

PATRIOT DRILLING, LLC

NM OIL CONSERVATION

ARTESIA DISTRICT

APR 04 2016

OPERATOR: COG Operating, LLC
WELL/LEASE: Horned Owl Fed #2H
COUNTY: Eddy Co., New Mexico
Sec. 25, T 26S, R 26E

RECEIVED

30-015-42485

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
441	1	3,910	1 1/2
988	1	4,397	2
1,368	1/4	4,869	2 1/4
1,653	1 1/4	5,542	2 1/4
1,994	3/4	5,796	1 1/2
2,500	3/4	6,407	1 1/2
2,976	1/2	6,817	1 1/4
3,438	1/2		

Patriot Drilling, LLC

M. Leroy Peterson, Executive Vice-President

The foregoing instrument was acknowledged before me on this 10th day of July, 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

RECEIVED

JUL 17 15

COG
ARTESIA WEST



NM OIL CONSERVATION
ARTESIA DISTRICT

APR 04 2016

RECEIVED

July 8, 2015

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

Attn: Kanicia Castillo

RE: **Horned Owl Federal No 002H**

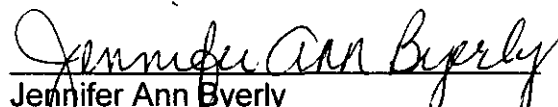
Please find enclosed a copy of the survey from 0' to 6235' ran on the above referenced well.

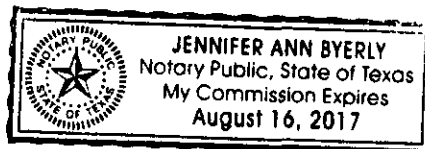
Sincerely, 

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 8 day of July,
A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

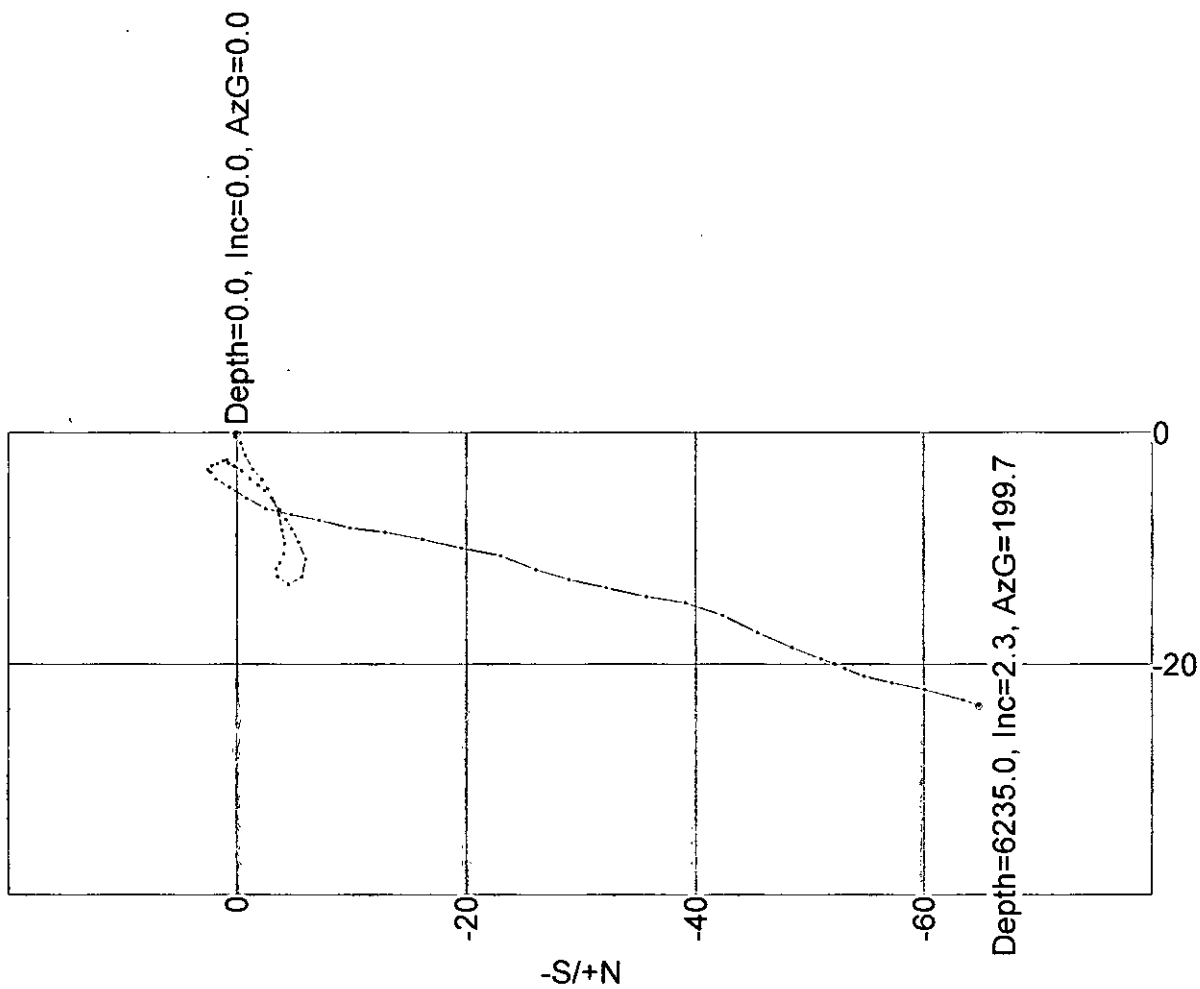
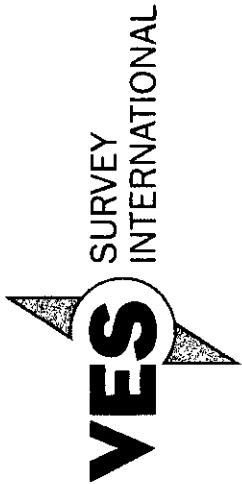


