

PATRIOT DRILLING, LLC

HOBS COO

MAR 05 2015

RECEIVED

30-025-4 2211

OPERATOR: COG Operating, LLC
WELL/LEASE: Lusk Deep Unit A #35H
COUNTY: Lea Co., New Mexico
Sec. 20, T 19S, R 32E

STATE OF NEW MEXICO
DEVIATION REPORT

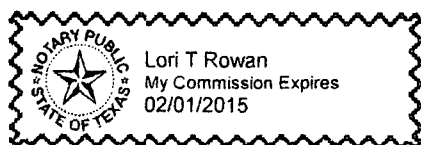
<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
294	1	4,445	2
617	1 1/4	4,631	1
857	1/2	5,124	3/4
1,194	1/2	5,578	1/2
1,592	1 1/4	5,888	1/4
1,955	2	6,388	1/2
2,430	1	6,862	1/2
2,812	1	7,362	2
3,225	3/4	7,972	1/2
3,444	1 1/2		
3,711	1		

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 12th day of January, 2015 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015



Lori T. Rowan
Notary Public for Ector Co., Texas

MAR 10 2015

HOBBS OCD

MAR 05 2015

RECEIVED



December 18, 2014

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

30-025-42211

Attn: Kanicia Castillo

RE: Lusk Deep Unit A 35H

Please find enclosed a copy of the survey from 0.00' to 7915.00' ran on the above referenced well.

If I can be of any further service, please do not hesitate to call me at 800-606-4976.

Sincerely,

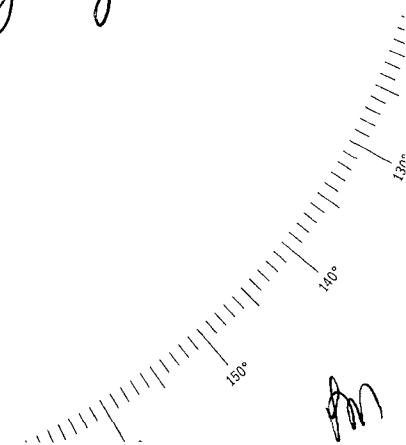
A handwritten signature in black ink, appearing to read "KH", written over a horizontal line.

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

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

A handwritten signature in black ink, appearing to read "Jennifer Ann Byerly", written over a horizontal line.
Jennifer Ann Byerly
Notary Public, State of Texas





Company: COG Operating
Lease/Well: Lusk Deep Unit A /35H

Rig Name: Patriot # 6
State/County: New Mexico /Lea
Latitude: 32.65, Longitude: -103.78
GRID North is 0.30 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : 17FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: lusk deep unit a # 35h-de_01.ut

Minimum Curvature Method

Report Date/Time: 12/18/2014 / 11:08

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Lusk Deep Unit A 35H / API 30-025-42211

