

Operator: COG Operating
Well/Lease: Prickly Pear 6 Federal 3
County: Lea

STATE OF NEW MEXICO
DEVIATION REPORT

<u>Footage</u>	<u>Degree</u>
368	0.80
674	0.60
1250	0.80
1500	0.20
1815	0.30
1927	0.40
2179	0.60
2431	0.70
2684	1.10
2937	1.40
3309	1.80
3698	1.60
3950	1.10
4332	0.50
4733	1.00
4987	0.70
5188	0.90
5473	1.40
5844	1.20
5971	1.10
6233	1.40
6679	0.80
6981	0.60
7467	0.10
8100	0.70
8468	0.70
8722	2.60
9177	2.30
9513	2.60
9910	0.60
10507	0.40

HOBBS OGD

MAR 12 2015

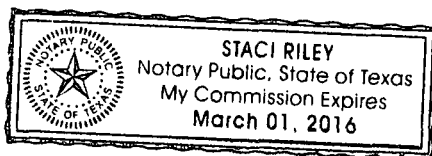
RECEIVED

30-025-41629

Signed By: Charles Walsh
Charles Walsh, Division Manager
Pioneer Drilling Company

Appeared before me on Oct. 29, 2014

Staci Riley
Notary Public



MAR 18 2015



October 2, 2014

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

30-025-41629

HOBBS OCD

MAR 12 2015

RECEIVED

Attn: Kanicia Castillo

RE: Prickly Pear 6 Federal No. 003H

Please find enclosed a copy of the survey from 0.00' to 10,420.00' ran on the above referenced well.

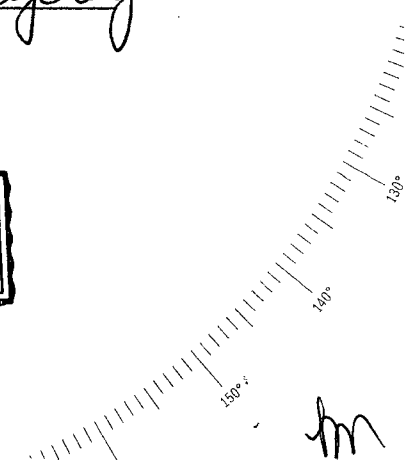
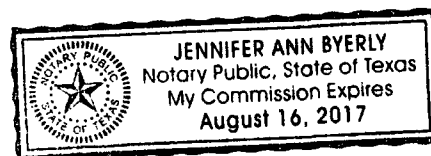
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 2 day of October, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)
Lease/Well: Prickly Pear 6 Federal/No. 003H



Rig Name: Pioneer 20
State/County: New Mexico/Lea
Latitude: 32.61, Longitude: -103.50
GRID North is 0.45 Degrees East of True North
VS-Azi: 0.00 Degrees



Depth Reference : 17 Feet

30-025-41629

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 10/2/2014 / 11:15

VES Survey International

West Texas

(432) 563-5444

Surveyor: Neil Bates

Prickly Pear 6 Federal No. 003H / API 30-025-41629

HOBBS OGD

MAR 12 2015

RECEIVED

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	0.14	209.56	100.00	-0.11	-0.06	-0.11	0.12	209.56	0.14
200.00	0.33	139.77	200.00	-0.44	0.07	-0.44	0.44	171.22	0.31
300.00	0.28	164.49	300.00	-0.89	0.32	-0.89	0.95	160.25	0.14
400.00	0.28	127.16	400.00	-1.28	0.58	-1.28	1.41	155.47	0.18
500.00	0.48	137.14	499.99	-1.74	1.07	-1.74	2.04	148.43	0.21
600.00	0.34	148.78	599.99	-2.30	1.51	-2.30	2.75	146.75	0.16
700.00	0.15	291.91	699.99	-2.51	1.54	-2.51	2.95	148.39	0.47
800.00	0.08	348.68	799.99	-2.39	1.41	-2.39	2.78	149.45	0.12
900.00	0.43	266.75	899.99	-2.34	1.02	-2.34	2.55	156.41	0.43
1000.00	0.58	185.68	999.99	-2.87	0.60	-2.87	2.93	168.25	0.67
1100.00	0.47	149.01	1099.98	-3.73	0.76	-3.73	3.80	168.51	0.35
1200.00	0.91	154.92	1199.98	-4.79	1.30	-4.79	4.97	164.78	0.44
1300.00	1.05	157.48	1299.96	-6.36	1.99	-6.36	6.66	162.62	0.15
1400.00	0.27	174.10	1399.95	-7.44	2.36	-7.44	7.80	162.36	0.79
1500.00	0.57	153.58	1499.95	-8.12	2.61	-8.12	8.53	162.18	0.33
1600.00	0.30	249.14	1599.95	-8.66	2.58	-8.66	9.04	163.39	0.67
1700.00	0.20	307.48	1699.95	-8.65	2.20	-8.65	8.92	165.74	0.26
1800.00	0.21	37.65	1799.95	-8.40	2.17	-8.40	8.67	165.50	0.29

