



Company: Noble Energy

Rig: Production / CoreTech

API # 05-123-23749

Date: 11/7/2013

Surveyor: Norman Cowan

VS: 0.000

Lat : 40.221

Long: -104.598

Well: Mick D 18-25

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.58 Deg East of True

Declination: 8.44 Degrees

Depth Reference: Ground Level

Elevation: 4796 Feet

Total Depth as Drilled: 7204 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	0.932	305.292	0.470	-0.664	99.996	0.932	0.470	0.813	305.292
200.000	0.898	316.638	1.509	-1.865	199.983	0.184	1.509	2.400	308.975
300.000	1.725	340.348	3.496	-2.910	299.957	0.972	3.496	4.549	320.233
400.000	2.418	359.796	7.023	-3.423	399.892	0.978	7.023	7.813	334.014
500.000	2.951	17.612	11.586	-2.652	499.783	0.984	11.586	11.886	347.108
600.000	3.877	18.569	17.245	-0.796	599.605	0.928	17.245	17.263	357.356
700.000	4.457	28.965	23.850	2.162	699.341	0.950	23.850	23.948	5.180
800.000	4.584	30.803	30.682	6.090	799.030	0.193	30.682	31.281	11.227
900.000	4.237	28.148	37.372	9.879	898.734	0.403	37.372	38.655	14.808
1000.000	4.173	29.638	43.791	13.422	998.465	0.126	43.791	45.802	17.040
1100.000	4.142	29.300	50.104	16.988	1098.202	0.040	50.104	52.905	18.730
1200.000	3.940	33.871	56.106	20.671	1197.953	0.380	56.106	59.793	20.225
1300.000	3.296	34.118	61.339	24.198	1297.754	0.645	61.339	65.939	21.529
1400.000	3.321	33.742	66.127	27.419	1397.587	0.033	66.127	71.586	22.521
1500.000	3.126	35.114	70.766	30.597	1497.429	0.210	70.766	77.097	23.382
1600.000	2.833	35.671	75.004	33.606	1597.293	0.294	75.004	82.188	24.135
1700.000	2.432	38.642	78.668	36.372	1697.188	0.423	78.668	86.670	24.813
1800.000	2.151	40.596	81.751	38.918	1797.108	0.291	81.751	90.542	25.457
1900.000	1.651	46.250	84.172	41.180	1897.052	0.534	84.172	93.705	26.069
2000.000	1.443	55.479	85.882	43.258	1997.016	0.324	85.882	96.161	26.734
2100.000	1.092	66.088	86.981	45.166	2096.992	0.421	86.981	98.009	27.441
2200.000	1.269	87.552	87.415	47.143	2196.971	0.473	87.415	99.317	28.338
2300.000	1.134	103.188	87.236	49.212	2296.949	0.353	87.236	100.160	29.428
2400.000	1.539	99.811	86.782	51.499	2396.922	0.412	86.782	100.912	30.686
2500.000	1.428	113.499	86.056	53.964	2496.888	0.370	86.056	101.576	32.091
2600.000	1.579	104.169	85.222	56.443	2596.854	0.287	85.222	102.218	33.517
2700.000	1.420	107.423	84.514	58.960	2696.820	0.181	84.514	103.048	34.901
2800.000	1.852	108.961	83.618	61.670	2796.779	0.435	83.618	103.900	36.410
2900.000	1.879	104.376	82.686	64.787	2896.726	0.152	82.686	105.044	38.080
3000.000	1.488	97.006	82.120	67.664	2996.683	0.446	82.120	106.406	39.487
3100.000	1.674	105.314	81.576	70.362	3096.645	0.295	81.576	107.729	40.779
3200.000	1.405	93.571	81.114	72.995	3196.609	0.413	81.114	109.122	41.984
3300.000	0.737	84.092	81.104	74.859	3296.591	0.689	81.104	110.370	42.707
3400.000	0.605	70.506	81.346	75.996	3396.584	0.206	81.346	111.322	43.053
3500.000	0.600	60.995	81.776	76.952	3496.578	0.100	81.776	112.290	43.259

