



Company: Noble Energy
Rig: Production/VES
API # 05-123-11280

Date: 4/5/13

Surveyor: Levi Sheldon

VS:

Lat : 40.48603

Long: -104.756

Well: Berg 01

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is -0.48 of True North

Declination: 8.62

Depth Reference: Ground Level

Elevation: 4,777 Feet

Total Depth as Drilled: 7,325 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	0.397	162.222	-0.330	0.106	99.999	0.397	-0.330	0.347	162.222
200.000	0.273	156.658	-0.879	0.306	199.997	0.129	-0.879	0.931	160.801
300.000	0.457	144.548	-1.422	0.632	299.995	0.199	-1.422	1.556	156.051
400.000	0.295	141.016	-1.948	1.025	399.993	0.164	-1.948	2.201	152.237
500.000	0.377	149.790	-2.433	1.353	499.991	0.097	-2.433	2.784	150.915
600.000	0.420	155.756	-3.052	1.670	599.989	0.060	-3.052	3.479	151.318
700.000	0.209	133.971	-3.513	1.951	699.988	0.239	-3.513	4.019	150.947
800.000	0.287	158.436	-3.873	2.175	799.987	0.130	-3.873	4.442	150.680
900.000	0.273	135.037	-4.274	2.435	899.985	0.114	-4.274	4.919	150.325
1000.000	0.226	135.923	-4.585	2.741	999.985	0.047	-4.585	5.342	149.124
1100.000	0.145	149.682	-4.836	2.943	1099.984	0.092	-4.836	5.661	148.680
1200.000	0.291	125.561	-5.093	3.213	1199.983	0.169	-5.093	6.021	147.752
1300.000	0.408	119.815	-5.417	3.728	1299.981	0.122	-5.417	6.576	145.465
1400.000	0.368	121.899	-5.764	4.309	1399.979	0.042	-5.764	7.197	143.215
1500.000	0.329	131.839	-6.125	4.796	1499.977	0.072	-6.125	7.780	141.937
1600.000	0.458	135.660	-6.603	5.290	1599.975	0.131	-6.603	8.460	141.300
1700.000	0.496	160.670	-7.297	5.713	1699.971	0.210	-7.297	9.267	141.945
1800.000	0.444	190.916	-8.086	5.783	1799.968	0.251	-8.086	9.941	144.431
1900.000	1.067	230.179	-9.063	4.994	1899.960	0.776	-9.063	10.348	151.143
2000.000	1.247	237.841	-10.238	3.358	1999.939	0.236	-10.238	10.775	161.841
2100.000	0.822	237.085	-11.207	1.835	2099.923	0.425	-11.207	11.356	170.700
2200.000	0.809	241.750	-11.931	0.611	2199.913	0.068	-11.931	11.946	177.068
2300.000	0.678	248.171	-12.485	-0.560	2299.904	0.156	-12.485	12.497	182.570
2400.000	0.771	246.277	-12.976	-1.725	2399.896	0.096	-12.976	13.090	187.574
2500.000	0.454	219.692	-13.551	-2.594	2499.891	0.418	-13.551	13.797	190.838
2600.000	0.477	200.871	-14.245	-2.995	2599.887	0.154	-14.245	14.556	191.875
2700.000	0.488	218.193	-14.969	-3.407	2699.884	0.146	-14.969	15.352	192.824
2800.000	0.427	203.146	-15.646	-3.817	2799.881	0.135	-15.646	16.105	193.711
2900.000	0.291	211.393	-16.206	-4.096	2899.879	0.144	-16.206	16.715	194.185
3000.000	0.411	225.811	-16.673	-4.486	2999.877	0.148	-16.673	17.266	195.058
3100.000	0.308	200.532	-17.175	-4.837	3099.875	0.187	-17.175	17.843	195.730
3200.000	0.310	199.384	-17.682	-5.021	3199.873	0.006	-17.682	18.381	195.854
3300.000	0.356	226.670	-18.150	-5.337	3299.872	0.163	-18.150	18.918	196.386
3400.000	0.465	265.660	-18.394	-5.968	3399.869	0.293	-18.394	19.338	197.975
3500.000	0.563	279.954	-18.340	-6.856	3499.865	0.161	-18.340	19.579	200.498

