

RECEIVED

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COG
ARTESIA WEST



July 8, 2015

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

HOBBS OCL

SEP 25 2015

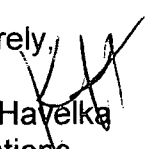
RECEIVED

Attn: Kanicia Castillo

RE: Iggles State Com No 001H

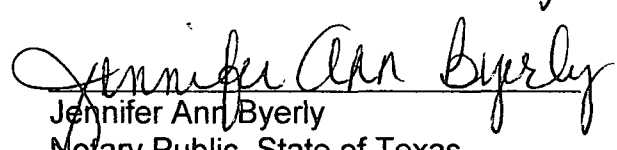
Please find enclosed a copy of the survey from 0' to 8620' ran on the above referenced well.

Sincerely,

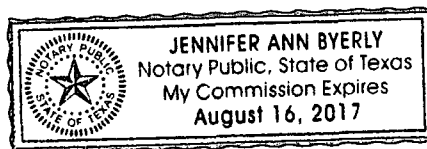

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

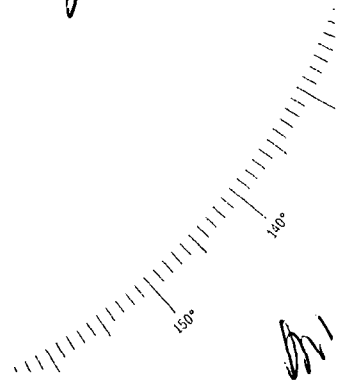
This instrument was acknowledged before me on the 8 day of July,
A.D., 2015, by Keith Havelka.


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



SEP 28 2015





Company: Cog Operating , LLC
Lease/Well: Iggles State Com No/001H



Rig Name: Ensign 772
State/County: New Mexico /Lea
VS-Azi: 0.00 Degrees
Latitude: 32.72675, Longitude: -103.57228
Grid North = True North -0.41 degs
Grid Convergence Applied = -0.41 degs

Depth Reference : R.K.B= 31 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: iggles state com 1h -de_01.ut

Minimum Curvature Method

Report Date/Time: 7/8/2015 / 14:56

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Iggles State Com No 001H / API 30-025-42377

