



Company: Noble Energy
Rig: Production
API # 05-123-29061
Date: 6/27/2013
Surveyor: Norman Cowan
VS: 0.000
Lat : 40.484
Long: -104.378

Well: Wells Ranch USX AA 13-09
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is .720 Degrees East of
Declination: 8.38 Degrees
Depth Reference: Ground Level
Elevation: 4820 Feet
Total Depth as Drilled: 6958 Feet

Lat & Long obtained by handheld GPS at wellhead

MS Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.747	187.587	-0.646	-0.086	99.997	0.747	-0.646	0.651	187.587
200.000	0.918	177.133	-2.092	-0.132	199.987	0.229	-2.092	2.096	183.609
300.000	0.822	165.720	-3.587	0.085	299.975	0.198	-3.587	3.588	178.642
400.000	0.382	182.712	-4.615	0.246	399.969	0.470	-4.615	4.622	176.946
500.000	0.755	197.957	-5.575	0.027	499.964	0.399	-5.575	5.575	179.719
600.000	0.665	209.201	-6.708	-0.459	599.957	0.165	-6.708	6.723	183.912
700.000	0.709	213.765	-7.728	-1.086	699.950	0.070	-7.728	7.804	187.996
800.000	0.796	225.116	-8.733	-1.922	799.941	0.172	-8.733	8.942	192.410
900.000	0.315	223.912	-9.421	-2.604	899.936	0.482	-9.421	9.774	195.453
1000.000	0.787	219.172	-10.151	-3.229	999.931	0.474	-10.151	10.652	197.644
1100.000	0.573	196.740	-11.162	-3.806	1099.924	0.338	-11.162	11.793	198.830
1200.000	0.552	216.478	-12.028	-4.237	1199.919	0.194	-12.028	12.753	199.404
1300.000	0.698	220.024	-12.883	-4.915	1299.914	0.151	-12.883	13.789	200.884
1400.000	0.875	224.717	-13.892	-5.845	1399.904	0.188	-13.892	15.072	202.818
1500.000	0.742	235.547	-14.801	-6.916	1499.894	0.202	-14.801	16.337	205.045
1600.000	0.606	237.441	-15.452	-7.896	1599.887	0.138	-15.452	17.353	207.066
1700.000	0.613	238.702	-16.015	-8.798	1699.882	0.015	-16.015	18.272	208.785
1800.000	0.424	229.446	-16.533	-9.537	1799.877	0.206	-16.533	19.086	209.977
1900.000	0.335	237.303	-16.932	-10.064	1899.875	0.103	-16.932	19.697	210.727
2000.000	0.766	342.700	-16.452	-10.509	1999.872	0.914	-16.452	19.522	212.570
2100.000	1.506	7.582	-14.511	-10.534	2099.852	0.873	-14.511	17.932	215.978
2200.000	1.993	19.028	-11.565	-9.794	2199.806	0.597	-11.565	15.155	220.262
2300.000	1.559	42.169	-8.912	-8.314	2299.759	0.830	-8.912	12.188	223.010
2400.000	1.104	37.952	-7.145	-6.808	2399.731	0.465	-7.145	9.869	223.619
2500.000	1.596	24.802	-5.121	-5.632	2499.704	0.578	-5.121	7.612	227.719
2600.000	1.136	39.833	-3.096	-4.413	2599.675	0.579	-3.096	5.390	234.947
2700.000	0.991	359.092	-1.470	-3.791	2699.659	0.753	-1.470	4.066	248.808
2800.000	1.110	10.846	0.346	-3.623	2799.643	0.246	0.346	3.639	275.459
2900.000	0.522	346.703	1.741	-3.545	2899.632	0.669	1.741	3.949	296.152
3000.000	0.404	8.360	2.532	-3.598	2999.629	0.209	2.532	4.400	305.134
3100.000	0.245	14.935	3.088	-3.492	3099.627	0.162	3.088	4.661	311.485
3200.000	0.143	320.218	3.391	-3.517	3199.627	0.200	3.391	4.885	313.955
3300.000	0.744	334.640	4.073	-3.875	3299.623	0.607	4.073	5.622	316.432
3400.000	1.129	335.358	5.555	-4.563	3399.610	0.385	5.555	7.189	320.599

