

Results of Directional Survey

API number:	30-025-40397		
OGRID:		Operator:	THREE RIVERS OPERATING COMPANY LLC
		Property:	AIRSTRIPE 6 STATE # 2H

surface	ULSTR:	L	06	T	19S	R	35E
				2171	FSL	665	FWL

BH Loc	ULSTR:	M	07	T	19S	R	35E
17540	MD	10774.8	TVD	421	FSL	547	FWL
				4859	FNL		

Top Perf/OH	ULSTR:	L	06	T	19S	R	35E
10851	MD	10664.7	TVD	1822	FSL	598	FWL

Bot Perf/OH	ULSTR:	M	07	T	19S	R	35E
17360	MD	10769.9	TVD	601	FSL	545	FWL
				4679	FNL		

	MD	N/S	E/W	VD
	10821	-320.20	-69.00	10657
TOP PERFS/OH	10851	-349.20	-66.90	10664.70
	10851	-349.20	-66.90	10664.7
	17341	-6830.80	-119.90	10769.20
BOT PERFS/OH	17360	-6849.80	-119.76	10769.85
	17435	-6924.80	-119.20	10772.40

NEXT TO LAST	17530.1	-7019.90	-118.40	10774.40
LAST READING	17540	-7029.70	-118.40	10774.80
TD	17540	-7029.70	-118.40	10774.80

Surface Location	2171	FS	665	FW
Projected BHL	4859	FN	547	FW
Location of				
Top Perfs/OH	1822	FS	598	FW
Bottom Perfs/OH	4679	FN	545	FW

SUMMARY of Subsurface Locations

Surface Location	L-06-19S-35E	2171	FS	665	FW	Vert. Depth
Top Perfs/OH	L-06-19S-35E	1822	FS	598	FW	10664.70
Bottom Perfs/OH	M-07-19S-35E	4679	FN	545	FW	10769.85
Projected TD	M-07-19S-35E	4859	FN	547	FW	10774.80

AUG 21 2014



June 2, 2014

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

Attn: Kanicia Castillo

RE: **Airstrip 6 State Com No. 002H**

Please find enclosed a copy of the survey from 0.00' to 9,955.00' ran on the above referenced well.

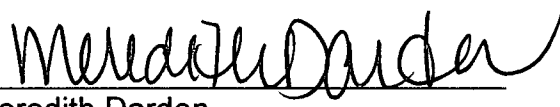
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

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




Meredith Darden
Notary Public, State of Texas



Company: COG Operating LLC (Concho)
 Lease/Well: Airstrip 6 State Com /No. 002H
 Location: Sec 6 T19S R35E
 Rig Name: Precision 105
 State/County: New Mexico/Lea
 Latitude: 32.69, Longitude: -103.50
 GRID North is 0.45 Degrees East of True North
 VS-Azi: 180.79 Degrees



Depth Reference : RKB = 26 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...6 state com #2h gyro-de_01.ut

Minimum Curvature Method

Report Date/Time: 6/2/2014 / 08:25

VES Survey International

West, Texas

432-563-5444

Surveyor: Chris Bankson

Airstrip 6 State Com No. 002H / API 30-025-40397

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	280.60	100.00	0.02	-0.12	-0.02	0.12	280.60	0.14
200.00	0.16	118.75	200.00	-0.02	-0.12	0.02	0.12	259.40	0.30
300.00	0.22	97.05	300.00	-0.11	0.19	0.11	0.22	120.32	0.09
400.00	0.25	95.92	400.00	-0.16	0.60	0.15	0.62	104.77	0.04
500.00	0.09	95.41	500.00	-0.19	0.90	0.18	0.92	101.86	0.17
600.00	0.11	106.19	600.00	-0.22	1.06	0.21	1.09	101.79	0.03
700.00	0.11	122.06	700.00	-0.30	1.24	0.28	1.28	103.65	0.03
800.00	0.22	135.63	800.00	-0.49	1.46	0.47	1.54	108.56	0.11
900.00	0.04	130.29	900.00	-0.65	1.62	0.63	1.74	111.85	0.17
1000.00	0.08	111.96	1000.00	-0.70	1.71	0.68	1.85	112.22	0.04
1100.00	0.38	111.02	1100.00	-0.84	2.09	0.82	2.25	112.03	0.29
1200.00	0.10	107.84	1199.99	-0.99	2.48	0.96	2.67	111.77	0.27
1300.00	0.31	106.30	1299.99	-1.09	2.83	1.06	3.03	111.16	0.21
1400.00	0.43	112.38	1399.99	-1.31	3.43	1.27	3.68	110.92	0.12
1500.00	0.34	146.31	1499.99	-1.70	3.94	1.64	4.29	113.32	0.24
1600.00	0.27	158.42	1599.99	-2.17	4.19	2.11	4.72	117.33	0.09
1700.00	0.16	175.45	1699.99	-2.53	4.29	2.47	4.98	120.49	0.13
1800.00	0.18	253.18	1799.99	-2.71	4.15	2.65	4.96	123.13	0.21

