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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)

Friday, December 20, 2024  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for Duke Unit 1H  
47-103-03694-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, Chief, is written over the text.

James A. Martin  
Chief

Operator's Well Number: Duke Unit 1H  
Farm Name: Dallison Lumber Company  
U.S. WELL NUMBER: 47-103-03694-00-00  
Horizontal 6A New Drill  
Date Issued: 12/20/2024

Promoting a healthy environment.

12/20/2024

# PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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## CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Also, 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

12/20/2024

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 - Wetzell Green Pine Grove 7.5'  
Operator ID County District Quadrangle
- 2) Operator's Well Number: Duke Unit 1H Well Pad Name: Cedar Pad
- 3) Farm Name/Surface Owner: Dallison Lumber Company Public Road Access: CR 52
- 4) Elevation, current ground: As-Built - 1248' Elevation, proposed post-construction: \_\_\_\_\_
- 5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_  
(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal
- 6) Existing Pad: Yes or No Yes
- 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: 11000' MD
- 11) Proposed Horizontal Leg Length: 500' \*Open to modification at a later date
- 12) Approximate Fresh Water Strata Depths: 612'
- 13) Method to Determine Fresh Water Depths: 47103308970000 Offset well records. Depths have been adjusted according to surface elevations.
- 14) Approximate Saltwater Depths: 2193'
- 15) Approximate Coal Seam Depths: 1010'
- 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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NOV 27 2024  
WV Department of  
Environmental Protection

*Handwritten signature*  
12/20/2024

WW-6B  
(04/15)

4710303694  
API NO. 47-103  
OPERATOR WELL NO. Duke Unit 1H  
Well Pad Name: Cedar Pad

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	J-55	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	662'	662'	CTS, 690 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3200'	3200'	CTS, 1303 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	11000'	11000'	CTS, 1844 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"	0.375"	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							

PACKERS

Kind:	N/A			RECEIVED Office of Oil and Gas
Sizes:	N/A			NOV 27 2024
Depths Set:	N/A			WV Department of Environmental Protection

12/20/2024

*[Handwritten Signature]*  
11/27/24

WW-6B  
(10/14)

47 10 30 36 94  
API NO. 47-103  
OPERATOR WELL NO. Duke Unit 1H  
Well Pad Name: Cedar 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): 71.85 acres

22) Area to be disturbed for well pad only, less access road (acres): 18.45 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 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.

12/20/2024

Handwritten signature and date: 11/27/24

4710303694

November 19, 2024

West Virginia Office of Oil and Gas  
Attn: Taylor Brewer  
601 57<sup>th</sup> St SE  
Charleston, WV 25304

RE: Request for Variance – Class L Cement  
Duke Unit 1H-2H, Graden Unit 1H-2H, and Graden Unit 1H-2H  
Wetzel County, WV

Mr. Brewer:

Pursuant to 35CSR8 Section 9.2.h.8, Antero Resources Corporation (“Antero”) would like to implement the variance to allow Class L Cement in place of Class A cement relating to the construction of the following horizontal wells (Duke Unit 1H-2H, Graden Unit 1H-2H, and Graden Unit 1H-2H) on the Cedar pad.

Antero only plans to use this method if Class A cement is not available to be use due to supply issues. Please see Order No 2022-14 attached.

If you have any questions or need further information, please feel free to contact Mallory Turco, Permitting Manager, at (303) 357-7182 or email at [mturco@anteroresources.com](mailto:mturco@anteroresources.com).

Sincerely,



Stefan Gaspar  
Permitting Agent  
Antero Resources Corporation

12/20/2024

WW-9  
(4/16)

47 10 30 36 94

API Number 47 - 103 - \_\_\_\_\_  
Operator's Well No. Duke Unit 1H

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) Fishing Creek Quadrangle Pine Grove 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number                      \*UIC Permit # will be provided on Form WR-34 )
- Reuse (at API Number                      Future permitted well locations when applicable. API# will be provided on Form WR-34 )
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain                      Northwestern Landfill Permit #SWF-1025/ WV0109410

Wetzel County Landfill (Permit #SWF-1021)

Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite and taken to landfill.

