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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, November 13, 2024  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for Arrow Unit 1H  
47-103-03675-00-00

**Extended Lateral Length**

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

A handwritten signature in blue ink, appearing to read "James A. Martin", is written over a faint, light-colored outline of the state of West Virginia.

James A. Martin  
Chief

Operator's Well Number: Arrow Unit 1H  
Farm Name: Antero Midstream, LLC  
U.S. WELL NUMBER: 47-103-03675-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 11/13/2024

Promoting a healthy environment.

11/15/2024

WW-6B  
(04/15)

API NO. 47- 103 - 03675  
OPERATOR WELL NO. Arrow Unit 1H MOD  
Well Pad Name: Lincoln Pad

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Corporation 494507062 103 - Wetzel Green Pine Grove 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Arrow Unit 1H MOD Well Pad Name: Lincoln Pad

3) Farm Name/Surface Owner: Antero Midstream, LLC Public Road Access: Furbee Ridge Road

4) Elevation, current ground: 1290' Elevation, proposed post-construction: 1260'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 7600' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18600' MD

11) Proposed Horizontal Leg Length: 8692' \*Open to modification at a later date

12) Approximate Fresh Water Strata Depths: 387'

13) Method to Determine Fresh Water Depths: 47103034090000 Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 2308'

15) Approximate Coal Seam Depths: 1003'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

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*SM Key*  
11/15/2024

WW-6B  
(04/15)

API NO. 47- 103 - 03675  
 OPERATOR WELL NO. Arrow Unit 1H MOD  
 Well Pad Name: Lincoln Pad

18)

**CASING AND TUBING PROGRAM**

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	J-55	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	437'	437'	CTS, 455 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3100'	3100'	CTS, 1262 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	18600'	18600'	CTS, 3759 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.375"	2250	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	14,360	2500	Class G/H	~1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

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**PACKERS**

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Kind:	N/A				WV Department of Environmental Protection
Sizes:	N/A				
Depths Set:	N/A				

*Smiley*  
11/15/2024

WW-6B  
(10/14)

API NO. 47- 103 - 03675  
OPERATOR WELL NO. Arrow Unit 1H MOD  
Well Pad Name: Lincoln Pad

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill a new horizontal shallow well into the Marcellus Shale.

\*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs  
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 34.11 acres

22) Area to be disturbed for well pad only, less access road (acres): 10.64 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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24) Describe all cement additives associated with each cement type:

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Conductor: no additives, Class A/L cement.

Surface: Class A/L cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A/L cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class G/H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

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25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

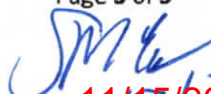
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

\*Note: Attach additional sheets as needed.

Page 3 of 3

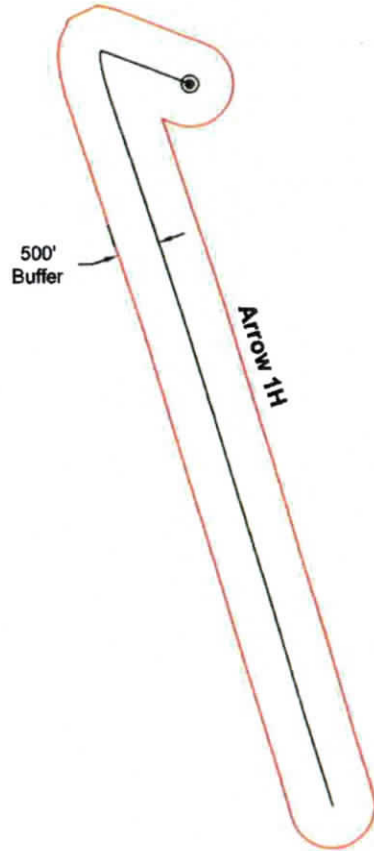
  
11/15/2024

**LEGEND**

- ⊙ Proposed gas well
- ⊛ Existing Well, as noted
- ⊛ Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



