



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 KRAMER 1H
47-095-02673-00-00


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

A blue ink signature of James A. Martin, written in a cursive style, is positioned to the right of his name and title.

Operator's Well Number: KRAMER 1H
Farm Name: MICHAEL J. & MELINDA R. 
U.S. WELL NUMBER: 47-095-02673-00-00
Horizontal 6A New Drill
Date Issued: 2/10/2020

Promoting a healthy environment.

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: _____

PERMIT CONDITIONS 4709502673

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: Kramer Unit 1H 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 _____

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13000' MD

11) Proposed Horizontal Leg Length: 3115'

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: _____

JEB
1/9/2020

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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, 698 Cu. Ft.
Intermediate							
Production	5"	New	P-110	18#	13000	13000	1049 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

4/19/2020

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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4/10/2020

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

JCB
1/9/2020

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.

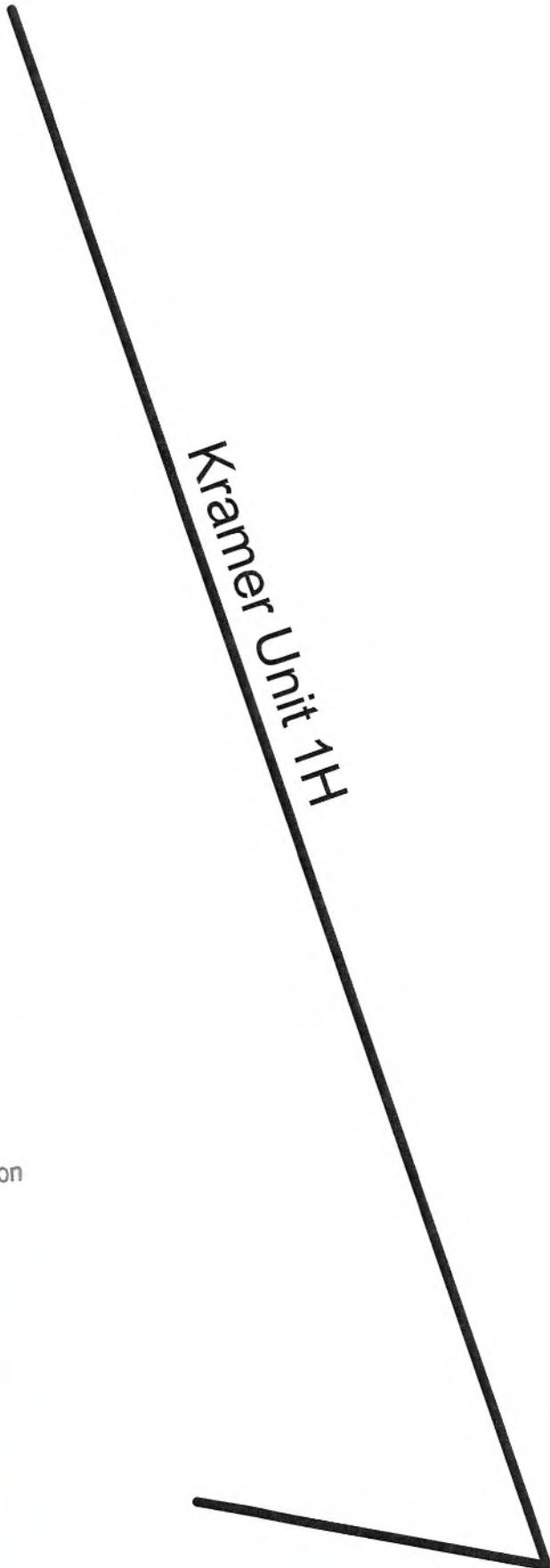
Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

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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Antero Resources Corporation

Kramer Unit 1H - AOR



REMARKS
No Wells of Interest

October 30, 2019

4709502673

WW-9
(4/16)

API Number 47 - 095 - _____
Operator's Well No. Kramer 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) 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/Surf 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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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

4709502673

Form WW-9

Operator's Well No. Kramer Unit 1H

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: [Signature]
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 Residuuum
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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4709502673



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)

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Driving Directions:

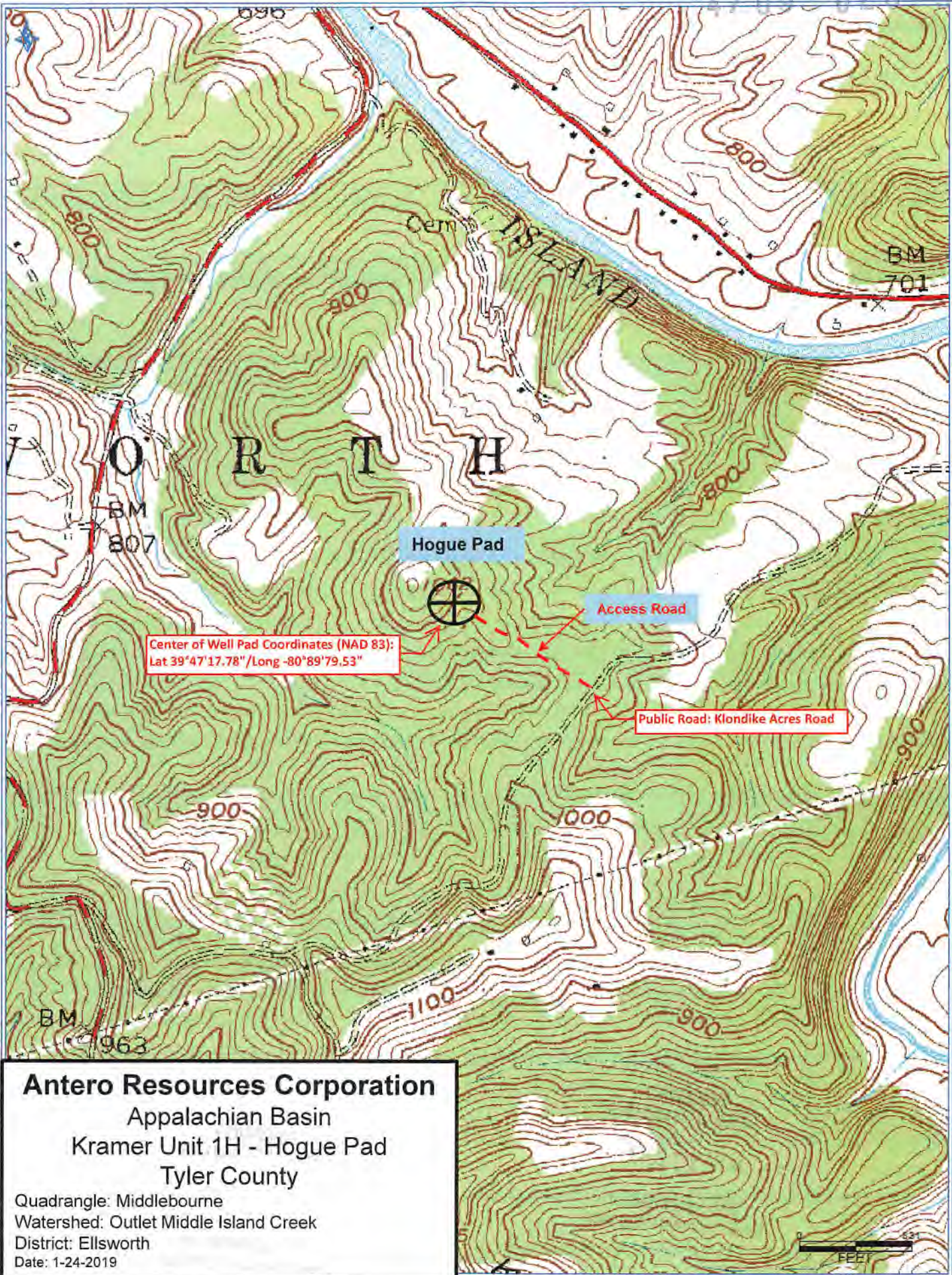
From the intersection of Broad St and Main St in the town of Middlebourne, head southwest on WV-18 S/Main St toward Wilcox Ave for 0.3 miles. Turn right onto Bridgeway Rd for 0.1 miles. Turn left onto Middlebourne-Wick/Wick Rd for 2.0 miles. Turn left onto Middlebourne-Wick for 0.1 miles. Keep left to 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.

JCS
12/12/2019

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



Antero Resources Corporation
 Appalachian Basin
 Kramer Unit 1H - Hogue Pad
 Tyler County

