

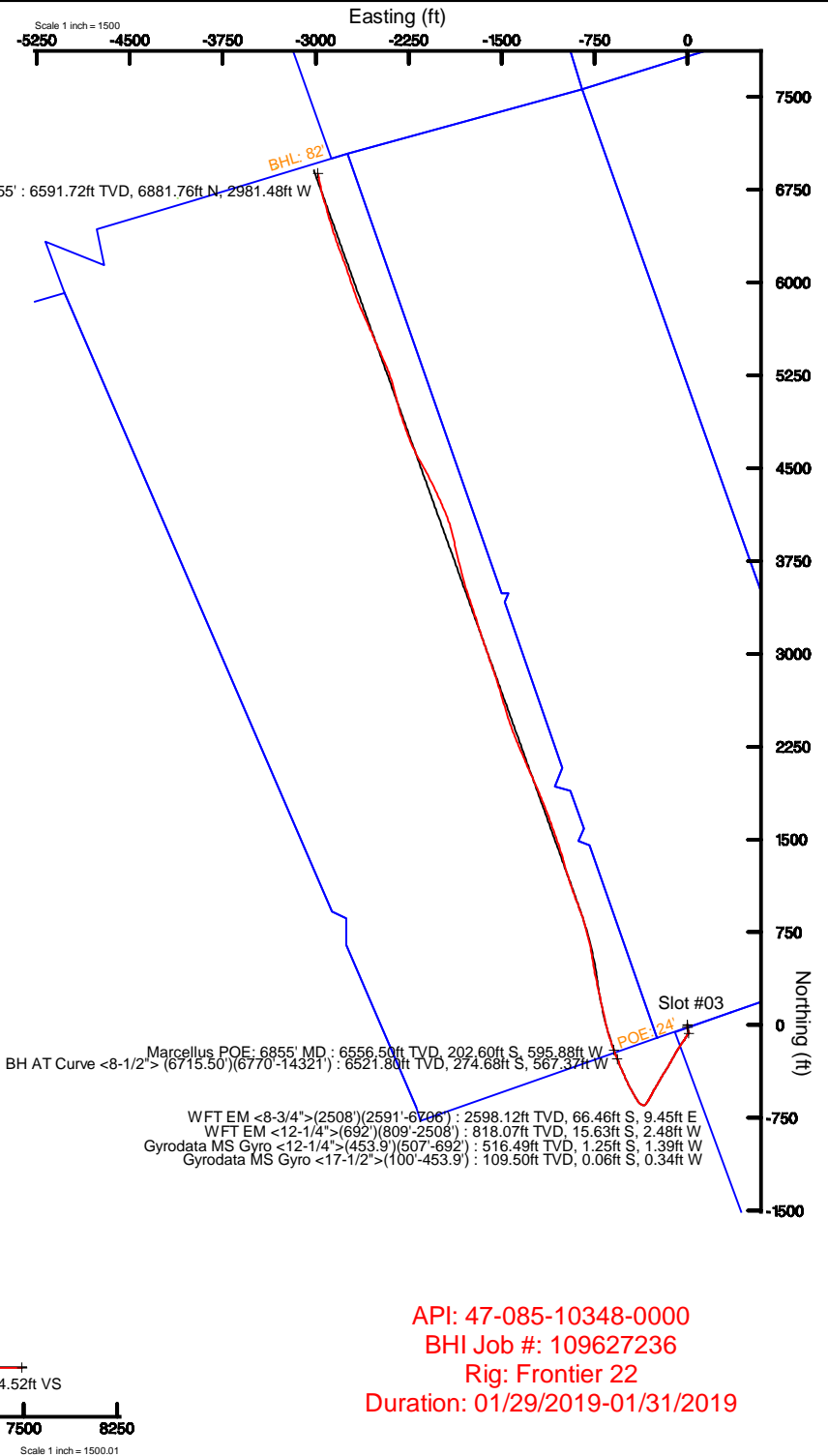
ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV
 Field: Ritchie
 Facility: Weekley Trust Pad

Slot: Slot #03
 Well: Ray Unit 3H
 Wellbore: Ray Unit 3H PWB

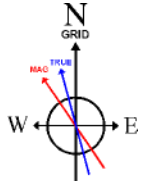
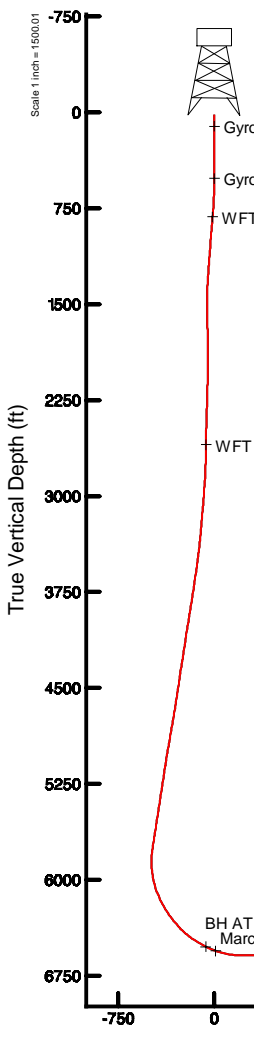
| | |
|--|---|
| Plot reference wellpath is Ray Unit 3H PWP Rev-A.0 | Grid System: NAD27 / UTM Zone 17 North, US feet |
| True vertical depths are referenced to Frontier 22 (RKB) | North Reference: Grid north |
| Measured depths are referenced to Frontier 22 (RKB) | Scale: True distance |
| Frontier 22 (RKB) to Mean Sea Level: 1259.5 feet | Depths are in feet |
| Mean Sea Level to Ground level (At Slot: Slot #03): -1235 feet | Created by: delaset on 2019-02-11 |
| Coordinates are in feet referenced to Slot | Database: WA_MPL_EasternUS_Defn |

| Location Information | | | | | |
|---|-------------------|--------------------|-------------------|--------------------|----------------|
| Facility Name | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | |
| Weekley Trust Pad | 1661856.457 | 14297226.975 | 39°22'17.590"N | 80°55'26.890"W | |
| Slot | Local N (ft) | Local E (ft) | Grid East (US ft) | Grid North (US ft) | Latitude |
| Slot #03 | 3.05 | 19.63 | 1661876.080 | 14297230.025 | 39°22'17.620"N |
| Frontier 22 (RKB) to Ground level (At Slot: Slot #03) | | | 24.5ft | | |
| Mean Sea Level to Ground level (At Slot: Slot #03) | | | -1235ft | | |
| Frontier 22 (RKB) to Mean Sea Level | | | 1259.5ft | | |



| Well Data | | | |
|-----------|-------------|-----------------|------------------------------|
| Slot | Well | Wellbore | Wellpath |
| Slot #03 | Ray Unit 3H | Ray Unit 3H AWB | Ray Unit 3H AWP Proj: 14355' |
| Slot #03 | Ray Unit 3H | Ray Unit 3H PWB | Ray Unit 3H PWP Rev-A.0 |

| Well Profile Data | | | | | | | | |
|-------------------|----------|---------|---------|----------|--------------|--------------|---------------|---------|
| Design Comment | MD (ft) | Inc (°) | Az (°) | TVD (ft) | Local N (ft) | Local E (ft) | DLS (°/100ft) | VS (ft) |
| Tie On | 6715.50 | 60.290 | 337.920 | 6496.54 | -318.86 | -549.26 | 6.25 | -114.39 |
| Proj. To Bottom | 6787.50 | 64.840 | 338.810 | 6528.70 | -259.47 | -572.80 | 6.41 | -50.54 |
| POE | 6882.10 | 72.620 | 340.999 | 6563.00 | -176.74 | -603.02 | 8.50 | 37.54 |
| Landing Pt. | 7068.06 | 90.000 | 345.001 | 6591.00 | -1.61 | -656.41 | 9.58 | 220.41 |
| Lateral Shift | 7432.45 | 90.000 | 352.296 | 6591.00 | 355.41 | -728.08 | 2.00 | 580.63 |
| On Azimuth | 8035.51 | 90.000 | 340.235 | 6591.00 | 940.14 | -871.00 | 2.00 | 1179.25 |
| BHL | 14373.51 | 90.000 | 340.235 | 6591.00 | 6904.75 | -3014.29 | 0.00 | 7517.25 |



User specified (HDGM) Dip: 66.48° Field: 51806 nT
 Magnetic North is 7.68 degrees West of True North (at 1/25/2019)
 Grid North is 0.05 degrees East of True North
 To correct azimuth from True to Grid subtract 0.05 degrees
 To correct azimuth from Magnetic to Grid subtract 7.73 degrees

API: 47-085-10348-0000
 BHI Job #: 109627236
 Rig: Frontier 22
 Duration: 01/29/2019-01/31/2019