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MAR 05 2015
HOBS OGD

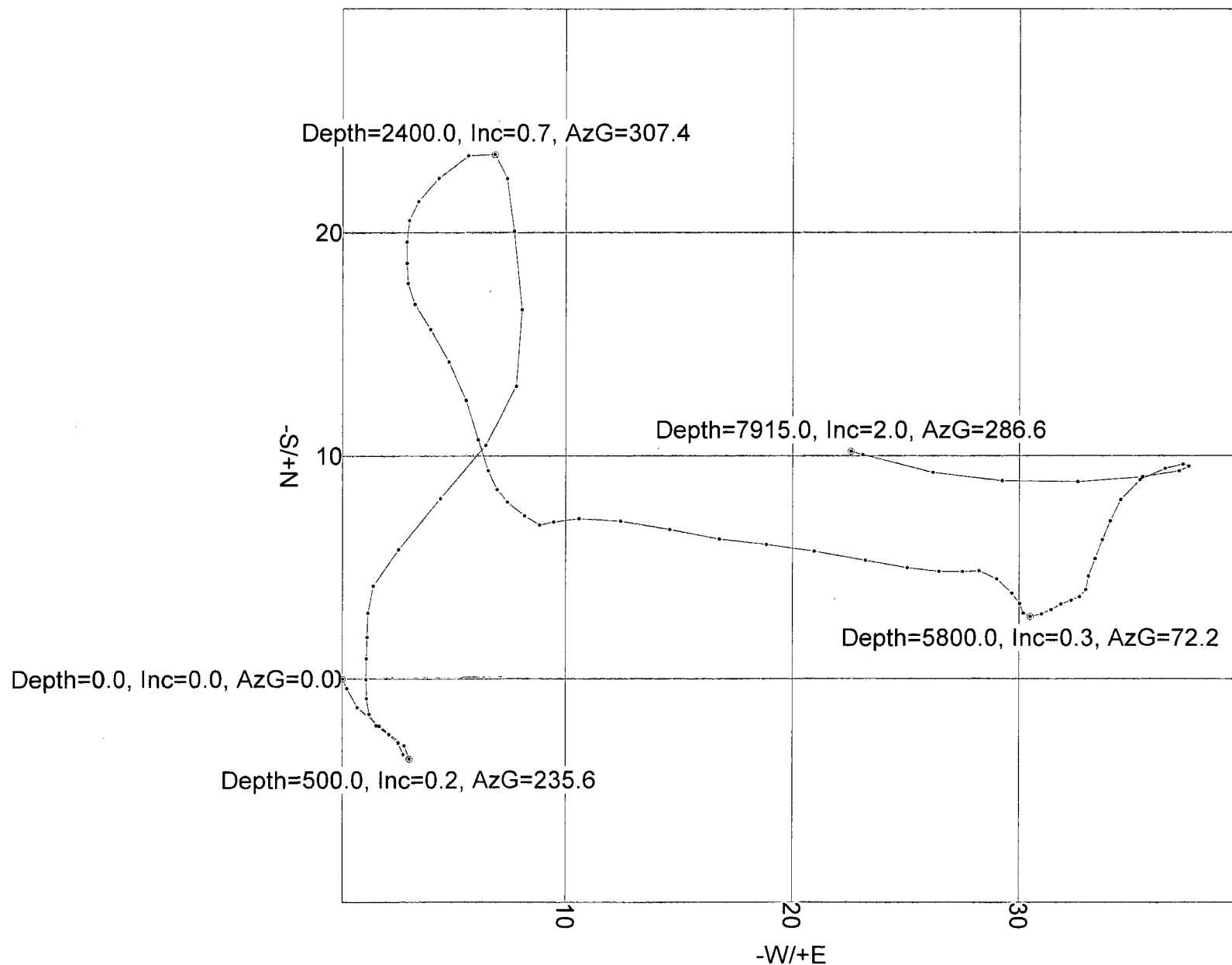
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.55	155.14	100.00	-0.44	0.20	-0.44	0.48	155.14	0.55
200.00	0.57	147.88	199.99	-1.30	0.67	-1.30	1.46	152.67	0.07
300.00	0.96	118.46	299.98	-2.11	1.67	-2.11	2.69	141.73	0.54
400.00	0.70	142.53	399.97	-3.00	2.77	-3.00	4.09	137.22	0.43
500.00	0.21	235.61	499.97	-3.59	3.00	-3.59	4.68	140.09	0.74
600.00	0.37	336.51	599.97	-3.39	2.72	-3.39	4.35	141.23	0.46
700.00	0.28	337.35	699.97	-2.87	2.50	-2.87	3.81	138.93	0.10
800.00	0.40	296.04	799.97	-2.50	2.10	-2.50	3.26	139.97	0.26
900.00	0.41	311.05	899.97	-2.11	1.52	-2.11	2.60	144.30	0.11
1000.00	0.34	352.21	999.96	-1.58	1.21	-1.58	1.99	142.66	0.27
1100.00	0.47	349.61	1099.96	-0.89	1.09	-0.89	1.41	129.12	0.13
1200.00	0.53	4.93	1199.96	-0.03	1.06	-0.03	1.06	91.58	0.15
1300.00	0.55	357.48	1299.95	0.91	1.08	0.91	1.41	49.90	0.07
1400.00	0.56	6.85	1399.95	1.88	1.12	1.88	2.18	30.79	0.09
1500.00	0.69	357.56	1499.94	2.96	1.15	2.96	3.18	21.23	0.16
1600.00	0.77	23.07	1599.93	4.18	1.39	4.18	4.40	18.38	0.33
1700.00	1.53	40.52	1699.91	5.81	2.52	5.81	6.33	23.44	0.83
1800.00	1.86	38.29	1799.87	8.10	4.39	8.10	9.21	28.47	0.33

