



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : KB= GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 8/30/2013 / 12:19

Vaughn Energy Services

Pinedale, Wyoming

866-835-8333

Jay Hinman

HSR-Redmond 12-21

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	0.610	341.508	99.998	0.504	-0.169	0.504	0.532	341.508	0.610
200.000	0.482	339.179	199.994	1.402	-0.487	1.402	1.484	340.848	0.129
300.000	0.193	320.463	299.992	1.926	-0.744	1.926	2.064	338.877	0.306
400.000	0.292	284.601	399.991	2.120	-1.097	2.120	2.387	332.629	0.176
500.000	0.601	310.894	499.988	2.527	-1.740	2.527	3.069	325.451	0.363
600.000	0.460	1.229	599.984	3.272	-2.128	3.272	3.903	326.958	0.469
700.000	0.941	18.146	699.976	4.453	-1.864	4.453	4.827	337.289	0.519
800.000	0.864	18.234	799.964	5.950	-1.372	5.950	6.106	347.015	0.077
900.000	1.251	4.439	899.947	7.754	-1.051	7.754	7.825	352.278	0.460
1000.000	1.293	10.867	999.922	9.951	-0.754	9.951	9.979	355.665	0.149
1100.000	1.499	8.777	1099.893	12.352	-0.342	12.352	12.357	358.415	0.212
1200.000	2.043	2.105	1199.844	15.426	-0.077	15.426	15.426	359.715	0.581
1300.000	2.307	359.586	1299.772	19.220	-0.026	19.220	19.220	359.923	0.280
1400.000	2.436	8.338	1399.687	23.336	0.268	23.336	23.337	0.658	0.384
1500.000	2.315	357.026	1499.602	27.456	0.471	27.456	27.460	0.983	0.484
1600.000	2.240	349.487	1599.523	31.394	0.010	31.394	31.394	0.018	0.308
1700.000	2.097	340.899	1699.451	35.044	-0.945	35.044	35.057	358.455	0.355
1800.000	2.160	331.789	1799.383	38.434	-2.435	38.434	38.511	356.375	0.344
1900.000	2.039	340.220	1899.316	41.769	-3.928	41.769	41.954	354.627	0.331
2000.000	2.401	334.599	1999.241	45.336	-5.429	45.336	45.660	353.172	0.422
2100.000	2.251	329.402	2099.158	48.918	-7.327	48.918	49.464	351.482	0.259
2200.000	2.549	328.061	2199.071	52.496	-9.503	52.496	53.349	349.739	0.304
2300.000	2.690	326.216	2298.966	56.333	-11.984	56.333	57.594	347.990	0.164
2400.000	2.636	320.150	2398.858	60.049	-14.762	60.049	61.837	346.188	0.287
2500.000	2.690	320.904	2498.750	63.635	-17.715	63.635	66.055	344.443	0.064
2600.000	2.714	318.769	2598.639	67.237	-20.756	67.237	70.367	342.845	0.104
2700.000	2.300	323.397	2698.543	70.628	-23.513	70.628	74.439	341.587	0.461
2800.000	2.305	319.608	2798.463	73.770	-26.012	73.770	78.222	340.577	0.152
2900.000	2.294	327.808	2898.382	76.996	-28.381	76.996	82.060	339.766	0.329
3000.000	2.090	320.303	2998.309	80.092	-30.612	80.092	85.743	339.082	0.352
3100.000	2.100	324.210	3098.243	82.982	-32.848	82.982	89.247	338.404	0.143
3200.000	2.576	326.259	3198.159	86.337	-35.168	86.337	93.225	337.837	0.484
3300.000	2.146	332.600	3298.074	89.868	-37.279	89.868	97.293	337.471	0.503
3400.000	2.023	336.747	3398.008	93.152	-38.837	93.152	100.924	337.368	0.194

