



15-39778

September 18, 2014

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

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 08 2014

RECEIVED

Attn: Kanicia Castillo

RE: **Stonewall 9 Fee No. 002H**

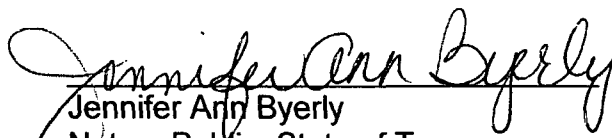
Please find enclosed a copy of the survey from 0.00' to 2359.00' ran on the above referenced well.

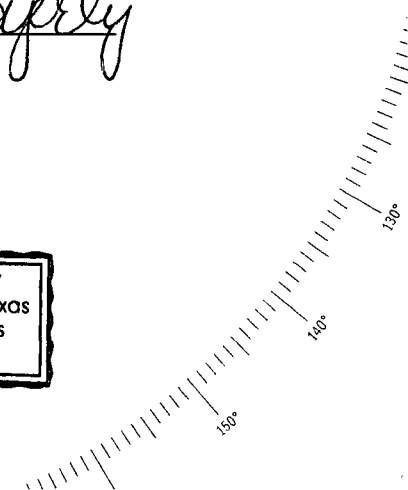
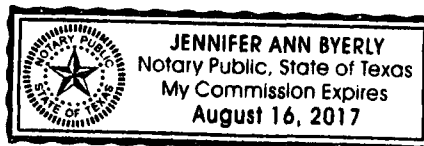
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18 day of September A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)

Lease/Well: Stonewall 9 FEE/No. 002H



Rig Name: Silver Oak 3

State/County: New Mexico/Eddy

Latitude: 32.68, Longitude: -104.39

GRID North is 0.03 Degrees West of True North

VS-Azi: 0.00 Degrees



NM OIL CONSERVATION
 ARTESIA DISTRICT
 DEC 08 2014
 RECEIVED

Depth Reference : RKB= 16 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 9/18/2014 / 13:41

