



---

west virginia department of environmental protection

---

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

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

Monday, August 26, 2024  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for Ralph Unit 1H  
47-017-06984-00-00

**Extended Lateral Length**

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

A handwritten signature in blue ink, appearing to read "James A. Martin", is written over a faint, larger version of the signature.

James A. Martin  
Chief

Operator's Well Number: Ralph Unit 1H  
Farm Name: Shawn A Glaspell  
U.S. WELL NUMBER: 47-017-06984-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 8/26/24

Promoting a healthy environment.

08/30/2024

*CE# 4033643  
7500*

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

1) Well Operator: Antero Resources Corporation 494507062 017-Doddridge McLellan Center Point 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Ralph Unit 1H MOD Well Pad Name: Crimson Pad

3) Farm Name/Surface Owner: Shawn A. Glaspell Public Road Access: Riggins Run

4) Elevation, current ground: 1249' Elevation, proposed post-construction: 1222'

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

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 7700' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7700' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 29800' MD

RECEIVED  
Office of Oil and Gas

11) Proposed Horizontal Leg Length: 18537.9'

AUG 7 2024

12) Approximate Fresh Water Strata Depths: 303', 953'

WV Department of  
Environmental Protection

13) Method to Determine Fresh Water Depths: 47-017-00483

14) Approximate Saltwater Depths: 2123'

15) Approximate Coal Seam Depths: None Identified

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: \_\_\_\_\_

*Spencer [Signature]*  
8-5-24

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100	100	CTS, 89 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	1003	1003	CTS, 1045 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	29800	29800	6581 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	12,630	2500	Lead-HPOZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

**PACKERS**

RECEIVED  
Office of Oil and Gas

Kind:	N/A			AUG 7 2024
Sizes:	N/A			WV Department of Environmental Protection
Depths Set:	N/A			

*Anthony [Signature]*  
8-5-24

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

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

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs  
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 36.89 acres

22) Area to be disturbed for well pad only, less access road (acres): 14.46 acres

23) Describe centralizer placement for each casing string:

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

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

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

RECEIVED  
Office of Oil and Gas  
AUG 7 2024  
WV Department of  
Environmental Protection

25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.

