



Company: Noble Energy
Rig: Production / V.E.S.

API # 05-123-34220

Date: 12/9/2013

Surveyor: Norman Cowan

VS: 0.000

Lat : 40.534

Long: -104.628

Well: Booth USX EE 35-07D

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.56 Deg East of Tru

Declination: 8.47 Degrees

Depth Reference: Ground Level

Elevation: 4831 Feet

Total Depth as Drilled: 7391 Feet

Lat & Long obtained by handheld GPS at wellhead

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	0.800	145.912	-0.578	0.391	99.997	0.800	-0.578	0.698	145.912
200.000	0.924	171.282	-1.954	0.905	199.986	0.398	-1.954	2.153	155.147
300.000	1.003	166.688	-3.603	1.229	299.972	0.111	-3.603	3.807	161.168
400.000	0.262	165.200	-4.677	1.489	399.965	0.741	-4.677	4.908	162.339
500.000	1.444	160.494	-6.086	1.968	499.952	1.183	-6.086	6.396	162.078
600.000	0.681	158.410	-7.826	2.608	599.934	0.765	-7.826	8.249	161.572
700.000	0.963	156.947	-9.152	3.155	699.924	0.283	-9.152	9.681	160.977
800.000	1.438	137.429	-10.849	4.333	799.902	0.620	-10.849	11.683	158.228
900.000	2.100	154.305	-13.425	5.976	899.854	0.836	-13.425	14.695	156.002
1000.000	3.578	180.897	-18.196	6.722	999.733	1.942	-18.196	19.398	159.725
1100.000	4.739	195.495	-25.298	5.569	1099.471	1.563	-25.298	25.903	167.584
1200.000	5.951	192.496	-34.340	3.344	1199.034	1.243	-34.340	34.503	174.438
1300.000	6.643	192.364	-45.051	0.984	1298.430	0.692	-45.051	45.062	178.749
1400.000	8.344	190.022	-57.846	-1.517	1397.573	1.728	-57.846	57.866	181.502
1500.000	9.640	179.632	-73.366	-2.726	1496.348	2.073	-73.366	73.417	182.128
1600.000	11.287	176.425	-91.507	-2.062	1594.683	1.746	-91.507	91.531	181.291
1700.000	13.272	173.266	-112.677	-0.106	1692.391	2.095	-112.677	112.677	180.054
1800.000	13.929	169.845	-135.925	3.362	1789.588	1.038	-135.925	135.966	178.583
1900.000	13.980	170.130	-159.673	7.555	1886.637	0.086	-159.673	159.851	177.291
2000.000	14.054	172.277	-183.605	11.257	1983.660	0.525	-183.605	183.950	176.492
2100.000	14.776	172.054	-208.266	14.651	2080.511	0.724	-208.266	208.781	175.976
2200.000	14.129	170.640	-232.939	18.399	2177.346	0.736	-232.939	233.665	175.484
2300.000	13.922	170.252	-256.838	22.421	2274.365	0.228	-256.838	257.815	175.011
2400.000	14.557	173.651	-281.184	25.848	2371.294	1.050	-281.184	282.370	174.748
2500.000	14.915	172.404	-306.431	28.938	2468.005	0.478	-306.431	307.794	174.605
2600.000	13.099	170.451	-330.363	32.520	2565.028	1.877	-330.363	331.960	174.378
2700.000	12.763	172.163	-352.480	35.906	2662.493	0.509	-352.480	354.304	174.184
2800.000	13.426	172.374	-374.930	38.952	2759.892	0.665	-374.930	376.948	174.069
2900.000	13.789	176.995	-398.339	41.118	2857.088	1.146	-398.339	400.455	174.107
3000.000	12.147	175.080	-420.723	42.645	2954.534	1.697	-420.723	422.879	174.212
3100.000	12.395	172.720	-441.852	44.907	3052.250	0.559	-441.852	444.128	174.197
3200.000	13.259	173.263	-463.886	47.612	3149.754	0.872	-463.886	466.323	174.140
3300.000	14.294	177.257	-487.607	49.548	3246.878	1.405	-487.607	490.118	174.198
3400.000	15.337	177.658	-513.152	50.680	3343.552	1.048	-513.152	515.648	174.360
3500.000	14.067	180.225	-538.520	51.172	3440.277	1.427	-538.520	540.946	174.572

