



Company: Noble Energy
Rig: Production/ CoreTech
API # 05-123-26064
Date: 12/18/2013
Surveyor: Sean Bratt
VS: 0.000
Lat : 40.519
Long: -104.625

Well: Irvine 2-15
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is 0.57 Degrees East of
Declination: 8.46 Degrees
Depth Reference: Ground Level
Elevation: 4811 Feet
T.D as Drilled: 7352 Feet

Lat & Long obtained by handheld GPS at wellhead
MS Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbgr
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.879	314.971	0.542	-0.542	99.996	0.879	0.542	0.767	314.971
200.000	0.513	316.071	1.406	-1.395	199.989	0.366	1.406	1.981	315.219
300.000	0.438	289.747	1.858	-2.066	299.985	0.229	1.858	2.778	311.966
400.000	0.402	281.029	2.054	-2.770	399.983	0.073	2.054	3.448	306.560
500.000	0.305	296.124	2.238	-3.353	499.981	0.134	2.238	4.031	303.726
600.000	0.405	353.161	2.706	-3.634	599.979	0.350	2.706	4.531	306.681
700.000	0.474	14.857	3.458	-3.570	699.976	0.179	3.458	4.970	314.087
800.000	0.496	14.203	4.277	-3.357	799.973	0.023	4.277	5.437	321.870
900.000	0.435	10.117	5.070	-3.184	899.969	0.069	5.070	5.987	327.870
1000.000	0.457	10.014	5.836	-3.048	999.966	0.022	5.836	6.585	332.422
1100.000	0.436	6.659	6.607	-2.935	1099.963	0.033	6.607	7.229	336.047
1200.000	0.372	4.614	7.308	-2.865	1199.961	0.065	7.308	7.850	338.595
1300.000	0.376	5.627	7.958	-2.806	1299.959	0.007	7.958	8.439	340.575
1400.000	0.303	13.602	8.541	-2.712	1399.957	0.087	8.541	8.962	342.384
1500.000	0.292	13.224	9.046	-2.592	1499.955	0.011	9.046	9.410	344.013
1600.000	0.166	343.228	9.434	-2.575	1599.955	0.170	9.434	9.779	344.730
1700.000	0.245	347.504	9.781	-2.663	1699.954	0.080	9.781	10.137	344.767
1800.000	0.327	317.871	10.201	-2.901	1799.953	0.167	10.201	10.606	344.124
1900.000	0.490	307.600	10.674	-3.431	1899.950	0.178	10.674	11.212	342.178
2000.000	0.484	308.142	11.196	-4.102	1999.947	0.007	11.196	11.924	339.876
2100.000	0.367	321.270	11.706	-4.635	2099.944	0.152	11.706	12.590	338.400
2200.000	0.375	318.786	12.202	-5.050	2199.942	0.018	12.202	13.206	337.515
2300.000	0.095	133.176	12.391	-5.206	2299.941	0.469	12.391	13.440	337.212
2400.000	0.296	150.149	12.110	-5.017	2399.941	0.207	12.110	13.108	337.499
2500.000	0.381	154.599	11.586	-4.746	2499.939	0.088	11.586	12.520	337.727
2600.000	0.436	155.362	10.940	-4.444	2599.936	0.056	10.940	11.809	337.891
2700.000	0.401	148.695	10.295	-4.104	2699.934	0.060	10.295	11.083	338.267
2800.000	0.405	159.237	9.665	-3.796	2799.931	0.074	9.665	10.384	338.555
2900.000	0.563	147.123	8.922	-3.405	2899.928	0.187	8.922	9.550	339.114
3000.000	0.679	133.424	8.103	-2.708	2999.922	0.188	8.103	8.543	341.522
3100.000	0.653	133.359	7.304	-1.863	3099.915	0.026	7.304	7.538	345.690
3200.000	0.799	120.547	6.559	-0.848	3199.907	0.218	6.559	6.613	352.629
3300.000	0.605	131.159	5.857	0.150	3299.899	0.233	5.857	5.859	1.466
3400.000	0.539	166.358	5.052	0.658	3399.895	0.352	5.052	5.094	7.426
3500.000	0.819	248.175	4.329	0.106	3499.890	0.914	4.329	4.330	1.399

