



Company: NOBLE ENERGY

Well: UPRC 7-10G

Rig Name: PRODUCTION

State/County: COLORADO/WELD

Latitude: 40.32

GRID North is 0.51 Degrees East of True North

VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Service Company : VAUGHN ENERGY SERVICES

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro_run01-01.ut

Minimum Curvature Method

Report Date/Time: 12/13/2010 / 10:23

Vaughn Energy Services

Rifle, Colorado

800-606-4976

Surveyor: Nick Campbell

UPRC 7-10G

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	****
100.00	0.08	283.20	100.00	0.02	-0.07	0.02	0.07	283.20	0.08
200.00	0.14	152.76	200.00	-0.08	-0.08	-0.08	0.11	226.48	0.20
300.00	0.08	9.01	300.00	-0.11	-0.01	-0.11	0.11	186.68	0.21
400.00	0.13	45.52	400.00	0.04	0.08	0.04	0.09	62.54	0.08
500.00	0.31	285.14	500.00	0.19	-0.10	0.19	0.22	331.39	0.40
600.00	0.76	259.93	599.99	0.15	-1.02	0.15	1.03	278.28	0.49
700.00	0.67	278.08	699.99	0.11	-2.24	0.11	2.25	272.93	0.24
800.00	0.71	280.28	799.98	0.31	-3.43	0.31	3.44	275.11	0.05
900.00	0.92	266.89	899.97	0.37	-4.84	0.37	4.85	274.42	0.28
1000.00	1.00	273.62	999.96	0.39	-6.50	0.39	6.51	273.39	0.14
1100.00	0.93	277.21	1099.94	0.54	-8.18	0.54	8.20	273.79	0.09
1200.00	1.49	271.30	1199.92	0.67	-10.29	0.67	10.31	273.75	0.57
1300.00	1.86	275.32	1299.88	0.85	-13.21	0.85	13.24	273.70	0.38
1400.00	2.31	275.68	1399.81	1.20	-16.83	1.20	16.87	274.09	0.45
1500.00	2.18	286.52	1499.73	1.94	-20.66	1.94	20.75	275.38	0.44
1600.00	2.29	271.18	1599.66	2.53	-24.48	2.53	24.61	275.89	0.61
1700.00	2.54	279.38	1699.57	2.93	-28.66	2.93	28.81	275.84	0.43
1800.00	2.58	269.57	1799.47	3.27	-33.11	3.27	33.27	275.65	0.44
1900.00	2.98	265.91	1899.35	3.07	-37.96	3.07	38.08	274.63	0.43
2000.00	2.47	261.93	1999.24	2.58	-42.69	2.58	42.76	273.46	0.54
2100.00	2.07	254.96	2099.16	1.81	-46.56	1.81	46.60	272.23	0.49
2200.00	1.95	260.19	2199.10	1.05	-49.99	1.05	50.00	271.21	0.21
2300.00	1.72	249.85	2299.05	0.25	-53.07	0.25	53.07	270.27	0.41
2400.00	1.57	249.81	2399.01	-0.74	-55.76	-0.74	55.77	269.24	0.15
2500.00	1.49	242.72	2498.97	-1.81	-58.20	-1.81	58.23	268.22	0.20
2600.00	1.28	243.71	2598.94	-2.90	-60.36	-2.90	60.43	267.25	0.21
2700.00	1.22	244.30	2698.92	-3.86	-62.32	-3.86	62.44	266.46	0.06
2800.00	0.99	238.16	2798.90	-4.78	-64.02	-4.78	64.20	265.73	0.26

