



Company/Rig: Noble Energy/Production/CoreTech
WELL/API#: BUXMAN 28-12/05-123-25736
DECLINATION: 8.23
TD AS DRILLED: 7276'
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.46482, Longitude: -104.78035
Grid North = True North -0.46 degs (NAD 27)
Grid Correction Applied = -0.46 degs



Depth Reference : RKB=SURFACE ELEVATION=4737'

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run1-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 4/17/2017 / 13:35

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

COMMERCE CITY, COLORADO

303-853-4976

Surveyor: JAY HINMAN / Buxman 28-12

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	0.587	203.689	99.998	-0.469	-0.206	-0.469	0.512	203.689	0.587
200.000	0.952	240.032	199.990	-1.353	-1.131	-1.353	1.763	219.904	0.592
300.000	1.053	256.912	299.975	-1.976	-2.746	-1.976	3.383	234.262	0.311
400.000	0.608	276.173	399.964	-2.127	-4.168	-2.127	4.679	242.966	0.519
500.000	0.657	270.355	499.958	-2.066	-5.268	-2.066	5.659	248.585	0.081
600.000	0.376	255.232	599.954	-2.146	-6.159	-2.146	6.522	250.786	0.309
700.000	0.374	250.911	699.952	-2.337	-6.785	-2.337	7.176	250.995	0.028
800.000	0.749	199.915	799.947	-3.058	-7.316	-3.058	7.930	247.315	0.590
900.000	0.387	243.360	899.942	-3.824	-7.841	-3.824	8.724	244.000	0.538
1000.000	0.472	218.002	999.940	-4.300	-8.397	-4.300	9.434	242.881	0.206
1100.000	0.627	215.287	1099.935	-5.071	-8.966	-5.071	10.301	240.508	0.157
1200.000	0.903	207.327	1199.926	-6.217	-9.643	-6.217	11.474	237.190	0.295
1300.000	0.771	206.494	1299.915	-7.519	-10.305	-7.519	12.757	233.883	0.132
1400.000	0.682	222.526	1399.908	-8.561	-11.008	-8.561	13.945	232.129	0.221
1500.000	0.965	208.929	1499.897	-9.737	-11.818	-9.737	15.312	230.515	0.342
1600.000	0.875	222.446	1599.884	-11.037	-12.741	-11.037	16.857	229.098	0.235
1700.000	1.199	223.765	1699.868	-12.356	-13.980	-12.356	18.658	228.527	0.326
1800.000	1.157	229.068	1799.847	-13.773	-15.466	-13.773	20.710	228.313	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	1.077	241.241	1899.828	-14.887	-17.053	-14.887	22.636	228.879	0.250
2000.000	1.381	229.408	1999.805	-16.123	-18.791	-16.123	24.760	229.370	0.394
2100.000	1.718	228.757	2099.768	-17.895	-20.834	-17.895	27.464	229.339	0.338
2200.000	1.910	232.609	2199.718	-19.895	-23.285	-19.895	30.627	229.488	0.227
2300.000	2.041	231.061	2299.659	-22.026	-25.993	-22.026	34.071	229.723	0.142
2400.000	2.276	237.267	2399.588	-24.219	-29.049	-24.219	37.821	230.181	0.332
2500.000	2.285	236.854	2499.509	-26.383	-32.388	-26.383	41.774	230.834	0.018
2600.000	2.215	233.999	2599.432	-28.608	-35.620	-28.608	45.686	231.230	0.132
2700.000	2.124	224.557	2699.360	-31.065	-38.484	-31.065	49.457	231.089	0.368
2800.000	2.588	215.618	2799.276	-34.220	-41.099	-34.220	53.480	230.218	0.590
2900.000	2.147	221.560	2899.190	-37.457	-43.656	-37.457	57.523	229.370	0.504
3000.000	1.856	221.367	2999.129	-40.074	-45.969	-40.074	60.984	228.919	0.291
3100.000	1.268	238.557	3099.092	-41.867	-47.984	-41.867	63.681	228.894	0.746
3200.000	1.596	264.283	3199.062	-42.583	-50.313	-42.583	65.915	229.757	0.713
3300.000	1.972	294.534	3299.015	-42.007	-53.264	-42.007	67.836	231.739	0.999
3400.000	2.636	312.782	3398.935	-39.731	-56.517	-39.731	69.085	234.893	0.982
3500.000	3.531	320.454	3498.790	-35.795	-60.165	-35.795	70.008	239.250	0.983
3600.000	4.498	322.883	3598.543	-30.294	-64.492	-30.294	71.252	244.839	0.982
3700.000	4.816	327.416	3698.213	-23.630	-69.119	-23.630	73.046	251.126	0.486
3800.000	5.380	326.068	3797.818	-16.203	-73.996	-16.203	75.750	257.649	0.576
3900.000	5.196	331.002	3897.392	-8.353	-78.808	-8.353	79.250	263.950	0.490
4000.000	4.226	333.236	3997.054	-1.103	-82.663	-1.103	82.670	269.236	0.987
4100.000	3.514	342.888	4096.826	5.116	-85.224	5.116	85.377	273.436	0.963
4200.000	2.703	352.874	4196.679	10.385	-86.418	10.385	87.040	276.852	0.972
4300.000	2.282	8.772	4296.585	14.691	-86.407	14.691	87.647	279.650	0.805
4400.000	2.289	7.908	4396.506	18.637	-85.829	18.637	87.829	282.251	0.035
4500.000	1.388	8.500	4496.453	21.813	-85.375	21.813	88.117	284.332	0.901
4600.000	1.132	6.824	4596.429	23.992	-85.078	23.992	88.396	285.748	0.258
4700.000	0.725	355.645	4696.415	25.604	-85.009	25.604	88.781	286.762	0.444
4800.000	1.110	344.821	4796.403	27.170	-85.311	27.170	89.533	287.666	0.420
4900.000	0.440	302.258	4896.393	28.310	-85.889	28.310	90.434	288.243	0.840
5000.000	0.859	246.523	4996.388	28.216	-86.901	28.216	91.367	287.988	0.712
5100.000	1.025	267.491	5096.374	27.878	-88.483	27.878	92.771	287.488	0.380
5200.000	0.888	250.125	5196.361	27.575	-90.105	27.575	94.230	287.016	0.319
5300.000	0.950	247.703	5296.348	26.997	-91.601	26.997	95.496	286.422	0.073
5400.000	1.192	226.906	5396.331	25.972	-93.127	25.972	96.681	285.583	0.454
5500.000	0.912	187.432	5496.315	24.473	-93.989	24.473	97.123	284.595	0.758
5600.000	0.912	243.729	5596.304	23.332	-94.806	23.332	97.635	283.826	0.860
5700.000	1.451	272.158	5696.283	23.028	-96.785	23.028	99.486	283.383	0.781
5800.000	1.830	252.521	5796.243	22.596	-99.573	22.596	102.105	282.785	0.673

