30-025-41201

OCD – HOBBS
07/26/2016
RECEIVED

VES SURVEY INTERNATIONAL

January 20, 2016

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

Attn: Kanicia Castillo

RE: **Goose State No 002H**

Please find enclosed a copy of the survey from 0' to 10,645' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 20 day of January, A.D., 2016, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas

JENNIFER ANN BYERLY
Notary Public, State of Texas
My Commission Expires
August 16, 2017

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

Company: Concho
Lease/Well: Goose State No/002H

Rig Name: Independence 205
State/County: New Mexico/Lea
VS-Azi: 0.00 Degrees
Latitude: 32.53625, Longitude: -103.58946
Grid North = True North -0.40 degs (NAD 27)
Grid Correction Applied = -0.40 degs

Depth Reference : RKB = 26 Foot

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: ...e state com 2h_gyro survey.ut
Minimum Curvature Method
Report Date/Time: 1/20/2016 / 14:03

VES Survey International
West Texas
(432) 563-5444
Surveyor: Gene Heiss
Goose State No 002H / API 30-025-41201

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	0.27	18.99	100.00	0.22	0.08	0.22	0.23	18.99	0.27
200.00	0.51	42.59	200.00	0.77	0.46	0.77	0.89	30.57	0.29
300.00	0.51	66.33	299.99	1.28	1.16	1.28	1.73	42.32	0.21
400.00	0.34	88.85	399.99	1.46	1.86	1.46	2.37	51.88	0.24
500.00	0.76	90.96	499.99	1.46	2.82	1.46	3.17	62.64	0.42
600.00	0.48	53.39	599.98	1.70	3.81	1.70	4.17	66.01	0.47
700.00	0.21	72.01	699.98	2.01	4.33	2.01	4.77	65.14	0.29
800.00	0.56	77.85	799.98	2.17	4.98	2.17	5.43	66.51	0.35
900.00	0.39	61.77	899.97	2.43	5.76	2.43	6.25	67.13	0.21
1000.00	0.13	35.26	999.97	2.68	6.13	2.68	6.69	66.36	0.28
1100.00	0.03	29.03	1099.97	2.80	6.20	2.80	6.81	65.72	0.09
1200.00	0.28	11.79	1199.97	3.07	6.27	3.07	6.98	63.93	0.25
1300.00	0.27	2.91	1299.97	3.55	6.33	3.55	7.26	60.76	0.04
1400.00	0.56	2.61	1399.97	4.27	6.37	4.27	7.67	56.13	0.29
1500.00	0.39	307.04	1499.96	4.97	6.12	4.97	7.88	50.91	0.47
1600.00	0.54	311.12	1599.96	5.49	5.49	5.49	7.76	45.03	0.15

VES Survey Date: 1/15/2016

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	0.47	310.88	1699.96	6.06	4.83	6.06	7.75	38.52	0.07
1800.00	0.34	4.25	1799.95	6.62	4.54	6.62	8.03	34.42	0.38
1900.00	0.31	17.52	1899.95	7.17	4.64	7.17	8.54	32.91	0.08
2000.00	0.32	11.52	1999.95	7.70	4.78	7.70	9.06	31.81	0.04
2100.00	0.55	23.91	2099.95	8.42	5.03	8.42	9.80	30.85	0.24
2200.00	0.37	31.49	2199.95	9.13	5.39	9.13	10.60	30.56	0.18
2300.00	0.37	46.49	2299.94	9.63	5.80	9.63	11.24	31.04	0.10
2400.00	0.24	54.87	2399.94	9.98	6.20	9.98	11.75	31.87	0.14
2500.00	0.40	40.67	2499.94	10.36	6.60	10.36	12.28	32.50	0.18
2600.00	0.52	49.42	2599.94	10.92	7.17	10.92	13.06	33.29	0.13
2700.00	1.00	56.08	2699.93	11.70	8.24	11.70	14.31	35.14	0.49
2800.00	1.41	59.10	2799.91	12.82	10.02	12.82	16.27	38.00	0.41
2900.00	1.96	56.73	2899.86	14.39	12.50	14.39	19.06	40.98	0.55
3000.00	1.41	53.09	2999.82	16.06	14.91	16.06	21.92	42.87	0.55
3100.00	1.35	50.91	3099.79	17.55	16.81	17.55	24.30	43.77	0.08
3200.00	1.45	57.49	3199.76	18.97	18.79	18.97	26.71	44.73	0.19
3300.00	1.11	49.54	3299.73	20.28	20.60	20.28	28.91	45.45	0.38
3400.00	1.14	46.35	3399.72	21.60	22.06	21.60	30.87	45.60	0.07
3500.00	1.05	54.45	3499.70	22.82	23.53	22.82	32.77	45.87	0.18
3600.00	1.08	38.86	3599.68	24.09	24.87	24.09	34.62	45.91	0.29
3700.00	1.01	14.95	3699.66	25.68	25.69	25.68	36.32	45.01	0.44
3800.00	0.47	6.55	3799.65	26.94	25.96	26.94	37.42	43.94	0.54
3900.00	0.60	331.68	3899.65	27.82	25.76	27.82	37.91	42.80	0.34
4000.00	0.44	304.31	3999.65	28.50	25.19	28.50	38.04	41.48	0.29
4100.00	0.76	313.60	4099.64	29.17	24.40	29.17	38.03	39.91	0.33
4200.00	0.90	305.26	4199.63	30.08	23.28	30.08	38.03	37.74	0.19
4300.00	1.10	287.01	4299.62	30.81	21.72	30.81	37.70	35.18	0.37
4400.00	0.51	231.61	4399.61	30.82	20.45	30.82	36.99	33.57	0.91
4500.00	0.85	219.96	4499.60	29.97	19.62	29.97	35.82	33.22	0.37
4600.00	0.78	207.94	4599.59	28.80	18.83	28.80	34.41	33.17	0.19
4700.00	1.05	209.91	4699.58	27.41	18.05	27.41	32.82	33.37	0.28
4800.00	1.05	214.90	4799.56	25.86	17.07	25.86	30.99	33.43	0.09
4900.00	1.00	212.23	4899.54	24.37	16.08	24.37	29.20	33.42	0.07
5000.00	0.96	198.48	4999.53	22.84	15.35	22.84	27.52	33.91	0.24
5100.00	0.97	197.94	5099.52	21.24	14.83	21.24	25.90	34.91	0.01
5200.00	1.17	199.63	5199.50	19.48	14.22	19.48	24.12	36.14	0.20
5300.00	1.25	203.15	5299.48	17.51	13.45	17.51	22.08	37.53	0.11
5400.00	1.45	209.78	5399.45	15.41	12.39	15.41	19.78	38.81	0.25
5500.00	0.96	214.54	5499.43	13.62	11.29	13.62	17.69	39.65	0.50

