



Company: Noble Energy

Rig: Production/Core-Tech

API # 05-123-16523

Date: 05/29/2014

Surveyor: Mark Simmons

VS: 0.000

Lat : 40.340

Long: -104.781

Well: Rumsey 10-4

Location: Weld County, Colorado

North Reference: Grid North

Convergence: Grid north is 0.46 Degrees East of

Declination: 8.47

Depth Reference: Ground Level

Elevation: 4683

Total Depth as Drilled: 7351

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	0.189	312.075	0.110	-0.122	100.000	0.189	0.110	0.165	312.075
200.000	0.411	349.703	0.573	-0.309	199.998	0.285	0.573	0.651	331.704
300.000	0.391	38.917	1.191	-0.159	299.996	0.334	1.191	1.202	352.412
400.000	0.492	57.173	1.689	0.416	399.993	0.172	1.689	1.740	13.847
500.000	0.560	44.115	2.273	1.117	499.989	0.137	2.273	2.532	26.179
600.000	0.531	41.825	2.969	1.766	599.985	0.036	2.969	3.454	30.751
700.000	0.546	37.943	3.690	2.368	699.980	0.039	3.690	4.384	32.694
800.000	0.395	6.624	4.408	2.701	799.977	0.292	4.408	5.169	31.498
900.000	0.231	328.634	4.922	2.636	899.976	0.256	4.922	5.583	28.169
1000.000	0.215	310.791	5.217	2.389	999.975	0.071	5.217	5.738	24.602
1100.000	0.176	338.293	5.482	2.190	1099.974	0.101	5.482	5.903	21.772
1200.000	0.169	321.646	5.740	2.041	1199.974	0.050	5.740	6.092	19.576
1300.000	0.137	313.652	5.938	1.863	1299.973	0.039	5.938	6.224	17.421
1400.000	0.148	294.456	6.074	1.659	1399.973	0.049	6.074	6.297	15.280
1500.000	0.155	34.448	6.240	1.618	1499.973	0.233	6.240	6.446	14.541
1600.000	0.143	18.103	6.470	1.734	1599.973	0.044	6.470	6.698	15.003
1700.000	0.215	23.026	6.761	1.846	1699.972	0.073	6.761	7.008	15.271
1800.000	0.033	63.659	6.946	1.945	1799.972	0.191	6.946	7.213	15.644
1900.000	0.181	56.492	7.046	2.103	1899.972	0.148	7.046	7.353	16.616
2000.000	0.526	60.318	7.360	2.633	1999.970	0.346	7.360	7.817	19.684
2100.000	0.728	69.733	7.808	3.628	2099.964	0.226	7.808	8.609	24.920
2200.000	0.735	64.841	8.300	4.803	2199.955	0.063	8.300	9.590	30.059
2300.000	0.658	47.239	8.963	5.805	2299.948	0.226	8.963	10.679	32.933
2400.000	0.375	1.102	9.680	6.233	2399.944	0.481	9.680	11.513	32.779
2500.000	0.382	341.000	10.323	6.131	2499.942	0.132	10.323	12.006	30.708
2600.000	0.476	335.480	11.016	5.850	2599.939	0.103	11.016	12.473	27.972
2700.000	0.480	333.462	11.768	5.491	2699.936	0.017	11.768	12.986	25.012
2800.000	0.395	321.345	12.412	5.088	2799.933	0.125	12.412	13.415	22.290
2900.000	0.426	291.433	12.817	4.527	2899.931	0.214	12.817	13.593	19.451
3000.000	0.336	262.574	12.915	3.889	2999.928	0.209	12.915	13.488	16.760
3100.000	0.319	267.978	12.868	3.320	3099.927	0.035	12.868	13.289	14.467
3200.000	0.478	266.686	12.834	2.625	3199.924	0.159	12.834	13.099	11.561
3300.000	0.603	239.810	12.545	1.754	3299.920	0.279	12.545	12.667	7.960
3400.000	0.659	227.582	11.892	0.875	3399.914	0.145	11.892	11.925	4.207

