



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Monday, June 23, 2025
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for CONAWAY UNIT 1H
47-095-02925-00-00

Lateral Extension/ Leases Added

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.

James A. Martin
Chief

Operator's Well Number: CONAWAY UNIT 1H
Farm Name: JIMMY E. & EARL P. PATTERSON & LINDA LOU
U.S. WELL NUMBER: 47-095-02925-00-00
Horizontal 6A New Drill
Date Modification Issued: 06/23/2025

Promoting a healthy environment.

06/27/2025

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

- 1) Well Operator: Antero Resources Corporation Operator ID 494507062 County 095 - Tyler District Union Middlebourne
- 2) Operator's Well Number: Conaway Unit 1H MOD Well Pad Name: Mary Patterson Pad
- 3) Farm Name/Surface Owner: Jimmy E. & Earl P. Patterson & Linda Lou Dennis Public Road Access: Dansers Lane
- 4) Elevation, current ground: 694.76' Elevation, proposed post-construction: 694.70'
- 5) Well Type (a) Gas X Oil Underground Storage
Other
(b) If Gas Shallow X Deep
Horizontal X
- 6) Existing Pad: Yes or No Yes
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6300' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#
- 8) Proposed Total Vertical Depth: 6300' TVD
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 20400' MD
- 11) Proposed Horizontal Leg Length: 11460.8'
- 12) Approximate Fresh Water Strata Depths: 235
- 13) Method to Determine Fresh Water Depths: 47-095-00081
- 14) Approximate Saltwater Depths: 718
- 15) Approximate Coal Seam Depths: N/A
- 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 X
- (a) If Yes, provide Mine Info: Name: Depth: Seam: Owner:

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18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100	100 ✓	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300 ✓	CTS, 313 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500 ✓	CTS, 1018 Cu. Ft. ✓
Intermediate							
Production	5-1/2"	New	P-110	23#	20400	20400 ✓	4213 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	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"	12,630	2500	Lead-HPOZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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

Drill, perforate, fracture a new shallow well and complete Marcellus Shale.

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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): 32.49 acres

22) Area to be disturbed for well pad only, less access road (acres): 13.09 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.

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

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 H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

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.

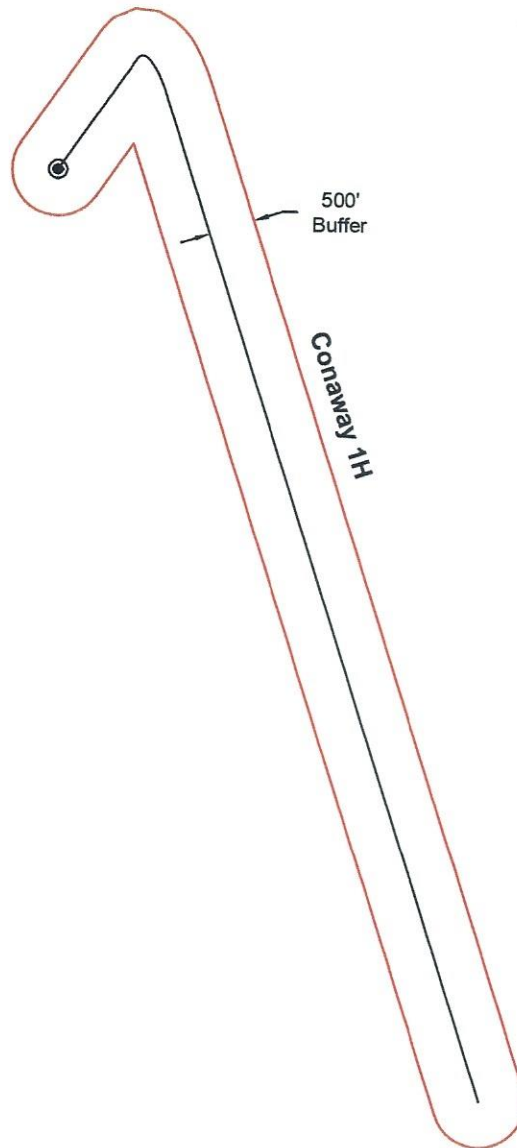
*Note: Attach additional sheets as needed.