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Scale: 1 inch = 2000 feet



Bridgeport Office  
Phone: (304) 848-5035  
Fax: (304) 848-5037

172 Thompson Drive  
Bridgeport, WV 26330

PARTY CHIEF: C. Lynch	DRAWN BY: J. McNemar
RESEARCH: J. Miller	PREPARED: July 11, 2024
SURVEYED: Dec. 2016	PROJECT NO: 108-34-G-18
FIELD CREW: C.L., K.M.	DRAWING NO: Arrow 1H ADR

Sheet 1 of 1

11/15/2024

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>D: Melinda A. Debner Lease</u></b> Melinda A. Debner	Antero Resources Corporation	1/8+	327A/0871
<b><u>A: J.L. Lancaster Lease</u></b> J.L. Lancaster F.M. Lowry Tri-State Gas Company Manufacturers Light & Heat Company A.M. Snider & Duane M. Snider Hundred Gas Company Carl D. Perkins Perkins Oil & Gas, Inc. Stone Energy Corporation EQT Production Company	F.M. Lowry Tri-State Gas Company Manufacturers Light & Heat Company A.M. Snider & Duane M. Snider Hundred Gas Company Carl D. Perkins Perkins Oil & Gas, Inc. Stone Energy Corporation EQT Production Company Antero Resources Company	1/8 Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment	0059/0213 0073/0155 009A/0141 048A/0109 0256/0189 055A/0062 075A/0621 126A/0958 183A/0305 230A/0783
<b><u>C: Acropolis, Inc. Lease</u></b> Acropolis, Inc.	Antero Resources Corporation	1/8+	326A/0586
<b><u>E: Nancy K. Sayre Lease</u></b> Nancy K. Sayre	Antero Resources Corporation	1/8+	200A/0927
<b><u>F: Patricia Lou Scheper Lease</u></b> Patricia Lou Scheper	Antero Resources Corporation	1/8+	360A/0103
<b><u>G: A.J. McHenry &amp; Maggie McHenry Lease</u></b> A.J. McHenry & Maggie McHenry Tri-State Gas Company The Manufacturers Light & Heat Company A.M. Snider and Duane M. Snider Hundred Gas Company Carl D. Perkins and Dorothy Louise Perkins Perkins Oil & Gas Inc. Stone Energy Corporation EQT Production Company	Tri-State Gas Company The Manufacturers Light & Heat Company A.M. Snider and Duane M. Snider Hundred Gas Company Carl D. Perkins and Dorothy Louise Perkins Perkins Oil & Gas Inc. Stone Energy Corporation EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment	0107/0342 009A/0141 048A/0109 0256/0189 055A/0062 084A/0009 126A/0958 0556/0132 296A/0432
<b><u>H: J.W. Haught &amp; A.B. Haught Lease</u></b> J.W. Haught, et ux Tri State Gas Company The Manufacturers Light and Heat Company Hundred Gas Company Carl D. Perkins and Dorothy Louise Perkins Perkins Oil and Gas Inc. Stone Energy Corporation EQT Production	Tri State Gas Company The Manufacturers Light and Heat Company Hundred Gas Company Carl D. Perkins and Dorothy Louise Perkins Perkins Oil and Gas Inc. Stone Energy Corporation EQT Production Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment Assignment Assignment Assignment	0107/0340 009A/0141 048A/0109 055A/0062 075A/0621 126A/0658 183A/0305 230A/0783

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INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>I: S.J. Straight &amp; S.F. Straight Lease</b>			
S.J. Straight & S.F. Straight	Wheeling National Gas Company	1/8	0074/0611
Wheeling National Gas Company	The Manufacturers Light & Heat Company	Assignment	0080/0050
The Manufacturers Light & Heat Company	Hundred Gas Company	Assignment	0167/0423
Hundred Gas Company	Carl D. Perkins and Dorothy Louise Perkins	Assignment	0201/0316
Carl D. Perkins and Dorothy Louise Perkins	Perkins Oil & Gas Inc.	Assignment	0225/0574
Perkins Oil & Gas Inc.	Stone Energy Corporation	Assignment	0390/0066
Stone Energy Corporation	EQT Production Company	Assignment	0556/0132
EQT Production Company	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>0662/0686</b>
<b>J: AMP V, LP Lease</b>			
AMP V, LP	<b>Antero Resources Corporation</b>	1/8+	0295/0642

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\*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

\*Co-tenancy utilization – Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with development of certain royalty owners' interests in this tract.

