Results of Directional Survey

API number:	30-025-41203			
OGRID:		Operator:	COG OPERATING LLC	
		Property:	BEN LILLY STATE COM	# 3H

surface	ULSTR:	V (N)	02	T	21S	R	33E	
				330	FSL	1980	FWL	
								7900
BH Loc	ULSTR:	C (3)	02	T	21S	R	33E	
18650	MD	11430.8	TVD	274	FNL	1907	FWL	
				7626	FSL			
Top Perf/OH	ULSTR:	V (N)	02	T	21S	R	33E	
11778	MD	11551.7	TVD	759	FSL	1887	FWL	
Bot Perf/OH	ULSTR:	C (3)	02	T	21S	R	33E	
18440	MD	11436.7	TVD	484	FNL	1905	FWL	
				7416	FSL			

	MD	N/S	E/W	VD
	11746	398.20	-92.10	11543
TOP PERFS/OH	**11778**	428.90	-92.90	11551.70
	11778	428.90	-92.90	11551.70
	18419	7065.30	-75.40	11436.80
BOT PERFS/OH	**18440**	7086.30	-75.12	11436.67
	18515	7161.30	-74.10	11436.20

NEXT TO LAST	18560	7206.30	-73.60	11433.90
LAST READING	18650	7296.20	-72.60	11430.80
TD	**18650**	7296.20	-72.60	11430.80

Surface Location	330	FS	1980	FW
Projected BHL	7626	FS	1907	FW
Location of				
Top Perfs/OH	759	FS	1887	FW
Bottom Perfs/OH	7416	FS	1905	FW

SUMMARY of Subsurface Locations

Surface Location	V-02-21S-33E	330	FS	1980	FW	Vert. Depth
Top Perfs/OH	V-02-21S-33E	759	FS	1887	FW	11551.70
Bottom Perfs/OH	C-02-21S-33E	7416	FS	1905	FW	11436.67
Projected TD	C-02-21S-33E	7626	FS	1907	FW	11430.80

APR 07 2014

VES
VAUGHN ENERGY SERVICES
A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

October 14, 2013

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

Attn: Kanicia Castillo

RE: **Ben Lilly 2 State Com No. 003H**

Please find enclosed a copy of the survey from 0.00' to 10950.00' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 14 day of October, A.D., 2013, by Keith Havelka.

Meredith Darden
Notary Public, State of Texas

MEREDITH DARDEN
Notary Public, State of Texas
My Commission Expires
July 25, 2017

Company: COG Operating, LLC (Concho)
Lease/Well: Ben Lilly 2 State Com/No. 003h

Rig Name: Precision 105
State/County: New Mexico/Lea
Latitude: 32.50, Longitude: -103.54
GRID North is 0.42 Degrees East of True North
VS-Azi: 0.00 Degrees

Depth Reference : RKB = 25 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS
Filename: ...2 state com 3h_gyro survey.ut
Minimum Curvature Method
Report Date/Time: 10/14/2013 / 09:17

Vaughn Energy Services
Midland, Texas
432-563-5444
Surveyor: Gene Heiss
Ben Lilly 2 State Com No. 003H / API 30-025-41203

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	0.35	315.39	100.00	0.22	-0.22	0.22	0.31	315.39	0.35
200.00	0.12	260.77	200.00	0.42	-0.53	0.42	0.68	308.24	0.30
300.00	0.31	290.52	300.00	0.50	-0.89	0.50	1.02	299.27	0.22
400.00	0.27	329.08	400.00	0.80	-1.27	0.80	1.50	302.13	0.20
500.00	0.15	353.63	500.00	1.13	-1.40	1.13	1.80	308.85	0.14
600.00	0.31	329.08	600.00	1.50	-1.56	1.50	2.16	313.86	0.18
700.00	0.39	344.18	699.99	2.06	-1.79	2.06	2.73	318.98	0.12
800.00	0.53	9.50	799.99	2.84	-1.81	2.84	3.36	327.51	0.24
900.00	0.66	17.49	899.98	3.84	-1.56	3.84	4.14	337.91	0.16
1000.00	0.63	0.87	999.98	4.94	-1.38	4.94	5.13	344.43	0.19
1100.00	0.87	357.83	1099.97	6.26	-1.40	6.26	6.41	347.41	0.24
1200.00	0.84	26.32	1199.96	7.68	-1.10	7.68	7.76	351.84	0.42
1300.00	0.50	48.88	1299.95	8.63	-0.44	8.63	8.64	357.05	0.42
1400.00	0.52	37.45	1399.95	9.27	0.16	9.27	9.28	1.00	0.10
1500.00	0.72	356.35	1499.94	10.26	0.40	10.26	10.27	2.21	0.48
1600.00	1.06	348.80	1599.93	11.80	0.18	11.80	11.80	0.86	0.35
1700.00	1.24	357.31	1699.91	13.78	-0.05	13.78	13.78	359.78	0.25
1800.00	1.28	358.70	1799.89	15.98	-0.13	15.98	15.98	359.54	0.06

