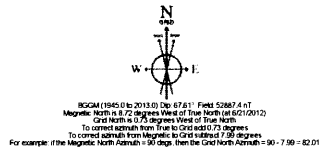
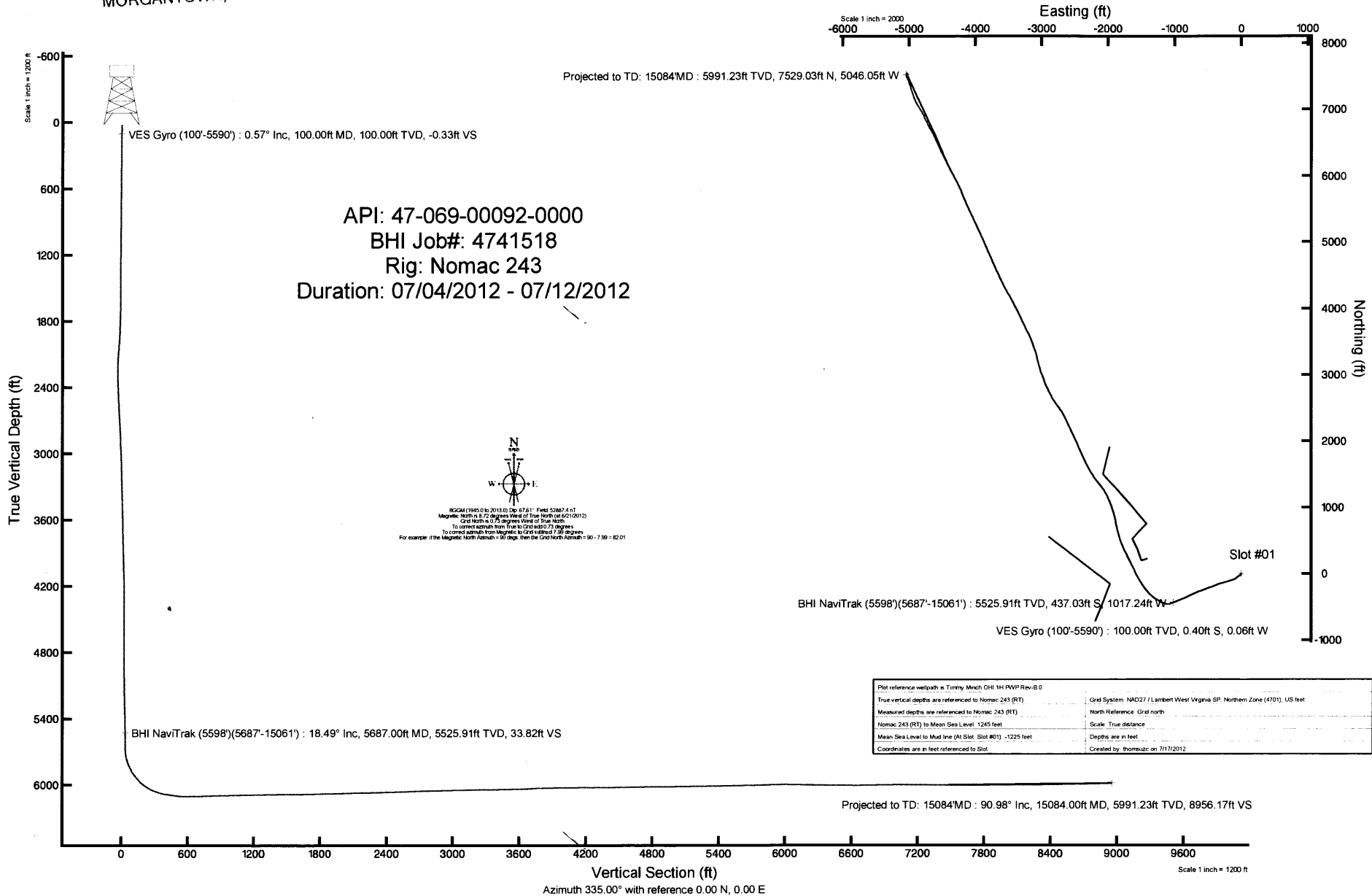


CHESAPEAKE APPALACHIA, LLC

Location: Ohio County, WV Slot: Slot #01
 Field: Ohio Well: Timmy Minch OHI 1H
 Facility: Timmy Minch OHI Wellbore: Timmy Minch OHI 1H PWB



WV GEOLOGICAL SURVEY
 MORGANTOWN, WV



| | |
|---|--|
| Plot reference wellpath is Timmy Minch OHI 1H PWB Rev: B0 | Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet |
| True vertical depths are referenced to Nomac 243 (RT) | North Reference: Grid north |
| Measured depths are referenced to Nomac 243 (RT) | Scale: True distance |
| Nomac 243 (RT) to Mean Sea Level: 1245 feet | Depths are in feet |
| Mean Sea Level to Mud line (At Slot: Slot #01) : -1225 feet | Created by: thomazic on 7/17/2012 |
| Coordinates are in feet referenced to Slot | |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
Page 1 of 8



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

REPORT SETUP INFORMATION

| | | | |
|---------------------|---|----------------------|--|
| Projection System | NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet | Software System | WellArchitect® 3.0.0 |
| North Reference | Grid | User | Thomsuzc |
| Scale | 0.999973 | Report Generated | 7/17/2012 at 4:10:46 PM |
| Convergence at slot | 0.73° West | Database/Source file | WA_Eastern_US/Timmy_Minch_OHI_1H_AWB.xml |

WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | 0.00 | 0.00 | 1679185.80 | 579468.00 | 40°05'07.136"N | 80°38'47.611"W |
| Facility Reference Pt | | | 1679185.80 | 579468.00 | 40°05'07.136"N | 80°38'47.611"W |
| Field Reference Pt | | | 0.00 | 0.00 | 38°17'12.460"N | 86°28'23.077"W |

WELLPATH DATUM

| | | | |
|--------------------------|-------------------|---|-------------------|
| Calculation method | Minimum curvature | Nomac 243 (RT) to Facility Vertical Datum | 20.00ft |
| Horizontal Reference Pt | Slot | Nomac 243 (RT) to Mean Sea Level | 1245.00ft |
| Vertical Reference Pt | Nomac 243 (RT) | Nomac 243 (RT) to Mud Line at Slot (Slot #01) | 20.00ft |
| MD Reference Pt | Nomac 243 (RT) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 335.00° |