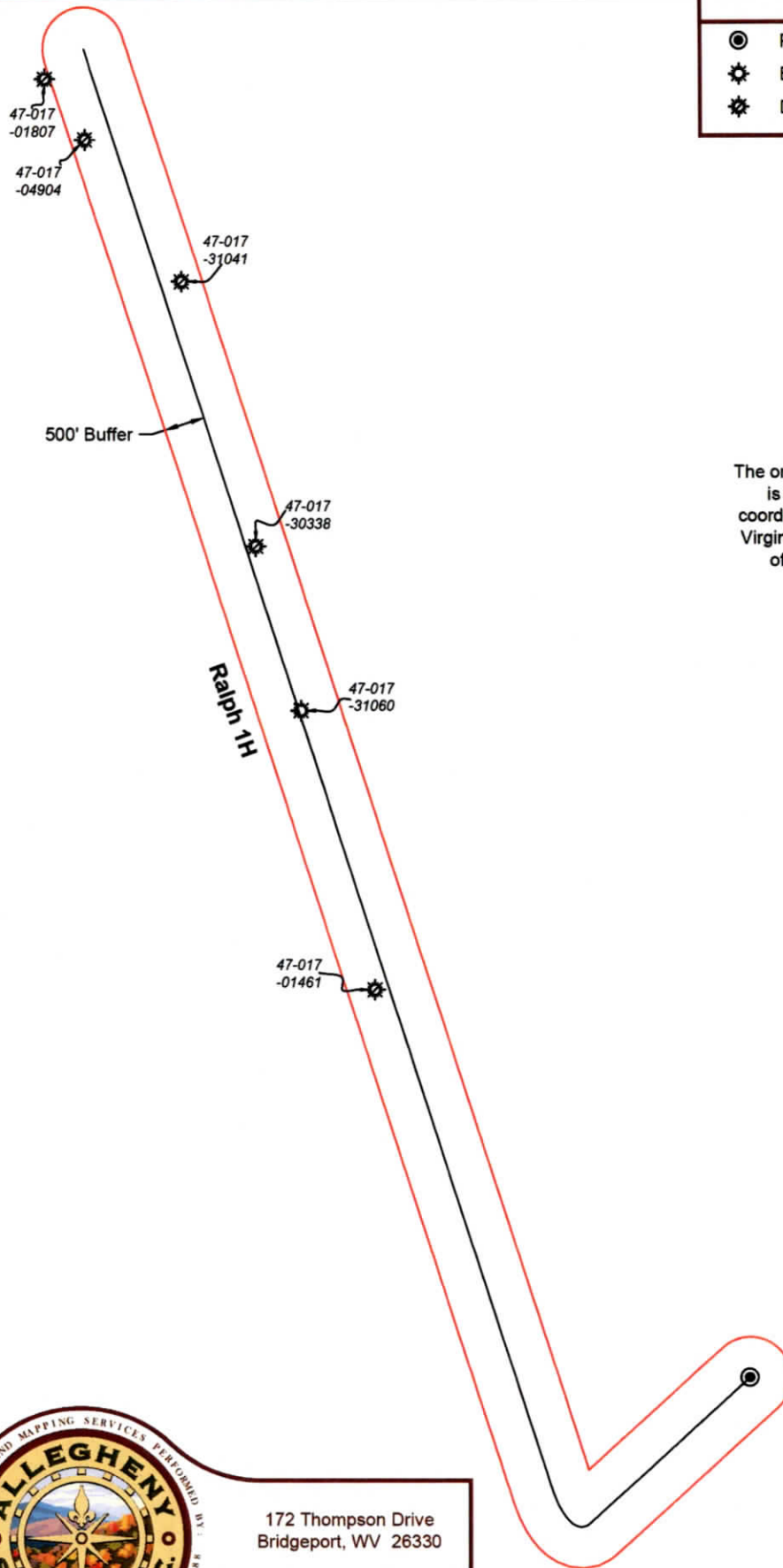
*Jimmy Hall*  
8-5-24

**LEGEND**

- ⊙ Proposed gas well
- ⊛ Existing Well, as noted
- ⊛ Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



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

172 Thompson Drive  
 Bridgeport, WV 26330

PARTY CHIEF: C. Lynch	DRAWN BY: J. Smith
RESEARCH: J. Miller	PREPARED: October 12, 2023
SURVEYED: Dec. 2016	PROJECT NO: 147-30-M-23
FIELD CREW: C.L., K.M.	DRAWING NO: Ralph 1H AOR

Sheet 1 of 1



Scale: 1 inch = 200 feet

08/30/2024

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47017014610000	GEORGE DOTSON	1	SCOTT JAMES F	SCOTT JAMES F	2,152		Big Injun	Weir, Fifth, Warren, Alexander
47017310600000	D A DOTSON 1	532	CARNEGIE NATURAL GAS	CARNEGIE NATURAL GAS	2,639		Big Injun, Gordon	Weir, Fifth, Warren, Alexander
47017303380000	N M LAUGHERY 1	197	CARNEGIE NATURAL GAS	CARNEGIE NATURAL GAS	2,644		Big Injun	Weir, Fifth, Warren, Alexander
47017310410000	MARGARET WRIGHT	3	SMITH PERSOL FEICK&	SMITH PERSOL FEICK&	2,220		Big Injun	Weir, Fifth, Warren, Alexander
47017049040000	HARDMAN OWO	23	TARGA DEVELOPMENT INC	TARGA DEV INC	2,192			
47017018070000	M T WILLIAMS	12117	DIVERSIFIED PRODUCTION LLC	CONSOL GAS SUPPLY CRP	5,275	5084 - 5094	Riley, Benson	Weir, Fifth, Warren, Alexander