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

Page 1 of 10



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

REPORT SETUP INFORMATION

| | | | |
|---------------------|------------------------------------|----------------------|---|
| Projection System | NAD27 / UTM Zone 17 North, US feet | Software System | WellArchitect® 5.1 |
| North Reference | Grid | User | Delaset |
| Scale | 0.999601 | Report Generated | 2/11/2019 at 12:47:18 PM |
| Convergence at slot | 0.05° East | Database/Source file | WA_MPL_EasternUS_Defn/Ray_Unit_3H_AWP_Proj_14355_.xml |

WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | 3.05 | 19.63 | 1661876.08 | 14297230.03 | 39°22'17.620"N | 80°55'26.640"W |
| Facility Reference Pt | | | 1661856.46 | 14297226.98 | 39°22'17.590"N | 80°55'26.890"W |
| Field Reference Pt | | | 0.00 | 0.00 | 0°00'00.000" | 85°29'19.301"W |

WELLPATH DATUM

| | | | |
|--------------------------|-------------------|--|-------------------|
| Calculation method | Minimum curvature | Frontier 22 (RKB) to Facility Vertical Datum | 24.50ft |
| Horizontal Reference Pt | Slot | Frontier 22 (RKB) to Mean Sea Level | 1259.50ft |
| Vertical Reference Pt | Frontier 22 (RKB) | Frontier 22 (RKB) to Ground Level at Slot (Slot #03) | 24.50ft |
| MD Reference Pt | Frontier 22 (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 340.24° |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'
Page 2 of 10



REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

WELLPATH DATA (192 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] | Comments |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|---|
| 0.00† | 0.000 | 260.800 | 0.00 | 0.00 | 0.00 | 0.00 | 1661876.08 | 14297230.03 | 39°22'17.620"N | 80°55'26.640"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | |
| 24.50 | 0.000 | 260.800 | 24.50 | 0.00 | 0.00 | 0.00 | 1661876.08 | 14297230.03 | 39°22'17.620"N | 80°55'26.640"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | |
| 109.50 | 0.470 | 260.800 | 109.50 | 0.06 | -0.06 | -0.34 | 1661875.74 | 14297229.97 | 39°22'17.619"N | 80°55'26.644"W | 0.35 | 260.800 | 0.55 | 0.55 | -116.71 | Gyrodata MS Gyro <17-1/2">(100'-453.9') |
| 134.50 | 0.460 | 272.400 | 134.50 | 0.12 | -0.07 | -0.55 | 1661875.53 | 14297229.96 | 39°22'17.619"N | 80°55'26.647"W | 0.55 | 262.903 | 0.38 | -0.04 | 46.40 | |
| 159.50 | 0.450 | 262.730 | 159.50 | 0.18 | -0.08 | -0.74 | 1661875.34 | 14297229.95 | 39°22'17.619"N | 80°55'26.649"W | 0.75 | 264.150 | 0.31 | -0.04 | -38.68 | |
| 184.50 | 0.460 | 264.910 | 184.50 | 0.23 | -0.10 | -0.94 | 1661875.14 | 14297229.93 | 39°22'17.619"N | 80°55'26.652"W | 0.95 | 264.083 | 0.08 | 0.04 | 8.72 | |
| 209.50 | 0.220 | 255.290 | 209.50 | 0.26 | -0.12 | -1.09 | 1661874.99 | 14297229.91 | 39°22'17.619"N | 80°55'26.654"W | 1.09 | 263.775 | 0.98 | -0.96 | -38.48 | |
| 234.50 | 0.090 | 308.330 | 234.50 | 0.28 | -0.12 | -1.15 | 1661874.93 | 14297229.91 | 39°22'17.619"N | 80°55'26.655"W | 1.15 | 264.107 | 0.72 | -0.52 | 212.16 | |
| 259.50 | 0.130 | 276.820 | 259.50 | 0.31 | -0.10 | -1.19 | 1661874.89 | 14297229.92 | 39°22'17.619"N | 80°55'26.655"W | 1.20 | 265.061 | 0.28 | 0.16 | -126.04 | |
| 284.50 | 0.130 | 229.580 | 284.50 | 0.31 | -0.12 | -1.24 | 1661874.84 | 14297229.91 | 39°22'17.619"N | 80°55'26.656"W | 1.25 | 264.571 | 0.42 | 0.00 | -188.96 | |
| 309.50 | 0.130 | 207.660 | 309.50 | 0.28 | -0.16 | -1.28 | 1661874.80 | 14297229.86 | 39°22'17.618"N | 80°55'26.656"W | 1.29 | 262.789 | 0.20 | 0.00 | -87.68 | |
| 334.50 | 0.200 | 198.340 | 334.50 | 0.23 | -0.23 | -1.30 | 1661874.78 | 14297229.80 | 39°22'17.618"N | 80°55'26.657"W | 1.32 | 260.076 | 0.30 | 0.28 | -37.28 | |
| 359.50 | 0.100 | 187.320 | 359.50 | 0.17 | -0.29 | -1.32 | 1661874.76 | 14297229.73 | 39°22'17.617"N | 80°55'26.657"W | 1.35 | 257.564 | 0.41 | -0.40 | -44.08 | |
| 384.50 | 0.220 | 177.330 | 384.50 | 0.11 | -0.36 | -1.32 | 1661874.76 | 14297229.66 | 39°22'17.616"N | 80°55'26.657"W | 1.37 | 254.724 | 0.49 | 0.48 | -39.96 | |
| 409.50 | 0.230 | 178.080 | 409.50 | 0.01 | -0.46 | -1.32 | 1661874.76 | 14297229.57 | 39°22'17.615"N | 80°55'26.657"W | 1.39 | 250.791 | 0.04 | 0.04 | 3.00 | |
| 434.50 | 0.340 | 187.060 | 434.50 | -0.10 | -0.58 | -1.32 | 1661874.76 | 14297229.44 | 39°22'17.614"N | 80°55'26.657"W | 1.45 | 246.255 | 0.47 | 0.44 | 35.92 | |
| 459.50 | 0.410 | 176.700 | 459.49 | -0.25 | -0.75 | -1.33 | 1661874.75 | 14297229.28 | 39°22'17.613"N | 80°55'26.657"W | 1.52 | 240.697 | 0.39 | 0.28 | -41.44 | |
| 463.40 | 0.420 | 175.100 | 463.39 | -0.28 | -0.77 | -1.33 | 1661874.75 | 14297229.25 | 39°22'17.612"N | 80°55'26.657"W | 1.54 | 239.744 | 0.39 | 0.26 | -41.03 | |
| 516.50 | 0.640 | 196.130 | 516.49 | -0.71 | -1.25 | -1.39 | 1661874.69 | 14297228.77 | 39°22'17.608"N | 80°55'26.658"W | 1.87 | 228.022 | 0.55 | 0.41 | 39.60 | Gyrodata MS Gyro <12-1/4">(453.9')(507'-692') |
| 609.50 | 1.620 | 193.150 | 609.47 | -2.23 | -3.03 | -1.84 | 1661874.25 | 14297226.99 | 39°22'17.590"N | 80°55'26.663"W | 3.54 | 211.193 | 1.06 | 1.05 | -3.20 | |
| 701.50 | 3.620 | 184.110 | 701.37 | -5.98 | -7.20 | -2.34 | 1661873.74 | 14297222.83 | 39°22'17.549"N | 80°55'26.670"W | 7.57 | 198.012 | 2.21 | 2.17 | -9.83 | |
| 818.50 | 4.660 | 178.540 | 818.07 | -13.87 | -15.63 | -2.48 | 1661873.60 | 14297214.40 | 39°22'17.466"N | 80°55'26.672"W | 15.83 | 189.027 | 0.95 | 0.89 | -4.76 | WFT EM <12-1/4">(692')(809'-2508') |
| 913.50 | 5.020 | 174.680 | 912.73 | -21.56 | -23.63 | -2.00 | 1661874.08 | 14297206.41 | 39°22'17.386"N | 80°55'26.666"W | 23.71 | 184.837 | 0.51 | 0.38 | -4.06 | |
| 1008.50 | 4.170 | 168.400 | 1007.42 | -29.00 | -31.15 | -0.92 | 1661875.16 | 14297198.89 | 39°22'17.312"N | 80°55'26.652"W | 31.16 | 181.691 | 1.04 | -0.89 | -6.61 | |
| 1103.50 | 4.220 | 165.150 | 1102.17 | -35.91 | -37.91 | 0.67 | 1661876.75 | 14297192.13 | 39°22'17.245"N | 80°55'26.632"W | 37.92 | 178.986 | 0.26 | 0.05 | -3.42 | |
| 1198.50 | 4.660 | 165.920 | 1196.88 | -43.23 | -45.03 | 2.51 | 1661878.58 | 14297185.01 | 39°22'17.175"N | 80°55'26.609"W | 45.10 | 176.816 | 0.47 | 0.46 | 0.81 | |
| 1292.50 | 3.680 | 159.260 | 1290.63 | -50.04 | -51.56 | 4.50 | 1661880.58 | 14297178.49 | 39°22'17.110"N | 80°55'26.583"W | 51.75 | 175.009 | 1.16 | -1.04 | -7.09 | |
| 1387.50 | 2.300 | 137.190 | 1385.50 | -54.85 | -55.81 | 6.88 | 1661882.96 | 14297174.24 | 39°22'17.068"N | 80°55'26.553"W | 56.23 | 172.974 | 1.87 | -1.45 | -23.23 | |
| 1482.50 | 0.860 | 77.800 | 1480.47 | -56.70 | -57.06 | 8.87 | 1661884.95 | 14297172.99 | 39°22'17.056"N | 80°55'26.528"W | 57.74 | 171.163 | 2.11 | -1.52 | -62.52 | |
| 1577.50 | 1.170 | 359.130 | 1575.46 | -55.87 | -55.94 | 9.55 | 1661885.63 | 14297174.11 | 39°22'17.067"N | 80°55'26.519"W | 56.75 | 170.309 | 1.38 | 0.33 | -82.81 | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'
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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

