



Company/Rig: NOBLE ENERGY/ V.E.S.
WELL/API#: NOFFSINGER 44-15/05-123-16529
DECLINATION: 8.35 Degrees
TD AS DRILLED: 7331 Feet
COUNTY/STATE: WELD/COLORADO
VS-Azi: 0.000 Degrees
Latitude: 40.30575, Longitude: -104.75639
Grid North = True North -0.48 degs (NAD 27)
Grid Correction Applied = -0.48 degs



DEPTH REFERENCE : RKB=SURFACE ELEVATION=4729'

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: noffsinger44-15-de_01.ut

Minimum Curvature Method

Report Date/Time: 12/1/2015 / 09:34

LAT & LONG OBTAINED BY HANDHELD GPS AT WELLHEAD

NORTH REFERENCE: GRID

HENDERSON, COLORADO

303-853-4976

Surveyor: JAY HINMAN / Noffsinger 44-15

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.726	343.329	99.997	0.607	-0.182	0.607	0.633	343.329	0.726
200.000	0.481	348.438	199.992	1.625	-0.448	1.625	1.685	344.600	0.250
300.000	0.817	334.609	299.985	2.680	-0.837	2.680	2.808	342.649	0.368
400.000	1.178	343.794	399.970	4.312	-1.430	4.312	4.543	341.650	0.394
500.000	1.321	348.651	499.946	6.429	-1.944	6.429	6.716	343.177	0.178
600.000	1.252	347.781	599.921	8.627	-2.402	8.627	8.955	344.442	0.072
700.000	0.880	3.377	699.904	10.461	-2.588	10.461	10.776	346.105	0.469
800.000	0.909	10.868	799.892	12.006	-2.393	12.006	12.242	348.728	0.121
900.000	1.359	9.398	899.872	13.956	-2.050	13.956	14.106	351.644	0.451
1000.000	1.187	0.608	999.847	16.162	-1.845	16.162	16.267	353.487	0.260
1100.000	1.118	354.427	1099.827	18.169	-1.929	18.169	18.271	353.940	0.142
1200.000	1.409	5.759	1199.803	20.362	-1.900	20.362	20.451	354.669	0.382
1300.000	1.380	1.838	1299.773	22.789	-1.738	22.789	22.855	355.638	0.099
1400.000	0.936	342.894	1399.753	24.774	-1.940	24.774	24.850	355.523	0.581
1500.000	0.710	348.484	1499.742	26.162	-2.304	26.162	26.263	354.967	0.240
1600.000	1.055	330.016	1599.730	27.566	-2.888	27.566	27.717	354.020	0.444
1700.000	0.547	310.797	1699.721	28.676	-3.709	28.676	28.915	352.630	0.568
1800.000	0.517	309.455	1799.716	29.274	-4.419	29.274	29.606	351.417	0.033

