

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-017-06809 County Doddridge District West Union  
Quad West Union 7.5' Pad Name Addie Pad Field/Pool Name -----  
Farm name Antero Resources Corporation Well Number Cobra Unit 1H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4353811m Easting 516769m  
Landing Point of Curve Northing 4354008m Easting 517319m  
Bottom Hole Northing 4356213m Easting 516453m

Elevation (ft) 891' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)

Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 5/11/2017 Date drilling commenced 7/6/2017 Date drilling ceased 11/27/2017  
Date completion activities began 2/11/2018 Date completion activities ceased 7/6/2018  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 370' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1495', 1535' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by:

\_\_\_\_\_

API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra Unit 1H

| CASING STRINGS            | Hole Size     | Casing Size | Depth  | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/ N)<br>* Provide details below* |
|---------------------------|---------------|-------------|--------|-------------|-------------|-----------------|---|
| Conductor                 | 24"           | 20"         | 95'    | New         | 94#, H-40   | N/A             | Y   |
| Surface                   | 17-1/2"       | 13-3/8"     | 491'   | New         | 54#, J-55   | N/A             | Y   |
| Coal                      |               |             |        |             |             |                 |   |
| Intermediate 1            | 12-1/4"       | 9-5/8"      | 2607'  | New         | 36#, J-55   | N/A             | Y   |
| Intermediate 2            |               |             |        |             |             |                 |   |
| Intermediate 3            |               |             |        |             |             |                 |   |
| Production                | 8-3/4"/8-1/2" | 5-1/2"      | 15090' | New         | 23#, P-110  | N/A             | Y   |
| Tubing                    |               | 2-3/8"      | 7000'  |             | 4.7#, P-110 |                 |   |
| Packer type and depth set |               | N/A         |        |             |             |                 |   |

Comment Details \_\_\_\_\_

| CEMENT DATA    | Class/Type of Cement | Number of Sacks            | Slurry wt (ppg)       | Yield (ft <sup>3</sup> /sks) | Volume (ft <sup>3</sup> ) | Cement Top (MD)                | WOC (hrs) |
|----------------|----------------------|----------------------------|-----------------------|------------------------------|---------------------------|--------------------------------|-----------|
| Conductor      | Class A              | 204 sx                     | 15.6                  | 1.18                         | 241                       | 0'                             | 8 Hrs.    |
| Surface        | Class A              | 440 sx                     | 15.6                  | 1.20                         | 528                       | 0'                             | 8 Hrs.    |
| Coal           |                      |                            |                       |                              |                           |                                |           |
| Intermediate 1 | Class A              | 950 sx                     | 15.6                  | 1.18                         | 1121                      | 0'                             | 8 Hrs.    |
| Intermediate 2 |                      |                            |                       |                              |                           |                                |           |
| Intermediate 3 |                      |                            |                       |                              |                           |                                |           |
| Production     | Class H              | 674sx (Lead) 1112sx (Tail) | 14(Lead), 15.2 (Tail) | 1.45 (Lead), 1.83 (Tail)     | 3012                      | ~500' into Intermediate Casing | 8 Hrs.    |
| Tubing         |                      |                            |                       |                              |                           |                                |           |

Drillers TD (ft) 15390' MD, 6475' TVD (BHL), 6503' (Deepest Point Drilled)      Loggers TD (ft) 15090' MD  
 Deepest formation penetrated Marcellus      Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6295'

Check all wireline logs run       caliper     density     deviated/directional     induction  
 neutron     resistivity     gamma ray     temperature     sonic

Well cored     Yes     No      Conventional      Sidewall      Were cuttings collected     Yes     No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE     Yes     No      DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?     Yes     No      DETAILS \_\_\_\_\_

WERE TRACERS USED     Yes     No      TYPE OF TRACER(S) USED N/A

API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra Unit 1H

**PERFORATION RECORD**

| Stage No.                             | Perforation date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formation(s) |
|---------------------------------------|------------------|------------------------|----------------------|------------------------|--------------|
| <b>*PLEASE SEE ATTACHED EXHIBIT 1</b> |                  |                        |                      |                        |              |
|                                       |                  |                        |                      |                        |              |
|                                       |                  |                        |                      |                        |              |
|                                       |                  |                        |                      |                        |              |
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|                                       |                  |                        |                      |                        |              |
|                                       |                  |                        |                      |                        |              |
|                                       |                  |                        |                      |                        |              |

Please insert additional pages as applicable.

**STIMULATION INFORMATION PER STAGE**

Complete a separate record for each stimulation stage.

| Stage No.                             | Stimulations Date | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/other (units) |
|---------------------------------------|-------------------|---------------------|------------------------------|------------------------------|------------|--------------------------|------------------------|----------------------------------|
| <b>*PLEASE SEE ATTACHED EXHIBIT 2</b> |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |
|                                       |                   |                     |                              |                              |            |                          |                        |                                  |

Please insert additional pages as applicable.

API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra Unit 1H

| <u>PRODUCING FORMATION(S)</u> | <u>DEPTHS</u>      |            |                              |
|-------------------------------|--------------------|------------|------------------------------|
| <u>Marcellus</u>              | <u>6435' (TOP)</u> | <u>TVD</u> | <u>7042' (TOP)</u> <u>MD</u> |
|                               |                    |            |                              |
|                               |                    |            |                              |

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 12840 mcfpd Oil 92 bpd NGL --- bpd Water 73 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

| <u>LITHOLOGY/<br/>FORMATION</u> | <u>TOP</u>                      | <u>BOTTOM</u>              | <u>TOP</u>                | <u>BOTTOM</u>             | <u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND<br/>TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u> |
|---------------------------------|---------------------------------|----------------------------|---------------------------|---------------------------|--|
|                                 | <u>DEPTH IN FT<br/>NAME TVD</u> | <u>DEPTH IN FT<br/>TVD</u> | <u>DEPTH IN FT<br/>MD</u> | <u>DEPTH IN FT<br/>MD</u> |  |

**\*PLEASE SEE ATTACHED EXHIBIT 3**

|  |  |  |  |  |  |
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Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC  
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal  
Address 381 Colonial Manor Rd City North Huntington State PA Zip 15642

Cementing Company C&J Energy Services  
Address 1650 Hackers Creek City Lane Jew State WV Zip 26378

Stimulating Company Keane Group  
Address 5825 North Sam Houston Parkway West, Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820  
Signature [Signature] Title Permitting Agent Date 11/9/2018

API 47-017-06809 Farm Name Antero Resources Corp Well Number Cobra Unit 1H

**EXHIBIT 1**

| Stage No. | Perforation Date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formations |
|-----------|------------------|------------------------|----------------------|------------------------|------------|
| 1         | 2/11/2018        | 14822                  | 14989                | 48                     | Marcellus  |
| 2         | 2/24/2018        | 14624                  | 14791                | 48                     | Marcellus  |
| 3         | 2/24/2018        | 14425                  | 14593                | 48                     | Marcellus  |
| 4         | 2/25/2018        | 14227                  | 14394                | 48                     | Marcellus  |
| 5         | 2/25/2018        | 14029                  | 14196                | 48                     | Marcellus  |
| 6         | 2/26/2018        | 13830                  | 13998                | 48                     | Marcellus  |
| 7         | 2/27/2018        | 13632                  | 13799                | 48                     | Marcellus  |
| 8         | 2/27/2018        | 13434                  | 13601                | 48                     | Marcellus  |
| 9         | 2/28/2018        | 13235                  | 13403                | 48                     | Marcellus  |
| 10        | 3/1/2018         | 13037                  | 13204                | 48                     | Marcellus  |
| 11        | 3/1/2018         | 12839                  | 13006                | 48                     | Marcellus  |
| 12        | 3/2/2018         | 12640                  | 12808                | 48                     | Marcellus  |
| 13        | 3/2/2018         | 12442                  | 12609                | 48                     | Marcellus  |
| 14        | 3/3/2018         | 12244                  | 12411                | 48                     | Marcellus  |
| 15        | 3/3/2018         | 12045                  | 12213                | 48                     | Marcellus  |
| 16        | 3/4/2018         | 11847                  | 12014                | 48                     | Marcellus  |
| 17        | 3/4/2018         | 11649                  | 11816                | 48                     | Marcellus  |
| 18        | 3/5/2018         | 11450                  | 11618                | 48                     | Marcellus  |
| 19        | 3/5/2018         | 11252                  | 11419                | 48                     | Marcellus  |
| 20        | 3/6/2018         | 11054                  | 11221                | 48                     | Marcellus  |
| 21        | 3/7/2018         | 10855                  | 11023                | 48                     | Marcellus  |
| 22        | 3/7/2018         | 10657                  | 10824                | 48                     | Marcellus  |
| 23        | 3/7/2018         | 10459                  | 10626                | 48                     | Marcellus  |
| 24        | 3/8/2018         | 10260                  | 10428                | 48                     | Marcellus  |
| 25        | 3/8/2018         | 10062                  | 10229                | 48                     | Marcellus  |
| 26        | 3/8/2018         | 9864                   | 10031                | 48                     | Marcellus  |
| 27        | 3/9/2018         | 9665                   | 9833                 | 48                     | Marcellus  |
| 28        | 3/9/2018         | 9467                   | 9634                 | 48                     | Marcellus  |
| 29        | 3/9/2018         | 9269                   | 9436                 | 48                     | Marcellus  |
| 30        | 3/10/2018        | 9070                   | 9238                 | 48                     | Marcellus  |
| 31        | 3/10/2018        | 8872                   | 9039                 | 48                     | Marcellus  |
| 32        | 3/10/2018        | 8674                   | 8841                 | 48                     | Marcellus  |
| 33        | 3/11/2018        | 8475                   | 8643                 | 48                     | Marcellus  |
| 34        | 3/11/2018        | 8277                   | 8444                 | 48                     | Marcellus  |
| 35        | 3/11/2018        | 8079                   | 8246                 | 48                     | Marcellus  |
| 36        | 3/12/2018        | 7880                   | 8048                 | 48                     | Marcellus  |
| 37        | 3/12/2018        | 7682                   | 7849                 | 48                     | Marcellus  |
| 38        | 3/12/2018        | 7484                   | 7651                 | 48                     | Marcellus  |
| 39        | 3/12/2018        | 7285                   | 7453                 | 48                     | Marcellus  |
| 40        | 3/13/2018        | 7087                   | 7254                 | 48                     | Marcellus  |

**API 47-017-06809 Farm Name Antero Resources Corp Well Number Cobra Unit 1H**

**EXHIBIT 2**

| Stage No. | Stimulations Date | Avg Pump Rate | Avg Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI)   | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/ other (units) |
|-----------|-------------------|---------------|------------------------------|------------------------------|--------------|--------------------------|------------------------|-----------------------------------|
| 1         | 2/11/2018         | 74.7          | 7281                         | 5634                         | 4770         | 466562                   | 12738                  | N/A                               |
| 2         | 2/24/2018         | 74            | 7446                         | 6250                         | 5315         | 461666                   | 10641                  | N/A                               |
| 3         | 2/24/2018         | 71            | 7505                         | 5647                         | 5078         | 459317                   | 10537                  | N/A                               |
| 4         | 2/25/2018         | 70.9          | 7522                         | 5486                         | 3500         | 460702                   | 10309                  | N/A                               |
| 5         | 2/25/2018         | 73.4          | 7611                         | 5362                         | 4716         | 459567                   | 11022                  | N/A                               |
| 6         | 2/26/2018         | 70.3          | 7433                         | 5418                         | 4825         | 503330                   | 10507                  | N/A                               |
| 7         | 2/27/2018         | 74.7          | 7317                         | 5550                         | 3991         | 502000                   | 10540                  | N/A                               |
| 8         | 2/27/2018         | 78.4          | 7812                         | 5441                         | 4028         | 502500                   | 10046                  | N/A                               |
| 9         | 2/28/2018         | 73.3          | 7134                         | 5425                         | 4797         | 500170                   | 10375                  | N/A                               |
| 10        | 3/1/2018          | 78.2          | 7619                         | 5180                         | 4583         | 501830                   | 10303                  | N/A                               |
| 11        | 3/1/2018          | 71.7          | 7187                         | 5662                         | 4981         | 505440                   | 10159                  | N/A                               |
| 12        | 3/2/2018          | 80.2          | 7602                         | 5618                         | 4236         | 504350                   | 10252                  | N/A                               |
| 13        | 3/2/2018          | 74.1          | 7205                         | 5011                         | 4479         | 501332                   | 10229                  | N/A                               |
| 14        | 3/3/2018          | 77.7          | 7362                         | 5483                         | 3925         | 502060                   | 10163                  | N/A                               |
| 15        | 3/3/2018          | 78.2          | 7875                         | 5601                         | 5111         | 504230                   | 10142                  | N/A                               |
| 16        | 3/4/2018          | 72.6          | 7451                         | 5487                         | 5174         | 501700                   | 11242                  | N/A                               |
| 17        | 3/4/2018          | 76.5          | 7417                         | 5570                         | 4720         | 502600                   | 10123                  | N/A                               |
| 18        | 3/5/2018          | 71.3          | 7214                         | 4564                         | 3861         | 510950                   | 10380                  | N/A                               |
| 19        | 3/5/2018          | 79.8          | 7753                         | 5373                         | 3940         | 501860                   | 10996                  | N/A                               |
| 20        | 3/6/2018          | 77.6          | 7301                         | 5530                         | 4694         | 501800                   | 11587                  | N/A                               |
| 21        | 3/7/2018          | 77.8          | 7163                         | 5402                         | 4093         | 503500                   | 10266                  | N/A                               |
| 22        | 3/7/2018          | 72.9          | 7166                         | 5131                         | 3939         | 506510                   | 10070                  | N/A                               |
| 23        | 3/7/2018          | 75.4          | 7262                         | 5989                         | 5586         | 506000                   | 10035                  | N/A                               |
| 24        | 3/8/2018          | 73.8          | 6885                         | 5644                         | 5415         | 507000                   | 10129                  | N/A                               |
| 25        | 3/8/2018          | 76.7          | 7012                         | 5935                         | 4082         | 505925                   | 10035                  | N/A                               |
| 26        | 3/8/2018          | 78.8          | 6968                         | 4974                         | 5222         | 505000                   | 10153                  | N/A                               |
| 27        | 3/9/2018          | 78.3          | 7413                         | 5515                         | 3612         | 505000                   | 10179                  | N/A                               |
| 28        | 3/9/2018          | 76.4          | 7103                         | 5871                         | 5735         | 485264                   | 9786                   | N/A                               |
| 29        | 3/9/2018          | 78.2          | 6782                         | 5504                         | 3978         | 503000                   | 10186                  | N/A                               |
| 30        | 3/10/2018         | 78.7          | 6568                         | 4618                         | 5041         | 511684                   | 10093                  | N/A                               |
| 31        | 3/10/2018         | 74.1          | 7016                         | 5668                         | 4388         | 513565                   | 9994                   | N/A                               |
| 32        | 3/10/2018         | 79.6          | 6831                         | 5280                         | 4313         | 508000                   | 10163                  | N/A                               |
| 33        | 3/11/2018         | 69.4          | 7030                         | 5853                         | 4109         | 515190                   | 9989                   | N/A                               |
| 34        | 3/11/2018         | 76.1          | 6806                         | 4240                         | 5076         | 501793                   | 10019                  | N/A                               |
| 35        | 3/11/2018         | 76.8          | 6621                         | 5310                         | 4495         | 503000                   | 10186                  | N/A                               |
| 36        | 3/12/2018         | 74.6          | 6761                         | 5470                         | 3988         | 507908                   | 10137                  | N/A                               |
| 37        | 3/12/2018         | 74.3          | 6828                         | 5495                         | 4441         | 501752                   | 9997                   | N/A                               |
| 38        | 3/12/2018         | 77.7          | 7269                         | 5489                         | 5241         | 501000                   | 11792                  | N/A                               |
| 39        | 3/12/2018         | 76.1          | 6699                         | 5473                         | 3810         | 507000                   | 10129                  | N/A                               |
| 40        | 3/13/2018         | 76.5          | 6369                         | 5712                         | 3999         | 505000                   | 10157                  | N/A                               |
|           | <b>AVG=</b>       | <b>76</b>     | <b>7,190</b>                 | <b>5,447</b>                 | <b>4,532</b> | <b>19,957,057</b>        | <b>415,786</b>         | <b>TOTAL</b>                      |