for

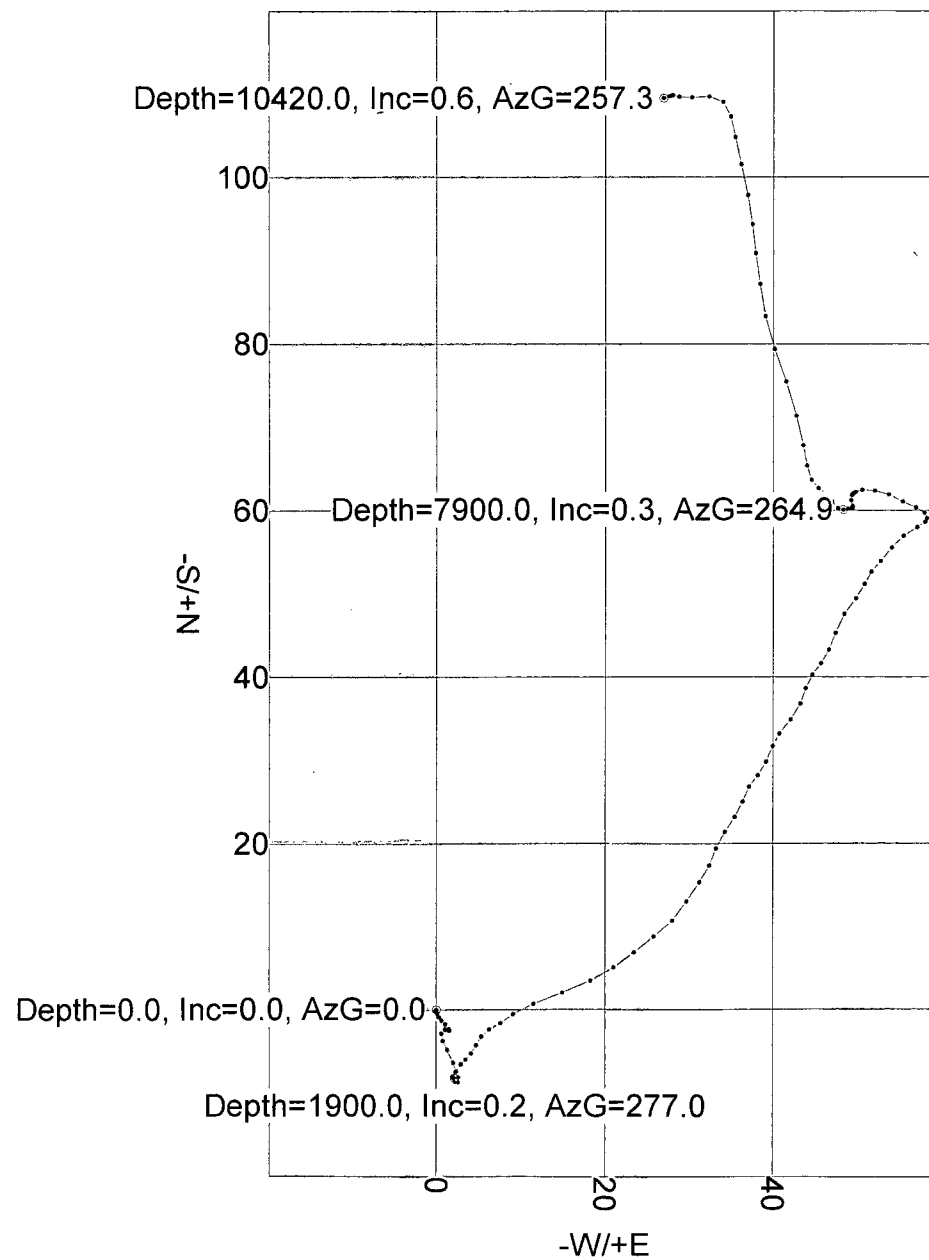
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.20	276.98	1899.95	-8.23	2.11	-8.23	8.50	165.63	0.36
2000.00	0.14	354.56	1999.95	-8.09	1.92	-8.09	8.31	166.63	0.22
2100.00	0.76	37.00	2099.94	-7.43	2.31	-7.43	7.78	162.73	0.67
2200.00	0.47	31.74	2199.94	-6.56	2.92	-6.56	7.18	155.96	0.30
2300.00	0.46	53.45	2299.93	-5.97	3.46	-5.97	6.90	149.88	0.17
2400.00	0.65	32.34	2399.93	-5.25	4.09	-5.25	6.65	142.05	0.28
2500.00	0.69	31.94	2499.92	-4.25	4.72	-4.25	6.35	132.05	0.04
2600.00	0.68	28.88	2599.92	-3.22	5.32	-3.22	6.22	121.16	0.04
2700.00	0.81	62.37	2699.91	-2.37	6.24	-2.37	6.67	110.77	0.45
2800.00	0.97	59.50	2799.90	-1.61	7.60	-1.61	7.77	101.93	0.17
2900.00	1.11	50.65	2899.88	-0.56	9.08	-0.56	9.10	93.53	0.21
3000.00	2.07	68.81	2999.84	0.71	11.52	0.71	11.54	86.49	1.07
3100.00	2.14	69.19	3099.77	2.02	14.95	2.02	15.09	82.29	0.07
3200.00	2.02	63.27	3199.71	3.48	18.27	3.48	18.60	79.22	0.25
3300.00	1.65	57.09	3299.66	5.05	21.04	5.05	21.64	76.50	0.42
3400.00	1.81	48.35	3399.61	6.88	23.43	6.88	24.42	73.63	0.31
3500.00	1.66	53.62	3499.56	8.79	25.78	8.79	27.24	71.17	0.22
3600.00	1.67	44.20	3599.52	10.70	27.97	10.70	29.94	69.06	0.27
3700.00	1.64	27.55	3699.48	13.02	29.65	13.02	32.38	66.29	0.48
3800.00	1.57	41.01	3799.44	15.32	31.21	15.32	34.77	63.85	0.38
3900.00	1.17	15.49	3899.41	17.34	32.38	17.34	36.73	61.84	0.72
4000.00	1.37	26.68	3999.39	19.39	33.19	19.39	38.44	59.71	0.32
4100.00	1.22	28.60	4099.36	21.39	34.24	21.39	40.37	58.00	0.16
4200.00	1.26	39.49	4199.34	23.18	35.45	23.18	42.35	56.82	0.24
4300.00	1.20	12.73	4299.32	25.04	36.37	25.04	44.16	55.45	0.57
4400.00	1.09	34.91	4399.30	26.85	37.15	26.85	45.83	54.15	0.45
4500.00	0.86	39.14	4499.28	28.21	38.17	28.21	47.46	53.53	0.24
4600.00	1.34	26.95	4599.27	29.83	39.17	29.83	49.24	52.71	0.53
4700.00	1.02	15.95	4699.24	31.73	39.95	31.73	51.01	51.54	0.39
4800.00	0.95	40.49	4799.23	33.21	40.73	33.21	52.55	50.80	0.42
4900.00	1.54	35.85	4899.21	34.93	42.05	34.93	54.67	50.29	0.59
5000.00	1.02	25.72	4999.18	36.82	43.22	36.82	56.78	49.57	0.56
5100.00	1.20	12.98	5099.16	38.64	43.85	38.64	58.45	48.61	0.30
5200.00	0.93	43.05	5199.15	40.26	44.64	40.26	60.11	47.95	0.61
5300.00	1.08	31.53	5299.13	41.66	45.68	41.66	61.83	47.64	0.25
5400.00	1.08	30.23	5399.11	43.28	46.65	43.28	63.63	47.15	0.03
5500.00	1.45	16.44	5499.09	45.30	47.48	45.30	65.63	46.35	0.48
5600.00	1.41	33.73	5599.06	47.54	48.52	47.54	67.93	45.59	0.43
5700.00	1.28	38.42	5699.03	49.43	49.90	49.43	70.24	45.27	0.16

