



A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

March 25, 2014

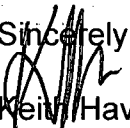
Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

30-015-41788

Attn: Kanicia Castillo

RE: **Myox 6 State Com No. 003H**

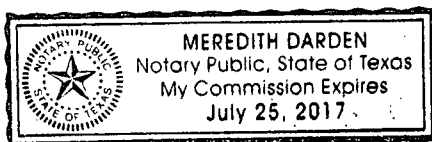
Please find enclosed a copy of the survey from 0.00' to 9310.00' ran on the
above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 25th day of March,
A.D., 2014, by Keith Havelka.


Meredith Darden
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)
Lease/Well: MYOX 6 STATE COM/No. 003H



Rig Name: SCAN FREEDOM
State/County: NEW MEXICO/EDDY
Latitude: 32.08, Longitude: -104.13
GRID North is 0.11 Degrees East of True North
VS-Azi: 179.82 Degrees



Depth Reference : RKB 27 FEET

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: e-line-de_01.ut

Minimum Curvature Method

Report Date/Time: 3/28/2014 / 13:57

Vaughn Energy Services

Midland, TX

432-563-5444

Surveyor: Andrew Meadville

Myox 6 State Com No. 003H / API 30-015-41788

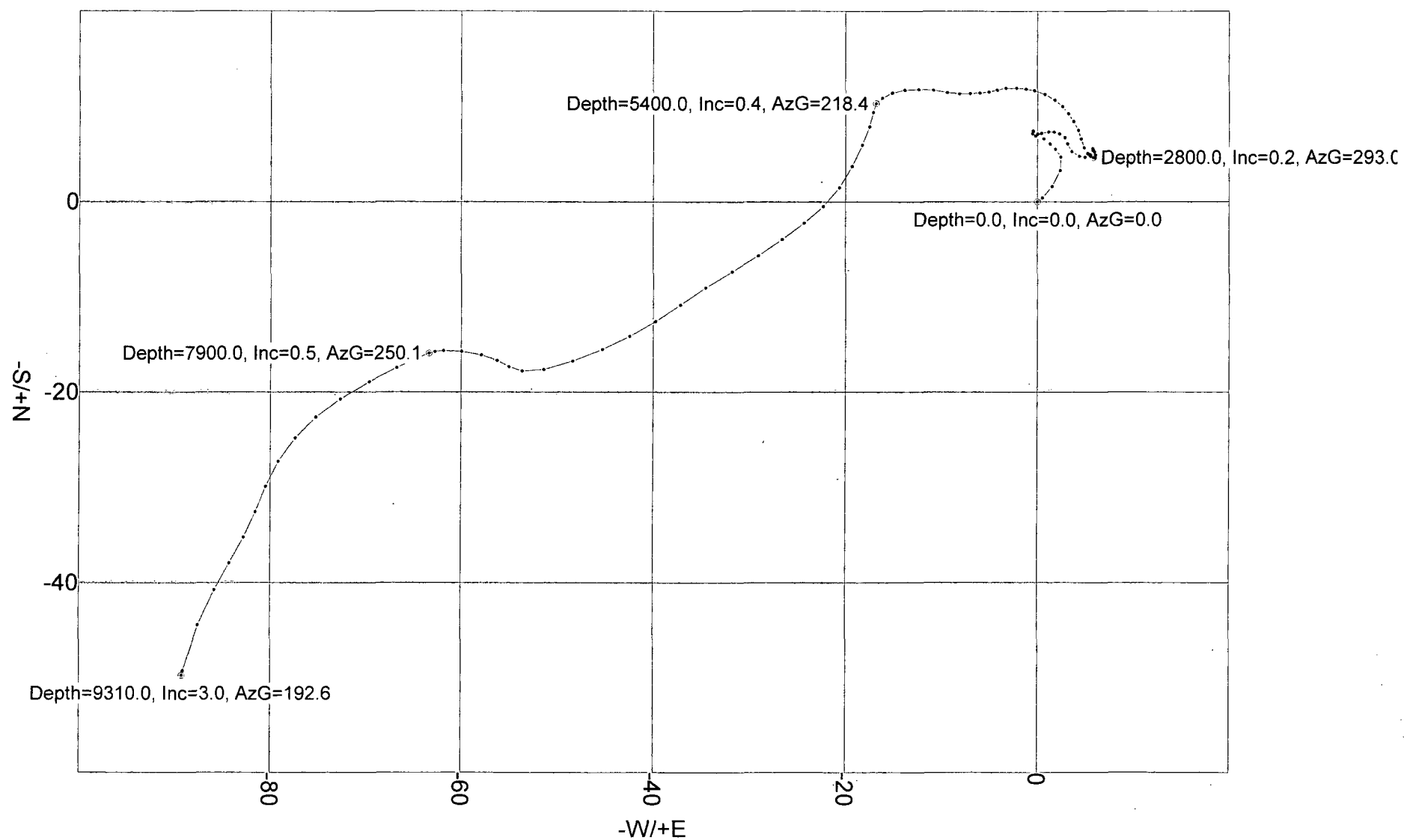
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.77	52.60	100.00	0.41	0.54	-0.41	0.67	52.60	0.77
200.00	1.05	31.00	199.98	1.60	1.54	-1.60	2.22	43.91	0.43
300.00	1.10	21.70	299.97	3.27	2.37	-3.27	4.04	35.84	0.18
400.00	0.70	331.42	399.96	4.70	2.43	-4.69	5.29	27.34	0.85
500.00	0.46	317.63	499.95	5.53	1.87	-5.52	5.84	18.70	0.27
600.00	0.43	311.62	599.95	6.07	1.32	-6.07	6.22	12.26	0.05
700.00	0.52	307.17	699.94	6.60	0.68	-6.59	6.63	5.86	0.09
800.00	0.43	306.50	799.94	7.09	0.02	-7.09	7.09	0.13	0.09
900.00	0.21	305.46	899.94	7.42	-0.43	-7.42	7.43	356.67	0.22
1000.00	0.45	171.51	999.94	7.14	-0.52	-7.14	7.15	355.82	0.62
1100.00	0.35	59.15	1099.94	6.90	-0.20	-6.90	6.90	358.32	0.67
1200.00	0.43	69.69	1199.93	7.19	0.41	-7.19	7.20	3.25	0.10
1300.00	0.46	87.69	1299.93	7.33	1.16	-7.33	7.42	8.97	0.14
1400.00	0.20	98.63	1399.93	7.32	1.73	-7.32	7.52	13.31	0.26
1500.00	0.47	112.99	1499.93	7.14	2.28	-7.13	7.49	17.73	0.28
1600.00	0.35	137.58	1599.93	6.75	2.86	-6.74	7.33	23.00	0.21
1700.00	0.50	169.96	1699.92	6.09	3.15	-6.08	6.86	27.33	0.27
1800.00	0.59	137.37	1799.92	5.29	3.57	-5.28	6.38	34.02	0.32

