

Company: Anadarko Petroleum Corp.
 Well/API: Fred Mayer 3-15A/05-123-17926
 Tool Type: North Seeking Rate Gyro
 Rig Name: Production/CoreTech
 County/State: Weld/Colorado
 Latitude: 40.231, Longitude: -104.879
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = GL Elevation = 4794

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro.ut

Minimum Curvature Method

Report Date/Time: 9/30/2014 / 14:41

Lat/Long & Elevation Obtained By Handheld GPS At Wellhead

Handheld GPS Reference: NAD83/Device Error: ±9 Feet

VES Survey International - Henderson CO

Justin Williams

303-853-4976

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	0.196	125.383	100.000	-0.099	0.140	-0.099	0.171	125.383	0.196
200.000	0.176	119.774	199.999	-0.275	0.413	-0.275	0.496	123.650	0.027
300.000	0.413	226.826	299.998	-0.597	0.283	-0.597	0.661	154.656	0.494
400.000	0.581	175.768	399.995	-1.350	0.058	-1.350	1.351	177.558	0.455
500.000	0.583	167.983	499.990	-2.354	0.201	-2.354	2.362	175.119	0.079
600.000	0.551	165.964	599.985	-3.318	0.424	-3.318	3.345	172.724	0.038
700.000	0.124	195.084	699.983	-3.890	0.512	-3.890	3.923	172.500	0.447
800.000	0.399	81.971	799.982	-3.946	0.828	-3.946	4.032	168.145	0.462
900.000	0.504	97.422	899.979	-3.954	1.609	-3.954	4.269	157.859	0.160
1000.000	0.370	82.499	999.976	-3.969	2.365	-3.969	4.620	149.208	0.175
1100.000	0.229	46.223	1099.975	-3.789	2.829	-3.789	4.728	143.248	0.230
1200.000	0.111	233.060	1199.975	-3.708	2.896	-3.708	4.705	142.011	0.339
1300.000	0.340	272.781	1299.974	-3.752	2.523	-3.752	4.521	146.083	0.265
1400.000	0.470	269.792	1399.971	-3.739	1.816	-3.739	4.157	154.092	0.132
1500.000	0.670	273.499	1499.966	-3.705	0.822	-3.705	3.795	167.484	0.203
1600.000	0.833	283.555	1599.958	-3.499	-0.467	-3.499	3.530	187.609	0.209
1700.000	1.142	287.359	1699.943	-3.031	-2.125	-3.031	3.702	215.033	0.316
1800.000	1.662	277.486	1799.913	-2.545	-4.514	-2.545	5.182	240.588	0.571
1900.000	1.745	278.483	1899.869	-2.131	-7.458	-2.131	7.756	254.050	0.088
2000.000	1.743	277.393	1999.822	-1.711	-10.472	-1.711	10.611	260.720	0.033
2100.000	1.741	278.876	2099.776	-1.281	-13.480	-1.281	13.541	264.571	0.045
2200.000	1.156	286.257	2199.744	-0.764	-15.950	-0.764	15.968	267.256	0.612
2300.000	1.399	269.702	2299.719	-0.488	-18.139	-0.488	18.145	268.458	0.439
2400.000	1.054	261.265	2399.696	-0.634	-20.269	-0.634	20.279	268.208	0.388
2500.000	1.319	257.407	2499.675	-1.025	-22.301	-1.025	22.325	267.369	0.276
2600.000	1.264	272.377	2599.650	-1.230	-24.526	-1.230	24.557	267.129	0.341
2700.000	1.272	278.201	2699.625	-1.026	-26.726	-1.026	26.746	267.802	0.129
2800.000	0.904	303.869	2799.608	-0.428	-28.479	-0.428	28.482	269.139	0.602
2900.000	0.959	304.646	2899.594	0.487	-29.823	0.487	29.827	270.936	0.057
3000.000	0.519	277.807	2999.586	1.025	-30.960	1.025	30.977	271.896	0.549
3100.000	0.681	275.428	3099.580	1.142	-32.000	1.142	32.021	272.045	0.164
3200.000	1.140	274.537	3199.568	1.277	-33.583	1.277	33.607	272.178	0.459
3300.000	1.635	248.700	3299.539	0.838	-35.904	0.838	35.914	271.337	0.786