VES Survey Date: 1/15/2016

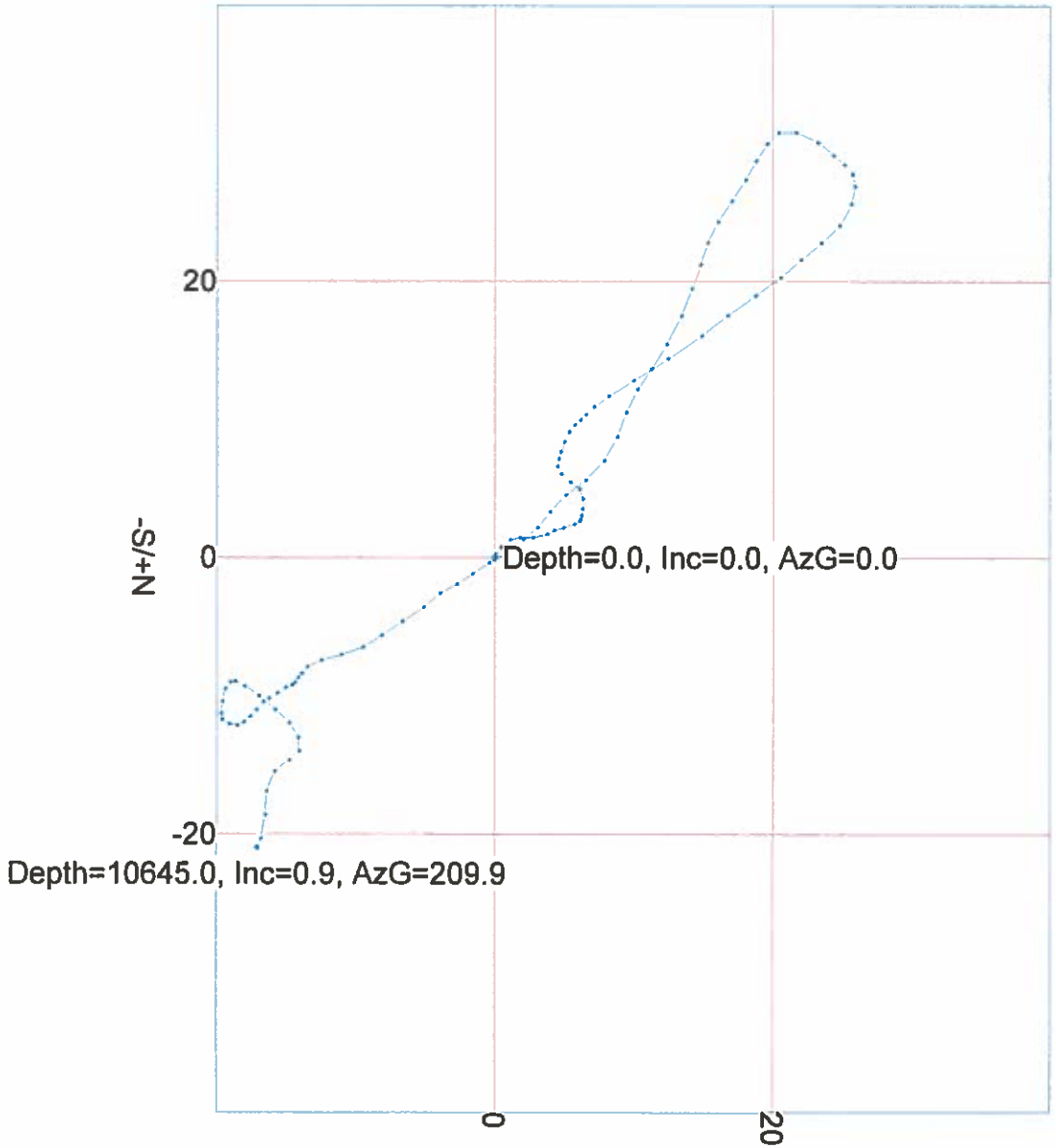
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5600.00	1.07	214.43	5599.41	12.16	10.29	12.16	15.93	40.22	0.11
5700.00	1.05	197.29	5699.39	10.52	9.49	10.52	14.17	42.05	0.32
5800.00	1.10	202.77	5799.38	8.76	8.84	8.76	12.45	45.27	0.11
5900.00	1.17	215.19	5899.36	7.04	7.88	7.04	10.56	48.24	0.26
6000.00	1.04	231.86	5999.34	5.64	6.57	5.64	8.66	49.39	0.35
6100.00	1.00	232.65	6099.32	4.54	5.17	4.54	6.88	48.65	0.05
6200.00	0.94	212.95	6199.31	3.33	4.03	3.33	5.22	50.42	0.34
6300.00	0.73	225.02	6299.30	2.19	3.13	2.19	3.82	55.01	0.27
6400.00	0.79	233.70	6399.29	1.33	2.12	1.33	2.50	57.91	0.13
6500.00	0.94	232.57	6499.28	0.42	0.91	0.42	1.00	65.25	0.15
6600.00	0.77	246.63	6599.27	-0.35	-0.36	-0.35	0.50	226.16	0.27
6700.00	0.87	227.63	6699.26	-1.12	-1.54	-1.12	1.90	233.83	0.29
6800.00	0.71	246.54	6799.25	-1.88	-2.67	-1.88	3.26	234.81	0.30
6900.00	0.85	237.88	6899.24	-2.52	-3.86	-2.52	4.61	236.87	0.18
7000.00	0.96	224.08	6999.22	-3.52	-5.07	-3.52	6.17	235.27	0.24
7100.00	1.25	244.05	7099.21	-4.60	-6.64	-4.60	8.07	235.30	0.48
7200.00	0.84	223.00	7199.19	-5.61	-8.12	-5.61	9.87	235.36	0.56
7300.00	1.04	249.57	7299.18	-6.47	-9.47	-6.47	11.47	235.68	0.47
7400.00	0.85	251.69	7399.16	-7.01	-11.02	-7.01	13.07	237.53	0.19