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.54	106.59	1899.91	4.78	4.37	-4.76	6.48	42.45	0.30
2000.00	0.16	72.55	1999.91	4.69	4.96	-4.67	6.82	46.61	0.42
2100.00	0.52	58.63	2099.91	4.96	5.47	-4.94	7.39	47.81	0.37
2200.00	0.26	353.42	2199.91	5.42	5.83	-5.40	7.96	47.11	0.47
2300.00	0.10	232.19	2299.91	5.59	5.74	-5.57	8.01	45.77	0.32
2400.00	0.14	135.79	2399.91	5.45	5.76	-5.43	7.93	46.60	0.18
2500.00	0.16	146.95	2499.91	5.25	5.92	-5.23	7.91	48.46	0.03
2600.00	0.26	169.76	2599.91	4.91	6.04	-4.89	7.78	50.90	0.13
2700.00	0.09	220.43	2699.91	4.62	6.03	-4.60	7.60	52.52	0.22
2800.00	0.21	292.97	2799.91	4.64	5.81	-4.62	7.44	51.41	0.20
2900.00	0.20	302.28	2899.91	4.80	5.50	-4.79	7.30	48.84	0.04
3000.00	0.24	323.37	2999.91	5.06	5.23	-5.05	7.28	45.91	0.09
3100.00	0.58	331.94	3099.90	5.67	4.86	-5.66	7.47	40.61	0.35
3200.00	0.55	351.04	3199.90	6.60	4.55	-6.58	8.02	34.59	0.19
3300.00	0.56	334.62	3299.89	7.52	4.26	-7.51	8.65	29.56	0.16
3400.00	0.62	328.56	3399.89	8.42	3.77	-8.41	9.23	24.13	0.08
3500.00	0.52	324.00	3499.88	9.25	3.22	-9.24	9.80	19.21	0.10
3600.00	0.58	316.74	3599.88	9.99	2.61	-9.99	10.33	14.61	0.09
3700.00	0.64	302.94	3699.87	10.67	1.79	-10.66	10.82	9.52	0.16
3800.00	0.72	297.16	3799.87	11.26	0.76	-11.26	11.28	3.87	0.11
3900.00	0.58	281.35	3899.86	11.64	-0.29	-11.65	11.65	358.56	0.23
4000.00	0.43	278.34	3999.85	11.80	-1.16	-11.80	11.86	354.40	0.15
4100.00	0.70	275.86	4099.85	11.91	-2.13	-11.92	12.10	349.85	0.27
4200.00	0.59	261.94	4199.84	11.91	-3.25	-11.92	12.34	344.74	0.19
4300.00	0.50	253.51	4299.84	11.71	-4.17	-11.72	12.43	340.39	0.12
4400.00	0.57	260.81	4399.83	11.51	-5.09	-11.52	12.58	336.15	0.10
4500.00	0.55	265.37	4499.83	11.39	-6.06	-11.41	12.90	331.98	0.05
4600.00	0.61	267.64	4599.82	11.33	-7.07	-11.35	13.35	328.03	0.07
4700.00	0.67	269.99	4699.82	11.30	-8.19	-11.33	13.96	324.08	0.07
4800.00	0.82	282.59	4799.81	11.46	-9.48	-11.49	14.87	320.41	0.22
4900.00	0.81	276.64	4899.80	11.70	-10.88	-11.73	15.98	317.08	0.09
5000.00	0.92	270.52	4999.79	11.79	-12.38	-11.83	17.10	313.59	0.15
5100.00	0.77	262.67	5099.78	11.71	-13.86	-11.75	18.14	310.20	0.19
5200.00	0.76	250.83	5199.77	11.41	-15.15	-11.45	18.97	306.97	0.16
5300.00	0.60	233.87	5299.76	10.88	-16.20	-10.93	19.51	303.90	0.26
5400.00	0.39	218.43	5399.76	10.31	-16.83	-10.36	19.73	301.50	0.24
5500.00	0.77	187.48	5499.75	9.38	-17.13	-9.43	19.52	298.70	0.48
5600.00	1.01	199.48	5599.74	7.88	-17.51	-7.94	19.20	294.24	0.30
5700.00	1.37	203.10	5699.72	5.95	-18.27	-6.01	19.21	288.05	0.37

