



September 11, 2014

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

30-015-31892

NM OIL CONSERVATION
ARTESIA DISTRICT

NOV 10 2014

RECEIVED

Attn: Kanicia Castillo

RE: **Bradley 8 Fee No. 003H**

Please find enclosed a copy of the survey from 0.00' to 2452.00' ran on the above referenced well.

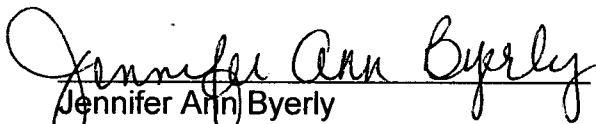
Sincerely,

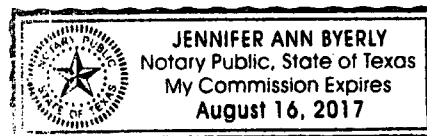

Keith Havelka
Operations

STATE OF TEXAS §

COUNTY OF NUECES §

This instrument was acknowledged before me on the 11 day of September A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating, LLC (Concho)
 Lease/Well: Bradley 8 Fee /No. 003H
 Location: S/8 - T19/S - R26/E
 Rig Name: Silver Oak #3
 State/County: New Mexico/Eddy
 Latitude: 32.67, Longitude: -104.40
 GRID North is 0.04 Degrees West of True North
 VS-Azi: 0.00 Degrees



Depth Reference : RKB = 17FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
 Minimum Curvature Method
 Report Date/Time: 9/11/2014 / 11:15

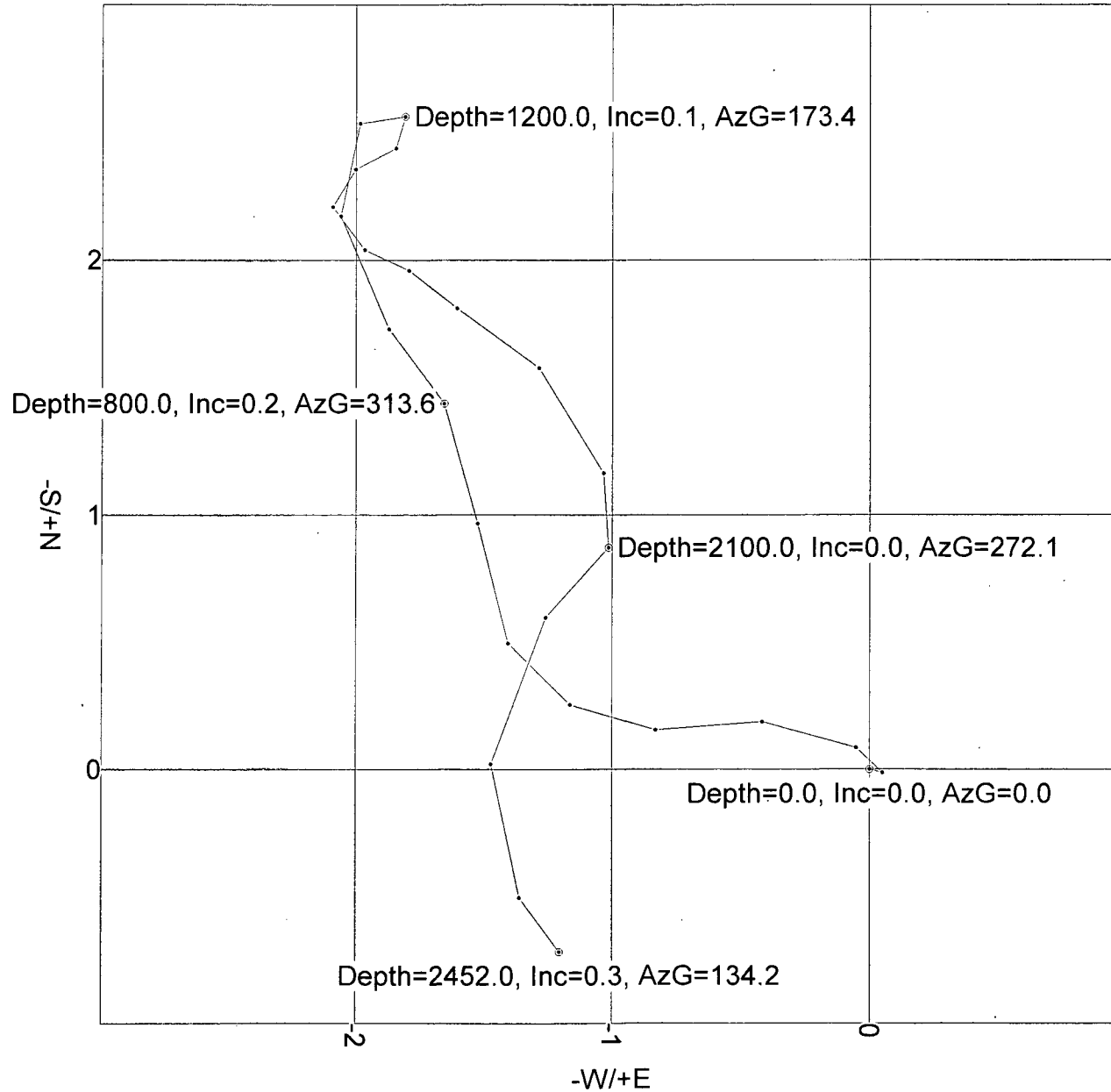
VES Survey International
 West Texas
 (432) 563-5444
 Surveyor: Cody Johnson
 Bradley 8 Fee No. 003H / API 30-015-39812

