

**GyroTracer Directional:**

Date: 10/24/2018  
 Operator : Adrian Bruner  
 API: 05-123-23530  
 Well Name: **Hungenberg E 28-12**  
 Field : Noble Energy Inc  
 Tool Type And Number: 1719  
 Bottom Depth : 7000.00  
 Total Well Depth: 7231.00  
 Latitude : 40.455412 N  
 Longitude : 104.675228 W  
 Grid Offset : 0.53

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

Northing: 0.00      Easting: 0.00      Altitude: 4704.00

**Description:**

*Azimuth measured in degrees and referenced to local grid*

*Inclination measured from Vertical*

*Length measured in US survey feet*

Start Time: 10/24/2018 11:06

End Time: 10/24/2018 12:19

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	0.670	29.534	33.555	99.990	0.980	0.650	0.670	1.176
200.000	0.490	352.071	28.068	199.985	1.777	0.948	0.416	2.014
300.000	1.217	19.277	26.013	299.971	3.235	1.579	0.794	3.600
400.000	1.632	35.747	26.572	399.943	5.285	2.643	0.607	5.909
500.000	1.755	50.804	30.813	499.902	7.474	4.458	0.412	8.703
600.000	1.984	51.767	33.454	599.851	9.851	6.509	0.246	11.807
700.000	1.984	35.682	34.425	699.796	12.467	8.544	0.570	15.114
800.000	1.843	25.967	34.180	799.737	15.327	10.409	0.545	18.527
900.000	2.104	41.432	34.258	899.683	17.999	12.259	0.659	21.777
1000.000	1.559	41.168	34.318	999.627	20.696	14.127	0.593	25.058
1100.000	2.055	31.549	34.544	1099.576	23.249	16.005	0.333	28.225
1200.000	1.732	50.344	34.771	1199.534	25.531	17.726	0.701	31.081
1300.000	1.504	51.286	35.213	1299.498	27.564	19.453	0.050	33.737
1400.000	1.319	48.082	35.813	1399.466	29.369	21.191	0.065	36.216
1500.000	1.567	47.967	36.653	1499.437	30.887	22.983	0.316	38.500
1600.000	1.382	64.048	37.556	1599.411	32.210	24.765	0.411	40.630
1700.000	1.373	59.186	38.435	1699.388	33.407	26.511	0.105	42.648
1800.000	1.223	62.985	39.273	1799.364	34.602	28.295	0.155	44.698
1900.000	0.951	44.922	39.945	1899.345	35.693	29.892	0.479	46.557
2000.000	0.642	52.113	40.326	1999.337	36.359	30.863	0.392	47.692
2100.000	0.053	334.145	40.313	2099.334	36.732	31.166	0.664	48.172
2200.000	0.286	266.386	39.829	2199.332	37.117	30.956	0.434	48.331
2300.000	0.882	295.827	38.734	2299.327	37.639	30.191	0.753	48.252

2400.000	0.827	286.058	37.387	2399.319	38.233	29.218	0.076	48.119
2500.000	1.019	303.402	35.835	2499.310	38.932	28.115	0.433	48.023
2600.000	0.737	313.024	34.165	2599.299	39.614	26.886	0.232	47.876
2700.000	0.602	287.720	32.414	2699.288	40.350	25.621	0.250	47.797
2800.000	0.786	287.949	30.574	2799.275	41.084	24.272	0.133	47.718
2900.000	0.894	284.444	28.810	2899.263	41.812	22.996	0.270	47.718
3000.000	0.660	313.520	27.400	2999.255	42.319	21.936	0.547	47.667
3100.000	0.512	306.410	26.088	3099.248	42.832	20.972	0.069	47.691
3200.000	0.309	275.767	25.182	3199.245	43.148	20.288	0.432	47.680
3300.000	0.895	81.708	25.989	3299.240	43.009	20.966	1.480	47.847
3400.000	0.832	89.530	26.844	3399.236	43.100	21.813	0.146	48.306
3500.000	0.174	71.367	27.618	3499.232	43.052	22.525	0.615	48.588
3600.000	0.440	53.862	28.355	3599.227	43.191	23.309	0.362	49.080
3700.000	0.953	61.628	29.490	3699.215	43.636	24.677	0.557	50.131
3800.000	0.950	63.010	30.647	3799.203	44.004	26.072	0.053	51.148
3900.000	0.939	110.883	31.849	3899.193	44.094	27.391	0.744	51.909
4000.000	1.167	100.770	33.391	3999.180	43.849	28.903	0.335	52.518
4100.000	1.507	108.789	35.416	4099.158	43.493	30.927	0.295	53.368
4200.000	1.871	95.697	37.958	4199.122	42.928	33.489	0.367	54.446
4300.000	1.611	115.926	40.426	4299.086	42.349	36.075	0.548	55.632
4400.000	1.557	99.887	42.699	4399.047	41.983	38.740	0.465	57.126
4500.000	1.786	73.801	44.324	4499.012	42.302	41.315	0.754	59.131
4600.000	1.762	76.454	45.745	4598.963	43.139	44.276	0.140	61.817
4700.000	2.564	91.900	47.943	4698.879	43.579	48.303	0.897	65.056
4800.000	2.888	90.794	50.223	4798.774	43.982	52.832	0.371	68.743
4900.000	2.833	82.194	52.449	4898.653	44.354	57.697	0.412	72.775
5000.000	2.232	83.062	54.070	4998.554	44.964	62.048	0.611	76.628
5100.000	1.763	98.291	55.382	5098.483	45.365	65.716	0.687	79.854
5200.000	1.134	98.405	56.313	5198.447	45.557	68.344	0.622	82.136
5300.000	1.410	87.159	57.205	5298.422	45.431	70.510	0.305	83.879
5400.000	1.053	86.093	57.946	5398.401	45.416	72.527	0.216	85.573
5500.000	1.447	117.047	58.852	5498.381	44.945	74.366	0.795	86.892
5600.000	1.298	151.742	60.001	5598.360	43.892	76.025	0.747	87.786
5700.000	0.916	156.929	61.139	5698.343	42.502	77.115	0.297	88.052
5800.000	0.926	142.957	62.037	5798.331	41.429	78.038	0.218	88.353
5900.000	0.660	121.303	62.754	5898.324	40.527	78.703	0.406	88.525
6000.000	0.470	36.206	62.974	5998.321	40.373	79.147	0.756	88.849
6100.000	0.291	347.875	62.876	6098.318	40.727	79.506	0.321	89.331
6200.000	0.196	21.945	62.803	6198.315	40.959	79.708	0.312	89.616
6300.000	0.553	49.248	62.503	6298.311	41.577	79.879	0.216	90.052
6400.000	0.241	351.690	62.197	6398.307	42.292	80.205	0.476	90.673
6500.000	0.435	62.903	61.878	6498.303	42.978	80.417	0.447	91.181
6600.000	0.717	353.521	61.580	6598.297	43.812	80.962	0.686	92.056
6700.000	0.287	62.032	61.144	6698.293	44.549	80.846	0.636	92.307
6800.000	0.123	27.249	60.979	6798.290	45.003	81.117	0.175	92.764
6900.000	0.578	357.987	60.689	6898.285	45.780	81.541	0.481	93.514
7000.000	0.507	356.287	60.432	6998.279	46.536	82.024	0.129	94.306
7000.010	0.500	356.280	60.432	6998.289	46.536	82.024	0.175	94.306