



**Company:** Noble Energy  
**Rig:** Production/ V.E.S  
**API #** 05-123-22686  
**Date:** 12/30/2013  
**Surveyor:** Jay Hinman  
**VS:** 0.000  
**Lat :** 40.52142  
**Long:** -104.81585

**Well:** Cecil Farms 6-11  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** Grid North is 0.44 Deg  
**Declination:** 8.55  
**Depth Reference:** Ground Level  
**Elevation:** 4873'  
**Total Depth as Drilled:** 7511'

**Lat & Long obtained by handheld GPS at wellhead**

HA Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000
100.000	0.946	176.370	-0.824	0.052	99.995	0.946	-0.824	0.826
200.000	0.583	178.286	-2.156	0.120	199.986	0.364	-2.156	2.160
300.000	0.442	162.557	-3.032	0.250	299.982	0.198	-3.032	3.043
400.000	0.492	158.282	-3.799	0.525	399.979	0.061	-3.799	3.835
500.000	0.339	205.473	-4.464	0.556	499.977	0.361	-4.464	4.499
600.000	0.319	142.385	-4.952	0.598	599.975	0.345	-4.952	4.988
700.000	0.121	63.630	-5.125	0.863	699.975	0.318	-5.125	5.198
800.000	0.529	290.304	-4.918	0.525	799.973	0.619	-4.918	4.946
900.000	0.506	296.481	-4.561	-0.304	899.969	0.060	-4.561	4.571
1000.000	0.656	286.303	-4.203	-1.249	999.964	0.182	-4.203	4.385
1100.000	0.701	272.798	-4.012	-2.410	1099.957	0.166	-4.012	4.680
1200.000	1.110	265.538	-4.058	-3.987	1199.945	0.423	-4.058	5.689
1300.000	0.980	258.932	-4.297	-5.791	1299.928	0.177	-4.297	7.211
1400.000	0.846	253.580	-4.670	-7.338	1399.915	0.158	-4.670	8.698
1500.000	0.714	264.771	-4.935	-8.667	1499.906	0.201	-4.935	9.973
1600.000	0.910	265.854	-5.050	-10.080	1599.896	0.197	-5.050	11.274
1700.000	0.843	245.835	-5.408	-11.543	1699.885	0.312	-5.408	12.747
1800.000	0.687	250.028	-5.914	-12.778	1799.876	0.165	-5.914	14.080
1900.000	0.504	261.006	-6.188	-13.775	1899.870	0.215	-6.188	15.101
2000.000	0.535	273.865	-6.225	-14.675	1999.866	0.120	-6.225	15.941
2100.000	0.944	296.440	-5.826	-15.879	2099.858	0.495	-5.826	16.914
2200.000	1.366	312.857	-4.648	-17.491	2199.837	0.532	-4.648	18.098
2300.000	0.849	333.048	-3.177	-18.700	2299.819	0.641	-3.177	18.968
2400.000	1.378	320.514	-1.589	-19.800	2399.800	0.579	-1.589	19.864
2500.000	0.772	349.410	0.000	-20.688	2499.782	0.795	0.000	20.688
2600.000	0.290	79.297	0.709	-20.563	2599.779	0.824	0.709	20.575
2700.000	0.843	3.733	1.491	-20.266	2699.775	0.821	1.491	20.321
2800.000	0.741	314.822	2.681	-20.677	2799.766	0.663	2.681	20.850
2900.000	0.500	230.690	2.861	-21.473	2899.762	0.851	2.861	21.663
3000.000	0.537	267.690	2.566	-22.279	2999.758	0.331	2.566	22.426
3100.000	0.874	246.977	2.249	-23.450	3099.750	0.418	2.249	23.557
3200.000	0.804	241.713	1.618	-24.770	3199.740	0.104	1.618	24.823
3300.000	0.990	234.825	0.788	-26.094	3299.727	0.214	0.788	26.106
3400.000	0.498	240.169	0.074	-27.177	3399.719	0.496	0.074	27.177
3500.000	0.642	252.560	-0.310	-28.089	3499.714	0.189	-0.310	28.091