## EXHIBIT 3

| LITHOLOGY/ FORMATION | TOP DEPTH (TVD) | BOTTOM DEPTH (TVD) | TOP DEPTH (MD) | BOTTOM DEPTH (MD) |
|----------------------|-----------------|--------------------|----------------|-------------------|
|                      | From Surface    | From Surface       | From Surface   | From Surface      |
| Shale                | 0               | 197                | 0              | 197               |
| Sandy shale          | 197             | 357                | 197            | 357               |
| Sandstone            | 357             | 417                | 357            | 417               |
| Sandstone tr coal    | 417             | 437                | 417            | 437               |
| Sandy shale          | 437             | 537                | 437            | 537               |
| Shale                | 537             | 737                | 537            | 737               |
| Silty sandstone      | 737             | 817                | 737            | 817               |
| Silty shale          | 817             | 997                | 817            | 997               |
| Sandstone            | 997             | 1,017              | 997            | 1,017             |
| Silty shale          | 1,017           | 1,277              | 1,017          | 1,277             |
| Sandstone            | 1,277           | 1,417              | 1,277          | 1,417             |
| Sandy shale          | 1,417           | 1,677              | 1,417          | 1,677             |
| Silty shale          | 1,677           | 1,748              | 1,677          | 1,768             |
| Big Lime             | 1,748           | 2,286              | 1,768          | 2,325             |
| Fifty Foot Sandstone | 2,286           | 2,507              | 2,325          | 2,553             |
| Gordon               | 2,507           | 2,712              | 2,553          | 2,764             |
| Fifth Sandstone      | 2,712           | 2,777              | 2,764          | 2,831             |
| Bayard               | 2,777           | 3,565              | 2,831          | 3,680             |
| Speechley            | 3,565           | 3,745              | 3,680          | 3,880             |
| Balltown             | 3,745           | 4,353              | 3,880          | 4,537             |
| Bradford             | 4,353           | 4,796              | 4,537          | 5,028             |
| Benson               | 4,796           | 5,090              | 5,028          | 5,355             |
| Alexander            | 5,090           | 6,053              | 5,355          | 6,420             |
| Sycamore             | 6,053           | 6,230              | 6,420          | 6,648             |
| Middlesex            | 6,230           | 6,362              | 6,648          | 6,862             |
| Burkett              | 6,362           | 6,392              | 6,862          | 6,927             |
| Tully                | 6,392           | 6,435              | 6,927          | 7,042             |
| Marcellus            | 6,435           | NA                 | 7,042          | NA                |

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

# ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV

Field: Doddridge

Facility: Addie Pac

Slot: Slot #08

Well: Cobra Unit 1H

Wellbore: Cobra Unit 1H PWB

Preference wellbore is Cobra Unit 1H PWB Rev-A.0  
 This vertical depth is referenced to Frontier 22 (RXB)  
 Measured depths are referenced to Frontier 22 (RXB)  
 Frontier 22 (RXB) to Mean Sea Level: 814.5 feet.  
 Mean Sea Level to Mud line (At Slot Slot #08): -380 feet  
 Coordinates are in feet referenced to Slot

Grid System: NAD83 / UTM Zone 17 North, US feet  
 North Reference: Grid north  
 Scale: True distance  
 Depths are in feet  
 Created by: delaney on 2019-01-11  
 Database: WA\_MPL\_EASTMANUS\_DWH



| Location Information                             |                   |                    |                |
|--|-------------------|--------------------|----------------|
| Facility Name                                    | Grid East (US ft) | Grid North (US ft) | Longitude      |
| Addie Pac  | 1995325.147       | 14283416.126       | 80°49'20.630"W |
| Slot   | Local E (ft)      | Grid North (US ft) | Longitude      |
| Slot #08   | 80.51             | 14283414.245       | 80°48'20.180"W |
| Comment:   | Cobra Unit 1H     |                    |                |
| Frontier 22 (RXB) to Mud line (At Slot Slot #08) | 24.5ft            |                    |                |
| Mean Sea Level to Mud line (At Slot Slot #08)    | -80ft             |                    |                |
| Frontier 22 (RXB) to Mean Sea Level              | 914.5ft           |                    |                |

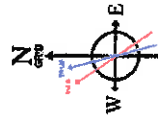
API: 47-017-06809-0000  
 BHI Job #: 8883961  
 Rig: Frontier 22  
 Duration: 11/23/2017-11/25/2017

Gyrodeta MS Gyro <17-1/2> (100-472) : 0.24° Inc, 108.50ft MD, 109.50ft TVD, 0.01ft VS  
 Gyrodeta MS Gyro <12-1/4> (472)(499-680) : 0.31° Inc, 508.50ft MD, 508.50ft TVD, -0.80ft VS  
 WFT EM <12-1/4> (680)(792-2525) : 6.30° Inc, 801.50ft MD, 801.03ft TVD, -8.01ft VS

| Well Profile Data |          |         |         |          |              |
|-------------------|----------|---------|---------|----------|--------------|
| Design Comment    | MD (ft)  | Inc (") | Az (°)  | TVD (ft) | Local N (ft) |
| Tie On            | 6753.50  | 49.450  | 3.770   | 6310.78  | 192.57       |
| Proj To Bottom    | 6825.50  | 55.340  | 359.690 | 6354.71  | 239.54       |
| POE               | 7046.93  | 69.590  | 350.500 | 6457.00  | 433.94       |
| Landing Pt        | 7283.92  | 80.000  | 350.500 | 6499.00  | 663.02       |
| On Admth          | 7831.93  | 90.000  | 337.676 | 6499.00  | 1188.93      |
| BHL               | 15072.31 | 90.000  | 337.676 | 6499.00  | 7886.63      |
|                   |          |         |         |          | -1027.94     |
|                   |          |         |         |          | 0.00         |
|                   |          |         |         |          | 7886.13      |

WFT EM <8-3/4> (2525)(2662-6744) : 13.14° Inc, 2671.50ft MD, 2622.38ft TVD, -180.23ft VS

| Well Data |               |                   |                           |
|-----------|---------------|-------------------|---------------------------|
| Slot      | Well          | Wellbore          | Wellbath                  |
| Slot #08  | Cobra Unit 1H | Cobra Unit 1H PWB | Cobra Unit 1H PWB Rev-A.0 |

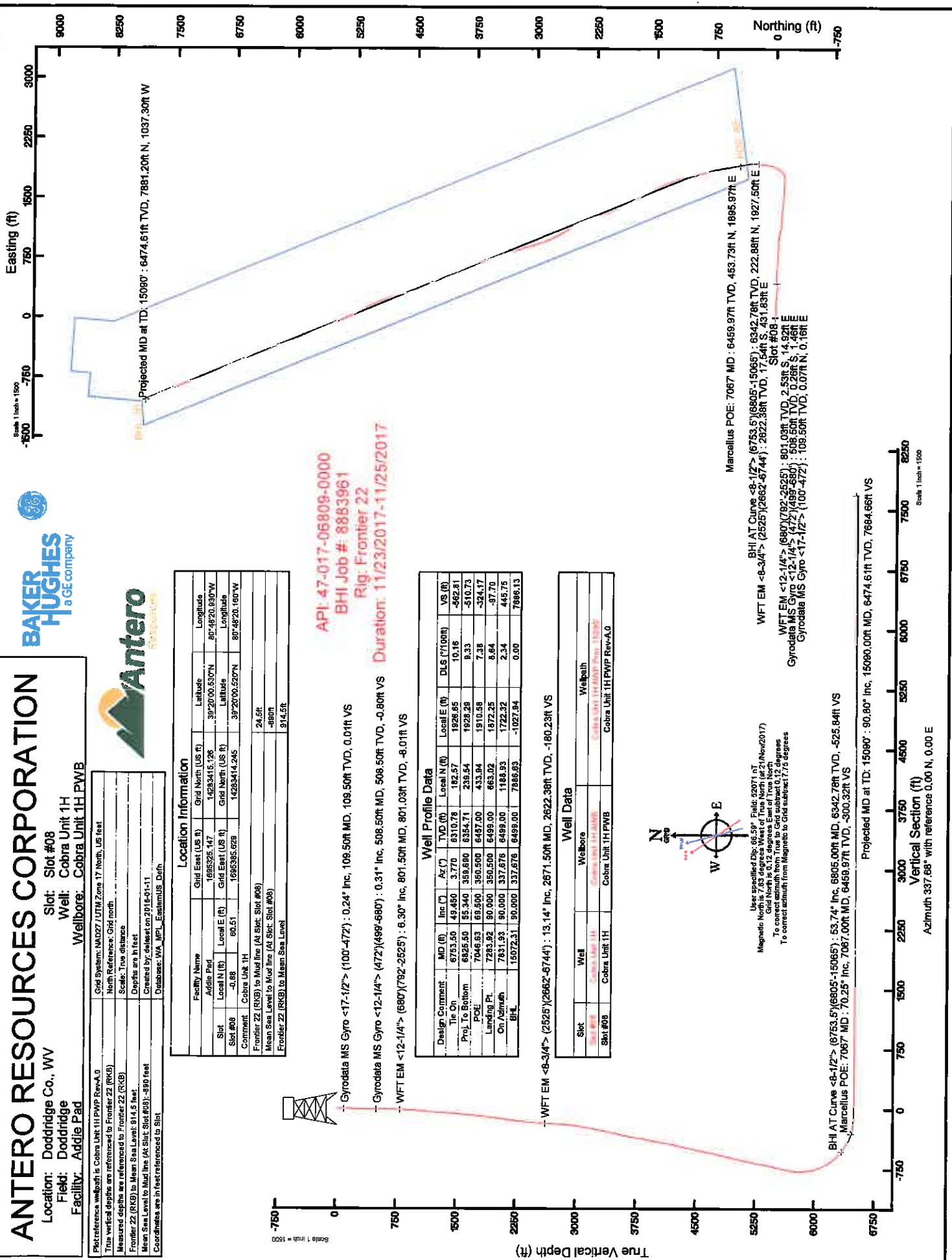


User specified Dip: 68.59° Field: 22071.0T  
 Magnetic North is 7.83 degrees West of True North (at 21 Nov 2017)  
 Grid North is 0.12 degrees East of True North  
 To correct azimuth from Magnetic to Grid subtract 7.6 degrees

BHI AT Curve <8-1/2> (8753.5)(6805-15065) : 53.74° Inc, 6805.00ft MD, 6342.78ft TVD, -525.84ft VS  
 Marcellus POE: 7067 MD : 70.25° Inc, 7067.00ft MD, 6459.97ft TVD, -300.32ft VS

Projected MD at TD: 15090° : 90.80° Inc, 15090.00ft MD, 6474.61ft TVD, 7694.66ft VS

Vertical Section (ft)  
 Azimuth 337.68° with reference 0.00 N, 0.00 E



Scale 1 inch = 1500  
 Easting (ft)  
 3000  
 2250  
 1500  
 750  
 0  
 -750  
 -1500

Scale 1 inch = 1500  
 Vertical Section (ft)  
 6750  
 6000  
 5250  
 4500  
 3750  
 3000  
 2250  
 1500  
 750  
 0  
 -750

Marcellus POE: 7067 MD : 6459.97ft TVD, 453.73ft N, 1895.97ft E  
 BHI AT Curve <8-1/2> (8753.5)(6805-15065) : 6342.78ft TVD, 222.88ft N, 1927.50ft E  
 WFT EM <8-3/4> (2525)(2662-6744) : 2622.38ft TVD, 17.54ft S, 431.63ft E  
 Slot #08  
 Gyrodeta MS Gyro <12-1/4> (472)(499-680) : 601.03ft TVD, 2.53ft S, 14.92ft E  
 Gyrodeta MS Gyro <17-1/2> (100-472) : 109.50ft TVD, 0.07ft N, 0.16ft E





# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090

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| REFERENCE WELLPATH IDENTIFICATION |                              |
|-----------------------------------|------------------------------|
| Operator                          | ANTERO RESOURCES CORPORATION |
| Area                              | Doddridge Co., WV            |
| Field                             | Doddridge                    |
| Facility                          | Addle Pad                    |
| Slot                              | Slot #08                     |
| Well                              | Cobra Unit 1H                |
| Wellbore                          | Cobra Unit 1H AWB            |

| REPORT SETUP INFORMATION |  |
|--------------------------|--|
| Projection System        | NAD27 / UTM Zone 17 North, US feet                     |
| North Reference          | Grid   |
| Scale                    | 0.999603   |
| Convergence at slot      | 0.12" East   |
| Software System          | WellArchitect® 5.1                                     |
| User                     | Delaset  |
| Report Generated         | 11/Jan/2018 at 13:48                                   |
| Database/Source file     | WA_MPL_EasternUS_Defn/Cobra_Unit_1H_AWP_Proj_15090.xml |

| WELLPATH LOCATION     |                   |          |                  |                 |                        |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | -0.88             | 60.51    | 1695385.63       | 14283414.25     | 39°20'00.520"N         | 80°48'20.160"W |
| Facility Reference Pt |                   |          | 1695325.15       | 14283415.13     | 39°20'00.530"N         | 80°48'20.930"W |
| Field Reference Pt    |                   |          | 0.00             | 0.00            | 0°00'00.000"           | 85°29'19.301"W |

| WELLPATH DATUM           |  |
|--------------------------|--|
| Calculation method       | Minimum curvature                                |
| Horizontal Reference Pt  | Slot   |
| Vertical Reference Pt    | Frontier 22 (RKB)                                |
| IMD Reference Pt         | Frontier 22 (RKB)                                |
| Field Vertical Reference | Mean Sea Level                                   |
|                          | Frontier 22 (RKB) to Facility Vertical Datum     |
|                          | Frontier 22 (RKB) to Mean Sea Level              |
|                          | Frontier 22 (RKB) to Mud Line at Slot (Slot #08) |
|                          | Section Origin                                   |
|                          | Section Azimuth                                  |
|                          | 24.50ft  |
|                          | 914.50ft   |
|                          | 24.50ft  |
|                          | N 0.00, E 0.00 ft                                |
|                          | 337.68°  |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
Page 2 of 10



## REFERENCE WELLPATH IDENTIFICATION

|          |                              |                   |
|----------|------------------------------|-------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot #08          |
| Area     | Doddridge Co., WV            | Cobra Unit 1H     |
| Field    | Doddridge                    | Cobra Unit 1H AWB |
| Facility | Addle Pad                    |                   |

## WELLPATH DATA (191 stations) † = interpolated/extrapolated station

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (ft) | Grid North (ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments                                     |
|---------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|--|
| 0.001   | 0.000           | 65.760      | 0.00     | 0.00           | 0.00       | 0.00      | 1695385.63     | 14283414.24     | 39°20'00.520"N | 80°48'20.160"W | 0.00              | 0.000           | 0.00           | 0.00                  | 0.00                 |  |
| 24.50   | 0.000           | 65.760      | 24.50    | 0.00           | 0.00       | 0.00      | 1695385.63     | 14283414.24     | 39°20'00.520"N | 80°48'20.160"W | 0.00              | 0.000           | 0.00           | 0.00                  | 0.00                 |  |
| 109.50  | 0.240           | 65.760      | 109.50   | 0.07           | 0.16       | 0.16      | 1695385.79     | 14283414.32     | 39°20'00.521"N | 80°48'20.158"W | 0.18              | 65.760          | 0.28           | 0.28                  | 77.36                | Syrodata MS Gyro <17-1/2"> (100'-472')       |
| 209.50  | 0.250           | 110.480     | 209.50   | -0.14          | 0.08       | 0.56      | 1695386.19     | 14283414.33     | 39°20'00.521"N | 80°48'20.153"W | 0.56              | 81.560          | 0.20           | 0.20                  | 44.72                |  |
| 309.50  | 0.050           | 88.800      | 309.50   | -0.30          | 0.01       | 0.81      | 1695386.43     | 14283414.25     | 39°20'00.520"N | 80°48'20.150"W | 0.81              | 89.479          | 0.20           | 0.20                  | -21.68               |  |
| 409.50  | 0.250           | 113.830     | 409.50   | -0.47          | -0.08      | 1.05      | 1695386.68     | 14283414.17     | 39°20'00.519"N | 80°48'20.147"W | 1.05              | 94.356          | 0.21           | 0.20                  | 25.03                |  |
| 481.50  | 0.260           | 113.340     | 481.50   | -0.70          | -0.21      | 1.34      | 1695386.97     | 14283414.04     | 39°20'00.517"N | 80°48'20.143"W | 1.36              | 98.811          | 0.01           | 0.01                  | -0.68                |  |
| 508.50  | 0.310           | 116.350     | 508.50   | -0.80          | -0.26      | 1.46      | 1695387.09     | 14283413.98     | 39°20'00.517"N | 80°48'20.141"W | 1.49              | 100.250         | 0.19           | 0.19                  | 11.15                | Syrodata MS Gyro <12-1/4"> (472')(489'-880') |
| 588.50  | 1.100           | 105.070     | 588.49   | -1.51          | -0.60      | 2.52      | 1695388.14     | 14283413.65     | 39°20'00.514"N | 80°48'20.128"W | 2.59              | 103.355         | 0.89           | 0.88                  | -12.53               |  |
| 689.50  | 3.140           | 101.740     | 689.42   | -3.43          | -1.33      | 5.80      | 1695391.43     | 14283412.81     | 39°20'00.507"N | 80°48'20.086"W | 5.95              | 102.930         | 2.24           | 2.24                  | -3.68                |  |
| 801.50  | 6.300           | 95.380      | 801.03   | -8.01          | -2.53      | 14.92     | 1695400.55     | 14283411.71     | 39°20'00.495"N | 80°48'19.970"W | 15.14             | 99.630          | 2.86           | 2.82                  | 1.97                 |  |
| 895.50  | 8.160           | 93.780      | 894.28   | -13.34         | -3.46      | 26.71     | 1695412.33     | 14283410.79     | 39°20'00.485"N | 80°48'19.820"W | 26.93             | 97.371          | 1.98           | 1.92                  | -1.70                |  |
| 990.50  | 9.910           | 93.390      | 988.10   | -19.85         | -4.38      | 41.59     | 1695427.20     | 14283409.86     | 39°20'00.476"N | 80°48'19.631"W | 41.82             | 96.016          | 1.85           | 1.85                  | -0.41                |  |
| 1084.50 | 11.970          | 93.300      | 1080.38  | -27.57         | -5.42      | 59.40     | 1695445.00     | 14283408.82     | 39°20'00.465"N | 80°48'19.404"W | 59.64             | 95.216          | 2.19           | 2.18                  | -0.10                |  |
| 1274.50 | 11.800          | 84.280      | 1266.23  | -42.54         | -5.40      | 98.86     | 1695484.45     | 14283408.85     | 39°20'00.465"N | 80°48'18.902"W | 99.01             | 94.459          | 0.52           | 0.17                  | -2.34                |  |
| 1368.50 | 11.980          | 84.480      | 1358.22  | -48.10         | -3.50      | 118.13    | 1695503.71     | 14283410.74     | 39°20'00.463"N | 80°48'18.657"W | 118.18            | 91.698          | 0.20           | 0.19                  | 0.22                 |  |
| 1462.50 | 12.100          | 91.770      | 1450.15  | -54.95         | -2.87      | 137.69    | 1695523.27     | 14283411.38     | 39°20'00.469"N | 80°48'18.408"W | 137.72            | 91.194          | 1.62           | 0.13                  | 7.74                 |  |
| 1557.50 | 12.340          | 95.490      | 1543.00  | -63.75         | -4.15      | 157.75    | 1695543.31     | 14283410.10     | 39°20'00.476"N | 80°48'18.153"W | 157.60            | 91.507          | 0.87           | 0.25                  | 3.92                 |  |
| 1651.50 | 13.160          | 93.410      | 1634.68  | -73.08         | -5.75      | 178.43    | 1695563.99     | 14283408.50     | 39°20'00.459"N | 80°48'17.889"W | 178.52            | 91.845          | 1.00           | 0.87                  | -2.21                |  |
| 1746.50 | 13.620          | 89.910      | 1727.10  | -82.01         | -6.37      | 200.41    | 1695585.96     | 14283407.88     | 39°20'00.453"N | 80°48'17.610"W | 200.51            | 91.821          | 0.98           | 0.48                  | -3.68                |  |
| 1841.50 | 13.930          | 94.430      | 1819.37  | -91.39         | -7.24      | 223.00    | 1695608.54     | 14283407.01     | 39°20'00.444"N | 80°48'17.322"W | 223.11            | 91.859          | 1.18           | 0.33                  | 4.76                 |  |
| 1936.50 | 15.190          | 98.850      | 1911.32  | -102.97        | -10.04     | 246.70    | 1695632.23     | 14283404.21     | 39°20'00.444"N | 80°48'17.021"W | 246.90            | 92.330          | 1.77           | 1.33                  | 4.65                 |  |
| 2030.50 | 14.990          | 97.580      | 2002.08  | -115.41        | -13.53     | 270.92    | 1695656.44     | 14283400.72     | 39°20'00.380"N | 80°48'16.713"W | 271.25            | 92.860          | 0.41           | -0.21                 | -1.35                |  |
| 2125.50 | 14.610          | 98.290      | 2093.93  | -127.27        | -16.47     | 295.00    | 1695680.52     | 14283397.78     | 39°20'00.351"N | 80°48'16.406"W | 295.46            | 93.185          | 0.53           | -0.40                 | -1.36                |  |
| 2220.50 | 15.590          | 95.400      | 2185.65  | -138.95        | -18.98     | 319.62    | 1695705.12     | 14283395.27     | 39°20'00.326"N | 80°48'16.093"W | 320.19            | 93.399          | 1.06           | 1.03                  | -0.94                |  |
| 2314.50 | 14.970          | 92.370      | 2276.33  | -149.89        | -20.67     | 344.33    | 1695729.82     | 14283393.56     | 39°20'00.308"N | 80°48'15.778"W | 344.95            | 93.436          | 1.08           | -0.66                 | -3.22                |  |
| 2409.50 | 14.680          | 90.040      | 2368.17  | -159.80        | -21.19     | 368.63    | 1695754.11     | 14283393.06     | 39°20'00.303"N | 80°48'15.469"W | 369.23            | 93.280          | 0.70           | -0.31                 | -2.45                |  |
| 2503.50 | 14.350          | 87.880      | 2459.17  | -168.15        | -20.77     | 392.18    | 1695777.65     | 14283393.49     | 39°20'00.306"N | 80°48'15.170"W | 392.73            | 93.031          | 0.87           | -0.35                 | -2.30                |  |
| 2534.50 | 14.060          | 87.250      | 2489.22  | -170.74        | -20.44     | 399.78    | 1695786.25     | 14283393.81     | 39°20'00.309"N | 80°48'15.073"W | 400.30            | 92.927          | 1.06           | -0.84                 | -2.03                |  |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                              |  |                   |
|----------|------------------------------|--|-------------------|
| Operator | ANTERO RESOURCES CORPORATION |  | Slot #08          |
| Area     | Doddridge Co., WV            |  | Cobra Unit 1H     |
| Field    | Doddridge                    |  | Cobra Unit 1H AWB |
| Facility | Addle Pad                    |  |                   |