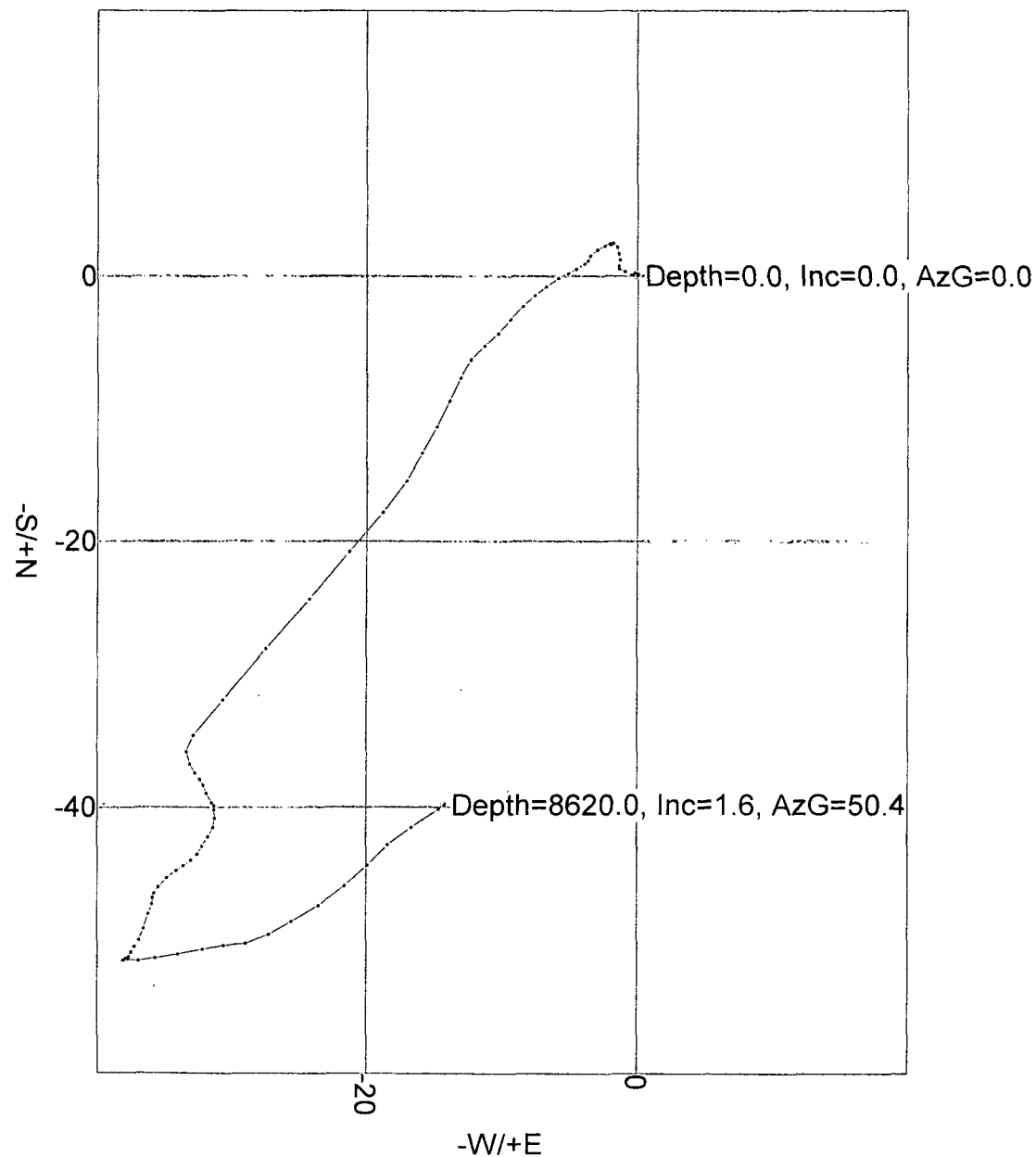
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.18	12.12	100.00	0.15	0.03	0.15	0.15	12.12	0.18
200.00	0.31	253.33	200.00	0.22	-0.19	0.22	0.29	319.31	0.42
300.00	0.14	121.95	300.00	0.08	-0.34	0.08	0.35	283.28	0.41
400.00	0.26	285.03	400.00	0.08	-0.46	0.08	0.47	279.29	0.41
500.00	0.36	307.04	500.00	0.32	-0.93	0.32	0.99	289.17	0.15
600.00	0.19	272.41	600.00	0.52	-1.35	0.52	1.45	291.11	0.23
700.00	0.29	35.62	700.00	0.73	-1.37	0.73	1.55	298.22	0.42
800.00	0.32	343.43	799.99	1.20	-1.30	1.20	1.77	312.83	0.27
900.00	0.25	359.34	899.99	1.69	-1.38	1.69	2.18	320.72	0.10
1000.00	0.32	333.34	999.99	2.16	-1.51	2.16	2.63	325.03	0.15
1100.00	0.20	284.96	1099.99	2.45	-1.80	2.45	3.04	323.73	0.24
1200.00	0.12	196.41	1199.99	2.40	-2.00	2.40	3.12	320.20	0.23
1300.00	0.06	37.86	1299.99	2.33	-2.00	2.33	3.07	319.48	0.18
1400.00	0.12	279.89	1399.99	2.39	-2.06	2.39	3.16	319.22	0.15
1500.00	0.35	238.08	1499.99	2.25	-2.42	2.25	3.30	312.90	0.27
1600.00	0.38	242.23	1599.99	1.93	-2.97	1.93	3.55	303.07	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
1700.00	0.38	221.20	1699.99	1.53	-3.48	1.53	3.80	293.71	0.14
1800.00	0.16	158.14	1799.98	1.15	-3.65	1.15	3.83	287.52	0.34
1900.00	0.39	249.72	1899.98	0.91	-3.92	0.91	4.02	283.06	0.42
2000.00	0.47	226.63	1999.98	0.51	-4.53	0.51	4.56	276.46	0.19
2100.00	0.32	260.65	2099.98	0.19	-5.10	0.19	5.10	272.12	0.27
2200.00	0.64	235.49	2199.98	-0.17	-5.83	-0.17	5.83	268.31	0.38
2300.00	0.64	234.03	2299.97	-0.82	-6.74	-0.82	6.79	263.09	0.02
2400.00	0.59	229.93	2399.96	-1.48	-7.59	-1.48	7.73	258.99	0.07
2500.00	0.77	225.48	2499.96	-2.28	-8.46	-2.28	8.76	254.93	0.19
2600.00	0.79	219.88	2599.95	-3.28	-9.39	-3.28	9.94	250.73	0.08
2700.00	0.78	221.47	2699.94	-4.32	-10.28	-4.32	11.15	247.20	0.02
2800.00	0.82	232.18	2799.93	-5.27	-11.30	-5.27	12.47	244.98	0.20