VES Survey Date: 10/02/2013

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	1.11	0.38	1899.86	18.07	-0.15	18.07	18.07	359.53	0.17
2000.00	0.46	22.41	1999.85	19.41	0.01	19.41	19.41	0.04	0.70
2100.00	0.28	356.51	2099.85	20.03	0.15	20.03	20.03	0.44	0.25
2200.00	0.06	246.29	2199.85	20.25	0.09	20.25	20.25	0.25	0.30
2300.00	0.07	203.94	2299.85	20.16	0.01	20.16	20.16	0.03	0.05
2400.00	0.08	195.43	2399.85	20.04	-0.03	20.04	20.04	359.91	0.01
2500.00	0.07	348.42	2499.85	20.03	-0.06	20.03	20.03	359.82	0.14
2600.00	0.08	173.54	2599.85	20.02	-0.07	20.02	20.02	359.81	0.15
2700.00	0.09	194.10	2699.85	19.86	-0.08	19.86	19.86	359.78	0.03
2800.00	0.12	243.88	2799.85	19.74	-0.20	19.74	19.74	359.43	0.10
2900.00	0.09	273.57	2899.85	19.69	-0.37	19.69	19.70	358.92	0.06
3000.00	0.19	242.88	2999.85	19.63	-0.60	19.63	19.63	358.26	0.12
3100.00	0.26	141.53	3099.85	19.37	-0.60	19.37	19.38	358.23	0.35
3200.00	0.35	59.86	3199.85	19.34	-0.19	19.34	19.35	359.43	0.40
3300.00	0.25	320.25	3299.85	19.66	-0.07	19.66	19.66	359.80	0.46
3400.00	0.11	292.79	3399.85	19.87	-0.29	19.87	19.87	359.16	0.16
3500.00	0.10	267.09	3499.85	19.90	-0.47	19.90	19.90	358.66	0.05
3600.00	0.22	227.70	3599.85	19.77	-0.69	19.77	19.78	358.00	0.15
3700.00	0.31	295.94	3699.85	19.76	-1.07	19.76	19.79	356.89	0.31
3800.00	0.33	159.39	3799.85	19.61	-1.22	19.61	19.65	356.45	0.59
3900.00	0.32	139.11	3899.84	19.14	-0.94	19.14	19.16	357.20	0.11
4000.00	0.18	84.57	3999.84	18.94	-0.60	18.94	18.95	358.20	0.26
4100.00	0.09	18.15	4099.84	19.03	-0.41	19.03	19.03	358.75	0.17
4200.00	0.10	333.43	4199.84	19.18	-0.43	19.18	19.19	358.72	0.07
4300.00	0.36	294.22	4299.84	19.39	-0.76	19.39	19.40	357.77	0.29
4400.00	0.44	295.33	4399.84	19.68	-1.39	19.68	19.73	355.96	0.08
4500.00	1.32	281.94	4499.83	20.08	-2.86	20.08	20.28	351.90	0.90
4600.00	1.56	282.76	4599.80	20.62	-5.32	20.62	21.30	345.54	0.25
4700.00	1.40	290.72	4699.76	21.36	-7.79	21.36	22.73	339.95	0.26
4800.00	1.50	287.02	4799.73	22.17	-10.19	22.17	24.40	335.32	0.14
4900.00	1.51	297.86	4899.70	23.17	-12.61	23.17	26.38	331.45	0.28
5000.00	1.52	288.68	4999.66	24.21	-15.03	24.21	28.50	328.17	0.24
5100.00	1.58	284.84	5099.62	24.99	-17.62	24.99	30.58	324.81	0.12
5200.00	1.36	278.69	5199.59	25.53	-20.13	25.53	32.51	321.74	0.28
5300.00	1.45	275.51	5299.56	25.83	-22.56	25.83	34.29	318.86	0.12
5400.00	1.59	294.72	5399.53	26.53	-25.08	26.53	36.51	316.61	0.53
5500.00	1.45	282.15	5499.49	27.38	-27.58	27.38	38.86	314.79	0.36
5600.00	1.33	275.64	5599.46	27.76	-29.97	27.76	40.85	312.80	0.20
5700.00	1.25	270.71	5699.44	27.88	-32.22	27.88	42.61	310.88	0.14

