



Company: Noble Energy
Rig: PRODUCTION / VES
API # 05-123-16745
Date: 1/22/2014
Surveyor: DUSTIN SKORUPPA
VS: 0.000
Lat : 40.267
Long: -104.842

Well: STATE 36-11E
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is 0.43 East of True N
Declination: 8.55
Depth Reference: Ground Level
Elevation: 4769
Total Depth as Drilled: 7409

Lat & Long obtained by handheld GPS at wellhead

Gyro Survey Calculations

Depth	Inc	AZI	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	0.207	271.927	0.006	-0.181	100.000	0.207	0.006	0.181	271.927
200.000	0.098	190.597	-0.072	-0.377	200.000	0.215	-0.072	0.384	259.226
300.000	0.509	276.818	-0.103	-0.833	299.998	0.512	-0.103	0.840	262.956
400.000	0.086	280.822	-0.036	-1.348	399.997	0.422	-0.036	1.349	268.464
500.000	0.236	283.635	0.027	-1.623	499.996	0.150	0.027	1.623	270.940
600.000	0.150	311.010	0.161	-1.922	599.996	0.124	0.161	1.928	274.791
700.000	0.379	315.169	0.482	-2.254	699.994	0.230	0.482	2.305	282.063
800.000	0.413	309.976	0.948	-2.763	799.992	0.049	0.948	2.921	288.932
900.000	0.374	349.389	1.500	-3.099	899.990	0.268	1.500	3.443	295.828
1000.000	0.243	305.179	1.943	-3.333	999.989	0.262	1.943	3.858	300.246
1100.000	0.256	349.469	2.285	-3.547	1099.988	0.189	2.285	4.220	302.790
1200.000	0.294	2.202	2.761	-3.578	1199.987	0.072	2.761	4.519	307.653
1300.000	0.318	327.554	3.251	-3.717	1299.985	0.184	3.251	4.938	311.173
1400.000	0.424	280.246	3.551	-4.230	1399.983	0.313	3.551	5.523	310.013
1500.000	0.564	298.144	3.849	-5.028	1499.980	0.207	3.849	6.332	307.434
1600.000	0.527	245.808	3.892	-5.881	1599.976	0.482	3.892	7.052	303.497
1700.000	0.264	288.728	3.777	-6.519	1699.973	0.379	3.777	7.534	300.092
1800.000	0.137	243.967	3.799	-6.844	1799.973	0.192	3.799	7.827	299.035
1900.000	0.406	151.421	3.435	-6.781	1899.972	0.434	3.435	7.602	296.867
2000.000	0.088	190.463	3.049	-6.626	1999.971	0.342	3.049	7.294	294.711
2100.000	0.308	123.992	2.824	-6.417	2099.970	0.285	2.824	7.011	293.750
2200.000	0.152	356.989	2.806	-6.201	2199.970	0.418	2.806	6.806	294.345
2300.000	0.596	45.230	3.305	-5.839	2299.968	0.508	3.305	6.709	299.509
2400.000	0.972	34.889	4.366	-4.985	2399.958	0.400	4.366	6.627	311.217
2500.000	0.832	29.959	5.691	-4.137	2499.946	0.159	5.691	7.036	323.984
2600.000	1.025	21.767	7.151	-3.443	2599.933	0.233	7.151	7.936	334.290
2700.000	0.831	5.800	8.703	-3.038	2699.920	0.321	8.703	9.218	340.758
2800.000	0.709	343.776	10.019	-3.137	2799.911	0.318	10.019	10.499	342.612
2900.000	0.717	302.007	10.945	-3.841	2899.904	0.509	10.945	11.599	340.661
3000.000	1.183	275.415	11.374	-5.400	2999.890	0.629	11.374	12.591	334.605
3100.000	0.619	243.928	11.234	-6.912	3099.878	0.731	11.234	13.190	328.396
3200.000	1.073	226.921	10.357	-8.082	3199.867	0.515	10.357	13.137	322.035
3300.000	1.536	217.094	8.648	-9.574	3299.841	0.512	8.648	12.902	312.090
3400.000	1.795	234.845	6.677	-11.664	3399.799	0.574	6.677	13.439	299.789
3500.000	1.687	225.597	4.745	-13.996	3499.753	0.301	4.745	14.779	288.726

