

Results of Directional Survey

API number:	30-025-40404		
OGRID:		Operator:	COG OPERATING LLC
		Property:	WILD COBRA 1 STATE # 1H

surface	ULSTR:	E	01	T 19S	R 34E
				1815 FNL	460 FWL

BH Loc	ULSTR:	H	01	T 19S	R 34E
14740 MD		10687.5	TVD	2135 FNL	467 FEL
					4813 FWL

Top Perf/OH	ULSTR:	E	01	T 19S	R 34E
10804 MD		10643.5	TVD	1887 FNL	889 FWL

Bot Perf/OH	ULSTR:	H	01	T 19S	R 34E
14701 MD		10687.2	TVD	2134 FNL	506 FEL
					4774 FWL

	MD	N/S	E/W	VD
	10772	-71.60	398.20	10634.4
TOP PERFS/OH	10804	-72.30	428.90	10643.50
	10804	-72.30	428.90	10643.50
	14663	-317.20	4275.70	10686.90
BOT PERFS/OH	14701	-318.52	4313.65	10687.19
	14741	-319.90	4353.60	10687.50

NEXT TO LAST	14663	-317.20	4275.70	10686.90
LAST READING	14741	-319.90	4353.60	10687.50
TD	14740	-319.87	4352.60	10687.49

Surface Location	1815 FN	460 FW
Projected BHL	2135 FN	4813 FW
Location of		
Top Perfs/OH	1887 FN	889 FW
Bottom Perfs/OH	2134 FN	4774 FW

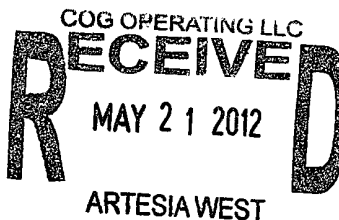
SUMMARY of Subsurface Locations

Surface Location	E-01-19S-34E	1815 FN	460 FW	Vert. Depth
Top Perfs/OH	E-01-19S-34E	1887 FN	889 FW	10643.50
Bottom Perfs/OH	H-01-19S-34E	2134 FN	4774 FW	10687.19
Projected TD	H-01-19S-34E	2135 FN	4813 FW	10687.49

**McVAY DRILLING COMPANY**

P.O. Box 2450
 Hobbs, New Mexico 88241
 (575) 397-3311
 FAX: 39-DRILL

Well Name and Num: Wild Cobra 1 State 2H
 Location: Sec. 1, T19S, R34E
 Operator: COG
 Drilling Contractor: McVay Drilling Company



SUR: E-01-19s-34e, 1815/N & 460/W
 BHL: H-1-19s-34e, 2135/N & 4813/W
 API # 30-025-40404

The undersigned certifies that he is an authorized representative of the drilling contractor who drilled the above described well and that he has conducted deviation tests and obtained the following results:

<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>	<u>Degrees @</u>	<u>Depth</u>
1.12	471	1.96	7541	88.99	11723
0.80	959	0.90	8047	87.76	11979
1.44	1459	0.53	8554	90.84	12286
0.73	1685	1.17	9028	88.37	12487
0.93	2162	1.22	9501	89.69	13237
0.69	2636	1.36	9996	92.68	13515
2.36	3110	1.32	10130	90.04	13699
2.78	3205	0.79	10160	88.81	13884
1.30	3500	5.45	10284	88.61	14069
1.98	3971	6.60	10315	90.40	14254
1.23	4159	19.08	10372	89.60	14663
0.90	4635	24.27	10437		
1.88	5220	40.27	10530		
1.86	5580	59.79	10647		
1.54	6054	66.13	10709		
1.27	6559	80.28	10867		
1.22	7065	86.35	11089		

HOBBS OCD**JUN 26 2012****RECEIVED**

By: *Harold Crum*

Subscribed and sworn to before me this 15th day of May, 2012

Tina Flemens
 Notary Public, Lea County, New Mexico



HOBBS OCD
JUN 26 2012
RECEIVED

COG OPERATING

Scharb

Lea County, NM

Wild Cobra 1 State #2H

VH - Job #32K0412484

SUR: E-01-19s-34e, 1815/N & 460/W
BHL: H-1-19s-34e, 2135/N & 4813/W
API # 30-025-40404

Survey: Gyro

SDI Standard Survey Report

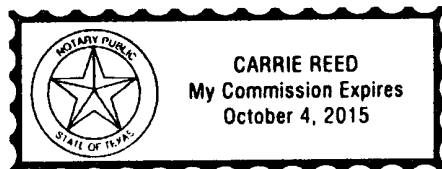
This survey is correct to the best of my knowledge and is supported by actual field data.

Richardson

Notarized this date 14th of May, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Wild Cobra 1 State #2H
Project:	Scharb	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Wild Cobra 1 State #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0412484	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0412484	Database:	EDM-Regulatory

Project	Scharb		
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		Lea County, NM			
Site Position:		Northing:	612,439 34 usft	Latitude:	32° 40' 51 600 N
From:	Lat/Long	Easting:	753,020 58 usft	Longitude:	103° 30' 39 600 W
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 44 °

Well	Wild Cobra 1 State #2H, Directional (Pathfinder)					
Well Position	+N/-S	0 00 usft	Northing:	616,411 04 usft	Latitude:	32° 41' 31 133 N
	+E/-W	0 00 usft	Easting:	749,945 34 usft	Longitude:	103° 31' 15 222 W
Position Uncertainty		0 00 usft	Wellhead Elevation:	usft	Ground Level:	0 00 usft

Wellbore	VH - Job #32K0412484				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/28/12	7 49	60 61	48,843

Design	VH - Job #32K0412484			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 00	0 00	0 00	94 28

Survey Program		Date	05/11/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 00	10,098 00	Gyro (VH - Job #32K0412484)	Keeper	Keeper Gyro	

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
100 00	0 39	211 64	100 00	-0 29	-0 18	211 64	0 34
200 00	0 81	218 29	199 99	-1 13	-0 80	215 03	1 39
300 00	0 82	230 77	299 98	-2 14	-1 79	219 85	2 79
400 00	0 72	230 22	399 97	-3 00	-2 82	223 31	4 12
500 00	0 29	198 62	499 97	-3 64	-3 39	222 96	4 97
600 00	0 49	144 67	599 97	-4 23	-3 22	217 32	5 31
700 00	0 83	143 31	699 96	-5 16	-2 54	206 24	5 75
800 00	1 03	151 60	799 95	-6 53	-1 68	194 44	6 74
900 00	1 05	149 43	899 93	-8 11	-0 79	185 55	8 15
1,000 00	1 23	154 61	999 91	-9 87	0 14	179 20	9 87
1,100 00	1 36	159 23	1,099 89	-11 95	1 02	175 12	11 99

