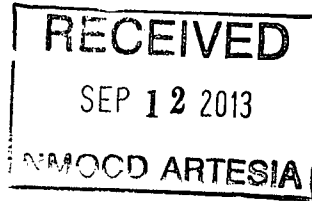


Archer

Archer Directional Drilling Services.
12101 Cutten Road
Houston, Texas 77066
Tel: 281-301-2600
Fax: 281-301-2795

COG Operating, LLC
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701



April 25, 2013

Re: COG Operating, LLC
Randall Federal #2
Field: Cedar Lake
Rig: Silver Oak Drilling 11
Eddy County, New Mexico
API # 30-015-40101

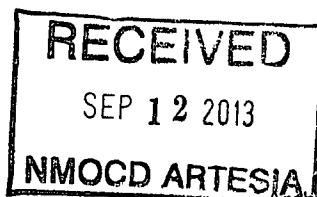
Enclosed please find the original of the surveys performed on the referenced well by Archer Directional Drilling Services. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Wellhole Number</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Raul Lopez Field Engineer	Original Hole	1371-4975	04/21/13-04/24/13	MWD

If additional information is required, please contact the undersigned at the letterhead address and phone number.



Amador Baggerly
MWD Coordinator



Archer

Archer Directional Drilling Services.
12101 Cutten Road
Houston, Texas 77066
Tel: 281-301-2600
Fax: 281-301-2795

MWD Survey Certification

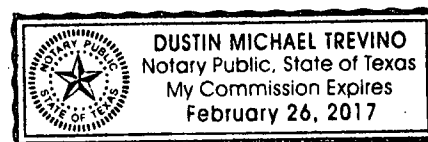
State of New Mexico
County of Eddy

I, Amador Baggerly, certify that; I am employed by Archer Directional Drilling Services; that I did on the day(s) of 04/21/13 through 04/24/13, conduct or supervise the taking of MWD surveys from a depth of 1371 feet to a depth of 4975 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Archer Directional Drilling Services; that I am authorized and qualified to make this report; that these surveys were conducted at the request of COG Operating, LLC for the Randall Federal #2 (API # 30-015-40101), Well located in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Archer Directional Drilling Services

Amador Baggerly
MWD Coordinator

State of Texas
County of Harris

Before me, a notary public, on this day personally appeared Amador Baggerly, on this 25 day of April, 2013, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statement therein contained are true and correct.

