



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-22318
Date: 5/2/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.45206
Long: -104.43028

Well: Wells Ranch 14-27
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.69 Deg
Declination: 8.44
Depth Reference: Ground Level
Elevation: 4790'
Total Depth as Drilled: 7004'

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	0.544	92.639	-0.022	0.474	99.998	0.544	-0.022	0.475
200.000	0.344	140.483	-0.275	1.140	199.996	0.404	-0.275	1.173
300.000	0.259	85.690	-0.490	1.557	299.995	0.288	-0.490	1.632
400.000	0.548	294.542	-0.274	1.348	399.993	0.785	-0.274	1.375
500.000	0.393	282.992	0.001	0.578	499.990	0.181	0.001	0.578
600.000	0.333	233.340	-0.095	0.011	599.988	0.310	-0.095	0.096
700.000	0.198	45.828	-0.148	-0.097	699.988	0.530	-0.148	0.177
800.000	0.642	198.958	-0.557	-0.155	799.986	0.823	-0.557	0.578
900.000	0.450	164.419	-1.465	-0.232	899.982	0.372	-1.465	1.483
1000.000	0.691	185.201	-2.444	-0.181	999.977	0.314	-2.444	2.450
1100.000	0.491	187.836	-3.469	-0.294	1099.971	0.202	-3.469	3.481
1200.000	0.566	186.759	-4.384	-0.411	1199.967	0.076	-4.384	4.403
1300.000	0.541	165.832	-5.333	-0.353	1299.963	0.203	-5.333	5.344
1400.000	0.474	157.658	-6.172	-0.081	1399.959	0.099	-6.172	6.173
1500.000	0.603	164.387	-7.062	0.218	1499.954	0.144	-7.062	7.065
1600.000	0.502	164.500	-7.991	0.477	1599.950	0.101	-7.991	8.005
1700.000	0.586	152.508	-8.867	0.830	1699.945	0.141	-8.867	8.906
1800.000	0.666	171.303	-9.895	1.154	1799.939	0.219	-9.895	9.962
1900.000	0.815	186.874	-11.176	1.157	1899.931	0.249	-11.176	11.235
2000.000	0.768	177.039	-12.551	1.106	1999.921	0.143	-12.551	12.599
2100.000	0.310	237.533	-13.366	0.913	2099.917	0.672	-13.366	13.397
2200.000	0.207	319.431	-13.374	0.567	2199.917	0.348	-13.374	13.386
2300.000	0.408	323.454	-12.950	0.237	2299.915	0.202	-12.950	12.953
2400.000	0.572	340.836	-12.193	-0.139	2399.911	0.219	-12.193	12.194
2500.000	0.573	355.125	-11.223	-0.345	2499.907	0.142	-11.223	11.228
2600.000	0.972	345.210	-9.904	-0.604	2599.897	0.419	-9.904	9.923
2700.000	0.987	350.957	-8.234	-0.956	2699.883	0.099	-8.234	8.289
2800.000	0.908	339.549	-6.642	-1.368	2799.869	0.204	-6.642	6.781
2900.000	0.898	335.578	-5.186	-1.969	2899.857	0.063	-5.186	5.547
3000.000	1.122	342.714	-3.538	-2.583	2999.841	0.256	-3.538	4.381
3100.000	1.316	337.437	-1.543	-3.315	3099.819	0.224	-1.543	3.656
3200.000	1.266	335.383	0.522	-4.216	3199.793	0.068	0.522	4.248
3300.000	1.282	340.402	2.581	-5.051	3299.768	0.113	2.581	5.672
3400.000	1.281	339.456	4.681	-5.819	3399.743	0.021	4.681	7.468

3500.000	0.869	311.823	6.234	-6.776	3499.726	0.651	6.234	9.207
3600.000	0.543	273.645	6.769	-7.814	3599.719	0.555	6.769	10.338
3700.000	0.685	294.484	7.047	-8.831	3699.713	0.262	7.047	11.298
3800.000	0.587	266.532	7.264	-9.886	3799.707	0.322	7.264	12.268
3900.000	0.897	256.122	7.045	-11.157	3899.699	0.337	7.045	13.195
4000.000	0.807	267.846	6.831	-12.620	3999.688	0.196	6.831	14.350
4100.000	1.447	274.953	6.914	-14.581	4099.668	0.654	6.914	16.137
4200.000	1.650	292.653	7.577	-17.167	4199.632	0.517	7.577	18.765
4300.000	1.835	307.128	9.098	-19.772	4299.586	0.476	9.098	21.765
4400.000	2.224	300.588	11.052	-22.719	4399.524	0.452	11.052	25.264
4500.000	2.325	300.319	13.063	-26.140	4499.445	0.102	13.063	29.223
4600.000	1.992	324.005	15.494	-28.913	4599.376	0.944	15.494	32.803
4700.000	1.189	345.269	17.903	-30.199	4699.337	0.983	17.903	35.107
4800.000	1.773	15.876	20.395	-30.039	4799.305	0.963	20.395	36.309
4900.000	3.394	37.730	24.224	-27.805	4899.202	1.869	24.224	36.877
5000.000	3.558	48.659	28.614	-23.664	4999.019	0.681	28.614	37.132
5100.000	2.894	53.909	32.151	-19.294	5098.860	0.726	32.151	37.496
5200.000	1.784	56.984	34.487	-15.949	5198.776	1.116	34.487	37.996
5300.000	0.614	68.483	35.532	-14.145	5298.752	1.189	35.532	38.243
5400.000	0.266	130.982	35.576	-13.471	5398.749	0.545	35.576	38.041
5500.000	0.604	208.696	34.961	-13.548	5498.747	0.606	34.961	37.494
5600.000	0.535	186.296	34.035	-13.852	5598.742	0.231	34.035	36.746
5700.000	0.332	220.742	33.350	-14.093	5698.739	0.322	33.350	36.206
5800.000	0.796	196.228	32.463	-14.476	5798.734	0.513	32.463	35.545
5900.000	0.649	218.964	31.356	-15.027	5898.727	0.319	31.356	34.770
6000.000	0.989	217.875	30.234	-15.913	5998.716	0.340	30.234	34.166
6100.000	0.850	239.619	29.178	-17.082	6098.704	0.373	29.178	33.811
6200.000	1.343	254.269	28.485	-18.851	6198.685	0.564	28.485	34.157
6300.000	1.768	239.228	27.378	-21.305	6298.649	0.586	27.378	34.690
6400.000	2.719	232.635	25.149	-24.515	6398.571	0.983	25.149	35.121
6500.000	5.875	221.865	19.897	-29.817	6498.279	3.244	19.897	35.846
6600.000	4.294	217.116	13.100	-35.492	6597.882	1.635	13.100	37.832
6700.000	1.436	218.756	9.137	-38.536	6697.747	2.859	9.137	39.604
6775.000	0.757	217.255	8.010	-39.424	6772.733	0.906	8.010	40.229

0

rees East of True North

Cbrg

0.000

92.639

103.581

107.472

101.509

89.869

173.108

213.400

195.586

188.993

184.236

184.846

185.352

183.791

180.750

178.232

176.585

174.652

173.348

174.090

174.962

176.093

177.573

178.950

180.651

181.760

183.489

186.621

191.637

200.786

216.138

245.042

277.060

297.062

308.817

312.613
310.903
308.591
306.309
302.273
298.428
295.369
293.816
294.709
295.941
296.553
298.185
300.662
304.174
311.063
320.410
329.032
335.181
338.293
339.261
338.818
337.853
337.093
335.967
334.394
332.241
329.653
326.504
322.111
315.731
303.715
290.259
283.339
281.485