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

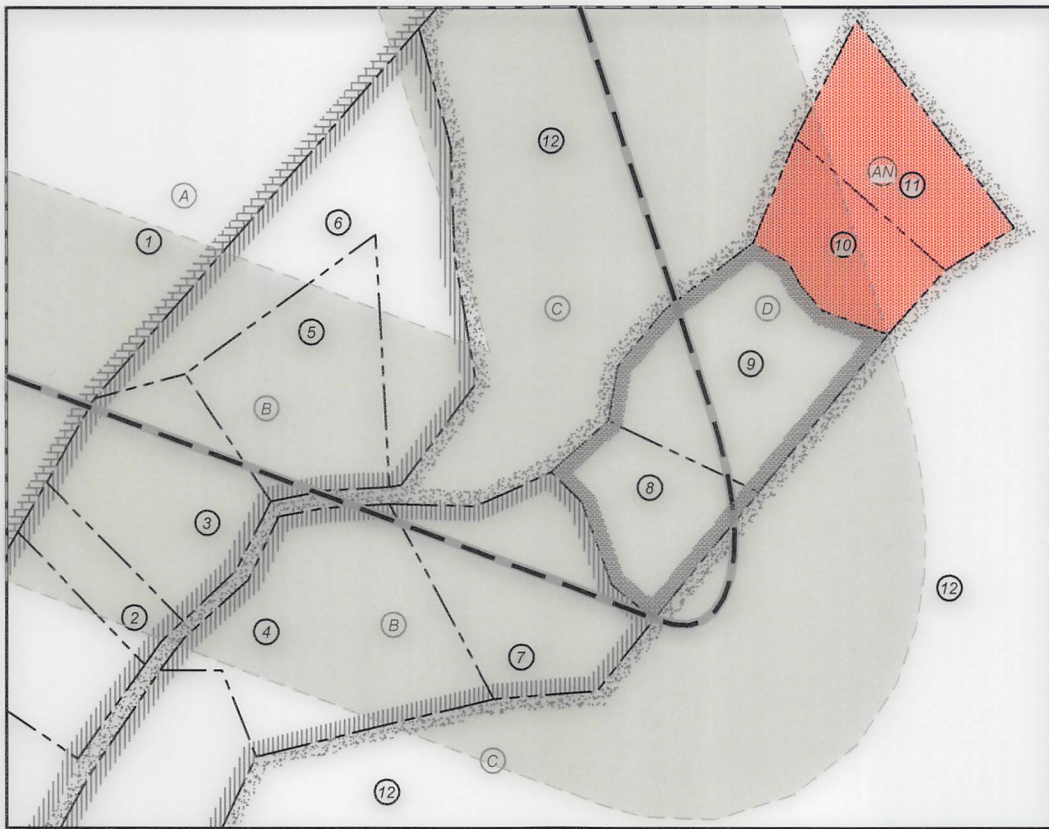


**Antero Resources
Well No. Kramer Unit 1H**

Antero Resources Corporation

Page 2 of 3

ID	TM/Par	Owner	Bk/Pg	Acres	ID	TM/Par	Owner	Bk/Pg	Acres
1	20/108	Michael J. & Melinda R. Hogue	348/404	192.00	37	20/71	Perry L. & Jackie L. Weekley	370/145	4
2	26/46.6	Camille Patera	296/247	1.702	38	20/70	Nina Wise	WB25/700	3.91
3	26/46.9	Eugene B Jr & Carol A Johnson	351/60	5.00	39	20/69	Jerry, Michelle, & Justin Williams	440/471	1.5
4	26/46.7	Camille Patera	296/247	7.32	40	20/68	Barbara J. Davis	WB30/311	2.09
5	26/46.2	Robert E Lee II & Chasity L Pittman	408/122	5.135	41	20-67	William M. & Janet S. Baker	175/391	2.10
6	26/46.14	Jay-Bee Production Company	420/97	8.69	42	20/60.1	Robert Kocher	358/343	0.049
7	26/46.3	Timothy Kanz	440/24	5.4	43	20/60	Robert R. & Rosalee J. Forrester	321/129	0.38
8	26/46.12	Charles R. & Bertha A. Holliday	306/665	3.238	44	20/58	Robert R. & Rosalee J. Forrester	321/129	0.46
9	26/46.13	Charles R. & Bertha A. Holliday	306/665	5.94	45	20/59.1	Robert R & Rosalee J Forrester	335/826	0.047
10	26/46.22	Eugene B. Johnson, Sr., et ux	351/247	2.924	46	20/59	Robert Kocher	358/343	4.19
11	26/46.23	Eugene B. Johnson, Sr., et ux	351/247	3.598	47	20-55	Mary Alice Hickman	AR36/289	71.34
12	26-46	Jay-Bee Production Company	420/97	286.04	48	20-54	William M. & Janet S. Baker	175/391	100.45
13	20-65.1	James S. & Ghislaine S. Suter	273/557	1.58	49	20/54.1	Bradley Baker	355/823	2
14	21-63	James S. & Ghislaine S. Suter	229/658	0.44	50	20/53	Clara Negie	344/51	8
15	20-82	James S. & Ghislaine S. Suter	211/449	0.7	51	20/51.6	Brian & Sarah Carpenter	342/467	24.92
16	20-62.1	James S. & Ghislaine S. Suter	287/509	0.83	52	20-33	Lance M. & Tina R. Hickman	396/561	77.84
17	20-66	Jeff T. Hoover	313/120	1.0	53	20/23	Michael & Chris Lenz	313/216	4.595
18	20/65.1	James S & Ghislane Suter	273/557	1.58	54	20/23.1	Michael & Chris Lenz	323/732	5.517
19	20/79	Tamara Wilcox & Steven L Conrad	361/205	0.682	55	20-10	Connie L. Hickman, et al	341/209	41
20	20/78	Joseph C. Snyder Jr.	397/838	0.85	56	20/33.3	Richard Fonner	415/796	18.5
21	20/77	Joseph C. Snyder Jr.	397/838	1.272	57	20/25	Marshal McKinney	208/650	0.92
22	20/76	Stephen D. & Brenda J. Ashley	211/429	2.74	58	20/33.2	Homer Matthews	284/375	0.28
23	20/64	Randy Murray & Julia A. Murray	WB37/375	0.99	59	20/32	Homer Lee Matthews	176/216	0.34
24	20/65	Kathy Sue Archer	336/138	6.85	60	20/31	Larry & Barbara Lee	211/179	0.34
25	20/64.1	Dylan Shane Murray	385/472	3.23	61	20/21	Nancy Mercer	WB32/425	0.34
26	20-62	Nancy Villers & Sara Fay Eskew	WB44/598	67.67	62	20/29.1	James Bembry	331/43	0.25
27	20/75	Ricky J. & Sharon S. Morris	285/17	1.47	63	20/27	Earl P. & Crucita Kendle	331/341	0.32
28	20/74	Barbara K. Davis	AR43/791	1.46	64	20/29	Maurine Hadley	167/69	0.34
29	20/73	John T & Catherine L. Burr	378/27	1.11	65	20/30	Donald & Susan Smith	321/165	0.26
30	20/72	John T & Catherine L. Burr	378/27	1.13	66	20/28	Victor & Lorraine Weekley	280/422	0.23
31	20/63.1	Mary A. Hickman	WB37/375	0.484	67	20/20	Melinda Sue George	351/520	0.14
32	20/63	Kimberly & George Eidel	353/298	4.786	68	20/33.1	Jerry & Jacqueline Brown	340/215	8
33	20/61	Mark Duane Hickman, et al	WB54/1	2.22	69	14/67	Tommy L. & Carolyn Williams	169/472	3.0
34	20-56.2	Lance M. & Tina R. Hickman	438/814	2.95	70	20/9	Marvin Gene Franklin	WB57/258	2.77
35	20-56.1	Lance M Hickman	393/85	16.405	71	20B-29	Connie Lee & Michael D. Hickman	251/264	0.41
36	20-56	Mary Alice Hickman	152/16	14.96					