Notary Public's Signature



Company: COG Operating, LLC

Job Number: 04213-433-21

Calculation Method

Minimum Curvature

Well: Randall Federal #2

Mag Decl.: 0.00

Proposed Azimuth

265.2

Location: Eddy County, New Mexico

Dir Driller: Marty Smith

Depth Reference

KBG

Rig: Silver Oak Drilling 11

MWD Eng: Raul Lopez

Tie Into: Gyro Survey

Job Date: 04/21/13 - 04/24/13

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
Tie In	1260.00	1.11	121.6	0	1259.97	2.32	3.02 S	2.58 E	0.00	0.00	0	0	0
1	1371	0.6	135.3	111	1370.96	-3.55	4.00 S	3.90 E	5.59	135.67	0.49	-0.46	12.34
2	1465	1.5	237.4	94	1464.95	-2.78	5.01 S	3.21 E	5.95	147.31	1.84	0.96	108.62
3	1559	2.6	269.6	94	1558.89	0.43	5.69 S	0.05 E	5.69	179.54	1.65	1.17	34.26
4	1653	4.4	266.5	94	1652.71	6.16	5.92 S	5.69 W	8.21	223.84	1.92	1.91	-3.30
5	1747	5.3	266.6	94	1746.37	14.11	6.40 S	13.62 W	15.05	244.83	0.96	0.96	0.11
6	1841	4.3	258.5	94	1840.04	21.95	7.36 S	21.41 W	22.64	251.03	1.28	-1.06	-8.62
7	1943	3.6	252.3	102	1941.80	28.87	9.10 S	28.20 W	29.63	252.13	0.80	-0.69	-6.08
8	2037	3.9	254.2	94	2035.60	34.89	10.86 S	34.09 W	35.78	252.33	0.35	0.32	2.02
9	2131	4.0	272.8	94	2129.38	41.27	11.57 S	40.44 W	42.07	254.03	1.36	0.11	19.79
10	2225	3.5	271.4	94	2223.18	47.38	11.34 S	46.59 W	47.95	256.32	0.54	-0.53	-1.49
11	2319	4.1	271.6	94	2316.97	53.57	11.18 S	52.81 W	53.98	258.05	0.64	0.64	0.21
12	2413	3.7	270.8	94	2410.75	59.92	11.04 S	59.21 W	60.23	259.43	0.43	-0.43	-0.85
13	2507	4.9	265.9	94	2504.48	66.96	11.29 S	66.24 W	67.20	260.33	1.33	1.28	-5.21
14	2600	4.9	265.5	93	2597.15	74.90	11.88 S	74.16 W	75.11	260.90	0.04	0.00	-0.43
15	2695	4.8	266.5	95	2691.80	82.93	12.44 S	82.18 W	83.11	261.39	0.14	-0.11	1.05
16	2788	4.8	265.0	93	2784.48	90.71	13.02 S	89.94 W	90.87	261.76	0.13	0.00	-1.61
17	2881	4.8	264.9	93	2877.15	98.49	13.71 S	97.69 W	98.64	262.01	0.01	0.00	-0.11
18	2975	4.8	264.1	94	2970.82	106.36	14.46 S	105.52 W	106.50	262.20	0.07	0.00	-0.85
19	3069	4.8	263.0	94	3064.49	114.22	15.34 S	113.33 W	114.37	262.29	0.10	0.00	-1.17
20	3162	4.3	263.4	93	3157.20	121.60	16.22 S	120.66 W	121.74	262.34	0.54	-0.54	0.43
21	3256	4.3	262.0	94	3250.94	128.64	17.11 S	127.65 W	128.79	262.36	0.11	0.00	-1.49
22	3349	4.3	264.1	93	3343.67	135.60	17.96 S	134.57 W	135.76	262.40	0.17	0.00	2.26
23	3444	4.4	262.5	95	3438.40	142.80	18.80 S	141.72 W	142.97	262.44	0.17	0.11	-1.68
24	3538	4.2	261.0	94	3532.13	149.84	19.81 S	148.70 W	150.01	262.41	0.24	-0.21	-1.60
25	3632	4.2	261.0	94	3625.88	156.71	20.89 S	155.50 W	156.90	262.35	0.00	0.00	0.00
26	3726	4.1	260.0	94	3719.64	163.49	22.01 S	162.21 W	163.69	262.27	0.13	-0.11	-1.06
27	3819	4.0	260.9	93	3812.40	170.03	23.10 S	168.69 W	170.26	262.20	0.13	-0.11	0.97
28	3913	4.0	259.3	94	3906.17	176.56	24.23 S	175.14 W	176.81	262.13	0.12	0.00	-1.70
29	4007	4.1	260.0	94	3999.94	183.17	25.42 S	181.67 W	183.44	262.04	0.12	0.11	0.74
30	4101	2.9	259.9	94	4093.76	188.88	26.42 S	187.33 W	189.18	261.97	1.28	-1.28	-0.11
31	4195	1.9	267.6	94	4187.68	192.81	26.90 S	191.22 W	193.11	261.99	1.12	-1.06	8.19
32	4289	0.7	43.2	94	4281.66	193.94	26.55 S	192.39 W	194.21	262.14	2.61	-1.28	-238.72
33	4383	0.8	21.8	94	4375.66	193.22	25.52 S	191.75 W	193.44	262.42	0.31	0.11	-22.77
34	4477	0.9	33.0	94	4469.65	192.47	24.29 S	191.10 W	192.64	262.76	0.21	0.11	11.91
35	4572	0.2	349.9	95	4564.64	192.03	23.50 S	190.73 W	192.17	262.98	0.81	-0.74	333.58
36	4665	0.4	9.0	93	4657.64	191.97	23.02 S	190.71 W	192.09	263.12	0.24	0.22	-366.56