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	0.06	104.12	100.00	-0.01	0.05	-0.01	0.05	104.12	0.06
200.00	0.22	305.88	200.00	0.09	-0.05	0.09	0.10	328.54	0.27
300.00	0.24	267.56	300.00	0.19	-0.42	0.19	0.46	294.31	0.15
400.00	0.23	263.32	400.00	0.16	-0.83	0.16	0.84	280.63	0.02
500.00	0.21	312.98	500.00	0.26	-1.16	0.26	1.19	282.36	0.19
600.00	0.18	316.79	600.00	0.50	-1.41	0.50	1.49	289.40	0.03
700.00	0.41	358.65	700.00	0.97	-1.53	0.97	1.81	302.36	0.30
800.00	0.19	313.62	799.99	1.44	-1.66	1.44	2.19	310.94	0.30
900.00	0.23	331.76	899.99	1.73	-1.87	1.73	2.55	312.72	0.07
1000.00	0.32	341.00	999.99	2.17	-2.06	2.17	2.99	316.52	0.10
1100.00	0.22	59.74	1099.99	2.53	-1.98	2.53	3.22	321.94	0.35
1200.00	0.08	173.42	1199.99	2.56	-1.81	2.56	3.14	324.75	0.26
1300.00	0.08	219.51	1299.99	2.44	-1.85	2.44	3.06	322.87	0.06
1400.00	0.13	255.57	1399.99	2.36	-2.00	2.36	3.09	319.63	0.08
1500.00	0.14	168.56	1499.99	2.21	-2.09	2.21	3.04	316.55	0.19
1600.00	0.13	116.29	1599.99	2.04	-1.97	2.04	2.83	316.04	0.12
1700.00	0.09	113.87	1699.99	1.96	-1.80	1.96	2.66	317.49	0.04
1800.00	0.19	134.56	1799.99	1.81	-1.61	1.81	2.42	318.43	0.11

