

Company: EXXON MOBIL
Lease/Well: PCU/25-25

Rig Name: PRODUCTION
State/County: COLORADO/RIO-BLANCO

Latitude: 39.87

GRID North is 1.76 Degrees West of True North

VS-Azi: 0.00 Degrees

Depth Reference : KB = GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01.ut

Minimum Curvature Method

Report Date/Time: 6/4/2010 / 13:17

Vaughn Energy Services

Rifle Colorado

970-456-2071

Surveyor: Lamar Guy

PCU 25-25

Duplicate Copy
USP DR # 50959.067

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	1.07	61.70	199.99	0.89	1.64	0.89	1.87	61.70	0.54
400.00	3.89	60.55	399.78	5.11	9.20	5.11	10.52	60.96	1.41
600.00	8.01	53.30	598.66	16.78	26.28	16.78	31.18	57.45	2.09
800.00	10.18	56.07	796.14	34.97	52.13	34.97	62.77	56.14	1.11
1000.00	10.42	51.31	992.92	56.14	80.91	56.14	98.48	55.24	0.44
1200.00	10.25	50.41	1189.67	78.79	108.74	78.79	134.28	54.07	0.12
1400.00	9.55	53.90	1386.70	99.90	135.86	99.90	168.63	53.67	0.46
1600.00	9.10	54.85	1584.05	118.78	162.19	118.78	201.04	53.78	0.24
1800.00	9.10	55.60	1781.54	136.83	188.17	136.83	232.66	53.98	0.06
2000.00	9.01	54.95	1979.04	154.75	214.04	154.75	264.13	54.13	0.07
2200.00	9.25	60.08	2176.51	171.77	240.80	171.77	295.78	54.50	0.42
2400.00	10.04	57.03	2373.68	189.27	269.36	189.27	329.21	54.90	0.47
2600.00	9.39	56.56	2570.82	207.75	297.60	207.75	362.94	55.08	0.33
2800.00	9.03	56.47	2768.24	225.41	324.30	225.41	394.94	55.20	0.18
3000.00	9.89	57.38	2965.52	243.34	351.85	243.34	427.80	55.33	0.44
3200.00	10.12	58.80	3162.47	261.70	381.34	261.70	462.50	55.54	0.17
3400.00	7.89	54.74	3360.00	278.73	407.58	278.73	493.78	55.63	1.16
3600.00	4.08	56.60	3558.87	290.59	424.73	290.59	514.62	55.62	1.91

