



Company: Noble Energy  
 Lease/Well: Thompson / 3  
 Location: S-28 T-4N R-64W  
 Rig Name: Production  
 State/County: Colorado / Weld County  
 Latitude: 40.28, Longitude: -104.56  
 GRID North is 0.61 Degrees East of True North  
 VS-Azi: 0.00 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: inrun2\_ed.ut  
 Minimum Curvature Method  
 Report Date/Time: 2/11/2011 / 21:05

Vaughn Energy Services  
 Fort Worth, Texas  
 817-741-3610  
 Robert Davis

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	0.05	116.03	100.00	-0.02	0.04	-0.02	0.04	116.03	0.05
200.00	0.06	195.16	200.00	-0.08	0.06	-0.08	0.10	145.37	0.07
300.00	0.30	324.98	300.00	0.08	-0.11	0.08	0.13	307.61	0.34
400.00	0.33	17.66	400.00	0.57	-0.17	0.57	0.60	343.66	0.28
500.00	0.70	21.23	499.99	1.42	0.14	1.42	1.42	5.67	0.37
600.00	0.71	27.14	599.99	2.53	0.64	2.53	2.61	14.25	0.07
700.00	0.90	26.63	699.98	3.79	1.28	3.79	4.00	18.64	0.19
800.00	0.75	18.28	799.97	5.11	1.84	5.11	5.43	19.75	0.19
900.00	0.80	7.52	899.96	6.42	2.13	6.42	6.77	18.36	0.15
1000.00	0.71	1.96	999.95	7.73	2.24	7.73	8.05	16.18	0.11
1100.00	0.69	11.98	1099.94	8.94	2.39	8.94	9.25	14.97	0.12
1200.00	0.56	16.15	1199.94	10.00	2.65	10.00	10.34	14.85	0.13
1300.00	0.23	25.91	1299.93	10.65	2.87	10.65	11.03	15.11	0.34
1400.00	0.20	23.96	1399.93	10.99	3.03	10.99	11.40	15.43	0.03
1500.00	0.19	356.21	1499.93	11.31	3.09	11.31	11.72	15.29	0.09
1600.00	0.10	320.08	1599.93	11.54	3.03	11.54	11.93	14.69	0.12
1700.00	0.13	294.28	1699.93	11.65	2.87	11.65	12.00	13.82	0.06
1800.00	0.19	282.53	1799.93	11.73	2.60	11.73	12.02	12.51	0.06
1900.00	0.30	258.33	1899.93	11.71	2.19	11.71	11.92	10.57	0.15
2000.00	0.36	239.08	1999.93	11.50	1.66	11.50	11.62	8.21	0.13
2100.00	0.58	216.51	2099.92	10.93	1.08	10.93	10.98	5.66	0.28
2200.00	0.42	211.68	2199.92	10.21	0.59	10.21	10.23	3.31	0.17
2300.00	0.36	205.97	2299.92	9.61	0.26	9.61	9.62	1.55	0.07
2400.00	0.26	256.68	2399.92	9.28	-0.10	9.28	9.28	359.40	0.28
2500.00	0.23	263.99	2499.92	9.21	-0.52	9.21	9.22	356.77	0.04
2600.00	0.07	250.22	2599.92	9.16	-0.78	9.16	9.20	355.14	0.16
2700.00	0.31	261.24	2699.92	9.10	-1.10	9.10	9.17	353.10	0.24
2800.00	0.24	276.60	2799.91	9.08	-1.57	9.08	9.22	350.19	0.10
2900.00	0.35	298.30	2899.91	9.25	-2.05	9.25	9.48	347.53	0.16
3000.00	0.34	322.95	2999.91	9.64	-2.50	9.64	9.95	345.48	0.15
3100.00	0.33	295.22	3099.91	10.00	-2.94	10.00	10.42	343.62	0.16
3200.00	0.26	249.21	3199.91	10.04	-3.42	10.04	10.61	341.21	0.24
3300.00	0.33	214.89	3299.91	9.72	-3.80	9.72	10.44	338.67	0.19
3400.00	0.60	253.48	3399.90	9.33	-4.46	9.33	10.35	334.46	0.39