3600.000	1.591	224.027	2.716	-16.013	3599.712	0.106	2.716	16.242	279.627
3700.000	1.451	215.832	0.691	-17.719	3699.677	0.259	0.691	17.733	272.234
3800.000	1.400	212.867	-1.361	-19.123	3799.646	0.090	-1.361	19.172	265.929
3900.000	1.443	205.629	-3.522	-20.331	3899.615	0.185	-3.522	20.634	260.171
4000.000	1.114	217.872	-5.425	-21.473	3999.591	0.426	-5.425	22.147	255.820
4100.000	1.467	233.378	-6.957	-23.097	4099.565	0.494	-6.957	24.122	253.238
4200.000	1.754	234.739	-8.604	-25.374	4199.526	0.289	-8.604	26.793	251.269
4300.000	1.286	216.065	-10.394	-27.284	4299.491	0.675	-10.394	29.197	249.145
4400.000	1.206	222.465	-12.078	-28.655	4399.467	0.160	-12.078	31.097	247.145
4500.000	1.120	216.092	-13.644	-29.942	4499.447	0.155	-13.644	32.904	245.502
4600.000	1.477	243.587	-15.007	-31.672	4599.422	0.708	-15.007	35.048	244.647
4700.000	1.486	237.040	-16.286	-33.914	4699.388	0.169	-16.286	37.622	244.349
4800.000	1.498	231.284	-17.809	-36.022	4799.355	0.150	-17.809	40.184	243.693
4900.000	1.624	240.663	-19.320	-38.277	4899.318	0.284	-19.320	42.876	243.217
5000.000	1.579	242.139	-20.658	-40.730	4999.279	0.061	-20.658	45.669	243.105
5100.000	1.442	243.029	-21.873	-43.069	5099.244	0.139	-21.873	48.305	243.076
5200.000	1.764	239.394	-23.227	-45.515	5199.205	0.338	-23.227	51.099	242.964
5300.000	1.586	241.148	-24.679	-48.052	5299.162	0.185	-24.679	54.019	242.816
5400.000	1.851	245.288	-26.022	-50.732	5399.117	0.292	-26.022	57.016	242.845
5500.000	2.097	248.805	-27.359	-53.905	5499.057	0.275	-27.359	60.450	243.091
5600.000	2.400	254.181	-28.591	-57.626	5598.980	0.369	-28.591	64.328	243.612
5700.000	2.614	250.974	-29.905	-61.796	5698.885	0.255	-29.905	68.652	244.176
5800.000	2.811	260.308	-31.061	-66.368	5798.773	0.483	-31.061	73.277	244.920
5900.000	2.546	270.729	-31.446	-71.006	5898.664	0.553	-31.446	77.657	246.113
6000.000	2.983	273.065	-31.278	-75.825	5998.548	0.451	-31.278	82.023	247.584
6100.000	3.707	269.697	-31.156	-81.657	6098.377	0.750	-31.156	87.399	249.116
6200.000	4.306	273.909	-30.917	-88.636	6198.132	0.667	-30.917	93.873	250.770
6300.000	3.987	262.984	-31.086	-95.832	6297.872	0.850	-31.086	100.748	252.028
6400.000	4.428	286.058	-30.443	-102.993	6397.609	1.736	-30.443	107.398	253.533
6500.000	4.150	284.724	-28.456	-110.202	6497.329	0.296	-28.456	113.817	255.522
6600.000	2.441	292.513	-26.721	-115.669	6597.160	1.763	-26.721	118.715	256.992
6700.000	1.827	301.473	-25.073	-118.996	6697.091	0.697	-25.073	121.608	258.102
6800.000	1.478	290.467	-23.789	-121.564	6797.049	0.470	-23.789	123.870	258.927
6900.000	1.809	313.302	-22.256	-123.921	6897.009	0.727	-22.256	125.904	259.818
7000.000	1.863	332.695	-19.729	-125.815	6996.959	0.621	-19.729	127.353	261.088
7100.000	1.670	334.753	-16.967	-127.183	7096.911	0.204	-16.967	128.309	262.401
7200.000	0.799	290.148	-15.409	-128.458	7196.889	1.235	-15.409	129.379	263.160

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