3600.000	14.473	178.748	-563.166	51.398	3537.192	0.545	-563.166	565.506	174.785
3700.000	13.512	175.772	-587.310	52.532	3634.225	1.200	-587.310	589.655	174.889
3800.000	13.499	172.208	-610.525	54.976	3731.461	0.832	-610.525	612.995	174.855
3900.000	14.695	171.836	-634.645	58.359	3828.448	1.199	-634.645	637.322	174.746
4000.000	15.661	173.488	-660.610	61.691	3924.959	1.059	-660.610	663.485	174.665
4100.000	16.128	173.029	-687.807	64.907	4021.136	0.484	-687.807	690.863	174.609
4200.000	16.393	173.589	-715.617	68.169	4117.135	0.308	-715.617	718.857	174.559
4300.000	15.734	172.969	-743.098	71.404	4213.230	0.681	-743.098	746.520	174.511
4400.000	13.516	174.058	-768.181	74.274	4309.984	2.235	-768.181	771.763	174.477
4500.000	12.345	173.320	-790.422	76.728	4407.447	1.182	-790.422	794.138	174.456
4600.000	10.395	171.813	-809.972	79.256	4505.480	1.973	-809.972	813.840	174.411
4700.000	9.045	170.065	-826.645	81.897	4604.042	1.382	-826.645	830.692	174.342
4800.000	7.114	172.256	-840.524	84.088	4703.045	1.955	-840.524	844.720	174.287
4900.000	6.544	167.615	-852.225	86.145	4802.336	0.793	-852.225	856.568	174.228
5000.000	4.416	160.012	-861.410	88.683	4901.874	2.244	-861.410	865.963	174.122
5100.000	2.998	158.290	-867.458	90.967	5001.663	1.422	-867.458	872.215	174.014
5200.000	2.415	165.642	-871.929	92.457	5101.551	0.678	-871.929	876.817	173.947
5300.000	2.631	172.820	-876.247	93.266	5201.454	0.382	-876.247	881.196	173.924
5400.000	2.753	153.118	-880.666	94.639	5301.346	0.929	-880.666	885.736	173.866
5500.000	2.554	145.165	-884.637	96.997	5401.239	0.418	-884.637	889.939	173.743
5600.000	1.019	132.608	-887.068	98.925	5501.188	1.575	-887.068	892.567	173.637
5700.000	0.514	127.529	-887.943	99.935	5601.179	0.509	-887.943	893.549	173.579
5800.000	0.577	202.283	-888.682	100.100	5701.175	0.664	-888.682	894.302	173.573
5900.000	1.336	236.519	-889.791	98.937	5801.161	0.918	-889.791	895.274	173.655
6000.000	2.825	251.198	-891.228	95.631	5901.093	1.570	-891.228	896.344	173.875
6100.000	3.020	255.054	-892.702	90.753	6000.963	0.277	-892.702	897.303	174.195
6200.000	3.088	267.761	-893.486	85.517	6100.822	0.679	-893.486	897.570	174.533
6300.000	2.959	281.524	-893.076	80.297	6200.684	0.735	-893.076	896.678	174.862
6400.000	1.894	288.180	-892.045	76.197	6300.593	1.101	-892.045	895.293	175.118
6500.000	1.474	297.016	-890.945	73.482	6400.550	0.492	-890.945	893.970	175.285
6600.000	0.849	298.347	-890.009	71.684	6500.529	0.626	-890.009	892.891	175.395
6700.000	0.498	307.639	-889.392	70.688	6600.522	0.367	-889.392	892.197	175.456
6800.000	0.588	305.750	-888.827	69.928	6700.518	0.092	-888.827	891.574	175.502
6900.000	0.218	308.351	-888.410	69.363	6800.515	0.370	-888.410	891.113	175.536
7000.000	0.543	299.576	-888.058	68.802	6900.513	0.330	-888.058	890.719	175.570
7100.000	0.215	273.759	-887.812	68.203	7000.510	0.362	-887.812	890.427	175.607

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