VES Survey International

West Texas

(432) 563-5444

Surveyor: Bryan Massey

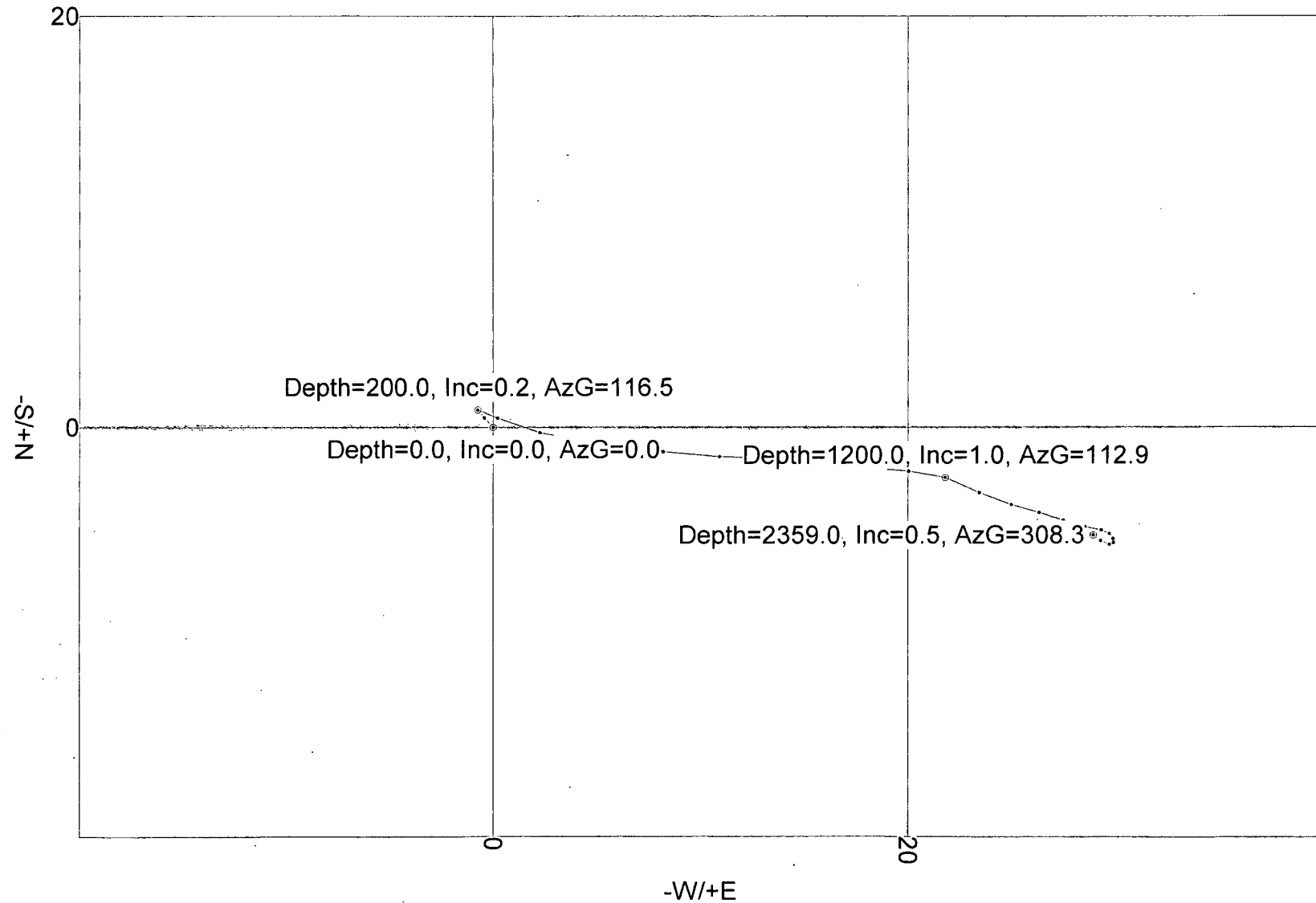
Stonewall 9 Fee No. 002H / API 30-015-39778

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	0.72	317.20	100.00	0.46	-0.43	0.46	0.63	317.20	0.72
200.00	0.15	116.55	200.00	0.86	-0.73	0.86	1.13	319.61	0.86
300.00	1.03	113.04	299.99	0.45	0.22	0.45	0.50	25.64	0.88
400.00	1.46	106.36	399.97	-0.26	2.26	-0.26	2.28	96.58	0.45
500.00	1.80	96.54	499.92	-0.80	5.04	-0.80	5.11	98.99	0.45
600.00	1.85	97.45	599.87	-1.19	8.21	-1.19	8.29	98.22	0.05
700.00	1.27	92.32	699.84	-1.44	10.92	-1.44	11.01	97.52	0.59
800.00	1.39	90.99	799.81	-1.51	13.24	-1.51	13.32	96.49	0.13
900.00	1.38	95.40	899.78	-1.64	15.65	-1.64	15.74	95.98	0.11
1000.00	1.31	100.81	999.75	-1.97	17.97	-1.97	18.08	96.25	0.15
1100.00	1.08	87.47	1099.73	-2.14	20.03	-2.14	20.15	96.10	0.36
1200.00	1.02	112.94	1199.72	-2.45	21.79	-2.45	21.93	96.40	0.47
1300.00	1.05	115.50	1299.70	-3.19	23.43	-3.19	23.65	97.74	0.06
1400.00	0.83	105.17	1399.69	-3.77	24.96	-3.77	25.24	98.59	0.28
1500.00	0.76	106.96	1499.68	-4.15	26.29	-4.15	26.62	98.97	0.07
1600.00	0.64	109.30	1599.67	-4.53	27.46	-4.53	27.83	99.37	0.12
1700.00	0.60	103.42	1699.66	-4.84	28.49	-4.84	28.90	99.64	0.08
1800.00	0.32	100.40	1799.66	-5.01	29.27	-5.01	29.70	99.71	0.28

