



Company: Anadarko Petroleum
 Well: HSR-Dayley 13-36
 API: 05-123-15438
 Rig Name: Production/ Warrior
 State/County: Colorado/Weld
 Latitude: 40.263, Longitude: -104.733
 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: hgyro-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 1/23/2014 / 09:42

VAUGHN ENERGY SERVICES
 HENDERSON, COLORADO
 303-853-4976
 SEAN BRATT

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	0.221	276.331	100.000	0.021	-0.192	0.021	0.193	276.331	0.221
200.000	0.276	268.699	199.999	0.037	-0.624	0.037	0.625	273.400	0.064
300.000	0.428	227.594	299.997	-0.220	-1.140	-0.220	1.161	259.080	0.285
400.000	0.443	230.180	399.994	-0.719	-1.712	-0.719	1.857	247.226	0.025
500.000	0.428	228.615	499.991	-1.213	-2.289	-1.213	2.591	242.079	0.019
600.000	0.429	229.264	599.988	-1.705	-2.854	-1.705	3.324	239.146	0.005
700.000	0.387	228.876	699.986	-2.171	-3.392	-2.171	4.027	237.375	0.043
800.000	0.330	237.125	799.984	-2.549	-3.887	-2.549	4.649	236.745	0.077
900.000	0.349	253.040	899.982	-2.794	-4.420	-2.794	5.230	237.703	0.096
1000.000	0.367	254.163	999.980	-2.971	-5.020	-2.971	5.833	239.386	0.019
1100.000	0.208	239.423	1099.979	-3.151	-5.485	-3.151	6.325	240.128	0.174
1200.000	0.227	313.496	1199.978	-3.107	-5.786	-3.107	6.567	241.766	0.263
1300.000	0.328	334.129	1299.977	-2.712	-6.054	-2.712	6.634	245.868	0.141
1400.000	0.367	353.750	1399.975	-2.136	-6.214	-2.136	6.571	251.031	0.124
1500.000	0.483	355.319	1499.973	-1.398	-6.284	-1.398	6.437	257.458	0.116
1600.000	0.728	7.987	1599.967	-0.349	-6.230	-0.349	6.239	266.793	0.278
1700.000	0.671	10.788	1699.960	0.855	-6.032	0.855	6.092	278.071	0.066
1800.000	0.818	12.734	1799.951	2.127	-5.765	2.127	6.145	290.254	0.149
1900.000	0.776	22.347	1899.942	3.450	-5.350	3.450	6.366	302.815	0.140
2000.000	0.754	35.073	1999.933	4.615	-4.714	4.615	6.597	314.387	0.171
2100.000	0.480	63.142	2099.927	5.343	-3.962	5.343	6.651	323.438	0.400
2200.000	0.491	43.352	2199.924	5.844	-3.294	5.844	6.708	330.591	0.167
2300.000	0.297	45.566	2299.921	6.337	-2.815	6.337	6.934	336.051	0.195
2400.000	0.238	347.251	2399.920	6.721	-2.675	6.721	7.234	338.296	0.266
2500.000	0.154	275.524	2499.920	6.936	-2.855	6.936	7.501	337.631	0.239
2600.000	0.238	285.559	2599.919	7.005	-3.188	7.005	7.696	335.529	0.090
2700.000	0.156	262.187	2699.919	7.042	-3.522	7.042	7.874	333.426	0.113
2800.000	0.248	285.008	2799.918	7.080	-3.866	7.080	8.066	331.361	0.121
2900.000	0.334	273.762	2899.917	7.155	-4.366	7.155	8.382	328.608	0.103
3000.000	0.405	274.926	2999.915	7.204	-5.009	7.204	8.774	325.189	0.072
3100.000	0.538	293.293	3099.911	7.420	-5.792	7.420	9.413	322.023	0.200
3200.000	0.639	287.458	3199.906	7.773	-6.755	7.773	10.298	319.006	0.118
3300.000	0.706	298.374	3299.899	8.233	-7.829	8.233	11.361	316.440	0.144
3400.000	0.906	275.236	3399.889	8.598	-9.158	8.598	12.561	313.193	0.378
3500.000	1.071	256.401	3499.875	8.450	-10.853	8.450	13.755	307.904	0.362

