



Company: Noble Energy

Rig: Production / CoreTech

API # 05-123-10888

Date: 9/26/2013

Surveyor: CJ Hines

VS: 0.000

Lat : 40.34304

Long: -104.6186

Well: Weidenkeller 1-1

Location: Weld County, Colorado

North Reference: GRID

Convergence: GRID North is 0.57 Degrees East o

Declination: 8.47

Depth Reference: Ground Level

Elevation: 4731

Total Depth as Drilled: 7141

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.000
100.000	0.242	181.834	-0.211	-0.007	100.000	0.242	-0.211	0.211	181.834
200.000	0.114	175.413	-0.522	-0.006	199.999	0.130	-0.522	0.522	180.613
300.000	0.257	156.618	-0.826	0.091	299.999	0.153	-0.826	0.831	173.696
400.000	0.355	174.289	-1.341	0.211	399.997	0.136	-1.341	1.357	171.053
500.000	0.322	168.678	-1.925	0.297	499.995	0.047	-1.925	1.948	171.225
600.000	0.363	156.470	-2.491	0.479	599.994	0.084	-2.491	2.537	169.119
700.000	0.377	147.912	-3.061	0.780	699.992	0.057	-3.061	3.158	165.697
800.000	0.299	137.002	-3.530	1.133	799.990	0.101	-3.530	3.708	162.207
900.000	0.446	139.749	-4.018	1.562	899.988	0.149	-4.018	4.311	158.753
1000.000	0.333	132.945	-4.514	2.027	999.985	0.122	-4.514	4.948	155.816
1100.000	0.484	143.170	-5.050	2.493	1099.983	0.167	-5.050	5.632	153.723
1200.000	0.356	173.560	-5.697	2.781	1199.980	0.253	-5.697	6.340	153.976
1300.000	0.076	89.516	-6.005	2.882	1299.980	0.356	-6.005	6.661	154.359
1400.000	0.227	202.616	-6.187	2.872	1399.979	0.266	-6.187	6.821	155.099
1500.000	0.279	239.445	-6.494	2.586	1499.978	0.167	-6.494	6.990	158.284
1600.000	0.096	257.202	-6.636	2.295	1599.978	0.190	-6.636	7.022	160.920
1700.000	0.193	318.695	-6.528	2.103	1699.978	0.169	-6.528	6.858	162.144
1800.000	0.201	296.597	-6.323	1.835	1799.977	0.076	-6.323	6.584	163.813
1900.000	0.487	283.148	-6.148	1.265	1899.975	0.295	-6.148	6.277	168.371
2000.000	0.455	268.305	-6.063	0.455	1999.972	0.126	-6.063	6.080	175.710
2100.000	0.147	203.384	-6.192	0.007	2099.970	0.415	-6.192	6.192	179.932
2200.000	0.402	124.131	-6.507	0.247	2199.969	0.401	-6.507	6.511	177.828
2300.000	0.665	115.777	-6.956	1.060	2299.965	0.274	-6.956	7.036	171.338
2400.000	1.030	141.874	-7.915	2.138	2399.954	0.522	-7.915	8.199	164.888
2500.000	0.997	153.150	-9.399	3.085	2499.939	0.202	-9.399	9.892	161.826
2600.000	0.753	144.839	-10.712	3.857	2599.927	0.274	-10.712	11.385	160.200
2700.000	0.698	147.296	-11.762	4.564	2699.919	0.063	-11.762	12.616	158.791
2800.000	0.570	161.706	-12.747	5.050	2799.913	0.204	-12.747	13.711	158.389
2900.000	0.459	178.907	-13.620	5.214	2899.909	0.189	-13.620	14.584	159.054
3000.000	0.452	204.779	-14.379	5.056	2999.906	0.204	-14.379	15.242	160.628
3100.000	0.169	224.045	-14.844	4.788	3099.904	0.298	-14.844	15.597	162.122
3200.000	0.114	236.789	-15.004	4.602	3199.904	0.062	-15.004	15.694	162.947
3300.000	0.387	196.623	-15.383	4.422	3299.903	0.309	-15.383	16.006	163.962
3400.000	0.392	257.011	-15.783	3.992	3399.901	0.392	-15.783	16.280	165.805
3500.000	0.578	148.418	-16.290	3.923	3499.899	0.795	-16.290	16.756	166.459