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	0.20	134.67	1899.66	-5.18	29.67	-5.18	30.12	99.90	0.19
2000.00	0.16	156.73	1999.66	-5.43	29.84	-5.43	30.33	100.31	0.08
2100.00	0.09	200.93	2099.66	-5.63	29.87	-5.63	30.39	100.67	0.11
2200.00	0.20	266.48	2199.66	-5.71	29.67	-5.71	30.21	100.90	0.18
2300.00	0.36	308.44	2299.66	-5.53	29.25	-5.53	29.77	100.71	0.25
2359.00	0.51	308.29	2358.65	-5.25	28.90	-5.25	29.37	100.30	0.27



VES Survey International
West Texas
(432) 563-5444
Surveyor: Bryan Massey
Stonewall 9 Fee No. 002H / API 30-015-39778



VES Survey Date: 09/03/2014



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

September 11, 2014

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

RE: Stonewall 9 Fee #2H
150' FNL & 1700' FWL
Sec. 9, T19S, R26E
Eddy County, New Mexico

Dear Sir,

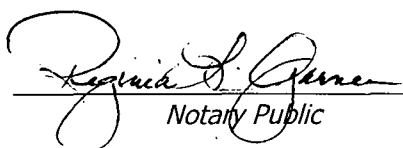
The attached is the Deviation Survey for the above captioned well.

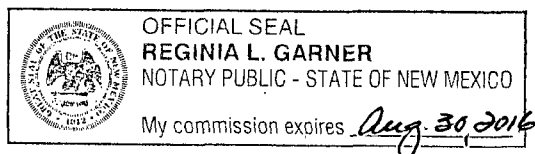
Very truly yours,


Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 11th day of September, 2014.


Notary Public



STONEWALL 9 FEE #2H

Date	Depth	Deviation	Direction
8/31/2014	171	0.20	0.00
9/1/2014	444	1.00	0.00
9/1/2014	714	1.20	0.00
9/1/2014	964	0.80	0.00
9/1/2014	1182	0.30	0.00
9/2/2014	1426	0.00	0.00
9/3/2014	1863	0.40	0.00
9/3/2014	2236	0.50	0.00
9/4/2014	2396	0.50	339.20
9/4/2014	2427	0.60	341.30
9/4/2014	2458	0.60	184.60
9/4/2014	2489	4.30	173.80
9/4/2014	2521	8.20	172.50
9/4/2014	2552	11.70	172.20
9/4/2014	2583	14.40	174.40
9/4/2014	2614	17.30	178.40
9/4/2014	2645	20.90	179.40
9/4/2014	2676	24.10	179.60
9/4/2014	2770	33.50	179.20
9/4/2014	2801	36.30	179.50
9/4/2014	2832	39.40	180.00
9/4/2014	2863	42.70	179.70
9/4/2014	2894	45.50	178.60
9/4/2014	2925	48.60	177.40
9/5/2014	3081	61.30	180.00
9/5/2014	3112	63.40	180.30
9/5/2014	3144	65.60	181.30
9/5/2014	3175	68.30	181.80
9/5/2014	3206	71.60	182.10
9/5/2014	3237	75.30	181.90
9/6/2014	3319	84.90	181.10
9/6/2014	3350	88.00	181.10
9/6/2014	3381	88.90	181.00
9/6/2014	3412	89.40	90.30
9/6/2014	3443	90.30	180.90
9/6/2014	3599	90.50	178.10
9/6/2014	3691	90.80	178.10
9/6/2014	3786	91.00	178.00
9/6/2014	3877	90.60	178.60
9/6/2014	3974	90.30	178.90
9/6/2014	4068	90.50	178.80
9/6/2014	4162	89.90	178.80
9/6/2014	4256	89.80	178.50