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
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WV GEOLOGICAL SURVEY
MORGANTOWN, WV**REFERENCE WELLPATH IDENTIFICATION**

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

WELLPATH DATA (147 stations) † = interpolated/extrapolated station

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 0.00† | 0.000 | 188.900 | 0.00 | 0.00 | 0.00 | 0.00 | 1679185.80 | 579468.00 | 40°05'07.136"N | 80°38'47.611"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 |
| 20.00 | 0.000 | 188.900 | 20.00 | 0.00 | 0.00 | 0.00 | 1679185.80 | 579468.00 | 40°05'07.136"N | 80°38'47.611"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 |
| 108.00 | 0.630 | 188.900 | 108.00 | -0.40 | -0.48 | -0.07 | 1679185.73 | 579467.52 | 40°05'07.132"N | 80°38'47.612"W | 0.48 | 188.900 | 0.72 | 0.72 | 0.00 |
| 208.00 | 0.560 | 192.620 | 207.99 | -1.24 | -1.50 | -0.27 | 1679185.53 | 579466.50 | 40°05'07.121"N | 80°38'47.614"W | 1.52 | 190.094 | 0.08 | -0.07 | 3.72 |
| 308.00 | 0.340 | 182.320 | 307.99 | -1.90 | -2.27 | -0.39 | 1679185.41 | 579465.73 | 40°05'07.114"N | 80°38'47.616"W | 2.30 | 189.632 | 0.23 | -0.22 | -10.30 |
| 408.00 | 0.390 | 189.950 | 407.99 | -2.44 | -2.90 | -0.46 | 1679185.34 | 579465.10 | 40°05'07.108"N | 80°38'47.616"W | 2.94 | 188.932 | 0.07 | 0.05 | 7.63 |
| 508.00 | 0.480 | 176.410 | 507.98 | -3.11 | -3.66 | -0.49 | 1679185.31 | 579464.34 | 40°05'07.100"N | 80°38'47.617"W | 3.69 | 187.615 | 0.14 | 0.09 | -13.54 |
| 608.00 | 0.510 | 194.740 | 607.98 | -3.84 | -4.50 | -0.58 | 1679185.22 | 579463.50 | 40°05'07.092"N | 80°38'47.618"W | 4.54 | 187.285 | 0.16 | 0.03 | 18.33 |
| 708.00 | 0.400 | 182.690 | 707.98 | -4.49 | -5.28 | -0.71 | 1679185.09 | 579462.72 | 40°05'07.084"N | 80°38'47.619"W | 5.33 | 187.605 | 0.15 | -0.11 | -12.05 |
| 808.00 | 0.450 | 189.340 | 807.98 | -5.12 | -6.02 | -0.79 | 1679185.01 | 579461.98 | 40°05'07.077"N | 80°38'47.620"W | 6.07 | 187.435 | 0.07 | 0.05 | 6.65 |
| 908.00 | 0.650 | 189.620 | 907.97 | -5.92 | -6.97 | -0.94 | 1679184.86 | 579461.03 | 40°05'07.067"N | 80°38'47.622"W | 7.03 | 187.718 | 0.20 | 0.20 | 0.28 |
| 1008.00 | 0.440 | 150.390 | 1007.97 | -6.76 | -7.86 | -0.85 | 1679184.95 | 579460.14 | 40°05'07.058"N | 80°38'47.621"W | 7.91 | 186.166 | 0.42 | -0.21 | -39.23 |
| 1108.00 | 0.470 | 140.870 | 1107.96 | -7.54 | -8.51 | -0.40 | 1679185.40 | 579459.49 | 40°05'07.052"N | 80°38'47.615"W | 8.52 | 182.695 | 0.08 | 0.03 | -9.52 |
| 1208.00 | 0.400 | 136.210 | 1207.96 | -8.27 | -9.08 | 0.10 | 1679185.90 | 579458.92 | 40°05'07.047"N | 80°38'47.608"W | 9.08 | 179.371 | 0.08 | -0.07 | -4.66 |
| 1308.00 | 0.200 | 153.750 | 1307.96 | -8.78 | -9.49 | 0.42 | 1679186.22 | 579458.51 | 40°05'07.043"N | 80°38'47.604"W | 9.50 | 177.475 | 0.22 | -0.20 | -17.54 |
| 1408.00 | 0.390 | 118.250 | 1407.96 | -9.23 | -9.81 | 0.80 | 1679186.60 | 579458.19 | 40°05'07.039"N | 80°38'47.599"W | 9.84 | 175.363 | 0.26 | 0.19 | -35.50 |
| 1508.00 | 0.580 | 153.760 | 1507.95 | -10.00 | -10.42 | 1.32 | 1679187.12 | 579457.58 | 40°05'07.033"N | 80°38'47.592"W | 10.51 | 172.787 | 0.35 | 0.19 | 35.51 |
| 1608.00 | 0.450 | 138.020 | 1607.95 | -10.89 | -11.17 | 1.81 | 1679187.61 | 579456.83 | 40°05'07.026"N | 80°38'47.586"W | 11.31 | 170.817 | 0.19 | -0.13 | -15.74 |
| 1708.00 | 2.510 | 215.470 | 1707.92 | -12.34 | -13.24 | 0.80 | 1679186.60 | 579454.76 | 40°05'07.005"N | 80°38'47.599"W | 13.27 | 176.555 | 2.45 | 2.06 | 77.45 |
| 1808.00 | 5.960 | 227.570 | 1807.63 | -14.98 | -18.53 | -4.31 | 1679181.49 | 579449.47 | 40°05'06.953"N | 80°38'47.663"W | 19.03 | 193.083 | 3.54 | 3.45 | 12.10 |
| 1908.00 | 12.550 | 239.710 | 1906.28 | -17.54 | -27.53 | -17.54 | 1679168.26 | 579440.48 | 40°05'06.862"N | 80°38'47.832"W | 32.64 | 212.500 | 6.84 | 6.59 | 12.14 |
| 2008.00 | 15.400 | 228.230 | 2003.33 | -22.37 | -41.86 | -36.83 | 1679148.97 | 579426.15 | 40°05'06.718"N | 80°38'48.078"W | 55.75 | 221.344 | 3.96 | 2.85 | -11.48 |
| 2108.00 | 16.000 | 228.720 | 2099.60 | -30.07 | -59.79 | -57.09 | 1679128.71 | 579408.21 | 40°05'06.538"N | 80°38'48.336"W | 82.67 | 223.674 | 0.61 | 0.60 | 0.49 |
| 2208.00 | 17.040 | 239.880 | 2195.49 | -35.24 | -76.24 | -80.13 | 1679105.68 | 579391.76 | 40°05'06.373"N | 80°38'48.629"W | 110.60 | 226.422 | 3.33 | 1.04 | 11.16 |
| 2308.00 | 17.130 | 248.670 | 2291.10 | -35.60 | -88.95 | -106.52 | 1679079.28 | 579379.05 | 40°05'06.244"N | 80°38'48.967"W | 138.78 | 230.135 | 2.58 | 0.09 | 8.79 |
| 2408.00 | 16.900 | 252.530 | 2386.72 | -32.75 | -98.68 | -134.11 | 1679051.70 | 579369.33 | 40°05'06.144"N | 80°38'49.320"W | 166.50 | 233.654 | 1.15 | -0.23 | 3.86 |
| 2508.00 | 17.010 | 251.980 | 2482.38 | -29.07 | -107.56 | -161.88 | 1679023.93 | 579360.44 | 40°05'06.053"N | 80°38'49.676"W | 194.36 | 236.397 | 0.19 | 0.11 | -0.55 |
| 2608.00 | 17.130 | 253.200 | 2577.97 | -25.19 | -116.35 | -189.89 | 1678995.92 | 579351.66 | 40°05'05.963"N | 80°38'50.035"W | 222.70 | 238.504 | 0.38 | 0.12 | 1.22 |
| 2708.00 | 17.050 | 255.170 | 2673.56 | -20.51 | -124.35 | -218.16 | 1678967.65 | 579343.65 | 40°05'05.880"N | 80°38'50.397"W | 251.11 | 240.316 | 0.58 | -0.08 | 1.97 |
| 2808.00 | 17.230 | 254.760 | 2769.12 | -15.41 | -132.00 | -246.62 | 1678939.19 | 579336.00 | 40°05'05.801"N | 80°38'50.762"W | 279.72 | 241.843 | 0.22 | 0.18 | -0.41 |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
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WV GEOLOGICAL SURVEY
MORGANTOWN, WV



