



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, February 10, 2020
WELL WORK PERMIT
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202


Re: Permit approval for FENDER 2H
47-095-02671-00-00

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.

James A. Martin
Chief

Operator's Well Number: FENDER 2H
Farm Name: MICHAEL J. & MELINDA R. 
U.S. WELL NUMBER: 47-095-02671-00-00
Horizontal 6A New Drill
Date Issued: 2/10/2020

A handwritten signature in blue ink, appearing to read 'J. Martin', is written over the typed name and title of James A. Martin.

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

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. 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.

API Number: _____

4709502671

PERMIT CONDITIONS

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.

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

1) Well Operator: Antero Resources Corporation 494507062 095 - Tyler Ellsworth Middlebourne 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Fender Unit 2H Well Pad Name: Hogue Pad

3) Farm Name/Surface Owner: Michael J. & Melinda R. Hogue Public Road Access: Klondike Acres Road

4) Elevation, current ground: 1033' Elevation, proposed post-construction: ~1014.5'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

*JCB
1/19/2020*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6000' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 14800' MD

11) Proposed Horizontal Leg Length: 4692'

12) Approximate Fresh Water Strata Depths: 456'

13) Method to Determine Fresh Water Depths: 47-095-00704

14) Approximate Saltwater Depths: 1581'

15) Approximate Coal Seam Depths: 740'

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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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	16"	New	H-40	94#	80	80	CTS, 63 Cu. Ft.
Fresh Water	10 3/4"	New	J-55	40.5#	506 *see # 19	506 *see # 19	CTS, 368 Cu. Ft.
Coal	7 5/8"	New	K-55	26.4#	2500	2500	CTS, 698Cu. Ft.
Intermediate							
Production	5"	New	P-110	18#	14800	14800	1271 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*JCB
1/19/2020*

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	16"	20"	0.438"	2630	50	Class A	~1.2
Fresh Water	10 3/4"	13 1/2"	0.35"	2730	1000	Class A	~1.2
Coal	7 5/8"	9 7/8"	0.328"	4140	1500	Class A	~1.2
Intermediate							
Production	5"	6 3/4"	0.362"	15840	2500	Class H	~1.26
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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

Drill, perforate, fracture a new horizontal shallow well and complete 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

*QCB
7/19/2020*

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 28.10 acres

22) Area to be disturbed for well pad only, less access road (acres): 12.79 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers
Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.
Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.
Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake
Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat
Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

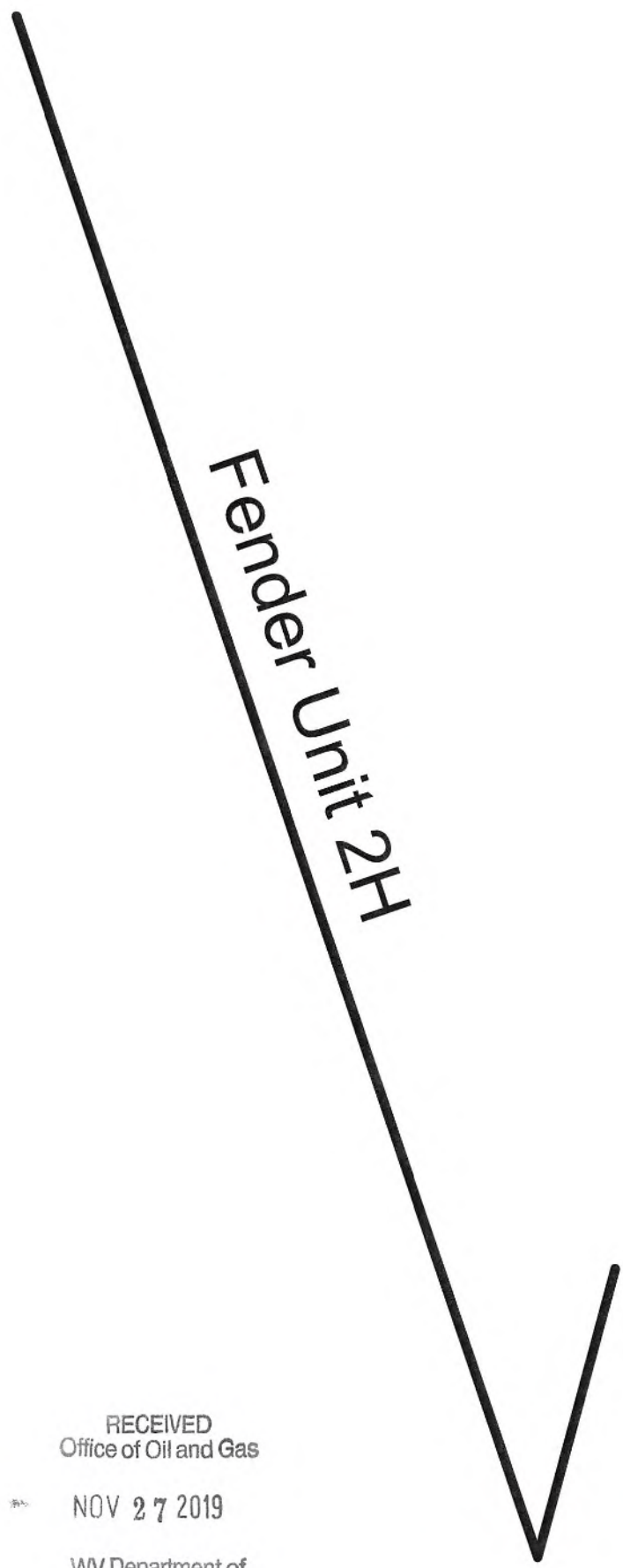
25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.
Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

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11/10/2020



Fender Unit 2H



Antero Resources Corporation

Fender Unit 2H - AOR



REMARKS
No Wells of Interest

October 30, 2019

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WW-9
(4/16)

API Number 47 - 095
Operator's Well No. Fender Unit 2H

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) Outlet Middle Island Creek Quadrangle Middlebourne 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

JCB
12/12/2019

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 - Dust/Suff 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)

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* FOR:

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Office of Oil and Gas

Company Official (Typed Name) Gretchen Kohler

Company Official Title Senior Environmental & Regulatory Manager

DEC 19 2019

Subscribed and sworn before me this 25th day of NOVEMBER, 2019

WV Department of
Environmental Protection

[Signature]

Notary Public

My commission expires 3.13.2022

MEGAN GRIFFITH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184011666
MY COMMISSION EXPIRES MARCH 13, 2022

4709502671

Form WW-9

Operator's Well No. Fender Unit 2H

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 7.45 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

Private Access Upgrade (4.92 Acres) + Main Access Road (3.32 Acres) + Land Owner Access (1.84 Acres) + Well Pad (12.79 Acres) + Staging Pad 1 (1.91 Acres) + Staging Pad 2 (0.97 Acres) + Topsoil/Stripping Pile (2.35 Acres) = Total 28.10 Acres

Seed Mixtures

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 (Hogue Pad Design)		See attached Table IV-4A for additional seed type (Hogue East 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: J. Craig Blens
Comments: _____

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Title: Oil & Gas Inspector Date: 12/12/2019

