



Company: Anadarko Petroleum  
 Well: Sekich 20-18  
 API #: 05-123-23682  
 Rig Name: Production/Core-Tech  
 State/County: Colorado/Weld  
 Latitude: 40.223, Longitude: -104.928  
 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: msgyro\_run01-01-de\_01.ut

Minimum Curvature Method

Report Date/Time: 5/28/2014 / 17:06

Vaughn Energy Services  
 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	0.109	317.882	100.000	0.071	-0.064	0.071	0.095	317.882	0.109
200.000	0.170	246.141	200.000	0.081	-0.264	0.081	0.276	287.123	0.171
300.000	0.242	270.081	299.999	0.021	-0.611	0.021	0.611	272.010	0.111
400.000	0.142	252.961	399.999	-0.015	-0.940	-0.015	0.940	269.115	0.114
500.000	0.217	263.807	499.998	-0.071	-1.247	-0.071	1.249	266.730	0.082
600.000	0.232	270.734	599.997	-0.089	-1.637	-0.089	1.640	266.886	0.031
700.000	0.681	239.758	699.994	-0.386	-2.353	-0.386	2.384	260.687	0.497
800.000	0.750	236.926	799.986	-1.042	-3.415	-1.042	3.571	253.025	0.077
900.000	0.557	248.137	899.980	-1.581	-4.414	-1.581	4.689	250.300	0.231
1000.000	0.772	239.966	999.973	-2.099	-5.449	-2.099	5.839	248.934	0.235
1100.000	0.722	237.278	1099.964	-2.776	-6.562	-2.776	7.125	247.066	0.061
1200.000	0.668	234.278	1199.957	-3.457	-7.565	-3.457	8.317	245.440	0.065
1300.000	0.688	233.489	1299.950	-4.154	-8.520	-4.154	9.479	244.006	0.022
1400.000	0.769	205.961	1399.942	-5.115	-9.296	-5.115	10.611	241.180	0.356
1500.000	0.781	205.132	1499.933	-6.335	-9.880	-6.335	11.736	237.330	0.016
1600.000	0.584	247.834	1599.927	-7.144	-10.641	-7.144	12.817	236.122	0.530
1700.000	0.742	247.812	1699.920	-7.581	-11.712	-7.581	13.952	237.085	0.158
1800.000	1.129	260.834	1799.906	-7.983	-13.284	-7.983	15.498	238.998	0.440
1900.000	1.169	251.703	1899.886	-8.460	-15.226	-8.460	17.418	240.942	0.187
2000.000	1.341	258.161	1999.862	-9.020	-17.340	-9.020	19.545	242.516	0.223
2100.000	1.421	246.090	2099.834	-9.763	-19.618	-9.763	21.913	243.544	0.301
2200.000	1.313	203.689	2199.808	-11.314	-21.212	-11.314	24.041	241.925	0.994
2300.000	1.881	200.128	2299.768	-13.904	-22.237	-13.904	26.226	237.983	0.576
2400.000	1.608	184.292	2399.722	-16.844	-22.907	-16.844	28.433	233.672	0.551
2500.000	1.702	192.942	2499.681	-19.690	-23.344	-19.690	30.539	229.854	0.267
2600.000	1.624	194.421	2599.639	-22.510	-24.030	-22.510	32.926	226.871	0.089
2700.000	1.452	187.836	2699.603	-25.137	-24.556	-25.137	35.141	224.329	0.247
2800.000	1.298	199.118	2799.574	-27.463	-25.099	-27.463	37.204	222.426	0.310
2900.000	1.114	194.115	2899.552	-29.476	-25.708	-29.476	39.112	221.093	0.212
3000.000	1.039	199.300	2999.534	-31.275	-26.244	-31.275	40.827	220.002	0.123
3100.000	1.080	205.545	3099.517	-32.980	-26.950	-32.980	42.591	219.254	0.123
3200.000	1.469	212.801	3199.492	-34.908	-28.051	-34.908	44.782	218.784	0.420
3300.000	1.799	225.974	3299.452	-37.076	-29.874	-37.076	47.614	218.860	0.498
3400.000	1.635	256.415	3399.409	-38.502	-32.389	-38.502	50.314	220.071	0.915

