Antero Resources

# Ingot Unit 2H
## Tyler County WV
**Northing:** 14326538.68
**Easting:** 1680245.67
**As Drilled**

Scientific Drilling

Azimuths to Grid North
True North: -0.09°
Magnetic North: -8.55°

*To convert Magnetic North to Grid, Subtract 8.55°*
*To convert True North to Grid, Subtract 0.09°*

Magnetic Field
Strength: 52293.0snT
Dip Angle: 66.97°
Date: 11/19/2014
Model: BGGM2014

Precision 525: GL 1201' + 19 @ 1220.0usft
Gr: 1201.0

**WELL DETAILS** Ingot Unit 2H
Ground Level: 1201.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|
| 0.0 | 0.0 | 14326538.68 | 1680245.67 | 39° 27' 7.190 N | 80° 51' 32.056 W |

Genie Lightfoot
8:31, June 10 2015

Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK 73128

**PROJECT DETAILS:** Tyler County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level

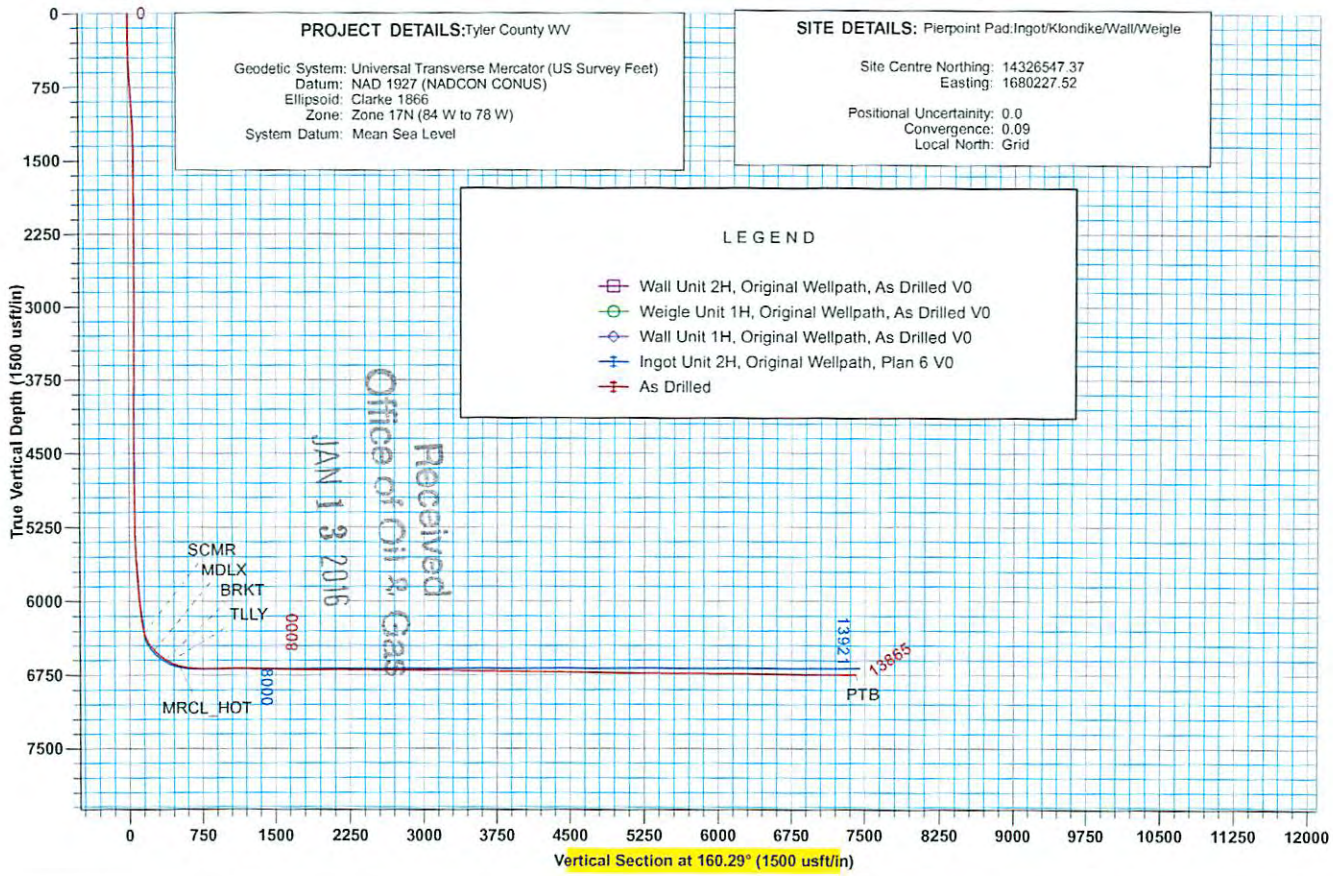
**SITE DETAILS:** Pierpoint Pad:Ingot/Klondike/Wall/Weigle

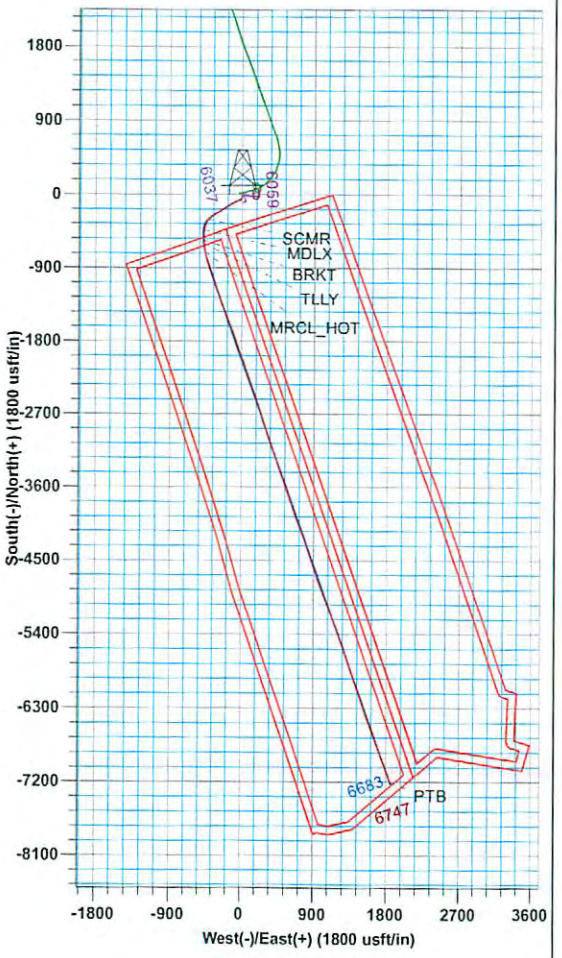
Site Centre Northing: 14326547.37
Easting: 1680227.52

Positional Uncertainty: 0.0
Convergence: 0.09
Local North: Grid

LEGEND

- Wall Unit 2H, Original Wellpath, As Drilled V0
- Weigle Unit 1H, Original Wellpath, As Drilled V0
- Wall Unit 1H, Original Wellpath, As Drilled V0
- Ingot Unit 2H, Original Wellpath, Plan 6 V0
- As Drilled



