



Company: Noble Energy
Rig: Production/VES
API # 05-123-32601
Date: 4/28/2013
Surveyor: Justin Williams

Well: Gabel USX AB21-14
Location: Weld County, Colorado
North Reference: GRID
Convergence: Grid north is -0.61 of True North
Declination: 8.52
Depth Reference: Ground Level
Elevation: 4880
Total Depth as Drilled: 7342

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	0.000
100.000	0.530	293.393	0.184	-0.425	99.999	0.530	0.184	0.463	293.393
200.000	0.601	268.288	0.352	-1.373	199.994	0.255	0.352	1.417	284.366
300.000	0.550	305.306	0.613	-2.288	299.989	0.368	0.613	2.369	285.005
400.000	0.671	273.261	0.924	-3.265	399.984	0.357	0.924	3.393	285.804
500.000	0.774	294.604	1.239	-4.463	499.976	0.286	1.239	4.632	285.509
600.000	0.743	289.563	1.737	-5.688	599.967	0.074	1.737	5.948	286.980
700.000	1.085	306.520	2.517	-7.060	699.955	0.432	2.517	7.496	289.624
800.000	1.151	309.154	3.715	-8.600	799.935	0.084	3.715	9.368	293.363
900.000	1.112	305.448	4.912	-10.169	899.916	0.083	4.912	11.293	295.781
1000.000	1.185	292.296	5.867	-11.916	999.896	0.273	5.867	13.282	296.213
1100.000	1.350	298.887	6.828	-13.905	1099.872	0.220	6.828	15.491	296.155
1200.000	1.338	289.047	7.778	-16.040	1199.844	0.231	7.778	17.826	295.871
1300.000	1.252	299.804	8.702	-18.090	1299.819	0.257	8.702	20.075	295.689
1400.000	1.124	297.925	9.704	-19.905	1399.797	0.133	9.704	22.144	295.991
1500.000	1.037	288.853	10.456	-21.628	1499.780	0.192	10.456	24.022	295.802
1600.000	1.184	285.500	11.024	-23.479	1599.761	0.161	11.024	25.939	295.152
1700.000	1.035	301.705	11.775	-25.243	1699.742	0.346	11.775	27.855	295.008
1800.000	0.776	306.831	12.656	-26.554	1799.730	0.271	12.656	29.415	295.483
1900.000	0.474	274.716	13.096	-27.508	1899.724	0.452	13.096	30.466	295.458
2000.000	0.443	328.801	13.460	-28.120	1999.721	0.418	13.460	31.175	295.579
2100.000	0.364	326.248	14.055	-28.496	2099.719	0.081	14.055	31.774	296.253
2200.000	0.463	352.875	14.720	-28.723	2199.716	0.214	14.720	32.275	297.134
2300.000	0.744	14.174	15.750	-28.614	2299.711	0.355	15.750	32.662	298.830
2400.000	0.603	357.844	16.905	-28.475	2399.704	0.236	16.905	33.115	300.697
2500.000	1.092	354.441	18.380	-28.587	2499.693	0.491	18.380	33.986	302.739
2600.000	1.383	342.128	20.477	-29.049	2599.669	0.392	20.477	35.541	305.180
2700.000	1.356	336.410	22.711	-29.894	2699.641	0.139	22.711	37.542	307.224
2800.000	1.348	346.086	24.937	-30.650	2799.613	0.228	24.937	39.513	309.132
2900.000	1.290	341.888	27.149	-31.283	2899.587	0.113	27.149	41.421	310.954
3000.000	1.178	339.081	29.179	-32.000	2999.563	0.128	29.179	43.306	312.360
3100.000	0.971	331.976	30.887	-32.765	3099.546	0.245	30.887	45.028	313.310
3200.000	1.125	343.414	32.576	-33.443	3199.529	0.259	32.576	46.687	314.248
3300.000	0.662	342.809	34.069	-33.894	3299.517	0.464	34.069	48.057	315.147
3400.000	0.846	336.986	35.300	-34.354	3399.508	0.199	35.300	49.257	315.778
3500.000	0.822	311.497	36.455	-35.179	3499.498	0.369	36.455	50.661	316.020