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	1.74	42.93	1899.82	10.48	6.43	10.48	12.29	31.52	0.19
2000.00	1.80	13.33	1999.78	13.12	7.82	13.12	15.28	30.80	0.91
2100.00	2.18	356.13	2099.72	16.55	8.06	16.55	18.41	25.96	0.70
2200.00	1.87	352.81	2199.65	20.07	7.73	20.07	21.50	21.06	0.33
2300.00	0.84	351.26	2299.62	22.41	7.41	22.41	23.60	18.30	1.04
2400.00	0.68	307.45	2399.62	23.49	6.83	23.49	24.46	16.20	0.58
2500.00	0.97	239.53	2499.61	23.43	5.63	23.43	24.09	13.51	0.95
2600.00	0.95	225.46	2599.59	22.42	4.31	22.42	22.83	10.88	0.24
2700.00	0.62	216.07	2699.58	21.40	3.40	21.40	21.67	9.03	0.35
2800.00	0.49	193.01	2799.58	20.54	2.98	20.54	20.75	8.26	0.26
2900.00	0.61	181.31	2899.57	19.59	2.87	19.59	19.80	8.35	0.16
3000.00	0.50	177.04	2999.57	18.62	2.88	18.62	18.85	8.80	0.12
3100.00	0.52	177.93	3099.57	17.73	2.92	17.73	17.97	9.36	0.03
3200.00	0.65	147.87	3199.56	16.79	3.24	16.79	17.11	10.93	0.33
3300.00	0.86	148.40	3299.55	15.67	3.94	15.67	16.16	14.12	0.21
3400.00	1.07	152.40	3399.54	14.20	4.77	14.20	14.98	18.55	0.21
3500.00	1.10	159.13	3499.52	12.49	5.54	12.49	13.66	23.92	0.13
3600.00	1.01	166.70	3599.50	10.73	6.08	10.73	12.34	29.54	0.16
3700.00	0.67	154.72	3699.49	9.34	6.54	9.34	11.40	34.99	0.38
3800.00	0.40	155.24	3799.49	8.49	6.93	8.49	10.96	39.22	0.28
3900.00	0.49	124.38	3899.49	7.94	7.43	7.94	10.87	43.08	0.25
4000.00	0.64	133.24	3999.48	7.32	8.18	7.32	10.98	48.17	0.17
4100.00	0.29	96.00	4099.48	6.91	8.84	6.91	11.22	51.96	0.44
4200.00	0.47	68.10	4199.47	7.04	9.47	7.04	11.80	53.37	0.25
4300.00	0.84	90.11	4299.47	7.19	10.58	7.19	12.80	55.80	0.44
4400.00	1.26	95.94	4399.45	7.08	12.41	7.08	14.28	60.30	0.43
4500.00	1.26	103.99	4499.43	6.70	14.56	6.70	16.03	65.30	0.18
4600.00	1.29	98.01	4599.40	6.28	16.74	6.28	17.88	69.45	0.14
4700.00	1.13	95.16	4699.38	6.03	18.84	6.03	19.78	72.25	0.17
4800.00	1.33	100.56	4799.36	5.73	20.96	5.73	21.73	74.71	0.23
4900.00	1.30	100.11	4899.33	5.32	23.22	5.32	23.82	77.10	0.03
5000.00	0.84	100.36	4999.31	4.99	25.06	4.99	25.55	78.74	0.46
5100.00	0.78	92.50	5099.30	4.82	26.47	4.82	26.90	79.67	0.13
5200.00	0.39	86.03	5199.30	4.82	27.49	4.82	27.91	80.06	0.40
5300.00	0.45	89.23	5299.30	4.85	28.23	4.85	28.64	80.26	0.07
5400.00	0.62	133.45	5399.29	4.48	29.02	4.48	29.36	81.22	0.43
5500.00	0.44	134.27	5499.29	3.84	29.68	3.84	29.93	82.63	0.17
5600.00	0.24	162.63	5599.28	3.37	30.03	3.37	30.21	83.60	0.26
5700.00	0.27	155.60	5699.28	2.95	30.19	2.95	30.33	84.42	0.04

