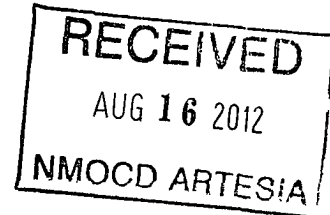




30-015-39519

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



May 23, 2012

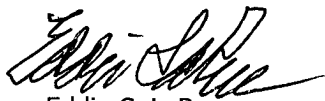
COG, LLC
Fasken Center, Tower II
550 West Texas Ave, Suite 1300
Midland, TX 79701

RE: Burch Keely Unit #530
2310' FNL & 1043' FEL
Sec. 13, T17S, R29E
Eddy County, New Mexico

Dear Sir,

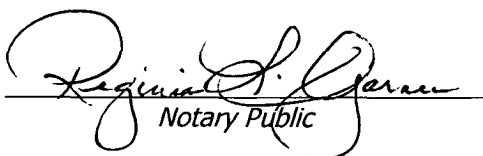
The attached is the Deviation Survey for the above captioned well.

Very truly yours,


Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

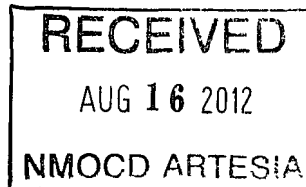
The foregoing was acknowledged before me this 23rd day of May, 2012.


Regina L. Garner
Notary Public



Burch Keely Unit #530

Date	Depth	Dev/Inc	Dir/AZ
5/16/2012	160	0.70	
5/17/2012	267	1.00	
5/18/2012	343	0.80	
5/18/2012	588	0.70	
5/18/2012	841	0.90	
5/18/2012	1065	0.70	
5/19/2012	1099	2.02	89.47
5/19/2012	1163	2.37	94.13
5/19/2012	1226	2.73	95.45
5/20/2012	2564	6.42	224.80
5/20/2012	2755	6.33	224.80
5/20/2012	3092	6.68	224.80
5/20/2012	3138	6.24	107.40
5/20/2012	3424	5.54	113.11
5/21/2012	4285	0.65	117.50
5/21/2012	4572	0.35	92.11



COG Operating LLC

Eddy County, NM (NAD27 NME)

Burch Keely Unit #530

Burch Keely Unit #530

Job #32D0512573

Design: Actual

SDI Standard Survey Report

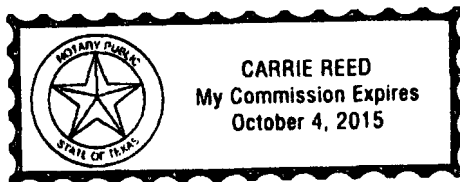
This survey is correct to the best of my knowledge and is supported by actual field data.

A handwritten signature in cursive script, appearing to read "L. L. L. L.", written over a horizontal line.

Notarized this date 15th of June, 2012.

A handwritten signature in cursive script, appearing to read "Carrie Reed", written over a horizontal line.

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 #530
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3652 00usft (SO #4)
Site:	Burch Keely Unit #530	MD Reference:	RF @ 3652 00usft (SO #4)
Well:	Burch Keely Unit #530	North Reference:	Grid
Wellbore:	Job #32D0512573	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 #530		
Site Position:		Northing:	667,742 60 usft
From:	Map	Easting:	595,459 10 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 50' 7 168 N
		Longitude:	104° 1' 21 164 W
		Grid Convergence:	0 17 °

Well	Burch Keely Unit #530		
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' 7 168 N
		Longitude:	104° 1' 21 164 W
		Ground Level:	3,634 00 usft

Wellbore	Job #32D0512573		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2012/01/13	7 77
			Dip Angle
			(°)
			60 66
			Field Strength
			(nT)
			48,875

Design	Actual		
Audit Notes:			
Version:	1 0	Phase:	ACTUAL
		Tie On Depth:	0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction
			(°)
			108 07

Survey Program	Date	2012/05/21		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100 00	993 00	Gyro (Job #32D0512573)	Keeper	Standard Wireline Keeper ver 1 0 2
1,099 00	4,610 00	MWD (Job #32D0512573)	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
100 00	0 53	147 73	100 00	-0 39	0 25	147 73	0 46
200 00	0 91	191 54	199 99	-1 56	0 34	167 88	1 60
300 00	0 84	212 13	299 98	-2 96	-0 21	184 13	2 97
400 00	0 54	220 57	399 97	-3 94	-0 91	193 01	4 04
500 00	0 57	152 73	499 97	-4 74	-0 99	191 79	4 84
600 00	0 86	111 71	599 96	-5 46	-0 06	180 67	5 46
700 00	1 69	75 32	699 94	-5 36	2 06	158 98	5 74
800 00	2 60	71 34	799 87	-4 26	5 64	127 10	7 07
900 00	2 62	72 72	899 76	-2 86	9 97	106 00	10 37



