



Company: Noble Energy

Rig: Production / Coretech

API # 05-123-20817

Date: 5/28/2014

Surveyor: Norman Cowan

VS: 0.000

Lat : 40.144

Long: -104.567

Well: Sloan 41-17

Location: Weld County, Colorado

North Reference: GRID

Convergence: Grid north is 0.6 Deg East of True

Declination: 8.34 Degrees

Depth Reference: Ground Level

Elevation: 4875 Feet

Total Depth as Drilled: 7255 Feet

Lat & Long obtained by handheld GPS at wellhead

MS Gyro Survey Calculations

Depth	Inc	AzG	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
100.000	0.726	130.600	-0.413	0.481	99.997	0.726	-0.413	0.634	130.600
200.000	0.865	122.171	-1.227	1.602	199.988	0.181	-1.227	2.018	127.455
300.000	0.508	148.321	-2.006	2.474	299.981	0.467	-2.006	3.185	129.042
400.000	0.574	154.869	-2.837	2.919	399.976	0.091	-2.837	4.070	134.180
500.000	0.522	157.504	-3.711	3.306	499.972	0.058	-3.711	4.970	138.302
600.000	0.543	174.343	-4.603	3.527	599.967	0.157	-4.603	5.799	142.541
700.000	0.970	228.714	-5.634	2.938	699.959	0.789	-5.634	6.354	152.462
800.000	1.798	245.430	-6.845	0.874	799.930	0.913	-6.845	6.901	172.721
900.000	2.188	258.596	-7.875	-2.424	899.870	0.599	-7.875	8.239	197.107
1000.000	2.044	258.464	-8.609	-6.042	999.801	0.144	-8.609	10.518	215.063
1100.000	2.212	258.942	-9.336	-9.684	1099.732	0.169	-9.336	13.451	226.048
1200.000	2.147	250.797	-10.322	-13.347	1199.660	0.316	-10.322	16.872	232.283
1300.000	2.157	259.347	-11.286	-16.964	1299.590	0.321	-11.286	20.375	236.366
1400.000	2.271	257.365	-12.067	-20.747	1399.515	0.137	-12.067	24.001	239.816
1500.000	2.243	257.814	-12.913	-24.593	1499.438	0.033	-12.913	27.777	242.297
1600.000	2.021	252.552	-13.855	-28.187	1599.369	0.296	-13.855	31.408	243.824
1700.000	1.991	256.771	-14.781	-31.560	1699.307	0.151	-14.781	34.850	244.904
1800.000	1.922	252.394	-15.686	-34.850	1799.249	0.164	-15.686	38.217	245.767
1900.000	1.560	250.132	-16.656	-37.729	1899.203	0.369	-16.656	41.242	246.180
2000.000	1.293	258.878	-17.336	-40.116	1999.172	0.344	-17.336	43.702	246.628
2100.000	1.344	266.591	-17.624	-42.395	2099.145	0.185	-17.624	45.912	247.427
2200.000	1.333	291.049	-17.276	-44.652	2199.119	0.567	-17.276	47.877	248.849
2300.000	1.676	300.908	-16.106	-46.993	2299.085	0.429	-16.106	49.676	251.081
2400.000	1.857	303.352	-14.464	-49.601	2399.037	0.195	-14.464	51.667	253.743
2500.000	2.040	309.223	-12.448	-52.333	2498.979	0.271	-12.448	53.793	256.620
2600.000	1.501	297.015	-10.728	-54.878	2598.931	0.655	-10.728	55.917	258.939
2700.000	1.362	276.759	-9.994	-57.224	2698.901	0.522	-9.994	58.091	260.094
2800.000	1.548	272.203	-9.802	-59.754	2798.869	0.219	-9.802	60.552	260.684
2900.000	1.510	270.935	-9.728	-62.420	2898.833	0.051	-9.728	63.174	261.142
3000.000	1.376	272.508	-9.654	-64.937	2998.801	0.140	-9.654	65.651	261.544
3100.000	1.202	264.786	-9.697	-67.180	3098.776	0.245	-9.697	67.877	261.786
3200.000	1.244	298.767	-9.270	-69.176	3198.755	0.716	-9.270	69.795	262.368
3300.000	1.147	327.779	-7.901	-70.662	3298.734	0.606	-7.901	71.102	263.620
3400.000	1.077	334.410	-6.206	-71.601	3398.715	0.146	-6.206	71.870	265.046
3500.000	1.098	343.289	-4.441	-72.283	3498.697	0.170	-4.441	72.419	266.484