2900.00	0.82	214.93	2899.92	-6.30	-12.27	-6.30	13.80	242.83	0.20
3000.00	1.00	206.30	2999.91	-7.67	-13.07	-7.67	15.15	239.60	0.23
3100.00	1.20	203.70	3099.89	-9.41	-13.88	-9.41	16.77	235.86	0.21
3200.00	1.28	206.70	3199.86	-11.37	-14.80	-11.37	18.67	232.47	0.10
3300.00	1.29	210.01	3299.84	-13.34	-15.87	-13.34	20.73	229.94	0.07
3400.00	1.47	208.18	3399.81	-15.45	-17.03	-15.45	22.99	227.80	0.19
3500.00	1.92	222.79	3499.77	-17.81	-18.78	-17.81	25.88	226.52	0.62
3600.00	2.55	217.87	3599.69	-20.79	-21.28	-20.79	29.75	225.67	0.66
3700.00	2.77	221.29	3699.58	-24.36	-24.24	-24.36	34.37	224.86	0.27
3800.00	2.87	220.05	3799.46	-28.10	-27.45	-28.10	39.28	224.33	0.12
3900.00	2.84	219.59	3899.34	-31.92	-30.64	-31.92	44.25	223.82	0.04
4000.00	1.11	217.82	3999.27	-34.59	-32.81	-34.59	47.68	223.48	1.73
4100.00	0.56	174.39	4099.26	-35.85	-33.35	-35.85	48.96	222.94	0.80
4200.00	0.57	153.72	4199.26	-36.78	-33.09	-36.78	49.47	221.97	0.20
4300.00	0.31	148.90	4299.25	-37.46	-32.73	-37.46	49.74	221.14	0.11
4400.00	0.39	136.96	4399.25	-37.94	-32.35	-37.94	49.86	220.45	0.11
4500.00	0.20	175.95	4499.25	-38.36	-32.11	-38.36	50.03	219.92	0.27
4600.00	0.57	154.35	4599.25	-38.99	-31.88	-38.99	50.36	219.27	0.39
4700.00	0.35	144.43	4699.25	-39.69	-31.48	-39.69	50.66	218.42	0.24
4800.00	0.03	3.44	4799.25	-39.90	-31.31	-39.90	50.72	218.11	0.37
4900.00	0.40	176.71	4899.24	-40.22	-31.28	-40.22	50.95	217.88	0.43
5000.00	0.33	174.70	4999.24	-40.85	-31.24	-40.85	51.43	217.40	0.06
5100.00	0.50	197.24	5099.24	-41.56	-31.34	-41.56	52.05	217.02	0.23
5200.00	0.45	221.34	5199.24	-42.27	-31.73	-42.27	52.85	216.89	0.20
5300.00	0.55	207.05	5299.23	-42.99	-32.20	-42.99	53.71	216.84	0.16
5400.00	0.26	217.58	5399.23	-43.59	-32.56	-43.59	54.41	216.75	0.30
5500.00	0.46	229.91	5499.23	-44.03	-33.00	-44.03	55.02	216.85	0.21

