



Company: Anadarko Petroleum  
 Well: HSR Camp 1-24  
 API #: 05-123-19078  
 Rig Name: Production/Canary  
 State/County: Colorado/Weld  
 Latitude: 40.211, Longitude: -104.831  
 Directions are relative to True North  
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= Ground Level

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: survey\_to\_7750-de\_01.ut

Minimum Curvature Method

Report Date/Time: 11/6/2013 / 20:17

Vaughn Energy Services  
 Henderson, Colorado  
 866-835-8333  
 Randy Holcomb

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	0.139	225.713	100.000	-0.085	-0.087	-0.085	0.121	225.713	0.139
200.000	0.267	340.220	200.000	0.050	-0.253	0.050	0.258	281.145	0.349
300.000	0.312	354.448	299.998	0.540	-0.358	0.540	0.648	326.452	0.084
400.000	0.294	0.277	399.997	1.067	-0.383	1.067	1.134	340.252	0.036
500.000	0.286	346.491	499.996	1.567	-0.440	1.567	1.628	344.304	0.070
600.000	0.321	44.852	599.994	2.008	-0.301	2.008	2.031	351.474	0.298
700.000	0.241	337.359	699.993	2.401	-0.184	2.401	2.408	355.607	0.319
800.000	0.551	316.031	799.991	2.941	-0.599	2.941	3.001	348.488	0.338
900.000	0.810	298.112	899.984	3.620	-1.556	3.620	3.940	336.735	0.333
1000.000	0.832	300.388	999.974	4.320	-2.806	4.320	5.152	326.995	0.039
1100.000	0.929	294.468	1099.962	5.023	-4.170	5.023	6.528	320.303	0.133
1200.000	0.964	274.637	1199.949	5.427	-5.746	5.427	7.904	313.362	0.328
1300.000	1.037	275.171	1299.933	5.576	-7.486	5.576	9.334	306.683	0.073
1400.000	0.893	276.195	1399.919	5.742	-9.162	5.742	10.812	302.077	0.144
1500.000	0.906	274.839	1499.907	5.893	-10.724	5.893	12.236	298.788	0.025
1600.000	0.840	275.042	1599.895	6.024	-12.242	6.024	13.644	296.200	0.066
1700.000	0.728	276.765	1699.886	6.163	-13.604	6.163	14.935	294.373	0.114
1800.000	0.375	282.494	1799.881	6.309	-14.554	6.309	15.863	293.435	0.357
1900.000	0.601	271.823	1899.877	6.396	-15.398	6.396	16.674	292.557	0.243
2000.000	0.227	284.686	1999.875	6.463	-16.114	6.463	17.362	291.855	0.383
2100.000	0.660	269.165	2099.871	6.505	-16.882	6.505	18.092	291.073	0.446
2200.000	0.552	321.263	2199.866	6.872	-17.759	6.872	19.042	291.155	0.541
2300.000	0.085	255.559	2299.865	7.229	-18.132	7.229	19.520	291.737	0.523
2400.000	0.270	104.159	2399.864	7.153	-17.975	7.153	19.346	291.700	0.346
2500.000	0.354	152.069	2499.863	6.823	-17.602	6.823	18.878	291.186	0.265
2600.000	4.791	0.179	2599.754	10.728	-17.444	10.728	20.479	301.591	5.106
2700.000	9.443	358.583	2698.956	23.112	-17.634	23.112	29.071	322.656	4.656
2800.000	13.501	358.943	2796.938	42.991	-18.053	42.991	46.628	337.222	4.058
2900.000	17.695	356.503	2893.235	69.844	-19.196	69.844	72.433	344.632	4.244
3000.000	21.106	352.543	2987.547	102.876	-22.460	102.876	105.299	347.684	3.654
3100.000	25.271	350.954	3079.449	141.826	-28.156	141.826	144.593	348.771	4.212
3200.000	29.923	351.949	3168.048	187.627	-35.009	187.627	190.865	349.431	4.675
3300.000	33.811	355.267	3252.965	240.075	-40.801	240.075	243.518	350.355	4.263