VES Survey Date: 10/02/2013

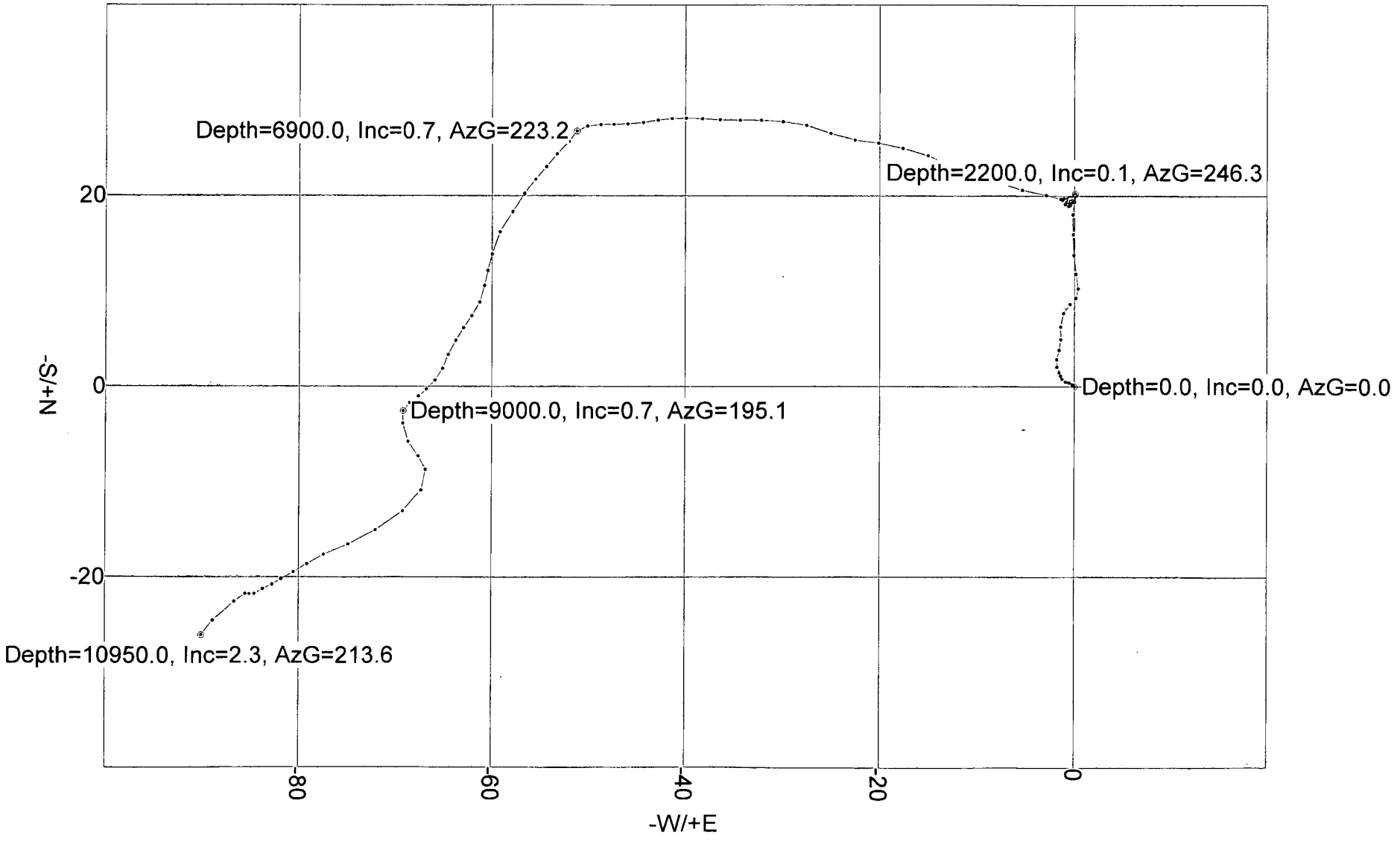
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5800.00	1.25	270.09	5799.41	27.90	-34.40	27.90	44.29	309.04	0.02
5900.00	1.10	272.95	5899.39	27.95	-36.45	27.95	45.94	307.48	0.17
6000.00	0.99	273.48	5999.38	28.05	-38.28	28.05	47.46	306.24	0.11
6100.00	0.89	269.63	6099.36	28.10	-39.92	28.10	48.82	305.14	0.12
6200.00	0.79	267.86	6199.35	28.07	-41.39	28.07	50.01	304.14	0.11
6300.00	0.86	258.93	6299.34	27.90	-42.82	27.90	51.11	303.09	0.15
6400.00	0.91	263.15	6399.33	27.66	-44.34	27.66	52.26	301.95	0.08
6500.00	0.93	266.04	6499.32	27.51	-45.94	27.51	53.55	300.91	0.05
6600.00	0.74	271.53	6599.31	27.47	-47.40	27.47	54.79	300.09	0.21
6700.00	0.80	264.91	6699.30	27.43	-48.74	27.43	55.93	299.36	0.11
6800.00	0.79	262.84	6799.29	27.28	-50.13	27.28	57.07	298.55	0.03
6900.00	0.66	223.22	6899.28	26.77	-51.21	26.77	57.78	297.60	0.51
7000.00	0.93	210.51	6999.27	25.65	-52.02	25.65	58.00	296.24	0.32
7100.00	1.14	234.54	7099.25	24.37	-53.24	24.37	58.55	294.59	0.48
7200.00	0.94	201.11	7199.24	23.02	-54.35	23.02	59.02	292.96	0.63
7300.00	1.12	237.08	7299.22	21.72	-55.47	21.72	59.57	291.39	0.66
7400.00	1.17	201.51	7399.20	20.24	-56.66	20.24	60.17	289.66	0.70
7500.00	1.45	220.18	7499.18	18.33	-57.85	18.33	60.68	287.58	0.50