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	0.36	236.71	5599.23	-44.46	-33.57	-44.46	55.70	217.05	0.10
5700.00	0.36	235.55	5699.22	-44.81	-34.09	-44.81	56.30	217.26	0.01
5800.00	0.64	230.42	5799.22	-45.34	-34.78	-45.34	57.14	217.49	0.28
5900.00	0.45	207.25	5899.22	-46.04	-35.39	-46.04	58.07	217.54	0.29
6000.00	0.19	221.26	5999.21	-46.52	-35.68	-46.52	58.63	217.49	0.26
6100.00	0.23	178.84	6099.21	-46.84	-35.79	-46.84	58.95	217.38	0.16
6200.00	0.32	187.30	6199.21	-47.32	-35.82	-47.32	59.35	217.12	0.10
6300.00	0.61	210.61	6299.21	-48.06	-36.13	-48.06	60.12	216.93	0.34
6400.00	0.75	189.86	6399.20	-49.16	-36.51	-49.16	61.24	216.60	0.28
6500.00	0.40	224.61	6499.20	-50.05	-36.87	-50.05	62.17	216.37	0.48
6600.00	0.28	208.97	6599.20	-50.52	-37.23	-50.52	62.75	216.39	0.15
6700.00	0.31	205.30	6699.19	-50.98	-37.47	-50.98	63.27	216.31	0.17
6800.00	0.14	207.26	6799.19	-51.34	-37.64	-51.34	63.66	216.25	0.17
6900.00	0.19	266.25	6899.19	-51.46	-37.86	-51.46	63.89	216.35	0.17
7000.00	0.18	204.65	6999.19	-51.61	-38.10	-51.61	64.15	216.43	0.19
7100.00	0.27	46.29	7099.19	-51.59	-37.99	-51.59	64.06	216.37	0.44
7200.00	0.19	122.45	7199.19	-51.51	-37.67	-51.51	63.82	216.18	0.30
7300.00	0.70	90.86	7299.19	-51.61	-36.92	-51.61	63.46	215.58	0.54
7400.00	0.86	74.47	7399.18	-51.42	-35.59	-51.42	62.54	214.69	0.28
7500.00	1.05	84.14	7499.17	-51.13	-33.96	-51.13	61.38	213.60	0.24
7600.00	1.08	72.94	7599.15	-50.76	-32.15	-50.76	60.08	212.35	0.21
7700.00	0.74	88.72	7699.14	-50.46	-30.60	-50.46	59.02	211.23	0.42
7800.00	1.15	81.04	7799.12	-50.29	-28.96	-50.29	58.04	209.94	0.43
7900.00	1.05	55.56	7899.10	-49.62	-27.21	-49.62	56.59	208.74	0.50
8000.00	1.17	63.26	7999.08	-48.64	-25.54	-48.64	54.94	207.70	0.19
8100.00	1.52	55.61	8099.06	-47.43	-23.54	-47.43	52.95	206.39	0.29
8200.00	1.27	49.04	8199.03	-45.96	-21.61	-45.96	50.79	205.18	0.11
8300.00	1.35	45.63	8299.00	-44.41	-19.94	-44.41	48.68	204.17	0.11
8400.00	1.18	45.17	8398.98	-42.86	-18.36	-42.86	46.63	203.19	0.17
8500.00	1.35	59.36	8498.95	-41.54	-16.62	-41.54	44.74	201.81	0.35
8600.00	1.42	52.52	8598.92	-40.19	-14.63	-40.19	42.76	200.00	0.18
8620.00	1.57	50.38	8618.92	-39.86	-14.22	-39.86	42.32	199.63	0.77



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Iggles State Com No 001H / API 30-025-42377



VES Survey Date: 6/30/2015



COG Operating, LLC

Lea County, NM

Sec 21, T18S, R34E

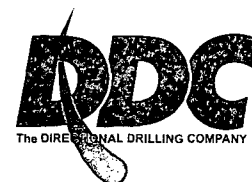
Iggles State Com #1H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

04 August, 2015





HP
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Iggles State Com #1H
Project:	Lea County, NM	TVD Reference:	Well @ 4071.0usft (Ensign 772)
Site:	Sec 21, T18S, R34E	MD Reference:	Well @ 4071.0usft (Ensign 772)
Well:	Iggles State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

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	Sec 21, T18S, R34E				
Site Position:		Northing:	628,944.10 usft	Latitude:	32° 43' 36.311 N
From:	Map	Easting:	734,046.40 usft	Longitude:	103° 34' 20.199 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.41 °

Well	Iggles State Com #1H					
Well Position	+N/-S	0.0 usft	Northing:	628,944.10 usft	Latitude:	32° 43' 36.311 N
	+E/-W	0.0 usft	Easting:	734,046.40 usft	Longitude:	103° 34' 20.199 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	4,040.0 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/11/2015	7.21	60.55	48,441

Design	Wellbore #1				
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	359.69	

Survey Program	Date	8/4/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	8,620.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
8,679.0	16,936.0	MWD (Wellbore #1)	MWD default	MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	628,944.10	734,046.40	32° 43' 36.311 N	103° 34' 20.199 W
100.0	0.18	12.12	100.0	0.2	0.0	628,944.26	734,046.43	32° 43' 36.312 N	103° 34' 20.198 W
200.0	0.31	253.33	200.0	0.2	-0.2	628,944.33	734,046.20	32° 43' 36.313 N	103° 34' 20.201 W
300.0	0.14	121.95	300.0	0.1	-0.3	628,944.19	734,046.05	32° 43' 36.312 N	103° 34' 20.203 W
400.0	0.26	285.03	400.0	0.1	-0.5	628,944.19	734,045.93	32° 43' 36.312 N	103° 34' 20.204 W
500.0	0.36	307.04	500.0	0.3	-0.9	628,944.43	734,045.46	32° 43' 36.314 N	103° 34' 20.210 W
600.0	0.19	272.41	600.0	0.5	-1.4	628,944.63	734,045.05	32° 43' 36.316 N	103° 34' 20.215 W
700.0	0.29	35.62	700.0	0.7	-1.4	628,944.84	734,045.03	32° 43' 36.318 N	103° 34' 20.215 W
800.0	0.32	343.43	800.0	1.2	-1.3	628,945.32	734,045.10	32° 43' 36.323 N	103° 34' 20.214 W
900.0	0.25	359.34	900.0	1.7	-1.4	628,945.80	734,045.01	32° 43' 36.328 N	103° 34' 20.215 W
1,000.0	0.32	333.34	1,000.0	2.2	-1.5	628,946.27	734,044.89	32° 43' 36.332 N	103° 34' 20.216 W