7500.00	0.87	257.42	7499.15	-7.41	-12.47	-7.41	14.51	239.27	0.09
7600.00	0.48	218.96	7599.14	-7.90	-13.48	-7.90	15.63	239.61	0.58
7700.00	0.24	220.11	7699.14	-8.39	-13.87	-8.39	16.21	238.85	0.24
7800.00	0.24	220.12	7799.14	-8.70	-14.14	-8.70	16.60	238.39	0.00
7900.00	0.22	206.11	7899.14	-9.03	-14.36	-9.03	16.96	237.82	0.06
8000.00	0.16	255.45	7999.14	-9.24	-14.58	-9.24	17.26	237.63	0.17
8100.00	0.38	245.93	8099.14	-9.41	-15.01	-9.41	17.72	237.92	0.22
8200.00	0.50	230.28	8199.14	-9.82	-15.65	-9.82	18.47	237.88	0.17
8300.00	0.29	250.71	8299.13	-10.19	-16.22	-10.19	19.16	237.88	0.25
8400.00	0.30	220.92	8399.13	-10.47	-16.64	-10.47	19.66	237.82	0.15
8500.00	0.51	222.71	8499.13	-11.00	-17.12	-11.00	20.35	237.27	0.21
8600.00	0.28	221.86	8599.13	-11.51	-17.59	-11.51	21.02	236.79	0.23
8700.00	0.43	232.26	8699.13	-11.93	-18.04	-11.93	21.63	236.54	0.16
8800.00	0.20	256.11	8799.12	-12.20	-18.51	-12.20	22.17	236.62	0.26
8900.00	0.49	293.16	8899.12	-12.07	-19.08	-12.07	22.57	237.68	0.36
9000.00	0.22	316.89	8999.12	-11.76	-19.60	-11.76	22.86	239.04	0.30
9100.00	0.37	13.99	9099.12	-11.30	-19.66	-11.30	22.67	240.11	0.32
9200.00	0.66	0.39	9199.12	-10.41	-19.57	-10.41	22.17	241.99	0.30
9300.00	0.44	29.28	9299.11	-9.51	-19.38	-9.51	21.59	243.88	0.34
9400.00	0.30	46.62	9399.11	-8.99	-19.01	-8.99	21.03	244.68	0.18