7600.00	1.45	204.09	7599.15	16.21	-59.18	16.21	61.36	285.32	0.40
7700.00	1.37	194.70	7699.12	13.90	-60.00	13.90	61.59	283.05	0.24
7800.00	0.69	191.48	7799.10	12.16	-60.42	12.16	61.63	281.38	0.68
7900.00	1.15	192.68	7899.09	10.59	-60.76	10.59	61.68	279.89	0.46
8000.00	0.94	199.15	7999.07	8.84	-61.25	8.84	61.88	278.21	0.24
8100.00	0.97	220.28	8099.06	7.42	-62.06	7.42	62.50	276.82	0.35
8200.00	0.80	206.79	8199.04	6.15	-62.92	6.15	63.22	275.58	0.26
8300.00	0.97	213.59	8299.03	4.82	-63.71	4.82	63.89	274.33	0.20
8400.00	0.96	201.28	8399.02	3.34	-64.48	3.34	64.57	272.96	0.21
8500.00	0.85	201.95	8499.01	1.87	-65.06	1.87	65.09	271.65	0.11
8600.00	0.84	221.76	8599.00	0.64	-65.82	0.64	65.82	270.56	0.29
8700.00	0.62	226.08	8698.99	-0.28	-66.70	-0.28	66.70	269.76	0.22
8800.00	0.62	226.01	8798.98	-1.03	-67.48	-1.03	67.49	269.12	0.00
8900.00	0.70	241.42	8898.98	-1.70	-68.41	-1.70	68.43	268.58	0.19
9000.00	0.67	195.12	8998.97	-2.56	-69.10	-2.56	69.15	267.88	0.54
9100.00	0.85	172.39	9098.96	-3.86	-69.15	-3.86	69.26	266.81	0.35
9200.00	1.45	157.44	9198.94	-5.77	-68.57	-5.77	68.81	265.19	0.67
9300.00	0.78	122.11	9298.92	-7.30	-67.50	-7.30	67.90	263.83	0.93
9400.00	1.21	172.73	9398.91	-8.71	-66.79	-8.71	67.36	262.57	0.94
9500.00	1.44	205.70	9498.88	-10.90	-67.20	-10.90	68.08	260.79	0.78
9600.00	1.99	233.23	9598.84	-13.07	-69.14	-13.07	70.36	259.30	0.98