3600.000	1.484	132.212	-17.590	5.147	3599.882	0.943	-17.590	18.328	163.690
3700.000	1.290	149.581	-19.431	6.676	3699.853	0.461	-19.431	20.546	161.038
3800.000	1.658	133.547	-21.399	8.295	3799.820	0.549	-21.399	22.950	158.812
3900.000	1.508	146.860	-23.497	10.063	3899.782	0.396	-23.497	25.561	156.817
4000.000	1.307	158.619	-25.661	11.198	3999.752	0.351	-25.661	27.998	156.425
4100.000	0.537	167.528	-27.181	11.715	4099.739	0.781	-27.181	29.598	156.684
4200.000	1.340	164.272	-28.763	12.133	4199.724	0.805	-28.763	31.218	157.129
4300.000	1.337	170.386	-31.039	12.645	4299.697	0.143	-31.039	33.516	157.835
4400.000	1.719	156.053	-33.560	13.449	4399.662	0.537	-33.560	36.154	158.163
4500.000	1.124	170.375	-35.897	14.221	4499.631	0.688	-35.897	38.612	158.388
4600.000	0.944	169.708	-37.675	14.532	4599.615	0.180	-37.675	40.381	158.907
4700.000	1.101	167.334	-39.423	14.890	4699.599	0.163	-39.423	42.142	159.308
4800.000	1.510	169.551	-41.657	15.340	4799.572	0.412	-41.657	44.392	159.784
4900.000	1.874	170.871	-44.567	15.838	4899.529	0.366	-44.567	47.298	160.436
5000.000	1.769	174.344	-47.718	16.250	4999.478	0.153	-47.718	50.409	161.194
5100.000	1.257	188.292	-50.339	16.244	5099.443	0.627	-50.339	52.895	162.116
5200.000	1.305	188.119	-52.552	15.925	5199.418	0.048	-52.552	54.912	163.142
5300.000	1.637	177.903	-55.107	15.816	5299.385	0.422	-55.107	57.332	163.986
5400.000	1.585	192.042	-57.888	15.580	5399.346	0.400	-57.888	59.948	164.936
5500.000	0.807	211.379	-59.841	14.925	5499.324	0.866	-59.841	61.675	165.996
5600.000	0.435	222.300	-60.723	14.303	5599.318	0.389	-60.723	62.385	166.746
5700.000	0.228	323.353	-60.844	13.929	5699.317	0.528	-60.844	62.418	167.105
5800.000	0.350	330.455	-60.419	13.660	5799.316	0.127	-60.419	61.944	167.260
5900.000	0.686	327.120	-59.651	13.185	5899.311	0.338	-59.651	61.091	167.536
6000.000	1.195	5.276	-58.110	12.956	5999.298	0.781	-58.110	59.536	167.431
6100.000	0.836	347.445	-56.359	12.893	6099.283	0.474	-56.359	57.815	167.114
6200.000	1.150	23.203	-54.724	13.130	6199.269	0.679	-54.724	56.277	166.508
6300.000	1.193	24.251	-52.853	13.953	6299.248	0.048	-52.853	54.664	165.212
6400.000	0.803	41.253	-51.377	14.843	6399.233	0.485	-51.377	53.478	163.886
6500.000	0.881	113.229	-51.153	16.011	6499.224	0.992	-51.153	53.600	162.619
6600.000	1.724	134.378	-52.508	17.793	6599.198	0.956	-52.508	55.441	161.280
6700.000	2.057	148.951	-55.098	19.794	6699.144	0.582	-55.098	58.546	160.239

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