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	0.26	72.17	5799.28	2.80	30.50	2.80	30.63	84.76	0.35
5900.00	0.34	81.55	5899.28	2.91	31.00	2.91	31.14	84.64	0.09
6000.00	0.23	42.58	5999.28	3.11	31.43	3.11	31.58	84.36	0.21
6100.00	0.34	70.34	6099.28	3.36	31.85	3.36	32.03	83.98	0.18
6200.00	0.21	68.04	6199.28	3.53	32.31	3.53	32.50	83.77	0.14
6300.00	0.26	67.89	6299.28	3.68	32.68	3.68	32.89	83.58	0.05
6400.00	0.29	13.67	6399.28	4.01	32.95	4.01	33.20	83.07	0.25
6500.00	0.42	10.28	6499.27	4.61	33.08	4.61	33.40	82.06	0.14
6600.00	0.55	26.79	6599.27	5.40	33.36	5.40	33.79	80.80	0.19
6700.00	0.49	14.88	6699.27	6.24	33.68	6.24	34.25	79.51	0.12
6800.00	0.56	29.11	6799.26	7.07	34.03	7.07	34.75	78.26	0.15
6900.00	0.67	22.88	6899.26	8.04	34.49	8.04	35.42	76.89	0.13
7000.00	0.81	60.74	6999.25	8.92	35.34	8.92	36.45	75.83	0.50
7100.00	0.58	72.21	7099.24	9.42	36.44	9.42	37.64	75.50	0.27
7200.00	0.35	82.95	7199.24	9.62	37.22	9.62	38.44	75.52	0.25
7300.00	0.16	197.03	7299.24	9.52	37.48	9.52	38.67	75.75	0.43
7400.00	0.45	258.83	7399.24	9.32	37.06	9.32	38.21	75.89	0.40
7500.00	1.43	261.34	7499.22	9.05	35.44	9.05	36.58	75.67	0.98
7600.00	1.85	268.83	7599.18	8.83	32.60	8.83	33.77	74.84	0.47
7700.00	2.00	272.65	7699.12	8.88	29.25	8.88	30.56	73.11	0.20
7800.00	1.55	282.54	7799.08	9.25	26.19	9.25	27.77	70.54	0.54
7900.00	2.11	285.81	7899.03	10.05	23.10	10.05	25.19	66.49	0.57
7915.00	2.04	286.65	7914.02	10.20	22.57	10.20	24.77	65.68	0.52



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Lusk Deep Unit A 35H / API 30-025-42211



VES Survey Date: 11/30/2014



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COG Operating LLC

Lea County, NM
Lusk Deep Unit A
#35H

30-025-42211

OH

Survey: MWD #1

Survey Report - Geographic

15 December, 2014

pm



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #35H
Project:	Lea County, NM	TVD Reference:	WELL @ 3608.9usft (Original Well Elev)
Site:	Lusk Deep Unit A	MD Reference:	WELL @ 3608.9usft (Original Well Elev)
Well:	#35H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM		
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	Lusk Deep Unit A				
Site Position:		Northing:	603,696.00 usft	Latitude:	32° 39' 30.900 N
From:	Map	Easting:	660,099.70 usft	Longitude:	103° 48' 47.247 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.28 °

Well	#35H					
Well Position	+N/-S	0.0 usft	Northing:	599,764.20 usft	Latitude:	32° 38' 51.481 N
	+E/-W	0.0 usft	Easting:	670,347.80 usft	Longitude:	103° 46' 47.616 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,590.9 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/1/2014	7.29	60.46	48,501