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	1.05	22.91	5799.01	51.16	50.95	51.16	72.20	44.89	0.39
5900.00	0.80	33.26	5899.00	52.59	51.69	52.59	73.74	44.51	0.30
6000.00	1.19	45.58	5998.98	53.90	52.82	53.90	75.46	44.42	0.44
6100.00	1.24	34.71	6098.96	55.51	54.18	55.51	77.57	44.30	0.24
6200.00	1.10	55.52	6198.94	56.94	55.58	56.94	79.57	44.31	0.44
6300.00	1.10	59.39	6298.92	57.97	57.19	57.97	81.43	44.61	0.07
6400.00	0.23	36.75	6398.91	58.62	58.13	58.62	82.56	44.76	0.89
6500.00	0.33	13.12	6498.91	59.06	58.32	59.06	83.00	44.64	0.15
6600.00	0.59	318.40	6598.91	59.73	58.04	59.73	83.29	44.18	0.48
6700.00	0.86	288.19	6698.90	60.35	56.99	60.35	83.01	43.36	0.46
6800.00	1.11	299.52	6798.89	61.06	55.44	61.06	82.47	42.23	0.31
6900.00	1.03	294.93	6898.87	61.92	53.78	61.92	82.01	40.98	0.11
7000.00	0.97	275.47	6998.85	62.38	52.12	62.38	81.29	39.88	0.34
7100.00	0.73	268.87	7098.84	62.44	50.65	62.44	80.40	39.04	0.26
7200.00	0.32	216.04	7198.84	62.20	49.84	62.20	79.71	38.71	0.59
7300.00	0.13	300.70	7298.84	62.03	49.58	62.03	79.41	38.63	0.34
7400.00	0.29	202.41	7398.84	61.86	49.39	61.86	79.16	38.60	0.33
7500.00	0.49	177.25	7498.84	61.20	49.31	61.20	78.60	38.86	0.26
7600.00	0.35	148.56	7598.83	60.51	49.49	60.51	78.18	39.28	0.25
7700.00	0.21	275.84	7698.83	60.27	49.47	60.27	77.97	39.38	0.50
7800.00	0.40	254.99	7798.83	60.20	48.95	60.20	77.59	39.11	0.22
7900.00	0.30	264.88	7898.83	60.09	48.35	60.09	77.13	38.82	0.12
8000.00	0.50	297.58	7998.83	60.27	47.71	60.27	76.87	38.37	0.30
8100.00	0.72	332.73	8098.82	61.02	47.04	61.02	77.05	37.62	0.42
8200.00	0.68	308.69	8198.81	61.95	46.29	61.95	77.33	36.76	0.29
8300.00	0.66	306.49	8298.81	62.66	45.36	62.66	77.36	35.90	0.04
8400.00	0.89	330.67	8398.80	63.68	44.52	63.68	77.70	34.96	0.39
8500.00	1.18	351.21	8498.78	65.37	43.98	65.37	78.79	33.93	0.47
8600.00	1.71	348.54	8598.75	67.85	43.53	67.85	80.61	32.68	0.53
8700.00	2.43	345.65	8698.68	71.37	42.71	71.37	83.17	30.90	0.73
8800.00	2.49	341.28	8798.59	75.47	41.49	75.47	86.12	28.80	0.20
8900.00	2.29	340.10	8898.51	79.40	40.11	79.40	88.96	26.80	0.20
9000.00	2.38	348.95	8998.42	83.31	39.03	83.31	92.00	25.10	0.37
9100.00	2.13	351.89	9098.35	87.19	38.37	87.19	95.26	23.76	0.27
9200.00	2.11	352.38	9198.28	90.86	37.87	90.86	98.43	22.63	0.03
9300.00	1.92	354.82	9298.22	94.35	37.47	94.35	101.52	21.66	0.20
9400.00	2.14	347.47	9398.15	97.85	36.92	97.85	104.58	20.67	0.34
9500.00	2.23	348.91	9498.08	101.58	36.14	101.58	107.82	19.58	0.10
9600.00	1.57	345.81	9598.02	104.82	35.43	104.82	110.64	18.67	0.67

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
9700.00	1.35	349.16	9697.99	107.30	34.87	107.30	112.83	18.00	0.24
9800.00	1.07	310.35	9797.97	109.06	33.94	109.06	114.22	17.28	0.84
9900.00	1.09	272.69	9897.95	109.71	32.28	109.71	114.36	16.39	0.70
10000.00	1.26	262.33	9997.93	109.61	30.24	109.61	113.70	15.42	0.28
10100.00	0.55	295.19	10097.92	109.67	28.71	109.67	113.36	14.67	0.86
10200.00	0.37	270.33	10197.92	109.87	27.96	109.87	113.37	14.28	0.26
10300.00	0.13	209.73	10297.92	109.78	27.59	109.78	113.19	14.11	0.32
10420.00	0.61	257.29	10417.91	109.52	26.89	109.52	112.77	13.80	0.45



VES Survey International
West Texas
(432) 563-5444
Surveyor: Neil Bates
Prickly Pear 6 Federal No. 003H / API 30-025-41629



V.E.S. Survey Date: 09/25/2014



20-025-41629

COG Operating LLC

Lea County, NM
Prickly Pear 6 Federal
#3H

HOBBS OCD

MAR 12 2015

RECEIVED

OH

Design: OH

Survey Report - Geographic

03 October, 2014



hm



TDS
Survey Report - Geographic



Company: COG Operating LLC
Project: Lea County, NM
Site: Prickly Pear 6 Federal
Well: #3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #3H
TVD Reference: KB @ 3716.7usft
MD Reference: KB @ 3716.7usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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	Prickly Pear 6 Federal			
Site Position:		Northing:	586,248.00 usft	Latitude: 32° 36' 32.124 N
From:	Map	Easting:	757,174.90 usft	Longitude: 103° 29' 53.407 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.45 °