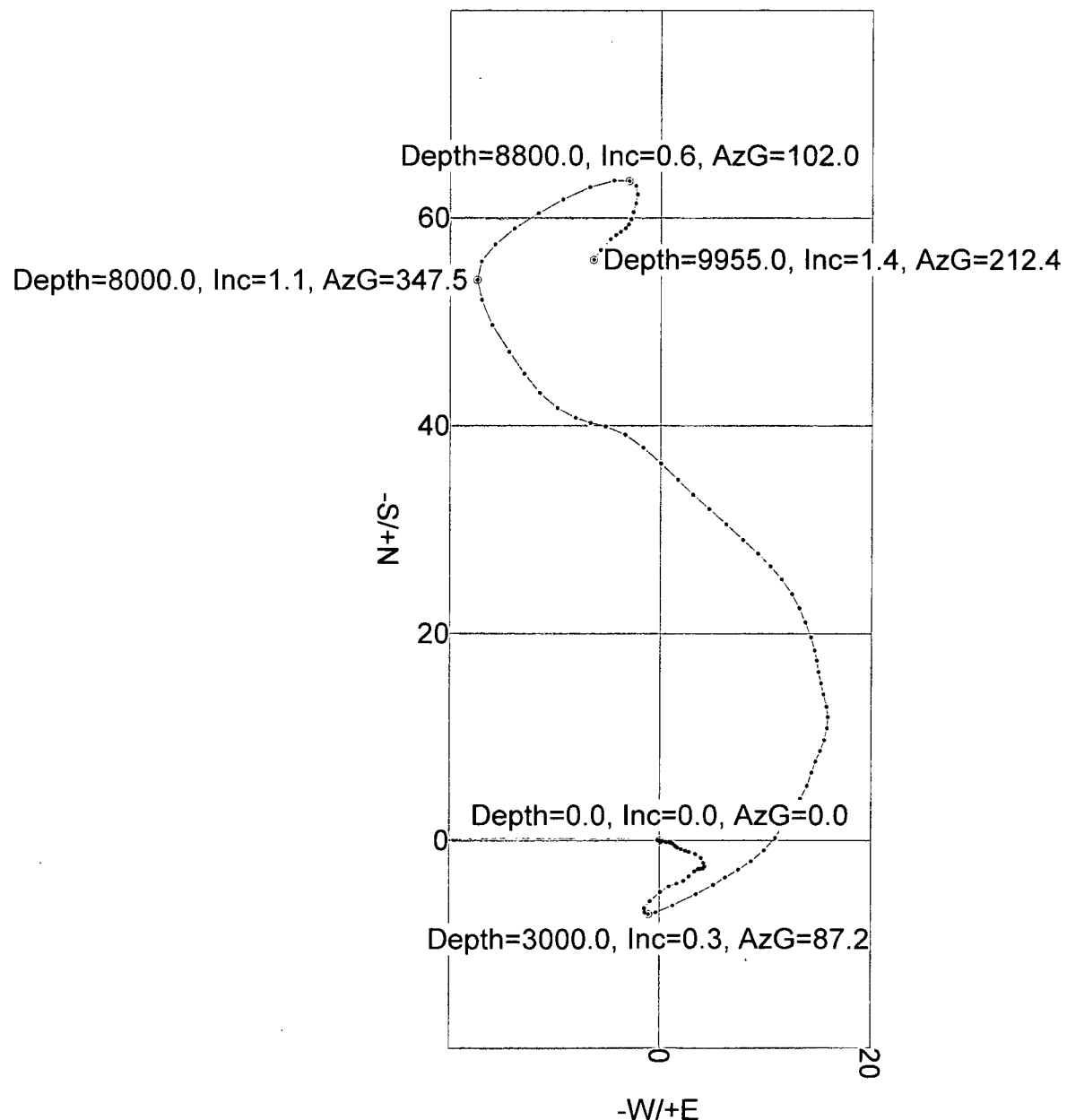
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.13	276.27	1899.99	-2.74	3.89	2.69	4.76	125.22	0.08
2000.00	0.10	258.17	1999.99	-2.75	3.68	2.70	4.60	126.73	0.05
2100.00	0.39	230.63	2099.99	-2.98	3.33	2.93	4.47	131.78	0.30
2200.00	0.44	221.69	2199.98	-3.48	2.82	3.44	4.48	140.99	0.08
2300.00	0.32	240.98	2299.98	-3.90	2.32	3.87	4.54	149.28	0.17
2400.00	0.52	253.48	2399.98	-4.17	1.64	4.15	4.48	158.54	0.22
2500.00	0.40	247.07	2499.98	-4.43	0.88	4.42	4.52	168.78	0.13
2600.00	0.74	230.40	2599.97	-4.98	0.06	4.98	4.98	179.31	0.37
2700.00	0.77	224.75	2699.96	-5.87	-0.91	5.88	5.94	188.78	0.08
2800.00	0.25	195.75	2799.96	-6.55	-1.44	6.57	6.71	192.37	0.56
2900.00	0.24	149.73	2899.96	-6.95	-1.39	6.97	7.09	191.32	0.19
3000.00	0.28	87.21	2999.96	-7.12	-1.04	7.13	7.19	188.34	0.27
3100.00	0.55	71.17	3099.95	-6.95	-0.35	6.96	6.96	182.89	0.29
3200.00	1.44	66.02	3199.94	-6.29	1.25	6.27	6.41	168.75	0.90
3300.00	1.43	62.20	3299.91	-5.19	3.50	5.15	6.26	146.01	0.10
3400.00	0.72	59.93	3399.89	-4.30	5.15	4.23	6.71	129.86	0.70
3500.00	0.82	56.40	3499.88	-3.59	6.29	3.50	7.24	119.70	0.11
3600.00	0.84	59.62	3599.87	-2.82	7.52	2.72	8.03	110.57	0.05
3700.00	0.83	52.41	3699.86	-2.01	8.72	1.89	8.95	102.95	0.11
3800.00	1.03	46.94	3799.84	-0.95	9.96	0.81	10.00	95.43	0.22
3900.00	0.80	32.49	3899.83	0.26	10.99	-0.41	11.00	88.66	0.33
4000.00	1.03	30.28	3999.82	1.62	11.82	-1.78	11.93	82.20	0.23
4100.00	0.71	32.03	4099.81	2.92	12.60	-3.09	12.93	76.96	0.32
4200.00	0.81	33.57	4199.80	4.04	13.32	-4.22	13.92	73.15	0.11
4300.00	0.81	19.53	4299.79	5.29	13.95	-5.48	14.92	69.23	0.20
4400.00	0.76	17.95	4399.78	6.58	14.39	-6.78	15.82	65.42	0.05
4500.00	0.52	22.49	4499.77	7.63	14.77	-7.83	16.62	62.67	0.25
4600.00	0.74	22.37	4599.77	8.65	15.19	-8.86	17.48	60.33	0.23
4700.00	0.57	17.44	4699.76	9.73	15.58	-9.94	18.37	58.03	0.18
4800.00	0.75	7.31	4799.75	10.85	15.82	-11.07	19.18	55.54	0.22
4900.00	0.50	1.34	4899.75	11.94	15.91	-12.16	19.89	53.11	0.27
5000.00	0.66	345.38	4999.74	12.93	15.77	-13.15	20.40	50.65	0.23
5100.00	0.74	349.42	5099.73	14.13	15.51	-14.34	20.98	47.66	0.10
5200.00	0.52	342.63	5199.73	15.20	15.26	-15.41	21.54	45.11	0.24
5300.00	0.77	351.02	5299.72	16.29	15.02	-16.50	22.16	42.66	0.27
5400.00	0.50	353.40	5399.72	17.39	14.86	-17.60	22.88	40.51	0.27
5500.00	0.67	344.51	5499.71	18.39	14.66	-18.59	23.51	38.55	0.19
5600.00	0.82	344.07	5599.70	19.64	14.30	-19.83	24.29	36.07	0.15
5700.00	0.94	335.25	5699.69	21.07	13.76	-21.26	25.17	33.16	0.19