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	269.79	

Survey Program	Date 12/15/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	7,915.0	GYRO (OH)	NS-GYRO-SS	NS Gyro single shots	
7,972.0	13,079.0	MWD #1 (OH)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
7,915.0	2.04	286.65	7,914.0	10.2	22.5	599,774.44	670,370.35	32° 38' 51.581 N	103° 46' 47.351 W	
7,972.0	0.40	298.70	7,971.0	10.6	21.4	599,774.83	670,369.20	32° 38' 51.585 N	103° 46' 47.365 W	
8,003.0	1.30	259.50	8,002.0	10.6	21.0	599,774.81	670,368.76	32° 38' 51.585 N	103° 46' 47.370 W	
8,035.0	4.50	270.20	8,034.0	10.5	19.3	599,774.75	670,367.15	32° 38' 51.584 N	103° 46' 47.389 W	
8,067.0	8.40	271.80	8,065.7	10.6	15.7	599,774.83	670,363.55	32° 38' 51.585 N	103° 46' 47.431 W	
8,098.0	12.40	272.70	8,096.2	10.9	10.2	599,775.06	670,357.96	32° 38' 51.588 N	103° 46' 47.496 W	
8,130.0	16.80	270.40	8,127.2	11.0	2.1	599,775.25	670,349.90	32° 38' 51.590 N	103° 46' 47.590 W	
8,162.0	20.00	265.80	8,157.5	10.7	-8.0	599,774.88	670,339.82	32° 38' 51.587 N	103° 46' 47.708 W	
8,193.0	22.90	263.50	8,186.4	9.6	-19.3	599,773.81	670,328.54	32° 38' 51.577 N	103° 46' 47.840 W	
8,225.0	25.50	264.40	8,215.6	8.2	-32.3	599,772.44	670,315.49	32° 38' 51.564 N	103° 46' 47.993 W	
8,257.0	29.50	266.30	8,244.0	7.1	-47.0	599,771.26	670,300.77	32° 38' 51.553 N	103° 46' 48.165 W	



