



Company: NOBLE ENERGY  
 Lease/Well: EASTON/12-315  
 Location:  
 Rig Name: PRODUCTION  
 State/County: COLORADO/WELD  
 Latitude: 40.33  
 GRID North is 0.57 Degrees East of True North  
 VS-Azi: 0.00 Degrees

FIELD COPY ONLY (NOT DEFINITIVE)

DEPTH REFERENCE : GL = 0'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: easton12-3i5raw.ut  
 Minimum Curvature Method  
 Report Date/Time: 4/6/2011 / 19:04

Vaughn Energy Services  
 Rifle, Colorado  
 970 456 2071  
 Surveyor: S.Anderson  
 Easton 12-315 API# 05-123-17753

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	0.35	168.24	100.00	-0.30	0.06	-0.30	0.31	168.24	0.35
200.00	0.29	243.65	200.00	-0.72	-0.10	-0.72	0.73	188.13	0.40
300.00	0.25	248.84	300.00	-0.91	-0.53	-0.91	1.06	210.44	0.05
400.00	0.20	226.99	400.00	-1.11	-0.87	-1.11	1.41	218.03	0.10
500.00	0.29	253.39	500.00	-1.30	-1.24	-1.30	1.80	223.62	0.14
600.00	0.32	261.06	599.99	-1.42	-1.76	-1.42	2.26	231.12	0.05
700.00	0.21	272.79	699.99	-1.45	-2.21	-1.45	2.65	236.72	0.12
800.00	0.23	280.13	799.99	-1.41	-2.59	-1.41	2.95	241.46	0.03
900.00	0.22	288.75	899.99	-1.31	-2.97	-1.31	3.24	246.15	0.03
1000.00	0.04	14.39	999.99	-1.22	-3.14	-1.22	3.37	248.84	0.22
1100.00	0.20	327.30	1099.99	-1.03	-3.22	-1.03	3.39	252.22	0.17
1200.00	0.26	324.90	1199.99	-0.70	-3.45	-0.70	3.52	258.51	0.06
1300.00	0.16	280.02	1299.99	-0.49	-3.72	-0.49	3.75	262.48	0.18
1400.00	0.06	218.94	1399.99	-0.51	-3.89	-0.51	3.92	262.59	0.14
1500.00	0.08	213.31	1499.99	-0.60	-3.96	-0.60	4.01	261.34	0.02
1600.00	0.27	201.60	1599.99	-0.88	-4.09	-0.88	4.18	257.83	0.19
1700.00	0.46	266.97	1699.99	-1.12	-4.57	-1.12	4.71	256.22	0.43
1800.00	0.46	275.27	1799.98	-1.11	-5.38	-1.11	5.49	258.37	0.07
1900.00	0.59	282.74	1899.98	-0.96	-6.28	-0.96	6.35	261.35	0.15
2000.00	0.73	300.79	1999.97	-0.51	-7.34	-0.51	7.35	265.99	0.25
2100.00	1.01	308.73	2099.96	0.36	-8.57	0.36	8.58	272.43	0.30
2200.00	1.02	300.04	2199.95	1.36	-10.02	1.36	10.12	277.71	0.15
2300.00	1.12	295.80	2299.93	2.23	-11.67	2.23	11.88	280.80	0.13
2400.00	1.11	293.06	2399.91	3.03	-13.44	3.03	13.78	282.71	0.05
2500.00	0.93	292.73	2499.89	3.73	-15.09	3.73	15.54	283.88	0.18
2600.00	0.89	283.24	2599.88	4.22	-16.59	4.22	17.12	284.27	0.16
2700.00	0.90	286.48	2699.87	4.62	-18.10	4.62	18.68	284.32	0.05
2800.00	0.74	286.32	2799.86	5.03	-19.48	5.03	20.12	284.47	0.16
2900.00	0.70	272.89	2899.85	5.24	-20.71	5.24	21.37	284.20	0.17
3000.00	0.48	275.61	2999.85	5.31	-21.74	5.31	22.37	283.73	0.22
3100.00	0.40	287.68	3099.84	5.46	-22.48	5.46	23.13	283.64	0.12