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
5900.000	2.020	246.610	5896.187	21.416	-102.714	21.416	104.923	281.778	0.274
6000.000	1.941	258.522	5996.127	20.380	-105.992	20.380	107.933	280.884	0.418
6100.000	1.598	259.755	6096.079	19.795	-109.024	19.795	110.806	280.291	0.345
6200.000	1.317	265.590	6196.047	19.458	-111.542	19.458	113.226	279.896	0.318
6300.000	0.967	268.581	6296.027	19.349	-113.531	19.349	115.168	279.672	0.355
6400.000	1.054	273.087	6396.011	19.378	-115.293	19.378	116.910	279.541	0.118
6500.000	1.261	252.850	6495.991	19.103	-117.263	19.103	118.809	279.252	0.455
6600.000	0.381	246.153	6595.980	18.644	-118.619	18.644	120.075	278.932	0.885
6700.000	0.835	349.934	6695.976	19.226	-119.050	19.226	120.592	279.174	0.996
6800.000	1.258	330.547	6795.960	20.899	-119.717	20.899	121.527	279.902	0.546
6900.000	0.553	282.762	6895.948	21.961	-120.727	21.961	122.709	280.310	0.976
7000.000	1.511	272.465	6995.930	22.125	-122.516	22.125	124.498	280.236	0.972