



Company: Noble Energy

Rig: Production / CoreTech

API # 05-123-33632

Date: 12/5/2013

Surveyor: CJ Hines

VS: 0.000

Lat : 40.5189

Long: -104.63

Well: Irvine PC #E02-18

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.56 East of True N

Declination: 8.46

Depth Reference: Ground Level

Elevation: 4830

Total Depth as Drilled: 7328

Lat & Long obtained by handheld GPS at wellhead

MS Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbrg
100.000	0.575	112.418	-0.191	0.463	99.998	0.575	-0.191	0.501	112.418
200.000	0.719	94.053	-0.427	1.553	199.992	0.251	-0.427	1.611	105.365
300.000	0.415	70.624	-0.351	2.521	299.987	0.377	-0.351	2.545	97.928
400.000	0.711	129.917	-0.629	3.338	399.983	0.613	-0.629	3.397	100.670
500.000	0.566	156.661	-1.480	4.009	499.977	0.327	-1.480	4.274	110.263
600.000	0.970	140.683	-2.588	4.741	599.968	0.454	-2.588	5.402	118.631
700.000	0.984	146.307	-3.958	5.754	699.953	0.097	-3.958	6.984	124.522
800.000	0.845	152.890	-5.329	6.567	799.941	0.174	-5.329	8.457	129.060
900.000	0.579	105.047	-6.117	7.391	899.934	0.626	-6.117	9.594	129.610
1000.000	0.956	131.094	-6.796	8.508	999.925	0.504	-6.796	10.889	128.618
1100.000	1.067	120.500	-7.817	9.938	1099.909	0.217	-7.817	12.644	128.186
1200.000	0.900	118.270	-8.661	11.432	1199.894	0.171	-8.661	14.342	127.148
1300.000	0.715	119.155	-9.337	12.669	1299.884	0.185	-9.337	15.738	126.391
1400.000	0.666	121.835	-9.948	13.707	1399.877	0.059	-9.948	16.936	125.969
1500.000	0.614	118.418	-10.509	14.672	1499.871	0.064	-10.509	18.048	125.612
1600.000	0.776	106.579	-10.958	15.793	1599.864	0.216	-10.958	19.222	124.754
1700.000	0.539	105.974	-11.280	16.894	1699.857	0.237	-11.280	20.314	123.731
1800.000	0.440	114.587	-11.570	17.696	1799.853	0.123	-11.570	21.143	123.176
1900.000	0.616	129.975	-12.075	18.457	1899.849	0.225	-12.075	22.056	123.193
2000.000	0.545	127.676	-12.711	19.246	1999.844	0.075	-12.711	23.064	123.443
2100.000	0.319	126.765	-13.168	19.845	2099.841	0.226	-13.168	23.816	123.566
2200.000	0.154	329.782	-13.219	20.000	2199.841	0.464	-13.219	23.974	123.461
2300.000	0.275	60.328	-12.984	20.141	2299.840	0.316	-12.984	23.963	122.808
2400.000	0.312	125.631	-13.024	20.570	2399.839	0.318	-13.024	24.347	122.340
2500.000	0.303	178.284	-13.447	20.799	2499.838	0.273	-13.447	24.768	122.883
2600.000	0.362	232.656	-13.904	20.556	2599.836	0.309	-13.904	24.816	124.074
2700.000	0.469	289.145	-13.961	19.918	2699.834	0.404	-13.961	24.324	125.028
2800.000	0.477	287.449	-13.702	19.135	2799.831	0.016	-13.702	23.535	125.606
2900.000	0.371	319.412	-13.332	18.527	2899.828	0.254	-13.332	22.825	125.737
3000.000	0.362	245.139	-13.218	18.030	2999.827	0.443	-13.218	22.356	126.246
3100.000	0.340	241.366	-13.493	17.483	3099.825	0.032	-13.493	22.084	127.660
3200.000	0.670	270.262	-13.632	16.638	3199.821	0.407	-13.632	21.510	129.329
3300.000	0.796	280.359	-13.505	15.370	3299.813	0.180	-13.505	20.460	131.304
3400.000	0.303	268.712	-13.386	14.423	3399.808	0.504	-13.386	19.677	132.865
3500.000	0.765	141.714	-13.916	14.572	3499.805	0.977	-13.916	20.149	133.680
3600.000	0.997	135.598	-15.061	15.595	3599.793	0.251	-15.061	21.680	134.003