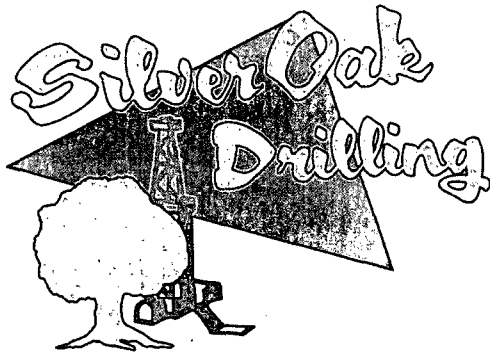
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.27	120.58	1899.99	1.58	-1.29	1.58	2.04	320.76	0.09
2000.00	0.34	169.66	1999.99	1.16	-1.03	1.16	1.56	318.40	0.26
2100.00	0.04	272.06	2099.99	0.87	-1.01	0.87	1.34	310.66	0.35
2200.00	0.40	217.45	2199.99	0.60	-1.26	0.60	1.40	295.35	0.38
2300.00	0.34	180.05	2299.98	0.02	-1.47	0.02	1.47	270.85	0.24
2400.00	0.29	153.99	2399.98	-0.50	-1.36	-0.50	1.45	249.68	0.15
2452.00	0.30	134.17	2451.98	-0.72	-1.21	-0.72	1.40	239.25	0.20



VES Survey International
West Texas
(432) 563-5444
Surveyor: Cody Johnson
Bradley 8 Fee No. 003H / API 30-015-39812



VES Survey Date: 08/20/2014



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

August 29, 2014

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

RE: Bradley 8 Fee #3H
150' FSL & 2260' FEL
Sec. 8, T19S, R26E
Eddy County, New Mexico

Dear Sir,

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

Very truly yours,

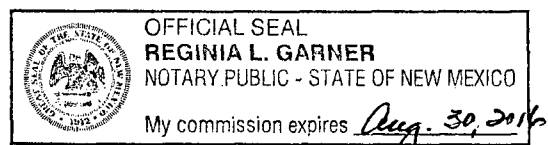
A handwritten signature in cursive script that reads "Chris Graham".

Chris Graham
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 29th day of August, 2014.

A handwritten signature in cursive script that reads "Regina L. Garner".

Notary Public

BRADLEY 8 FEE #3H

Date	Depth	Deviation	Direction
8/18/2014	229	0.50	0.00
8/18/2014	474	0.30	0.00
8/19/2014	745	0.80	0.00
8/19/2014	1150	0.00	0.00
8/20/2014	1614	0.50	0.00
8/21/2014	2084	0.60	0.00
8/21/2014	2492	0.30	131.80
8/21/2014	2523	0.30	157.20
8/21/2014	2554	1.10	18.50
8/21/2014	2585	5.80	4.70
8/21/2014	2616	10.30	1.60
8/21/2014	2648	14.20	359.10
8/22/2014	2774	26.70	359.60
8/22/2014	2805	29.80	0.40
8/22/2014	2836	32.70	359.70
8/22/2014	2867	35.00	359.60
8/22/2014	2898	37.10	359.30
8/22/2014	2929	39.90	359.10
8/22/2014	2992	45.80	359.80
8/22/2014	3023	48.40	0.50
8/22/2014	3054	51.10	0.70
8/22/2014	3085	53.50	1.10
8/22/2014	3117	55.90	0.80
8/22/2014	3148	58.80	0.40
8/22/2014	3179	62.60	0.00
8/22/2014	3211	66.20	359.80
8/22/2014	3242	70.10	359.50
8/22/2014	3274	74.10	359.00
8/22/2014	3305	78.20	358.60
8/23/2014	3399	90.30	357.90
8/23/2014	3431	92.60	357.70
8/23/2014	3481	92.80	358.30
8/23/2014	3575	92.40	357.80
8/23/2014	3669	92.00	357.10
8/24/2014	3763	91.70	357.60
8/24/2014	3857	92.60	358.30
8/24/2014	3857	92.60	358.30
8/24/2014	3951	93.10	359.40
8/24/2014	4045	92.30	359.70
8/24/2014	4138	93.40	359.90
8/24/2014	4233	91.90	359.10
8/24/2014	4325	92.20	359.20
8/24/2014	4419	92.80	358.60

