



Company: Noble Energy
 Lease/Well: Gill Land/22-1
 API: 05-123-10789
 Rig Name: Production/Lightning
 State/County: Colorado/Weld
 Latitude: 40.473, Longitude: -104.529
 GRID North is 0.630 Degrees East of 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_ed.ut
 Minimum Curvature Method
 Report Date/Time: 11/16/2012 / 11:02

Vaughn Energy Services
 Fort Worth, Texas
 817-741-3610
 Robert Hooper

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	0.452	270.747	99.999	0.005	-0.394	0.005	0.394	270.747	0.452
200.000	0.150	265.496	199.997	0.000	-0.920	0.000	0.920	270.000	0.303
300.000	0.221	242.762	299.997	-0.099	-1.222	-0.099	1.226	265.386	0.101
400.000	0.243	203.973	399.996	-0.380	-1.479	-0.380	1.527	255.580	0.155
500.000	0.216	199.338	499.995	-0.752	-1.628	-0.752	1.793	245.216	0.033
600.000	0.195	186.631	599.995	-1.098	-1.710	-1.098	2.032	237.293	0.050
700.000	0.179	183.438	699.994	-1.422	-1.739	-1.422	2.246	230.713	0.019
800.000	0.255	182.659	799.993	-1.801	-1.758	-1.801	2.517	224.316	0.076

HORIZONTAL DISPLACEMENT IS
 2.517 FEET AT 224.316 DEGREES