HP
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Iggle State Com #1H
Project:	Lea County, NM	TVD Reference:	Well @ 4071.0usft (Ensign 772)
Site:	Sec 21, T18S, R34E	MD Reference:	Well @ 4071.0usft (Ensign 772)
Well:	Iggle State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,100.0	0.20	284.96	1,100.0	2.5	-1.8	628,946.56	734,044.59	32° 43' 36.335 N	103° 34' 20.220 W
1,200.0	0.12	196.41	1,200.0	2.4	-2.0	628,946.51	734,044.39	32° 43' 36.335 N	103° 34' 20.222 W
1,300.0	0.06	37.86	1,300.0	2.3	-2.0	628,946.45	734,044.40	32° 43' 36.334 N	103° 34' 20.222 W
1,400.0	0.12	279.89	1,400.0	2.4	-2.1	628,946.51	734,044.32	32° 43' 36.335 N	103° 34' 20.223 W
1,500.0	0.35	238.08	1,500.0	2.3	-2.4	628,946.37	734,043.96	32° 43' 36.333 N	103° 34' 20.227 W
1,600.0	0.38	242.23	1,600.0	1.9	-3.0	628,946.05	734,043.41	32° 43' 36.330 N	103° 34' 20.234 W
1,700.0	0.38	221.20	1,700.0	1.5	-3.5	628,945.65	734,042.90	32° 43' 36.326 N	103° 34' 20.240 W
1,800.0	0.16	158.14	1,800.0	1.2	-3.7	628,945.27	734,042.73	32° 43' 36.323 N	103° 34' 20.242 W
1,900.0	0.39	249.72	1,900.0	0.9	-3.9	628,945.02	734,042.46	32° 43' 36.320 N	103° 34' 20.245 W
2,000.0	0.47	226.63	2,000.0	0.5	-4.5	628,944.62	734,041.85	32° 43' 36.316 N	103° 34' 20.252 W
2,100.0	0.32	260.65	2,100.0	0.2	-5.1	628,944.29	734,041.27	32° 43' 36.313 N	103° 34' 20.259 W
2,200.0	0.64	235.49	2,200.0	-0.2	-5.9	628,943.93	734,040.54	32° 43' 36.310 N	103° 34' 20.267 W
2,300.0	0.64	234.03	2,300.0	-0.8	-6.8	628,943.29	734,039.63	32° 43' 36.303 N	103° 34' 20.278 W
2,400.0	0.59	229.93	2,400.0	-1.5	-7.6	628,942.63	734,038.78	32° 43' 36.297 N	103° 34' 20.288 W
2,500.0	0.77	225.48	2,500.0	-2.3	-8.5	628,941.82	734,037.91	32° 43' 36.289 N	103° 34' 20.298 W
2,600.0	0.79	219.88	2,599.9	-3.3	-9.4	628,940.82	734,036.98	32° 43' 36.279 N	103° 34' 20.309 W
2,700.0	0.78	221.47	2,699.9	-4.3	-10.3	628,939.78	734,036.09	32° 43' 36.269 N	103° 34' 20.320 W
2,800.0	0.82	232.18	2,799.9	-5.3	-11.3	628,938.84	734,035.08	32° 43' 36.260 N	103° 34' 20.332 W
2,900.0	0.82	214.93	2,899.9	-6.3	-12.3	628,937.81	734,034.10	32° 43' 36.249 N	103° 34' 20.343 W
3,000.0	1.00	206.30	2,999.9	-7.7	-13.1	628,936.44	734,033.30	32° 43' 36.236 N	103° 34' 20.353 W
3,100.0	1.20	203.70	3,099.9	-9.4	-13.9	628,934.70	734,032.50	32° 43' 36.219 N	103° 34' 20.362 W
3,200.0	1.28	206.70	3,199.9	-11.4	-14.8	628,932.74	734,031.57	32° 43' 36.200 N	103° 34' 20.373 W
3,300.0	1.29	210.01	3,299.8	-13.3	-15.9	628,930.77	734,030.51	32° 43' 36.180 N	103° 34' 20.386 W
3,400.0	1.47	208.18	3,399.8	-15.4	-17.1	628,928.67	734,029.34	32° 43' 36.159 N	103° 34' 20.400 W
3,500.0	1.92	222.79	3,499.8	-17.8	-18.8	628,926.31	734,027.60	32° 43' 36.136 N	103° 34' 20.420 W
3,600.0	2.55	217.87	3,599.7	-20.8	-21.3	628,923.32	734,025.09	32° 43' 36.107 N	103° 34' 20.450 W
3,700.0	2.77	221.29	3,699.6	-24.4	-24.3	628,919.75	734,022.13	32° 43' 36.072 N	103° 34' 20.485 W
3,800.0	2.87	220.05	3,799.5	-28.1	-27.5	628,916.02	734,018.93	32° 43' 36.035 N	103° 34' 20.523 W
3,900.0	2.84	219.59	3,899.3	-31.9	-30.7	628,912.19	734,015.74	32° 43' 35.997 N	103° 34' 20.560 W
4,000.0	1.11	217.82	3,999.3	-34.6	-32.8	628,909.52	734,013.57	32° 43' 35.971 N	103° 34' 20.586 W
4,100.0	0.56	174.39	4,099.3	-35.8	-33.4	628,908.27	734,013.02	32° 43' 35.959 N	103° 34' 20.593 W
4,200.0	0.57	153.72	4,199.3	-36.8	-33.1	628,907.33	734,013.29	32° 43' 35.949 N	103° 34' 20.590 W
4,300.0	0.31	148.90	4,299.3	-37.4	-32.7	628,906.66	734,013.65	32° 43' 35.943 N	103° 34' 20.585 W
4,400.0	0.39	136.96	4,399.3	-37.9	-32.4	628,906.17	734,014.02	32° 43' 35.938 N	103° 34' 20.581 W
4,500.0	0.20	175.95	4,499.3	-38.4	-32.1	628,905.75	734,014.26	32° 43' 35.934 N	103° 34' 20.578 W
4,600.0	0.57	154.35	4,599.2	-39.0	-31.9	628,905.13	734,014.49	32° 43' 35.928 N	103° 34' 20.576 W
4,700.0	0.35	144.43	4,699.2	-39.7	-31.5	628,904.43	734,014.88	32° 43' 35.921 N	103° 34' 20.571 W
4,800.0	0.03	3.44	4,799.2	-39.9	-31.3	628,904.21	734,015.06	32° 43' 35.918 N	103° 34' 20.569 W
4,900.0	0.40	176.71	4,899.2	-40.2	-31.3	628,903.89	734,015.09	32° 43' 35.915 N	103° 34' 20.569 W
5,000.0	0.33	174.70	4,999.2	-40.9	-31.3	628,903.25	734,015.13	32° 43' 35.909 N	103° 34' 20.568 W
5,100.0	0.50	197.24	5,099.2	-41.6	-31.4	628,902.55	734,015.03	32° 43' 35.902 N	103° 34' 20.570 W
5,200.0	0.45	221.34	5,199.2	-42.3	-31.8	628,901.84	734,014.64	32° 43' 35.895 N	103° 34' 20.574 W
5,300.0	0.55	207.05	5,299.2	-43.0	-32.2	628,901.12	734,014.16	32° 43' 35.888 N	103° 34' 20.580 W
5,400.0	0.26	217.58	5,399.2	-43.6	-32.6	628,900.51	734,013.81	32° 43' 35.882 N	103° 34' 20.584 W
5,500.0	0.46	229.91	5,499.2	-44.0	-33.0	628,900.07	734,013.36	32° 43' 35.878 N	103° 34' 20.589 W
5,600.0	0.36	236.71	5,599.2	-44.5	-33.6	628,899.64	734,012.79	32° 43' 35.873 N	103° 34' 20.596 W
5,700.0	0.36	235.55	5,699.2	-44.8	-34.1	628,899.29	734,012.27	32° 43' 35.870 N	103° 34' 20.602 W
5,800.0	0.64	230.42	5,799.2	-45.3	-34.8	628,898.76	734,011.58	32° 43' 35.865 N	103° 34' 20.610 W
5,900.0	0.45	207.25	5,899.2	-46.1	-35.4	628,898.05	734,010.97	32° 43' 35.858 N	103° 34' 20.617 W
6,000.0	0.19	221.26	5,999.2	-46.5	-35.7	628,897.58	734,010.68	32° 43' 35.853 N	103° 34' 20.621 W
6,100.0	0.23	178.84	6,099.2	-46.9	-35.8	628,897.25	734,010.58	32° 43' 35.850 N	103° 34' 20.622 W
6,200.0	0.32	187.30	6,199.2	-47.3	-35.9	628,896.77	734,010.54	32° 43' 35.845 N	103° 34' 20.623 W
6,300.0	0.61	210.61	6,299.2	-48.1	-36.2	628,896.04	734,010.24	32° 43' 35.838 N	103° 34' 20.626 W
6,400.0	0.75	189.86	6,399.2	-49.2	-36.5	628,894.94	734,009.85	32° 43' 35.827 N	103° 34' 20.631 W
6,500.0	0.40	224.61	6,499.2	-50.1	-36.9	628,894.04	734,009.50	32° 43' 35.818 N	103° 34' 20.635 W



