



west virginia department of environmental protection

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

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

Wednesday, October 4, 2023  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for Gowland 1H  
47-103-03614-00-00

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 handwritten signature in blue ink, appearing to read 'James A. Martin', is written over a blue circular stamp. The signature is written in a cursive style.  
James A. Martin  
Chief

Operator's Well Number: Gowland 1H  
Farm Name: Kenneth E & Vicky A VanDyne  
U.S. WELL NUMBER: 47-103-03614-00-00  
Horizontal 6A New Drill  
Date Issued: 10/4/2023

Promoting a healthy environment.

10/06/2023

# 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.

## 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.

10/06/2023



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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  
dep.wv.gov

**ORDER  
ISSUED UNDER  
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: Antero Resources Corporation  
1615 Wynkoop Street  
Denver, CO 80202

DATE: April 25, 2022  
ORDER NO.: 2022-W-6

**INTRODUCTION**

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to Antero Resources Corporation (hereinafter "Antero" or "Operator"), collectively the "Parties."

**FINDINGS OF THE CHIEF**

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Antero is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 1615 Wynkoop Street, Denver, CO 80202.
3. On March 30, 2022, Antero submitted a well work permit application identified as API# 47-103-03498. The well is located on the Cedar Pad in the Green District of Wetzel County, West Virginia.
4. On March 30, 2022, Antero requested a waiver for Wetlands B, R, S and T as outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-103-03498.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
  
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
  
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

## **ORDER**

West Virginia Code §22-6A-12(b) requires, in part, that “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. The Office of Oil and Gas grants the request for a waiver for Wetlands B, R, S and T from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-103-03498. The Office of Oil and Gas hereby **ORDERS** that Antero shall meet the following site construction and operational requirements for the Cedar Well Pad:

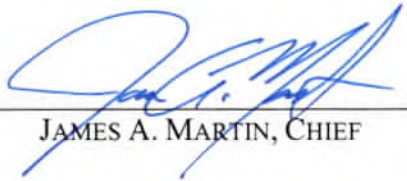
- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetlands B, R, S and T shall be protected by two rows of forty-two inch (42”) SMARTFence. This along with temporary and permanent vegetative cover will prevent sediment from reaching the wetlands
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 25th day of April 2022.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:



JAMES A. MARTIN, CHIEF

Attachment 1



NO.	DATE	DESCRIPTION

**CFC**  
 Civil & Environmental Consultants, Inc.  
 120 Geneva Boulevard - Ringwood, WV 26038  
 PH: 304.823.3119 • FAX: 304.823.3237

**ANTERO RESOURCES**  
 CEDAR WELL PAD  
 WETZEL COUNTY  
 WEST VIRGINIA

**SITE PLAN**  
 SHEET NO. C306  
 DATE: 10/06/2023



SCALE: AS SHOWN

10/06/2023





WW-6B  
(04/15)

4710303614  
API NO. 47-103  
OPERATOR WELL NO. Gowland Unit 1H  
Well Pad Name: Cedar Pad

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

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

2) Operator's Well Number: Gowland Unit 1H Well Pad Name: Cedar Pad

3) Farm Name/Surface Owner: Kenneth E. & Vicky A. Vandyne Public Road Access: CR 52

4) Elevation, current ground: 1276' Elevation, proposed post-construction: 1248'

5) Well Type (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No No

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

8) Proposed Total Vertical Depth: 7600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 9300' 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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10/06/2023  
J. M. [Signature]

WW-6B  
(04/15)

API NO. 47-103  
OPERATOR WELL NO. Gowland 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#	3450'	3450'	CTS, 1405 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	9300'	9300'	CTS, 1416 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 SEP 18 2023
Sizes:	N/A			WV Department of Environmental Protection
Depths Set:	N/A			

*Handwritten signature and date: 9/12/23*

4710303614

WW-68  
(10/14)

API NO. 47-103  
OPERATOR WELL NO. Gowind 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.

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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

WV Department of  
Environmental Protection

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.

10/06/2023  
SW  
9/12/23

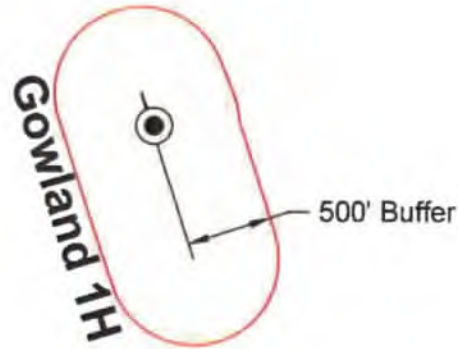
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**LEGEND**

- 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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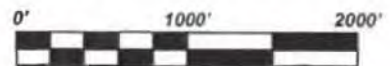


Bridgeport Office  
Phone: (304) 848-5035  
Fax: (304) 848-5037

172 Thompson Drive  
Bridgeport, WV 26330

PARTY CHIEF: C. Lynch	DRAWN BY: J. Smith
RESEARCH: J. Miller	PREPARED: August 17, 2023
SURVEYED: Dec. 2016	PROJECT NO: 122-34-G-18
FIELD CREW: C.L., K.M.	DRAWING NO: Gowland 1H Short AOR

Sheet 1 of 1



Scale: 1 inch = 1000 feet

10/06/2023

4710303614

August 21, 2023

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  
Midas Unit 1H, Wilma Unit 1H, Gowland Unit 1H, Jiffy Unit 1H, Gunto Unit 1H-2H  
Wetzel County, WV

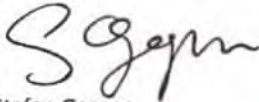
Mr. Brewer:

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 (Midas Unit 1H, Wilma Unit 1H, Gowland Unit 1H, Jiffy Unit 1H, Gunto 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

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Office of Oil and Gas

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10/06/2023



west virginia department of environmental protection

Office of Oil and Gas  
601 57th Street, SE  
Charleston, WV 25304  
Phone (304) 828-0450

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

**BEFORE THE OFFICE OF OIL AND GAS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE OF WEST VIRGINIA**

**IN THE MATTER OF A VARIANCE FROM )  
LEGISLATIVE RULE 35CSR4 )  
SECTION 11.5 AND LEGISLATIVE RULE )  
35CSR8 SECTION 9.2.h.8., )  
RELATING TO THE CEMENTING )  
OF OIL AND GAS WELLS )**

**ORDER NO. 2022-14**

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**REPORT OF THE OFFICE**

In response to industry requests, the West Virginia Department of Environmental Protection, Office of Oil and Gas has reviewed the proposed use of American Petroleum Institute (API) Class L cement to be used in place of API Class A cement for well construction.