\*\*Pooling/Unitization – Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners in this tract.

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b>K: AMP V, LP Lease</b>				
	AMP V, LP	Antero Resources Corporation	1/8+	0295/0642

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Environmental Protection

**\*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.**

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**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

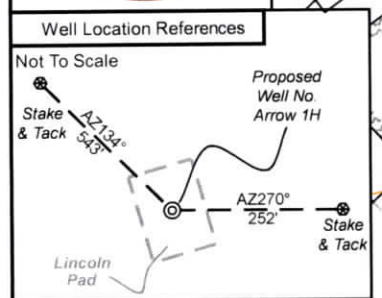
Well Operator: Antero Resources Corporation  
 By: Tim Rady  
 Its: Senior Vice President of Land



**Antero Resources**  
**Well No. Arrow 1H**  
**BHL MOD**  
**Antero Resources Corporation**



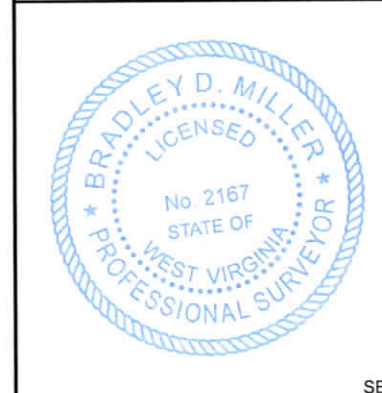
Page  
1 of 2



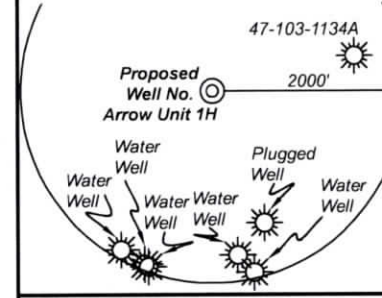
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*

Bradley D. Miller, P.S. 2167



Note: Five water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



	Bearing	Dist.
L1	N 17°25' E	1,002.3'
L2	N 35°10' W	1,366.7'
L3	S 84°10' W	1,121.3'
L4	N 89°54' E	2,642.0'
L5	S 81°46' W	958.1'