3600.000	0.925	236.419	3.616	-1.230	3599.878	0.207	3.616	3.820	341.210
3700.000	0.890	249.579	2.899	-2.630	3699.866	0.211	2.899	3.915	317.783
3800.000	1.023	260.703	2.484	-4.239	3799.852	0.228	2.484	4.913	300.368
3900.000	1.071	262.014	2.210	-6.046	3899.835	0.053	2.210	6.437	290.078
4000.000	1.071	260.213	1.921	-7.892	3999.818	0.034	1.921	8.122	283.682
4100.000	1.138	259.939	1.589	-9.791	4099.799	0.068	1.589	9.919	279.218
4200.000	1.133	261.702	1.273	-11.747	4199.779	0.035	1.273	11.815	276.184
4300.000	1.142	266.160	1.063	-13.719	4299.760	0.089	1.063	13.760	274.432
4400.000	1.156	265.909	0.925	-15.720	4399.740	0.015	0.925	15.747	273.366
4500.000	1.071	274.604	0.928	-17.658	4499.721	0.189	0.928	17.683	273.007
4600.000	1.197	286.511	1.299	-19.592	4599.701	0.266	1.299	19.635	273.795
4700.000	1.024	280.827	1.764	-21.471	4699.683	0.204	1.764	21.543	274.697
4800.000	0.780	283.568	2.092	-23.010	4799.670	0.248	2.092	23.105	275.194
4900.000	0.682	291.502	2.470	-24.226	4899.662	0.141	2.470	24.351	275.821
5000.000	0.679	301.864	3.001	-25.283	4999.655	0.123	3.001	25.460	276.769
5100.000	0.630	292.935	3.528	-26.293	5099.648	0.113	3.528	26.528	277.642
5200.000	0.644	288.722	3.922	-27.331	5199.642	0.049	3.922	27.611	278.167
5300.000	0.424	299.182	4.283	-28.185	5299.638	0.240	4.283	28.509	278.640
5400.000	0.230	293.882	4.544	-28.692	5399.636	0.195	4.544	29.049	279.000
5500.000	0.364	10.832	4.938	-28.816	5499.635	0.384	4.938	29.236	279.723
5600.000	0.341	14.389	5.538	-28.682	5599.633	0.032	5.538	29.212	280.927
5700.000	0.370	13.352	6.139	-28.534	5699.631	0.030	6.139	29.187	282.142
5800.000	0.593	28.183	6.909	-28.215	5799.628	0.254	6.909	29.049	283.759
5900.000	0.952	30.486	8.081	-27.549	5899.619	0.361	8.081	28.710	286.348
6000.000	0.826	8.500	9.511	-27.021	5999.607	0.361	9.511	28.646	289.390
6100.000	0.872	10.214	10.972	-26.780	6099.596	0.052	10.972	28.940	292.280
6200.000	0.825	13.036	12.422	-26.482	6199.585	0.063	12.422	29.251	295.130
6300.000	0.896	2.026	13.905	-26.292	6299.574	0.180	13.905	29.743	297.873
6400.000	0.973	3.582	15.534	-26.212	6399.560	0.081	15.534	30.469	300.653
6500.000	0.966	0.295	17.225	-26.154	6499.546	0.056	17.225	31.317	303.368
6600.000	1.132	3.492	19.053	-26.090	6599.529	0.177	19.053	32.306	306.141
6700.000	1.045	356.462	20.949	-26.086	6699.511	0.159	20.949	33.457	308.768
6800.000	1.006	335.681	22.659	-26.503	6799.496	0.372	22.659	34.869	310.528
6900.000	0.411	17.912	23.800	-26.754	6899.488	0.753	23.800	35.808	311.656
7000.000	0.656	105.897	23.985	-26.093	6999.485	0.762	23.985	35.442	312.589
7100.000	0.669	110.745	23.621	-24.996	7099.478	0.057	23.621	34.391	313.380

True North

yro