



Company: Noble Energy
Rig: Production/VES
API # 05-123-26326
Date: 10/29/13
Surveyor: Levi Sheldon
VS: 0.000
Lat : 40.517
Long: -104.468

Well: Foss USX AA05-05
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.670 Degrees East
Declination: 8.39
Depth Reference: Ground Level
Elevation: 4,710 Feet
Total Depth as Drilled: 7,032 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	0.531	346.062	0.450	-0.112	99.999	0.531	0.450	0.463	346.062
200.000	0.516	357.069	1.350	-0.246	199.994	0.102	1.350	1.372	349.657
300.000	0.429	340.294	2.151	-0.395	299.991	0.163	2.151	2.188	349.585
400.000	0.430	15.318	2.865	-0.422	399.988	0.258	2.865	2.896	351.612
500.000	0.508	8.356	3.666	-0.259	499.985	0.097	3.666	3.675	355.960
600.000	0.328	1.765	4.391	-0.186	599.982	0.186	4.391	4.395	357.579
700.000	0.237	359.075	4.884	-0.180	699.981	0.092	4.884	4.887	357.887
800.000	0.283	16.655	5.327	-0.113	799.980	0.091	5.327	5.328	358.787
900.000	0.321	30.879	5.803	0.102	899.979	0.084	5.803	5.804	1.002
1000.000	0.313	16.955	6.305	0.325	999.977	0.077	6.305	6.313	2.950
1100.000	0.369	45.863	6.791	0.636	1099.976	0.179	6.791	6.821	5.351
1200.000	0.334	43.364	7.228	1.068	1199.974	0.038	7.228	7.306	8.403
1300.000	0.351	50.118	7.636	1.503	1299.972	0.044	7.636	7.783	11.137
1400.000	0.400	55.134	8.033	2.025	1399.970	0.059	8.033	8.284	14.151
1500.000	0.308	28.073	8.470	2.438	1499.968	0.188	8.470	8.814	16.061
1600.000	0.144	35.422	8.810	2.638	1599.967	0.166	8.810	9.196	16.670
1700.000	0.229	63.142	9.002	2.889	1699.967	0.121	9.002	9.455	17.792
1800.000	0.444	107.091	8.979	3.437	1799.965	0.321	8.979	9.614	20.948
1900.000	0.604	82.549	8.933	4.330	1899.961	0.272	8.933	9.927	25.861
2000.000	0.716	79.872	9.111	5.468	1999.954	0.116	9.111	10.626	30.968
2100.000	0.480	26.310	9.597	6.268	2099.949	0.578	9.597	11.463	33.151
2200.000	0.420	31.542	10.285	6.646	2199.946	0.073	10.285	12.245	32.869
2300.000	0.476	355.077	11.011	6.802	2299.943	0.285	11.011	12.943	31.705
2400.000	0.666	312.681	11.819	6.339	2399.939	0.449	11.819	13.412	28.207
2500.000	0.553	333.999	12.646	5.700	2499.933	0.251	12.646	13.872	24.264
2600.000	0.566	323.276	13.475	5.194	2599.929	0.105	13.475	14.442	21.079
2700.000	0.428	319.941	14.157	4.658	2699.925	0.140	14.157	14.904	18.214
2800.000	0.489	317.985	14.760	4.132	2799.922	0.063	14.760	15.328	15.639
2900.000	0.576	326.220	15.495	3.567	2899.917	0.115	15.495	15.900	12.963
3000.000	0.552	343.816	16.376	3.153	2999.912	0.174	16.376	16.677	10.898
3100.000	0.476	318.541	17.150	2.744	3099.909	0.237	17.150	17.368	9.089
3200.000	0.158	244.039	17.401	2.345	3199.907	0.460	17.401	17.558	7.675
3300.000	0.881	198.414	16.611	1.978	3299.903	0.778	16.611	16.729	6.792
3400.000	1.203	184.105	14.835	1.660	3399.886	0.412	14.835	14.927	6.387
3500.000	1.776	177.683	12.238	1.648	3499.852	0.596	12.238	12.349	7.669