FILE NO: 15-54-E-19
 DRAWING NO: Kramer Unit 1H Well Plat
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV



DATE: November 21, 2019
 OPERATOR'S WELL NO. Kramer 1H
 API WELL NO
 47 - 095 - 02673
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 Proposed 1,014.5'

LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
 DISTRICT: Ellsworth COUNTY: Tyler

SURFACE OWNER: Michael J. & Melinda R. Hogue Barbara K. Davis; WV Division of Natural Resources; ACREAGE: 192.0
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux (2); Ridgetop Capital LP; LEASE NO: ACREAGE: 191.5; 81.33; 310.393; 9.178; 28.54; 1.46;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 6,900' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 13,000' 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. Kramer Unit 1H**

Antero Resources Corporation

Page 3 of 3

Leases	
A	Michael J. & Melinda R. Hogue
B	James F. Doan, et ux
C	Ridgetop Capital LP
D	James F. Doan, et ux
E	James S. Sutter
F	James S. Sutter
G	Jeff T. Hoover
H	Nancy Ann Villers
I	OPEN
J	Steven L. Conrad, et ux
K	Kendra K. Cottrill Wyke
L	Mary Alice Hickman Estate
M	OPEN
N	Norman C. Twyman
O	Stephen D. Ashley, et ux
P	OPEN
Q	Barbara K. Davis
R	OPEN
S	OPEN
T	Perry L. Weekley, et ux

Leases	
U	Mary A. Hickman
V	Lance M. Hickman
W	Mary Alice Hickman
X	OPEN
Y	OPEN
Z	Barbara J. Davis
AA	OPEN
AB	Rosalee J. Forrester
AC	Rosalee J. Forrester
AD	Rosalee J. Forrester
AE	Robert J. Kocher
AF	William M. Baker, et ux
AG	Bradley Baker
AH	Clara Jane Glover
AI	Brian D. Carpenter, et ux
AJ	Michael A. Lenz, et ux
AK	Richard A. Fonner, et ux
AL	Connie L. Hickman
AM	WV Division of Natural Resources
AN	Open



FILE NO: 15-54-E-19
 DRAWING NO: Kramer Unit 1H Well Plat
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

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



DATE: November 21, 2019
 OPERATOR'S WELL NO. Kramer 1H
 API WELL NO
 47 - 095 - 02673
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
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 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux (2); Ridgetop Capital LP; LEASE NO: ACREAGE: 191.5; 81.33; 310.393; 9.178; 28.54; 1.46;
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 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

WW-6A1

Operator's Well Number Kramer 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
<u>Michael J. & Melinda R. Hogue Lease (TM 20 PCL 108)</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 (TM 26 PCL 46.12)</u>			
James F. Doan et ux	Chesapeake Appalachia	1/8	0376/0345
Chesapeake Appalachia	SWN Production Company LLC	Assignment	0465/0463
SWN Production Company	Antero Exchange Properties	Assignment	0544/0242
Antero Exchange Properties	Antero Resources Corporation	Merger	0552/0315
<u>Ridgetop Capital LP Lease (TM 20 PCL 110)</u>			
Ridgetop Capital LP	Antero Resources Corporation	1/8+	0634/0345
<u>James F. Doan et ux Lease (TM 26 PCL 46.13)</u>			
James F. Doan et ux	Chesapeake Appalachia	1/8	0376/0345
Chesapeake Appalachia	SWN Production Company LLC	Assignment	0465/0463
SWN Production Company	Antero Exchange Properties	Assignment	0544/0242
Antero Exchange Properties	Antero Resources Corporation	Merger	0552/0315
<u>Ridgetop Capital LP Lease (TM 26 PCL 46)</u>			
Ridgetop Capital LP	Antero Resources Corporation	1/8+	0634/0345
<u>Michael J. & Melinda R. Hogue Lease (TM 20 PCL 108)</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

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WV Department of
Environmental Protection

WW-6A1
(5/13)

Operator's Well No. Kramer Unit 1H

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>WV Division of Natural Resources Lease</u>				
WV Division of Natural Resources Lease	Antero Resources Corporation		1/8+	0648/0563


*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: VP of Land

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

Sincerely,

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

Thomas Kuhn
Senior Landman

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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. Kramer Unit 1H

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>508788.207m</u>
County: <u>Tyler</u>	UTM NAD 83 Northing: <u>4369128.939m</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.

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 <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <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 <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<p align="center">OOG OFFICE USE ONLY</p> <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED <input checked="" type="checkbox"/> RECEIVED <input checked="" type="checkbox"/> RECEIVED <input checked="" type="checkbox"/> RECEIVED
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 WV Department of
 Environmental Protection

Required Attachments:

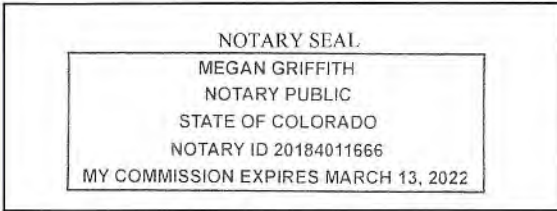
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

4709502673

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:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Maria Henry <i>Maria Henry</i></u>		<u>Denver, CO 80202</u>
Its:	<u>VP of Geology</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>mgriffith@anteroresources.com</u>



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 depprivacyofficer@wv.gov.

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WV Department of
Environmental Protection

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 and 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

WW-6A
(8-13)

API NO. 47- 095 - _____
OPERATOR WELL NO. Kramer Unit 1H
Well Pad Name: Hogue Pad

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. **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. 47-095-02673 Kramer Unit #H
Well Pad Name: Hogue Pad

Mgriffith
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.