**FINDINGS OF FACT**

1. On July 14, 2022, Northeast Natural Energy (NNE) submitted a variance request from Legislative Rule 35CSR8 Section 9.2.h.8., for the use of API Class L cement in place of API Class A cement, relating to the construction of horizontal wells.
2. Laboratory analysis submitted by NNE on July 14, 2022, indicates API Class L cement is comparable to API Class A cement and thereby satisfies the requirements of the West Virginia Code.
3. Contemporaneously, the Chief of the Office of Oil and Gas also chose to consider a variance to Legislative Rule 35CSR4 Section 11.5., for the use of API Class L cement in place of API Class A cement, relating to the construction of vertical wells.

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- 4. On August 18, 2022, the Office of Oil and Gas provided public notice of acceptance of public comments on the variance consideration. During the 20-day public comment period, no comments were received.

**CONCLUSIONS OF LAW**

Pursuant to Article 6 and Article 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to Legislative Rule 35CSR4, Section 18 and Legislative Rule 35CSR8, Section 14, the Chief of the Office of Oil and Gas may grant a variance from any requirement of these rules.


**ORDER**

It is ordered that the Class L cement product approved and monogrammed by API is approved for use in place of API Class A cement for well construction subject to the provisions of Legislative Rule 35CSR4 and Legislative Rule 35CSR8.

Dated this, the 13th day of September, 2022.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief  
Office of Oil and Gas

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SEP 18 2023

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Environmental Protection

4710303614

WW-9  
(4/16)

API Number 47 - 103  
Operator's Well No. Gowland 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 Production 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.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Oil/Drill Foam, Production - Water Based Mud

-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  
Company Official (Typed Name) Gretchen Kohler  
Company Official Title Director Environmental & Regulatory Compliance

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Subscribed and sworn before me this 28<sup>th</sup> day of August, 2023

Stefan Gaspar Notary Public

My commission expires November 15, 2026



10/06/2023



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: [Signature]

Comments: Properly reclaim seed & mulch

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Title: WV Oil & Gas Inspector Date: 9-12-23

Field Reviewed?  Yes  No

**Form WW-9 Additives Attachment****SURFACE INTERVAL**

1. Fresh Water
2. Soap –Foamer AC
3. Air

**INTERMEDIATE INTERVAL*****STIFF FOAM RECIPE:***

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 ( 11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard ( 9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

**PRODUCTION INTERVAL**

1. Alpha 1655  
Salt Inhibitor
2. Mil-Carb  
Calcium Carbonate
3. Cottonseed Hulls  
Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal  
Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol  
Amine Acid Complex – Shale Stabilizer
6. Xan-Plex  
Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)  
Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill  
Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda  
Sodium Hydroxide – Alkalinity Control
10. Mil-Lime  
Calcium Hydroxide – Lime
11. LD-9  
Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica  
Hydro-Biotite Mica – LCM

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13. Escaid 110  
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco  
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep  
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K  
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous  
Inorganic Salt
18. D-D  
Drilling Detergent – Surfactant
19. Terra-Rate  
Organic Surfactant Blend
20. W.O. Defoam  
Alcohol-Based Defoamer
21. Perma-Lose HT  
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D  
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells  
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite  
Natural Graphite – LCM
25. Mil Bar  
Barite – Weighting Agent
26. X-Cide 102  
Biocide
27. Soda Ash  
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol  
Amine Acid complex – Shale Stabilizer
29. Sulfatrol  
Sulfonated Asphalt – Shale Control Additive
30. Xanvis  
Viscosifier For Water-Based Muds
31. Milstarch  
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube  
Drilling Fluid Lubricant

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**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**

