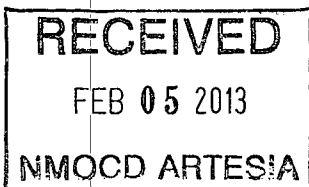


DRILLING INC. Oil Well Drilling Contractor

Post Office Box 160 Artesia, New Mexico 88211-0160 Office (575) 748-8704 Fax (575) 748-8719

July 12, 2012



30 015 39970

COG Operating, LLC
550 W. Texas, Suite 1300
Midland, Texas 79701

Re: Pinto 36 State Com # 5H
Sec. 36, T-18-S, R-25-E
Eddy County, New Mexico

Attn: Jim Evans

The following is a Deviation Survey on the referenced well in Eddy County, New Mexico:

258' - 0.75°	1096' - 1°	2134' - 0.75°	3277' - 0.75°
493' - 1°	1457' - 1°	2369' - 0.75°	3761' - 1.75°
837' - 1°	1865' - 1°	2776' - 0.5°	

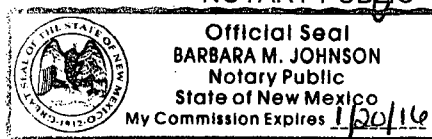
Sincerely,

Gary W. Chappell
Contracts Manager

STATE OF NEW MEXICO)
COUNTY OF EDDY)

The foregoing was acknowledged before me this 12th day of July, 2012 by Gary W. Chappell.

NOTARY PUBLIC





Company: COG Operating LLC (Concho)
Lease/Well: Pinto 36 State Com/ No. 005H
Location: Sec 36 185 Range 25 E Sec 36
Rig Name: JW #4
State/County: New Mexico/Eddy
Latitude: 32.70
GRID North is 0.06 Degrees West of True North
VS-Azi: 0.00 Degrees



RECEIVED
FEB 05 2013
NMOCD ARTESIA

Depth Reference : 13'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 7/12/2012 / 09:21

Vaughn Energy Services

Fort Worth, Texas

817-741-3610

Surveyor: Jason Wilson

Pinto 36 State Com No. 005 / API 30-015-39970

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.46	348.07	100.00	0.39	-0.08	0.40	348.07	0.46
200.00	0.49	313.92	200.00	1.08	-0.48	1.18	336.24	0.28
300.00	0.64	318.70	299.99	1.80	-1.15	2.13	327.31	0.15
400.00	0.47	230.18	399.99	1.95	-1.83	2.68	316.78	0.78
500.00	0.92	179.91	499.98	0.88	-2.15	2.32	292.35	0.72
600.00	0.86	169.90	599.97	-0.66	-2.01	2.12	251.73	0.17
700.00	1.22	169.14	699.95	-2.45	-1.68	2.97	214.47	0.35
800.00	1.05	173.65	799.93	-4.40	-1.38	4.61	197.40	0.19
900.00	0.51	194.68	899.92	-5.75	-1.39	5.91	193.61	0.60
1000.00	1.27	162.62	999.91	-7.23	-1.17	7.33	189.22	0.88
1100.00	0.96	155.12	1099.89	-9.05	-0.49	9.06	183.10	0.34
1200.00	0.96	149.60	1199.88	-10.54	0.29	10.54	178.44	0.09
1300.00	0.80	160.89	1299.87	-11.92	0.94	11.96	175.49	0.24
1400.00	0.82	176.20	1399.86	-13.30	1.22	13.35	174.77	0.22
1500.00	0.52	160.69	1499.85	-14.44	1.41	14.51	174.40	0.35
1600.00	0.40	169.72	1599.85	-15.21	1.63	15.30	173.89	0.14
1700.00	0.26	171.33	1699.84	-15.77	1.72	15.87	173.77	0.14
1800.00	0.49	253.57	1799.84	-16.12	1.35	16.17	175.23	0.52