WELLPATH DATA (192 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) | Comments |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|-------------------------------------|
| 1672.50 | 1.210 | 329.610 | 1670.44 | -53.97 | -54.10 | 9.03 | 1661885.11 | 14297175.95 | 39°22'17.085"N | 80°55'26.526"W | 54.85 | 170.524 | 0.64 | 0.04 | -31.07 | |
| 1767.50 | 1.300 | 300.220 | 1765.42 | -52.16 | -52.69 | 7.59 | 1661883.67 | 14297177.35 | 39°22'17.099"N | 80°55'26.544"W | 53.24 | 171.801 | 0.68 | 0.09 | -30.94 | |
| 1861.50 | 1.190 | 262.070 | 1859.40 | -51.14 | -52.29 | 5.70 | 1661881.78 | 14297177.76 | 39°22'17.103"N | 80°55'26.568"W | 52.60 | 173.775 | 0.87 | -0.12 | -40.59 | |
| 1956.50 | 1.700 | 238.110 | 1954.37 | -51.23 | -53.17 | 3.53 | 1661879.61 | 14297176.88 | 39°22'17.094"N | 80°55'26.596"W | 53.29 | 176.202 | 0.82 | 0.54 | -25.22 | |
| 2051.50 | 0.840 | 193.540 | 2049.35 | -52.11 | -54.59 | 2.17 | 1661878.25 | 14297175.45 | 39°22'17.080"N | 80°55'26.613"W | 54.64 | 177.723 | 1.32 | -0.91 | -46.92 | |
| 2146.50 | 1.490 | 130.350 | 2144.33 | -53.77 | -56.07 | 2.95 | 1661879.03 | 14297173.98 | 39°22'17.066"N | 80°55'26.603"W | 56.15 | 176.989 | 1.41 | 0.68 | -66.52 | |
| 2240.50 | 2.260 | 129.300 | 2238.28 | -56.41 | -58.03 | 5.31 | 1661881.39 | 14297172.01 | 39°22'17.046"N | 80°55'26.573"W | 58.28 | 174.768 | 0.82 | 0.82 | -1.12 | |
| 2335.50 | 2.000 | 140.790 | 2333.21 | -59.58 | -60.51 | 7.81 | 1661883.89 | 14297169.54 | 39°22'17.022"N | 80°55'26.541"W | 61.01 | 172.643 | 0.52 | -0.27 | 12.09 | |
| 2430.50 | 1.610 | 149.790 | 2428.16 | -62.46 | -62.94 | 9.53 | 1661885.61 | 14297167.11 | 39°22'16.998"N | 80°55'26.519"W | 63.66 | 171.389 | 0.51 | -0.41 | 9.47 | |
| 2517.50 | 1.210 | 182.770 | 2515.14 | -64.51 | -64.92 | 10.10 | 1661886.18 | 14297165.13 | 39°22'16.978"N | 80°55'26.512"W | 65.70 | 171.155 | 1.02 | -0.46 | 37.91 | |
| 2600.50 | 1.250 | 222.530 | 2598.12 | -65.74 | -66.46 | 9.45 | 1661885.52 | 14297163.59 | 39°22'16.963"N | 80°55'26.520"W | 67.13 | 171.909 | 1.01 | 0.05 | 47.90 | WFT EM <8-3/4">(2508')(2591'-6706') |
| 2694.50 | 2.910 | 228.210 | 2692.06 | -67.11 | -68.81 | 6.98 | 1661883.05 | 14297161.25 | 39°22'16.940"N | 80°55'26.552"W | 69.16 | 174.211 | 1.78 | 1.77 | 6.04 | |
| 2789.50 | 4.730 | 222.410 | 2786.84 | -69.85 | -73.30 | 2.54 | 1661878.61 | 14297156.75 | 39°22'16.895"N | 80°55'26.609"W | 73.35 | 178.019 | 1.96 | 1.92 | -6.11 | |
| 2884.50 | 6.470 | 213.450 | 2881.39 | -74.88 | -80.66 | -3.06 | 1661873.02 | 14297149.39 | 39°22'16.823"N | 80°55'26.680"W | 80.72 | 182.170 | 2.04 | 1.83 | -9.43 | |
| 2979.50 | 6.670 | 211.070 | 2975.76 | -81.57 | -89.86 | -8.85 | 1661867.23 | 14297140.21 | 39°22'16.732"N | 80°55'26.754"W | 90.29 | 185.628 | 0.36 | 0.21 | -2.51 | |
| 3074.50 | 6.540 | 209.710 | 3070.13 | -88.57 | -99.28 | -14.38 | 1661861.70 | 14297130.79 | 39°22'16.639"N | 80°55'26.824"W | 100.32 | 188.244 | 0.21 | -0.14 | -1.43 | |
| 3169.50 | 7.590 | 210.500 | 3164.41 | -96.10 | -109.38 | -20.25 | 1661855.84 | 14297120.68 | 39°22'16.539"N | 80°55'26.899"W | 111.24 | 190.488 | 1.11 | 1.11 | 0.83 | |
| 3264.50 | 9.140 | 217.230 | 3258.40 | -104.22 | -120.80 | -28.00 | 1661848.09 | 14297109.27 | 39°22'16.426"N | 80°55'26.998"W | 124.00 | 193.050 | 1.93 | 1.63 | 7.08 | |
| 3359.50 | 10.630 | 215.980 | 3351.99 | -113.26 | -133.90 | -37.71 | 1661838.38 | 14297096.18 | 39°22'16.297"N | 80°55'27.122"W | 139.11 | 195.730 | 1.58 | 1.57 | -1.32 | |
| 3454.50 | 11.720 | 215.750 | 3445.18 | -123.66 | -148.82 | -48.50 | 1661827.60 | 14297081.27 | 39°22'16.150"N | 80°55'27.259"W | 156.52 | 198.050 | 1.15 | 1.15 | -0.24 | |
| 3554.50 | 13.390 | 213.390 | 3542.79 | -136.36 | -166.73 | -60.80 | 1661815.30 | 14297063.36 | 39°22'15.973"N | 80°55'27.416"W | 177.47 | 200.036 | 1.75 | 1.67 | -2.36 | |
| 3648.50 | 13.280 | 211.690 | 3634.26 | -149.61 | -185.01 | -72.47 | 1661803.64 | 14297045.09 | 39°22'15.792"N | 80°55'27.565"W | 198.69 | 201.390 | 0.43 | -0.12 | -1.81 | |
| 3743.50 | 12.820 | 209.450 | 3726.80 | -163.30 | -203.47 | -83.38 | 1661792.73 | 14297026.64 | 39°22'15.610"N | 80°55'27.704"W | 219.89 | 202.284 | 0.72 | -0.48 | -2.36 | |
| 3838.50 | 13.520 | 210.790 | 3819.30 | -177.24 | -222.19 | -94.25 | 1661781.87 | 14297007.93 | 39°22'15.425"N | 80°55'27.842"W | 241.35 | 202.986 | 0.80 | 0.74 | 1.41 | |
| 3933.50 | 14.090 | 210.350 | 3911.56 | -191.71 | -241.70 | -105.77 | 1661770.35 | 14296988.42 | 39°22'15.232"N | 80°55'27.989"W | 263.84 | 203.635 | 0.61 | 0.60 | -0.46 | |
| 4028.50 | 13.710 | 207.790 | 4003.78 | -206.73 | -261.64 | -116.87 | 1661759.26 | 14296968.49 | 39°22'15.035"N | 80°55'28.131"W | 286.56 | 204.069 | 0.76 | -0.40 | -2.69 | |
| 4122.50 | 13.340 | 210.340 | 4095.17 | -221.20 | -280.86 | -127.54 | 1661748.59 | 14296949.28 | 39°22'14.845"N | 80°55'28.267"W | 308.46 | 204.423 | 0.75 | -0.39 | 2.71 | |
| 4217.50 | 12.990 | 209.310 | 4187.67 | -235.23 | -299.63 | -138.30 | 1661737.83 | 14296930.52 | 39°22'14.660"N | 80°55'28.404"W | 330.00 | 204.777 | 0.44 | -0.37 | -1.08 | |
| 4313.50 | 13.240 | 208.980 | 4281.17 | -249.54 | -318.65 | -148.91 | 1661727.23 | 14296911.50 | 39°22'14.472"N | 80°55'28.539"W | 351.73 | 205.047 | 0.27 | 0.26 | -0.34 | |
| 4408.50 | 13.160 | 207.800 | 4373.66 | -264.02 | -337.73 | -159.22 | 1661716.92 | 14296892.43 | 39°22'14.283"N | 80°55'28.671"W | 373.39 | 205.241 | 0.30 | -0.08 | -1.24 | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