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.46	206.48	5799.69	3.71	-19.31	-3.77	19.66	280.88	0.12
5900.00	1.53	215.08	5899.66	1.48	-20.64	-1.54	20.69	274.09	0.23
6000.00	1.44	226.34	5999.62	-0.48	-22.32	0.41	22.32	268.76	0.30
6100.00	1.59	230.40	6099.59	-2.24	-24.30	2.16	24.40	264.74	0.18
6200.00	1.65	234.67	6199.55	-3.95	-26.54	3.87	26.83	261.53	0.14
6300.00	1.80	236.37	6299.50	-5.65	-29.02	5.56	29.57	258.98	0.16
6400.00	1.89	240.55	6399.45	-7.33	-31.77	7.24	32.60	257.00	0.16
6500.00	1.86	237.62	6499.40	-9.01	-34.57	8.91	35.73	255.39	0.10
6600.00	1.78	232.77	6599.35	-10.83	-37.18	10.71	38.73	253.77	0.17
6700.00	1.78	239.05	6699.30	-12.57	-39.75	12.44	41.69	252.46	0.20
6800.00	1.78	241.70	6799.25	-14.10	-42.45	13.97	44.74	251.62	0.08
6900.00	1.84	246.69	6899.20	-15.48	-45.30	15.33	47.87	251.14	0.17
7000.00	1.96	249.42	6999.14	-16.71	-48.37	16.56	51.18	250.94	0.15
7100.00	1.62	257.87	7099.10	-17.61	-51.35	17.45	54.28	251.07	0.43
7200.00	1.00	279.44	7199.07	-17.76	-53.59	17.59	56.46	251.67	0.78
7300.00	0.67	301.47	7299.06	-17.31	-54.95	17.14	57.62	252.51	0.46
7400.00	0.96	295.19	7399.05	-16.65	-56.21	16.47	58.63	253.50	0.31
7500.00	1.08	283.15	7499.03	-16.08	-57.88	15.90	60.08	254.47	0.24
7600.00	1.36	277.80	7599.01	-15.71	-59.98	15.52	62.00	255.33	0.31
7700.00	0.82	264.48	7698.99	-15.61	-61.87	15.42	63.81	255.84	0.59
7800.00	0.21	258.75	7798.99	-15.72	-62.76	15.52	64.70	255.94	0.61
7900.00	0.51	250.08	7898.99	-15.91	-63.36	15.71	65.32	255.91	0.30
8000.00	1.08	246.14	7998.98	-16.44	-64.64	16.24	66.70	255.73	0.57
8100.00	1.56	244.09	8098.95	-17.42	-66.73	17.21	68.97	255.37	0.48
8200.00	2.17	241.60	8198.89	-18.91	-69.62	18.69	72.15	254.80	0.61
8300.00	1.93	237.20	8298.83	-20.73	-72.70	20.50	75.60	254.09	0.29
8400.00	1.75	229.57	8398.78	-22.63	-75.28	22.39	78.61	253.27	0.30
8500.00	1.74	218.98	8498.73	-24.80	-77.40	24.56	81.28	252.23	0.32
8600.00	1.75	212.90	8598.69	-27.26	-79.19	27.01	83.75	251.00	0.19
8700.00	1.64	199.92	8698.64	-29.89	-80.50	29.64	85.87	249.63	0.40
8800.00	1.63	203.26	8798.60	-32.55	-81.55	32.29	87.81	248.24	0.10
8900.00	1.75	206.73	8898.56	-35.22	-82.80	34.96	89.98	246.96	0.16
9000.00	1.81	211.16	8998.51	-37.94	-84.31	37.67	92.45	245.77	0.15
9100.00	1.88	206.93	9098.46	-40.75	-85.87	40.48	95.05	244.61	0.15
9200.00	2.81	203.55	9198.37	-44.46	-87.59	44.19	98.23	243.09	0.93
9300.00	3.01	193.92	9298.25	-49.26	-89.20	48.98	101.90	241.09	0.53
9310.00	2.99	192.64	9308.23	-49.77	-89.32	49.49	102.25	240.88	0.72



