

May 22, 2015

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

15-42952

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 3 2015

RECEIVED

Attn: Kanicia Castillo

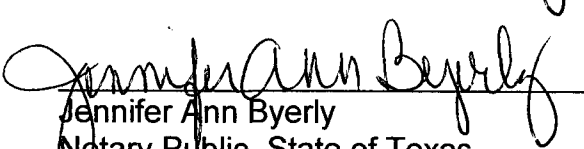
RE: **Stonewall 9 Fee 6H**

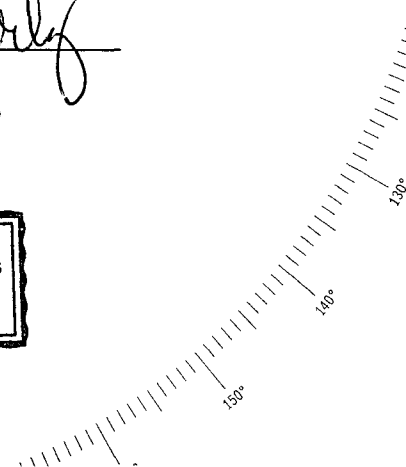
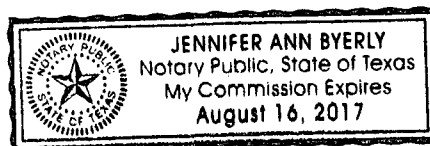
Please find enclosed a copy of the survey from 0' to 2472' ran on the above referenced well.

Sincerely, 
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 22 day of May,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: Concho
Lease/Well: Stonewall 9 Fee/6H

Rig Name: Silver Oak 3
State/County: New Mexico/Eddy

VS-Azi: 0.00 Degrees

Latitude: 32.66814, Longitude: -104.38722

Grid Convergence Applied = +0.03 degs (NAD 27)

Grid North = True North +0.03 degs



Depth Reference : RKB = 18 feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 5/22/2015 / 12:17