## WELLPATH DATA (191 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert.Sect (ft) | North (ft) | East (ft) | Grid East (US FT) | Grid North (US FT) | Latitude (°)   | Longitude (ft) | Closure Dist (ft) | Closure Dir (°) | DLS (P/100ft) | Build Rate (P/100ft) | Turn Rate (P/100ft) | Comments                        |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|---------------------------------|
| 2671.50 | 13.140          | 82.230      | 2622.38  | -180.23        | -17.54     | 431.83    | 1695817.29        | 14283396.71        | 39°20'00.33"N  | 80°48'14.665"W | 432.19            | 92.328          | 1.09          | -0.67                | -3.66               | MFT EM <-3/4> (2525)(2662-6744) |
| 2766.50 | 12.620          | 79.700      | 2715.01  | -185.08        | -14.24     | 452.66    | 1695838.11        | 14283400.01        | 39°20'00.370"N | 80°48'14.400"W | 452.89            | 91.802          | 0.88          | -0.65                | -2.66               |                                 |
| 2860.50 | 14.100          | 81.800      | 2806.48  | -190.00        | -10.78     | 474.02    | 1695859.46        | 14283403.47        | 39°20'00.403"N | 80°48'14.128"W | 474.14            | 91.303          | 1.76          | 1.68                 | 2.23                |                                 |
| 2954.50 | 16.550          | 85.860      | 2897.13  | -196.97        | -8.18      | 498.71    | 1695884.14        | 14283406.07        | 39°20'00.428"N | 80°48'13.813"W | 486.78            | 90.940          | 2.84          | 2.61                 | 4.32                |                                 |
| 3049.50 | 17.630          | 93.610      | 2987.85  | -207.48        | -8.11      | 528.57    | 1695911.99        | 14283408.14        | 39°20'00.429"N | 80°48'13.459"W | 526.63            | 90.883          | 2.65          | 1.14                 | 8.16                |                                 |
| 3143.50 | 18.770          | 96.730      | 3077.25  | -221.05        | -10.78     | 555.80    | 1695941.20        | 14283403.47        | 39°20'00.402"N | 80°48'13.087"W | 555.90            | 91.111          | 1.60          | 1.21                 | 3.32                |                                 |
| 3237.50 | 20.970          | 97.420      | 3165.65  | -236.74        | -14.73     | 587.50    | 1695972.89        | 14283399.53        | 39°20'00.362"N | 80°48'12.684"W | 587.68            | 91.436          | 2.35          | 2.34                 | 0.73                |                                 |
| 3332.50 | 23.370          | 95.050      | 3253.62  | -253.84        | -18.58     | 623.13    | 1696008.51        | 14283395.67        | 39°20'00.323"N | 80°48'12.230"W | 623.41            | 91.708          | 2.70          | 2.58                 | -2.49               |                                 |
| 3427.50 | 26.830          | 93.340      | 3339.64  | -271.79        | -21.49     | 663.31    | 1696048.68        | 14283392.76        | 39°20'00.289"N | 80°48'11.719"W | 663.66            | 91.856          | 3.72          | 3.64                 | -1.80               |                                 |
| 3521.50 | 27.750          | 92.250      | 3423.17  | -290.08        | -23.58     | 706.36    | 1696091.71        | 14283390.67        | 39°20'00.272"N | 80°48'11.171"W | 706.75            | 91.912          | 1.11          | 0.98                 | -1.16               |                                 |
| 3615.50 | 26.920          | 95.230      | 3506.88  | -309.02        | -26.38     | 749.42    | 1696134.75        | 14283387.87        | 39°20'00.243"N | 80°48'10.623"W | 749.88            | 92.016          | 1.70          | -0.81                | -1.57               |                                 |
| 3709.50 | 26.160          | 93.760      | 3590.77  | -327.97        | -29.68     | 791.29    | 1696176.60        | 14283384.58        | 39°20'00.210"N | 80°48'10.091"W | 791.84            | 92.148          | 1.07          | -0.81                | -1.57               |                                 |
| 3804.50 | 25.300          | 90.720      | 3676.36  | -345.12        | -31.30     | 832.48    | 1696217.78        | 14283382.95        | 39°20'00.183"N | 80°48'09.566"W | 833.07            | 92.153          | 1.65          | -0.91                | -3.19               |                                 |
| 3899.50 | 24.170          | 88.590      | 3762.64  | -360.00        | -31.08     | 872.23    | 1696257.51        | 14283383.18        | 39°20'00.194"N | 80°48'08.061"W | 872.78            | 92.041          | 1.51          | -1.19                | -2.24               |                                 |
| 3993.50 | 23.890          | 91.110      | 3848.50  | -374.44        | -30.97     | 910.50    | 1696295.78        | 14283383.28        | 39°20'00.194"N | 80°48'08.574"W | 911.02            | 91.948          | 1.13          | -0.30                | 2.68                |                                 |
| 4087.50 | 23.240          | 96.080      | 3934.87  | -390.83        | -33.31     | 947.97    | 1696333.22        | 14283380.95        | 39°20'00.170"N | 80°48'08.097"W | 948.56            | 92.012          | 2.22          | -0.69                | 5.29                |                                 |
| 4182.50 | 21.970          | 94.810      | 4022.37  | -407.85        | -36.78     | 984.32    | 1696369.56        | 14283377.48        | 39°20'00.135"N | 80°48'07.634"W | 985.01            | 92.140          | 1.43          | -1.34                | -1.34               |                                 |
| 4276.50 | 21.170          | 95.550      | 4109.78  | -423.80        | -39.90     | 1018.74   | 1696403.96        | 14283374.36        | 39°20'00.104"N | 80°48'07.196"W | 1019.52           | 92.243          | 0.90          | -0.85                | 0.79                |                                 |
| 4371.50 | 21.180          | 101.810     | 4198.38  | -441.45        | -45.07     | 1052.61   | 1696437.82        | 14283369.18        | 39°20'00.052"N | 80°48'06.765"W | 1053.58           | 92.452          | 2.38          | 0.01                 | 6.59                |                                 |
| 4467.50 | 20.480          | 103.830     | 4288.11  | -461.09        | -52.64     | 1085.90   | 1696471.08        | 14283361.63        | 39°19'59.976"N | 80°48'06.342"W | 1087.17           | 92.775          | 1.04          | -0.73                | 2.10                |                                 |
| 4562.50 | 22.080          | 101.150     | 4378.63  | -480.73        | -60.06     | 1119.56   | 1696504.74        | 14283354.21        | 39°19'59.902"N | 80°48'05.914"W | 1121.17           | 93.071          | 1.97          | 1.68                 | -2.82               |                                 |
| 4656.50 | 25.210          | 96.130      | 4462.74  | -500.03        | -65.62     | 1156.81   | 1696541.97        | 14283348.65        | 39°19'59.847"N | 80°48'05.440"W | 1156.67           | 93.247          | 3.96          | 3.33                 | -6.34               |                                 |
| 4751.50 | 26.690          | 93.860      | 4548.16  | -519.08        | -69.21     | 1198.21   | 1696583.36        | 14283345.06        | 39°19'59.810"N | 80°48'04.913"W | 1200.21           | 93.306          | 1.88          | 1.56                 | -2.40               |                                 |
| 4846.50 | 25.440          | 92.430      | 4633.50  | -537.03        | -71.51     | 1239.89   | 1696625.02        | 14283342.76        | 39°19'59.787"N | 80°48'04.383"W | 1241.95           | 93.301          | 1.47          | -1.32                | -1.49               |                                 |
| 4940.50 | 25.750          | 92.760      | 4718.27  | -554.14        | -73.35     | 1280.48   | 1696665.67        | 14283340.93        | 39°19'59.758"N | 80°48'03.866"W | 1282.65           | 93.278          | 0.36          | 0.33                 | 0.35                |                                 |
| 5035.50 | 26.520          | 95.930      | 4803.56  | -572.93        | -76.53     | 1322.17   | 1696707.27        | 14283337.74        | 39°19'59.735"N | 80°48'03.336"W | 1324.38           | 93.313          | 1.68          | 0.81                 | 3.34                |                                 |
| 5129.50 | 26.150          | 96.180      | 4887.81  | -592.75        | -80.93     | 1363.63   | 1696748.72        | 14283333.35        | 39°19'59.691"N | 80°48'02.808"W | 1366.03           | 93.396          | 0.41          | -0.39                | 0.27                |                                 |
| 5224.50 | 26.210          | 94.860      | 4973.42  | -611.98        | -84.90     | 1404.61   | 1696789.68        | 14283329.38        | 39°19'59.651"N | 80°48'02.287"W | 1407.17           | 93.459          | 1.16          | -0.99                | -1.39               |                                 |
| 5318.50 | 26.750          | 94.950      | 5057.82  | -630.82        | -88.42     | 1445.63   | 1696830.68        | 14283325.96        | 39°19'59.615"N | 80°48'01.765"W | 1448.33           | 93.500          | 1.84          | 1.64                 | 0.10                |                                 |
| 5413.50 | 26.570          | 94.200      | 5142.82  | -650.10        | -91.82     | 1488.12   | 1696873.16        | 14283322.46        | 39°19'59.580"N | 80°48'01.224"W | 1490.65           | 93.531          | 0.40          | -0.19                | -0.79               |                                 |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
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| REFERENCE WELLPATH IDENTIFICATION |                              | Slot     | Slot #08          |
|-----------------------------------|------------------------------|----------|-------------------|
| Operator                          | ANTERO RESOURCES CORPORATION | Well     | Cobra Unit 1H     |
| Area                              | Doddridge Co., WV            | Wellbore | Cobra Unit 1H AWB |
| Field                             | Doddridge                    |          |                   |
| Facility                          | Addle Pad                    |          |                   |

| WELLPATH DATA (191 stations) † = interpolated/extrapolated station |                 |             |          |                |            |           |                |                 |                |                |                   |                 |                |                       |                      |                     |
|--|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|---------------------|
| MD (ft)  | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (ft) | Grid North (ft) | Latitude (°)   | Longitude (ft) | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments            |
| 5507.50  | 25.920          | 92.600      | 5227.13  | -668.14        | -94.29     | 1529.61   | 1696974.63     | 14283319.99     | 39°19'59.555"N | 80°48'00.696"W | 1532.52           | 93.528          | 1.02           | -0.69                 | -1.70                |                     |
| 5602.50  | 24.840          | 90.840      | 5312.96  | -684.74        | -95.53     | 1570.31   | 1696955.31     | 14283318.76     | 39°19'59.542"N | 80°48'00.178"W | 1573.21           | 93.481          | 1.39           | -1.14                 | -1.85                |                     |
| 5696.50  | 25.870          | 92.130      | 5397.91  | -700.99        | -96.58     | 1610.54   | 1696995.53     | 14283317.70     | 39°19'59.531"N | 80°47'59.666"W | 1613.44           | 93.432          | 1.24           | 1.10                  | 1.37                 |                     |
| 5791.50  | 26.160          | 93.750      | 5483.28  | -718.78        | -98.72     | 1652.15   | 1697037.12     | 14283315.56     | 39°19'59.509"N | 80°47'59.137"W | 1655.10           | 93.419          | 0.81           | 0.31                  | 1.71                 |                     |
| 5885.50  | 25.220          | 94.120      | 5567.98  | -736.80        | -101.51    | 1692.81   | 1697077.78     | 14283312.77     | 39°19'59.480"N | 80°47'58.620"W | 1695.85           | 93.432          | 1.01           | -1.00                 | 0.39                 |                     |
| 5980.50  | 24.520          | 93.390      | 5654.18  | -754.36        | -104.13    | 1732.67   | 1697117.61     | 14283310.15     | 39°19'59.453"N | 80°47'58.112"W | 1735.80           | 93.439          | 0.80           | -0.74                 | -0.77                |                     |
| 6043.50  | 24.480          | 91.330      | 5711.50  | -765.24        | -105.17    | 1768.78   | 1697143.71     | 14283309.83     | 39°19'59.447"N | 80°47'57.949"W | 1748.66           | 93.435          | 1.59           | 0.00                  | -3.84                |                     |
| 6075.50  | 24.080          | 86.910      | 5740.67  | -770.05        | -104.97    | 1771.93   | 1697156.86     | 14283309.32     | 39°19'59.444"N | 80°47'57.800"W | 1775.04           | 93.422          | 1.13           | -0.12                 | -2.72                |                     |
| 6106.50  | 21.640          | 79.290      | 5789.24  | -773.28        | -103.57    | 1783.87   | 1697188.79     | 14283310.72     | 39°19'59.458"N | 80°47'57.461"W | 1786.87           | 93.323          | 12.36          | -7.87                 | -24.58               |                     |
| 6137.50  | 19.390          | 69.530      | 5798.28  | -774.60        | -100.70    | 1794.31   | 1697179.22     | 14283313.58     | 39°19'59.486"N | 80°47'57.328"W | 1797.13           | 93.212          | 13.18          | -7.26                 | -31.48               |                     |
| 6169.50  | 18.720          | 60.550      | 5828.54  | -774.14        | -96.32     | 1803.76   | 1697188.67     | 14283317.96     | 39°19'59.529"N | 80°47'57.099"W | 1806.33           | 93.057          | 9.39           | -2.09                 | -28.06               |                     |
| 6200.50  | 19.320          | 53.890      | 5857.85  | -772.30        | -90.85     | 1812.24   | 1697197.14     | 14283323.43     | 39°19'59.583"N | 80°47'56.989"W | 1814.51           | 92.870          | 7.26           | 1.94                  | -21.48               |                     |
| 6232.50  | 20.710          | 50.630      | 5887.92  | -769.37        | -84.14     | 1820.89   | 1697205.79     | 14283330.14     | 39°19'59.649"N | 80°47'56.876"W | 1822.83           | 92.646          | 5.57           | 4.34                  | -10.19               |                     |
| 6284.50  | 22.370          | 47.510      | 5917.68  | -765.61        | -76.44     | 1829.75   | 1697214.65     | 14283337.84     | 39°19'59.725"N | 80°47'56.767"W | 1831.35           | 92.392          | 6.30           | 5.19                  | -9.75                |                     |
| 6295.50  | 23.350          | 43.330      | 5946.25  | -761.05        | -77.99     | 1838.32   | 1697223.22     | 14283346.29     | 39°19'59.808"N | 80°47'56.656"W | 1839.58           | 92.118          | 6.12           | 3.16                  | -13.48               |                     |
| 6327.50  | 25.360          | 39.050      | 5975.40  | -755.15        | -58.05     | 1846.99   | 1697231.88     | 14283356.22     | 39°19'59.906"N | 80°47'56.551"W | 1847.90           | 91.800          | 8.36           | 6.28                  | -13.38               |                     |
| 6358.50  | 27.190          | 35.120      | 6003.20  | -748.15        | -47.10     | 1855.25   | 1697240.14     | 14283367.17     | 39°20'00.014"N | 80°47'56.447"W | 1855.86           | 91.454          | 8.14           | 5.90                  | -12.68               |                     |
| 6388.50  | 28.970          | 32.670      | 6030.55  | -740.03        | -34.98     | 1863.38   | 1697248.26     | 14283379.27     | 39°20'00.134"N | 80°47'56.340"W | 1863.70           | 91.076          | 6.84           | 5.74                  | -7.90                |                     |
| 6421.50  | 30.970          | 30.730      | 6058.27  | -730.64        | -21.38     | 1871.77   | 1697256.65     | 14283392.87     | 39°20'00.268"N | 80°47'56.235"W | 1871.89           | 90.854          | 6.94           | 6.25                  | -6.06                |                     |
| 6452.50  | 33.290          | 28.860      | 6084.52  | -720.51        | -7.07      | 1879.95   | 1697264.83     | 14283407.18     | 39°20'00.409"N | 80°47'56.128"W | 1879.96           | 90.216          | 8.14           | 7.48                  | -6.03                |                     |
| 6494.50  | 35.870          | 27.390      | 6110.87  | -708.94        | 8.95       | 1888.50   | 1697273.38     | 14283423.19     | 39°20'00.568"N | 80°47'56.021"W | 1886.53           | 89.729          | 8.47           | 8.06                  | -4.59                |                     |
| 6515.50  | 37.890          | 24.960      | 6135.66  | -696.61        | 25.84      | 1896.70   | 1697281.57     | 14283439.88     | 39°20'00.732"N | 80°47'55.923"W | 1896.87           | 89.225          | 8.04           | 6.52                  | -7.84                |                     |
| 6547.50  | 36.970          | 20.430      | 6160.74  | -682.55        | 43.99      | 1904.36   | 1697289.23     | 14283458.21     | 39°20'00.914"N | 80°47'55.846"W | 1904.87           | 88.677          | 9.42           | 3.37                  | -14.16               |                     |
| 6578.50  | 40.090          | 15.280      | 6184.65  | -667.48        | 62.76      | 1910.40   | 1697295.26     | 14283478.98     | 39°20'01.099"N | 80°47'55.789"W | 1911.43           | 88.119          | 11.17          | 3.61                  | -16.61               |                     |
| 6609.50  | 40.980          | 10.130      | 6208.22  | -650.98        | 82.40      | 1914.82   | 1697299.68     | 14283496.61     | 39°20'01.293"N | 80°47'55.746"W | 1916.59           | 87.536          | 11.17          | 2.87                  | -16.61               |                     |
| 6641.50  | 42.420          | 7.980       | 6232.11  | -632.81        | 103.42     | 1918.16   | 1697303.03     | 14283517.82     | 39°20'01.501"N | 80°47'55.715"W | 1920.95           | 86.914          | 6.34           | 4.50                  | -6.72                |                     |
| 6688.00†   | 43.445          | 7.234       | 6251.51  | -617.17        | 121.31     | 1920.55   | 1697305.41     | 14283535.50     | 39°20'01.677"N | 80°47'55.710"W | 1924.38           | 86.386          | 4.32           | 3.87                  | -2.82                | Middlesex: 6668' MD |
| 6704.50  | 43.620          | 7.110       | 6254.78  | -614.47        | 124.38     | 1920.94   | 1697305.80     | 14283538.86     | 39°20'01.708"N | 80°47'55.677"W | 1924.96           | 86.295          | 4.32           | 3.88                  | -2.75                |                     |
| 6704.50  | 45.380          | 5.950       | 6277.60  | -594.32        | 146.67     | 1923.48   | 1697308.35     | 14283560.66     | 39°20'01.928"N | 80°47'55.677"W | 1929.07           | 85.940          | 6.08           | 5.50                  | -3.62                |                     |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                              |  |          |                   |
|----------|------------------------------|--|----------|-------------------|
| Operator | ANTERO RESOURCES CORPORATION |  | Slot     | Slot #08          |
| Area     | Doddridge Co., WV            |  | Well     | Cobra Unit 1H     |
| Field    | Doddridge                    |  | Wellbore | Cobra Unit 1H AWB |
| Facility | Addie Pad                    |  |          |                   |