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

WELLPATH DATA (147 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------------|-----------------|----------------|----------------|----------------|----------------|-----------------|-------------------|--------------------|-----------------------|-----------------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2908.00 | 17.030 | 253.420 | 2864.68 | -10.75 | -140.07 | -274.94 | 1678910.86 | 579327.93 | 40°05'05.717"N | 80°38'51.125"W | 308.57 | 243.003 | 0.44 | -0.20 | -1.34 |
| 3008.00 | 16.850 | 254.290 | 2960.34 | -6.27 | -148.17 | -302.93 | 1678882.88 | 579319.83 | 40°05'05.634"N | 80°38'51.484"W | 337.23 | 243.935 | 0.31 | -0.18 | 0.87 |
| 3108.00 | 16.460 | 250.410 | 3056.15 | -2.59 | -156.85 | -330.23 | 1678855.58 | 579311.16 | 40°05'05.545"N | 80°38'51.833"W | 365.59 | 244.594 | 1.18 | -0.39 | -3.88 |
| 3208.00 | 16.480 | 248.370 | 3152.05 | -0.42 | -166.83 | -356.76 | 1678829.05 | 579301.18 | 40°05'05.443"N | 80°38'52.173"W | 393.84 | 244.939 | 0.58 | 0.02 | -2.04 |
| 3308.00 | 16.550 | 250.080 | 3247.92 | 1.67 | -176.91 | -383.34 | 1678802.47 | 579291.10 | 40°05'05.340"N | 80°38'52.513"W | 422.19 | 245.227 | 0.49 | 0.07 | 1.71 |
| 3408.00 | 16.040 | 249.560 | 3343.90 | 4.03 | -186.59 | -409.68 | 1678776.14 | 579281.42 | 40°05'05.241"N | 80°38'52.850"W | 450.17 | 245.513 | 0.53 | -0.51 | -0.52 |
| 3508.00 | 16.320 | 249.490 | 3439.94 | 6.23 | -196.33 | -435.78 | 1678750.03 | 579271.67 | 40°05'05.141"N | 80°38'53.185"W | 477.97 | 245.747 | 0.28 | 0.28 | -0.07 |
| 3608.00 | 16.720 | 249.810 | 3535.82 | 8.54 | -206.22 | -462.44 | 1678723.37 | 579261.78 | 40°05'05.040"N | 80°38'53.526"W | 506.34 | 245.966 | 0.41 | 0.40 | 0.32 |
| 3708.00 | 17.070 | 246.640 | 3631.50 | 10.16 | -217.01 | -489.42 | 1678696.40 | 579251.00 | 40°05'04.930"N | 80°38'53.871"W | 535.37 | 246.088 | 0.99 | 0.35 | -3.17 |
| 3808.00 | 17.360 | 248.840 | 3727.02 | 11.58 | -228.21 | -516.80 | 1678669.01 | 579239.80 | 40°05'04.816"N | 80°38'54.222"W | 564.95 | 246.175 | 0.71 | 0.29 | 2.20 |
| 3908.00 | 16.640 | 249.180 | 3822.65 | 13.62 | -238.68 | -544.10 | 1678641.72 | 579229.32 | 40°05'04.709"N | 80°38'54.571"W | 594.15 | 246.314 | 0.73 | -0.72 | 0.34 |
| 4008.00 | 17.520 | 249.630 | 3918.24 | 15.88 | -249.01 | -571.59 | 1678614.22 | 579218.99 | 40°05'04.603"N | 80°38'54.923"W | 623.48 | 246.460 | 0.89 | 0.88 | 0.45 |
| 4108.00 | 16.950 | 250.550 | 4013.75 | 18.51 | -259.11 | -599.45 | 1678586.37 | 579208.90 | 40°05'04.500"N | 80°38'55.280"W | 653.05 | 246.624 | 0.63 | -0.57 | 0.92 |
| 4208.00 | 17.050 | 249.640 | 4109.38 | 21.10 | -269.06 | -626.94 | 1678558.88 | 579198.95 | 40°05'04.398"N | 80°38'55.632"W | 682.24 | 246.773 | 0.28 | 0.10 | -0.91 |
| 4308.00 | 16.750 | 246.020 | 4205.06 | 22.55 | -280.02 | -653.85 | 1678531.97 | 579187.99 | 40°05'04.287"N | 80°38'55.976"W | 711.29 | 246.816 | 1.09 | -0.30 | -3.62 |
| 4408.00 | 16.460 | 246.950 | 4300.89 | 23.29 | -291.42 | -680.05 | 1678505.77 | 579176.59 | 40°05'04.171"N | 80°38'56.311"W | 739.86 | 246.804 | 0.39 | -0.29 | 0.93 |
| 4508.00 | 16.180 | 247.630 | 4396.87 | 24.41 | -302.27 | -705.97 | 1678479.85 | 579165.74 | 40°05'04.060"N | 80°38'56.643"W | 767.96 | 246.821 | 0.34 | -0.28 | 0.68 |
| 4608.00 | 16.370 | 244.470 | 4492.86 | 24.92 | -313.65 | -731.57 | 1678454.25 | 579154.36 | 40°05'03.945"N | 80°38'56.971"W | 795.98 | 246.794 | 0.91 | 0.19 | -3.16 |
| 4708.00 | 16.030 | 240.780 | 4588.89 | 23.77 | -326.46 | -756.34 | 1678429.48 | 579141.55 | 40°05'03.815"N | 80°38'57.287"W | 823.79 | 246.653 | 1.08 | -0.34 | -3.69 |
| 4808.00 | 16.610 | 244.760 | 4684.86 | 22.69 | -339.30 | -781.32 | 1678404.50 | 579128.71 | 40°05'03.685"N | 80°38'57.606"W | 851.81 | 246.527 | 1.26 | 0.58 | 3.98 |
| 4908.00 | 16.870 | 245.770 | 4780.63 | 22.83 | -351.35 | -807.48 | 1678378.34 | 579116.66 | 40°05'03.562"N | 80°38'57.941"W | 880.61 | 246.485 | 0.39 | 0.26 | 1.01 |
| 5008.00 | 17.260 | 248.290 | 4876.23 | 23.87 | -362.79 | -834.50 | 1678351.33 | 579105.22 | 40°05'03.446"N | 80°38'58.286"W | 909.95 | 246.503 | 0.84 | 0.39 | 2.52 |
| 5108.00 | 17.130 | 246.800 | 4971.76 | 25.19 | -374.08 | -861.82 | 1678324.01 | 579093.93 | 40°05'03.331"N | 80°38'58.636"W | 939.50 | 246.536 | 0.46 | -0.13 | -1.49 |
| 5208.00 | 16.580 | 246.700 | 5067.46 | 26.07 | -385.52 | -888.46 | 1678297.37 | 579082.49 | 40°05'03.214"N | 80°38'58.977"W | 968.50 | 246.543 | 0.55 | -0.55 | -0.10 |
| 5308.00 | 16.440 | 248.070 | 5163.34 | 27.26 | -396.45 | -914.69 | 1678271.14 | 579071.56 | 40°05'03.103"N | 80°38'59.312"W | 996.91 | 246.567 | 0.41 | -0.14 | 1.37 |
| 5408.00 | 16.110 | 249.910 | 5259.33 | 29.20 | -406.50 | -940.84 | 1678244.98 | 579061.51 | 40°05'03.001"N | 80°38'59.647"W | 1024.91 | 246.633 | 0.61 | -0.33 | 1.84 |
| 5508.00 | 17.300 | 249.170 | 5355.11 | 31.47 | -416.56 | -967.77 | 1678218.06 | 579051.46 | 40°05'02.898"N | 80°38'59.992"W | 1053.61 | 246.712 | 1.21 | 1.19 | -0.74 |
| 5598.00 | 16.920 | 247.450 | 5441.13 | 33.00 | -426.34 | -992.37 | 1678193.45 | 579041.67 | 40°05'02.798"N | 80°39'00.307"W | 1080.08 | 246.751 | 0.70 | -0.42 | -1.91 |
| 5687.00 | 18.490 | 246.070 | 5525.91 | 33.82 | -437.03 | -1017.24 | 1678168.59 | 579030.98 | 40°05'02.689"N | 80°39'00.625"W | 1107.14 | 246.750 | 1.83 | 1.76 | -1.55 |
| 5779.00 | 19.640 | 245.710 | 5612.86 | 34.28 | -449.31 | -1044.66 | 1678141.17 | 579018.71 | 40°05'02.564"N | 80°39'00.976"W | 1137.19 | 246.728 | 1.26 | 1.25 | -0.39 |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
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WV GEOLOGICAL SURVEY
MORGANTOWN, WV
**BAKER
HUGHES**
REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