**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)**

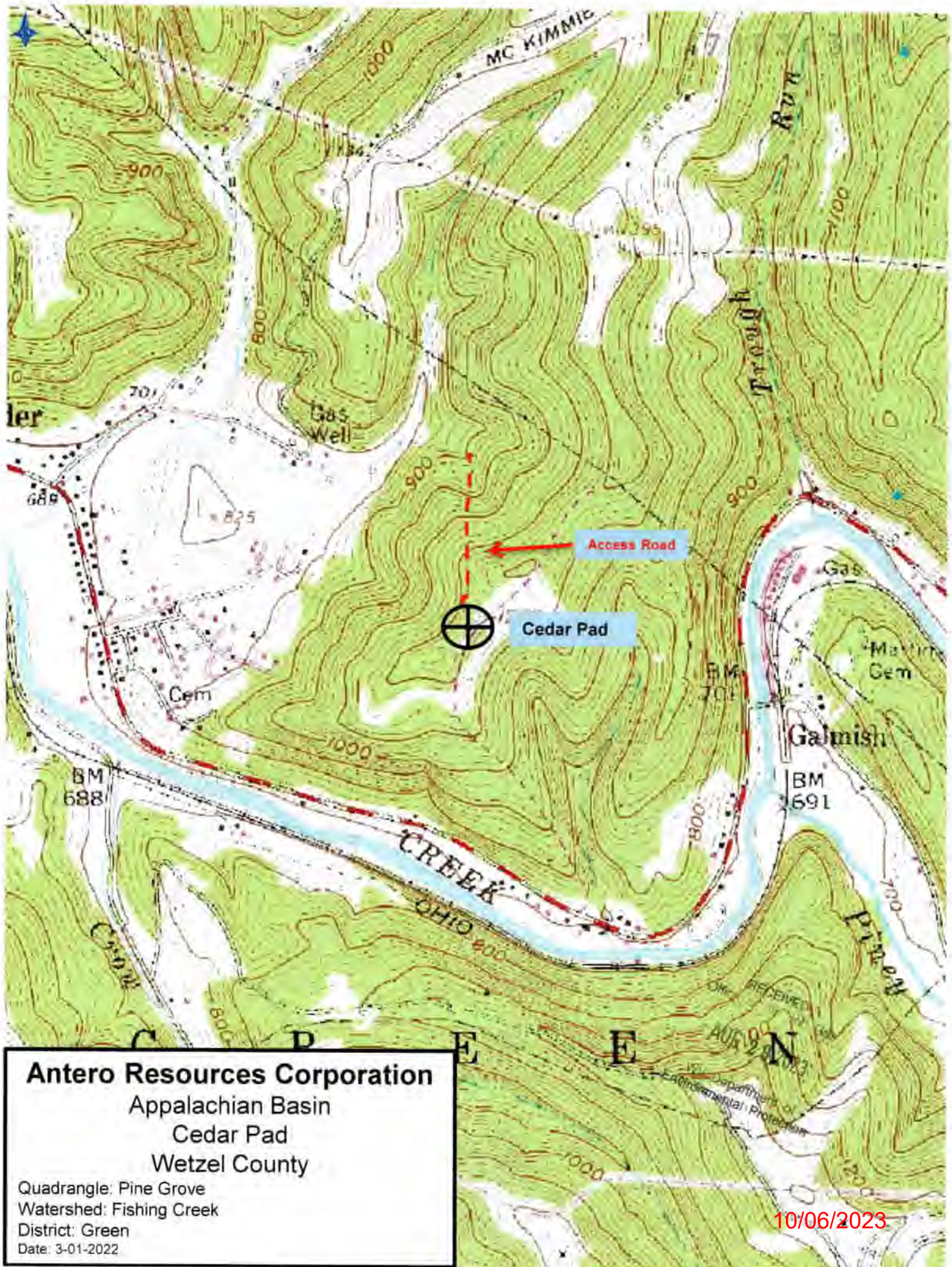
**Driving Directions:**

- 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**

*Handwritten signature and date*  
10/06/2023  
9-16-23



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

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

10/06/2023

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



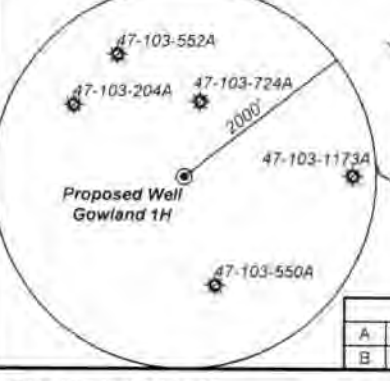
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D Miller*

Bradley D Miller, P.S. 2167



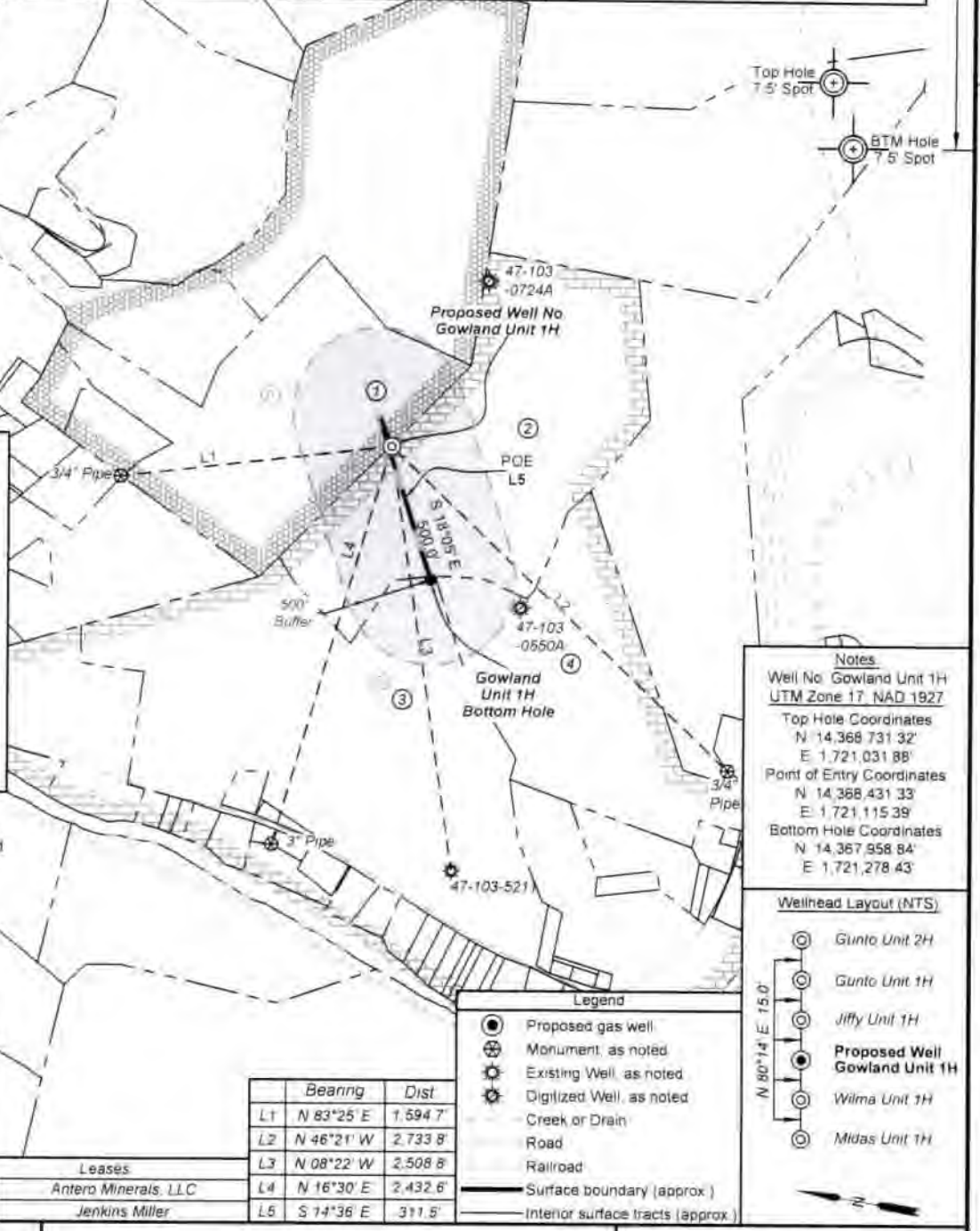
Note: 0 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 525' of the center of the well pad.