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #35H
Project:	Lea County, NM	TVD Reference:	WELL @ 3608.9usft (Original Well Elev)
Site:	Lusk Deep Unit A	MD Reference:	WELL @ 3608.9usft (Original Well Elev)
Well:	#35H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,288.0	32.80	267.20	8,270.5	6.1	-63.0	599,770.35	670,284.76	32° 38' 51.545 N	103° 46' 48.353 W
8,320.0	36.70	267.40	8,296.8	5.3	-81.3	599,769.49	670,266.55	32° 38' 51.538 N	103° 46' 48.566 W
8,352.0	40.20	267.90	8,321.8	4.5	-101.1	599,768.68	670,246.67	32° 38' 51.531 N	103° 46' 48.798 W
8,383.0	42.80	269.30	8,345.1	4.0	-121.7	599,768.19	670,226.13	32° 38' 51.527 N	103° 46' 49.038 W
8,415.0	46.50	270.00	8,367.8	3.9	-144.2	599,768.05	670,203.65	32° 38' 51.527 N	103° 46' 49.301 W
8,446.0	48.80	269.70	8,388.7	3.8	-167.1	599,767.99	670,180.74	32° 38' 51.527 N	103° 46' 49.569 W
8,478.0	51.60	269.20	8,409.2	3.6	-191.6	599,767.75	670,156.16	32° 38' 51.526 N	103° 46' 49.857 W
8,510.0	53.70	268.60	8,428.6	3.1	-217.1	599,767.26	670,130.73	32° 38' 51.523 N	103° 46' 50.154 W
8,539.0	56.70	268.30	8,445.1	2.4	-240.9	599,766.62	670,106.93	32° 38' 51.517 N	103° 46' 50.433 W
8,570.0	59.60	268.30	8,461.5	1.6	-267.2	599,765.84	670,080.61	32° 38' 51.511 N	103° 46' 50.740 W
8,602.0	62.70	268.60	8,476.9	0.9	-295.2	599,765.08	670,052.59	32° 38' 51.505 N	103° 46' 51.068 W
8,634.0	65.80	269.50	8,490.8	0.4	-324.0	599,764.61	670,023.78	32° 38' 51.502 N	103° 46' 51.405 W
8,665.0	68.90	270.20	8,502.8	0.3	-352.6	599,764.53	669,995.17	32° 38' 51.502 N	103° 46' 51.740 W
8,697.0	71.80	270.70	8,513.5	0.6	-382.8	599,764.77	669,965.04	32° 38' 51.506 N	103° 46' 52.092 W
8,729.0	74.20	271.10	8,522.9	1.0	-413.4	599,765.25	669,934.45	32° 38' 51.513 N	103° 46' 52.450 W
8,760.0	76.50	271.80	8,530.7	1.8	-443.3	599,766.01	669,904.47	32° 38' 51.522 N	103° 46' 52.801 W
8,792.0	79.50	271.60	8,537.4	2.7	-474.6	599,766.94	669,873.18	32° 38' 51.533 N	103° 46' 53.166 W
8,824.0	81.60	271.40	8,542.6	3.6	-506.2	599,767.77	669,841.63	32° 38' 51.542 N	103° 46' 53.535 W
8,855.0	83.50	271.30	8,546.7	4.3	-536.9	599,768.49	669,810.90	32° 38' 51.551 N	103° 46' 53.895 W
8,887.0	85.50	271.10	8,549.7	5.0	-568.7	599,769.16	669,779.06	32° 38' 51.559 N	103° 46' 54.267 W
8,919.0	87.60	271.60	8,551.6	5.7	-600.7	599,769.91	669,747.13	32° 38' 51.568 N	103° 46' 54.640 W
9,014.0	93.30	272.30	8,550.9	8.9	-695.6	599,773.14	669,652.22	32° 38' 51.605 N	103° 46' 55.750 W
9,140.0	92.70	268.80	8,544.3	10.1	-821.4	599,774.35	669,526.42	32° 38' 51.624 N	103° 46' 57.221 W
9,235.0	90.50	268.30	8,541.6	7.7	-916.3	599,771.94	669,431.50	32° 38' 51.605 N	103° 46' 58.332 W
9,330.0	90.90	267.90	8,540.5	4.6	-1,011.2	599,768.80	669,336.56	32° 38' 51.578 N	103° 46' 59.442 W
9,426.0	91.10	267.20	8,538.8	0.5	-1,107.1	599,764.69	669,240.66	32° 38' 51.543 N	103° 47' 0.564 W
9,521.0	90.10	269.20	8,537.8	-2.5	-1,202.1	599,761.71	669,145.72	32° 38' 51.518 N	103° 47' 1.675 W
9,616.0	90.70	270.00	8,537.2	-3.2	-1,297.1	599,761.05	669,050.72	32° 38' 51.516 N	103° 47' 2.786 W
9,711.0	91.50	269.90	8,535.3	-3.2	-1,392.1	599,760.96	668,955.74	32° 38' 51.520 N	103° 47' 3.897 W
9,805.0	90.70	269.70	8,533.5	-3.6	-1,486.0	599,760.63	668,861.76	32° 38' 51.522 N	103° 47' 4.996 W
9,935.0	90.10	267.60	8,532.6	-6.6	-1,616.0	599,757.57	668,731.81	32° 38' 51.498 N	103° 47' 6.516 W