3600.000	2.035	173.719	8.925	1.905	3599.797	0.290	8.925	9.126	12.048
3700.000	2.194	166.807	5.296	2.536	3699.729	0.300	5.296	5.872	25.587
3800.000	2.344	155.956	1.565	3.806	3799.651	0.454	1.565	4.115	67.653
3900.000	2.462	157.237	-2.283	5.471	3899.563	0.129	-2.283	5.928	112.656
4000.000	2.266	172.354	-6.223	6.565	3999.479	0.651	-6.223	9.046	133.471
4100.000	2.072	172.346	-9.974	7.068	4099.407	0.194	-9.974	12.225	144.675
4200.000	2.190	176.200	-13.671	7.436	4199.338	0.185	-13.671	15.563	151.459
4300.000	2.192	193.161	-17.440	7.127	4299.266	0.646	-17.440	18.840	157.772
4400.000	2.059	197.956	-21.011	6.138	4399.197	0.222	-21.011	21.889	163.716
4500.000	2.089	197.439	-24.459	5.037	4499.131	0.035	-24.459	24.973	168.362
4600.000	1.943	216.793	-27.556	3.476	4599.071	0.693	-27.556	27.774	172.811
4700.000	1.889	222.723	-30.124	1.343	4699.015	0.205	-30.124	30.154	177.448
4800.000	2.712	236.541	-32.639	-1.749	4798.934	0.987	-32.639	32.685	183.067
4900.000	2.970	236.461	-35.374	-5.882	4898.811	0.258	-35.374	35.860	189.441
5000.000	2.875	241.866	-37.988	-10.253	4998.681	0.291	-37.988	39.347	195.104
5100.000	2.256	245.066	-40.000	-14.249	5098.581	0.635	-40.000	42.462	199.607
5200.000	1.500	243.821	-41.407	-17.209	5198.526	0.757	-41.407	44.841	202.567
5300.000	0.855	255.920	-42.166	-19.107	5298.505	0.687	-42.166	46.293	204.377
5400.000	0.634	269.604	-42.352	-20.384	5398.496	0.282	-42.352	47.002	205.702
5500.000	0.039	273.911	-42.353	-20.972	5498.494	0.595	-42.353	47.261	206.343
5600.000	0.509	89.669	-42.348	-20.561	5598.493	0.548	-42.348	47.076	205.898
5700.000	0.641	74.113	-42.193	-19.579	5698.488	0.203	-42.193	46.514	204.893
5800.000	0.665	73.824	-41.878	-18.483	5798.481	0.024	-41.878	45.775	203.815
5900.000	0.756	78.902	-41.589	-17.279	5898.474	0.110	-41.589	45.036	202.561
6000.000	0.656	65.181	-41.222	-16.113	5998.466	0.196	-41.222	44.259	201.349
6100.000	0.677	79.249	-40.872	-15.013	6098.460	0.164	-40.872	43.542	200.169
6200.000	0.615	74.368	-40.617	-13.916	6198.453	0.083	-40.617	42.935	198.912
6300.000	0.632	55.118	-40.157	-12.947	6298.447	0.209	-40.157	42.193	197.870
6400.000	0.634	59.254	-39.559	-12.019	6398.441	0.046	-39.559	41.345	196.900
6500.000	0.757	92.743	-39.308	-10.883	6498.434	0.418	-39.308	40.787	195.476
6600.000	0.735	87.712	-39.314	-9.583	6598.426	0.069	-39.314	40.465	193.699
6700.000	0.630	88.589	-39.275	-8.392	6698.419	0.105	-39.275	40.161	192.062
6775.000	1.257	106.488	-39.498	-7.191	6773.408	0.913	-39.498	40.147	190.319

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