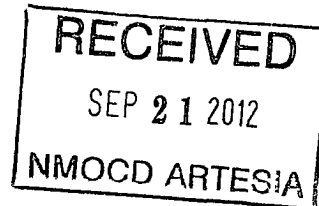




PO Box 1370
Artesia, NM 88211-1370
(575) 748-1288

30-015-39518



May 14, 2012

COG, LLC
Fasken Center, Tower II
550 West Texas Ave, Suite 1300
Midland, TX 79701

RE: Burch Keely Unit #524
1690' FNL & 1308' FEL
Sec. 13, T17S, R29E
Eddy County, New Mexico

Dear Sir,

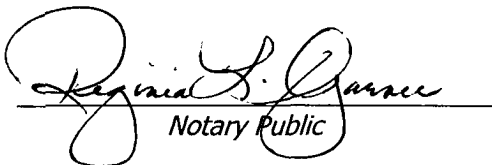
The attached is the Deviation Survey for the above captioned well.

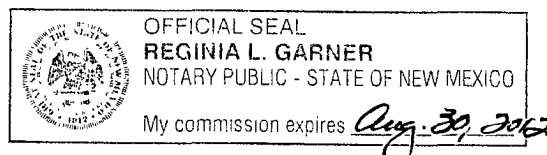
Very truly yours,


Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 14th day of May, 2012.


Notary Public



Burch Keely Unit #524

Date	Depth	Dev/Inc	Dir/AZ	TVD
5/7/2012	267	0.50		
5/8/2012	724	1.40		
5/9/2012	1119	1.85	83.32	1169
5/9/2012	1183	2.55	86.4	1233
5/10/2012	1278	3.34	82.33	
5/10/2012	1310	4.48	84.64	
5/10/2012	1437	6.07	91.06	
5/10/2012	1794	6.60	83.23	
5/10/2012	1890	5.98	80.42	
5/10/2012	1986	6.24	80.16	
5/10/2012	2272	6.24	78.84	2322
5/10/2012	2368	6.51	81.21	2918
5/10/2012	2463	7.39	86.40	2513
5/11/2012	3037	7.03	81.74	
5/11/2012	3132	7.03	83.15	
5/11/2012	3228	6.86	83.67	
5/11/2012	3323	6.16	84.82	
5/11/2012	3719	6.07	85.34	
5/11/2012	3514	5.80	88.16	
5/11/2012	3897	4.57	97.03	3947
5/11/2012	3961	3.61	101.30	4011
5/11/2012	4024	2.55	99.41	4074
5/12/2012	4415	0.30		



COG Operating LLC

Eddy County, NM (NAD27 NME)

Burch Keely Unit #524

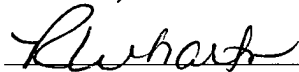
Burch Keely Unit #524

OH - Job #32D0512526

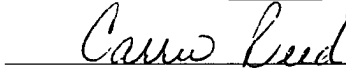
Design: Actual

SDI Standard Survey Report

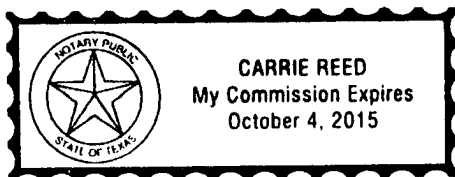
This survey is correct to the best of my knowledge and is supported by actual field data.



Notarized this date 16th of June, 2012.



Notary Signature
County of Midland
State of Texas





Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Burch Keely Unit #524
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3649 00usft (SO #4)
Site:	Burch Keely Unit #524	MD Reference:	RF @ 3649 00usft (SO #4)
Well:	Burch Keely Unit #524	North Reference:	Grid
Wellbore:	OH - Job #32D0512526	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Project	Eddy County, NM (NAD27 NME)		
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	Burch Keely Unit #524		
Site Position:		Northing:	668,361 90 usft
From:	Map	Easting:	595,192 20 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 50' 13 304 N
		Longitude:	104° 1' 24 271 W
		Grid Convergence:	0 17 °

Well	Burch Keely Unit #524		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 13 304 N
		Longitude:	104° 1' 24 271 W
		Ground Level:	3,637 00 usft

Wellbore	OH - Job #32D0512526				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2012/05/09	7 73	60 65	48,844

Design	Actual			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0.00	84 63

Survey Program	Date	2012/05/12		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100 00	1,060 00	Gyro (OH - Job #32D0512526)	Keeper	Standard Wireline Keeper ver 1 0 2
1,119 00	4,297 00	MWD (OH - Job #32D0512526)	MWD	MWD - Standard

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
11 15	0 05	86 20	11 15	0 00	0 00	86 20	0 00
West HL-BKU #524							
12 23	0 05	86 20	12 23	0 00	0 01	86 20	0 01
North HL-BKU #524							
100.00	0 44	86 20	100 00	0 03	0 38	86 20	0.38
200 00	0 22	40 23	200 00	0 20	0 89	77.49	0 91
300 00	0 31	70 22	300.00	0 44	1 27	71 05	1 34
400 00	0 50	44 09	399 99	0 84	1 83	65 29	2 01
500.00	0 58	93 59	499 99	1 12	2 64	66 94	2 86
600 00	0 96	81 61	599 98	1 21	3 97	73 01	4 15