## WELLPATH DATA (191 stations) † = interpolated/extrapolated station

| MD (ft)  | Inclination (°) | North (ft)   | East (ft) | Grid East (ft) | Grid North (ft) | Latitude   | Longitude   | Closure (ft)   | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments |       |       |  |
|----------|-----------------|--------------|-----------|----------------|-----------------|------------|-------------|----------------|----------------|-----------------------|----------------------|----------|-------|-------|--|
| 6736.50  | 47.950          | 4910.6299.56 | -574.22   | 189.83         | 1925.68         | 1697310.54 | 14283584.01 | 39°20'02.157"N | 80°47'55.648"W | 1933.16               | 84.960               | 8.37     | 8.03  | -3.25 |  |
| 6753.50  | 49.450          | 3.770        | 6310.78   | -562.81        | 182.57          | 1926.65    | 1697311.51  | 14283596.74    | 39°20'02.283"N | 80°47'55.636"W        | 1935.28              | 84.587   | 10.16 | 8.82  | -6.71  |
| 6805.00  | 53.740          | 359.800      | 6342.78   | -525.84        | 222.88          | 1927.50    | 1697312.36  | 14283637.04    | 39°20'02.681"N | 80°47'55.624"W        | 1940.34              | 83.404   | 11.25 | 8.33  | -9.65BHIAI Curve -6-1/2"> (6753.5)(6805-15065) |
| 6859.00  | 58.240          | 354.800      | 6372.98   | -483.57        | 287.55          | 1925.00    | 1697309.86  | 14283681.69    | 39°20'03.123"N | 80°47'55.654"W        | 1943.50              | 82.087   | 10.27 | 8.33  | -7.24  |
| 6887.00† | 60.298          | 353.678      | 6387.29   | -460.50        | 291.50          | 1922.60    | 1697307.48  | 14283705.63    | 39°20'03.359"N | 80°47'55.684"W        | 1944.57              | 81.379   | 8.24  | 7.35  | -4.34Burkeft 6887 MD                           |
| 6906.00  | 61.700          | 352.880      | 6396.50   | -444.50        | 308.00          | 1920.65    | 1697305.51  | 14283722.12    | 39°20'03.523"N | 80°47'55.708"W        | 1945.19              | 80.889   | 8.24  | 7.38  | -4.18  |
| 6952.00† | 65.791          | 350.892      | 6416.95   | -404.51        | 348.83          | 1914.82    | 1697299.68  | 14283762.93    | 39°20'03.928"N | 80°47'55.781"W        | 1946.33              | 79.675   | 9.70  | 8.88  | -4.32Tully: 6952 MD                            |
| 6953.00  | 65.860          | 350.860      | 6417.26   | -403.63        | 348.73          | 1914.67    | 1697299.54  | 14283763.83    | 39°20'03.935"N | 80°47'55.783"W        | 1946.35              | 79.649   | 9.70  | 8.88  | -4.17  |
| 7000.00  | 67.720          | 349.840      | 6435.77   | -361.48        | 392.31          | 1907.42    | 1697292.29  | 14283806.40    | 39°20'04.356"N | 80°47'55.874"W        | 1947.35              | 78.378   | 4.38  | 3.91  | -2.15  |
| 7038.00† | 68.899          | 349.340      | 6449.81   | -317.78        | 436.22          | 1899.31    | 1697285.91  | 14283841.12    | 39°20'04.700"N | 80°47'55.954"W        | 1948.42              | 77.340   | 3.34  | 3.10  | -1.32Hamilton: 7038 MD                         |
| 7048.00  | 68.210          | 349.210      | 6453.39   | -317.78        | 436.22          | 1899.31    | 1697285.91  | 14283841.12    | 39°20'04.700"N | 80°47'55.954"W        | 1948.42              | 77.340   | 3.34  | 3.10  | -1.32Hamilton: 7038 MD                         |
| 7067.00† | 70.253          | 349.210      | 6459.97   | -300.32        | 453.73          | 1895.97    | 1697280.84  | 14283867.79    | 39°20'04.963"N | 80°47'56.018"W        | 1948.76              | 77.065   | 3.34  | 3.11  | -1.30  |
| 7095.00  | 71.790          | 349.220      | 6469.08   | -274.38        | 479.74          | 1891.02    | 1697275.83  | 14283893.79    | 39°20'05.221"N | 80°47'56.081"W        | 1949.50              | 76.542   | 5.49  | 5.49  | 0.02Marcellus POE: 7067 MD                     |
| 7143.00  | 76.450          | 348.920      | 6482.21   | -229.13        | 525.05          | 1882.26    | 1697267.14  | 14283939.09    | 39°20'05.669"N | 80°47'56.191"W        | 1950.92              | 75.765   | 5.49  | 5.49  | 0.02   |
| 7190.00  | 78.760          | 348.850      | 6492.29   | -184.10        | 570.09          | 1873.41    | 1697258.30  | 14283984.11    | 39°20'06.114"N | 80°47'56.302"W        | 1954.12              | 74.414   | 9.73  | 9.71  | -0.82  |
| 7238.00  | 83.770          | 349.160      | 6499.58   | -137.60        | 616.85          | 1864.37    | 1697249.26  | 14284030.65    | 39°20'06.574"N | 80°47'56.416"W        | 1958.24              | 73.075   | 4.92  | 4.91  | -0.15  |
| 7300.00  | 90.000          | 350.920      | 6502.93   | -77.16         | 677.60          | 1853.67    | 1697238.56  | 14284081.67    | 39°20'07.177"N | 80°47'56.550"W        | 1963.70              | 71.698   | 10.46 | 10.44 | 0.65   |
| 7333.00  | 90.000          | 351.460      | 6502.92   | -45.07         | 710.21          | 1848.62    | 1697233.51  | 14284124.17    | 39°20'07.499"N | 80°47'56.771"W        | 1963.70              | 71.698   | 10.46 | 10.44 | 0.65   |
| 7428.00  | 90.090          | 345.230      | 6501.87   | 232.34         | 899.36          | 1798.14    | 1697183.05  | 14284403.21    | 39°20'10.260"N | 80°47'57.248"W        | 1980.35              | 68.984   | 1.84  | -0.09 | 1.84   |
| 7523.00  | 89.970          | 347.580      | 6501.92   | 139.43         | 898.00          | 1820.23    | 1697205.14  | 14284311.89    | 39°20'09.356"N | 80°47'56.970"W        | 2004.48              | 66.342   | 2.03  | 0.65  | 1.93   |
| 7617.00  | 90.080          | 345.490      | 6501.75   | 326.49         | 1081.27         | 1774.13    | 1697158.05  | 14284495.09    | 39°20'11.169"N | 80°47'57.551"W        | 2029.69              | 63.741   | 6.05  | -0.68 | -6.01  |
| 7712.00  | 90.060          | 343.860      | 6501.65   | 420.77         | 1172.89         | 1749.02    | 1697133.95  | 14284586.67    | 39°20'12.075"N | 80°47'57.868"W        | 2052.35              | 61.180   | 2.50  | 0.13  | -2.50  |
| 7807.00  | 90.310          | 342.620      | 6501.34   | 515.33         | 1263.85         | 1721.63    | 1697106.57  | 14284677.60    | 39°20'12.974"N | 80°47'58.214"W        | 2077.66              | 58.639   | 0.28  | -0.03 | 0.27   |
| 7902.00  | 90.220          | 337.810      | 6500.90   | 610.20         | 1353.22         | 1689.48    | 1697074.44  | 14284766.93    | 39°20'13.858"N | 80°47'58.621"W        | 2105.88              | 56.154   | 1.72  | 0.00  | -1.72  |
| 7997.00  | 90.250          | 333.790      | 6500.51   | 705.13         | 1439.85         | 1650.55    | 1697035.52  | 14284853.52    | 39°20'14.715"N | 80°47'59.114"W        | 2135.79              | 53.717   | 1.33  | 0.26  | -1.31  |
| 8092.00  | 90.120          | 332.450      | 6500.21   | 798.83         | 1523.69         | 1608.05    | 1696993.03  | 14284937.33    | 39°20'15.545"N | 80°47'59.652"W        | 2164.61              | 51.306   | 5.06  | -0.08 | -5.06  |
| 8186.00  | 90.280          | 332.180      | 6499.66   | 893.42         | 1607.82         | 1563.91    | 1696948.91  | 14285021.42    | 39°20'16.377"N | 80°48'00.212"W        | 2190.31              | 48.900   | 4.23  | 0.03  | -4.23  |
| 8281.00  | 90.250          | 332.310      | 6499.44   | 987.99         | 1691.89         | 1519.67    | 1696860.69  | 14285105.46    | 39°20'17.209"N | 80°48'00.772"W        | 2215.28              | 46.543   | 1.43  | -0.14 | -1.43  |
| 8376.00  | 90.220          | 332.630      | 6499.04   | 1083.59        | 1777.02         | 1475.30    | 1696800.34  | 14285190.55    | 39°20'18.052"N | 80°48'01.335"W        | 2242.96              | 44.207   | 0.33  | 0.17  | -0.28  |
| 8472.00  | 90.220          | 332.630      | 6499.04   | 1083.59        | 1777.02         | 1475.30    | 1696800.34  | 14285190.55    | 39°20'18.052"N | 80°48'01.335"W        | 2274.18              | 41.980   | 0.14  | -0.03 | 0.14   |
|          |                 |              |           |                |                 |            |             |                |                | 2309.61               | 39.700               | 0.33     | -0.03 | 0.33  |  |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'

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## REFERENCE WELLPATH IDENTIFICATION

|          |                              |                   |
|----------|------------------------------|-------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot #08          |
| Area     | Doddridge Co., WV            | Cobra Unit 1H     |
| Field    | Doddridge                    | Cobra Unit 1H AWB |
| Facility | Addie Pad                    |                   |

