



Company: EXXON MOBIL

Lease/Well: FRU/197-28A7

Location:

Rig Name: PRODUCTION

State/County: COLORADO/RIO BLANCO

Latitude: 39.93

GRID North is 1.81 Degrees West of True North

VS-Azi: 0.00 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

DEPTH REFERENCE : KB = 0'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-01.ut

Minimum Curvature Method

Report Date/Time: 9/20/2010 / 14:24

Vaughn Energy Services

Rifle, Colorado

970 456 2071

Surveyor: S.Anderson

FCU 197-28A7 API# 05-103-11632

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
200.00	0.47	90.50	200.00	-0.01	0.82	-0.01	0.82	90.50	0.23
400.00	4.81	122.96	399.74	-4.58	8.68	-4.58	9.81	117.83	2.21
600.00	7.88	116.72	598.49	-15.31	27.96	-15.31	31.88	118.70	1.57
800.00	11.36	108.65	795.66	-27.77	58.87	-27.77	65.09	115.26	1.86
1000.00	14.09	108.76	990.73	-41.90	100.58	-41.90	108.96	112.62	1.37
1200.00	14.41	107.19	1184.58	-57.08	147.40	-57.08	158.07	111.17	0.25
1400.00	13.98	109.82	1378.48	-72.63	193.90	-72.63	207.06	110.53	0.39
1600.00	13.75	112.33	1572.65	-89.85	238.62	-89.85	254.97	110.63	0.32
1800.00	13.71	112.15	1766.94	-107.82	282.56	-107.82	302.44	110.89	0.03
2000.00	13.75	110.52	1961.22	-125.09	326.78	-125.09	349.91	110.95	0.19
2200.00	13.28	109.16	2155.68	-140.96	370.74	-140.96	396.63	110.82	0.29
2400.00	12.67	110.73	2350.58	-156.26	412.95	-156.26	441.52	110.73	0.35
2600.00	13.12	111.41	2545.53	-172.31	454.59	-172.31	486.15	110.76	0.24
2800.00	13.23	113.92	2740.27	-189.88	496.65	-189.88	531.71	110.92	0.29
3000.00	13.01	113.27	2935.05	-208.05	538.25	-208.05	577.06	111.13	0.13
3200.00	13.28	113.86	3129.81	-226.24	579.94	-226.24	622.50	111.31	0.15
3400.00	13.88	115.83	3324.22	-245.98	622.53	-245.98	669.37	111.56	0.38
3600.00	14.42	114.85	3518.15	-266.89	666.71	-266.89	718.14	111.82	0.29
3800.00	13.02	116.53	3712.44	-287.42	709.46	-287.42	765.47	112.05	0.72
4000.00	10.24	117.35	3908.32	-305.66	745.43	-305.66	805.66	112.30	1.39
4200.00	6.62	119.36	4106.12	-319.48	771.27	-319.48	834.82	112.50	1.82
4400.00	2.66	125.83	4305.43	-327.86	785.09	-327.86	850.80	112.67	1.99
4600.00	0.42	129.07	4505.34	-331.04	789.43	-331.04	856.03	112.75	1.12
4800.00	0.92	116.04	4705.33	-332.21	791.45	-332.21	858.34	112.77	0.26
5000.00	1.39	116.02	4905.29	-333.98	795.06	-333.98	862.35	112.79	0.23
5200.00	1.55	114.12	5105.22	-336.15	799.70	-336.15	867.48	112.80	0.09
5400.00	1.54	120.12	5305.15	-338.61	804.51	-338.61	872.87	112.83	0.08
5600.00	1.66	131.07	5505.07	-341.86	809.03	-341.86	878.29	112.91	0.16
5800.00	1.74	128.15	5704.98	-345.64	813.60	-345.64	883.97	113.02	0.06
6000.00	2.56	109.34	5904.84	-349.00	820.20	-349.00	891.36	113.05	0.54
6200.00	3.68	102.14	6104.54	-351.82	830.68	-351.82	902.12	112.95	0.59
6400.00	3.99	103.05	6304.10	-354.74	843.73	-354.74	915.28	112.80	0.16

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
6600.00	3.30	107.64	6503.69	-358.06	856.00	-358.06	927.87	112.70	0.37
6800.00	3.20	107.38	6703.37	-361.47	866.81	-361.47	939.16	112.64	0.05
7000.00	3.01	104.86	6903.08	-364.49	877.21	-364.49	949.92	112.56	0.11
7200.00	2.14	123.56	7102.88	-367.90	885.40	-367.90	958.80	112.56	0.60
7400.00	1.54	129.86	7302.77	-371.69	890.58	-371.69	965.03	112.65	0.32
7600.00	1.22	152.82	7502.71	-375.31	893.62	-375.31	969.23	112.78	0.32
7800.00	1.14	136.58	7702.67	-378.65	895.96	-378.65	972.68	112.91	0.17
8000.00	0.94	136.58	7902.64	-381.28	898.45	-381.28	976.00	113.00	0.10
8200.00	1.06	135.47	8102.61	-383.78	900.87	-383.78	979.21	113.07	0.06
8400.00	1.38	128.04	8302.56	-386.58	904.06	-386.58	983.25	113.15	0.18
8600.00	1.15	140.98	8502.52	-389.63	907.23	-389.63	987.36	113.24	0.18
8800.00	1.28	151.75	8702.47	-393.16	909.55	-393.16	990.88	113.38	0.13
9000.00	1.38	167.70	8902.42	-397.47	911.11	-397.47	994.04	113.57	0.19
9200.00	1.42	175.35	9102.36	-402.29	911.83	-402.29	996.63	113.81	0.10
9400.00	1.62	153.53	9302.29	-407.28	913.29	-407.28	999.99	114.03	0.30
9600.00	1.50	175.66	9502.22	-412.42	914.74	-412.42	1003.42	114.27	0.30
9800.00	1.95	159.80	9702.13	-418.22	916.12	-418.22	1007.06	114.54	0.32
10000.00	1.83	156.58	9902.02	-424.34	918.56	-424.34	1011.84	114.80	0.08
10200.00	1.42	153.40	10101.94	-429.48	920.93	-429.48	1016.16	115.00	0.21
10400.00	0.90	155.32	10301.90	-433.12	922.70	-433.12	1019.30	115.15	0.26
10600.00	1.33	165.20	10501.86	-436.80	923.95	-436.80	1022.00	115.30	0.24
10800.00	1.26	182.39	10701.81	-441.25	924.45	-441.25	1024.36	115.52	0.20
11000.00	1.69	210.55	10901.74	-445.99	922.86	-445.99	1024.98	115.79	0.41
11200.00	1.47	192.54	11101.67	-451.03	920.81	-451.03	1025.34	116.10	0.27
11400.00	1.20	153.81	11301.62	-455.42	921.17	-455.42	1027.60	116.31	0.46
11600.00	0.93	143.73	11501.58	-458.60	923.06	-458.60	1030.70	116.42	0.16
11800.00	0.74	102.21	11701.56	-460.18	925.28	-460.18	1033.40	116.44	0.31
12000.00	0.33	148.46	11901.56	-460.95	926.84	-460.95	1035.14	116.44	0.28
12147.00	0.89	148.54	12048.55	-462.28	927.66	-462.28	1036.46	116.49	0.38

HORIZONTAL DISPLACEMENT IS  
1036.46 FEET AT 116.49 DEGREES