



Company: Anadarko Petroleum
 Well: UPRC 19-10L
 API: 05-123-17444
 Rig Name: Production/ VES
 State/County: Colorado/Weld
 Latitude: 40.210, Longitude: -104.930
 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: gyro-de_01.ut
 Minimum Curvature Method
 Report Date/Time: 3/24/2014 / 16:59

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 | 0.771 | 209.904 | 99.997 | -0.584 | -0.336 | -0.584 | 0.673 | 209.904 | 0.771 |
| 200.000 | 0.631 | 220.013 | 199.990 | -1.589 | -1.025 | -1.589 | 1.891 | 212.834 | 0.187 |
| 300.000 | 0.309 | 222.717 | 299.986 | -2.209 | -1.562 | -2.209 | 2.705 | 215.272 | 0.323 |
| 400.000 | 0.303 | 257.391 | 399.985 | -2.465 | -2.003 | -2.465 | 3.176 | 219.101 | 0.182 |
| 500.000 | 0.279 | 238.977 | 499.983 | -2.648 | -2.469 | -2.648 | 3.620 | 223.004 | 0.096 |
| 600.000 | 0.548 | 321.537 | 599.981 | -2.399 | -2.975 | -2.399 | 3.822 | 231.123 | 0.582 |
| 700.000 | 0.667 | 8.124 | 699.976 | -1.448 | -3.190 | -1.448 | 3.503 | 245.585 | 0.493 |
| 800.000 | 0.587 | 342.634 | 799.971 | -0.383 | -3.261 | -0.383 | 3.283 | 263.305 | 0.287 |
| 900.000 | 0.558 | 323.180 | 899.966 | 0.496 | -3.706 | 0.496 | 3.739 | 277.625 | 0.196 |
| 1000.000 | 0.585 | 330.008 | 999.961 | 1.328 | -4.252 | 1.328 | 4.455 | 287.338 | 0.073 |
| 1100.000 | 0.690 | 320.780 | 1099.954 | 2.236 | -4.888 | 2.236 | 5.375 | 294.579 | 0.147 |
| 1200.000 | 0.745 | 318.666 | 1199.947 | 3.190 | -5.698 | 3.190 | 6.530 | 299.243 | 0.061 |
| 1300.000 | 0.653 | 315.638 | 1299.939 | 4.085 | -6.525 | 4.085 | 7.698 | 302.049 | 0.098 |
| 1400.000 | 0.728 | 321.461 | 1399.932 | 4.990 | -7.320 | 4.990 | 8.859 | 304.282 | 0.103 |
| 1500.000 | 0.737 | 321.858 | 1499.924 | 5.992 | -8.113 | 5.992 | 10.086 | 306.452 | 0.010 |
| 1600.000 | 0.759 | 322.941 | 1599.915 | 7.027 | -8.909 | 7.027 | 11.347 | 308.264 | 0.027 |
| 1700.000 | 0.717 | 287.416 | 1699.907 | 7.743 | -9.905 | 7.743 | 12.572 | 308.015 | 0.452 |
| 1800.000 | 0.920 | 332.093 | 1799.898 | 8.640 | -10.878 | 8.640 | 13.891 | 308.459 | 0.650 |
| 1900.000 | 0.887 | 275.265 | 1899.888 | 9.420 | -12.025 | 9.420 | 15.275 | 308.076 | 0.861 |
| 2000.000 | 0.811 | 311.658 | 1999.877 | 9.962 | -13.324 | 9.962 | 16.637 | 306.783 | 0.535 |
| 2100.000 | 0.970 | 301.749 | 2099.865 | 10.878 | -14.573 | 10.878 | 18.185 | 306.738 | 0.221 |
| 2200.000 | 1.020 | 328.132 | 2199.851 | 12.079 | -15.763 | 12.079 | 19.859 | 307.462 | 0.457 |
| 2300.000 | 0.937 | 278.667 | 2299.838 | 12.958 | -17.041 | 12.958 | 21.407 | 307.249 | 0.822 |
| 2400.000 | 1.143 | 303.726 | 2399.822 | 13.635 | -18.678 | 13.635 | 23.125 | 306.129 | 0.494 |
| 2500.000 | 1.187 | 324.341 | 2499.802 | 15.030 | -20.112 | 15.030 | 25.108 | 306.772 | 0.419 |
| 2600.000 | 1.169 | 328.365 | 2599.780 | 16.740 | -21.251 | 16.740 | 27.052 | 308.230 | 0.085 |
| 2700.000 | 1.001 | 278.423 | 2699.765 | 17.737 | -22.649 | 17.737 | 28.768 | 308.064 | 0.928 |
| 2800.000 | 1.022 | 308.461 | 2799.750 | 18.419 | -24.211 | 18.419 | 30.421 | 307.263 | 0.524 |
| 2900.000 | 1.081 | 287.295 | 2899.733 | 19.254 | -25.810 | 19.254 | 32.200 | 306.723 | 0.390 |
| 3000.000 | 0.874 | 237.118 | 2999.720 | 19.121 | -27.350 | 19.121 | 33.371 | 304.957 | 0.850 |
| 3100.000 | 0.867 | 238.587 | 3099.709 | 18.312 | -28.637 | 18.312 | 33.991 | 302.598 | 0.023 |
| 3200.000 | 0.920 | 234.865 | 3199.697 | 17.456 | -29.939 | 17.456 | 34.656 | 300.244 | 0.078 |
| 3300.000 | 0.805 | 226.126 | 3299.685 | 16.507 | -31.102 | 16.507 | 35.211 | 297.957 | 0.175 |
| 3400.000 | 0.832 | 154.342 | 3399.678 | 15.366 | -31.293 | 15.366 | 34.862 | 296.152 | 0.960 |
| 3500.000 | 0.784 | 158.314 | 3499.668 | 14.075 | -30.726 | 14.075 | 33.796 | 294.612 | 0.074 |

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| HORIZONTAL DISPLACEMENT IS 48.159 FEET AT 240.457 DEGREES |
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