Date	Depth	Deviation	Direction
9/6/2014	4350	90.00	178.20
9/7/2014	4443	89.70	179.10
9/7/2014	4537	90.50	179.00
9/7/2014	4632	90.30	179.50
9/7/2014	4726	89.40	179.60
9/7/2014	4820	89.40	180.10
9/7/2014	4914	90.10	179.60
9/7/2014	5008	88.90	178.50
9/7/2014	5102	89.40	178.20
9/7/2014	5196	90.60	177.80
9/7/2014	5289	90.70	179.10
9/7/2014	5383	91.00	179.20
9/7/2014	5477	90.80	179.40
9/8/2014	5570	90.20	179.50
9/8/2014	5663	90.10	179.50
9/8/2014	5757	90.50	179.50
9/8/2014	5850	89.40	179.40
9/8/2014	6038	89.80	179.00
9/8/2014	6132	90.30	179.00
9/8/2014	6225	90.60	179.20
9/8/2014	6319	89.70	179.10
9/8/2014	6413	89.80	179.20
9/8/2014	6507	90.10	179.00
9/8/2014	6601	90.20	178.90
9/9/2014	6695	90.30	178.80
9/9/2014	6789	90.30	178.50
9/9/2014	6882	89.80	178.50
9/9/2014	6972	89.90	179.00
9/9/2014	7069	90.10	179.50
9/9/2014	7163	90.60	179.90
9/9/2014	7257	90.40	179.50
9/9/2014	7350	90.40	179.40
9/9/2014	7444	89.40	178.90
9/9/2014	7537	89.40	179.40
9/9/2014	7543	89.40	179.30

EOF



COG Operating LLC

Eddy County, NM (NAD27 NME)

Stonewall 9 Fee

#2H

WB1/Job #1411619

Design: Surveys (Silver Oak 3)

Standard Survey Report

10 September, 2014





Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3364.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3364.00usft (Silver Oak 3)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1411619	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

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	#2H		
Well Position	+N-S	0.00 usft	Northing:
	+E-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 40' 55.28160 N
		Longitude:	104° 23' 22.39586 W
		Ground Level:	3,346.00 usft

Wellbore	WB1/Job #1411619		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010_14	09/03/14	7.60
		Dip Angle	60.39
		Field Strength	48,480

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
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
		Direction	178.80
		(°)	

Survey Program	Date 09/10/14		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.00	2,359.00	VES Gyro Survey (WB1/Job #1411619)	VES-ISCWSA-GYRO-3
2,396.00	7,602.00	Phoenix MWD Survey (WB1/Job #1411619)	PHX+MWD+IGRF
			Description
			Biaxial Semi-Cont. Gyro
			PHX+MWD+IGRF v3: standard declination

Survey	Measured Depth	Inclination	Azimuth	Vertical Depth	+N-S	+E-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
	(usft)	(°)	(°)	(usft)	(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	0.72	317.20	100.00	0.46	-0.43	-0.47	0.72	0.72	0.00
	200.00	0.15	116.55	200.00	0.86	-0.74	-0.88	0.86	-0.57	159.35
	300.00	1.03	113.04	299.99	0.45	0.21	-0.45	0.88	0.88	-3.51
	400.00	1.46	106.36	399.97	-0.26	2.26	0.30	0.45	0.43	-6.68
	500.00	1.80	96.54	499.92	-0.80	5.04	0.90	0.44	0.34	-9.82
	600.00	1.85	97.45	599.87	-1.18	8.20	1.35	0.06	0.05	0.91
	700.00	1.27	92.32	699.84	-1.44	10.91	1.67	0.60	-0.58	-5.13
	800.00	1.39	90.99	799.81	-1.50	13.23	1.78	0.12	0.12	-1.33
	900.00	1.38	95.40	899.78	-1.64	15.64	1.96	0.11	-0.01	4.41



Phoenix Technology Services

Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3364.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3364.00usft (Silver Oak 3)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1411619	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