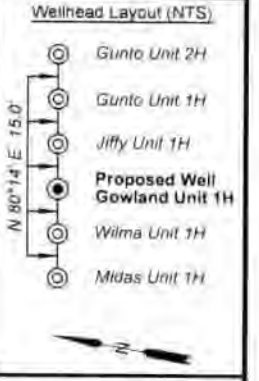
ID	TM-Par	Owner	Bk/Pg	Acres
1	13-40	Kenneth E & Vicky A. VanDyne	357/204	42.33
2	14-19	Dallison Lumber Company	357/267	51.50
3	13-83	Emma Virginia Miller	133/455	58.00
4	14-34	Thelma Deaton	493/482	41.00

1,582' to Top Hole  
1,338' to Bottom Hole  
LATITUDE 39 - 35 - 00  
LONGITUDE 80 - 42 - 30

Notes  
West Virginia Coordinate System of 1927, North Zone  
based upon Differential GPS Measurements  
Well No. Gowland Unit 1H Top Hole coordinates are:  
N 391,159.08' Latitude 39°34'03.40"  
E 1,657,783.81' Longitude 80°42'50.20"  
Bottom Hole coordinates are:  
N 390,382.33' Latitude 39°33'55.76"  
E 1,658,017.51' Longitude 80°42'47.08"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
N 4,379,816.203m N 4,379,580.749m  
E 524,586.361m E 524,661.501m  
Plat orientation and corner and well references are based upon the grid north meridian  
Well location references are based upon the magnetic meridian



Notes  
Well No. Gowland Unit 1H  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N 14,368,731.32'  
E 1,721,031.88'  
Point of Entry Coordinates  
N 14,368,431.33'  
E 1,721,115.39'  
Bottom Hole Coordinates  
N 14,367,958.84'  
E 1,721,278.43'



Legend

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

	Bearing	Dist
L1	N 83°25' E	1,594.7'
L2	N 46°21' W	2,733.8'
L3	N 08°22' W	2,508.8'
L4	N 16°30' E	2,432.6'
L5	S 14°36' E	311.5'

Leases	
A	Antero Minerals, LLC
B	Jenkins Miller

FILE NO: 122-34-G-18  
DRAWING NO: Gowland 1H 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: August 16, 2023  
OPERATOR'S WELL NO: Gowland 1H  
API WELL NO: 47-103-03614  
STATE: 47 COUNTY: 103 PERMIT: 03614

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

LOCATION: ELEVATION: Existing 1,276' Proposed 1,248' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove  
DISTRICT: Green Dallison COUNTY: Wetzel 10/06/2023  
SURFACE OWNER: 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) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,600' TVD / 9,300' 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

WW-6A1  
(5/13)

Operator's Well No. Gowland 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
<b>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

\*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.

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

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

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

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

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

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Page 1 of 1

10/06/2023

Operator's Well Number Gowland 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><u>B: Jenkins Miller Lease</u></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
<b><u>A: Antero Minerals, LLC Lease</u></b>			
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.

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4710303614

August 17, 2023

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: Gowland 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 Gowland 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 Gowland Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,



Kelsey Silipo  
Sr. Landman

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

Date of Notice Certification: 08/25/2023

API No. 47- 103 - \_\_\_\_\_  
Operator's Well No. Gowland 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: 524586.361m  
Northing: 4379816.203m  
Public Road Access: CR 52  
Generally used farm name: Kenneth E. & Vicky A. Vandyne

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

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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 notified 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.

AUG 29 2023

10/06/2023

**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>1815 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 29 day of August 2023.  
Stepan 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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 Oil and Gas  
 AUG 29 2023  
 Department of  
 Environmental Protection

WW-6A  
(9-13)

API NO. 47-103 **47 10303614**  
OPERATOR WELL NO. Gowland Unit 1H  
Well Pad Name: Cedar Pad

**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:** 8/28/2023 **Date Permit Application Filed:** 8/28/2023

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.

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

SURFACE OWNER(s)

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

Name: Dallison Lumber Company  
Address: P.O. Box 159  
Jacksonburg, WV 26377

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Emma Virginia Miller  
Address: 8619 Lynngate Drive  
Spring, TX 77373

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' **PAVED** and Gas  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: \_\_\_\_\_  
Address: \_\_\_\_\_ **WV Department of Environmental Protection**

\*Please attach additional forms if necessary

**AUG 29 2023**

**10/06/2023**

**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/mil-and-gas/pages/default.aspx](http://www.dep.wv.gov/mil-and-gas/pages/default.aspx).

**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

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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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WV Department of  
Environmental Protection

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.**

**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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WW-6A  
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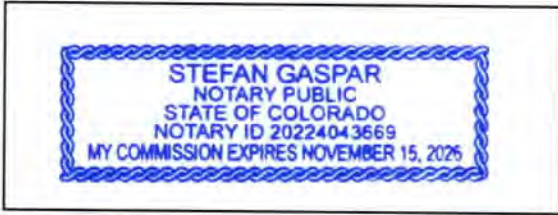
API NO. 47-103 -  
OPERATOR WELL NO. Gowland Unit 1H  
Well Pad Name: Cedar Pad

**Notice is hereby given by:**

Well Operator: Antero Resources Corporation *John M. Evered* Address: 1615 Wynkoop Street  
Telephone: (303) 357-7310 Denver, CO 80202  
Email: mturco@anteroresources.com 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 28 day of August 2023.  
Stefan Gaspar Notary Public  
My Commission Expires November 15, 2026