Vaughn Energy Services
Midland, TX
432-563-5444
Surveyor: Andrew Meadville
Myox 6 State Com No. 003H / API 30-015-41788



VES Survey Date: 03/13/2014



COG Operating LLC

Eddy County, NM (NAD 27 NME)

Myox 6 State

#3H

WB2/Job #1410284

Survey: Pheonix WB2 MWD Survey

Standard Survey Report

31 March, 2014



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3094.00usft (Scandril Freedom)
Site:	Myox 6 State	MD Reference:	KB @ 3094.00usft (Scandril Freedom)
Well:	#3H	North Reference:	Grid
Wellbore:	WB2/Job #1410284	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Scandril Freedom)	Database:	GCR DB

Project	Eddy County, NM (NAD 27 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	Myox 6 State				
Site Position:		Northing:	392,266.10 usft	Latitude:	32° 4' 41.84167 N
From:	Map	Easting:	563,486.50 usft	Longitude:	104° 7' 42.09780 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.11 °

Well	#3H					
Well Position	+N/-S	0.00 usft	Northing:	392,266.10 usft	Latitude:	32° 4' 41.84167 N
	+E/-W	0.00 usft	Easting:	563,486.50 usft	Longitude:	104° 7' 42.09780 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,068.00 usft	

Wellbore	WB2/Job #1410284				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	03/05/14	7.50	59.89	48,198

Design	Surveys (Scandril Freedom)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	7,400.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.82	

Survey Program	Date 03/31/14				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	7,400.00	Gyro Surveys (WB1/Job #1410284)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
7,400.00	17,755.00	Phoenix WB2 MWD Survey (WB2/Job #14	MWD	MWD - Standard	

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)	
7,400.00	0.96	295.19	7,399.05	-16.64	-56.21	16.47	0.00	0.00	0.00	
Tie-on WB1										
7,408.00	5.10	173.40	7,407.04	-16.97	-56.23	16.79	70.81	51.75	-1,522.38	
First Phoenix WB2 MWD Surveys										
7,472.00	11.80	161.60	7,470.31	-26.02	-53.83	25.85	10.76	10.47	-18.44	
7,503.00	15.80	158.30	7,500.41	-32.95	-51.27	32.79	13.15	12.90	-10.65	
7,535.00	19.60	157.20	7,530.89	-41.95	-47.58	41.80	11.92	11.88	-3.44	
7,566.00	23.80	157.60	7,559.69	-52.53	-43.18	52.39	13.56	13.55	1.29	
7,598.00	28.00	157.90	7,588.47	-65.46	-37.89	65.34	13.13	13.13	0.94	



Phoenix Technology Services

Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3094.00usft (Scandriill Freedom)
Site:	Myox 6 State	MD Reference:	KB @ 3094.00usft (Scandriill Freedom)
Well:	#3H	North Reference:	Grid
Wellbore:	WB2/Job #1410284	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Scandriill Freedom)	Database:	GCR DB