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.43	248.42	1899.84	-16.38	0.59	16.39	177.94	0.08
2000.00	0.21	245.48	1999.84	-16.59	0.07	16.59	179.75	0.21
2100.00	0.57	242.98	2099.84	-16.89	-0.54	16.90	181.82	0.35
2200.00	0.48	287.48	2199.83	-16.99	-1.37	17.05	184.62	0.40
2300.00	0.43	291.81	2299.83	-16.73	-2.12	16.86	187.22	0.06
2400.00	0.58	300.18	2399.82	-16.33	-2.91	16.59	190.09	0.17
2500.00	0.61	305.71	2499.82	-15.76	-3.78	16.21	193.48	0.06
2600.00	0.60	308.19	2599.81	-15.13	-4.63	15.82	197.00	0.03
2700.00	0.72	310.00	2699.81	-14.40	-5.52	15.42	200.98	0.12
2800.00	0.50	311.76	2799.80	-13.71	-6.33	15.10	204.78	0.23
2900.00	0.30	314.09	2899.80	-13.24	-6.84	14.90	207.32	0.20
3000.00	0.42	307.89	2999.80	-12.83	-7.32	14.77	209.70	0.13
3100.00	0.42	300.22	3099.79	-12.42	-7.92	14.73	212.53	0.06
3200.00	0.54	271.70	3199.79	-12.22	-8.70	15.00	215.46	0.26
3300.00	0.38	268.43	3299.79	-12.22	-9.51	15.48	217.89	0.16
3400.00	0.77	220.98	3399.78	-12.73	-10.28	16.36	218.92	0.58
3500.00	1.31	178.64	3499.77	-14.39	-10.69	17.93	216.62	0.91
3600.00	1.63	187.12	3599.73	-16.95	-10.84	20.12	212.61	0.38
3700.00	1.92	196.89	3699.69	-19.96	-11.51	23.04	209.96	0.41
3800.00	1.93	201.21	3799.63	-23.13	-12.60	26.34	208.58	0.15
3900.00	1.58	217.43	3899.58	-25.79	-14.05	29.37	208.57	0.60
4000.00	1.12	220.33	3999.56	-27.63	-15.52	31.69	209.32	0.46
4054.00	1.00	218.75	4053.55	-28.40	-16.15	32.68	209.63	0.23

CRESCENT

DIRECTIONAL DRILLING

Minimum Curvature Calculation

Client: COG Operating LLC
Well: Pinto 36 State Com 5H
County: Eddy
Rig: JW #4

M.W.D. OPERATORS: Matt Rainey/ Stacy Ogle
DIRECTIONAL DRILLERS: Derek Patterson / Floyd Smith
Tool Azimuth to Grid North: 7.96
Job #: PB-12402

Vertical Section Angle: 0.48

API#: 30-015-39970

Sur #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	DLS
Tie In	2100.00	0.57	242.98	2099.84	-16.29	-16.28	-0.73	0.00
1	2150.00	0.49	263.30	2149.84	-16.43	-16.42	-1.16	0.41
2	2175.00	3.30	335.10	2174.82	-15.79	-15.78	-1.57	12.72
3	2206.00	6.30	342.30	2205.71	-13.37	-13.35	-2.47	9.85
4	2237.00	9.50	349.70	2236.41	-9.24	-9.21	-3.44	10.81
5	2268.00	13.10	351.80	2266.81	-3.25	-3.21	-4.40	11.69
6	2299.00	16.70	352.30	2296.76	4.63	4.68	-5.50	11.62
7	2330.00	20.20	352.50	2326.16	14.35	14.40	-6.79	11.29
8	2362.00	24.10	352.10	2355.80	26.29	26.36	-8.41	12.20
9	2393.00	28.00	351.60	2383.64	39.74	39.83	-10.35	12.60
10	2425.00	31.90	351.60	2411.36	55.52	55.63	-12.68	12.19
11	2456.00	35.30	352.00	2437.18	72.48	72.61	-15.12	10.99
12	2487.00	39.00	352.10	2461.88	91.00	91.15	-17.71	11.94
13	2518.00	42.60	352.70	2485.35	111.05	111.22	-20.39	11.68
14	2549.00	46.10	352.80	2507.51	132.52	132.72	-23.12	11.29
15	2580.00	49.30	353.00	2528.37	155.24	155.47	-25.95	10.33
16	2612.00	52.40	352.00	2548.57	179.81	180.07	-29.20	9.99
17	2643.00	55.40	350.90	2566.84	204.55	204.83	-32.92	10.09
18	2674.00	58.40	350.20	2583.76	230.12	230.44	-37.19	9.86
19	2706.00	61.80	350.00	2599.71	257.41	257.77	-41.96	10.64
20	2737.00	65.90	350.60	2613.37	284.79	285.19	-46.65	13.34
21	2768.00	69.60	351.30	2625.11	313.08	313.52	-51.16	12.12
22	2799.00	73.20	351.80	2634.99	342.10	342.58	-55.47	11.71
23	2831.00	76.30	351.80	2643.41	372.62	373.13	-59.87	9.69
24	2862.00	78.20	351.30	2650.25	402.48	403.04	-64.32	6.33
25	2893.00	80.20	351.10	2656.06	432.54	433.13	-68.98	6.48
26	2924.00	82.50	350.40	2660.72	462.74	463.38	-73.90	7.75
27	2956.00	84.50	350.00	2664.34	494.02	494.70	-79.31	6.37
28	2987.00	86.90	349.90	2666.67	524.41	525.14	-84.71	7.75
29	3019.00	90.20	350.20	2667.48	555.87	556.64	-90.23	10.35
30	3050.00	90.90	352.00	2667.18	586.45	587.27	-95.03	6.23
31	3081.00	90.70	353.50	2666.75	617.17	618.02	-98.94	4.88
32	3112.00	90.20	354.80	2666.50	647.98	648.85	-102.10	4.49
33	3143.00	90.00	354.80	2666.45	678.82	679.73	-104.91	0.65
34	3175.00	89.70	355.70	2666.53	710.69	711.62	-107.56	2.96
35	3206.00	90.00	357.10	2666.62	741.61	742.55	-109.51	4.62
36	3238.00	90.00	359.00	2666.62	773.58	774.53	-110.60	5.94
37	3302.00	90.70	1.50	2666.22	837.57	838.53	-110.32	4.06
38	3396.00	91.80	2.00	2664.17	931.53	932.46	-107.45	1.29
39	3489.00	92.30	2.00	2660.85	1024.43	1025.34	-104.20	0.54