VES Survey Date: 1/15/2016

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
9500.00	0.26	131.16	9499.11	-8.97	-18.65	-8.97	20.69	244.33	0.37
9600.00	0.62	113.73	9599.10	-9.33	-17.99	-9.33	20.26	242.58	0.38
9700.00	0.83	130.89	9699.10	-10.02	-16.94	-10.02	19.69	239.40	0.30
9800.00	0.90	130.43	9799.09	-11.01	-15.80	-11.01	19.26	235.14	0.07
9900.00	0.74	137.12	9899.08	-11.99	-14.76	-11.99	19.02	230.92	0.18
10000.00	0.69	160.68	9999.07	-13.03	-14.12	-13.03	19.22	227.30	0.30
10100.00	0.52	197.83	10099.06	-14.04	-14.06	-14.04	19.87	225.05	0.42
10200.00	0.68	249.65	10199.06	-14.68	-14.76	-14.68	20.81	225.15	0.54
10300.00	0.90	220.35	10299.05	-15.48	-15.82	-15.48	22.13	225.62	0.45
10400.00	0.95	184.04	10399.04	-16.91	-16.39	-16.91	23.55	224.10	0.58
10500.00	1.00	183.41	10499.02	-18.61	-16.50	-18.61	24.87	221.55	0.05
10600.00	1.01	196.71	10599.01	-20.33	-16.80	-20.33	26.37	219.58	0.23
10645.00	0.94	209.94	10644.00	-21.03	-17.10	-21.03	27.10	219.12	0.53

VES Survey Date: 1/15/2016

VES Survey International
West Texas
(432) 563-5444
Surveyor: Gene Heiss
Goose State No 002H / API 30-025-41201



VES Survey Date: 1/15/2016

VES SURVEY INTERNATIONAL

I Gene Heiss certify that I am employed by VES Survey International. That I did on the day(s) of 01/15/16 through 01/15/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 10,645.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho for the Goose State Well # 2H API # 30-025-41201 in Lea County / Parish New Mexico ; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by VES Survey International.

Gene Heiss
Service Technician
VES Survey International

30-025-41201

COG Operating LLC

Lea County, NM (NAD27 NME)
Goose State
#2H

OH

Survey: MWD #1

Survey Report - Geographic

02 February, 2016

CONCHO

Wellplanning

Survey Report - Geographic

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3741.9usft (Original Well Elev)
Site:	Goose State	**MD Reference:**	WELL @ 3741.9usft (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	Lea 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	Goose State				
Site Position:		**Northing:**	559,599.30 usft	**Latitude:**	32° 32' 10.489 N
From:	Map	**Easting:**	729,248.10 usft	**Longitude:**	103° 35' 22.048 W
Position Uncertainty:	3.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well	#2H					
Well Position	**+N/-S**	0.0 usft	**Northing:**	559,599.30 usft	**Latitude:**	32° 32' 10.489 N
	+E/-W	0.0 usft	**Easting:**	729,248.10 usft	**Longitude:**	103° 35' 22.048 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,715.9 usft

Wellbore	OH			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	12/26/2015	7.14	60.37	48,272