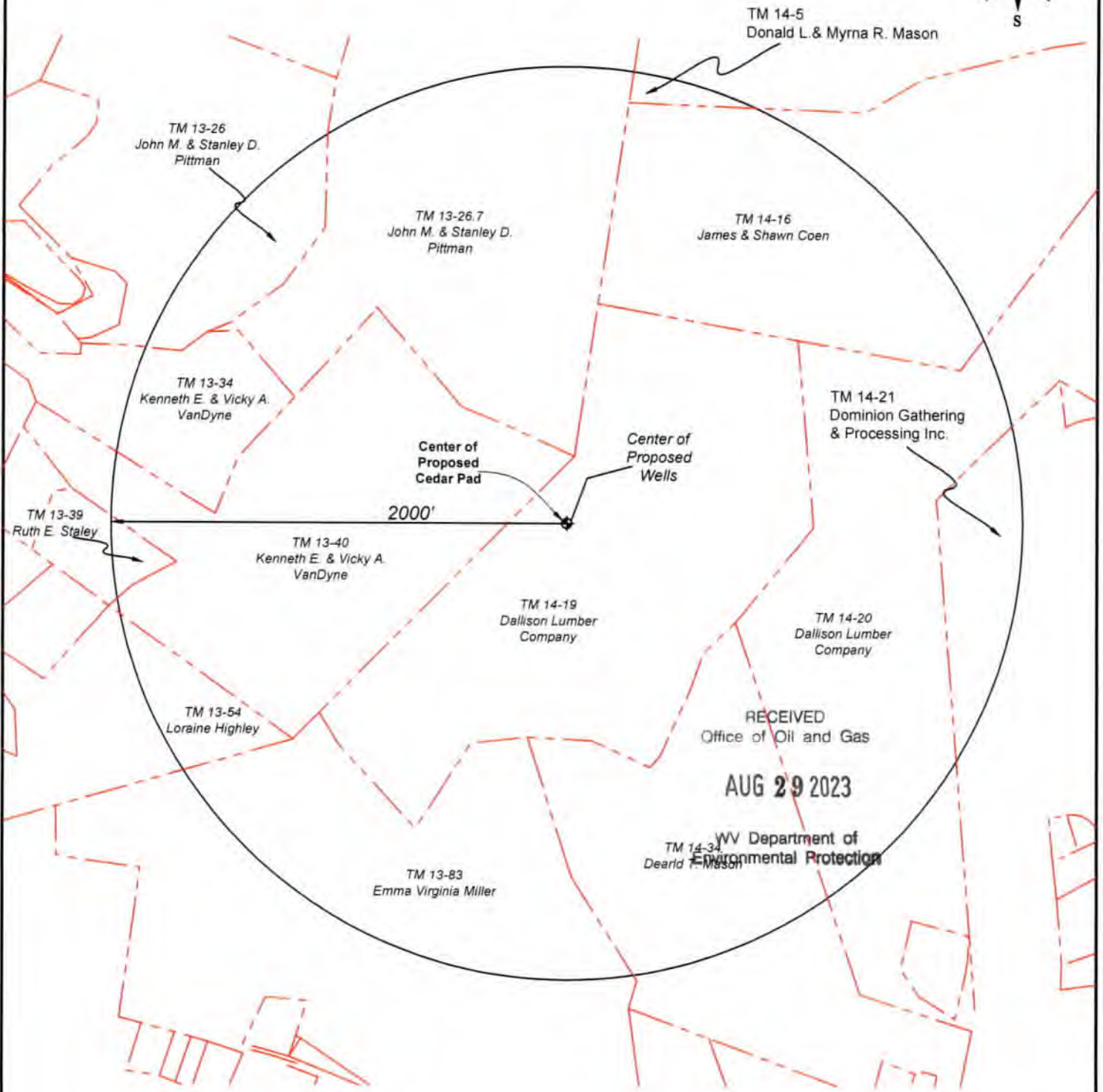
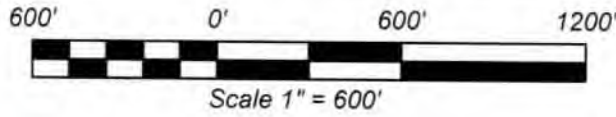
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# Cedar Drill Pad Water Well Map



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**Note**

No Water wells or springs found within 2,000' of pad

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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:** 06/20/2023

**Date Permit Application Filed:** 08/28/2023

**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:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>524586.361m</u>
County:	<u>Wetzel</u>		Northing:	<u>4379816.203m</u>
District:	<u>Green</u>	Public Road Access:	<u>CR 52</u>	
Quadrangle:	<u>Pine Grove 7.5'</u>	Generally used farm name:	<u>Kenneth E. &amp; Vicky A. VanDyne</u>	
Watershed:	<u>Fishing Creek</u>			

**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/protection/default.aspx](http://www.dep.wv.gov/oil-and-gas/protection/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@dep.wv.gov  
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).

10/06/2023

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF PLANNED OPERATION**

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

**Date of Notice:** 08/28/2023      **Date Permit Application Filed:** 08/28/2023

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

CERTIFIED MAIL       HAND  
RETURN RECEIPT REQUESTED      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

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

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

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83    Easting:	<u>524586.361m</u>
County:	<u>Wetzel</u>	Northing:	<u>4379816.203m</u>
District:	<u>Green</u>	Public Road Access:	<u>CR 52</u>
Quadrangle:	<u>Pine Grove 7.5'</u>	Generally used farm name:	<u>Kenneth E. &amp; Vicky A. VanDyne</u>
Watershed:	<u>Fishing Creek</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. 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).

Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7310  
Email: mluroo@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315

AUG 28 2023

**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 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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

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

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

August 23, 2023

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 Pad, Wetzel County  
Gowland Unit 1H 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 for access to the State Road for a well site located off Wetzel County Route 52 SLS MP 1.93.

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,

Gary K. Clayton, P.E.  
Regional Operations Engineer  
Central Office O&G Coordinator

AUG 29 2023

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

WV Department of  
Environmental Protection

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.)

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FRACTURING/STIMULATING INTERVAL

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

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AUG 29 2023  
Department of Environmental Protection

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

PAD NAME: Cedar Pad

REVIEWED BY: Mallory Turco

SIGNATURE: MAT TURCO

### 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

AUG 29 2023

WV Department of Environmental Protection

LOCATION COORDINATES				
SITE LOCATIONS	WV83-NF ( NORTH ZONE )		UTM83-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	39.585290	-80.706670	4381771.1379	525189.3871
CENTROID OF WELL PAD	39.567788	-80.713115	4379827.0267	524642.1577
VALVE PAD	39.566308	-80.714992	4379662.2572	524481.4518
CEDAR 5V WELL	39.568204	-80.712253	4379873.4152	524716.0172

