



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-22803
Date: 5/22/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.45575
Long: -104.43014

Well: Wells Ranch 13-27
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.69 Deg
Declination: 8.43
Depth Reference: Ground Level
Elevation: 4810'
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	0.419	327.033	0.307	-0.199	99.999	0.419	0.307	0.366
200.000	0.502	5.369	1.050	-0.357	199.996	0.312	1.050	1.109
300.000	0.493	359.594	1.916	-0.319	299.992	0.051	1.916	1.942
400.000	0.485	271.341	2.356	-0.745	399.990	0.681	2.356	2.471
500.000	0.335	342.366	2.644	-1.256	499.988	0.491	2.644	2.927
600.000	0.536	272.256	2.941	-1.812	599.986	0.526	2.941	3.454
700.000	0.031	129.320	2.942	-2.258	699.984	0.561	2.942	3.709
800.000	0.171	313.481	3.028	-2.345	799.984	0.202	3.028	3.830
900.000	0.511	236.637	2.885	-2.825	899.982	0.500	2.885	4.038
1000.000	0.485	217.738	2.305	-3.456	999.979	0.165	2.305	4.155
1100.000	0.367	151.002	1.691	-3.560	1099.976	0.478	1.691	3.941
1200.000	0.239	217.642	1.246	-3.533	1199.975	0.349	1.246	3.746
1300.000	0.632	233.748	0.754	-4.105	1299.972	0.407	0.754	4.174
1400.000	0.271	239.546	0.308	-4.753	1399.969	0.363	0.308	4.763
1500.000	0.229	169.013	-0.008	-4.919	1499.968	0.291	-0.008	4.919
1600.000	0.204	235.567	-0.305	-5.028	1599.968	0.239	-0.305	5.038
1700.000	0.205	174.067	-0.584	-5.157	1699.967	0.210	-0.584	5.190
1800.000	0.411	268.014	-0.775	-5.497	1799.966	0.472	-0.775	5.551
1900.000	0.297	257.595	-0.843	-6.108	1899.964	0.130	-0.843	6.165
2000.000	0.364	273.131	-0.881	-6.678	1999.963	0.111	-0.881	6.736
2100.000	0.432	291.482	-0.726	-7.346	2099.960	0.144	-0.726	7.382
2200.000	0.482	271.060	-0.580	-8.118	2199.957	0.169	-0.580	8.139
2300.000	0.638	247.460	-0.785	-9.053	2299.952	0.275	-0.785	9.087
2400.000	0.466	227.847	-1.272	-9.869	2399.948	0.253	-1.272	9.950
2500.000	0.577	218.955	-1.937	-10.487	2499.944	0.137	-1.937	10.665
2600.000	0.721	197.904	-2.927	-10.997	2599.937	0.276	-2.927	11.380
2700.000	0.413	219.513	-3.804	-11.420	2699.932	0.370	-3.804	12.037
2800.000	0.478	251.340	-4.216	-12.045	2799.930	0.252	-4.216	12.761
2900.000	0.234	251.539	-4.414	-12.634	2899.928	0.244	-4.414	13.382
3000.000	0.291	224.605	-4.659	-13.006	2999.927	0.134	-4.659	13.815
3100.000	0.242	268.093	-4.847	-13.395	3099.926	0.203	-4.847	14.245
3200.000	0.304	175.366	-5.118	-13.585	3199.925	0.397	-5.118	14.517
3300.000	0.489	220.539	-5.707	-13.841	3299.923	0.349	-5.707	14.971
3400.000	0.373	198.945	-6.339	-14.224	3399.920	0.198	-6.339	15.573

3500.000	0.356	224.745	-6.868	-14.549	3499.918	0.164	-6.868	16.088
3600.000	0.513	226.665	-7.396	-15.093	3599.915	0.157	-7.396	16.807
3700.000	0.690	219.747	-8.165	-15.803	3699.909	0.191	-8.165	17.788
3800.000	0.446	218.337	-8.933	-16.429	3799.904	0.244	-8.933	18.701
3900.000	0.542	189.011	-9.706	-16.745	3899.901	0.267	-9.706	19.354
4000.000	0.352	139.419	-10.406	-16.619	3999.898	0.412	-10.406	19.608
4100.000	0.386	58.185	-10.461	-16.133	4099.897	0.481	-10.461	19.228
4200.000	1.192	49.203	-9.604	-15.060	4199.886	0.813	-9.604	17.861
4300.000	1.446	52.379	-8.154	-13.273	4299.860	0.265	-8.154	15.577
4400.000	1.813	39.482	-6.162	-11.267	4399.819	0.517	-6.162	12.842
4500.000	2.159	50.007	-3.731	-8.818	4499.760	0.501	-3.731	9.575
4600.000	2.111	47.949	-1.287	-6.007	4599.690	0.091	-1.287	6.144
4700.000	2.210	49.985	1.186	-3.163	4699.619	0.125	1.186	3.379
4800.000	1.501	39.132	3.442	-0.860	4799.566	0.788	3.442	3.548
4900.000	1.185	59.604	4.981	0.858	4899.539	0.570	4.981	5.055
5000.000	1.267	68.724	5.905	2.780	4999.517	0.211	5.905	6.527
5100.000	1.090	75.900	6.538	4.733	5099.495	0.230	6.538	8.071
5200.000	1.415	75.354	7.082	6.850	5199.471	0.325	7.082	9.853
5300.000	1.080	83.123	7.508	8.981	5299.448	0.375	7.508	11.706
5400.000	0.750	109.410	7.403	10.535	5399.435	0.526	7.403	12.876
5500.000	0.820	118.577	6.843	11.780	5499.426	0.144	6.843	13.624
5600.000	0.768	120.415	6.162	12.987	5599.416	0.058	6.162	14.374
5700.000	0.579	106.284	5.680	14.050	5699.409	0.250	5.680	15.155
5800.000	0.608	110.308	5.355	15.033	5799.404	0.051	5.355	15.958
5900.000	0.967	84.476	5.252	16.370	5899.395	0.496	5.252	17.191
6000.000	0.782	86.300	5.377	17.890	5999.383	0.187	5.377	18.681
6100.000	0.629	60.910	5.688	19.051	6099.376	0.344	5.688	19.882
6200.000	0.698	71.443	6.149	20.108	6199.369	0.140	6.149	21.027
6300.000	0.939	64.127	6.700	21.423	6299.359	0.262	6.700	22.446
6400.000	0.894	60.060	7.447	22.836	6399.346	0.079	7.447	24.020
6500.000	0.608	47.616	8.194	23.904	6499.337	0.328	8.194	25.269
6600.000	0.693	50.520	8.936	24.762	6599.331	0.092	8.936	26.325
6700.000	0.739	68.565	9.556	25.829	6699.323	0.229	9.556	27.540
6800.000	0.733	56.296	10.147	26.962	6799.315	0.157	10.147	28.808

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rees East of True North

Cbrg

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327.033
341.220
350.548
342.460
334.596
328.367
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273.713
269.908
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264.358
265.915
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69.377