



Company: Anadarko Petroleum  
 Well: Cannon Red W 15-12  
 API: 05-123-16515  
 Rig Name: Production/ VES  
 State/County: Colorado/Weld  
 Latitude: 40.136, Longitude: -104.771  
 Directions are relative to True North  
 VS-Azi: 0.000 Degrees



**FIELD COPY ONLY (NOT DEFINITIVE)**

Depth Reference : RKB= Ground Level

**DRILLOG GYRO SURVEY CALCULATIONS**

Filename: pre.ut  
 Minimum Curvature Method  
 Report Date/Time: 11/16/2013 / 15:39

Vaughn Energy Services  
 Henderson, CO 80640  
 303-853-4976  
 Sean Bratt

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	0.149	121.913	100.000	-0.069	0.110	-0.069	0.130	121.913	0.149
200.000	0.152	113.808	200.000	-0.191	0.342	-0.191	0.392	119.171	0.022
300.000	0.199	25.691	299.999	-0.088	0.539	-0.088	0.546	99.280	0.247
400.000	0.372	329.382	399.998	0.348	0.449	0.348	0.568	52.230	0.310
500.000	0.484	321.779	499.995	0.959	0.022	0.959	0.959	1.329	0.125
600.000	0.339	295.616	599.993	1.419	-0.506	1.419	1.507	340.380	0.234
700.000	0.397	321.335	699.991	1.817	-0.989	1.817	2.069	331.447	0.173
800.000	0.430	342.400	799.988	2.445	-1.318	2.445	2.777	331.664	0.154
900.000	0.643	300.845	899.984	3.090	-1.914	3.090	3.635	328.229	0.430
1000.000	0.542	299.607	999.979	3.611	-2.807	3.611	4.574	322.147	0.103
1100.000	0.402	273.172	1099.976	3.864	-3.568	3.864	5.259	317.285	0.255
1200.000	0.521	290.198	1199.972	4.040	-4.344	4.040	5.933	312.925	0.180
1300.000	0.358	290.112	1299.969	4.305	-5.064	4.305	6.647	310.366	0.162
1400.000	0.489	301.935	1399.967	4.638	-5.720	4.638	7.364	309.037	0.157
1500.000	0.595	256.553	1499.963	4.743	-6.587	4.743	8.117	305.757	0.429
1600.000	0.392	300.997	1599.959	4.799	-7.385	4.799	8.807	303.015	0.418
1700.000	0.433	286.717	1699.957	5.084	-8.040	5.084	9.513	302.304	0.110
1800.000	0.614	301.460	1799.952	5.472	-8.859	5.472	10.413	301.701	0.224
1900.000	0.624	283.774	1899.947	5.881	-9.845	5.881	11.468	300.852	0.191
2000.000	0.634	311.838	1999.941	6.380	-10.786	6.380	12.532	300.603	0.305
2100.000	0.777	300.855	2099.933	7.096	-11.780	7.096	13.753	301.064	0.197
2200.000	0.387	293.300	2199.928	7.578	-12.673	7.578	14.765	300.877	0.397
2300.000	0.544	322.137	2299.925	8.086	-13.274	8.086	15.543	301.348	0.277
2400.000	0.474	312.332	2399.921	8.739	-13.871	8.739	16.395	302.212	0.111
2500.000	0.512	301.515	2499.917	9.251	-14.558	9.251	17.249	302.435	0.101
2600.000	0.456	289.427	2599.914	9.618	-15.315	9.618	18.084	302.129	0.116
2700.000	0.747	272.889	2699.908	9.783	-16.341	9.783	19.045	300.908	0.336
2800.000	0.942	273.086	2799.897	9.860	-17.812	9.860	20.359	298.966	0.195
2900.000	1.054	258.290	2899.882	9.717	-19.534	9.717	21.818	296.448	0.280
3000.000	0.713	239.744	2999.870	9.217	-20.972	9.217	22.909	293.726	0.442
3100.000	0.147	238.919	3099.867	8.838	-21.619	8.838	23.356	292.234	0.565
3200.000	0.219	322.689	3199.867	8.924	-21.845	8.924	23.597	292.220	0.250
3300.000	0.354	345.807	3299.865	9.375	-22.037	9.375	23.948	293.046	0.175
3400.000	0.280	301.156	3399.864	9.801	-22.322	9.801	24.379	293.706	0.250
3500.000	0.094	352.151	3499.864	10.009	-22.543	10.009	24.665	293.942	0.233