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
3500.00	0.50	288.63	3499.90	9.33	-5.37	9.33	10.76	330.05	0.34
3600.00	0.65	317.02	3599.89	9.88	-6.17	9.88	11.65	328.00	0.31
3700.00	0.64	327.06	3699.89	10.76	-6.86	10.76	12.76	327.47	0.11
3800.00	0.48	321.40	3799.88	11.55	-7.42	11.55	13.73	327.27	0.17
3900.00	0.37	337.12	3899.88	12.18	-7.81	12.18	14.47	327.32	0.16
4000.00	0.45	333.14	3999.88	12.82	-8.11	12.82	15.17	327.68	0.08
4100.00	0.50	341.03	4099.87	13.58	-8.43	13.58	15.99	328.17	0.08
4200.00	0.48	333.22	4199.87	14.37	-8.76	14.37	16.83	328.62	0.07
4300.00	0.88	326.37	4299.86	15.38	-9.38	15.38	18.02	328.64	0.41
4400.00	1.31	352.91	4399.85	17.16	-9.94	17.16	19.83	329.90	0.65
4500.00	2.14	359.60	4499.80	20.16	-10.10	20.16	22.55	333.39	0.85
4600.00	1.48	2.37	4599.75	23.31	-10.06	23.31	25.39	336.66	0.66
4700.00	2.08	10.99	4699.70	26.38	-9.66	26.38	28.10	339.89	0.65
4800.00	2.07	17.79	4799.64	29.88	-8.76	29.88	31.14	343.66	0.25
4900.00	1.71	15.57	4899.58	33.05	-7.81	33.05	33.96	346.71	0.37
5000.00	1.39	17.64	4999.54	35.65	-7.04	35.65	36.33	348.83	0.33
5100.00	1.42	24.56	5099.51	37.93	-6.16	37.93	38.42	350.78	0.17
5200.00	0.75	44.01	5199.50	39.52	-5.19	39.52	39.86	352.52	0.75
5300.00	1.19	17.18	5299.48	40.98	-4.43	40.98	41.22	353.84	0.62
5400.00	1.96	26.94	5399.44	43.50	-3.34	43.50	43.63	355.60	0.82
5500.00	2.65	37.86	5499.36	46.85	-1.15	46.85	46.87	358.60	0.82
5600.00	3.12	47.41	5599.24	50.53	2.28	50.53	50.58	2.58	0.67
5700.00	3.22	51.55	5699.08	54.12	6.49	54.12	54.50	6.83	0.25
5800.00	2.67	52.04	5798.95	57.29	10.52	57.29	58.25	10.40	0.55
5900.00	2.31	52.89	5898.86	59.94	13.96	59.94	61.54	13.11	0.36
6000.00	1.50	49.54	5998.80	62.00	16.56	62.00	64.18	14.95	0.81
6100.00	1.15	43.96	6098.77	63.58	18.25	63.58	66.15	16.02	0.37
6200.00	0.91	34.64	6198.76	64.95	19.40	64.95	67.78	16.63	0.30
6300.00	0.42	83.42	6298.75	65.64	20.21	65.64	68.68	17.11	0.70
6400.00	0.46	70.07	6398.75	65.82	20.95	65.82	69.08	17.66	0.11
6500.00	0.91	79.43	6498.74	66.10	22.11	66.10	69.70	18.50	0.46
6600.00	0.46	89.50	6598.73	66.25	23.29	66.25	70.23	19.37	0.46
6700.00	0.52	103.90	6698.73	66.15	24.13	66.15	70.41	20.04	0.14
6800.00	0.56	44.38	6798.73	66.39	24.92	66.39	70.91	20.57	0.54
6900.00	0.74	46.98	6898.72	67.18	25.74	67.18	71.95	20.96	0.18

HORIZONTAL DISPLACEMENT IS  
71.95 FEET AT 20.96 DEGREES