VES Survey International

Midland, Texas

432-563-5444

Surveyor: Adam Askew

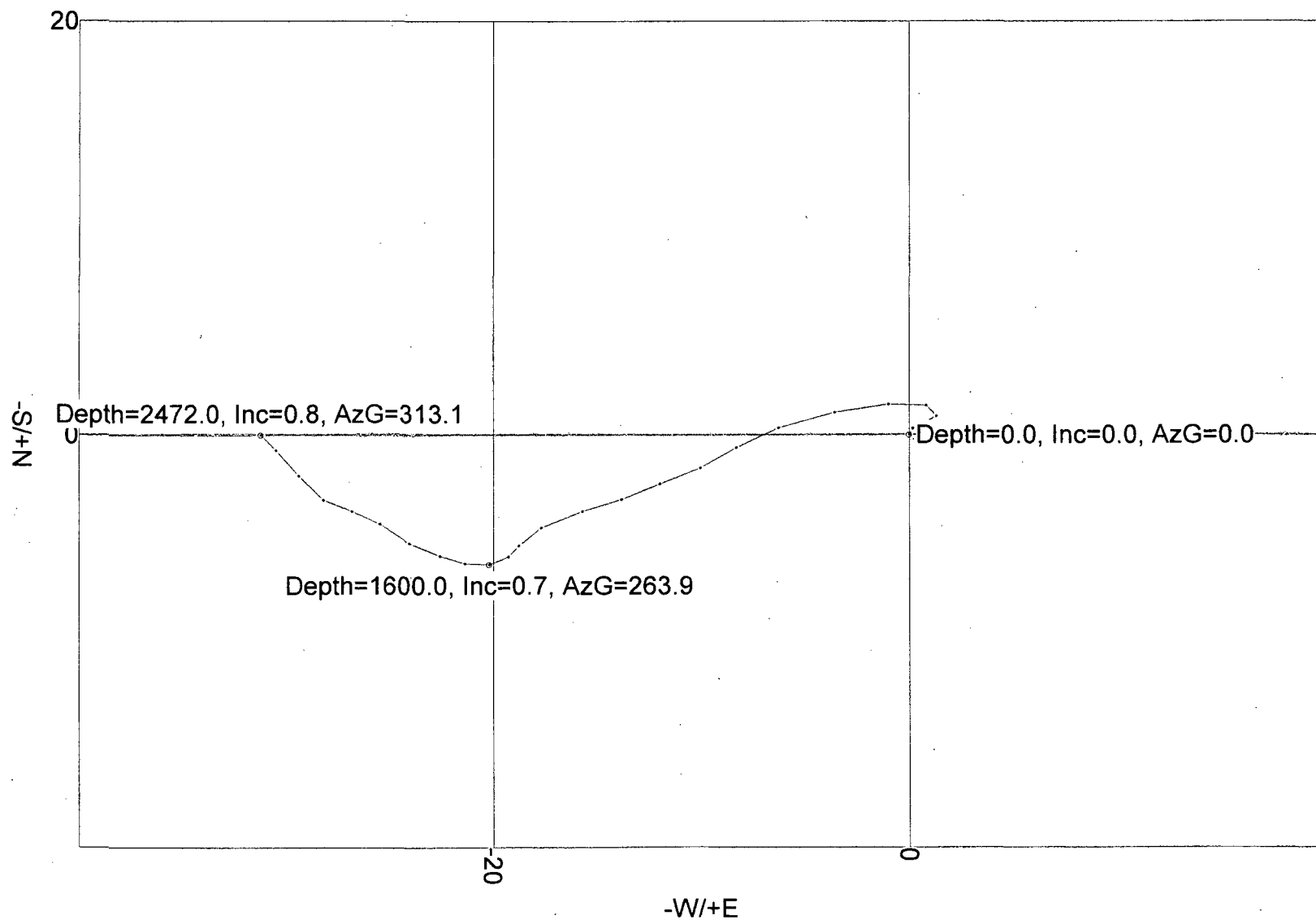
Stonewall 9 Fee 6H / API 30-015-42952

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	0.39	28.23	100.00	0.30	0.16	0.30	0.34	28.23	0.39
200.00	0.45	94.85	200.00	0.57	0.72	0.57	0.91	51.66	0.47
300.00	0.46	26.00	299.99	0.90	1.29	0.90	1.57	55.15	0.52
400.00	0.78	283.13	399.99	1.42	0.81	1.42	1.63	29.63	0.99
500.00	1.31	265.16	499.97	1.47	-1.00	1.47	1.78	325.96	0.62
600.00	1.70	258.33	599.94	1.08	-3.59	1.08	3.75	286.72	0.43
700.00	1.52	250.30	699.90	0.33	-6.29	0.33	6.30	273.02	0.29
800.00	1.09	236.94	799.87	-0.63	-8.33	-0.63	8.35	265.67	0.52
900.00	1.20	243.96	899.85	-1.61	-10.06	-1.61	10.19	260.92	0.18
1000.00	1.19	252.72	999.83	-2.38	-11.99	-2.38	12.23	258.80	0.18
1100.00	1.10	242.51	1099.81	-3.13	-13.84	-3.13	14.19	257.26	0.22
1200.00	1.19	262.78	1199.79	-3.70	-15.72	-3.70	16.15	256.75	0.41
1300.00	1.29	234.74	1299.77	-4.49	-17.68	-4.49	18.24	255.76	0.61
1400.00	0.32	216.34	1399.76	-5.36	-18.77	-5.36	19.52	254.05	0.99
1500.00	0.53	227.66	1499.76	-5.90	-19.28	-5.90	20.16	252.98	0.23
1600.00	0.67	263.94	1599.75	-6.28	-20.20	-6.28	21.15	252.74	0.39