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Wild Cobra 1 State #2H
Project:	Scharb	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Wild Cobra 1 State #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0412484	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0412484	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200 00	1 43	162 06	1,199 86	-14 24	1 82	172 70	14 36
1,300 00	1 43	164 86	1,299 83	-16 63	2 53	171 34	16 83
1,400 00	1 40	159 11	1,399 80	-18 98	3 30	170 15	19 26
1,500 00	1 30	154 78	1,499 77	-21 15	4 22	168 73	21 56
1,600 00	1 24	153 76	1,599 74	-23 14	5 18	167 39	23 72
1,700 00	1 17	158 73	1,699 72	-25 07	6 03	166 48	25 78
1,800 00	1 10	167 12	1,799 70	-26 95	6 61	166 22	27 75
1,900 00	0 88	169 43	1,899 69	-28 64	6 96	166 33	29 48
2,000 00	0 87	140 77	1,999 68	-29 99	7 59	165 80	30 93
2,100 00	1 03	124 81	2,099 66	-31 09	8 80	164 19	32 31
2,200 00	1 04	134 92	2,199 65	-32 24	10 18	162 47	33 81
2,300 00	0 95	134 22	2,299 63	-33 46	11 42	161 15	35 36
2,400 00	1 04	132 28	2,399 62	-34 65	12 69	159 89	36 90
2,500 00	1 05	119 44	2,499 60	-35 71	14 16	158 38	38 41
2,600 00	1 06	112 98	2,599 58	-36 52	15 81	156 60	39 79
2,700 00	1 14	98 46	2,699 56	-37 03	17 64	154 53	41 02
2,800 00	1 66	85 87	2,799 53	-37 07	20 07	151 57	42 15
2,900 00	2 51	84 07	2,899 47	-36 74	23 69	147 18	43 72
3,000 00	2 65	80 61	2,999 37	-36 14	28 15	142 08	45 81
3,100 00	2 44	79 65	3,099 27	-35 38	32 53	137 40	48 06
3,200 00	2 58	71 84	3,199 17	-34 29	36 76	133 01	50 27
3,300 00	2 12	69 25	3,299 09	-32 94	40 63	129 03	52 30
3,400 00	1 81	72 07	3,399 03	-31 79	43 86	125 94	54 17
3,500 00	1 64	76 90	3,498 98	-30 98	46 76	123 53	56 09
3,600 00	1 00	90 59	3,598 96	-30 67	49 02	122 03	57 82
3,700 00	0 98	95 68	3,698 94	-30 76	50 75	121 22	59 34
3,800 00	0 99	94 07	3,798 93	-30 91	52 46	120 51	60 89
3,900 00	1 18	69 04	3,898 91	-30 60	54 28	119 41	62 31
4,000 00	0 99	60 17	3,998 89	-29 80	55 99	118 03	63 43
4,100 00	0 88	37 76	4,098 88	-28 77	57 21	116 69	64 04
4,200 00	0 89	33 94	4,198 87	-27 52	58 12	115 34	64 30
4,300 00	1 00	63 10	4,298 85	-26 48	59 33	114 05	64 97
4,400 00	0 98	63 50	4,398 84	-25 70	60 87	112 89	66 07
4,500 00	1 08	71 99	4,498 82	-25 03	62 53	111 81	67 35
4,600 00	1 36	92 65	4,598 80	-24 79	64 61	110 99	69 21
4,700 00	1 61	105 28	4,698 77	-25 22	67 16	110 58	71 73
4,800 00	1 71	112 25	4,798 72	-26 15	69 89	110 51	74 62
4,900 00	1 78	124 66	4,898 68	-27 60	72 55	110 83	77 62
5,000 00	1 81	126 72	4,998 63	-29 43	75 09	111 40	80 65
5,100 00	1 74	131 46	5,098 58	-31 38	77 50	112 04	83 61
5,200 00	1 98	128 35	5,198 53	-33 45	79 99	112 70	86 70
5,300 00	2 06	132 81	5,298 47	-35 75	82 66	113 39	90 06
5,400 00	2 04	133 15	5,398 40	-38 18	85 28	114 12	93 44
5,500 00	1 84	134 38	5,498 34	-40 52	87 73	114 79	96 63

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Wild Cobra 1 State #2H
Project:	Scharb	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Wild Cobra 1 State #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0412484	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0412484	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600 00	1 53	130 09	5,598 30	-42 51	89 89	115 31	99 44
5,700 00	1 34	127 62	5,698 27	-44 08	91 84	115 64	101 87
5,800 00	1 07	122 19	5,798 25	-45 29	93 56	115 83	103 94
5,900 00	0 99	120 78	5,898 23	-46 23	95 09	115 93	105 73
6,000 00	1 25	116 60	5,998 21	-47 16	96 81	115 97	107 68
6,100 00	1 17	115 24	6,098 19	-48 09	98 71	115 97	109 80
6,200 00	1 35	123 48	6,198 17	-49 17	100 61	116 05	111 99
6,300 00	1 30	129 13	6,298 14	-50 54	102 48	116 25	114 26
6,400 00	1 40	138 26	6,398 11	-52 16	104 17	116 60	116 50
6,500 00	1 36	152 95	6,498 08	-54 13	105 52	117 16	118 60
6,600 00	1 33	157 62	6,598 06	-56 26	106 50	117 85	120 45
6,700 00	1 09	156 93	6,698 03	-58 21	107 32	118 48	122 09
6,800 00	0 98	155 82	6,798 02	-59 87	108 04	118 99	123 52
6,900 00	0 84	175 75	6,898 00	-61 38	108 45	119 51	124 61
7,000 00	0 89	176 28	6,997 99	-62 88	108 55	120 08	125 45
7,100 00	0 82	181 05	7,097 98	-64 37	108 59	120 66	126 23
7,200 00	0 84	165 04	7,197 97	-65 80	108 76	121 17	127 12
7,300 00	0 65	160 61	7,297 96	-67 04	109 14	121 56	128 09
7,400 00	0 62	133 16	7,397 96	-67 95	109 72	121 77	129 06
7,500 00	0 74	127 24	7,497 95	-68 71	110 63	121 84	130 23
7,600 00	0 73	123 10	7,597 94	-69 45	111 68	121 87	131 51
7,700 00	0 63	116 54	7,697 93	-70 04	112 71	121 86	132 70
7,800 00	0 66	96 77	7,797 93	-70 35	113 77	121 73	133 76
7,900 00	0 84	74 46	7,897 92	-70 22	115 05	121 40	134 79
8,000 00	1 01	72 60	7,997 91	-69 76	116 59	120 89	135 87
8,100 00	0 85	69 26	8,097 89	-69 24	118 13	120 38	136 92
8,200 00	0 95	77 29	8,197 88	-68 79	119 63	119 90	138 00
8,300 00	0 71	68 36	8,297 87	-68 38	121 02	119 47	139 00
8,400 00	0 60	89 14	8,397 86	-68 15	122 12	119 16	139 84
8,500 00	0 56	118 29	8,497 86	-68 37	123 07	119 05	140 79
8,600 00	0 64	121 23	8,597 85	-68 89	123 98	119 06	141 83
8,700 00	1 21	108 87	8,697 84	-69 52	125 45	118 99	143 43
8,800 00	0 11	170 65	8,797 83	-69 96	126 47	118 95	144 53
8,900 00	0 54	287 76	8,897 83	-69 91	126 04	119 02	144 13
9,000 00	1 03	299 84	8,997 82	-69 32	124 81	119 05	142 76
9,100 00	1 00	299 10	9,097 81	-68 45	123 27	119 04	140 99
9,200 00	0 99	304 65	9,197 79	-67 53	121 79	119 01	139 26
9,300 00	0 88	303 62	9,297 78	-66 61	120 44	118 95	137 64
9,400 00	0 57	294 23	9,397 77	-65 98	119 35	118 94	136 38
9,500 00	0 50	274 90	9,497 77	-65 74	118 46	119 03	135 48
9,600 00	0 60	291 27	9,597 76	-65 52	117 54	119 14	134 56
9,700 00	0 86	277 54	9,697 75	-65 23	116 31	119 28	133 35
9,800 00	0 92	271 36	9,797 74	-65 11	114 76	119 57	131 94
9,900 00	0 96	271 78	9,897 73	-65 06	113 12	119 91	130 50