WELLPATH DATA (147 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5822.00 | 19.850 | 247.000 | 5653.33 | 34.63 | -455.13 | -1057.97 | 1678127.86 | 579012.88 | 40°05'02.505"N | 80°39'01.146"W | 1151.72 | 246.723 | 1.13 | 0.49 | 3.00 |
| 5865.00 | 22.110 | 256.530 | 5693.49 | 36.50 | -459.87 | -1072.57 | 1678113.26 | 579008.14 | 40°05'02.457"N | 80°39'01.333"W | 1167.00 | 246.792 | 9.50 | 5.26 | 22.16 |
| 5907.00 | 25.060 | 265.530 | 5731.99 | 41.20 | -462.41 | -1089.13 | 1678096.70 | 579005.61 | 40°05'02.429"N | 80°39'01.546"W | 1183.23 | 246.996 | 11.07 | 7.02 | 21.43 |
| 5950.00 | 28.250 | 274.810 | 5770.43 | 49.46 | -462.26 | -1108.36 | 1678077.47 | 579005.75 | 40°05'02.428"N | 80°39'01.793"W | 1200.90 | 247.361 | 12.18 | 7.42 | 21.58 |
| 5994.00 | 30.980 | 282.530 | 5808.70 | 61.54 | -458.93 | -1129.81 | 1678056.03 | 579009.08 | 40°05'02.459"N | 80°39'02.069"W | 1219.46 | 247.893 | 10.65 | 6.20 | 17.55 |
| 6037.00 | 33.820 | 289.960 | 5845.01 | 76.75 | -452.44 | -1151.87 | 1678033.96 | 579015.57 | 40°05'02.520"N | 80°39'02.354"W | 1237.54 | 248.556 | 11.36 | 6.60 | 17.28 |
| 6080.00 | 37.640 | 295.760 | 5879.92 | 95.39 | -442.64 | -1174.96 | 1678010.87 | 579025.37 | 40°05'02.614"N | 80°39'02.653"W | 1255.57 | 249.357 | 11.86 | 8.88 | 13.49 |
| 6124.00 | 42.060 | 297.850 | 5913.70 | 117.55 | -429.91 | -1200.10 | 1677985.73 | 579038.10 | 40°05'02.736"N | 80°39'02.979"W | 1274.78 | 250.291 | 10.50 | 10.05 | 4.75 |
| 6167.00 | 46.500 | 300.500 | 5944.48 | 141.90 | -415.26 | -1226.29 | 1677959.54 | 579052.75 | 40°05'02.878"N | 80°39'03.318"W | 1294.69 | 251.292 | 11.18 | 10.33 | 6.16 |
| 6210.00 | 50.360 | 300.850 | 5973.00 | 168.46 | -398.85 | -1253.95 | 1677931.88 | 579069.16 | 40°05'03.037"N | 80°39'03.676"W | 1315.86 | 252.356 | 9.00 | 8.98 | 0.81 |
| 6254.00 | 54.890 | 303.370 | 5999.71 | 197.83 | -380.25 | -1283.55 | 1677902.29 | 579087.76 | 40°05'03.217"N | 80°39'04.060"W | 1338.69 | 253.498 | 11.26 | 10.30 | 5.73 |
| 6299.00 | 60.190 | 307.740 | 6023.86 | 230.89 | -358.15 | -1314.39 | 1677871.45 | 579109.86 | 40°05'03.431"N | 80°39'04.461"W | 1362.31 | 254.758 | 14.34 | 11.78 | 9.71 |
| 6342.00 | 65.510 | 310.680 | 6043.48 | 265.33 | -333.96 | -1344.01 | 1677841.83 | 579134.05 | 40°05'03.666"N | 80°39'04.846"W | 1384.88 | 256.046 | 13.79 | 12.37 | 6.84 |
| 6385.00 | 70.390 | 314.550 | 6059.62 | 302.17 | -306.97 | -1373.30 | 1677812.54 | 579161.04 | 40°05'03.929"N | 80°39'05.227"W | 1407.20 | 257.400 | 14.08 | 11.35 | 9.00 |
| 6429.00 | 74.420 | 317.960 | 6072.92 | 341.88 | -276.68 | -1402.28 | 1677783.56 | 579191.33 | 40°05'04.225"N | 80°39'05.605"W | 1429.32 | 258.839 | 11.77 | 9.16 | 7.75 |
| 6472.00 | 77.850 | 321.210 | 6083.23 | 382.11 | -244.89 | -1429.33 | 1677756.51 | 579223.11 | 40°05'04.536"N | 80°39'05.958"W | 1450.16 | 260.278 | 10.84 | 7.98 | 7.56 |
| 6515.00 | 81.720 | 325.310 | 6090.86 | 423.53 | -210.99 | -1454.63 | 1677731.21 | 579257.01 | 40°05'04.867"N | 80°39'06.289"W | 1469.85 | 261.747 | 13.00 | 9.00 | 9.53 |
| 6559.00 | 81.850 | 326.920 | 6097.14 | 466.56 | -174.84 | -1478.91 | 1677706.93 | 579293.16 | 40°05'05.222"N | 80°39'06.607"W | 1489.21 | 263.258 | 3.63 | 0.30 | 3.66 |
| 6602.00 | 84.640 | 328.870 | 6102.20 | 508.92 | -138.67 | -1501.60 | 1677684.24 | 579329.33 | 40°05'05.576"N | 80°39'06.905"W | 1507.99 | 264.724 | 7.90 | 6.49 | 4.53 |
| 6645.00 | 87.750 | 328.790 | 6105.05 | 551.57 | -101.97 | -1523.80 | 1677662.04 | 579366.04 | 40°05'05.936"N | 80°39'07.197"W | 1527.21 | 266.172 | 7.23 | 7.23 | -0.19 |
| 6689.00 | 90.890 | 328.600 | 6105.58 | 595.30 | -64.38 | -1546.66 | 1677639.18 | 579403.62 | 40°05'06.305"N | 80°39'07.497"W | 1548.00 | 267.616 | 7.15 | 7.14 | -0.43 |
| 6776.00 | 90.830 | 336.990 | 6104.27 | 682.15 | 12.92 | -1586.40 | 1677599.45 | 579480.92 | 40°05'07.063"N | 80°39'08.021"W | 1586.45 | 270.467 | 9.64 | -0.07 | 9.64 |
| 6862.00 | 91.380 | 331.780 | 6102.61 | 768.10 | 90.42 | -1623.55 | 1677562.29 | 579558.42 | 40°05'07.825"N | 80°39'08.512"W | 1626.07 | 273.188 | 6.09 | 0.64 | -6.06 |
| 6993.00 | 91.480 | 335.590 | 6099.34 | 899.00 | 207.79 | -1681.60 | 1677504.25 | 579675.78 | 40°05'08.977"N | 80°39'09.278"W | 1694.39 | 277.044 | 2.91 | 0.08 | 2.91 |
| 7123.00 | 91.110 | 333.800 | 6096.40 | 1028.96 | 325.28 | -1737.15 | 1677448.70 | 579793.27 | 40°05'10.131"N | 80°39'10.012"W | 1767.34 | 280.606 | 1.41 | -0.28 | -1.38 |
| 7253.00 | 91.080 | 338.040 | 6093.91 | 1158.89 | 443.92 | -1790.17 | 1677395.68 | 579911.91 | 40°05'11.296"N | 80°39'10.713"W | 1844.39 | 283.927 | 3.26 | -0.02 | 3.26 |
| 7384.00 | 91.080 | 342.680 | 6091.44 | 1289.25 | 567.24 | -1834.18 | 1677351.67 | 580035.23 | 40°05'12.510"N | 80°39'11.300"W | 1919.89 | 287.185 | 3.54 | 0.00 | 3.54 |
| 7514.00 | 90.920 | 348.570 | 6089.17 | 1416.95 | 693.10 | -1866.44 | 1677319.42 | 580161.08 | 40°05'13.749"N | 80°39'11.736"W | 1990.97 | 290.372 | 4.53 | -0.12 | 4.53 |
| 7644.00 | 90.800 | 348.050 | 6087.22 | 1543.44 | 820.39 | -1892.77 | 1677293.08 | 580288.36 | 40°05'15.004"N | 80°39'12.096"W | 2062.92 | 293.433 | 0.41 | -0.09 | -0.40 |
| 7775.00 | 91.290 | 344.210 | 6084.83 | 1671.93 | 947.52 | -1924.16 | 1677261.69 | 580415.49 | 40°05'16.256"N | 80°39'12.520"W | 2144.81 | 296.217 | 2.95 | 0.37 | -2.93 |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
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JUL 30 2012
WV GEOLOGICAL SURVEY
MORGANTOWN, WV