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	0.74	338.66	5799.68	22.42	13.18	-22.60	26.01	30.46	0.21
5900.00	1.04	329.65	5899.67	23.80	12.49	-23.97	26.88	27.70	0.33
6000.00	0.93	322.28	5999.65	25.22	11.54	-25.37	27.73	24.59	0.17
6100.00	0.96	316.59	6099.64	26.47	10.47	-26.61	28.46	21.58	0.10
6200.00	0.97	315.48	6199.63	27.68	9.30	-27.80	29.20	18.57	0.02
6300.00	1.27	311.80	6299.61	29.02	7.89	-29.12	30.07	15.20	0.31
6400.00	1.26	314.06	6399.58	30.52	6.27	-30.60	31.15	11.62	0.05
6500.00	1.26	310.36	6499.56	31.99	4.65	-32.05	32.33	8.26	0.08
6600.00	1.10	313.45	6599.54	33.36	3.11	-33.40	33.51	5.33	0.17
6700.00	1.24	315.15	6699.52	34.79	1.65	-34.81	34.83	2.72	0.14
6800.00	1.37	312.79	6799.49	36.37	0.01	-36.37	36.37	0.01	0.15
6900.00	1.20	311.47	6899.46	37.88	-1.66	-37.86	37.92	357.50	0.18
7000.00	1.24	300.34	6999.44	39.12	-3.37	-39.07	39.27	355.07	0.24
7100.00	1.11	285.97	7099.42	39.94	-5.24	-39.86	40.28	352.52	0.32
7200.00	0.58	279.55	7199.41	40.29	-6.68	-40.19	40.84	350.59	0.54
7300.00	1.15	292.73	7299.40	40.76	-8.11	-40.65	41.56	348.75	0.60
7400.00	1.12	302.98	7399.38	41.68	-9.86	-41.54	42.83	346.69	0.21
7500.00	1.45	317.82	7499.35	43.15	-11.53	-42.99	44.67	345.04	0.47
7600.00	1.26	326.84	7599.33	45.01	-12.98	-44.83	46.84	343.91	0.29
7700.00	1.67	324.78	7699.29	47.12	-14.42	-46.92	49.28	342.98	0.42
7800.00	1.82	331.44	7799.25	49.71	-16.02	-49.48	52.22	342.13	0.25
7900.00	1.19	346.91	7899.21	52.11	-17.02	-51.87	54.82	341.92	0.75
8000.00	1.07	347.46	7999.19	54.03	-17.45	-53.78	56.78	342.10	0.12
8100.00	1.21	34.71	8099.17	55.81	-17.05	-55.57	58.35	343.01	0.92
8200.00	1.20	42.77	8199.15	57.45	-15.74	-57.22	59.56	344.68	0.17
8300.00	1.51	55.22	8299.12	58.96	-13.95	-58.76	60.59	346.69	0.43
8400.00	1.58	58.38	8399.09	60.44	-11.69	-60.27	61.56	349.05	0.11
8500.00	1.52	62.76	8499.05	61.77	-9.33	-61.64	62.47	351.41	0.13
8600.00	1.72	67.26	8599.01	62.96	-6.77	-62.86	63.32	353.87	0.24
8700.00	1.05	86.10	8698.98	63.60	-4.46	-63.54	63.76	355.99	0.80
8800.00	0.59	102.01	8798.97	63.56	-3.04	-63.51	63.63	357.26	0.51
8900.00	0.47	157.47	8898.97	63.07	-2.38	-63.03	63.12	357.84	0.51
9000.00	0.52	184.64	8998.96	62.24	-2.26	-62.21	62.29	357.92	0.24
9100.00	0.47	195.26	9098.96	61.39	-2.40	-61.35	61.44	357.76	0.10
9200.00	0.53	195.32	9198.96	60.55	-2.63	-60.51	60.61	357.51	0.05
9300.00	0.32	201.40	9298.95	59.85	-2.85	-59.81	59.92	357.27	0.22
9400.00	0.31	212.11	9398.95	59.36	-3.10	-59.32	59.45	357.01	0.06
9500.00	0.20	224.87	9498.95	59.01	-3.37	-58.96	59.10	356.73	0.12
9600.00	0.49	237.47	9598.95	58.66	-3.85	-58.60	58.78	356.24	0.29