3600.000	0.478	60.510	82.236	77.773	3596.574	0.122	82.236	113.187	43.403
3700.000	0.581	49.706	82.769	78.523	3696.570	0.143	82.769	114.090	43.492
3800.000	0.595	39.439	83.497	79.239	3796.565	0.106	83.497	115.112	43.501
3900.000	0.421	16.675	84.250	79.674	3896.561	0.263	84.250	115.957	43.401
4000.000	0.586	16.779	85.091	79.927	3996.557	0.165	85.091	116.743	43.208
4100.000	0.239	32.012	85.758	80.185	4096.554	0.361	85.758	117.406	43.077
4200.000	0.304	60.959	86.063	80.528	4196.553	0.149	86.063	117.863	43.097
4300.000	0.317	12.629	86.462	80.820	4296.552	0.255	86.462	118.354	43.068
4400.000	0.208	89.372	86.734	81.062	4396.551	0.337	86.734	118.718	43.064
4500.000	0.148	328.332	86.846	81.175	4496.551	0.311	86.846	118.877	43.067
4600.000	0.244	258.917	86.916	80.899	4596.550	0.237	86.916	118.739	42.947
4700.000	0.363	257.686	86.807	80.380	4696.549	0.120	86.807	118.307	42.799
4800.000	0.395	309.320	86.958	79.804	4796.547	0.331	86.958	118.027	42.543
4900.000	0.173	265.771	87.165	79.387	4896.546	0.295	87.165	117.898	42.326
5000.000	0.363	242.394	87.007	78.956	4996.544	0.215	87.007	117.492	42.223
5100.000	0.615	235.691	86.558	78.232	5096.541	0.258	86.558	116.673	42.108
5200.000	0.587	232.519	85.944	77.382	5196.535	0.043	85.944	115.648	41.999
5300.000	0.766	241.282	85.311	76.390	5296.528	0.206	85.311	114.514	41.842
5400.000	0.776	242.863	84.681	75.201	5396.519	0.024	84.681	113.252	41.607
5500.000	0.671	250.324	84.175	74.047	5496.511	0.141	84.175	112.109	41.337
5600.000	0.197	294.626	84.050	73.340	5596.508	0.547	84.050	111.549	41.107
5700.000	0.181	334.349	84.264	73.115	5696.508	0.129	84.264	111.563	40.948
5800.000	0.145	328.619	84.514	72.981	5796.507	0.040	84.514	111.664	40.812
5900.000	0.308	339.337	84.874	72.820	5896.507	0.168	84.874	111.832	40.629
6000.000	0.532	323.900	85.501	72.452	5996.504	0.249	85.501	112.070	40.277
6100.000	0.803	311.936	86.344	71.657	6096.497	0.304	86.344	112.205	39.689
6200.000	0.885	312.790	87.337	70.569	6196.486	0.082	87.337	112.284	38.938
6300.000	0.882	306.851	88.323	69.386	6296.474	0.092	88.323	112.318	38.153
6400.000	0.905	297.434	89.148	68.070	6396.462	0.148	89.148	112.165	37.364
6500.000	1.026	300.402	89.965	66.597	6496.448	0.131	89.965	111.932	36.511
6600.000	1.075	296.600	90.838	64.986	6596.431	0.085	90.838	111.690	35.580
6700.000	0.653	267.640	91.235	63.577	6696.420	0.595	91.235	111.202	34.871
6800.000	0.658	170.456	90.645	63.103	6796.416	0.984	90.645	110.447	34.844
6900.000	0.718	184.371	89.454	63.151	6896.409	0.177	89.454	109.499	35.221
6950.000	0.467	172.985	88.939	63.152	6946.406	0.551	88.939	109.079	35.377

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