



Company: Anadarko Petroleum
Well: Amen 1
API #: 05-123-11706
Rig Name: Production/Warrior
State/County: Colorado/Weld
Latitude: 40.390, Longitude: -104.923
Directions are relative to True North
VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= Ground Level

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: hygyro2-de_01_mrg.ut

Minimum Curvature Method

Report Date/Time: 7/2/2014 / 08:35

VES Survey International

Henderson, Colorado

303-853-4976

Mark Simmons

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.680	114.233	99.998	-0.243	0.541	-0.243	0.593	114.233	0.680
200.000	0.201	47.014	199.995	-0.368	1.210	-0.368	1.264	106.901	0.630
300.000	0.224	115.732	299.994	-0.333	1.514	-0.333	1.550	102.407	0.240
400.000	0.317	263.707	399.994	-0.448	1.414	-0.448	1.484	107.582	0.521
500.000	0.351	278.241	499.992	-0.435	0.836	-0.435	0.942	117.478	0.091
600.000	0.437	271.910	599.990	-0.378	0.151	-0.378	0.407	158.231	0.096
700.000	0.319	260.134	699.988	-0.413	-0.505	-0.413	0.652	230.711	0.141
800.000	0.345	257.948	799.986	-0.523	-1.073	-0.523	1.194	244.001	0.029
900.000	0.440	248.753	899.984	-0.726	-1.726	-0.726	1.872	247.197	0.114
1000.000	0.270	238.675	999.982	-0.987	-2.285	-0.987	2.490	246.633	0.181
1100.000	0.369	245.993	1099.980	-1.241	-2.781	-1.241	3.046	245.951	0.107
1200.000	0.297	255.795	1199.978	-1.436	-3.327	-1.436	3.624	246.656	0.092
1300.000	0.429	265.929	1299.976	-1.526	-3.952	-1.526	4.236	248.884	0.146
1400.000	0.554	257.441	1399.973	-1.658	-4.797	-1.658	5.076	250.935	0.145
1500.000	0.998	244.589	1499.963	-2.137	-6.056	-2.137	6.422	250.565	0.474
1600.000	1.046	247.746	1599.947	-2.856	-7.688	-2.856	8.202	249.618	0.074
1700.000	1.067	242.780	1699.930	-3.628	-9.362	-3.628	10.040	248.815	0.094
1800.000	1.113	248.635	1799.912	-4.408	-11.094	-4.408	11.938	248.330	0.120
1900.000	0.737	258.638	1899.899	-4.889	-12.629	-4.889	13.542	248.839	0.408
2000.000	0.615	271.375	1999.892	-5.002	-13.796	-5.002	14.675	250.069	0.193
2100.000	0.413	277.298	2099.888	-4.944	-14.690	-4.944	15.500	251.400	0.208
2200.000	0.169	307.116	2199.887	-4.809	-15.166	-4.809	15.910	252.407	0.279
2300.000	0.307	325.034	2299.886	-4.500	-15.437	-4.500	16.080	253.749	0.155
2400.000	0.315	245.002	2399.885	-4.396	-15.840	-4.396	16.439	254.489	0.400
2500.000	0.211	244.867	2499.884	-4.590	-16.256	-4.590	16.891	254.231	0.104
2600.000	0.096	265.123	2599.883	-4.676	-16.506	-4.676	17.155	254.184	0.125
2700.000	0.173	282.611	2699.883	-4.650	-16.737	-4.650	17.371	254.474	0.086
2800.000	0.339	261.280	2799.882	-4.662	-17.177	-4.662	17.798	254.816	0.189
2900.000	0.491	267.767	2899.880	-4.723	-17.898	-4.723	18.510	255.216	0.159
3000.000	0.507	257.762	2999.876	-4.834	-18.758	-4.834	19.371	255.550	0.088
3100.000	0.756	248.060	3099.870	-5.174	-19.802	-5.174	20.467	255.357	0.271
3200.000	0.717	246.760	3199.861	-5.668	-20.989	-5.668	21.741	254.889	0.043
3300.000	0.985	277.281	3299.851	-5.805	-22.417	-5.805	23.156	255.481	0.517
3400.000	0.993	298.912	3399.836	-5.277	-24.028	-5.277	24.601	257.613	0.371

