



**Company:** Noble Energy  
**Rig:** PRODUCTION / VES  
**API #** 05-123-16965  
**Date:** 1/17/2014  
**Surveyor:** DUSTIN SKORUPPA  
**VS:** 0.000  
**Lat :** 40.2599  
**Long:** -104.492

**Well:** KEISHA WHITE D01-01  
**Location:** Weld County, Colorado  
**North Reference:** GRID  
**Convergence:** Grid north is 0.68 East of True N  
**Declination:** 8.36  
**Depth Reference:** Ground Level  
**Elevation:** 4758  
**Total Depth as Drilled:** 6996

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

**Gyro Survey Calculations**

Depth	Inc	AZI	N/S	E/W	TVD	DL	VS	CD	Cbrg
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.616	267.998	-0.019	-0.537	99.998	0.616	-0.019	0.537	267.998
200.000	0.641	228.514	-0.408	-1.493	199.993	0.425	-0.408	1.548	254.705
300.000	0.165	275.424	-0.766	-2.056	299.990	0.542	-0.766	2.194	249.573
400.000	0.302	259.209	-0.801	-2.458	399.989	0.151	-0.801	2.585	251.940
500.000	0.417	283.703	-0.765	-3.070	499.987	0.189	-0.765	3.164	256.018
600.000	0.803	265.537	-0.733	-4.123	599.981	0.427	-0.733	4.188	259.921
700.000	0.128	221.865	-0.871	-4.897	699.978	0.716	-0.871	4.973	259.915
800.000	0.275	205.790	-1.170	-5.076	799.977	0.156	-1.170	5.209	257.015
900.000	0.191	131.456	-1.497	-5.055	899.976	0.289	-1.497	5.272	253.504
1000.000	0.087	159.329	-1.678	-4.903	999.976	0.122	-1.678	5.183	251.106
1100.000	0.488	190.765	-2.168	-4.956	1099.975	0.417	-2.168	5.410	246.379
1200.000	0.260	186.704	-2.811	-5.062	1199.972	0.229	-2.811	5.791	240.954
1300.000	0.729	164.994	-3.651	-4.924	1299.968	0.496	-3.651	6.130	233.446
1400.000	0.172	130.092	-4.362	-4.645	1399.965	0.596	-4.362	6.372	226.802
1500.000	0.461	115.380	-4.630	-4.167	1499.964	0.298	-4.630	6.229	221.984
1600.000	0.244	123.994	-4.922	-3.627	1599.962	0.223	-4.922	6.114	216.386
1700.000	0.461	104.696	-5.143	-3.061	1699.960	0.244	-5.143	5.985	210.760
1800.000	0.369	121.611	-5.414	-2.397	1799.957	0.152	-5.414	5.921	203.883
1900.000	0.479	24.792	-5.203	-1.947	1899.955	0.639	-5.203	5.556	200.518
2000.000	0.341	47.780	-4.624	-1.552	1999.953	0.212	-4.624	4.877	198.550
2100.000	0.545	341.128	-3.974	-1.485	2099.950	0.515	-3.974	4.242	200.489
2200.000	0.839	327.363	-2.908	-2.034	2199.943	0.336	-2.908	3.548	214.971
2300.000	0.737	300.554	-1.964	-2.982	2299.934	0.379	-1.964	3.571	236.637
2400.000	0.307	348.866	-1.374	-3.588	2399.930	0.580	-1.374	3.842	249.047
2500.000	0.569	322.040	-0.719	-3.945	2499.927	0.326	-0.719	4.010	259.668
2600.000	0.198	331.187	-0.176	-4.334	2599.925	0.375	-0.176	4.338	267.674
2700.000	0.203	7.262	0.151	-4.395	2699.924	0.124	0.151	4.398	271.966
2800.000	0.444	14.709	0.701	-4.275	2799.922	0.244	0.701	4.332	279.311
2900.000	0.690	37.730	1.552	-3.808	2899.917	0.331	1.552	4.112	292.177
3000.000	0.736	17.871	2.640	-3.242	2999.910	0.250	2.640	4.181	309.157
3100.000	0.608	33.029	3.696	-2.756	3099.903	0.218	3.696	4.610	323.290
3200.000	1.453	4.239	5.405	-2.373	3199.886	0.966	5.405	5.903	336.296
3300.000	1.786	2.256	8.226	-2.218	3299.846	0.338	8.226	8.520	344.911
3400.000	1.942	348.869	11.446	-2.484	3399.794	0.461	11.446	11.712	347.757
3500.000	1.376	337.479	14.217	-3.271	3499.752	0.653	14.217	14.589	347.045