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	0.12	231.81	9698.95	58.36	-4.29	-58.30	58.52	355.79	0.37
9800.00	0.61	230.80	9798.95	57.96	-4.78	-57.89	58.16	355.28	0.49
9900.00	1.03	218.20	9898.94	56.92	-5.75	-56.84	57.21	354.23	0.46
9955.00	1.35	212.37	9953.92	55.98	-6.40	-55.89	56.35	353.47	0.63



VES Survey International
West, Texas
432-563-5444
Surveyor: Chris Bankson
Airstrip 6 State Com No. 002H / API 30-025-40397



VES Survey Date: 05/22/2014



COG Operating LLC

Lea County, NM

Airstrip 6 State

#2H

OH

Survey: MWD #1

Standard Survey Report

02 June, 2014



Wellplanning Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3930.7usft (Original Well Elev)
Site:	Airstrip 6 State	MD Reference:	WELL @ 3930.7usft (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		
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	Airstrip 6 State		
Site Position:		Northing:	615,115.10 usft
From:	Map	Easting:	755,590.70 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 41' 17.878 N
		Longitude:	103° 30' 9.287 W
		Grid Convergence:	0.45 °

Well	#2H		
Well Position	+N/-S	0.0 usft	Northing: 615,115.10 usft
	+E/-W	0.0 usft	Easting: 755,590.70 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 41' 17.878 N
		Longitude:	103° 30' 9.287 W
		Ground Level:	3,904.7 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	5/6/2014	7.23
			Dip Angle
			(°)
			60.55
			Field Strength
			(nT)
			48,610

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
			(°)
			180.79

Survey Program	Date 6/2/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
100.0	9,955.0	GYRO (OH)	MWD
10,065.0	17,540.0	MWD #1 (OH)	MWD
			Description
			MWD - Standard
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
9,955.0	1.35	212.37	9,953.9	56.0	-6.4	-55.9	0.00	0.00	0.00	
10,065.0	1.50	209.00	10,063.9	53.6	-7.8	-53.5	0.16	0.14	-3.06	
10,128.0	1.50	211.10	10,126.9	52.2	-8.6	-52.1	0.09	0.00	3.33	
10,159.0	2.20	196.10	10,157.9	51.3	-9.0	-51.1	2.73	2.26	-48.39	
10,190.0	5.50	187.00	10,188.8	49.2	-9.4	-49.1	10.79	10.65	-29.35	
10,222.0	10.20	185.60	10,220.5	44.9	-9.8	-44.7	14.70	14.69	-4.38	
10,253.0	15.60	183.50	10,250.7	38.0	-10.3	-37.8	17.48	17.42	-6.77	
10,284.0	20.60	181.60	10,280.1	28.4	-10.8	-28.2	16.24	16.13	-6.13	
10,315.0	24.10	179.70	10,308.8	16.6	-10.9	-16.4	11.53	11.29	-6.13	
10,347.0	25.80	178.90	10,337.8	3.1	-10.7	-2.9	5.42	5.31	-2.50	