3600.000	0.663	287.996	-0.300	-29.174	3599.708	0.398	-0.300	29.175
3700.000	0.678	266.057	-0.161	-30.314	3699.701	0.256	-0.161	30.315
3800.000	0.766	257.615	-0.345	-31.557	3799.693	0.138	-0.345	31.559
3900.000	0.771	252.374	-0.692	-32.851	3899.684	0.070	-0.692	32.858
4000.000	0.384	237.199	-1.078	-33.774	3999.679	0.413	-1.078	33.791
4100.000	0.357	213.501	-1.519	-34.228	4099.677	0.154	-1.519	34.261
4200.000	0.881	189.382	-2.538	-34.525	4199.671	0.574	-2.538	34.618
4300.000	1.213	202.562	-4.274	-35.056	4299.654	0.408	-4.274	35.316
4400.000	0.646	252.761	-5.419	-36.001	4399.642	0.941	-5.419	36.407
4500.000	1.073	314.017	-4.935	-37.213	4499.632	0.950	-4.935	37.539
4600.000	1.086	318.982	-3.569	-38.508	4599.615	0.094	-3.569	38.674
4700.000	1.509	301.974	-2.157	-40.247	4699.589	0.567	-2.157	40.305
4800.000	2.339	309.794	-0.154	-42.931	4799.532	0.869	-0.154	42.932
4900.000	2.501	321.166	2.851	-45.867	4899.443	0.506	2.851	45.956
5000.000	2.161	320.254	6.000	-48.440	4999.361	0.342	6.000	48.811
5100.000	2.059	318.142	8.787	-50.844	5099.293	0.128	8.787	51.598
5200.000	1.231	326.783	11.023	-52.631	5199.251	0.862	11.023	53.773
5300.000	1.301	315.985	12.738	-54.008	5299.227	0.248	12.738	55.490
5400.000	1.337	315.679	14.388	-55.612	5399.200	0.037	14.388	57.443
5500.000	1.139	300.773	15.732	-57.281	5499.177	0.377	15.732	59.402
5600.000	1.018	324.397	16.962	-58.651	5599.160	0.457	16.962	61.055
5700.000	0.942	326.194	18.367	-59.625	5699.145	0.082	18.367	62.390
5800.000	0.752	341.515	19.671	-60.290	5799.134	0.294	19.671	63.419
5900.000	0.191	259.750	20.264	-60.663	5899.131	0.749	20.264	63.958
6000.000	0.336	323.198	20.469	-61.003	5999.130	0.303	20.469	64.345
6100.000	0.441	310.505	20.953	-61.471	6099.128	0.135	20.953	64.944
6200.000	0.339	321.279	21.434	-61.948	6199.126	0.125	21.434	65.551
6300.000	0.647	323.254	22.117	-62.471	6299.122	0.309	22.117	66.270
6400.000	0.088	358.401	22.646	-62.811	6399.119	0.577	22.646	66.769
6500.000	0.331	345.740	23.003	-62.884	6499.119	0.245	23.003	66.959
6600.000	0.628	355.819	23.829	-62.995	6599.115	0.308	23.829	67.351
6700.000	0.503	12.979	24.804	-62.936	6699.110	0.209	24.804	67.648
6800.000	0.377	31.101	25.513	-62.668	6799.107	0.187	25.513	67.662
6900.000	0.031	143.564	25.773	-62.482	6899.107	0.389	25.773	67.589
7000.000	0.323	112.276	25.644	-62.206	6999.106	0.297	25.644	67.284
7100.000	1.170	116.908	25.075	-61.034	7099.097	0.849	25.075	65.985
7200.000	1.163	138.354	23.855	-59.450	7199.076	0.434	23.855	64.057
7275.000	1.588	162.399	22.296	-58.630	7274.055	0.944	22.296	62.726

0

rees East of True North

**Cbrg**

0.000  
176.370  
176.821  
175.278  
172.135  
172.900  
173.111  
170.442  
173.909  
183.810  
196.550  
210.992  
224.494  
233.423  
237.527  
240.340  
243.391  
244.896  
245.164  
245.812  
247.015  
249.850  
255.117  
260.357  
265.410  
270.001  
271.976  
274.208  
277.389  
277.590  
276.571  
275.478  
273.737  
271.729  
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269.695  
269.373  
268.792  
268.172  
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262.446  
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279.805  
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289.827  
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290.720  
291.510  
292.152  
292.415  
292.404  
292.335  
291.864  
290.821