WELLPATH DATA (192 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] | Comments |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|----------|
| 4503.50 | 13.120 | 212.180 | 4466.18 | -277.96 | -356.43 | -170.01 | 1661706.14 | 14296873.74 | 39°22'14.099"N | 80°55'28.809"W | 394.90 | 205.500 | 1.05 | -0.04 | 4.61 | |
| 4598.50 | 14.440 | 214.670 | 4558.44 | -291.50 | -375.30 | -182.49 | 1661693.66 | 14296854.88 | 39°22'13.912"N | 80°55'28.968"W | 417.31 | 205.932 | 1.52 | 1.39 | 2.62 | |
| 4692.50 | 15.050 | 213.280 | 4649.34 | -305.66 | -395.14 | -195.85 | 1661680.30 | 14296835.05 | 39°22'13.716"N | 80°55'29.138"W | 441.01 | 206.366 | 0.75 | 0.65 | -1.48 | |
| 4787.50 | 14.890 | 211.190 | 4741.12 | -320.76 | -415.89 | -208.94 | 1661667.22 | 14296814.30 | 39°22'13.511"N | 80°55'29.305"W | 465.43 | 206.675 | 0.59 | -0.17 | -2.20 | |
| 4882.50 | 14.810 | 209.590 | 4832.95 | -336.36 | -436.89 | -221.26 | 1661654.91 | 14296793.31 | 39°22'13.304"N | 80°55'29.462"W | 489.72 | 206.860 | 0.44 | -0.08 | -1.68 | |
| 4977.50 | 14.840 | 207.290 | 4924.79 | -352.56 | -458.26 | -232.83 | 1661643.34 | 14296771.95 | 39°22'13.093"N | 80°55'29.610"W | 514.02 | 206.934 | 0.62 | 0.03 | -2.42 | |
| 5072.50 | 14.370 | 209.290 | 5016.72 | -368.58 | -479.35 | -244.18 | 1661632.00 | 14296750.86 | 39°22'12.884"N | 80°55'29.754"W | 537.96 | 206.994 | 0.73 | -0.49 | 2.11 | |
| 5167.50 | 14.040 | 212.110 | 5108.81 | -383.42 | -499.40 | -256.07 | 1661620.11 | 14296730.83 | 39°22'12.686"N | 80°55'29.906"W | 561.22 | 207.147 | 0.81 | -0.35 | 2.97 | |
| 5262.50 | 12.870 | 210.960 | 5201.20 | -397.23 | -518.23 | -267.64 | 1661608.55 | 14296712.00 | 39°22'12.500"N | 80°55'30.053"W | 583.26 | 207.314 | 1.26 | -1.23 | -1.21 | |
| 5356.50 | 12.860 | 207.510 | 5292.85 | -410.96 | -536.49 | -277.86 | 1661598.33 | 14296693.76 | 39°22'12.320"N | 80°55'30.184"W | 604.17 | 207.381 | 0.82 | -0.01 | -3.67 | |
| 5451.50 | 13.010 | 208.370 | 5385.44 | -425.27 | -555.27 | -287.82 | 1661588.37 | 14296674.98 | 39°22'12.134"N | 80°55'30.311"W | 625.43 | 207.400 | 0.26 | 0.16 | 0.91 | |
| 5546.50 | 13.150 | 207.710 | 5477.97 | -439.71 | -574.25 | -297.93 | 1661578.27 | 14296656.01 | 39°22'11.947"N | 80°55'30.440"W | 646.93 | 207.421 | 0.22 | 0.15 | -0.69 | |
| 5641.50 | 12.920 | 207.740 | 5570.52 | -454.19 | -593.21 | -307.90 | 1661568.31 | 14296637.05 | 39°22'11.759"N | 80°55'30.567"W | 668.36 | 207.431 | 0.24 | -0.24 | 0.03 | |
| 5736.50 | 13.390 | 212.590 | 5663.03 | -468.08 | -611.88 | -318.77 | 1661557.44 | 14296618.39 | 39°22'11.575"N | 80°55'30.705"W | 689.94 | 207.518 | 1.26 | 0.49 | 5.11 | |
| 5830.50 | 14.280 | 211.540 | 5754.30 | -481.98 | -630.93 | -330.69 | 1661545.52 | 14296599.34 | 39°22'11.387"N | 80°55'30.857"W | 712.34 | 207.660 | 0.98 | 0.95 | -1.12 | |
| 5862.50 | 12.720 | 218.910 | 5785.42 | -486.28 | -637.04 | -334.97 | 1661541.24 | 14296593.24 | 39°22'11.327"N | 80°55'30.912"W | 719.74 | 207.736 | 7.25 | -4.88 | 23.03 | |
| 5894.50 | 11.170 | 228.830 | 5816.73 | -489.25 | -641.82 | -339.52 | 1661536.70 | 14296588.46 | 39°22'11.279"N | 80°55'30.970"W | 726.09 | 207.878 | 8.02 | -4.84 | 31.00 | |
| 5925.50 | 10.070 | 241.230 | 5847.20 | -490.77 | -645.10 | -344.15 | 1661532.06 | 14296585.18 | 39°22'11.247"N | 80°55'31.029"W | 731.16 | 208.079 | 8.16 | -3.55 | 40.00 | |
| 5957.50 | 10.400 | 258.680 | 5878.70 | -490.78 | -647.02 | -349.44 | 1661526.78 | 14296583.27 | 39°22'11.228"N | 80°55'31.096"W | 735.35 | 208.372 | 9.71 | 1.03 | 54.53 | |
| 5988.50 | 11.870 | 273.370 | 5909.12 | -489.12 | -647.38 | -355.37 | 1661520.86 | 14296582.91 | 39°22'11.225"N | 80°55'31.172"W | 738.50 | 208.764 | 10.27 | 4.74 | 47.39 | |
| 6020.50 | 13.860 | 283.250 | 5940.32 | -485.74 | -646.31 | -362.39 | 1661513.84 | 14296583.98 | 39°22'11.235"N | 80°55'31.261"W | 740.97 | 209.279 | 9.25 | 6.22 | 30.87 | |
| 6052.50 | 15.200 | 291.610 | 5971.30 | -480.87 | -643.88 | -370.02 | 1661506.21 | 14296586.40 | 39°22'11.259"N | 80°55'31.358"W | 742.63 | 209.884 | 7.77 | 4.19 | 26.13 | |
| 6083.50 | 15.490 | 300.810 | 6001.20 | -474.99 | -640.27 | -377.35 | 1661498.88 | 14296590.02 | 39°22'11.295"N | 80°55'31.452"W | 743.19 | 210.514 | 7.90 | 0.94 | 29.68 | |
| 6115.50 | 16.580 | 309.620 | 6031.96 | -467.76 | -635.16 | -384.54 | 1661491.69 | 14296595.12 | 39°22'11.345"N | 80°55'31.543"W | 742.50 | 211.191 | 8.32 | 3.41 | 27.53 | |
| 6147.50 | 18.520 | 317.530 | 6062.47 | -459.14 | -628.50 | -391.49 | 1661484.75 | 14296601.77 | 39°22'11.411"N | 80°55'31.632"W | 740.46 | 211.918 | 9.60 | 6.06 | 24.72 | |
| 6178.50 | 21.200 | 322.820 | 6091.63 | -449.25 | -620.40 | -398.20 | 1661478.04 | 14296609.87 | 39°22'11.491"N | 80°55'31.717"W | 737.20 | 212.694 | 10.40 | 8.65 | 17.06 | |
| 6210.50 | 23.800 | 326.050 | 6121.19 | -437.46 | -610.44 | -405.31 | 1661470.94 | 14296619.83 | 39°22'11.590"N | 80°55'31.807"W | 732.74 | 213.583 | 8.99 | 8.12 | 10.09 | |
| 6241.50 | 25.830 | 328.450 | 6149.33 | -424.79 | -599.49 | -412.34 | 1661463.91 | 14296630.78 | 39°22'11.698"N | 80°55'31.897"W | 727.61 | 214.521 | 7.31 | 6.55 | 7.74 | |
| 6273.50 | 27.840 | 329.250 | 6177.88 | -410.63 | -587.13 | -419.80 | 1661456.44 | 14296643.13 | 39°22'11.821"N | 80°55'31.992"W | 721.77 | 215.565 | 6.38 | 6.28 | 2.50 | |
| 6304.50 | 29.580 | 330.440 | 6205.07 | -395.98 | -574.25 | -427.28 | 1661448.97 | 14296656.01 | 39°22'11.948"N | 80°55'32.087"W | 715.77 | 216.652 | 5.91 | 5.61 | 3.84 | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