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	1.31	100.81	999.75	-1.97	17.96	2.34	0.14	-0.07	5.41
1,100.00	1.08	87.47	1,099.73	-2.14	20.03	2.56	0.36	-0.23	-13.34
1,200.00	1.02	112.94	1,199.71	-2.44	21.79	2.90	0.47	-0.06	25.47
1,300.00	1.05	115.50	1,299.70	-3.18	23.43	3.67	0.06	0.03	2.56
1,400.00	0.83	105.17	1,399.69	-3.77	24.96	4.29	0.28	-0.22	-10.33
1,500.00	0.76	106.96	1,499.68	-4.15	26.29	4.70	0.07	-0.07	1.79
1,600.00	0.64	109.30	1,599.67	-4.53	27.45	5.10	0.12	-0.12	2.34
1,700.00	0.60	103.42	1,699.66	-4.84	28.49	5.43	0.08	-0.04	-5.88
1,800.00	0.32	100.40	1,799.66	-5.01	29.27	5.62	0.28	-0.28	-3.02
1,900.00	0.20	134.67	1,899.66	-5.18	29.67	5.80	0.19	-0.12	34.27
2,000.00	0.16	156.73	1,999.66	-5.43	29.85	6.06	0.08	-0.04	22.06
2,100.00	0.09	200.93	2,099.66	-5.63	29.88	6.26	0.11	-0.07	44.20
2,200.00	0.20	266.48	2,199.66	-5.72	29.68	6.34	0.18	0.11	65.55
2,300.00	0.36	308.44	2,299.66	-5.53	29.26	6.14	0.25	0.16	41.96
2,359.00	0.51	308.29	2,358.65	-5.26	28.91	5.86	0.25	0.25	-0.25
Tie-on to VES Gyro									
2,396.00	0.50	339.20	2,395.65	-5.00	28.72	5.60	0.73	-0.03	83.54
First Phoenix MWD Survey									
2,427.00	0.60	341.30	2,426.65	-4.72	28.62	5.32	0.33	0.32	6.77
2,458.00	0.60	184.60	2,457.65	-4.73	28.55	5.33	3.79	0.00	-505.48
2,490.00	4.30	173.80	2,489.62	-6.09	28.67	6.69	11.60	11.56	-33.75
2,521.00	8.20	172.50	2,520.43	-9.44	29.09	10.05	12.59	12.58	-4.19
2,552.00	11.70	172.20	2,550.95	-14.75	29.80	15.37	11.29	11.29	-0.97
2,583.00	14.40	174.40	2,581.15	-21.70	30.60	22.33	8.85	8.71	7.10
2,614.00	17.30	178.40	2,610.97	-30.14	31.11	30.79	9.99	9.35	12.90
2,646.00	20.90	179.40	2,641.20	-40.61	31.30	41.26	11.30	11.25	3.13
2,677.00	24.10	179.60	2,669.84	-52.47	31.40	53.12	10.33	10.32	0.65
2,708.00	27.00	179.60	2,697.81	-65.84	31.50	66.49	9.35	9.35	0.00
2,739.00	30.30	179.40	2,725.01	-80.70	31.63	81.35	10.65	10.65	-0.65
2,770.00	33.50	179.20	2,751.32	-97.08	31.83	97.72	10.33	10.32	-0.65
2,801.00	36.30	179.50	2,776.74	-114.81	32.03	115.46	9.05	9.03	0.97
2,832.00	39.40	180.00	2,801.22	-133.83	32.11	134.47	10.05	10.00	1.61
2,863.00	42.70	179.70	2,824.59	-154.19	32.16	154.83	10.66	10.65	-0.97
2,894.00	45.50	178.60	2,846.85	-175.76	32.49	176.40	9.36	9.03	-3.55
2,925.00	48.60	177.40	2,867.97	-198.43	33.29	199.08	10.39	10.00	-3.87
2,957.00	51.70	177.30	2,888.48	-222.97	34.42	223.64	9.69	9.69	-0.31
2,988.00	54.70	177.70	2,907.04	-247.76	35.50	248.45	9.73	9.68	1.29
3,019.00	57.20	178.40	2,924.40	-273.43	36.38	274.13	8.28	8.06	2.26
3,050.00	59.30	179.40	2,940.71	-299.78	36.88	300.49	7.31	6.77	3.23
3,081.00	61.30	180.00	2,956.07	-326.71	37.02	327.41	6.67	6.45	1.94
3,112.00	63.40	180.30	2,970.46	-354.17	36.95	354.86	6.83	6.77	0.97
3,144.00	65.60	181.30	2,984.23	-383.05	36.54	383.73	7.43	6.88	3.13
3,175.00	68.30	181.80	2,996.37	-411.56	35.77	412.22	8.84	8.71	1.61



