



**Company:** Noble Energy

**Rig:** Production / CoreTech

**API #** 05-123-18976

**Date:** 3/17/2014

**Surveyor:** CJ Hines

**VS:** 0.000

**Lat :** 40.445

**Long:** -104.477

**Well:** UPV #31-7G3

**Location:** Weld County, Colorado

**North Reference:** GRID

**Convergence:** Grid north is -0.66 East of True Nc

**Declination:** 8.34

**Depth Reference:** Ground Level

**Elevation:** 4631

**Total Depth as Drilled:** 6962

**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	0.000
100.000	0.252	283.365	0.051	-0.214	100.000	0.252	0.051	0.220	283.365
200.000	0.109	185.719	0.007	-0.438	199.999	0.288	0.007	0.438	270.961
300.000	0.159	321.841	0.022	-0.533	299.999	0.249	0.022	0.534	272.343
400.000	0.180	337.682	0.276	-0.679	399.999	0.051	0.276	0.733	292.159
500.000	0.575	228.000	0.086	-1.111	499.997	0.658	0.086	1.115	274.429
600.000	0.519	200.180	-0.675	-1.641	599.993	0.269	-0.675	1.774	247.639
700.000	0.574	260.032	-1.187	-2.290	699.989	0.547	-1.187	2.579	242.608
800.000	0.669	263.171	-1.343	-3.363	799.983	0.101	-1.343	3.621	248.234
900.000	0.746	266.805	-1.449	-4.593	899.975	0.090	-1.449	4.816	252.496
1000.000	0.877	272.778	-1.448	-6.008	999.965	0.155	-1.448	6.180	256.451
1100.000	1.197	275.562	-1.309	-7.811	1099.949	0.324	-1.309	7.920	260.484
1200.000	1.573	281.131	-0.943	-10.198	1199.919	0.399	-0.943	10.241	264.715
1300.000	2.042	280.632	-0.350	-13.295	1299.869	0.469	-0.350	13.300	268.494
1400.000	2.330	281.681	0.391	-17.037	1399.797	0.291	0.391	17.041	271.313
1500.000	2.657	280.050	1.207	-21.309	1499.702	0.335	1.207	21.343	273.241
1600.000	2.963	289.367	2.468	-26.029	1599.582	0.549	2.468	26.146	275.417
1700.000	3.414	291.412	4.412	-31.240	1699.427	0.465	4.412	31.550	278.039
1800.000	4.183	298.649	7.248	-37.213	1799.207	0.904	7.248	37.912	281.022
1900.000	4.661	307.545	11.472	-43.634	1898.910	0.835	11.472	45.117	284.731
2000.000	4.752	302.269	16.159	-50.358	1998.574	0.442	16.159	52.887	287.791
2100.000	4.727	301.464	20.521	-57.375	2098.232	0.071	20.521	60.934	289.681
2200.000	4.957	307.615	25.309	-64.312	2197.876	0.567	25.309	69.112	291.482
2300.000	5.248	309.556	30.858	-71.260	2297.479	0.338	30.858	77.654	293.415
2400.000	5.163	309.830	36.653	-78.241	2397.067	0.088	36.653	86.401	295.101
2500.000	5.172	318.264	42.898	-84.697	2496.662	0.759	42.898	94.941	296.862
2600.000	5.164	320.500	49.734	-90.560	2596.255	0.201	49.734	103.317	298.775
2700.000	4.597	325.011	56.489	-95.720	2695.893	0.684	56.489	111.145	300.547
2800.000	4.251	333.558	63.090	-99.668	2795.596	0.744	63.090	117.958	302.334
2900.000	4.136	327.149	69.438	-103.274	2895.329	0.482	69.438	124.448	303.916
3000.000	3.919	338.140	75.639	-106.503	2995.083	0.801	75.639	130.630	305.383
3100.000	3.994	346.619	82.199	-108.581	3094.846	0.589	82.199	136.186	307.127
3200.000	4.270	355.674	89.300	-109.668	3194.587	0.708	89.300	141.427	309.155
3300.000	5.064	1.287	97.426	-109.850	3294.255	0.915	97.426	146.829	311.570
3400.000	5.965	3.657	107.024	-109.420	3393.791	0.928	107.024	153.058	314.366
3500.000	6.250	359.712	117.652	-109.116	3493.224	0.508	117.652	160.463	317.156

3600.000	5.623	359.918	127.995	-109.150	3592.687	0.628	127.995	168.215	319.543
3700.000	5.070	5.525	137.292	-108.732	3692.252	0.759	137.292	175.133	321.622
3800.000	4.779	10.921	145.781	-107.517	3791.884	0.547	145.781	181.141	323.590
3900.000	4.245	17.013	153.410	-105.645	3891.574	0.717	153.410	186.267	325.447
4000.000	3.354	13.327	159.796	-103.887	3991.353	0.923	159.796	190.598	326.971
4100.000	2.406	18.572	164.633	-102.544	4091.226	0.983	164.633	193.957	328.083
4200.000	2.009	36.133	168.038	-100.842	4191.153	0.780	168.038	195.975	329.031
4300.000	1.688	21.395	170.825	-99.272	4291.101	0.571	170.825	197.576	329.838
4400.000	1.454	36.508	173.217	-97.979	4391.064	0.474	173.217	199.008	330.506
4500.000	1.427	15.627	175.437	-96.889	4491.033	0.523	175.437	200.413	331.089
4600.000	1.615	353.984	178.038	-96.701	4590.999	0.600	178.038	202.604	331.491
4700.000	1.466	339.087	180.634	-97.305	4690.963	0.426	180.634	205.176	331.689
4800.000	1.363	352.534	183.009	-97.917	4790.933	0.347	183.009	207.557	331.852
4900.000	1.579	351.327	185.550	-98.279	4890.900	0.218	185.550	209.971	332.092
5000.000	1.696	335.336	188.257	-99.104	4990.859	0.470	188.257	212.750	332.236
5100.000	1.572	339.142	190.884	-100.210	5090.819	0.165	190.884	215.589	332.301
5200.000	1.330	358.284	193.326	-100.733	5190.787	0.538	193.326	217.996	332.478
5300.000	0.807	319.485	195.021	-101.225	5290.770	0.865	195.021	219.727	332.568
5400.000	0.867	334.867	196.241	-102.004	5390.760	0.232	196.241	221.168	332.535
5500.000	0.977	26.917	197.687	-101.939	5490.749	0.815	197.687	222.422	332.722
5600.000	1.057	20.869	199.309	-101.225	5590.733	0.134	199.309	223.541	333.075
5700.000	0.931	56.306	200.622	-100.220	5690.719	0.617	200.622	224.262	333.456
5800.000	1.073	7.967	202.000	-99.414	5790.705	0.831	202.000	225.138	333.796
5900.000	1.091	5.306	203.875	-99.196	5890.687	0.053	203.875	226.727	334.055
6000.000	1.050	346.796	205.716	-99.318	5990.670	0.347	205.716	228.436	334.229
6100.000	1.342	22.830	207.688	-99.073	6090.650	0.790	207.688	230.108	334.498
6200.000	1.405	23.968	209.888	-98.120	6190.621	0.069	209.888	231.690	334.945
6300.000	1.882	25.698	212.488	-96.910	6290.579	0.479	212.488	233.544	335.484
6400.000	2.010	39.968	215.313	-95.071	6390.522	0.500	215.313	235.368	336.176
6500.000	1.510	61.353	217.289	-92.787	6490.476	0.817	217.289	236.271	336.876
6600.000	0.454	194.666	217.538	-91.731	6590.466	1.851	217.538	236.087	337.136

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