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
3800.00	1.79	59.30	3758.60	296.11	433.35	296.11	524.86	55.66	1.15
4000.00	0.87	64.27	3958.54	288.36	437.41	288.36	529.48	55.70	0.46
4200.00	0.45	330.56	4158.53	299.71	438.39	299.71	531.04	55.64	0.60
4400.00	0.32	284.60	4358.53	300.53	437.47	300.53	530.75	55.51	0.16
4600.00	0.50	258.34	4558.52	300.49	436.07	300.49	529.58	55.43	0.13
4800.00	0.75	243.89	4758.51	299.73	434.03	299.73	527.47	55.37	0.15
5000.00	0.92	230.54	4958.49	288.14	431.61	288.14	524.57	55.37	0.13
5200.00	0.95	225.71	5158.46	285.97	429.19	285.97	521.35	55.41	0.04
5400.00	1.24	225.02	5358.43	283.28	426.48	283.28	517.69	55.48	0.15
5600.00	1.25	202.55	5558.38	289.73	424.11	289.73	513.63	55.66	0.24
5800.00	1.30	204.36	5758.33	285.65	422.34	285.65	509.87	55.93	0.03
6000.00	1.53	192.20	5958.27	280.97	420.84	280.97	506.01	56.27	0.19
6200.00	1.77	191.68	6158.19	275.33	419.64	275.33	501.90	56.73	0.12
6400.00	1.90	191.67	6358.08	269.05	418.35	269.05	497.39	57.25	0.06
6600.00	2.18	188.75	6557.96	262.04	417.10	262.04	492.58	57.86	0.15
6800.00	2.86	176.75	6757.76	253.29	416.80	253.29	487.73	58.71	0.43
7000.00	3.10	174.08	6957.49	242.94	417.64	242.94	483.16	59.81	0.14
7200.00	2.01	172.74	7157.29	234.08	418.64	234.08	479.64	60.79	0.64
7400.00	1.80	179.46	7357.18	227.46	419.12	227.46	476.86	61.51	0.15
7600.00	1.79	184.33	7557.08	221.21	418.91	221.21	473.73	62.16	0.08
7800.00	1.81	203.55	7756.99	215.20	417.41	215.20	469.62	62.73	0.30
8000.00	2.05	213.01	7956.87	209.30	414.20	209.30	464.07	63.19	0.20
8200.00	2.55	213.55	8156.71	202.59	409.78	202.59	457.13	63.69	0.25
8400.00	2.60	215.31	8356.51	195.17	404.70	195.17	449.31	64.25	0.05
8600.00	2.63	214.42	8556.30	187.68	399.48	187.68	441.37	64.84	0.02
8800.00	2.77	212.12	8756.08	179.81	394.32	179.81	433.38	65.49	0.09
9000.00	2.87	219.72	8955.84	171.88	388.56	171.88	424.88	66.14	0.19
9200.00	2.67	224.94	9155.60	164.73	382.08	164.73	416.08	66.68	0.16
9400.00	2.78	231.01	9355.38	158.39	375.02	158.39	407.10	67.10	0.15
9600.00	2.70	234.45	9555.15	152.60	367.42	152.60	397.85	67.45	0.09
9800.00	3.27	228.44	9754.88	146.08	359.31	146.08	387.87	67.88	0.32
10000.00	3.97	227.24	9954.48	137.59	349.96	137.59	376.04	68.54	0.35
10200.00	4.14	225.87	10153.98	127.87	339.70	127.87	362.97	69.37	0.10
10400.00	4.54	225.73	10353.40	117.32	328.86	117.32	349.16	70.37	0.20
10600.00	4.22	227.25	10552.82	106.80	317.79	106.80	335.25	71.42	0.17
10800.00	4.71	227.02	10752.21	96.21	306.38	96.21	321.13	72.57	0.25
11000.00	4.83	229.96	10951.52	85.20	293.92	85.20	306.02	73.84	0.14
11200.00	4.82	231.72	11150.81	74.57	280.88	74.57	290.61	75.13	0.07
11400.00	4.78	233.80	11350.11	64.44	267.56	64.44	275.21	76.46	0.09

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
11600.00	5.21	233.54	11549.35	54.13	253.54	54.13	259.25	77.95	0.21
11800.00	5.48	234.85	11748.48	43.24	238.43	43.24	242.32	79.72	0.15
12000.00	6.08	237.04	11947.46	31.98	221.74	31.98	224.04	81.79	0.32
12200.00	6.47	239.72	12146.27	20.54	203.13	20.54	204.17	84.22	0.25
12400.00	6.84	238.24	12344.92	8.60	183.28	8.60	183.48	87.31	0.20
12600.00	6.64	239.42	12543.54	-3.56	163.20	-3.56	163.24	91.25	0.12
12800.00	6.26	241.14	12742.27	-14.70	143.69	-14.70	144.44	95.84	0.22
13000.00	6.33	238.65	12941.07	-25.70	124.74	-25.70	127.36	101.64	0.14
13200.00	4.50	239.08	13140.17	-35.46	108.59	-35.46	114.24	108.09	0.91
13400.00	4.45	237.63	13339.56	-43.65	95.31	-43.65	104.83	114.61	0.06
13500.00	4.60	242.41	13439.25	-47.58	88.48	-47.58	100.46	118.27	0.40

Vaughn Energy Services
 Rifle Colorado
 970-456-2071
 Surveyor: Lamar Guy
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