



**Company:** Noble Energy  
**Rig:** Production / VES  
**API #** 05-123-31885  
**Date:** 10/22/2013  
**Surveyor:** CJ Hines  
**VS:** 0.000  
**Lat :** 40.521  
**Long:** -104.454

**Well:** NCLP USX AA #05-01  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** Grid north is 0.68 Deg East of True  
**Declination:** 8.38  
**Depth Reference:** Ground Level  
**Elevation:** 4712  
**Total Depth as Drilled:** 6993

**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	0.416	250.980	-0.118	-0.343	99.999	0.416	-0.118	0.363	250.980
200.000	0.427	313.966	0.022	-0.955	199.997	0.440	0.022	0.955	271.314
300.000	0.893	293.081	0.586	-1.940	299.990	0.517	0.586	2.026	286.810
400.000	0.956	277.109	0.995	-3.485	399.977	0.264	0.995	3.624	285.932
500.000	1.808	297.320	1.822	-5.715	499.948	0.969	1.822	5.998	287.686
600.000	1.443	320.214	3.514	-7.922	599.908	0.738	3.514	8.667	293.920
700.000	1.358	290.085	4.889	-9.841	699.880	0.733	4.889	10.988	296.417
800.000	0.815	293.606	5.581	-11.606	799.862	0.547	5.581	12.878	295.680
900.000	0.496	313.064	6.161	-12.574	899.855	0.385	6.161	14.002	296.104
1000.000	0.826	299.044	6.807	-13.521	999.848	0.365	6.807	15.137	296.722
1100.000	1.232	299.634	7.688	-15.085	1099.832	0.406	7.688	16.931	297.006
1200.000	1.228	285.508	8.506	-17.052	1199.809	0.302	8.506	19.055	296.512
1300.000	1.006	303.725	9.280	-18.814	1299.790	0.416	9.280	20.978	296.254
1400.000	0.781	303.340	10.141	-20.113	1399.778	0.225	10.141	22.525	296.758
1500.000	0.931	345.254	11.301	-20.889	1499.768	0.628	11.301	23.750	298.414
1600.000	1.327	313.587	12.885	-21.934	1599.749	0.725	12.885	25.439	300.431
1700.000	0.781	320.182	14.206	-23.209	1699.732	0.559	14.206	27.212	301.471
1800.000	0.786	308.711	15.159	-24.181	1799.723	0.157	15.159	28.540	302.083
1900.000	0.276	339.435	15.813	-24.801	1899.718	0.567	15.813	29.413	302.522
2000.000	0.681	98.034	15.956	-24.297	1999.716	0.849	15.956	29.067	303.293
2100.000	1.020	88.343	15.898	-22.819	2099.705	0.367	15.898	27.811	304.866
2200.000	1.331	111.026	15.507	-20.844	2199.684	0.554	15.507	25.980	306.647
2300.000	1.904	106.853	14.609	-18.170	2299.644	0.584	14.609	23.315	308.799
2400.000	1.429	104.029	13.825	-15.371	2399.601	0.482	13.825	20.674	311.969
2500.000	1.311	109.042	13.150	-13.080	2499.573	0.168	13.150	18.547	315.151
2600.000	0.933	117.567	12.400	-11.278	2599.554	0.412	12.400	16.761	317.713
2700.000	0.848	156.120	11.346	-10.256	2699.542	0.594	11.346	15.294	317.888
2800.000	0.595	145.588	10.241	-9.663	2799.534	0.285	10.241	14.080	316.663
2900.000	0.541	167.777	9.351	-9.270	2899.530	0.225	9.351	13.167	315.250
3000.000	0.861	148.418	8.249	-8.776	2999.522	0.393	8.249	12.045	313.227
3100.000	0.989	157.167	6.814	-8.048	3099.509	0.190	6.814	10.545	310.254
3200.000	1.169	164.513	5.036	-7.441	3199.491	0.227	5.036	8.985	304.089
3300.000	0.924	117.353	3.682	-6.452	3299.476	0.867	3.682	7.429	299.713
3400.000	1.446	32.557	4.375	-5.057	3399.461	1.644	4.375	6.687	310.863
3500.000	2.590	23.215	7.515	-3.487	3499.397	1.187	7.515	8.284	335.107