Date	Depth	Deviation	Direction
8/24/2014	4513	93.20	358.50
8/24/2014	4606	93.00	359.00
8/24/2014	4700	93.10	358.70
8/24/2014	4793	92.50	358.30
8/25/2014	4887	92.30	358.20
8/25/2014	4980	91.50	358.30
8/25/2014	5074	91.50	358.40
8/25/2014	5168	91.20	358.30
8/25/2014	5260	91.00	358.10
8/25/2014	5354	91.20	358.40
8/25/2014	5447	91.40	358.50
8/25/2014	5541	91.90	358.40
8/25/2014	5635	92.40	358.40
8/25/2014	5728	91.60	358.70
8/26/2014	5822	90.80	358.60
8/26/2014	5915	91.60	357.90
8/26/2014	6103	91.00	358.20
8/26/2014	6197	91.20	357.70
8/26/2014	6290	91.50	357.90
8/26/2014	6384	91.70	357.70
8/26/2014	6478	91.20	358.50
8/26/2014	6571	91.10	359.40
8/26/2014	6665	91.40	359.60
8/26/2014	6759	91.80	359.30
8/26/2014	6852	91.70	358.30
8/27/2014	7133	91.00	357.50
8/27/2014	7226	90.50	357.90
8/27/2014	7320	90.00	357.90
8/27/2014	7413	90.50	358.20
8/27/2014	7507	90.90	357.50
8/27/2014	7601	91.30	357.30
8/27/2014	7608	91.40	357.40

EOF



COG Operating LLC

Eddy County, NM (NAD27 NME)

Bradley 8 Fee

#3H

WB1/Job #1411087

Design: Surveys (Silver Oak 3)

Standard Survey Report

28 August, 2014





Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1411087	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		Bradley 8 Fee			
Site Position:		Northing:	606,797.50 usft	Latitude:	32° 40' 5.40482 N
From:	Map	Easting:	478,847.80 usft	Longitude:	104° 24' 7.45386 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.04 °

Well	#3H					
Well Position	+N/-S	0.00 usft	Northing:	606,797.50 usft	Latitude:	32° 40' 5.40482 N
	+E/-W	0.00 usft	Easting:	478,847.80 usft	Longitude:	104° 24' 7.45386 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,373.00 usft

Wellbore						WB1/Job #1411087					
Magnetics		Model Name		Sample Date		Declination (°)		Dip Angle (°)		Field Strength (nT)	
		IGRF2010_14		08/15/14		7.61		60.38		48,476	

Design:	Surveys (Silver Oak 3)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	358.54	

Survey Program		Date	08/28/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	2,452.00	VES Gyro Survey (WB1/Job #1411087)	VES-ISCWSA-GYRO-3	Biaxial Semi-Cont. Gyro	
2,492.00	7,668.00	Phoenix MWD Survey (WB1/Job #141108)	PHX+MWD+IGRF	PHX+MWD+IGRF v3:standard declination	

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)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	100.00	0.06	104.12	100.00	-0.01	0.05	-0.01	0.06	0.06	0.00
	200.00	0.22	305.88	200.00	0.09	-0.05	0.09	0.28	0.16	-158.24
	300.00	0.24	267.56	300.00	0.19	-0.42	0.20	0.15	0.02	-38.32
	400.00	0.23	263.32	400.00	0.16	-0.83	0.18	0.02	-0.01	-4.24
	500.00	0.21	312.98	500.00	0.26	-1.16	0.29	0.19	-0.02	49.66
	600.00	0.18	316.79	600.00	0.50	-1.40	0.53	0.03	-0.03	3.81
	700.00	0.41	358.65	700.00	0.97	-1.52	1.01	0.30	0.23	41.86
	800.00	0.19	313.62	799.99	1.44	-1.65	1.49	0.31	-0.22	-45.03
	900.00	0.23	331.76	899.99	1.73	-1.86	1.78	0.08	0.04	18.14