VES Survey International
P.O. Box 261021 Corpus Christi, TX 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com





VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Horned Owl Federal No 002H / API 30-015-42485



-W/+E

VES Survey Date: 6/30/2015



NM OIL CONSERVATION

ARTESIA DISTRICT

APR 04 2016

RECEIVED

COG Operating LLC.

Eddy County, NM

Horned Owl Federal

#2H

OH

Survey: MWD #1

Survey Report - Geographic

07 July, 2015



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3435.9usft (Original Well Elev)
Site:	Horned Owl Federal	MD Reference:	WELL @ 3435.9usft (Original Well Elev)
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Project	Eddy 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	Horned Owl Federal		
Site Position:	Map	Northing:	370,965.80 usft
From:		Easting:	526,339.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 11.534 N
		Longitude:	104° 14' 54.047 W
		Grid Convergence:	0.05 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 1' 11.534 N
		Longitude:	104° 14' 54.047 W
		Ground Level:	3,415.9 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	6/18/2015	7.39
			Dip Angle
			(°)
			59.78
			Field Strength
			(nT)
			48,020

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			179.06

Survey Program	Date 7/7/2015		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		Description
100.0	11,903.0	MWD #1 (OH)	MWD
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting		
(usft)			(usft)			(usft)	(usft)		
0.0	0.00	0.00	0.0	0.0	0.0	370,965.80	526,339.80	32° 1' 11.534 N	104° 14' 54.047 W
100.0	0.28	325.89	100.0	0.2	-0.1	370,966.00	526,339.66	32° 1' 11.536 N	104° 14' 54.049 W
200.0	0.31	196.74	200.0	0.1	-0.4	370,965.94	526,339.45	32° 1' 11.536 N	104° 14' 54.051 W
300.0	0.59	243.33	300.0	-0.3	-0.9	370,965.45	526,338.91	32° 1' 11.531 N	104° 14' 54.058 W
400.0	0.70	254.22	400.0	-0.7	-1.9	370,965.06	526,337.86	32° 1' 11.527 N	104° 14' 54.070 W
500.0	0.90	231.25	500.0	-1.4	-3.1	370,964.40	526,336.66	32° 1' 11.520 N	104° 14' 54.084 W
600.0	0.46	224.44	600.0	-2.2	-4.0	370,963.62	526,335.77	32° 1' 11.513 N	104° 14' 54.094 W
700.0	0.64	245.36	700.0	-2.7	-4.8	370,963.10	526,334.98	32° 1' 11.508 N	104° 14' 54.103 W
800.0	0.73	241.70	800.0	-3.2	-5.9	370,962.57	526,333.91	32° 1' 11.502 N	104° 14' 54.116 W
900.0	0.72	256.35	900.0	-3.7	-7.1	370,962.12	526,332.74	32° 1' 11.498 N	104° 14' 54.129 W
1,000.0	0.84	262.21	999.9	-3.9	-8.4	370,961.87	526,331.40	32° 1' 11.495 N	104° 14' 54.145 W
1,100.0	0.54	252.94	1,099.9	-4.2	-9.6	370,961.63	526,330.23	32° 1' 11.493 N	104° 14' 54.158 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3435.9usft (Original Well Elev)
