



Company: Noble Energy
 Rig: Production / V.E.S.
 API # 05-123-11291
 Date: 5/17/2013
 Surveyor: Norman Cowan
 VS: 0.000
 Lat : 40.320
 Long: -104.795

Well: Monfort Gilcrest K 8-16
 Location: Weld County, Colorado
 North Reference: GRID
 Convergence: Grid North is .46 Degrees East of
 Declination: 8.61 Degrees
 Depth Reference: Ground Level
 Elevation: 4702 Feet
 Total Depth as Drilled: 7336 Feet

Lat & Long obtained by handheld GPS at wellhead

HA 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	0.615	217.970	-0.423	-0.330	99.998	0.615	-0.423	0.537	217.970
200.000	0.312	210.453	-1.081	-0.799	199.995	0.308	-1.081	1.344	216.449
300.000	0.089	151.208	-1.384	-0.900	299.994	0.278	-1.384	1.651	213.020
400.000	0.116	98.189	-1.467	-0.762	399.994	0.094	-1.467	1.653	207.466
500.000	0.286	156.412	-1.709	-0.562	499.993	0.245	-1.709	1.800	198.212
600.000	0.326	158.143	-2.202	-0.357	599.992	0.041	-2.202	2.231	189.203
700.000	0.253	146.736	-2.651	-0.130	699.991	0.092	-2.651	2.654	182.798
800.000	0.281	163.629	-3.071	0.061	799.990	0.083	-3.071	3.072	178.865
900.000	0.320	162.860	-3.573	0.212	899.988	0.039	-3.573	3.579	176.601
1000.000	0.136	174.337	-3.958	0.306	999.987	0.188	-3.958	3.970	175.577
1100.000	0.101	137.311	-4.141	0.378	1099.987	0.082	-4.141	4.158	174.789
1200.000	0.238	330.128	-4.026	0.334	1199.987	0.337	-4.026	4.040	175.255
1300.000	0.246	195.241	-4.053	0.175	1299.987	0.446	-4.053	4.057	177.534
1400.000	0.250	331.805	-4.067	0.015	1399.986	0.461	-4.067	4.067	179.789
1500.000	0.111	120.223	-3.923	-0.005	1499.986	0.350	-3.923	3.923	180.068
1600.000	0.137	42.415	-3.883	0.160	1599.986	0.157	-3.883	3.887	177.642
1700.000	0.183	61.729	-3.719	0.381	1699.985	0.070	-3.719	3.739	174.145
1800.000	0.127	203.273	-3.746	0.478	1799.985	0.293	-3.746	3.776	172.725
1900.000	0.477	155.267	-4.225	0.608	1899.984	0.403	-4.225	4.269	171.807
2000.000	0.855	201.314	-5.299	0.511	1999.977	0.627	-5.299	5.323	174.490
2100.000	0.794	220.904	-6.517	-0.214	2099.967	0.287	-6.517	6.521	181.878
2200.000	0.768	240.822	-7.368	-1.253	2199.958	0.271	-7.368	7.474	189.650
2300.000	0.840	232.616	-8.140	-2.421	2299.948	0.135	-8.140	8.492	196.561
2400.000	0.677	236.033	-8.915	-3.493	2399.940	0.169	-8.915	9.574	201.394
2500.000	0.807	212.844	-9.836	-4.364	2499.931	0.324	-9.836	10.760	203.926
2600.000	0.867	212.917	-11.062	-5.157	2599.921	0.060	-11.062	12.205	204.993
2700.000	0.536	196.779	-12.145	-5.703	2699.913	0.382	-12.145	13.418	205.153
2800.000	0.487	193.521	-13.007	-5.938	2799.909	0.057	-13.007	14.298	204.537
2900.000	0.509	199.085	-13.840	-6.182	2899.905	0.053	-13.840	15.158	204.070
3000.000	0.734	206.995	-14.830	-6.618	2999.900	0.240	-14.830	16.240	204.049
3100.000	0.415	234.137	-15.614	-7.203	3099.895	0.411	-15.614	17.195	204.764
3200.000	0.469	273.156	-15.803	-7.905	3199.892	0.300	-15.803	17.670	206.575
3300.000	0.300	300.693	-15.647	-8.539	3299.890	0.246	-15.647	17.826	208.623
3400.000	0.849	329.571	-14.875	-9.140	3399.884	0.604	-14.875	17.458	211.568