HP
Survey Report - Geographic



Company: COG Operating, LLC
Project: Lea County, NM
Site: Sec 21, T18S, R34E
Well: Iggle State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Iggle State Com #1H
TVD Reference: Well @ 4071.0usft (Ensign 772)
MD Reference: Well @ 4071.0usft (Ensign 772)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,600.0	0.28	208.97	6,599.2	-50.5	-37.3	628,893.58	734,009.13	32° 43' 35.814 N	103° 34' 20.639 W
6,700.0	0.31	205.30	6,699.2	-51.0	-37.5	628,893.12	734,008.90	32° 43' 35.809 N	103° 34' 20.642 W
6,800.0	0.14	207.26	6,799.2	-51.3	-37.7	628,892.77	734,008.73	32° 43' 35.806 N	103° 34' 20.644 W
6,900.0	0.19	266.25	6,899.2	-51.5	-37.9	628,892.65	734,008.51	32° 43' 35.804 N	103° 34' 20.647 W
7,000.0	0.18	204.65	6,999.2	-51.6	-38.1	628,892.50	734,008.28	32° 43' 35.803 N	103° 34' 20.649 W
7,100.0	0.27	46.29	7,099.2	-51.6	-38.0	628,892.52	734,008.38	32° 43' 35.803 N	103° 34' 20.648 W
7,200.0	0.19	122.45	7,199.2	-51.5	-37.7	628,892.59	734,008.69	32° 43' 35.804 N	103° 34' 20.645 W
7,300.0	0.70	90.86	7,299.2	-51.6	-37.0	628,892.49	734,009.44	32° 43' 35.803 N	103° 34' 20.636 W
7,400.0	0.86	74.47	7,399.2	-51.4	-35.6	628,892.68	734,010.78	32° 43' 35.805 N	103° 34' 20.620 W
7,500.0	1.05	84.14	7,499.2	-51.1	-34.0	628,892.98	734,012.41	32° 43' 35.807 N	103° 34' 20.601 W
7,600.0	1.08	72.94	7,599.1	-50.8	-32.2	628,893.35	734,014.22	32° 43' 35.811 N	103° 34' 20.580 W
7,700.0	0.74	88.72	7,699.1	-50.5	-30.6	628,893.64	734,015.77	32° 43' 35.814 N	103° 34' 20.562 W
7,800.0	1.15	81.04	7,799.1	-50.3	-29.0	628,893.81	734,017.41	32° 43' 35.815 N	103° 34' 20.542 W
7,900.0	1.05	55.56	7,899.1	-49.6	-27.2	628,894.48	734,019.15	32° 43' 35.822 N	103° 34' 20.522 W
8,000.0	1.17	63.26	7,999.1	-48.6	-25.6	628,895.46	734,020.82	32° 43' 35.831 N	103° 34' 20.502 W
8,100.0	1.52	55.61	8,099.1	-47.4	-23.6	628,896.67	734,022.83	32° 43' 35.843 N	103° 34' 20.479 W
8,200.0	1.27	49.04	8,199.0	-46.0	-21.6	628,898.14	734,024.76	32° 43' 35.858 N	103° 34' 20.456 W
8,300.0	1.35	45.63	8,299.0	-44.4	-20.0	628,899.70	734,026.44	32° 43' 35.873 N	103° 34' 20.436 W
8,400.0	1.18	45.17	8,399.0	-42.9	-18.4	628,901.24	734,028.01	32° 43' 35.888 N	103° 34' 20.418 W
8,500.0	1.35	59.36	8,499.0	-41.5	-16.6	628,902.57	734,029.75	32° 43' 35.901 N	103° 34' 20.397 W
8,600.0	1.42	52.52	8,598.9	-40.2	-14.6	628,903.93	734,031.75	32° 43' 35.914 N	103° 34' 20.374 W
8,620.0	1.57	50.38	8,618.9	-39.9	-14.2	628,904.25	734,032.16	32° 43' 35.918 N	103° 34' 20.369 W
Tie In To GYRO @ 8620' MD / 8619' TVD									
8,679.0	1.80	54.80	8,677.9	-38.8	-12.9	628,905.30	734,033.54	32° 43' 35.928 N	103° 34' 20.353 W
8,775.0	1.50	56.90	8,773.9	-37.2	-10.6	628,906.86	734,035.82	32° 43' 35.943 N	103° 34' 20.326 W
8,870.0	1.90	57.30	8,868.8	-35.7	-8.2	628,908.39	734,038.19	32° 43' 35.958 N	103° 34' 20.298 W
8,966.0	2.00	54.60	8,964.8	-33.9	-5.5	628,910.22	734,040.89	32° 43' 35.976 N	103° 34' 20.266 W
9,060.0	1.90	45.30	9,058.7	-31.8	-3.1	628,912.26	734,043.34	32° 43' 35.996 N	103° 34' 20.237 W
9,155.0	1.90	52.20	9,153.6	-29.8	-0.7	628,914.34	734,045.70	32° 43' 36.016 N	103° 34' 20.210 W
9,254.0	1.90	53.60	9,252.6	-27.8	1.9	628,916.31	734,048.32	32° 43' 36.036 N	103° 34' 20.179 W
9,349.0	2.40	43.20	9,347.5	-25.4	4.6	628,918.70	734,050.95	32° 43' 36.059 N	103° 34' 20.148 W
9,381.0	5.30	11.00	9,379.5	-23.5	5.3	628,920.64	734,051.69	32° 43' 36.078 N	103° 34' 20.139 W
9,412.0	9.80	359.20	9,410.2	-19.4	5.5	628,924.68	734,051.93	32° 43' 36.118 N	103° 34' 20.136 W
9,444.0	14.20	357.70	9,441.5	-12.8	5.3	628,931.33	734,051.73	32° 43' 36.184 N	103° 34' 20.138 W
9,476.0	18.20	356.40	9,472.2	-3.9	4.9	628,940.25	734,051.26	32° 43' 36.272 N	103° 34' 20.142 W
9,488.3	19.47	356.96	9,483.8	0.1	4.6	628,944.21	734,051.03	32° 43' 36.312 N	103° 34' 20.145 W
Crossed 330' Hard Line @ 9488' MD / 9484' TVD									
9,507.0	21.40	357.70	9,501.4	6.6	4.3	628,950.73	734,050.73	32° 43' 36.376 N	103° 34' 20.148 W
9,539.0	23.80	0.80	9,530.9	18.9	4.2	628,963.02	734,050.58	32° 43' 36.498 N	103° 34' 20.148 W
9,571.0	26.00	3.30	9,559.9	32.4	4.7	628,976.48	734,051.08	32° 43' 36.631 N	103° 34' 20.141 W
9,602.0	28.80	3.80	9,587.4	46.6	5.6	628,990.72	734,051.96	32° 43' 36.772 N	103° 34' 20.130 W
9,634.0	31.30	2.90	9,615.1	62.6	6.5	629,006.72	734,052.90	32° 43' 36.930 N	103° 34' 20.118 W
9,665.0	34.00	2.90	9,641.2	79.3	7.3	629,023.42	734,053.74	32° 43' 37.095 N	103° 34' 20.106 W
9,697.0	36.80	2.40	9,667.3	97.8	8.2	629,041.93	734,054.60	32° 43' 37.278 N	103° 34' 20.095 W
9,728.0	39.30	2.20	9,691.7	116.9	9.0	629,061.02	734,055.36	32° 43' 37.467 N	103° 34' 20.084 W
9,759.0	41.90	2.00	9,715.3	137.1	9.7	629,081.18	734,056.10	32° 43' 37.667 N	103° 34' 20.074 W
9,791.0	44.80	2.00	9,738.5	159.0	10.5	629,103.13	734,056.87	32° 43' 37.884 N	103° 34' 20.063 W
9,823.0	47.70	2.00	9,760.7	182.1	11.3	629,126.23	734,057.67	32° 43' 38.112 N	103° 34' 20.052 W
9,855.0	50.50	2.00	9,781.6	206.3	12.1	629,150.40	734,058.52	32° 43' 38.351 N	103° 34' 20.040 W
9,886.0	53.10	2.00	9,800.8	230.6	13.0	629,174.75	734,059.37	32° 43' 38.592 N	103° 34' 20.028 W
9,918.0	55.60	2.20	9,819.4	256.6	13.9	629,200.73	734,060.32	32° 43' 38.849 N	103° 34' 20.014 W
9,949.0	59.80	2.40	9,836.0	282.8	15.0	629,226.91	734,061.37	32° 43' 39.108 N	103° 34' 20.000 W
9,981.0	63.10	2.60	9,851.3	310.9	16.2	629,254.98	734,062.60	32° 43' 39.386 N	103° 34' 19.983 W
10,013.0	65.70	3.10	9,865.1	339.7	17.6	629,283.80	734,064.04	32° 43' 39.671 N	103° 34' 19.964 W
10,044.0	69.00	3.30	9,877.0	368.3	19.2	629,312.36	734,065.63	32° 43' 39.953 N	103° 34' 19.943 W