Surface - Air/Freshwater, Intermediate - Dust/Stiff Foam, Production - Water Based Mud

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Drill cuttings stored in tanks, removed offsite and taken to landfill.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98), Northwestern Landfill (Permit # SWF-1025/WV0109410)  
Wetzel County Landfill (Permit #SWF-1021)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Gretchen Kohler

NOV 20 2024

Company Official (Typed Name) Gretchen Kohler

Company Official Title Director Environmental & Regulatory Compliance

WV Department of  
Environmental Protection

Subscribed and sworn before me this 19<sup>th</sup> day of November, 2024

Stefan Gaspar

Notary Public

My commission expires November 15, 2026



Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 71.85 acres Prevegetation pH \_\_\_\_\_

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type Hay or straw or Wood Fiber (will be used where needed)

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road (30.35 acres) + Valve Pad Access Road (0.65 acres) + Well Pad (18.45 acres) + Valve Pad (1.45 acres) + Spoil 1 (1.24 acres) + Spoil 2 (4.59 acres) + Spoil 3 (3.28 acres) + Spoil 4 (2.22 acres) + Topsoil/Stripping 1 (1.37 acres) + Topsoil/Stripping 2 (2.04 acres) + Topsoil/Stripping 3 (6.21 acres) = 71.85 acres

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
Field Bromegrass	40	Tall Fescue	30
See attached Table IV-3 for additional seed type Cedar Pad Design)		See attached Table IV-4A for additional seed type Cedar Pad Design)	
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: SMG  
Comments: Properly reclaim seed mulch all areas.

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Title: W O & G Inspector Date: 11/22/24

Field Reviewed?  Yes  No





**911 Address**  
**1934 McKimmie Ridge Rd.**  
**Reader, WV 26167**

## Well Site Safety Plan

### Antero Resources

**Well Name: CEDAR UNIT 5V, MIDAS UNIT 1H, WILMA UNIT 1H, GOWLAND UNIT 1H, JIFFY UNIT 1H, GUNTO UNIT 1H-2H, DUKE UNIT 1H-2H, GRADEN UNIT 1H-2H, MARMA UNIT 1H-2H**

**Pad Location: CEDAR PAD**

Wetzel County/Green District

#### GPS Coordinates:

**Entrance** - Lat 39.585290/Long -80.706670 (NAD83)

**Pad Center** - Lat 39.567788/Long -80.713115 (NAD83)

#### Driving Directions:

- From WV-20, turn east onto North Fork Road
- Immediately turn left onto CO-15/17 (N Fork Rd) and travel for 2.2 miles
- Turn left onto WV-17 (Barker Run Rd) and continue for 2.3 miles
- Turn left onto CO 17/1 (Morgan-Ashland Ridge Rd) and continue for 2.7 miles
- Turn left onto CO 52 (McKimmie Ridge Rd) and travel for 1.6 miles
- The Cedar Lease Road will be on the left

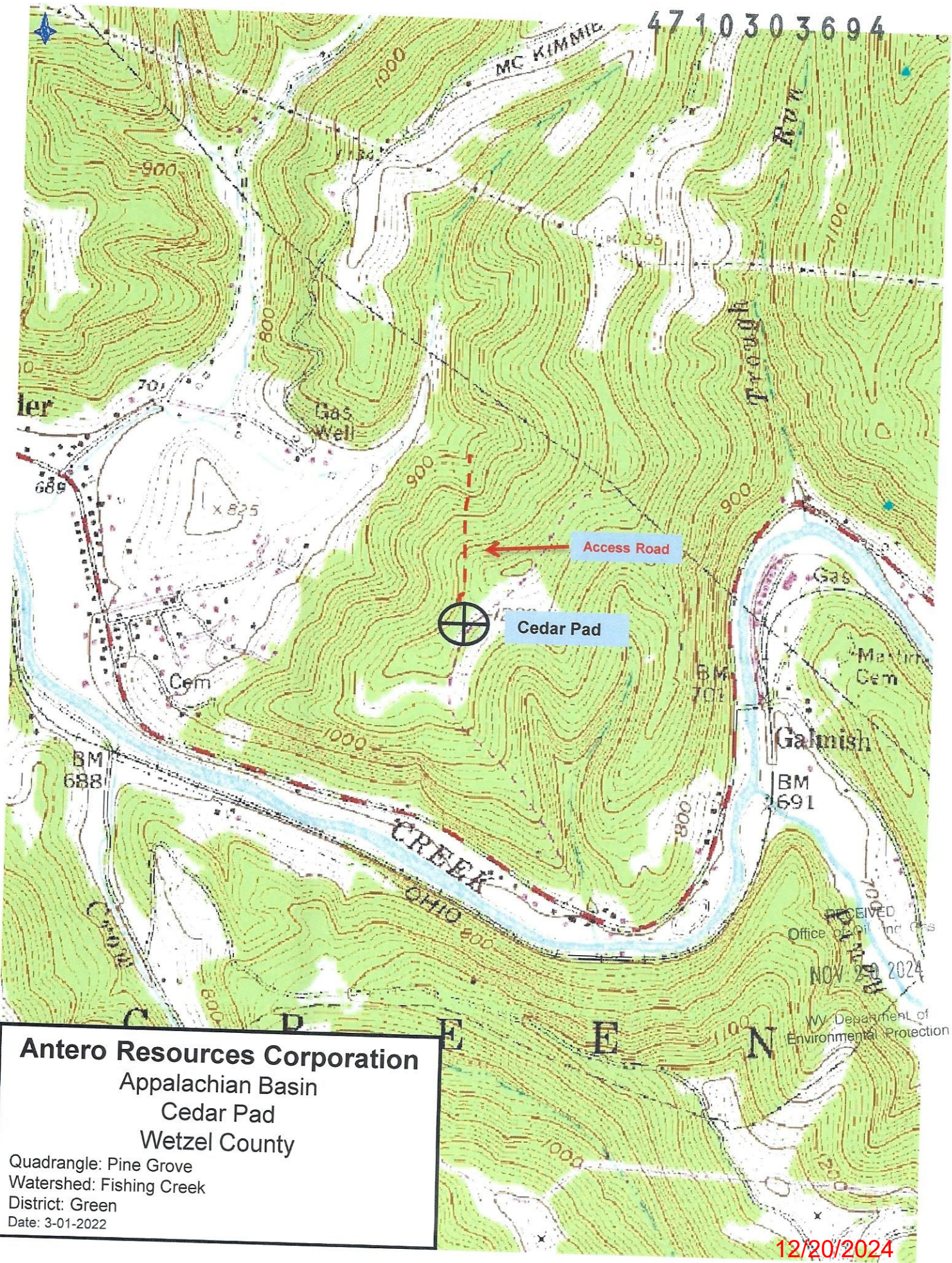
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**EMERGENCY (24 HOUR) CONTACT 1-800-878-1373**