# CEDAR WELL PAD ANTERO RESOURCES CORPORATION PERMIT SITE PLANS

WETZEL COUNTY, WEST VIRGINIA  
LITTLE MUSKINGUM - MIDDLE ISLAND CREEK WATERSHED

SHEET INDEX			
C000 - COVER SHEET	C602 - PROFILES AND SECTIONS	C620 - PROFILES AND SECTIONS	C905 - RECLAMATION PLAN
C001 - GENERAL NOTES	C603 - PROFILES AND SECTIONS	C621 - PROFILES AND SECTIONS	C906 - RECLAMATION PLAN
C002 - MATERIAL QUANTITIES	C604 - PROFILES AND SECTIONS	C622 - PROFILES AND SECTIONS	C907 - RECLAMATION PLAN
C003 - MASTER LEGEND	C605 - PROFILES AND SECTIONS	C623 - PROFILES AND SECTIONS	
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C102 - EXISTING CONDITIONS	C608 - PROFILES AND SECTIONS	C626 - PROFILES AND SECTIONS	
C200 - ISOPACH PLAN	C609 - PROFILES AND SECTIONS	C800 - DETAILS	
C300 - OVERALL SITE PLAN	C610 - PROFILES AND SECTIONS	C801 - DETAILS	
C301 - SITE PLAN	C611 - PROFILES AND SECTIONS	C802 - DETAILS	
C302 - SITE PLAN	C612 - PROFILES AND SECTIONS	C803 - DETAILS	
C303 - SITE PLAN	C613 - PROFILES AND SECTIONS	C804 - DETAILS	
C304 - SITE PLAN	C614 - PROFILES AND SECTIONS	C805 - DETAILS	
C305 - SITE PLAN	C615 - PROFILES AND SECTIONS	C900 - OVERALL RECLAMATION PLAN	
C306 - SITE PLAN	C616 - PROFILES AND SECTIONS	C901 - RECLAMATION PLAN	
C307 - SITE PLAN	C617 - PROFILES AND SECTIONS	C902 - RECLAMATION PLAN	
C600 - PROFILES AND SECTIONS	C618 - PROFILES AND SECTIONS	C903 - RECLAMATION PLAN	
C601 - PROFILES AND SECTIONS	C619 - PROFILES AND SECTIONS	C904 - RECLAMATION PLAN	

**GENERAL DESCRIPTION:**  
THE ACCESS ROAD AND WELL PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

**FLOODPLAIN NOTES:**  
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY IDENTIFIED FLOOD ZONES. PER FEMA MAP NUMBER 54103C0180C.

**MISS UTILITY STATEMENT:**  
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN; TICKET #2021252794. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

**ENTRANCE PERMIT:**  
ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

**ENVIRONMENTAL NOTES:**  
STREAM AND WETLAND DELINEATIONS WERE PERFORMED ON AUGUST 24, 2020 AND AUGUST 17, 2021 BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC (CEC) TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE STREAM AND WETLAND DELINEATION MAP WAS PREPARED BY CEC AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATIONS. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. ANTERO RESOURCES CORPORATION SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

**GEOTECHNICAL NOTES:**  
THE PROPOSED 2:1 SLOPES AND 1.5:1 SLOPES SHALL BE FIELD VERIFIED BY A CERTIFIED GEOTECHNICAL ENGINEER TO ENSURE THE PROPOSED SLOPES ARE ADEQUATE PRIOR TO CONSTRUCTION. ACCESS ROAD CONSTRUCTION SHALL BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER OR PROJECT DESIGN ENGINEER DURING CONSTRUCTION.

**PROJECT CONTACTS:**

<b>OPERATOR</b> ANTERO RESOURCES CORPORATION 535 WHITE OAKS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 842-4100 FAX: (304) 842-4102	<b>SURVEYOR:</b> CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 120 GENESIS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 933-3119
<b>ELI WAGONER - ENVIRONMENTAL &amp; REGULATORY MANAGER</b> OFFICE: (304) 842-4191 CELL: (304) 627-7405	<b>ENVIRONMENTAL:</b> CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 120 GENESIS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 933-3119
<b>AARON KUNZLER - CONSTRUCTION MANAGER</b> OFFICE: (304) 842-4401 CELL: (304) 641-8242	<b>CIVIL:</b> CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 120 GENESIS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 933-3119
<b>ROBERT WIRKS - DESIGN MANAGER</b> OFFICE: (304) 842-4401 CELL: (304) 627-7405	<b>GEOTECHNICAL:</b> CIVIL & ENVIRONMENTAL CONSULTANTS, INC. 120 GENESIS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 933-3119
<b>SCOTT HOFFER - UTILITY SUPERVISOR</b> OFFICE: (304) 842-4401 CELL: (304) 615-8699	
<b>DIANA HOFF - SVP OPERATIONS</b> OFFICE (303) 357-6904	

**RESTRICTION NOTES:**

- THERE ARE NO LAKES, RESERVOIRS, OR PERENNIAL STREAM WITHIN 100 FEET OF THE WELL PAD.
- THERE ARE WETLANDS THAT WILL BE IMPACTED WITHIN 100 FEET, AND INSIDE OF THE WELL PAD LOD AND WILL NEED TO BE PERMITTED THROUGH THE APPROPRIATE AGENCIES, THEREFOR A WAIVER WILL BE REQUESTED.
- THERE ARE NO EPHEMERAL, INTERMITTENT, OR PERENNIAL STREAM IMPACTS WITHIN THE LOD THAT WILL NEED TO BE PERMITTED.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) TO BE DRILLED.
- THERE ARE NO OCCUPIED DWELLINGS OR AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

**REPRODUCTION WARNING**

THE PLANS HAVE BEEN CREATED ON ANS I (22" X 34") SHEETS. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

\*\*\*WARNING\*\* INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

**DESIGN CERTIFICATION:**

THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS CRS 35-8.

**WEST VIRGINIA 811 CALL BEFORE YOU DIG!**

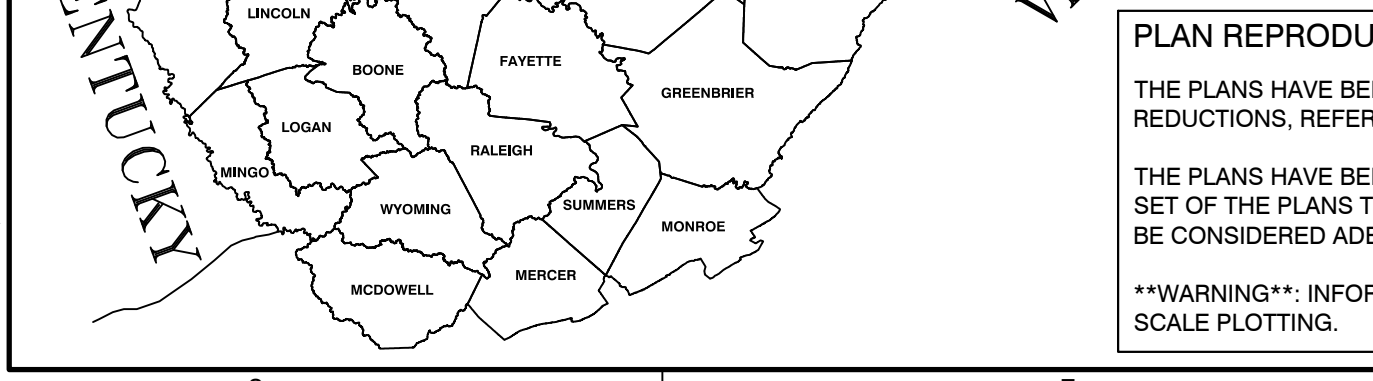
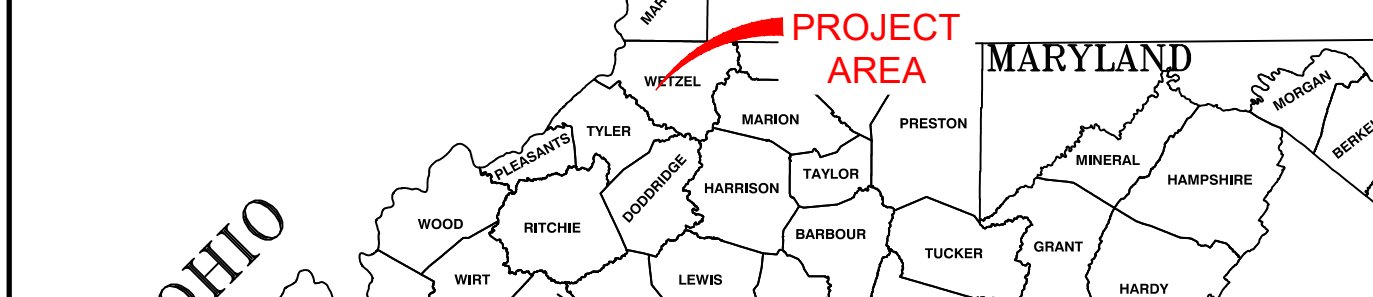
WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!