Wellplanning Survey Report

Company: COG Operating LLC
Project: Lea County, NM
Site: Airstrip 6 State
Well: #2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well #2H
TVD Reference: WELL @ 3930.7usft (Original Well Elev)
MD Reference: WELL @ 3930.7usft (Original Well Elev)
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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,378.0	28.10	178.60	10,365.4	-11.0	-10.4	11.1	7.43	7.42	-0.97
10,410.0	30.90	180.20	10,393.3	-26.7	-10.2	26.9	9.09	8.75	5.00
10,446.0	33.80	182.50	10,423.7	-46.0	-10.7	46.1	8.75	8.06	6.39
10,477.0	35.50	184.40	10,449.2	-63.6	-11.8	63.7	6.50	5.48	6.13
10,508.0	36.00	192.20	10,474.4	-81.4	-14.4	81.6	14.78	1.61	25.16
10,539.0	37.00	200.10	10,499.3	-99.1	-19.5	99.4	15.49	3.23	25.48
10,570.0	41.50	204.20	10,523.3	-117.3	-27.0	117.6	16.75	14.52	13.23
10,602.0	46.70	203.00	10,546.3	-137.7	-35.9	138.1	16.46	16.25	-3.75
10,634.0	51.40	201.20	10,567.3	-160.1	-44.9	160.7	15.29	14.69	-5.63
10,665.0	55.60	197.20	10,585.7	-183.6	-53.1	184.3	17.06	13.55	-12.90
10,697.0	58.90	192.90	10,603.0	-209.6	-60.1	210.4	15.30	10.31	-13.44
10,728.0	60.70	188.20	10,618.6	-235.9	-65.0	236.8	14.33	5.81	-15.16
10,759.0	63.10	183.80	10,633.2	-263.1	-67.8	264.0	14.72	7.74	-14.19
10,790.0	66.90	180.50	10,646.3	-291.1	-68.8	292.1	15.60	12.26	-10.65
10,821.0	72.60	180.10	10,657.0	-320.2	-69.0	321.1	18.43	18.39	-1.29
10,851.0	77.70	179.70	10,664.7	-349.2	-68.9	350.1	17.05	17.00	-1.33
10,883.0	80.80	181.00	10,670.7	-380.6	-69.1	381.6	10.48	9.69	4.06
10,914.0	81.70	182.60	10,675.4	-411.3	-70.1	412.2	5.87	2.90	5.16
10,946.0	82.30	184.40	10,679.9	-442.9	-72.0	443.8	5.88	1.88	5.63
10,977.0	84.50	185.50	10,683.4	-473.6	-74.7	474.5	7.92	7.10	3.55
11,040.0	87.60	185.20	10,687.8	-536.1	-80.6	537.2	4.94	4.92	-0.48
11,134.0	87.30	185.40	10,692.0	-629.6	-89.2	630.8	0.38	-0.32	0.21
11,228.0	88.00	184.30	10,695.8	-723.2	-97.2	724.5	1.39	0.74	-1.17
11,321.0	87.90	184.30	10,699.1	-815.9	-104.1	817.3	0.11	-0.11	0.00
11,416.0	88.10	182.50	10,702.4	-910.7	-109.8	912.1	1.91	0.21	-1.89
11,510.0	89.30	182.10	10,704.6	-1,004.6	-113.5	1,006.0	1.35	1.28	-0.43
11,604.0	89.50	181.60	10,705.6	-1,098.5	-116.6	1,100.0	0.57	0.21	-0.53
11,698.0	88.80	180.70	10,707.0	-1,192.5	-118.5	1,194.0	1.21	-0.74	-0.96
11,792.0	90.00	181.10	10,707.9	-1,286.5	-119.9	1,288.0	1.35	1.28	0.43
11,886.0	90.50	180.60	10,707.5	-1,380.5	-121.3	1,382.0	0.75	0.53	-0.53
11,980.0	90.60	180.00	10,706.6	-1,474.4	-121.8	1,476.0	0.65	0.11	-0.64
12,073.0	90.10	179.50	10,706.1	-1,567.4	-121.4	1,569.0	0.76	-0.54	-0.54
12,167.0	88.40	179.40	10,707.3	-1,661.4	-120.5	1,662.9	1.81	-1.81	-0.11
12,261.0	90.10	180.50	10,708.5	-1,755.4	-120.4	1,756.9	2.15	1.81	1.17
12,355.0	90.30	179.70	10,708.2	-1,849.4	-120.6	1,850.9	0.88	0.21	-0.85
12,449.0	90.40	179.20	10,707.6	-1,943.4	-119.7	1,944.9	0.54	0.11	-0.53
12,543.0	90.50	179.10	10,706.9	-2,037.4	-118.3	2,038.8	0.15	0.11	-0.11
12,637.0	91.50	178.80	10,705.2	-2,131.4	-116.6	2,132.8	1.11	1.06	-0.32
12,730.0	89.50	179.60	10,704.4	-2,224.3	-115.3	2,225.7	2.32	-2.15	0.86
12,825.0	90.20	179.50	10,704.7	-2,319.3	-114.5	2,320.7	0.74	0.74	-0.11
12,919.0	89.70	178.80	10,704.8	-2,413.3	-113.1	2,414.7	0.92	-0.53	-0.74
13,013.0	90.10	178.10	10,704.9	-2,507.3	-110.6	2,508.6	0.86	0.43	-0.74
13,107.0	87.60	178.50	10,706.8	-2,601.2	-107.8	2,602.5	2.69	-2.66	0.43