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Burch Keely Unit #530
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3652 00usft (SO #4)
Site:	Burch Keely Unit #530	MD Reference:	RF @ 3652 00usft (SO #4)
Well:	Burch Keely Unit #530	North Reference:	Grid
Wellbore:	Job #32D0512573	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)
993 00	2 69	76 33	992 66	-1 71	14 12	96 91	14 22
Gyro Tie-in							
1,099 00	2 02	89 47	1,098 57	-1 11	18 40	93 44	18 44
1,163 00	2 37	94 13	1,162 53	-1 19	20 85	93 27	20 88
1,226 00	2 73	95 45	1,225 46	-1 43	23 64	93 45	23 69
1,290 00	3 25	104 67	1,289 38	-2 03	26 92	94 31	26 99
1,354 00	4 04	113 02	1,353 25	-3 37	30 75	96 26	30 93
1,417 00	4 31	112 50	1,416 08	-5 15	34 97	98 37	35 35
1,481 00	5 28	115 05	1,479 86	-7 31	39 86	100 39	40 53
1,545 00	5 89	113 99	1,543 55	-9 89	45 53	102 26	46 60
1,608 00	6 24	108 63	1,606 20	-12 30	51 73	103 38	53 17
1,704 00	5 98	104 50	1,701 65	-15 22	61 52	103 90	63 37
1,799 00	5 19	104 94	1,796 20	-17 57	70 46	104 00	72 62
1,895 00	5 05	110 65	1,891 82	-20 18	78 61	104 40	81 16
1,991 00	5 70	104 22	1,987 40	-22 84	87 18	104 68	90 12
2,087 00	5 33	105 10	2,082 95	-25 17	96 11	104 68	99 35
2,182 00	5 72	104 67	2,177 51	-27 52	104 95	104 69	108 50
2,277 00	5 98	106 08	2,272 02	-30 09	114 28	104 75	118 18
2,373 00	5 38	111 61	2,367 55	-33 13	123 27	105 04	127 65
2,469 00	6 34	112 28	2,463 04	-36 80	132 36	105 54	137 38
2,564 00	6 42	113 46	2,557 46	-40 90	142 09	106 06	147 86
2,660 00	6 16	112 50	2,652 88	-45 01	151 77	106 52	158 30
2,755 00	6 33	109 77	2,747 31	-48 73	161 41	106 80	168 60
2,851 00	6 07	109 42	2,842 75	-52 21	171 17	106 96	178 96
2,946 00	6 51	105 90	2,937 18	-55 36	181 09	107 00	189 36
3,042 00	6 68	106 70	3,032 55	-58 45	191 67	106 96	200 39
3,138 00	6 24	107 40	3,127 94	-61 62	202 00	106 96	211 19
3,233 00	6 06	106 52	3,222 39	-64 59	211 73	106 96	221 37
3,329 00	5 54	113 90	3,317 90	-67 90	220 83	107 09	231 03
3,424 00	5 54	113 11	3,412 45	-71 56	229 24	107 34	240 15
3,520 00	5 19	109 77	3,508 03	-74 85	237 59	107 49	249 10
3,615 00	5 45	112 50	3,602 62	-78 03	245 80	107 61	257 89
3,711 00	4 84	109 51	3,698 24	-81 13	253 83	107 72	266 48
3,807 00	4 59	108 73	3,793 91	-83 71	261 28	107 76	274 37
3,870 00	3 85	107 77	3,856 74	-85 17	265 69	107 77	279 00
3,934 00	3 43	100 46	3,920 61	-86 17	269 61	107 72	283 05
4,030 00	1 85	103 99	4,016 51	-87 07	273 94	107 63	287 45
4,093 00	1 23	103 36	4,079 48	-87 47	275 59	107 61	289 13
4,131 47	1 06	99 28	4,117 95	-87 62	276 34	107 59	289 90
TG1-BKU #530							
4,157 00	0 95	95 78	4,143 47	-87 68	276 78	107 58	290 34
4,221 00	0 89	184 07	4,207 47	-88 23	277 28	107 65	290 97
4,285 00	0 65	117 59	4,271 46	-88 89	277 56	107 76	291 45
4,380 00	0 10	48 60	4,366 46	-89 09	278 10	107 76	292 02
4,476 00	0 09	174 37	4,462 46	-89 11	278 17	107 76	292 10



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Site Burch Keely Unit #530
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RF @ 3652 00usft (SO #4)
Site:	Burch Keely Unit #530	MD Reference:	RF @ 3652 00usft (SO #4)
Well:	Burch Keely Unit #530	North Reference:	Grid
Wellbore:	Job #32D0512573	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)
4,560 00	0 35	92 11	4,546 46	-89 18	278 43	107 76	292 37
Last MWD Survey							
4,610 00	0 35	92 11	4,596 46	-89 19	278 74	107 74	292 66
Projection to Bit - PBHL-BKU #530							