Phoenix Technology Services

Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM (NAD27-NME)	TVD Reference:	KB @ 3364.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3364.00usft (Silver Oak 3)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1411619	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR DB

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)
3,206.00	71.60	182.10	3,007.00	-440.66	34.78	441.29	10.68	10.65	0.97
3,237.00	75.30	181.90	3,015.82	-470.35	33.74	470.95	11.95	11.94	-0.65
3,268.00	79.30	181.60	3,022.64	-500.57	32.82	501.15	12.94	12.90	-0.97
3,299.00	82.90	181.20	3,027.43	-531.18	32.07	531.74	11.68	11.61	-1.29
3,319.00	84.90	181.10	3,029.56	-551.07	31.67	551.61	10.01	10.00	-0.50
3,350.00	88.00	181.10	3,031.48	-582.00	31.08	582.52	10.00	10.00	0.00
3,381.00	88.90	181.00	3,032.32	-612.98	30.51	613.48	2.92	2.90	-0.32
3,412.00	89.40	180.90	3,032.78	-643.97	29.99	644.46	1.64	1.61	-0.32
3,443.00	90.30	180.90	3,032.86	-674.97	29.51	675.44	2.90	2.90	0.00
3,506.00	90.80	179.70	3,032.25	-737.96	29.18	738.41	2.06	0.79	-1.90
3,599.00	90.50	178.10	3,031.20	-830.94	30.96	831.40	1.75	-0.32	-1.72
3,692.00	90.80	178.10	3,030.14	-923.88	34.05	924.39	0.32	0.32	0.00
3,786.00	91.00	178.00	3,028.67	-1,017.81	37.24	1,018.37	0.24	0.21	-0.11
3,880.00	90.60	178.60	3,027.35	-1,111.76	40.03	1,112.36	0.77	-0.43	0.64
3,974.00	90.30	178.90	3,026.62	-1,205.74	42.08	1,206.35	0.45	-0.32	0.32
4,068.00	90.50	178.80	3,025.96	-1,299.72	43.97	1,300.35	0.24	0.21	-0.11
4,162.00	89.90	178.80	3,025.63	-1,393.69	45.94	1,394.35	0.64	-0.64	0.00
4,256.00	89.80	178.50	3,025.88	-1,487.67	48.15	1,488.35	0.34	-0.11	-0.32
4,350.00	90.00	178.20	3,026.04	-1,581.63	50.86	1,582.35	0.38	0.21	-0.32
4,443.00	89.70	179.10	3,026.28	-1,674.60	53.05	1,675.34	1.02	-0.32	0.97
4,537.00	90.50	179.00	3,026.12	-1,768.59	54.61	1,769.34	0.86	0.85	-0.11
4,632.00	90.30	179.50	3,025.46	-1,863.58	55.85	1,864.34	0.57	-0.21	0.53
4,726.00	89.40	179.60	3,025.70	-1,957.57	56.59	1,958.33	0.96	-0.96	0.11
4,820.00	89.40	180.10	3,026.69	-2,051.57	56.84	2,052.31	0.53	0.00	0.53
4,914.00	90.10	179.60	3,027.10	-2,145.56	57.08	2,146.29	0.92	0.74	-0.53
5,009.00	88.90	178.50	3,027.93	-2,240.54	58.66	2,241.28	1.71	-1.26	-1.16
5,102.00	89.40	178.20	3,029.31	-2,333.49	61.34	2,334.27	0.63	0.54	-0.32
5,196.00	90.60	177.80	3,029.31	-2,427.44	64.62	2,428.26	1.35	1.28	-0.43
5,289.00	90.70	179.10	3,028.25	-2,520.39	67.13	2,521.25	1.40	0.11	1.40
5,383.00	91.00	179.20	3,026.86	-2,614.37	68.53	2,615.23	0.34	0.32	0.11
5,477.00	90.80	179.40	3,025.38	-2,708.35	69.67	2,709.22	0.30	-0.21	0.21
5,570.00	90.20	179.50	3,024.57	-2,801.35	70.57	2,802.21	0.65	-0.65	0.11
5,664.00	90.10	179.50	3,024.32	-2,895.34	71.39	2,896.20	0.11	-0.11	0.00
5,757.00	90.50	179.50	3,023.84	-2,988.34	72.20	2,989.19	0.43	0.43	0.00
5,851.00	89.40	179.40	3,023.92	-3,082.33	73.10	3,083.19	1.18	-1.17	-0.11
5,944.00	89.50	179.50	3,024.81	-3,175.32	73.99	3,176.18	0.15	0.11	0.11
6,038.00	89.80	179.00	3,025.38	-3,269.31	75.22	3,270.17	0.62	0.32	-0.53
6,132.00	90.30	179.00	3,025.30	-3,363.30	76.86	3,364.17	0.53	0.53	0.00
6,226.00	90.60	179.20	3,024.56	-3,457.28	78.34	3,458.17	0.38	0.32	0.21
6,319.00	89.70	179.10	3,024.32	-3,550.27	79.72	3,551.16	0.97	-0.97	-0.11
6,413.00	89.80	179.20	3,024.73	-3,644.26	81.11	3,645.16	0.15	0.11	0.11
6,507.00	90.10	179.00	3,024.81	-3,738.25	82.59	3,739.16	0.38	0.32	-0.21
6,601.00	90.20	178.90	3,024.57	-3,832.23	84.31	3,833.16	0.15	0.11	-0.11
6,695.00	90.30	178.80	3,024.16	-3,926.21	86.20	3,927.16	0.15	0.11	-0.11



