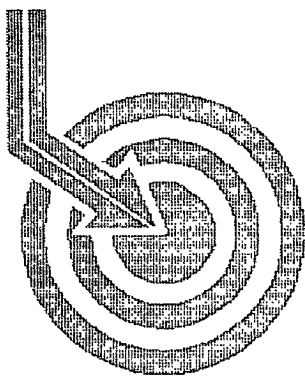




Scientific Drilling

COG RESOURCES

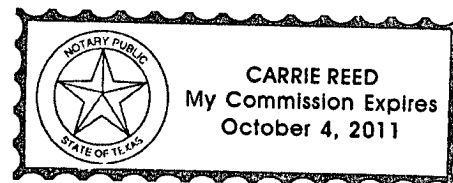
Field: Empire Yeso
Site: Eddy County, NM
Well: Folk Federal #11
Wellpath: DH - Job #32D1009454
Survey: 10/31/09-11/04/09

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

.....Lu Hart..... Company Representative

Notorized this date 3rd of December, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas



mp



Scientific Drilling International Survey Report

Company: COG RESOURCES Date: 11/05/2009 Time: 14:57:03 Page: 1
Field: Empire Yeso Co-ordinate(NE) Reference: Site: Eddy County, NM, True North
Site: Eddy County, NM Vertical (TVD) Reference: SITE 0.0
Well: Folk Federal #11 Section (VS) Reference: Well (0.00N,0.00E,306.79Azi)
Wellpath: VH - Job #32K1009462 Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 10/31/09 Start Date: 10/31/2009
KSRG 0'-775'
Company: Scientific Drilling Internatio Engineer: Garza/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	359.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.48	339.27	100.00	0.35	0.39	-0.15	0.48	0.42	339.27
200.00	0.85	343.01	199.99	1.31	1.49	-0.51	0.37	1.58	341.03
300.00	1.72	335.34	299.97	3.22	3.57	-1.36	0.88	3.82	339.18
400.00	1.50	333.23	399.93	5.71	6.10	-2.57	0.23	6.62	337.13
500.00	1.70	11.65	499.89	7.51	8.72	-2.86	1.07	9.18	341.83
600.00	1.46	41.29	599.85	8.04	11.13	-1.72	0.84	11.26	351.21
700.00	1.32	48.62	699.82	7.71	12.85	-0.02	0.23	12.85	359.93