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
1700.00	0.70	279.85	1699.74	-6.23	-21.38	-6.23	22.27	253.75	0.19
1800.00	0.75	294.06	1799.74	-5.86	-22.58	-5.86	23.33	255.45	0.19
1900.00	1.05	292.06	1899.72	-5.25	-24.02	-5.25	24.59	257.67	0.30
2000.00	0.98	314.22	1999.71	-4.31	-25.48	-4.31	25.85	260.40	0.39
2100.00	0.88	271.34	2099.70	-3.70	-26.87	-3.70	27.12	262.17	0.69
2200.00	0.92	310.55	2199.69	-3.16	-28.24	-3.16	28.42	263.62	0.60
2300.00	1.00	318.11	2299.67	-1.99	-29.43	-1.99	29.50	266.13	0.15
2400.00	0.88	318.81	2399.66	-0.76	-30.52	-0.76	30.53	268.58	0.12
2472.00	0.76	313.05	2471.65	-0.01	-31.24	-0.01	31.24	269.97	0.20



VES Survey International
Midland, Texas
432-563-5444
Surveyor: Adam Askew
Stonewall 9 Fee 6H / API 30-015-42952



VES Survey Date: 5/13/2015



PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

May 22, 2015

COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Stonewall 9 Fee #6H
150' FSL & 2310' FWL
Sec. 9, T19S, R26E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned well.

Very truly yours,

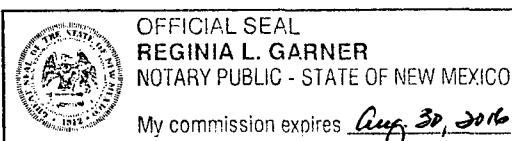
A handwritten signature in black ink, appearing to read "Chris Graham". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 22nd day of May, 2015.

A handwritten signature in black ink, appearing to read "Regina L. Garner". The signature is cursive and elegant, with the first letters of the first and last names being capitalized and prominent.

Notary Public

STONEWALL 9 FEE #6H

Date	Depth	Deviation	Direction	TVD
5/11/2015	262	0.70	0.00	0.00
5/11/2015	414	0.70	0.00	0.00
5/11/2015	715	1.50	0.00	0.00
5/11/2015	810	1.30	0.00	0.00
5/11/2015	967	1.20	0.00	0.00
5/11/2015	1155	1.00	0.00	0.00
5/13/2015	1404	0.80	0.00	0.00
5/13/2015	1847	1.10	0.00	0.00
5/13/2015	2100	1.00	0.00	0.00
5/14/2015	2484	1.00	306.40	0.00
5/14/2015	2515	1.00	314.10	0.00
5/14/2015	2547	1.00	314.80	0.00
5/14/2015	2579	6.00	0.00	0.00
5/14/2015	2610	8.40	3.60	0.00
5/14/2015	2641	10.90	1.20	0.00
5/14/2015	2673	13.10	358.10	0.00
5/14/2015	2736	17.90	358.30	0.00
5/15/2015	2798	23.90	357.00	2789.00
5/15/2015	2830	26.50	358.00	2818.00
5/15/2015	2861	29.60	359.80	2846.00
5/15/2015	2893	32.90	0.40	2873.00
5/15/2015	2956	39.70	359.50	2924.00
5/15/2015	2987	42.20	359.80	2997.00
5/15/2015	3019	45.00	0.40	2970.00
5/15/2015	3051	47.70	1.20	2992.00
5/15/2015	3082	50.70	1.90	3012.00
5/15/2015	3113	53.90	1.70	3031.00
5/15/2015	3145	57.50	1.60	0.00
5/15/2015	3177	60.70	1.10	0.00
5/15/2015	3208	63.80	359.90	0.00
5/15/2015	3240	67.00	359.50	0.00
5/15/2015	3303	74.60	357.30	0.00
5/15/2015	3335	78.60	357.50	0.00
5/15/2015	3449	89.70	357.30	0.00
5/16/2015	3512	89.80	358.50	0.00
5/16/2015	3606	90.10	359.30	0.00
5/16/2015	3701	89.50	359.00	0.00
5/16/2015	3890	90.40	359.00	0.00
5/16/2015	3985	90.50	358.90	0.00
5/16/2015	4081	90.70	358.60	0.00
5/16/2015	4175	90.80	358.40	0.00
5/16/2015	4269	90.80	358.40	0.00
5/16/2015	4365	90.80	358.60	0.00