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	1.871	237.328	3399.492	-0.562	-38.607	-0.562	38.611	269.167	0.419
3500.000	1.850	229.622	3499.440	-2.488	-41.210	-2.488	41.285	266.545	0.251
3600.000	1.732	228.753	3599.391	-4.530	-43.576	-4.530	43.811	264.065	0.121
3700.000	1.835	228.502	3699.342	-6.587	-45.911	-6.587	46.381	261.835	0.104
3800.000	1.675	223.113	3799.296	-8.715	-48.110	-8.715	48.893	259.732	0.230
3900.000	0.845	210.344	3899.271	-10.419	-49.481	-10.419	50.566	258.109	0.871
4000.000	0.615	125.971	3999.265	-11.371	-49.420	-11.371	50.711	257.043	0.995
4100.000	0.911	93.459	4099.256	-11.734	-48.192	-11.734	49.600	256.316	0.513
4200.000	0.973	107.534	4199.243	-12.038	-46.588	-12.038	48.118	255.513	0.239
4300.000	0.878	111.315	4299.230	-12.572	-45.064	-12.572	46.785	254.412	0.113
4400.000	1.183	102.665	4399.214	-13.077	-43.343	-13.077	45.273	253.211	0.341
4500.000	1.172	106.401	4499.193	-13.592	-41.356	-13.592	43.532	251.807	0.078
4600.000	1.116	107.544	4599.173	-14.174	-39.446	-14.174	41.916	250.236	0.060
4700.000	0.468	109.194	4699.163	-14.602	-38.132	-14.602	40.832	249.047	0.648
4800.000	0.243	73.519	4799.161	-14.676	-37.542	-14.676	40.309	248.648	0.306
4900.000	0.216	250.628	4899.160	-14.678	-37.517	-14.678	40.286	248.632	0.459
5000.000	0.207	240.512	4999.160	-14.830	-37.852	-14.830	40.654	248.605	0.038
5100.000	0.130	250.521	5099.159	-14.957	-38.117	-14.957	40.947	248.575	0.082
5200.000	0.241	209.028	5199.159	-15.179	-38.327	-15.179	41.223	248.394	0.167
5300.000	0.333	207.237	5299.158	-15.622	-38.562	-15.622	41.606	247.947	0.092
5400.000	0.396	252.407	5399.156	-15.985	-39.024	-15.985	42.171	247.726	0.286
5500.000	0.396	236.148	5499.153	-16.282	-39.641	-16.282	42.855	247.671	0.112
5600.000	0.506	250.193	5599.150	-16.624	-40.344	-16.624	43.635	247.606	0.155
5700.000	0.382	178.148	5699.148	-17.107	-40.749	-17.107	44.195	247.227	0.532
5800.000	0.319	141.954	5799.146	-17.659	-40.567	-17.659	44.244	246.476	0.226
5900.000	0.549	123.731	5899.143	-18.144	-39.997	-18.144	43.921	245.599	0.266
6000.000	0.477	88.728	5999.140	-18.401	-39.183	-18.401	43.289	244.844	0.316
6100.000	0.456	106.514	6099.136	-18.505	-38.386	-18.505	42.614	244.262	0.146
6200.000	0.737	86.287	6199.131	-18.576	-37.363	-18.576	41.726	243.564	0.348
6300.000	1.036	54.685	6299.119	-18.012	-35.982	-18.012	40.239	243.409	0.562
6400.000	1.075	65.533	6399.102	-17.101	-34.391	-17.101	38.408	243.561	0.203
6500.000	1.065	59.969	6499.085	-16.247	-32.732	-16.247	36.542	243.602	0.104
6600.000	1.680	59.878	6599.056	-15.046	-30.659	-15.046	34.152	243.861	0.615
6700.000	1.913	74.425	6699.007	-13.862	-27.783	-13.862	31.049	243.484	0.510
6800.000	2.302	68.391	6798.939	-12.674	-24.308	-12.674	27.414	242.462	0.447
6900.000	2.928	51.938	6898.836	-10.360	-20.430	-10.360	22.906	243.110	0.971
7000.000	3.710	46.872	6998.668	-6.574	-16.057	-6.574	17.351	247.737	0.834
7100.000	2.485	43.090	7098.520	-2.778	-12.215	-2.778	12.527	257.186	1.241
HORIZONTAL DISPLACEMENT IS 12.527 FEET AT 257.186 DEGREES									