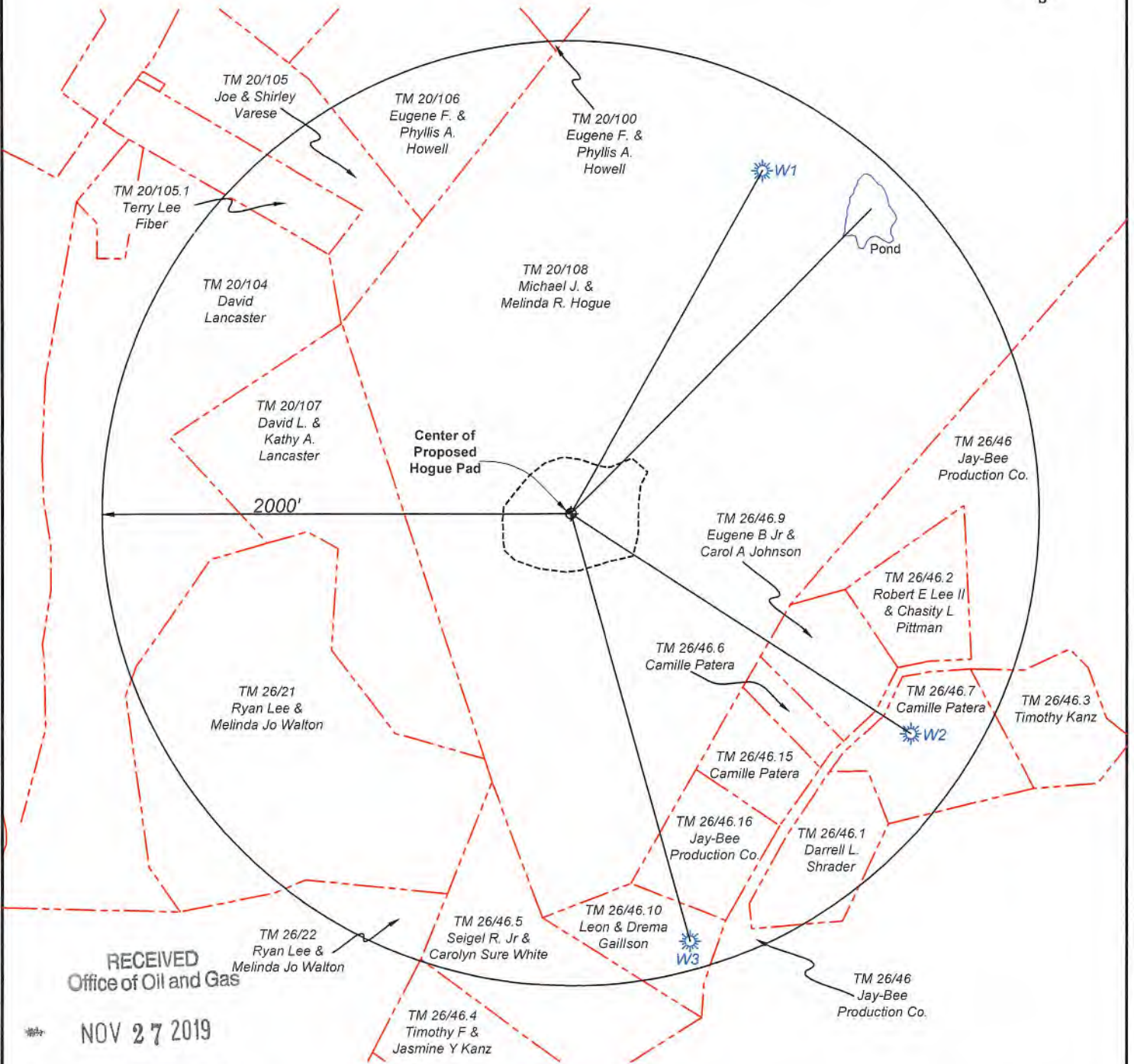
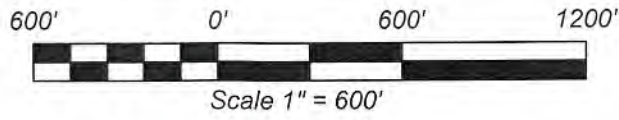
MEGAN GRIFFITH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184011666
MY COMMISSION EXPIRES MARCH 13, 2022

Subscribed and sworn before me this 25th day of NOVEMBER '19
Megan

Notary Public
My Commission Expires 3.13.2022

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Hogue Drill Pad Water Well & Spring Map



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WV Department of
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- W1 Michael J. & Melinda R. Hogue, PO Box 239, Middlebourne, WV 26149-0239
 W2 Camille Paterra, 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:** 11/25/2019

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: West Virginia UTM NAD 83 Easting: 508788.207m
County: Tyler Northing: 4369128.939m
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(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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4709502673

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
Kramer 1H 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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WV Department of
Environmental Protection

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 4709502673

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	NAD83-WF (NORTH ZONE)		UTM83-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
MAIN ACCESS ROAD ENTRANCE	39.469444	-80.897977	4368376.7454	509136.4824
PRIVATE ACCESS ROAD ENTRANCE	39.464030	-80.901650	4368774.9733	508460.4090
CENTROID OF WELL PAD	39.471778	-80.897952	4369137.4409	508774.6738
ABOVE GROUND IMPAIRED WATER CONTAINMENT	39.472737	-80.897930	4359188.315	459779.440

GENERAL DESCRIPTION:
THE ACCESS ROADS, WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED TO ADD IN THE DEVELOPMENT OF INDIVIDUAL MANICULES UNDER GAS WELLS.