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Burch Keely Unit #524
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3649.00usft (SO #4)
Site:	Burch Keely Unit #524	MD Reference:	RF @ 3649 00usft (SO #4)
Well:	Burch Keely Unit #524	North Reference:	Grid
Wellbore:	OH - Job #32D0512526	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
700 00	1 28	75 41	699 96	1 62	5 88	74 63	6 10
800 00	1 83	75 55	799 92	2 30	8 51	74 89	8 81
900 00	2 19	75 71	899 86	3 17	11 90	75 11	12 32
1,000.00	1 90	82.83	999 80	3 84	15 40	75 98	15 87
1,060 00	1 93	86 58	1,059 77	4 03	17 40	76 96	17 86
Gryo Tie-in							
1,119 00	1 85	83 32	1,118 73	4 20	19 33	77 75	19 78
1,183 00	2 55	86 40	1,182 69	4 41	21 78	78 56	22 22
1,246.00	3 34	82 35	1,245 60	4 74	25 00	79 26	25 44
1,310 00	4 48	84 64	1,309 45	5 22	29 33	79 90	29 80
1,374 00	5 28	88 51	1,373 22	5 53	34 77	80 96	35 20
1,437 00	6 07	91 06	1,435 91	5 55	41 00	82 29	41 37
1,501 00	6 68	91 14	1,499 51	5 41	48 10	83 58	48 40
1,596 00	6 16	91 94	1,593 92	5 13	58 72	85 01	58 94
1,692 00	6 24	87 89	1,689 36	5 15	69 08	85 74	69 27
1,794 00	6 60	83 23	1,790 72	6 04	80 44	85 71	80 67
1,890 00	5 98	80.42	1,886 14	7 52	90 85	85 27	91 16
1,986 00	6 24	80 16	1,981 60	9 25	100 92	84 77	101 34
2,081 00	6 95	78 58	2,075 97	11 27	111 64	84 24	112.21
2,177 00	7 12	79 63	2,171 24	13 49	123 19	83 75	123 92
2,272 00	6 24	78 84	2,265 60	15 55	134 05	83 38	134.94
2,368.00	6 51	81 21	2,361 00	17 39	144 54	83 14	145 58
2,463 00	7 39	86 40	2,455 31	18 60	155 96	83 20	157 07
2,559 00	7 21	84 64	2,550 53	19 55	168 12	83 37	169 25
2,654 00	7 03	83 59	2,644 80	20 75	179 83	83 42	181 03
2,750 00	7 03	83 59	2,740 07	22 06	191 51	83 43	192 78
2,846 00	6 95	82 79	2,835 36	23 45	203 11	83 41	204 46
2,941 00	6 95	82 62	2,929 66	24 91	214 51	83 38	215 95
3,037 00	7 03	81 74	3,024 95	26 50	226 09	83 32	227 63
3,132 00	7 03	83 15	3,119 23	28 03	237 61	83 27	239.26
3,228 00	6 86	83 67	3,214 53	29 36	249 14	83 28	250 87
3,323 00	6 16	84 82	3,308 92	30 44	259 86	83 32	261 64
3,419 00	6 07	85 34	3,404 37	31 32	270 05	83 38	271 86
3,514 00	5 80	88 16	3,498 86	31 88	279 85	83 50	281 66
3,610 00	5 63	85 17	3,594 38	32 44	289 39	83 60	291 20
3,705 00	6 33	88 60	3,688 87	32 96	299.27	83 72	301.08
3,769.00	6 33	87 28	3,752 48	33 21	306 32	83 81	308 12
3,833 00	5 54	89 91	3,816 13	33 38	312 94	83 91	314.71
3,897 00	4 57	97 03	3,879 88	33 08	318 56	84 07	320 27
3,960 00	3 61	101 34	3,942 72	32 38	322 99	84 28	324 61
4,024 00	2 55	99 41	4,006 63	31 75	326.37	84 44	327.91
4,088 00	2 73	112 58	4,070 56	30 93	329 18	84 63	330 63
4,129 36	2 20	118 29	4,111 88	30 18	330 79	84 79	332 16
TG1-BKU #524							



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Burch Keely Unit #524
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3649 00usft (SO #4)
Site:	Burch Keely Unit #524	MD Reference:	RF @ 3649 00usft (SO #4)
Well:	Burch Keely Unit #524	North Reference:	Grid
Wellbore:	OH - Job #32D0512526	Survey Calculation Method:	Minimum Curvature
Design:	Actual	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
4,151 00	1 93	122 52	4,133 51	29 79	331 46	84 87	332 80
4,215 00	0 70	129 82	4,197.49	28 96	332.67	85 03	333 93
4,247 00	0 35	156 18	4,229.49	28 74	332 86	85 07	334 10
Last MWD Survey							
4,297 00	0 35	156 18	4,279 49	28 46	332.98	85 11	334 20
Projection to Bit - PBHL-BKU #524							