Scientific Drilling International, Inc.

SDI Standard Survey Report



Company:	COG OPERATING	Local Co-ordinate Reference:	Well Wild Cobra 1 State #2H
Project:	Scharb	TVD Reference:	WELL @ 0 00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0 00usft (Original Well Elev)
Well:	Wild Cobra 1 State #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0412484	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0412484	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
10,000 00	1 16	283 47	9,997 71	-64 80	111 30	120 21	128 79
10,098 00	1 06	278 40	10,095 69	-64 44	109 44	120 49	127 00

COG OPERATING

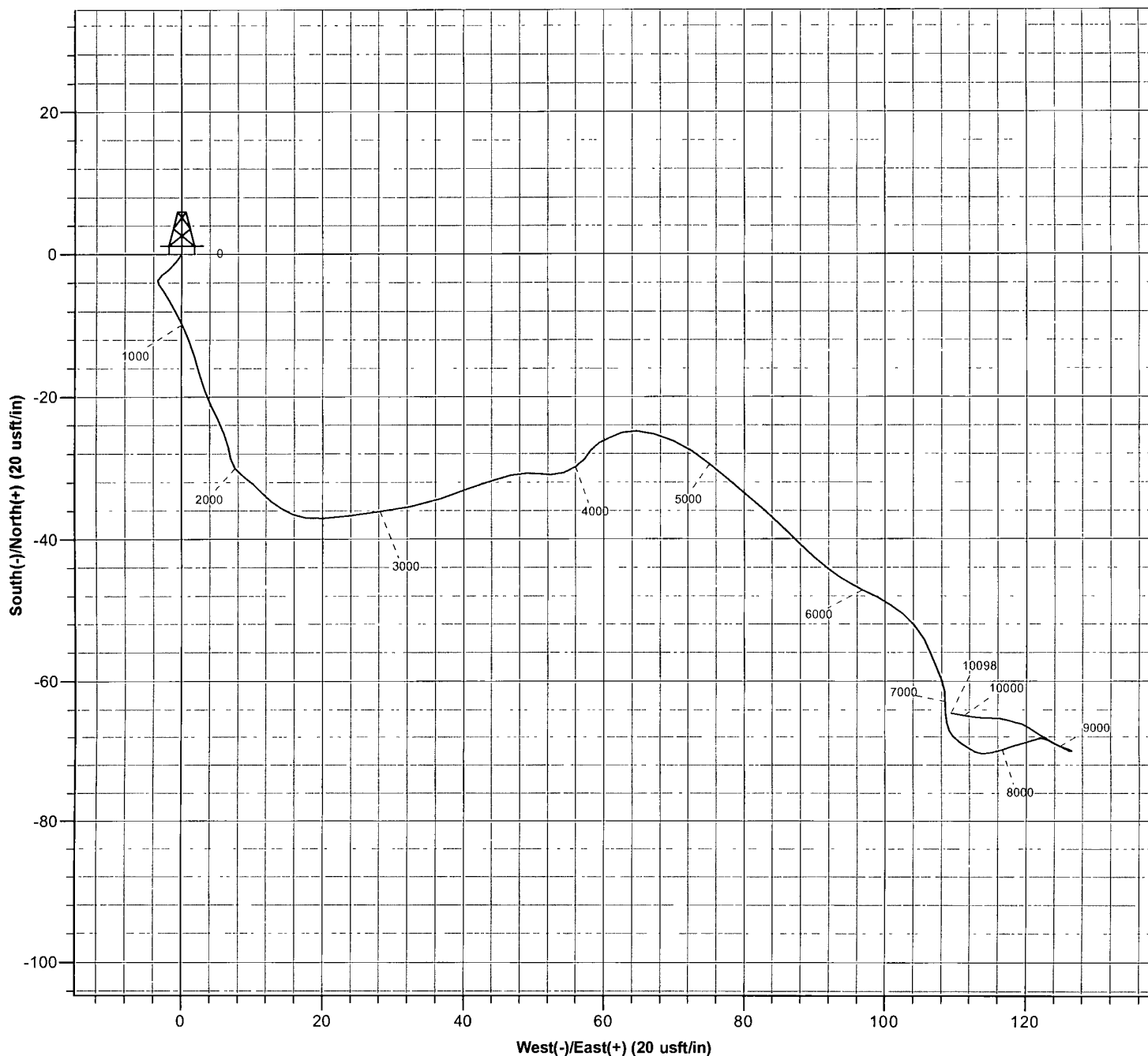


Azimuths to Grd North
True North -0.44°
Magnetic North 7.05°
Magnetic Field
Strength 48842.8 nT
Dip Angle 60.61°
Date 04/28/2012
Model IGRF2010

WELL DETAILS: Wild Cobra 1 State #2H

Ground Level: 0.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	616411.04	749945.3432	41° 31.133' N	103° 31' 15.222' W	



Project: Scharb
Site: Lea County, NM
Well: Wild Cobra 1 State #2H
Wellbore: VH - Job #32K0412484
Design: VH - Job #32K0412484

SITE DETAILS: Lea County, NM
Site Centre Latitude: 32° 40' 51.600 N
Longitude: 103° 30' 39.600 W

Positional Uncertainty: 0.00
Convergence: 0.44
Local North: Grid



COG Operating LLC

Lea County(NAD83)

Wild Cobra 1 State

#2H

OH

Design: OH

Pathfinder X & Y Report

08 May, 2012

SUR: E-01-19s-34e, 1815/N & 460/W
BHL: H-1-19s-34e, 2135/N & 4813/W
API # 30-025-40404