Field Reviewed? (X) 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
Klondike Acres Road
Middlebourne, WV 26149

Well Site Safety Plan

Antero Resources

**Well Name: Fender Unit 1H-3H, Kramer Unit 1H-2H &
 Lancaster Unit 1H-3H**

Pad Location: HOGUE PAD

Tyler County/Ellsworth District

GPS Coordinates:

Entrance - Lat 39°28'10.0"/Long -80°53'37.6" (NAD83)

Pad Center - Lat 39°28'18.6"/Long -80°53'53.2" (NAD83)

Driving Directions:

From the intersection of Broad St and Main St in the town of Middlebourne, head southwest on WV-18 S/Main St toward Wilcox Ave for 0.3 miles. Turn right onto Bridgeway Rd for 0.1 miles. Turn left onto Middlebourne-Wick/Wick Rd for 2.0 miles. Turn left onto Middlebourne-Wick for 0.1 miles. Keep left to continue on Klondike Ridge for 0.4 miles. Turn left onto Klondike Ridge for 0.6 miles. Access road will be on your left.

Alternate Route:

From the intersection of WV-18 and Klondike Ridge / 46 in Centerville, head northwest on Klondike Ridge toward Wheelers Run for 5.6 miles. Sharp right onto Klondike Acres Rd for 0.6 miles. Access road will be on your left.

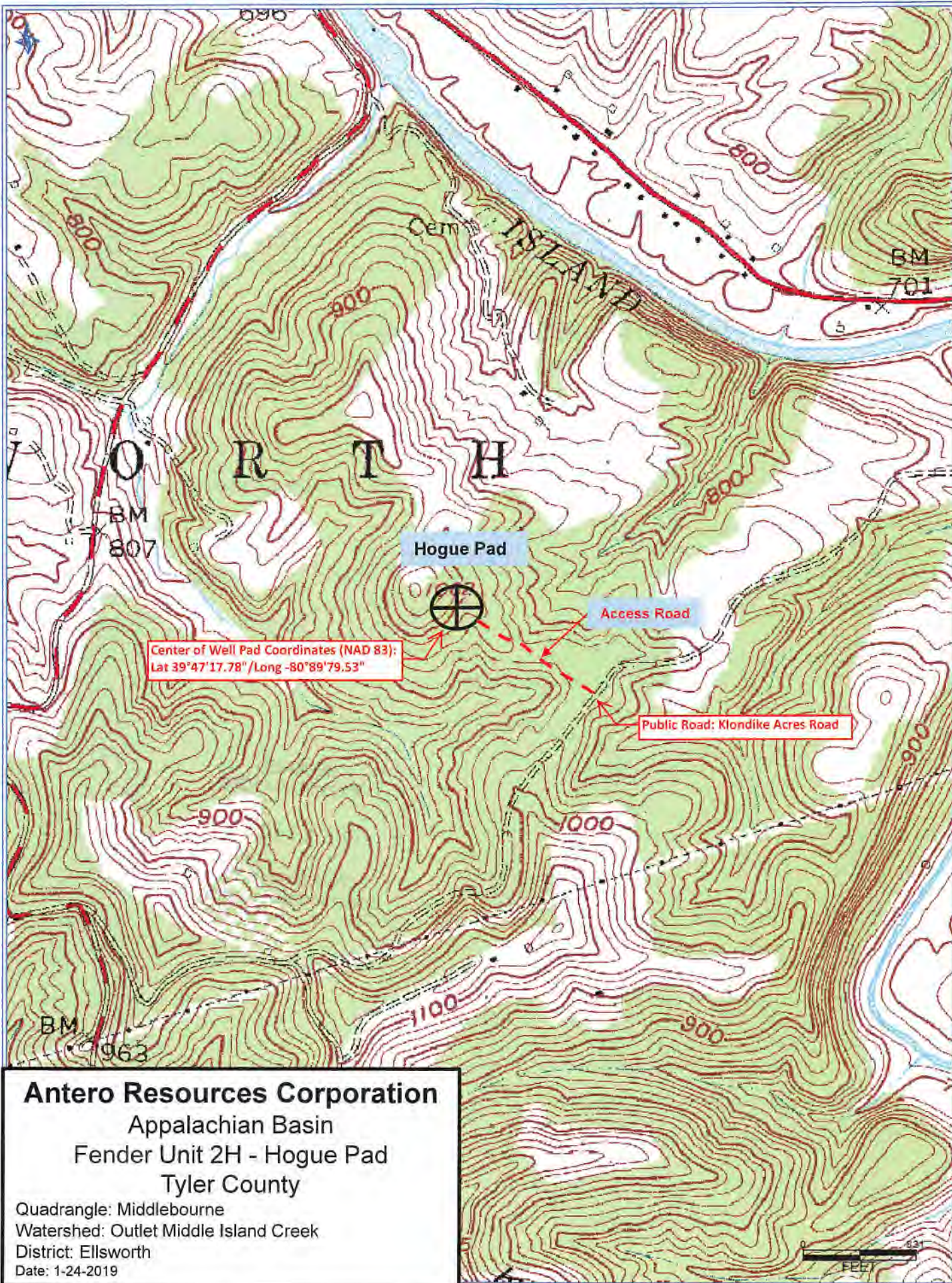
EMERGENCY (24 HOUR) CONTACT 1-800-878-1373

