



Company: Noble Energy
Rig: Production/Coretech
API # 05-123-16125
Date: 5-19-14
Surveyor: Justin Williams
VS: 0.000
Lat : 40.484
Long: -104.623

Well: Schwisow E14-09
Location: Weld County, Colorado
North Reference: GRID
Convergence: GRID North is 0.57 De
Declination: 8.4
Depth Reference: RKB = Ground Level
Elevation: 4708
Total Depth as Drilled: 7197

Lat & Long obtained by handheld GPS at wellhead

MS 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	0.000
100.000	0.148	185.234	-0.129	-0.012	100.000	0.148	-0.129	0.129
200.000	0.040	175.601	-0.292	-0.021	200.000	0.109	-0.292	0.293
300.000	0.060	268.222	-0.328	-0.071	300.000	0.074	-0.328	0.336
400.000	0.573	292.999	-0.134	-0.584	399.998	0.519	-0.134	0.599
500.000	0.610	299.570	0.324	-1.507	499.993	0.077	0.324	1.542
600.000	0.552	291.510	0.763	-2.418	599.987	0.100	0.763	2.536
700.000	0.632	293.745	1.162	-3.371	699.982	0.083	1.162	3.566
800.000	0.519	305.328	1.646	-4.246	799.977	0.161	1.646	4.553
900.000	0.563	314.945	2.255	-4.963	899.973	0.101	2.255	5.451
1000.000	0.632	327.069	3.065	-5.611	999.967	0.144	3.065	6.393
1100.000	0.620	320.405	3.945	-6.255	1099.961	0.074	3.945	7.395
1200.000	0.287	291.449	4.453	-6.833	1199.958	0.394	4.453	8.156
1300.000	0.822	304.566	4.952	-7.657	1299.953	0.546	4.952	9.118
1400.000	0.881	314.326	5.895	-8.797	1399.942	0.156	5.895	10.590
1500.000	0.826	323.950	7.015	-9.771	1499.931	0.153	7.015	12.028
1600.000	0.770	298.475	7.918	-10.786	1599.922	0.356	7.918	13.380
1700.000	0.812	314.665	8.737	-11.881	1699.912	0.227	8.737	14.748
1800.000	0.657	296.864	9.495	-12.897	1799.904	0.274	9.495	16.015
1900.000	0.495	351.856	10.181	-13.470	1899.900	0.551	10.181	16.884
2000.000	0.642	338.810	11.131	-13.733	1999.895	0.195	11.131	17.678
2100.000	0.321	325.652	11.885	-14.094	2099.891	0.337	11.885	18.436
2200.000	0.238	312.332	12.256	-14.406	2199.890	0.105	12.256	18.914
2300.000	0.360	281.788	12.461	-14.867	2299.889	0.196	12.461	19.398
2400.000	0.346	264.666	12.497	-15.475	2399.887	0.106	12.497	19.891
2500.000	0.240	282.024	12.512	-15.980	2499.886	0.137	12.512	20.296
2600.000	0.308	261.109	12.514	-16.450	2599.884	0.119	12.514	20.669
2700.000	0.376	257.876	12.404	-17.036	2699.883	0.071	12.404	21.074
2800.000	0.364	270.000	12.335	-17.675	2799.881	0.079	12.335	21.554
2900.000	0.481	309.526	12.602	-18.317	2899.878	0.306	12.602	22.233
3000.000	0.520	331.517	13.269	-18.857	2999.874	0.195	13.269	23.057
3100.000	0.479	336.658	14.051	-19.239	3099.870	0.061	14.051	23.824
3200.000	0.365	268.239	14.425	-19.723	3199.868	0.484	14.425	24.436
3300.000	0.996	204.333	13.624	-20.400	3299.862	0.897	13.624	24.531
3400.000	1.052	181.730	11.915	-20.786	3399.846	0.405	11.915	23.958