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.000	0.893	283.819	1899.709	29.746	-5.523	29.746	30.255	349.482	0.482
2000.000	0.841	268.094	1999.697	29.908	-7.013	29.908	30.719	346.803	0.243
2100.000	0.634	288.909	2099.689	30.063	-8.271	30.063	31.180	344.618	0.336
2200.000	0.654	298.856	2199.683	30.518	-9.294	30.518	31.902	343.062	0.113
2300.000	0.677	353.766	2299.677	31.380	-9.858	31.380	32.892	342.561	0.614
2400.000	0.901	354.929	2399.668	32.751	-9.991	32.751	34.242	343.035	0.225
2500.000	0.843	6.877	2499.656	34.266	-9.973	34.266	35.687	343.773	0.190
2600.000	1.345	359.683	2599.638	36.170	-9.891	36.170	37.498	344.706	0.519
2700.000	1.250	348.992	2699.612	38.413	-10.106	38.413	39.720	345.261	0.260
2800.000	1.031	344.674	2799.592	40.351	-10.552	40.351	41.708	345.345	0.235
2900.000	0.956	1.961	2899.577	42.052	-10.761	42.052	43.407	345.646	0.308
3000.000	1.176	357.441	2999.560	43.911	-10.778	43.911	45.214	346.209	0.236
3100.000	0.992	7.584	3099.542	45.794	-10.710	45.794	47.030	346.837	0.265
3200.000	0.489	27.936	3199.534	47.029	-10.396	47.029	48.165	347.535	0.560
3300.000	0.256	70.107	3299.532	47.482	-9.986	47.482	48.521	348.124	0.345
3400.000	0.275	54.597	3399.531	47.697	-9.580	47.697	48.650	348.643	0.074
3500.000	0.481	149.410	3499.529	47.475	-9.171	47.475	48.353	349.066	0.573
3600.000	0.550	143.361	3599.525	46.729	-8.671	46.729	47.526	349.488	0.088
3700.000	0.586	131.982	3699.520	46.001	-8.004	46.001	46.692	350.129	0.118
3800.000	1.054	123.765	3799.510	45.148	-6.859	45.148	45.666	351.361	0.482
3900.000	1.002	135.177	3899.494	44.016	-5.478	44.016	44.356	352.906	0.211
4000.000	1.011	142.159	3999.478	42.699	-4.320	42.699	42.917	354.223	0.123
4100.000	1.326	145.011	4099.457	41.055	-3.116	41.055	41.173	355.660	0.321
4200.000	1.297	149.766	4199.431	39.129	-1.882	39.129	39.174	357.246	0.113
4300.000	1.180	144.184	4299.408	37.316	-0.710	37.316	37.323	358.911	0.168
4400.000	0.966	150.007	4399.390	35.751	0.314	35.751	35.753	0.504	0.240
4500.000	0.667	129.483	4499.380	34.651	1.185	34.651	34.671	1.958	0.413
4600.000	0.254	121.040	4599.377	34.167	1.824	34.167	34.215	3.056	0.418
4700.000	0.633	84.176	4699.374	34.109	2.563	34.109	34.205	4.298	0.456
4800.000	0.515	334.762	4799.371	34.571	2.922	34.571	34.695	4.831	0.940
4900.000	0.372	29.062	4899.368	35.262	2.888	35.262	35.380	4.682	0.424
5000.000	0.349	334.026	4999.367	35.819	2.912	35.819	35.937	4.648	0.334
5100.000	0.559	314.394	5099.364	36.434	2.430	36.434	36.515	3.816	0.259
5200.000	0.170	269.131	5199.362	36.773	1.933	36.773	36.824	3.010	0.456
5300.000	0.353	289.504	5299.360	36.873	1.495	36.873	36.904	2.322	0.202
5400.000	0.294	43.792	5399.360	37.162	1.382	37.162	37.187	2.130	0.545
5500.000	0.361	18.618	5499.358	37.645	1.661	37.645	37.682	2.526	0.157
5600.000	0.148	344.223	5599.357	38.068	1.726	38.068	38.107	2.596	0.253
5700.000	0.524	77.606	5699.356	38.290	2.137	38.290	38.349	3.195	0.553
5800.000	0.390	54.642	5799.352	38.585	2.862	38.585	38.691	4.242	0.224

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5900.000	1.159	359.158	5899.344	39.793	3.124	39.793	39.916	4.489	0.991
6000.000	1.212	2.386	5999.322	41.861	3.154	41.861	41.980	4.308	0.085
6100.000	0.333	45.553	6099.313	43.121	3.405	43.121	43.255	4.515	0.996
6200.000	0.969	129.114	6199.307	42.791	4.268	42.791	43.004	5.696	0.988
6300.000	1.609	160.259	6299.282	40.936	5.399	40.936	41.291	7.513	0.927
6400.000	2.038	163.431	6399.232	37.910	6.380	37.910	38.443	9.553	0.440
6500.000	1.923	171.799	6499.172	34.545	7.127	34.545	35.272	11.657	0.311
6600.000	2.400	181.819	6599.101	30.791	7.299	30.791	31.644	13.337	0.607
6700.000	1.915	189.806	6699.030	27.051	6.948	27.051	27.930	14.406	0.570
6800.000	1.888	189.770	6798.975	23.782	6.384	23.782	24.624	15.027	0.027
6900.000	2.385	189.194	6898.905	20.105	5.772	20.105	20.917	16.020	0.498
7000.000	2.106	175.529	6998.829	16.219	5.583	16.219	17.153	18.996	0.602
7100.000	1.904	180.302	7098.768	12.727	5.718	12.727	13.952	24.193	0.262