



Company: Noble Energy

Rig: Production/Coretech

API # 05-123-25519

Date: 9/19/13

Surveyor: Levi Sheldon

VS: 0.000

Lat : 40.341

Long: -104.627

Well: Used G 02-21

Location: Weld County, Colorado

North Reference: GRID

Convergence: GRID North is 0.560 Degrees East

Declination: 8.48

Depth Reference: Ground Level

Elevation: 4,678 Feet

Total Depth as Drilled: 7,606 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	0.287	40.927	0.189	0.164	100.000	0.287	0.189	0.251	40.927
200.000	0.568	358.561	0.874	0.316	199.997	0.405	0.874	0.930	19.857
300.000	0.440	38.630	1.670	0.543	299.993	0.366	1.670	1.756	18.009
400.000	0.178	305.591	2.060	0.656	399.992	0.483	2.060	2.162	17.669
500.000	0.407	328.456	2.454	0.344	499.991	0.253	2.454	2.478	7.984
600.000	0.491	355.286	3.184	0.123	599.988	0.224	3.184	3.186	2.212
700.000	0.633	309.086	3.960	-0.341	699.984	0.460	3.960	3.974	355.073
800.000	0.423	265.150	4.277	-1.138	799.980	0.441	4.277	4.426	345.094
900.000	0.610	310.167	4.589	-1.914	899.976	0.432	4.589	4.972	337.366
1000.000	2.774	325.858	6.936	-3.679	999.927	2.193	6.936	7.851	332.058
1100.000	3.843	326.934	11.747	-6.866	1099.759	1.071	11.747	13.607	329.696
1200.000	5.959	324.665	18.791	-11.697	1199.387	2.124	18.791	22.134	328.099
1300.000	8.363	321.954	28.754	-19.182	1298.600	2.427	28.754	34.565	326.293
1400.000	10.290	310.961	40.338	-30.410	1397.282	2.616	40.338	50.516	322.988
1500.000	10.947	306.929	51.898	-44.745	1495.570	0.992	51.898	68.524	319.233
1600.000	11.693	303.332	63.171	-60.802	1593.625	1.027	63.171	87.678	316.095
1700.000	12.008	299.288	73.829	-78.341	1691.496	0.888	73.829	107.648	313.301
1800.000	12.080	296.085	83.519	-96.813	1789.295	0.672	83.519	127.860	310.784
1900.000	11.275	295.054	92.260	-115.068	1887.225	0.832	92.260	147.487	308.722
2000.000	11.361	297.205	100.903	-132.684	1985.281	0.431	100.903	166.692	307.252
2100.000	11.322	301.027	110.465	-149.855	2083.329	0.753	110.465	186.170	306.396
2200.000	10.712	298.268	119.927	-166.452	2181.487	0.806	119.927	205.155	305.772
2300.000	10.171	297.294	128.377	-182.484	2279.830	0.570	128.377	223.116	305.126
2400.000	10.782	302.152	137.403	-198.250	2378.165	1.074	137.403	241.211	304.725
2500.000	11.559	298.368	147.142	-214.986	2476.271	1.068	147.142	260.518	304.389
2600.000	12.040	295.069	156.322	-233.249	2574.158	0.828	156.322	280.787	303.830
2700.000	12.718	293.054	165.051	-252.825	2671.833	0.804	165.051	301.931	303.138
2800.000	13.266	290.217	173.327	-273.721	2769.274	0.841	173.327	323.984	302.343
2900.000	11.221	290.491	180.699	-293.604	2866.995	2.045	180.699	344.754	301.610
3000.000	11.517	293.320	188.057	-311.886	2965.033	0.631	188.057	364.195	301.089
3100.000	11.280	299.043	196.758	-329.604	3063.064	1.155	196.758	383.865	300.835
3200.000	10.849	299.483	206.138	-346.348	3161.205	0.439	206.138	403.050	300.760
3300.000	11.062	299.452	215.487	-362.894	3259.382	0.212	215.487	422.050	300.702
3400.000	11.162	302.765	225.442	-379.387	3357.508	0.646	225.442	441.314	300.720