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	176.61

Survey Program **Date** 2/2/2016

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
100.0	10,645.0	GYRO (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
10,733.0	21,061.0	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**
10,645.0	0.94	209.94	10,644.0	-21.0	-17.1	559,578.26	729,231.02	32° 32' 10.282 N	103° 35' 22.249 W
10,733.0	1.60	182.90	10,732.0	-22.9	-17.5	559,576.41	729,230.60	32° 32' 10.263 N	103° 35' 22.254 W
10,764.0	6.60	172.40	10,762.9	-25.1	-17.3	559,574.21	729,230.81	32° 32' 10.242 N	103° 35' 22.252 W
10,795.0	11.00	173.60	10,793.5	-29.8	-16.7	559,569.50	729,231.38	32° 32' 10.195 N	103° 35' 22.245 W
10,827.0	13.50	178.00	10,824.8	-36.6	-16.2	559,562.74	729,231.85	32° 32' 10.128 N	103° 35' 22.241 W
10,858.0	16.10	181.60	10,854.8	-44.5	-16.2	559,554.82	729,231.86	32° 32' 10.050 N	103° 35' 22.241 W
10,890.0	20.00	175.50	10,885.2	-54.4	-15.9	559,544.93	729,232.16	32° 32' 9.952 N	103° 35' 22.238 W
10,921.0	23.70	171.00	10,913.9	-65.8	-14.5	559,533.48	729,233.55	32° 32' 9.838 N	103° 35' 22.223 W
10,968.0	30.10	166.10	10,955.8	-86.6	-10.2	559,512.69	729,237.87	32° 32' 9.632 N	103° 35' 22.174 W
11,015.0	35.40	163.10	10,995.4	-111.1	-3.4	559,488.20	729,244.66	32° 32' 9.390 N	103° 35' 22.097 W
11,062.0	40.10	160.50	11,032.5	-138.4	5.6	559,460.89	729,253.68	32° 32' 9.119 N	103° 35' 21.994 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3741.9usft (Original Well Elev)
Site:	Goose State	**MD Reference:**	WELL @ 3741.9usft (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
11,109.0	43.30	159.30	11,067.6	-167.8	16.3	559,431.54	729,264.43	32° 32' 8.828 N	103° 35' 21.871 W
11,156.0	48.20	158.60	11,100.4	-199.2	28.4	559,400.13	729,276.53	32° 32' 8.516 N	103° 35' 21.732 W
11,203.0	53.80	160.50	11,130.0	-233.4	41.2	559,365.92	729,289.26	32° 32' 8.177 N	103° 35' 21.586 W
11,250.0	58.40	162.80	11,156.2	-270.4	53.4	559,328.90	729,301.51	32° 32' 7.809 N	103° 35' 21.446 W
11,297.0	62.10	164.10	11,179.5	-309.5	65.0	559,289.79	729,313.13	32° 32' 7.422 N	103° 35' 21.313 W
11,344.0	65.20	165.40	11,200.3	-350.1	76.1	559,249.16	729,324.20	32° 32' 7.019 N	103° 35' 21.187 W
11,391.0	68.10	165.40	11,219.0	-391.9	87.0	559,207.41	729,335.07	32° 32' 6.605 N	103° 35' 21.064 W
11,485.0	77.40	162.00	11,246.8	-477.9	112.2	559,121.37	729,360.30	32° 32' 5.752 N	103° 35' 20.776 W
11,518.0	83.60	161.30	11,252.3	-508.8	122.4	559,090.50	729,370.55	32° 32' 5.446 N	103° 35' 20.659 W
11,612.0	85.70	162.60	11,261.0	-597.8	151.4	559,001.52	729,399.54	32° 32' 4.563 N	103° 35' 20.328 W
11,706.0	87.00	164.50	11,267.0	-687.7	178.0	558,911.55	729,426.10	32° 32' 3.671 N	103° 35' 20.025 W
11,800.0	89.20	166.20	11,270.1	-778.6	201.8	558,820.67	729,449.86	32° 32' 2.770 N	103° 35' 19.755 W
11,894.0	88.80	166.70	11,271.8	-870.0	223.8	558,729.30	729,471.88	32° 32' 1.865 N	103° 35' 19.505 W
11,988.0	88.10	169.90	11,274.3	-962.0	242.8	558,637.30	729,490.93	32° 32' 0.953 N	103° 35' 19.290 W
12,082.0	89.30	173.70	11,276.5	-1,055.0	256.2	558,544.30	729,504.33	32° 32' 0.032 N	103° 35' 19.141 W
12,176.0	89.00	176.80	11,277.8	-1,148.7	264.0	558,450.65	729,512.12	32° 31' 59.104 N	103° 35' 19.058 W
12,270.0	89.70	178.00	11,278.9	-1,242.6	268.3	558,356.75	729,516.38	32° 31' 58.175 N	103° 35' 19.016 W
12,365.0	88.50	177.90	11,280.4	-1,337.5	271.7	558,261.83	729,519.78	32° 31' 57.236 N	103° 35' 18.984 W