7,282' to Bottom Hole

8,995' to Top Hole

BTM Hole 7.5' Spot

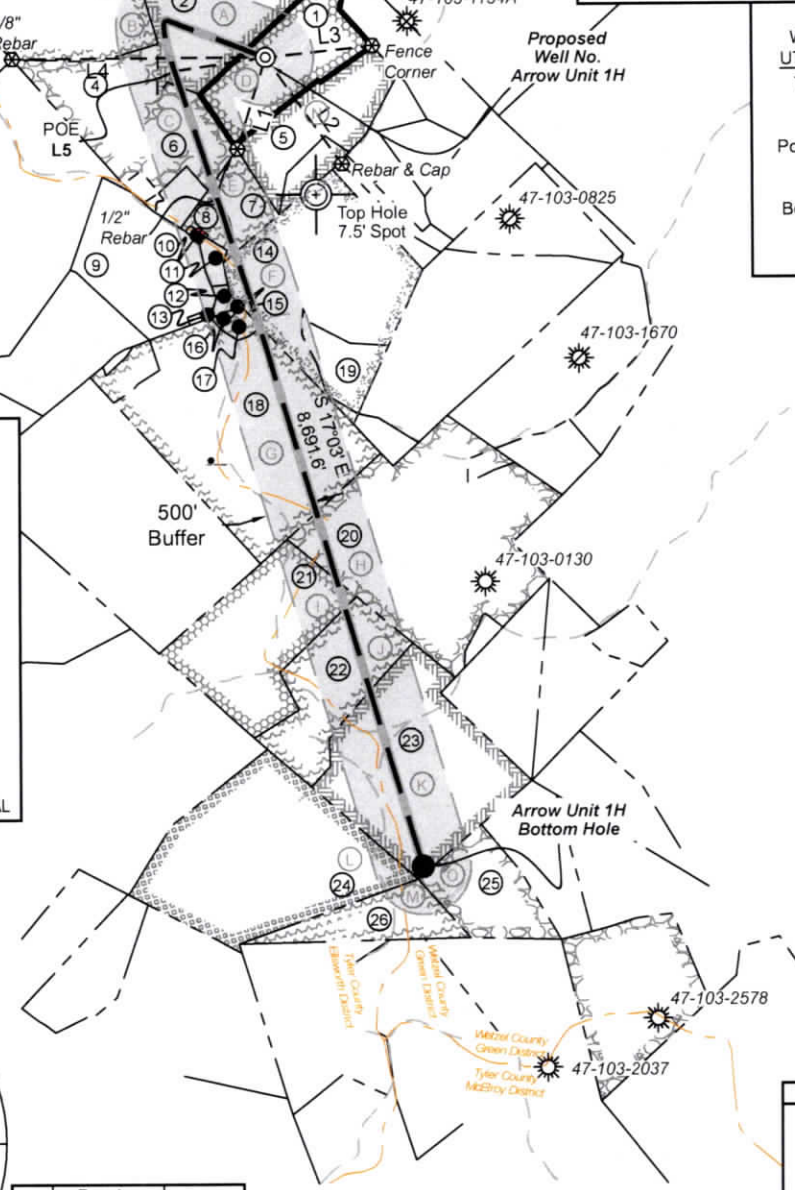
**TOP HOLE LATITUDE 39 - 32 - 30**  
**BTM HOLE LATITUDE 39 - 30 - 00**

Notes  
 West Virginia Coordinate System of 1927, North Zone  
 based upon Differential GPS Measurements.  
 Well No. Arrow Unit 1H Top Hole coordinates are  
 N: 373,548.84' Latitude: 39°31'08.33"  
 E: 1,650,132.86' Longitude: 80°44'24.79"  
 Bottom Hole coordinates are  
 N: 365,101.77' Latitude: 39°29'45.06"  
 E: 1,651,732.13' Longitude: 80°44'02.90"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,374,412.126m N: 4,371,846.806m  
 E: 522,344.745m E: 522,874.849m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.

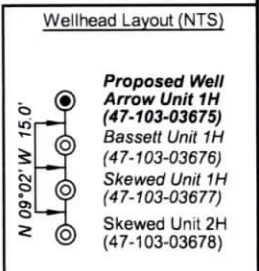
LONGITUDE 80 - 42 - 30

8,263' to Top Hole

1,512' to Bottom Hole



Notes:  
 Well No. Arrow Unit 1H  
 UTM Zone 17, NAD 1927  
 Top Hole Coordinates  
 N: 14,351,001.78'  
 E: 1,713,678.39'  
 Point of Entry Coordinates  
 N: 14,350,848.87'  
 E: 1,712,732.90'  
 Bottom Hole Coordinates  
 N: 14,342,585.41'  
 E: 1,715,417.82'



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

FILE NO: 108-34-G-18  
 DRAWING NO: Arrow 1H BHL MOD  
 SCALE: 1" = 2000'  
 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: August 21 20 24  
 OPERATOR'S WELL NO. Arrow 1H  
 API WELL NO  
 47 - 103 - 03675  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Proposed Elev: 1,260' Existing Elev: 1,290' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove  
 DISTRICT: Green COUNTY: Wetzell

SURFACE OWNER: Antero Midstream, LLC ACREAGE: 33.25  
 ROYALTY OWNER: Melinda A. Debner LEASE NO: ACREAGE: 33.25

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 7,600' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,600' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
 Denver, CO 80202 Bridgeport, WV 26330