## WELLPATH DATA (191 stations)

| MD (ft)  | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (ft) | Grid North (ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|----------|
| 8567.00  | 90.220          | 335.390     | 6498.68  | 1178.38        | 1862.40    | 1433.67   | 1696618.73     | 14285275.90     | 39°20'18.896"N | 80°48'01.862"W | 2350.31           | 37.589          | 2.91           | 0.00                  | 2.91                 |          |
| 8662.00  | 90.180          | 334.310     | 6498.35  | 1273.27        | 1948.39    | 1393.30   | 1696778.37     | 14285361.88     | 39°20'19.747"N | 80°48'02.374"W | 2396.31           | 35.569          | 1.14           | -0.04                 | -1.14                |          |
| 8757.00  | 90.120          | 334.780     | 6498.12  | 1368.12        | 2034.17    | 1352.47   | 1696737.56     | 14285447.60     | 39°20'20.596"N | 80°48'02.891"W | 2442.75           | 33.619          | 0.50           | -0.06                 | 0.49                 |          |
| 8851.00  | 90.180          | 339.200     | 6497.85  | 1462.08        | 2120.87    | 1315.73   | 1696700.84     | 14285534.07     | 39°20'21.452"N | 80°48'03.356"W | 2495.87           | 31.817          | 4.70           | 0.06                  | 4.70                 |          |
| 8946.00  | 90.220          | 344.360     | 6497.52  | 1556.82        | 2210.87    | 1286.04   | 1696671.16     | 14285624.24     | 39°20'22.344"N | 80°48'03.731"W | 2557.71           | 30.186          | 5.43           | 0.04                  | 5.43                 |          |
| 9040.00  | 90.180          | 341.780     | 6497.19  | 1650.39        | 2300.79    | 1258.67   | 1696643.80     | 14285714.12     | 39°20'23.233"N | 80°48'04.077"W | 2622.57           | 28.681          | 2.74           | -0.04                 | -2.74                |          |
| 9135.00  | 90.120          | 337.880     | 6496.94  | 1745.31        | 2389.95    | 1228.93   | 1696611.07     | 14285803.24     | 39°20'24.115"N | 80°48'04.491"W | 2686.03           | 27.156          | 4.10           | -0.06                 | -4.09                |          |
| 9230.00  | 90.180          | 336.240     | 6496.69  | 1840.30        | 2477.44    | 1188.91   | 1696574.01     | 14285890.70     | 39°20'24.984"N | 80°48'04.960"W | 2747.94           | 25.636          | 1.74           | 0.06                  | 1.74                 |          |
| 9325.00  | 90.180          | 324.050     | 6496.40  | 1934.30        | 2559.67    | 1141.71   | 1696526.88     | 14285972.90     | 39°20'25.794"N | 80°48'05.559"W | 2802.75           | 24.039          | 12.83          | 0.00                  | -12.83               |          |
| 9418.00  | 90.060          | 327.640     | 6496.20  | 2026.29        | 2637.45    | 1088.94   | 1696474.13     | 14286050.64     | 39°20'26.564"N | 80°48'06.228"W | 2853.41           | 22.435          | 3.82           | -0.13                 | 3.82                 |          |
| 9514.00  | 90.090          | 331.790     | 6496.07  | 2120.35        | 2719.47    | 1041.04   | 1696426.25     | 14286132.63     | 39°20'27.376"N | 80°48'07.377"W | 2911.92           | 20.947          | 4.37           | 0.03                  | 4.37                 |          |
| 9608.00  | 90.120          | 338.250     | 6495.85  | 2208.97        | 2800.07    | 988.94    | 1696383.53     | 14286216.31     | 39°20'28.204"N | 80°48'07.863"W | 2975.63           | 19.602          | 2.47           | -0.06                 | 2.47                 |          |
| 9703.00  | 90.150          | 342.630     | 6495.63  | 2303.84        | 2879.56    | 928.14    | 1696333.40     | 14286299.49     | 39°20'29.064"N | 80°48'08.265"W | 3045.32           | 18.374          | 4.36           | 0.09                  | 4.36                 |          |
| 9798.00  | 90.150          | 343.880     | 6495.43  | 2408.43        | 2970.40    | 869.32    | 1696285.59     | 14286384.42     | 39°20'30.847"N | 80°48'08.617"W | 3120.77           | 17.302          | 4.61           | 0.03                  | 4.61                 |          |
| 9898.00  | 90.150          | 343.880     | 6495.23  | 2513.53        | 3063.25    | 813.49    | 1696238.77     | 14286474.51     | 39°20'31.749"N | 80°48'08.956"W | 3199.87           | 16.342          | 0.72           | 0.00                  | 0.72                 |          |
| 10093.00 | 90.180          | 345.150     | 6494.86  | 2617.25        | 3253.08    | 848.12    | 1696233.41     | 14286566.02     | 39°20'32.654"N | 80°48'09.276"W | 3279.97           | 15.445          | 0.60           | 0.00                  | 0.60                 |          |
| 10177.00 | 90.150          | 343.460     | 6494.59  | 2720.62        | 3343.57    | 822.70    | 1696208.00     | 14286658.48     | 39°20'33.549"N | 80°48'09.597"W | 3361.82           | 14.613          | 1.34           | 0.03                  | 1.34                 |          |
| 10272.00 | 90.180          | 339.830     | 6494.31  | 2825.37        | 3433.72    | 792.78    | 1696178.10     | 14286748.60     | 39°20'34.441"N | 80°48'09.975"W | 3443.28           | 13.823          | 1.80           | -0.03                 | -1.80                |          |
| 10368.00 | 90.180          | 339.450     | 6494.01  | 2927.32        | 3523.72    | 768.39    | 1696144.71     | 14286836.66     | 39°20'35.331"N | 80°48'10.398"W | 3524.05           | 13.001          | 3.82           | 0.03                  | -3.82                |          |
| 10462.00 | 90.080          | 339.270     | 6493.79  | 3026.27        | 3611.69    | 726.25    | 1696111.59     | 14286924.49     | 39°20'36.201"N | 80°48'10.817"W | 3604.82           | 12.162          | 0.40           | 0.00                  | -0.40                |          |
| 10556.00 | 90.280          | 341.060     | 6493.49  | 3118.18        | 3700.11    | 694.36    | 1696079.71     | 14287012.88     | 39°20'37.076"N | 80°48'11.221"W | 3683.98           | 11.370          | 0.21           | -0.10                 | -0.19                |          |
| 10651.00 | 90.430          | 340.450     | 6492.90  | 3214.04        | 3789.80    | 663.06    | 1696048.41     | 14287102.88     | 39°20'37.963"N | 80°48'11.617"W | 3764.89           | 10.628          | 1.91           | 0.20                  | 1.90                 |          |
| 10745.00 | 90.280          | 334.620     | 6492.31  | 3314.00        | 3876.62    | 627.14    | 1696012.52     | 14287202.53     | 39°20'38.822"N | 80°48'12.071"W | 3847.36           | 9.824           | 0.66           | 0.16                  | -0.64                |          |
| 10840.00 | 90.220          | 336.780     | 6491.90  | 3412.94        | 3963.20    | 588.06    | 1695973.45     | 14287289.32     | 39°20'39.678"N | 80°48'12.568"W | 3927.02           | 9.189           | 6.20           | -0.16                 | -6.20                |          |
| 10935.00 | 90.280          | 340.930     | 6491.48  | 3507.90        | 4051.79    | 553.80    | 1695939.21     | 14287375.87     | 39°20'40.555"N | 80°48'13.000"W | 4006.59           | 8.440           | 2.28           | -0.06                 | -2.28                |          |
| 11030.00 | 90.220          | 338.210     | 6491.07  | 3602.83        | 4140.81    | 520.65    | 1695906.07     | 14287464.42     | 39°20'41.435"N | 80°48'13.420"W | 4089.46           | 7.783           | 4.36           | 0.06                  | 4.36                 |          |
| 11126.00 | 90.150          | 332.850     | 6490.76  | 3728.73        | 4228.15    | 480.90    | 1695866.33     | 14287553.40     | 39°20'42.299"N | 80°48'13.923"W | 4173.41           | 7.167           | 2.86           | -0.06                 | -2.86                |          |
| 11221.00 | 90.120          | 331.380     | 6490.54  | 3823.28        | 4312.12    | 436.47    | 1695821.92     | 14287640.71     | 39°20'43.180"N | 80°48'14.486"W | 4255.41           | 6.489           | 5.58           | -0.07                 | -5.58                |          |
| 11317.00 | 90.310          | 334.360     | 6490.18  | 3918.93        | 4397.55    | 392.71    | 1695778.18     | 14287724.64     | 39°20'43.975"N | 80°48'15.041"W | 4334.15           | 5.760           | 1.55           | -0.03                 | -1.55                |          |
|          |                 |             |          |                |            |           |                | 4415.05         |                |                | 4415.05           | 5.103           | 3.13           | 0.20                  | 3.12                 |          |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
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| REFERENCE WELLPATH IDENTIFICATION |                              | Slot #08          |
|-----------------------------------|------------------------------|-------------------|
| Operator                          | ANTERO RESOURCES CORPORATION | Cobra Unit 1H     |
| Area                              | Doddridge Co., WV            | Cobra Unit 1H AWB |
| Field                             | Doddridge                    |                   |
| Facility                          | Addle Pac                    |                   |

| WELLPATH DATA (191 stations) |                 |             |          |                |            |           |                    |                     |                |                |                   |                 |                |                       |                     |          |       |  |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|--------------------|---------------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|---------------------|----------|-------|--|
| MD (ft)                      | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (NAD 83) | Grid North (NAD 83) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (°/100ft) | Comments |       |  |
| 11472.00                     | 90.310          | 339.390     | 6489.66  | 4013.89        | 4484.90    | 355.43    | 1695740.91         | 14287897.35         | 39°20'44.839"N | 80°48'15.513"W | 4498.96           | 4.531           | 5.27           | 0.00                  | 0.00                | 5.27     |       |  |
| 11507.00                     | 90.090          | 343.320     | 6489.33  | 4108.68        | 4574.89    | 325.06    | 1695710.56         | 14287987.31         | 39°20'45.730"N | 80°48'15.987"W | 4686.43           | 4.064           | 4.14           | -0.23                 | 4.14                | 4.14     |       |  |
| 11602.00                     | 90.180          | 344.850     | 6489.11  | 4203.08        | 4666.25    | 299.01    | 1695684.52         | 14288078.63         | 39°20'46.633"N | 80°48'16.226"W | 4675.82           | 3.666           | 1.61           | 0.09                  | 0.09                | 1.61     |       |  |
| 11697.00                     | 90.280          | 344.630     | 6488.72  | 4297.36        | 4757.90    | 274.01    | 1695659.53         | 14288170.25         | 39°20'47.539"N | 80°48'16.542"W | 4765.78           | 3.286           | 0.25           | 0.11                  | -0.23               | 0.11     |       |  |
| 11792.00                     | 90.250          | 341.780     | 6489.28  | 4381.91        | 4848.83    | 248.56    | 1695632.09         | 14288261.15         | 39°20'48.439"N | 80°48'16.869"W | 4855.10           | 2.911           | 3.00           | -0.03                 | -0.03               | -3.00    |       |  |
| 11887.00                     | 90.280          | 340.920     | 6487.85  | 4466.71        | 4938.84    | 216.18    | 1695601.73         | 14288351.12         | 39°20'49.329"N | 80°48'17.273"W | 4943.57           | 2.506           | 0.91           | 0.03                  | 0.03                | -0.91    |       |  |
| 11982.00                     | 90.250          | 338.120     | 6487.41  | 4551.65        | 5027.83    | 182.95    | 1695576.50         | 14288440.07         | 39°20'50.208"N | 80°48'17.694"W | 5031.16           | 2.084           | 2.95           | -0.03                 | -0.03               | -2.95    |       |  |
| 12077.00                     | 90.340          | 330.660     | 6486.92  | 4636.43        | 5113.44    | 141.91    | 1695552.49         | 14288525.64         | 39°20'51.064"N | 80°48'18.214"W | 5115.40           | 1.580           | 7.85           | 0.09                  | 0.09                | -7.85    |       |  |
| 12172.00                     | 90.180          | 327.750     | 6486.48  | 4720.38        | 5195.03    | 93.28     | 1695528.37         | 14288607.21         | 39°20'51.864"N | 80°48'18.830"W | 5195.87           | 1.029           | 3.07           | -0.17                 | -0.17               | -3.06    |       |  |
| 12267.00                     | 90.060          | 333.970     | 6486.29  | 4804.66        | 5277.97    | 47.05     | 1695504.66         | 14288690.11         | 39°20'52.684"N | 80°48'19.417"W | 5278.18           | 0.511           | 6.55           | -0.13                 | -0.13               | 6.55     |       |  |
| 12362.00                     | 90.520          | 338.870     | 6485.80  | 4899.61        | 5365.01    | 9.06      | 1695480.68         | 14288777.11         | 39°20'53.545"N | 80°48'19.988"W | 5365.01           | 0.097           | 5.18           | 0.48                  | 5.16                | 5.16     |       |  |
| 12457.00                     | 90.460          | 336.030     | 6484.99  | 5054.59        | 5452.73    | -66.80    | 1695456.85         | 14288864.80         | 39°20'54.413"N | 80°48'20.359"W | 5452.80           | 359.712         | 2.99           | -0.06                 | -0.06               | -2.99    |       |  |
| 12552.00                     | 90.250          | 334.920     | 6484.40  | 5149.52        | 5539.16    | -105.32   | 1695432.35         | 14288952.45         | 39°20'55.268"N | 80°48'20.859"W | 5539.56           | 359.308         | 1.19           | -0.22                 | -1.17               | -1.17    |       |  |
| 12647.00                     | 90.120          | 337.240     | 6484.10  | 5244.47        | 5625.99    | -142.34   | 1695408.37         | 14289040.37         | 39°20'56.127"N | 80°48'21.347"W | 5625.98           | 358.928         | 2.45           | -0.14                 | 2.44                | 2.44     |       |  |
| 12742.00                     | 90.180          | 336.890     | 6483.85  | 5339.47        | 5713.48    | -181.33   | 1695384.35         | 14289128.04         | 39°20'56.993"N | 80°48'21.815"W | 5715.25           | 358.573         | 0.37           | 0.08                  | -0.37               | -0.37    |       |  |
| 12837.00                     | 90.220          | 334.640     | 6483.52  | 5434.41        | 5800.10    | -222.03   | 1695360.39         | 14289216.04         | 39°20'57.850"N | 80°48'22.309"W | 5802.94           | 358.209         | 2.37           | 0.04                  | -2.37               | 0.04     | -2.37 |  |
| 12932.00                     | 90.120          | 334.630     | 6483.23  | 5529.27        | 5885.94    | -259.10   | 1695336.69         | 14289297.84         | 39°20'58.699"N | 80°48'22.825"W | 5889.13           | 357.840         | 0.11           | -0.11                 | -0.11               | -0.11    | -0.11 |  |
| 13026.00                     | 90.090          | 338.900     | 6483.06  | 5623.24        | 5972.30    | -291.35   | 1695312.63         | 14289384.16         | 39°20'59.553"N | 80°48'23.295"W | 5977.92           | 357.516         | 4.54           | -0.03                 | 4.54                | 4.54     |       |  |
| 13121.00                     | 90.220          | 341.410     | 6482.80  | 5718.14        | 6061.65    | -322.55   | 1695288.21         | 14289473.48         | 39°21'00.437"N | 80°48'23.703"W | 6068.65           | 357.248         | 2.65           | 0.14                  | 2.64                | 0.14     | 2.64  |  |
| 13217.00                     | 90.120          | 340.660     | 6482.52  | 5813.98        | 6152.44    | -352.56   | 1695264.33         | 14289564.23         | 39°21'01.335"N | 80°48'24.097"W | 6160.88           | 356.998         | 0.78           | -0.10                 | -0.78               | -0.10    | -0.78 |  |
| 13312.00                     | 90.310          | 342.510     | 6482.16  | 5908.75        | 6242.57    | -381.66   | 1695240.12         | 14289654.33         | 39°21'02.227"N | 80°48'24.477"W | 6252.52           | 356.768         | 1.96           | 0.20                  | 1.95                | 0.20     | 1.95  |  |
| 13407.00                     | 90.280          | 341.810     | 6481.67  | 6003.46        | 6333.00    | -414.21   | 1695014.12         | 14289744.72         | 39°21'03.121"N | 80°48'24.845"W | 6344.49           | 356.551         | 0.74           | -0.03                 | -0.74               | -0.03    | -0.74 |  |
| 13503.00                     | 90.310          | 338.560     | 6481.18  | 6099.35        | 6423.30    | -450.36   | 1694971.59         | 14289834.98         | 39°21'04.014"N | 80°48'25.257"W | 6436.64           | 356.310         | 3.40           | 0.03                  | -3.40               | 0.03     | -3.40 |  |
| 13598.00                     | 90.220          | 336.710     | 6480.74  | 6194.35        | 6511.14    | -481.96   | 1694935.45         | 14289922.79         | 39°21'04.883"N | 80°48'25.715"W | 6526.70           | 356.043         | 1.94           | -0.09                 | -1.94               | -0.09    | -1.94 |  |
| 13693.00                     | 90.180          | 331.360     | 6480.41  | 6289.12        | 6598.52    | -533.79   | 1694893.88         | 14290009.14         | 39°21'05.728"N | 80°48'26.242"W | 6614.84           | 355.735         | 5.64           | -0.04                 | -5.64               | -0.04    | -5.64 |  |
| 13788.00                     | 90.060          | 335.160     | 6480.21  | 6381.83        | 6679.56    | -571.22   | 1694852.05         | 14290091.14         | 39°21'06.549"N | 80°48'26.772"W | 6700.85           | 355.431         | 4.10           | -0.13                 | 4.10                | -0.13    | 4.10  |  |
| 13881.00                     | 90.090          | 338.430     | 6480.09  | 6476.80        | 6766.86    | -607.87   | 1694814.64         | 14290178.41         | 39°21'07.413"N | 80°48'27.246"W | 6790.92           | 355.175         | 3.44           | 0.03                  | 3.44                | 0.03     | 3.44  |  |
| 13976.00                     | 90.180          | 336.180     | 6479.87  | 6571.79        | 6854.50    | -648.34   | 1694778.00         | 14290266.01         | 39°21'08.280"N | 80°48'27.710"W | 6881.40           | 354.932         | 2.37           | 0.09                  | -2.37               | 0.09     | -2.37 |  |
| 14071.00                     | 90.180          | 333.380     | 6479.57  | 6666.66        | 6940.43    | -689.51   | 1694737.54         | 14290351.91         | 39°21'09.130"N | 80°48'28.223"W | 6970.65           | 354.663         | 2.95           | 0.00                  | -2.95               | 0.00     | -2.95 |  |
| 14166.00                     | 90.180          | 335.260     | 6479.27  | 6761.49        | 7026.28    | -726.49   | 1694696.40         | 14290437.49         | 39°21'09.977"N | 80°48'28.745"W | 7059.80           | 354.395         | 1.98           | 0.00                  | 1.98                | 0.00     | 1.98  |  |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator                     | Area              | Field     | Facility  | Slot     | Slot #08          |
|------------------------------|-------------------|-----------|-----------|----------|-------------------|
| ANTERO RESOURCES CORPORATION | Doddridge Co., WV | Doddridge | Addie Pad | Well     | Cobra Unit 1H     |
|                              |                   |           |           | Wellbore | Cobra Unit 1H AWB |