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
993 00	992 66	-1 71	14 12	Gyro Tie-in
4,560 00	4,546 46	-89 18	278 43	Last MWD Survey
4,610 00	4,596 46	-89 19	278 74	Projection to Bit

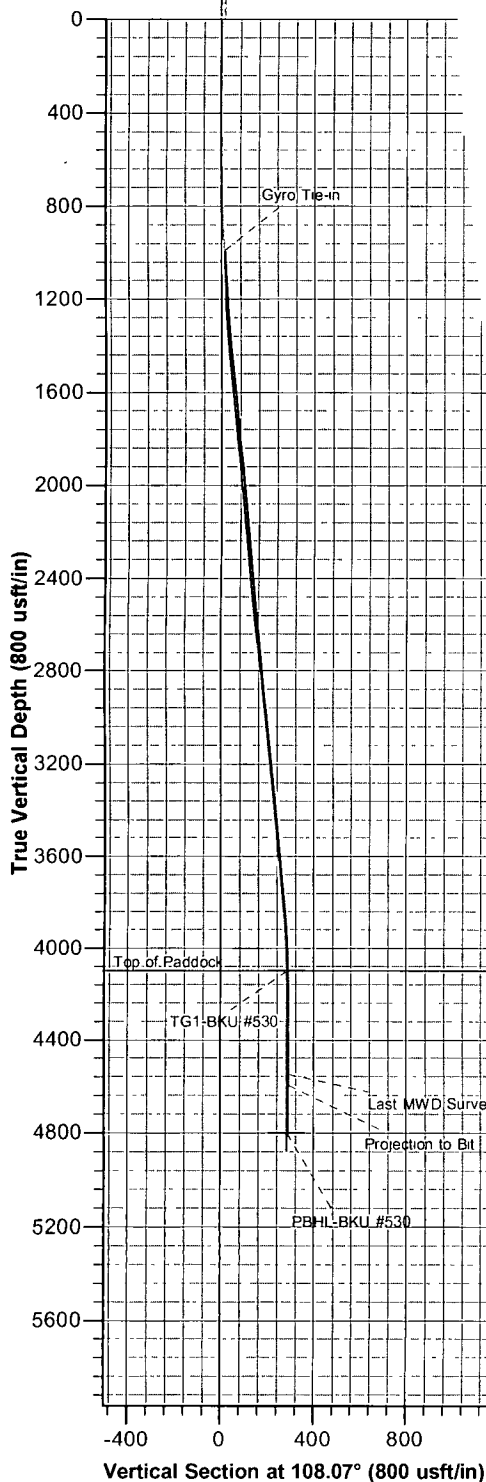
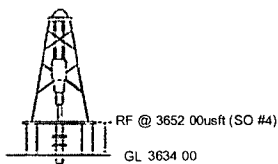


Azimuths to Grid North
True North -0 17°
Magnetic North 7 60°

Magnetic Field
Strength 48874 7snT
Dip Angle 60 66°
Date 01/13/2012
Model IGRF2010

To convert Magnetic North to Grid, Add 7 60°
To convert True North to Grid, Subtract 0 17°

Burch Keely Unit #530
Eddy County, NM (NAN27 NME)
Northing: (Y) 667742.60
Easting: (X) 595459.10
Plan #2 - 7-7/8" Hole



WELL DETAILS: Burch Keely Unit #530

+N/-S	+E/-W	Northing	Ground Level	3634 00	Easting	Latitude	Longitude
0 00	0 00	667742 60	595459 1032° 50' 7 168 N	104° 1' 21 164 W			

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	993 00	2 69	76 33	992 66	-1 71	14 12	0 00	0 00	13 95	
2	1150 00	2 69	76 33	1149 49	0 03	21 28	0 00	0 00	20 22	
3	1331 00	5 54	109 99	1330 03	-1 95	33 62	2 00	57 93	32 56	
4	3836 17	5 54	109 99	3823 50	-84 63	260 83	0 00	0 00	274 22	
5	4113 10	0 00	0 00	4100 00	-89 20	273 40	2 00	180 00	287 58	TG1-BKU #530
6	4813 10	0 00	0 00	4800 00	-89 20	273 40	0 00	0 00	287 58	PBHL-BKU #530

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
TG1-BKU #530	4100 00	-89 20	273 40	667653 40	595732 5032° 50' 6 278 N	104° 1' 17 963 W	
- plan hits target center							
PBHL-BKU #530	4800 00	-89 20	273 40	667653 40	595732 5032° 50' 6 278 N	104° 1' 17 963 W	
- plan hits target center							

SITE DETAILS: Burch Keely Unit #530

Site Centre Northing 667742 60
Easting 595459 10

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

TVDPPath	MDPath	Formation	DipAngleDipDir
4100 00	4113 10	Top of Paddock	0 00

LEGEND

— Burch Keely Unit #530, Job #32D0512573, Gyro
— Burch Keely Unit #530, Job #32D0512573, MWD
— Plan #2 - 7-7/8" Hole