Date	Depth	Deviation	Direction	TVD
5/16/2015	4460	90.90	358.60	0.00
5/16/2015	4554	91.00	358.80	0.00
5/17/2015	4743	91.40	358.90	3118.96
5/17/2015	4836	91.70	358.80	3116.44
5/17/2015	4931	90.90	358.90	0.00
5/17/2015	5025	91.00	358.70	3112.73
5/17/2015	5120	91.00	358.60	0.00
5/17/2015	5214	90.90	358.80	0.00
5/17/2015	5308	90.90	358.80	0.00
5/17/2015	5403	91.30	359.00	0.00
5/17/2015	5498	91.60	358.80	0.00
5/17/2015	5592	90.50	358.90	0.00
5/18/2015	5782	91.30	358.30	0.00
5/18/2015	5876	91.50	358.20	0.00
5/18/2015	5971	91.80	358.78	0.00
5/18/2015	6160	90.80	358.90	0.00
5/18/2015	6254	90.00	358.50	0.00
5/18/2015	6348	90.40	358.50	0.00
5/18/2015	6443	90.60	358.40	0.00
5/18/2015	6537	90.70	358.10	0.00
5/18/2015	6632	91.10	358.90	0.00
5/18/2015	6727	91.40	358.50	0.00
5/19/2015	6822	91.90	359.00	0.00
5/19/2015	6917	91.10	359.70	0.00
5/19/2015	7102	90.10	359.30	0.00
5/19/2015	7196	90.40	358.30	0.00
5/19/2015	7291	90.60	358.50	0.00
5/19/2015	7385	90.10	358.40	0.00
5/19/2015	7480	89.70	358.60	0.00
5/19/2015	7575	90.20	358.10	0.00
5/19/2015	7734	91.60	358.50	0.00

EOF



COG Operating LLC

Eddy County, NM (NAD27 NME)

Stonewall 9 Fee

#6H

WB1 / Job #1513532

Design: Surveys (Silver Oak 3)

Standard Survey Report

20 May, 2015





Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well: #6H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3372.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3372.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513532	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

Project:	Eddy 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		

Site:	Stonewall 9 Fee		
Site Position:		Northing:	611,835.50 usft
From:	Map	Easting:	482,702.00 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 55.28160 N
		Longitude:	104° 23' 22.39586 W
		Grid Convergence:	-0.03 °

Well	#6H					
Well Position	+N/-S	0.00 usft	Northing:	606,785.90 usft	Latitude:	32° 40' 5.31615 N
	+E/-W	0.00 usft	Easting:	483,417.90 usft	Longitude:	104° 23' 13.98945 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,354.00 usft

Wellbore: WB1 / Job #1513532					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/6/2015	7.63	60.55	48,415

Design					Surveys: (Silver Oak 3)						
Audit Notes:											
Version:		1.0		Phase:		ACTUAL		Tie On Depth:		0.00	
Vertical Section:		Depth From (TVD)			+N/-S		+E/-W		Direction		
		(usft)			(usft)		(usft)		(°)		
		0.00			0.00		0.00		358.42		

Survey Program:	Date	5/20/2015		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.00	2,472.00	VES Gyro Survey (WB1 / Job #1513532)	NS-GYRO-MS	North sensing gyrocompassing m/s
2,547.00	7,734.00	Phoenix MWD Surveys (WB1 / Job #1513	PHX+MWD+HDGM	PHX+MWD+HDGM

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.39	28.23	100.00	0.30	0.16	0.30	0.39	0.39	0.00
200.00	0.45	94.85	200.00	0.57	0.71	0.55	0.46	0.06	66.62
300.00	0.46	26.00	299.99	0.89	1.28	0.86	0.51	0.01	-68.85
400.00	0.78	283.13	399.99	1.41	0.79	1.39	0.99	0.32	-102.87
500.00	1.31	265.16	499.97	1.47	-1.01	1.49	0.62	0.53	-17.97
600.00	1.70	258.33	599.94	1.07	-3.60	1.17	0.43	0.39	-6.83
700.00	1.52	250.30	699.90	0.32	-6.30	0.50	0.29	-0.18	-8.03
800.00	1.09	236.94	799.87	-0.64	-8.35	-0.41	0.52	-0.43	-13.36
900.00	1.20	243.96	899.85	-1.62	-10.09	-1.34	0.18	0.11	7.02