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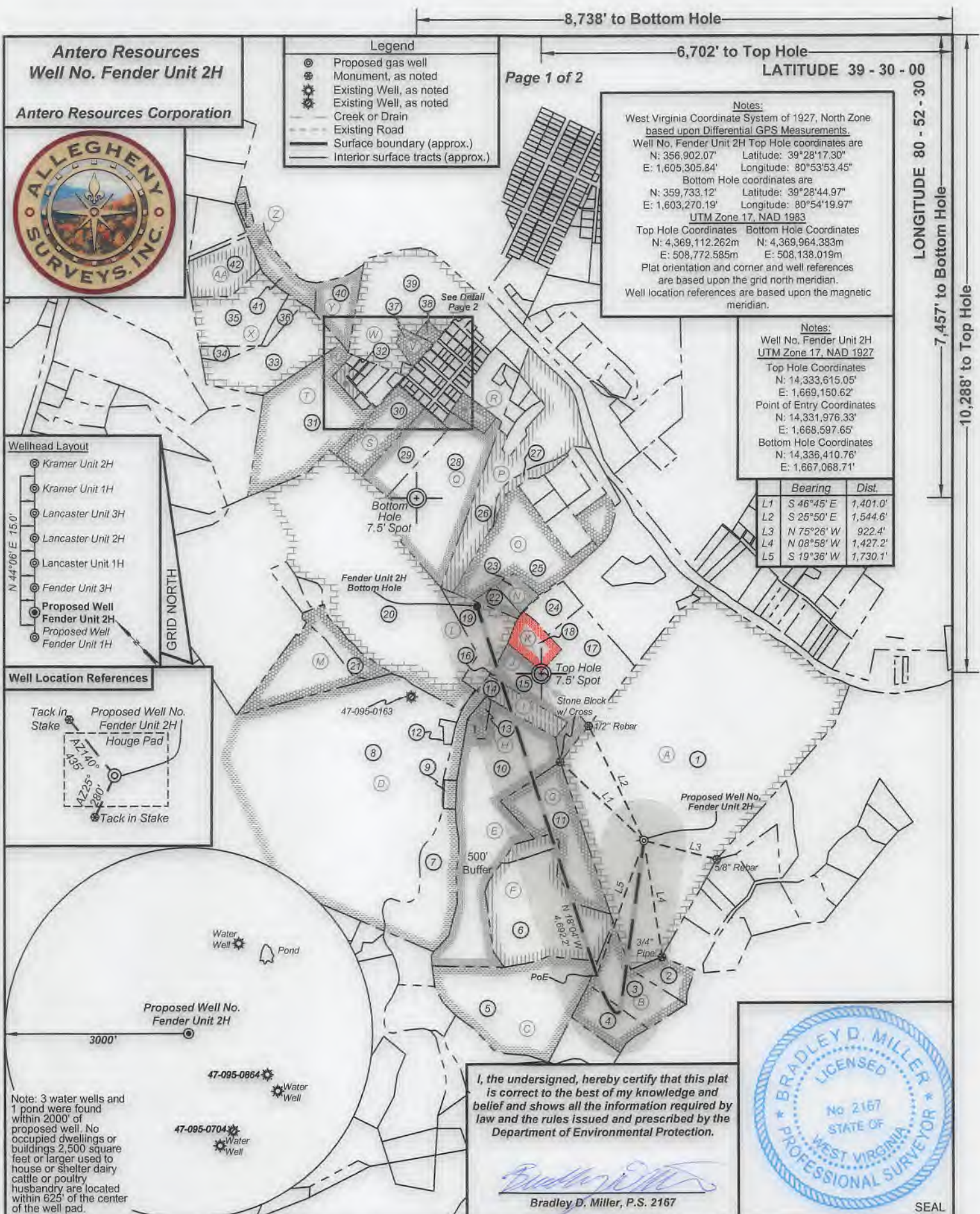
JOB
10/21/2019



Antero Resources Corporation
 Appalachian Basin
 Fender Unit 2H - Hogue Pad
 Tyler County

Quadrangle: Middlebourne
 Watershed: Outlet Middle Island Creek
 District: Ellsworth
 Date: 1-24-2019





Antero Resources
Well No. Fender Unit 2H

Antero Resources Corporation

Wellhead Layout

- Kramer Unit 2H
- Kramer Unit 1H
- Lancaster Unit 3H
- Lancaster Unit 2H
- Lancaster Unit 1H
- Fender Unit 3H
- Proposed Well Fender Unit 2H
- Proposed Well Fender Unit 1H

GRID NORTH
N 44°06' E 15.0'

Well Location References

Tack in Stake Proposed Well No. Fender Unit 2H Houge Pad

427°40' 435'

422°5' 280'

Tack in Stake

Proposed Well No. Fender Unit 2H

3000'

47-095-0864

47-095-0704

Note: 3 water wells and 1 pond were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

Legend

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

8,738' to Bottom Hole

6,702' to Top Hole

Page 1 of 2

LATITUDE 39 - 30 - 00

LONGITUDE 80 - 52 - 30

LONGITUDE 80 - 52 - 30

7,457' to Bottom Hole

10,288' to Top Hole

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements
Well No. Fender Unit 2H Top Hole coordinates are
N: 356,902.07' Latitude: 39°28'17.30"
E: 1,605,305.84' Longitude: 80°53'53.45"
Bottom Hole coordinates are
N: 359,733.12' Latitude: 39°28'44.97"
E: 1,603,270.19' Longitude: 80°54'19.97"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,369,112.262m N: 4,369,964.383m
E: 508,772.585m E: 508,138.019m
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. Fender Unit 2H UTM Zone 17, NAD 1927
Top Hole Coordinates
N: 14,333,615.05'
E: 1,669,150.62'
Point of Entry Coordinates
N: 14,331,976.33'
E: 1,668,597.65'
Bottom Hole Coordinates
N: 14,336,410.76'
E: 1,667,068.71'

Bearing	Dist.
L1 S 46°45' E	1,401.0'
L2 S 26°50' E	1,544.6'
L3 N 75°26' W	922.4'
L4 N 08°58' W	1,427.2'
L5 S 19°36' W	1,730.1'

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

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



FILE NO: 17-54-E-19
DRAWING NO: Fender Unit 2H Well Plat
SCALE: 1" = 1500'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: November 19, 20 19
OPERATOR'S WELL NO. Fender 2H
API WELL NO 464
47 - 095 - 02671
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
Proposed 1,014.5'
Existing 1,033'
LOCATION: ELEVATION: WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Ellsworth COUNTY: Tyler
SURFACE OWNER: Michael J. & Melinda R. Hogue Terry Lee Fiber; James F. Doan, et ux;
Joe & Shirley Varese; Peter W. & Irmagard E. Guenter, Joint Living Trust; ACREAGE: 192.0
ROYALTY OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2) LEASE NO: ACREAGE: 18.89; 11.318;
93.1; 58.27275;
191.5; 35.9; 36.5
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 6,000' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 14,800' MD

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

Antero Resources
Well No. Fender Unit 2H
Antero Resources Corporation



Leases	
A	Michael J. & Melinda R. Hogue
B	James F. Doan, et ux
C	Ryan L. Walton, et ux
D	The Swan Living Trust
E	David L. Lancaster, et ux
F	Ryan L. Walton, et ux
G	David L. Lancaster, et ux
H	Kenneth W. Lancaster
I	Terry Lee Fiber
J	Joe & Shirley Varese
K	OPEN
L	Peter W. & Irmagard E. Guenter Joint Living Trust
M	Thomas & Cynthia H. Hall
N	BRC Appalachian Minerals I, LLC
O	Robert C. Kramer
P	Charles E. Anderson, et ux
Q	Ruth E. Blake
R	Earnestine Pelikan & David Leasure
S	Betty Lou Hadley
T	Sam Maxson
U	Larry K. Spencer
V	Tustin Family Trust
W	Tustin Family Trust
X	BRC Appalachian Minerals I, LLC
Y	Nellie M. Wilson
Z	Arthur D. Haught
AA	Mary Frances Carpenter
AB	Wanda M. Spencer
AC	Larry K. Spencer
AD	Harold L. Holloway, Jr., et ux
AE	Michael H. Glover, et ux
AF	Betty Lou Hadley
AG	Jordan L. & Michael P. Haught
AH	James M. Glover, et ux
AI	James M. Glover, et ux
AJ	April N. DeLong
AK	Ruth Blake
AL	Ruth Blake
AM	Betty Lou Hadley
AN	James D. Anderson & Tracy A. Doll
AO	Betty Lou Hadley
AP	Bessie L. Matthews, et vir
AQ	Betty Lou Hadley
AR	Betty Lou Hadley
AS	Betty Lou Hadley
AT	Stephen D. Ashley, et ux
AU	James M. Glover, et ux
AV	Martha J. Hayes, et vir
AW	Betty Lou Hadley
AX	Betty Lou Hadley
AY	NO LEASE
AZ	Betty Hadley
BA	Laura June Smith
BB	Kathryn Knowlton
BC	Crystal Christophel
BD	Timothy Stanley, et ux
BE	Donald E. Huffman
BF	Betty Lou Hadley
BG	Betty Lou Hadley
BH	Nancy Glover
BI	William H. Eddy