Phoenix Technology Services

Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1411087	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	0.32	341.00	999.99	2.18	-2.05	2.23	0.10	0.09	9.24
1,100.00	0.22	59.74	1,099.99	2.54	-1.97	2.59	0.35	-0.10	78.74
1,200.00	0.08	173.42	1,199.99	2.56	-1.80	2.61	0.26	-0.14	113.68
1,300.00	0.08	219.51	1,299.99	2.44	-1.84	2.49	0.06	0.00	46.09
1,400.00	0.13	255.57	1,399.99	2.36	-1.99	2.41	0.08	0.05	36.06
1,500.00	0.14	168.56	1,499.99	2.21	-2.08	2.26	0.19	0.01	-87.01
1,600.00	0.13	116.29	1,599.99	2.04	-1.95	2.09	0.12	-0.01	-52.27
1,700.00	0.09	113.87	1,699.99	1.96	-1.78	2.00	0.04	-0.04	-2.42
1,800.00	0.19	134.56	1,799.99	1.81	-1.59	1.85	0.11	0.10	20.69
1,900.00	0.27	120.58	1,899.99	1.57	-1.26	1.61	0.10	0.08	-13.98
2,000.00	0.34	169.66	1,999.99	1.16	-1.01	1.19	0.26	0.07	49.08
2,100.00	0.04	272.06	2,099.99	0.87	-0.99	0.90	0.35	-0.30	102.40
2,200.00	0.40	217.45	2,199.99	0.60	-1.24	0.63	0.38	0.36	-54.61
2,300.00	0.34	180.05	2,299.98	0.02	-1.45	0.06	0.24	-0.06	-37.40
2,400.00	0.29	153.99	2,399.98	-0.50	-1.34	-0.47	0.15	-0.05	-26.06
2,452.00	0.30	134.17	2,451.98	-0.72	-1.18	-0.68	0.20	0.02	-38.12
Tie-on to VES Gyro Survey									
2,492.00	0.30	131.80	2,491.98	-0.86	-1.03	-0.83	0.03	0.00	-5.93
First Phoenix MWD Survey									
2,523.00	0.30	157.20	2,522.98	-0.99	-0.94	-0.96	0.43	0.00	81.94
2,554.00	1.10	18.50	2,553.98	-0.78	-0.81	-0.76	4.32	2.58	-447.42
2,585.00	5.80	4.70	2,584.92	1.06	-0.59	1.08	15.29	15.16	-44.52
2,616.00	10.30	1.60	2,615.60	5.40	-0.38	5.41	14.58	14.52	-10.00
2,648.00	14.20	359.10	2,646.87	12.19	-0.37	12.19	12.30	12.19	-7.81
2,679.00	17.80	358.50	2,676.66	20.73	-0.55	20.73	11.63	11.61	-1.94
2,711.00	20.90	356.70	2,706.85	31.32	-1.01	31.33	9.86	9.69	-5.63
2,742.00	23.80	358.60	2,735.52	43.09	-1.48	43.12	9.64	9.35	6.13
2,774.00	26.70	359.60	2,764.46	56.74	-1.69	56.76	9.16	9.06	3.13
2,805.00	29.80	0.40	2,791.76	71.41	-1.68	71.43	10.07	10.00	2.58
2,836.00	32.70	359.70	2,818.26	87.49	-1.67	87.50	9.43	9.35	-2.26
2,867.00	35.00	359.60	2,844.01	104.76	-1.78	104.77	7.42	7.42	-0.32
2,898.00	37.10	359.30	2,869.07	123.00	-1.95	123.01	6.80	6.77	-0.97
2,929.00	39.90	359.10	2,893.33	142.29	-2.22	142.30	9.04	9.03	-0.65
2,960.00	43.20	358.90	2,916.52	162.85	-2.58	162.86	10.65	10.65	-0.65
2,992.00	45.80	359.80	2,939.35	185.27	-2.83	185.29	8.36	8.13	2.81
3,023.00	48.40	0.50	2,960.45	207.98	-2.77	207.98	8.55	8.39	2.26
3,054.00	51.10	0.70	2,980.48	231.64	-2.52	231.63	8.72	8.71	0.65
3,086.00	53.50	1.10	3,000.04	256.95	-2.12	256.92	7.56	7.50	1.25
3,117.00	55.90	0.80	3,017.95	282.25	-1.71	282.20	7.78	7.74	-0.97
3,148.00	58.80	0.40	3,034.68	308.34	-1.43	308.28	9.42	9.35	-1.29
3,179.00	62.60	0.00	3,049.85	335.37	-1.34	335.30	12.31	12.26	-1.29
3,211.00	66.20	359.80	3,063.67	364.23	-1.39	364.14	11.26	11.25	-0.63
3,242.00	70.10	359.50	3,075.21	392.99	-1.57	392.90	12.61	12.58	-0.97