Well	#3H			
Well Position	+N/-S	0.0 usft	Northing:	586,248.00 usft
	+E/-W	0.0 usft	Easting:	757,174.90 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level: 3,699.7 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/4/2014	7.18	60.47	48,531

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	179.82	

Survey Program	Date 10/3/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	10,420.0	Gyro #1 (OH)	Good_gyro	Good Gyro	
10,548.0	15,771.0	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
0.0	0.00	0.00	0.0	0.0	0.0	586,248.00	757,174.90	32° 36' 32.124 N	103° 29' 53.407 W
100.0	0.14	209.56	100.0	-0.1	-0.1	586,247.90	757,174.84	32° 36' 32.123 N	103° 29' 53.408 W
200.0	0.33	139.77	200.0	-0.4	0.1	586,247.57	757,174.96	32° 36' 32.120 N	103° 29' 53.407 W
300.0	0.28	164.49	300.0	-0.9	0.3	586,247.12	757,175.21	32° 36' 32.116 N	103° 29' 53.404 W
400.0	0.28	127.16	400.0	-1.3	0.6	586,246.73	757,175.47	32° 36' 32.112 N	103° 29' 53.401 W
500.0	0.48	137.14	500.0	-1.7	1.1	586,246.28	757,175.95	32° 36' 32.107 N	103° 29' 53.395 W
600.0	0.34	148.78	600.0	-2.3	1.5	586,245.72	757,176.39	32° 36' 32.102 N	103° 29' 53.390 W
700.0	0.15	291.91	700.0	-2.5	1.5	586,245.51	757,176.42	32° 36' 32.100 N	103° 29' 53.390 W
800.0	0.08	348.68	800.0	-2.4	1.4	586,245.63	757,176.29	32° 36' 32.101 N	103° 29' 53.391 W
900.0	0.43	266.75	900.0	-2.3	1.0	586,245.68	757,175.90	32° 36' 32.101 N	103° 29' 53.396 W
1,000.0	0.58	185.68	1,000.0	-2.9	0.6	586,245.15	757,175.48	32° 36' 32.096 N	103° 29' 53.401 W