Wellplanning Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3930.7usft (Original Well Elev)
Site:	Airstrip 6 State	MD Reference:	WELL @ 3930.7usft (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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,202.0	86.00	178.00	10,712.1	-2,696.0	-104.9	2,697.2	1.76	-1.68	-0.53
13,296.0	86.30	178.70	10,718.4	-2,789.8	-102.2	2,790.9	0.81	0.32	0.74
13,391.0	87.40	179.40	10,723.6	-2,884.6	-100.6	2,885.7	1.37	1.16	0.74
13,486.0	89.50	180.10	10,726.2	-2,979.6	-100.2	2,980.7	2.33	2.21	0.74
13,581.0	91.20	180.30	10,725.6	-3,074.6	-100.6	3,075.7	1.80	1.79	0.21
13,676.0	91.30	179.70	10,723.6	-3,169.5	-100.6	3,170.6	0.64	0.11	-0.63
13,772.0	91.80	179.30	10,721.0	-3,265.5	-99.7	3,266.6	0.67	0.52	-0.42
13,866.0	90.90	178.90	10,718.8	-3,359.5	-98.2	3,360.5	1.05	-0.96	-0.43
13,959.0	89.10	178.60	10,718.8	-3,452.4	-96.2	3,453.4	1.96	-1.94	-0.32
14,053.0	89.00	178.70	10,720.3	-3,546.4	-94.0	3,547.4	0.15	-0.11	0.11
14,147.0	89.20	178.00	10,721.8	-3,640.4	-91.3	3,641.3	0.77	0.21	-0.74
14,240.0	89.30	177.20	10,723.0	-3,733.3	-87.4	3,734.1	0.87	0.11	-0.86
14,334.0	90.00	176.80	10,723.6	-3,827.1	-82.5	3,827.9	0.86	0.74	-0.43
14,428.0	88.80	176.50	10,724.6	-3,921.0	-77.0	3,921.7	1.32	-1.28	-0.32
14,522.0	87.70	176.80	10,727.4	-4,014.8	-71.5	4,015.4	1.21	-1.17	0.32
14,616.0	87.50	177.10	10,731.4	-4,108.5	-66.5	4,109.1	0.38	-0.21	0.32
14,710.0	87.20	176.80	10,735.7	-4,202.3	-61.5	4,202.8	0.45	-0.32	-0.32
14,804.0	86.00	178.30	10,741.3	-4,296.1	-57.5	4,296.4	2.04	-1.28	1.60
14,898.0	86.40	178.40	10,747.5	-4,389.8	-54.8	4,390.1	0.44	0.43	0.11
14,992.0	87.50	179.30	10,752.5	-4,483.7	-52.9	4,484.0	1.51	1.17	0.96
15,086.0	87.80	180.30	10,756.4	-4,577.6	-52.6	4,577.9	1.11	0.32	1.06
15,180.0	88.50	181.80	10,759.4	-4,671.5	-54.3	4,671.8	1.76	0.74	1.60
15,274.0	89.40	181.90	10,761.1	-4,765.4	-57.3	4,765.8	0.96	0.96	0.11
15,368.0	88.50	181.90	10,762.9	-4,859.4	-60.5	4,859.7	0.96	-0.96	0.00
15,462.0	89.40	182.40	10,764.6	-4,953.3	-64.0	4,953.7	1.10	0.96	0.53
15,553.0	91.10	181.90	10,764.2	-5,044.2	-67.4	5,044.7	1.95	1.87	-0.55
15,647.0	92.00	181.40	10,761.6	-5,138.1	-70.1	5,138.6	1.10	0.96	-0.53
15,741.0	91.50	182.60	10,758.8	-5,232.0	-73.4	5,232.6	1.38	-0.53	1.28
15,835.0	92.60	182.50	10,755.4	-5,325.9	-77.6	5,326.5	1.18	1.17	-0.11
15,929.0	90.90	182.30	10,752.5	-5,419.8	-81.5	5,420.4	1.82	-1.81	-0.21
16,023.0	90.20	182.60	10,751.6	-5,513.7	-85.5	5,514.3	0.81	-0.74	0.32
16,117.0	91.50	182.30	10,750.2	-5,607.6	-89.5	5,608.3	1.42	1.38	-0.32
16,211.0	89.40	182.00	10,749.5	-5,701.5	-93.1	5,702.2	2.26	-2.23	-0.32
16,305.0	88.40	181.50	10,751.3	-5,795.4	-95.9	5,796.2	1.19	-1.06	-0.53
16,399.0	89.00	181.60	10,753.4	-5,889.4	-98.5	5,890.2	0.65	0.64	0.11
16,493.0	90.20	181.00	10,754.1	-5,983.3	-100.6	5,984.2	1.43	1.28	-0.64
16,588.0	89.10	181.20	10,754.7	-6,078.3	-102.4	6,079.2	1.18	-1.16	0.21
16,682.0	87.70	182.00	10,757.3	-6,172.2	-105.0	6,173.1	1.72	-1.49	0.85
16,776.0	88.70	182.10	10,760.3	-6,266.1	-108.4	6,267.0	1.07	1.06	0.11
16,871.0	89.80	181.60	10,761.5	-6,361.1	-111.5	6,362.0	1.27	1.16	-0.53
16,966.0	90.70	181.70	10,761.1	-6,456.0	-114.2	6,457.0	0.95	0.95	0.11
17,060.0	89.80	181.10	10,760.7	-6,550.0	-116.5	6,551.0	1.15	-0.96	-0.64
17,154.0	88.70	181.20	10,761.9	-6,644.0	-118.4	6,645.0	1.18	-1.17	0.11