3500.000	0.857	184.185	10.251	-20.868	3499.832	0.199	10.251	23.250
3600.000	1.438	185.840	8.257	-21.050	3599.812	0.582	8.257	22.612
3700.000	0.887	178.806	6.235	-21.162	3699.791	0.569	6.235	22.061
3800.000	0.712	157.770	4.886	-20.911	3799.781	0.338	4.886	21.474
3900.000	0.968	175.003	3.469	-20.602	3899.771	0.357	3.469	20.892
4000.000	1.134	154.973	1.731	-20.110	3999.754	0.400	1.731	20.184
4100.000	1.223	169.898	-0.216	-19.504	4099.733	0.319	-0.216	19.505
4200.000	1.129	178.205	-2.251	-19.286	4199.712	0.195	-2.251	19.417
4300.000	1.382	175.986	-4.438	-19.171	4299.688	0.258	-4.438	19.678
4400.000	1.230	180.542	-6.715	-19.097	4399.662	0.184	-6.715	20.243
4500.000	1.489	188.237	-9.075	-19.293	4499.634	0.316	-9.075	21.320
4600.000	0.769	161.888	-10.998	-19.271	4599.615	0.870	-10.998	22.188
4700.000	0.547	80.460	-11.557	-18.591	4699.610	0.874	-11.557	21.891
4800.000	0.572	177.723	-11.977	-18.101	4799.607	0.840	-11.977	21.705
4900.000	0.925	248.274	-12.775	-18.831	4899.600	0.911	-12.775	22.755
5000.000	0.411	288.997	-12.957	-19.920	4999.593	0.669	-12.957	23.763
5100.000	0.739	334.217	-12.259	-20.540	5099.588	0.536	-12.259	23.921
5200.000	0.905	265.571	-11.739	-21.608	5199.580	0.937	-11.739	24.591
5300.000	0.895	205.113	-12.508	-22.727	5299.570	0.906	-12.508	25.942
5400.000	0.654	129.644	-13.579	-22.619	5399.563	0.967	-13.579	26.382
5500.000	0.860	49.597	-13.457	-21.609	5499.557	0.986	-13.457	25.457
5600.000	0.903	115.147	-13.306	-20.324	5599.547	0.955	-13.306	24.293
5700.000	0.774	181.934	-14.315	-19.634	5699.539	0.929	-14.315	24.299
5800.000	1.014	225.784	-15.607	-20.291	5799.527	0.704	-15.607	25.599
5900.000	1.861	228.153	-17.308	-22.135	5899.495	0.848	-17.308	28.099
6000.000	0.897	224.961	-18.945	-23.898	5999.465	0.967	-18.945	30.496
6100.000	1.195	239.441	-20.029	-25.348	6099.448	0.396	-20.029	32.306
6200.000	1.274	261.786	-20.718	-27.347	6199.426	0.485	-20.718	34.309
6300.000	0.709	302.427	-20.545	-28.970	6299.411	0.869	-20.545	35.516
6400.000	1.466	339.117	-19.018	-29.949	6399.394	0.992	-19.018	35.477
6500.000	1.671	14.199	-16.410	-30.047	6499.358	0.965	-16.410	34.236
6600.000	1.974	4.230	-13.279	-29.562	6599.308	0.438	-13.279	32.408
6700.000	1.477	340.073	-10.350	-29.875	6699.264	0.870	-10.350	31.617
6800.000	1.749	310.290	-8.152	-31.478	6799.226	0.870	-8.152	32.516
6900.000	2.512	302.282	-5.994	-34.495	6899.156	0.816	-5.994	35.012
7000.000	2.513	298.204	-3.788	-38.279	6999.060	0.179	-3.788	38.466
7050.000	2.087	301.126	-2.799	-40.024	7049.020	0.883	-2.799	40.122

0

degrees East of True North

Cbrg

0.000
185.234
184.100
192.154
257.033
282.122
287.511
289.013
291.188
294.434
298.647
302.237
303.092
302.890
303.828
305.676
306.283
306.330
306.360
307.084
309.024
310.139
310.390
309.967
308.922
308.060
307.262
306.058
304.911
304.529
305.132
306.142
306.180
303.736
299.822

296.162
291.417
286.417
283.153
279.558
274.919
269.365
263.343
256.965
250.627
244.810
240.285
238.134
236.509
235.848
236.959
239.170
241.486
241.174
239.022
238.086
236.788
233.904
232.434
231.978
231.594
231.687
232.853
234.657
237.584
241.360
245.811
250.892
255.482
260.142
264.349
265.999