ID	TM/Par	Owner	Bk/Pg	Acres
1	20/108	Michael J. & Melinda R. Hogue	348/404	192.00
2	26/46.10	Leon & Drema Gall Ison	359/311	4.98
3	26/46.5	Richard Doty	493/673	13.14
4	26/46.4	Timothy F. & Jasmine Y. Kanz	415/716	8.10
5	26/22	Ryan Lee & Melinda Jo Walton	342/687	36.50
6	26/21	Ryan Lee & Melinda Jo Walton	342/687	35.90
7	26/20	Kenneth & Brenda Lancaster	210/502	20.00
8	20/102	Antero Midstream LLC	575/69	203.59
9	20/103	Kenneth & Brenda Lancaster	210/341	1.20
10	20/104	David Lancaster	210/505	57.00
11	20/107	David L. & Kathy A. Lancaster	314/344	18.89
12	20/102.1	Terrell Lee Henderson	445/302	0.951
13	20/104.1	Kenneth & Brenda Lancaster	328/13	1.796
14	20/105.1	Terry Lee Fiber	335/682	6.06
15	20/105	Joe & Shirley Varese	352/736	11.322
16	20/105.2	Terry Lee Fiber	336/480	0.098
17	20/106	Eugene F. & Phyllis A. Howell	223/371	19.76
18	20/106.1	Lee Ann Hall	486/806	5.493
19	20/99	Pioneer Land Company LLC	431/414	10.00
20	20/85	Pioneer Land Company LLC	431/414	83.10
21	20/83.5	Thomas & Cynthia Hall	392/229	6.416
22	20/93.1	Vernon Stevens	423/703	2.14
23	20/93.5	Nina Smith & Mary Bennett	308/115	2.88
24	20/106.2	Nancy Forester	328/633	5.429
25	20/93	Robert C. Kramer	547/650	23.964
26	20/92	Charles & Doris Anderson	210/359	27.00
27	20/94	Charles & Doris Anderson	217/398	2.806
28	20/86	Ruth E. Blake	317/103	23.75
29	20/44.1	Ruth E. Blake	317/103	10.17
30	20/44.2	Roy D. Hadley & Betty L. Gully	295/375	11.27
31	20/43	Janet Neff, et al	429/173	35.00
32	20A/1	William G. & Larry K. Spencer	296/368	1.71
33	20/42	Janet Neff, et al	429/173	20.23
34	20/42.1	Kenneth & Mary Ashley	351/771	1.889
35	20/41	Kenneth & Mary Ashley	194/365	15.79
36	20/41.1	Janet Neff, et al	429/173	2.218
37	20/46.1	Betty Tustin	WB45/156	2.476
38	20/47	Betty Tustin	WB45/156	1.00
39	20/46	Betty Tustin	WB45/156	29.66

ID	TM/Par	Owner	Bk/Pg	Acres
40	20/45	Nellie M. Wilson	337/462	8.00
41	20/40.1	Gary & Margaret Rymer	232/12	7.07
42	20/40	William H. & Judy M. White	352/566	9.31
43	20A/6	Roy D. & Betty Lou Hadley	353/558	0.53
44	20A/3.1	Larry K. Spencer	425/56	0.524
45	20A/2	Wanda M. Spencer, et al	AR50/170	0.45
46	20A/3	Harold L. & Debra C. Holloway	225/51	0.366
47	20A/5	Michael H. & Vola J. Glover	208/103	1.38
48	20A/7	Jordan L. & Michael P. Haught	522/391	1.66
49	20A/8	James M. & Sara K. Glover	434/163	0.44
50	20A/9	James M. & Sarah M. Glover	578/622	0.17
51	20A/10	April N. DeLong	437/806	0.11
52	20A/10.1	Ruth E. Blake	348/604	0.16
53	20A/11	Ruth E. Blake	343/574	0.14
54	20A/12	Roy D. & Betty Lou Hadley	304/366	0.25
55	20A/13	James D. Anderson & Tracy A. Doll	400/425	0.33
56	20A/55	Roy D. & Betty Lou Hadley	350/341	0.17
57	20A/54	Bessie L. Matthews, et vir	521/634	0.46
58	20A/52	Betty Lou Hadley	579/652	0.24
59	20A/53	Deloris Gully	AR40/97	0.33
60	20A/14	Roy D. Hadley	332/696	0.17
61	20A/15	Stephen D. & Brenda J. Ashley	317/183	0.50
62	20A/16	James M. Glover	330/197	0.50
63	20/46.2	James & Sara Glover	350/386	0.386
64	20A/17	Chris L. Hayes & Maritha J. Tennant	343/212	0.17
65	20A/18	Roy D. Hadley	WB23/305	0.66
66	20A/19	Roy D. Hadley	WB23/305	0.17
67	20A/20	Betty Hadley	470/683	0.17
68	20A/50	Betty Lou Hadley	579/652	0.17
69	20A/51	Shirl A. Henderson	WB19/379	0.17
70	20A/51.1	Crystal Christophel	WB19/379	0.16
71	20/86.1	Earnest Leasure, et al	321/160	0.37
72	20A/21	Roy D. Hadley	317/674	3.00
73	20A/22	Roy Hadley	WB23/305	0.17
74	20A/23	Connie Sue Tanner	327/883	0.33
75	20A/24	Timothy & Tonya Stanley	581/792	0.33
76	20A/26.1	Evelyn S. Smith	328/95	0.165
77	20A/25	Nancy Glover	147/104	0.33
78	20A/26	Evelyn S. Smith	332/681	0.165

FILE NO: 17-54-E-19
 DRAWING NO: Fender Unit 2H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

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

DATE: November 19, 20 19
 OPERATOR'S WELL NO. Fender 2H
 API WELL NO. **4709502671**
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: Existing 1,033' Proposed 1,014.5' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
 DISTRICT: Ellsworth COUNTY: Tyler
 SURFACE OWNER: Michael J. & Melinda R. Hogue; Terry Lee Fiber; James F. Doan, et ux; ACREAGE: 192.0
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2); Joe & Shirley Varese; Peter W. & Irmagard E. Guenter, Joint Living Trust; LEASE NO: ACREAGE: 18.89; 11.318; 81.33; 7.04; 93.1; 58.27275; 191.5; 35.9; 36.5
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 6,000' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 14,800' MD