LIMITS OF DISTURBANCE PARCEL BREAK UPS - CEDAR WELL PAD				
WETZEL COUNTY, WEST VIRGINIA				
OWNER	TM-PARCEL	DEED-PAGE	TYPE OF DISTURBANCE	ACERAGE
MCKIMMIE RIDGE ROAD	0	0	PARCEL INFORMATION	
			Access Road	0.13
			<b>PARCEL TOTAL</b>	<b>0.13</b>
MASON KAREN B	9-44	353-216	PARCEL INFORMATION	
			Access Road	0.55
			<b>PARCEL TOTAL</b>	<b>0.55</b>
VANDYNE KENNETH & VICKY A	14-1	339-472	PARCEL INFORMATION	
			Access Road	9.49
			Spoil 1	1.24
			<b>PARCEL TOTAL</b>	<b>10.73</b>
MASON DONALD L & MYRNA R.	14-5	390-62	PARCEL INFORMATION	
			Access Road	5.47
			<b>PARCEL TOTAL</b>	<b>5.47</b>
SLATER LAURA ANN	13-17	423-93	PARCEL INFORMATION	
			Access Road	4.06
			Topsoil/Stripping 1	1.37
			<b>PARCEL TOTAL</b>	<b>5.43</b>
PITTMAN JOHN MICHAEL & PITTMAN STANLEY DALE	13-26-7	458-837	PARCEL INFORMATION	
			Access Road	4.08
			<b>PARCEL TOTAL</b>	<b>4.08</b>
COEN JAMES E & SHAWN	14-16	454-45	PARCEL INFORMATION	
			Access Road	3.33
			<b>PARCEL TOTAL</b>	<b>3.33</b>
DALLISON LUMBER COMPANY	14-19	53-205	PARCEL INFORMATION	
			Access Road	2.95
			Valve Pad Access Road	0.65
			Well Pad	12.76
			Valve Pad	1.45
			Spoil 2	2.52
			Spoil 3	1.44
			Topsoil/Stripping 2	2.04
			<b>PARCEL TOTAL</b>	<b>23.81</b>
MILLER EMMA VIRGINIA RATLIFF RONALD WAYNE	13-83	133-455	PARCEL INFORMATION	
			Spoil 2	2.07
			Spoil 3	1.54
			Topsoil/Stripping 3	3.67
			<b>PARCEL TOTAL</b>	<b>7.28</b>
HIGLEY LORRAINE	13-54	81-258	PARCEL INFORMATION	
			Spoil 3	0.27
			Topsoil/Stripping 3	2.16
			<b>PARCEL TOTAL</b>	<b>2.43</b>
VANDYNE KENNETH E & VANDYNE VICKY E	13-40	357-204	PARCEL INFORMATION	
			Access Road	0.29
			Well Pad	5.69
			Spoil 3	0.03
			Spoil 4	2.22
			Topsoil/Stripping 3	0.38
			<b>PARCEL TOTAL</b>	<b>8.61</b>

L.O.D. AREAS			
DESCRIPTION	ACRES		
Access Road	30.35		
Valve Pad Access Road	0.65		
Well Pad	18.45		
Valve Pad	1.45		
Spoil 1	1.24		
Spoil 2	4.59		
Spoil 3	3.28		
Spoil 4	2.22		
Topsoil/Stripping 1	1.37		
Topsoil/Stripping 2	2.04		
Topsoil/Stripping 3	6.21		
<b>TOTAL</b>	<b>71.85</b>		