Wellplanning Survey Report

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM	TVD Reference:	WELL @ 3930.7usft (Original Well Elev)
Site:	Airstrip 6 State	MD Reference:	WELL @ 3930.7usft (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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,248.0	87.40	180.50	10,765.1	-6,737.9	-119.8	6,738.9	1.57	-1.38	-0.74
17,341.0	87.60	179.70	10,769.2	-6,830.8	-119.9	6,831.8	0.89	0.22	-0.86
17,435.0	88.40	179.40	10,772.4	-6,924.8	-119.2	6,925.7	0.91	0.85	-0.32
17,498.0	89.00	179.60	10,773.9	-6,987.7	-118.7	6,988.7	1.00	0.95	0.32
17,530.1	89.00	179.60	10,774.4	-7,019.9	-118.4	7,020.8	0.00	0.00	0.00
PBHL(AS#1)									
17,540.0	89.00	179.60	10,774.6	-7,029.7	-118.4	7,030.7	0.00	0.00	0.00

Checked By:	_____	Approved By:	_____	Date:	_____
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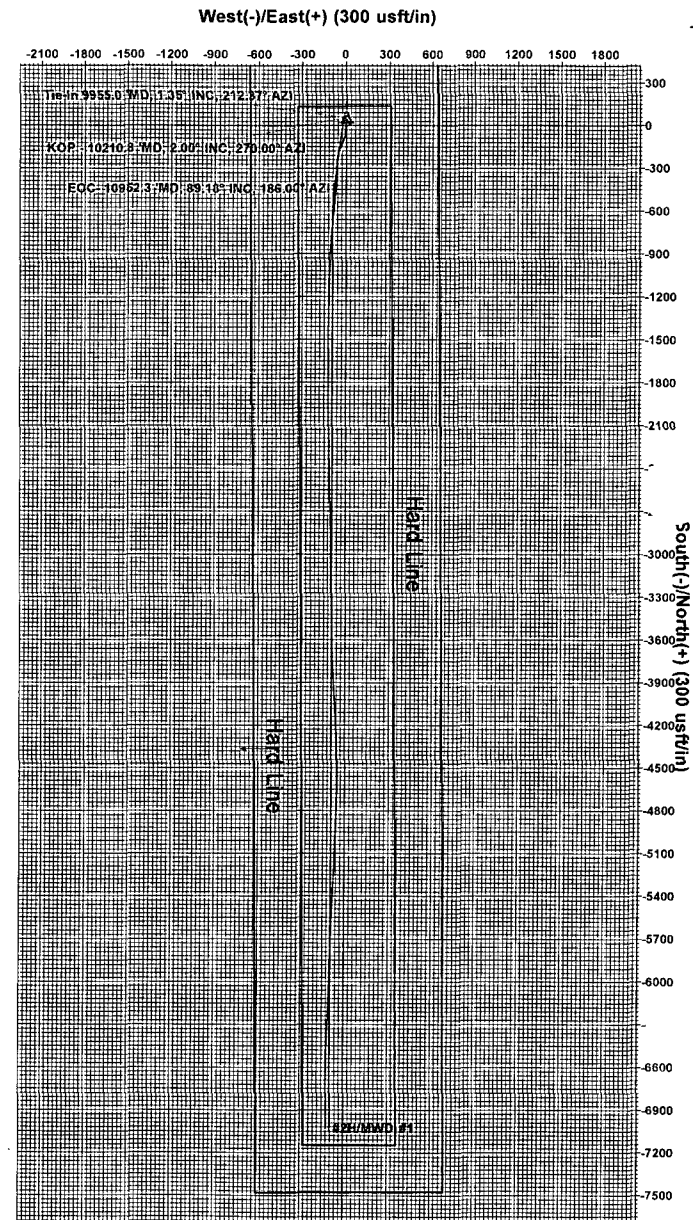
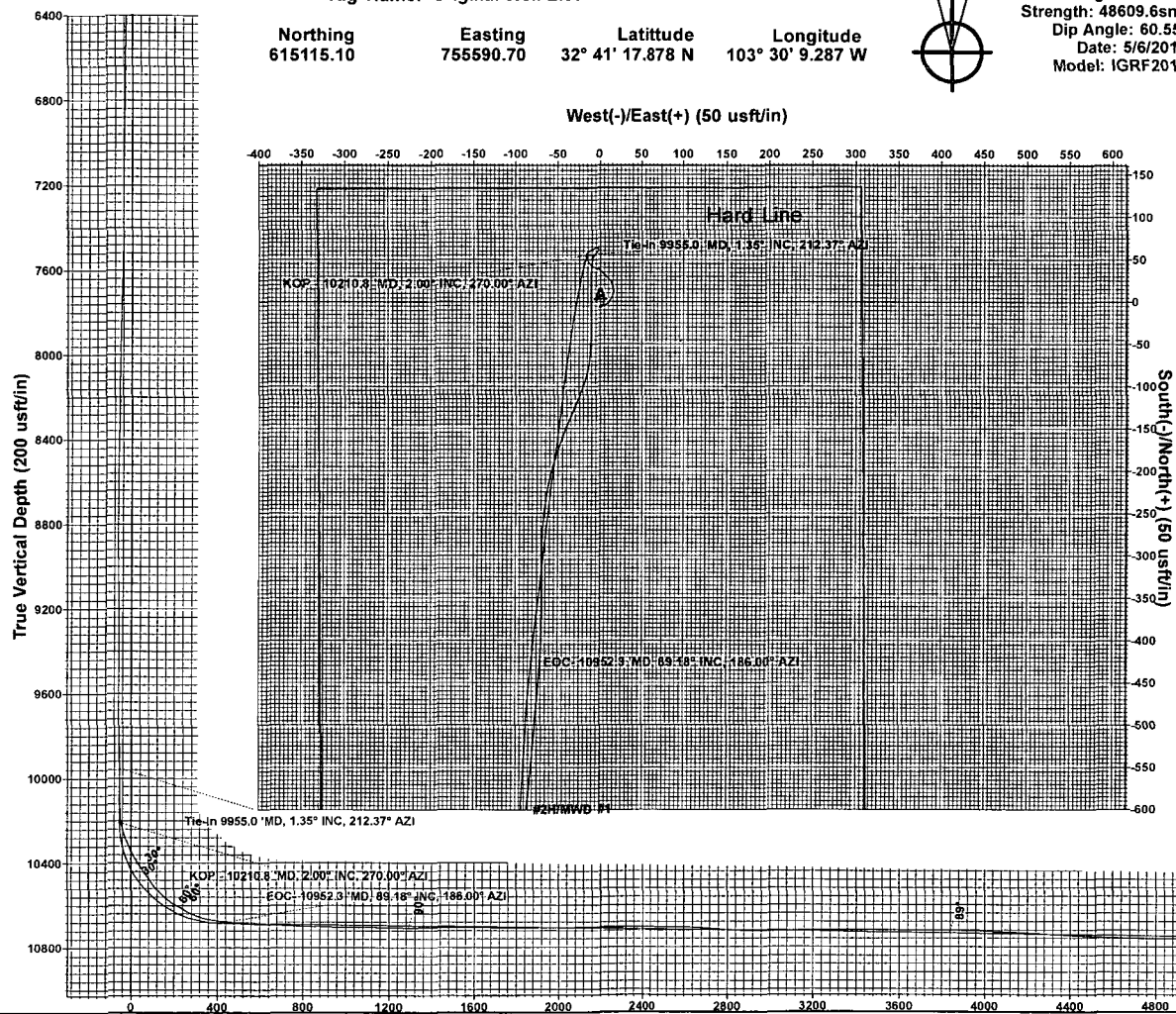
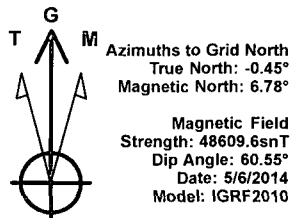
Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	9955.0	1.35	212.37	9953.9	56.0	-6.4	0.00	0.00	-55.9
2	10040.6	2.00	270.00	10039.5	55.1	-8.5	2.00	99.37	-55.0
3	10210.8	2.00	270.00	10209.6	55.1	-14.4	0.00	0.00	-54.9
4	10952.3	89.18	186.00	10685.0	-411.2	-79.8	12.00	-84.03	412.3
5	11251.9	89.18	180.01	10689.3	-710.3	-95.5	2.00	-90.08	711.5
6	17561.8	89.18	180.01	10780.0	-7019.6	-96.2	0.00	0.00	7020.3

COG Operating LLC
Project: Lea County, NM
Site: Airstrip 6 State
Well: #2H
Wellbore: OH
Plan: Plan #2 (#2H/OH)

Ground Elevation: 3904.7
RKB Elevation: WELL @ 3930.7usft (Original Well Elev)
Rig Name: Original Well Elev

Northing 615115.10
Easting 755590.70
Latitude 32° 41' 17.878 N
Longitude 103° 30' 9.287 W



Plan: Plan #2 (#2H/OH)
Created By: Well Planner Date: 9:34, June 02 2014

Vertical Section at 180.79° (200 usft/in)
Terra Directional Services
322 Spring Hill Drive, Suite A100, Spring, Texas 77386
432.425.7532

PROJECT DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid