 10.00)										

1,850.00 1,850.00 8-5/8" Casing 8-5/8 12-1/4

4,816.74 4,800.00 Top of Paddock 0.00

2,000.00	2,000.00	0.00	0.00	KOP Start Build 2.00°/100'
2,341.28	2,340.47	-1.79	20.22	EOC hold 6.83°
4,475.46	4,459.53	-24.21	272.88	Start DLS 2.00°/100'
4,816.74	4,800.00	-26.00	293.10	EOC hold 0.00°