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

WELLPATH DATA (147 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 7905.00 | 91.170 | 338.660 | 6082.04 | 1801.03 | 1070.68 | -1965.53 | 1677220.33 | 580538.65 | 40°05'17.468"N | 80°39'13.073"W | 2238.23 | 298.578 | 4.27 | -0.09 | -4.27 |
| 8037.00 | 91.380 | 332.860 | 6079.10 | 1932.93 | 1190.96 | -2019.68 | 1677166.17 | 580658.93 | 40°05'18.649"N | 80°39'13.790"W | 2344.68 | 300.527 | 4.40 | 0.16 | -4.39 |
| 8167.00 | 91.290 | 321.660 | 6076.06 | 2061.51 | 1300.10 | -2089.86 | 1677096.00 | 580768.07 | 40°05'19.719"N | 80°39'14.710"W | 2461.26 | 301.886 | 8.61 | -0.07 | -8.62 |
| 8297.00 | 91.420 | 323.510 | 6072.99 | 2188.43 | 1403.32 | -2168.82 | 1677017.04 | 580871.28 | 40°05'20.729"N | 80°39'15.743"W | 2583.24 | 302.905 | 1.43 | 0.10 | 1.42 |
| 8427.00 | 91.420 | 327.660 | 6069.76 | 2316.61 | 1510.51 | -2242.26 | 1676943.61 | 580978.47 | 40°05'21.779"N | 80°39'16.706"W | 2703.58 | 303.966 | 3.19 | 0.00 | 3.19 |
| 8557.00 | 91.820 | 332.980 | 6066.09 | 2446.08 | 1623.37 | -2306.58 | 1676879.29 | 581091.32 | 40°05'22.886"N | 80°39'17.552"W | 2820.57 | 305.138 | 4.10 | 0.31 | 4.09 |
| 8688.00 | 91.880 | 334.780 | 6061.86 | 2576.98 | 1740.93 | -2364.22 | 1676821.65 | 581208.88 | 40°05'24.040"N | 80°39'18.313"W | 2936.05 | 306.367 | 1.37 | 0.05 | 1.37 |
| 8817.00 | 91.820 | 335.590 | 6057.69 | 2705.91 | 1857.95 | -2418.33 | 1676767.54 | 581325.90 | 40°05'25.190"N | 80°39'19.028"W | 3049.64 | 307.534 | 0.63 | -0.05 | 0.63 |
| 8948.00 | 92.030 | 336.710 | 6053.29 | 2836.81 | 1977.70 | -2471.27 | 1676714.60 | 581445.64 | 40°05'26.366"N | 80°39'19.729"W | 3165.20 | 308.669 | 0.87 | 0.16 | 0.85 |
| 9078.00 | 91.020 | 334.820 | 6049.83 | 2966.74 | 2096.19 | -2524.61 | 1676661.26 | 581564.13 | 40°05'27.530"N | 80°39'20.435"W | 3281.41 | 309.703 | 1.65 | -0.78 | -1.45 |
| 9208.00 | 90.950 | 334.290 | 6047.60 | 3096.72 | 2213.56 | -2580.46 | 1676605.42 | 581681.50 | 40°05'28.683"N | 80°39'21.173"W | 3399.80 | 310.624 | 0.41 | -0.05 | -0.41 |
| 9338.00 | 90.830 | 334.830 | 6045.58 | 3226.70 | 2330.94 | -2636.29 | 1676549.59 | 581798.88 | 40°05'29.836"N | 80°39'21.911"W | 3519.00 | 311.482 | 0.43 | -0.09 | 0.42 |
| 9468.00 | 90.620 | 328.280 | 6043.93 | 3356.38 | 2445.18 | -2698.17 | 1676487.70 | 581913.11 | 40°05'30.957"N | 80°39'22.726"W | 3641.30 | 312.184 | 5.04 | -0.16 | -5.04 |
| 9599.00 | 90.740 | 322.600 | 6042.37 | 3485.50 | 2553.01 | -2772.45 | 1676413.43 | 582020.94 | 40°05'32.013"N | 80°39'23.699"W | 3768.86 | 312.640 | 4.34 | 0.09 | -4.34 |
| 9729.00 | 91.940 | 331.120 | 6039.33 | 3614.03 | 2661.73 | -2843.44 | 1676342.45 | 582129.65 | 40°05'33.078"N | 80°39'24.631"W | 3894.86 | 313.110 | 6.62 | 0.92 | 6.55 |