TDS
Survey Report - Geographic



Company: COG Operating LLC
Project: Lea County, NM
Site: Prickly Pear 6 Federal
Well: #3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #3H
TVD Reference: KB @ 3716.7usft
MD Reference: KB @ 3716.7usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
1,100.0	0.47	149.01	1,100.0	-3.7	0.7	586,244.30	757,175.64	32° 36' 32.088 N	103° 29' 53.399 W
1,200.0	0.91	154.92	1,200.0	-4.8	1.3	586,243.23	757,176.19	32° 36' 32.077 N	103° 29' 53.393 W
1,300.0	1.05	157.48	1,300.0	-6.3	2.0	586,241.66	757,176.87	32° 36' 32.062 N	103° 29' 53.385 W
1,400.0	0.27	174.10	1,400.0	-7.4	2.4	586,240.58	757,177.25	32° 36' 32.051 N	103° 29' 53.381 W
1,500.0	0.57	153.58	1,500.0	-8.1	2.6	586,239.90	757,177.49	32° 36' 32.044 N	103° 29' 53.378 W
1,600.0	0.30	249.14	1,599.9	-8.6	2.6	586,239.36	757,177.47	32° 36' 32.039 N	103° 29' 53.378 W
1,700.0	0.20	307.48	1,699.9	-8.6	2.2	586,239.37	757,177.09	32° 36' 32.039 N	103° 29' 53.383 W
1,800.0	0.21	37.65	1,799.9	-8.4	2.2	586,239.62	757,177.06	32° 36' 32.041 N	103° 29' 53.383 W
1,900.0	0.20	276.98	1,899.9	-8.2	2.1	586,239.79	757,177.00	32° 36' 32.043 N	103° 29' 53.384 W
2,000.0	0.14	354.56	1,999.9	-8.1	1.9	586,239.93	757,176.81	32° 36' 32.044 N	103° 29' 53.386 W
2,100.0	0.76	37.00	2,099.9	-7.4	2.3	586,240.59	757,177.20	32° 36' 32.051 N	103° 29' 53.381 W
2,200.0	0.47	31.74	2,199.9	-6.5	2.9	586,241.46	757,177.82	32° 36' 32.060 N	103° 29' 53.374 W
2,300.0	0.46	53.45	2,299.9	-6.0	3.5	586,242.05	757,178.35	32° 36' 32.065 N	103° 29' 53.368 W
2,400.0	0.65	32.34	2,399.9	-5.2	4.1	586,242.77	757,178.98	32° 36' 32.072 N	103° 29' 53.360 W
2,500.0	0.69	31.94	2,499.9	-4.2	4.7	586,243.76	757,179.60	32° 36' 32.082 N	103° 29' 53.353 W
2,600.0	0.68	28.88	2,599.9	-3.2	5.3	586,244.79	757,180.21	32° 36' 32.092 N	103° 29' 53.346 W
2,700.0	0.81	62.37	2,699.9	-2.4	6.2	586,245.64	757,181.12	32° 36' 32.101 N	103° 29' 53.335 W
2,800.0	0.97	59.50	2,799.9	-1.6	7.6	586,246.40	757,182.48	32° 36' 32.108 N	103° 29' 53.319 W
2,900.0	1.11	50.65	2,899.9	-0.6	9.1	586,247.44	757,183.95	32° 36' 32.118 N	103° 29' 53.302 W
3,000.0	2.07	68.81	2,999.8	0.7	11.5	586,248.71	757,186.39	32° 36' 32.131 N	103° 29' 53.273 W
3,100.0	2.14	69.19	3,099.8	2.0	14.9	586,250.02	757,189.82	32° 36' 32.143 N	103° 29' 53.233 W
3,200.0	2.02	63.27	3,199.7	3.5	18.2	586,251.48	757,193.14	32° 36' 32.157 N	103° 29' 53.194 W
3,300.0	1.65	57.09	3,299.7	5.1	21.0	586,253.05	757,195.92	32° 36' 32.173 N	103° 29' 53.161 W
3,400.0	1.81	48.35	3,399.6	6.9	23.4	586,254.89	757,198.31	32° 36' 32.191 N	103° 29' 53.133 W
3,500.0	1.66	53.62	3,499.6	8.8	25.8	586,256.79	757,200.65	32° 36' 32.209 N	103° 29' 53.106 W
3,600.0	1.67	44.20	3,599.5	10.7	27.9	586,258.70	757,202.84	32° 36' 32.228 N	103° 29' 53.080 W
3,700.0	1.64	27.55	3,699.5	13.0	29.6	586,261.01	757,204.51	32° 36' 32.251 N	103° 29' 53.060 W
3,800.0	1.57	41.01	3,799.4	15.3	31.2	586,263.31	757,206.07	32° 36' 32.274 N	103° 29' 53.042 W
3,900.0	1.17	15.49	3,899.4	17.3	32.3	586,265.33	757,207.25	32° 36' 32.293 N	103° 29' 53.028 W
4,000.0	1.37	26.68	3,999.4	19.4	33.2	586,267.38	757,208.06	32° 36' 32.314 N	103° 29' 53.018 W
4,100.0	1.22	28.60	4,099.4	21.4	34.2	586,269.39	757,209.10	32° 36' 32.333 N	103° 29' 53.006 W
4,200.0	1.26	39.49	4,199.3	23.2	35.4	586,271.17	757,210.31	32° 36' 32.351 N	103° 29' 52.991 W
4,300.0	1.20	12.73	4,299.3	25.0	36.3	586,273.04	757,211.24	32° 36' 32.369 N	103° 29' 52.980 W
4,400.0	1.09	34.91	4,399.3	26.8	37.1	586,274.84	757,212.02	32° 36' 32.387 N	103° 29' 52.971 W
4,500.0	0.86	39.14	4,499.3	28.2	38.1	586,276.20	757,213.03	32° 36' 32.401 N	103° 29' 52.959 W
4,600.0	1.34	26.95	4,599.3	29.8	39.1	586,277.83	757,214.04	32° 36' 32.417 N	103° 29' 52.947 W
4,700.0	1.02	15.95	4,699.2	31.7	39.9	586,279.72	757,214.81	32° 36' 32.435 N	103° 29' 52.938 W
4,800.0	0.95	40.49	4,799.2	33.2	40.7	586,281.21	757,215.59	32° 36' 32.450 N	103° 29' 52.929 W
4,900.0	1.54	35.85	4,899.2	34.9	42.0	586,282.93	757,216.92	32° 36' 32.467 N	103° 29' 52.913 W
5,000.0	1.02	25.72	4,999.2	36.8	43.2	586,284.82	757,218.09	32° 36' 32.485 N	103° 29' 52.899 W
5,100.0	1.20	12.98	5,099.2	38.6	43.8	586,286.64	757,218.71	32° 36' 32.503 N	103° 29' 52.892 W
5,200.0	0.93	43.05	5,199.1	40.3	44.6	586,288.26	757,219.50	32° 36' 32.519 N	103° 29' 52.882 W
5,300.0	1.08	31.53	5,299.1	41.7	45.7	586,289.65	757,220.55	32° 36' 32.533 N	103° 29' 52.870 W
5,400.0	1.08	30.23	5,399.1	43.3	46.6	586,291.27	757,221.52	32° 36' 32.549 N	103° 29' 52.858 W
5,500.0	1.45	16.44	5,499.1	45.3	47.5	586,293.30	757,222.35	32° 36' 32.569 N	103° 29' 52.849 W
5,600.0	1.41	33.73	5,599.1	47.5	48.5	586,295.54	757,223.39	32° 36' 32.591 N	103° 29' 52.836 W
5,700.0	1.28	38.42	5,699.0	49.4	49.9	586,297.43	757,224.77	32° 36' 32.610 N	103° 29' 52.820 W
5,800.0	1.05	22.91	5,799.0	51.2	50.9	586,299.15	757,225.82	32° 36' 32.627 N	103° 29' 52.807 W
5,900.0	0.80	33.26	5,899.0	52.6	51.7	586,300.58	757,226.56	32° 36' 32.641 N	103° 29' 52.799 W
6,000.0	1.19	45.58	5,999.0	53.9	52.8	586,301.89	757,227.68	32° 36' 32.654 N	103° 29' 52.785 W
6,100.0	1.24	34.71	6,099.0	55.5	54.1	586,303.51	757,229.04	32° 36' 32.669 N	103° 29' 52.769 W
6,200.0	1.10	55.52	6,198.9	56.9	55.6	586,304.94	757,230.45	32° 36' 32.684 N	103° 29' 52.753 W
6,300.0	1.10	59.39	6,298.9	58.0	57.2	586,305.97	757,232.07	32° 36' 32.694 N	103° 29' 52.734 W
6,400.0	0.23	36.75	6,398.9	58.6	58.1	586,306.62	757,233.01	32° 36' 32.700 N	103° 29' 52.723 W
6,500.0	0.33	13.12	6,498.9	59.1	58.3	586,307.06	757,233.20	32° 36' 32.704 N	103° 29' 52.720 W