3600.000	2.819	26.051	11.801	-1.516	3599.286	0.265	11.801	11.898	352.677
3700.000	3.178	20.336	16.609	0.527	3699.149	0.467	16.609	16.618	1.817
3800.000	2.985	29.118	21.483	2.757	3799.005	0.510	21.483	21.659	7.313
3900.000	3.128	25.591	26.218	5.203	3898.863	0.236	26.218	26.730	11.224
4000.000	3.000	21.964	31.106	7.360	3998.720	0.232	31.106	31.965	13.312
4100.000	1.877	356.295	35.168	8.233	4098.631	1.540	35.168	36.119	13.176
4200.000	0.894	354.059	37.579	8.046	4198.600	0.984	37.579	38.431	12.086
4300.000	0.210	273.616	38.367	7.783	4298.596	0.884	38.367	39.148	11.467
4400.000	0.627	250.535	38.196	7.084	4398.593	0.441	38.196	38.848	10.507
4500.000	0.876	255.550	37.823	5.829	4498.584	0.258	37.823	38.270	8.761
4600.000	1.161	248.547	37.262	4.146	4598.568	0.310	37.262	37.492	6.349
4700.000	1.167	252.191	36.581	2.234	4698.548	0.074	36.581	36.649	3.495
4800.000	0.894	258.870	36.119	0.499	4798.531	0.297	36.119	36.122	0.792
4900.000	0.333	247.990	35.859	-0.536	4898.525	0.570	35.859	35.863	359.144
5000.000	0.581	232.540	35.442	-1.208	4998.522	0.275	35.442	35.462	358.048
5100.000	0.210	216.279	34.985	-1.719	5098.520	0.384	34.985	35.027	357.187
5200.000	0.419	222.265	34.566	-2.074	5198.518	0.212	34.566	34.629	356.566
5300.000	0.747	224.929	33.834	-2.781	5298.513	0.329	33.834	33.948	355.302
5400.000	1.138	206.079	32.481	-3.678	5398.499	0.494	32.481	32.688	353.540
5500.000	0.485	167.917	31.175	-4.025	5498.489	0.813	31.175	31.434	352.643
5600.000	0.154	153.924	30.640	-3.878	5598.488	0.337	30.640	30.885	352.787
5700.000	0.086	354.627	30.594	-3.825	5698.487	0.237	30.594	30.832	352.873
5800.000	0.260	311.839	30.820	-4.001	5798.487	0.205	30.820	31.078	352.603
5900.000	0.808	286.228	31.168	-4.847	5898.482	0.584	31.168	31.542	351.161
6000.000	0.952	285.472	31.586	-6.324	5998.471	0.145	31.586	32.213	348.678
6100.000	1.435	284.514	32.122	-8.337	6098.449	0.483	32.122	33.186	345.451
6200.000	1.567	284.187	32.771	-10.874	6198.414	0.132	32.771	34.528	341.642
6300.000	1.706	281.055	33.391	-13.660	6298.373	0.165	33.391	36.077	337.750
6400.000	1.502	274.814	33.786	-16.427	6398.334	0.268	33.786	37.568	334.071
6500.000	0.887	294.747	34.220	-18.436	6498.313	0.734	34.220	38.871	331.686
6600.000	0.250	358.210	34.763	-19.146	6598.308	0.807	34.763	39.686	331.156
6700.000	0.352	299.154	35.131	-19.421	6698.307	0.310	35.131	40.142	331.065
6750.000	0.723	266.010	35.184	-19.870	6748.304	0.939	35.184	40.407	330.544

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