HP
Survey Report - Geographic



Company: COG Operating, LLC
Project: Lea County, NM
Site: Sec 21, T18S, R34E
Well: Igles State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Igles State Com #1H
TVD Reference: Well @ 4071.0usft (Ensign 772)
MD Reference: Well @ 4071.0usft (Ensign 772)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,076.0	72.00	2.90	9,887.7	398.4	20.9	629,342.48	734,067.26	32° 43' 40.251 N	103° 34' 19.921 W
10,107.0	74.50	2.20	9,896.7	428.0	22.2	629,372.13	734,068.58	32° 43' 40.545 N	103° 34' 19.903 W
10,139.0	77.10	1.90	9,904.5	459.0	23.3	629,403.13	734,069.69	32° 43' 40.851 N	103° 34' 19.888 W
10,171.0	80.80	1.70	9,910.6	490.4	24.3	629,434.52	734,070.68	32° 43' 41.162 N	103° 34' 19.873 W
10,202.0	83.20	1.50	9,915.0	521.1	25.1	629,465.20	734,071.53	32° 43' 41.465 N	103° 34' 19.861 W
10,234.0	86.30	0.80	9,917.9	553.0	25.8	629,497.06	734,072.17	32° 43' 41.780 N	103° 34' 19.851 W
10,297.0	87.50	0.10	9,921.3	615.9	26.3	629,559.96	734,072.67	32° 43' 42.403 N	103° 34' 19.840 W
10,392.0	91.40	0.60	9,922.2	710.8	26.9	629,654.94	734,073.25	32° 43' 43.342 N	103° 34' 19.825 W
10,487.0	92.20	0.30	9,919.2	805.8	27.6	629,749.89	734,073.99	32° 43' 44.282 N	103° 34' 19.808 W
10,581.0	92.90	359.90	9,915.0	899.7	27.8	629,843.79	734,074.16	32° 43' 45.211 N	103° 34' 19.798 W
10,675.0	91.30	359.90	9,911.6	993.6	27.6	629,937.73	734,073.99	32° 43' 46.141 N	103° 34' 19.792 W
10,770.0	89.90	0.10	9,910.6	1,088.6	27.6	630,032.72	734,073.99	32° 43' 47.080 N	103° 34' 19.784 W
10,865.0	89.50	359.80	9,911.1	1,183.6	27.5	630,127.72	734,073.91	32° 43' 48.020 N	103° 34' 19.777 W
10,959.0	89.80	359.60	9,911.7	1,277.6	27.0	630,221.72	734,073.42	32° 43' 48.951 N	103° 34' 19.775 W
11,054.0	90.00	358.90	9,911.8	1,372.6	25.8	630,316.71	734,072.18	32° 43' 49.891 N	103° 34' 19.782 W
11,148.0	91.40	359.20	9,910.7	1,466.6	24.2	630,410.68	734,070.62	32° 43' 50.821 N	103° 34' 19.792 W
11,243.0	92.80	358.70	9,907.2	1,561.5	22.5	630,505.60	734,068.88	32° 43' 51.760 N	103° 34' 19.804 W
11,338.0	91.90	358.50	9,903.3	1,656.4	20.2	630,600.49	734,066.56	32° 43' 52.699 N	103° 34' 19.824 W
11,432.0	92.00	357.80	9,900.1	1,750.3	17.1	630,694.39	734,063.53	32° 43' 53.628 N	103° 34' 19.851 W
11,526.0	91.20	358.00	9,897.5	1,844.2	13.7	630,788.29	734,060.08	32° 43' 54.558 N	103° 34' 19.884 W
11,620.0	90.90	358.50	9,895.8	1,938.1	10.8	630,882.23	734,057.21	32° 43' 55.487 N	103° 34' 19.909 W
11,715.0	91.10	359.80	9,894.1	2,033.1	9.4	630,977.20	734,055.80	32° 43' 56.427 N	103° 34' 19.918 W
11,810.0	91.50	0.30	9,891.9	2,128.1	9.5	631,072.18	734,055.89	32° 43' 57.367 N	103° 34' 19.909 W
11,905.0	92.50	359.90	9,888.6	2,223.0	9.7	631,167.12	734,056.05	32° 43' 58.306 N	103° 34' 19.899 W
11,999.0	91.40	359.60	9,885.4	2,317.0	9.2	631,261.06	734,055.64	32° 43' 59.236 N	103° 34' 19.896 W
12,093.0	91.60	359.60	9,883.0	2,410.9	8.6	631,355.03	734,054.99	32° 44' 0.166 N	103° 34' 19.896 W
12,188.0	90.90	0.10	9,880.9	2,505.9	8.3	631,450.00	734,054.74	32° 44' 1.105 N	103° 34' 19.891 W
12,282.0	91.00	0.30	9,879.3	2,599.9	8.7	631,543.99	734,055.07	32° 44' 2.035 N	103° 34' 19.879 W
12,376.0	91.30	0.10	9,877.5	2,693.9	9.0	631,637.97	734,055.39	32° 44' 2.965 N	103° 34' 19.867 W
12,469.0	91.60	359.90	9,875.1	2,786.8	9.0	631,730.94	734,055.39	32° 44' 3.885 N	103° 34' 19.859 W
12,564.0	90.50	0.30	9,873.4	2,881.8	9.2	631,825.92	734,055.56	32° 44' 4.825 N	103° 34' 19.849 W
12,659.0	90.80	359.90	9,872.3	2,976.8	9.3	631,920.91	734,055.72	32° 44' 5.765 N	103° 34' 19.839 W
12,754.0	91.50	0.10	9,870.4	3,071.8	9.3	632,015.89	734,055.72	32° 44' 6.705 N	103° 34' 19.831 W
12,849.0	91.00	359.80	9,868.3	3,166.8	9.2	632,110.87	734,055.64	32° 44' 7.644 N	103° 34' 19.824 W
12,944.0	91.20	359.60	9,866.5	3,261.7	8.7	632,205.85	734,055.14	32° 44' 8.584 N	103° 34' 19.822 W
13,038.0	92.20	358.90	9,863.7	3,355.7	7.5	632,299.80	734,053.91	32° 44' 9.514 N	103° 34' 19.829 W
13,133.0	91.50	358.90	9,860.6	3,450.6	5.7	632,394.73	734,052.09	32° 44' 10.453 N	103° 34' 19.842 W
13,226.0	89.90	359.60	9,859.5	3,543.6	4.5	632,487.71	734,050.88	32° 44' 11.374 N	103° 34' 19.848 W
13,321.0	90.20	0.50	9,859.4	3,638.6	4.6	632,582.71	734,050.96	32° 44' 12.314 N	103° 34' 19.840 W
13,416.0	91.40	0.30	9,858.1	3,733.6	5.2	632,677.70	734,051.62	32° 44' 13.253 N	103° 34' 19.824 W
13,510.0	92.40	0.50	9,855.0	3,827.5	5.9	632,771.65	734,052.28	32° 44' 14.183 N	103° 34' 19.808 W
13,604.0	91.70	0.60	9,851.6	3,921.5	6.8	632,865.58	734,053.18	32° 44' 15.112 N	103° 34' 19.790 W
13,699.0	91.90	1.40	9,848.6	4,016.4	8.4	632,960.52	734,054.84	32° 44' 16.051 N	103° 34' 19.762 W
13,793.0	91.20	1.20	9,846.1	4,110.4	10.6	633,054.46	734,056.97	32° 44' 16.981 N	103° 34' 19.729 W
13,888.0	89.60	0.10	9,845.4	4,205.3	11.6	633,149.45	734,058.05	32° 44' 17.921 N	103° 34' 19.709 W
13,982.0	89.30	359.90	9,846.3	4,299.3	11.6	633,243.44	734,058.05	32° 44' 18.851 N	103° 34' 19.701 W
14,077.0	90.70	0.10	9,846.3	4,394.3	11.6	633,338.44	734,058.05	32° 44' 19.791 N	103° 34' 19.693 W
14,171.0	91.20	359.60	9,844.8	4,488.3	11.4	633,432.42	734,057.80	32° 44' 20.721 N	103° 34' 19.688 W
14,266.0	91.10	359.40	9,842.8	4,583.3	10.6	633,527.40	734,056.97	32° 44' 21.660 N	103° 34' 19.690 W
14,361.0	91.40	358.70	9,840.8	4,678.3	9.0	633,622.37	734,055.40	32° 44' 22.600 N	103° 34' 19.700 W
14,459.0	90.90	358.70	9,838.8	4,776.2	6.8	633,720.32	734,053.17	32° 44' 23.570 N	103° 34' 19.718 W
14,553.0	91.20	358.50	9,837.1	4,870.2	4.5	633,814.28	734,050.88	32° 44' 24.499 N	103° 34' 19.737 W
14,635.5	91.46	359.45	9,835.2	4,952.6	3.0	633,896.74	734,049.40	32° 44' 25.316 N	103° 34' 19.747 W
Crossed Section Line @ 14636' MD / 9835' TVD									
14,649.0	91.50	359.60	9,834.8	4,966.1	2.9	633,910.24	734,049.29	32° 44' 25.449 N	103° 34' 19.747 W