VES Survey Date: 10/02/2013

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	1.98	237.36	9698.78	-15.04	-71.98	-15.04	73.54	258.20	0.14
9800.00	1.76	248.09	9798.73	-16.54	-74.86	-16.54	76.66	257.54	0.41
9900.00	1.42	245.21	9898.69	-17.63	-77.41	-17.63	79.39	257.17	0.34
10000.00	0.88	232.57	9998.67	-18.62	-79.14	-18.62	81.30	256.76	0.60
10100.00	1.01	244.27	10098.65	-19.47	-80.55	-19.47	82.87	256.41	0.24
10200.00	0.75	235.30	10198.64	-20.22	-81.88	-20.22	84.34	256.13	0.30
10300.00	0.50	244.08	10298.64	-20.79	-82.81	-20.79	85.38	255.91	0.26
10400.00	0.74	242.87	10398.63	-21.27	-83.77	-21.27	86.43	255.75	0.24
10500.00	0.43	234.79	10498.62	-21.78	-84.65	-21.78	87.41	255.57	0.32
10600.00	0.36	311.56	10598.62	-21.78	-85.19	-21.78	87.93	255.66	0.49
10700.00	0.32	228.23	10698.62	-21.76	-85.63	-21.76	88.36	255.74	0.45
10800.00	1.29	235.41	10798.61	-22.59	-86.77	-22.59	89.66	255.41	0.98
10900.00	2.13	223.53	10898.56	-24.57	-88.98	-24.57	92.31	254.56	0.90
10950.00	2.32	213.55	10948.53	-26.09	-90.18	-26.09	93.88	253.86	0.86

VES Survey Date: 10/02/2013

Vaughn Energy Services
Midland, Texas
432-563-5444
Surveyor: Gene Heiss
Ben Lilly 2 State Com No. 003H / API 30-025-41203



VES Survey Date: 10/02/2013

COG Operating, LLC

Lea County, NM
Sec 2, T21-S, R33-E
Ben Lilly 2 State #3H

Wellbore #1

Survey: MWD

DDC Survey Report

21 October, 2013

The DIRECTIONAL DRILLING COMPANY

The DIRECTIONAL DRILLING COMPANY

Survey Certification Sheet

COG Operating, LLC	WT-13722	10/21/13
Company	Job Number	Date

Sec2, T21S, R33E	Ben Lilly 2 State #3H	Lea, NM
Lease	Well Name	County & State

API: 30-025-41203

Surveyed from a depth of: 10950 feet to 18650 feet MD

Type of Survey: MWD

Directional Supervisor/Surveyor: James Reed

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by **The Directional Drilling Company (DDC)**. This report represents a true and correct Directional survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.

Digitally signed by Larry Wright
DN: cn=Larry Wright, o=The Directional Drilling Company, ou=GM of Guidance Services, email=larryw@directionaldrillers.com, c=US
Date: 2013.10.30 15:34:28 -05'00'

Larry Wright
MWD General Manager

• 11390 FM 830 • Willis, Texas 77318 •
• PH 936-856-4332 • FAX 936-856-8678 •

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Ben Lilly 2 State #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3850.0usft (Precision #105)
Site:	Sec 2, T21-S, R33-E	**MD Reference:**	WELL @ 3850.0usft (Precision #105)
Well:	Ben Lilly 2 State #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**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 Sec 2, T21-S, R33-E

Site Position:		**Northing:**	547,002.50 usft	**Latitude:**	32° 30' 4.860 N
From:	Map	**Easting:**	743,071.50 usft	**Longitude:**	103° 32' 41.672 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.42 °

Well Ben Lilly 2 State #3H

Well Position	**+N/-S**	0.0 usft	**Northing:**	547,002.50 usft	**Latitude:**	32° 30' 4.860 N
	+E/-W	0.0 usft	**Easting:**	743,071.50 usft	**Longitude:**	103° 32' 41.672 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,823.9 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/2/2013	7.31	60.39	48,553

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	359.48

Survey Program **Date** 10/18/2013

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	10,950.0	VES Gyro Survey (Wellbore #1)	Good_gyro	Good Gyro
11,015.0	18,650.0	MWD (Wellbore #1)		