Scientific Drilling International Survey Report

Company: COG RESOURCES	Date: 11/09/2009	Time: 11:44:31	Page: 1
Field: Empire Yeso	Co-ordinate(NE) Reference:	Site: Eddy County, NM, True North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Folk Federal #11-	Section (VS) Reference:	Well (0.00N,0.00E,306.79Azi)	
Wellpath: DH- Job #32D1009454	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 10/31/09-11/04/09	Start Date: 10/31/2009
MWD 895'-4240'	
Company: Scientific Drilling Internatio	Engineer: McCormick/Baldwin/Baldwin/Beck
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
775.00	1.79	60.64	774.80	7.06	13.99	1.65	0.00	14.09	6.73
895.00	1.23	51.05	894.75	5.98	15.72	4.29	0.51	16.30	15.25
959.00	0.99	19.58	958.74	5.98	16.68	5.01	1.01	17.41	16.71
1022.00	1.44	339.20	1021.73	6.81	17.93	4.91	1.49	18.59	15.31
1086.00	2.19	319.98	1085.70	8.68	19.62	3.84	1.49	19.99	11.07
1150.00	2.98	321.45	1149.63	11.48	21.85	2.01	1.24	21.95	5.26
1214.00	3.35	316.55	1213.53	14.93	24.51	-0.31	0.72	24.51	359.28
1277.00	4.17	315.93	1276.40	19.00	27.49	-3.17	1.30	27.68	353.43
1341.00	5.08	308.87	1340.19	24.13	30.94	-6.99	1.67	31.73	347.27
1405.00	5.83	305.91	1403.90	30.21	34.63	-11.83	1.25	36.60	341.14
1469.00	6.28	303.59	1467.54	36.96	38.47	-17.38	0.80	42.22	335.69
1532.00	6.86	303.36	1530.13	44.16	42.45	-23.39	0.92	48.47	331.14
1596.00	7.66	302.59	1593.62	52.23	46.85	-30.18	1.26	55.73	327.21
1660.00	8.66	302.05	1656.97	61.28	51.70	-37.86	1.57	64.08	323.79
1723.00	9.35	303.00	1719.19	71.11	57.01	-46.17	1.12	73.36	321.00
1787.00	10.13	305.53	1782.27	81.93	63.11	-55.11	1.39	83.78	318.87
1851.00	10.82	305.88	1845.20	93.56	69.90	-64.56	1.08	95.15	317.27
1914.00	10.76	304.81	1907.09	105.35	76.72	-74.18	0.33	106.72	315.97
1978.00	10.32	304.59	1970.01	117.05	83.39	-83.80	0.69	118.22	314.86
2042.00	9.91	304.49	2033.01	128.28	89.76	-93.06	0.64	129.30	313.97
2105.00	10.28	306.10	2095.04	139.32	96.14	-102.07	0.74	140.22	313.29
2169.00	10.98	306.86	2157.94	151.13	103.16	-111.56	1.12	151.95	312.76
2296.00	11.06	307.28	2282.60	175.40	117.80	-130.93	0.09	176.12	311.98
2359.00	10.07	302.80	2344.53	186.94	124.44	-140.37	2.04	187.59	311.56
2456.00	10.08	303.32	2440.03	203.87	133.70	-154.59	0.09	204.39	310.85
2551.00	9.49	302.15	2533.65	219.98	142.43	-168.17	0.66	220.38	310.26
2614.00	9.55	302.60	2595.78	230.37	148.01	-176.97	0.15	230.71	309.91
2678.00	9.55	303.10	2658.90	240.96	153.77	-185.89	0.13	241.25	309.60
2774.00	9.43	303.24	2753.58	256.76	162.43	-199.14	0.13	256.98	309.20
2869.00	9.25	303.74	2847.32	272.15	170.94	-212.00	0.21	272.33	308.88
2933.00	9.28	304.43	2910.49	282.44	176.71	-220.53	0.18	282.60	308.71
2996.00	9.50	304.20	2972.64	292.71	182.51	-229.02	0.35	292.85	308.55
3060.00	10.60	300.64	3035.66	303.84	188.48	-238.45	1.97	303.95	308.32
3155.00	10.44	300.96	3129.06	321.09	197.36	-253.35	0.18	321.15	307.92
3250.00	10.17	300.35	3222.53	337.98	206.02	-267.97	0.31	338.01	307.55
3314.00	9.33	302.67	3285.61	348.77	211.68	-277.21	1.45	348.79	307.36
3378.00	8.52	303.60	3348.83	358.68	217.10	-285.53	1.29	358.69	307.25
3441.00	7.35	304.33	3411.23	367.37	221.96	-292.75	1.86	367.38	307.17
3505.00	6.37	305.36	3474.77	375.01	226.32	-299.02	1.54	375.01	307.12
3568.00	6.29	305.66	3537.38	381.95	230.36	-304.68	0.14	381.96	307.09
3632.00	5.32	302.16	3601.05	388.41	233.98	-310.04	1.61	388.42	307.04
3696.00	4.24	297.92	3664.83	393.71	236.67	-314.64	1.77	393.71	306.95
3759.00	3.43	300.72	3727.69	397.89	238.72	-318.32	1.32	397.89	306.87
3822.00	2.10	300.35	3790.62	400.91	240.27	-320.93	2.11	400.91	306.82
3890.00	1.35	304.39	3858.58	402.94	241.35	-322.67	1.12	402.94	306.80
3953.00	0.48	311.04	3921.58	403.95	241.94	-323.48	1.39	403.95	306.79
4048.00	0.29	294.12	4016.57	404.58	242.30	-324.00	0.23	404.58	306.79
4145.00	0.17	336.30	4113.57	404.95	242.53	-324.28	0.21	404.95	306.79
4240.00	0.24	44.96	4208.57	405.04	242.80	-324.20	0.25	405.04	306.83



Scientific
Drilling

Field: Empire Yeso
Site: Eddy County, NM
Well: Folk Federal #11
Wellpath: DH - Job #32D1009454
Survey: 10/31/09-11/04/09



Azimuths to True North
Magnetic North: 0.00°

Magnetic Field
Strength: 0nT
Dip Angle: 0.00°
Date: 11/09/2009
Model: igrf2000