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3372.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3372.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 // Job #1513532	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

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)
1,000.00	1.19	252.72	999.83	-2.39	-12.02	-2.06	0.18	-0.01	8.76
1,100.00	1.10	242.51	1,099.81	-3.14	-13.86	-2.76	0.22	-0.09	-10.21
1,200.00	1.19	262.78	1,199.79	-3.71	-15.74	-3.28	0.41	0.09	20.27
1,300.00	1.29	234.74	1,299.77	-4.49	-17.69	-4.00	0.61	0.10	-28.04
1,400.00	0.32	216.34	1,399.76	-5.37	-18.78	-4.85	0.99	-0.97	-18.40
1,500.00	0.53	227.66	1,499.76	-5.91	-19.28	-5.37	0.23	0.21	11.32
1,600.00	0.67	263.94	1,599.75	-6.28	-20.21	-5.72	0.40	0.14	36.28
1,700.00	0.70	279.85	1,699.74	-6.24	-21.39	-5.64	0.19	0.03	15.91
1,800.00	0.75	294.06	1,799.74	-5.86	-22.59	-5.24	0.19	0.05	14.21
1,900.00	1.05	292.06	1,899.72	-5.25	-24.04	-4.59	0.30	0.30	-2.00
2,000.00	0.98	314.22	1,999.71	-4.31	-25.50	-3.61	0.40	-0.07	22.16
2,100.00	0.88	271.34	2,099.70	-3.70	-26.88	-2.96	0.69	-0.10	-42.88
2,200.00	0.92	310.55	2,199.69	-3.16	-28.26	-2.38	0.61	0.04	39.21
2,300.00	1.00	318.11	2,299.67	-1.99	-29.45	-1.17	0.15	0.08	7.56
2,400.00	0.88	318.81	2,399.66	-0.76	-30.54	0.08	0.12	-0.12	0.70
2,472.00	0.76	313.05	2,471.65	-0.02	-31.25	0.84	0.20	-0.17	-8.00
Tie-on to VES Gyro Survey									
2,547.00	3.20	355.00	2,546.60	2.41	-31.80	3.28	3.58	3.25	55.93
First Phoenix MWD Survey									
2,579.00	6.00	0.00	2,578.50	4.97	-31.87	5.85	8.83	8.75	15.63
2,610.00	8.40	3.60	2,609.25	8.85	-31.73	9.72	7.87	7.74	11.61
2,641.00	10.90	1.20	2,639.81	14.04	-31.53	14.91	8.17	8.06	-7.74
2,673.00	13.10	358.70	2,671.11	20.69	-31.55	21.56	7.06	6.88	-7.81
2,704.00	15.20	358.30	2,701.17	28.27	-31.75	29.13	6.78	6.77	-1.29
2,736.00	17.90	358.30	2,731.84	37.38	-32.02	38.25	8.44	8.44	0.00
2,767.00	21.10	357.80	2,761.06	47.72	-32.37	48.59	10.34	10.32	-1.61
2,798.00	23.90	357.00	2,789.69	59.57	-32.92	60.45	9.09	9.03	-2.58
2,830.00	26.50	358.00	2,818.64	73.18	-33.51	74.08	8.23	8.13	3.13
2,861.00	29.60	359.80	2,846.00	87.75	-33.77	88.65	10.37	10.00	5.81
2,893.00	32.90	0.40	2,873.35	104.35	-33.74	105.24	10.36	10.31	1.88
2,924.00	36.50	359.80	2,898.84	121.99	-33.71	122.88	11.66	11.61	-1.94
2,956.00	39.70	359.50	2,924.02	141.74	-33.84	142.61	10.02	10.00	-0.94
2,987.00	42.20	359.80	2,947.43	162.05	-33.96	162.93	8.09	8.06	0.97
3,019.00	45.00	0.40	2,970.60	184.12	-33.92	184.98	8.84	8.75	1.88
3,051.00	47.70	1.20	2,992.68	207.27	-33.59	208.11	8.63	8.44	2.50
3,082.00	50.70	1.90	3,012.94	230.72	-32.95	231.54	9.83	9.68	2.26
3,113.00	53.90	1.70	3,031.89	255.23	-32.18	256.02	10.34	10.32	-0.65
3,145.00	57.50	1.60	3,049.92	281.65	-31.42	282.41	11.25	11.25	-0.31
3,177.00	60.70	1.10	3,066.35	309.10	-30.78	309.83	10.09	10.00	-1.56
3,208.00	63.80	359.90	3,080.79	336.53	-30.54	337.24	10.57	10.00	-3.87
3,240.00	67.00	359.50	3,094.11	365.62	-30.70	366.33	10.06	10.00	-1.25
3,271.00	70.90	358.20	3,105.24	394.54	-31.28	395.25	13.18	12.58	-4.19
3,303.00	74.60	357.30	3,114.73	425.07	-32.48	425.81	11.87	11.56	-2.81



