



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-31049
Date: 4-3-14
Surveyor: Justin Williams
VS: 0.000
Lat : 40.499
Long: -104.401

Well: Wells Ranch USX AA 1:
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.71 De
Declination: 8.3
Depth Reference: RKB = Ground Level
Elevation: 4834
Total Depth as Drilled: 7010

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.000
100.000	0.560	107.364	-0.146	0.467	99.998	0.560	-0.146	0.489
200.000	0.406	141.010	-0.567	1.156	199.995	0.316	-0.567	1.288
300.000	0.236	348.561	-0.640	1.338	299.994	0.624	-0.640	1.483
400.000	0.039	341.949	-0.407	1.287	399.994	0.197	-0.407	1.350
500.000	0.467	207.596	-0.736	1.087	499.993	0.495	-0.736	1.313
600.000	1.114	255.997	-1.332	-0.045	599.984	0.877	-1.332	1.333
700.000	1.518	247.501	-2.074	-2.212	699.957	0.447	-2.074	3.032
800.000	1.641	236.569	-3.370	-4.630	799.920	0.325	-3.370	5.727
900.000	1.794	249.180	-4.716	-7.289	899.875	0.407	-4.716	8.681
1000.000	1.872	244.632	-5.972	-10.229	999.824	0.165	-5.972	11.844
1100.000	2.415	250.454	-7.377	-13.690	1099.754	0.584	-7.377	15.551
1200.000	2.420	253.359	-8.686	-17.699	1199.665	0.123	-8.686	19.715
1300.000	2.537	251.750	-9.984	-21.823	1299.571	0.136	-9.984	23.998
1400.000	2.183	250.538	-11.312	-25.720	1399.486	0.357	-11.312	28.098
1500.000	2.310	246.999	-12.734	-29.371	1499.409	0.188	-12.734	32.013
1600.000	2.558	246.594	-14.408	-33.275	1599.319	0.249	-14.408	36.260
1700.000	2.318	245.058	-16.147	-37.157	1699.228	0.249	-16.147	40.514
1800.000	2.496	246.455	-17.870	-40.986	1799.140	0.187	-17.870	44.713
1900.000	2.368	239.980	-19.773	-44.771	1899.050	0.303	-19.773	48.943
2000.000	2.479	238.584	-21.934	-48.406	1998.961	0.126	-21.934	53.143
2100.000	1.774	242.569	-23.774	-51.625	2098.891	0.721	-23.774	56.836
2200.000	1.405	242.867	-25.046	-54.090	2198.853	0.369	-25.046	59.607
2300.000	1.073	216.060	-26.363	-55.732	2298.830	0.659	-26.363	61.653
2400.000	1.285	238.683	-27.702	-57.241	2398.809	0.507	-27.702	63.592
2500.000	0.912	209.526	-28.977	-58.591	2498.791	0.660	-28.977	65.365
2600.000	0.713	216.514	-30.170	-59.353	2598.781	0.222	-30.170	66.581
2700.000	1.087	222.165	-31.373	-60.360	2698.769	0.384	-31.373	68.026
2800.000	0.911	214.597	-32.730	-61.448	2798.754	0.219	-32.730	69.621
2900.000	0.614	266.524	-33.417	-62.435	2898.746	0.719	-33.417	70.816
3000.000	0.590	225.480	-33.811	-63.337	2998.741	0.423	-33.811	71.797
3100.000	0.728	271.033	-34.160	-64.339	3098.735	0.526	-34.160	72.846
3200.000	0.727	258.697	-34.273	-65.597	3198.727	0.156	-34.273	74.011
3300.000	0.567	235.736	-34.676	-66.628	3298.720	0.301	-34.676	75.111
3400.000	0.450	225.358	-35.231	-67.316	3398.717	0.149	-35.231	75.978