HOBBS OCD

JUN 26 2012

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PATHFINDER®

A Schlumberger Company



Pathfinder
Pathfinder X & Y Report

Company: COG Operating LLC		Local Co-ordinate Reference:		Well #2H	
Project: Lea County(NAD83)		TVD Reference:		KB = 17 @ 3983.1 usft (Original Well Elev)	
Site: Wild Cobra 1 State		MD Reference:		KB = 17 @ 3983.1 usft (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(NAD83)					
Map System: US State Plane 1983					
Geo Datum: North American Datum 1983					
Map Zone: New Mexico Eastern Zone					
System Datum: Mean Sea Level					
Site Wild Cobra 1 State					
Site Position:		Northings:		Latitude:	
From: Map		616,429.330 usft		32.692	
Position Uncertainty: 0.0 usft		Easting: 791,278.170 usft		Longitude: -103.521	
		Slot Radius: 13-3/16 "		Grid Convergence: 0.44 °	
Well #2H					
Well Position		Northings:		Latitude:	
+N/-S 0.0 usft		616,429.330 usft		32.692	
+E/-W 0.0 usft		791,278.170 usft		Longitude: -103.521	
Position Uncertainty 0.0 usft		Wellhead Elevation: usft		Ground Level: 3,966.1 usft	
Wellbore OH					
Magnetics		Model Name		Sample Date	
		IGRF200510		1/12/2012	
		Declination (°)		Dip Angle (°)	
		7.52		60.64	
				Field Strength (nT)	
				48,879	
Design OH					
Audit Notes:					
Version: 1.0		Phase: ACTUAL		Tie On Depth: 0.0	
		Depth From (TVD) (usft)		+E/-W (usft)	
		0.0		0.0	
Vertical Section:		+N/-S (usft)		Direction (°)	
		0.0		94.28	



Pathfinder
Pathfinder X & Y Report



Company:	COG Operating LLC
Project:	Lea County(NAD83)
Site:	Wild Cobra 1 State
Well:	#2H
Wellbore:	OH
Design:	OH

Local Co-ordinate Reference:	Well #2H
TVD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
MD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
North Reference:	Grid
Survey Calculation Method:	Minimum Curvature
Database:	EDM 5000.1 Single User Db

Survey Program		Date	5/8/2012
From (usft)	To (usft)	Survey (Wellbore)	
100.0	10,098.0	Gyro #1 (OH)	
10,130.0	14,741.0	MWD #2 (OH)	
		Tool Name	Description
		NS-GYRO-MS	North sensing gyrocompassing m/s
		MWD	MWD - Standard

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.00	-3,983.1	0.0	0.0	0.0	0.00	616,429.33	791,278.17
100.0	0.39	211.64	100.0	-3,883.1	-0.3	-0.2	-0.2	0.39	616,429.04	791,277.99
200.0	0.81	218.29	200.0	-3,783.1	-1.1	-0.8	-0.7	0.43	616,428.20	791,277.37
300.0	0.82	230.77	300.0	-3,683.1	-2.1	-1.8	-1.6	0.18	616,427.19	791,276.38
400.0	0.72	230.22	400.0	-3,583.1	-3.0	-2.8	-2.6	0.10	616,426.33	791,275.35
500.0	0.29	198.62	500.0	-3,483.1	-3.6	-3.4	-3.1	0.50	616,425.69	791,274.78
600.0	0.49	144.67	600.0	-3,383.1	-4.2	-3.2	-2.9	0.40	616,425.10	791,274.95
700.0	0.83	143.31	700.0	-3,283.1	-5.2	-2.5	-2.2	0.34	616,424.17	791,275.63
800.0	1.03	151.60	799.9	-3,183.2	-6.5	-1.7	-1.2	0.24	616,422.80	791,276.49
900.0	1.05	149.43	899.9	-3,083.2	-8.1	-0.8	-0.2	0.04	616,421.22	791,277.38
1,000.0	1.23	154.61	999.9	-2,983.2	-9.9	0.1	0.9	0.21	616,419.46	791,278.31
1,100.0	1.36	159.23	1,099.9	-2,883.2	-11.9	1.0	1.9	0.17	616,417.38	791,279.19
1,200.0	1.43	162.06	1,199.9	-2,783.2	-14.2	1.8	2.9	0.10	616,415.09	791,279.99
1,300.0	1.43	164.86	1,299.8	-2,683.3	-16.6	2.5	3.8	0.07	616,412.70	791,280.70
1,400.0	1.40	159.11	1,399.8	-2,583.3	-19.0	3.3	4.7	0.15	616,410.35	791,281.47
1,500.0	1.30	154.78	1,499.8	-2,483.3	-21.1	4.2	5.8	0.14	616,408.18	791,282.39
1,600.0	1.24	153.76	1,599.7	-2,383.4	-23.1	5.2	6.9	0.06	616,406.19	791,283.35
1,700.0	1.17	158.73	1,699.7	-2,283.4	-25.1	6.0	7.9	0.13	616,404.26	791,284.20
1,800.0	1.10	167.12	1,799.7	-2,183.4	-27.0	6.6	8.6	0.18	616,402.38	791,284.78
1,900.0	0.88	169.43	1,899.7	-2,083.4	-28.6	7.0	9.1	0.22	616,400.69	791,285.13
2,000.0	0.87	140.77	1,999.7	-1,983.4	-30.0	7.6	9.8	0.43	616,399.34	791,285.76



Pathfinder
Pathfinder X & Y Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County(NAD83)	TVD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
Site:	Wild Cobra 1 State	MD Reference:	KB = 17 @ 3983.1usft (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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,100.0	1.03	124.81	2,099.7	-1,883.4	-31.1	8.8	11.1	0.31	616,398.24	791,286.97
2,200.0	1.04	134.92	2,199.6	-1,783.5	-32.2	10.2	12.6	0.18	616,397.09	791,288.35
2,300.0	0.95	134.22	2,299.6	-1,683.5	-33.5	11.4	13.9	0.09	616,395.87	791,289.59
2,400.0	1.04	132.28	2,399.6	-1,583.5	-34.6	12.7	15.2	0.10	616,394.68	791,290.86
2,500.0	1.05	119.44	2,499.6	-1,483.5	-35.7	14.2	16.8	0.23	616,393.62	791,292.33
2,600.0	1.06	112.98	2,599.6	-1,383.5	-36.5	15.8	18.5	0.12	616,392.81	791,293.98
2,700.0	1.14	98.46	2,699.6	-1,283.5	-37.0	17.6	20.4	0.29	616,392.30	791,295.81
2,800.0	1.66	85.87	2,799.5	-1,183.6	-37.1	20.1	22.8	0.60	616,392.26	791,298.24
2,900.0	2.51	84.07	2,899.5	-1,083.6	-36.7	23.7	26.4	0.85	616,392.69	791,301.86
3,000.0	2.65	80.61	2,999.4	-983.7	-36.1	28.2	30.8	0.21	616,393.19	791,306.32
3,100.0	2.44	79.65	3,099.3	-883.8	-35.4	32.5	35.1	0.21	616,393.95	791,310.70
3,200.0	2.58	71.84	3,199.2	-783.9	-34.3	36.8	39.2	0.37	616,395.04	791,314.93
3,300.0	2.12	69.25	3,299.1	-684.0	-32.9	40.6	43.0	0.47	616,396.39	791,318.80
3,400.0	1.81	72.07	3,399.0	-584.1	-31.8	43.9	46.1	0.32	616,397.54	791,322.03
3,500.0	1.64	76.90	3,499.0	-484.1	-31.0	46.8	48.9	0.22	616,398.35	791,324.93
3,600.0	1.00	90.59	3,599.0	-384.1	-30.7	49.0	51.2	0.71	616,398.66	791,327.19
3,700.0	0.98	95.68	3,698.9	-284.2	-30.8	50.7	52.9	0.09	616,398.57	791,328.92
3,800.0	0.99	94.07	3,798.9	-184.2	-30.9	52.5	54.6	0.03	616,398.42	791,330.63
3,900.0	1.18	69.04	3,898.9	-84.2	-30.6	54.3	56.4	0.51	616,398.73	791,332.45
4,000.0	0.99	60.17	3,998.9	15.8	-29.8	56.0	58.1	0.25	616,399.53	791,334.16
4,100.0	0.88	37.76	4,098.9	115.8	-28.8	57.2	59.2	0.38	616,400.56	791,335.38
4,200.0	0.89	33.94	4,198.9	215.8	-27.5	58.1	60.0	0.06	616,401.81	791,336.29
4,300.0	1.00	63.10	4,298.9	315.8	-26.5	59.3	61.1	0.49	616,402.85	791,337.50
4,400.0	0.98	63.50	4,398.8	415.7	-25.7	60.9	62.6	0.02	616,403.63	791,339.04
4,500.0	1.08	71.99	4,498.8	515.7	-25.0	62.5	64.2	0.18	616,404.30	791,340.70
4,600.0	1.36	92.65	4,598.8	615.7	-24.8	64.6	66.3	0.52	616,404.54	791,342.78
4,700.0	1.61	105.28	4,698.8	715.7	-25.2	67.2	68.8	0.41	616,404.11	791,345.33



