

Company: Anadarko Petroleum Corp.
 Well: Rademacher 15-25
 API: 05-123-23946
 Rig Name: Production/Coretech
 State/County: Colorado/Weld
 Latitude: 40.194, Longitude: -104.947
 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: 12/9/2013 / 16:50

Vaughn Energy Services
 Henderson, CO
 303-853-4976
 Levi Sheldon

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	0.340	133.026	99.999	-0.202	0.217	-0.202	0.297	133.026	0.340
200.000	0.412	142.747	199.997	-0.691	0.651	-0.691	0.949	136.689	0.096
300.000	0.550	127.890	299.994	-1.271	1.247	-1.271	1.781	135.548	0.185
400.000	0.472	145.945	399.990	-1.907	1.857	-1.907	2.662	135.773	0.178
500.000	0.255	200.873	499.988	-2.457	2.008	-2.457	3.173	140.743	0.387
600.000	0.978	288.163	599.983	-2.399	1.118	-2.399	2.647	155.022	0.999
700.000	1.485	299.073	699.959	-1.503	-0.826	-1.503	1.715	208.784	0.556
800.000	1.782	268.940	799.921	-0.902	-3.513	-0.902	3.628	255.594	0.896
900.000	2.401	250.772	899.854	-1.621	-7.046	-1.621	7.231	257.043	0.900
1000.000	2.590	228.463	999.762	-3.809	-10.716	-3.809	11.373	250.430	0.983
1100.000	2.791	229.135	1099.652	-6.900	-14.248	-6.900	15.831	244.159	0.203
1200.000	3.112	226.766	1199.519	-10.353	-18.067	-10.353	20.823	240.186	0.344
1300.000	2.972	220.543	1299.378	-14.182	-21.730	-14.182	25.948	236.869	0.359
1400.000	2.365	210.938	1399.270	-17.922	-24.476	-17.922	30.336	233.787	0.752
1500.000	2.263	199.857	1499.189	-21.549	-26.207	-21.549	33.929	230.571	0.458
1600.000	2.261	196.584	1599.111	-25.296	-27.441	-25.296	37.321	227.329	0.129
1700.000	2.206	193.539	1699.035	-29.057	-28.454	-29.057	40.669	224.399	0.131
1800.000	2.145	192.432	1798.963	-32.756	-29.308	-32.756	43.954	221.820	0.074
1900.000	2.221	193.641	1898.890	-36.467	-30.168	-36.467	47.328	219.600	0.089
2000.000	3.493	194.333	1998.764	-41.301	-31.379	-41.301	51.869	217.226	1.272
2100.000	5.247	193.517	2098.469	-48.699	-33.202	-48.699	58.940	214.285	1.756
2200.000	6.741	194.310	2197.920	-58.832	-35.721	-58.832	68.828	211.265	1.496
2300.000	8.378	200.821	2297.049	-71.330	-39.762	-71.330	81.663	209.137	1.845
2400.000	10.348	201.401	2395.712	-86.502	-45.629	-86.502	97.799	207.811	1.972
2500.000	12.428	198.283	2493.739	-105.084	-52.283	-105.084	117.372	206.452	2.169
2600.000	13.232	200.598	2591.242	-126.015	-59.685	-126.015	139.435	205.344	0.954
2700.000	12.953	203.317	2688.644	-147.021	-68.147	-147.021	162.047	204.869	0.676
2800.000	13.711	208.201	2785.951	-167.759	-78.185	-167.759	185.084	204.988	1.357
2900.000	13.929	209.152	2883.056	-188.715	-89.649	-188.715	208.927	205.410	0.315
3000.000	12.963	210.654	2980.314	-208.876	-101.230	-208.876	232.114	205.857	1.027
3100.000	13.243	209.018	3077.711	-228.541	-112.505	-228.541	254.732	206.210	0.465
3200.000	12.991	207.883	3175.101	-248.493	-123.318	-248.493	277.410	206.394	0.360
3300.000	12.241	210.838	3272.687	-267.531	-134.009	-267.531	299.218	206.607	0.990
3400.000	12.596	206.042	3370.350	-286.431	-144.231	-286.431	320.695	206.727	1.091