## WELLPATH DATA (191 stations)

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US M] | Grid North [US M] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS ["/100ft] | Build Rate ["/100ft] | Turn Rate ["/100ft] | Comments                   |
|----------|-----------------|-------------|----------|----------------|------------|-----------|------------------|-------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|----------------------------|
| 14280.00 | 89.750          | 338.080     | 6479.33  | 6855.47        | 7112.35    | -726.73   | 1694659.19       | 14290523.76       | 39°21'10.831"N | 80°48'29.218"W | 7149.38           | 354.166         | 3.03          | -0.46                | 3.00                |                            |
| 14356.00 | 89.820          | 340.850     | 6479.69  | 6851.41        | 7202.24    | -760.40   | 1694625.53       | 14290613.62       | 39°21'11.720"N | 80°48'29.643"W | 7242.27           | 353.973         | 2.89          | 0.07                 | 2.89                |                            |
| 14450.00 | 89.820          | 342.900     | 6479.98  | 7045.16        | 7291.57    | -789.64   | 1694596.30       | 14290702.91       | 39°21'12.604"N | 80°48'30.013"W | 7334.20           | 353.819         | 2.18          | 0.00                 | 2.18                |                            |
| 14545.00 | 89.910          | 339.640     | 6480.21  | 7139.96        | 7381.53    | -820.14   | 1694565.81       | 14290792.83       | 39°21'13.493"N | 80°48'30.398"W | 7426.95           | 353.660         | 3.43          | 0.09                 | -3.43               |                            |
| 14639.00 | 89.630          | 336.480     | 6480.58  | 7233.94        | 7488.71    | -855.26   | 1694530.71       | 14290879.98       | 39°21'14.356"N | 80°48'30.843"W | 7517.52           | 353.467         | 3.37          | -0.30                | -3.36               |                            |
| 14734.00 | 90.890          | 335.930     | 6480.15  | 7328.91        | 7555.63    | -893.59   | 1694492.40       | 14290966.86       | 39°21'15.216"N | 80°48'31.329"W | 7608.29           | 353.255         | 1.45          | 1.33                 | -0.58               |                            |
| 14828.00 | 90.950          | 337.080     | 6478.63  | 7423.87        | 7642.74    | -931.45   | 1694454.55       | 14291053.94       | 39°21'16.078"N | 80°48'31.808"W | 7699.29           | 353.051         | 1.22          | 0.06                 | 1.22                |                            |
| 14924.00 | 90.950          | 337.080     | 6477.05  | 7518.86        | 7730.24    | -968.43   | 1694417.58       | 14291141.40       | 39°21'16.943"N | 80°48'32.277"W | 7790.66           | 352.859         | 1.01          | 0.00                 | -0.01               |                            |
| 15019.00 | 90.800          | 336.070     | 6475.60  | 7613.83        | 7817.39    | -1006.20  | 1694378.83       | 14291228.52       | 39°21'17.806"N | 80°48'32.755"W | 7881.88           | 352.666         | 1.07          | -0.16                | -1.06               |                            |
| 15065.00 | 90.800          | 333.030     | 6474.98  | 7669.75        | 7858.92    | -1025.96  | 1694360.08       | 14291270.03       | 39°21'18.216"N | 80°48'33.008"W | 7925.61           | 352.562         | 6.61          | 0.00                 | -6.61               |                            |
| 15090.00 | 90.800          | 333.030     | 6474.61  | 7684.66        | 7881.20    | -1037.30  | 1694348.75       | 14291292.30       | 39°21'18.437"N | 80°48'33.149"W | 7948.17           | 352.502         | 0.00          | 0.00                 | 0.00                | Projected MD at ID: 15090' |

## HOLE & CASING SECTIONS - Ref Wellbore: Cobra Unit 1H AWB Proj: 15090'

| 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           | 0.00         | 0.00         |
| 17.5in Open Hole            | 104.50        | 500.50      | 396.00        | 104.50         | 500.50       | 0.08           | 0.14           | -0.25        | 1.43         |
| 13.375in Casing Surface     | 24.50         | 500.50      | 476.00        | 24.50          | 500.50       | 0.00           | 0.00           | -0.25        | 1.43         |
| 12.25in Open Hole           | 500.50        | 2618.50     | 2118.00       | 500.50         | 2568.86      | -0.25          | 1.43           | -19.02       | 419.25       |
| 9.625in Casing Intermediate | 24.50         | 2616.50     | 2592.00       | 24.50          | 2568.86      | 0.00           | 0.00           | -19.02       | 419.25       |
| 8.75in Open Hole            | 2616.50       | 6825.50     | 4209.00       | 2568.96        | 6354.65      | -19.02         | 419.25         | 239.58       | 1926.92      |
| 8.5in Open Hole             | 6825.50       | 15090.00    | 8264.50       | 6354.65        | 6474.61      | 239.58         | 1926.92        | 7881.20      | -1037.30     |
| 5.5in Casing Production     | 24.50         | 15090.00    | 15065.50      | 24.50          | 6474.61      | 0.00           | 0.00           | 7881.20      | -1037.30     |





# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
Page 9 of 10



## REFERENCE WELLPATH IDENTIFICATION

|          |                              |          |                   |
|----------|------------------------------|----------|-------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot     | Slot #08          |
| Area     | Doddridge Co., WV            | Well     | Cobra Unit 1H     |
| Field    | Doddridge                    | Wellbore | Cobra Unit 1H AWB |
| Facility | Addie Pad                    |          |                   |

## TARGETS

| Name                      | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape |
|---------------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|-------|
| Cobra Unit 1H POE - Rev-2 | 6457.00  | 433.94     | 1910.58   | 1697295.46        | 14283948.02        | 39°20'04.768"N | 80°47'55.833"W | point |
| Cobra Unit 1H BHL - Rev-1 | 6499.00  | 7886.63    | -1027.94  | 1694358.10        | 14291297.73        | 39°21'18.490"N | 80°48'33.030"W | point |
| Cobra Unit 1H LP - Rev-1  | 6499.00  | 663.02     | 1872.25   | 1697257.13        | 14284077.00        | 39°20'07.033"N | 80°47'56.314"W | point |

## WELLPATH COMPOSITION - Ref Wellbore: Cobra Unit 1H AWB Ref Wellpath: Cobra Unit 1H AWP Proj: 15090'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model                | Log Name/Comment                                | Wellbore          |
|---------------|-------------|---|---|-------------------|
| 24.50         | 481.50      | Gyrodata standard - Drop gyro or Multi-shot | 01 Gyrodata MS Gyro <17-1/2">(100'-472')        | Cobra Unit 1H AWB |
| 481.50        | 689.50      | Gyrodata standard - Drop gyro or Multi-shot | 02 Gyrodata MS Gyro <12-1/4">(472')(499'-680')  | Cobra Unit 1H AWB |
| 689.50        | 2534.50     | ISCWSA MWD, Rev. 4 (Standard)               | 03 WFT EM <12-1/4">(680')(792'-2525')           | Cobra Unit 1H AWB |
| 2534.50       | 6753.50     | ISCWSA MWD, Rev. 4 (Standard)               | 04 WFT EM <8-3/4">(2525')(2662'-6744')          | Cobra Unit 1H AWB |
| 6753.50       | 15065.00    | BHI AutoTrak Curve (Short)                  | 05 BHI AT Curve <8-1/2">(6753.5')(6805'-15065') | Cobra Unit 1H AWB |
| 15065.00      | 15090.00    | Blind Drilling (std)                        | Projection to bit                               | Cobra Unit 1H AWB |



# Actual Wellpath Report

Cobra Unit 1H AWP Proj: 15090'  
Page 10 of 10



## REFERENCE WELLPATH IDENTIFICATION

| Operator                     | Slot     | Slot #08          |
|------------------------------|----------|-------------------|
| ANTERO RESOURCES CORPORATION | Well     | Cobra Unit 1H     |
| Doddridge Co., WV            | Wellbore | Cobra Unit 1H AWB |
| Doddridge                    |          |                   |
| Addle Pad                    |          |                   |

## COMMENTS

Wellpath general comments  
 API: 47-017-06809-0000  
 BHI Job #: 8883961  
 Rig: Frontier 22  
 Duration: 11/23/2017-11/25/2017  
 Gyrodatta MS Gyro <17-1/2"> (100'-472')  
 Gyrodatta MS Gyro <12-1/4"> (472')(499'-680')  
 WFT EM <12-1/4"> (680')(792'-2525)  
 WFT EM <8-3/4"> (2525')(2662'-6744')  
 BHI AT Curve <8-1/2"> (6753.5')(6805'-15065')  
 Middlesex: 6668' MD  
 Burkett: 6887' MD  
 Tully: 6952' MD  
 Hamilton: 7038' MD  
 Marcellus POE: 7067' MD  
 Projected MD at TD: 15090'

# Hydraulic Fracturing Fluid Product Component Information Disclosure

|                               |                              |
|-------------------------------|------------------------------|
| Job Start Date                | 2/23/2018                    |
| Job End Date                  | 3/13/2018                    |
| State                         | West Virginia                |
| County                        | Doddridge                    |
| API Number                    | 47-017-06809-00-00           |
| Operator Name                 | Antero Resources Corporation |
| Well Name and Number          | Cobra 1H                     |
| Latitude                      | 39.33348000                  |
| Longitude                     | -80.80560000                 |
| Datum                         | NAD83                        |
| Federal Well                  | NO                           |
| Indian Well                   | NO                           |
| True Vertical Depth           | 6,503                        |
| Total Base Water Volume (gal) | 17,893,932                   |
| Total Base Non Water Volume   | 0                            |