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



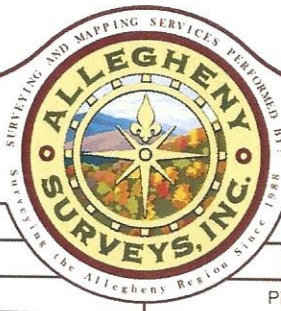
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Scale: 1 inch = 2000 feet



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

172 Thompson Drive
Bridgeport, WV 26330

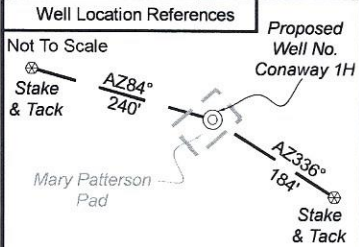
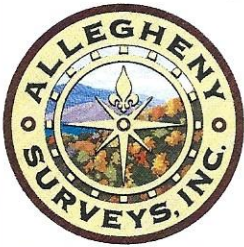
PARTY CHIEF: C. Lynch	DRAWN BY: J. McNemar
RESEARCH: J. Miller	PREPARED: June 9, 2025
SURVEYED: Dec. 2016	PROJECT NO: 169-54-U-23
FIELD CREW: C.L., K.M.	DRAWING NO: Conaway 1H AOR

Sheet 1 of 1

06/27/2025

Antero Resources
Well No. Conaway 1H
BHL MOD
Antero Resources Corporation

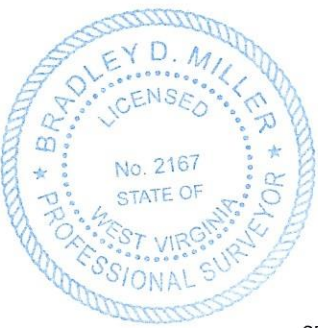
Page
1 of 2



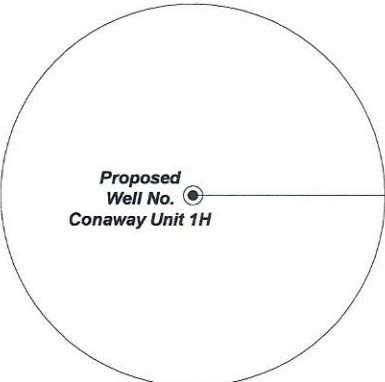
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller

Bradley D. Miller, P.S. 2167



SEAL



Note: No 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.

FILE NO: 169-54-U-23
DRAWING NO: Conaway Unit 1H Well Plat
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: May 5 2025
OPERATOR'S WELL NO. Conaway Unit 1H
API WELL NO
47 - 95 - 02925
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Proposed 694.70 WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne

DISTRICT: Union

SURFACE OWNER: Jimmy E. & Earl P. Patterson & Linda Lou Dennis

ROYALTY OWNER: Linda Lou Dennis

PROPOSED WORK: ☐ DRILL ☐ CONVERT ☒ DRILL DEEPER ☐ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD

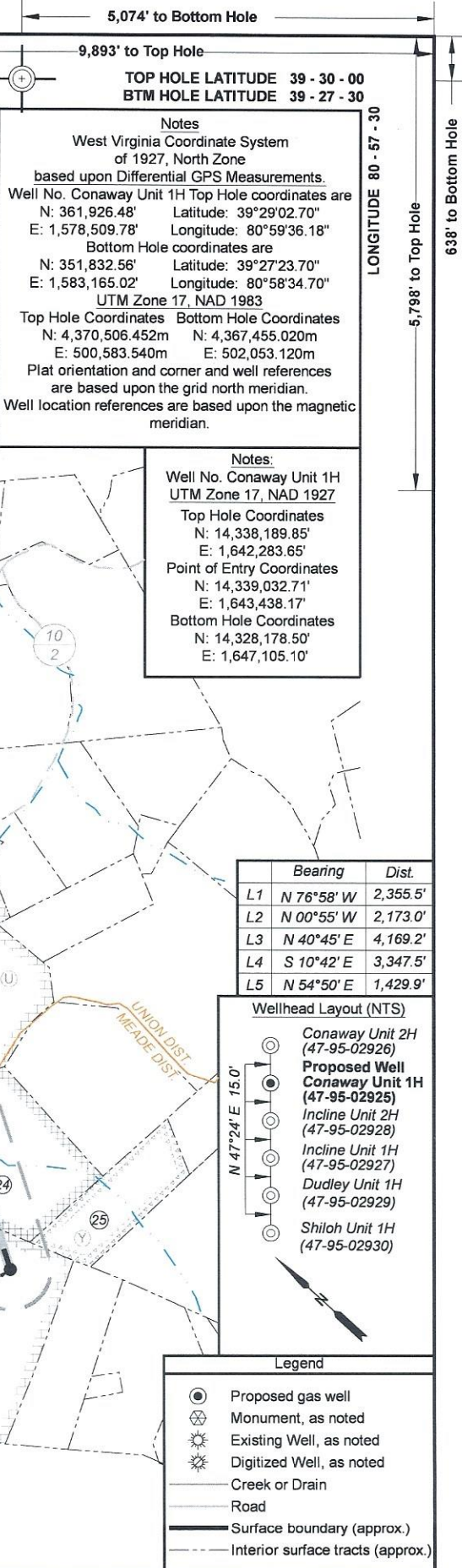
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,300' TVD 20,400' MD

WELL OPERATOR: Antero Resources Corporation

ADDRESS: 1615 Wynkoop Street
Denver, CO 80202

DESIGNATED AGENT: Conrad Baston

ADDRESS: 535 White Oaks Blvd.
Bridgeport, WV 26330





ID	Lessor
A	J & N Management Enterprises, LLC
B	Linda Lou Dennis
C	George A. & Yvonne Starkey
J	Antero Minerals, LLC
K	Antero Minerals, LLC
M	Myra L. Butcher
N	Ronald L. Adams Trust
O	Herbert A. & Sandra K. McEowen, JTWROS
P	Jodie L. Yost
Q	Shirley L. Chapman
S	Kevin R. Roberts
T	John Lester Snider, Jr.
U	Paul E. Snider
W	Jane Doan Schwab
X	BRC Appalachian Minerals I, LLC
Y	Kenneth M. Lantz
Z	Mary F. Mutschelknaus
AF	WV Dept. of Commerce, Division of Natural Resources
AI	Ted A. Darlene K. Koerber

No.	TM / Par	Owner	Bk / Pg	Ac.
1	9 / 8	Jimmy E. Patterson, et al	OR49 / 645	68.22
2		Middle Island Creek		
3	9 / 9	Patrick L. & Tammy M. Smith	370 / 11	58.50
4	9 / 12	Jimmy E. Patterson, et al	OR79 / 695	30.00
5	9 / 7.2	Ted A. & Darlene Koerber	301 / 157	112.09
6	9 / 14	George A. & Yvonne Starkey	184 / 21	65.51
7	9 / 15.5	Donald M. & Montana Thomas	277 / 656	5.56
8	9 / 43	George A. & Yvonne Starkey	350 / 455	15.70
9	9 / 42	Donna L. Johnson	199 / 145	16.20
10	9 / 42.2	Alan D. Johnson	555 / 787	2.00
11	9 / 42.1	Charles E. & Patsy J. Eddy	658 / 702	0.94
12	9 / 43.1	Robert V. & Myra L. Butcher	219 / 305	3.92
13	9 / 43.2	Robert V. & Myra L. Butcher	227 / 187	2.95
14	9 / 47	Coastal Lumber Company	301 / 131	67.24
15	9 / 24.1	James E. & Marsha Delancey	344 / 145	30.69
16	9 / 25.2	Herbert A. & Sandra K. McEowen	354 / 457	25.05
17	13 / 25.3	Jody Clegg Yost	354 / 552	23.75
18	9 / 51	Troy M. & Alexandra D. Watson	OR11 / 385	21.50
19	13 / 25.1	John L. Snider, Jr.	336 / 390	1.00
20	13 / 24.2	Marilyn & Mark A. Spiker, Sharon Grandstaff & Marsha Delancey	569 / 276	31.13
21	13 / 25	Paul E. Snider	338 / 205	26.01
22	13 / 26	Paul E. Snider	189 / 412	83.62
23	1 / 8	James P. Fleisher	576 / 260	37.00
24	2 / 7	Fred Davis	341 / 608	58.41
25	2 / 9	Fred Davis	341 / 608	35.56
26	1 / 3	Julie Ann Taylor	OR7 / 737	110.00
27	9 / 3	Gregory L. & Shirley F. Michael	357 / 131	293.00