Company: COG Operating, LLCJob Number: 04213-433-21

Calculation Method

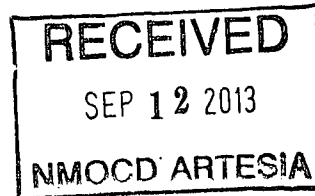
Minimum Curvature

Well: Randall Federal #2Mag Decl.: 0.00Proposed Azimuth 265.2Location: Eddy County, New MexicoDir Driller: Marty SmithDepth Reference KBGRig: Silver Oak Drilling 11MWD Eng: Raul LopezTie Into: Gyro SurveyJob Date: 04/21/13 - 04/24/13

Survey Number	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Direction Azimuth			
37	4759	0.4	4.5	94	4751.64	191.83	22.37 S	190.63 W	191.94	263.31	0.03	0.00	-4.79
38	4854	0.3	29.7	95	4846.64	191.64	21.82 S	190.48 W	191.73	263.46	0.19	-0.11	26.53
39	4933	0.2	26.7	79	4925.64	191.45	21.52 S	190.31 W	191.53	263.55	0.13	-0.13	-3.80
Proj.	4975	0.2	26.7	42	4967.63	191.37	21.39 S	190.25 W	191.45	263.59	0.00	0.00	0.00



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



April 25, 2013

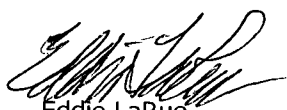
COG, LLC
One Concho Center
600 W. Illinois Ave.
Midland, TX 79701

RE: Randall Federal #2
400' FSL & 185' FEL
Sec. 7, T17S, R30E
Eddy County, New Mexico

Dear Sir,

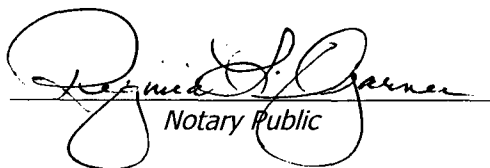
The attached is the Deviation Survey for the above captioned well.

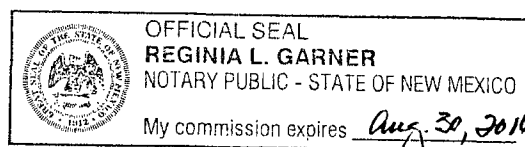
Very truly yours,


Eddie LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 25th day of April, 2013.


Notary Public



Randall Federal #2

Date	Depth	Deviation	Direction
4/17/2013	133	0.50	
4/17/2013	223	0.50	
4/18/2013	364	0.90	
4/19/2013	614	0.50	
4/20/2013	958	0.60	
4/20/2013	1272	1.00	
4/21/2013	1371	0.60	135.30
4/21/2013	1465	1.50	237.40
4/21/2013	1559	2.60	269.60
4/22/2013	1653	4.40	266.50
4/22/2013	1747	5.30	266.60
4/22/2013	1841	4.30	258.50
4/22/2013	1943	3.60	252.30
4/22/2013	2037	3.90	254.20
4/22/2013	2131	4.00	272.80
4/22/2013	2225	3.50	271.40
4/22/2013	2319	4.10	271.60
4/22/2013	2600	4.90	265.50
4/22/2013	2695	4.80	266.50
4/22/2013	2788	4.80	265.00
4/22/2013	2881	4.80	264.90
4/22/2013	2975	4.80	264.10
4/23/2013	3069	4.80	263.00
4/23/2013	3162	4.30	263.40
4/23/2013	3265	4.30	262.00
4/23/2013	3349	4.30	264.10
4/23/2013	3444	4.40	262.50
4/23/2013	3538	4.20	261.00
4/23/2013	3632	4.20	261.00
4/23/2013	3726	4.10	260.00
4/23/2013	3713	4.00	259.00
4/23/2013	4007	4.10	260.00
4/23/2013	4101	2.90	259.90
4/23/2013	4195	1.90	267.60
4/24/2013	4289	0.70	43.20
4/24/2013	4383	0.80	21.80
4/24/2013	4477	0.90	33.00
4/24/2013	4665	0.40	9.00
4/24/2013	4759	0.40	4.50
4/24/2013	4933	0.20	26.70