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3364.00usft (Silver Oak 3)
Site:	Stonewall 9 Fee	MD Reference:	KB @ 3364.00usft (Silver Oak 3)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1411619	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	Database:	GCR-DB

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)
6,789.00	90.30	178.50	3,023.66	-4,020.18	88.41	4,021.15	0.32	0.00	-0.32
6,882.00	89.80	178.50	3,023.58	-4,113.15	90.85	4,114.15	0.54	-0.54	0.00
6,976.00	89.90	179.00	3,023.83	-4,207.13	92.90	4,208.15	0.54	0.11	0.53
7,069.00	90.30	179.50	3,023.67	-4,300.12	94.12	4,301.15	0.69	0.43	0.54
7,163.00	90.60	179.90	3,022.93	-4,394.12	94.61	4,395.13	0.53	0.32	0.43
7,257.00	90.40	179.50	3,022.11	-4,488.11	95.10	4,489.12	0.48	-0.21	-0.43
7,350.00	90.40	179.40	3,021.46	-4,581.11	95.99	4,582.11	0.11	0.00	-0.11
7,444.00	89.40	178.90	3,021.62	-4,675.09	97.39	4,676.11	1.19	-1.06	-0.53
7,537.00	89.40	179.40	3,022.60	-4,768.08	98.77	4,769.10	0.54	0.00	0.54
7,543.00	89.40	179.30	3,022.66	-4,774.08	98.84	4,775.10	1.67	0.00	-1.67
Last Phoenix MWD Survey									
7,602.00	89.40	179.30	3,023.28	-4,833.07	99.56	4,834.09	0.00	0.00	0.00
Projection to TD									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,359.00	2,358.65	-5.26	28.91	Tie-on to VES Gyro
2,396.00	2,395.65	-5.00	28.72	First Phoenix MWD Survey
7,543.00	3,022.66	-4,774.08	98.84	Last Phoenix MWD Survey
7,602.00	3,023.28	-4,833.07	99.56	Projection to TD

Checked By: _____ Approved By: _____ Date: _____