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
3200.00	0.29	308.48	3199.84	5.72	-23.01	5.72	23.71	283.96	0.16
3300.00	0.22	322.45	3299.84	6.03	-23.33	6.03	24.09	284.49	0.10
3400.00	0.17	330.83	3399.84	6.31	-23.51	6.31	24.35	285.02	0.06
3500.00	0.27	355.27	3499.84	6.67	-23.61	6.67	24.53	285.78	0.13
3600.00	0.23	352.18	3599.84	7.10	-23.65	7.10	24.70	286.71	0.03
3700.00	0.50	330.40	3699.84	7.68	-23.89	7.68	25.10	287.82	0.29
3800.00	0.78	325.00	3799.83	8.61	-24.50	8.61	25.97	289.37	0.29
3900.00	0.76	330.23	3899.82	9.75	-25.22	9.75	27.04	291.14	0.07
4000.00	0.92	329.16	3999.81	11.02	-25.96	11.02	28.21	293.00	0.16
4100.00	0.97	341.74	4099.80	12.52	-26.64	12.52	29.44	295.17	0.21
4200.00	0.91	332.28	4199.78	14.03	-27.28	14.03	30.67	297.21	0.17
4300.00	0.82	320.18	4299.77	15.28	-28.10	15.28	31.99	298.53	0.20
4400.00	1.14	313.23	4399.76	16.51	-29.29	16.51	33.62	299.41	0.35
4500.00	1.66	303.76	4499.73	17.99	-31.21	17.99	36.03	299.96	0.56
4600.00	1.77	299.77	4599.68	19.57	-33.76	19.57	39.02	300.10	0.17
4700.00	2.16	298.88	4699.62	21.25	-36.76	21.25	42.46	300.03	0.39
4800.00	1.57	306.35	4799.57	22.97	-39.51	22.97	45.70	300.17	0.64
4900.00	1.64	301.08	4899.53	24.52	-41.84	24.52	48.49	300.37	0.17
5000.00	1.36	302.48	4999.50	25.90	-44.07	25.90	51.11	300.44	0.29
5100.00	1.28	304.55	5099.47	27.16	-45.98	27.16	53.41	300.57	0.09
5200.00	1.18	303.50	5199.45	28.36	-47.76	28.36	55.54	300.70	0.10
5300.00	1.38	294.32	5299.42	29.42	-49.71	29.42	57.77	300.62	0.29
5400.00	1.29	316.26	5399.39	30.73	-51.59	30.73	60.05	300.78	0.52
5500.00	0.83	333.79	5499.38	32.20	-52.69	32.20	61.75	301.43	0.55
5600.00	1.39	356.31	5599.36	34.06	-53.09	34.06	63.07	302.68	0.70
5700.00	2.45	15.37	5699.30	37.33	-52.60	37.33	64.50	305.36	1.22
5800.00	2.08	357.68	5799.22	41.20	-52.11	41.20	66.43	308.34	0.78
5900.00	2.23	354.30	5899.15	44.96	-52.37	44.96	69.02	310.64	0.20
6000.00	2.01	346.88	5999.09	48.61	-52.96	48.61	71.89	312.54	0.35
6100.00	1.25	334.14	6099.04	51.30	-53.84	51.30	74.36	313.61	0.84
6200.00	1.62	327.17	6199.01	53.47	-55.08	53.47	76.76	314.15	0.41
6300.00	1.25	313.81	6298.98	55.41	-56.63	55.41	79.23	314.37	0.50
6400.00	1.03	328.60	6398.96	56.93	-57.89	56.93	81.19	314.52	0.36
6500.00	1.16	347.89	6498.94	58.69	-58.57	58.69	82.92	315.06	0.39
6600.00	1.10	356.15	6598.92	60.64	-58.85	60.64	84.50	315.86	0.18
6700.00	1.29	355.42	6698.90	62.71	-59.00	62.71	86.11	316.75	0.19
6800.00	1.89	351.57	6798.86	65.46	-59.33	65.46	88.35	317.81	0.61
6900.00	2.23	351.17	6898.80	69.02	-59.87	69.02	91.37	319.06	0.34
7000.00	3.49	356.47	6998.67	73.98	-60.36	73.98	95.48	320.79	1.28
HORIZONTAL DISPLACEMENT IS 95.48 FEET AT 320.79 DEGREES									