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
2900.00	1.23	233.27	2898.88	-5.87	-65.61	-5.87	65.88	264.88	0.26
3000.00	1.03	232.80	2998.86	-7.06	-67.19	-7.06	67.56	264.00	0.20
3100.00	1.20	238.90	3098.84	-8.15	-68.81	-8.15	69.29	263.25	0.20
3200.00	0.88	219.66	3198.83	-9.28	-70.19	-9.28	70.80	262.47	0.47
3300.00	1.03	245.52	3298.81	-10.25	-71.50	-10.25	72.23	261.85	0.45
3400.00	1.22	203.98	3398.79	-11.59	-72.76	-11.59	73.68	260.95	0.82
3500.00	1.72	197.49	3498.76	-14.00	-73.64	-14.00	74.96	259.24	0.53
3600.00	2.08	186.74	3598.71	-17.24	-74.31	-17.24	76.28	256.94	0.50
3700.00	2.19	188.92	3698.64	-20.93	-74.82	-20.93	77.69	254.37	0.14
3800.00	2.32	182.02	3798.56	-24.84	-75.19	-24.84	79.18	251.72	0.30
3900.00	2.24	184.24	3898.48	-28.81	-75.40	-28.81	80.72	249.09	0.12
4000.00	1.95	187.13	3998.41	-32.44	-75.76	-32.44	82.41	246.82	0.31
4100.00	1.53	196.37	4098.37	-35.41	-76.34	-35.41	84.16	245.12	0.50
4200.00	1.40	189.93	4198.33	-37.89	-76.93	-37.89	85.75	243.78	0.21
4300.00	1.55	204.91	4298.30	-40.31	-77.71	-40.31	87.54	242.58	0.41
4400.00	2.21	219.57	4398.25	-43.02	-79.50	-43.02	90.39	241.58	0.81
4500.00	2.20	227.61	4498.17	-45.80	-82.15	-45.80	94.05	240.86	0.31
4600.00	1.86	241.41	4598.11	-47.87	-84.99	-47.87	97.54	240.61	0.59
4700.00	1.73	229.06	4698.06	-49.63	-87.56	-49.63	100.65	240.45	0.41
4800.00	1.61	215.40	4798.02	-51.77	-89.51	-51.77	103.41	239.96	0.42
4900.00	1.59	219.38	4897.98	-53.99	-91.21	-53.99	105.99	239.38	0.11
5000.00	1.43	209.61	4997.95	-56.14	-92.70	-56.14	108.38	238.80	0.30
5100.00	1.21	208.46	5097.92	-58.16	-93.82	-58.16	110.39	238.21	0.22
5200.00	1.10	193.31	5197.90	-60.03	-94.55	-60.03	112.00	237.59	0.32
5300.00	1.08	195.80	5297.88	-61.87	-95.03	-61.87	113.39	236.93	0.05
5400.00	0.65	180.12	5397.87	-63.34	-95.28	-63.34	114.42	236.39	0.48
5500.00	0.97	198.18	5497.86	-64.71	-95.55	-64.71	115.40	235.89	0.40
5600.00	0.68	195.86	5597.85	-66.09	-95.98	-66.09	116.53	235.45	0.29
5700.00	0.69	188.97	5697.84	-67.25	-96.23	-67.25	117.40	235.05	0.08
5800.00	0.37	135.13	5797.84	-68.07	-96.09	-68.07	117.76	234.69	0.55
5900.00	0.49	122.75	5897.84	-68.54	-95.50	-68.54	117.55	234.34	0.15
6000.00	0.58	128.08	5997.83	-69.08	-94.75	-69.08	117.26	233.91	0.10
6100.00	0.33	233.70	6097.83	-69.56	-94.58	-69.56	117.40	233.67	0.73
6200.00	0.32	101.70	6197.83	-69.78	-94.54	-69.78	117.51	233.57	0.59
6300.00	0.16	107.23	6297.83	-69.88	-94.14	-69.88	117.24	233.41	0.16
6400.00	0.19	138.31	6397.83	-70.05	-93.89	-70.05	117.14	233.28	0.10
6500.00	0.29	151.62	6497.83	-70.40	-93.66	-70.40	117.16	233.07	0.11
6600.00	0.40	144.40	6597.83	-70.91	-93.33	-70.91	117.21	232.78	0.12
6700.00	0.34	117.55	6697.82	-71.33	-92.86	-71.33	117.10	232.47	0.18
6800.00	0.55	139.46	6797.82	-71.83	-92.29	-71.83	116.95	232.10	0.27
6900.00	0.40	95.22	6897.82	-72.23	-91.62	-72.23	116.67	231.75	0.38
7000.00	0.49	105.38	6997.81	-72.38	-90.86	-72.38	116.16	231.46	0.12
7100.00	0.65	100.54	7097.81	-72.60	-89.89	-72.60	115.54	231.07	0.17
7135.00	0.62	105.09	7132.81	-72.68	-89.51	-72.68	115.30	230.92	0.18

HORIZONTAL DISPLACEMENT IS

115.30 FEET AT 230.92 DEGREES