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	13.106	207.565	3467.845	-306.278	-154.265	-306.278	342.934	206.733	0.612
3600.000	13.375	208.327	3565.187	-326.511	-165.000	-326.511	365.834	206.809	0.321
3700.000	13.890	210.560	3662.370	-347.028	-176.591	-347.028	389.375	206.970	0.736
3800.000	14.429	212.132	3759.332	-367.914	-189.320	-367.914	413.767	207.229	0.662
3900.000	14.581	211.899	3856.144	-389.151	-202.598	-389.151	438.731	207.502	0.162
4000.000	13.649	208.899	3953.126	-410.168	-214.951	-410.168	463.078	207.657	1.184
4100.000	13.208	207.149	4050.392	-430.663	-225.866	-430.663	486.298	207.675	0.600
4200.000	13.732	206.788	4147.641	-451.423	-236.428	-451.423	509.589	207.643	0.531
4300.000	14.677	207.452	4244.582	-473.261	-247.618	-473.261	534.126	207.619	0.960
4400.000	14.708	209.936	4341.314	-495.504	-259.794	-495.504	559.479	207.668	0.631
4500.000	14.176	211.014	4438.154	-517.000	-272.438	-517.000	584.389	207.787	0.596
4600.000	14.124	211.963	4535.120	-537.846	-285.206	-537.846	608.786	207.936	0.238
4700.000	13.823	213.690	4632.160	-558.137	-298.292	-558.137	632.847	208.122	0.514
4800.000	13.932	213.282	4729.241	-578.141	-311.525	-578.141	656.731	208.318	0.147
4900.000	12.734	211.055	4826.545	-597.648	-323.817	-597.648	679.736	208.450	1.304
5000.000	10.436	210.171	4924.501	-614.922	-334.056	-614.922	699.802	208.513	2.304
5100.000	8.412	211.823	5023.146	-628.969	-342.466	-628.969	716.160	208.568	2.042
5200.000	7.300	213.810	5122.207	-640.463	-349.858	-640.463	729.790	208.646	1.145
5300.000	5.239	210.712	5221.603	-649.667	-355.726	-649.667	740.681	208.703	2.088
5400.000	3.314	230.372	5321.326	-655.436	-360.284	-655.436	747.931	208.797	2.393
5500.000	0.754	289.739	5421.260	-657.058	-363.130	-657.058	750.725	208.928	3.001
5600.000	0.383	3.272	5521.256	-656.502	-363.730	-656.502	750.529	208.988	0.743
5700.000	0.494	24.470	5621.254	-655.776	-363.533	-655.776	749.798	209.002	0.195
5800.000	0.461	340.029	5721.250	-655.005	-363.492	-655.005	749.104	209.028	0.363
5900.000	0.722	317.958	5821.245	-654.158	-364.051	-654.158	748.636	209.097	0.342
6000.000	0.732	305.852	5921.237	-653.316	-364.991	-653.316	748.358	209.191	0.154
6100.000	0.614	307.511	6021.230	-652.616	-365.933	-652.616	748.208	209.280	0.120
6200.000	0.444	268.217	6121.226	-652.302	-366.745	-652.302	748.331	209.346	0.390
6300.000	0.384	257.679	6221.224	-652.385	-367.460	-652.385	748.754	209.391	0.096
6400.000	0.409	288.119	6321.221	-652.346	-368.126	-652.346	749.047	209.436	0.209
6500.000	0.453	281.866	6421.218	-652.154	-368.851	-652.154	749.237	209.492	0.064
6600.000	0.515	322.628	6521.215	-651.715	-369.511	-651.715	749.180	209.552	0.342
6700.000	0.254	7.579	6621.213	-651.138	-369.755	-651.138	748.799	209.590	0.381
6800.000	0.147	339.819	6721.212	-650.798	-369.770	-650.798	748.510	209.604	0.141
6900.000	0.544	312.085	6821.210	-650.358	-370.167	-650.358	748.324	209.647	0.419
7000.000	0.557	292.405	6921.206	-649.855	-370.969	-649.855	748.284	209.720	0.189
7100.000	0.613	302.276	7021.201	-649.383	-371.871	-649.383	748.323	209.798	0.115
7200.000	0.489	289.274	7121.196	-648.957	-372.726	-648.957	748.378	209.871	0.176

HORIZONTAL DISPLACEMENT IS 748.378 FEET AT 209.871 DEGREES									
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