12,459.0	89.20	177.30	11,282.3	-1,431.4	275.6	558,167.93	729,523.71	32° 31' 56.308 N	103° 35' 18.945 W
12,552.0	89.00	176.20	11,283.8	-1,524.3	279.3	558,075.01	729,527.36	32° 31' 55.387 N	103° 35' 18.910 W
12,647.0	90.40	178.90	11,284.3	-1,619.3	281.7	557,980.05	729,529.77	32° 31' 54.447 N	103° 35' 18.890 W
12,741.0	89.70	179.70	11,284.2	-1,713.2	282.8	557,886.06	729,530.92	32° 31' 53.517 N	103° 35' 18.884 W
12,835.0	89.00	179.60	11,285.2	-1,807.2	283.4	557,792.06	729,531.49	32° 31' 52.586 N	103° 35' 18.885 W
12,929.0	90.10	178.10	11,286.0	-1,901.2	285.3	557,698.09	729,533.38	32° 31' 51.656 N	103° 35' 18.871 W
13,023.0	89.30	178.10	11,286.5	-1,995.2	288.4	557,604.14	729,536.49	32° 31' 50.727 N	103° 35' 18.842 W
13,120.0	89.50	178.40	11,287.5	-2,092.1	291.4	557,507.19	729,539.45	32° 31' 49.767 N	103° 35' 18.815 W
13,214.0	90.00	178.70	11,287.9	-2,186.1	293.7	557,413.23	729,541.83	32° 31' 48.837 N	103° 35' 18.795 W
13,308.0	87.60	177.60	11,289.9	-2,280.0	296.8	557,319.30	729,544.87	32° 31' 47.908 N	103° 35' 18.767 W
13,402.0	87.80	177.90	11,293.6	-2,373.9	300.5	557,225.45	729,548.55	32° 31' 46.979 N	103° 35' 18.732 W
13,496.0	88.00	178.10	11,297.1	-2,467.7	303.7	557,131.57	729,551.83	32° 31' 46.049 N	103° 35' 18.701 W
13,590.0	88.40	178.30	11,300.0	-2,561.6	306.7	557,037.67	729,554.78	32° 31' 45.120 N	103° 35' 18.675 W
13,684.0	88.60	179.00	11,302.5	-2,655.6	308.9	556,943.72	729,557.00	32° 31' 44.190 N	103° 35' 18.656 W
13,778.0	89.00	179.40	11,304.5	-2,749.5	310.2	556,849.75	729,558.31	32° 31' 43.260 N	103° 35' 18.649 W
13,872.0	89.30	179.80	11,305.9	-2,843.5	310.9	556,755.77	729,558.97	32° 31' 42.330 N	103° 35' 18.649 W
13,966.0	88.00	178.50	11,308.1	-2,937.5	312.3	556,661.81	729,560.36	32° 31' 41.400 N	103° 35' 18.640 W
14,060.0	87.90	177.00	11,311.4	-3,031.4	316.0	556,567.94	729,564.05	32° 31' 40.471 N	103° 35' 18.605 W
14,154.0	88.20	177.40	11,314.6	-3,125.2	320.5	556,474.11	729,568.64	32° 31' 39.543 N	103° 35' 18.559 W
14,248.0	88.70	177.80	11,317.2	-3,219.1	324.5	556,380.23	729,572.57	32° 31' 38.613 N	103° 35' 18.521 W
14,343.0	89.00	178.00	11,319.1	-3,314.0	328.0	556,285.31	729,576.05	32° 31' 37.674 N	103° 35' 18.488 W
14,437.0	89.30	178.50	11,320.5	-3,407.9	330.8	556,191.36	729,578.92	32° 31' 36.744 N	103° 35' 18.462 W
14,531.0	89.70	178.90	11,321.3	-3,501.9	333.0	556,097.39	729,581.05	32° 31' 35.814 N	103° 35' 18.445 W
14,625.0	89.10	177.00	11,322.3	-3,595.8	336.3	556,003.46	729,584.42	32° 31' 34.884 N	103° 35' 18.413 W
14,719.0	89.50	177.20	11,323.4	-3,689.7	341.1	555,909.59	729,589.17	32° 31' 33.955 N	103° 35' 18.365 W
14,813.0	90.00	177.30	11,323.8	-3,783.6	345.6	555,815.70	729,593.68	32° 31' 33.026 N	103° 35' 18.320 W
14,907.0	87.70	177.60	11,325.7	-3,877.5	349.8	555,721.82	729,597.86	32° 31' 32.097 N	103° 35' 18.279 W
15,001.0	88.00	177.80	11,329.2	-3,971.3	353.5	555,627.96	729,601.63	32° 31' 31.168 N	103° 35' 18.243 W
15,095.0	87.10	175.20	11,333.3	-4,065.1	359.3	555,534.23	729,607.36	32° 31' 30.240 N	103° 35' 18.183 W
15,189.0	87.50	175.60	11,337.7	-4,158.7	368.8	555,440.64	729,614.89	32° 31' 29.313 N	103° 35' 18.103 W
15,283.0	88.50	177.00	11,341.0	-4,252.4	372.9	555,346.89	729,620.96	32° 31' 28.385 N	103° 35' 18.040 W
15,377.0	89.10	177.50	11,342.9	-4,346.3	377.4	555,253.02	729,625.47	32° 31' 27.456 N	103° 35' 17.995 W
15,471.0	89.40	177.70	11,344.2	-4,440.2	381.3	555,159.11	729,629.40	32° 31' 26.526 N	103° 35' 17.957 W