CRESCENT

DIRECTIONAL DRILLING

Minimum Curvature Calculation

Client: COG Operating LLC
Well: Pinto 36 State Com 5H
County: Eddy
Rig: JW #4

M.W.D. OPERATORS: Matt Rainey/ Stacy Ogle
DIRECTIONAL DRILLERS: Derek Patterson / Floyd Smith
Tool Azimuth to Grid North: 7.96
Job #: PB-12402

Vertical Section Angle: 0.48

API#: 30-015-39970

Sur #	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	DLS
40	3583.00	92.80	2.50	2656.66	1118.29	1119.18	-100.52	0.75
41	3677.00	92.10	1.60	2652.65	1212.17	1213.03	-97.16	1.21
42	3770.00	91.10	1.80	2650.05	1305.11	1305.95	-94.40	1.10
43	3864.00	92.00	1.80	2647.51	1399.05	1399.87	-91.45	0.96
44	3957.00	91.30	1.60	2644.83	1491.99	1492.79	-88.69	0.78
45	4051.00	89.70	2.30	2644.01	1585.95	1586.73	-85.49	1.86
46	4144.00	90.10	2.20	2644.17	1678.91	1679.65	-81.84	0.44
47	4238.00	90.70	2.30	2643.52	1772.86	1773.58	-78.15	0.65
48	4332.00	91.00	2.50	2642.12	1866.80	1867.49	-74.21	0.38
49	4425.00	91.20	2.30	2640.34	1959.73	1960.39	-70.32	0.30
50	4519.00	91.40	2.30	2638.20	2053.66	2054.29	-66.55	0.21
51	4612.00	91.80	2.00	2635.61	2146.58	2147.19	-63.06	0.54
52	4705.00	92.20	2.00	2632.36	2239.49	2240.07	-59.82	0.43
53	4799.00	91.10	1.80	2629.65	2333.42	2333.98	-56.70	1.19
54	4892.00	91.50	2.20	2627.54	2426.37	2426.90	-53.46	0.61
55	4986.00	90.30	2.00	2626.07	2520.31	2520.82	-50.01	1.29
56	5080.00	90.50	2.00	2625.41	2614.28	2614.76	-46.73	0.21
57	5173.00	90.90	2.30	2624.28	2707.23	2707.69	-43.24	0.54
58	5267.00	91.30	3.00	2622.47	2801.15	2801.57	-38.90	0.86
59	5360.00	90.50	3.20	2621.01	2894.04	2894.42	-33.87	0.89
60	5454.00	90.60	3.40	2620.11	2987.92	2988.26	-28.46	0.24
61	5548.00	90.60	2.30	2619.12	3081.83	3082.14	-23.79	1.17
62	5641.00	90.90	2.30	2617.91	3174.78	3175.06	-20.05	0.32
63	5735.00	90.60	2.30	2616.68	3268.72	3268.97	-16.28	0.32
64	5828.00	91.10	1.30	2615.30	3361.69	3361.92	-13.36	1.20
65	5922.00	91.20	1.30	2613.41	3455.66	3455.87	-11.23	0.11
66	6015.00	91.50	1.30	2611.22	3548.62	3548.82	-9.12	0.32
67	6109.00	91.60	1.50	2608.68	3642.57	3642.76	-6.82	0.24
68	6203.00	91.60	1.80	2606.05	3736.52	3736.68	-4.12	0.32
69	6296.00	92.20	2.00	2602.97	3829.44	3829.58	-1.04	0.68
70	6390.00	91.20	1.50	2600.18	3923.37	3923.49	1.83	1.19
71	6483.00	89.80	0.60	2599.37	4016.36	4016.47	3.54	1.79
72	6577.00	89.40	0.40	2600.02	4110.36	4110.47	4.36	0.48
73	6671.00	89.80	0.90	2600.68	4204.36	4204.46	5.42	0.68
74	6764.00	89.80	1.50	2601.00	4297.35	4297.44	7.37	0.65
75	6857.00	90.60	1.50	2600.68	4390.33	4390.40	9.80	0.86
76	6951.00	90.30	1.50	2599.94	4484.31	4484.37	12.27	0.32
77	7045.00	89.90	1.50	2599.78	4578.30	4578.33	14.73	0.43
78	7139.00	89.80	1.50	2600.02	4672.28	4672.30	17.19	0.11
PTB	7193.00	89.80	1.50	2600.21	4726.27	4726.28	18.60	0.00