4710303694



**Antero Resources Corporation**  
 Appalachian Basin  
 Cedar Pad  
 Wetzel County

Quadrangle: Pine Grove  
 Watershed: Fishing Creek  
 District: Green  
 Date: 3-01-2022

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**Antero Resources  
Well No. Duke 1H**

Antero Resources Corporation

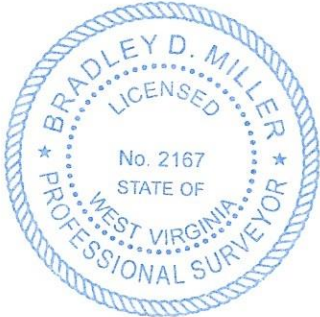


**Legend**

- ⊙ Proposed gas well
- ⊗ Monument, as noted
- ⊛ Existing Well, as noted
- ⊙ Digitized Well, as noted
- Creek or Drain
- Railroad
- 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

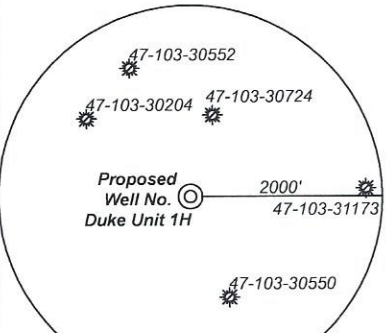
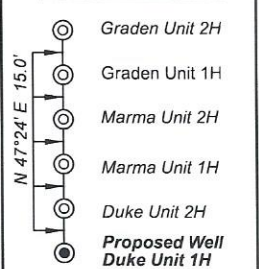


SEAL

Leases	
P	Antero Minerals, LLC
Q	Antero Minerals, LLC
R	Jenkins Miller

	Bearing	Dist.
L1	N 75°38'E	2,201.0'
L2	N 83°14'E	1,862.0'
L3	S 70°18'E	2,364.1'
L4	S 45°08'E	3,733.4'
L5	S 66°39'W	1,920.3'

**Wellhead Layout (NTS)**



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.