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.000	1.198	285.723	3499.818	-4.575	-25.793	-4.575	26.195	259.941	0.323
3600.000	1.363	296.637	3599.793	-3.759	-27.862	-3.759	28.114	262.317	0.294
3700.000	1.049	301.769	3699.771	-2.744	-29.703	-2.744	29.829	264.723	0.331
3800.000	1.152	285.982	3799.753	-1.985	-31.448	-1.985	31.510	266.389	0.319
3900.000	1.688	262.882	3899.722	-1.890	-33.876	-1.890	33.929	266.806	0.774
4000.000	1.625	264.739	3999.681	-2.203	-36.750	-2.203	36.816	266.570	0.083
4100.000	1.631	261.733	4099.640	-2.538	-39.570	-2.538	39.651	266.331	0.086
4200.000	1.692	264.917	4199.598	-2.873	-42.449	-2.873	42.546	266.128	0.111
4300.000	1.424	272.684	4299.561	-2.946	-45.161	-2.946	45.257	266.268	0.341
4400.000	1.372	288.689	4399.532	-2.504	-47.536	-2.504	47.602	266.985	0.393
4500.000	1.423	288.068	4499.502	-1.735	-49.851	-1.735	49.881	268.006	0.053
4600.000	1.445	292.385	4599.471	-0.870	-52.197	-0.870	52.204	269.045	0.110
4700.000	1.268	289.540	4699.443	-0.020	-54.405	-0.020	54.405	269.979	0.189
4800.000	1.178	294.096	4799.420	0.770	-56.385	0.770	56.390	270.782	0.132
4900.000	0.902	289.816	4899.404	1.456	-58.063	1.456	58.082	271.436	0.287
5000.000	0.633	291.690	4999.394	1.927	-59.317	1.927	59.348	271.860	0.270
5100.000	0.663	316.649	5099.388	2.552	-60.227	2.552	60.281	272.426	0.282
5200.000	0.372	344.458	5199.384	3.285	-60.711	3.285	60.800	273.098	0.377
5300.000	0.707	317.665	5299.380	4.054	-61.214	4.054	61.348	273.789	0.410
5400.000	1.014	297.809	5399.369	4.923	-62.412	4.923	62.606	274.510	0.424
5500.000	1.153	306.302	5499.351	5.931	-64.006	5.931	64.280	275.295	0.212
5600.000	1.324	311.782	5599.327	7.297	-65.678	7.297	66.082	276.340	0.208
5700.000	1.182	288.376	5699.304	8.392	-67.518	8.392	68.038	277.085	0.527
5800.000	0.504	273.374	5799.293	8.743	-68.936	8.743	69.488	277.228	0.707
5900.000	0.917	291.119	5899.285	9.057	-70.121	9.057	70.703	277.360	0.463
6000.000	1.019	301.485	5999.271	9.809	-71.625	9.809	72.293	277.798	0.202
6100.000	0.474	289.782	6099.262	10.413	-72.772	10.413	73.513	278.144	0.563
6200.000	0.627	280.364	6199.257	10.652	-73.699	10.652	74.465	278.224	0.177
6300.000	0.134	12.150	6299.255	10.865	-74.212	10.865	75.003	278.329	0.645
6400.000	0.354	320.460	6399.254	11.218	-74.384	11.218	75.226	278.576	0.291
6500.000	0.085	315.756	6499.254	11.509	-74.633	11.509	75.515	278.767	0.270
6600.000	0.333	310.655	6599.253	11.752	-74.905	11.752	75.821	278.916	0.249
6700.000	0.299	26.865	6699.252	12.174	-75.008	12.174	75.989	279.219	0.391
6800.000	0.237	3.539	6799.251	12.613	-74.877	12.613	75.932	279.562	0.124
6900.000	0.157	96.140	6899.250	12.805	-74.728	12.805	75.818	279.724	0.290
6932.000	0.115	345.408	6931.250	12.832	-74.693	12.832	75.787	279.748	0.702
HORIZONTAL DISPLACEMENT IS 75.787 FEET AT 279.748 DEGREES									