WELLPATH DATA (192 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) | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|--|
| 6336.50 | 31.260 | 331.310 | 6232.66 | -379.99 | -560.09 | -435.16 | 1661441.09 | 14296670.16 | 39°22'12.088"N | 80°55'32.187"W | 709.28 | 217.845 | 5.43 | 5.25 | 2.72 | |
| 6368.50 | 33.490 | 331.270 | 6259.69 | -363.07 | -545.07 | -443.39 | 1661432.86 | 14296685.18 | 39°22'12.236"N | 80°55'32.292"W | 702.64 | 219.127 | 6.97 | 6.97 | -0.12 | |
| 6399.50 | 36.130 | 331.780 | 6285.14 | -345.58 | -529.51 | -451.83 | 1661424.43 | 14296700.73 | 39°22'12.390"N | 80°55'32.399"W | 696.08 | 220.474 | 8.57 | 8.52 | 1.65 | |
| 6431.50 | 38.170 | 332.230 | 6310.64 | -326.45 | -512.45 | -460.90 | 1661415.37 | 14296717.78 | 39°22'12.559"N | 80°55'32.514"W | 689.22 | 221.968 | 6.43 | 6.37 | 1.41 | |
| 6463.50 | 40.160 | 333.190 | 6335.45 | -306.42 | -494.49 | -470.16 | 1661406.11 | 14296735.74 | 39°22'12.737"N | 80°55'32.632"W | 682.33 | 223.555 | 6.50 | 6.22 | 3.00 | |
| 6494.50 | 42.190 | 333.970 | 6358.79 | -286.15 | -476.21 | -479.24 | 1661397.04 | 14296754.01 | 39°22'12.917"N | 80°55'32.747"W | 675.61 | 225.182 | 6.75 | 6.55 | 2.52 | |
| 6526.50 | 44.300 | 334.520 | 6382.09 | -264.35 | -456.46 | -488.76 | 1661387.51 | 14296773.74 | 39°22'13.113"N | 80°55'32.868"W | 668.77 | 226.957 | 6.70 | 6.59 | 1.72 | |
| 6553.00† | 46.616 | 335.097 | 6400.68 | -245.54 | -439.37 | -496.80 | 1661379.48 | 14296790.83 | 39°22'13.281"N | 80°55'32.971"W | 663.22 | 228.510 | 8.88 | 8.74 | 2.18 | Middlesex: 6553' MD |
| 6557.50 | 47.010 | 335.190 | 6403.76 | -242.28 | -436.40 | -498.18 | 1661378.10 | 14296793.80 | 39°22'13.311"N | 80°55'32.988"W | 662.29 | 228.782 | 8.88 | 8.75 | 2.08 | |
| 6589.50 | 50.270 | 335.510 | 6424.90 | -218.35 | -414.57 | -508.19 | 1661368.09 | 14296815.62 | 39°22'13.527"N | 80°55'33.115"W | 655.84 | 230.793 | 10.22 | 10.19 | 1.00 | |
| 6620.50 | 53.690 | 335.960 | 6443.99 | -194.01 | -392.31 | -518.23 | 1661358.06 | 14296837.87 | 39°22'13.747"N | 80°55'33.243"W | 649.97 | 232.873 | 11.09 | 11.03 | 1.45 | |
| 6652.50 | 56.040 | 336.890 | 6462.41 | -167.90 | -368.32 | -528.69 | 1661347.60 | 14296861.85 | 39°22'13.984"N | 80°55'33.376"W | 644.34 | 235.136 | 7.72 | 7.34 | 2.91 | |
| 6684.50 | 58.400 | 337.430 | 6479.73 | -141.03 | -343.53 | -539.13 | 1661337.17 | 14296886.63 | 39°22'14.229"N | 80°55'33.508"W | 639.27 | 237.495 | 7.51 | 7.37 | 1.69 | |
| 6715.50 | 60.290 | 337.920 | 6495.54 | -114.39 | -318.86 | -549.26 | 1661327.04 | 14296911.29 | 39°22'14.473"N | 80°55'33.637"W | 635.10 | 239.863 | 6.25 | 6.10 | 1.58 | |
| 6742.00† | 61.170 | 337.714 | 6508.50 | -91.30 | -297.46 | -557.99 | 1661318.32 | 14296932.69 | 39°22'14.685"N | 80°55'33.748"W | 632.32 | 241.938 | 3.39 | 3.32 | -0.78 | Burkett: 6742' MD |
| 6770.00 | 62.100 | 337.500 | 6521.80 | -66.69 | -274.68 | -567.37 | 1661308.94 | 14296955.46 | 39°22'14.910"N | 80°55'33.867"W | 630.36 | 244.167 | 3.39 | 3.32 | -0.76 | BH AT Curve <-8-1/2"> (6715.50')(6770'-14321') |
| 6803.00 | 64.750 | 337.910 | 6536.56 | -37.20 | -247.37 | -578.57 | 1661297.75 | 14296982.75 | 39°22'15.180"N | 80°55'34.010"W | 629.23 | 246.850 | 8.11 | 8.03 | 1.24 | Tully: 6803' MD |
| 6851.00 | 69.730 | 339.630 | 6555.12 | 7.03 | -206.12 | -594.58 | 1661281.74 | 14297023.98 | 39°22'15.588"N | 80°55'34.213"W | 629.29 | 250.880 | 10.89 | 10.38 | 3.58 | |
| 6855.00† | 70.168 | 339.795 | 6556.50 | 10.79 | -202.60 | -595.88 | 1661280.44 | 14297027.51 | 39°22'15.622"N | 80°55'34.230"W | 629.38 | 251.222 | 11.63 | 10.96 | 4.13 | Marcellus POE: 6855' MD |
| 6898.00 | 74.890 | 341.520 | 6569.40 | 51.79 | -163.91 | -609.45 | 1661266.87 | 14297066.18 | 39°22'16.005"N | 80°55'34.402"W | 631.11 | 254.947 | 11.63 | 10.98 | 4.01 | |
| 6945.00 | 80.200 | 342.740 | 6579.54 | 97.64 | -120.24 | -623.53 | 1661252.80 | 14297109.83 | 39°22'16.437"N | 80°55'34.581"W | 635.01 | 259.085 | 11.58 | 11.30 | 2.60 | |
| 6992.00 | 85.010 | 344.360 | 6585.58 | 144.16 | -75.56 | -636.72 | 1661239.62 | 14297154.50 | 39°22'16.878"N | 80°55'34.748"W | 641.18 | 263.233 | 10.79 | 10.23 | 3.45 | |
| 7039.00 | 87.010 | 345.480 | 6588.85 | 190.88 | -30.29 | -648.91 | 1661227.43 | 14297199.75 | 39°22'17.326"N | 80°55'34.903"W | 649.62 | 267.328 | 4.87 | 4.26 | 2.38 | |
| 7086.00 | 89.880 | 347.170 | 6590.13 | 237.59 | 15.36 | -660.02 | 1661216.33 | 14297245.38 | 39°22'17.777"N | 80°55'35.044"W | 660.20 | 271.333 | 7.09 | 6.11 | 3.60 | |
| 7134.00 | 90.060 | 347.170 | 6590.15 | 285.24 | 62.16 | -670.68 | 1661205.67 | 14297292.16 | 39°22'18.240"N | 80°55'35.179"W | 673.55 | 275.295 | 0.38 | 0.38 | 0.00 | |
| 7228.00 | 90.310 | 347.380 | 6589.85 | 378.53 | 153.85 | -691.38 | 1661184.97 | 14297383.81 | 39°22'19.146"N | 80°55'35.442"W | 708.29 | 282.545 | 0.35 | 0.27 | 0.22 | |
| 7322.00 | 90.220 | 347.610 | 6589.42 | 471.78 | 245.62 | -711.74 | 1661164.63 | 14297475.55 | 39°22'20.053"N | 80°55'35.700"W | 752.93 | 289.039 | 0.26 | -0.10 | 0.24 | |
| 7417.00 | 90.220 | 347.730 | 6589.05 | 565.98 | 338.43 | -732.02 | 1661144.35 | 14297568.32 | 39°22'20.971"N | 80°55'35.958"W | 806.47 | 294.812 | 0.13 | 0.00 | 0.13 | |
| 7512.00 | 89.880 | 349.960 | 6588.97 | 659.91 | 431.63 | -750.40 | 1661125.98 | 14297661.48 | 39°22'21.892"N | 80°55'36.191"W | 865.68 | 299.907 | 2.37 | -0.36 | 2.35 | |
| 7607.00 | 90.030 | 351.000 | 6589.04 | 753.39 | 525.32 | -766.11 | 1661110.28 | 14297755.13 | 39°22'22.818"N | 80°55'36.390"W | 928.92 | 304.438 | 1.11 | 0.16 | 1.09 | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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| REFERENCE WELLPATH IDENTIFICATION | | | | |
|-----------------------------------|------------------------------|--|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | | Slot | Slot #03 |
| Area | Ritchie County, WV | | Well | Ray Unit 3H |
| Field | Ritchie | | Wellbore | Ray Unit 3H AWP |
| Facility | Weekley Trust Pad | | | |