FLOODPLAIN NOTES:
THE PROPOSED SITE LOCATION IS NOT WITHIN ANY IDENTIFIED FLOOD ZONES PER FEMA MAP NUMBER(S) # 449500122C.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET # 182724429. 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 MARIOTT 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 REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (DACA) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE WATERS AND WETLAND DELINEATION MAP WAS PROVIDED BY GAI CONSULTANTS AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THIS MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USE OR THE ABUSE OF THE WATERS. IT IS SOLELY RECOMMENDED THAT THE APPROPRIATE AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN WRITTEN CONTRIBUTION OF THE DELINEATION SHOWING ON THE EXISTENT PRIOR TO ENGAGING IN CONSTRUCTION ON THE PROPERTIES DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED WORKS TO WATER OF THE U.S. INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

GEOTECHNICAL NOTES:
THE PROPOSED 2:1 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 ON PROJECT DESIGN ENGINEER DURING CONSTRUCTION.

PROJECT CONTACTS:

OPERATOR
ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PHONE: (304) 824-0100
FAX: (304) 842-4152

ENGINEER/SURVEYOR
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
JOSEPH G. ROHRBAUGH, P.E. - PROJECT MANAGER/REGISTERED ENGINEER
OFFICE: (304) 633-9110 FAX: (304) 333-2337 CELL: (304) 889-2881

ENVIRONMENTAL
GAI CONSULTANTS
JASON COOK, PROJECT MANAGER
OFFICE: (304) 709-4306

GEOTECHNICAL
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
KEVIN BISHOP, PROJECT MANAGER
OFFICE: (304) 853-3118 FAX: (304) 433-9727 CELL: (304) 774-7176

SAFETY
ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PHONE: (304) 824-0100
FAX: (304) 842-4152

REGULATORY
ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PHONE: (304) 824-0100
FAX: (304) 842-4152

CONSTRUCTION
ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PHONE: (304) 824-0100
FAX: (304) 842-4152

FIELD ENGINEER
ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PHONE: (304) 824-0100
FAX: (304) 842-4152



LOCATION MAP

MIDDLEBOURNE USGS 7.5' QUAD

SCALE IN FEET

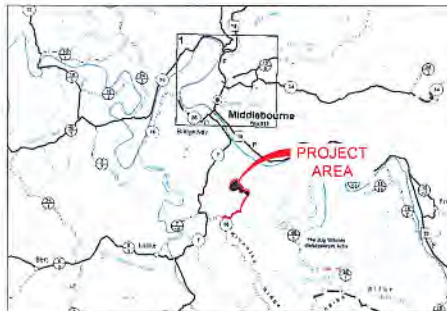
0 1000 2000

1 INCH = 1000 FEET



**APPROVED
MODIFICATION
WVDEP OOG**

WDS 1/29/2020



VICINITY MAP

TYLER COUNTY ROAD MAP

SCALE IN FEET

0 1 MILE 2 MILES

1 INCH = 1 MILE



PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON AN A4 D 100% 34" X 46" SHEET. FOR REDUCTIONS, REFER TO DIMENSION 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 AS A TRUE REPRESENTATION OF THE PROJECT.

WARNING INFORMATION MAY BE LOST IN COPYING AND/OR COPY SCALE PLOTTING.



RESTRICTIONS NOTES:

1. THERE ARE NO LAKES OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOD.
2. THERE ARE NO WETLANDS TO BE DISTURBED OR WITHIN 100 FEET OF THE WELL PAD LOD.
3. THERE ARE NO PERENNIAL STREAMS TO BE DISTURBED WITHIN 100 FEET OF THE WELL PAD LOD.
4. THERE ARE EPHEMERAL AND PERMITTENT STREAM IMPACTS WITHIN THE LOD.
5. THERE ARE NO NATIONALLY PRODUCING FROST STREAMS WITHIN 300 FEET OF THE WELL PAD LOD.
6. THERE ARE NO GROUND WATER IN CREEKS OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1,000 FEET OF THE WELL PAD LOD.
7. THERE ARE NO APPROPRIATE EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELL PAD LOD.
8. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 200 FEET OF THE CENTER OF THE WELL PAD.
9. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 200 FEET OF THE CENTER OF THE WELL PAD.

WEST VIRGINIA
CALL BEFORE YOU DIG!

WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL 48 HOURS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!

SHEET INDEX

1. COVER SHEET	13. ISOPACH	26. 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. CULVERT PROFILES	43. RECLAMATION PLAN
8. MASTER LEGEND	20. STAFF 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