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	1.720	339.458	3497.955	96.180	-40.061	96.180	104.189	337.387	0.316
3600.000	2.116	328.176	3597.899	99.154	-41.561	99.154	107.512	337.259	0.545
3700.000	1.452	339.380	3697.850	101.908	-42.981	101.908	110.601	337.132	0.747
3800.000	1.399	311.539	3797.820	103.904	-44.341	103.904	112.970	336.890	0.688
3900.000	0.819	288.782	3897.801	104.944	-45.932	104.944	114.555	336.362	0.717
4000.000	0.699	267.326	3997.793	105.146	-47.217	105.146	115.261	335.817	0.306
4100.000	0.873	290.418	4097.784	105.383	-48.541	105.383	116.025	335.269	0.358
4200.000	0.622	285.442	4197.775	105.793	-49.778	105.793	116.919	334.802	0.259
4300.000	0.985	271.510	4297.765	105.961	-51.161	105.961	117.665	334.227	0.409
4400.000	1.069	326.662	4397.751	106.763	-52.533	106.763	118.988	333.800	0.954
4500.000	0.911	324.568	4497.736	108.190	-53.506	108.190	120.698	333.685	0.163
4600.000	0.884	343.061	4597.724	109.576	-54.192	109.576	122.244	333.685	0.290
4700.000	0.508	341.722	4697.717	110.735	-54.556	110.735	123.445	333.772	0.377
4800.000	0.488	293.818	4797.713	111.328	-55.084	111.328	124.210	333.674	0.405
4900.000	0.328	265.831	4897.711	111.479	-55.759	111.479	124.646	333.427	0.251
5000.000	0.421	243.723	4997.709	111.296	-56.373	111.296	124.758	333.137	0.170
5100.000	0.208	298.240	5097.708	111.219	-56.862	111.219	124.912	332.921	0.344
5200.000	0.448	243.414	5197.706	111.130	-57.371	111.130	125.065	332.695	0.369
5300.000	0.045	177.018	5297.705	110.916	-57.718	110.916	125.035	332.509	0.432
5400.000	0.666	163.483	5397.703	110.320	-57.551	110.320	124.429	332.450	0.622
5500.000	0.613	122.775	5497.697	109.474	-56.936	109.474	123.394	332.522	0.447
5600.000	0.143	209.766	5597.695	109.076	-56.548	109.076	122.863	332.597	0.622
5700.000	0.071	289.513	5697.695	108.989	-56.668	108.989	122.840	332.528	0.148
5800.000	0.448	63.893	5797.694	109.181	-56.375	109.181	122.877	332.691	0.500
5900.000	0.556	58.230	5897.690	109.609	-55.612	109.609	122.909	333.098	0.119
6000.000	0.222	16.313	5997.688	110.050	-55.145	110.050	123.093	333.385	0.418
6100.000	0.714	351.297	6097.684	110.852	-55.185	110.852	123.829	333.535	0.521
6200.000	1.098	343.163	6197.671	112.385	-55.556	112.385	125.367	333.695	0.404
6300.000	0.884	351.460	6297.656	114.065	-55.948	114.065	127.047	333.872	0.258
6400.000	0.934	353.303	6397.644	115.637	-56.158	115.637	128.552	334.097	0.059
6500.000	0.759	359.086	6497.633	117.110	-56.264	117.110	129.924	334.339	0.195
6600.000	1.064	334.625	6597.620	118.611	-56.672	118.611	131.454	334.462	0.487
6700.000	0.865	348.970	6697.606	120.190	-57.214	120.190	133.113	334.544	0.311
6800.000	1.122	329.826	6797.592	121.778	-57.851	121.778	134.820	334.590	0.416
6900.000	1.405	293.609	6897.569	123.115	-59.466	123.115	136.724	334.219	0.830
7000.000	2.285	289.716	6997.516	124.278	-62.465	124.278	139.094	333.315	0.889
7040.000	2.473	282.034	7037.482	124.727	-64.060	124.727	140.216	332.815	0.925
HORIZONTAL DISPLACEMENT IS 140.216 FEET AT 332.815 DEGREES									