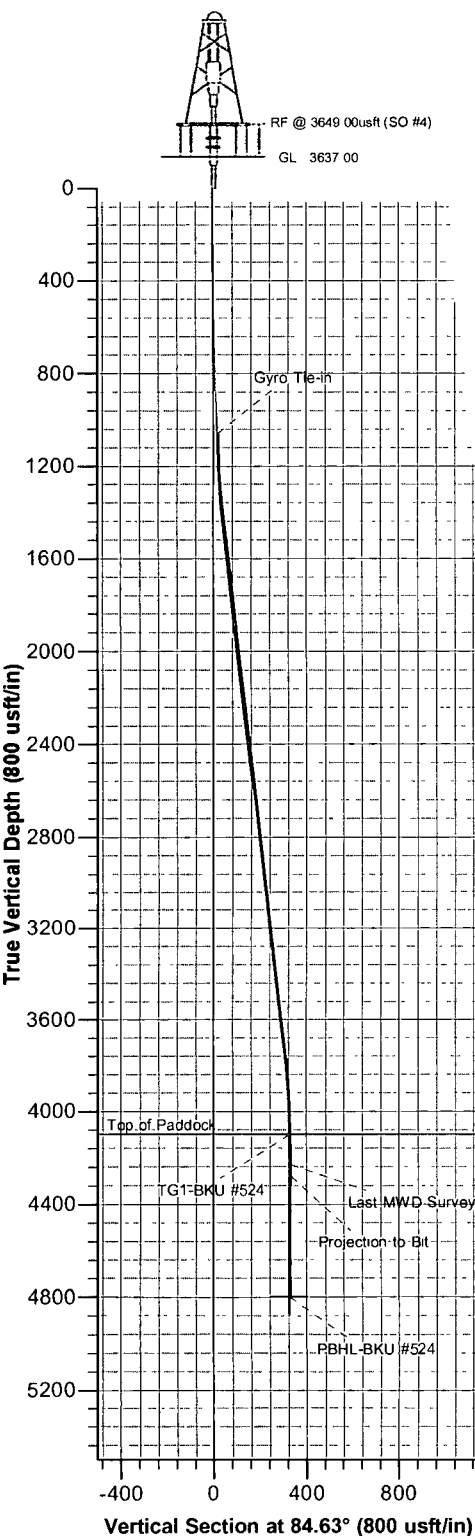
Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,060 00	1,059 77	4 03	17 40	Gryo Tie-in
4,247 00	4,229 49	28 74	332 86	Last MWD Survey
4,297 00	4,279 49	28 46	332 98	Projection to Bit



Azimuths to Grid North
True North -0 17°
Magnetic North 7 56°

Magnetic Field
Strength 48843 6snT
Dip Angle 60 65°
Date 05/09/2012
Model IGRF2010

Burch Keely Unit #524
Eddy County, NM (NAN27 NME)
Northing: (Y) 668361.90
Easting: (X) 595192.20
Plan #2 vs Actual - 7-7/8" Hole



WELL DETAILS: Burch Keely Unit #524

+N/-S	+E/-W	Northing	Ground Level Easting	3637 00 Latitude	Longitude
0 00	0 00	668361 90	595192 202° 50'	13 304 N 104° 1'	24 271 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	1060 00	1 93	86 58	1059 77	4 03	17 40	0 00	0 00	17 70	
2	1150 00	1 93	86 58	1149 71	4 21	20 42	0 00	0 00	20 73	
3	1378 77	6 50	85 04	1377 81	5 56	37 19	2 00	-2 19	37 54	
4	3791 98	6 50	85 04	3775 48	29 21	309 53	0 00	0 00	310 90	
5	4117 20	0 00	0 00	4100 00	30 80	327 90	2 00	180 00	329 34	TG1-BKU #524
6	4817 20	0 00	0 00	4800 00	30 80	327 90	0 00	0 00	329 34	PBHL-BKU #524

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
North HL-BKU #524	-1 00	40 80	317 90	668402 70	595510 182° 50'	13 699 N104° 1'	20 544 W
- plan misses target center by 1103 12usft at 1060 00usft MD (1059 77 TVD, 4 03 N, 17 40 E)							
West HL-BKU #524	-1 00	40 80	317 90	668402 70	595510 182° 50'	13 699 N104° 1'	20 544 W
- plan misses target center by 1103 12usft at 1060 00usft MD (1059 77 TVD, 4 03 N, 17 40 E)							
TG1-BKU #524	4100 00	30 80	327 90	668392 70	595520 182° 50'	13 599 N104° 1'	20 427 W
- plan hits target center							
PBHL-BKU #524	4800 00	30 80	327 90	668392 70	595520 182° 50'	13 599 N104° 1'	20 427 W
- plan hits target center							

SITE DETAILS: Burch Keely Unit #524

Site Centre Northing 668361.90
Easting 595192.20

Positional Uncertainty 0 00
Convergence 0 17
Local North Grid

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

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

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngleDipDir
4100 00	4117 20	Top of Paddock	0 00

LEGEND

- Burch Keely Unit #524, OH, Gyro
- Burch Keely Unit #524, OH, MWD
- Plan #2 - 7-7/8" Hole