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H:
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1411087	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)
3,274.00	74.10	359.00	3,085.04	423.43	-1.97	423.35	12.59	12.50	-1.56
3,305.00	78.20	358.60	3,092.46	453.52	-2.60	453.44	13.28	13.23	-1.29
3,336.00	82.30	358.30	3,097.71	484.05	-3.43	483.98	13.26	13.23	-0.97
3,367.00	86.60	357.90	3,100.70	514.88	-4.45	514.83	13.93	13.87	-1.29
3,399.00	90.30	357.90	3,101.57	546.85	-5.62	546.81	11.56	11.56	0.00
3,431.00	92.60	357.70	3,100.76	578.81	-6.85	578.80	7.21	7.19	-0.63
3,481.00	92.80	358.30	3,098.41	628.72	-8.59	628.74	1.26	0.40	1.20
3,575.00	92.40	357.80	3,094.14	722.57	-11.79	722.64	0.68	-0.43	-0.53
3,669.00	92.00	357.10	3,090.53	816.41	-15.97	816.55	0.86	-0.43	-0.74
3,763.00	91.70	357.60	3,087.50	910.26	-20.31	910.48	0.62	-0.32	0.53
3,857.00	92.60	358.30	3,083.97	1,004.13	-23.67	1,004.41	1.21	0.96	0.74
3,951.00	93.10	359.40	3,079.30	1,097.99	-25.56	1,098.29	1.28	0.53	1.17
4,045.00	92.30	359.70	3,074.87	1,191.89	-26.29	1,192.17	0.91	-0.85	0.32
4,138.00	93.40	359.90	3,070.25	1,284.77	-26.62	1,285.03	1.20	1.18	0.22
4,233.00	91.90	359.10	3,065.85	1,379.66	-27.45	1,379.91	1.79	-1.58	-0.84
4,325.00	92.20	359.20	3,062.56	1,471.59	-28.81	1,471.85	0.34	0.33	0.11
4,419.00	92.80	358.60	3,058.46	1,565.48	-30.61	1,565.76	0.90	0.64	-0.64
4,513.00	93.20	358.50	3,053.54	1,659.32	-32.99	1,659.63	0.44	0.43	-0.11
4,606.00	93.00	359.00	3,048.51	1,752.17	-35.01	1,752.49	0.58	-0.22	0.54
4,700.00	93.10	358.70	3,043.51	1,846.01	-36.90	1,846.35	0.34	0.11	-0.32
4,793.00	92.50	358.30	3,038.97	1,938.87	-39.33	1,939.24	0.78	-0.65	-0.43
4,887.00	92.30	358.20	3,035.03	2,032.74	-42.20	2,033.16	0.24	-0.21	-0.11
4,980.00	91.50	358.30	3,031.95	2,125.65	-45.04	2,126.11	0.87	-0.86	0.11
5,074.00	91.50	358.40	3,029.49	2,219.58	-47.74	2,220.07	0.11	0.00	0.11
5,167.00	91.20	358.30	3,027.30	2,312.51	-50.42	2,313.05	0.34	-0.32	-0.11
5,260.00	91.00	358.10	3,025.51	2,405.45	-53.34	2,406.03	0.30	-0.22	-0.22
5,354.00	91.20	358.40	3,023.71	2,499.39	-56.21	2,500.01	0.38	0.21	0.32
5,447.00	91.40	358.50	3,021.60	2,592.33	-58.72	2,592.99	0.24	0.22	0.11
5,541.00	91.90	358.40	3,018.89	2,686.26	-61.27	2,686.95	0.54	0.53	-0.11
5,635.00	92.40	358.40	3,015.36	2,780.15	-63.89	2,780.88	0.53	0.53	0.00
5,728.00	91.60	358.70	3,012.12	2,873.07	-66.24	2,873.82	0.92	-0.86	0.32
5,822.00	90.80	358.60	3,010.15	2,967.02	-68.45	2,967.80	0.86	-0.85	-0.11
5,915.00	91.60	357.90	3,008.20	3,059.95	-71.29	3,060.78	1.14	0.86	-0.75
6,010.00	90.70	358.20	3,006.30	3,154.88	-74.53	3,155.75	1.00	-0.95	0.32
6,103.00	91.00	358.20	3,004.92	3,247.82	-77.45	3,248.74	0.32	0.32	0.00
6,197.00	91.20	357.70	3,003.11	3,341.74	-80.81	3,342.72	0.57	0.21	-0.53
6,290.00	91.50	357.90	3,000.92	3,434.65	-84.38	3,435.69	0.39	0.32	0.22
6,384.00	91.70	357.70	2,998.30	3,528.54	-87.98	3,529.64	0.30	0.21	-0.21
6,477.00	91.20	358.50	2,995.94	3,621.46	-91.07	3,622.61	1.01	-0.54	0.86
6,571.00	91.10	359.40	2,994.06	3,715.43	-92.79	3,716.58	0.96	-0.11	0.96
6,665.00	91.40	359.60	2,992.01	3,809.40	-93.61	3,810.55	0.38	0.32	0.21
6,759.00	91.80	359.30	2,989.38	3,903.36	-94.51	3,904.50	0.53	0.43	-0.32
6,852.00	91.70	358.30	2,986.54	3,996.29	-96.46	3,997.45	1.08	-0.11	-1.08
6,946.00	90.40	357.40	2,984.82	4,090.21	-99.98	4,091.43	1.68	-1.38	-0.96