Leases	
A	J.L. Lancaster
B	Suzann Marie Stoehr
C	Acropolis, Inc.
D	Melinda A. Debner
E	Nancy K. Sayre
F	Patricia Lou Scheper
G	A.J. McHenry & Maggie McHenry
H	J.W. Haught & A.B. Haught
I	S.J. Straight & S.F. Straight
J	AMP V, LP
K	AMP V, LP
L	Riverwood Resources, LLC
M	Barbara V. Kittle
N	Blackrock Enterprises, LLC
O	Dominic J. Kowalski, et ux

ID	TM-Par	Owner	Bk/Pg	Acres
1	20-23	Antero Midstream, LLC	465/156	33.30
2	19-49	Antero Midstream, LLC	465/156	32.30
3	19-47	William & Suzann Stoehr Family Trust	499/799	80.00
4	19-50	Ronald H. Eastham, et al	451/110	40.00
5	20-29	Antero Midstream, LLC	465/153	20.90
6	19-50.1	Phillip D. Haught, et al	499/173	4.75
7	22-1	Antero Midstream, LLC	465/156	8.61
8	22-1.1	Michael L. & Teresa L. Bassett	465/156	3.77
9	18-2	Antero Midstream, LLC	647/742	34.36
10	22-38	Michael L. & Teresa L. Bassett	344/242	0.48
11	18-3.1	Michael L. & Teresa L. Bassett	378/575	2.15
12	18-3	Gary Fred & Sharon Haught	265/64	1.01
13	19-50.3	David Bowyer	441/580	0.25
14	22-41	Robert L. Jr. & Donna K. Jones	462/717	71.29
15	22-6.1	Ancient Energy, LTD	441/591	0.04
16	22-10	Gary Fred & Sharon Haught	319/32	0.30
17	22-11.1	Gary Fred & Sharon Haught	319/32	2.00
18	18-9	Courtney N. Vancamp	638/148	86.50
19	22-12	Robert L. Jr. & Donna K. Jones	297/500	10.80
20	22-18	Timothy L. & Vicki L. Glasscock	370/425	99.89
21	18-5	Dena S. Straight & Vicki L. Glasscock	OR172/546	50.13
22	18-6	Eric D. Beatty & Jack Gordon Straight	651/575	31.96
23	18-7	Thomas Straight, et al	270/558	68.00
24	24-1	Michael Luke & Teresa Lynn Bassett	580/59	75.10
25	25-1	Dominic Joseph & Delmer Michele Kowalski	353/533	60.00
26	24-2	Hornet Midstream Pipeline, LLC	543/702	17.25