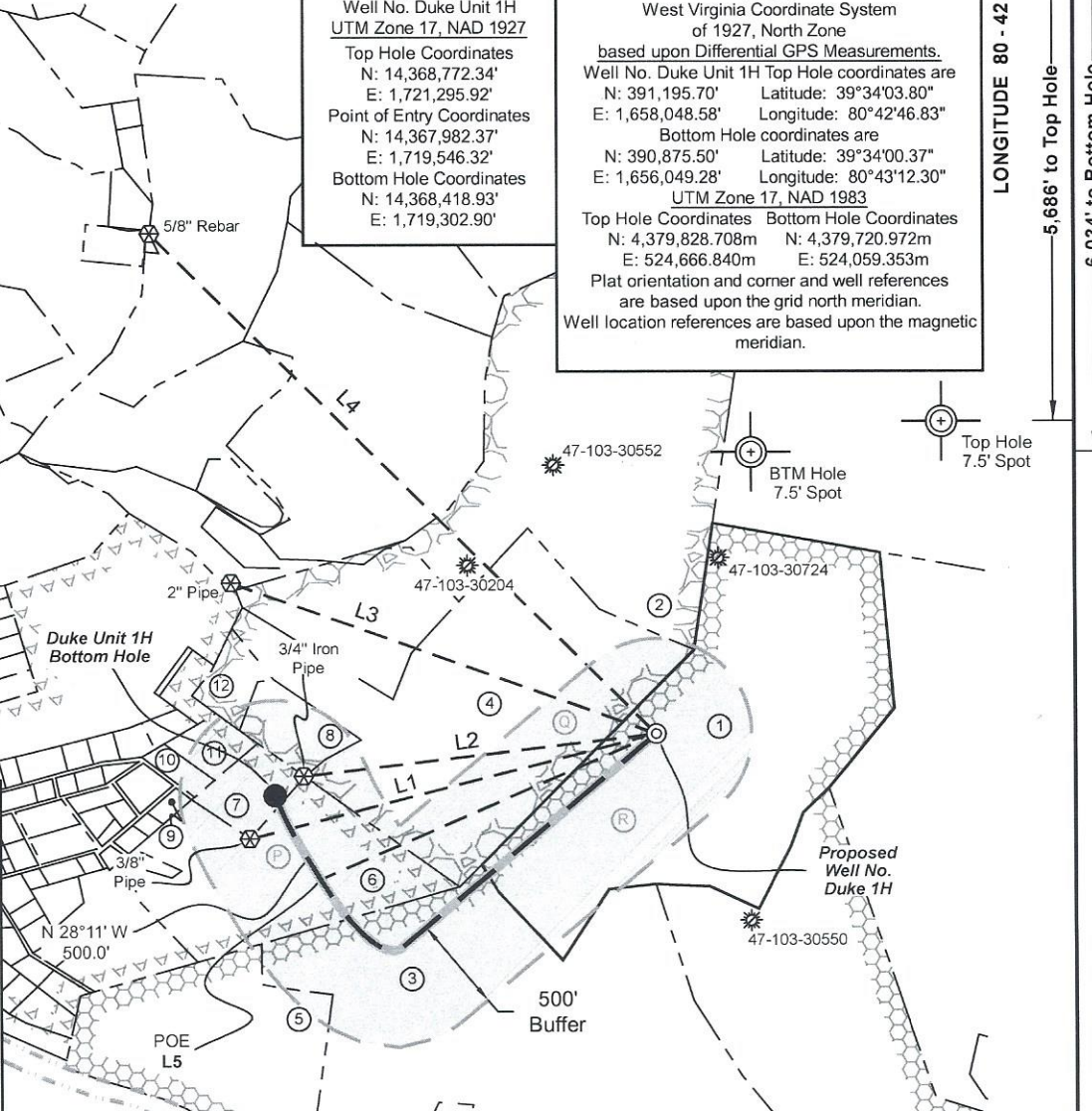
3,312' to Bottom Hole  
1,318' to Top Hole

LATITUDE 39 - 35 - 00

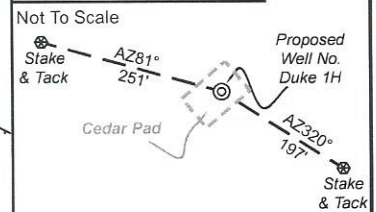
LONGITUDE 80 - 42 - 30

**Notes:**  
Well No. Duke Unit 1H  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,368,772.34'  
E: 1,721,295.92'  
Point of Entry Coordinates  
N: 14,367,982.37'  
E: 1,719,546.32'  
Bottom Hole Coordinates  
N: 14,368,418.93'  
E: 1,719,302.90'

**Notes**  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Duke Unit 1H Top Hole coordinates are  
N: 391,195.70' Longitude: 80°42'46.83"  
Bottom Hole coordinates are  
N: 390,875.50' Longitude: 80°43'12.30"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates N: 4,379,828.708m E: 524,666.840m  
Bottom Hole Coordinates N: 4,379,720.972m E: 524,059.353m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.