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)
Tie In @ 10950' MD / 10949' TVD									
10,950.0	2.32	213.55	10,948.5	-26.1	-90.1	-25.3	0.00	0.00	0.00
11,015.0	3.20	216.10	11,013.5	-28.7	-91.9	-27.8	1.37	1.35	3.92
11,046.0	2.40	300.60	11,044.4	-29.0	-93.0	-28.2	12.29	-2.58	272.58
11,078.0	7.90	346.90	11,076.3	-26.6	-94.1	-25.7	20.24	17.19	144.69
11,110.0	13.30	355.80	11,107.7	-20.7	-94.9	-19.9	17.58	16.88	27.81
11,142.0	15.20	356.90	11,138.8	-12.9	-95.4	-12.0	6.00	5.94	3.44
11,174.0	16.90	358.10	11,169.5	-4.0	-95.7	-3.2	5.41	5.31	3.75
11,205.0	22.10	356.20	11,198.7	6.3	-96.3	7.2	16.90	16.77	-6.13
11,237.0	26.00	356.30	11,227.9	19.3	-97.1	20.2	12.19	12.19	0.31

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Ben Lilly 2 State #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3850.0usft (Precision #105)
Site:	Sec 2, T21-S, R33-E	**MD Reference:**	WELL @ 3850.0usft (Precision #105)
Well:	Ben Lilly 2 State #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**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)
11,269.0	28.20	357.60	11,256.4	33.9	-97.9	34.7	7.12	6.88	4.06
11,301.0	30.10	358.80	11,284.4	49.4	-98.4	50.3	6.21	5.94	3.75
11,333.0	33.00	359.50	11,311.6	66.2	-98.6	67.1	9.13	9.06	2.19
11,365.0	38.50	1.60	11,337.6	84.9	-98.4	85.8	17.61	17.19	6.56
11,396.0	43.10	0.70	11,361.1	105.1	-98.0	106.0	14.96	14.84	-2.90
11,428.0	45.40	359.50	11,384.0	127.4	-98.0	128.3	7.65	7.19	-3.75
11,460.0	47.80	359.20	11,406.0	150.7	-98.3	151.6	7.53	7.50	-0.94
11,492.0	50.40	359.70	11,426.9	174.9	-98.5	175.8	8.21	8.13	1.56
11,523.0	53.00	0.00	11,446.1	199.2	-98.5	200.1	8.42	8.39	0.97
11,555.0	55.30	0.40	11,464.9	225.1	-98.5	226.0	7.26	7.19	1.25
11,587.0	58.00	0.90	11,482.5	251.9	-98.1	252.7	8.54	8.44	1.56
11,619.0	62.10	2.50	11,498.4	279.6	-97.3	280.4	13.52	12.81	5.00
11,651.0	68.00	3.70	11,511.9	308.5	-95.7	309.4	18.75	18.44	3.75
11,683.0	71.20	3.90	11,523.1	338.4	-93.8	339.3	10.02	10.00	0.63
11,714.0	71.20	2.00	11,533.1	367.7	-92.2	368.6	5.80	0.00	-6.13
11,746.0	72.70	358.50	11,543.0	398.2	-92.1	399.0	11.41	4.69	-10.94
11,778.0	75.70	358.60	11,551.7	428.9	-92.9	429.8	9.38	9.38	0.31
11,810.0	80.50	359.50	11,558.3	460.2	-93.4	461.1	15.25	15.00	2.81
11,841.0	83.10	358.80	11,562.7	490.9	-93.9	491.8	8.68	8.39	-2.26
11,935.0	90.80	357.90	11,567.7	584.7	-96.6	585.5	8.25	8.19	-0.96
12,030.0	91.40	359.30	11,565.9	679.6	-98.9	680.5	1.60	0.63	1.47
12,125.0	90.80	0.00	11,564.1	774.6	-99.5	775.5	0.97	-0.63	0.74
12,221.0	90.10	359.00	11,563.3	870.6	-100.3	871.5	1.27	-0.73	-1.04
12,316.0	90.40	0.70	11,562.9	965.6	-100.6	966.5	1.82	0.32	1.79
12,412.0	90.70	0.60	11,562.0	1,061.6	-99.5	1,062.4	0.33	0.31	-0.10
12,507.0	90.80	0.60	11,560.7	1,156.6	-98.5	1,157.4	0.11	0.11	0.00
12,602.0	90.90	0.40	11,559.3	1,251.6	-97.6	1,252.4	0.24	0.11	-0.21
12,698.0	91.20	0.70	11,557.6	1,347.5	-96.7	1,348.4	0.44	0.31	0.31
12,793.0	90.50	359.70	11,556.1	1,442.5	-96.4	1,443.3	1.28	-0.74	-1.05
12,889.0	91.30	0.00	11,554.6	1,538.5	-96.6	1,539.3	0.89	0.83	0.31
12,985.0	92.40	359.70	11,551.5	1,634.5	-96.9	1,635.3	1.19	1.15	-0.31
13,080.0	91.80	0.20	11,548.1	1,729.4	-97.0	1,730.2	0.82	-0.63	0.53
13,176.0	91.20	0.00	11,545.5	1,825.4	-96.8	1,826.2	0.66	-0.63	-0.21
13,272.0	91.40	359.70	11,543.4	1,921.3	-97.1	1,922.1	0.38	0.21	-0.31
13,367.0	92.10	0.40	11,540.5	2,016.3	-97.0	2,017.1	1.04	0.74	0.74
13,462.0	91.50	0.60	11,537.5	2,111.2	-96.1	2,112.0	0.67	-0.63	0.21
13,557.0	90.30	0.70	11,536.0	2,206.2	-95.1	2,207.0	1.27	-1.26	0.11
13,653.0	91.20	0.60	11,534.7	2,302.2	-94.0	2,303.0	0.94	0.94	-0.10
13,749.0	90.10	0.60	11,533.6	2,398.2	-93.0	2,398.9	1.15	-1.15	0.00
13,844.0	90.60	0.40	11,533.1	2,493.2	-92.1	2,493.9	0.57	0.53	-0.21
13,940.0	90.00	1.40	11,532.6	2,589.2	-90.6	2,589.9	1.21	-0.63	1.04
14,035.0	91.40	1.60	11,531.4	2,684.1	-88.2	2,684.8	1.49	1.47	0.21
14,130.0	89.90	2.10	11,530.3	2,779.1	-85.1	2,779.7	1.66	-1.58	0.53

Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well Ben Lilly 2 State #3H
Project:	Lea County, NM	TVD Reference:	WELL @ 3850.0usft (Precision #105)
Site:	Sec 2, T21 S, R33 E	MD Reference:	WELL @ 3850.0usft (Precision #105)
Well:	Ben Lilly 2 State #3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
14,225.0	92.10	2.50	11,528.7	2,874.0	-81.3	2,874.6	2.35	2.32	0.42
14,321.0	90.20	1.30	11,526.7	2,969.9	-78.1	2,970.5	2.34	-1.98	-1.25
14,416.0	90.80	1.10	11,525.9	3,064.9	-76.1	3,065.4	0.67	0.63	-0.21
14,606.0	91.80	1.80	11,521.6	3,254.8	-71.3	3,255.3	0.64	0.53	0.37
14,702.0	92.20	0.00	11,518.2	3,350.7	-69.8	3,351.2	1.92	0.42	-1.88
14,797.0	90.00	0.60	11,516.4	3,445.7	-69.3	3,446.1	2.40	-2.32	0.63
14,893.0	90.20	359.20	11,516.3	3,541.7	-69.5	3,542.1	1.47	0.21	-1.46
14,988.0	90.80	358.60	11,515.4	3,636.6	-71.3	3,637.1	0.89	0.63	-0.63
15,083.0	89.90	0.60	11,514.8	3,731.6	-71.9	3,732.1	2.31	-0.95	2.11
15,179.0	90.10	359.90	11,514.8	3,827.6	-71.5	3,828.1	0.76	0.21	-0.73
15,274.0	89.80	358.80	11,514.9	3,922.6	-72.6	3,923.1	1.20	-0.32	-1.16
15,369.0	90.80	0.20	11,514.4	4,017.6	-73.4	4,018.1	1.81	1.05	1.47
15,465.0	91.30	0.60	11,512.7	4,113.6	-72.8	4,114.1	0.67	0.52	0.42
15,560.0	91.70	359.30	11,510.2	4,208.5	-72.8	4,209.0	1.43	0.42	-1.37
15,655.0	91.70	359.90	11,507.4	4,303.5	-73.5	4,304.0	0.63	0.00	0.63
15,751.0	91.80	359.20	11,504.4	4,399.5	-74.3	4,399.9	0.74	0.10	-0.73
15,846.0	91.90	359.00	11,501.4	4,494.4	-75.8	4,494.9	0.24	0.11	-0.21
15,941.0	92.00	357.90	11,498.1	4,589.3	-78.3	4,589.8	1.16	0.11	-1.16
16,133.0	92.10	358.30	11,491.3	4,781.1	-84.7	4,781.6	0.21	0.05	0.21
16,228.0	91.90	357.80	11,488.0	4,876.0	-87.9	4,876.6	0.57	-0.21	-0.53
16,324.0	92.50	358.30	11,484.3	4,971.8	-91.2	4,972.5	0.81	0.63	0.52
16,419.0	90.90	359.30	11,481.5	5,066.8	-93.2	5,067.4	1.99	-1.68	1.05
16,514.0	89.30	1.30	11,481.3	5,161.8	-92.7	5,162.4	2.70	-1.68	2.11
16,610.0	89.10	1.30	11,482.6	5,257.7	-90.5	5,258.3	0.21	-0.21	0.00
16,705.0	88.70	0.90	11,484.4	5,352.7	-88.7	5,353.3	0.60	-0.42	-0.42