3500.000	0.709	337.128	-13.666	-9.755	3499.875	0.173	-13.666	16.790	215.522
3600.000	1.034	334.145	-12.283	-10.390	3599.863	0.328	-12.283	16.088	220.227
3700.000	1.352	318.813	-10.583	-11.560	3699.842	0.448	-10.583	15.673	227.527
3800.000	1.300	319.510	-8.832	-13.073	3799.815	0.054	-8.832	15.777	235.957
3900.000	1.659	326.558	-6.762	-14.608	3899.782	0.402	-6.762	16.097	245.160
4000.000	1.901	313.835	-4.405	-16.602	3999.734	0.462	-4.405	17.176	255.139
4100.000	2.251	321.438	-1.721	-19.023	4099.668	0.445	-1.721	19.100	264.832
4200.000	2.197	326.255	1.409	-21.312	4199.593	0.195	1.409	21.359	273.783
4300.000	1.355	320.474	3.915	-23.129	4299.544	0.860	3.915	23.458	279.607
4400.000	1.341	305.301	5.503	-24.836	4399.517	0.356	5.503	25.439	282.493
4500.000	1.344	317.714	7.047	-26.581	4499.489	0.290	7.047	27.499	284.848
4600.000	1.438	313.564	8.779	-28.279	4599.460	0.138	8.779	29.610	287.247
4700.000	1.247	315.805	10.424	-29.946	4699.432	0.198	10.424	31.709	289.192
4800.000	1.044	315.224	11.851	-31.347	4799.412	0.203	11.851	33.512	290.709
4900.000	1.011	309.396	13.057	-32.670	4899.396	0.110	13.057	35.183	291.785
5000.000	1.096	313.488	14.275	-34.045	4999.379	0.114	14.275	36.917	292.748
5100.000	0.699	325.455	15.436	-35.085	5099.367	0.437	15.436	38.330	293.747
5200.000	0.701	352.367	16.544	-35.512	5199.360	0.326	16.544	39.177	294.980
5300.000	0.533	329.855	17.553	-35.827	5299.354	0.292	17.553	39.896	296.102
5400.000	0.554	303.284	18.220	-36.464	5399.350	0.251	18.220	40.763	296.550
5500.000	0.406	334.727	18.806	-37.020	5499.346	0.296	18.806	41.523	296.930
5600.000	0.895	287.029	19.355	-37.918	5599.340	0.690	19.355	42.572	297.042
5700.000	0.589	306.909	19.892	-39.075	5699.332	0.395	19.892	43.847	296.980
5800.000	0.807	295.820	20.508	-40.121	5799.325	0.256	20.508	45.058	297.074
5900.000	0.582	272.643	20.838	-41.262	5899.317	0.356	20.838	46.225	296.795
6000.000	0.650	297.140	21.120	-42.274	5999.312	0.269	21.120	47.256	296.547
6100.000	0.728	274.364	21.427	-43.412	6099.305	0.283	21.427	48.412	296.270
6200.000	0.680	266.979	21.444	-44.638	6199.297	0.103	21.444	49.522	295.660
6300.000	0.998	277.933	21.533	-46.093	6299.286	0.355	21.533	50.875	295.040
6400.000	0.943	257.077	21.469	-47.758	6399.272	0.356	21.469	52.362	294.206
6500.000	0.962	266.257	21.231	-49.397	6499.259	0.154	21.231	53.766	293.258
6600.000	1.359	256.467	20.898	-51.387	6599.238	0.443	20.898	55.474	292.131
6700.000	1.108	250.156	20.293	-53.450	6699.215	0.285	20.293	57.172	290.790
6800.000	1.317	249.007	19.553	-55.431	6799.192	0.210	19.553	58.779	289.430
6900.000	1.430	245.439	18.623	-57.639	6899.164	0.142	18.623	60.573	287.905
7000.000	1.399	264.203	17.981	-59.989	6999.134	0.462	17.981	62.625	286.685
7100.000	1.603	254.632	17.487	-62.552	7099.099	0.322	17.487	64.950	285.619
7200.000	1.220	268.654	17.091	-64.964	7199.069	0.513	17.091	67.175	284.740

True North