TYLER COUNTY, WEST VIRGINIA						
OWNER	TM-PARCEL	DEED-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	LOD ACERAGE	TREE CLEARING ACRES
AR-BEE PRODUCTION COMPANY	26-46	420-97	286.39	PARCEL INFORMATION	1.22	0.27
				PRIVATE ACCESS UPGRADE	1.22	0.27
				PARCEL TOTAL	1.22	0.27
WALTON RYAN (B. MELINDA)	26-46-11	332-042	0.43	PARCEL INFORMATION	0.00	0.00
				PRIVATE ACCESS UPGRADE	0.00	0.00
				PARCEL TOTAL	0.00	0.00
KANZ TIMOTHY F KANZ JASMINE Y	26-48-4	415-732	6.1	PARCEL INFORMATION	0.19	0.26
				PRIVATE ACCESS UPGRADE	0.19	0.26
				PARCEL TOTAL	0.19	0.26
DOFF RICHARD	26-48-5	493-473	18.14	PARCEL INFORMATION	0.04	0.04
				PRIVATE ACCESS UPGRADE	0.21	0.06
				PARCEL TOTAL	0.25	0.06
SON LON & DREMA GAI (LIFE)	26-48-10	359-311	4.98	PARCEL INFORMATION	0.14	0.14
				PRIVATE ACCESS UPGRADE	0.27	0.14
				PARCEL TOTAL	0.27	0.14
JAY-BEE PRODUCTION CO	26-48-16	420-97	5.09	PARCEL INFORMATION	0.22	0.00
				PRIVATE ACCESS UPGRADE	0.22	0.00
				PARCEL TOTAL	0.22	0.00
DEE KAREN SUE (LIFE)	26-48-21	390-506	0.23	PARCEL INFORMATION	0.01	0.01
				PRIVATE ACCESS UPGRADE	0.03	0.01
				PARCEL TOTAL	0.04	0.01
SHADERT DARRYL	26-48-1	348-711	5.58	PARCEL INFORMATION	0.01	0.01
				PRIVATE ACCESS UPGRADE	0.23	0.01
				PARCEL TOTAL	0.24	0.02
KANZ TIMOTHY F KANZ JASMINE Y	26-48-15	390-247	7.72	PARCEL INFORMATION	0.12	0.04
				PRIVATE ACCESS UPGRADE	0.12	0.04
				PARCEL TOTAL	0.12	0.04
KANZ TIMOTHY F KANZ JASMINE Y	26-48-6	296-247	1.75	PARCEL INFORMATION	0.11	0.03
				PRIVATE ACCESS UPGRADE	0.11	0.03
				PARCEL TOTAL	0.11	0.03
KANZ TIMOTHY F KANZ JASMINE Y	26-48-7	296-247	7.32	PARCEL INFORMATION	0.21	0.04
				PRIVATE ACCESS UPGRADE	0.21	0.04
				PARCEL TOTAL	0.21	0.04
JOHNSON EUGENE B JR & KANG, R	26-48-8	374-48	5	PARCEL INFORMATION	0.04	2.92
				PRIVATE ACCESS UPGRADE	0.04	2.92
				PARCEL TOTAL	0.04	2.92
				MAIN ACCESS ROAD	1.36	0.00
				LAND OWNER ACCESS	2.55	0.00
				PARCEL TOTAL	3.78	2.92
HOGUE MICHAEL J & MELINDA R	26-48-8	370-47	392	PARCEL INFORMATION	1.49	10.60
				MAIN ACCESS ROAD	2.09	0.00
				LAND OWNER ACCESS	1.04	0.00
				WELL PAD	32.79	0.00
				STAGING PAD 1	3.91	0.00
				STAGING PAD 2	5.97	0.00
				PARCEL TOTAL	39.44	10.60
				TOTAL	28.45	22.63

L.O.D. AREAS

DESCRIPTION	ACRES
PRIVATE ACCESS UPGRADE	4.92
MAIN ACCESS ROAD	3.02
LAND OWNER ACCESS	1.84
WELL PAD	32.79
STAGING PAD 1	3.91
STAGING PAD 2	5.97
TOPSOIL/STRIPPING PAD 1	0.35
TOTAL	58.10
WOODS	22.61

WELL LEGEND

WELL HEAD	WV NORTH NAD 27	WV NORTH NAD 83	UTM-N	NAD 83
FENDER UNIT 1H	N: 356891.297 E: 1605295.401	N: 356925.892 E: 1573854.305	N: 4369108.925 E: 508769.459	LAT: 39.471522 LON: 80.898046
FENDER UNIT 2H	N: 356902.071 E: 1605305.838	N: 356936.666 E: 1573864.742	N: 4369112.460 E: 508772.584	LAT: 39.471552 LON: 80.898010
FENDER UNIT 3H	N: 356912.844 E: 1605316.275	N: 356947.439 E: 1573875.129	N: 4369115.596 E: 508775.709	LAT: 39.471582 LON: 80.897974
LANCASTER UNIT 1H	N: 356923.617 E: 1605326.712	N: 356958.213 E: 1573885.516	N: 4369118.931 E: 508778.834	LAT: 39.471612 LON: 80.897937
LANCASTER UNIT 2H	N: 356934.390 E: 1605337.149	N: 356968.986 E: 1573896.490	N: 4369122.266 E: 508781.958	LAT: 39.471642 LON: 80.897901
LANCASTER UNIT 3H	N: 356945.164 E: 1605347.586	N: 356979.760 E: 1573906.490	N: 4369125.602 E: 508785.083	LAT: 39.471672 LON: 80.897864
KRAMER UNIT 1H	N: 356955.937 E: 1605358.023	N: 356990.534 E: 1573916.927	N: 4369128.937 E: 508788.206	LAT: 39.471702 LON: 80.897828
KRAMER UNIT 2H	N: 356966.710 E: 1605368.460	N: 357001.307 E: 1573927.364	N: 4369132.272 E: 508791.333	LAT: 39.471732 LON: 80.897792



REVISION RECORD

NO.	DATE	DESCRIPTION
1		ISSUE FOR CONSTRUCTION

ANTERO RESOURCES CORPORATION
600 MARKLESS AVENUE, SUITE 200, HARRISBURG, WV 26106
PH: 304.823.3119 | BCS: 488.8236 | FAX: 304.823.3227
WWW.ANTERO.COM