15,565.0	89.90	178.40	11,344.8	-4,534.1	384.5	555,065.17	729,632.60	32° 31' 25.597 N	103° 35' 17.927 W
15,659.0	90.20	178.80	11,344.7	-4,628.1	386.8	554,971.20	729,634.90	32° 31' 24.667 N	103° 35' 17.908 W
15,754.0	88.60	178.00	11,345.7	-4,723.1	389.5	554,876.25	729,637.55	32° 31' 23.727 N	103° 35' 17.885 W
15,848.0	89.10	178.20	11,347.6	-4,817.0	392.6	554,782.32	729,640.66	32° 31' 22.797 N	103° 35' 17.856 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3741.9usft (Original Well Elev)
Site:	Goose State	**MD Reference:**	WELL @ 3741.9usft (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
15,942.0	89.40	178.80	11,348.8	-4,910.9	395.0	554,688.36	729,643.12	32° 31' 21.867 N	103° 35' 17.835 W
16,036.0	88.20	176.90	11,350.7	-5,004.9	398.6	554,594.45	729,646.65	32° 31' 20.938 N	103° 35' 17.801 W
16,130.0	88.50	177.20	11,353.5	-5,098.7	403.4	554,500.61	729,651.49	32° 31' 20.009 N	103° 35' 17.752 W
16,224.0	88.70	177.20	11,355.8	-5,192.5	408.0	554,406.75	729,656.06	32° 31' 19.080 N	103° 35' 17.706 W
16,318.0	89.30	177.60	11,357.4	-5,286.4	412.2	554,312.87	729,660.34	32° 31' 18.151 N	103° 35' 17.664 W
16,412.0	89.70	178.00	11,358.2	-5,380.4	415.9	554,218.94	729,663.95	32° 31' 17.221 N	103° 35' 17.630 W
16,506.0	90.10	178.20	11,358.4	-5,474.3	419.0	554,124.99	729,667.06	32° 31' 16.291 N	103° 35' 17.601 W
16,601.0	90.70	178.70	11,357.7	-5,569.3	421.5	554,030.03	729,669.63	32° 31' 15.351 N	103° 35' 17.579 W
16,695.0	88.60	177.90	11,358.3	-5,663.2	424.3	553,936.08	729,672.42	32° 31' 14.421 N	103° 35' 17.554 W
16,789.0	89.30	178.20	11,360.0	-5,757.2	427.5	553,842.15	729,675.62	32° 31' 13.492 N	103° 35' 17.524 W
16,883.0	87.80	177.20	11,362.4	-5,851.0	431.3	553,748.26	729,679.39	32° 31' 12.562 N	103° 35' 17.488 W
16,977.0	88.40	177.50	11,365.5	-5,944.9	435.6	553,654.41	729,683.73	32° 31' 11.634 N	103° 35' 17.445 W
17,072.0	88.80	177.90	11,367.8	-6,039.8	439.4	553,559.52	729,687.55	32° 31' 10.694 N	103° 35' 17.408 W
17,166.0	90.20	176.90	11,368.6	-6,133.7	443.7	553,465.62	729,691.81	32° 31' 9.765 N	103° 35' 17.366 W
17,260.0	89.70	176.30	11,368.7	-6,227.5	449.3	553,371.79	729,697.38	32° 31' 8.836 N	103° 35' 17.309 W
17,354.0	90.00	176.40	11,369.0	-6,321.3	455.3	553,277.98	729,703.37	32° 31' 7.907 N	103° 35' 17.246 W
17,448.0	89.30	175.60	11,369.5	-6,415.1	461.8	553,184.21	729,709.93	32° 31' 6.979 N	103° 35' 17.177 W
17,535.0	89.60	175.10	11,370.4	-6,501.8	468.9	553,097.50	729,716.98	32° 31' 6.121 N	103° 35' 17.102 W
17,629.0	88.10	175.30	11,372.3	-6,595.4	476.7	553,003.85	729,724.84	32° 31' 5.193 N	103° 35' 17.018 W
17,724.0	87.00	175.90	11,376.3	-6,690.1	484.0	552,909.22	729,732.12	32° 31' 4.256 N	103° 35' 16.941 W
17,818.0	87.10	176.00	11,381.2	-6,783.7	490.7	552,815.58	729,738.75	32° 31' 3.329 N	103° 35' 16.871 W
17,912.0	86.20	177.20	11,386.7	-6,877.4	496.2	552,721.91	729,744.32	32° 31' 2.402 N	103° 35' 16.813 W
18,006.0	85.40	177.80	11,393.5	-6,971.1	500.3	552,628.25	729,748.41	32° 31' 1.475 N	103° 35' 16.773 W
18,100.0	86.80	177.90	11,399.9	-7,064.8	503.8	552,534.54	729,751.93	32° 31' 0.548 N	103° 35' 16.740 W
18,194.0	88.60	177.50	11,403.7	-7,158.6	507.6	552,440.69	729,755.70	32° 30' 59.619 N	103° 35' 16.704 W
18,288.0	87.10	178.30	11,407.2	-7,252.5	511.0	552,346.83	729,759.14	32° 30' 58.690 N	103° 35' 16.671 W
18,382.0	88.90	178.00	11,410.5	-7,346.4	514.1	552,252.94	729,762.17	32° 30' 57.760 N	103° 35' 16.643 W