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)
7,629.00	32.30	159.80	7,615.27	-79.98	-32.29	79.88	14.21	13.87	6.13
7,661.00	36.40	162.90	7,641.68	-97.09	-26.54	97.01	13.93	12.81	9.69
7,692.00	39.80	166.70	7,666.08	-115.55	-21.55	115.48	13.32	10.97	12.26
7,724.00	42.10	168.90	7,690.25	-136.04	-17.13	135.99	8.48	7.19	6.88
7,755.00	44.40	170.80	7,712.83	-156.95	-13.40	156.91	8.52	7.42	6.13
7,787.00	47.00	172.60	7,735.17	-179.61	-10.10	179.58	9.07	8.13	5.63
7,819.00	50.30	172.90	7,756.31	-203.44	-7.07	203.41	10.34	10.31	0.94
7,850.00	52.80	173.90	7,775.59	-227.55	-4.28	227.54	8.45	8.06	3.23
7,882.00	55.50	174.60	7,794.33	-253.36	-1.69	253.35	8.62	8.44	2.19
7,913.00	57.90	176.40	7,811.35	-279.18	0.34	279.18	9.14	7.74	5.81
7,945.00	60.70	177.20	7,827.68	-306.65	1.87	306.66	9.01	8.75	2.50
7,977.00	63.50	177.90	7,842.66	-334.90	3.08	334.91	8.96	8.75	2.19
8,008.00	66.10	178.00	7,855.85	-362.93	4.08	362.94	8.39	8.39	0.32
8,040.00	69.10	178.20	7,868.05	-392.50	5.06	392.51	9.39	9.38	0.63
8,071.00	73.00	178.60	7,878.11	-421.80	5.88	421.82	12.64	12.58	1.29
8,103.00	75.70	179.90	7,886.74	-452.61	6.28	452.63	9.30	8.44	4.06
8,134.00	78.50	181.10	7,893.66	-482.82	6.02	482.84	9.79	9.03	3.87
8,166.00	81.10	182.30	7,899.33	-514.30	5.08	514.31	8.92	8.13	3.75
8,198.00	82.90	182.50	7,903.78	-545.96	3.75	545.97	5.66	5.63	0.63
8,229.00	85.40	182.70	7,906.94	-576.76	2.35	576.77	8.09	8.06	0.65
8,261.00	88.10	182.40	7,908.76	-608.68	0.93	608.68	8.49	8.44	-0.94
8,292.00	88.80	182.30	7,909.60	-639.64	-0.34	639.64	2.28	2.26	-0.32
8,324.00	89.60	182.10	7,910.04	-671.61	-1.57	671.60	2.58	2.50	-0.63
8,419.00	91.30	181.60	7,909.30	-766.56	-4.63	766.54	1.87	1.79	-0.53
8,513.00	89.00	182.60	7,909.05	-860.49	-8.08	860.46	2.67	-2.45	1.06
8,703.00	87.00	184.30	7,915.68	-1,050.01	-19.50	1,049.94	1.38	-1.05	0.89
8,798.00	88.30	184.50	7,919.58	-1,144.65	-26.78	1,144.56	1.38	1.37	0.21
8,892.00	88.90	184.70	7,921.87	-1,238.32	-34.32	1,238.20	0.67	0.64	0.21
8,987.00	89.80	184.40	7,922.95	-1,333.01	-41.85	1,332.87	1.00	0.95	-0.32
9,081.00	89.30	181.90	7,923.69	-1,426.86	-47.02	1,426.70	2.71	-0.53	-2.66
9,176.00	90.40	181.70	7,923.94	-1,521.81	-50.00	1,521.64	1.18	1.16	-0.21
9,271.00	91.80	181.50	7,922.11	-1,616.75	-52.66	1,616.58	1.49	1.47	-0.21
9,365.00	93.80	180.80	7,917.52	-1,710.62	-54.54	1,710.44	2.25	2.13	-0.74
9,460.00	94.20	180.80	7,910.90	-1,805.37	-55.86	1,805.19	0.42	0.42	0.00
9,554.00	91.50	181.10	7,906.22	-1,899.24	-57.42	1,899.05	2.89	-2.87	0.32
9,649.00	88.80	181.00	7,905.97	-1,994.21	-59.16	1,994.02	2.84	-2.84	-0.11
9,744.00	89.60	180.50	7,907.30	-2,089.19	-60.40	2,088.99	0.99	0.84	-0.53
9,842.00	90.00	181.00	7,907.64	-2,187.18	-61.69	2,186.98	0.65	0.41	0.51
9,937.00	91.70	181.00	7,906.23	-2,282.15	-63.34	2,281.94	1.79	1.79	0.00
10,032.00	90.70	180.70	7,904.24	-2,377.12	-64.75	2,376.91	1.10	-1.05	-0.32
10,126.00	91.90	180.80	7,902.11	-2,471.09	-65.98	2,470.87	1.28	1.28	0.11
10,221.00	90.10	179.90	7,900.45	-2,566.07	-66.56	2,565.85	2.12	-1.89	-0.95
10,315.00	88.50	179.40	7,901.60	-2,660.06	-65.99	2,659.83	1.78	-1.70	-0.53



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3094.00usft (Scandrift Freedom)
Site:	Myox 6 State	MD Reference:	KB @ 3094.00usft (Scandrift Freedom)
Well:	#3H	North Reference:	Grid
Wellbore:	WB2/Job #1410284	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Scandrift Freedom)	Database:	GCR DB

