



Company: Noble Energy  
Lease/Well: Wells Ranch USX AA / 25-12  
Location: S-25 T-6N R-63W  
Rig Name: Production  
State/County: Colorado / Weld County  
Latitude: 40.46, Longitude: -104.39  
GRID North is 0.72 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: inrun\_ed.ut  
Minimum Curvature Method  
Report Date/Time: 6/24/2011 / 22:36

Vaughn Energy Services  
Denver, CO  
720-215-1841  
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	0.48	284.82	100.00	0.11	-0.40	0.11	0.42	284.82	0.48
200.00	0.42	298.27	200.00	0.39	-1.13	0.39	1.19	288.92	0.12
300.00	0.26	28.30	299.99	0.76	-1.35	0.76	1.55	299.49	0.49
400.00	0.41	41.57	399.99	1.23	-1.00	1.23	1.58	320.81	0.17
500.00	0.36	36.90	499.99	1.75	-0.57	1.75	1.84	341.87	0.05
600.00	0.39	195.70	599.99	1.68	-0.47	1.68	1.74	344.23	0.74
700.00	0.24	172.68	699.99	1.14	-0.54	1.14	1.26	334.68	0.19
800.00	0.07	188.25	799.99	0.87	-0.52	0.87	1.01	329.03	0.18
900.00	0.05	32.46	899.99	0.85	-0.50	0.85	0.98	329.25	0.12
1000.00	0.06	17.13	999.99	0.94	-0.46	0.94	1.05	333.76	0.02
1100.00	0.10	172.13	1099.99	0.90	-0.43	0.90	1.00	334.31	0.16
1200.00	0.02	231.60	1199.99	0.81	-0.43	0.81	0.92	331.84	0.09
1300.00	0.04	100.78	1299.99	0.79	-0.41	0.79	0.89	332.72	0.05
1400.00	0.13	94.55	1399.99	0.78	-0.26	0.78	0.82	341.24	0.09
1500.00	0.24	105.16	1499.99	0.71	0.05	0.71	0.72	4.15	0.12
1600.00	0.12	109.22	1599.99	0.62	0.36	0.62	0.72	29.83	0.12
1700.00	0.10	65.59	1699.99	0.62	0.54	0.62	0.82	40.68	0.08
1800.00	0.14	88.92	1799.99	0.66	0.73	0.66	0.99	48.02	0.06
1900.00	0.04	56.07	1899.99	0.68	0.88	0.68	1.12	52.33	0.11
2000.00	0.01	249.60	1999.99	0.70	0.90	0.70	1.14	52.26	0.05
2100.00	0.04	340.05	2099.99	0.72	0.88	0.72	1.14	50.40	0.04
2200.00	0.10	10.42	2199.99	0.84	0.88	0.84	1.22	46.30	0.06
2300.00	0.09	213.90	2299.99	0.86	0.85	0.86	1.21	44.77	0.18
2400.00	0.12	166.83	2399.99	0.69	0.83	0.69	1.08	50.32	0.09
2500.00	0.11	29.49	2499.99	0.67	0.90	0.67	1.12	53.47	0.21
2600.00	0.13	273.62	2599.99	0.76	0.83	0.76	1.12	47.68	0.20
2700.00	0.10	222.93	2699.99	0.70	0.65	0.70	0.95	43.08	0.11
2800.00	0.13	216.06	2799.99	0.54	0.52	0.54	0.75	44.18	0.03
2900.00	0.10	187.72	2899.98	0.35	0.44	0.35	0.57	51.29	0.06
3000.00	0.07	342.46	2999.98	0.33	0.41	0.33	0.52	51.60	0.17
3100.00	0.13	290.20	3099.98	0.43	0.28	0.43	0.51	33.44	0.11
3200.00	0.14	83.10	3199.98	0.48	0.29	0.48	0.56	31.43	0.27
3300.00	0.07	138.86	3299.98	0.45	0.46	0.45	0.64	45.69	0.12
3400.00	0.11	240.98	3399.98	0.35	0.42	0.35	0.55	49.80	0.14