3600.000	1.626	342.545	16.679	-4.156	3599.718	0.283	16.679	17.189	346.009
3700.000	1.742	336.991	19.431	-5.175	3699.674	0.200	19.431	20.109	345.086
3800.000	1.354	347.828	21.985	-6.018	3799.638	0.484	21.985	22.794	344.690
3900.000	1.202	345.892	24.157	-6.523	3899.613	0.158	24.157	25.022	344.889
4000.000	1.534	340.909	26.439	-7.217	3999.584	0.352	26.439	27.406	344.733
4100.000	0.865	341.594	28.420	-7.893	4099.562	0.669	28.420	29.496	344.479
4200.000	1.541	321.035	30.182	-8.977	4199.540	0.792	30.182	31.488	343.437
4300.000	0.992	304.810	31.721	-10.533	4299.515	0.651	31.721	33.424	341.632
4400.000	1.492	292.185	32.707	-12.449	4399.492	0.567	32.707	34.996	339.163
4500.000	1.749	301.117	33.987	-14.960	4499.452	0.360	33.987	37.134	336.242
4600.000	1.624	294.180	35.356	-17.559	4599.409	0.239	35.356	39.476	333.590
4700.000	1.515	297.098	36.538	-20.028	4699.371	0.134	36.538	41.667	331.271
4800.000	1.227	332.010	38.086	-21.707	4799.344	0.867	38.086	43.838	330.318
4900.000	1.754	309.387	40.002	-23.393	4899.311	0.781	40.002	46.340	329.681
5000.000	1.115	297.566	41.424	-25.439	4999.279	0.701	41.424	48.611	328.446
5100.000	1.765	282.170	42.199	-27.807	5099.247	0.750	42.199	50.537	326.617
5200.000	2.127	263.147	42.302	-31.154	5199.190	0.736	42.302	52.536	323.629
5300.000	2.796	267.592	41.978	-35.434	5299.098	0.695	41.978	54.934	319.832
5400.000	2.227	278.332	42.157	-39.794	5399.002	0.736	42.157	57.972	316.652
5500.000	1.520	284.549	42.772	-43.000	5498.948	0.735	42.772	60.650	314.847
5600.000	1.101	292.487	43.473	-45.172	5598.921	0.455	43.473	62.692	313.902
5700.000	1.033	290.040	44.149	-46.906	5698.904	0.082	44.149	64.415	313.265
5800.000	0.176	320.115	44.576	-47.852	5798.898	0.885	44.576	65.397	312.970
5900.000	0.477	340.492	45.086	-48.089	5898.896	0.318	45.086	65.919	313.154
6000.000	0.743	277.121	45.558	-48.871	5998.891	0.680	45.558	66.813	312.991
6100.000	0.738	266.850	45.603	-50.158	6098.883	0.133	45.603	67.790	312.277
6200.000	0.746	275.045	45.625	-51.450	6198.875	0.106	45.625	68.766	311.566
6300.000	0.760	282.810	45.829	-52.745	6298.866	0.103	45.829	69.874	310.987
6400.000	0.626	265.495	45.934	-53.936	6398.859	0.247	45.934	70.845	310.419
6500.000	0.272	184.846	45.654	-54.500	6498.856	0.641	45.654	71.096	309.952
6600.000	0.376	189.960	45.095	-54.577	6598.855	0.108	45.095	70.797	309.566
6700.000	0.325	173.043	44.490	-54.599	6698.853	0.115	44.490	70.431	309.175

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