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)
10,411.00	89.40	179.30	7,903.36	-2,756.03	-64.90	2,755.81	0.94	0.94	-0.10
10,506.00	90.50	179.60	7,903.44	-2,851.03	-63.99	2,850.81	1.20	1.16	0.32
10,600.00	89.00	179.20	7,903.85	-2,945.02	-63.00	2,944.80	1.65	-1.60	-0.43
10,696.00	88.10	178.90	7,906.28	-3,040.97	-61.41	3,040.76	0.99	-0.94	-0.31
10,790.00	89.40	179.00	7,908.33	-3,134.93	-59.69	3,134.73	1.39	1.38	0.11
10,884.00	90.70	179.10	7,908.25	-3,228.92	-58.13	3,228.72	1.39	1.38	0.11
10,978.00	89.50	179.70	7,908.09	-3,322.91	-57.15	3,322.71	1.43	-1.28	0.64
11,073.00	88.20	180.00	7,909.99	-3,417.89	-56.90	3,417.69	1.40	-1.37	0.32
11,167.00	89.50	180.20	7,911.88	-3,511.87	-57.06	3,511.67	1.40	1.38	0.21
11,261.00	90.60	180.10	7,911.80	-3,605.86	-57.31	3,605.67	1.18	1.17	-0.11
11,355.00	89.10	179.40	7,912.04	-3,699.86	-56.90	3,699.66	1.76	-1.60	-0.74
11,450.00	89.80	179.70	7,912.96	-3,794.85	-56.15	3,794.66	0.80	0.74	0.32
11,544.00	90.70	179.50	7,912.55	-3,888.85	-55.50	3,888.65	0.98	0.96	-0.21
11,638.00	91.40	179.30	7,910.82	-3,982.83	-54.51	3,982.64	0.77	0.74	-0.21
11,731.00	89.60	179.30	7,910.01	-4,075.81	-53.38	4,075.62	1.94	-1.94	0.00
11,826.00	90.20	180.10	7,910.18	-4,170.81	-52.88	4,170.62	1.05	0.63	0.84
11,920.00	88.90	179.70	7,910.92	-4,264.80	-52.72	4,264.62	1.45	-1.38	-0.43
12,014.00	89.20	178.90	7,912.47	-4,358.78	-51.57	4,358.60	0.91	0.32	-0.85
12,108.00	89.80	178.90	7,913.29	-4,452.76	-49.76	4,452.58	0.64	0.64	0.00
12,202.00	90.20	178.30	7,913.29	-4,546.73	-47.47	4,546.56	0.77	0.43	-0.64
12,296.00	90.90	178.60	7,912.39	-4,640.69	-44.92	4,640.53	0.81	0.74	0.32
12,390.00	91.70	178.30	7,910.26	-4,734.63	-42.38	4,734.48	0.91	0.85	-0.32
12,484.00	92.20	178.10	7,907.06	-4,828.53	-39.43	4,828.39	0.57	0.53	-0.21
12,578.00	90.50	178.30	7,904.85	-4,922.46	-36.48	4,922.32	1.82	-1.81	0.21
12,672.00	91.20	177.80	7,903.45	-5,016.39	-33.28	5,016.26	0.92	0.74	-0.53
12,766.00	89.50	179.30	7,902.88	-5,110.35	-30.90	5,110.23	2.41	-1.81	1.60
12,861.00	90.90	179.80	7,902.55	-5,205.35	-30.16	5,205.23	1.56	1.47	0.53
12,955.00	89.70	179.10	7,902.05	-5,299.34	-29.25	5,299.22	1.48	-1.28	-0.74
13,048.00	91.00	178.90	7,901.49	-5,392.32	-27.63	5,392.21	1.41	1.40	-0.22
13,142.00	89.30	178.40	7,901.24	-5,486.29	-25.42	5,486.18	1.89	-1.81	-0.53
13,236.00	87.70	178.90	7,903.70	-5,580.23	-23.20	5,580.13	1.78	-1.70	0.53
13,331.00	88.50	178.70	7,906.85	-5,675.16	-21.21	5,675.06	0.87	0.84	-0.21
13,424.00	90.00	178.60	7,908.07	-5,768.12	-19.02	5,768.03	1.62	1.61	-0.11
13,519.00	90.90	178.40	7,907.32	-5,863.08	-16.54	5,863.00	0.97	0.95	-0.21
13,612.00	91.70	177.90	7,905.21	-5,956.01	-13.54	5,955.94	1.01	0.86	-0.54
13,706.00	89.90	177.60	7,903.90	-6,049.92	-9.85	6,049.86	1.94	-1.91	-0.32
13,800.00	88.30	178.30	7,905.38	-6,143.85	-6.48	6,143.80	1.86	-1.70	0.74
13,894.00	89.10	178.40	7,907.51	-6,237.78	-3.78	6,237.74	0.86	0.85	0.11
13,988.00	90.20	178.50	7,908.08	-6,331.75	-1.23	6,331.71	1.18	1.17	0.11
14,082.00	91.10	178.50	7,907.02	-6,425.71	1.23	6,425.68	0.96	0.96	0.00
14,176.00	91.90	178.30	7,904.56	-6,519.64	3.85	6,519.62	0.88	0.85	-0.21
14,270.00	90.00	179.10	7,903.00	-6,613.60	5.98	6,613.58	2.19	-2.02	0.85
14,364.00	87.70	179.70	7,904.88	-6,707.57	6.97	6,707.55	2.53	-2.45	0.64
14,458.00	88.40	179.00	7,908.08	-6,801.50	8.03	6,801.50	1.05	0.74	-0.74



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3094.00usft (Scandrill Freedom)
Site:	Myox 6 State	MD Reference:	KB @ 3094.00usft (Scandrill Freedom)
Well:	#3H	North Reference:	Grid
Wellbore:	WB2/Job #1410284	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Scandrill Freedom)	Database:	GCR DB