Pathfinder
Pathfinder X & Y Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County(NAD83)	TVD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
Site:	Wild Cobra 1 State	MD Reference:	KB = 17 @ 3983.1usft (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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D/Leg (°/100usft)	Northing (usft)	Easting (usft)
4,800.0	1.71	112.25	4,798.7	815.6	-26.2	69.9	71.6	0.23	616,403.18	791,348.06
4,900.0	1.78	124.66	4,898.7	915.6	-27.6	72.5	74.4	0.38	616,401.73	791,350.72
5,000.0	1.81	126.72	4,998.6	1,015.5	-29.4	75.1	77.1	0.07	616,399.90	791,353.26
5,100.0	1.74	131.46	5,098.6	1,115.5	-31.4	77.5	79.6	0.16	616,397.95	791,355.67
5,200.0	1.98	128.35	5,198.5	1,215.4	-33.5	80.0	82.3	0.26	616,395.88	791,358.16
5,300.0	2.06	132.81	5,298.5	1,315.4	-35.7	82.7	85.1	0.18	616,393.58	791,360.83
5,400.0	2.04	133.15	5,398.4	1,415.3	-38.2	85.3	87.9	0.02	616,391.15	791,363.45
5,500.0	1.84	134.38	5,498.3	1,515.2	-40.5	87.7	90.5	0.20	616,388.81	791,365.90
5,600.0	1.53	130.09	5,598.3	1,615.2	-42.5	89.9	92.8	0.33	616,386.82	791,368.06
5,700.0	1.34	127.62	5,698.3	1,715.2	-44.1	91.8	94.9	0.20	616,385.25	791,370.01
5,800.0	1.07	122.19	5,798.2	1,815.1	-45.3	93.6	96.7	0.29	616,384.04	791,371.73
5,900.0	0.99	120.78	5,898.2	1,915.1	-46.2	95.1	98.3	0.08	616,383.10	791,373.26
6,000.0	1.25	116.60	5,998.2	2,015.1	-47.2	96.8	100.1	0.27	616,382.17	791,374.98
6,100.0	1.17	115.24	6,098.2	2,115.1	-48.1	98.7	102.0	0.08	616,381.24	791,376.88
6,200.0	1.35	123.48	6,198.2	2,215.1	-49.2	100.6	104.0	0.25	616,380.16	791,378.78
6,300.0	1.30	129.13	6,298.1	2,315.0	-50.5	102.5	106.0	0.14	616,378.79	791,380.65
6,400.0	1.40	138.26	6,398.1	2,415.0	-52.2	104.2	107.8	0.24	616,377.17	791,382.34
6,500.0	1.36	152.95	6,498.1	2,515.0	-54.1	105.5	109.3	0.36	616,375.20	791,383.69
6,600.0	1.33	157.62	6,598.1	2,615.0	-56.3	106.5	110.4	0.11	616,373.07	791,384.67
6,700.0	1.09	156.93	6,698.0	2,714.9	-58.2	107.3	111.4	0.24	616,371.12	791,385.49
6,800.0	0.98	155.82	6,798.0	2,814.9	-59.9	108.0	112.2	0.11	616,369.46	791,386.21
6,900.0	0.84	175.75	6,898.0	2,914.9	-61.4	108.4	112.7	0.34	616,367.95	791,386.62
7,000.0	0.89	176.28	6,998.0	3,014.9	-62.9	108.5	112.9	0.05	616,366.45	791,386.72
7,100.0	0.82	181.05	7,098.0	3,114.9	-64.4	108.6	113.1	0.10	616,364.96	791,386.76
7,200.0	0.84	165.04	7,198.0	3,214.9	-65.8	108.8	113.4	0.23	616,363.53	791,386.93
7,300.0	0.65	160.61	7,298.0	3,314.9	-67.0	109.1	113.8	0.20	616,362.29	791,387.31
7,400.0	0.62	133.16	7,398.0	3,414.9	-67.9	109.7	114.5	0.30	616,361.38	791,387.89



