



Company/Rig: NOBLE ENERGY/CoreTech  
WELL: Loloff B 26-25  
DECLINATION: 8.28  
TD AS DRILLED: 6920'  
COUNTY/STATE: Weld/Colorado  
Latitude: 40.368, Longitude: -104.519  
GRID North is 0.630 Degrees East of True North  
VS-Azi: 0.000 Degrees



DEPTH REFERENCE : RKB=SURFACE ELEVATION=GL

DRILLOG MS GYRO SURVEY CALCULATIONS

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

Minimum Curvature Method

Report Date/Time: 11/25/2014 / 12:58

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: Nick Kula

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	0.953	305.094	99.995	0.478	-0.680	0.478	0.832	305.094	0.953
200.000	0.558	302.139	199.987	1.215	-1.773	1.215	2.150	304.425	0.397
300.000	0.662	271.456	299.981	1.489	-2.763	1.489	3.138	298.322	0.338
400.000	0.885	279.351	399.972	1.629	-4.102	1.629	4.414	291.660	0.247
500.000	0.779	338.196	499.963	2.386	-5.117	2.386	5.646	295.000	0.823
600.000	1.147	286.131	599.951	3.295	-6.330	3.295	7.137	297.499	0.907
700.000	1.180	261.498	699.931	3.421	-8.310	3.421	8.986	292.377	0.497
800.000	0.984	229.000	799.914	2.705	-9.976	2.705	10.336	285.173	0.634
900.000	1.169	223.661	899.896	1.404	-11.328	1.404	11.415	277.065	0.210
1000.000	1.224	225.233	999.874	-0.086	-12.791	-0.086	12.791	269.615	0.064
1100.000	1.049	225.070	1099.854	-1.484	-14.197	-1.484	14.274	264.031	0.175
1200.000	0.597	240.073	1199.844	-2.391	-15.296	-2.391	15.482	261.117	0.496
1300.000	0.468	270.828	1299.840	-2.645	-16.156	-2.645	16.371	260.703	0.309
1400.000	0.376	267.024	1399.837	-2.656	-16.892	-2.656	17.100	261.065	0.095
1500.000	0.336	284.861	1499.835	-2.598	-17.504	-2.598	17.696	261.559	0.117
1600.000	0.404	304.505	1599.833	-2.323	-18.078	-2.323	18.227	262.679	0.143
1700.000	0.592	324.339	1699.829	-1.703	-18.670	-1.703	18.748	264.788	0.252
1800.000	0.982	315.858	1799.820	-0.668	-19.568	-0.668	19.580	268.044	0.407
1900.000	0.613	333.633	1899.810	0.426	-20.403	0.426	20.407	271.196	0.441