Site:	Horned Owl Federal	MD Reference:	WELL @ 3435.9usft (Original Well Elev)
Well:	#2H	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
1,200.0	0.53	299.55	1,199.9	-4.1	-10.4	370,961.72	526,329.37	32° 1' 11.494 N	104° 14' 54.168 W
1,300.0	0.47	285.75	1,299.9	-3.7	-11.2	370,962.06	526,328.58	32° 1' 11.497 N	104° 14' 54.178 W
1,400.0	0.26	328.11	1,399.9	-3.4	-11.7	370,962.36	526,328.06	32° 1' 11.500 N	104° 14' 54.184 W
1,500.0	0.73	240.61	1,499.9	-3.6	-12.4	370,962.24	526,327.39	32° 1' 11.499 N	104° 14' 54.191 W
1,600.0	0.73	188.01	1,599.9	-4.5	-13.1	370,961.30	526,326.74	32° 1' 11.490 N	104° 14' 54.199 W
1,700.0	1.03	125.87	1,699.9	-5.7	-12.4	370,960.14	526,327.38	32° 1' 11.478 N	104° 14' 54.192 W
1,800.0	0.95	75.43	1,799.9	-6.0	-10.9	370,959.83	526,328.91	32° 1' 11.475 N	104° 14' 54.174 W
1,900.0	0.90	59.80	1,899.9	-5.4	-9.4	370,960.43	526,330.40	32° 1' 11.481 N	104° 14' 54.157 W
2,000.0	0.58	65.28	1,999.9	-4.8	-8.3	370,961.04	526,331.53	32° 1' 11.487 N	104° 14' 54.143 W
2,100.0	0.51	50.26	2,099.9	-4.3	-7.5	370,961.53	526,332.34	32° 1' 11.492 N	104° 14' 54.134 W
2,200.0	0.69	61.54	2,199.9	-3.7	-6.6	370,962.10	526,333.21	32° 1' 11.498 N	104° 14' 54.124 W
2,300.0	0.66	49.49	2,299.9	-3.0	-5.6	370,962.76	526,334.18	32° 1' 11.504 N	104° 14' 54.113 W
2,400.0	0.38	40.54	2,399.9	-2.4	-5.0	370,963.39	526,334.83	32° 1' 11.510 N	104° 14' 54.105 W
2,500.0	0.46	41.75	2,499.8	-1.9	-4.5	370,963.94	526,335.31	32° 1' 11.516 N	104° 14' 54.099 W
2,600.0	0.59	35.90	2,599.8	-1.1	-3.9	370,964.66	526,335.88	32° 1' 11.523 N	104° 14' 54.093 W
2,700.0	0.55	49.77	2,699.8	-0.4	-3.3	370,965.39	526,336.55	32° 1' 11.530 N	104° 14' 54.085 W
2,800.0	0.41	7.96	2,799.8	0.3	-2.8	370,966.05	526,336.96	32° 1' 11.537 N	104° 14' 54.080 W
2,900.0	0.28	58.15	2,899.8	0.7	-2.6	370,966.53	526,337.22	32° 1' 11.541 N	104° 14' 54.077 W
3,000.0	0.08	86.43	2,999.8	0.9	-2.3	370,966.67	526,337.50	32° 1' 11.543 N	104° 14' 54.074 W
3,100.0	0.41	337.45	3,099.8	1.2	-2.4	370,967.00	526,337.43	32° 1' 11.546 N	104° 14' 54.075 W
3,200.0	0.25	327.55	3,199.8	1.7	-2.6	370,967.52	526,337.18	32° 1' 11.551 N	104° 14' 54.078 W
3,300.0	0.33	347.10	3,299.8	2.2	-2.8	370,967.98	526,337.00	32° 1' 11.556 N	104° 14' 54.080 W
3,400.0	0.34	290.01	3,399.8	2.6	-3.1	370,968.36	526,336.65	32° 1' 11.560 N	104° 14' 54.084 W
3,500.0	0.30	135.37	3,499.8	2.5	-3.2	370,968.28	526,336.56	32° 1' 11.559 N	104° 14' 54.085 W
3,600.0	0.35	266.01	3,599.8	2.3	-3.4	370,968.07	526,336.44	32° 1' 11.557 N	104° 14' 54.086 W
3,700.0	0.58	214.40	3,699.8	1.8	-4.0	370,967.63	526,335.85	32° 1' 11.552 N	104° 14' 54.093 W
3,800.0	1.00	208.34	3,799.8	0.6	-4.7	370,966.45	526,335.15	32° 1' 11.541 N	104° 14' 54.101 W