3600.000	0.628	324.464	-3.077	-72.877	3598.686	0.543	-3.077	72.942	267.582
3700.000	0.788	261.558	-2.732	-73.876	3698.679	0.751	-2.732	73.926	267.882
3800.000	1.318	231.196	-3.554	-75.452	3798.663	0.753	-3.554	75.536	267.304
3900.000	1.877	222.244	-5.487	-77.450	3898.624	0.610	-5.487	77.644	265.948
4000.000	1.991	217.129	-8.085	-79.600	3998.567	0.207	-8.085	80.009	264.201
4100.000	2.269	213.991	-11.111	-81.755	4098.498	0.302	-11.111	82.507	262.261
4200.000	3.021	206.734	-15.106	-84.047	4198.391	0.822	-15.106	85.394	259.811
4300.000	3.385	201.880	-20.199	-86.333	4298.234	0.454	-20.199	88.664	256.832
4400.000	3.712	211.075	-25.711	-89.104	4398.043	0.655	-25.711	92.739	253.904
4500.000	3.764	204.653	-31.467	-92.144	4497.831	0.422	-31.467	97.369	251.145
4600.000	3.850	205.344	-37.484	-94.950	4597.610	0.098	-37.484	102.081	248.457
4700.000	3.039	199.042	-43.024	-97.252	4697.429	0.894	-43.024	106.344	246.136
4800.000	2.678	193.024	-47.806	-98.643	4797.305	0.469	-47.806	109.617	244.144
4900.000	2.805	181.307	-52.528	-99.226	4897.191	0.573	-52.528	112.271	242.104
5000.000	3.138	168.466	-57.655	-98.734	4997.058	0.742	-57.655	114.335	239.717
5100.000	3.198	168.741	-63.072	-97.642	5096.905	0.062	-63.072	116.242	237.140
5200.000	3.194	168.611	-68.538	-96.548	5196.749	0.008	-68.538	118.402	234.629
5300.000	2.576	166.560	-73.454	-95.476	5296.622	0.626	-73.454	120.462	232.427
5400.000	2.191	164.646	-77.484	-94.447	5396.536	0.392	-77.484	122.164	230.635
5500.000	1.625	158.450	-80.646	-93.420	5496.480	0.602	-80.646	123.414	229.197
5600.000	1.352	141.456	-82.888	-92.164	5596.446	0.516	-82.888	123.954	228.033
5700.000	1.479	143.338	-84.846	-90.658	5696.416	0.135	-84.846	124.168	226.897
5800.000	1.529	133.600	-86.801	-88.921	5796.382	0.260	-86.801	124.264	225.691
5900.000	1.406	125.293	-88.430	-86.955	5896.349	0.245	-88.430	124.020	224.518
6000.000	1.478	125.975	-89.896	-84.910	5996.317	0.074	-89.896	123.656	223.366
6100.000	1.432	131.626	-91.483	-82.932	6096.285	0.151	-91.483	123.478	222.193
6200.000	1.405	109.776	-92.728	-80.845	6196.255	0.538	-92.728	123.022	221.083
6300.000	1.567	96.851	-93.306	-78.333	6296.222	0.372	-93.306	121.828	220.015
6400.000	1.648	99.498	-93.706	-75.557	6396.182	0.110	-93.706	120.373	218.880
6500.000	1.464	105.094	-94.276	-72.905	6496.146	0.238	-94.276	119.177	217.715
6600.000	1.259	105.475	-94.902	-70.612	6596.117	0.206	-94.902	118.290	216.651
6700.000	0.595	99.782	-95.284	-69.042	6696.104	0.669	-95.284	117.668	215.927
6800.000	0.134	102.870	-95.398	-68.416	6796.101	0.462	-95.398	117.395	215.647
6900.000	0.604	4.871	-94.899	-68.257	6896.099	0.637	-94.899	116.897	215.726
7000.000	2.009	359.775	-92.621	-68.219	6996.071	1.409	-92.621	115.032	216.373

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