| WELLPATH DATA (192 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] | Comments | |
| 7701.00 | 89.940 | 348.530 | 6589.07 | 846.09 | 617.81 | -782.81 | 1661093.58 | 14297847.59 | 39°22'23.733"N | 80°55'36.601"W | 997.24 | 308.281 | 2.63 | -0.10 | -2.63 | | |
| 7795.00 | 90.830 | 347.050 | 6588.44 | 939.27 | 709.68 | -802.69 | 1661073.71 | 14297939.42 | 39°22'24.641"N | 80°55'36.854"W | 1071.43 | 311.481 | 1.84 | 0.95 | -1.57 | | |
| 7891.00 | 89.660 | 344.390 | 6588.03 | 1034.82 | 802.70 | -826.37 | 1661050.04 | 14298032.41 | 39°22'25.560"N | 80°55'37.154"W | 1152.05 | 314.168 | 3.03 | -1.22 | -2.77 | | |
| 7985.00 | 90.120 | 339.920 | 6588.21 | 1128.74 | 892.16 | -855.17 | 1661021.26 | 14298121.83 | 39°22'26.445"N | 80°55'37.520"W | 1235.82 | 316.213 | 4.78 | 0.49 | -4.76 | | |
| 8080.00 | 89.820 | 339.010 | 6588.26 | 1223.73 | 981.12 | -888.49 | 1660987.95 | 14298210.75 | 39°22'27.324"N | 80°55'37.943"W | 1323.64 | 317.836 | 1.01 | -0.32 | -0.96 | | |
| 8174.00 | 89.780 | 340.080 | 6588.58 | 1317.72 | 1069.19 | -921.34 | 1660955.11 | 14298298.79 | 39°22'28.195"N | 80°55'38.361"W | 1411.40 | 319.248 | 1.14 | -0.04 | 1.14 | | |
| 8268.00 | 90.000 | 342.090 | 6588.76 | 1411.71 | 1158.11 | -951.81 | 1660924.65 | 14298387.67 | 39°22'29.074"N | 80°55'38.748"W | 1499.06 | 320.584 | 2.15 | 0.23 | 2.14 | | |
| 8363.00 | 90.030 | 344.760 | 6588.74 | 1506.55 | 1249.16 | -978.91 | 1660897.56 | 14298478.68 | 39°22'29.974"N | 80°55'39.092"W | 1587.03 | 321.916 | 2.81 | 0.03 | 2.81 | | |
| 8457.00 | 90.120 | 343.720 | 6588.62 | 1600.32 | 1339.62 | -1004.44 | 1660872.04 | 14298569.11 | 39°22'30.868"N | 80°55'39.416"W | 1674.36 | 323.138 | 1.11 | 0.10 | -1.11 | | |
| 8551.00 | 89.600 | 341.960 | 6588.85 | 1694.22 | 1429.43 | -1032.17 | 1660844.32 | 14298658.88 | 39°22'31.756"N | 80°55'39.768"W | 1763.14 | 324.167 | 1.95 | -0.55 | -1.87 | | |
| 8646.00 | 89.140 | 339.820 | 6589.89 | 1789.20 | 1519.19 | -1063.27 | 1660813.24 | 14298748.60 | 39°22'32.644"N | 80°55'40.164"W | 1854.31 | 325.012 | 2.30 | -0.48 | -2.25 | | |
| 8741.00 | 89.600 | 341.370 | 6590.94 | 1884.19 | 1608.78 | -1094.83 | 1660781.69 | 14298838.16 | 39°22'33.529"N | 80°55'40.565"W | 1945.98 | 325.763 | 1.70 | 0.48 | 1.63 | | |
| 8836.00 | 89.970 | 339.840 | 6591.29 | 1979.19 | 1698.39 | -1126.38 | 1660750.16 | 14298927.73 | 39°22'34.415"N | 80°55'40.965"W | 2037.95 | 326.448 | 1.66 | 0.39 | -1.61 | | |
| 8931.00 | 90.120 | 337.520 | 6591.22 | 2074.15 | 1786.88 | -1160.91 | 1660715.63 | 14299016.19 | 39°22'35.290"N | 80°55'41.404"W | 2130.88 | 326.989 | 2.45 | 0.16 | -2.44 | | |
| 9026.00 | 90.000 | 337.330 | 6591.12 | 2169.03 | 1874.60 | -1197.38 | 1660679.18 | 14299103.87 | 39°22'36.157"N | 80°55'41.868"W | 2224.38 | 327.432 | 0.24 | -0.13 | -0.20 | | |
| 9121.00 | 89.660 | 336.300 | 6591.40 | 2263.86 | 1961.93 | -1234.78 | 1660641.79 | 14299191.16 | 39°22'37.021"N | 80°55'42.343"W | 2318.16 | 327.815 | 1.14 | -0.36 | -1.08 | | |
| 9216.00 | 89.540 | 335.720 | 6592.06 | 2358.60 | 2048.72 | -1273.41 | 1660603.18 | 14299277.92 | 39°22'37.879"N | 80°55'42.834"W | 2412.22 | 328.136 | 0.62 | -0.13 | -0.61 | | |
| 9311.00 | 89.600 | 336.760 | 6592.78 | 2453.36 | 2135.66 | -1311.68 | 1660564.92 | 14299364.83 | 39°22'38.739"N | 80°55'43.321"W | 2506.30 | 328.443 | 1.10 | 0.06 | 1.09 | | |
| 9406.00 | 89.940 | 337.300 | 6593.16 | 2548.21 | 2223.13 | -1348.76 | 1660527.87 | 14299452.26 | 39°22'39.603"N | 80°55'43.792"W | 2600.28 | 328.755 | 0.67 | 0.36 | 0.57 | | |
| 9501.00 | 89.850 | 337.800 | 6593.33 | 2643.11 | 2310.93 | -1385.03 | 1660491.60 | 14299540.02 | 39°22'40.471"N | 80°55'44.253"W | 2694.20 | 329.064 | 0.53 | -0.09 | 0.53 | | |
| 9595.00 | 89.850 | 339.850 | 6593.58 | 2737.07 | 2398.58 | -1418.99 | 1660457.66 | 14299627.64 | 39°22'41.338"N | 80°55'44.684"W | 2786.88 | 329.392 | 2.18 | 0.00 | 2.18 | | |
| 9689.00 | 89.940 | 342.180 | 6593.75 | 2831.06 | 2487.46 | -1449.56 | 1660427.10 | 14299716.48 | 39°22'42.217"N | 80°55'45.073"W | 2879.01 | 329.769 | 2.48 | 0.10 | 2.48 | | |
| 9784.00 | 89.940 | 343.580 | 6593.85 | 2925.95 | 2578.24 | -1477.53 | 1660399.14 | 14299807.23 | 39°22'43.114"N | 80°55'45.428"W | 2971.61 | 330.184 | 1.47 | 0.00 | 1.47 | | |
| 9879.00 | 89.910 | 343.760 | 6593.97 | 3020.78 | 2669.41 | -1504.24 | 1660372.44 | 14299898.37 | 39°22'44.015"N | 80°55'45.767"W | 3064.07 | 330.598 | 0.19 | -0.03 | 0.19 | | |
| 9973.00 | 90.150 | 342.440 | 6593.92 | 3114.66 | 2759.35 | -1531.57 | 1660345.13 | 14299988.27 | 39°22'44.905"N | 80°55'46.115"W | 3155.90 | 330.968 | 1.43 | 0.26 | -1.40 | | |
| 10068.00 | 89.940 | 340.430 | 6593.85 | 3209.64 | 2849.40 | -1561.81 | 1660314.90 | 14300078.28 | 39°22'45.795"N | 80°55'46.499"W | 3249.36 | 331.272 | 2.13 | -0.22 | -2.12 | | |
| 10163.00 | 89.940 | 341.460 | 6593.95 | 3304.63 | 2939.20 | -1592.83 | 1660283.89 | 14300168.04 | 39°22'46.682"N | 80°55'46.893"W | 3343.05 | 331.546 | 1.08 | 0.00 | 1.08 | | |
| 10257.00 | 89.910 | 341.160 | 6594.07 | 3398.61 | 3028.24 | -1622.95 | 1660253.78 | 14300257.05 | 39°22'47.563"N | 80°55'47.276"W | 3435.72 | 331.811 | 0.32 | -0.03 | -0.32 | | |
| 10351.00 | 89.850 | 341.180 | 6594.27 | 3492.60 | 3117.21 | -1653.29 | 1660223.46 | 14300345.98 | 39°22'48.442"N | 80°55'47.661"W | 3528.50 | 332.060 | 0.07 | -0.06 | 0.02 | | |
| 10447.00 | 89.940 | 342.040 | 6594.45 | 3588.57 | 3208.30 | -1683.57 | 1660193.18 | 14300437.04 | 39°22'49.343"N | 80°55'48.046"W | 3623.21 | 332.312 | 0.90 | 0.09 | 0.90 | | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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| REFERENCE WELLPATH IDENTIFICATION | | | | |
|-----------------------------------|------------------------------|--|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | | Slot | Slot #03 |
| Area | Ritchie County, WV | | Well | Ray Unit 3H |
| Field | Ritchie | | Wellbore | Ray Unit 3H AWP |
| Facility | Weekley Trust Pad | | | |