10,062.0	90.70	269.00	8,531.7	-10.4	-1,742.9	599,753.80	668,604.87	32° 38' 51.468 N	103° 47' 8.001 W
10,157.0	89.40	270.00	8,531.6	-11.2	-1,837.9	599,752.98	668,509.88	32° 38' 51.464 N	103° 47' 9.112 W
10,252.0	89.30	269.00	8,532.7	-12.1	-1,932.9	599,752.15	668,414.89	32° 38' 51.461 N	103° 47' 10.223 W
10,347.0	88.10	270.70	8,534.9	-12.3	-2,027.9	599,751.90	668,319.92	32° 38' 51.463 N	103° 47' 11.334 W
10,473.0	89.10	270.70	8,538.0	-10.8	-2,153.8	599,753.44	668,193.97	32° 38' 51.485 N	103° 47' 12.807 W
10,568.0	88.50	270.40	8,539.9	-9.9	-2,248.8	599,754.35	668,098.99	32° 38' 51.499 N	103° 47' 13.917 W
10,663.0	90.20	271.10	8,541.0	-8.6	-2,343.8	599,755.59	668,004.01	32° 38' 51.516 N	103° 47' 15.028 W
10,758.0	89.70	271.10	8,541.1	-6.8	-2,438.8	599,757.42	667,909.03	32° 38' 51.539 N	103° 47' 16.139 W
10,853.0	88.50	270.00	8,542.6	-5.9	-2,533.8	599,758.33	667,814.05	32° 38' 51.553 N	103° 47' 17.250 W
10,980.0	92.60	272.20	8,541.4	-3.4	-2,660.7	599,760.76	667,687.11	32° 38' 51.583 N	103° 47' 18.734 W
11,107.0	90.70	271.40	8,537.7	0.5	-2,787.6	599,764.75	667,560.23	32° 38' 51.629 N	103° 47' 20.218 W
11,203.0	90.40	271.80	8,536.8	3.2	-2,883.5	599,767.43	667,464.28	32° 38' 51.660 N	103° 47' 21.340 W
11,298.0	90.70	271.10	8,535.9	5.6	-2,978.5	599,769.83	667,369.31	32° 38' 51.689 N	103° 47' 22.450 W
11,393.0	91.40	270.70	8,534.2	7.1	-3,073.5	599,771.33	667,274.34	32° 38' 51.709 N	103° 47' 23.561 W
11,489.0	89.00	270.40	8,533.8	8.0	-3,169.5	599,772.25	667,178.35	32° 38' 51.723 N	103° 47' 24.684 W
11,584.0	89.30	269.70	8,535.2	8.1	-3,264.4	599,772.33	667,083.36	32° 38' 51.728 N	103° 47' 25.794 W
11,679.0	89.60	269.30	8,536.1	7.3	-3,359.4	599,771.50	666,988.37	32° 38' 51.725 N	103° 47' 26.905 W
11,773.0	90.30	269.00	8,536.2	5.9	-3,453.4	599,770.11	666,894.38	32° 38' 51.716 N	103° 47' 28.005 W
11,868.0	90.80	269.00	8,535.3	4.2	-3,548.4	599,768.45	666,799.40	32° 38' 51.704 N	103° 47' 29.116 W
11,963.0	89.70	269.30	8,534.9	2.8	-3,643.4	599,767.04	666,704.41	32° 38' 51.695 N	103° 47' 30.227 W
12,059.0	90.00	269.00	8,535.1	1.4	-3,739.4	599,765.62	666,608.42	32° 38' 51.686 N	103° 47' 31.350 W
12,186.0	90.70	269.30	8,534.4	-0.5	-3,866.4	599,763.73	666,481.44	32° 38' 51.674 N	103° 47' 32.835 W
12,281.0	90.00	269.00	8,533.8	-1.9	-3,961.3	599,762.32	666,386.46	32° 38' 51.664 N	103° 47' 33.946 W
12,376.0	90.30	268.60	8,533.5	-3.9	-4,056.3	599,760.33	666,291.48	32° 38' 51.649 N	103° 47' 35.057 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #35H
Project:	Lea County, NM	TVD Reference:	WELL @ 3608.9usft (Original Well Elev)
Site:	Lusk Deep Unit A	MD Reference:	WELL @ 3608.9usft (Original Well Elev)
Well:	#35H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,471.0	90.20	268.30	8,533.1	-6.4	-4,151.3	599,757.76	666,196.51	32° 38' 51.629 N	103° 47' 36.168 W
12,598.0	90.50	267.60	8,532.4	-11.0	-4,278.2	599,753.22	666,069.60	32° 38' 51.590 N	103° 47' 37.652 W
12,724.0	88.80	267.90	8,533.1	-15.9	-4,404.1	599,748.27	665,943.70	32° 38' 51.548 N	103° 47' 39.125 W
12,886.0	88.00	267.60	8,537.6	-22.3	-4,565.9	599,741.92	665,781.89	32° 38' 51.493 N	103° 47' 41.018 W
13,079.0	88.00	267.60	8,544.4	-30.4	-4,758.6	599,733.84	665,589.18	32° 38' 51.423 N	103° 47' 43.272 W
PBHL(LDUA#35)									

Checked By: _____	Approved By: _____	Date: _____
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