16,801.0	89.40	0.90	11,486.0	5,448.7	-87.2	5,449.2	0.73	0.73	0.00
16,894.0	90.20	0.20	11,486.4	5,541.7	-86.3	5,542.2	1.14	0.86	-0.75
16,990.0	90.90	359.90	11,485.4	5,637.7	-86.2	5,638.2	0.79	0.73	-0.31
17,085.0	90.80	359.20	11,484.0	5,732.6	-86.9	5,733.2	0.74	-0.11	-0.74
17,181.0	91.40	357.60	11,482.2	5,828.6	-89.6	5,829.2	1.78	0.63	-1.67
17,276.0	91.60	0.90	11,479.7	5,923.5	-90.9	5,924.1	3.48	0.21	3.47
17,371.0	91.70	0.70	11,477.0	6,018.5	-89.5	6,019.0	0.24	0.11	-0.21
17,467.0	91.70	0.90	11,474.1	6,114.4	-88.2	6,115.0	0.21	0.00	0.21
17,561.0	91.90	0.90	11,471.2	6,208.4	-86.7	6,208.9	0.21	0.21	0.00
17,657.0	92.10	0.90	11,467.8	6,304.3	-85.2	6,304.8	0.21	0.21	0.00
17,752.0	92.80	0.20	11,463.8	6,399.2	-84.3	6,399.7	1.04	0.74	-0.74
17,847.0	93.70	0.70	11,458.4	6,494.0	-83.6	6,494.5	1.08	0.95	0.53
17,943.0	94.20	0.60	11,451.8	6,589.8	-82.5	6,590.3	0.53	0.52	-0.10
18,038.0	94.10	0.20	11,444.9	6,684.6	-81.8	6,685.0	0.43	-0.11	-0.42
18,134.0	92.20	1.30	11,439.6	6,780.4	-80.5	6,780.9	2.29	-1.98	1.15
18,229.0	89.80	0.90	11,438.0	6,875.4	-78.7	6,875.8	2.56	-2.53	-0.42
18,324.0	90.50	1.10	11,437.7	6,970.3	-77.1	6,970.8	0.77	0.74	0.21
18,419.0	90.60	0.90	11,436.8	7,065.3	-75.4	7,065.7	0.24	0.11	-0.21

Company:	COG Operating, LLC	**Local Co-ordinate Reference:**	Well Ben Lilly 2 State #3H
Project:	Lea County, NM	**TVD Reference:**	WELL @ 3850.0usft (Precision #105)
Site:	Sec 2, T21-S, R33-E	**MD Reference:**	WELL @ 3850.0usft (Precision #105)
Well:	Ben Lilly 2 State #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**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)
18,515.0	91.30	0.70	11,435.2	7,161.3	-74.1	7,161.7	0.76	0.73	-0.21
18,560.0	92.00	0.60	11,433.9	7,206.3	-73.6	7,206.7	1.57	1.56	-0.22
TD @ 18650' MD / 11430.8' TVD									
18,650.0	92.00	0.60	11,430.8	7,296.2	-72.6	7,296.6	0.00	0.00	0.00

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,950.0	10,948.5	-26.1	-90.1	Tie In @ 10950' MD / 10949' TVD
18,650.0	11,430.8	7,296.2	-72.6	TD @ 18650' MD / 11430.8' TVD

Checked By: _____ Approved By: _____ Date: _____