| 9859.00 | 92.770 | 333.700 | 6033.99 | 3743.78 | 2776.84 | -2903.59 | 1676282.30 | 582244.76 | 40°05'34.208"N | 80°39'25.424"W | 4017.67 | 313.722 | 2.08 | 0.64 | 1.98 |
| 9990.00 | 90.830 | 340.750 | 6029.87 | 3874.53 | 2897.48 | -2954.24 | 1676231.65 | 582365.40 | 40°05'35.394"N | 80°39'26.095"W | 4137.99 | 314.444 | 5.58 | -1.48 | 5.38 |
| 10120.00 | 90.400 | 339.430 | 6028.47 | 4004.00 | 3019.70 | -2998.50 | 1676187.38 | 582487.62 | 40°05'36.596"N | 80°39'26.685"W | 4255.54 | 315.202 | 1.07 | -0.33 | -1.02 |
| 10250.00 | 90.710 | 344.040 | 6027.21 | 4133.07 | 3143.12 | -3039.23 | 1676146.65 | 582611.02 | 40°05'37.810"N | 80°39'27.229"W | 4372.20 | 315.963 | 3.55 | 0.24 | 3.55 |
| 10380.00 | 90.370 | 346.100 | 6025.99 | 4261.05 | 3268.71 | -3072.72 | 1676113.17 | 582736.62 | 40°05'39.047"N | 80°39'27.681"W | 4486.22 | 316.770 | 1.61 | -0.26 | 1.58 |
| 10510.00 | 90.000 | 341.210 | 6025.57 | 4389.53 | 3393.42 | -3109.30 | 1676076.59 | 582861.32 | 40°05'40.274"N | 80°39'28.172"W | 4602.50 | 317.502 | 3.77 | -0.28 | -3.76 |
| 10641.00 | 90.890 | 339.920 | 6024.55 | 4519.90 | 3516.95 | -3152.88 | 1676033.01 | 582984.85 | 40°05'41.489"N | 80°39'28.754"W | 4723.30 | 318.124 | 1.20 | 0.68 | -0.98 |
| 10771.00 | 90.860 | 332.460 | 6022.56 | 4649.77 | 3635.79 | -3205.32 | 1675980.57 | 583103.68 | 40°05'42.657"N | 80°39'29.448"W | 4846.96 | 318.600 | 5.74 | -0.02 | -5.74 |
| 10901.00 | 90.860 | 334.590 | 6020.61 | 4779.70 | 3752.13 | -3263.27 | 1675922.63 | 583220.02 | 40°05'43.799"N | 80°39'30.213"W | 4972.67 | 318.986 | 1.64 | 0.00 | 1.64 |
| 11031.00 | 90.770 | 334.740 | 6018.76 | 4909.69 | 3869.62 | -3318.89 | 1675867.01 | 583337.51 | 40°05'44.953"N | 80°39'30.948"W | 5097.94 | 319.381 | 0.13 | -0.07 | 0.12 |
| 11161.00 | 90.920 | 333.530 | 6016.84 | 5039.66 | 3986.58 | -3375.60 | 1675810.30 | 583454.47 | 40°05'46.102"N | 80°39'31.697"W | 5223.74 | 319.744 | 0.94 | 0.12 | -0.93 |
| 11292.00 | 90.800 | 333.590 | 6014.88 | 5170.60 | 4103.87 | -3433.92 | 1675751.98 | 583571.75 | 40°05'47.253"N | 80°39'32.467"W | 5351.03 | 320.079 | 0.10 | -0.09 | 0.05 |
| 11422.00 | 90.710 | 325.930 | 6013.16 | 5299.95 | 4216.08 | -3499.33 | 1675686.57 | 583683.96 | 40°05'48.354"N | 80°39'33.327"W | 5479.11 | 320.307 | 5.89 | -0.07 | -5.89 |
| 11552.00 | 91.140 | 334.300 | 6011.06 | 5429.35 | 4328.68 | -3564.04 | 1675621.86 | 583796.55 | 40°05'49.458"N | 80°39'34.178"W | 5607.13 | 320.533 | 6.45 | 0.33 | 6.44 |
| 11682.00 | 91.080 | 335.210 | 6008.54 | 5559.32 | 4446.24 | -3619.48 | 1675566.43 | 583914.11 | 40°05'50.613"N | 80°39'34.911"W | 5733.21 | 320.853 | 0.70 | -0.05 | 0.70 |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084/MD
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WV GEOLOGICAL SURVEY
MORGANTOWN, WV**REFERENCE WELLPATH IDENTIFICATION**