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
3600.000	0.330	274.404	3599.863	10.112	-22.841	10.112	24.980	293.880	0.324
3700.000	0.631	334.212	3699.860	10.630	-23.368	10.630	25.672	294.461	0.545
3800.000	0.385	340.744	3799.856	11.443	-23.718	11.443	26.334	295.756	0.252
3900.000	0.617	10.362	3899.852	12.290	-23.732	12.290	26.726	297.378	0.340
4000.000	0.828	0.319	3999.844	13.543	-23.631	13.543	27.237	299.816	0.246
4100.000	0.911	8.296	4099.833	15.052	-23.513	15.052	27.918	302.626	0.146
4200.000	0.918	15.171	4199.820	16.611	-23.188	16.611	28.524	305.616	0.110
4300.000	1.146	353.918	4299.804	18.378	-23.085	18.378	29.507	308.524	0.442
4400.000	1.126	359.678	4399.784	20.355	-23.196	20.355	30.861	311.267	0.116
4500.000	1.074	6.820	4499.766	22.268	-23.090	22.268	32.078	313.961	0.146
4600.000	1.168	2.536	4599.747	24.216	-22.934	24.216	33.353	316.558	0.126
4700.000	0.928	357.549	4699.730	26.043	-22.923	26.043	34.695	318.646	0.256
4800.000	0.736	10.877	4799.720	27.483	-22.837	27.483	35.733	320.275	0.272
4900.000	0.657	342.916	4899.712	28.661	-22.884	28.661	36.676	321.395	0.345
5000.000	0.309	105.445	4999.710	29.137	-22.792	29.137	36.992	321.966	0.863
5100.000	1.096	103.976	5099.702	28.834	-21.604	28.834	36.030	323.157	0.786
5200.000	1.718	94.320	5199.672	28.490	-19.182	28.490	34.346	326.048	0.664
5300.000	1.399	87.670	5299.635	28.427	-16.468	28.427	32.852	329.916	0.366
5400.000	1.430	55.950	5399.606	29.175	-14.214	29.175	32.454	334.025	0.774
5500.000	1.185	56.345	5499.579	30.447	-12.319	30.447	32.845	337.971	0.246
5600.000	0.800	40.535	5599.564	31.550	-11.005	31.550	33.415	340.771	0.469
5700.000	0.641	26.111	5699.557	32.583	-10.305	32.583	34.174	342.449	0.240
5800.000	0.513	9.933	5799.552	33.526	-9.982	33.526	34.981	343.420	0.206
5900.000	0.647	25.942	5899.546	34.475	-9.658	34.475	35.802	344.350	0.209
6000.000	0.658	48.960	5999.540	35.359	-8.978	35.359	36.481	345.753	0.261
6100.000	1.512	45.901	6099.521	36.654	-7.598	36.654	37.433	348.290	0.856
6200.000	1.790	20.691	6199.481	39.033	-6.098	39.033	39.507	351.120	0.770
6300.000	1.205	9.546	6299.447	41.532	-5.372	41.532	41.878	352.630	0.651
6400.000	0.760	322.299	6399.433	43.094	-5.603	43.094	43.456	352.592	0.887
6500.000	1.114	295.495	6499.420	44.036	-6.886	44.036	44.571	351.113	0.554
6600.000	1.714	300.474	6599.389	45.213	-9.052	45.213	46.110	348.679	0.612
6700.000	1.151	278.691	6699.358	46.123	-11.333	46.123	47.495	346.195	0.773
6800.000	1.168	292.379	6799.338	46.663	-13.269	46.663	48.513	344.127	0.277
6900.000	1.569	297.406	6899.309	47.681	-15.426	47.681	50.115	342.072	0.418
7000.000	2.249	297.258	6999.253	49.210	-18.386	49.210	52.533	339.513	0.681
7100.000	2.619	304.758	7099.163	51.411	-22.008	51.411	55.924	336.826	0.487
7200.000	3.000	287.798	7199.044	53.514	-26.376	53.514	59.661	333.762	0.910
7300.000	3.107	273.887	7298.904	54.497	-31.571	54.497	62.982	329.915	0.747
7350.000	3.076	268.029	7348.831	54.543	-34.264	54.543	64.412	327.863	0.635

HORIZONTAL DISPLACEMENT IS  
64.412 FEET AT 327.863 DEGREES