3,900.0	1.01	216.89	3,899.8	-0.8	-5.6	370,964.97	526,334.20	32° 1' 11.526 N	104° 14' 54.112 W
4,000.0	1.22	200.58	3,999.8	-2.5	-6.5	370,963.27	526,333.30	32° 1' 11.509 N	104° 14' 54.123 W
4,100.0	1.41	187.08	4,099.8	-4.7	-7.0	370,961.05	526,332.77	32° 1' 11.487 N	104° 14' 54.129 W
4,200.0	1.47	195.74	4,199.7	-7.2	-7.5	370,958.60	526,332.27	32° 1' 11.463 N	104° 14' 54.135 W
4,300.0	1.67	192.89	4,299.7	-9.9	-8.2	370,955.94	526,331.60	32° 1' 11.437 N	104° 14' 54.143 W
4,400.0	1.86	181.69	4,399.6	-12.9	-8.6	370,952.90	526,331.23	32° 1' 11.407 N	104° 14' 54.147 W
4,500.0	2.01	198.73	4,499.6	-16.2	-9.2	370,949.62	526,330.62	32° 1' 11.374 N	104° 14' 54.154 W
4,600.0	1.95	185.68	4,599.5	-19.5	-9.9	370,946.26	526,329.89	32° 1' 11.341 N	104° 14' 54.163 W
4,700.0	2.09	196.81	4,699.5	-23.0	-10.6	370,942.82	526,329.19	32° 1' 11.307 N	104° 14' 54.171 W
4,800.0	1.71	206.24	4,799.4	-26.1	-11.8	370,939.74	526,328.00	32° 1' 11.276 N	104° 14' 54.185 W
4,900.0	1.78	187.52	4,899.4	-28.9	-12.7	370,936.86	526,327.14	32° 1' 11.248 N	104° 14' 54.195 W
5,000.0	2.03	196.12	4,999.3	-32.2	-13.4	370,933.62	526,326.45	32° 1' 11.216 N	104° 14' 54.203 W
5,100.0	2.08	189.61	5,099.2	-35.7	-14.2	370,930.13	526,325.65	32° 1' 11.181 N	104° 14' 54.212 W
5,200.0	1.89	188.67	5,199.2	-39.1	-14.7	370,926.71	526,325.10	32° 1' 11.147 N	104° 14' 54.218 W
5,300.0	2.06	207.13	5,299.1	-42.3	-15.8	370,923.48	526,324.03	32° 1' 11.116 N	104° 14' 54.231 W
5,400.0	1.84	204.79	5,399.1	-45.4	-17.3	370,920.42	526,322.54	32° 1' 11.085 N	104° 14' 54.248 W
5,500.0	1.88	201.93	5,499.0	-48.4	-18.5	370,917.45	526,321.25	32° 1' 11.056 N	104° 14' 54.263 W
5,600.0	1.23	199.12	5,599.0	-50.9	-19.5	370,914.91	526,320.29	32° 1' 11.031 N	104° 14' 54.274 W
5,700.0	0.26	198.81	5,699.0	-52.1	-19.9	370,913.68	526,319.86	32° 1' 11.019 N	104° 14' 54.279 W
5,800.0	0.86	207.07	5,799.0	-53.0	-20.4	370,912.80	526,319.45	32° 1' 11.010 N	104° 14' 54.284 W
5,900.0	1.19	198.40	5,898.9	-54.7	-21.0	370,911.14	526,318.78	32° 1' 10.993 N	104° 14' 54.292 W
6,000.0	1.71	190.07	5,998.9	-57.1	-21.6	370,908.69	526,318.19	32° 1' 10.969 N	104° 14' 54.299 W
6,100.0	1.73	191.73	6,098.9	-60.1	-22.2	370,905.74	526,317.62	32° 1' 10.940 N	104° 14' 54.305 W
6,200.0	2.31	197.16	6,198.8	-63.5	-23.1	370,902.34	526,316.72	32° 1' 10.906 N	104° 14' 54.316 W
6,235.0	2.94	199.68	6,233.8	-65.0	-23.6	370,900.82	526,316.21	32° 1' 10.891 N	104° 14' 54.322 W
6,407.0	1.40	234.40	6,405.6	-70.4	-26.8	370,895.44	526,313.02	32° 1' 10.838 N	104° 14' 54.359 W
6,502.0	1.60	235.30	6,500.6	-71.8	-28.8	370,894.01	526,310.98	32° 1' 10.824 N	104° 14' 54.383 W
6,596.0	1.60	238.20	6,594.6	-73.2	-31.0	370,892.57	526,308.79	32° 1' 10.810 N	104° 14' 54.408 W