3500.000	1.122	234.804	10.940	-0.349	3499.902	0.475	10.940	10.946	358.171
3600.000	1.644	238.647	9.630	-2.375	3599.872	0.530	9.630	9.918	346.148
3700.000	1.566	236.244	8.124	-4.736	3699.833	0.103	8.124	9.404	329.761
3800.000	1.926	245.286	6.662	-7.398	3799.787	0.452	6.662	9.956	312.005
3900.000	1.759	242.869	5.260	-10.290	3899.735	0.184	5.260	11.557	297.074
4000.000	1.304	240.603	4.002	-12.647	3999.699	0.459	4.002	13.265	287.557
4100.000	0.908	266.141	3.390	-14.429	4099.681	0.623	3.390	14.822	283.221
4200.000	0.940	305.216	3.810	-15.889	4199.669	0.619	3.810	16.340	283.483
4300.000	0.491	298.352	4.486	-16.937	4299.661	0.456	4.486	17.521	284.836
4400.000	0.608	294.111	4.907	-17.798	4399.656	0.123	4.907	18.462	285.412
4500.000	0.383	317.019	5.368	-18.510	4499.652	0.295	5.368	19.273	286.171
4600.000	0.613	49.146	5.962	-18.333	4599.650	0.735	5.962	19.278	288.014
4700.000	1.245	66.111	6.752	-16.936	4699.636	0.682	6.752	18.232	291.735
4800.000	1.135	77.814	7.400	-14.974	4799.615	0.266	7.400	16.703	296.299
4900.000	1.071	68.012	7.960	-13.140	4899.596	0.199	7.960	15.362	301.206
5000.000	0.903	67.269	8.614	-11.546	4999.582	0.168	8.614	14.405	306.727
5100.000	0.553	77.401	9.024	-10.348	5099.573	0.372	9.024	13.730	311.091
5200.000	0.566	65.560	9.334	-9.427	5199.569	0.116	9.334	13.266	314.716
5300.000	0.599	72.014	9.700	-8.479	5299.563	0.073	9.700	12.884	318.840
5400.000	0.917	69.703	10.139	-7.232	5399.555	0.319	10.139	12.454	324.499
5500.000	1.173	67.220	10.813	-5.538	5499.538	0.261	10.813	12.148	332.880
5600.000	1.845	54.542	12.143	-3.283	5599.503	0.746	12.143	12.579	344.872
5700.000	1.559	39.816	14.122	-1.100	5699.459	0.520	14.122	14.164	355.544
5800.000	1.324	30.820	16.158	0.363	5799.428	0.326	16.158	16.163	1.285
5900.000	1.204	28.702	18.072	1.459	5899.403	0.128	18.072	18.131	4.615
6000.000	0.700	34.978	19.494	2.314	5999.389	0.514	19.494	19.631	6.768
6100.000	0.881	19.985	20.717	2.927	6099.380	0.274	20.717	20.923	8.041
6200.000	0.807	359.417	22.145	3.182	6199.369	0.310	22.145	22.372	8.178
6300.000	0.738	343.756	23.468	2.995	6299.360	0.221	23.468	23.658	7.273
6400.000	0.787	352.444	24.768	2.724	6399.351	0.125	24.768	24.917	6.277
6500.000	0.749	332.948	26.031	2.337	6499.342	0.263	26.031	26.135	5.130
6600.000	0.696	336.673	27.171	1.799	6599.334	0.071	27.171	27.230	3.788
6700.000	0.633	348.342	28.269	1.447	6699.328	0.149	28.269	28.306	2.930
6800.000	0.420	358.547	29.177	1.326	6799.323	0.232	29.177	29.207	2.602
6900.000	0.339	348.084	29.833	1.256	6899.321	0.107	29.833	29.859	2.410
7000.000	0.370	356.257	30.444	1.174	6999.319	0.060	30.444	30.467	2.207

True North