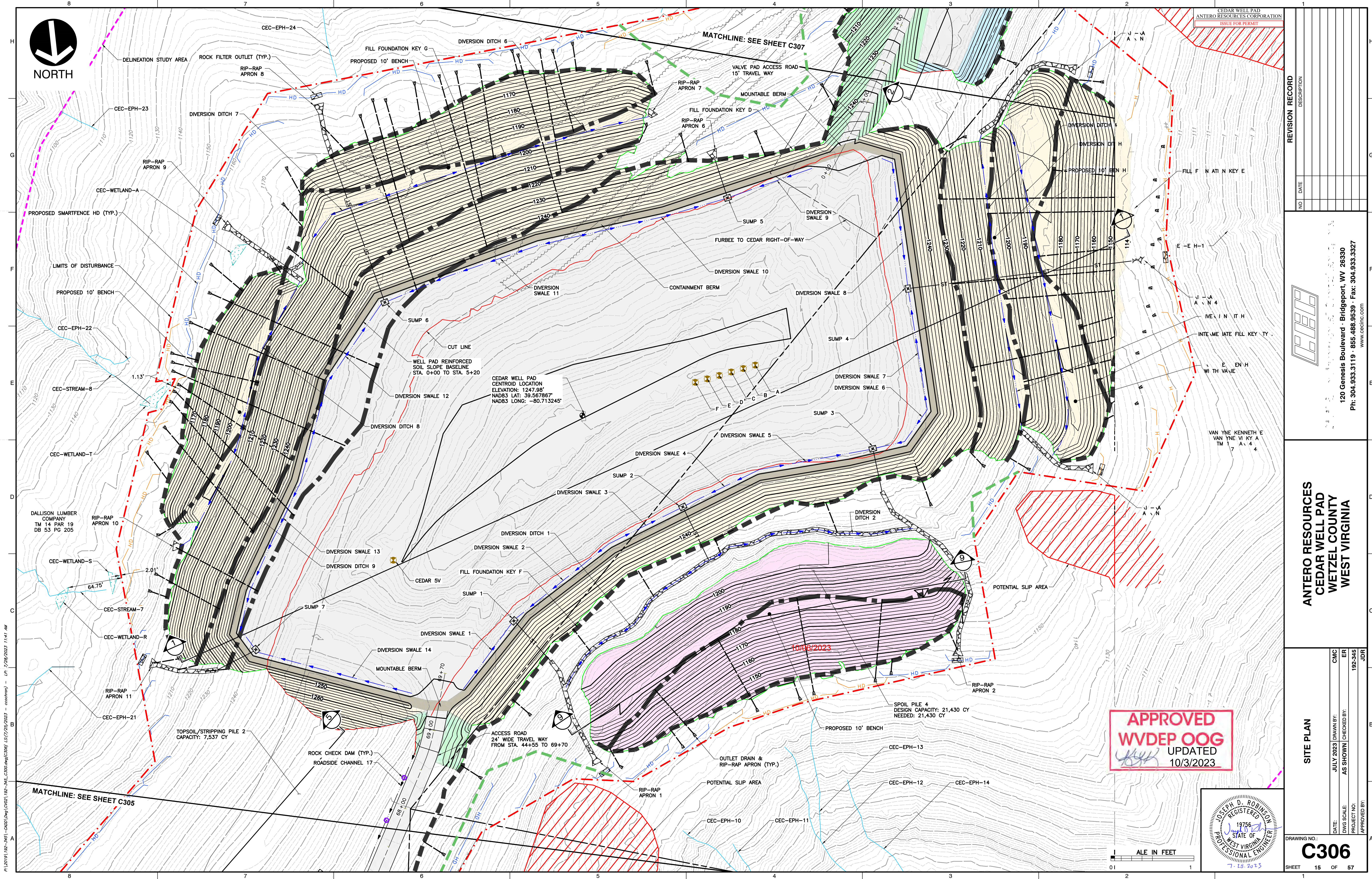
AQUATIC IMPACTS WITHIN LOD			
IDENTIFIER	TYPE OF STREAM/WETLAND	DISTURBANCE WITHIN LIMITS OF DISTURBANCE	
		LF	AC
CEC-WETLAND-A	PEM	N/A	0.005
CEC-WETLAND-I	PEM	N/A	0.014
CEC-WETLAND-J	PEM	N/A	0.020
<b>TOTAL WETLAND IMPACTS</b>		<b>N/A</b>	<b>0.039</b>

WELL LEGEND					
WELL LETTER	WELL NAME	WV NORTH NAD 27	WV NORTH NAD 83	UTM-M	NAD 83
	CEDAR 5V (PERMITTED)	N: 391339.771 E: 1658212.392	N: 391375.873 E: 1626772.438	N: 4379873.415 E: 524716.017	NAD 83 LAT: 39°34'05.53" LONG: -80°42'44.11"
A	MIDAS 1H	N: 391153.9883 E: 1657754.2484	N: 391190.1379 E: 1626314.2766	N: 4379814.499 E: 524577.380	NAD 83 LAT: 39°34'03.64" LONG: -80°42'49.93"
B	WILMA UNIT 1H	N: 391156.5343 E: 1657769.0292	N: 391192.6843 E: 1626329.0578	N: 4379815.350 E: 524581.870	NAD 83 LAT: 39°34'03.67" LONG: -80°42'49.74"
C	GOWLAND 1H	N: 391159.0802 E: 1657783.8100	N: 391195.2307 E: 1626343.8391	N: 4379816.201 E: 524586.361	NAD 83 LAT: 39°34'03.69" LONG: -80°42'49.55"
D	JIFFY UNIT 1H	N: 391161.6262 E: 1657798.5908	N: 391197.7770 E: 1626358.6203	N: 4379817.052 E: 524590.851	NAD 83 LAT: 39°34'03.72" LONG: -80°42'49.36"
E	GUNTO 1H	N: 391164.1722 E: 1657813.3716	N: 391200.3234 E: 1626373.4016	N: 4379817.903 E: 524595.341	NAD 83 LAT: 39°34'03.75" LONG: -80°42'49.18"
F	GUNTO 2H	N: 391166.7182 E: 1657828.1524	N: 391202.8698 E: 1626388.1828	N: 4379818.754 E: 524599.831	NAD 83 LAT: 39°34'03.77" LONG: -80°42'48.99"

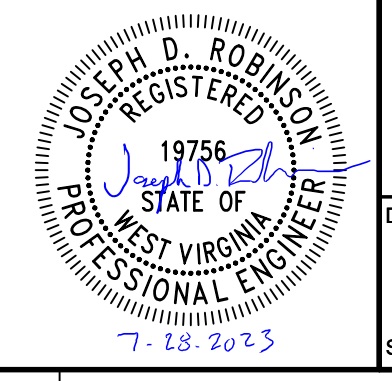


120 Genesis Boulevard - Bridgeport, W 26330  
Ph: 304 933 3119 - 855 488 9639 - Fax: 304 933 3327  
www.cecinc.com

COVER SHEET  
DRAWING NO: C000  
SHEET 1 OF 57



**APPROVED WVDEP OOG**  
UPDATED  
10/3/2023



NO.	DATE	DESCRIPTION

**ANTERO RESOURCES CORPORATION**  
120 Genesis Boulevard • Bridgeport, WV 26330  
Ph: 304.933.3119 • 855.488.9539 • Fax: 304.933.3327  
www.acerinc.com

**ANTERO RESOURCES CORPORATION**  
**CEDAR WELL PAD**  
**WETZEL COUNTY**  
**WEST VIRGINIA**

SITE PLAN	
DATE:	JULY 2023 [DRAWN BY: CHM]
DWG SCALE:	AS SHOWN [CHECKED BY: ER]
PROJECT NO.:	192-945
APPROVED BY:	JDR
DRAWING NO.:	<b>C306</b>
SHEET:	15 OF 57

P:\192-945-CAD\DWG\C306\192-945-C306.dwg (C306) LS(7/25/2023 - 11:41 AM) - LP: 7/28/2023 11:41 AM