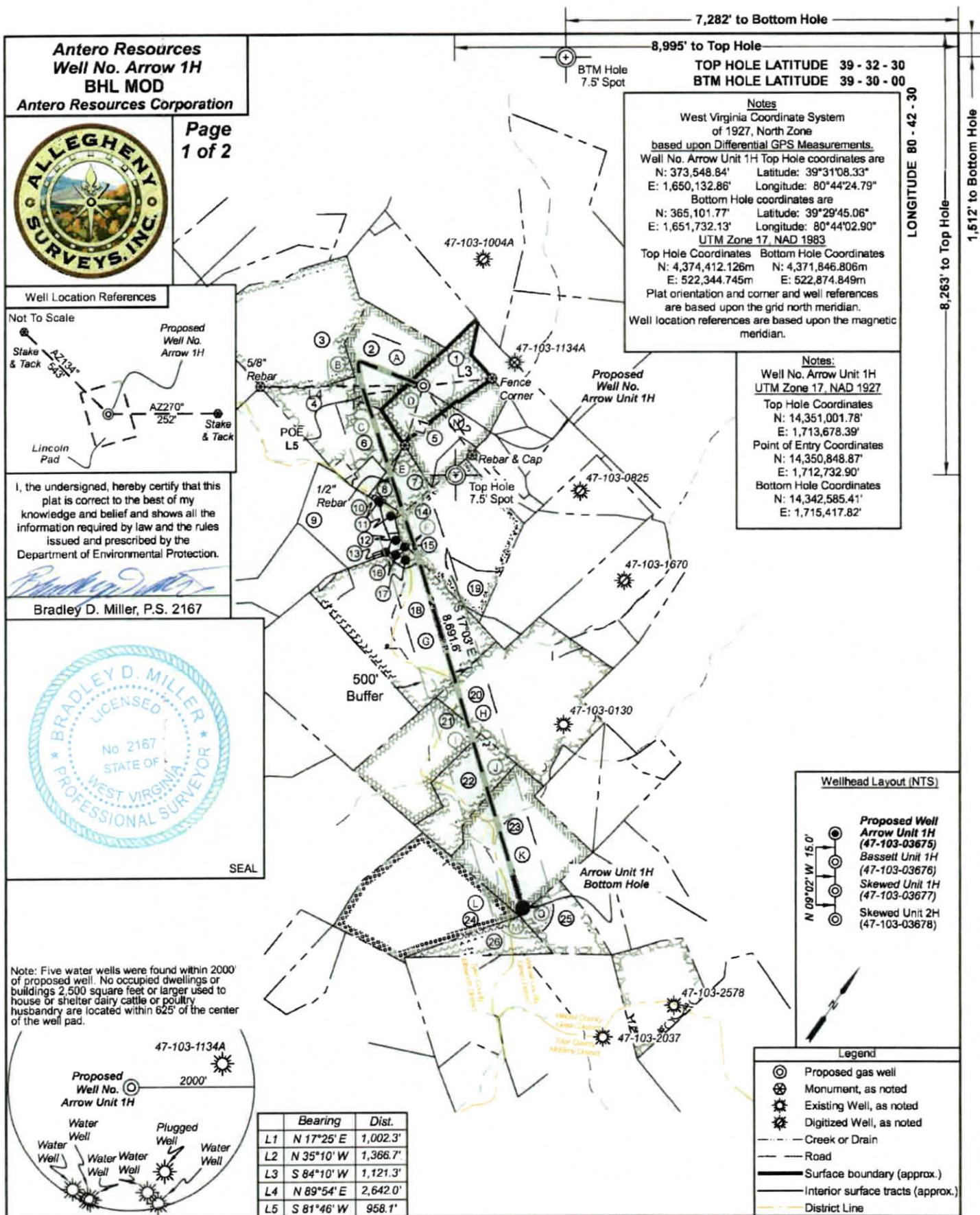
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 MINIMUM DEGREE OF ACCURACY:  
Submeter  
 PROVEN SOURCE OF ELEVATION:  
WVDOT, Harrisville, WV

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

DATE: August 21 20 24  
 OPERATOR'S WELL NO. Arrow 1H  
 API WELL NO  
47 - 103 - 03675  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Proposed Elev: 1,260' Existing Elev: 1,290' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove  
 DISTRICT: Green COUNTY: Wetzel **11/15/2024**  
 SURFACE OWNER: Antero Minerals, LLC ACREAGE: 33.25  
 ROYALTY OWNER: Melinda A. Debner LEASE NO: \_\_\_\_\_ ACREAGE: 33.25  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 7,600' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,600' MD

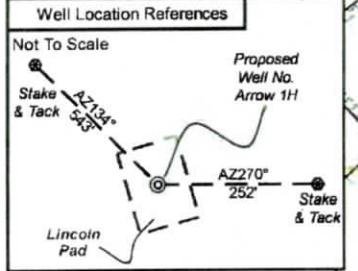
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330



**Antero Resources**  
**Well No. Arrow 1H**  
**BHL MOD**  
**Antero Resources Corporation**



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1 of 2



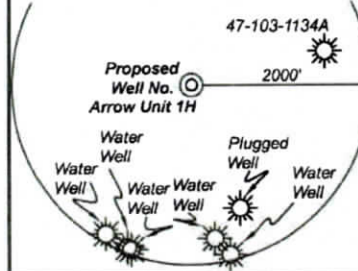
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*

Bradley D. Miller, P.S. 2167



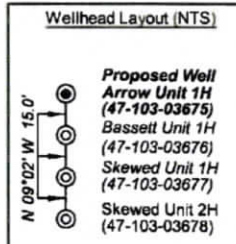
Note: Five water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



