



**Company:** Noble Energy  
**Rig:** Production/Coretech  
**API #** 05-123-21153  
**Date:** 4/17/14  
**Surveyor:** Levi Sheldon  
**VS:** 0.000  
**Lat :** 40.361  
**Long:** -104.565

**Well:** Cross 32-11A  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** GRID North is 0.600 Degrees East  
**Declination:** 8.37  
**Depth Reference:** Ground Level  
**Elevation:** 4,708 Feet  
**Total Depth as Drilled:** 7,227 Feet

**Lat & Long obtained by handheld GPS at wellhead**

MS Gyro Survey Calculations

Depth	Inc	AzG	N/-S	E/-W	TVD	DL	VS	CD	Cbgr
0.000	0.000	0.000	0.000	0.000	0.000	****	0.000	0.000	0.000
100.000	0.235	90.555	-0.002	0.205	100.000	0.235	-0.002	0.205	90.555
200.000	0.272	16.155	0.224	0.476	199.999	0.308	0.224	0.526	64.753
300.000	1.004	2.404	1.328	0.579	299.992	0.742	1.328	1.449	23.542
400.000	1.867	23.545	3.697	1.266	399.960	0.998	3.697	3.908	18.905
500.000	2.199	48.676	6.457	3.358	499.899	0.942	6.457	7.278	27.474
600.000	2.249	51.982	8.933	6.344	599.824	0.138	8.933	10.956	35.384
700.000	2.242	49.346	11.415	9.374	699.747	0.104	11.415	14.771	39.392
800.000	2.184	45.707	14.020	12.222	799.673	0.152	14.020	18.600	41.080
900.000	2.192	51.915	16.531	15.091	899.600	0.237	16.531	22.383	42.394
1000.000	2.303	47.382	19.071	18.075	999.523	0.209	19.071	26.276	43.465
1100.000	2.373	47.928	21.819	21.091	1099.440	0.073	21.819	30.346	44.028
1200.000	2.393	55.498	24.389	24.349	1199.354	0.315	24.389	34.463	44.952
1300.000	2.292	41.586	27.068	27.397	1299.271	0.576	27.068	38.513	45.346
1400.000	2.018	39.869	29.915	29.853	1399.200	0.281	29.915	42.263	44.941
1500.000	1.985	47.622	32.434	32.261	1499.139	0.273	32.434	45.747	44.847
1600.000	1.956	38.850	34.930	34.611	1599.080	0.303	34.930	49.174	44.737
1700.000	2.089	43.426	37.583	36.934	1699.018	0.209	37.583	52.693	44.501
1800.000	2.021	48.795	40.068	39.514	1798.954	0.204	40.068	56.274	44.601
1900.000	2.079	40.361	42.612	42.015	1898.890	0.307	42.612	59.842	44.596
2000.000	2.254	53.982	45.151	44.781	1998.819	0.542	45.151	63.592	44.764
2100.000	2.350	47.138	47.702	47.875	2098.739	0.291	47.702	67.583	45.103
2200.000	2.352	50.835	50.393	50.969	2198.654	0.152	50.393	71.675	45.325
2300.000	2.199	50.040	52.921	54.030	2298.576	0.157	52.921	75.630	45.594
2400.000	1.819	47.270	55.230	56.666	2398.514	0.392	55.230	79.129	45.735
2500.000	1.832	51.447	57.302	59.081	2498.463	0.134	57.302	82.306	45.876
2600.000	1.682	47.811	59.284	61.419	2598.416	0.186	59.284	85.363	46.013
2700.000	1.731	47.642	61.287	63.622	2698.372	0.049	61.287	88.340	46.071
2800.000	1.678	47.759	63.289	65.822	2798.328	0.053	63.289	91.313	46.124
2900.000	1.562	50.267	65.145	67.954	2898.288	0.136	65.145	94.136	46.209
3000.000	1.245	53.449	66.663	69.875	2998.258	0.327	66.663	96.573	46.348
3100.000	0.895	74.594	67.517	71.500	3098.240	0.522	67.517	98.340	46.641
3200.000	0.954	81.693	67.845	73.077	3198.227	0.129	67.845	99.715	47.126
3300.000	0.889	102.246	67.800	74.659	3298.215	0.335	67.800	100.851	47.756
3400.000	0.978	115.395	67.270	76.188	3398.202	0.231	67.270	101.636	48.557
3500.000	1.136	77.282	67.122	77.926	3498.186	0.706	67.122	102.849	49.260

3600.000	0.955	72.271	67.594	79.687	3598.169	0.203	67.594	104.494	49.694
3700.000	1.187	37.535	68.669	81.111	3698.153	0.676	68.669	106.275	49.749
3800.000	1.088	62.009	69.936	82.580	3798.133	0.492	69.936	108.215	49.739
3900.000	0.803	85.613	70.435	84.117	3898.120	0.477	70.435	109.712	50.059
4000.000	0.864	156.830	69.795	85.112	3998.112	0.972	69.795	110.070	50.647
4100.000	0.388	207.115	68.800	85.254	4098.106	0.685	68.800	109.553	51.096
4200.000	0.887	297.749	68.860	84.416	4198.101	0.971	68.860	108.939	50.795
4300.000	1.074	299.788	69.685	82.918	4298.087	0.191	69.685	108.312	49.956
4400.000	1.079	312.836	70.791	81.414	4398.069	0.245	70.791	107.887	48.992
4500.000	0.701	290.685	71.648	80.151	4498.057	0.504	71.648	107.506	48.206
4600.000	1.083	227.710	71.228	78.879	4598.047	0.987	71.228	106.280	47.918
4700.000	1.142	280.668	70.777	77.201	4698.031	0.993	70.777	104.735	47.486
4800.000	0.588	248.151	70.770	75.746	4798.020	0.719	70.770	103.662	46.945
4900.000	0.506	264.550	70.537	74.830	4898.015	0.176	70.537	102.835	46.691
5000.000	0.206	259.532	70.463	74.214	4998.013	0.301	70.463	102.336	46.485
5100.000	0.202	37.308	70.570	74.143	5098.013	0.380	70.570	102.359	46.415
5200.000	0.667	77.497	70.836	74.818	5198.010	0.530	70.836	103.032	46.566
5300.000	1.124	17.973	71.895	75.690	5297.999	0.973	71.895	104.392	46.473
5400.000	0.515	54.703	73.087	76.359	5397.989	0.775	73.087	105.700	46.254
5500.000	0.364	19.683	73.646	76.833	5497.986	0.301	73.646	106.428	46.213
5600.000	0.340	135.016	73.735	77.149	5597.985	0.595	73.735	106.719	46.296
5700.000	0.599	84.033	73.580	77.878	5697.982	0.467	73.580	107.140	46.626
5750.000	1.024	80.603	73.680	78.579	5747.977	0.856	73.680	107.719	46.843

of True North