#####

COG Operating LLC

Eddy County, NM

Pinto 36 State Com 5H

Pinto 36 State Com 5H

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

18 July, 2012

Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Pinto 36 State Com 5H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3512.00ft (Original Well Elev)
Site:	Pinto 36 State Com 5H	MD Reference:	WELL @ 3512.00ft (Original Well Elev)
Well:	Pinto 36 State Com 5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Houston R5000 Database

Project:	Eddy County, NM	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Pinto 36 State Com 5H				
Site Position:		Northing:	617,460.800 ft	Latitude:	32.697447
From:	Map	Easting:	466,229.700 ft	Longitude:	-104.443114
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.06 °

Well	Pinto 36 State Com 5H				
Well Position	+N-S	0.00 ft	Northing:	617,460.800 ft	Latitude: 32.697447
	+E-W	0.00 ft	Easting:	466,229.700 ft	Longitude: -104.443114
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level: 3,494.00 ft

Wellbore:	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	7/7/2012	(°)	(°)	(nT)
			7.89	60.45	48,697

Design:	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	0.48	

Survey Program	Date	7/18/2012			
From	To	Survey (Wellbore)	Tool Name	Description	
(ft)	(ft)				
100.00	2,100.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard	
2,150.00	7,234.00	MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N-S	+E-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	
2,100.00	0.57	242.98	2,099.84	-16.28	-0.73	-16.28	0.00	0.00	0.00	
2,150.00	0.49	263.30	2,149.84	-16.41	-1.16	-16.42	0.41	-0.16	40.64	
2,175.00	3.30	335.10	2,174.83	-15.77	-1.57	-15.79	12.72	11.24	287.20	
2,206.00	6.30	342.30	2,205.71	-13.34	-2.46	-13.36	9.85	9.68	23.23	
2,237.00	9.50	349.70	2,236.42	-9.20	-3.44	-9.23	10.81	10.32	23.87	
2,268.00	13.10	351.80	2,266.81	-3.21	-4.40	-3.24	11.69	11.61	6.77	
2,299.00	16.70	352.30	2,296.76	4.69	-5.49	4.64	11.62	11.61	1.61	
2,330.00	20.20	352.50	2,326.17	14.41	-6.79	14.35	11.29	11.29	0.65	
2,362.00	24.10	352.10	2,355.80	26.36	-8.41	26.29	12.20	12.19	-1.25	
2,393.00	28.00	351.60	2,383.64	39.84	-10.34	39.75	12.60	12.58	-1.61	

Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Pinto 36 State Com 5H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3512.00ft (Original Well Elev)
Site:	Pinto 36 State Com 5H	MD Reference:	WELL @ 3512.00ft (Original Well Elev)
Well:	Pinto 36 State Com 5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Houston R5000 Database