	Bearing	Dist.
L1	N 17°25' E	1,002.3'
L2	N 35°10' W	1,366.7'
L3	S 84°10' W	1,121.3'
L4	N 89°54' E	2,642.0'
L5	S 81°46' W	958.1'

**Notes**  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
 Well No. Arrow Unit 1H Top Hole coordinates are  
 N: 373,548.84' Latitude: 39°31'08.33"  
 E: 1,650,132.86' Longitude: 80°44'24.79"  
 Bottom Hole coordinates are  
 N: 365,101.77' Latitude: 39°29'45.06"  
 E: 1,651,732.13' Longitude: 80°44'02.90"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,374,412.126m N: 4,371,846.806m  
 E: 522,344.745m E: 522,874.849m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.

**Notes:**  
 Well No. Arrow Unit 1H UTM Zone 17, NAD 1927  
 Top Hole Coordinates  
 N: 14,351,001.78'  
 E: 1,713,678.39'  
 Point of Entry Coordinates  
 N: 14,350,848.87'  
 E: 1,712,732.90'  
 Bottom Hole Coordinates  
 N: 14,342,585.41'  
 E: 1,715,417.82'



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

FILE NO: 108-34-G-18  
 DRAWING NO: Arrow 1H BHL MOD  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: Submeter  
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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*11/17/24*



Leases	
A	J.L. Lancaster
B	Suzann Marie Stoehr
C	Acropolis, Inc.
D	Melinda A. Debner
E	Nancy K. Sayre
F	Patricia Lou Scheper
G	A.J. McHenry & Maggie McHenry
H	J.W. Haught & A.B. Haught
I	S.J. Straight & S.F. Straight
J	AMP V, LP
K	AMP V, LP
L	Riverwood Resources, LLC
M	Barbara V. Kittle
N	Blackrock Enterprises, LLC
O	Dominic J. Kowalski, et ux

ID	TM-Par	Owner	Bk/Pg	Acres
1	20-23	Antero Midstream, LLC	465/156	33.30
2	19-49	Antero Midstream, LLC	465/156	32.30
3	19-47	William & Suzann Stoehr Family Trust	499/799	80.00
4	19-50	Ronald H. Eastham, et al	451/110	40.00
5	20-29	Antero Midstream, LLC	465/153	20.90
6	19-50.1	Phillip D. Haught, et al	499/173	4.75
7	22-1	Antero Midstream, LLC	465/156	8.61
8	22-1.1	Michael L. & Teresa L. Bassett	465/156	3.77
9	18-2	Antero Midstream, LLC	647/742	34.36
10	22-38	Michael L. & Teresa L. Bassett	344/242	0.48
11	18-3.1	Michael L. & Teresa L. Bassett	378/575	2.15
12	18-3	Gary Fred & Sharon Haught	265/64	1.01
13	19-50.3	David Bowyer	441/580	0.25
14	22-41	Robert L. Jr. & Donna K. Jones	462/717	71.29
15	22-6.1	Ancient Energy, LTD	441/591	0.04
16	22-10	Gary Fred & Sharon Haught	319/32	0.30
17	22-11.1	Gary Fred & Sharon Haught	319/32	2.00
18	18-9	Courtney N. Vancamp	638/148	85.50
19	22-12	Robert L. Jr. & Donna K. Jones	297/500	10.80
20	22-18	Timothy L. & Vicki L. Glasscock	370/425	99.89
21	18-5	Dena S. Straight & Vicki L. Glasscock	OR172/546	50.13
22	18-6	Eric D. Beatty & Jack Gordon Straight	651/575	31.96
23	18-7	Thomas Straight, et al	270/558	68.00
24	24-1	Michael Luke & Teresa Lynn Bassett	580/59	75.10
25	25-1	Dominic Joseph & Delmer Michele Kowalski	353/533	60.00
26	24-2	Hornet Midstream Pipeline, LLC	543/702	17.25

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