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
3600.000	1.292	238.515	3599.854	7.642	-12.723	7.642	14.841	300.990	0.427
3700.000	1.692	230.068	3699.820	6.106	-14.816	6.106	16.025	292.397	0.455
3800.000	2.366	220.203	3799.757	3.582	-17.280	3.582	17.647	281.710	0.757
3900.000	2.524	231.186	3899.666	0.625	-20.328	0.625	20.338	271.762	0.494
4000.000	2.648	234.326	3999.565	-2.102	-23.920	-2.102	24.012	264.978	0.188
4100.000	2.608	254.582	4099.462	-4.054	-27.990	-4.054	28.282	261.759	0.925
4200.000	2.827	240.451	4199.350	-5.875	-32.330	-5.875	32.859	259.700	0.703
4300.000	3.550	244.532	4299.195	-8.423	-37.270	-8.423	38.210	257.265	0.757
4400.000	4.084	244.188	4398.973	-11.305	-43.271	-11.305	44.723	255.358	0.535
4500.000	4.140	254.441	4498.716	-13.824	-49.954	-13.824	51.832	254.532	0.736
4600.000	3.569	254.147	4598.490	-15.642	-56.425	-15.642	58.553	254.506	0.571
4700.000	2.978	265.580	4698.327	-16.692	-62.009	-16.692	64.216	254.934	0.878
4800.000	2.565	282.539	4798.212	-16.407	-66.783	-16.407	68.769	256.198	0.913
4900.000	2.411	297.587	4898.119	-14.947	-70.833	-14.947	72.392	258.085	0.669
5000.000	2.505	296.827	4998.027	-12.986	-74.647	-12.986	75.768	260.131	0.099
5100.000	2.354	303.249	5097.937	-10.874	-78.314	-10.874	79.065	262.095	0.311
5200.000	2.124	297.260	5197.861	-8.900	-81.678	-8.900	82.162	263.781	0.328
5300.000	2.078	300.824	5297.794	-7.122	-84.882	-7.122	85.180	265.204	0.138
5400.000	1.966	285.433	5397.732	-5.737	-88.093	-5.737	88.279	266.274	0.553
5500.000	1.929	298.277	5497.675	-4.483	-91.229	-4.483	91.339	267.187	0.437
5600.000	1.700	315.231	5597.625	-2.632	-93.756	-2.632	93.793	268.392	0.581
5700.000	1.678	306.766	5697.582	-0.703	-95.973	-0.703	95.976	269.581	0.250
5800.000	1.840	306.899	5797.535	1.137	-98.430	1.137	98.436	270.662	0.162
5900.000	1.865	301.126	5897.483	2.942	-101.107	2.942	101.149	271.667	0.188
6000.000	1.523	303.464	5997.439	4.516	-103.608	4.516	103.707	272.496	0.349
6100.000	1.412	308.988	6097.406	6.024	-105.675	6.024	105.846	273.263	0.180
6200.000	1.208	298.657	6197.380	7.305	-107.558	7.305	107.806	273.886	0.311
6300.000	1.148	298.411	6297.359	8.288	-109.364	8.288	109.678	274.334	0.061
6400.000	1.151	301.748	6397.339	9.292	-111.099	9.292	111.487	274.781	0.067
6500.000	1.047	301.219	6497.320	10.294	-112.734	10.294	113.203	275.217	0.105
6600.000	1.171	307.898	6597.302	11.395	-114.321	11.395	114.888	275.692	0.179
6700.000	0.957	288.928	6697.285	12.293	-115.917	12.293	116.567	276.054	0.409
6800.000	1.007	281.371	6797.270	12.738	-117.569	12.738	118.257	276.183	0.139
6900.000	0.985	284.664	6897.255	13.129	-119.262	13.129	119.983	276.282	0.061
7000.000	0.887	278.848	6997.241	13.465	-120.859	13.465	121.607	276.357	0.137
7100.000	0.690	287.420	7097.232	13.765	-122.198	13.765	122.971	276.427	0.229
7200.000	0.521	288.420	7197.226	14.089	-123.204	14.089	124.007	276.524	0.170

HORIZONTAL DISPLACEMENT IS
124.007 FEET AT 276.524 DEGREES