3500.000	0.542	218.964	-35.874	-67.893	3498.713	0.107	-35.874	76.788
3600.000	0.728	181.807	-36.877	-68.210	3598.707	0.442	-36.877	77.541
3700.000	0.734	146.790	-38.048	-67.880	3698.699	0.440	-38.048	77.816
3800.000	1.512	134.360	-39.507	-66.585	3798.680	0.811	-39.507	77.423
3900.000	1.453	134.272	-41.315	-64.734	3898.646	0.059	-41.315	76.794
4000.000	1.477	140.692	-43.197	-63.009	3998.613	0.166	-43.197	76.395
4100.000	1.455	146.783	-45.256	-61.498	4098.581	0.157	-45.256	76.355
4200.000	1.397	145.636	-47.325	-60.114	4198.550	0.065	-47.325	76.507
4300.000	0.712	171.172	-48.945	-59.331	4298.533	0.815	-48.945	76.914
4400.000	0.469	233.299	-49.803	-59.563	4398.528	0.644	-49.803	77.641
4500.000	0.683	202.269	-50.599	-60.117	4498.523	0.371	-50.599	78.577
4600.000	1.094	222.795	-51.851	-60.991	4598.511	0.513	-51.851	80.053
4700.000	1.403	248.877	-52.993	-62.782	4698.488	0.639	-52.993	82.157
4800.000	2.068	249.409	-54.069	-65.613	4798.442	0.666	-54.069	85.021
4900.000	2.694	249.127	-55.541	-69.498	4898.355	0.626	-55.541	88.965
5000.000	2.552	254.683	-56.966	-73.842	4998.250	0.291	-56.966	93.262
5100.000	2.418	250.126	-58.271	-77.973	5098.156	0.239	-58.271	97.341
5200.000	1.660	250.396	-59.475	-81.321	5198.092	0.758	-59.475	100.749
5300.000	1.026	243.772	-60.356	-83.489	5298.064	0.651	-60.356	103.021
5400.000	1.064	235.575	-61.277	-85.059	5398.048	0.154	-61.277	104.832
5500.000	0.550	219.663	-62.171	-86.131	5498.038	0.556	-62.171	106.225
5600.000	0.379	148.218	-62.822	-86.263	5598.035	0.560	-62.822	106.714
5700.000	0.283	191.175	-63.346	-86.136	5698.034	0.259	-63.346	106.921
5800.000	0.280	144.177	-63.787	-86.041	5798.032	0.225	-63.787	107.107
5900.000	0.660	128.807	-64.346	-85.449	5898.029	0.397	-64.346	106.967
6000.000	0.484	128.148	-64.967	-84.669	5998.024	0.176	-64.967	106.722
6100.000	0.542	104.073	-65.343	-83.878	6098.020	0.221	-65.343	106.326
6200.000	0.795	80.516	-65.344	-82.735	6198.013	0.369	-65.344	105.427
6300.000	0.550	80.803	-65.152	-81.576	6298.006	0.245	-65.152	104.401
6400.000	0.697	98.588	-65.166	-80.501	6398.001	0.241	-65.166	103.572
6500.000	0.660	51.550	-64.899	-79.449	6497.994	0.542	-64.899	102.587
6600.000	1.001	53.729	-64.024	-78.293	6597.984	0.343	-64.024	101.138
6700.000	1.021	59.068	-63.049	-76.824	6697.968	0.096	-63.049	99.384

1-10P

0

degrees East of True North

Cbrg

0.000

107.364

116.125

115.579

107.539

124.081

181.928

226.837

233.953

237.100

239.721

241.683

243.859

245.416

246.261

246.561

246.588

246.512

246.443

246.171

245.623

245.273

245.153

244.685

244.175

243.684

243.055

242.536

241.958

241.843

241.906

242.034

242.414

242.505

242.374

242.148
241.603
240.728
239.318
237.453
235.567
233.651
231.789
230.479
230.100
229.913
229.631
229.833
230.510
231.369
232.351
233.228
233.820
234.136
234.231
234.177
233.935
233.668
233.448
233.019
232.501
232.081
231.699
231.387
231.009
230.756
230.726
230.625