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
2000.000	0.803	348.929	1999.802	1.593	-20.775	1.593	20.836	274.384	0.267
2100.000	0.599	342.336	2099.795	2.779	-21.068	2.779	21.250	277.513	0.219
2200.000	0.638	358.459	2199.789	3.833	-21.241	3.833	21.585	280.229	0.178
2300.000	0.439	27.330	2299.785	4.730	-21.081	4.730	21.605	282.647	0.331
2400.000	0.466	40.948	2399.782	5.378	-20.638	5.378	21.327	284.605	0.111
2500.000	0.575	51.114	2499.778	6.000	-19.981	6.000	20.862	286.715	0.143
2600.000	0.457	41.095	2599.774	6.616	-19.328	6.616	20.429	288.896	0.149
2700.000	0.317	18.607	2699.771	7.179	-18.977	7.179	20.290	290.720	0.204
2800.000	0.241	26.997	2799.770	7.629	-18.793	7.629	20.283	292.093	0.086
2900.000	0.194	292.621	2899.770	7.881	-18.855	7.881	20.435	292.685	0.321
3000.000	0.216	274.572	2999.769	7.962	-19.199	7.962	20.784	292.524	0.068
3100.000	0.089	344.952	3099.769	8.052	-19.407	8.052	21.011	292.533	0.204
3200.000	0.267	125.835	3199.768	7.990	-19.238	7.990	20.831	292.555	0.341
3300.000	0.271	102.636	3299.767	7.802	-18.818	7.802	20.371	292.519	0.108
3400.000	0.526	82.074	3399.765	7.814	-18.133	7.814	19.745	293.312	0.289
3500.000	0.517	92.589	3499.761	7.857	-17.228	7.857	18.935	294.515	0.096
3600.000	0.104	128.055	3599.759	7.780	-16.706	7.780	18.428	294.973	0.437
3700.000	0.906	109.379	3699.755	7.462	-15.888	7.462	17.553	295.157	0.808
3800.000	1.006	99.299	3799.741	7.058	-14.276	7.058	15.925	296.307	0.195
3900.000	0.312	37.390	3899.734	7.132	-13.244	7.132	15.042	298.303	0.902
4000.000	0.642	302.963	3999.732	7.653	-13.549	7.653	15.561	299.461	0.735
4100.000	1.248	264.509	4099.719	7.854	-15.103	7.854	17.023	297.475	0.846
4200.000	1.560	269.848	4199.688	7.746	-17.548	7.746	19.181	293.817	0.337
4300.000	1.589	252.986	4299.651	7.336	-20.235	7.336	21.524	289.929	0.463
4400.000	1.773	245.417	4399.608	6.287	-22.968	6.287	23.813	285.308	0.288
4500.000	2.181	229.123	4499.549	4.398	-25.814	4.398	26.186	279.669	0.690
4600.000	2.551	229.737	4599.464	1.715	-28.950	1.715	29.001	273.390	0.371
4700.000	1.764	220.976	4699.393	-0.885	-31.658	-0.885	31.670	268.398	0.851
4800.000	1.528	214.432	4799.351	-3.147	-33.421	-3.147	33.569	264.621	0.302
4900.000	1.307	211.480	4899.321	-5.219	-34.770	-5.219	35.160	261.463	0.232
5000.000	1.043	227.205	4999.300	-6.810	-36.034	-6.810	36.671	259.297	0.414
5100.000	0.971	228.096	5099.284	-7.995	-37.332	-7.995	38.179	257.912	0.073
5200.000	1.072	226.280	5199.268	-9.208	-38.639	-9.208	39.721	256.597	0.106
5300.000	0.738	252.758	5299.256	-10.045	-39.930	-10.045	41.174	255.879	0.527
5400.000	0.660	248.254	5399.249	-10.449	-41.080	-10.449	42.388	255.729	0.095
5500.000	0.801	241.607	5499.241	-10.995	-42.230	-10.995	43.638	255.406	0.164
5600.000	0.780	223.029	5599.231	-11.825	-43.310	-11.825	44.895	254.728	0.256
5700.000	0.587	216.943	5699.224	-12.732	-44.082	-12.732	45.884	253.890	0.207
5800.000	1.115	199.197	5799.213	-14.060	-44.709	-14.060	46.868	252.543	0.584
5900.000	1.102	192.637	5899.194	-15.917	-45.240	-15.917	47.958	250.616	0.128

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
6000.000	1.383	191.338	5999.171	-18.038	-45.687	-18.038	49.119	248.455	0.282
6100.000	1.566	168.298	6099.138	-20.559	-45.647	-20.559	50.064	245.754	0.616
6200.000	2.127	176.144	6199.086	-23.748	-45.245	-23.748	51.099	242.306	0.614
6300.000	3.951	165.623	6298.942	-28.938	-44.265	-28.938	52.885	236.826	1.901
6400.000	6.953	163.779	6398.478	-38.089	-41.718	-38.089	56.491	227.603	3.006
6500.000	5.463	162.148	6497.889	-48.433	-38.568	-48.433	61.913	218.531	1.500
6600.000	3.127	163.638	6597.601	-55.582	-36.340	-55.582	66.408	213.177	2.339
6650.000	2.908	166.904	6647.532	-58.126	-35.668	-58.126	68.197	211.535	0.557