



Company: Noble Energy
Rig: Production/ V.E.S
API # 05-123-15886
Date: 3/27/2013
Surveyor: Jay Hinman
VS: 0.000
Lat : 40.27066
Long: -104.62817

Well: Mark 35-13
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid North is 0.56 Deg
Declination: 8.54
Depth Reference: Ground Level
Elevation: 4764'
Total Depth as Drilled: 7230'

Lat & Long obtained by handheld GPS at wellhead

Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000
100.000	0.557	278.168	0.069	-0.481	99.998	0.557	0.069	0.486
200.000	0.216	243.199	0.053	-1.130	199.996	0.399	0.053	1.131
300.000	0.621	323.819	0.405	-1.618	299.994	0.623	0.405	1.668
400.000	0.587	16.790	1.333	-1.790	399.989	0.539	1.333	2.231
500.000	0.884	29.046	2.497	-1.268	499.981	0.334	2.497	2.800
600.000	0.513	45.859	3.482	-0.572	599.973	0.420	3.482	3.529
700.000	0.807	30.266	4.402	0.104	699.967	0.342	4.402	4.404
800.000	1.047	57.073	5.507	1.226	799.954	0.489	5.507	5.642
900.000	0.524	38.306	6.363	2.276	899.944	0.576	6.363	6.757
1000.000	0.945	67.614	7.035	3.322	999.936	0.552	7.035	7.780
1100.000	0.534	57.996	7.597	4.480	1099.928	0.428	7.597	8.819
1200.000	0.840	35.048	8.444	5.296	1199.920	0.406	8.444	9.967
1300.000	0.991	62.812	9.439	6.486	1299.908	0.463	9.439	11.453
1400.000	0.560	51.592	10.138	7.638	1399.899	0.455	10.138	12.693
1500.000	0.418	109.660	10.318	8.365	1499.896	0.490	10.318	13.283
1600.000	0.587	86.075	10.231	9.220	1599.892	0.264	10.231	13.772
1700.000	0.860	164.378	9.543	9.933	1699.886	0.938	9.543	13.774
1800.000	0.561	212.239	8.406	9.874	1799.879	0.638	8.406	12.967
1900.000	0.859	249.432	7.728	8.911	1899.872	0.534	7.728	11.795
2000.000	0.903	242.241	7.098	7.512	1999.860	0.119	7.098	10.335
2100.000	0.585	289.860	6.904	6.334	2099.852	0.667	6.904	9.370
2200.000	0.514	346.663	7.514	5.751	2199.848	0.527	7.514	9.462
2300.000	0.650	336.864	8.472	5.425	2299.843	0.168	8.472	10.059
2400.000	0.941	34.954	9.666	5.672	2399.835	0.813	9.666	11.207
2500.000	1.240	87.260	10.391	7.224	2499.819	0.998	10.391	12.655
2600.000	0.780	121.330	10.089	8.886	2599.804	0.737	10.089	13.444
2700.000	1.184	99.245	9.569	10.488	2699.789	0.546	9.569	14.197
2800.000	1.144	101.279	9.207	12.486	2799.769	0.058	9.207	15.514
2900.000	0.823	62.685	9.342	14.103	2899.755	0.717	9.342	16.916
3000.000	1.073	29.798	10.483	15.206	2999.742	0.587	10.483	18.470
3100.000	1.713	37.722	12.478	16.586	3099.712	0.667	12.478	20.755
3200.000	0.932	24.991	14.397	17.844	3199.685	0.830	14.397	22.927
3300.000	1.106	349.596	16.083	18.013	3299.670	0.642	16.083	24.148
3400.000	1.442	341.323	18.225	17.435	3399.645	0.382	18.225	25.222

3500.000	1.915	346.319	21.041	16.637	3499.602	0.494	21.041	26.824
3600.000	1.572	348.882	24.010	15.977	3599.555	0.351	24.010	28.840
3700.000	2.099	0.302	27.188	15.722	3699.504	0.639	27.188	31.407
3800.000	1.788	334.912	30.433	15.071	3799.448	0.907	30.433	33.960
3900.000	1.771	356.018	33.388	14.302	3899.401	0.652	33.388	36.322
4000.000	1.982	4.312	36.654	14.324	3999.348	0.343	36.654	39.354
4100.000	2.041	0.384	40.160	14.466	4099.286	0.150	40.160	42.686
4200.000	2.204	358.439	43.862	14.426	4199.217	0.178	43.862	46.174
4300.000	2.352	10.531	47.802	14.749	4299.139	0.502	47.802	50.026
4400.000	1.852	9.316	51.414	15.385	4399.071	0.503	51.414	53.667
4500.000	1.924	7.717	54.672	15.872	4499.017	0.090	54.672	56.929
4600.000	2.330	12.313	58.321	16.531	4598.948	0.440	58.321	60.619
4700.000	2.162	29.093	61.956	17.882	4698.872	0.676	61.956	64.484
4800.000	2.702	34.536	65.545	20.135	4798.782	0.586	65.545	68.568
4900.000	2.219	44.536	68.866	22.828	4898.690	0.644	68.866	72.551
5000.000	2.555	43.418	71.865	25.718	4998.603	0.339	71.865	76.328
5100.000	1.863	46.525	74.602	28.429	5098.528	0.702	74.602	79.835
5200.000	1.360	47.560	76.521	30.484	5198.488	0.503	76.521	82.369
5300.000	0.966	31.870	78.038	31.806	5298.468	0.503	78.038	84.271
5400.000	0.730	38.071	79.256	32.644	5398.457	0.253	79.256	85.715
5500.000	1.327	35.066	80.705	33.702	5498.440	0.599	80.705	87.459
5600.000	0.905	13.920	82.419	34.557	5598.421	0.583	82.419	89.371
5700.000	0.846	357.903	83.923	34.720	5698.410	0.251	83.923	90.822
5800.000	1.275	18.404	85.717	35.044	5798.393	0.567	85.717	92.604
5900.000	0.584	21.197	87.248	35.580	5898.379	0.693	87.248	94.224
6000.000	0.398	39.585	87.991	35.985	5998.375	0.241	87.991	95.065
6100.000	0.855	57.468	88.660	36.835	6098.369	0.492	88.660	96.007
6200.000	0.891	44.983	89.611	38.014	6198.358	0.193	89.611	97.340
6300.000	0.926	46.303	90.719	39.148	6298.345	0.041	90.719	98.805
6400.000	0.477	43.675	91.578	40.020	6398.337	0.450	91.578	99.941
6500.000	0.991	68.839	92.192	41.114	6498.329	0.595	92.192	100.944
6600.000	0.965	73.331	92.745	42.727	6598.315	0.081	92.745	102.114
6700.000	0.716	66.381	93.237	44.105	6698.304	0.269	93.237	103.143
6800.000	1.088	87.176	93.534	45.625	6798.291	0.490	93.534	104.069

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Cbrg

0.000
278.168
272.685
284.062
306.668
333.081
350.669
1.353
12.547
19.681
25.274
30.528
32.096
34.496
36.996
39.031
42.025
46.148
49.592
49.066
46.624
42.535
37.427
32.632
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41.375
47.625
53.595
56.480
55.417
53.046
51.103
48.239
43.731

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26.345
23.188
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16.189
15.825
16.099
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26.003