Pathfinder
Pathfinder X & Y Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County(NAD83)	TVD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
Site:	Wild Cobra 1 State	MD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
Well:	#2H	North Reference:	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
7,500.0	0.74	127.24	7,498.0	3,514.9	-68.7	110.6	115.4	0.14	616,360.62	791,388.80
7,600.0	0.73	123.10	7,597.9	3,614.8	-69.4	111.7	116.5	0.05	616,359.88	791,389.85
7,700.0	0.63	116.54	7,697.9	3,714.8	-70.0	112.7	117.6	0.13	616,359.29	791,390.88
7,800.0	0.66	96.77	7,797.9	3,814.8	-70.4	113.8	118.7	0.22	616,358.98	791,391.94
7,900.0	0.84	74.46	7,897.9	3,914.8	-70.2	115.0	120.0	0.34	616,359.11	791,393.22
8,000.0	1.01	72.60	7,997.9	4,014.8	-69.8	116.6	121.5	0.17	616,359.57	791,394.76
8,100.0	0.85	69.26	8,097.9	4,114.8	-69.2	118.1	123.0	0.17	616,360.09	791,396.30
8,200.0	0.95	77.29	8,197.9	4,214.8	-68.8	119.6	124.4	0.16	616,360.54	791,397.80
8,300.0	0.71	68.36	8,297.9	4,314.8	-68.4	121.0	125.8	0.27	616,360.95	791,399.19
8,400.0	0.60	89.14	8,397.9	4,414.8	-68.1	122.1	126.9	0.26	616,361.18	791,400.29
8,500.0	0.56	118.29	8,497.9	4,514.8	-68.4	123.1	127.8	0.29	616,360.96	791,401.24
8,600.0	0.64	121.23	8,597.9	4,614.8	-68.9	124.0	128.8	0.09	616,360.44	791,402.15
8,700.0	1.21	108.87	8,697.8	4,714.7	-69.5	125.5	130.3	0.60	616,359.81	791,403.62
8,800.0	0.11	170.65	8,797.8	4,814.7	-70.0	126.5	131.3	1.16	616,359.37	791,404.64
8,900.0	0.54	287.76	8,897.8	4,914.7	-69.9	126.0	130.9	0.60	616,359.42	791,404.21
9,000.0	1.03	299.84	8,997.8	5,014.7	-69.3	124.8	129.6	0.51	616,360.01	791,402.98
9,100.0	1.00	299.10	9,097.8	5,114.7	-68.4	123.3	128.0	0.03	616,360.88	791,401.44
9,200.0	0.99	304.65	9,197.8	5,214.7	-67.5	121.8	126.5	0.10	616,361.80	791,399.96
9,300.0	0.88	303.62	9,297.8	5,314.7	-66.6	120.4	125.1	0.11	616,362.72	791,398.61
9,400.0	0.57	294.23	9,397.8	5,414.7	-66.0	119.3	123.9	0.33	616,363.35	791,397.52
9,500.0	0.50	274.90	9,497.8	5,514.7	-65.7	118.5	123.0	0.19	616,363.59	791,396.63
9,600.0	0.60	291.27	9,597.8	5,614.7	-65.5	117.5	122.1	0.19	616,363.81	791,395.71
9,700.0	0.86	277.54	9,697.8	5,714.7	-65.2	116.3	120.8	0.31	616,364.10	791,394.48
9,800.0	0.92	271.36	9,797.7	5,814.6	-65.1	114.8	119.3	0.11	616,364.22	791,392.93
9,900.0	0.96	271.78	9,897.7	5,914.6	-65.1	113.1	117.7	0.04	616,364.27	791,391.29
10,000.0	1.16	283.47	9,997.7	6,014.6	-64.8	111.3	115.8	0.29	616,364.53	791,389.47
10,098.0	1.06	278.40	10,095.7	6,112.6	-64.4	109.4	113.9	0.14	616,364.89	791,387.61



Pathfinder
Pathfinder X & Y Report



Company: COG Operating LLC		Local Co-ordinate Reference:		Well #2H	
Project: Lea County(NAD83)		TVD Reference:		KB = 17 @ 3983.1usft (Original Well Elev)	
Site: Wild Cobra 1 State		MD Reference:		KB = 17 @ 3983.1usft (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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)
10,130.0	1.32	274.57	10,127.7	6,144.6	-64.4	108.8	113.3	0.85	616,364.96	791,386.95
10,160.0	0.79	266.45	10,157.7	6,174.6	-64.4	108.2	112.7	1.83	616,364.98	791,386.40
10,191.0	0.53	145.83	10,188.7	6,205.6	-64.5	108.1	112.6	3.72	616,364.85	791,386.26
10,222.0	2.20	91.84	10,219.7	6,236.6	-64.6	108.8	113.3	6.25	616,364.71	791,386.94
KOP - 10222.0 'MD, 10219.7 'TVD, 91.64 'AZI, 2.20 'INC, -64.6 'N, 108.8 'E										
10,253.0	4.13	99.42	10,250.6	6,267.5	-64.8	110.5	115.0	6.36	616,364.51	791,388.63
10,284.0	5.45	101.48	10,281.5	6,298.4	-65.3	113.0	117.6	4.29	616,364.03	791,391.18
10,315.0	6.60	97.98	10,312.3	6,329.2	-65.8	116.2	120.8	3.89	616,363.49	791,394.39
10,345.0	9.23	94.21	10,342.1	6,359.0	-66.3	120.3	124.9	8.93	616,363.08	791,398.49
10,376.0	13.54	86.74	10,372.4	6,389.3	-66.2	126.4	131.0	14.67	616,363.10	791,404.60
10,407.0	19.08	85.37	10,402.2	6,419.1	-65.6	135.1	139.6	17.91	616,363.72	791,413.28
10,437.0	24.27	85.49	10,430.0	6,446.9	-64.7	146.2	150.6	17.30	616,364.60	791,424.32
10,452.0	26.82	86.88	10,443.6	6,460.5	-64.3	152.6	157.0	17.46	616,365.03	791,430.77
10,468.0	29.11	88.72	10,457.7	6,474.6	-64.0	160.1	164.4	15.29	616,365.31	791,438.27
10,483.0	31.66	90.55	10,470.6	6,487.5	-64.0	167.7	172.0	18.08	616,365.35	791,445.86
10,499.0	34.47	91.92	10,484.1	6,501.0	-64.2	176.4	180.7	18.17	616,365.16	791,454.58
10,530.0	40.27	91.51	10,508.7	6,525.6	-64.7	195.2	199.5	18.73	616,364.60	791,473.38
10,561.0	45.20	91.07	10,531.4	6,548.3	-65.2	216.2	220.5	15.93	616,364.13	791,494.41
10,591.0	50.39	91.16	10,551.6	6,568.5	-65.6	238.4	242.7	17.30	616,363.70	791,516.62
10,616.0	54.78	91.69	10,566.8	6,583.7	-66.1	258.3	262.5	17.64	616,363.20	791,536.46
10,647.0	59.79	92.47	10,583.5	6,600.4	-67.1	284.3	288.6	16.30	616,362.25	791,562.52
10,679.0	63.40	93.04	10,598.7	6,615.6	-68.4	312.5	316.7	11.39	616,360.90	791,590.63
10,709.0	66.13	92.75	10,611.5	6,628.4	-69.8	339.6	343.8	9.14	616,359.53	791,617.73
10,740.0	68.50	91.65	10,623.5	6,640.4	-70.9	368.1	372.4	8.32	616,358.43	791,646.31
10,772.0	71.75	91.11	10,634.4	6,651.3	-71.6	398.2	402.4	10.28	616,357.71	791,676.39
10,804.0	75.18	91.36	10,643.5	6,660.4	-72.3	428.9	433.1	10.74	616,357.05	791,707.05
10,835.0	78.35	92.30	10,650.6	6,667.5	-73.2	459.0	463.2	10.64	616,356.08	791,737.21