3600.000	0.530	266.237	-18.285	-7.802	3599.861	0.135	-18.285	19.880	203.107
3700.000	0.474	271.036	-18.308	-8.677	3699.857	0.070	-18.308	20.260	205.358
3800.000	0.681	279.727	-18.200	-9.676	3799.852	0.225	-18.200	20.612	207.998
3900.000	0.683	273.819	-18.060	-10.857	3899.845	0.070	-18.060	21.072	211.014
4000.000	0.758	276.000	-17.951	-12.110	3999.837	0.080	-17.951	21.654	214.006
4100.000	0.677	283.002	-17.749	-13.344	4099.829	0.120	-17.749	22.205	216.937
4200.000	0.744	276.594	-17.541	-14.564	4199.821	0.104	-17.541	22.799	219.702
4300.000	0.959	277.345	-17.360	-16.039	4299.810	0.216	-17.360	23.635	222.735
4400.000	0.842	272.743	-17.218	-17.603	4399.798	0.138	-17.218	24.624	225.635
4500.000	1.211	280.790	-16.984	-19.376	4499.782	0.395	-16.984	25.766	228.763
4600.000	1.136	273.583	-16.725	-21.404	4599.761	0.165	-16.725	27.163	231.996
4700.000	0.992	272.934	-16.618	-23.257	4699.744	0.145	-16.618	28.585	234.453
4800.000	0.945	259.174	-16.729	-24.932	4799.729	0.237	-16.729	30.024	236.139
4900.000	0.983	251.137	-17.161	-26.554	4899.715	0.140	-17.161	31.617	237.126
5000.000	0.786	244.043	-17.739	-27.983	4999.703	0.225	-17.739	33.132	237.628
5100.000	0.814	243.777	-18.353	-29.237	5099.694	0.028	-18.353	34.520	237.882
5200.000	0.749	262.739	-18.750	-30.523	5199.684	0.265	-18.750	35.822	238.438
5300.000	0.536	244.470	-19.034	-31.594	5299.678	0.293	-19.034	36.885	238.933
5400.000	0.305	246.294	-19.343	-32.260	5399.675	0.231	-19.343	37.614	239.053
5500.000	0.251	231.044	-19.588	-32.674	5499.674	0.091	-19.588	38.096	239.058
5600.000	0.195	80.267	-19.697	-32.677	5599.674	0.432	-19.697	38.154	238.919
5700.000	0.430	359.749	-19.292	-32.511	5699.673	0.442	-19.292	37.804	239.314
5800.000	0.588	355.812	-18.405	-32.550	5799.669	0.162	-18.405	37.393	240.515
5900.000	0.843	352.693	-17.163	-32.681	5899.661	0.257	-17.163	36.913	242.293
6000.000	0.942	11.319	-15.627	-32.613	5999.649	0.305	-15.627	36.164	244.397
6100.000	0.512	20.904	-14.403	-32.292	6099.641	0.446	-14.403	35.359	245.961
6200.000	0.313	22.889	-13.734	-32.026	6199.638	0.200	-13.734	34.847	246.788
6300.000	0.311	42.150	-13.282	-31.738	6299.637	0.104	-13.282	34.405	247.292
6400.000	0.266	33.497	-12.887	-31.428	6399.635	0.062	-12.887	33.968	247.704
6500.000	0.113	290.219	-12.660	-31.392	6499.635	0.312	-12.660	33.849	248.037
6600.000	0.139	241.087	-12.684	-31.591	6599.635	0.107	-12.684	34.042	248.124
6700.000	0.140	214.264	-12.844	-31.766	6699.635	0.065	-12.844	34.264	247.985
6800.000	0.241	189.514	-13.152	-31.869	6799.634	0.129	-13.152	34.476	247.575
6900.000	0.301	225.993	-13.542	-32.093	6899.633	0.179	-13.542	34.833	247.122
7000.000	0.339	258.861	-13.782	-32.572	6999.631	0.185	-13.782	35.368	247.066
7100.000	0.486	213.424	-14.193	-33.096	7099.629	0.346	-14.193	36.011	246.788
7150.000	0.458	172.419	-14.568	-33.186	7149.628	0.664	-14.568	36.243	246.299