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

WELLPATH DATA (147 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 11812.00 | 91.080 | 334.410 | 6006.09 | 5689.29 | 4563.86 | -3674.80 | 1675511.11 | 584031.72 | 40°05'51.768"N | 80°39'35.643"W | 5859.43 | 321.159 | 0.62 | 0.00 | -0.62 |
| 11943.00 | 91.940 | 337.120 | 6002.64 | 5820.22 | 4683.26 | -3728.55 | 1675457.36 | 584151.12 | 40°05'52.941"N | 80°39'36.354"W | 5986.23 | 321.475 | 2.17 | 0.66 | 2.07 |
| 12073.00 | 90.800 | 336.200 | 5999.53 | 5950.13 | 4802.58 | -3780.03 | 1675405.88 | 584270.44 | 40°05'54.113"N | 80°39'37.036"W | 6111.75 | 321.794 | 1.13 | -0.88 | -0.71 |
| 12205.00 | 88.920 | 337.310 | 5999.85 | 6082.06 | 4923.86 | -3832.13 | 1675353.79 | 584391.72 | 40°05'55.305"N | 80°39'37.727"W | 6239.36 | 322.107 | 1.65 | -1.42 | 0.84 |
| 12335.00 | 88.860 | 335.320 | 6002.37 | 6211.99 | 5042.88 | -3884.34 | 1675301.58 | 584510.73 | 40°05'56.475"N | 80°39'38.418"W | 6365.43 | 322.394 | 1.53 | -0.05 | -1.53 |
| 12465.00 | 88.920 | 335.460 | 6004.89 | 6341.97 | 5161.05 | -3938.46 | 1675247.45 | 584628.90 | 40°05'57.635"N | 80°39'39.134"W | 6492.14 | 322.652 | 0.12 | 0.05 | 0.11 |
| 12595.00 | 89.820 | 335.160 | 6006.32 | 6471.95 | 5279.16 | -3992.76 | 1675193.16 | 584747.00 | 40°05'58.796"N | 80°39'39.853"W | 6619.04 | 322.899 | 0.73 | 0.69 | -0.23 |
| 12726.00 | 89.450 | 334.140 | 6007.15 | 6602.95 | 5397.54 | -4048.85 | 1675137.07 | 584865.38 | 40°05'59.958"N | 80°39'40.594"W | 6747.34 | 323.125 | 0.83 | -0.28 | -0.78 |
| 12856.00 | 90.890 | 334.750 | 6006.77 | 6732.94 | 5514.82 | -4104.92 | 1675081.00 | 584982.66 | 40°06'01.110"N | 80°39'41.335"W | 6874.85 | 323.338 | 1.20 | 1.11 | 0.47 |
| 12986.00 | 90.860 | 336.730 | 6004.78 | 6862.90 | 5633.32 | -4158.33 | 1675027.59 | 585101.15 | 40°06'02.274"N | 80°39'42.042"W | 7001.85 | 323.566 | 1.52 | -0.02 | 1.52 |
| 13116.00 | 90.550 | 340.250 | 6003.18 | 6992.63 | 5754.23 | -4205.98 | 1674979.94 | 585222.07 | 40°06'03.463"N | 80°39'42.675"W | 7127.52 | 323.836 | 2.72 | -0.24 | 2.71 |
| 13246.00 | 90.090 | 332.360 | 6002.45 | 7122.49 | 5873.18 | -4258.18 | 1674927.74 | 585341.01 | 40°06'04.631"N | 80°39'43.367"W | 7254.40 | 324.057 | 6.08 | -0.35 | -6.07 |
| 13376.00 | 89.450 | 331.070 | 6002.98 | 7252.28 | 5987.65 | -4319.78 | 1674866.14 | 585455.48 | 40°06'05.755"N | 80°39'44.178"W | 7383.26 | 324.191 | 1.11 | -0.49 | -0.99 |
| 13506.00 | 89.350 | 332.580 | 6004.34 | 7382.07 | 6102.24 | -4381.16 | 1674804.77 | 585570.06 | 40°06'06.879"N | 80°39'44.987"W | 7512.12 | 324.323 | 1.16 | -0.08 | 1.16 |
| 13637.00 | 89.350 | 333.190 | 6005.82 | 7512.97 | 6218.83 | -4440.86 | 1674745.07 | 585686.65 | 40°06'08.024"N | 80°39'45.775"W | 7641.67 | 324.469 | 0.47 | 0.00 | 0.47 |
| 13767.00 | 89.940 | 332.580 | 6006.63 | 7642.87 | 6334.54 | -4500.11 | 1674685.82 | 585802.36 | 40°06'09.159"N | 80°39'46.556"W | 7770.29 | 324.610 | 0.65 | 0.45 | -0.47 |
| 13897.00 | 90.620 | 336.760 | 6005.99 | 7772.84 | 6452.02 | -4555.72 | 1674630.22 | 585919.83 | 40°06'10.313"N | 80°39'47.292"W | 7898.30 | 324.774 | 3.26 | 0.52 | 3.22 |
| 14027.00 | 90.680 | 336.210 | 6004.52 | 7902.79 | 6571.21 | -4607.58 | 1674578.35 | 586039.02 | 40°06'11.484"N | 80°39'47.979"W | 8025.62 | 324.963 | 0.43 | 0.05 | -0.42 |
| 14157.00 | 90.310 | 329.900 | 6003.39 | 8032.64 | 6687.04 | -4666.46 | 1674519.48 | 586154.84 | 40°06'12.621"N | 80°39'48.756"W | 8154.28 | 325.091 | 4.86 | -0.28 | -4.85 |
| 14287.00 | 90.370 | 333.870 | 6002.62 | 8162.42 | 6801.67 | -4727.71 | 1674458.23 | 586269.47 | 40°06'13.746"N | 80°39'49.563"W | 8283.35 | 325.198 | 3.05 | 0.05 | 3.05 |
| 14417.00 | 90.550 | 334.690 | 6001.58 | 8292.41 | 6918.79 | -4784.12 | 1674401.82 | 586386.59 | 40°06'14.896"N | 80°39'50.308"W | 8411.74 | 325.337 | 0.65 | 0.14 | 0.63 |
| 14548.00 | 90.520 | 325.010 | 6000.35 | 8422.72 | 7031.93 | -4849.84 | 1674336.11 | 586499.72 | 40°06'16.006"N | 80°39'51.173"W | 8542.18 | 325.406 | 7.39 | -0.02 | -7.39 |
| 14678.00 | 91.080 | 338.670 | 5998.53 | 8552.20 | 7146.25 | -4911.04 | 1674274.91 | 586614.05 | 40°06'17.128"N | 80°39'51.979"W | 8671.06 | 325.502 | 10.52 | 0.43 | 10.51 |
| 14808.00 | 90.990 | 342.210 | 5996.18 | 8681.57 | 7268.71 | -4954.55 | 1674231.40 | 586736.50 | 40°06'18.332"N | 80°39'52.560"W | 8796.69 | 325.721 | 2.72 | -0.07 | 2.72 |
| 14938.00 | 91.080 | 340.520 | 5993.83 | 8810.75 | 7391.87 | -4996.08 | 1674189.87 | 586859.66 | 40°06'19.544"N | 80°39'53.115"W | 8921.92 | 325.946 | 1.30 | 0.07 | -1.30 |
| 15061.00 | 90.980 | 339.590 | 5991.62 | 8933.25 | 7507.48 | -5038.03 | 1674147.92 | 586975.26 | 40°06'20.681"N | 80°39'53.674"W | 9041.23 | 326.136 | 0.76 | -0.08 | -0.76 |
| 15084.00 | 90.980 | 339.590 | 5991.23 | 8956.17 | 7529.03 | -5046.05 | 1674139.90 | 586996.81 | 40°06'20.893"N | 80°39'53.781"W | 9063.60 | 326.170 | 0.00 | 0.00 | 0.00 |