Pathfinder
Pathfinder X & Y Report



Company: COG Operating LLC		Local Co-ordinate Reference:		Well #2H	
Project: Lea County(NAD83)		TVD Reference:		KB = 17 @ 3983.1usft (Original Well Elev)	
Site: Wild Cobra 1 State		MD Reference:		KB = 17 @ 3983.1usft (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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVOSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,867.0	80.28	92.11	10,656.5	6,673.4	-74.5	490.5	494.6	6.06	616,354.87	791,768.63
10,899.0	81.69	92.14	10,661.5	6,678.4	-75.6	522.0	526.2	4.41	616,353.70	791,800.21
10,930.0	82.92	92.47	10,665.7	6,682.6	-76.9	552.7	556.9	4.11	616,352.46	791,830.91
10,962.0	85.30	93.10	10,669.0	6,685.9	-78.4	584.5	588.7	7.69	616,350.92	791,862.70
10,994.0	85.82	93.26	10,671.4	6,688.3	-80.2	616.4	620.6	1.70	616,349.15	791,894.55
11,026.0	86.09	93.71	10,673.7	6,690.6	-82.1	648.2	652.6	1.64	616,347.21	791,926.41
11,058.0	86.44	93.10	10,675.8	6,692.7	-84.0	680.1	684.5	2.19	616,345.31	791,958.29
11,089.0	86.35	93.08	10,677.7	6,694.6	-85.7	711.0	715.4	0.30	616,343.64	791,989.18
11,153.0	89.60	92.55	10,680.0	6,696.9	-88.8	774.9	779.4	5.15	616,340.50	792,053.06
LP - 11153.0 'MD, 10680.0 'TVD, 92.55 'AZI, 89.60 'INC, -88.8 'N, 774.9 'E										
11,246.0	92.77	91.81	10,678.1	6,695.0	-92.4	867.8	872.3	3.50	616,336.97	792,145.96
11,341.0	91.98	92.23	10,674.1	6,691.0	-95.7	962.6	967.1	0.94	616,333.62	792,240.82
11,437.0	90.31	92.79	10,672.2	6,689.1	-99.9	1,058.5	1,063.0	1.83	616,329.42	792,336.70
11,532.0	89.52	94.18	10,672.3	6,689.2	-105.7	1,153.4	1,158.0	1.68	616,323.64	792,431.52
11,628.0	90.04	94.25	10,672.7	6,689.6	-112.7	1,249.1	1,254.0	0.55	616,316.59	792,527.26
11,723.0	88.99	95.68	10,673.5	6,690.4	-121.0	1,343.7	1,349.0	1.87	616,308.37	792,621.90
11,819.0	88.64	95.45	10,675.5	6,692.4	-130.3	1,439.3	1,445.0	0.44	616,299.06	792,717.42
11,915.0	88.02	94.92	10,678.3	6,695.2	-138.9	1,534.8	1,540.9	0.85	616,290.39	792,812.99
11,979.0	87.76	94.71	10,680.7	6,697.6	-144.3	1,598.6	1,604.9	0.52	616,285.02	792,876.72
12,042.0	87.58	94.87	10,683.2	6,700.1	-149.6	1,661.3	1,667.8	0.38	616,279.76	792,939.45
12,105.0	88.29	92.06	10,685.5	6,702.4	-153.4	1,724.1	1,730.8	4.60	616,275.96	793,002.29
12,201.0	90.84	92.14	10,686.2	6,703.1	-156.9	1,820.0	1,826.7	2.66	616,272.44	793,098.21
12,296.0	90.84	92.11	10,684.8	6,701.7	-160.4	1,915.0	1,921.6	0.03	616,268.92	793,193.14
12,391.0	90.84	92.02	10,683.4	6,700.3	-163.8	2,009.9	2,016.5	0.09	616,265.49	793,288.06
12,487.0	88.37	93.13	10,684.1	6,701.0	-168.1	2,105.8	2,112.5	2.82	616,261.18	793,383.96
12,582.0	88.11	92.70	10,687.0	6,703.9	-173.0	2,200.6	2,207.4	0.53	616,256.35	793,478.79
12,678.0	88.72	93.83	10,689.7	6,706.6	-178.4	2,296.4	2,303.3	1.34	616,250.89	793,574.59



Pathfinder
Pathfinder X & Y Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #2H
Project:	Lea County(NAD83)	TVD Reference:	KB = 17 @ 3983.1usft (Original Well Elev)
Site:	Wild Cobra 1 State	MD Reference:	KB = 17 @ 3983.1usft (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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)
12,772.0	89.60	95.77	10,691.0	6,707.9	-186.3	2,390.1	2,397.3	2.27	616,243.02	793,668.25
12,867.0	89.96	95.27	10,691.4	6,708.3	-195.4	2,484.6	2,492.3	0.65	616,233.88	793,762.81
12,960.0	89.43	95.12	10,691.9	6,708.8	-203.9	2,577.3	2,585.3	0.59	616,225.46	793,855.42
13,052.0	89.34	94.71	10,692.9	6,709.8	-211.7	2,668.9	2,677.3	0.46	616,217.58	793,947.08
13,145.0	90.13	94.76	10,693.3	6,710.2	-219.4	2,761.6	2,770.3	0.85	616,209.91	794,039.76
13,237.0	89.96	93.28	10,693.3	6,710.2	-225.9	2,853.4	2,862.3	1.62	616,203.46	794,131.53
13,330.0	91.10	92.69	10,692.4	6,709.3	-230.7	2,946.2	2,955.2	1.38	616,198.61	794,224.40
13,422.0	92.15	91.50	10,689.8	6,706.7	-234.1	3,038.1	3,047.1	1.72	616,195.25	794,316.30
13,515.0	92.68	90.94	10,685.9	6,702.8	-236.1	3,131.0	3,139.9	0.83	616,193.27	794,409.19
13,607.0	91.63	92.26	10,682.4	6,699.3	-238.6	3,222.9	3,231.7	1.83	616,190.71	794,501.09
13,699.0	90.04	93.31	10,681.1	6,698.0	-243.1	3,314.8	3,323.7	2.07	616,186.24	794,592.97
13,792.0	88.90	93.53	10,681.9	6,698.8	-248.6	3,407.6	3,416.7	1.25	616,180.69	794,685.79
13,884.0	88.81	94.22	10,683.8	6,700.7	-254.9	3,499.4	3,508.7	0.76	616,174.47	794,777.57
13,977.0	89.08	95.83	10,685.5	6,702.4	-263.0	3,592.0	3,601.6	1.76	616,166.33	794,870.19
14,069.0	88.81	95.15	10,687.2	6,704.1	-271.8	3,683.6	3,693.6	0.80	616,157.53	794,961.75
14,161.0	88.99	94.86	10,688.9	6,705.8	-279.8	3,775.2	3,785.6	0.37	616,149.50	795,053.38
14,254.0	90.40	95.76	10,689.4	6,706.3	-288.4	3,867.8	3,878.5	1.80	616,140.90	795,145.98
14,346.0	90.66	95.62	10,688.6	6,705.5	-297.6	3,959.4	3,970.5	0.32	616,131.78	795,237.52
14,439.0	90.48	94.39	10,687.7	6,704.6	-305.7	4,052.0	4,063.5	1.34	616,123.66	795,330.16
14,531.0	90.40	92.94	10,686.9	6,703.8	-311.5	4,143.8	4,155.5	1.58	616,117.78	795,421.97
14,663.0	89.60	91.98	10,686.9	6,703.8	-317.2	4,275.7	4,287.4	0.95	616,112.12	795,553.84
14,741.0	89.60	91.98	10,687.5	6,704.4	-319.9	4,353.6	4,365.4	0.00	616,109.42	795,631.79

