



Company/Rig: NOBLE ENERGY/ CORETECH  
WELL/API#: HEMPLE EDWARD UNIT 2/05-123-09445  
DECLINATION: 8.35  
TD AS DRILLED: 4,560 Feet  
COUNTY/STATE: WELD/COLORADO  
Latitude: 40.294, Longitude: -104.692  
GRID North is 0.520 Degrees East of True North  
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4,804 Feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_run01-01-de\_01.ut

Minimum Curvature Method

Report Date/Time: 12/10/2014 / 15:26

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: 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	0.066	224.884	100.000	-0.041	-0.041	-0.041	0.058	224.884	0.066
200.000	0.262	250.926	200.000	-0.157	-0.298	-0.157	0.337	242.229	0.205
300.000	0.121	284.871	299.999	-0.205	-0.617	-0.205	0.650	251.644	0.175
400.000	0.322	216.884	399.998	-0.402	-0.888	-0.402	0.975	245.623	0.299
500.000	0.361	240.884	499.997	-0.780	-1.331	-0.780	1.543	239.630	0.147
600.000	0.384	240.692	599.994	-1.098	-1.899	-1.098	2.193	239.972	0.024
700.000	0.244	214.039	699.993	-1.438	-2.311	-1.438	2.722	238.099	0.199
800.000	0.341	236.053	799.992	-1.781	-2.677	-1.781	3.216	236.361	0.147
900.000	0.349	207.693	899.990	-2.217	-3.066	-2.217	3.783	234.125	0.169
1000.000	0.294	239.175	999.988	-2.618	-3.427	-2.618	4.313	232.626	0.182
1100.000	0.296	241.490	1099.987	-2.873	-3.875	-2.873	4.823	233.446	0.012
1200.000	0.225	278.767	1199.986	-2.966	-4.295	-2.966	5.220	235.373	0.179
1300.000	0.237	264.191	1299.985	-2.957	-4.695	-2.957	5.548	237.794	0.060
1400.000	0.291	278.510	1399.984	-2.940	-5.152	-2.940	5.932	240.286	0.085
1500.000	0.344	296.186	1499.983	-2.770	-5.673	-2.770	6.313	243.972	0.111
1600.000	0.283	287.475	1599.981	-2.564	-6.178	-2.564	6.689	247.464	0.077
1700.000	0.298	262.774	1699.980	-2.522	-6.672	-2.522	7.133	249.294	0.125
1800.000	0.378	277.322	1799.978	-2.513	-7.258	-2.513	7.681	250.904	0.117

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
1900.000	0.186	291.594	1899.977	-2.411	-7.736	-2.411	8.103	252.690	0.204
2000.000	0.181	265.020	1999.977	-2.365	-8.044	-2.365	8.385	253.617	0.084
2100.000	0.095	165.151	2099.976	-2.459	-8.181	-2.459	8.542	253.272	0.218
2200.000	0.072	38.250	2199.976	-2.489	-8.121	-2.489	8.493	252.959	0.150
2300.000	0.385	66.563	2299.975	-2.306	-7.773	-2.306	8.108	253.478	0.324
2400.000	0.268	65.228	2399.974	-2.074	-7.252	-2.074	7.543	254.040	0.118
2500.000	0.248	240.231	2499.973	-2.084	-7.229	-2.084	7.523	253.918	0.515
2600.000	0.426	244.102	2599.972	-2.354	-7.751	-2.354	8.100	253.107	0.179
2700.000	0.363	259.608	2699.969	-2.573	-8.397	-2.573	8.782	252.962	0.123
2800.000	0.465	243.963	2799.967	-2.809	-9.073	-2.809	9.498	252.800	0.152
2900.000	0.513	261.072	2899.963	-3.056	-9.880	-3.056	10.342	252.811	0.153
3000.000	0.490	263.462	2999.959	-3.174	-10.747	-3.174	11.206	253.544	0.031
3100.000	0.467	279.889	3099.956	-3.153	-11.573	-3.153	11.995	254.760	0.139
3200.000	0.396	276.249	3199.953	-3.045	-12.319	-3.045	12.690	256.115	0.076
3300.000	0.290	281.160	3299.951	-2.959	-12.911	-2.959	13.246	257.094	0.110
3400.000	0.240	316.758	3399.950	-2.757	-13.303	-2.757	13.586	258.291	0.169
3500.000	0.214	333.205	3499.949	-2.438	-13.531	-2.438	13.749	259.786	0.070
3600.000	0.364	2.679	3599.948	-1.954	-13.600	-1.954	13.740	261.825	0.206
3700.000	0.243	8.948	3699.947	-1.427	-13.552	-1.427	13.627	263.989	0.125
3800.000	0.338	6.115	3799.945	-0.924	-13.488	-0.924	13.520	266.082	0.096
3900.000	0.084	49.756	3899.945	-0.583	-13.401	-0.583	13.413	267.509	0.284
4000.000	0.484	71.169	3999.943	-0.399	-12.945	-0.399	12.951	268.234	0.407
4100.000	0.585	342.273	4099.940	0.224	-12.700	0.224	12.702	271.008	0.752
4200.000	0.832	63.977	4199.935	1.028	-12.203	1.028	12.246	274.817	0.945
4300.000	0.895	28.015	4299.924	2.036	-11.184	2.036	11.368	280.320	0.536
4400.000	1.040	24.399	4399.910	3.553	-10.442	3.553	11.030	288.789	0.157
4450.000	1.001	22.463	4449.902	4.370	-10.087	4.370	10.993	293.421	0.104