Wellplanning
Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3435.9usft (Original Well Elev)
Site:	Horned Owl Federal	MD Reference:	WELL @ 3435.9usft (Original Well Elev)
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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
6,691.0	1.50	243.10	6,689.5	-74.5	-33.2	370,891.31	526,306.55	32° 1' 10.797 N	104° 14' 54.434 W
6,786.0	1.50	253.70	6,784.5	-75.4	-35.6	370,890.40	526,304.25	32° 1' 10.788 N	104° 14' 54.461 W
6,818.0	1.20	227.50	6,816.5	-75.7	-36.2	370,890.06	526,303.60	32° 1' 10.785 N	104° 14' 54.468 W
6,849.0	4.20	193.50	6,847.5	-77.1	-36.7	370,888.73	526,303.10	32° 1' 10.772 N	104° 14' 54.474 W
6,881.0	6.00	196.30	6,879.3	-79.8	-37.4	370,885.99	526,302.35	32° 1' 10.745 N	104° 14' 54.483 W
6,913.0	6.70	182.20	6,911.1	-83.3	-38.0	370,882.52	526,301.81	32° 1' 10.710 N	104° 14' 54.489 W
6,944.0	9.80	167.80	6,941.8	-87.7	-37.5	370,878.13	526,302.30	32° 1' 10.667 N	104° 14' 54.484 W
6,976.0	14.00	163.70	6,973.1	-94.0	-35.8	370,871.75	526,303.96	32° 1' 10.604 N	104° 14' 54.464 W
7,008.0	18.90	164.30	7,003.8	-102.8	-33.3	370,863.04	526,306.45	32° 1' 10.517 N	104° 14' 54.436 W
7,040.0	23.80	168.20	7,033.6	-114.1	-30.6	370,851.72	526,309.18	32° 1' 10.405 N	104° 14' 54.404 W
7,072.0	27.50	172.30	7,062.4	-127.7	-28.3	370,838.08	526,311.49	32° 1' 10.270 N	104° 14' 54.377 W
7,104.0	29.30	176.90	7,090.6	-142.9	-26.9	370,822.93	526,312.90	32° 1' 10.121 N	104° 14' 54.361 W
7,135.0	30.00	180.20	7,117.5	-158.2	-26.5	370,807.61	526,313.29	32° 1' 9.969 N	104° 14' 54.357 W
7,167.0	31.10	182.20	7,145.1	-174.4	-26.9	370,791.35	526,312.94	32° 1' 9.808 N	104° 14' 54.361 W
7,199.0	32.60	178.60	7,172.3	-191.3	-27.0	370,774.47	526,312.83	32° 1' 9.641 N	104° 14' 54.362 W
7,230.0	34.80	175.90	7,198.1	-208.5	-26.1	370,757.29	526,313.67	32° 1' 9.471 N	104° 14' 54.353 W
7,262.0	38.70	174.90	7,223.7	-227.6	-24.6	370,738.21	526,315.21	32° 1' 9.282 N	104° 14' 54.335 W
7,293.0	42.50	174.90	7,247.2	-247.7	-22.8	370,718.12	526,317.01	32° 1' 9.083 N	104° 14' 54.314 W
7,325.0	46.40	176.40	7,270.1	-270.0	-21.1	370,695.78	526,318.70	32° 1' 8.862 N	104° 14' 54.295 W
7,357.0	50.80	178.20	7,291.2	-294.0	-20.0	370,671.81	526,319.81	32° 1' 8.625 N	104° 14' 54.282 W
7,389.0	54.70	179.80	7,310.6	-319.4	-19.6	370,646.35	526,320.25	32° 1' 8.373 N	104° 14' 54.277 W
7,420.0	59.40	179.90	7,327.5	-345.5	-19.5	370,620.35	526,320.32	32° 1' 8.116 N	104° 14' 54.277 W
7,449.0	64.90	180.00	7,341.0	-371.1	-19.5	370,594.72	526,320.34	32° 1' 7.862 N	104° 14' 54.277 W
7,481.0	69.80	180.00	7,353.3	-400.6	-19.5	370,565.19	526,320.34	32° 1' 7.570 N	104° 14' 54.277 W
7,513.0	72.50	180.80	7,363.7	-430.9	-19.7	370,534.91	526,320.13	32° 1' 7.270 N	104° 14' 54.280 W
7,544.0	74.70	181.10	7,372.4	-460.6	-20.2	370,505.18	526,319.63	32° 1' 6.976 N	104° 14' 54.286 W