# Antero

**Tyler County WV**
**Pierpoint Pad:Ingot/Klondike/Wall/Weigle**
**Ingot Unit 2H**
**Original Wellpath**

**Design: As Drilled**

# EOW Completion Report

**09 June, 2015**



Scientific Drilling

| | | | |
|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

| | | | |
|---|---|---|---|
| **Project** | Tyler County WV, Tyler Co West Virginia | | |
| **Map System:** | Universal Transverse Mercator (US Survey Fee | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Zone 17N (84 W to 78 W) | | |

| | | | | | |
|---|---|---|---|---|---|
| **Site** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | | | | |
| **Site Position:** | | **Northing:** | 14,326,547.37 usft | **Latitude:** | 39° 27' 7.276 N |
| **From:** | Map | **Easting:** | 1,680,227.52 usft | **Longitude:** | 80° 51' 32.288 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16" | **Grid Convergence:** | 0.09 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | Ingot Unit 2H, Marcellus | | | | | |
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 14,326,538.68 usft | **Latitude:** | 39° 27' 7.190 N |
| | **+E/-W** | 0.0 usft | **Easting:** | 1,680,245.67 usft | **Longitude:** | 80° 51' 32.056 W |
| **Position Uncertainty** | | 2.0 usft | **Wellhead Elevation:** | 1,220.0 usft | **Ground Level:** | 1,201.0 usft |

| | |
|---|---|
| **Wellbore** | Original Wellpath |

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | BGGM2014 | 11/19/2014 | -8.46 | 66.97 | 52,293 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | As Drilled | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | 1.0 | **Phase:** | ACTUAL | **Tie On Depth:** | 0.0 |

| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 160.29 |

**Survey Program** **Date** 6/9/2015

| **From (usft)** | **To (usft)** | **Survey (Wellbore)** | **Tool Name** | **Description** |
|---|---|---|---|---|
| 106.3 | 6,106.0 | Survey #8 Final Gyro to KOP (Original We | Standard Keeper 104 | Standard Wireline Keeper ver 1.0.4 |
| 6,174.0 | 13,865.0 | Survey #9 SDI MWD (Original Wellpath) | MWD SDI | MWD - Standard ver 1.0.1 |

**Survey**

| **MD (usft)** | **Inc (°)** | **Azi (azimuth) (°)** | **TVD (usft)** | **N/S (usft)** | **E/W (usft)** | **V. Sec (usft)** | **DLeg (°/100usft)** |
|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 |
| 106.3 | 0.17 | 152.45 | 106.3 | -0.1 | 0.1 | 0.2 | 0.16 |
| 129.7 | 0.36 | 141.53 | 129.7 | -0.2 | 0.1 | 0.3 | 0.84 |
| 154.3 | 0.30 | 130.90 | 154.3 | -0.3 | 0.2 | 0.4 | 0.35 |
| 180.3 | 0.21 | 124.95 | 180.3 | -0.4 | 0.3 | 0.5 | 0.36 |
| 204.6 | 0.17 | 133.14 | 204.6 | -0.5 | 0.4 | 0.6 | 0.20 |
| 230.9 | 0.30 | 142.77 | 230.9 | -0.5 | 0.5 | 0.7 | 0.51 |
| 255.4 | 0.27 | 136.83 | 255.4 | -0.6 | 0.5 | 0.8 | 0.17 |
| 279.7 | 0.32 | 128.91 | 279.7 | -0.7 | 0.6 | 0.9 | 0.27 |
| 304.0 | 0.31 | 129.25 | 304.0 | -0.8 | 0.7 | 1.0 | 0.04 |
| 330.5 | 0.31 | 112.43 | 330.5 | -0.9 | 0.9 | 1.1 | 0.34 |

| | | | |
|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 354.9 | 0.47 | 138.74 | 354.9 | -1.0 | 1.0 | 1.2 | 0.97 |
| 404.9 | 0.44 | 156.40 | 404.9 | -1.3 | 1.2 | 1.6 | 0.29 |
| 430.0 | 0.71 | 176.52 | 430.0 | -1.5 | 1.2 | 1.9 | 1.33 |
| 455.0 | 1.12 | 183.68 | 455.0 | -1.9 | 1.2 | 2.2 | 1.70 |
| 480.0 | 1.55 | 186.87 | 480.0 | -2.5 | 1.2 | 2.8 | 1.75 |
| 505.0 | 2.05 | 189.11 | 505.0 | -3.3 | 1.1 | 3.5 | 2.02 |
| 530.0 | 2.82 | 190.01 | 529.9 | -4.3 | 0.9 | 4.4 | 3.09 |
| 555.0 | 3.69 | 191.38 | 554.9 | -5.7 | 0.6 | 5.6 | 3.49 |
| 580.0 | 4.24 | 193.42 | 579.8 | -7.4 | 0.2 | 7.1 | 2.27 |
| 605.5 | 4.52 | 193.04 | 605.2 | -9.3 | -0.2 | 8.7 | 1.10 |
| 630.5 | 4.81 | 193.53 | 630.2 | -11.3 | -0.7 | 10.4 | 1.17 |
| 655.5 | 5.17 | 194.67 | 655.0 | -13.4 | -1.2 | 12.2 | 1.50 |
| 678.9 | 5.39 | 195.09 | 678.4 | -15.5 | -1.7 | 14.0 | 0.95 |
| 703.8 | 5.50 | 195.46 | 703.2 | -17.8 | -2.4 | 15.9 | 0.46 |
| 728.4 | 5.67 | 195.31 | 727.7 | -20.1 | -3.0 | 17.9 | 0.69 |
| 756.0 | 5.71 | 195.39 | 755.1 | -22.7 | -3.7 | 20.1 | 0.15 |
| 780.7 | 5.75 | 195.32 | 779.8 | -25.1 | -4.4 | 22.2 | 0.16 |
| 805.5 | 5.79 | 195.49 | 804.4 | -27.5 | -5.0 | 24.2 | 0.18 |
| 830.2 | 5.76 | 195.31 | 828.9 | -29.9 | -5.7 | 26.2 | 0.14 |
| 854.5 | 5.77 | 195.50 | 853.1 | -32.2 | -6.4 | 28.2 | 0.09 |
| 878.8 | 5.21 | 196.67 | 877.3 | -34.5 | -7.0 | 30.1 | 2.35 |
| 905.6 | 4.76 | 196.59 | 904.0 | -36.7 | -7.7 | 32.0 | 1.68 |
| 929.9 | 4.58 | 195.65 | 928.3 | -38.6 | -8.2 | 33.6 | 0.80 |
| 955.1 | 4.53 | 197.54 | 953.3 | -40.5 | -8.8 | 35.2 | 0.63 |
| 979.9 | 4.03 | 200.54 | 978.1 | -42.3 | -9.4 | 36.6 | 2.21 |
| 1,003.6 | 4.00 | 198.08 | 1,001.7 | -43.8 | -9.9 | 37.9 | 0.74 |
| 1,031.0 | 3.90 | 198.48 | 1,029.0 | -45.6 | -10.5 | 39.4 | 0.38 |
| 1,055.3 | 3.70 | 197.37 | 1,053.3 | -47.2 | -11.0 | 40.7 | 0.88 |
| 1,079.4 | 3.51 | 197.71 | 1,077.4 | -48.6 | -11.5 | 41.9 | 0.79 |
| 1,103.7 | 3.33 | 198.23 | 1,101.7 | -50.0 | -11.9 | 43.0 | 0.75 |
| 1,130.5 | 3.10 | 197.88 | 1,128.4 | -51.4 | -12.4 | 44.2 | 0.86 |
| 1,154.8 | 2.90 | 197.81 | 1,152.6 | -52.6 | -12.8 | 45.2 | 0.83 |
| 1,179.0 | 2.76 | 198.13 | 1,176.8 | -53.8 | -13.2 | 46.2 | 0.58 |
| 1,205.8 | 2.57 | 193.75 | 1,203.6 | -55.0 | -13.5 | 47.2 | 1.04 |
| 1,230.2 | 2.27 | 192.65 | 1,227.9 | -56.0 | -13.7 | 48.1 | 1.25 |
| 1,254.2 | 2.20 | 187.65 | 1,252.0 | -56.9 | -13.9 | 48.9 | 0.86 |
| 1,278.5 | 1.89 | 191.10 | 1,276.3 | -57.7 | -14.0 | 49.6 | 1.37 |
| 1,305.4 | 1.65 | 197.12 | 1,303.1 | -58.6 | -14.2 | 50.3 | 1.13 |
| 1,329.6 | 1.43 | 198.32 | 1,327.3 | -59.2 | -14.4 | 50.8 | 0.92 |
| 1,353.8 | 1.38 | 200.67 | 1,351.5 | -59.7 | -14.6 | 51.3 | 0.32 |
| 1,380.5 | 1.10 | 200.71 | 1,378.2 | -60.3 | -14.8 | 51.7 | 1.05 |
| 1,404.9 | 1.15 | 197.29 | 1,402.6 | -60.7 | -15.0 | 52.1 | 0.34 |
| 1,429.0 | 1.08 | 200.41 | 1,426.7 | -61.2 | -15.1 | 52.5 | 0.38 |
| 1,455.8 | 0.92 | 196.82 | 1,453.5 | -61.6 | -15.3 | 52.8 | 0.64 |