18,476.0	86.40	179.00	11,414.4	-7,440.2	516.5	552,159.06	729,764.63	32° 30' 56.831 N	103° 35' 16.622 W
18,571.0	87.80	178.80	11,419.2	-7,535.1	518.4	552,064.20	729,766.45	32° 30' 55.893 N	103° 35' 16.609 W
18,665.0	89.80	179.00	11,421.1	-7,629.1	520.2	551,970.24	729,768.26	32° 30' 54.963 N	103° 35' 16.595 W
18,759.0	88.50	179.40	11,422.5	-7,723.0	521.5	551,876.26	729,769.57	32° 30' 54.033 N	103° 35' 16.588 W
18,853.0	85.00	179.40	11,427.9	-7,816.9	522.5	551,782.43	729,770.55	32° 30' 53.104 N	103° 35' 16.584 W
18,947.0	86.10	179.40	11,435.2	-7,910.6	523.4	551,688.72	729,771.53	32° 30' 52.177 N	103° 35' 16.580 W
19,041.0	88.60	179.70	11,439.5	-8,004.5	524.2	551,594.83	729,772.27	32° 30' 51.248 N	103° 35' 16.579 W
19,135.0	89.30	177.90	11,441.2	-8,098.4	526.1	551,500.87	729,774.24	32° 30' 50.318 N	103° 35' 16.564 W
19,230.0	89.80	176.40	11,442.0	-8,193.3	530.9	551,406.00	729,778.96	32° 30' 49.379 N	103° 35' 16.516 W
19,324.0	91.80	175.90	11,440.7	-8,287.1	537.2	551,312.22	729,785.27	32° 30' 48.450 N	103° 35' 16.450 W
19,418.0	88.40	176.40	11,440.5	-8,380.9	543.5	551,218.45	729,791.58	32° 30' 47.522 N	103° 35' 16.384 W
19,512.0	89.80	176.40	11,442.0	-8,474.7	549.4	551,124.65	729,797.48	32° 30' 46.594 N	103° 35' 16.323 W
19,606.0	88.40	177.60	11,443.5	-8,568.5	554.3	551,030.79	729,802.40	32° 30' 45.664 N	103° 35' 16.273 W
19,700.0	89.90	177.70	11,444.9	-8,662.4	558.2	550,936.89	729,806.26	32° 30' 44.735 N	103° 35' 16.236 W
19,794.0	87.20	178.40	11,447.2	-8,756.3	561.4	550,842.98	729,809.45	32° 30' 43.806 N	103° 35' 16.206 W
19,888.0	88.60	178.30	11,450.7	-8,850.2	564.1	550,749.08	729,812.16	32° 30' 42.876 N	103° 35' 16.182 W
19,982.0	90.50	178.20	11,451.4	-8,944.2	566.9	550,655.14	729,815.03	32° 30' 41.946 N	103° 35' 16.157 W
20,077.0	88.80	179.40	11,452.0	-9,039.1	568.9	550,560.16	729,817.02	32° 30' 41.007 N	103° 35' 16.141 W
20,171.0	86.40	179.40	11,455.9	-9,133.0	569.9	550,466.26	729,818.00	32° 30' 40.077 N	103° 35' 16.137 W
20,265.0	87.90	179.60	11,460.6	-9,226.9	570.7	550,372.38	729,818.82	32° 30' 39.148 N	103° 35' 16.135 W
20,359.0	89.80	179.60	11,462.5	-9,320.9	571.4	550,278.41	729,819.48	32° 30' 38.218 N	103° 35' 16.135 W
20,453.0	91.50	180.10	11,461.4	-9,414.9	571.6	550,184.42	729,819.72	32° 30' 37.288 N	103° 35' 16.140 W
20,547.0	89.60	179.80	11,460.5	-9,508.9	571.7	550,090.42	729,819.81	32° 30' 36.358 N	103° 35' 16.147 W
20,641.0	87.90	179.60	11,462.6	-9,602.9	572.2	549,996.45	729,820.30	32° 30' 35.428 N	103° 35' 16.149 W
20,735.0	89.40	179.60	11,464.8	-9,696.8	572.9	549,902.48	729,820.95	32° 30' 34.498 N	103° 35' 16.149 W
20,829.0	90.70	180.10	11,464.7	-9,790.8	573.1	549,808.49	729,821.20	32° 30' 33.568 N	103° 35' 16.154 W
20,923.0	92.60	180.10	11,462.0	-9,884.8	572.9	549,714.53	729,821.04	32° 30' 32.639 N	103° 35' 16.163 W
21,011.0	87.90	179.50	11,461.6	-9,972.7	573.2	549,626.56	729,821.34	32° 30' 31.768 N	103° 35' 16.167 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well #2H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	WELL @ 3741.9usft (Original Well Elev)
Site:	Goose State	**MD Reference:**	WELL @ 3741.9usft (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
21,060.8	87.90	179.50	11,463.4	-10,022.5	573.7	549,576.81	729,821.78	32° 30' 31.276 N	103° 35' 16.166 W
PBHL(GSC#2H)									
21,061.0	87.90	179.50	11,463.4	-10,022.7	573.7	549,576.59	729,821.78	32° 30' 31.274 N	103° 35' 16.166 W

Checked By: _____ Approved By: _____ Date: _____