



**Company:** Noble Energy  
**Rig:** Production/VES  
**API #** 05-123-24387

**Date:** 5/13/13

**Surveyor:** Levi Sheldon

**VS:** 0.000

**Lat :** 40.17137

**Long:** -104.542

**Well:** Waste Management USX Y 03-19

**Location:** Weld County, Colorado

**North Reference:** GRID

**Grid North is:** .62 Degrees East of True North

**Declination:** 8.47

**Depth Reference:** Ground Level

**Elevation:** 4874 Feet

**Total Depth as Drilled:** 7182 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	0.499	264.049	-0.045	-0.433	99.999	0.499	-0.045	0.436	264.049
200.000	0.217	33.125	0.068	-0.763	199.998	0.658	0.068	0.766	275.116
300.000	0.377	148.960	-0.055	-0.490	299.997	0.510	-0.055	0.493	263.591
400.000	0.440	260.409	-0.401	-0.698	399.995	0.676	-0.401	0.805	240.144
500.000	0.212	327.918	-0.308	-1.175	499.994	0.408	-0.308	1.215	255.295
600.000	0.692	219.966	-0.615	-1.661	599.992	0.784	-0.615	1.771	249.690
700.000	0.720	217.741	-1.574	-2.433	699.984	0.039	-1.574	2.898	237.097
800.000	0.999	225.723	-2.680	-3.442	799.973	0.303	-2.680	4.362	232.098
900.000	0.917	237.614	-3.717	-4.742	899.959	0.215	-3.717	6.026	231.909
1000.000	0.732	194.647	-4.764	-5.580	999.949	0.628	-4.764	7.337	229.510
1100.000	0.457	224.056	-5.668	-6.018	1099.944	0.402	-5.668	8.267	226.717
1200.000	1.191	218.910	-6.763	-6.948	1199.933	0.737	-6.763	9.696	225.773
1300.000	1.077	188.137	-8.502	-7.734	1299.914	0.612	-8.502	11.494	222.291
1400.000	1.431	212.157	-10.490	-8.532	1399.891	0.626	-10.490	13.522	219.122
1500.000	0.880	179.147	-12.315	-9.185	1499.871	0.843	-12.315	15.363	216.717
1600.000	1.478	200.401	-14.291	-9.623	1599.850	0.731	-14.291	17.229	213.955
1700.000	1.231	225.044	-16.258	-10.833	1699.823	0.626	-16.258	19.537	213.675
1800.000	0.418	261.299	-17.073	-11.953	1799.812	0.927	-17.073	20.841	214.998
1900.000	0.770	164.006	-17.773	-12.129	1899.809	0.921	-17.773	21.518	214.311
2000.000	0.900	197.527	-19.168	-12.181	1999.798	0.497	-19.168	22.710	212.435
2100.000	1.646	228.974	-20.859	-13.501	2099.774	0.996	-20.859	24.847	212.912
2200.000	1.981	226.541	-22.991	-15.839	2199.724	0.344	-22.991	27.919	214.564
2300.000	1.907	229.340	-25.264	-18.356	2299.666	0.120	-25.264	31.229	216.001
2400.000	1.582	201.611	-27.633	-20.128	2399.622	0.894	-27.633	34.186	216.069
2500.000	1.494	204.674	-30.101	-21.180	2499.586	0.121	-30.101	36.806	215.132
2600.000	0.844	206.443	-31.946	-22.053	2599.564	0.651	-31.946	38.818	214.618
2700.000	1.550	207.105	-33.810	-22.997	2699.542	0.706	-33.810	40.890	214.223
2800.000	1.179	229.794	-35.678	-24.399	2799.514	0.649	-35.678	43.224	214.367
2900.000	1.091	229.768	-36.957	-25.912	2899.494	0.088	-36.957	45.136	215.036
3000.000	1.456	209.486	-38.678	-27.264	2999.470	0.574	-38.678	47.322	215.180
3100.000	1.089	167.794	-40.712	-27.688	3099.447	0.968	-40.712	49.236	214.220
3200.000	0.683	165.935	-42.220	-27.343	3199.435	0.407	-42.220	50.300	212.928
3300.000	1.452	174.685	-44.060	-27.080	3299.417	0.784	-44.060	51.717	211.576
3400.000	0.878	159.332	-46.039	-26.692	3399.396	0.648	-46.039	53.217	210.104