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| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 1,480.0 | 0.79 | 200.19 | 1,477.7 | -62.0 | -15.4 | 53.1 | 0.58 |
| 1,504.3 | 0.81 | 196.67 | 1,501.9 | -62.3 | -15.5 | 53.4 | 0.22 |
| 1,528.5 | 0.82 | 199.09 | 1,526.1 | -62.6 | -15.6 | 53.7 | 0.15 |
| 1,555.3 | 0.66 | 189.04 | 1,552.9 | -62.9 | -15.7 | 54.0 | 0.77 |
| 1,579.6 | 0.69 | 195.28 | 1,577.3 | -63.2 | -15.8 | 54.2 | 0.33 |
| 1,603.9 | 0.58 | 190.72 | 1,601.6 | -63.5 | -15.8 | 54.4 | 0.50 |
| 1,630.8 | 0.57 | 188.67 | 1,628.4 | -63.7 | -15.9 | 54.7 | 0.09 |
| 1,654.6 | 0.59 | 188.85 | 1,652.2 | -64.0 | -15.9 | 54.9 | 0.08 |
| 1,680.9 | 0.43 | 182.01 | 1,678.6 | -64.2 | -15.9 | 55.1 | 0.65 |
| 1,705.2 | 0.38 | 194.21 | 1,702.8 | -64.4 | -16.0 | 55.2 | 0.41 |
| 1,728.5 | 0.39 | 179.54 | 1,726.1 | -64.5 | -16.0 | 55.4 | 0.42 |
| 1,755.3 | 0.38 | 172.18 | 1,753.0 | -64.7 | -16.0 | 55.5 | 0.19 |
| 1,779.2 | 0.38 | 172.14 | 1,776.9 | -64.9 | -15.9 | 55.7 | 0.00 |
| 1,805.5 | 0.30 | 162.07 | 1,803.2 | -65.0 | -15.9 | 55.9 | 0.38 |
| 1,829.2 | 0.32 | 148.96 | 1,826.9 | -65.1 | -15.9 | 56.0 | 0.31 |
| 1,855.6 | 0.32 | 158.27 | 1,853.2 | -65.3 | -15.8 | 56.1 | 0.20 |
| 1,879.1 | 0.30 | 163.14 | 1,876.8 | -65.4 | -15.7 | 56.3 | 0.14 |
| 1,905.6 | 0.26 | 133.51 | 1,903.2 | -65.5 | -15.7 | 56.4 | 0.56 |
| 1,929.3 | 0.22 | 153.85 | 1,927.0 | -65.6 | -15.6 | 56.5 | 0.39 |
| 1,955.6 | 0.16 | 143.04 | 1,953.2 | -65.7 | -15.6 | 56.6 | 0.27 |
| 1,979.4 | 0.16 | 159.10 | 1,977.0 | -65.7 | -15.5 | 56.6 | 0.19 |
| 2,005.6 | 0.17 | 143.47 | 2,003.3 | -65.8 | -15.5 | 56.7 | 0.17 |
| 2,029.4 | 0.23 | 145.63 | 2,027.0 | -65.8 | -15.5 | 56.8 | 0.25 |
| 2,055.8 | 0.25 | 135.94 | 2,053.5 | -65.9 | -15.4 | 56.9 | 0.17 |
| 2,079.4 | 0.18 | 145.55 | 2,077.0 | -66.0 | -15.3 | 57.0 | 0.33 |
| 2,105.7 | 0.17 | 145.90 | 2,103.4 | -66.1 | -15.3 | 57.0 | 0.04 |
| 2,129.5 | 0.14 | 152.66 | 2,127.2 | -66.1 | -15.3 | 57.1 | 0.15 |
| 2,155.8 | 0.13 | 175.17 | 2,153.4 | -66.2 | -15.2 | 57.2 | 0.20 |
| 2,180.1 | 0.13 | 97.39 | 2,177.7 | -66.2 | -15.2 | 57.2 | 0.67 |
| 2,203.2 | 0.09 | 136.30 | 2,200.8 | -66.2 | -15.2 | 57.2 | 0.36 |
| 2,230.1 | 0.05 | 146.84 | 2,227.8 | -66.3 | -15.2 | 57.3 | 0.16 |
| 2,254.0 | 0.12 | 131.24 | 2,251.7 | -66.3 | -15.1 | 57.3 | 0.31 |
| 2,280.3 | 0.12 | 134.70 | 2,278.0 | -66.3 | -15.1 | 57.3 | 0.03 |
| 2,304.1 | 0.20 | 160.84 | 2,301.7 | -66.4 | -15.1 | 57.4 | 0.45 |
| 2,330.4 | 0.12 | 204.77 | 2,328.1 | -66.4 | -15.1 | 57.5 | 0.53 |
| 2,354.2 | 0.15 | 251.29 | 2,351.8 | -66.5 | -15.1 | 57.5 | 0.46 |
| 2,380.6 | 0.18 | 242.64 | 2,378.2 | -66.5 | -15.2 | 57.5 | 0.15 |
| 2,404.4 | 0.25 | 272.15 | 2,402.0 | -66.5 | -15.2 | 57.5 | 0.54 |
| 2,430.3 | 0.24 | 257.81 | 2,428.0 | -66.5 | -15.4 | 57.4 | 0.24 |
| 2,454.0 | 0.29 | 259.88 | 2,451.7 | -66.5 | -15.5 | 57.4 | 0.21 |
| 2,480.7 | 0.30 | 273.65 | 2,478.4 | -66.6 | -15.6 | 57.4 | 0.27 |
| 2,504.9 | 0.30 | 269.88 | 2,502.5 | -66.5 | -15.7 | 57.3 | 0.08 |
| 2,529.0 | 0.34 | 271.21 | 2,526.7 | -66.5 | -15.9 | 57.3 | 0.17 |
| 2,555.7 | 0.24 | 261.57 | 2,553.4 | -66.6 | -16.0 | 57.3 | 0.42 |
| 2,580.0 | 0.27 | 263.70 | 2,577.6 | -66.6 | -16.1 | 57.2 | 0.13 |