TDS
Survey Report - Geographic



Company: COG Operating LLC
Project: Lea County, NM
Site: Prickly Pear 6 Federal
Well: #3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #3H
TVD Reference: KB @ 3716.7usft
MD Reference: KB @ 3716.7usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
6,600.0	0.59	318.40	6,598.9	59.7	58.0	586,307.73	757,232.92	32° 36' 32.711 N	103° 29' 52.724 W
6,700.0	0.86	288.19	6,698.9	60.3	57.0	586,308.35	757,231.87	32° 36' 32.717 N	103° 29' 52.736 W
6,800.0	1.11	299.52	6,798.9	61.1	55.4	586,309.06	757,230.31	32° 36' 32.724 N	103° 29' 52.754 W
6,900.0	1.03	294.93	6,898.9	61.9	53.8	586,309.92	757,228.65	32° 36' 32.733 N	103° 29' 52.773 W
7,000.0	0.97	275.47	6,998.9	62.4	52.1	586,310.38	757,227.00	32° 36' 32.738 N	103° 29' 52.793 W
7,100.0	0.73	268.87	7,098.8	62.4	50.6	586,310.44	757,225.52	32° 36' 32.738 N	103° 29' 52.810 W
7,200.0	0.32	216.04	7,198.8	62.2	49.8	586,310.21	757,224.71	32° 36' 32.736 N	103° 29' 52.819 W
7,300.0	0.13	300.70	7,298.8	62.0	49.6	586,310.04	757,224.45	32° 36' 32.734 N	103° 29' 52.822 W
7,400.0	0.29	202.41	7,398.8	61.9	49.4	586,309.86	757,224.26	32° 36' 32.733 N	103° 29' 52.825 W
7,500.0	0.49	177.25	7,498.8	61.2	49.3	586,309.20	757,224.18	32° 36' 32.726 N	103° 29' 52.826 W
7,600.0	0.35	148.56	7,598.8	60.5	49.5	586,308.51	757,224.36	32° 36' 32.719 N	103° 29' 52.824 W
7,700.0	0.21	275.84	7,698.8	60.3	49.4	586,308.27	757,224.34	32° 36' 32.717 N	103° 29' 52.824 W
7,800.0	0.40	254.99	7,798.8	60.2	48.9	586,308.20	757,223.82	32° 36' 32.716 N	103° 29' 52.830 W
7,900.0	0.30	264.88	7,898.8	60.1	48.3	586,308.09	757,223.22	32° 36' 32.715 N	103° 29' 52.837 W
8,000.0	0.50	297.58	7,998.8	60.3	47.7	586,308.26	757,222.57	32° 36' 32.717 N	103° 29' 52.845 W
8,100.0	0.72	332.73	8,098.8	61.0	47.0	586,309.02	757,221.90	32° 36' 32.725 N	103° 29' 52.852 W
8,200.0	0.68	308.69	8,198.8	62.0	46.3	586,309.95	757,221.15	32° 36' 32.734 N	103° 29' 52.861 W
8,300.0	0.66	306.49	8,298.8	62.7	45.3	586,310.67	757,220.22	32° 36' 32.741 N	103° 29' 52.872 W
8,400.0	0.89	330.67	8,398.8	63.7	44.5	586,311.69	757,219.38	32° 36' 32.751 N	103° 29' 52.882 W
8,500.0	1.18	351.21	8,498.8	65.4	43.9	586,313.38	757,218.84	32° 36' 32.768 N	103° 29' 52.888 W
8,600.0	1.71	348.54	8,598.8	67.9	43.5	586,315.86	757,218.39	32° 36' 32.793 N	103° 29' 52.893 W
8,700.0	2.43	345.65	8,698.7	71.4	42.7	586,319.38	757,217.57	32° 36' 32.827 N	103° 29' 52.902 W
8,800.0	2.49	341.28	8,798.6	75.5	41.4	586,323.49	757,216.34	32° 36' 32.868 N	103° 29' 52.916 W
8,900.0	2.29	340.10	8,898.5	79.4	40.1	586,327.42	757,214.97	32° 36' 32.907 N	103° 29' 52.932 W
9,000.0	2.38	348.95	8,998.4	83.3	39.0	586,331.34	757,213.89	32° 36' 32.946 N	103° 29' 52.944 W
9,100.0	2.13	351.89	9,098.3	87.2	38.3	586,335.22	757,213.23	32° 36' 32.984 N	103° 29' 52.951 W
9,200.0	2.11	352.38	9,198.3	90.9	37.8	586,338.88	757,212.72	32° 36' 33.021 N	103° 29' 52.957 W
9,300.0	1.92	354.82	9,298.2	94.4	37.4	586,342.38	757,212.33	32° 36' 33.055 N	103° 29' 52.961 W
9,400.0	2.14	347.47	9,398.2	97.9	36.9	586,345.87	757,211.77	32° 36' 33.090 N	103° 29' 52.967 W
9,500.0	2.23	348.91	9,498.1	101.6	36.1	586,349.60	757,210.99	32° 36' 33.127 N	103° 29' 52.976 W
9,600.0	1.57	345.81	9,598.0	104.8	35.4	586,352.84	757,210.28	32° 36' 33.159 N	103° 29' 52.984 W
9,700.0	1.35	349.16	9,698.0	107.3	34.8	586,355.32	757,209.72	32° 36' 33.184 N	103° 29' 52.990 W
9,800.0	1.07	310.35	9,798.0	109.1	33.9	586,357.08	757,208.79	32° 36' 33.201 N	103° 29' 53.001 W
9,900.0	1.09	272.69	9,898.0	109.7	32.2	586,357.73	757,207.13	32° 36' 33.208 N	103° 29' 53.021 W
10,000.0	1.26	262.33	9,997.9	109.6	30.2	586,357.63	757,205.09	32° 36' 33.207 N	103° 29' 53.044 W
10,100.0	0.55	295.19	10,097.9	109.7	28.7	586,357.69	757,203.56	32° 36' 33.208 N	103° 29' 53.062 W
10,200.0	0.37	270.33	10,197.9	109.9	27.9	586,357.89	757,202.81	32° 36' 33.210 N	103° 29' 53.071 W
10,300.0	0.13	209.73	10,297.9	109.8	27.5	586,357.80	757,202.43	32° 36' 33.209 N	103° 29' 53.075 W
10,420.0	0.61	257.29	10,417.9	109.5	26.8	586,357.54	757,201.74	32° 36' 33.206 N	103° 29' 53.084 W
10,548.0	0.90	275.00	10,545.9	109.5	25.2	586,357.48	757,200.07	32° 36' 33.206 N	103° 29' 53.103 W
10,580.0	1.70	212.60	10,577.9	109.1	24.7	586,357.10	757,199.57	32° 36' 33.202 N	103° 29' 53.109 W
10,612.0	4.70	171.80	10,609.8	107.4	24.6	586,355.40	757,199.50	32° 36' 33.185 N	103° 29' 53.110 W
10,644.0	8.50	168.80	10,641.6	103.8	25.2	586,351.78	757,200.14	32° 36' 33.149 N	103° 29' 53.103 W
10,675.0	11.70	170.00	10,672.1	98.4	26.2	586,346.44	757,201.13	32° 36' 33.096 N	103° 29' 53.092 W
10,707.0	15.40	171.80	10,703.2	91.0	27.4	586,339.03	757,202.30	32° 36' 33.023 N	103° 29' 53.079 W
10,739.0	19.20	173.20	10,733.8	81.6	28.6	586,329.60	757,203.53	32° 36' 32.930 N	103° 29' 53.065 W
10,771.0	22.40	174.40	10,763.7	70.3	29.9	586,318.30	757,204.75	32° 36' 32.818 N	103° 29' 53.052 W
10,802.0	24.50	172.70	10,792.1	58.0	31.2	586,306.05	757,206.15	32° 36' 32.696 N	103° 29' 53.037 W
10,834.0	26.50	171.40	10,821.0	44.4	33.2	586,292.41	757,208.06	32° 36' 32.561 N	103° 29' 53.016 W
10,865.0	29.80	174.40	10,848.4	29.9	34.9	586,277.90	757,209.84	32° 36' 32.418 N	103° 29' 52.996 W
10,897.0	33.60	176.50	10,875.6	13.1	36.3	586,261.14	757,211.16	32° 36' 32.252 N	103° 29' 52.982 W
10,929.0	37.80	177.40	10,901.6	-5.5	37.2	586,242.50	757,212.15	32° 36' 32.067 N	103° 29' 52.972 W
10,960.0	41.90	177.80	10,925.4	-25.3	38.1	586,222.65	757,212.97	32° 36' 31.871 N	103° 29' 52.965 W
10,992.0	45.90	177.10	10,948.4	-47.5	39.1	586,200.49	757,213.97	32° 36' 31.651 N	103° 29' 52.955 W
11,024.0	50.10	177.20	10,969.8	-71.3	40.3	586,176.75	757,215.15	32° 36' 31.416 N	103° 29' 52.943 W