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #6H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3372.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3372.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513532	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

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)	
3,335.00	78.60	357.50	3,122.14	456.16	-33.89	456.92	12.51	12.50	0.63	
3,366.00	81.70	357.90	3,127.44	486.68	-35.12	487.46	10.08	10.00	1.29	
3,398.00	84.70	357.90	3,131.23	518.43	-36.28	519.23	9.38	9.38	0.00	
3,449.00	89.70	357.30	3,133.72	569.30	-38.42	570.15	9.87	9.80	-1.18	
3,512.00	89.80	358.50	3,134.00	632.26	-40.73	633.14	1.91	0.16	1.90	
3,606.00	90.10	359.30	3,134.08	726.24	-42.53	727.14	0.91	0.32	0.85	
3,701.00	89.50	359.00	3,134.41	821.23	-43.94	822.13	0.71	-0.63	-0.32	
3,795.00	91.80	359.70	3,133.35	915.21	-45.01	916.10	2.56	2.45	0.74	
3,890.00	90.40	359.00	3,131.52	1,010.19	-46.08	1,011.07	1.65	-1.47	-0.74	
3,985.00	90.50	358.90	3,130.78	1,105.17	-47.82	1,106.06	0.15	0.11	-0.11	
4,081.00	90.70	358.60	3,129.77	1,201.14	-49.92	1,202.06	0.38	0.21	-0.31	
4,175.00	90.80	358.40	3,128.54	1,295.10	-52.38	1,296.05	0.24	0.11	-0.21	
4,269.00	90.80	358.40	3,127.23	1,389.05	-55.00	1,390.04	0.00	0.00	0.00	
4,365.00	90.80	358.60	3,125.89	1,485.01	-57.52	1,486.03	0.21	0.00	0.21	
4,460.00	90.90	358.60	3,124.48	1,579.97	-59.84	1,581.02	0.11	0.11	0.00	
4,554.00	91.00	358.80	3,122.92	1,673.93	-61.97	1,675.01	0.24	0.11	0.21	
4,648.00	91.20	358.70	3,121.11	1,767.89	-64.02	1,768.99	0.24	0.21	-0.11	
4,743.00	91.40	358.90	3,118.96	1,862.85	-66.01	1,863.96	0.30	0.21	0.21	
4,836.00	91.70	358.80	3,116.44	1,955.80	-67.87	1,956.92	0.34	0.32	-0.11	
4,931.00	90.90	358.90	3,114.29	2,050.75	-69.78	2,051.90	0.85	-0.84	0.11	
5,025.00	91.00	358.70	3,112.73	2,144.72	-71.75	2,145.88	0.24	0.11	-0.21	
5,120.00	91.00	358.60	3,111.07	2,239.68	-73.99	2,240.87	0.11	0.00	-0.11	
5,214.00	90.90	358.80	3,109.51	2,333.64	-76.12	2,334.85	0.24	-0.11	0.21	
5,308.00	90.90	358.80	3,108.04	2,427.61	-78.09	2,428.84	0.00	0.00	0.00	
5,403.00	91.30	359.00	3,106.21	2,522.57	-79.91	2,523.82	0.47	0.42	0.21	
5,498.00	91.60	358.80	3,103.81	2,617.52	-81.73	2,618.78	0.38	0.32	-0.21	
5,592.00	90.50	358.90	3,102.09	2,711.49	-83.62	2,712.76	1.18	-1.17	0.11	
5,687.00	90.90	358.50	3,100.93	2,806.46	-85.77	2,807.75	0.60	0.42	-0.42	
5,782.00	91.30	358.30	3,099.10	2,901.40	-88.43	2,902.74	0.47	0.42	-0.21	
5,876.00	91.50	358.20	3,096.81	2,995.33	-91.30	2,996.71	0.24	0.21	-0.11	
5,971.00	91.80	357.80	3,094.07	3,090.23	-94.61	3,091.67	0.53	0.32	-0.42	
6,066.00	91.00	357.70	3,091.75	3,185.13	-98.34	3,186.63	0.85	-0.84	-0.11	
6,160.00	90.80	358.90	3,090.27	3,279.07	-101.13	3,280.62	1.29	-0.21	1.28	
6,254.00	90.00	358.50	3,089.62	3,373.05	-103.26	3,374.61	0.95	-0.85	-0.43	
6,348.00	90.40	358.50	3,089.29	3,467.01	-105.72	3,468.61	0.43	0.43	0.00	
6,443.00	90.60	358.40	3,088.46	3,561.98	-108.29	3,563.61	0.24	0.21	-0.11	
6,537.00	90.70	358.10	3,087.39	3,655.93	-111.16	3,657.60	0.34	0.11	-0.32	
6,632.00	91.10	358.90	3,085.90	3,750.88	-113.65	3,752.59	0.94	0.42	0.84	
6,727.00	91.40	358.50	3,083.83	3,845.83	-115.80	3,847.56	0.53	0.32	-0.42	
6,822.00	91.90	359.00	3,081.09	3,940.77	-117.87	3,942.52	0.74	0.53	0.53	
6,917.00	91.10	359.70	3,078.61	4,035.73	-118.95	4,037.48	1.12	-0.84	0.74	
7,007.00	91.40	359.30	3,076.64	4,125.71	-119.74	4,127.44	0.56	0.33	-0.44	
7,102.00	90.10	359.30	3,075.40	4,220.69	-120.90	4,222.42	1.37	-1.37	0.00	
7,196.00	90.40	358.30	3,074.99	4,314.67	-122.86	4,316.41	1.11	0.32	-1.06	



