



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-23164
Date: 5/3/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.45519
Long: -104.41667

Well: Wells anch 43-27
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is -0.7 of Tr
Declination: 8.43
Depth Reference: Ground Level
Elevation: 4830'
Total Depth as Drilled: 7043'

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	0.540	260.195	-0.080	-0.465	99.999	0.540	-0.080	0.471
200.000	0.377	215.594	-0.428	-1.120	199.996	0.379	-0.428	1.199
300.000	0.080	313.967	-0.647	-1.362	299.995	0.396	-0.647	1.508
400.000	0.554	190.952	-1.073	-1.504	399.993	0.601	-1.073	1.847
500.000	1.090	156.990	-2.422	-1.224	499.983	0.702	-2.422	2.714
600.000	0.961	147.643	-4.005	-0.404	599.967	0.211	-4.005	4.026
700.000	1.102	152.578	-5.567	0.487	699.951	0.167	-5.567	5.588
800.000	0.804	146.803	-7.007	1.314	799.937	0.312	-7.007	7.129
900.000	1.162	177.891	-8.608	1.736	899.923	0.630	-8.608	8.781
1000.000	1.119	163.507	-10.558	2.050	999.903	0.289	-10.558	10.755
1100.000	1.040	160.786	-12.350	2.626	1099.886	0.094	-12.350	12.627
1200.000	1.078	160.921	-14.097	3.232	1199.869	0.039	-14.097	14.462
1300.000	1.193	166.741	-15.999	3.778	1299.849	0.163	-15.999	16.439
1400.000	1.252	154.655	-18.000	4.485	1399.826	0.264	-18.000	18.550
1500.000	0.923	148.197	-19.672	5.377	1499.808	0.351	-19.672	20.393
1600.000	0.957	145.874	-21.047	6.270	1599.795	0.051	-21.047	21.961
1700.000	0.940	144.554	-22.406	7.214	1699.781	0.028	-22.406	23.539
1800.000	1.019	151.457	-23.856	8.114	1799.766	0.142	-23.856	25.198
1900.000	0.777	141.044	-25.164	8.965	1899.754	0.291	-25.164	26.713
2000.000	0.332	159.076	-25.962	9.495	1999.749	0.472	-25.962	27.644
2100.000	0.216	203.242	-26.406	9.524	2099.748	0.232	-26.406	28.071
2200.000	0.221	217.863	-26.731	9.331	2199.748	0.056	-26.731	28.313
2300.000	0.333	189.969	-27.169	9.163	2299.746	0.172	-27.169	28.673
2400.000	0.440	222.357	-27.739	8.854	2399.744	0.239	-27.739	29.118
2500.000	0.370	238.984	-28.189	8.318	2499.742	0.136	-28.189	29.391
2600.000	0.598	267.664	-28.377	7.520	2599.738	0.326	-28.377	29.357
2700.000	0.372	315.078	-28.169	6.770	2699.735	0.441	-28.169	28.971
2800.000	0.442	318.683	-27.649	6.286	2799.732	0.075	-27.649	28.355
2900.000	0.283	289.391	-27.277	5.798	2899.731	0.239	-27.277	27.887
3000.000	0.280	267.136	-27.207	5.321	2999.729	0.109	-27.207	27.723
3100.000	0.068	207.267	-27.272	5.050	3099.729	0.253	-27.272	27.736
3200.000	0.153	258.161	-27.352	4.893	3199.729	0.122	-27.352	27.786
3300.000	0.099	346.109	-27.296	4.742	3299.729	0.179	-27.296	27.705
3400.000	0.510	193.379	-27.645	4.618	3399.727	0.599	-27.645	28.028
3500.000	1.407	209.795	-29.143	3.905	3499.713	0.930	-29.143	29.403

3600.000	1.320	237.085	-30.835	2.328	3599.685	0.649	-30.835	30.922
3700.000	1.721	223.775	-32.545	0.322	3699.650	0.532	-32.545	32.547
3800.000	1.721	213.297	-34.885	-1.542	3799.605	0.314	-34.885	34.919
3900.000	1.569	227.186	-37.070	-3.371	3899.564	0.425	-37.070	37.223
4000.000	1.920	219.303	-39.297	-5.436	3999.518	0.424	-39.297	39.671
4100.000	2.180	230.515	-41.803	-7.965	4099.454	0.477	-41.803	42.555
4200.000	2.327	231.593	-44.273	-11.024	4199.377	0.153	-44.273	45.625
4300.000	3.184	225.900	-47.467	-14.609	4299.261	0.899	-47.467	49.664
4400.000	3.883	233.845	-51.398	-19.337	4399.070	0.852	-51.398	54.915
4500.000	3.696	241.132	-54.952	-24.894	4498.852	0.516	-54.952	60.327
4600.000	3.475	240.830	-57.985	-30.364	4598.657	0.222	-57.985	65.454
4700.000	2.110	244.040	-60.268	-34.666	4698.535	1.374	-60.268	69.527
4800.000	1.259	249.885	-61.452	-37.352	4798.491	0.867	-61.452	71.913
4900.000	0.711	204.661	-62.394	-38.643	4898.478	0.911	-62.394	73.391
5000.000	0.893	191.592	-63.721	-39.058	4998.468	0.257	-63.721	74.738
5100.000	0.902	200.846	-65.219	-39.495	5098.456	0.145	-65.219	76.245
5200.000	0.678	193.820	-66.529	-39.916	5198.446	0.244	-66.529	77.585
5300.000	0.724	183.520	-67.734	-40.096	5298.439	0.134	-67.734	78.712
5400.000	0.529	164.930	-68.811	-40.015	5398.433	0.280	-68.811	79.600
5500.000	0.449	210.925	-69.592	-40.096	5498.429	0.389	-69.592	80.317
5600.000	0.478	149.568	-70.288	-40.086	5598.427	0.473	-70.288	80.915
5700.000	0.578	102.916	-70.760	-39.383	5698.423	0.428	-70.760	80.982
5800.000	0.217	111.544	-70.942	-38.716	5798.420	0.365	-70.942	80.819
5900.000	0.172	6.863	-70.862	-38.522	5898.420	0.309	-70.862	80.656
6000.000	0.564	86.748	-70.685	-38.013	5998.418	0.560	-70.685	80.258
6100.000	0.379	119.955	-70.823	-37.235	6098.415	0.322	-70.823	80.014
6200.000	0.267	346.905	-70.761	-37.001	6198.414	0.595	-70.761	79.851
6300.000	0.563	35.785	-70.135	-36.767	6298.412	0.437	-70.135	79.188
6400.000	0.506	76.398	-69.632	-36.050	6398.408	0.375	-69.632	78.410
6500.000	0.542	70.949	-69.374	-35.173	6498.403	0.061	-69.374	77.781
6600.000	0.558	42.316	-68.860	-34.399	6598.399	0.272	-68.860	76.973
6700.000	0.561	85.049	-68.457	-33.583	6698.395	0.408	-68.457	76.251
6800.000	0.416	23.158	-68.081	-32.953	6798.392	0.518	-68.081	75.637

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