| | | | |
|---|---|---|---|
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| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 2,603.9 | 0.27 | 264.86 | 2,601.6 | -66.6 | -16.2 | 57.2 | 0.02 |
| 2,630.7 | 0.23 | 254.41 | 2,628.3 | -66.6 | -16.3 | 57.2 | 0.23 |
| 2,654.7 | 0.27 | 267.15 | 2,652.4 | -66.6 | -16.4 | 57.2 | 0.28 |
| 2,678.9 | 0.29 | 266.16 | 2,676.6 | -66.6 | -16.5 | 57.1 | 0.08 |
| 2,706.0 | 0.33 | 267.17 | 2,703.6 | -66.6 | -16.7 | 57.1 | 0.15 |
| 2,729.7 | 0.29 | 267.55 | 2,727.3 | -66.6 | -16.8 | 57.1 | 0.17 |
| 2,754.3 | 0.29 | 273.73 | 2,752.0 | -66.6 | -16.9 | 57.0 | 0.13 |
| 2,778.0 | 0.30 | 273.12 | 2,775.7 | -66.6 | -17.1 | 57.0 | 0.04 |
| 2,805.5 | 0.25 | 267.48 | 2,803.2 | -66.6 | -17.2 | 56.9 | 0.21 |
| 2,829.9 | 0.36 | 278.12 | 2,827.6 | -66.6 | -17.3 | 56.9 | 0.50 |
| 2,854.2 | 0.36 | 275.81 | 2,851.8 | -66.6 | -17.5 | 56.8 | 0.06 |
| 2,878.5 | 0.37 | 273.56 | 2,876.1 | -66.6 | -17.6 | 56.7 | 0.07 |
| 2,905.5 | 0.37 | 280.73 | 2,903.1 | -66.6 | -17.8 | 56.7 | 0.17 |
| 2,929.8 | 0.44 | 280.85 | 2,927.5 | -66.5 | -18.0 | 56.6 | 0.29 |
| 2,954.1 | 0.41 | 285.03 | 2,951.8 | -66.5 | -18.2 | 56.5 | 0.18 |
| 2,981.0 | 0.48 | 281.26 | 2,978.6 | -66.4 | -18.4 | 56.4 | 0.28 |
| 3,004.8 | 0.43 | 285.65 | 3,002.5 | -66.4 | -18.5 | 56.3 | 0.26 |
| 3,031.0 | 0.46 | 285.81 | 3,028.6 | -66.3 | -18.7 | 56.1 | 0.11 |
| 3,054.6 | 0.54 | 277.80 | 3,052.2 | -66.3 | -18.9 | 56.0 | 0.45 |
| 3,080.8 | 0.46 | 277.93 | 3,078.5 | -66.3 | -19.2 | 55.9 | 0.30 |
| 3,104.3 | 0.40 | 282.36 | 3,102.0 | -66.2 | -19.3 | 55.8 | 0.29 |
| 3,130.6 | 0.48 | 280.37 | 3,128.3 | -66.2 | -19.5 | 55.7 | 0.31 |
| 3,154.2 | 0.44 | 280.92 | 3,151.9 | -66.2 | -19.7 | 55.6 | 0.17 |
| 3,180.3 | 0.45 | 285.24 | 3,178.0 | -66.1 | -19.9 | 55.5 | 0.13 |
| 3,204.1 | 0.55 | 281.46 | 3,201.8 | -66.1 | -20.1 | 55.4 | 0.44 |
| 3,229.2 | 0.46 | 279.60 | 3,226.9 | -66.0 | -20.3 | 55.3 | 0.36 |
| 3,255.2 | 0.44 | 288.11 | 3,252.8 | -66.0 | -20.5 | 55.2 | 0.27 |
| 3,279.7 | 0.40 | 288.09 | 3,277.3 | -65.9 | -20.7 | 55.1 | 0.16 |
| 3,303.9 | 0.41 | 279.33 | 3,301.5 | -65.9 | -20.9 | 55.0 | 0.26 |
| 3,328.4 | 0.49 | 284.86 | 3,326.1 | -65.9 | -21.1 | 54.9 | 0.37 |
| 3,355.1 | 0.46 | 287.82 | 3,352.8 | -65.8 | -21.3 | 54.8 | 0.14 |
| 3,379.5 | 0.49 | 286.88 | 3,377.1 | -65.7 | -21.5 | 54.6 | 0.13 |
| 3,403.6 | 0.48 | 279.56 | 3,401.3 | -65.7 | -21.7 | 54.5 | 0.26 |
| 3,430.4 | 0.48 | 272.28 | 3,428.0 | -65.7 | -21.9 | 54.4 | 0.23 |
| 3,454.5 | 0.46 | 277.83 | 3,452.1 | -65.6 | -22.1 | 54.3 | 0.21 |
| 3,478.6 | 0.38 | 277.80 | 3,476.3 | -65.6 | -22.3 | 54.3 | 0.33 |
| 3,505.8 | 0.46 | 284.45 | 3,503.4 | -65.6 | -22.5 | 54.2 | 0.34 |
| 3,530.0 | 0.45 | 282.11 | 3,527.6 | -65.5 | -22.6 | 54.1 | 0.09 |
| 3,554.1 | 0.49 | 287.55 | 3,551.7 | -65.5 | -22.8 | 53.9 | 0.25 |
| 3,580.8 | 0.47 | 282.17 | 3,578.4 | -65.4 | -23.0 | 53.8 | 0.18 |
| 3,605.1 | 0.52 | 274.66 | 3,602.8 | -65.4 | -23.3 | 53.7 | 0.34 |
| 3,629.3 | 0.43 | 272.27 | 3,626.9 | -65.4 | -23.5 | 53.6 | 0.38 |
| 3,653.4 | 0.51 | 271.27 | 3,651.1 | -65.4 | -23.7 | 53.6 | 0.33 |
| 3,680.6 | 0.47 | 276.08 | 3,678.3 | -65.4 | -23.9 | 53.5 | 0.21 |