## Hydraulic Fracturing Fluid Composition:

| Trade Name              | Supplier | Purpose            | Ingredients                                 | Chemical Service Abstract Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|-------------------------|----------|--------------------|---|--|--|--|----------|
| Water                   | Ascent   | Carrier/Base Fluid | Water                                       | 7732-18-5                                | 100.00000  | 87.97406   | None     |
| Sand (Proppant)         | Keane    | Proppant           | Crystalline silica: Quartz (SiO2)           | 14808-60-7                               | 100.00000  | 11.75761   | None     |
| KWG-111LS               | Keane    | Gel                | Guar gum                                    | 9000-30-0                                | 55.00000   | 0.02988  | None     |
|                         |          |                    | Distillates (petroleum), hydrotreated light | 64742-47-8                               | 55.00000   | 0.02988  | None     |
| KFR-16FW                | Keane    | Friction Reducer   | Water                                       | 7732-18-5                                | 60.00000   | 0.03378  | None     |
|                         |          |                    | Distillates (petroleum), hydrotreated light | 64742-47-8                               | 20.00000   | 0.01126  | None     |
|                         |          |                    | oleic acid diethanolamide                   | 93-83-4                                  | 1.50000  | 0.00084  | None     |
|                         |          |                    | ammonium chloride                           | 12125-02-9                               | 1.50000  | 0.00084  | None     |
|                         |          |                    | alcohols, C12-16, ethoxylated               | 68551-12-2                               | 1.00000  | 0.00056  | None     |
| Hydrochloric Acid (15%) | Keane    | Acidizing          |   |  |  |  |          |
| MBC-516W                | Keane    | Bioicide           | Hydrochloric Acid                           | 7647-01-0                                | 15.00000   | 0.01996  | None     |

|  |              |                        |   |            |          |         |      |
|--|--------------|------------------------|---|------------|----------|---------|------|
|  |              |                        | Water   | 7732-18-5  | 56.70000 | 0.0051  | None |
|  |              |                        | Glutaral  | 111-30-8   | 26.70000 | 0.0024  | None |
|  |              |                        | didecyl dimethyl ammonium chloride                                    | 7173-51-5  | 8.00000  | 0.00072 | None |
|  |              |                        | quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides | 68424-85-1 | 5.30000  | 0.00046 | None |
|  |              |                        | ethonal   | 64-17-5    | 2.80000  | 0.00025 | None |
| KSI-19   | Keane        | Scale Inhibitor        |   |            |          |         |      |
|  |              |                        | Methanol  | 67-56-1    | 30.00000 | 0.00420 | None |
| KWBO-2   | Keane        | Breaker                |   |            |          |         |      |
|  |              |                        | Sodium persulfate   | 7775-27-1  | 99.00000 | 0.00122 | None |
| KAI-12   | Keane        | Acid Inhibitor         |   |            |          |         |      |
|  |              |                        | Ethylene glycol   | 107-21-1   | 40.00000 | 0.00004 | None |
|  |              |                        | dipropylene glycol, monomethyl ether                                  | 34590-94-8 | 20.00000 | 0.00002 | None |
|  |              |                        | formic acid   | 64-18-6    | 10.00000 | 0.00001 | None |
|  |              |                        | Tar bases, quinoline derivs., benzyl chloride-quaternized             | 72480-70-7 | 10.00000 | 0.00001 | None |
|  |              |                        | Cinnamaldehyde  | 104-55-2   | 10.00000 | 0.00001 | None |
|  |              |                        | Ethoxylated alcohol   | 68131-39-5 | 10.00000 | 0.00001 | None |
|  |              |                        | isopropyl alcohol   | 67-63-0    | 5.00000  | 0.00001 | None |
| KFEAC-30   | Keane        | Iron Control           |   |            |          |         |      |
|  |              |                        | Citric acid   | 77-92-9    | 30.00000 | 0.00009 | None |
|  |              |                        | Acetic acid   | 64-19-7    | 5.00000  | 0.00002 | None |
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. |              |                        |   |            |          |         |      |
| Other Chemical(s)  | Listed Above | See Trade Name(s) List |   |            |          |         |      |
|  |              |                        | Distillates (petroleum), hydrotreated light                           | 64742-47-8 | 55.00000 | 0.02958 |      |
|  |              |                        | Distillates (petroleum), hydrotreated light                           | 64742-47-8 | 20.00000 | 0.01126 |      |
|  |              |                        | Glutaral  | 111-30-8   | 26.70000 | 0.00241 |      |
|  |              |                        | oleic acid diethanolamide   | 93-83-4    | 1.50000  | 0.00084 |      |
|  |              |                        | ammonium chloride   | 12125-02-9 | 1.50000  | 0.00084 |      |
|  |              |                        | didecyl dimethyl ammonium chloride                                    | 7173-51-5  | 8.00000  | 0.00072 |      |
|  |              |                        | alcohols, C12-16, ethoxylated   | 68551-12-2 | 1.00000  | 0.00056 |      |
|  |              |                        | quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides | 68424-85-1 | 5.30000  | 0.00046 |      |
|  |              |                        | ethonal   | 64-17-5    | 2.80000  | 0.00025 |      |
|  |              |                        | Citric acid   | 77-92-9    | 30.00000 | 0.00009 |      |
|  |              |                        | dipropylene glycol, monomethyl ether                                  | 34590-94-8 | 20.00000 | 0.00002 |      |
|  |              |                        | formic acid   | 64-18-6    | 10.00000 | 0.00001 |      |
|  |              |                        | Tar bases, quinoline derivs., benzyl chloride-quaternized             | 72480-70-7 | 10.00000 | 0.00001 |      |
|  |              |                        | Cinnamaldehyde  | 104-55-2   | 10.00000 | 0.00001 |      |
|  |              |                        | Ethoxylated alcohol   | 68131-39-5 | 10.00000 | 0.00001 |      |

|  |                  |         |         |         |
|--|------------------|---------|---------|---------|
|  | isoproyl alcohol | 67-63-0 | 5.00000 | 0.00001 |
|--|------------------|---------|---------|---------|

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

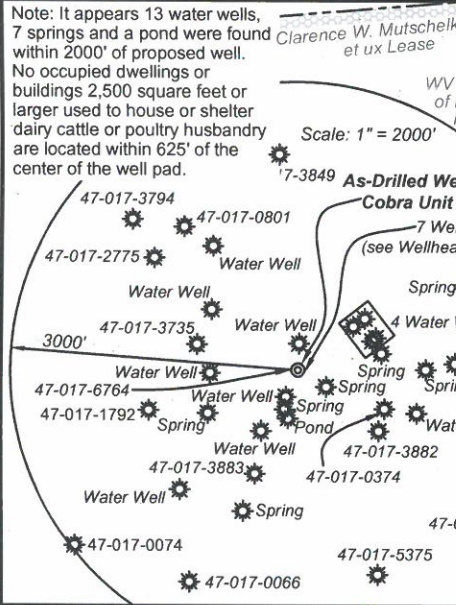
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.  
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

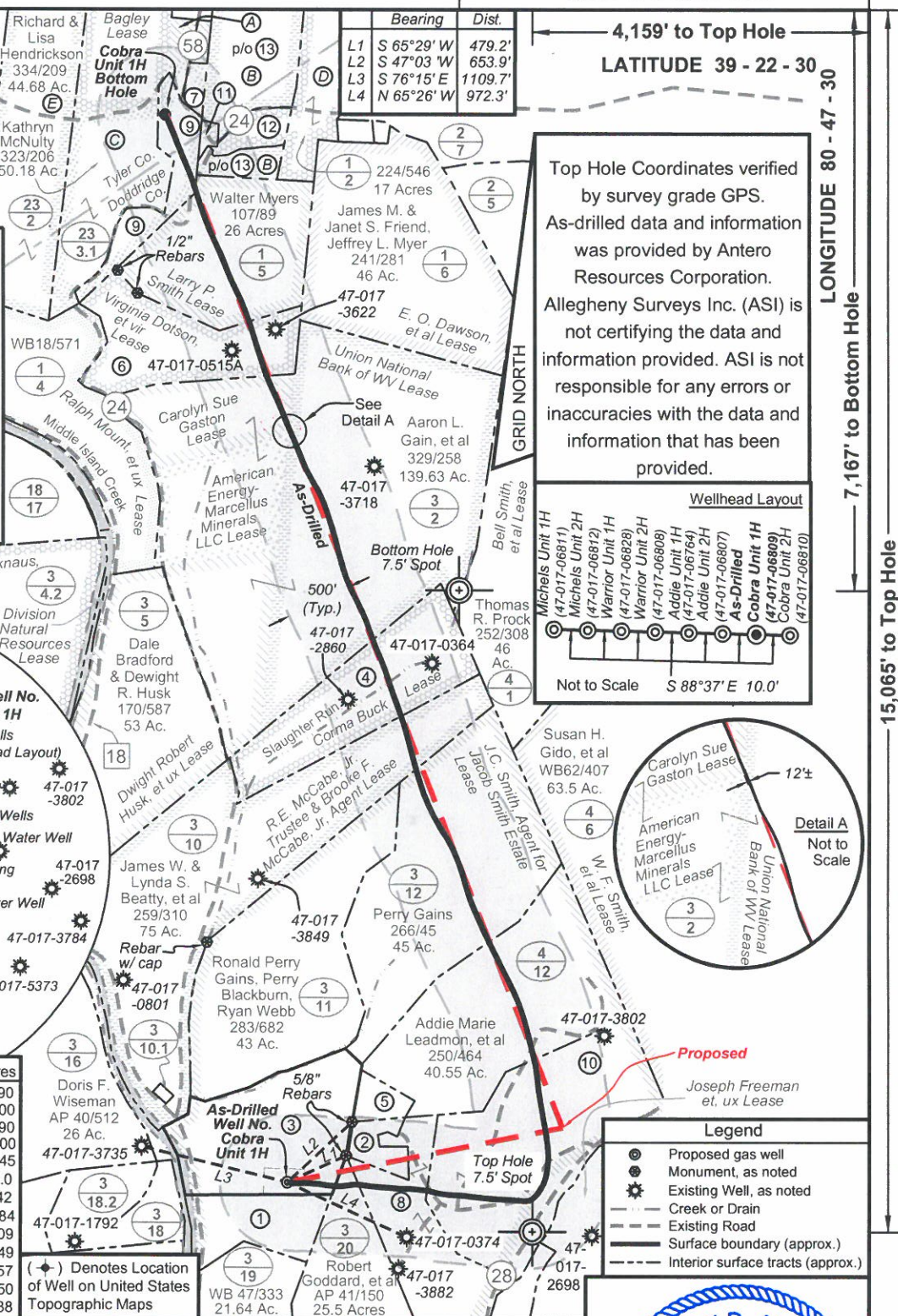
**Antero Resources  
Well No. Cobra Unit 1H  
As-Drilled Plat**  
Antero Resources Corporation

**Leases**  
A. Jerry L. Myer Lease  
B. Thomas Lee White Lease  
C. S. A. Smith & C. Burke Morris Lease  
D. Kendra K. Cottrill Wyke Lease  
E. Asia D. Cumberledge, et al Lease

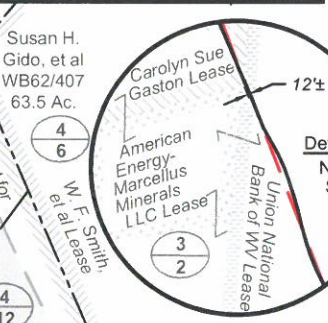
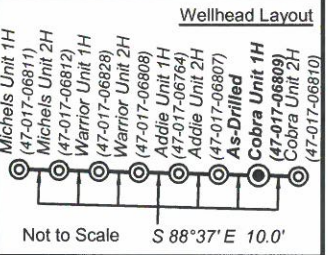
**Notes:**  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Cobra Unit 1H Top Hole coordinates are  
N: 306,252.82' Latitude: 39°20'00.52"  
E: 1,630,707.87' Longitude: 80°48'20.16"  
Bottom Hole coordinates are  
N: 314,150.23' Latitude: 39°21'18.44"  
E: 1,629,802.20' Longitude: 80°48'33.15"  
**UTM Zone 17, NAD 1983**  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,353,811.176m N: 4,356,212.529m  
E: 516,768.886m E: 516,452.830m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.



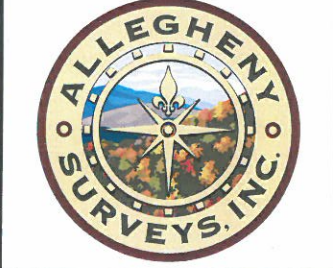
| ID | TM/Par | Owner                       | Bk / Pg   | Acres |
|----|--------|-----------------------------|-----------|-------|
| 1  | 3/17.1 | Antero Resources Corp.      | 358/562   | 9.90  |
| 2  | 3/21.1 | Charles & Carol Cottrill    | 256/479   | 3.00  |
| 3  | 3/17   | Antero Resources Corp.      | 349/553   | 25.90 |
| 4  | 3/6    | Thomas R. Prock             | 252/308   | 25.00 |
| 5  | 3/24   | Charles L. & Carol Cottrill | 256/474   | 2.45  |
| 6  | 1/7    | Perry Gains & Aaron Gain    | 329/229   | 20.0  |
| 7  | 1/10.1 | Jason & Jennifer Bagley     | 248/397   | 1.42  |
| 8  | 3/21   | Addie Marie Leadmon         | 250/84    | 19.84 |
| 9  | 1/10   | Judith Ann Bagley           | WB 32/342 | 10.09 |
| 10 | 4/22   | Gary M. & Mary Ann Eiff     | 302/640   | 39.49 |
| 11 | 1/1.1  | Myron B. & Betty L. White   | 171/18    | 0.57  |
| 12 | 1/1.2  | Charles & Roberta Beagle    | 224/499   | 4.50  |
| 13 | 1/1    | Myron B. & Betty L. White   | 210/534   | 14.88 |



Top Hole Coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.



- Legend**
- Proposed gas well
  - Monument, as noted
  - ⊙ Existing Well, as noted
  - Creek or Drain
  - - - Existing Road
  - Surface boundary (approx.)
  - - - Interior surface tracts (approx.)



**I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.**

*Bradley D. Miller*  
**Bradley D. Miller, P.S. 2167**

FILE NO: 45-30-WU-14  
DRAWING NO: Cobra 1H As Drilled Well Plat  
SCALE: 1" = 1200'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: June 7 20 18  
OPERATOR'S WELL NO. Cobra Unit 1H  
API WELL NO  
47 - 017 - 06809  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: 891' As-Drilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union Union National Bank of WV; Corma Buck; Joseph Freeman, et ux; COUNTY: Doddridge 600'  
SURFACE OWNER: Antero Resources Corp. J.C. Smith, Agent for Jacob Smith Estate; Virginia Dotson, et vir ACREAGE: 25.9 20; 79; 28.1  
ROYALTY OWNER: R. E. McCabe, Jr. Trustee & Brooke F. McCabe, Jr. Agent LEASE NO: ACREAGE: 25; 290; 75; 20

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,474.6' TVD  
15,090' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313