



Company: Noble Energy
Rig: Production / V.E.S
API # 05-123-25801
Date: 4/8/2013
Surveyor: Norman Cowan
VS: 0.000
Lat : 40.470
Long: -104.401

Well: Wells Ranch USX AA 23-10
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.71 Degrees East of
Declination: 8.43 Degrees
Depth Reference: Ground Level
Elevation: 4794 Feet
Total Depth as Drilled: 6990 Feet

Lat & Long obtained by handheld GPS at wellhead

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.614	328.019	0.455	-0.284	99.998	0.614	0.455	0.536	328.019
200.000	0.742	331.358	1.478	-0.878	199.991	0.133	1.478	1.719	329.276
300.000	0.698	344.777	2.633	-1.348	299.983	0.174	2.633	2.958	332.885
400.000	0.560	347.180	3.698	-1.617	399.977	0.140	3.698	4.036	336.383
500.000	0.531	336.049	4.598	-1.913	499.973	0.110	4.598	4.980	337.405
600.000	0.509	2.492	5.465	-2.082	599.969	0.239	5.465	5.848	339.142
700.000	0.377	353.212	6.235	-2.102	699.966	0.150	6.235	6.579	341.370
800.000	0.415	8.178	6.920	-2.089	799.963	0.110	6.920	7.228	343.200
900.000	0.381	14.863	7.600	-1.952	899.961	0.057	7.600	7.846	345.592
1000.000	0.342	17.339	8.206	-1.778	999.959	0.042	8.206	8.397	347.775
1100.000	0.545	351.492	8.962	-1.759	1099.956	0.280	8.962	9.133	348.892
1200.000	0.360	352.120	9.743	-1.873	1199.953	0.185	9.743	9.922	349.119
1300.000	0.405	356.477	10.407	-1.938	1299.951	0.053	10.407	10.586	349.453
1400.000	0.380	353.535	11.090	-1.997	1399.948	0.032	11.090	11.268	349.793
1500.000	0.362	345.198	11.725	-2.115	1499.946	0.057	11.725	11.914	349.775
1600.000	0.290	337.578	12.264	-2.292	1599.945	0.083	12.264	12.476	349.414
1700.000	0.134	282.163	12.523	-2.503	1699.944	0.241	12.523	12.770	348.698
1800.000	0.301	315.635	12.735	-2.800	1799.943	0.203	12.735	13.039	347.599
1900.000	0.438	341.307	13.285	-3.106	1899.941	0.212	13.285	13.643	346.840
2000.000	0.748	358.679	14.300	-3.244	1999.936	0.355	14.300	14.663	347.219
2100.000	1.114	350.141	15.910	-3.425	2099.922	0.390	15.910	16.275	347.850
2200.000	1.215	6.918	17.920	-3.464	2199.902	0.354	17.920	18.252	349.060
2300.000	0.833	14.408	19.677	-3.155	2299.886	0.404	19.677	19.929	350.890
2400.000	0.464	24.203	20.751	-2.808	2399.879	0.384	20.751	20.940	352.293
2500.000	0.060	187.342	21.068	-2.649	2499.878	0.522	21.068	21.234	352.834
2600.000	0.152	65.056	21.072	-2.535	2599.878	0.191	21.072	21.224	353.139
2700.000	0.076	148.344	21.072	-2.380	2699.878	0.162	21.072	21.206	353.555
2800.000	0.164	129.081	20.925	-2.235	2799.878	0.096	20.925	21.044	353.905
2900.000	0.268	106.318	20.769	-1.899	2899.877	0.133	20.769	20.856	354.775
3000.000	0.471	160.867	20.315	-1.540	2999.875	0.384	20.315	20.374	355.664
3100.000	1.110	152.604	19.067	-0.960	3099.865	0.648	19.067	19.091	357.118
3200.000	1.026	148.796	17.441	-0.050	3199.848	0.110	17.441	17.441	359.835
3300.000	1.424	146.785	15.636	1.094	3299.825	0.400	15.636	15.674	4.003
3400.000	1.782	140.550	13.395	2.763	3399.786	0.398	13.395	13.677	11.654

3500.000	1.272	90.976	12.175	4.861	3499.754	1.362	12.175	13.110	21.763
3600.000	1.333	51.475	12.881	6.880	3599.730	0.882	12.881	14.603	28.108
3700.000	1.303	44.774	14.413	8.591	3699.704	0.157	14.413	16.779	30.798
3800.000	1.828	48.104	16.285	10.579	3799.666	0.532	16.285	19.419	33.008
3900.000	1.821	52.375	18.320	13.024	3899.615	0.136	18.320	22.478	35.411
4000.000	2.173	57.090	20.320	15.874	3999.555	0.389	20.320	25.786	37.998
4100.000	2.174	62.440	22.228	19.148	4099.483	0.203	22.228	29.338	40.743
4200.000	1.377	48.099	23.907	21.723	4199.434	0.907	23.907	32.303	42.260
4300.000	0.409	335.923	25.035	22.472	4299.423	1.311	25.035	33.641	41.911
4400.000	0.244	166.110	25.155	22.377	4399.422	0.650	25.155	33.668	41.656
4500.000	0.360	204.847	24.663	22.296	4499.421	0.229	24.663	33.247	42.114
4600.000	0.827	312.954	24.869	21.636	4599.417	0.999	24.869	32.963	41.023
4700.000	1.189	340.766	26.341	20.766	4699.402	0.599	26.341	33.542	38.251
4800.000	0.489	29.785	27.691	20.636	4799.392	0.944	27.691	34.534	36.694
4900.000	0.632	40.411	28.481	21.205	4899.387	0.176	28.481	35.508	36.669
5000.000	0.347	125.223	28.726	21.810	4999.384	0.693	28.726	36.068	37.207
5100.000	0.731	224.152	28.094	21.613	5099.381	0.856	28.094	35.446	37.571
5200.000	1.084	226.300	26.983	20.485	5199.369	0.355	26.983	33.878	37.205
5300.000	1.301	229.831	25.597	18.934	5299.347	0.229	25.597	31.839	36.489
5400.000	1.468	227.581	24.001	17.121	5399.318	0.176	24.001	29.482	35.501
5500.000	1.352	229.697	22.374	15.275	5499.287	0.127	22.374	27.091	34.322
5600.000	1.754	224.210	20.514	13.308	5599.251	0.428	20.514	24.452	32.974
5700.000	1.521	231.445	18.589	11.203	5699.210	0.311	18.589	21.704	31.076
5800.000	1.506	244.134	17.188	8.982	5799.175	0.335	17.188	19.394	27.590
5900.000	1.431	239.153	15.975	6.728	5899.142	0.148	15.975	17.334	22.838
6000.000	1.229	241.979	14.831	4.709	5999.115	0.213	14.831	15.561	17.616
6100.000	1.569	249.341	13.844	2.481	6099.085	0.385	13.844	14.065	10.162
6200.000	1.532	245.128	12.799	-0.013	6199.049	0.120	12.799	12.799	359.942
6300.000	2.090	242.698	11.400	-2.847	6298.998	0.563	11.400	11.750	345.980
6400.000	2.016	252.037	10.021	-6.140	6398.935	0.342	10.021	11.752	328.502
6500.000	1.979	247.562	8.819	-9.409	6498.874	0.160	8.819	12.896	313.147
6600.000	2.351	238.777	7.097	-12.759	6598.803	0.498	7.097	14.600	299.085
6700.000	3.067	249.816	5.111	-17.024	6698.691	0.883	5.111	17.775	286.710
6800.000	2.731	254.826	3.564	-21.835	6798.563	0.421	3.564	22.124	279.270

True North