



Company: Synergy Resources  
 Well/API: Aufrecht N 02-10/05-123-26505  
 Tool Type: North Seeking Rate Gyro  
 Rig Name: Production/CoreTech  
 County/State: Weld/Colorado  
 VS-Azi: 0.000 Degrees  
 Latitude: 40.42734, Longitude: -104.85698  
 All Azimuths referenced to True North  
 No Grid Convergence Applied



Depth Reference : RKB = GL Elevation = 4950

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyrosurvey.ut

Minimum Curvature Method

Report Date/Time: 12/4/2017 / 15:40

Lat/Long Obtained By Handheld GPS At Wellhead  
 Handheld GPS Reference: NAD83/Device Error: ±9 Feet  
 VES Survey International - Henderson CO  
 Surveyor: Justin Williams / Aufrecht N 02-10  
 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	0.308	92.990	100.000	-0.014	0.269	-0.014	0.269	92.990	0.308
200.000	0.279	103.156	199.998	-0.084	0.774	-0.084	0.779	96.156	0.059
300.000	0.261	122.321	299.997	-0.261	1.205	-0.261	1.233	102.224	0.092
400.000	0.141	173.310	399.997	-0.505	1.412	-0.505	1.499	109.693	0.204
500.000	0.154	184.201	499.996	-0.762	1.416	-0.762	1.608	118.285	0.031
600.000	0.123	256.386	599.996	-0.922	1.302	-0.922	1.595	125.301	0.165
700.000	0.128	259.639	699.996	-0.967	1.088	-0.967	1.455	131.646	0.009
800.000	0.228	248.775	799.995	-1.059	0.792	-1.059	1.323	143.206	0.105
900.000	0.455	250.517	899.993	-1.264	0.232	-1.264	1.285	169.594	0.228
1000.000	0.520	242.978	999.990	-1.602	-0.547	-1.602	1.693	198.836	0.091
1100.000	0.614	242.348	1099.985	-2.057	-1.425	-2.057	2.502	214.711	0.094
1200.000	0.823	234.569	1199.977	-2.722	-2.485	-2.722	3.685	222.389	0.231
1300.000	1.042	232.804	1299.964	-3.688	-3.794	-3.688	5.291	225.812	0.220
1400.000	1.158	228.213	1399.945	-4.911	-5.271	-4.911	7.204	227.029	0.146
1500.000	1.193	227.356	1499.924	-6.289	-6.790	-6.289	9.255	227.195	0.039
1600.000	1.254	223.234	1599.901	-7.791	-8.305	-7.791	11.387	226.829	0.107