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)
2,425.00	31.90	351.60	2,411.36	55.64	-12.68	55.53	12.19	12.19	0.00
2,456.00	35.30	352.00	2,437.18	72.61	-15.12	72.49	10.99	10.97	1.29
2,487.00	39.00	352.10	2,461.89	91.15	-17.71	91.00	11.94	11.94	0.32
2,518.00	42.60	352.70	2,485.35	111.23	-20.38	111.05	11.68	11.61	1.94
2,549.00	46.10	352.80	2,507.51	132.72	-23.12	132.52	11.29	11.29	0.32
2,580.00	49.30	353.00	2,528.37	155.47	-25.95	155.25	10.33	10.32	0.65
2,612.00	52.40	352.00	2,548.57	180.07	-29.19	179.82	9.99	9.69	-3.13
2,643.00	55.40	350.90	2,566.84	204.84	-32.92	204.55	10.09	9.68	-3.55
2,674.00	58.40	350.20	2,583.77	230.45	-37.19	230.13	9.86	9.68	-2.26
2,706.00	61.80	350.00	2,599.71	257.77	-41.96	257.41	10.64	10.63	-0.63
2,737.00	65.90	350.60	2,613.37	285.20	-46.64	284.79	13.34	13.23	1.94
2,768.00	69.60	351.30	2,625.11	313.53	-51.15	313.09	12.12	11.94	2.26
2,799.00	73.20	351.80	2,635.00	342.58	-55.47	342.11	11.71	11.61	1.61
2,831.00	76.30	351.80	2,643.41	373.14	-59.87	372.62	9.69	9.69	0.00
2,862.00	78.20	351.30	2,650.25	403.04	-64.31	402.49	6.33	6.13	-1.61
2,893.00	80.20	351.10	2,656.06	433.13	-68.97	432.54	6.48	6.45	-0.65
2,924.00	82.50	350.40	2,660.72	463.38	-73.90	462.74	7.75	7.42	-2.26
2,956.00	84.50	350.00	2,664.35	494.71	-79.31	494.03	6.37	6.25	-1.25
2,987.00	86.90	349.90	2,666.67	525.14	-84.70	524.42	7.75	7.74	-0.32
3,019.00	90.20	350.20	2,667.48	556.65	-90.23	555.87	10.35	10.31	0.94
3,050.00	90.90	352.00	2,667.18	587.27	-95.03	586.46	6.23	2.26	5.81
3,081.00	90.70	353.50	2,666.75	618.02	-98.94	617.17	4.88	-0.65	4.84
3,112.00	90.20	354.80	2,666.51	648.86	-102.10	647.98	4.49	-1.61	4.19
3,143.00	90.00	354.80	2,666.45	679.73	-104.91	678.83	0.65	-0.65	0.00
3,175.00	89.70	355.70	2,666.54	711.62	-107.56	710.69	2.96	-0.94	2.81
3,206.00	90.00	357.10	2,666.62	742.56	-109.50	741.61	4.62	0.97	4.52
3,238.00	90.00	359.00	2,666.62	774.54	-110.59	773.58	5.94	0.00	5.94
3,302.00	90.70	1.50	2,666.23	838.53	-110.31	837.58	4.06	1.09	3.91
3,396.00	91.80	2.00	2,664.18	932.46	-107.44	931.53	1.29	1.17	0.53
3,489.00	92.30	2.00	2,660.85	1,025.35	-104.20	1,024.44	0.54	0.54	0.00
3,583.00	92.80	2.50	2,656.67	1,119.18	-100.51	1,118.30	0.75	0.53	0.53
3,677.00	92.10	1.60	2,652.65	1,213.03	-97.15	1,212.18	1.21	-0.74	-0.96
3,770.00	91.10	1.80	2,650.05	1,305.95	-94.40	1,305.12	1.10	-1.08	0.22
3,864.00	92.00	1.80	2,647.51	1,399.87	-91.44	1,399.06	0.96	0.96	0.00
3,957.00	91.30	1.60	2,644.83	1,492.79	-88.69	1,492.00	0.78	-0.75	-0.22
4,051.00	89.70	2.30	2,644.01	1,586.73	-85.49	1,585.96	1.86	-1.70	0.74
4,144.00	90.10	2.20	2,644.17	1,679.66	-81.84	1,678.91	0.44	0.43	-0.11
4,238.00	90.70	2.30	2,643.52	1,773.58	-78.15	1,772.87	0.65	0.64	0.11
4,332.00	91.00	2.50	2,642.12	1,867.49	-74.21	1,866.80	0.38	0.32	0.21
4,425.00	91.20	2.30	2,640.34	1,960.39	-70.32	1,959.73	0.30	0.22	-0.22
4,519.00	91.40	2.30	2,638.21	2,054.29	-66.55	2,053.66	0.21	0.21	0.00
4,612.00	91.80	2.00	2,635.61	2,147.19	-63.06	2,146.59	0.54	0.43	-0.32
4,705.00	92.20	2.00	2,632.36	2,240.08	-59.81	2,239.50	0.43	0.43	0.00

Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Pinto 36 State Com 5H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3512.00ft (Original Well Elev)
Site:	Pinto 36 State Com 5H	MD Reference:	WELL @ 3512.00ft (Original Well Elev)
Well:	Pinto 36 State Com 5H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Houston R5000 Database

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)
4,799.00	91.10	1.80	2,629.66	2,333.98	-56.70	2,333.43	1.19	-1.17	-0.21
4,892.00	91.50	2.20	2,627.55	2,426.90	-53.45	2,426.37	0.61	0.43	0.43
4,986.00	90.30	2.00	2,626.07	2,520.83	-50.01	2,520.32	1.29	-1.28	-0.21
5,080.00	90.50	2.00	2,625.41	2,614.77	-46.73	2,614.28	0.21	0.21	0.00
5,173.00	90.90	2.30	2,624.28	2,707.69	-43.24	2,707.24	0.54	0.43	0.32
5,267.00	91.30	3.00	2,622.47	2,801.58	-38.90	2,801.15	0.86	0.43	0.74
5,360.00	90.50	3.20	2,621.01	2,894.43	-33.87	2,894.04	0.89	-0.86	0.22
5,454.00	90.60	3.40	2,620.11	2,988.27	-28.46	2,987.92	0.24	0.11	0.21
5,548.00	90.60	2.30	2,619.13	3,082.14	-23.78	3,081.84	1.17	0.00	-1.17
5,641.00	90.90	2.30	2,617.91	3,175.06	-20.05	3,174.78	0.32	0.32	0.00
5,735.00	90.60	2.30	2,616.68	3,268.98	-16.28	3,268.73	0.32	-0.32	0.00
5,828.00	91.10	1.30	2,615.30	3,361.92	-13.36	3,361.69	1.20	0.54	-1.08
5,922.00	91.20	1.30	2,613.41	3,455.88	-11.23	3,455.66	0.11	0.11	0.00
6,015.00	91.50	1.30	2,611.22	3,548.83	-9.12	3,548.63	0.32	0.32	0.00
6,109.00	91.60	1.50	2,608.68	3,642.76	-6.82	3,642.58	0.24	0.11	0.21
6,203.00	91.60	1.80	2,606.05	3,736.69	-4.12	3,736.52	0.32	0.00	0.32
6,296.00	92.20	2.00	2,602.97	3,829.59	-1.03	3,829.44	0.68	0.65	0.22
6,390.00	91.20	1.50	2,600.18	3,923.50	1.84	3,923.38	1.19	-1.06	-0.53
6,483.00	89.80	0.60	2,599.37	4,016.48	3.54	4,016.37	1.79	-1.51	-0.97
6,577.00	89.40	0.40	2,600.03	4,110.47	4.36	4,110.36	0.48	-0.43	-0.21
6,671.00	89.80	0.90	2,600.68	4,204.46	5.43	4,204.36	0.68	0.43	0.53
6,764.00	89.80	1.50	2,601.01	4,297.44	7.37	4,297.35	0.65	0.00	0.65
6,857.00	90.60	1.50	2,600.68	4,390.41	9.81	4,390.34	0.86	0.86	0.00
6,951.00	90.30	1.50	2,599.94	4,484.37	12.27	4,484.32	0.32	-0.32	0.00
7,045.00	89.90	1.50	2,599.78	4,578.34	14.73	4,578.30	0.43	-0.43	0.00
7,139.00	89.80	1.50	2,600.03	4,672.31	17.19	4,672.29	0.11	-0.11	0.00
7,180.00	89.90	1.30	2,600.13	4,713.29	18.19	4,713.28	0.55	0.24	-0.49
Last Survey @ 7180.00' MD, 2600.13' TVD, 89.90° INC, 1.30° AZ									
7,234.00	89.90	1.30	2,600.23	4,767.28	19.42	4,767.28	0.00	0.00	0.00
Straight line Projection to TD @ 7234.00' MD, 2600.23' TVD									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,180.00	2,600.13	4,713.29	18.19	Last Survey @ 7180.00' MD, 2600.13' TVD, 89.90° INC, 1.30° AZ
7,234.00	2,600.23	4,767.28	19.42	Straight line Projection to TD @ 7234.00' MD, 2600.23' TVD

Checked By: _____ Approved By: _____ Date: _____