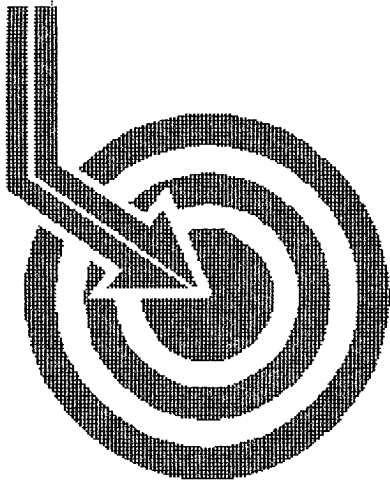




Scientific Drilling

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COG RESOURCES

Field: Maljamar
Site: Lea County, NM
Well: MC Federal #15
Wellpath: DH - Job #32D0210111
Survey: 02/19/10-02/24/10

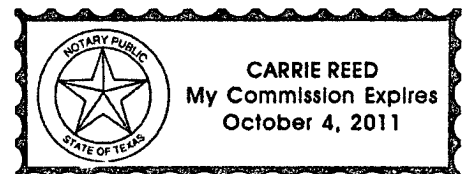
SUR: D-21-17s-32e, 430/N & 660/W
BHL: D-21-17s-32e, 281/N & 380/W
API # 30-025-38835

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

R. Wharton
Company Representative

Notarized this date 11th of March, 2010.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International, Inc.

Survey Report

Company: COG RESOURCES	Date: 2/28/2010	Time: 19:22:09	Page: 1
Field: Maljamar	Co-ordinate(NE) Reference:	Site: Lea County, NM, True North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: MC Federal #15	Section (VS) Reference:	Well (0.00N,0.00E,304.08Azi)	
Wellpath: VH - Job #32K0210116	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 02/18/10	Start Date: 2/18/2010
KSRG 0'-2045'	
Company: Scientific Drilling Internatio	Engineer: Madrid w/Gray
Tool: Keeper,Keeper Gyro	Tied-to: From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.0	0.00	359.70	0.0	0.0	0.0	0.0	0.00	0.0	0.00
100.0	0.07	324.12	100.0	0.1	0.0	0.0	0.07	0.1	324.12
200.0	0.07	289.79	200.0	0.2	0.1	-0.1	0.04	0.2	312.83
300.0	0.32	253.43	300.0	0.4	0.1	-0.5	0.27	0.5	277.61
400.0	1.28	226.93	400.0	0.8	-0.8	-1.5	1.00	1.7	243.06
500.0	2.39	220.90	499.9	1.3	-3.1	-3.7	1.13	4.9	230.00
600.0	3.16	215.64	599.8	1.7	-6.9	-6.7	0.81	9.6	223.96
700.0	3.77	218.07	699.6	2.0	-11.8	-10.3	0.63	15.7	221.27
800.0	4.04	219.93	799.4	2.5	-17.1	-14.6	0.30	22.5	220.59
900.0	3.98	228.16	899.2	3.7	-22.1	-19.5	0.58	29.4	221.40
1000.0	4.22	228.11	998.9	5.5	-26.8	-24.8	0.24	36.5	222.72
1100.0	4.43	228.15	1098.6	7.3	-31.9	-30.4	0.21	44.0	223.64
1200.0	4.51	227.94	1198.3	9.2	-37.1	-36.2	0.08	51.8	224.30
1300.0	3.82	227.78	1298.0	10.9	-42.0	-41.6	0.69	59.1	224.74
1400.0	2.83	226.09	1397.9	12.2	-45.9	-45.8	0.99	64.9	224.95
1500.0	2.13	226.36	1497.8	13.1	-48.9	-48.9	0.70	69.2	225.03
1600.0	1.49	229.85	1597.7	13.9	-51.0	-51.3	0.65	72.3	225.15
1700.0	0.70	239.85	1697.7	14.5	-52.2	-52.8	0.81	74.2	225.35
1800.0	0.42	274.90	1797.7	15.1	-52.4	-53.7	0.43	75.1	225.68
1900.0	0.48	319.54	1897.7	15.8	-52.1	-54.3	0.35	75.3	226.21
2000.0	0.42	349.18	1997.7	16.5	-51.4	-54.7	0.24	75.1	226.76
2045.0	0.11	302.18	2042.7	16.6	-51.2	-54.7	0.79	75.0	226.90



Scientific Drilling International, Inc.