Phoenix Technology Services

Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #6H-
Project:	Eddy County, NM (NAD27, NME)	TVD Reference:	KB @ 3372.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3372.00usft (Silver Oak 3)
Well:	#6H	North Reference:	Grid
Wellbore:	WB1 / Job #1513532	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	Compass 5000 GCR

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)
7,291.00	90.60	358.50	3,074.16	4,409.62	-125.52	4,411.41	0.30	0.21	0.21
7,385.00	90.10	358.40	3,073.59	4,503.59	-128.06	4,505.41	0.54	-0.53	-0.11
7,480.00	89.70	358.60	3,073.75	4,598.56	-130.55	4,600.41	0.47	-0.42	0.21
7,575.00	90.20	358.10	3,073.83	4,693.52	-133.28	4,695.41	0.74	0.53	-0.53
7,674.00	91.60	358.50	3,072.28	4,792.46	-136.22	4,794.39	1.47	1.41	0.40
Last Phoenix MWD Survey									
7,734.00	91.60	358.50	3,070.60	4,852.41	-137.79	4,854.37	0.00	0.00	0.00
Projection to TD									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,472.00	2,471.65	-0.02	-31.25	Tie-on to VES Gyro Survey
2,547.00	2,546.60	2.41	-31.80	First Phoenix MWD Survey
7,674.00	3,072.28	4,792.46	-136.22	Last Phoenix MWD Survey
7,734.00	3,070.60	4,852.41	-137.79	Projection to TD

Checked By: _____ Approved By: _____ Date: _____