**Well Location References**



ID	TM-Par	Owner	Bk/Pg	Acres
1	4-19	Dallison Lumber Company	53/205	51.50
2	13-26.7	John M. & Stanley D. Pittman	458/837	55.00
3	13-83	Emma Virginia Miller	133/455	59.00
4	13-40	Kenneth E. & Vicky A. Van Dyne	357/204	42.33
5	13-65	Raye Anne Lloyd	445/660	18.01
6	13-54	Lorraine Highley	WB81/258	20.17
7	13-54.2	Ronald M. & Pamela Ann Jackson	315/524	3.35
8	13-39	Ruth E. Staley	256/283	3.13
9	13-53.3	Deborah Fluharty, et al	453/149	0.69
10	13-37.1	Jeffrey D. Brown	394/491	1.00
11	13-37	Debra Ann Hengee, et al	398/447	2.00
12	13-38	Francis E. Bland	WB57/273	2.55

FILE NO: 118-34-G-18  
DRAWING NO: Duke Unit 1H Short Well Plat  
SCALE: 1" = 1000'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WV DOT, Harrisville, WV

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

DATE: November 5 2024  
OPERATOR'S WELL NO. Duke Unit 1H  
API WELL NO  
47 - 103 - 03194  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,248' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove

DISTRICT: Green COUNTY: Wetzell

SURFACE OWNER: Dallison Lumber Company ACREAGE: 51.50 12/20/2024

ROYALTY OWNER: Jenkins Miller LEASE NO: ACREAGE: 200

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) 7,600' TVD

PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 11,000' MD

WELL OPERATOR: Antero Resources Corporation  
ADDRESS: 1615 Wynkoop Street  
Denver, CO 80202

DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 535 White Oaks Blvd.  
Bridgeport, WV 26330

**Antero Resources**  
Well No. Duke 1H

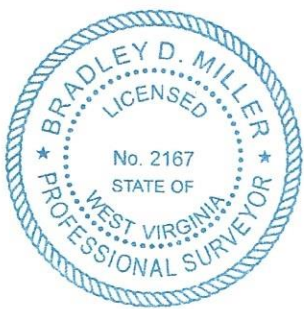
**Antero Resources Corporation**



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

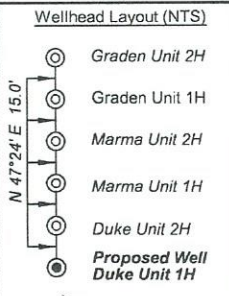
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

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



**Leases**

P	Antero Minerals, LLC
Q	Antero Minerals, LLC
R	Jenkins Miller



	Bearing	Dist.
L1	N 75°38' E	2,201.0'
L2	N 83°14' E	1,862.0'
L3	S 70°18' E	2,364.1'
L4	S 45°08' E	3,733.4'
L5	S 66°39' W	1,920.3'

ID	TM-Par	Owner	Bk/Pg	Acres
1	4-19	Dallison Lumber Company	53/205	51.50
2	13-26.7	John M. & Stanley D. Pittman	458/837	55.00
3	13-83	Emma Virginia Miller	133/455	59.00
4	13-40	Kenneth E. & Vicky A. Van Dyne	357/204	42.33
5	13-65	Raye Anne Lloyd	445/660	18.01
6	13-54	Lorraine Highley	WB81/258	20.17
7	13-54.2	Ronald M. & Pamela Ann Jackson	315/524	3.35
8	13-39	Ruth E. Staley	256/283	3.13
9	13-53.3	Deborah Fluharty, et al	453/149	0.69
10	13-37.1	Jeffrey D. Brown	394/491	1.00
11	13-37	Debra Ann Hengee, et al	398/447	2.00
12	13-38	Francis E. Bland	WB57/273	2.55

FILE NO: 118-34-G-18  
DRAWING NO: Duke Unit 1H Short Well Plat  
SCALE: 1" = 1000'  
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: November 5 2024  
OPERATOR'S WELL NO. Duke Unit 1H  
API WELL NO  
47 - 103 - 03694  
STATE COUNTY PERMIT

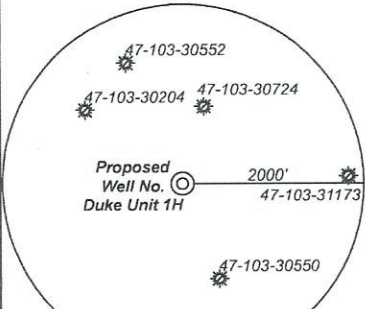
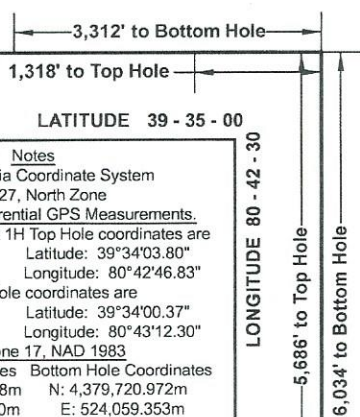
WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: As-Built 1,248' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove  
DISTRICT: Green COUNTY: Wetzel  
SURFACE OWNER: Dallison Lumber Company ACREAGE: 51.50  
ROYALTY OWNER: Jenkins Miller LEASE NO: ACREAGE: 200  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) 7,600' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 11,000' MD