TDS
Survey Report - Geographic



Company: COG Operating LLC
Project: Lea County, NM
Site: Prickly Pear 6 Federal
Well: #3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #3H
TVD Reference: KB @ 3716.7usft
MD Reference: KB @ 3716.7usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
11,055.0	54.50	177.60	10,988.8	-95.8	41.4	586,152.25	757,216.26	32° 36' 31.174 N	103° 29' 52.933 W
11,087.0	59.20	178.30	11,006.3	-122.5	42.3	586,125.48	757,217.21	32° 36' 30.909 N	103° 29' 52.924 W
11,118.0	63.90	178.80	11,021.0	-149.8	43.0	586,098.24	757,217.90	32° 36' 30.639 N	103° 29' 52.918 W
11,149.0	68.10	179.30	11,033.6	-178.1	43.5	586,069.93	757,218.37	32° 36' 30.359 N	103° 29' 52.916 W
11,172.0	71.20	179.20	11,041.6	-199.6	43.8	586,048.37	757,218.65	32° 36' 30.146 N	103° 29' 52.914 W
11,203.0	74.60	180.40	11,050.7	-229.3	43.9	586,018.75	757,218.75	32° 36' 29.853 N	103° 29' 52.916 W
11,234.0	77.20	181.60	11,058.3	-259.3	43.3	585,988.69	757,218.22	32° 36' 29.555 N	103° 29' 52.925 W
11,266.0	78.70	182.50	11,065.0	-290.6	42.2	585,957.42	757,217.10	32° 36' 29.246 N	103° 29' 52.941 W
11,298.0	80.50	182.90	11,070.8	-322.0	40.7	585,925.98	757,215.62	32° 36' 28.935 N	103° 29' 52.961 W
11,330.0	82.30	182.90	11,075.5	-353.6	39.1	585,894.38	757,214.02	32° 36' 28.622 N	103° 29' 52.983 W
11,361.0	84.60	183.20	11,079.1	-384.4	37.5	585,863.63	757,212.38	32° 36' 28.318 N	103° 29' 53.005 W
11,393.0	86.20	183.20	11,081.6	-416.2	35.7	585,831.78	757,210.60	32° 36' 28.003 N	103° 29' 53.028 W
11,457.0	87.10	183.60	11,085.4	-480.0	31.9	585,768.00	757,206.81	32° 36' 27.373 N	103° 29' 53.078 W
11,551.0	86.80	184.10	11,090.4	-573.7	25.6	585,674.35	757,200.51	32° 36' 26.446 N	103° 29' 53.161 W
11,646.0	86.90	184.80	11,095.6	-668.2	18.3	585,579.78	757,193.15	32° 36' 25.511 N	103° 29' 53.255 W
11,741.0	88.50	183.60	11,099.4	-762.9	11.3	585,485.12	757,186.20	32° 36' 24.575 N	103° 29' 53.345 W
11,836.0	88.60	183.90	11,101.8	-857.7	5.1	585,390.35	757,179.99	32° 36' 23.638 N	103° 29' 53.427 W
11,931.0	90.80	182.70	11,102.3	-952.5	-0.4	585,295.52	757,174.52	32° 36' 22.700 N	103° 29' 53.499 W
12,026.0	91.40	182.90	11,100.5	-1,047.4	-5.0	585,200.65	757,169.88	32° 36' 21.762 N	103° 29' 53.562 W
12,122.0	91.70	180.60	11,097.9	-1,143.3	-8.0	585,104.73	757,166.95	32° 36' 20.813 N	103° 29' 53.605 W
12,217.0	92.20	180.60	11,094.7	-1,238.2	-8.9	585,009.80	757,165.95	32° 36' 19.873 N	103° 29' 53.626 W
12,312.0	90.30	179.20	11,092.6	-1,333.2	-8.8	584,914.82	757,166.12	32° 36' 18.934 N	103° 29' 53.632 W
12,407.0	90.40	179.00	11,092.0	-1,428.2	-7.3	584,819.84	757,167.61	32° 36' 17.994 N	103° 29' 53.624 W
12,502.0	90.80	179.02	11,091.0	-1,523.1	-5.6	584,724.86	757,169.25	32° 36' 17.054 N	103° 29' 53.613 W
12,597.0	91.10	179.30	11,089.4	-1,618.1	-4.3	584,629.88	757,170.64	32° 36' 16.114 N	103° 29' 53.606 W
12,692.0	89.30	178.80	11,089.1	-1,713.1	-2.7	584,534.90	757,172.22	32° 36' 15.174 N	103° 29' 53.596 W
12,787.0	89.40	178.60	11,090.2	-1,808.1	-0.5	584,439.93	757,174.38	32° 36' 14.234 N	103° 29' 53.580 W
12,882.0	89.90	178.30	11,090.8	-1,903.0	2.0	584,344.97	757,176.94	32° 36' 13.294 N	103° 29' 53.558 W
12,977.0	90.10	178.30	11,090.8	-1,998.0	4.9	584,250.01	757,179.76	32° 36' 12.354 N	103° 29' 53.534 W
13,072.0	90.30	177.90	11,090.4	-2,092.9	8.0	584,155.06	757,182.91	32° 36' 11.415 N	103° 29' 53.506 W