2,034' to Bottom Hole

5,441' to Top Hole

TOP HOLE LATITUDE 39 - 25 - 00  
BTM HOLE LATITUDE 39 - 27 - 30

TOP HOLE LONGITUDE 80 - 40 - 00  
BTM HOLE LONGITUDE 80 - 42 - 30

11,693' to Top Hole

10,733' to Bottom Hole

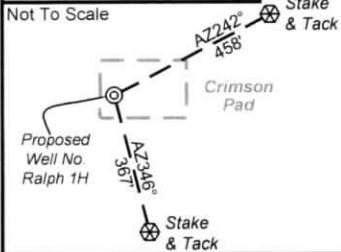
# Antero Resources Well No. Ralph 1H

Antero Resources Corporation

Page  
1 of 2



### Well Location References



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

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



SEAL

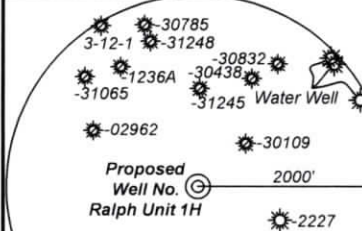
### Wellhead Layout (NTS)

- Dodrill Unit 1H
- Ramza Unit 1H
- Perna Unit 1H
- Glaspell Unit 1H
- Rabin Unit 1H
- Fripp Unit 1H
- Proposed Well Ralph Unit 1H

### Legend

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

Bearing	Dist.
L1 S 79°13' E	1,992.2'
L2 S 29°33' W	647.5'
L3 S 75°41' W	890.4'
L4 N 71°38' W	1,046.7'
L5 S 60°23' W	2,791.0'



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

FILE NO: 147-30-M-23

DRAWING NO: Ralph 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: April 25 2024

OPERATOR'S WELL NO. Ralph 1H

API WELL NO

47 - 017 -  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Proposed: 1,222' Existing: 1,249' WATERSHED: McElroy Creek QUADRANGLE: Center Point

DISTRICT: McClellan Shawn A. COUNTY: Doddridge

SURFACE OWNER: Glaspell ACREAGE: 100

ROYALTY OWNER: Minda Allen LEASE NO: ACREAGE: 100

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

PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,700' TVD 29,800' MD

WELL OPERATOR: Antero Resources Corporation

DESIGNATED AGENT: Kevin Ellis

ADDRESS: 1615 Wynkoop Street  
Denver, CO 80202

ADDRESS: 535 White Oaks Blvd.  
Bridgeport, WV 26330

08/30/2024



Leases	
A	O.W.O. Hardman, et al
B	Robert L. Wolfe
C	Deborah Ann Cox
D	Jefferson Minerals, LLC
E	Ed Broome, Inc.
F	Grace Olive Rudder
G	Mary Ann Swiger
H	Charles O. Dennison Trust
I	N.M. Laughery
J	W.B. Allen, et ux
K	Jay Bee Production Company, et al
L	Jacqueline L. Wichman Trust
M	Mary F. Mutschelknaus
N	Donald R. Reynolds
O	Arley Bartholow
P	Donald R. Reynolds
Q	Rebecca Allen & T.J. Allen
R	Donald R. Reynolds
S	W.S. & Nannie L. Stuart
T	Edison & Virginia L. Underwood
U	Thomas H. Downs
V	Robert O. Hopkins
W	Jacqueline L. Wichman Trust
X	Minda Allen
Y	Morris Mountaineer Oil & Gas, LLC