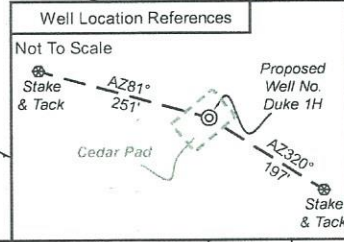
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330

**Notes:**  
Well No. Duke Unit 1H  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,368,772.34'  
E: 1,721,295.92'  
Point of Entry Coordinates  
N: 14,367,982.37'  
E: 1,719,546.32'  
Bottom Hole Coordinates  
N: 14,368,418.93'  
E: 1,719,302.90'

**Notes:**  
West Virginia Coordinate System  
of 1927, North Zone  
based upon Differential GPS Measurements.  
Well No. Duke Unit 1H Top Hole coordinates are  
N: 391,195.70' Longitude: 39°34'03.80"  
E: 1,658,048.58' Longitude: 80°42'46.83"  
Bottom Hole coordinates are  
N: 390,875.50' Latitude: 39°34'00.37"  
E: 1,656,049.28' Longitude: 80°43'12.30"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,379,828.708m N: 4,379,720.972m  
E: 524,666.840m E: 524,059.353m  
Plat orientation and corner and well references  
are based upon the grid north meridian.  
Well location references are based upon the magnetic  
meridian.



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.



WW-6A1  
(5/13)

Operator's Well No. Duke Unit 1H

**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>P: Antero Minerals, LLC Lease</u>	Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847

\*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 the 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

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Environmental Protection

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

Operator's Well Number Duke Unit 1H

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>R: Jenkins Miller Lease</b>			
Jenkins Miller	Hope Natural Gas Company	1/8	0107/0056
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0233/0387
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	066A/0069
Consolidated Gas Transmission Corporation	Eastern States Oil & Gas Inc	Assignment	076A/0232
Eastern States Oil & Gas Inc	Blazer Energy Corp	Merger	0012/0253
Blazer Energy Corp	Eastern States Oil & Gas Inc	Name Change	0012/0259
Eastern States Oil & Gas Inc	Equitable Production- Eastern States INC	Name Change	WVSOS
Equitable Production- Eastern States INC	Appalachian Natural Gas Trust	Assignment	079A/0244
Appalachian Natural Gas Trust	EQT Production Company	Merger	0096/0505
EQT Production Company	Antero Resources Corporation	Assignment	230A/0801

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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.

4710303694



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

November 13, 2024

West Virginia Department of Environmental Protection  
Chief, Office of Oil and Gas  
Attn: Mr. James Martin  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

RE: Duke Unit 1H  
Quadrangle: Pine Grove 7.5'  
Wetzel County/Green District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Duke Unit 1H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Duke Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in blue ink, appearing to be "TK", is written over a horizontal line. Below the signature, the name "Thomas Kuhn" and title "Staff Landman" are printed.

Thomas Kuhn  
Staff Landman

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Environmental Protection

12/20/2024

WW-PN  
(11-18-2015)

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### Horizontal Natural Gas Well Work Permit Application Notice By Publication

**Notice is hereby given:**

Pursuant to West Virginia Code 22-6A-10(e) prior to filing an application for a permit for a horizontal well the applicant shall publish in the county in which the well is located or is proposed to be located a Class II legal advertisement.

**Paper:** Wetzel Chronicle

**Public Notice Date:** 11/6/2024-11/13/2024

The following applicant intends to apply for a horizontal natural well work permit which disturbs three acres or more of surface excluding pipelines, gathering lines and roads or utilizes more than two hundred ten thousand gallons of water in any thirty day period.

**Applicant:** Antero Resources Corporation **Well Number:** Duke Unit 1H

**Address:** 1615 Wynkoop St. Denver, CO 80202

**Business Conducted:** Natural gas production.

**Location –**

State:	<u>West Virginia</u>	County:	<u>Wetzel</u>
District:	<u>Green</u>	Quadrangle:	<u>Pine Grove 7.5'</u>
UTM Coordinate NAD83 Northing:	<u>4379828.707m</u>		
UTM coordinate NAD83 Easting:	<u>524666.839m</u>		
Watershed:	<u>Fishing Creek</u>		

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**Coordinate Conversion:**

To convert the coordinates above into longitude and latitude, visit: [http://tagis.dep.wv.gov/convert/llutm\\_conus.php](http://tagis.dep.wv.gov/convert/llutm_conus.php)

**Electronic notification:**

To receive an email when applications have been received or issued by the Office of Oil and Gas, visit <http://www.dep.wv.gov/insidedep/Pages/DEPMailingLists.aspx> to sign up.