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

WW-6A1

Operator's Well Number Fender Unit 2H

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

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

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Michael J. & Melinda R. Hogue Lease</u>			
Michael J. & Melinda R. Hogue	Statoil USA Onshore Properties Inc.	1/8	0449/0283
Statoil USA Onshore Properties Inc.	EQT Production Company	Assignment	0539/0239
EQT Production Company	Antero Resources Corporation	Assignment	0663/0001
<u>James F. Doan et ux Lease</u>			
James F. Doan et ux	Chesapeake Appalachia	1/8	0376/0345
Chesapeake Appalachia	SWN Production Company LLC	Assignment	0465/0463
SWN Production Company LLC	Antero Exchange Properties	Assignment	0544/242
Antero Exchange Properties	Antero Resources Corporation	Name Change	0552/0315
<u>Ryan L. Walton et ux Lease (TM 26 PCL 22)</u>			
Ryan L. Walton et ux	Antero Resources Corporation	1/8+	0498/0445
<u>Ryan L. Walton et ux Lease (TM 26 PCL 21)</u>			
Ryan L. Walton et ux	Antero Resources Corporation	1/8+	0498/0445
<u>David L. Lancaster et ux Lease (TM 20 PCL 107)</u>			
David L. Lancaster et ux	Antero Resources Corporation	1/8+	0594/0713
<u>David L. Lancaster et ux Lease (TM 20 PCL 104)</u>			
David L. Lancaster et ux	Antero Resources Corporation	1/8+	0594/0713
<u>Terry Lee Fiber Lease</u>			
Terry Lee Fiber	Antero Resources Corporation	1/8+	0458/0235
<u>Joe & Shirley Varese Lease</u>			
Joe & Shirley Varese	Antero Resources Appalachian Corporation	1/8+	0408/0456
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430

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WV Department of
Environmental Protection

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

CONTINUED ON NEXT PAGE

WW-6A1
(5/13)

Operator's Well No. Fender Unit 2H

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Peter W. Guenther & Irmgard E. Guenther Lease</u>				
	Peter W. Guenther & Irmgard E. Guenther	Antero Resources Corporation	1/8+	0570/0838

*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:

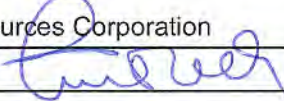
- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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.

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WV Department of
Environmental Protection

Well Operator: Antero Resources Corporation
 By: Tim Rady 
 Its: VP of Land

4709502671



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

November 21, 2019

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

RE: Fender Unit 2H
Quadrangle: Middlebourne 7.5'
Tyler County/Ellsworth District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Fender Unit 2H 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 Fender Unit 2H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in blue ink, appearing to read "Thomas Kuhn", is written over a horizontal line.

Thomas Kuhn
Senior Landman

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FEB 5 2020

WV Department of
Environmental Protection

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

Date of Notice Certification: 11/24/2019

API No. 47- 095 -

Operator's Well No. Fender Unit 2H

Well Pad Name: Hogue 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: <u>West Virginia</u>	UTM NAD 83	Easting: <u>508772.585m</u>
County: <u>Tyler</u>		Northing: <u>4369112.262m</u>
District: <u>Ellsworth</u>	Public Road Access: <u>Klondike Acres Road</u>	
Quadrangle: <u>Middlebourne 7.5'</u>	Generally used farm name: <u>Michael J. & Melinda R. Hogue</u>	
Watershed: <u>Outlet Middle Island Creek</u>		

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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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Environmental Protection

Required Attachments:

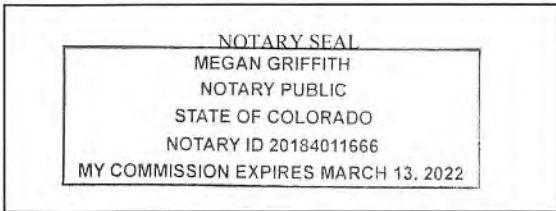
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Certification of Notice is hereby given:

THEREFORE, I Maria Henry, 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: Antero Resources Corporation
By: Maria Henry
Its: VP of Geology
Telephone: 303-357-7310

Address: 1615 Wynkoop Street
Denver, CO 80202
Facsimile: 303-357-7315
Email: mgriffith@anteroresources.com



Subscribed and sworn before me this 25th day of November '19
Megan Notary Public
My Commission Expires 3.13.2022

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 deprivacyofficer@wv.gov.

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WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47-095 -
OPERATOR WELL NO. Fender Unit 2H
Well Pad Name: Hogue 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: 11/25/2019 Date Permit Application Filed: 11/25/2019

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: Michael J. & Melinda R. Hogue
Address: PO Box 239
Middlebourne, WV 26149

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

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

COAL OPERATOR
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL,
SPRING OR OTHER WATER SUPPLY SOURCE
Name: NONE IDENTIFIED WITHIN 1500'
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-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

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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and are not required to be 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
(8-13)

API NO. 47-095 - _____
OPERATOR WELL NO. Fender Unit 2H
Well Pad Name: Hogue Pad

Maria Hs

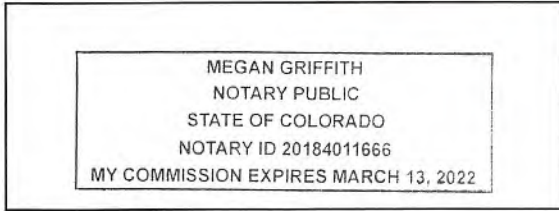
Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7223
Email: mgriffith@anteroresources.com

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

Oil and Gas Privacy Notice:

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



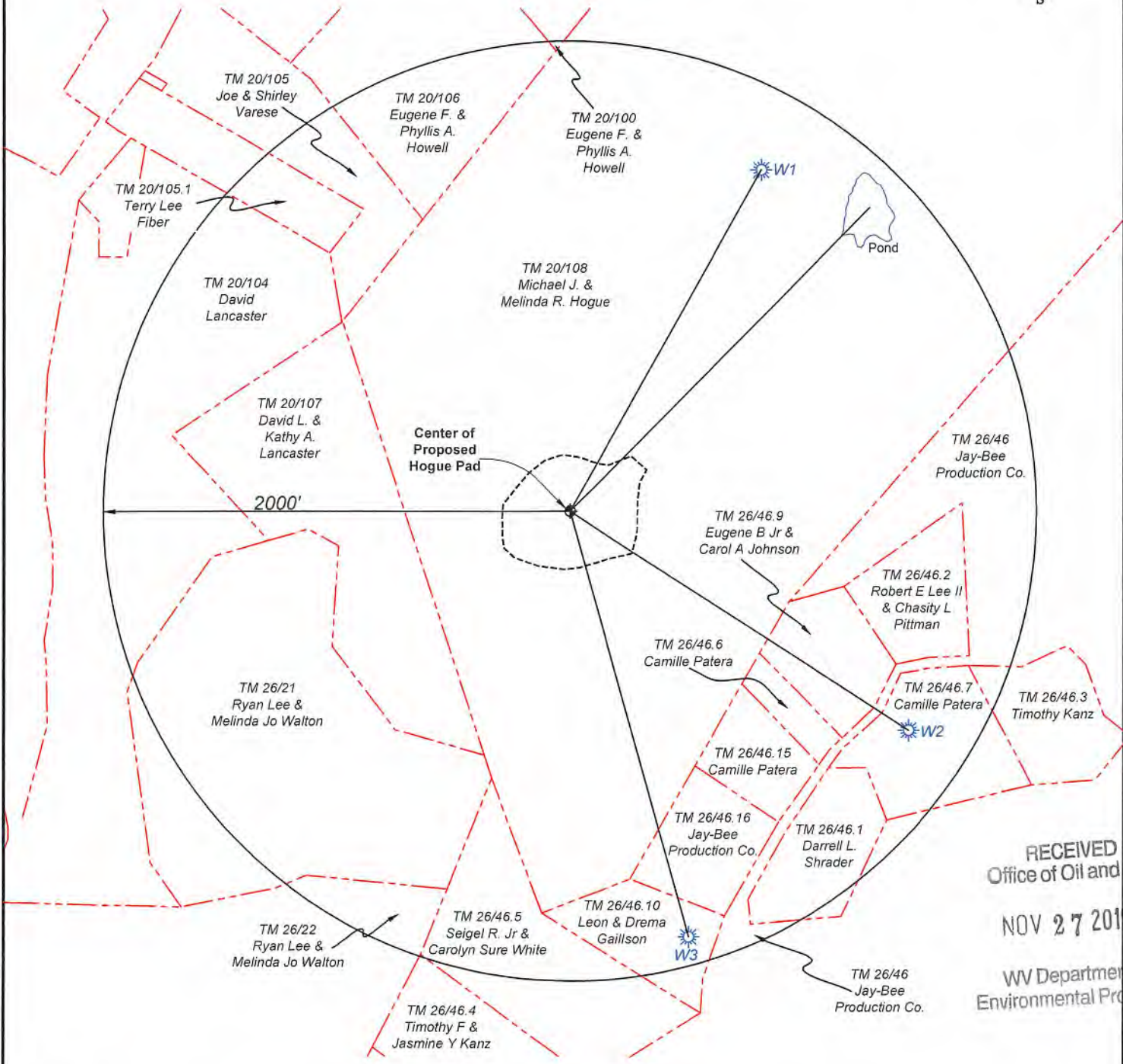
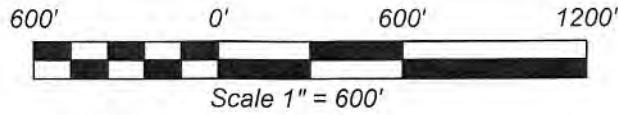
Subscribed and sworn before me this 25th day of NOVEMBER 19
[Signature] Notary Public
My Commission Expires 3.13.2022

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**Hogue Drill Pad
Water Well & Spring Map**



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Owners

- W1 Michael J. & Melinda R. Hogue, PO Box 239, Middlebourne, WV 26149-0239
- W2 Camille Patera, 338 Klondike Ac., Middlebourne, WV 26149-9546
- W3 Leon & Drema Gail Ison, 192 Beverly Ln., Julian WV 25529-9685
- Pond Michael J. & Melinda R. Hogue, PO Box 239, Middlebourne, WV 26149-0239

Tag	Azimuth	Dist.	Latitude	Longitude
W1	Az29°25'	1665.6'	39°28'33.25"	80°53'43.90"
W2	Az122°40'	1725.6'	39°28'09.81"	80°53'35.34"
W3	Az164°16'	1877.1'	39°28'01.00"	80°53'47.20"
Pond	Az44°55'	1819.0'	39°28'31.71"	80°53'27.93"

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: 01/09/2019 **Date Permit Application Filed:** _____

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: Michael J. & Melinda R. Hogue
Address: PO Box 239
Middlebourne, WV 26149

Name: _____
Address: _____

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>508772.585m</u>
County:	<u>Tyler</u>		Northing:	<u>4369112.262m</u>
District:	<u>Ellsworth</u>	Public Road Access:	<u>Klondike Acres Road</u>	
Quadrangle:	<u>Middlebourne 7.5'</u>	Generally used farm name:	<u>Michael J. & Melinda R. Hogue</u>	
Watershed:	<u>Outlet Middle Island 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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Antero Resources Corporation
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7223
Email: mgriffith@anteroresources.com
Facsimile: 303-357-7315

Authorized Representative: Megan Griffith
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7223
Email: mgriffith@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.

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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: _____ **Date Permit Application Filed:** _____

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

- CERTIFIED MAIL
RETURN RECEIPT REQUESTED
- HAND
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: Michael J. & Melinda R. Hogue
Address: PO Box 239
Middlebourne, WV 26149

Name: _____
Address: _____

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:	West Virginia	UTM NAD 83	Easting:	508772.585m
County:	Tyler		Northing:	4369112.262m
District:	Ellsworth	Public Road Access:	Klondike Acres Road	
Quadrangle:	Middlebourne 7.5'	Generally used farm name:	Michael J. & Melinda R. Hogue	
Watershed:	Outlet Middle Island Creek			

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7223
Email: mgriffith@anteroresources.com

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

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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.

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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

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

November 19, 2019

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

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

Subject: DOH Permit for the Hogue Pad, Tyler County
Fender 2H Well Site

Dear Mr. Martin,

This well site will be shared accessed by ANTERO RESOURCES from a DOH permit #06-2013-0200 which has been issued to JAY-BEE OIL & GAS, INC. for access to the State Road for a well site located off Tyler County 46 SLS.

Both operators have signed DISTRICT WIDE or STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENTS and provided the required Bonds. These operators are currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. ANTERO RESOURCES is in compliance with §22-6A-20 of the WV Code.

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Very Truly Yours,

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

Cc: Megan Griffith
Antero Resources
CH, OM, D-6
File

List of Anticipated Additives Used for Fracturing or Stimulating Well

4709502671

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	Proprietary
Anionic polymer	Proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	Proprietary
Demulsifier Base	Proprietary
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
Guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	Proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamethylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-olcompound with methyloxirane	38172-91-7

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HOGUE WELL PAD ANTERO RESOURCES CORPORATION FINAL CONSTRUCTION PLANS

ELLSWORTH DISTRICT, TYLER COUNTY, WEST VIRGINIA
LITTLE MUSGRINGUM - MIDDLE ISLAND CREEK WATERSHED

LOCATION COORDINATES

SITE LOCATIONS	WV83-MF (NORTH ZONE)		UTM83-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	39.469444	-80.895783	4368378.7454	509136.4822
PRIVATE ACCESS ROAD ENTRANCE	39.464210	-80.901650	4368274.9733	508461.4090
CENTROID OF WELL PAD	39.471728	-80.893953	4369187.4406	508774.6798
ABOVE GROUND IMPAIRED WATER CONTAINMENT	39.472737	-80.897930	4369188.335	508779.444

GENERAL DESCRIPTION:
THE ACCESS ROAD, WATER CONTAINMENT PAD AND WELL PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF TYPICAL WATERSHED WELLS.