7,576.0	76.10	181.00	7,380.5	-491.6	-20.7	370,474.22	526,319.06	32° 1' 6.669 N	104° 14' 54.293 W
7,608.0	78.90	180.80	7,387.4	-522.8	-21.2	370,442.98	526,318.57	32° 1' 6.360 N	104° 14' 54.299 W
7,640.0	82.10	180.90	7,392.7	-554.4	-21.7	370,411.43	526,318.11	32° 1' 6.048 N	104° 14' 54.304 W
7,671.0	84.00	180.90	7,396.4	-585.1	-22.2	370,380.66	526,317.62	32° 1' 5.743 N	104° 14' 54.310 W
7,703.0	86.50	181.00	7,399.1	-617.0	-22.7	370,348.78	526,317.09	32° 1' 5.428 N	104° 14' 54.317 W
7,735.0	87.70	181.60	7,400.7	-649.0	-23.4	370,316.83	526,316.37	32° 1' 5.112 N	104° 14' 54.325 W
7,767.0	87.80	181.60	7,402.0	-680.9	-24.3	370,284.87	526,315.48	32° 1' 4.795 N	104° 14' 54.336 W
7,798.0	89.20	181.70	7,402.8	-711.9	-25.2	370,253.89	526,314.58	32° 1' 4.489 N	104° 14' 54.347 W
7,861.0	92.00	181.60	7,402.1	-774.9	-27.0	370,190.93	526,312.77	32° 1' 3.866 N	104° 14' 54.368 W
7,955.0	92.70	181.20	7,398.3	-868.8	-29.3	370,097.04	526,310.48	32° 1' 2.937 N	104° 14' 54.396 W
8,051.0	89.70	179.30	7,396.2	-964.7	-29.7	370,001.07	526,310.06	32° 1' 1.987 N	104° 14' 54.402 W
8,146.0	89.10	177.20	7,397.2	-1,059.7	-26.8	369,906.13	526,312.96	32° 1' 1.047 N	104° 14' 54.369 W
8,241.0	89.80	177.00	7,398.2	-1,154.5	-22.0	369,811.26	526,317.76	32° 1' 0.108 N	104° 14' 54.314 W
8,336.0	90.60	177.10	7,397.8	-1,249.4	-17.1	369,716.38	526,322.65	32° 0' 59.169 N	104° 14' 54.258 W
8,431.0	90.00	176.80	7,397.3	-1,344.3	-12.1	369,621.52	526,327.71	32° 0' 58.230 N	104° 14' 54.200 W
8,526.0	88.90	176.20	7,398.2	-1,439.1	-6.3	369,526.70	526,333.51	32° 0' 57.292 N	104° 14' 54.134 W
8,621.0	90.10	175.70	7,399.1	-1,533.9	0.4	369,431.95	526,340.22	32° 0' 56.354 N	104° 14' 54.056 W
8,716.0	91.50	175.20	7,397.7	-1,628.5	7.9	369,337.26	526,347.75	32° 0' 55.417 N	104° 14' 53.970 W
8,812.0	90.20	174.90	7,396.3	-1,724.2	16.2	369,241.63	526,356.03	32° 0' 54.470 N	104° 14' 53.874 W
8,907.0	89.40	175.70	7,396.6	-1,818.8	24.0	369,146.95	526,363.82	32° 0' 53.533 N	104° 14' 53.785 W
9,001.0	90.20	175.10	7,397.0	-1,912.5	31.6	369,053.25	526,371.36	32° 0' 52.606 N	104° 14' 53.698 W
9,096.0	89.80	176.50	7,397.0	-2,007.3	38.5	368,958.51	526,378.31	32° 0' 51.668 N	104° 14' 53.618 W
9,191.0	90.40	176.10	7,396.8	-2,102.1	44.6	368,863.71	526,384.44	32° 0' 50.730 N	104° 14' 53.548 W
9,286.0	92.00	176.00	7,394.8	-2,196.8	51.2	368,768.96	526,390.99	32° 0' 49.792 N	104° 14' 53.473 W
9,381.0	90.40	176.40	7,392.8	-2,291.6	57.5	368,674.19	526,397.28	32° 0' 48.854 N	104° 14' 53.401 W
9,477.0	89.80	177.30	7,392.7	-2,387.5	62.8	368,578.34	526,402.56	32° 0' 47.906 N	104° 14' 53.340 W
9,572.0	89.70	177.80	7,393.1	-2,482.4	66.8	368,483.43	526,406.62	32° 0' 46.966 N	104° 14' 53.294 W
9,667.0	88.70	178.60	7,394.4	-2,577.3	69.8	368,388.49	526,409.60	32° 0' 46.027 N	104° 14' 53.260 W
9,767.0	89.40	179.20	7,396.1	-2,677.3	71.7	368,288.52	526,411.52	32° 0' 45.037 N	104° 14' 53.239 W