**Reviewing Applications:**

Copies of the proposed permit application may be reviewed at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE Charleston, WV 25304 (304-926-0450). Full copies or scans of the proposed permit application will cost \$15, whether mailed or obtained at DEP headquarters. Copies may be requested by calling the office or by sending an email to [DEP.comments@wv.gov](mailto:DEP.comments@wv.gov).

**Submitting Comments:**

Comments may be submitted online at <https://apps.dep.wv.gov/oog/comments/comments.cfm>, or by letter to Permit Review, Office of Oil and Gas, 601 57<sup>th</sup> Street, SE Charleston, WV 25304. Please reference the county, well number, and operator when using this option.

Regardless of format for comment submissions, they must be received no later than thirty days after the permit application is received by the Office of Oil and Gas.

For information related to horizontal drilling visit: [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx)

12/20/2024



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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION

Date of Notice Certification: 11/18/2024

API No. 47- 103 -

Operator's Well No. Duke Unit 1H

Well Pad Name: Cedar Pad

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: West Virginia  
County: Wetzel  
District: Green  
Quadrangle: Pine Grove 7.5'  
Watershed: Fishing Creek

UTM NAD 83 Easting: 524666.840m  
Northing: 4379828.708m  
Public Road Access: CR 52  
Generally used farm name: Dallison Lumber Company

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

\*PLEASE CHECK ALL THAT APPLY

- 1. NOTICE OF SEISMIC ACTIVITY or  NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or  NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or  NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

**OOG OFFICE USE ONLY**

- RECEIVED/  
NOT REQUIRED
- RECEIVED
- RECEIVED/  
NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

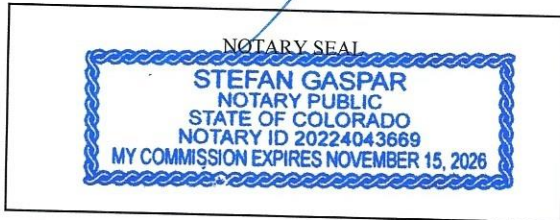
12/20/2024

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**Certification of Notice is hereby given:**

THEREFORE, I Jon McEvers, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Jon McEvers</u>		<u>Denver, CO 80202</u>
Its:	<u>SVP of Operations</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>mturco@anteroresources.com</u>



Subscribed and sworn before me this 19 day of November 2024  
Stefan Gaspar Notary Public  
 My Commission Expires November 15, 2026

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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12/20/2024

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 11/19/2024 **Date Permit Application Filed:** 11/19/2024

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

**Delivery method pursuant to West Virginia Code § 22-6A-10(b)**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

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Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

WV Department of Environmental Protection

SURFACE OWNER(s)  
Name: Dallison Lumber Company  
Address: P.O. Box 159  
Jacksonburg, WV 26377

Name: Kenneth E. & Vicky A. VanDyne  
Address: P.O. Box 311  
Reader, WV 26167

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: SEE ATTACHMENT  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

COAL OPERATOR  
Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: NONE WITHIN 1500'  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/and-gas/pages/default.aspx](http://www.dep.wv.gov/and-gas/pages/default.aspx).

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Environmental Protection

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

12/20/2024

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

12/20/2024

**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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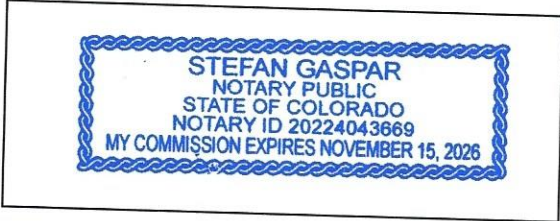
API NO. 47- 103 -  
OPERATOR WELL NO. Duke Unit 1H  
Well Pad Name: Cedar Pad  
**4710303694**

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation *John McEwen*  
Telephone: (303) 357-7310 Address: 1615 Wynkoop Street  
Email: mturco@anteroresources.com Denver, CO 80202  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 19 day of November, 2024  
Stefan Gaspar Notary Public  
My Commission Expires November 15, 2026

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least **TEN (10)** days prior to filing a permit application.  
**Date of Notice:** 10/30/2024 **Date Permit Application Filed:** 11/19/2024

**Delivery method pursuant to West Virginia Code § 22-6A-16(b)**

HAND DELIVERY  
 CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

**Notice is hereby provided to the SURFACE OWNER(s):**

Name: Dallison Lumber Company  
Address: PO Box 159  
Jacksonburg, WV 26377-0159

Name: Kenneth E. & Vicky A. VanDyne  
Address: PO Box 311  
Reader, WV 26167-0311

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia  
County: Wetzel  
District: Green  
Quadrangle: Pine Grove 7.5'  
Watershed: Fishing Creek

