



Company: Anadarko Petroleum  
 Well: Mathisen James H (B) #1  
 API: 05-123-07760  
 Rig Name: Production/ CoreTech  
 State/County: Colorado/Weld  
 Latitude: 40.061, Longitude: -104.844  
 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: 2/13/2014 / 16:30

VAUGHN ENERGY SERVICES

HENDERSON, COLORADO

303-853-4976

SEAN BRATT

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	0.277	127.867	100.000	-0.148	0.191	-0.148	0.241	127.867	0.277
200.000	0.242	77.538	199.999	-0.251	0.587	-0.251	0.639	113.132	0.223
300.000	0.435	112.291	299.997	-0.349	1.145	-0.349	1.197	106.972	0.273
400.000	0.571	115.662	399.993	-0.709	1.945	-0.709	2.070	110.031	0.139
500.000	0.697	118.173	499.987	-1.212	2.930	-1.212	3.171	112.472	0.129
600.000	0.589	111.243	599.981	-1.685	3.945	-1.685	4.290	113.131	0.133
700.000	0.666	119.131	699.975	-2.154	4.931	-2.154	5.381	113.597	0.115
800.000	0.677	119.275	799.968	-2.726	5.954	-2.726	6.549	114.599	0.012
900.000	0.494	124.673	899.963	-3.260	6.825	-3.260	7.563	115.536	0.191
1000.000	0.471	139.452	999.959	-3.818	7.447	-3.818	8.368	117.146	0.126
1100.000	0.120	171.883	1099.958	-4.234	7.729	-4.234	8.812	118.715	0.376
1200.000	0.321	244.166	1199.957	-4.459	7.491	-4.459	8.718	120.764	0.307
1300.000	0.207	187.676	1299.956	-4.760	7.215	-4.760	8.644	123.415	0.269
1400.000	0.292	231.155	1399.955	-5.099	6.993	-5.099	8.654	126.098	0.201
1500.000	0.511	273.971	1499.953	-5.227	6.350	-5.227	8.225	129.464	0.357
1600.000	0.422	250.623	1599.950	-5.319	5.558	-5.319	7.693	133.740	0.208
1700.000	0.522	313.192	1699.947	-5.129	4.879	-5.129	7.079	136.433	0.497
1800.000	0.593	304.868	1799.942	-4.522	4.122	-4.522	6.119	137.646	0.108
1900.000	0.599	301.579	1899.937	-3.952	3.252	-3.952	5.118	140.547	0.035
2000.000	0.485	280.650	1999.932	-3.600	2.392	-3.600	4.322	146.406	0.226
2100.000	0.374	277.420	2099.930	-3.480	1.652	-3.480	3.852	154.610	0.113
2200.000	0.434	319.818	2199.927	-3.149	1.084	-3.149	3.330	161.009	0.297
2300.000	0.630	292.598	2299.923	-2.648	0.332	-2.648	2.669	172.854	0.315
2400.000	0.632	304.224	2399.917	-2.127	-0.632	-2.127	2.219	196.539	0.128
2500.000	0.359	294.532	2499.913	-1.687	-1.372	-1.687	2.174	219.135	0.285
2600.000	0.613	316.143	2599.910	-1.171	-2.028	-1.171	2.342	239.990	0.309
2700.000	0.527	302.247	2699.905	-0.540	-2.787	-0.540	2.839	259.039	0.162
2800.000	0.462	322.318	2799.901	0.025	-3.423	0.025	3.423	270.411	0.184
2900.000	0.351	329.757	2899.899	0.608	-3.824	0.608	3.872	279.039	0.122
3000.000	0.458	309.119	2999.896	1.125	-4.288	1.125	4.434	284.705	0.179
3100.000	0.453	268.008	3099.893	1.364	-4.994	1.364	5.177	285.276	0.320
3200.000	0.740	259.044	3199.888	1.227	-6.023	1.227	6.146	281.519	0.301
3300.000	0.958	253.173	3299.877	0.863	-7.457	0.863	7.506	276.600	0.234
3400.000	1.093	243.961	3399.861	0.202	-9.114	0.202	9.116	271.270	0.213
3500.000	1.111	252.333	3499.842	-0.511	-10.894	-0.511	10.906	267.315	0.162