Civil & Environmental Consultants, Inc.
600 Markless Ave., Suite 200, Harrisburg, WV 26106
PH: 304.823.3119 | BCS: 488.8236 | FAX: 304.823.3227
WWW.CECI.COM

ANTERO RESOURCES CORPORATION
HOGUE WELL PAD
ELLSWORTH DISTRICT
TYLER COUNTY, WEST VIRGINIA

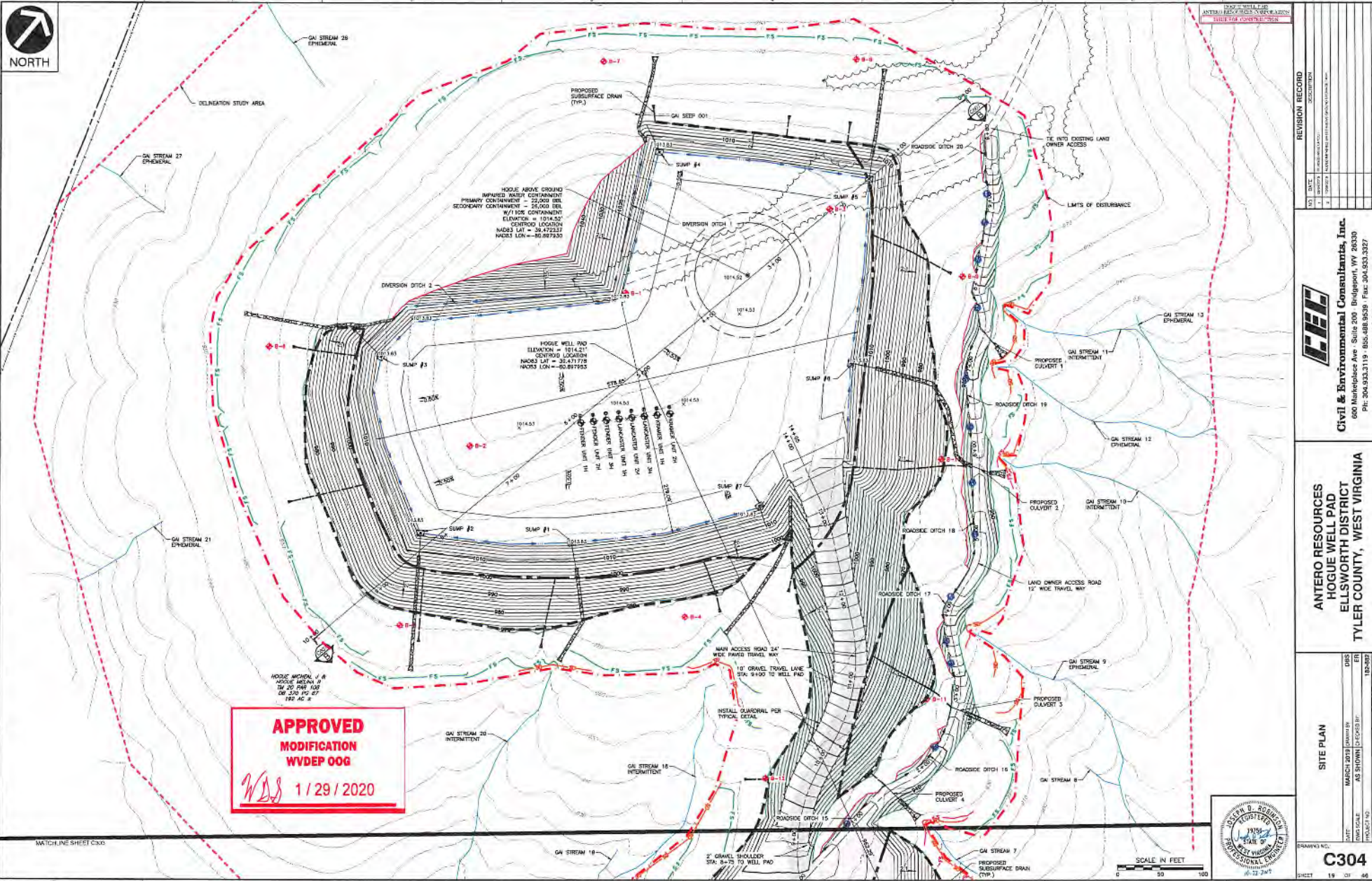
COVER

DATE: MARCH 2018
DRAWN BY: JACOB W. HARRIS
CHECKED BY: JACOB W. HARRIS
DATE: 03/28/2018

C000

26 of 26

4709502673



APPROVED
MODIFICATION
WVDEP OOG
WDS 1/29/2020



REVISION RECORD		
NO.	DATE	DESCRIPTION
1	1/29/2020	ISSUE FOR PERMITS
2	1/29/2020	REVISED PER COMMENTS

Civil & Environmental Consultants, Inc.
 600 Mainplace Ave. Suite 200 • Bridgeport, WV 26330
 PH: 304.933.3119 • FAX: 304.933.3327
 WWW.CIVIL-ENVIRONMENTAL.COM

ANTERO RESOURCES
HOGUE WELL PAD
ELLSWORTH DISTRICT
TYLER COUNTY, WEST VIRGINIA

SITE PLAN	
DATE	BY
MARCH 2019	JAWHBY
DATE SCALE	AS SHOWN (AS EXIST)
PROJECT NO.	18289
APPROVED BY:	JAWHBY

DRAWING NO. **C304**
 SHEET 19 OF 46