FLOODPLAIN NOTES:
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY IDENTIFIED FLOOD ZONES, PER FEMA MAP NUMBER #540902012C.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THE PROJECT DESIGN. TICKET # 1827124429. 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 FROM MAWH FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN OCTOBER & NOVEMBER, 2018 BY GAI CONSULTANTS TO REVEAL THE SITES FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE APPROXIMATE 2018 STREAM AND WETLAND DELINEATION MAP WAS PREPARED BY GAI CONSULTANTS AND SUBMITTED THE FEBRUARY 29, 2019. THE FIELD DELINEATION, THE MAP DOES NOT IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE ANCHORAGE WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS SOLEMELY RECOMMENDED THAT THE APPROPRIATE AGENCIES BE CONSULTED IN AN EFFORT TO SANCTION THE CONSTRUCTION OF THE DELINEATION SHOWN ON THE MAP PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROPERTIES SHOWN HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACT TO WATER OF THE U.S., INCLUDING INSTALLED AND STREAM CROSSINGS.

GEOTECHNICAL NOTES:
THE PROPOSED SLOPES SHALL BE FIELD VERIFIED BY A REGISTERED 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:

OPERATOR:
ANTERO RESOURCES CORPORATION
600 WEST 2000 EAST
MIDDLETOWN WV 26036
PHONE: 304.464.0100
FAX: 304.464.4102

ENGINEER/SURVEYOR:
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
JOSEPH L. ROBERTSON, P.E. - PROJECT MANAGER/REGISTERED ENGINEER
OFFICE: 304.853.3116 FAX: 304.853.3327 CELL: 445.866.2668

ENVIRONMENTAL:
GAI CONSULTANTS
JACOB COOK - PROJECT MANAGER
OFFICE: 304.758.4306

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ROBERT ESTEY - PROJECT MANAGER
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ENVIRONMENTAL & REGULATORY MANAGER:
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OFFICE: 1-406-785-1881 CELL: 1-740-709-4841

ENVIRONMENTAL & REGULATORY MANAGER:
ELI WAGNER - ENVIRONMENTAL & REGULATORY MANAGER
OFFICE: 1-888-889-6999 CELL: 304.450-9975

CONSTRUCTION MANAGER:
JAYMON KUNZLER - CONSTRUCTION MANAGER
OFFICE: 442.212-4344 CELL: 484.841-8242

FIELD ENGINEER:
ROBERT WIRKS - FIELD ENGINEER
OFFICE: 1-208-854-1181 CELL: 306.627-4261

UTILITY SUPERVISOR:
SCOTT HARTER - UTILITY SUPERVISOR
OFFICE: 1-763-761-1717 CELL: 304.984-3699

FIELD ENGINEER:
JOHN WENICH - FIELD ENGINEER
OFFICE: 1-763-761-1335 CELL: 1-743-777-3566



LOCATION MAP
MIDDLEBOURNE USGS 7.5' QUAD
SCALE: 1 INCH = 1000 FEET



VICINITY MAP
TYLER COUNTY ROAD MAP
SCALE: 1 INCH = 1 MILE

L.O.D. AREAS

DESCRIPTION	ACRES
PRIVATE ACCESS UPGRADE	4.92
MAIN ACCESS ROAD	3.32
LAND OWNER ACCESS	1.89
WELL PAD	12.79
STAGING PAD 1	1.91
STAGING PAD 2	0.97
TOPSOIL/STRIPPING PILE 1	2.55
TOTAL	28.10
WOODED	22.61

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1. COVER SHEET	13. ISOPACH	25. PROFILES AND SECTIONS	37. DETAILS
2. GENERAL NOTES	14. ISOPACH	26. PROFILES AND SECTIONS	38. DETAILS
3. MATERIAL QUANTITIES	15. SITE PLAN	27. PROFILES AND SECTIONS	39. DETAILS
4. BORING LOGS	16. SITE PLAN	28. PROFILES AND SECTIONS	40. DETAILS
5. BORING LOGS	17. SITE PLAN	29. PROFILES AND SECTIONS	41. DETAILS
6. BORING LOGS	18. SITE PLAN	30. PROFILES AND SECTIONS	42. RECLAMATION PLAN
7. BORING LOGS	19. SITE PLAN	31. CUT/VERT PROFILES	43. RECLAMATION PLAN
8. MANHOLE LOGS	20. SLUMP GRADING PLAN	32. GEOTECHNICAL SECTIONS	44. RECLAMATION PLAN
9. EXISTING CONDITIONS	21. UTILITY PLAN OVERVIEW	33. GEOTECHNICAL SECTIONS	45. RECLAMATION PLAN
10. ISOPACH	22. PROFILES AND SECTIONS	34. GEOTECHNICAL SECTIONS	46. RECLAMATION PLAN
11. ISOPACH	23. PROFILES AND SECTIONS	35. DETAILS	
12. ISOPACH	24. PROFILES AND SECTIONS	36. DETAILS	

LIMITS OF DISTURBANCE PARCEL BREAK UPS - HOGUE WELL PAD

OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	LOD ACERAGE	TREE CLEARING ACRES
JAY-BEE PRODUCTION COMPANY	28-46	425-81	286.39	PARCEL INFORMATION		0.77
				PRIVATE ACCESS UPGRADE	1.22	0.27
WALTON RYAN L & MELINDA K	28-40-11	232-942	6.43	PARCEL INFORMATION		0.06
				PRIVATE ACCESS UPGRADE	0.60	0.06
KANZ TIMOTHY F KANZ JASMINY	28-46-4	413-218	6.1	PARCEL INFORMATION		0.28
				PRIVATE ACCESS UPGRADE	0.25	0.06
EDDY RICHARD	28-46-5	981-473	13.14	PARCEL INFORMATION		0.04
				PRIVATE ACCESS UPGRADE	0.31	0.04
SON LEON & DREMA S&L (ILPE)	28-46-10	230-211	4.08	PARCEL INFORMATION		0.34
				PRIVATE ACCESS UPGRADE	0.27	0.34
JAY-BEE PRODUCTION CO	28-46-16	410-97	1.09	PARCEL INFORMATION		0.09
				PRIVATE ACCESS UPGRADE	0.23	0.09
PEEK KAREN SUE (JIFE)	28-40-21	390-506	0.22	PARCEL INFORMATION		0.01
				PRIVATE ACCESS UPGRADE	0.05	0.01
SHIRAZER DANIEL L	28-46-1	249-111	5.18	PARCEL INFORMATION		0.05
				PRIVATE ACCESS UPGRADE	0.28	0.05
KANZ TIMOTHY F KANZ JASMINY	28-49-23	276-247	3.722	PARCEL INFORMATION		0.03
				PRIVATE ACCESS UPGRADE	0.13	0.03
KANZ TIMOTHY F KANZ JASMINY	28-46-6	236-247	1.782	PARCEL INFORMATION		0.03
				PRIVATE ACCESS UPGRADE	0.11	0.03
KANZ TIMOTHY F KANZ JASMINY	28-46-7	249-242	7.32	PARCEL INFORMATION		0.24
				PRIVATE ACCESS UPGRADE	0.31	0.24
OSBORN LESLIE B & CAROLA	28-41-9	353-60	5	PARCEL INFORMATION		3.92
				PRIVATE ACCESS UPGRADE	0.06	3.92
				MAIN ACCESS ROAD	1.39	
				LAND OWNER ACCESS	2.33	
				PRIVATE ACCESS UPGRADE	3.78	2.97
				PARCEL TOTAL	1.68	0.06
HOGUE MICHAEL & SHERA R	20-10	210-67	132	PARCEL INFORMATION		18.90
				MAIN ACCESS ROAD	1.83	
				LAND OWNER ACCESS	1.84	
				WELL PAD	12.79	
				STAGING PAD 1	1.91	
				STAGING PAD 2	0.97	
				PARCEL TOTAL	19.44	18.90
				TOTAL	28.10	22.61

PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON ANSI D 227 X 345 SHEETS. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
THE PLANS HAVE BEEN CREATED BY 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 COPIING AND/OR GRAY SCALE PLOTTING.

