

**GyroTracer Directional:**

Date: 8/1/2018  
 Operator: Adrian Bruner  
 API: 05-123-32007  
 Well Name: **Ray H 12-24D**  
 Field: Noble Energy Inc  
 Tool Type And Number: 1605  
 Bottom Depth: 7550.00  
 Total Well Depth: 7873.00  
 Latitude: 40.23552 N  
 Longitude: 104.61425 W  
 Grid Offset: 0.57

**Starting Point Coordinates (in local grid):**

Northing: 0.00 Easting: 0.00 Altitude: 4858.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 8/1/2018 8:39

End Time: 8/1/2018 10:30

Depth	Inclination	Azimuth	Closure Direction	True Depth	Coordinates		Dogleg Severity	Closure Distance
					+N/-S	+E/-W		
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.000	0.280	244.806	224.170	100.000	-0.350	-0.340	0.280	0.488
200.000	0.332	214.201	224.246	199.999	-0.674	-0.656	0.170	0.941
300.000	0.247	228.562	225.255	299.998	-0.871	-0.879	0.153	1.237
400.000	0.233	227.678	221.586	399.997	-1.186	-1.053	0.108	1.586
500.000	0.039	249.793	220.664	499.997	-1.469	-1.262	0.221	1.936
600.000	0.282	257.407	228.343	599.996	-1.513	-1.700	0.268	2.276
700.000	0.310	293.152	233.588	699.995	-1.464	-1.985	0.217	2.467
800.000	0.390	7.541	242.838	799.994	-1.124	-2.191	0.381	2.463
900.000	0.452	15.188	256.555	899.991	-0.467	-1.954	0.086	2.009
1000.000	0.410	6.052	280.671	999.988	0.350	-1.855	0.102	1.888
1100.000	0.485	9.150	303.609	1099.985	1.174	-1.767	0.062	2.121
1200.000	1.154	46.935	337.215	1199.974	2.292	-0.963	0.822	2.486
1300.000	0.971	72.558	12.433	1299.955	3.190	0.703	0.473	3.266
1400.000	0.963	74.639	32.570	1399.942	3.603	2.301	0.053	4.275
1500.000	1.015	71.144	44.231	1499.927	4.060	3.953	0.064	5.667
1600.000	1.490	44.841	47.350	1599.903	5.256	5.706	0.748	7.758
1700.000	3.062	34.008	41.743	1699.812	8.843	7.890	1.636	11.851
1800.000	4.720	43.418	41.407	1799.603	13.673	12.057	1.793	18.230
1900.000	6.100	40.454	41.253	1899.186	20.532	18.008	1.412	27.311
2000.000	7.669	46.636	41.629	1998.459	29.391	26.121	1.739	39.321
2100.000	9.025	46.186	43.437	2097.432	38.869	36.804	1.352	53.529
2200.000	10.203	46.855	44.117	2196.055	50.279	48.753	1.139	70.035
2300.000	12.814	49.483	45.009	2294.044	63.555	63.575	2.663	89.895