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	1.516	258.815	3499.371	-39.094	-35.073	-39.094	52.521	221.897	0.136
3600.000	1.407	265.047	3599.339	-39.456	-37.594	-39.456	54.499	223.616	0.192
3700.000	1.654	231.541	3699.305	-40.460	-39.948	-40.460	56.858	224.635	0.913
3800.000	3.133	166.696	3799.230	-44.018	-40.449	-44.018	59.781	222.581	2.854
3900.000	3.613	147.041	3899.060	-49.322	-38.106	-49.322	62.327	217.690	1.244
4000.000	3.214	111.954	3998.893	-53.014	-33.791	-53.014	62.868	212.514	2.092
4100.000	4.025	114.895	4098.693	-55.539	-28.008	-55.539	62.202	206.762	0.832
4200.000	7.592	108.305	4198.164	-59.093	-18.550	-59.093	61.936	197.428	3.624
4300.000	10.910	124.361	4296.866	-66.512	-4.460	-66.512	66.661	183.836	4.173
4400.000	12.425	127.026	4394.798	-78.332	11.942	-78.332	79.237	171.332	1.608
4500.000	13.134	127.634	4492.320	-91.748	29.529	-91.748	96.383	162.159	0.722
4600.000	12.995	128.816	4589.731	-105.734	47.287	-105.734	115.826	155.905	0.301
4700.000	14.187	136.155	4686.937	-121.621	64.538	-121.621	137.684	152.047	2.094
4800.000	14.685	142.472	4783.785	-140.513	80.750	-140.513	162.063	150.115	1.651
4900.000	12.560	148.634	4880.971	-159.853	94.132	-159.853	185.510	149.508	2.571
5000.000	11.103	145.047	4978.846	-177.030	105.309	-177.030	205.985	149.253	1.631
5100.000	10.325	145.198	5077.101	-192.281	115.941	-192.281	224.531	148.911	0.779
5200.000	9.287	144.267	5175.639	-206.190	125.768	-206.190	241.521	148.618	1.051
5300.000	8.980	153.507	5274.377	-219.726	133.962	-219.726	257.343	148.630	1.497
5400.000	7.970	154.405	5373.283	-232.963	140.439	-232.963	272.019	148.917	1.019
5500.000	6.765	151.558	5472.456	-244.394	146.239	-244.394	284.805	149.105	1.259
5600.000	6.230	154.672	5571.814	-254.477	151.365	-254.477	296.091	149.255	0.640
5700.000	4.840	138.826	5671.351	-262.558	156.464	-262.558	305.643	149.208	2.054
5800.000	5.820	131.965	5770.919	-269.124	163.012	-269.124	314.644	148.796	1.167
5900.000	7.892	136.204	5870.199	-277.471	171.534	-277.471	326.212	148.275	2.131
6000.000	9.467	138.887	5969.051	-288.623	181.694	-288.623	341.051	147.809	1.626
6100.000	10.537	148.655	6067.537	-302.629	191.859	-302.629	358.322	147.626	2.002
6200.000	9.319	151.343	6166.038	-317.544	200.499	-317.544	375.545	147.731	1.303
6300.000	8.479	155.824	6264.834	-331.375	207.401	-331.375	390.928	147.958	1.088
6400.000	8.839	147.977	6363.698	-344.615	214.495	-344.615	405.916	148.101	1.234
6500.000	6.889	152.105	6462.753	-356.431	221.376	-356.431	419.584	148.156	2.029
6600.000	5.541	153.774	6562.163	-366.063	226.315	-366.063	430.373	148.274	1.361
6700.000	4.950	148.979	6661.745	-374.091	230.672	-374.091	439.493	148.341	0.735
6800.000	4.562	147.988	6761.400	-381.161	235.004	-381.161	447.784	148.344	0.397
6900.000	3.721	132.000	6861.142	-386.705	239.524	-386.705	454.876	148.226	1.420
7000.000	3.248	130.476	6960.956	-390.715	244.090	-390.715	460.693	148.006	0.482
7100.000	2.626	128.460	7060.825	-393.979	248.039	-393.979	465.556	147.807	0.631
HORIZONTAL DISPLACEMENT IS 465.556 FEET AT 147.807 DEGREES									