Actual Wellpath Report

Timmy Minch OHI 1H AWP Proj:15084'MD
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WV GEOLOGICAL SURVEY
MORGANTOWN, WV**REFERENCE WELLPATH IDENTIFICATION**

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

TARGETS

| Name | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
|-------------------------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| Timmy Minch OHI 1H Hardlines | | 5963.66 | 1911.82 | -1970.91 | 1677214.95 | 581379.76 | 40°05'25.779"N | 80°39'13.281"W | polygon |
| Timmy Minch OHI 1H W Hardline | | 5963.66 | 556.26 | -2889.32 | 1676296.56 | 580024.24 | 40°05'12.267"N | 80°39'24.872"W | polygon |
| Timmy Minch OHI 1H PBHL Rev-2 | | 5989.02 | 7534.82 | -5035.15 | 1674150.80 | 587002.60 | 40°06'20.951"N | 80°39'53.641"W | point |

WELLPATH COMPOSITION - Ref Wellbore: Timmy Minch OHI 1H AWB Ref Wellpath: Timmy Minch OHI 1H AWP Proj:15084'MD

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---------------|-------------|--------------------------------------|------------------------------------|------------------------|
| 20.00 | 5598.00 | Generic gyro - continuous (Standard) | VES Gyro (100'-5590') | Timmy Minch OHI 1H AWB |
| 5598.00 | 15061.00 | NaviTrak (MagCorr) | BHI NaviTrak (5598')(5687'-15061') | Timmy Minch OHI 1H AWB |
| 15061.00 | 15084.00 | Blind Drilling (std) | Projection to bit | Timmy Minch OHI 1H AWB |



Actual Wellpath Report
Timmy Minch OHI 1H AWP Proj:15084'MD
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JUL 30 2012

WV GEOLOGICAL SURVEY
MORGANTOWN, WV**REFERENCE WELLPATH IDENTIFICATION**

| | | | |
|----------|----------------------------|----------|------------------------|
| Operator | CHESAPEAKE APPALACHIA, LLC | Slot | Slot #01 |
| Area | Ohio County, WV | Well | Timmy Minch OHI 1H |
| Field | Ohio | Wellbore | Timmy Minch OHI 1H AWB |
| Facility | Timmy Minch OHI | | |

COMMENTS**Wellpath general comments**

API: 47-069-00092-0000

BHI Job#: 4741518

Rig: Nomac 243

Duration: 07/04/2012 - 07/12/2012

VES Gyro (100'-5590')

BHI NaviTrak (5598')(5687'-15061')

Projected to TD: 15084'MD