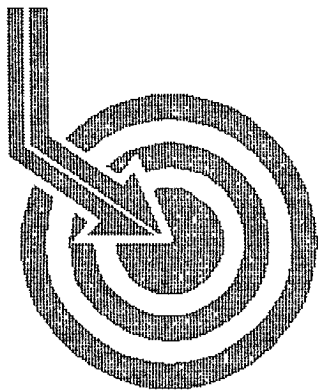
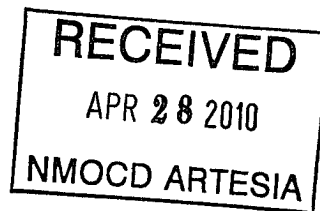




Scientific Drilling



30 015 36945

COG RESOURCES

Field: Fren
Site: Eddy County, NM
Well: Tex Mack 11 Federal #9
Survey: 01/11/10/01/19/10

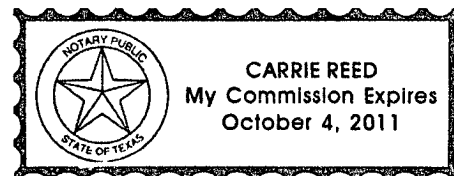
This survey is correct to the best of my knowledge and is supported by actual field data.

Reharter

Notorized this date 11th of February, 2010.

Carrie Reed

Notary Signature
County of Midland
State of Texas





Scientific Drilling International Survey Report

Company: COG RESOURCES	Date: 01/12/2010	Time: 15:59:21	Page: 1
Field: Fren	Co-ordinate(NE) Reference:	Site: Eddy County, NM, Grid North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE: 0.0	
Well: Tex Mack 11 Federal #9	Section (VS) Reference:	Well: (0.00N,0.00E,128.99Azi)	
Wellpath: VH - Job #32K0110022	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 01/10/10	Start Date: 01/10/2010
Company: Scientific Drilling Internatio	Engineer: Guebara/Rowe/Williams
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	359.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.27	149.50	100.00	0.22	-0.20	0.12	0.27	0.24	149.50
200.00	0.32	154.16	200.00	0.69	-0.66	0.36	0.06	0.75	151.23
300.00	0.64	171.84	299.99	1.36	-1.46	0.56	0.35	1.57	158.97
400.00	0.66	170.12	399.99	2.20	-2.58	0.74	0.03	2.69	164.01
500.00	0.95	166.17	499.98	3.29	-3.95	1.04	0.30	4.09	165.31
600.00	0.88	170.15	599.97	4.53	-5.52	1.37	0.09	5.68	166.09
700.00	0.95	170.30	699.95	5.73	-7.09	1.64	0.07	7.28	166.99
800.00	0.69	190.23	799.94	6.65	-8.50	1.67	0.38	8.66	168.88
900.00	0.69	201.69	899.94	7.11	-9.65	1.34	0.14	9.74	172.09
1000.00	0.51	209.17	999.93	7.37	-10.60	0.90	0.20	10.64	175.14
1100.00	0.58	191.88	1099.93	7.68	-11.48	0.58	0.18	11.50	177.11
1200.00	0.57	233.92	1199.92	7.78	-12.27	0.07	0.41	12.27	179.65
1300.00	0.23	218.96	1299.92	7.65	-12.72	-0.45	0.35	12.73	182.04
1400.00	0.28	43.44	1399.92	7.67	-12.70	-0.41	0.51	12.71	181.86
1500.00	0.65	37.57	1499.91	7.67	-12.07	0.10	0.37	12.07	179.52
1600.00	1.01	49.97	1599.90	7.83	-11.06	1.12	0.40	11.11	174.20
1700.00	1.59	62.12	1699.88	8.54	-9.84	3.02	0.64	10.29	162.92
1800.00	1.21	65.65	1799.85	9.56	-8.76	5.21	0.39	10.19	149.24
1819.00	1.55	71.77	1818.84	9.79	-8.59	5.64	1.95	10.28	146.73



Scientific Drilling International, Inc.

Survey Report

Company: COG RESOURCES
Field: Fren
Site: Eddy County, NM
Well: Tex Mack 11 Federal #9
Wellpath: DH - Job #32D0110007

Date: 1/31/2010
Co-ordinate(NE) Reference: Site: Eddy County, NM, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,128.99Azi)
Survey Calculation Method: Minimum Curvature
Db: Sybase