Phoenix Technology Services
Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #3H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3391.00usft (Silver Oak 3)
Site:	Bradley 8 Fee	MD Reference:	KB @ 3391.00usft (Silver Oak 3)
Well:	#3H	North Reference:	Grid
Wellbore:	WB1/Job #1411087	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Silver Oak 3)	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)
7,040.00	90.70	357.20	2,983.92	4,184.10	-104.41	4,185.40	0.38	0.32	-0.21
7,133.00	91.00	357.50	2,982.54	4,276.99	-108.71	4,278.37	0.46	0.32	0.32
7,226.00	90.50	357.90	2,981.32	4,369.91	-112.44	4,371.35	0.69	-0.54	0.43
7,320.00	90.00	357.90	2,980.91	4,463.84	-115.89	4,465.35	0.53	-0.53	0.00
7,413.00	90.50	358.20	2,980.50	4,556.79	-119.05	4,558.34	0.63	0.54	0.32
7,507.00	90.90	357.50	2,979.35	4,650.71	-122.58	4,652.33	0.86	0.43	-0.74
7,601.00	91.30	357.30	2,977.55	4,744.60	-126.84	4,746.29	0.48	0.43	-0.21
7,608.00	91.40	357.40	2,977.38	4,751.59	-127.16	4,753.29	2.02	1.43	1.43
Last Phoenix MWD Survey									
7,668.00	91.40	357.40	2,975.92	4,811.51	-129.89	4,813.26	0.00	0.00	0.00
Projection to TD									

Design/Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,452.00	2,451.98	-0.72	-1.18	Tie-on to VES Gyro Survey
2,492.00	2,491.98	-0.86	-1.03	First Phoenix MWD Survey
7,608.00	2,977.38	4,751.59	-127.16	Last Phoenix MWD Survey
7,668.00	2,975.92	4,811.51	-129.89	Projection to TD

Checked By: _____ Approved By: _____ Date: _____