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|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 3,704.8 | 0.41 | 278.83 | 3,702.5 | -65.3 | -24.1 | 53.4 | 0.26 |
| 3,729.1 | 0.44 | 272.86 | 3,726.7 | -65.3 | -24.2 | 53.3 | 0.22 |
| 3,755.7 | 0.47 | 281.92 | 3,753.3 | -65.3 | -24.5 | 53.2 | 0.29 |
| 3,779.9 | 0.46 | 279.77 | 3,777.5 | -65.3 | -24.7 | 53.1 | 0.08 |
| 3,804.2 | 0.48 | 276.60 | 3,801.9 | -65.2 | -24.8 | 53.0 | 0.13 |
| 3,828.4 | 0.51 | 269.28 | 3,826.1 | -65.2 | -25.1 | 52.9 | 0.29 |
| 3,855.6 | 0.53 | 281.44 | 3,853.2 | -65.2 | -25.3 | 52.8 | 0.41 |
| 3,879.8 | 0.57 | 269.21 | 3,877.4 | -65.2 | -25.5 | 52.7 | 0.51 |
| 3,904.1 | 0.56 | 274.99 | 3,901.7 | -65.2 | -25.8 | 52.7 | 0.24 |
| 3,930.7 | 0.43 | 275.52 | 3,928.4 | -65.1 | -26.0 | 52.6 | 0.49 |
| 3,955.1 | 0.56 | 273.06 | 3,952.8 | -65.1 | -26.2 | 52.5 | 0.54 |
| 3,979.2 | 0.59 | 273.12 | 3,976.9 | -65.1 | -26.5 | 52.4 | 0.12 |
| 4,003.6 | 0.59 | 270.10 | 4,001.2 | -65.1 | -26.7 | 52.3 | 0.13 |
| 4,030.4 | 0.57 | 263.77 | 4,028.0 | -65.1 | -27.0 | 52.2 | 0.25 |
| 4,054.0 | 0.55 | 262.45 | 4,051.7 | -65.2 | -27.2 | 52.2 | 0.10 |
| 4,080.2 | 0.54 | 260.67 | 4,077.8 | -65.2 | -27.4 | 52.1 | 0.08 |
| 4,104.0 | 0.53 | 268.64 | 4,101.6 | -65.2 | -27.7 | 52.1 | 0.31 |
| 4,130.1 | 0.50 | 262.27 | 4,127.8 | -65.2 | -27.9 | 52.0 | 0.25 |
| 4,154.4 | 0.59 | 267.40 | 4,152.0 | -65.2 | -28.1 | 51.9 | 0.42 |
| 4,180.4 | 0.61 | 262.76 | 4,178.0 | -65.3 | -28.4 | 51.9 | 0.20 |
| 4,204.2 | 0.67 | 262.43 | 4,201.8 | -65.3 | -28.7 | 51.8 | 0.25 |
| 4,230.5 | 0.48 | 266.20 | 4,228.1 | -65.3 | -28.9 | 51.7 | 0.74 |
| 4,254.2 | 0.49 | 262.31 | 4,251.8 | -65.4 | -29.1 | 51.7 | 0.15 |
| 4,280.1 | 0.56 | 269.62 | 4,277.7 | -65.4 | -29.4 | 51.6 | 0.37 |
| 4,303.9 | 0.53 | 266.82 | 4,301.5 | -65.4 | -29.6 | 51.6 | 0.17 |
| 4,330.5 | 0.48 | 257.49 | 4,328.1 | -65.4 | -29.8 | 51.5 | 0.36 |
| 4,354.1 | 0.49 | 246.30 | 4,351.8 | -65.5 | -30.0 | 51.5 | 0.40 |
| 4,380.2 | 0.53 | 246.58 | 4,377.8 | -65.6 | -30.2 | 51.5 | 0.15 |
| 4,404.0 | 0.59 | 248.80 | 4,401.6 | -65.6 | -30.4 | 51.5 | 0.27 |
| 4,430.1 | 0.55 | 255.85 | 4,427.7 | -65.7 | -30.7 | 51.5 | 0.31 |
| 4,454.3 | 0.67 | 244.56 | 4,451.9 | -65.8 | -30.9 | 51.5 | 0.70 |
| 4,480.3 | 0.46 | 242.10 | 4,477.9 | -65.9 | -31.2 | 51.6 | 0.81 |
| 4,504.0 | 0.58 | 245.26 | 4,501.6 | -66.0 | -31.3 | 51.6 | 0.52 |
| 4,530.2 | 0.64 | 235.48 | 4,527.8 | -66.2 | -31.6 | 51.6 | 0.46 |
| 4,553.9 | 0.58 | 236.46 | 4,551.4 | -66.3 | -31.8 | 51.7 | 0.26 |
| 4,579.8 | 0.58 | 241.64 | 4,577.4 | -66.4 | -32.0 | 51.7 | 0.20 |
| 4,603.6 | 0.48 | 234.96 | 4,601.2 | -66.6 | -32.2 | 51.8 | 0.49 |
| 4,630.1 | 0.52 | 237.35 | 4,627.7 | -66.7 | -32.4 | 51.8 | 0.17 |
| 4,653.8 | 0.53 | 223.00 | 4,651.4 | -66.8 | -32.6 | 51.9 | 0.55 |
| 4,679.9 | 0.57 | 233.09 | 4,677.5 | -67.0 | -32.8 | 52.0 | 0.40 |
| 4,705.9 | 0.55 | 224.94 | 4,703.5 | -67.2 | -32.9 | 52.1 | 0.32 |
| 4,729.3 | 0.68 | 215.04 | 4,726.9 | -67.3 | -33.1 | 52.2 | 0.72 |
| 4,754.7 | 0.61 | 200.86 | 4,752.2 | -67.6 | -33.2 | 52.4 | 0.69 |
| 4,755.1 | 0.53 | 221.07 | 4,752.6 | -67.6 | -33.2 | 52.4 | 53.74 |