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)
14,552.00	89.20	178.90	7,910.05	-6,895.47	9.75	6,895.46	0.86	0.85	-0.11
14,646.00	90.10	178.50	7,910.63	-6,989.44	11.89	6,989.44	1.05	0.96	-0.43
14,740.00	91.00	178.30	7,909.72	-7,083.40	14.51	7,083.41	0.98	0.96	-0.21
14,834.00	91.70	178.30	7,907.51	-7,177.33	17.30	7,177.35	0.74	0.74	0.00
14,928.00	90.20	179.20	7,905.95	-7,271.29	19.35	7,271.32	1.86	-1.60	0.96
15,023.00	91.00	179.40	7,904.95	-7,366.28	20.51	7,366.31	0.87	0.84	0.21
15,117.00	89.80	179.70	7,904.30	-7,460.27	21.25	7,460.30	1.32	-1.28	0.32
15,211.00	90.40	179.00	7,904.13	-7,554.26	22.31	7,554.30	0.98	0.64	-0.74
15,305.00	89.80	180.70	7,903.97	-7,648.26	22.56	7,648.29	1.92	-0.64	1.81
15,399.00	90.10	180.60	7,904.05	-7,742.25	21.49	7,742.28	0.34	0.32	-0.11
15,493.00	90.80	180.20	7,903.31	-7,836.25	20.84	7,836.27	0.86	0.74	-0.43
15,587.00	91.70	180.30	7,901.26	-7,930.22	20.43	7,930.25	0.96	0.96	0.11
15,682.00	89.30	180.30	7,900.43	-8,025.21	19.93	8,025.23	2.53	-2.53	0.00
15,776.00	89.30	179.80	7,901.58	-8,119.20	19.85	8,119.23	0.53	0.00	-0.53
15,870.00	89.10	179.50	7,902.90	-8,213.19	20.42	8,213.22	0.38	-0.21	-0.32
15,963.00	88.50	179.60	7,904.84	-8,306.17	21.15	8,306.19	0.65	-0.65	0.11
16,057.00	89.70	178.60	7,906.32	-8,400.14	22.63	8,400.17	1.66	1.28	-1.06
16,152.00	90.60	179.40	7,906.07	-8,495.13	24.29	8,495.16	1.27	0.95	0.84
16,246.00	91.00	179.60	7,904.76	-8,589.11	25.11	8,589.15	0.48	0.43	0.21
16,340.00	91.30	179.30	7,902.87	-8,683.09	26.01	8,683.13	0.45	0.32	-0.32
16,433.00	91.90	179.20	7,900.28	-8,776.04	27.23	8,776.09	0.65	0.65	-0.11
16,528.00	93.00	179.00	7,896.21	-8,870.94	28.72	8,870.99	1.18	1.16	-0.21
16,622.00	91.50	179.30	7,892.52	-8,964.86	30.11	8,964.91	1.63	-1.60	0.32
16,716.00	89.90	180.40	7,891.38	-9,058.85	30.36	9,058.90	2.07	-1.70	1.17
16,810.00	89.60	179.90	7,891.79	-9,152.85	30.11	9,152.89	0.62	-0.32	-0.53
16,904.00	89.00	180.40	7,892.93	-9,246.84	29.86	9,246.89	0.83	-0.64	0.53
16,998.00	89.70	179.70	7,894.00	-9,340.83	29.78	9,340.88	1.05	0.74	-0.74
17,092.00	90.20	178.90	7,894.08	-9,434.82	30.93	9,434.87	1.00	0.53	-0.85
17,186.00	90.60	178.70	7,893.43	-9,528.80	32.90	9,528.86	0.48	0.43	-0.21
17,280.00	88.80	178.50	7,893.92	-9,622.77	35.19	9,622.83	1.93	-1.91	-0.21
17,374.00	89.10	178.30	7,895.64	-9,716.71	37.82	9,716.78	0.38	0.32	-0.21
17,468.00	89.30	178.00	7,896.95	-9,810.65	40.85	9,810.73	0.38	0.21	-0.32
17,562.00	89.30	177.60	7,898.10	-9,904.58	44.46	9,904.67	0.43	0.00	-0.43
17,656.00	90.40	177.60	7,898.35	-9,998.49	48.40	9,998.60	1.17	1.17	0.00
17,699.00	90.20	177.50	7,898.12	-10,041.45	50.24	10,041.56	0.52	-0.47	-0.23
Last Phoenix WB2 MWD Surveys									
17,755.00	90.20	177.50	7,897.93	-10,097.40	52.68	10,097.52	0.00	0.00	0.00
Projection to TD									



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD 27 NME)	TVD Reference:	KB @ 3094.00usft (Scandriill Freedom)
Site:	Myox 6 State	MD Reference:	KB @ 3094.00usft (Scandriill Freedom)
Well:	#3H	North Reference:	Grid
Wellbore:	WB2/Job #1410284	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Scandriill Freedom)	Database:	GCR DB

