

Company: Anadarko Petroleum Corp.

Well: Davis State 24-16

API: 05-123-22315

Rig Name: Production/Coretech

State/County: Colorado/Weld

Latitude: 40.226, Longitude: -104.890

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: 1/23/2014 / 15:54

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	0.509	171.781	99.999	-0.439	0.063	-0.439	0.444	171.781	0.509
200.000	0.494	158.185	199.995	-1.279	0.287	-1.279	1.311	167.349	0.120
300.000	0.324	158.028	299.992	-1.941	0.553	-1.941	2.018	164.100	0.170
400.000	0.664	194.411	399.989	-2.764	0.514	-2.764	2.812	169.458	0.447
500.000	1.371	236.676	499.973	-3.983	-0.630	-3.983	4.032	188.985	0.987
600.000	2.313	241.087	599.921	-5.616	-3.396	-5.616	6.563	211.163	0.951
700.000	3.229	248.124	699.803	-7.641	-7.776	-7.641	10.902	225.503	0.976
800.000	3.509	263.392	799.632	-9.043	-13.430	-9.043	16.191	236.047	0.937
900.000	3.384	272.683	899.452	-9.257	-19.418	-9.257	21.512	244.513	0.572
1000.000	3.111	272.826	999.291	-8.985	-25.076	-8.985	26.637	250.287	0.273
1100.000	2.845	269.549	1099.156	-8.871	-30.267	-8.871	31.540	253.665	0.316
1200.000	2.838	271.805	1199.033	-8.812	-35.223	-8.812	36.308	255.954	0.112
1300.000	2.694	269.483	1298.917	-8.755	-40.047	-8.755	40.993	257.668	0.183
1400.000	2.376	268.513	1398.819	-8.830	-44.470	-8.830	45.338	258.769	0.321
1500.000	2.280	270.693	1498.736	-8.860	-48.531	-8.860	49.333	259.654	0.130
1600.000	2.078	270.115	1598.664	-8.832	-52.333	-8.832	53.073	260.420	0.204
1700.000	2.087	274.152	1698.598	-8.697	-55.962	-8.697	56.634	261.166	0.147
1800.000	2.111	274.880	1798.531	-8.408	-59.613	-8.408	60.203	261.971	0.036
1900.000	2.128	281.037	1898.463	-7.896	-63.271	-7.896	63.761	262.886	0.228
2000.000	2.158	289.242	1998.393	-6.921	-66.870	-6.921	67.227	264.091	0.308
2100.000	1.807	288.317	2098.333	-5.805	-70.144	-5.805	70.384	265.269	0.352
2200.000	1.437	281.987	2198.293	-5.049	-72.867	-5.049	73.042	266.036	0.410
2300.000	1.195	284.720	2298.266	-4.523	-75.103	-4.523	75.239	266.553	0.250
2400.000	1.052	265.607	2398.247	-4.329	-77.027	-4.329	77.149	266.784	0.399
2500.000	0.904	281.716	2498.233	-4.239	-78.715	-4.239	78.829	266.918	0.311
2600.000	0.968	269.639	2598.220	-4.084	-80.332	-4.084	80.436	267.090	0.207
2700.000	0.912	265.940	2698.206	-4.145	-81.971	-4.145	82.076	267.105	0.082
2800.000	1.031	278.396	2798.192	-4.070	-83.655	-4.070	83.754	267.214	0.241
2900.000	0.992	256.714	2898.177	-4.138	-85.387	-4.138	85.487	267.225	0.382
3000.000	0.916	220.176	2998.164	-4.947	-86.744	-4.947	86.885	266.736	0.602
3100.000	1.310	197.675	3098.145	-6.647	-87.607	-6.647	87.859	265.661	0.582
3200.000	1.355	204.467	3198.118	-8.812	-88.444	-8.812	88.882	264.310	0.164
3300.000	1.372	197.219	3298.090	-11.032	-89.288	-11.032	89.967	262.957	0.173
3400.000	1.101	189.725	3398.067	-13.122	-89.804	-13.122	90.758	261.687	0.315