**APPROVED
MODIFICATION
WVDEP OOG**

WDS 1/29/2020



RESTRICTIONS NOTES:

- THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOD.
- THERE ARE NO WETLANDS TO BE DESTROYED OR WITHIN 100 FEET OF THE WELL PAD LOD.
- THERE ARE NO PERENNIAL STREAMS TO BE DESTROYED OR WITHIN 100 FEET OF THE WELL PAD LOD.
- THERE ARE EPHEMERAL AND INTERMITTENT STREAM IMPACTS WITHIN THE LOD.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 400 FEET OF THE WELL PAD LOD.
- THERE ARE NO UNDERGROUND WATER IN LAKES OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD LOD.
- THERE ARE NO UNPROTECTED EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL PAD LOD.
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 425 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 425 FEET OF THE CENTER OF THE WELL PAD.

WEST VIRGINIA
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!



REVISION RECORD

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Antero Resources Corporation
Civil & Environmental Consultants, Inc.
900 Marketplace Ave - Suite 200 - Bridgeport, WV 26330
PH: 304-933-3119 FAX: 304-933-3327
www.artero.com

Antero Resources
HOGUE WELL PAD
ELLSWORTH DISTRICT
TYLER COUNTY, WEST VIRGINIA

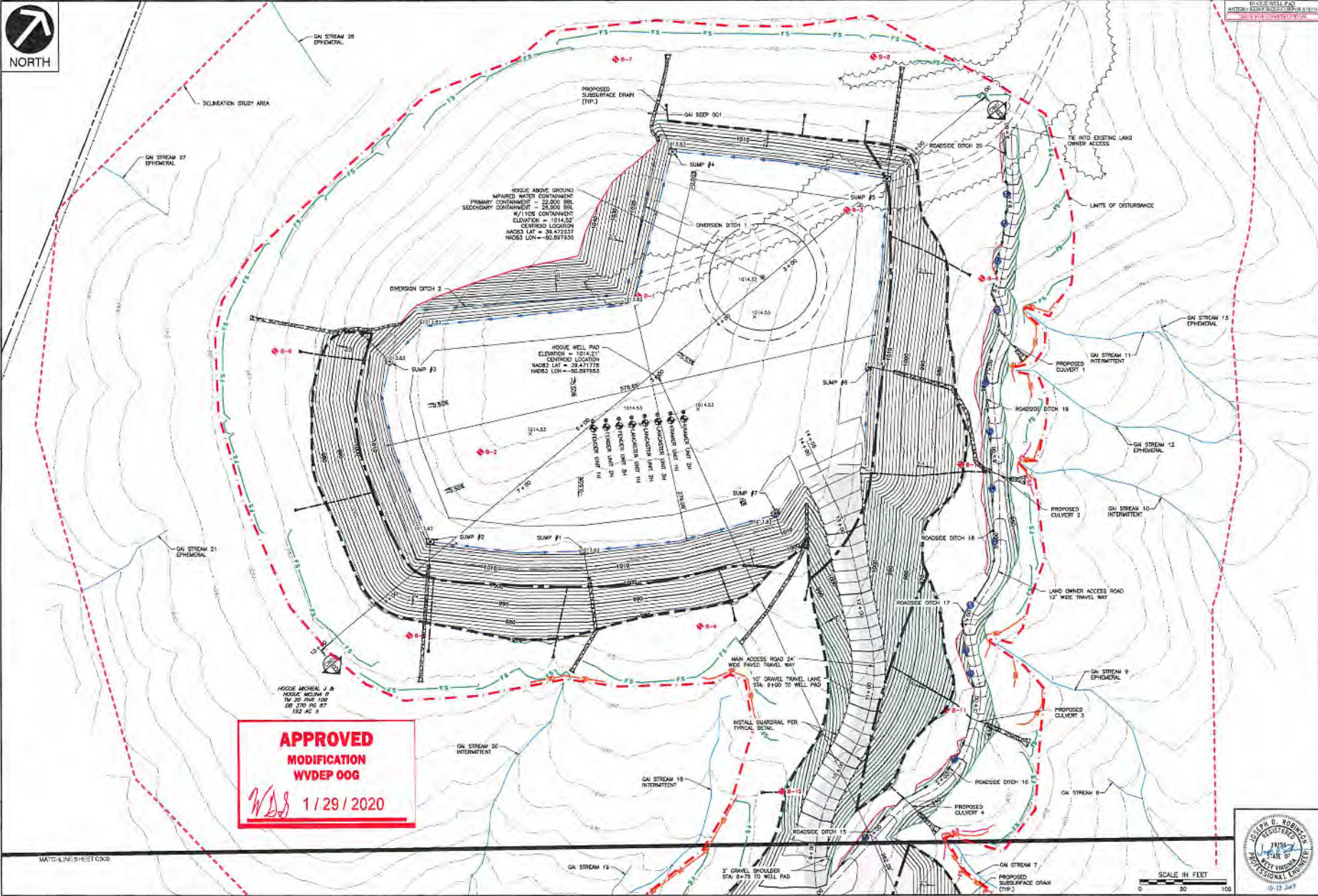
COVER

DATE: MARCH 20, 2020
DESIGNED BY: TYLER J. WILLIAMS
PROJECT NO.: 1827124429
DRAWN BY: TYLER J. WILLIAMS
CHECKED BY: TYLER J. WILLIAMS
APPROVED BY: TYLER J. WILLIAMS

SCALE: 1" = 1000'

PROJECT NO. C000

4709502671



APPROVED MODIFICATION WVDEP OOG
WDS 1/29/2020

HOGLEG WELLS PAD
 ANTERO ENERGY FACILITY PROJECT AREA
 W/10% CONTINGENCY

REVISION RECORD

NO.	DATE	DESCRIPTION
1	03/20/20	ISSUED FOR PERMIT
2	03/20/20	ISSUED FOR PERMIT
3	03/20/20	ISSUED FOR PERMIT

Civil & Environmental Consultants, Inc.
 666 Main Street
 Martinsburg, WV 26030
 PH: 304-333-1119
 WWW.CECINC.COM

**ANTERO RESOURCES
 HOGLEG WELLS PAD
 ELLSWORTH DISTRICT
 TYLER COUNTY, WEST VIRGINIA**

SITE PLAN

DATE	BY	CHK	APP
MARCH 2019	PERMIT		
AS SHOWN	AS SHOWN		
APPROVED BY:			



SCALE IN FEET
 0 20 40 80 100

DRAWING NO. **C304**
 SHEET 15 OF 46