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|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 4,779.8 | 0.54 | 224.92 | 4,777.4 | -67.8 | -33.4 | 52.5 | 0.15 |
| 4,804.8 | 0.61 | 224.28 | 4,802.4 | -67.9 | -33.6 | 52.6 | 0.28 |
| 4,830.8 | 0.60 | 228.11 | 4,828.4 | -68.1 | -33.8 | 52.8 | 0.16 |
| 4,855.4 | 0.73 | 225.71 | 4,852.9 | -68.3 | -34.0 | 52.9 | 0.54 |
| 4,880.9 | 0.79 | 219.37 | 4,878.4 | -68.6 | -34.2 | 53.0 | 0.41 |
| 4,906.0 | 1.38 | 227.74 | 4,903.5 | -68.9 | -34.5 | 53.2 | 2.43 |
| 4,930.5 | 2.14 | 234.98 | 4,928.0 | -69.4 | -35.1 | 53.5 | 3.22 |
| 4,955.6 | 2.86 | 240.36 | 4,953.1 | -70.0 | -36.1 | 53.7 | 3.02 |
| 4,980.6 | 3.69 | 240.83 | 4,978.1 | -70.7 | -37.3 | 53.9 | 3.32 |
| 5,005.0 | 4.48 | 243.34 | 5,002.5 | -71.5 | -38.8 | 54.2 | 3.31 |
| 5,030.3 | 5.14 | 244.12 | 5,027.6 | -72.4 | -40.7 | 54.4 | 2.63 |
| 5,055.5 | 5.69 | 244.72 | 5,052.8 | -73.4 | -42.9 | 54.7 | 2.19 |
| 5,080.3 | 6.06 | 244.49 | 5,077.4 | -74.5 | -45.2 | 54.9 | 1.50 |
| 5,105.4 | 6.85 | 246.75 | 5,102.3 | -75.7 | -47.8 | 55.1 | 3.30 |
| 5,130.4 | 7.83 | 247.66 | 5,127.2 | -76.9 | -50.7 | 55.3 | 3.94 |
| 5,155.1 | 8.64 | 248.16 | 5,151.6 | -78.2 | -54.0 | 55.5 | 3.29 |
| 5,180.5 | 9.38 | 247.99 | 5,176.6 | -79.7 | -57.7 | 55.6 | 2.92 |
| 5,205.5 | 10.05 | 248.34 | 5,201.3 | -81.3 | -61.6 | 55.8 | 2.69 |
| 5,230.2 | 10.62 | 247.76 | 5,225.6 | -83.0 | -65.7 | 55.9 | 2.34 |
| 5,256.0 | 11.07 | 246.66 | 5,250.9 | -84.8 | -70.2 | 56.2 | 1.92 |
| 5,280.1 | 11.40 | 245.92 | 5,274.6 | -86.7 | -74.5 | 56.5 | 1.49 |
| 5,305.2 | 11.79 | 244.17 | 5,299.2 | -88.9 | -79.0 | 57.0 | 2.09 |
| 5,330.1 | 12.39 | 242.21 | 5,323.5 | -91.2 | -83.7 | 57.6 | 2.92 |
| 5,355.6 | 13.38 | 241.23 | 5,348.4 | -93.9 | -88.7 | 58.5 | 3.98 |
| 5,380.1 | 14.07 | 241.07 | 5,372.1 | -96.7 | -93.8 | 59.4 | 2.83 |
| 5,406.0 | 14.61 | 241.11 | 5,397.2 | -99.8 | -99.4 | 60.4 | 2.09 |
| 5,430.1 | 15.27 | 241.33 | 5,420.5 | -102.8 | -104.9 | 61.4 | 2.75 |
| 5,454.5 | 15.90 | 241.63 | 5,444.1 | -105.9 | -110.6 | 62.4 | 2.60 |
| 5,480.9 | 16.54 | 241.37 | 5,469.4 | -109.5 | -117.1 | 63.6 | 2.44 |
| 5,504.7 | 16.96 | 241.28 | 5,492.2 | -112.7 | -123.1 | 64.6 | 1.77 |
| 5,530.1 | 17.58 | 241.34 | 5,516.4 | -116.4 | -129.7 | 65.8 | 2.44 |
| 5,554.9 | 17.77 | 241.16 | 5,540.1 | -120.0 | -136.3 | 67.0 | 0.80 |
| 5,580.8 | 18.34 | 241.25 | 5,564.7 | -123.9 | -143.4 | 68.2 | 2.20 |
| 5,604.6 | 18.56 | 241.35 | 5,587.2 | -127.5 | -150.0 | 69.4 | 0.94 |
| 5,630.5 | 19.10 | 241.12 | 5,611.8 | -131.5 | -157.3 | 70.7 | 2.10 |
| 5,655.9 | 19.82 | 241.24 | 5,635.8 | -135.6 | -164.7 | 72.1 | 2.83 |
| 5,680.7 | 20.39 | 240.60 | 5,659.0 | -139.7 | -172.2 | 73.5 | 2.47 |
| 5,704.8 | 20.92 | 240.28 | 5,681.6 | -143.9 | -179.6 | 74.9 | 2.25 |
| 5,730.8 | 21.51 | 239.76 | 5,705.8 | -148.6 | -187.7 | 76.6 | 2.38 |
| 5,755.0 | 22.21 | 239.72 | 5,728.3 | -153.2 | -195.5 | 78.2 | 2.89 |
| 5,780.5 | 23.03 | 239.61 | 5,751.8 | -158.1 | -203.9 | 80.1 | 3.22 |
| 5,805.2 | 23.57 | 239.84 | 5,774.5 | -163.0 | -212.4 | 81.8 | 2.22 |
| 5,829.3 | 24.43 | 240.34 | 5,796.6 | -167.9 | -220.9 | 83.6 | 3.66 |
| 5,854.9 | 25.23 | 240.64 | 5,819.7 | -173.2 | -230.2 | 85.4 | 3.17 |

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|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 5,880.7 | 25.62 | 240.68 | 5,843.0 | -178.6 | -239.9 | 87.3 | 1.51 |
| 5,905.4 | 25.46 | 240.64 | 5,865.3 | -183.9 | -249.2 | 89.0 | 0.65 |
| 5,930.8 | 25.58 | 239.79 | 5,888.3 | -189.3 | -258.7 | 91.0 | 1.51 |
| 5,955.0 | 26.03 | 239.08 | 5,910.0 | -194.6 | -267.7 | 92.9 | 2.26 |
| 5,980.8 | 26.75 | 238.84 | 5,933.2 | -200.6 | -277.6 | 95.2 | 2.82 |
| 6,005.0 | 26.99 | 238.56 | 5,954.8 | -206.3 | -286.9 | 97.4 | 1.12 |
| 6,030.4 | 26.44 | 238.36 | 5,977.4 | -212.2 | -296.7 | 99.7 | 2.20 |
| 6,055.1 | 26.06 | 237.43 | 5,999.6 | -218.0 | -305.9 | 102.1 | 2.27 |
| 6,080.0 | 25.58 | 236.89 | 6,022.0 | -223.9 | -315.0 | 104.5 | 2.15 |
| 6,106.0 | 26.22 | 236.76 | 6,045.4 | -230.1 | -324.5 | 107.2 | 2.47 |
| 6,174.0 | 25.53 | 236.61 | 6,106.6 | -246.4 | -349.3 | 114.2 | 1.02 |
| 6,225.0 | 24.97 | 237.10 | 6,152.7 | -258.3 | -367.5 | 119.2 | 1.17 |
| 6,264.0 | 24.31 | 235.48 | 6,188.2 | -267.3 | -381.1 | 123.2 | 2.42 |
| 6,309.0 | 26.29 | 231.47 | 6,228.8 | -278.8 | -396.5 | 128.7 | 5.82 |
| 6,354.0 | 26.24 | 229.71 | 6,269.2 | -291.4 | -411.9 | 135.5 | 1.73 |
| 6,399.0 | 27.52 | 225.85 | 6,309.3 | -305.1 | -426.9 | 143.3 | 4.81 |
| 6,413.0 | 28.67 | 222.91 | 6,321.7 | -309.8 | -431.5 | 146.1 | 12.84 |
| **SCMR** | | | | | | | |
| 6,444.0 | 31.41 | 217.14 | 6,348.5 | -321.7 | -441.5 | 154.0 | 12.84 |
| 6,488.0 | 36.31 | 208.26 | 6,385.1 | -342.4 | -454.6 | 169.0 | 15.80 |
| 6,533.0 | 40.18 | 201.93 | 6,420.4 | -367.6 | -466.3 | 188.8 | 12.23 |
| 6,578.0 | 42.53 | 195.85 | 6,454.2 | -395.7 | -475.9 | 212.0 | 10.34 |
| 6,623.0 | 45.19 | 189.89 | 6,486.7 | -426.1 | -482.8 | 238.3 | 10.91 |
| 6,636.0 | 45.94 | 188.53 | 6,495.8 | -435.2 | -484.3 | 246.4 | 9.42 |
| **MDLX** | | | | | | | |
| 6,668.0 | 47.85 | 185.34 | 6,517.6 | -458.4 | -487.1 | 267.3 | 9.42 |
| 6,712.0 | 51.39 | 182.11 | 6,546.1 | -491.9 | -489.3 | 298.0 | 9.80 |
| 6,757.0 | 55.32 | 179.77 | 6,573.0 | -527.9 | -489.8 | 331.8 | 9.68 |
| 6,794.0 | 57.77 | 177.49 | 6,593.4 | -558.8 | -489.1 | 361.1 | 8.40 |
| **BRKT** | | | | | | | |
| 6,802.0 | 58.31 | 177.01 | 6,597.6 | -565.6 | -488.8 | 367.6 | 8.40 |
| 6,844.0 | 61.92 | 174.17 | 6,618.6 | -601.9 | -485.9 | 402.7 | 10.40 |
| **TLLY** | | | | | | | |
| 6,847.0 | 62.18 | 173.98 | 6,620.0 | -604.5 | -485.7 | 405.3 | 10.40 |
| 6,892.0 | 68.13 | 171.27 | 6,638.9 | -645.0 | -480.4 | 445.2 | 14.31 |
| 6,937.0 | 73.73 | 168.60 | 6,653.6 | -686.8 | -473.0 | 487.1 | 13.65 |
| 6,953.0 | 75.24 | 167.82 | 6,657.8 | -701.9 | -469.8 | 502.3 | 10.55 |
| **MRCL_HOT** | | | | | | | |
| 6,982.0 | 77.98 | 166.42 | 6,664.6 | -729.4 | -463.5 | 530.4 | 10.55 |
| 7,026.0 | 80.72 | 166.08 | 6,672.7 | -771.4 | -453.2 | 573.4 | 6.27 |
| 7,071.0 | 84.77 | 164.50 | 6,678.4 | -814.6 | -441.9 | 617.8 | 9.65 |
| 7,099.0 | 87.15 | 163.50 | 6,680.3 | -841.4 | -434.2 | 645.7 | 9.22 |
| 7,144.0 | 89.83 | 161.96 | 6,681.5 | -884.4 | -420.9 | 690.6 | 6.87 |
| 7,188.0 | 89.76 | 160.95 | 6,681.7 | -926.1 | -406.9 | 734.6 | 2.30 |
| 7,278.0 | 89.36 | 159.64 | 6,682.4 | -1,010.8 | -376.5 | 824.6 | 1.52 |