HP
Survey Report - Geographic



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Iggle State Com #1H
Project:	Lea County, NM	TVD Reference:	Well @ 4071.0usft (Ensign 772)
Site:	Sec 21, T18S, R34E	MD Reference:	Well @ 4071.0usft (Ensign 772)
Well:	Iggle State Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,744.0	92.10	359.40	9,831.8	5,061.1	2.1	634,005.18	734,048.46	32° 44' 26.389 N	103° 34' 19.749 W
14,839.0	90.80	359.60	9,829.4	5,156.0	1.2	634,100.15	734,047.63	32° 44' 27.328 N	103° 34' 19.751 W
14,933.0	90.90	359.40	9,828.0	5,250.0	0.4	634,194.13	734,046.81	32° 44' 28.258 N	103° 34' 19.753 W
15,027.0	91.00	358.70	9,826.5	5,344.0	-1.1	634,288.11	734,045.25	32° 44' 29.188 N	103° 34' 19.763 W
15,121.0	90.80	359.40	9,825.0	5,438.0	-2.7	634,382.08	734,043.69	32° 44' 30.118 N	103° 34' 19.773 W
15,216.0	91.20	358.70	9,823.3	5,532.9	-4.3	634,477.05	734,042.12	32° 44' 31.058 N	103° 34' 19.784 W
15,310.0	92.30	358.70	9,820.5	5,626.9	-6.4	634,570.98	734,039.98	32° 44' 31.988 N	103° 34' 19.801 W
15,404.0	90.90	359.20	9,817.9	5,720.8	-8.1	634,664.93	734,038.26	32° 44' 32.917 N	103° 34' 19.813 W
15,524.0	91.40	359.10	9,815.4	5,840.8	-9.9	634,784.89	734,036.48	32° 44' 34.104 N	103° 34' 19.824 W
15,618.0	90.80	359.80	9,813.6	5,934.8	-10.8	634,878.87	734,035.58	32° 44' 35.034 N	103° 34' 19.826 W
15,712.0	88.70	359.90	9,814.1	6,028.8	-11.1	634,972.86	734,035.34	32° 44' 35.964 N	103° 34' 19.821 W
15,806.0	89.00	359.20	9,815.9	6,122.7	-11.8	635,066.84	734,034.60	32° 44' 36.894 N	103° 34' 19.822 W
15,900.0	90.50	359.20	9,816.3	6,216.7	-13.1	635,160.83	734,033.28	32° 44' 37.824 N	103° 34' 19.830 W
15,994.0	91.40	358.40	9,814.8	6,310.7	-15.1	635,254.79	734,031.32	32° 44' 38.754 N	103° 34' 19.845 W
16,088.0	89.30	358.40	9,814.2	6,404.6	-17.7	635,348.75	734,028.69	32° 44' 39.684 N	103° 34' 19.868 W
16,182.0	89.60	357.80	9,815.1	6,498.6	-20.8	635,442.69	734,025.58	32° 44' 40.614 N	103° 34' 19.896 W
16,276.0	88.90	359.20	9,816.3	6,592.5	-23.3	635,536.65	734,023.12	32° 44' 41.544 N	103° 34' 19.917 W
16,370.0	89.50	358.70	9,817.7	6,686.5	-25.0	635,630.62	734,021.39	32° 44' 42.474 N	103° 34' 19.929 W
16,464.0	90.00	359.60	9,818.1	6,780.5	-26.4	635,724.61	734,020.00	32° 44' 43.404 N	103° 34' 19.938 W
16,558.0	90.30	0.10	9,817.8	6,874.5	-26.6	635,818.61	734,019.75	32° 44' 44.334 N	103° 34' 19.933 W
16,653.0	90.60	0.10	9,817.1	6,969.5	-26.5	635,913.61	734,019.92	32° 44' 45.274 N	103° 34' 19.923 W
16,747.0	91.00	359.80	9,815.8	7,063.5	-26.6	636,007.60	734,019.84	32° 44' 46.204 N	103° 34' 19.916 W
16,841.0	91.20	359.10	9,814.0	7,157.5	-27.5	636,101.57	734,018.93	32° 44' 47.134 N	103° 34' 19.918 W
16,891.0	91.20	359.10	9,812.9	7,207.5	-28.2	636,151.56	734,018.15	32° 44' 47.628 N	103° 34' 19.923 W
16,936.0	91.20	359.10	9,812.0	7,252.4	-29.0	636,196.54	734,017.44	32° 44' 48.074 N	103° 34' 19.928 W

TD @ 16936' MD / 9812' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,620.0	8,618.9	-39.9	-14.2	Tie In To GYRO @ 8620' MD / 8619' TVD
9,488.3	9,483.8	0.1	4.6	Crossed 330' Hard Line @ 9488' MD / 9484' TVD
14,635.5	9,835.2	4,952.6	3.0	Crossed Section Line @ 14636' MD / 9835' TVD
16,936.0	9,812.0	7,252.4	-29.0	TD @ 16936' MD / 9812' TVD

Checked By: _____ Approved By: _____ Date: _____