3500.000	1.489	183.746	-48.052	-26.507	3499.375	0.779	-48.052	54.878	208.882
3600.000	1.089	150.537	-50.176	-26.124	3599.351	0.830	-50.176	56.569	207.504
3700.000	0.338	102.710	-51.068	-25.369	3699.343	0.898	-51.068	57.022	206.417
3800.000	0.486	89.931	-51.132	-24.658	3799.340	0.173	-51.132	56.767	205.745
3900.000	1.134	31.177	-50.285	-23.722	3899.331	0.975	-50.285	55.599	205.255
4000.000	0.902	35.029	-48.794	-22.757	3999.315	0.242	-48.794	53.840	205.004
4100.000	0.657	45.563	-47.748	-21.896	4099.306	0.283	-47.748	52.529	204.635
4200.000	1.085	27.917	-46.510	-21.044	4199.294	0.500	-46.510	51.049	204.345
4300.000	0.619	41.247	-45.267	-20.244	4299.283	0.504	-45.267	49.588	204.095
4400.000	0.255	318.863	-44.694	-20.035	4399.281	0.637	-44.694	48.979	204.145
4500.000	0.130	314.458	-44.447	-20.262	4499.280	0.125	-44.447	48.847	204.507
4600.000	0.605	348.570	-43.850	-20.448	4599.278	0.503	-43.850	48.383	205.000
4700.000	0.193	326.809	-43.191	-20.644	4699.275	0.432	-43.191	47.871	205.547
4800.000	0.355	315.705	-42.829	-20.953	4799.274	0.170	-42.829	47.679	206.069
4900.000	0.532	301.954	-42.362	-21.562	4899.271	0.205	-42.362	47.534	206.976
5000.000	1.062	271.533	-42.091	-22.883	4999.261	0.661	-42.091	47.909	208.530
5100.000	1.330	275.922	-41.947	-24.964	5099.240	0.283	-41.947	48.813	210.758
5200.000	1.498	305.550	-41.067	-27.182	5199.210	0.741	-41.067	49.248	213.500
5300.000	1.362	327.809	-39.301	-28.879	5299.180	0.568	-39.301	48.771	216.309
5400.000	0.894	5.694	-37.519	-29.435	5399.162	0.856	-37.519	47.687	218.115
5500.000	0.203	25.945	-36.582	-29.280	5499.157	0.707	-36.582	46.857	218.673
5600.000	1.190	13.139	-35.412	-28.966	5599.148	0.993	-35.412	45.749	219.282
5700.000	1.171	2.799	-33.379	-28.680	5699.127	0.214	-33.379	44.008	220.669
5800.000	1.216	6.516	-31.305	-28.510	5799.105	0.089	-31.305	42.341	222.325
5900.000	0.651	26.745	-29.743	-28.133	5899.092	0.645	-29.743	40.941	223.407
6000.000	1.224	27.737	-28.290	-27.380	5999.078	0.573	-28.290	39.370	224.064
6100.000	1.370	21.881	-26.235	-26.438	6099.052	0.197	-26.235	37.245	225.221
6200.000	0.885	34.431	-24.488	-25.555	6199.033	0.541	-24.488	35.394	226.222
6300.000	1.084	358.741	-22.905	-25.139	6299.019	0.632	-22.905	34.009	227.662
6400.000	0.836	50.555	-21.496	-24.597	6399.006	0.868	-21.496	32.666	228.849
6500.000	0.976	12.089	-20.200	-23.855	6498.995	0.611	-20.200	31.258	229.743
6600.000	1.075	28.382	-18.542	-23.230	6598.979	0.307	-18.542	29.723	231.405
6700.000	0.859	358.669	-16.967	-22.802	6698.965	0.538	-16.967	28.422	233.347
6800.000	0.522	331.506	-15.817	-23.037	6798.958	0.461	-15.817	27.944	235.527