| | | | |
|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 7,368.0 | 88.79 | 158.63 | 6,683.8 | -1,094.9 | -344.5 | 914.6 | 1.29 |
| 7,458.0 | 90.03 | 160.99 | 6,684.8 | -1,179.4 | -313.4 | 1,004.6 | 2.96 |
| 7,547.0 | 90.34 | 161.18 | 6,684.5 | -1,263.6 | -284.6 | 1,093.6 | 0.41 |
| 7,637.0 | 89.30 | 157.46 | 6,684.8 | -1,347.7 | -252.8 | 1,183.5 | 4.29 |
| 7,727.0 | 88.96 | 155.93 | 6,686.1 | -1,430.4 | -217.2 | 1,273.3 | 1.74 |
| 7,816.0 | 89.36 | 158.19 | 6,687.4 | -1,512.3 | -182.5 | 1,362.2 | 2.58 |
| 7,906.0 | 89.33 | 158.27 | 6,688.5 | -1,595.9 | -149.1 | 1,452.1 | 0.09 |
| 7,997.0 | 89.36 | 159.75 | 6,689.5 | -1,680.9 | -116.5 | 1,543.1 | 1.63 |
| 8,085.0 | 89.40 | 160.07 | 6,690.4 | -1,763.5 | -86.3 | 1,631.1 | 0.37 |
| 8,175.0 | 89.63 | 160.98 | 6,691.2 | -1,848.3 | -56.3 | 1,721.1 | 1.04 |
| 8,264.0 | 89.77 | 160.38 | 6,691.7 | -1,932.3 | -26.9 | 1,810.1 | 0.69 |
| 8,354.0 | 89.46 | 158.65 | 6,692.3 | -2,016.6 | 4.6 | 1,900.1 | 1.95 |
| 8,444.0 | 88.92 | 160.82 | 6,693.6 | -2,101.1 | 35.8 | 1,990.0 | 2.48 |
| 8,533.0 | 90.13 | 161.08 | 6,694.3 | -2,185.2 | 64.9 | 2,079.0 | 1.39 |
| 8,623.0 | 89.60 | 159.45 | 6,694.5 | -2,269.9 | 95.2 | 2,169.0 | 1.90 |
| 8,713.0 | 89.97 | 162.12 | 6,694.8 | -2,354.9 | 124.9 | 2,259.0 | 2.99 |
| 8,803.0 | 89.03 | 161.08 | 6,695.6 | -2,440.3 | 153.3 | 2,349.0 | 1.56 |
| 8,892.0 | 88.02 | 159.41 | 6,697.9 | -2,524.0 | 183.3 | 2,437.9 | 2.19 |
| 8,982.0 | 88.62 | 161.17 | 6,700.6 | -2,608.7 | 213.7 | 2,527.9 | 2.07 |
| 9,071.0 | 90.47 | 161.96 | 6,701.3 | -2,693.1 | 241.8 | 2,616.9 | 2.26 |
| 9,161.0 | 90.70 | 161.03 | 6,700.3 | -2,778.4 | 270.4 | 2,706.8 | 1.06 |
| 9,251.0 | 89.50 | 162.29 | 6,700.2 | -2,863.9 | 298.7 | 2,796.8 | 1.93 |
| 9,341.0 | 89.70 | 162.16 | 6,700.8 | -2,949.6 | 326.2 | 2,886.8 | 0.27 |
| 9,430.0 | 90.20 | 162.88 | 6,700.9 | -3,034.5 | 352.9 | 2,975.7 | 0.98 |
| 9,520.0 | 89.90 | 160.86 | 6,700.8 | -3,120.0 | 380.9 | 3,065.7 | 2.27 |
| 9,610.0 | 89.46 | 159.87 | 6,701.3 | -3,204.7 | 411.2 | 3,155.7 | 1.20 |
| 9,699.0 | 88.25 | 160.27 | 6,703.1 | -3,288.4 | 441.5 | 3,244.6 | 1.43 |
| 9,789.0 | 88.76 | 159.78 | 6,705.4 | -3,373.0 | 472.2 | 3,334.6 | 0.79 |
| 9,879.0 | 88.86 | 160.81 | 6,707.3 | -3,457.7 | 502.6 | 3,424.6 | 1.15 |
| 9,968.0 | 89.03 | 161.43 | 6,709.0 | -3,541.9 | 531.4 | 3,513.6 | 0.72 |
| 10,058.0 | 89.70 | 160.66 | 6,709.9 | -3,627.0 | 560.6 | 3,603.5 | 1.13 |
| 10,148.0 | 88.59 | 160.41 | 6,711.3 | -3,711.8 | 590.6 | 3,693.5 | 1.26 |
| 10,237.0 | 89.46 | 161.20 | 6,712.8 | -3,795.9 | 619.8 | 3,782.5 | 1.32 |
| 10,327.0 | 89.06 | 161.12 | 6,714.0 | -3,881.0 | 648.9 | 3,872.5 | 0.45 |
| 10,416.0 | 89.03 | 161.20 | 6,715.5 | -3,965.3 | 677.6 | 3,961.5 | 0.10 |
| 10,506.0 | 88.83 | 160.16 | 6,717.1 | -4,050.2 | 707.4 | 4,051.5 | 1.18 |
| 10,596.0 | 87.75 | 157.74 | 6,719.8 | -4,134.1 | 739.7 | 4,141.4 | 2.94 |
| 10,685.0 | 88.48 | 159.43 | 6,722.7 | -4,216.9 | 772.2 | 4,230.3 | 2.07 |
| 10,775.0 | 89.63 | 160.80 | 6,724.2 | -4,301.5 | 802.8 | 4,320.3 | 1.99 |
| 10,865.0 | 90.23 | 161.09 | 6,724.3 | -4,386.6 | 832.2 | 4,410.3 | 0.74 |
| 10,954.0 | 89.09 | 160.74 | 6,724.9 | -4,470.7 | 861.3 | 4,499.3 | 1.34 |
| 11,044.0 | 89.13 | 160.72 | 6,726.3 | -4,555.7 | 891.0 | 4,589.2 | 0.05 |
| 11,134.0 | 90.13 | 162.85 | 6,726.8 | -4,641.1 | 919.1 | 4,679.2 | 2.61 |
| 11,223.0 | 89.93 | 161.18 | 6,726.8 | -4,725.8 | 946.6 | 4,768.2 | 1.89 |