UTM NAD 83 Easting: 524666.840m  
Northing: 4379828.708m  
Public Road Access: CR 52  
Generally used farm name: Dallison Lumber Company

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-7323  
Email: mturco@anteroresources.com  
Facsimile: 303-357-7315

Authorized Representative: Mallory Turco  
Address: 1615 Wynkoop St.  
Denver, CO 80202  
Telephone: 303-357-7223  
Email: mturco@anteroresources.com  
Facsimile: 303-357-7315

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**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

12/20/2024







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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

Office of the District Engineer/Manager  
District Four

Post Office Box 4220 · Clarksburg, West Virginia 26302 · (304) 842-1500

Alanna J. Keller, P.E.  
Deputy Secretary of Transportation  
Deputy Commissioner of Highways

Jimmy Wriston, P. E.  
Secretary of Transportation  
Commissioner of Highways

November 8, 2024

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the Cedar Well Pad, Wetzel County  
Marma Unit 1H Well Site Marma Unit 2H Well Site Duke Unit 1H Well Site  
Duke Unit 2H Well Site Graden Unit 1H Well Site Graden Unit 2H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2021-0526 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off Wetzel County Route 52 SLS MP 1.72.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated March 6, 2023. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Lacy D. Pratt  
Central Office O&G Coordinator

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Cc: Stefan Gaspar  
Antero Resources Corporation  
OM, D-6  
File

Subdivision 3.3.e A listing of the anticipated additives that may be used in the water used for fracturing or stimulating the well. (A listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code 22-6-22.)

**FRACTURING/STIMULATING INTERVAL**

Additive	Chemical Abstract Service Number (CAS #)
1. Fresh Water	
2. 2 Phosphobutane 1,2,4 tricarboxylic acid	7732-18-5
3. Ammonium Persulfate	37971-36-1
4. Anionic copolymer	7727-54-0
5. Anionic polymer	Proprietary
6. BTEX Free Hydrotreated Heavy Naphtha	Proprietary
7. Cellulase enzyme	64742-48-9
8. Demulsifier Base	(Proprietary)
9. Ethoxylated alcohol blend	(Proprietary)
10. Ethoxylated Nonylphenol	Mixture
11. Ethoxylated oleylamine	68412-54-4
12. Ethylene Glycol	26635-93-8
13. Glycol Ethers	107-21-1
14. Guar gum	111-76-2
15. Hydrogen Chloride	9000-30-0
16. Hydrotreated light distillates, non-aromatic, BTEX free	7647-01-0
17. Isopropyl alcohol	64742-47-8
18. Liquid, 2,2-dibromo-3- nitrilopropionamide	67-63-0
19. Microparticle	10222-01-2
20. Petroleum Distillates (BTEX Below Detect)	Proprietary
21. Polyacrylamide	64742-47-8
22. Propargyl Alcohol	57-55-6
23. Propylene Glycol	107-19-7
24. Quartz	57-55-6
25. Sillica crystalline quartz	14808-60-7
26. Sodium Chloride	7631-86-9
27. Sodium Hydroxide	7647-14-5
28. Sugar	1310-73-2
29. Surfactant	57-50-1
30. Suspending agent (solid)	68439-51-0
31. Tar bases, quinolone derivs, benzyl chloride-quarternized	14808-60-7
32. Solvent Naptha, petroleum, heavy aliph	72480-70-7
33. Soybean Oil, Me ester	64742-96-7
34. Copolymer of Maleic and Acrylic Acid	67784-80-9
35. DETA Phosphonate	52255-49-9
36. Hexamethylene Triamine Penta	15827-60-8
37. Phosphino Carboxylic acid polymer	34690-00-1
38. Hexamethylene diamine penta	71050-62-9
39. 2-Propenoic acid, polymer with 2 propanamide	23605-74-5
40. Hexamethylene diamine penta (methylene phosphonic acid)	9003-06-9
41. Diethylene Glycol	23605-74-5
42. Methenamine	111-46-6
43. Polyethylene polyamine	100-97-0
44. Coco amine	68603-67-8
45. 2-Propyn-1-olcompound with methyloxirane	61791-14-8
	38172-91-7

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OPERATOR: Antero Resources Corporation WELL NO: Duke Unit 1H

PAD NAME: Cedar Pad

REVIEWED BY: Stefan Gaspar

SIGNATURE: *S Gaspar*

### WELL RESTRICTIONS CHECKLIST

#### HORIZONTAL 6A WELL

#### Well Restrictions

At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR

DEP Waiver and Permit Conditions

At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR

DEP Waiver and Permit Conditions

At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR

DEP Waiver and Permit Conditions

At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

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