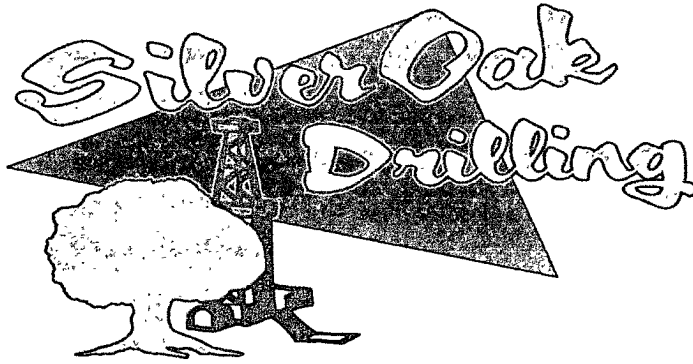
Survey Report

Company: COG RESOURCES	Date: 2/28/2010	Time: 19:29:58	Page: 1
Field: Maljamar	Co-ordinate(NE) Reference:	Site: Lea County, NM, True North	
Site: Lea County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: MC Federal #15	Section (VS) Reference:	Well (0.00N,0.00E,304.08Azi)	
Wellpath: DH - Job #32D0210111	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 02/19/10-02/24/10	Start Date: 2/19/2010
MWD 2142'-5498'	
Company: Scientific Drilling Internatio	Engineer: McCormick/Glover
Tool: MWD,MWD	Tied-to: From: Definitive Path

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
2045.0	0.11	302.18	2042.7	16.6	-51.2	-54.7	0.00	75.0	226.90
2142.0	0.08	68.09	2139.7	16.7	-51.2	-54.8	0.18	74.9	226.95
2205.0	1.06	337.63	2202.7	17.2	-50.6	-54.9	1.69	74.7	227.36
2268.0	2.77	329.56	2265.7	19.0	-48.7	-55.9	2.74	74.2	228.93
2332.0	3.87	316.60	2329.6	22.5	-45.8	-58.2	2.07	74.1	231.77
2395.0	4.41	312.73	2392.4	27.0	-42.7	-61.4	0.96	74.8	235.23
2459.0	5.15	317.69	2456.2	32.2	-38.9	-65.2	1.32	75.9	239.20
2522.0	5.16	319.42	2518.9	37.7	-34.6	-68.9	0.25	77.1	243.33
2617.0	4.79	318.74	2613.6	45.7	-28.4	-74.3	0.39	79.6	249.09
2712.0	4.35	315.51	2708.3	53.0	-22.8	-79.5	0.54	82.7	253.96
2805.0	4.66	327.21	2801.0	60.0	-17.2	-84.0	1.04	85.7	258.46
2900.0	4.04	321.13	2895.7	66.7	-11.3	-88.2	0.81	88.9	262.70
2994.0	5.17	314.77	2989.4	74.0	-5.7	-93.3	1.32	93.4	266.48
3103.0	4.36	313.80	3098.0	82.9	0.6	-99.7	0.75	99.7	270.34
3166.0	4.67	316.52	3160.8	87.8	4.1	-103.2	0.60	103.3	272.28
3260.0	4.72	319.04	3254.5	95.3	9.8	-108.4	0.23	108.8	275.17
3324.0	4.69	316.81	3318.3	100.4	13.7	-111.9	0.29	112.8	276.98
3388.0	4.28	316.39	3382.1	105.3	17.3	-115.4	0.64	116.7	278.55
3451.0	4.44	325.69	3444.9	109.8	21.1	-118.4	1.15	120.2	280.09
3513.0	5.32	325.43	3506.7	114.7	25.4	-121.3	1.42	124.0	281.82
3576.0	5.40	323.69	3569.4	120.2	30.2	-124.7	0.29	128.3	283.61
3671.0	5.07	324.75	3664.0	128.4	37.2	-129.8	0.36	135.0	286.00
3765.0	4.92	328.30	3757.7	135.9	44.0	-134.3	0.37	141.4	288.15
3861.0	5.68	323.94	3853.2	144.2	51.4	-139.3	0.90	148.5	290.25
3954.0	5.78	316.94	3945.8	153.1	58.5	-145.2	0.76	156.6	291.95
4049.0	5.95	316.24	4040.3	162.5	65.6	-151.9	0.19	165.4	293.36
4111.0	5.45	320.42	4102.0	168.5	70.2	-156.0	1.05	171.0	294.22
4174.0	5.39	318.27	4164.7	174.2	74.7	-159.8	0.34	176.4	295.04
4269.0	4.55	319.26	4259.3	182.2	80.9	-165.3	0.89	184.0	296.07
4364.0	4.74	321.21	4354.0	189.6	86.8	-170.2	0.26	191.0	297.02
4459.0	4.74	324.70	4448.7	197.0	93.0	-174.9	0.30	198.1	298.01
4552.0	4.90	324.58	4541.4	204.3	99.4	-179.4	0.17	205.1	298.99
4648.0	5.27	321.05	4637.0	212.4	106.2	-184.6	0.50	213.0	299.91
4742.0	5.32	322.96	4730.6	220.6	113.0	-189.9	0.19	221.0	300.76
4836.0	5.05	315.77	4824.2	228.8	119.5	-195.4	0.75	229.1	301.44
4931.0	5.21	315.70	4918.8	237.1	125.6	-201.4	0.17	237.3	301.94
4994.0	4.41	317.40	4981.6	242.3	129.4	-205.0	1.29	242.4	302.26
5089.0	3.32	327.38	5076.4	248.4	134.4	-209.0	1.34	248.4	302.75
5151.0	3.27	325.79	5138.3	251.7	137.4	-210.9	0.17	251.7	303.07
5214.0	3.21	325.17	5201.2	255.0	140.3	-212.9	0.11	255.0	303.38
5277.0	3.25	323.18	5264.1	258.3	143.2	-215.0	0.19	258.3	303.66
5341.0	2.86	319.45	5328.0	261.6	145.8	-217.1	0.68	261.6	303.89
5403.0	1.90	318.60	5389.9	264.1	147.8	-218.8	1.55	264.1	304.03
5467.0	0.33	292.95	5453.9	265.3	148.7	-219.7	2.51	265.3	304.08
5498.0	0.22	186.00	5484.9	265.3	148.6	-219.8	1.44	265.3	304.07