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
1700.000	1.546	223.789	1699.872	-9.562	-9.988	-9.562	13.827	226.249	0.292
1800.000	1.749	230.043	1799.830	-11.515	-12.091	-11.515	16.697	226.397	0.271
1900.000	2.022	236.871	1899.776	-13.459	-14.738	-13.459	19.959	227.596	0.353
2000.000	2.121	240.522	1999.711	-15.334	-17.826	-15.334	23.513	229.298	0.165
2100.000	2.112	245.965	2099.643	-16.995	-21.120	-16.995	27.109	231.176	0.201
2200.000	2.110	242.714	2199.575	-18.590	-24.439	-18.590	30.706	232.741	0.120
2300.000	2.093	234.916	2299.508	-20.484	-27.570	-20.484	34.346	233.389	0.286
2400.000	2.103	245.381	2399.441	-22.298	-30.733	-22.298	37.970	234.038	0.383
2500.000	2.357	254.669	2499.366	-23.606	-34.384	-23.606	41.707	235.529	0.440
2600.000	2.591	261.741	2599.273	-24.474	-38.603	-24.474	45.708	237.626	0.384
2700.000	2.708	257.709	2699.166	-25.302	-43.148	-25.302	50.020	239.613	0.220
2800.000	2.757	264.049	2799.052	-26.054	-47.849	-26.054	54.482	241.431	0.306
2900.000	2.754	262.372	2898.937	-26.622	-52.622	-26.622	58.973	243.164	0.081
3000.000	2.814	267.446	2998.819	-27.050	-57.455	-27.050	63.504	244.788	0.254
3100.000	2.983	268.794	3098.691	-27.215	-62.509	-27.215	68.176	246.473	0.182
3200.000	3.147	268.621	3198.548	-27.335	-67.854	-27.335	73.153	248.058	0.164
3300.000	3.566	271.818	3298.376	-27.303	-73.706	-27.303	78.601	249.674	0.458
3400.000	3.677	275.479	3398.177	-26.898	-80.006	-26.898	84.407	251.417	0.256
3500.000	3.748	273.215	3497.967	-26.409	-86.461	-26.409	90.404	253.015	0.163
3600.000	3.660	265.729	3597.759	-26.463	-92.906	-26.463	96.602	254.101	0.491
3700.000	3.436	267.915	3697.567	-26.810	-99.084	-26.810	102.647	254.860	0.261
3800.000	3.374	264.509	3797.390	-27.200	-105.008	-27.200	108.474	255.478	0.212
3900.000	3.110	266.320	3897.230	-27.656	-110.644	-27.656	114.048	255.966	0.283
4000.000	3.089	269.495	3997.084	-27.854	-116.045	-27.854	119.341	256.503	0.173
4100.000	2.338	273.528	4096.971	-27.752	-120.775	-27.752	123.923	257.059	0.774
4200.000	2.173	268.731	4196.894	-27.669	-124.706	-27.669	127.739	257.490	0.251
4300.000	2.303	264.895	4296.818	-27.889	-128.602	-27.889	131.592	257.764	0.198
4400.000	2.396	258.865	4396.734	-28.472	-132.654	-28.472	135.675	257.886	0.264
4500.000	2.497	269.899	4496.643	-28.879	-136.883	-28.879	139.897	258.087	0.481
4600.000	2.537	269.760	4596.547	-28.892	-141.275	-28.892	144.199	258.442	0.040
4700.000	2.697	274.713	4696.443	-28.708	-145.833	-28.708	148.631	258.863	0.277
4800.000	2.761	282.804	4796.330	-27.981	-150.526	-27.981	153.104	259.469	0.390
4900.000	2.756	283.341	4896.214	-26.893	-155.213	-26.893	157.526	260.170	0.026
5000.000	2.638	279.680	4996.103	-25.951	-159.821	-25.951	161.914	260.777	0.209
5100.000	2.125	274.079	5096.016	-25.432	-163.939	-25.432	165.900	261.182	0.563
5200.000	1.861	267.079	5195.956	-25.383	-167.410	-25.383	169.323	261.378	0.358
5300.000	1.813	273.936	5295.905	-25.357	-170.610	-25.357	172.484	261.546	0.225
5400.000	1.674	270.103	5395.858	-25.246	-173.649	-25.246	175.474	261.728	0.181
5500.000	1.741	267.296	5495.814	-25.315	-176.627	-25.315	178.432	261.844	0.107

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
5600.000	1.711	269.147	5595.769	-25.409	-179.637	-25.409	181.425	261.949	0.064
5700.000	1.238	255.516	5695.736	-25.702	-182.175	-25.702	183.979	261.970	0.585
5800.000	1.046	231.510	5795.716	-26.540	-183.936	-26.540	185.841	261.789	0.511
5900.000	1.026	225.193	5895.700	-27.739	-185.286	-27.739	187.350	261.485	0.116
6000.000	1.068	210.124	5995.683	-29.176	-186.388	-29.176	188.658	261.104	0.278
6100.000	1.263	210.402	6095.663	-30.933	-187.414	-30.933	189.950	260.628	0.196
6200.000	1.422	208.714	6195.635	-32.972	-188.568	-32.972	191.429	260.082	0.164
6300.000	1.657	204.662	6295.599	-35.374	-189.767	-35.374	193.036	259.441	0.259
6400.000	2.397	206.998	6395.536	-38.551	-191.320	-38.551	195.166	258.607	0.745
6500.000	1.824	211.692	6495.468	-41.769	-193.106	-41.769	197.572	257.795	0.598
6600.000	1.192	227.043	6595.433	-43.832	-194.703	-43.832	199.576	257.313	0.745
6700.000	0.933	237.449	6695.416	-44.979	-196.150	-44.979	201.241	257.085	0.322
6800.000	0.607	212.862	6795.407	-45.862	-197.124	-45.862	202.388	256.903	0.457
6900.000	0.517	205.007	6895.402	-46.715	-197.602	-46.715	203.048	256.699	0.118
7000.000	0.583	180.001	6995.398	-47.632	-197.792	-47.632	203.447	256.460	0.247
7050.000	0.641	173.221	7045.395	-48.164	-197.759	-48.164	203.540	256.312	0.186