3700.000	0.964	141.884	-16.345	16.723	3699.779	0.113	-16.345	23.384	134.345
3800.000	0.537	80.296	-16.928	17.704	3799.771	0.851	-16.928	24.494	133.716
3900.000	0.439	345.376	-16.478	18.070	3899.769	0.722	-16.478	24.455	132.363
4000.000	0.583	324.185	-15.695	17.675	3999.765	0.236	-15.695	23.638	131.604
4100.000	0.692	314.040	-14.863	16.943	4099.759	0.156	-14.863	22.538	131.257
4200.000	0.842	335.599	-13.774	16.206	4199.750	0.322	-13.774	21.268	130.362
4300.000	0.575	319.363	-12.724	15.576	4299.742	0.331	-12.724	20.112	129.246
4400.000	0.438	343.187	-11.977	15.138	4399.738	0.248	-11.977	19.303	128.351
4500.000	0.499	36.248	-11.260	15.285	4499.736	0.422	-11.260	18.985	126.377
4600.000	1.039	16.397	-10.038	15.799	4599.726	0.595	-10.038	18.718	122.431
4700.000	1.320	27.089	-8.143	16.579	4699.705	0.355	-8.143	18.471	116.158
4800.000	1.507	19.454	-5.878	17.541	4799.675	0.265	-5.878	18.500	108.525
4900.000	1.115	17.748	-3.711	18.276	4899.648	0.394	-3.711	18.649	101.478
5000.000	1.332	347.448	-1.650	18.320	4999.627	0.673	-1.650	18.394	95.146
5100.000	1.024	15.768	0.345	18.310	5099.606	0.649	0.345	18.313	88.922
5200.000	1.254	17.626	2.247	18.884	5199.586	0.233	2.247	19.017	83.215
5300.000	0.977	5.756	4.138	19.301	5299.567	0.359	4.138	19.740	77.899
5400.000	0.670	350.870	5.563	19.294	5399.557	0.372	5.563	20.080	73.915
5500.000	0.378	324.763	6.410	19.011	5499.553	0.369	6.410	20.062	71.367
5600.000	0.374	307.938	6.880	18.563	5599.551	0.110	6.880	19.797	69.663
5700.000	0.567	322.111	7.471	18.002	5699.547	0.224	7.471	19.490	67.461
5800.000	0.522	320.748	8.215	17.409	5799.543	0.046	8.215	19.250	64.740
5900.000	0.799	307.320	8.990	16.566	5899.536	0.315	8.990	18.849	61.512
6000.000	0.689	299.156	9.706	15.487	5999.528	0.153	9.706	18.277	57.923
6100.000	0.703	315.058	10.433	14.529	6099.520	0.193	10.433	17.887	54.317
6200.000	0.624	319.389	11.281	13.741	6199.514	0.093	11.281	17.778	50.615
6300.000	0.569	325.722	12.105	13.106	6299.508	0.086	12.105	17.841	47.275
6400.000	1.139	341.279	13.456	12.508	6399.497	0.610	13.456	18.371	42.908
6500.000	1.490	332.960	15.555	11.598	6499.471	0.399	15.555	19.403	36.709
6600.000	2.028	314.659	17.956	9.749	6599.424	0.771	17.956	20.432	28.498
6700.000	1.116	304.001	19.744	7.683	6699.385	0.954	19.744	21.186	21.263
6800.000	0.882	265.933	20.234	6.108	6799.371	0.688	20.234	21.136	16.797
6900.000	0.319	223.476	19.977	5.148	6899.366	0.682	19.977	20.630	14.451
7000.000	0.255	129.825	19.633	5.127	6999.365	0.421	19.633	20.291	14.636

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