13,166.0	89.30	179.00	11,090.8	-2,186.9	10.6	584,061.10	757,185.46	32° 36' 10.485 N	103° 29' 53.485 W
13,261.0	90.00	179.50	11,091.3	-2,281.9	11.8	583,966.11	757,186.70	32° 36' 9.545 N	103° 29' 53.479 W
13,356.0	88.90	178.50	11,092.3	-2,376.9	13.5	583,871.13	757,188.36	32° 36' 8.605 N	103° 29' 53.468 W
13,451.0	89.30	178.50	11,093.7	-2,471.8	15.9	583,776.18	757,190.84	32° 36' 7.665 N	103° 29' 53.448 W
13,547.0	89.90	178.10	11,094.4	-2,567.8	18.8	583,680.22	757,193.69	32° 36' 6.716 N	103° 29' 53.423 W
13,641.0	90.40	178.10	11,094.2	-2,661.7	21.9	583,586.27	757,196.81	32° 36' 5.786 N	103° 29' 53.396 W
13,736.0	87.20	178.80	11,096.2	-2,756.7	24.5	583,491.34	757,199.38	32° 36' 4.846 N	103° 29' 53.374 W
13,831.0	87.40	178.80	11,100.6	-2,851.5	26.5	583,396.47	757,201.36	32° 36' 3.907 N	103° 29' 53.360 W
13,926.0	87.90	178.80	11,104.5	-2,946.4	28.5	583,301.57	757,203.35	32° 36' 2.968 N	103° 29' 53.345 W
14,021.0	88.30	178.80	11,107.7	-3,041.4	30.4	583,206.64	757,205.34	32° 36' 2.029 N	103° 29' 53.331 W
14,116.0	88.90	179.00	11,110.0	-3,136.3	32.3	583,111.69	757,207.16	32° 36' 1.089 N	103° 29' 53.318 W
14,212.0	89.30	179.00	11,111.5	-3,232.3	33.9	583,015.72	757,208.84	32° 36' 0.139 N	103° 29' 53.307 W
14,306.0	89.20	180.20	11,112.7	-3,326.3	34.6	582,921.73	757,209.49	32° 35' 59.209 N	103° 29' 53.308 W
14,401.0	90.10	180.60	11,113.3	-3,421.3	33.9	582,826.73	757,208.83	32° 35' 58.269 N	103° 29' 53.325 W
14,496.0	90.70	180.60	11,112.7	-3,516.3	32.9	582,731.74	757,207.84	32° 35' 57.329 N	103° 29' 53.345 W
14,592.0	91.00	180.20	11,111.2	-3,612.2	32.3	582,635.75	757,207.17	32° 35' 56.380 N	103° 29' 53.362 W
14,687.0	91.40	180.20	11,109.2	-3,707.2	31.9	582,540.78	757,206.84	32° 35' 55.440 N	103° 29' 53.374 W
14,783.0	91.80	180.20	11,106.6	-3,803.2	31.6	582,444.81	757,206.50	32° 35' 54.490 N	103° 29' 53.387 W
14,878.0	92.90	180.40	11,102.7	-3,898.1	31.1	582,349.90	757,206.00	32° 35' 53.551 N	103° 29' 53.402 W
14,973.0	89.90	180.10	11,100.3	-3,993.1	30.7	582,254.94	757,205.59	32° 35' 52.612 N	103° 29' 53.415 W
15,069.0	87.40	180.60	11,102.6	-4,089.0	30.1	582,158.97	757,205.00	32° 35' 51.662 N	103° 29' 53.431 W
15,164.0	87.70	180.40	11,106.7	-4,183.9	29.3	582,064.06	757,204.17	32° 35' 50.723 N	103° 29' 53.449 W
15,259.0	87.80	180.60	11,110.4	-4,278.9	28.4	581,969.14	757,203.35	32° 35' 49.784 N	103° 29' 53.468 W
15,354.0	88.50	180.40	11,113.5	-4,373.8	27.6	581,874.19	757,202.52	32° 35' 48.845 N	103° 29' 53.486 W
15,449.0	89.10	180.40	11,115.5	-4,468.8	27.0	581,779.22	757,201.85	32° 35' 47.905 N	103° 29' 53.503 W



TDS
Survey Report - Geographic



Company: COG Operating LLC
Project: Lea County, NM
Site: Prickly Pear 6 Federal
Well: #3H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #3H
TVD Reference: KB @ 3716.7usft
MD Reference: KB @ 3716.7usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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
15,544.0	89.40	180.40	11,116.7	-4,563.8	26.3	581,684.23	757,201.19	32° 35' 46.965 N	103° 29' 53.519 W
15,640.0	90.00	180.40	11,117.2	-4,659.8	25.6	581,588.23	757,200.52	32° 35' 46.015 N	103° 29' 53.536 W
15,725.0	90.50	180.60	11,116.8	-4,744.8	24.9	581,503.24	757,199.78	32° 35' 45.174 N	103° 29' 53.552 W
15,771.0	90.50	180.60	11,116.4	-4,790.8	24.4	581,457.24	757,199.30	32° 35' 44.719 N	103° 29' 53.562 W

Checked By: _____ Approved By: _____ Date: _____