| WELLPATH DATA (192 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] | Comments | |
| 10542.00 | 90.150 | 342.740 | 6594.37 | 3683.51 | 3298.85 | -1712.31 | 1660164.45 | 14300527.55 | 39°22'50.238"N | 80°55'48.411"W | 3716.78 | 332.568 | 0.77 | 0.22 | 0.74 | | |
| 10637.00 | 89.970 | 340.970 | 6594.27 | 3778.46 | 3389.12 | -1741.90 | 1660134.88 | 14300617.79 | 39°22'51.131"N | 80°55'48.787"W | 3810.56 | 332.798 | 1.87 | -0.19 | -1.86 | | |
| 10730.00 | 89.820 | 342.100 | 6594.44 | 3871.44 | 3477.33 | -1771.35 | 1660105.44 | 14300705.96 | 39°22'52.003"N | 80°55'49.161"W | 3902.50 | 333.006 | 1.23 | -0.16 | 1.22 | | |
| 10824.00 | 90.000 | 343.760 | 6594.59 | 3965.33 | 3567.19 | -1798.94 | 1660077.86 | 14300795.78 | 39°22'52.891"N | 80°55'49.512"W | 3995.13 | 333.238 | 1.78 | 0.19 | 1.77 | | |
| 10919.00 | 89.660 | 344.450 | 6594.87 | 4060.11 | 3658.56 | -1824.96 | 1660051.85 | 14300887.11 | 39°22'53.794"N | 80°55'49.842"W | 4088.46 | 333.489 | 0.81 | -0.36 | 0.73 | | |
| 11014.00 | 89.880 | 346.780 | 6595.25 | 4154.69 | 3750.57 | -1848.56 | 1660028.26 | 14300979.09 | 39°22'54.704"N | 80°55'50.142"W | 4181.38 | 333.762 | 2.46 | 0.23 | 2.45 | | |
| 11108.00 | 89.570 | 347.280 | 6595.70 | 4248.03 | 3842.17 | -1869.66 | 1660007.17 | 14301070.65 | 39°22'55.609"N | 80°55'50.409"W | 4272.93 | 334.052 | 0.63 | -0.33 | 0.53 | | |
| 11202.00 | 90.060 | 348.210 | 6596.01 | 4341.22 | 3934.03 | -1889.61 | 1659987.23 | 14301162.47 | 39°22'56.517"N | 80°55'50.663"W | 4364.31 | 334.344 | 1.12 | 0.52 | 0.99 | | |
| 11297.00 | 89.970 | 343.100 | 6595.98 | 4435.77 | 4026.03 | -1913.14 | 1659963.71 | 14301254.44 | 39°22'57.427"N | 80°55'50.961"W | 4457.47 | 334.583 | 5.38 | -0.09 | -5.38 | | |
| 11391.00 | 89.820 | 338.270 | 6596.15 | 4529.74 | 4114.72 | -1944.22 | 1659932.64 | 14301343.09 | 39°22'58.304"N | 80°55'51.356"W | 4550.92 | 334.709 | 5.14 | -0.16 | -5.14 | | |
| 11486.00 | 89.910 | 336.950 | 6596.38 | 4624.63 | 4202.55 | -1980.41 | 1659896.47 | 14301430.89 | 39°22'59.172"N | 80°55'51.816"W | 4645.80 | 334.768 | 1.39 | 0.09 | -1.39 | | |
| 11581.00 | 89.600 | 334.850 | 6596.79 | 4719.35 | 4289.27 | -2019.20 | 1659857.69 | 14301517.57 | 39°23'00.029"N | 80°55'52.310"W | 4740.78 | 334.791 | 2.23 | -0.33 | -2.21 | | |
| 11676.00 | 90.000 | 333.990 | 6597.12 | 4813.86 | 4374.95 | -2060.21 | 1659816.69 | 14301603.22 | 39°23'00.876"N | 80°55'52.831"W | 4835.77 | 334.784 | 1.00 | 0.42 | -0.91 | | |
| 11771.00 | 90.000 | 331.050 | 6597.12 | 4907.99 | 4459.23 | -2104.05 | 1659772.88 | 14301687.46 | 39°23'01.710"N | 80°55'53.388"W | 4930.69 | 334.740 | 3.09 | 0.00 | -3.09 | | |
| 11866.00 | 89.820 | 330.530 | 6597.27 | 5001.70 | 4542.14 | -2150.41 | 1659726.54 | 14301770.35 | 39°23'02.530"N | 80°55'53.978"W | 5025.47 | 334.666 | 0.58 | -0.19 | -0.55 | | |
| 11960.00 | 89.690 | 333.330 | 6597.67 | 5094.70 | 4625.08 | -2194.63 | 1659682.33 | 14301853.25 | 39°23'03.350"N | 80°55'54.541"W | 5119.35 | 334.615 | 2.98 | -0.14 | 2.98 | | |
| 12055.00 | 89.170 | 337.560 | 6598.61 | 5189.35 | 4711.46 | -2234.10 | 1659642.88 | 14301939.60 | 39°23'04.204"N | 80°55'55.042"W | 5214.32 | 334.630 | 4.49 | -0.55 | 4.45 | | |
| 12148.00 | 89.660 | 340.650 | 6599.56 | 5282.31 | 4798.33 | -2267.27 | 1659609.73 | 14302026.43 | 39°23'05.062"N | 80°55'55.464"W | 5307.02 | 334.709 | 3.36 | 0.53 | 3.32 | | |
| 12243.00 | 89.880 | 340.550 | 6599.94 | 5377.31 | 4887.94 | -2298.82 | 1659578.18 | 14302116.00 | 39°23'05.948"N | 80°55'55.865"W | 5401.53 | 334.812 | 0.25 | 0.23 | -0.11 | | |
| 12337.00 | 90.030 | 344.820 | 6600.02 | 5471.20 | 4977.66 | -2326.79 | 1659550.22 | 14302205.68 | 39°23'06.835"N | 80°55'56.220"W | 5494.64 | 334.946 | 4.55 | 0.16 | 4.54 | | |
| 12431.00 | 90.770 | 347.760 | 6599.36 | 5564.66 | 5068.97 | -2349.07 | 1659527.96 | 14302296.96 | 39°23'07.738"N | 80°55'56.503"W | 5586.82 | 335.136 | 3.23 | 0.79 | 3.13 | | |
| 12526.00 | 90.890 | 343.250 | 6597.99 | 5659.23 | 5160.91 | -2372.84 | 1659504.20 | 14302388.86 | 39°23'08.647"N | 80°55'56.805"W | 5680.26 | 335.308 | 4.75 | 0.13 | -4.75 | | |
| 12620.00 | 89.940 | 339.740 | 6597.30 | 5753.19 | 5250.03 | -2402.66 | 1659474.38 | 14302477.95 | 39°23'09.528"N | 80°55'57.184"W | 5773.70 | 335.409 | 3.87 | -1.01 | -3.73 | | |
| 12714.00 | 90.220 | 337.450 | 6597.17 | 5847.14 | 5337.54 | -2436.97 | 1659440.09 | 14302565.42 | 39°23'10.393"N | 80°55'57.620"W | 5867.55 | 335.460 | 2.45 | 0.30 | -2.44 | | |
| 12809.00 | 89.910 | 335.520 | 6597.07 | 5941.93 | 5424.65 | -2474.87 | 1659402.20 | 14302652.49 | 39°23'11.254"N | 80°55'58.102"W | 5962.53 | 335.476 | 2.06 | -0.33 | -2.03 | | |
| 12902.00 | 90.090 | 336.160 | 6597.07 | 6034.66 | 5509.50 | -2512.93 | 1659364.16 | 14302737.31 | 39°23'12.093"N | 80°55'58.586"W | 6055.53 | 335.482 | 0.71 | 0.19 | 0.69 | | |
| 12998.00 | 89.780 | 336.940 | 6597.17 | 6130.46 | 5597.57 | -2551.14 | 1659325.97 | 14302825.35 | 39°23'12.964"N | 80°55'59.072"W | 6151.51 | 335.499 | 0.87 | -0.32 | 0.81 | | |
| 13093.00 | 90.060 | 336.590 | 6597.31 | 6225.28 | 5684.87 | -2588.61 | 1659288.51 | 14302912.61 | 39°23'13.827"N | 80°55'59.548"W | 6246.49 | 335.518 | 0.47 | 0.29 | -0.37 | | |
| 13186.00 | 90.340 | 335.760 | 6596.98 | 6318.05 | 5769.94 | -2626.18 | 1659250.95 | 14302997.65 | 39°23'14.668"N | 80°56'00.026"W | 6339.48 | 335.527 | 0.94 | 0.30 | -0.89 | | |
| 13281.00 | 90.280 | 338.550 | 6596.47 | 6412.90 | 5857.48 | -2663.06 | 1659214.09 | 14303085.15 | 39°23'15.534"N | 80°56'00.495"W | 6434.43 | 335.551 | 2.94 | -0.06 | 2.94 | | |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'
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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