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
3400.000	38.160	354.165	3333.863	298.565	-46.240	298.565	302.125	351.196	4.397
3500.000	38.575	354.585	3412.267	360.337	-52.323	360.337	364.116	351.738	0.490
3600.000	39.142	354.261	3490.137	422.779	-58.421	422.779	426.796	352.132	0.602
3700.000	39.047	356.684	3567.752	485.632	-63.399	485.632	489.753	352.562	1.530
3800.000	37.930	356.847	3646.024	547.768	-66.912	547.768	551.840	353.036	1.122
3900.000	38.534	355.183	3724.576	609.498	-71.218	609.498	613.645	353.335	1.194
4000.000	40.715	352.344	3801.602	672.874	-78.181	672.874	677.401	353.373	2.834
4100.000	43.128	350.217	3876.007	738.895	-88.336	738.895	744.157	353.183	2.800
4200.000	44.708	350.792	3948.038	807.306	-99.773	807.306	813.448	352.955	1.630
4300.000	44.509	350.979	4019.230	876.645	-110.898	876.645	883.632	352.790	0.238
4400.000	42.870	351.200	4091.537	944.884	-121.599	944.884	952.676	352.667	1.646
4500.000	42.145	351.670	4165.256	1011.697	-131.664	1011.697	1020.229	352.585	0.792
4600.000	41.832	351.049	4239.584	1077.835	-141.714	1077.835	1087.112	352.510	0.520
4700.000	40.370	349.895	4314.938	1142.665	-152.586	1142.665	1152.808	352.394	1.647
4800.000	36.732	349.355	4393.131	1203.958	-163.795	1203.958	1215.049	352.253	3.654
4900.000	35.429	347.240	4473.952	1261.621	-175.722	1261.621	1273.799	352.071	1.803
5000.000	34.324	350.877	4555.998	1317.734	-186.596	1317.734	1330.880	351.940	2.355
5100.000	31.347	352.484	4640.014	1371.371	-194.470	1371.371	1385.091	351.929	3.102
5200.000	27.274	354.573	4727.196	1419.989	-200.041	1419.989	1434.011	351.981	4.199
5300.000	23.723	357.155	4817.444	1462.905	-203.208	1462.905	1476.951	352.092	3.720
5400.000	20.468	355.438	4910.089	1500.435	-205.598	1500.435	1514.456	352.198	3.318
5500.000	16.312	355.759	5004.961	1531.883	-208.028	1531.883	1545.943	352.267	4.158
5600.000	12.163	2.034	5101.874	1556.428	-208.693	1556.428	1570.356	352.363	4.421
5700.000	8.598	9.579	5200.226	1574.333	-207.074	1574.333	1587.893	352.507	3.808
5800.000	5.723	16.917	5299.438	1586.476	-204.379	1586.476	1599.586	352.659	3.011
5900.000	3.084	12.574	5399.134	1593.873	-202.342	1593.873	1606.666	352.765	2.658
6000.000	2.886	9.910	5498.998	1598.979	-201.323	1598.979	1611.603	352.824	0.242
6100.000	2.873	2.231	5598.872	1603.962	-200.793	1603.962	1616.481	352.865	0.386
6200.000	1.683	357.814	5698.792	1607.933	-200.751	1607.933	1620.417	352.883	1.202
6300.000	2.605	347.454	5798.721	1611.619	-201.301	1611.619	1624.142	352.880	0.997
6400.000	2.023	351.359	5898.639	1615.582	-202.060	1615.582	1628.169	352.871	0.603
6500.000	1.262	342.453	5998.597	1618.377	-202.657	1618.377	1631.016	352.862	0.800
6600.000	0.914	344.275	6098.579	1620.195	-203.205	1620.195	1632.888	352.851	0.350
6700.000	0.858	347.586	6198.567	1621.694	-203.582	1621.694	1634.423	352.845	0.076
6800.000	0.585	287.788	6298.560	1622.582	-204.230	1622.582	1635.384	352.826	0.758
6900.000	0.763	247.533	6398.554	1622.483	-205.331	1622.483	1635.424	352.787	0.493
7000.000	0.792	260.710	6498.545	1622.117	-206.628	1622.117	1635.225	352.741	0.181
7100.000	0.995	327.276	6598.535	1622.736	-207.779	1622.736	1635.984	352.703	0.995
7200.000	0.572	315.401	6698.526	1623.822	-208.599	1623.822	1637.165	352.680	0.451
7300.000	0.597	225.578	6798.522	1623.812	-209.322	1623.812	1637.248	352.655	0.825
7400.000	3.158	191.233	6898.462	1620.746	-210.230	1620.746	1634.324	352.609	2.686
7500.000	5.997	186.591	6998.133	1612.854	-211.367	1612.854	1626.645	352.534	2.861
7600.000	3.525	165.881	7097.787	1604.681	-211.216	1604.681	1618.522	352.502	2.972
7700.000	1.219	115.650	7197.703	1601.238	-209.507	1601.238	1614.886	352.546	2.901
7750.000	0.619	105.366	7247.696	1600.936	-208.767	1600.936	1614.491	352.570	1.238

HORIZONTAL DISPLACEMENT IS

1614.491 FEET AT 352.570 DEGREES