ID	TM-Par	Owner	Bk/Pg	Acres
1	12-33	Jerry Walters	207/669	50
2	12-29	Larry & Kim Henthorn, et al	214/81	77.84
3	12-28	Garnett M. Ferree	WB24/333	107.00
4	17-3	Coastal Forest Resources Co.	199/267	766.00
5	5-1	Robert L. Wolfe	231/560	58.00
6	5-10	Kevin E. & Elizabeth A. Denny	287/49	88.89
7	5-11	Edward F. & Grace O. Rudder	244/30	53.76
8	11-1	Jonathan G. Edwards	277/108	29.58
9	11-1.1	Bernice A. Swiger	273/502	0.91
10	11-4	Craig A. & Connie L. Simmons	248/314	64.00
11	5-11.1	Grace Olive Rudder	WB42/130	60.63
12	11-5.2	James B. & Hazel I. Lemasters	143/118	21.50
13	11-13	Elk Lick Church of God	136/85	41.00
14	11-5.3	James B. & Hazel I. Lemasters	143/118	11.40
15	11-13.1	Elk Lick Church of God	136/85	35.00
16	11-5	James B. & Hazel I. Lemasters	143/118	108.00
17	11-5.1	James B. & Hazel I. Lemasters	143/118	5.58
18	11-21	Mary K. & Paul Baker	92/51	63.98
19	11-23	Sarah L. Mayle	WB48/356	54.67
20	11-24	Barbara M. Swiger	WB59/593	90.83
21	11-31	Sarah L. Mayle	WB48/356	36.94
22	11-33.1	Mary L. Glaspell, et al	WB33/513	0.60
23	11-33	Mary Lea Glaspell	WB33/513	50.00
24	11-23.2	Sarah L. Mayle	WB48/356	9.83
25	17-2	Mary Lea Glaspell	WB33/513	20.00
26	17-5	Chad Johnson, et al	304/417	131.00
27	11-34	Shawn A. Glaspell	271/230	254.51
28	17-9	John M. & Connie S. Underwood Irrevocable Trust	294/401	84.00
29	17-8	Cecelia Underwood Reid	WB96/232	93.00
30	17-13	Shawn A. Glaspell	468/444	65.00
31	17-17	John Tetric	319/311	131.34
32	17-16	Faith L. Fry	238/167	36.84
33	17-18.1	Faith L. & Michael Fry	342/340	19.50
34	17-16	Faith L. Fry	238/167	36.84
35	17-3.3	Shawn A. Glaspell	283/601	100.00
36	17-3.2	Shawn A. Glaspell	283/601	135.00

FILE NO: 147-30-M-23  
 DRAWING NO: Ralph 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: April 25 2024  
 OPERATOR'S WELL NO. Ralph 1H  
 API WELL NO  
 47 - 017 -  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Proposed: 1,222' Existing: 1,249' WATERSHED: McElroy Creek QUADRANGLE: Center Point  
 DISTRICT: McClellan Shawn A. COUNTY: Dodd 08/30/2024  
 SURFACE OWNER: Glaspell ACREAGE: 100  
 ROYALTY OWNER: Minda Allen LEASE NO: ACREAGE: 100  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,700' TVD 29,800' MD