FILE NO: 169-54-U-23	<div>STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OIL AND GAS DIVISION</div>	DATE: May 5 2025
DRAWING NO: Conaway Unit 1H Well Plat		OPERATOR'S WELL NO. Conaway Unit 1H
SCALE: 1" = 2000'		API WELL NO
MINIMUM DEGREE OF ACCURACY: Submeter		47 - 95 - 02925
PROVEN SOURCE OF ELEVATION: WV DOT, Harrisville, WV		STATE COUNTY PERMIT
WELL TYPE: <input type="checkbox"/> OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL (IF GAS) PRODUCTION: <input type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input checked="" type="checkbox"/> SHALLOW		
LOCATION: ELEVATION: Proposed 694.70 WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne		
DISTRICT: Union COUNTY: Tyler 06/27/2025		
SURFACE OWNER: Jimmy E. & Earl P. Patterson & Linda Lou Dennis ACREAGE: 68.22		
ROYALTY OWNER: Linda Lou Dennis LEASE NO: ACREAGE: 98.225		
PROPOSED WORK: <input type="checkbox"/> DRILL <input type="checkbox"/> CONVERT <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input checked="" type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 6,300' TVD		
<input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,400' MD		
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Conrad Baston		
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.		
Denver, CO 80202 Bridgeport, WV 26330		

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
<u>B: Linda Lou Dennis Lease</u> Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5
<u>A: J & N Management Enterprises, LLC Lease</u> J&N Management Enterprises, LLC	Antero Resources Corporation	1/8+	223/540
<u>B: Linda Lou Dennis Lease</u> Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5
<u>C: George A. & Yvonne Starkey Lease</u> George A. & Yvonne Starkey SEP Exploration, LLC	SEP Exploration, LLC Antero Resources Corporation	1/8+ Agreement	281/509 347/611
<u>J: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	185/98
<u>N: Ronald L. Adams Trust Lease</u> Ronald L. Adams Trust	Antero Resources Corporation	1/8+	594/411
<u>O: Herbert A. & Sandra K. McEowen, JTWROS Lease</u> Herbert A. & Sandra K. McEowen, JTWROS	Antero Resources Corporation	1/8+	234/1
<u>T: John Lester Snider, Jr. Lease</u> John Lester Snider, Jr.	Antero Resources Corporation	1/8+	275/661
<u>U: Paul E. Snider Lease</u> Paul E. Snider	Antero Resources Corporation	1/8+	554/643
<u>W: Jane Doan Schwab Lease</u> Jane Doan Schwab	Antero Resources Corporation	1/8+	306/682
<u>X: BRC Appalachian Minerals I, LLC</u> BRC Appalachian Minerals I, LLC BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc EQT Production Company	BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment	369/300 369/784 378/764 539/239 663/1

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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.

*Cotenancy 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

06/27/2025

**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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Z: Mary F. Mutschelknaus Lease</u>	Mary F. Mutschelknaus	Antero Resources Corporation	1/8+	291/27

***Cotenancy 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

**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.

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WV Department of
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Well Operator: Antero Resources Corporation

By: Tim Rady

Its: Senior Vice President of Land



June 16th, 2025

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Mr. Taylor Brewer
601 57th Street
Charleston, WV 25304

Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

Mr. Brewer:

4041718
6/15/25
\$ 7,500.00

Antero Resources Corporation (Antero) would like to submit the following permit modification for approved well on the Mary Patterson Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Conaway Unit 1H well.

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised MD and Production Casing/Cement program
- REVISED Form WW-6A1, which shows the leases we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole location

If you have any questions please feel free to contact me at (303) 357-7373.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "CW", written over a horizontal line.

Carly Wren
Permitting Agent
Antero Resources Corporation

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Enclosures

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