| | | | |
|---|---|---|---|
| **Company:** | Antero | **Local Co-ordinate Reference:** | Well Ingot Unit 2H |
| **Project:** | Tyler County WV | **TVD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Site:** | Pierpoint Pad:Ingot/Klondike/Wall/Weigle | **MD Reference:** | Precision 525: GL 1201' + 19 @ 1220.0usft |
| **Well:** | Ingot Unit 2H | **North Reference:** | Grid |
| **Wellbore:** | Original Wellpath | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | As Drilled | **Database:** | Oklahoma District |

**Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|---|---|---|---|---|---|---|---|
| 11,313.0 | 88.96 | 158.72 | 6,727.7 | -4,810.3 | 977.4 | 4,858.1 | 2.94 |
| 11,403.0 | 88.83 | 157.98 | 6,729.4 | -4,894.0 | 1,010.6 | 4,948.1 | 0.83 |
| 11,492.0 | 89.87 | 158.67 | 6,730.4 | -4,976.7 | 1,043.5 | 5,037.0 | 1.40 |
| 11,582.0 | 90.13 | 158.20 | 6,730.4 | -5,060.4 | 1,076.6 | 5,127.0 | 0.60 |
| 11,672.0 | 88.66 | 157.83 | 6,731.4 | -5,143.8 | 1,110.3 | 5,216.9 | 1.68 |
| 11,762.0 | 89.03 | 159.50 | 6,733.2 | -5,227.6 | 1,143.0 | 5,306.8 | 1.90 |
| 11,852.0 | 89.56 | 159.79 | 6,734.3 | -5,312.0 | 1,174.3 | 5,396.8 | 0.67 |
| 11,941.0 | 90.37 | 160.75 | 6,734.3 | -5,395.8 | 1,204.3 | 5,485.8 | 1.41 |
| 12,031.0 | 89.33 | 160.10 | 6,734.6 | -5,480.6 | 1,234.5 | 5,575.8 | 1.36 |
| 12,121.0 | 88.99 | 159.79 | 6,735.9 | -5,565.1 | 1,265.4 | 5,665.8 | 0.51 |
| 12,210.0 | 89.39 | 160.99 | 6,737.2 | -5,648.9 | 1,295.2 | 5,754.8 | 1.42 |
| 12,300.0 | 90.40 | 162.17 | 6,737.3 | -5,734.3 | 1,323.7 | 5,844.8 | 1.73 |
| 12,390.0 | 89.50 | 160.88 | 6,737.4 | -5,819.7 | 1,352.2 | 5,934.7 | 1.75 |
| 12,479.0 | 89.16 | 161.18 | 6,738.4 | -5,903.8 | 1,381.1 | 6,023.7 | 0.51 |
| 12,569.0 | 89.50 | 161.22 | 6,739.5 | -5,989.0 | 1,410.1 | 6,113.7 | 0.38 |
| 12,659.0 | 89.10 | 160.54 | 6,740.6 | -6,074.1 | 1,439.6 | 6,203.7 | 0.88 |
| 12,748.0 | 89.70 | 161.37 | 6,741.5 | -6,158.2 | 1,468.6 | 6,292.7 | 1.15 |
| 12,838.0 | 90.40 | 161.03 | 6,741.4 | -6,243.4 | 1,497.6 | 6,382.7 | 0.86 |
| 12,928.0 | 89.33 | 159.91 | 6,741.7 | -6,328.2 | 1,527.7 | 6,472.7 | 1.72 |
| 13,017.0 | 89.60 | 159.97 | 6,742.5 | -6,411.8 | 1,558.2 | 6,561.7 | 0.31 |
| 13,107.0 | 90.10 | 160.98 | 6,742.7 | -6,496.6 | 1,588.3 | 6,651.7 | 1.25 |
| 13,197.0 | 89.36 | 159.05 | 6,743.2 | -6,581.2 | 1,619.1 | 6,741.7 | 2.30 |
| 13,287.0 | 89.33 | 158.61 | 6,744.2 | -6,665.1 | 1,651.6 | 6,831.6 | 0.49 |
| 13,376.0 | 89.80 | 159.07 | 6,744.9 | -6,748.1 | 1,683.7 | 6,920.6 | 0.74 |
| 13,466.0 | 90.13 | 159.20 | 6,744.9 | -6,832.2 | 1,715.8 | 7,010.6 | 0.39 |
| 13,556.0 | 89.78 | 160.11 | 6,745.0 | -6,916.6 | 1,747.1 | 7,100.6 | 1.08 |
| 13,645.0 | 90.03 | 159.22 | 6,745.1 | -7,000.0 | 1,778.0 | 7,189.6 | 1.04 |
| 13,735.0 | 88.93 | 160.35 | 6,745.9 | -7,084.5 | 1,809.1 | 7,279.5 | 1.75 |
| 13,805.0 | 89.69 | 161.86 | 6,746.8 | -7,150.7 | 1,831.7 | 7,349.5 | 2.41 |
| 13,865.0 | 89.69 | 161.86 | 6,747.1 | -7,207.7 | 1,850.4 | 7,409.5 | 0.00 |
| PTB | | | | | | | |

**Design Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 6,413.0 | 6,321.7 | -309.8 | -431.5 | SCMR |
| 6,636.0 | 6,495.8 | -435.2 | -484.3 | MDLX |
| 6,794.0 | 6,593.4 | -558.8 | -489.1 | BRKT |
| 6,844.0 | 6,618.6 | -601.9 | -485.9 | TLLY |
| 6,953.0 | 6,657.8 | -701.9 | -469.8 | MRCL_HOT |
| 13,865.0 | 6,747.1 | -7,207.7 | 1,850.4 | PTB |



Checked By: _____ Approved By: _____ Date: _____