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	0.69	199.35	3499.98	-0.26	0.14	-0.26	0.29	151.97	0.61
3600.00	0.69	186.67	3599.97	-1.43	-0.13	-1.43	1.43	185.28	0.15
3700.00	1.21	198.30	3699.96	-3.03	-0.53	-3.03	3.08	190.00	0.55
3800.00	1.34	200.12	3799.94	-5.14	-1.27	-5.14	5.29	193.88	0.14
3900.00	1.40	201.98	3899.91	-7.37	-2.13	-7.37	7.67	196.12	0.07
4000.00	0.49	223.15	3999.89	-8.82	-2.88	-8.82	9.28	198.10	0.95
4100.00	0.17	128.95	4099.89	-9.23	-3.06	-9.23	9.72	198.35	0.54
4200.00	0.09	311.73	4199.89	-9.27	-3.00	-9.27	9.74	197.95	0.26
4300.00	0.15	43.93	4299.89	-9.12	-2.97	-9.12	9.59	198.05	0.18
4400.00	0.17	77.32	4399.89	-9.00	-2.74	-9.00	9.40	196.93	0.09
4500.00	0.13	86.89	4499.89	-8.96	-2.48	-8.96	9.30	195.50	0.05
4600.00	0.11	58.69	4599.89	-8.90	-2.30	-8.90	9.20	194.46	0.06
4700.00	0.07	22.08	4699.89	-8.80	-2.19	-8.80	9.07	194.00	0.07
4800.00	0.11	100.65	4799.89	-8.76	-2.08	-8.76	9.01	193.32	0.12
4900.00	0.18	59.22	4899.89	-8.70	-1.84	-8.70	8.89	191.95	0.12
5000.00	0.14	123.22	4999.89	-8.69	-1.60	-8.69	8.83	190.44	0.18
5100.00	0.11	353.96	5099.89	-8.66	-1.51	-8.66	8.79	189.86	0.23
5200.00	0.14	287.51	5199.89	-8.53	-1.63	-8.53	8.68	190.82	0.14
5300.00	0.24	242.38	5299.89	-8.59	-1.93	-8.59	8.81	192.69	0.18
5400.00	0.15	354.52	5399.89	-8.56	-2.14	-8.56	8.82	194.01	0.33
5500.00	0.15	223.62	5499.89	-8.53	-2.24	-8.53	8.82	194.72	0.28
5600.00	0.15	341.65	5599.89	-8.51	-2.37	-8.51	8.83	195.59	0.26
5700.00	0.23	251.42	5699.89	-8.45	-2.61	-8.45	8.84	197.13	0.27
5800.00	0.16	315.99	5799.89	-8.42	-2.89	-8.42	8.90	198.96	0.22
5900.00	0.17	281.75	5899.89	-8.29	-3.13	-8.29	8.86	200.70	0.10
6000.00	0.22	2.10	5999.89	-8.06	-3.27	-8.06	8.70	202.08	0.26
6100.00	0.17	40.51	6099.89	-7.76	-3.17	-7.76	8.38	202.22	0.14
6200.00	0.11	315.98	6199.89	-7.58	-3.15	-7.58	8.21	202.54	0.19
6300.00	0.18	157.16	6299.88	-7.65	-3.15	-7.65	8.28	202.40	0.29
6400.00	0.03	16.86	6399.88	-7.77	-3.09	-7.77	8.36	201.66	0.20
6500.00	0.20	39.36	6499.88	-7.61	-2.97	-7.61	8.17	201.30	0.18
6600.00	0.14	36.22	6599.88	-7.38	-2.78	-7.38	7.88	200.66	0.06
6700.00	0.41	0.45	6699.88	-6.92	-2.71	-6.92	7.43	201.35	0.30
<div> <div>HORIZONTAL DISPLACEMENT IS</div> <div>7.43 FEET AT 201.35 DEGREES</div> </div>									