3500.000	1.961	349.792	8.135	-5.277	3499.573	0.912	8.135	9.697	327.027
3600.000	2.894	352.283	12.320	-5.920	3599.482	0.939	12.320	13.669	334.337
3700.000	2.085	355.668	16.636	-6.396	3699.387	0.822	16.636	17.823	338.970
3800.000	2.961	348.976	20.985	-7.027	3799.289	0.923	20.985	22.130	341.486
3900.000	3.730	346.860	26.688	-8.261	3899.118	0.779	26.688	27.937	342.801
4000.000	2.912	347.994	32.340	-9.528	3998.949	0.821	32.340	33.714	343.583
4100.000	2.363	330.389	36.616	-11.075	4098.845	0.972	36.616	38.255	343.171
4200.000	2.011	279.923	38.711	-13.822	4198.781	1.891	38.711	41.105	340.350
4300.000	2.024	235.140	38.004	-17.000	4298.725	1.537	38.004	41.633	335.900
4400.000	2.082	228.283	35.786	-19.805	4398.661	0.252	35.786	40.901	331.038
4500.000	2.783	215.289	32.595	-22.564	4498.571	0.888	32.595	39.643	325.308
4600.000	3.061	216.070	28.455	-25.538	4598.440	0.281	28.455	38.235	318.092
4700.000	3.623	217.250	23.782	-29.023	4698.270	0.566	23.782	37.522	309.332
4800.000	3.656	220.558	18.845	-33.008	4798.068	0.213	18.845	38.009	299.722
4900.000	2.150	223.536	15.062	-36.374	4897.937	1.513	15.062	39.369	292.495
5000.000	1.359	212.149	12.699	-38.297	4997.890	0.861	12.699	40.347	288.345
5100.000	0.774	214.201	11.136	-39.307	5097.872	0.586	11.136	40.854	285.818
5200.000	0.386	105.314	10.489	-39.362	5197.869	0.970	10.489	40.736	284.921
5300.000	0.502	22.242	10.805	-38.872	5297.867	0.595	10.805	40.346	285.534
5400.000	0.126	353.855	11.320	-38.718	5397.865	0.395	11.320	40.339	286.297
5500.000	0.830	83.439	11.512	-38.010	5497.861	0.839	11.512	39.715	286.849
5600.000	1.127	70.678	11.920	-36.362	5597.847	0.367	11.920	38.266	288.150
5700.000	0.952	87.420	12.283	-34.604	5697.831	0.349	12.283	36.719	289.543
5800.000	0.681	71.392	12.510	-33.211	5797.820	0.352	12.510	35.489	290.641
5900.000	0.999	89.904	12.701	-31.776	5897.810	0.415	12.701	34.220	291.787
6000.000	0.517	110.708	12.543	-30.482	5997.801	0.548	12.543	32.961	292.367
6100.000	0.914	48.234	12.914	-29.465	6097.794	0.816	12.914	32.171	293.668
6200.000	0.437	83.275	13.490	-28.492	6197.787	0.610	13.490	31.524	295.336
6300.000	0.522	333.129	13.941	-28.319	6297.785	0.788	13.941	31.565	296.210
6400.000	0.605	356.142	14.874	-28.561	6397.781	0.239	14.874	32.202	297.510
6500.000	0.582	357.576	15.908	-28.618	6497.775	0.027	15.908	32.742	299.069
6600.000	0.434	33.392	16.732	-28.431	6597.772	0.343	16.732	32.989	300.477
6700.000	0.558	47.001	17.380	-27.866	6697.768	0.170	17.380	32.842	301.951

True North