3500.000	10.180	298.563	234.906	-395.288	3455.779	1.252	234.906	459.819	300.722
3600.000	10.658	301.614	243.979	-410.925	3554.131	0.730	243.979	477.897	300.699
3700.000	10.782	296.632	253.019	-427.162	3652.388	0.935	253.019	496.474	300.639
3800.000	13.473	293.393	261.839	-446.219	3750.148	2.775	261.839	517.370	300.404
3900.000	13.822	291.868	270.914	-467.997	3847.325	0.501	270.914	540.755	300.066
4000.000	11.749	294.349	279.562	-488.361	3944.841	2.145	279.562	562.718	299.789
4100.000	11.566	298.335	288.518	-506.461	4042.779	0.826	288.518	582.876	299.669
4200.000	10.772	299.082	297.818	-523.452	4140.885	0.807	297.818	602.243	299.638
4300.000	11.363	306.532	308.225	-539.535	4239.030	1.546	308.225	621.370	299.738
4400.000	12.488	305.309	320.339	-556.274	4336.870	1.153	320.339	641.917	299.936
4500.000	12.673	304.704	332.833	-574.115	4434.469	0.228	332.833	663.616	300.102
4600.000	10.917	305.149	344.531	-590.877	4532.354	1.759	344.531	683.986	300.246
4700.000	9.514	306.026	354.844	-605.303	4630.766	1.412	354.844	701.645	300.380
4800.000	9.518	304.769	364.419	-618.778	4729.390	0.208	364.419	718.114	300.495
4900.000	10.434	302.808	374.040	-633.181	4827.878	0.977	374.040	735.407	300.572
5000.000	10.279	304.794	384.037	-648.119	4926.249	0.389	384.037	753.354	300.649
5100.000	9.390	302.618	393.526	-662.317	5024.779	0.963	393.526	770.406	300.717
5200.000	5.518	308.120	400.894	-672.974	5123.916	3.933	400.894	783.333	300.782
5300.000	2.888	314.571	405.631	-678.552	5223.639	2.668	405.631	790.550	300.870
5400.000	1.213	325.386	408.270	-680.948	5323.572	1.712	408.270	793.961	300.945
5500.000	0.718	341.360	409.734	-681.749	5423.557	0.558	409.734	795.402	301.006
5600.000	1.302	11.980	411.439	-681.714	5523.542	0.776	411.439	796.251	301.113
5700.000	2.105	61.746	413.420	-679.860	5623.502	1.608	413.420	795.692	301.304
5800.000	2.741	57.376	415.579	-676.228	5723.412	0.663	415.579	793.719	301.573
5900.000	2.440	64.646	417.780	-672.290	5823.310	0.445	417.780	791.526	301.858
6000.000	1.676	62.817	419.360	-669.065	5923.245	0.767	419.360	789.627	302.079
6100.000	1.079	63.603	420.446	-666.921	6023.215	0.597	420.446	788.390	302.229
6200.000	0.660	49.186	421.241	-665.642	6123.204	0.469	421.241	787.733	302.327
6300.000	0.767	351.854	422.280	-665.301	6223.197	0.691	422.280	788.001	302.404
6400.000	0.800	341.191	423.603	-665.621	6323.188	0.149	423.603	788.980	302.473
6500.000	0.821	347.564	424.963	-666.000	6423.178	0.092	424.963	790.031	302.541
6600.000	0.696	5.059	426.267	-666.100	6523.169	0.262	426.267	790.818	302.617
6700.000	0.817	18.837	427.546	-665.817	6623.161	0.217	427.546	791.270	302.706
6800.000	0.440	11.622	428.597	-665.509	6723.154	0.384	428.597	791.579	302.782
6900.000	0.432	27.383	429.308	-665.259	6823.152	0.120	429.308	791.754	302.835
7000.000	0.715	2.611	430.266	-665.057	6923.147	0.370	430.266	792.104	302.901

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