WELLPATH DATA (192 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] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|----------------------------|
| 13375.00 | 90.060 | 341.170 | 6596.19 | 6506.89 | 5945.72 | -2695.42 | 1659181.74 | 14303173.36 | 39°23'16.406"N | 80°56'00.906"W | 6528.16 | 335.613 | 2.80 | -0.23 | 2.79 | |
| 13469.00 | 90.280 | 342.150 | 6595.91 | 6600.86 | 6034.95 | -2725.00 | 1659152.18 | 14303262.55 | 39°23'17.288"N | 80°56'01.282"W | 6621.64 | 335.699 | 1.07 | 0.23 | 1.04 | |
| 13564.00 | 90.680 | 340.570 | 6595.11 | 6695.83 | 6124.96 | -2755.36 | 1659121.83 | 14303352.52 | 39°23'18.178"N | 80°56'01.668"W | 6716.18 | 335.779 | 1.72 | 0.42 | -1.66 | |
| 13659.00 | 90.400 | 339.110 | 6594.22 | 6790.83 | 6214.13 | -2788.10 | 1659089.10 | 14303441.66 | 39°23'19.059"N | 80°56'02.084"W | 6810.94 | 335.836 | 1.56 | -0.29 | -1.54 | |
| 13753.00 | 90.250 | 340.090 | 6593.69 | 6884.82 | 6302.23 | -2820.86 | 1659056.35 | 14303529.73 | 39°23'19.930"N | 80°56'02.500"W | 6904.74 | 335.887 | 1.05 | -0.16 | 1.04 | |
| 13848.00 | 90.220 | 341.950 | 6593.30 | 6979.80 | 6392.06 | -2851.76 | 1659025.47 | 14303619.52 | 39°23'20.818"N | 80°56'02.893"W | 6999.36 | 335.956 | 1.96 | -0.03 | 1.96 | |
| 13943.00 | 90.430 | 343.270 | 6592.76 | 7074.72 | 6482.72 | -2880.15 | 1658997.08 | 14303710.14 | 39°23'21.715"N | 80°56'03.254"W | 7093.72 | 336.045 | 1.41 | 0.22 | 1.39 | |
| 14037.00 | 90.280 | 343.730 | 6592.17 | 7168.56 | 6572.84 | -2906.85 | 1658970.40 | 14303800.23 | 39°23'22.606"N | 80°56'03.593"W | 7186.93 | 336.143 | 0.51 | -0.16 | 0.49 | |
| 14132.00 | 90.090 | 344.510 | 6591.87 | 7263.35 | 6664.22 | -2932.84 | 1658944.42 | 14303891.57 | 39°23'23.509"N | 80°56'03.923"W | 7281.03 | 336.246 | 0.85 | -0.20 | 0.82 | |
| 14227.00 | 89.970 | 346.980 | 6591.82 | 7357.90 | 6756.28 | -2956.23 | 1658921.03 | 14303983.60 | 39°23'24.419"N | 80°56'04.220"W | 7374.73 | 336.368 | 2.60 | -0.13 | 2.60 | |
| 14321.00 | 90.090 | 349.580 | 6591.77 | 7450.97 | 6848.32 | -2975.33 | 1658901.95 | 14304075.59 | 39°23'25.329"N | 80°56'04.463"W | 7466.73 | 336.517 | 2.77 | 0.13 | 2.77 | |
| 14355.00 | 90.090 | 349.580 | 6591.72 | 7484.52 | 6881.76 | -2981.48 | 1658895.80 | 14304109.02 | 39°23'25.659"N | 80°56'04.541"W | 7499.85 | 336.576 | 0.00 | 0.00 | 0.00 | Projected MD at TD: 14355' |

HOLE & CASING SECTIONS - Ref Wellbore: Ray Unit 3H AWB Ref Wellpath: Ray Unit 3H AWP Proj: 14355'

| String/Diameter | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
|---------------------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| 20in Conductor | 24.50 | 104.50 | 80.00 | 24.50 | 104.50 | 0.00 | 0.00 | -0.05 | -0.30 |
| 17.5in Open Hole | 104.50 | 467.50 | 363.00 | 104.50 | 467.49 | -0.05 | -0.30 | -0.80 | -1.32 |
| 13.375in Casing Surface | 24.50 | 467.50 | 443.00 | 24.50 | 467.49 | 0.00 | 0.00 | -0.80 | -1.32 |
| 12.25in Open Hole | 467.50 | 2541.40 | 2073.90 | 467.49 | 2539.03 | -0.80 | -1.32 | -65.40 | 10.03 |
| 9.625in Casing Production | 24.50 | 2541.40 | 2516.90 | 24.50 | 2539.03 | 0.00 | 0.00 | -65.40 | 10.03 |
| 8.75in Open Hole | 2541.40 | 6787.50 | 4246.10 | 2539.03 | 6529.80 | -65.40 | 10.03 | -260.29 | -573.30 |
| 8.5in Open Hole | 6787.50 | 14355.00 | 7567.50 | 6529.80 | 6591.72 | -260.29 | -573.30 | 6881.76 | -2981.48 |
| 5.5in Casing Production | 24.50 | 14355.00 | 14330.50 | 24.50 | 6591.72 | 0.00 | 0.00 | 6881.76 | -2981.48 |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

TARGETS

| Name | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
|-----------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|-------|
| Ray Unit 3H POE Rev-2 | 6563.00 | -176.74 | -603.02 | 1661273.30 | 14297053.36 | 39°22'15.878"N | 80°55'34.320"W | point |
| Ray Unit 3H BHL Rev-2 | 6591.00 | 6904.75 | -3014.29 | 1658863.00 | 14304132.00 | 39°23'25.887"N | 80°56'04.958"W | point |
| Ray Unit 3H LP Rev-2 | 6591.00 | -1.61 | -656.41 | 1661219.93 | 14297228.42 | 39°22'17.609"N | 80°55'34.998"W | point |

WELLPATH COMPOSITION - Ref Wellbore: Ray Unit 3H AWB Ref Wellpath: Ray Unit 3H AWP Proj: 14355'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---------------|-------------|---|--|-----------------|
| 24.50 | 463.40 | Gyrodata standard - Drop gyro or Multi-shot | 01_Gyrodata MS Gyro <17-1/2">(100'-453.9') | Ray Unit 3H AWB |
| 463.40 | 701.50 | Gyrodata standard - Drop gyro or Multi-shot | 02_Gyrodata MS Gyro <12-1/4">(453.9')(507'-692') | Ray Unit 3H AWB |
| 701.50 | 2517.50 | ISCWSA MWD, Rev. 4 (Standard) | 03_WFT EM <12-1/4">(692')(809'-2508') | Ray Unit 3H AWB |
| 2517.50 | 6715.50 | ISCWSA MWD, Rev. 4 (Standard) | 04_WFT EM <8-3/4">(2508')(2591'-6706') | Ray Unit 3H AWB |
| 6715.50 | 14321.00 | BHI AutoTrak Curve (Short) | 05_BH AT Curve <8-1/2"> (6715.50')(6770'-14321') | Ray Unit 3H AWB |
| 14321.00 | 14355.00 | Blind Drilling (std) | Projection to bit | Ray Unit 3H AWB |



Actual Wellpath Report

Ray Unit 3H AWP Proj: 14355'

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|-----------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #03 |
| Area | Ritchie County, WV | Well | Ray Unit 3H |
| Field | Ritchie | Wellbore | Ray Unit 3H AWB |
| Facility | Weekley Trust Pad | | |

COMMENTS

Wellpath general comments

API: 47-085-10348-0000

BHI Job #: 109627236

Rig: Frontier 22

Duration: 01/29/2019-01/31/2019

Gyrodata MS Gyro <17-1/2">(100'-453.9')

Gyrodata MS Gyro <12-1/4">(453.9')(507'-692')

WFT EM <12-1/4">(692')(809'-2508')

WFT EM <8-3/4">(2508')(2591'-6706')

BH AT Curve <8-1/2"> (6715.50')(6770'-14321')

Middlesex: 6553' MD

Burkett: 6742' MD

Tully: 6803' MD

Marcellus POE: 6855' MD

Projected MD at TD: 14355'