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
3600.000	0.926	251.954	3599.826	-1.055	-12.587	-1.055	12.631	265.207	0.185
3700.000	0.516	300.956	3699.819	-1.074	-13.741	-1.074	13.783	265.530	0.705
3800.000	0.778	287.319	3799.813	-0.640	-14.776	-0.640	14.789	267.518	0.302
3900.000	0.763	291.772	3899.804	-0.191	-16.042	-0.191	16.043	269.316	0.062
4000.000	0.473	257.954	3999.798	-0.031	-17.064	-0.031	17.064	269.897	0.454
4100.000	0.762	248.162	4099.792	-0.364	-18.085	-0.364	18.088	268.846	0.307
4200.000	0.701	252.822	4199.784	-0.792	-19.287	-0.792	19.303	267.648	0.085
4300.000	0.650	237.337	4299.777	-1.279	-20.349	-1.279	20.389	266.403	0.189
4400.000	0.589	214.950	4399.771	-2.007	-21.121	-2.007	21.216	264.573	0.248
4500.000	0.515	191.861	4499.767	-2.867	-21.508	-2.867	21.698	262.406	0.232
4600.000	0.643	204.565	4599.762	-3.817	-21.833	-3.817	22.164	260.082	0.180
4700.000	0.417	203.253	4699.757	-4.662	-22.210	-4.662	22.694	258.147	0.226
4800.000	1.064	203.028	4799.749	-5.850	-22.717	-5.850	23.458	255.558	0.647
4900.000	0.376	194.563	4899.740	-7.023	-23.163	-7.023	24.204	253.133	0.694
5000.000	0.642	191.948	4999.736	-7.889	-23.361	-7.889	24.657	251.341	0.266
5100.000	0.280	187.825	5099.733	-8.678	-23.510	-8.678	25.061	249.739	0.363
5200.000	0.604	181.627	5199.730	-9.447	-23.559	-9.447	25.382	248.149	0.327
5300.000	0.674	185.595	5299.723	-10.559	-23.631	-10.559	25.883	245.923	0.083
5400.000	0.669	194.082	5399.717	-11.712	-23.830	-11.712	26.553	243.828	0.100
5500.000	0.380	233.541	5499.713	-12.475	-24.239	-12.475	27.261	242.767	0.447
5600.000	0.228	209.057	5599.711	-12.846	-24.602	-12.846	27.754	242.429	0.197
5700.000	0.467	202.907	5699.709	-13.395	-24.857	-13.395	28.237	241.681	0.242
5800.000	0.286	127.978	5799.707	-13.924	-24.820	-13.924	28.459	240.707	0.480
5900.000	0.145	20.439	5899.707	-13.959	-24.579	-13.959	28.267	240.407	0.357
6000.000	0.757	37.356	5999.703	-13.316	-24.134	-13.316	27.564	241.113	0.620
6100.000	0.934	17.768	6099.693	-12.014	-23.484	-12.014	26.379	242.907	0.336
6200.000	0.659	40.503	6199.683	-10.800	-22.862	-10.800	25.284	244.714	0.414
6300.000	0.739	12.374	6299.676	-9.733	-22.350	-9.733	24.377	246.468	0.348
6400.000	0.923	32.165	6399.666	-8.421	-21.783	-8.421	23.354	248.864	0.339
6500.000	0.764	46.385	6499.655	-7.279	-20.871	-7.279	22.104	250.774	0.262
6600.000	1.077	78.741	6599.643	-6.636	-19.467	-6.636	20.567	251.177	0.594
6700.000	1.070	67.626	6699.625	-6.097	-17.682	-6.097	18.704	250.976	0.208
6800.000	1.119	50.506	6799.607	-5.120	-16.065	-5.120	16.861	252.321	0.329
6900.000	1.186	51.344	6899.587	-3.853	-14.504	-3.853	15.007	255.122	0.069
7000.000	1.350	63.056	6999.563	-2.673	-12.645	-2.673	12.925	258.065	0.306
7100.000	1.382	62.821	7099.534	-1.588	-10.522	-1.588	10.641	261.416	0.032
7200.000	1.439	63.752	7199.504	-0.482	-8.323	-0.482	8.337	266.686	0.062
7300.000	1.301	85.308	7299.476	0.166	-6.065	0.166	6.067	271.572	0.530
7400.000	1.283	89.371	7399.450	0.272	-3.815	0.272	3.824	274.072	0.093
7500.000	1.379	96.749	7499.424	0.142	-1.500	0.142	1.507	275.423	0.196
7600.000	1.171	113.084	7599.399	-0.400	0.635	-0.400	0.750	122.199	0.417
7700.000	1.245	108.086	7699.377	-1.138	2.608	-1.138	2.845	113.570	0.129
7800.000	0.695	99.841	7799.362	-1.578	4.238	-1.578	4.522	110.430	0.566
7900.000	1.055	110.860	7899.350	-2.010	5.695	-2.010	6.039	109.439	0.396

HORIZONTAL DISPLACEMENT IS  
6.039 FEET AT 109.439 DEGREES