2400.000	13.569	50.561	46.041	2391.390	78.233	81.127	0.864	112.703
2500.000	13.760	46.921	46.439	2488.487	94.136	98.988	0.881	136.602
2600.000	13.690	45.836	46.384	2585.687	110.437	115.905	0.270	160.095
2700.000	13.689	46.836	46.292	2682.915	126.778	132.628	0.242	183.475
2800.000	14.110	46.855	46.454	2779.788	143.487	150.964	0.391	208.275
2900.000	13.330	46.425	46.539	2876.875	159.739	168.561	0.753	232.227
3000.000	14.480	49.666	46.711	2973.953	175.667	186.488	1.401	256.196
3100.000	14.502	46.136	46.740	3070.684	192.952	205.041	0.889	281.554
3200.000	13.630	48.821	46.766	3167.830	209.092	222.396	1.080	305.253
3300.000	13.504	48.929	46.956	3264.964	224.562	240.442	0.130	328.999
3400.000	12.463	50.168	47.140	3362.384	239.113	257.676	1.101	351.528
3500.000	11.998	48.405	47.211	3460.143	253.085	273.415	0.598	372.569
3600.000	12.104	43.799	47.256	3557.869	267.255	289.176	0.980	393.761
3700.000	12.490	42.301	47.097	3655.432	282.968	304.478	0.509	415.665
3800.000	12.599	43.898	46.941	3753.051	298.577	319.530	0.365	437.318
3900.000	13.980	43.911	46.911	3850.498	314.071	335.749	1.408	459.748
4000.000	14.940	45.827	46.803	3947.210	332.095	353.679	1.066	485.156
4100.000	14.090	48.773	46.752	4043.952	349.742	371.817	1.123	510.458
4200.000	13.660	47.788	46.836	4141.113	365.373	389.577	0.496	534.105
4300.000	15.684	46.383	46.885	4237.970	382.001	408.006	2.063	558.922
4400.000	15.349	45.340	46.863	4334.272	400.579	427.510	0.432	585.857
4500.000	15.518	46.554	46.835	4430.751	418.775	446.498	0.381	612.154
4600.000	14.901	46.446	46.865	4527.373	436.153	465.513	0.613	637.912
4700.000	13.741	44.417	46.796	4624.252	453.671	483.048	1.268	662.686
4800.000	12.577	46.896	46.788	4721.782	468.846	499.061	1.281	684.747
4900.000	10.813	49.195	46.831	4819.818	481.948	513.775	1.896	704.442
5000.000	8.226	55.399	46.900	4918.391	492.780	526.602	2.780	721.208
5100.000	6.988	61.263	47.091	5017.481	500.002	537.899	1.483	734.396
5200.000	6.103	59.615	47.267	5116.808	506.027	547.752	0.922	745.718
5300.000	4.830	61.553	47.433	5216.363	510.616	555.932	1.301	754.844
5400.000	3.537	72.538	47.575	5316.117	513.737	562.119	1.515	761.514
5500.000	2.056	76.373	47.713	5416.017	515.061	566.306	1.197	765.500
5600.000	1.036	88.522	47.821	5515.976	515.601	569.046	1.069	767.891
5700.000	0.784	82.705	47.893	5615.958	515.969	570.889	0.063	769.505
5800.000	0.821	86.615	47.952	5715.949	516.028	572.144	0.111	770.476
5900.000	0.711	79.915	48.011	5815.942	516.014	573.320	0.140	771.340
6000.000	0.821	105.653	48.078	5915.935	515.806	574.440	0.384	772.035
6100.000	0.964	120.925	48.171	6015.925	515.292	575.737	0.275	772.657
6200.000	1.080	91.235	48.282	6115.910	514.752	577.388	0.525	773.529
6300.000	1.308	105.848	48.409	6215.886	514.348	579.501	0.398	774.839
6400.000	0.966	101.520	48.532	6315.865	513.866	581.466	0.390	775.990
6500.000	0.640	86.990	48.603	6415.856	513.766	582.814	0.365	776.935
6600.000	0.598	78.922	48.652	6515.850	513.833	583.892	0.154	777.788
6700.000	0.587	65.768	48.697	6615.843	514.010	585.033	0.155	778.762
6800.000	0.400	127.081	48.739	6715.837	514.119	586.009	0.547	779.567
6900.000	0.944	162.985	48.822	6815.829	512.996	586.448	0.632	779.158
7000.000	1.004	177.717	48.925	6915.816	511.412	586.764	0.258	778.353
7100.000	0.556	186.642	49.004	7015.805	510.023	586.799	0.498	777.468
7200.000	0.466	284.363	48.976	7115.801	509.845	586.010	0.715	776.756
7300.000	0.437	270.904	48.933	7215.798	509.888	585.172	0.107	776.152

7400.000	0.239	292.011	48.900	7315.795	509.947	584.563	0.221	775.732
7500.000	0.190	232.421	48.880	7415.794	509.907	584.111	0.260	775.365
7550.030	0.630	258.050	48.864	7465.823	509.960	583.845	0.501	775.199