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

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APR 28 2010

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March 3, 2010

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

RE: MC Federal #15
430' FNL & 600' FWL
Sec. 21, T17S, R32E
Lea County, New Mexico

Dear Sir,

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

Very truly yours,

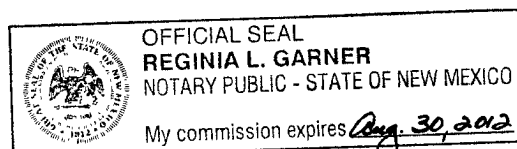
A handwritten signature in cursive script, appearing to read "Eddie C. LaRue".

Eddie C. LaRue
Operations Manager

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 3rd day of March, 2010.

A handwritten signature in cursive script, appearing to read "Regina L. Garner".

Notary Public

Pason DataHub Deviation Survey 2010/03/03 09:42:12

Well Dossier 1266199251 - MC FED 15

#

Depth	Deviation	Direction	TVD
321	0.30	0.00	0.00
813	5.10	0.00	0.00
842	4.20	0.00	882.00
967	3.90	0.00	0.00
1062	4.30	0.00	0.00
1124	4.40	0.00	0.00
1187	4.40	0.00	0.00
1250	4.40	0.00	0.00
1313	4.10	0.00	1353.00
1406	3.20	0.00	1446.00
1500	2.20	0.00	1540.00
1572	1.60	0.00	1635.00
1827	0.40	0.00	1887.00
2142	0.08	68.09	0.00
2205	1.06	337.60	2254.00
2268	2.77	329.50	2317.00
2332	3.87	316.60	2381.00
2459	5.15	317.60	2509.00
2522	5.16	319.40	251.00
2617	4.79	318.70	2613.00
2712	4.35	315.50	2708.25
2805	4.66	327.20	2800.00
2900	4.04	321.10	2895.69
2994	5.17	314.70	2989.39
3098	4.36	313.80	0.00
3166	4.67	316.50	0.00
3228	4.72	319.00	0.00
3324	4.69	316.80	0.00
3388	4.28	316.30	0.00
3395	2.90	317.40	2444.00
3451	4.44	325.60	0.00
3513	5.32	325.40	3506.68
3576	5.40	323.60	3569.40
3671	5.07	324.70	3664.01
3765	4.92	328.30	0.00
3861	5.68	323.90	0.00
3954	5.78	316.90	0.00
4049	5.95	316.20	0.00
4171	5.39	318.20	0.00
4269	4.55	319.20	0.00
4364	4.74	321.20	0.00
4559	4.74	324.70	0.00
4649	5.27	321.00	0.00
4742	5.32	322.90	0.00
4836	5.05	315.70	0.00
4931	5.21	315.70	0.00
4994	4.41	317.40	0.00
5089	3.32	327.30	0.00
5151	3.27	325.70	0.00
5214	3.21	325.10	0.00

Pason DataHub Deviation Survey 2010/03/03 09:42:12

Well Dossier 1266199251 - MC FED 15

#

Depth	Deviation	Direction	TVD
5277	3.25	323.1	0.00
5341	2.86	319.40	0.00
5403	1.90	318.60	0.00
5467	0.33	292.90	0.00
5498	0.22	186.00	0.00
5687	0.80	0.00	5757.00
6189	0.90	0.00	0.00
6380	1.00	0.00	6450.00
6730	0.07	0.00	0.00
7046	0.70	0.00	0.00