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	1.048	189.193	3498.049	-14.972	-90.113	-14.972	91.348	260.567	0.054
3600.000	1.118	199.436	3598.031	-16.795	-90.583	-16.795	92.127	259.496	0.206
3700.000	1.117	205.066	3698.012	-18.598	-91.321	-18.598	93.196	258.489	0.110
3800.000	1.137	212.325	3797.993	-20.319	-92.265	-20.319	94.476	257.580	0.144
3900.000	1.151	212.946	3897.973	-22.001	-93.342	-22.001	95.900	256.737	0.018
4000.000	1.109	216.150	3997.954	-23.626	-94.459	-23.626	97.369	255.957	0.076
4100.000	1.238	245.954	4097.934	-24.848	-96.017	-24.848	99.180	255.491	0.616
4200.000	1.268	253.378	4197.910	-25.604	-98.063	-25.604	101.351	255.367	0.165
4300.000	0.536	252.786	4297.897	-26.059	-99.570	-26.059	102.924	255.334	0.733
4400.000	0.344	337.560	4397.895	-25.920	-100.131	-25.920	103.431	255.487	0.609
4500.000	0.817	26.991	4497.890	-25.007	-99.922	-25.007	103.004	255.949	0.649
4600.000	0.644	22.569	4597.882	-23.853	-99.383	-23.853	102.205	256.503	0.182
4700.000	0.201	358.316	4697.879	-23.159	-99.172	-23.159	101.840	256.856	0.467
4800.000	0.233	298.442	4797.878	-22.887	-99.356	-22.887	101.958	257.028	0.218
4900.000	0.236	1.291	4897.877	-22.584	-99.530	-22.584	102.060	257.216	0.245
5000.000	0.287	5.498	4997.876	-22.128	-99.502	-22.128	101.932	257.462	0.054
5100.000	0.288	359.190	5097.875	-21.628	-99.481	-21.628	101.805	257.734	0.032
5200.000	0.217	339.521	5197.874	-21.200	-99.551	-21.200	101.783	257.978	0.111
5300.000	0.134	2.315	5297.874	-20.905	-99.613	-20.905	101.783	258.148	0.107
5400.000	0.164	24.381	5397.873	-20.658	-99.549	-20.658	101.670	258.277	0.064
5500.000	0.060	217.508	5497.873	-20.570	-99.522	-20.570	101.625	258.322	0.223
5600.000	0.276	237.937	5597.873	-20.739	-99.758	-20.739	101.891	258.256	0.220
5700.000	0.692	231.261	5697.869	-21.245	-100.433	-21.245	102.655	258.056	0.419
5800.000	0.958	237.115	5797.858	-22.076	-101.606	-22.076	103.976	257.742	0.279
5900.000	1.272	233.610	5897.839	-23.189	-103.201	-23.189	105.774	257.336	0.321
6000.000	1.445	236.605	5997.811	-24.541	-105.147	-24.541	107.973	256.862	0.186
6100.000	1.647	238.540	6097.775	-25.985	-107.425	-25.985	110.523	256.402	0.209
6200.000	1.819	243.609	6197.729	-27.441	-110.073	-27.441	113.442	256.002	0.230
6300.000	2.188	253.722	6297.668	-28.681	-113.327	-28.681	116.900	255.798	0.509
6400.000	1.346	241.841	6397.620	-29.770	-116.195	-29.770	119.948	255.629	0.914
6500.000	0.572	215.625	6497.606	-30.730	-117.521	-30.730	121.472	255.346	0.870
6600.000	0.415	191.281	6597.602	-31.492	-117.883	-31.492	122.017	255.043	0.259
6700.000	0.267	187.076	6697.600	-32.078	-117.982	-32.078	122.265	254.790	0.150
6800.000	0.230	359.792	6797.600	-32.108	-118.012	-32.108	122.302	254.780	0.496
6900.000	0.285	57.459	6897.599	-31.774	-117.803	-31.774	122.012	254.905	0.253
6950.000	0.203	34.888	6947.599	-31.634	-117.647	-31.634	121.826	254.950	0.250
HORIZONTAL DISPLACEMENT IS 121.826 FEET AT 254.950 DEGREES									