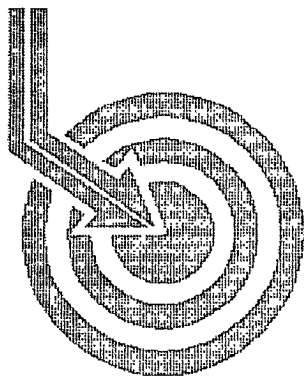




Scientific Drilling

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HOBBSOCD

SUR: N-21-17s-32e, 870/S & 1600/W
BHL: N-21-17s-32e, 371/S & 2270/W
API # 30-025-39108

COG RESOURCES

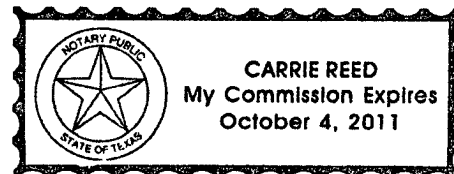
Field: Maljamar
Site: Lea County, NM
Well: MC Federal #37
Wellpath: DH - Job #32D1009419
Survey: 10/12/09-10/20/09

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

.....*[Signature]*.....Company Representative

Notorized this date 11th of November, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific Drilling International Survey Report

Company: COG RESOURCES	Date: 10/14/2009	Time: 13:28:39	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 #37	Section (VS) Reference:	Well (0.00N,0.00E,126.36Azi)	
Wellpath: VH - Job #32K1009420	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 10/12/09	Start Date: 10/12/2009
KSRG 0'-2056'	
Company: Scientific Drilling Internatio	Engineer: Madrid/Garza/Paredes
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
0.00	0.00	359.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.22	90.80	100.00	0.16	0.00	0.19	0.22	0.19	90.80
200.00	0.24	87.97	200.00	0.48	0.00	0.59	0.02	0.59	89.80
300.00	0.24	88.22	300.00	0.81	0.02	1.01	0.00	1.01	89.10
400.00	0.30	62.68	400.00	1.09	0.14	1.45	0.13	1.46	84.40
500.00	0.30	42.87	500.00	1.23	0.45	1.86	0.10	1.92	76.30
600.00	0.23	37.62	599.99	1.27	0.81	2.17	0.07	2.31	69.59
700.00	0.13	10.31	699.99	1.22	1.08	2.31	0.13	2.55	65.00
800.00	0.16	29.10	799.99	1.15	1.31	2.40	0.06	2.73	61.34
900.00	0.21	94.65	899.99	1.29	1.42	2.65	0.20	3.00	61.84
1000.00	0.35	94.15	999.99	1.71	1.38	3.13	0.14	3.42	66.24
1100.00	0.58	101.73	1099.99	2.42	1.25	3.93	0.24	4.13	72.31
1200.00	0.66	95.77	1199.98	3.38	1.09	5.00	0.10	5.12	77.66
1300.00	0.64	106.44	1299.98	4.40	0.88	6.11	0.12	6.17	81.82
1400.00	1.01	82.07	1399.97	5.56	0.84	7.52	0.50	7.57	83.61
1500.00	1.31	78.28	1499.95	6.95	1.20	9.51	0.31	9.59	82.84
1600.00	1.66	78.98	1599.91	8.70	1.70	12.05	0.35	12.17	81.95
1700.00	2.31	69.69	1699.85	10.78	2.68	15.37	0.72	15.60	80.10
1800.00	3.09	63.24	1799.74	13.11	4.59	19.66	0.84	20.19	76.85
1900.00	3.70	60.05	1899.56	15.63	7.42	24.86	0.64	25.95	73.39
2000.00	3.34	64.69	1999.38	18.30	10.27	30.29	0.46	31.99	71.26
2056.00	3.09	61.03	2055.29	19.71	11.70	33.09	0.58	35.10	70.52



Scientific Drilling International Survey Report

Company: COG RESOURCES	Date: 10/23/2009	Time: 15:38:51	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 #37	Section (VS) Reference: Well (0.00N,0.00E,126.36Azi)		
Wellpath: DH - Job #32D1009419	Survey Calculation Method: Minimum Curvature	Db: Sybase	

Survey: 10/12/09-10/20/09	Start Date: 10/12/2009
MWD 2170'-7148'	
Company: Scientific Drilling Internatio	Engineer: Hernandez/Elger/Baldwin
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
2056.00	3.09	61.03	2055.29	19.71	11.70	33.09	0.00	35.10	70.52
2170.00	2.89	62.16	2169.13	22.24	14.53	38.32	0.18	40.98	69.23
2264.00	3.58	87.57	2262.99	25.56	15.76	43.35	1.67	46.12	70.01
2358.00	3.93	104.27	2356.79	30.83	15.10	49.40	1.22	51.65	73.01
2421.00	4.56	112.28	2419.61	35.26	13.61	53.81	1.37	55.50	75.80
2485.00	6.17	113.91	2483.33	41.09	11.25	59.31	2.53	60.37	79.25
2547.00	7.56	114.60	2544.89	48.34	8.21	66.06	2.25	66.57	82.92
2609.00	9.31	122.69	2606.22	57.33	3.80	73.99	3.40	74.09	87.06
2671.00	9.71	125.18	2667.36	67.57	-1.92	82.49	0.93	82.51	91.33
2733.00	9.98	127.93	2728.45	78.16	-8.24	91.00	0.87	91.37	95.17
2795.00	10.81	129.82	2789.43	89.34	-15.26	99.70	1.45	100.86	98.70
2858.00	12.81	130.56	2851.10	102.20	-23.59	109.55	3.18	112.06	102.15
2920.00	13.44	129.09	2911.48	116.25	-32.60	120.36	1.15	124.70	105.16
2982.00	14.14	127.47	2971.69	131.02	-41.75	131.96	1.29	138.41	107.56
3075.00	12.92	126.60	3062.11	152.78	-54.86	149.33	1.33	159.09	110.17
3138.00	13.34	128.46	3123.46	167.09	-63.58	160.67	0.95	172.80	111.59
3200.00	14.08	128.18	3183.69	181.77	-72.69	172.20	1.20	186.92	112.89
3262.00	14.83	128.39	3243.73	197.24	-82.28	184.35	1.21	201.88	114.05
3325.00	15.31	130.50	3304.56	213.59	-92.69	196.99	1.16	217.71	115.20
3387.00	14.71	131.06	3364.45	229.60	-103.18	209.15	1.00	233.22	116.26
3449.00	13.97	131.13	3424.52	244.90	-113.27	220.73	1.19	248.09	117.17
3511.00	14.77	130.97	3484.58	260.24	-123.37	232.33	1.29	263.06	117.97
3604.00	15.85	131.85	3574.27	284.70	-139.62	250.74	1.19	286.99	119.11
3697.00	15.68	131.48	3663.78	309.86	-156.42	269.62	0.21	311.70	120.12
3790.00	15.25	131.04	3753.41	334.57	-172.77	288.26	0.48	336.07	120.94
3891.00	14.93	130.77	3850.93	360.78	-189.99	308.13	0.32	361.99	121.66
3985.00	14.48	131.12	3941.85	384.56	-205.63	326.15	0.49	385.56	122.23
4078.00	14.17	132.40	4031.95	407.47	-220.95	343.32	0.48	408.27	122.76
4172.00	13.44	132.96	4123.24	429.76	-236.15	359.81	0.79	430.38	123.28
4265.00	13.47	133.97	4213.69	451.23	-251.04	375.52	0.25	451.70	123.76
4359.00	15.31	132.94	4304.73	474.42	-267.09	392.48	1.98	474.74	124.24
4485.00	15.18	133.21	4426.30	507.32	-289.72	416.68	0.12	507.51	124.81
4610.00	14.83	133.44	4547.04	539.44	-311.92	440.23	0.28	539.53	125.32
4735.00	14.61	133.47	4667.93	570.96	-333.77	463.28	0.18	570.99	125.77
4860.00	13.89	125.99	4789.10	601.61	-353.43	486.87	1.58	601.63	125.98
4985.00	12.82	124.85	4910.72	630.48	-370.18	510.39	0.88	630.50	125.95
5078.00	12.25	125.41	5001.50	650.66	-381.79	526.90	0.63	650.68	125.93
5174.00	10.64	132.81	5095.59	669.65	-393.71	541.70	2.27	669.66	126.01
5267.00	10.30	133.74	5187.04	686.43	-405.30	554.01	0.41	686.43	126.19
5360.00	9.54	127.62	5278.66	702.38	-415.75	566.12	1.40	702.38	126.29
5453.00	8.51	132.71	5370.50	716.92	-425.12	577.28	1.40	716.92	126.37
5546.00	7.01	132.02	5462.65	729.41	-433.59	586.55	1.62	729.41	126.47
5639.00	5.71	131.62	5555.08	739.67	-440.46	594.23	1.40	739.67	126.55
5732.00	4.68	124.25	5647.69	748.06	-445.67	600.82	1.32	748.07	126.57
5826.00	2.52	131.26	5741.50	753.96	-449.19	605.54	2.34	753.96	126.57
5919.00	2.66	135.33	5834.41	758.12	-452.07	608.60	0.25	758.13	126.61
6012.00	2.38	134.85	5927.32	762.17	-454.97	611.48	0.30	762.18	126.65
6105.00	2.25	133.24	6020.24	765.89	-457.58	614.18	0.16	765.90	126.69
6198.00	3.13	129.42	6113.14	770.24	-460.45	617.47	0.97	770.25	126.71



Scientific Drilling International Survey Report

Company: COG RESOURCES
Field: Maljamar
Site: Lea County, NM
Well: MC Federal #37
Wellpath: DH - Job #32D1009419

Date: 10/23/2009 Time: 15:38:51 Page: 2
Co-ordinate(NE) Reference: Site: Lea County, NM, True North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,126.36Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
6291.00	4.24	127.07	6205.94	776.21	-464.13	622.18	1.20	776.23	126.72
6385.00	4.19	128.05	6299.69	783.12	-468.34	627.66	0.09	783.13	126.73
6478.00	3.95	129.00	6392.46	789.71	-472.45	632.82	0.27	789.73	126.74
6571.00	4.02	131.17	6485.23	796.16	-476.61	637.76	0.18	796.18	126.77
6665.00	3.58	121.94	6579.03	802.37	-480.34	642.74	0.80	802.39	126.77
6759.00	3.49	123.06	6672.85	808.15	-483.45	647.62	0.12	808.17	126.74
6851.00	3.64	123.42	6764.67	813.86	-486.59	652.41	0.16	813.88	126.72
6945.00	3.62	126.21	6858.48	819.81	-489.98	657.29	0.19	819.83	126.70
7039.00	3.58	127.30	6952.29	825.71	-493.51	662.02	0.08	825.73	126.70
7148.00	3.35	126.91	7061.09	832.30	-497.49	667.28	0.21	832.32	126.71