3600.000	0.740	295.310	37.206	-36.300	3599.489	0.234	37.206	51.980	315.706
3700.000	1.001	278.983	37.618	-37.746	3699.477	0.358	37.618	53.291	314.902
3800.000	1.240	274.967	37.848	-39.687	3799.458	0.251	37.848	54.841	313.642
3900.000	1.467	283.009	38.230	-42.011	3899.430	0.295	38.230	56.802	312.302
4000.000	1.220	284.307	38.781	-44.290	3999.403	0.248	38.781	58.869	311.206
4100.000	1.101	280.641	39.222	-46.266	4099.382	0.141	39.222	60.654	310.289
4200.000	1.420	276.035	39.529	-48.442	4199.358	0.335	39.529	62.524	309.215
4300.000	1.309	276.670	39.792	-50.809	4299.329	0.112	39.792	64.537	308.067
4400.000	2.233	288.826	40.553	-53.787	4399.281	0.992	40.553	67.362	307.015
4500.000	2.485	306.121	42.460	-57.382	4499.197	0.752	42.460	71.383	306.500
4600.000	2.947	321.045	45.737	-60.749	4599.086	0.841	45.737	76.042	306.975
4700.000	3.163	318.730	49.810	-64.185	4698.944	0.248	49.810	81.245	307.813
4800.000	3.004	311.866	53.632	-67.956	4798.799	0.401	53.632	86.570	308.281
4900.000	2.133	303.864	56.418	-71.453	4898.698	0.940	56.418	91.041	308.294
5000.000	1.468	285.047	57.788	-74.236	4998.649	0.882	57.788	94.076	307.898
5100.000	1.780	260.114	57.854	-77.003	5098.610	0.764	57.854	96.314	306.918
5200.000	1.644	249.397	57.082	-79.875	5198.566	0.347	57.082	98.176	305.551
5300.000	0.661	252.052	56.399	-81.767	5298.544	0.985	56.399	99.332	304.596
5400.000	0.360	279.067	56.271	-82.626	5398.540	0.378	56.271	99.968	304.256
5500.000	0.833	269.038	56.309	-83.663	5498.535	0.483	56.309	100.847	303.942
5600.000	0.384	346.492	56.622	-84.468	5598.530	0.838	56.622	101.691	303.835
5700.000	0.913	75.001	57.154	-83.777	5698.525	0.981	57.154	101.416	304.302
5800.000	1.434	92.574	57.304	-81.757	5798.504	0.627	57.304	99.840	305.027
5900.000	1.722	98.664	57.021	-79.022	5898.466	0.333	57.021	97.447	305.814
6000.000	1.275	101.446	56.574	-76.446	5998.432	0.452	56.574	95.103	306.504
6100.000	0.906	119.057	55.969	-74.664	6098.414	0.494	55.969	93.313	306.856
6200.000	0.987	129.330	55.039	-73.306	6198.400	0.188	55.039	91.668	306.900
6300.000	0.606	109.849	54.313	-72.142	6298.390	0.462	54.313	90.302	306.975
6400.000	0.843	91.619	54.113	-70.910	6398.382	0.327	54.113	89.199	307.348
6500.000	0.816	107.308	53.881	-69.495	6498.372	0.228	53.881	87.936	307.787
6600.000	0.578	115.630	53.451	-68.361	6598.365	0.258	53.451	86.777	308.021
6700.000	0.711	91.911	53.212	-67.287	6698.358	0.295	53.212	85.785	308.338
6800.000	0.600	84.994	53.237	-66.145	6798.352	0.136	53.237	84.908	308.829
6900.000	0.338	104.838	53.207	-65.338	6898.348	0.304	53.207	84.262	309.157
7000.000	0.774	99.010	53.026	-64.386	6998.344	0.438	53.026	83.411	309.473
7100.000	0.730	102.112	52.787	-63.097	7098.335	0.060	52.787	82.266	309.916