BHL - 14741.0 'MD, 10687.5 'TVD, 91.98 'AZI, 89.60 'INC, -319.9 'N, 4353.6 'E



Pathfinder
Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

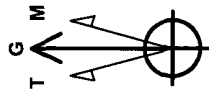
Company: COG Operating LLC Lea County(NAD83) Site: Wild Cobra 1 State Well: #2H Wellbore: OH Design: OH	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:	Well #2H KB = 17 @ 3983.1usft (Original Well Elev) KB = 17 @ 3983.1usft (Original Well Elev) Grid Minimum Curvature EDM 5000.1 Single User Db
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Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		
		+N/-S (usft)	+E/-W (usft)	Comment
10,222.0	10,219.7	-64.6	108.8	KOP - 10222.0 'MD, 10219.7 'TVD, 91.64 'AZI, 2.20 'INC, -64.6 'N, 108.8 'E
11,153.0	10,680.0	-88.8	774.9	LP - 11153.0 'MD, 10680.0 'TVD, 92.55 'AZI, 89.60 'INC, -88.8 'N, 774.9 'E
14,741.0	10,687.5	-319.9	4,353.6	BHL - 14741.0 'MD, 10687.5 'TVD, 91.98 'AZI, 89.60 'INC, -319.9 'N, 4353.6 'E

Checked By: _____	Approved By: _____	Date: _____
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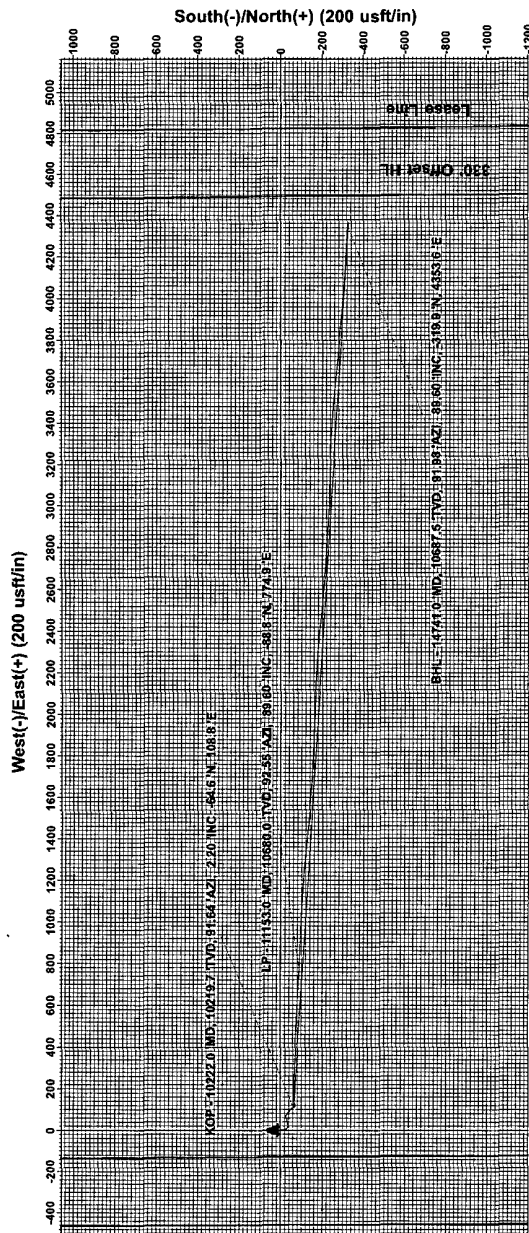


Project: Lea County(NAD83)
Site: Wild Cobra 1 State
Well: #2H
Wellbore: OH
Plan: Post Gyro Plan #3 (#2H/OH)



Azimuths to Grid North
True North: -0.44°
Magnetic North: 7.08°
Magnetic Field
Strength: 48879.4nT
Dip Angle: 60.64°
Date: 1/12/2012
Model: IGRF200510

PROJECT DETAILS: Lea County(NAD83)
Geoidic System: US State Plans 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



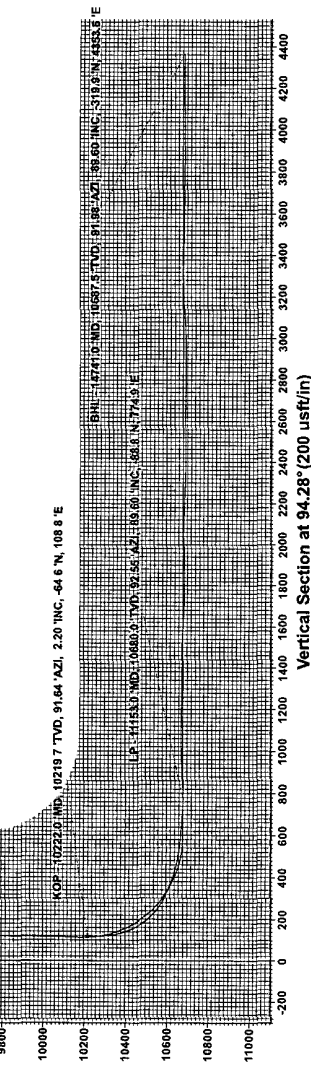
WELL DETAILS: #2H

Ground Elevation: 3966.1
RKB Elevation: KB = 17 @ 3953 fust (Original Well Elev)
Rig Name: Original Well Elev

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.0	0.0	616423.330	791278.170	32.692	-103.521	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	MD	Inc	Azi	TVD	+N/-S	+E/-W	North	East	Shape
PBH (Wild Cobra 1 State #2H)	10222.0	2.20	91.64	10219.7	-326.4	4365.3	616102.920	795443.490	Point



MD	Inc	Azi	TVD	+N/-S	+E/-W	North	East	Shape
10222.0	2.20	91.64	10219.7	-326.4	4365.3	616102.920	795443.490	Point
10555.5	90.00	93.53	10680.0	-326.4	4365.3	616102.920	795443.490	Point
14741.8	90.00	93.53	10680.0	-326.4	4365.3	616102.920	795443.490	Point

SECTION DETAILS	MD	Inc	Azi	TVD	+N/-S	+E/-W	North	East	Shape
330 Offset HL	10222.0	2.20	91.64	10219.7	-326.4	4365.3	616102.920	795443.490	Point
Lease Lbore	14741.8	90.00	93.53	10680.0	-326.4	4365.3	616102.920	795443.490	Point

Plan: Post Gyro Plan #3 (#2H/OH)

Created By: Michael Trout Date: 16.05. May 08 2012

Checked: _____ Date: _____

COO: [Signature]

COO: [Signature]

COO: [Signature]

COO: [Signature]