Wellplanning Survey Report - Geographic

Company:	COG Operating LLC.	Local Co-ordinate Reference:	Well #2H
Project:	Eddy County, NM	TVD Reference:	WELL @ 3435.9usft (Original Well Elev)
Site:	Horned Owl Federal	MD Reference:	WELL @ 3435.9usft (Original Well Elev)
Well:	#2H	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
9,857.0	89.80	179.10	7,396.7	-2,767.3	73.1	368,198.53	526,412.86	32° 0' 44.147 N	104° 14' 53.224 W
9,952.0	91.10	179.40	7,395.9	-2,862.3	74.3	368,103.54	526,414.10	32° 0' 43.207 N	104° 14' 53.210 W
10,048.0	91.90	181.30	7,393.4	-2,958.2	73.7	368,007.58	526,413.51	32° 0' 42.257 N	104° 14' 53.218 W
10,143.0	89.40	180.40	7,392.4	-3,053.2	72.3	367,912.61	526,412.10	32° 0' 41.317 N	104° 14' 53.235 W
10,238.0	89.80	180.40	7,393.0	-3,148.2	71.6	367,817.61	526,411.44	32° 0' 40.377 N	104° 14' 53.244 W
10,333.0	89.60	179.30	7,393.5	-3,243.2	71.9	367,722.62	526,411.69	32° 0' 39.437 N	104° 14' 53.242 W
10,428.0	89.90	178.66	7,393.9	-3,338.2	73.6	367,627.63	526,413.38	32° 0' 38.497 N	104° 14' 53.223 W
10,523.0	92.00	178.90	7,392.4	-3,433.1	75.6	367,532.67	526,415.40	32° 0' 37.557 N	104° 14' 53.201 W
10,618.0	90.90	179.30	7,390.0	-3,528.1	77.1	367,437.72	526,416.89	32° 0' 36.617 N	104° 14' 53.184 W
10,714.0	90.50	179.70	7,388.8	-3,624.1	77.9	367,341.73	526,417.73	32° 0' 35.667 N	104° 14' 53.175 W
10,809.0	90.00	178.60	7,388.4	-3,719.1	79.3	367,246.74	526,419.14	32° 0' 34.727 N	104° 14' 53.160 W
10,904.0	91.30	177.70	7,387.3	-3,814.0	82.4	367,151.80	526,422.21	32° 0' 33.788 N	104° 14' 53.125 W
10,999.0	90.20	176.90	7,386.0	-3,908.9	86.9	367,056.92	526,426.68	32° 0' 32.848 N	104° 14' 53.074 W
11,094.0	90.10	177.20	7,385.8	-4,003.8	91.8	366,962.04	526,431.57	32° 0' 31.909 N	104° 14' 53.018 W
11,189.0	91.10	176.80	7,384.8	-4,098.6	96.7	366,867.18	526,436.54	32° 0' 30.971 N	104° 14' 52.961 W
11,284.0	91.70	177.50	7,382.5	-4,193.5	101.5	366,772.33	526,441.27	32° 0' 30.032 N	104° 14' 52.907 W
11,379.0	91.00	177.10	7,380.2	-4,288.3	105.9	366,677.46	526,445.74	32° 0' 29.093 N	104° 14' 52.856 W
11,474.0	89.70	176.10	7,379.7	-4,383.2	111.6	366,582.63	526,451.37	32° 0' 28.154 N	104° 14' 52.791 W
11,569.0	90.60	175.70	7,379.4	-4,477.9	118.4	366,487.88	526,458.17	32° 0' 27.217 N	104° 14' 52.713 W
11,664.0	90.40	176.20	7,378.6	-4,572.7	125.1	366,393.12	526,464.87	32° 0' 26.279 N	104° 14' 52.636 W
11,900.9	90.40	176.20	7,376.9	-4,809.1	140.8	366,156.71	526,480.58	32° 0' 23.939 N	104° 14' 52.456 W
PBHL(HOF#2)									
11,903.0	90.40	176.20	7,376.9	-4,811.2	140.9	366,154.65	526,480.71	32° 0' 23.919 N	104° 14' 52.455 W

Checked By: _____	Approved By: _____	Date: _____
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