Time: 22:13:56
Page: 1

Survey: 01/11/10/01/19/10
Company: Scientific Drilling Internatio
Tool: MWD,MWD

Start Date: 1/11/2010
Engineer: Calvert/Baldwin
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
1819.0	1.55	71.77	1818.8	9.8	-8.6	5.6	0.00	10.3	146.73
1905.0	1.53	80.46	1904.8	11.2	-8.0	7.9	0.27	11.3	135.59
1968.0	1.93	112.65	1967.8	12.8	-8.3	9.7	1.64	12.8	130.63
2031.0	2.15	153.31	2030.7	14.8	-9.8	11.2	2.27	14.9	131.12
2093.0	3.17	157.45	2092.7	17.4	-12.4	12.4	1.67	17.5	135.05
2156.0	4.40	154.80	2155.5	21.1	-16.2	14.1	1.97	21.5	139.01
2218.0	5.34	148.30	2217.3	26.0	-20.8	16.6	1.76	26.6	141.40
2282.0	6.12	151.05	2281.0	32.0	-26.3	19.8	1.29	32.9	143.02
2344.0	6.91	147.44	2342.6	38.6	-32.4	23.4	1.43	39.9	144.10
2407.0	7.92	144.68	2405.1	46.3	-39.1	28.0	1.70	48.1	144.41
2469.0	8.93	142.24	2466.4	55.1	-46.4	33.4	1.73	57.1	144.25
2532.0	9.75	145.01	2528.6	65.0	-54.6	39.4	1.48	67.4	144.16
2602.0	10.11	132.88	2597.5	76.8	-63.7	47.3	3.03	79.3	143.36
2665.0	9.25	132.98	2659.6	87.4	-70.9	55.1	1.37	89.8	142.13
2727.0	8.52	127.28	2720.9	97.0	-77.0	62.4	1.84	99.1	141.00
2853.0	6.93	123.26	2845.7	113.9	-86.9	76.2	1.33	115.5	138.75
2978.0	7.10	129.72	2969.8	129.1	-95.9	88.4	0.65	130.5	137.33
3072.0	7.65	125.61	3063.0	141.2	-103.3	98.0	0.81	142.4	136.51
3197.0	7.56	127.51	3186.9	157.7	-113.1	111.3	0.21	158.7	135.48
3322.0	7.78	124.12	3310.8	174.3	-122.9	124.8	0.40	175.2	134.56
3448.0	6.76	125.35	3435.8	190.2	-132.0	137.9	0.82	190.9	133.74
3573.0	8.33	127.53	3559.7	206.6	-141.7	151.1	1.28	207.2	133.17
3729.0	7.60	129.39	3714.2	228.2	-155.2	168.0	0.50	228.7	132.72
3954.0	8.59	125.19	3937.0	259.9	-174.3	193.3	0.51	260.3	132.05
4011.0	8.05	125.44	3993.4	268.1	-179.1	200.0	0.95	268.4	131.84
4167.0	7.97	124.55	4147.8	289.8	-191.5	217.8	0.09	290.0	131.33
4324.0	7.41	124.86	4303.4	310.7	-203.5	235.1	0.36	310.9	130.88
4481.0	7.12	125.95	4459.2	330.6	-215.0	251.3	0.20	330.7	130.55
4637.0	6.99	128.38	4614.0	349.7	-226.6	266.5	0.21	349.8	130.37
4762.0	7.73	122.02	4738.0	365.7	-235.7	279.6	0.88	365.7	130.14
4919.0	7.39	121.99	4893.6	386.2	-246.7	297.1	0.22	386.2	129.70
5044.0	7.42	119.36	5017.5	402.1	-254.9	311.0	0.27	402.1	129.34
5106.0	6.05	122.32	5079.1	409.3	-258.6	317.2	2.28	409.3	129.19
5194.0	4.94	121.37	5166.7	417.7	-263.1	324.4	1.27	417.7	129.04
5263.0	4.23	119.14	5235.5	423.1	-265.9	329.1	1.06	423.1	128.93
5327.0	4.07	129.34	5299.3	427.7	-268.4	333.0	1.18	427.7	128.88
5421.0	3.61	138.39	5393.1	434.0	-272.8	337.5	0.81	434.0	128.95
5515.0	3.24	140.13	5486.9	439.5	-277.0	341.2	0.41	439.5	129.08
5577.0	3.81	128.28	5548.8	443.3	-279.6	343.9	1.49	443.3	129.12
5671.0	5.16	117.71	5642.5	450.5	-283.5	350.1	1.68	450.5	129.00
5734.0	4.52	122.04	5705.3	455.8	-286.2	354.7	1.17	455.8	128.90
5796.0	3.75	128.52	5767.2	460.2	-288.7	358.4	1.45	460.2	128.86
5859.0	3.73	116.49	5830.0	464.3	-290.9	361.8	1.24	464.3	128.80
5953.0	4.82	121.36	5923.8	471.2	-294.4	367.9	1.22	471.2	128.66
6015.0	5.02	132.17	5985.5	476.5	-297.5	372.2	1.53	476.5	128.64
6109.0	5.34	141.54	6079.1	484.8	-303.7	377.9	0.96	484.9	128.79
6235.0	5.46	143.33	6204.6	496.4	-313.1	385.2	0.16	496.4	129.11
6360.0	5.36	141.52	6329.0	507.8	-322.5	392.3	0.16	507.9	129.42
6449.0	5.09	147.06	6417.7	515.7	-329.0	397.1	0.64	515.7	129.65