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,400.00	7,399.05	-16.64	-56.21	Tie-on WB1
7,408.00	7,407.04	-16.97	-56.23	First Pheonix WB2 MWD Surveys
17,699.00	7,898.12	-10,041.45	50.24	Last Pheonix WB2 MWD Surveys
17,755.00	7,897.93	-10,097.40	52.68	Projection to TD

Checked By: _____ Approved By: _____ Date: _____



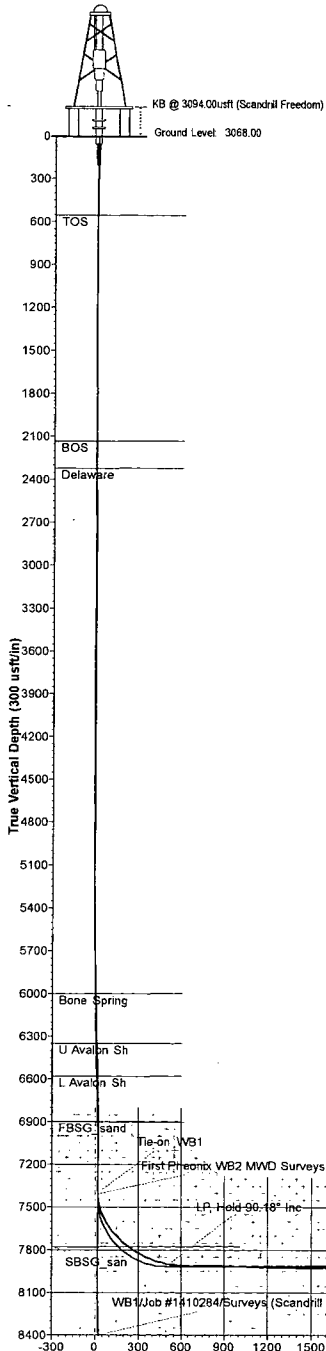
Project: Eddy County, NM (NAD 27 NME)
Site: Myox 6 State
Well: #3H
Wellbore: WB2/Job #1410284
Design: Plan#2 03-14-14
Rig: Scandril Freedom



PHOENIX
TECHNOLOGY SERVICES



Azimuths to Grid North
True North: -0.11°
Magnetic North: 7.39°
Magnetic Field
Strength: 48198.3snT
Dip Angle: 59.89°
Date: 03/05/2014
Model: IGRF2010_14



WELL DETAILS													
+N-S		+E/W		Northing		Ground Level:		3068.00		Latitude		Longitude	
0.00		0.00		392266.10		Easting		563486.50		32° 4' 41.84167 N		104° 7' 42.09780 W	

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E/W	Dleg	TFace	VSec	Target	Annotation
1	7400.00	0.96	295.19	7399.05	-16.64	-56.21	0.00	0.00	16.47		Gyro Tie On @ 7400' MD
2	7436.00	1.00	290.53	7435.04	-16.41	-56.78	0.25	-65.69	16.23		KOP, 121100' Build
3	8190.51	90.18	179.46	7915.44	-495.43	-60.07	12.00	-111.07	495.24		LP, Hold 90.18° Inc
4	17804.06	90.18	179.46	7885.00	-10108.50	31.30	0.00	0.00	10108.55	BHL Myox 6 State #3H	TO at 17804.06

DESIGN TARGET DETAILS																	
Name		TVD		+N-S		+E/W		Northing		Easting		Latitude		Longitude		Shape	
BHL Myox 6 State #3H		7885.00		-10108.50		31.30		382157.60		563517.80		32° 3' 1.80158 N		104° 7' 41.95718 W		Point	
- plan hits target center																	

LEGEND																	
— #3H, WB2/Job #1410284, Surveys (Scandril Freedom) V0																	
— #3H, WB1/Job #1410284, Surveys (Scandril Freedom) V0																	
— Plan#2 03-14-14																	

CASING DETAILS											
TVD		MD		Name		Size					
		350.00		9 5/8"		9-5/8					
		2340.00		5 1/2"		5-1/2					

Map System: US State Plane 1927 (Exact solution)					
Datum: NAD 1927 (NADCON CONUS)					
Ellipsoid: Clarke 1866					
Zone Name: New Mexico East 3001					
Local Origin: Well #3H, Grid North					
Latitude: 32° 4' 41.84167 N					
Longitude: 104° 7' 42.09780 W					
Grid East: 563486.50					
Grid North: 392266.10					
Scale Factor: 1.000					
Geomagnetic Model: IGRF2010_14					
Sample Date: 05-Mar-14					
Magnetic Declination: 7.50°					
Dip Angle from Horizontal: 59.89°					
Magnetic Field Strength: 48198					
To convert a Magnetic Direction to a Grid Direction, Add 7.39°					
To convert a Magnetic Direction to a True Direction, Add 7.50° East					
To convert a True Direction to a Grid Direction, Subtract 0.11°					
FORMATION TOP DETAILS					
TVDPath	MDPath	Formation	DipAngle	DipDir	
7775.51	7813.85	SBSG_san	-0.18	179.82	