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



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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Y: Morris Mountaineer Oil &amp; Gas, LLC Lease</b>			
Morris Mountaineer Oil & Gas, LLC	Antero Resources Corporation	1/8+	510/376
<b>X: Minda Allen Lease</b>			
Minda Allen	W. B. Allen	1/8	7/357
W. B. Allen	South Penn Oil Company	Assignment	7/359
South Penn Oil Company	Pennzoil Company	Name Change	WVSOS
Pennzoil Company	Pennzoil Products Company	Deed	203/621
Pennzoil Products Company	Pennzoil Exploration and Production Company	Deed	239/355
Pennzoil Exploration and Production Company	Pennz Energy Exploration and Production LLC	Deed	240/702
Pennz Energy Exploration and Production LLC	Devon Energy Production Company LP	Merger	244/399
Devon Energy Production Company LP	East Resources Inc	Assignment	247/337
East Resources Inc	East Resources Inc and HG Energy LLC	Assignment	253/31
East Resources Inc and HG Energy LLC	American Energy Marcellus LLC	Assignment	361/1
American Energy Marcellus LLC	Ascent Resources – Marcellus LLC	Name Change	36/455
Ascent Resources – Marcellus LLC	Tribune Resources, LLC	Merger	431/360
Tribune Resources, LLC	Antero Resources Corporation	Assignment	530/325
<b>V: Robert O. Hopkins Lease</b>			
Robert O. Hopkins	Antero Resources Corporation	1/8+	527/357
<b>U: Thomas H. Downs Lease</b>			
Thomas H. Downs	Antero Resources Corporation	1/8+	515/362
<b>S: W. S. &amp; Nannie L. Stuart Lease</b>			
W. S. & Nannie L. Stuart	South Penn Oil Company	1/8	11/180
South Penn Oil Company	South Penn Natural Gas Company	Assignment	53/162
South Penn Natural Gas Company	South Penn Oil Company	Deed	133/296
South Penn Oil Company	Pennzoil Company	Name Change	WVSOS
Pennzoil Company	Pennzoil Products Company	Deed	203/621
Pennzoil Products Company	Pennzoil Exploration and Production Company	Deed	239/355
Pennzoil Exploration and Production Company	Pennz Energy Exploration and Production LLC	Deed	240/702
Pennz Energy Exploration and Production LLC	Devon Energy Production Company LP	Merger	244/399
Devon Energy Production Company LP	East Resources Inc	Assignment	247/337
East Resources Inc	Ascent Resources – Marcellus LLC	Assignment	367/147
Ascent Resources – Marcellus LLC	Tribune Resources, LLC	Merger	431/260
Tribune Resources, LLC	Antero Resources Corporation	Assignment	530/325

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Q: Rebecca Allen &amp; I. J. Allen Lease</b>			
Rebecca Allen & I. J. Allen	W.B. Allen	1/8	8/257
W.B. Allen	South Penn Oil Company	Assignment	7/359
South Penn Oil Company	Pennzoil Company	Name Change	WVSOS
Pennzoil Company	Pennzoil Products Company	Deed	201/510
Pennzoil Products Company	Pennzoil Exploration and Production Company	Deed	239/355
Pennzoil Exploration and Production Company	Pennz Energy Exploration and Production LLC	Deed	240/702
Pennz Energy Exploration and Production LLC	Devon Energy Production LP	Merger	244/399
Devon Energy Production LP	East Resources, Inc	Assignment	247/337
East Resources, Inc	American Energy – Marcellus	Assignment	367/409
American Energy – Marcellus	Ascent Resources – Marcellus LLC	Name Change	36/455
Ascent Resources – Marcellus LLC	Tribune Resources, LLC	Merger	431/260
Tribune Resources, LLC	Antero Resources Corporation	Assignment	530/325
<b>P: Donald R. Reynolds Lease</b>			
Donald R. Reynolds	Tribune Resources, LLC	1/8	501/249
Tribune Resources, LLC	Antero Resources Corporation	Assignment	530/325
<b>O: Arley Bartholow Lease</b>			
Arley Bartholow	Antero Resources Corporation	1/8+	463/460
<b>N: Donald R. Reynolds Lease</b>			
Donald R. Reynolds	Antero Resources Corporation	1/8+	337/468
<b>M: Mary F. Mutschelknaus Lease</b>			
Mary F. Mutschelknaus	Antero Resources Corporation	1/8+	404/698
<b>L: Jacqueline L. Wichman Trust Lease</b>			
Jacqueline L. Wichman Trust	Antero Resources Corporation	1/8+	477/504
<b>K: Jay Bee Production Company, et al Lease</b>			
Jay Bee Production Company, et al	Antero Resources Corporation	1/8+	498/473
<b>J: W. B. Allen, et ux Lease</b>			
W. B. Allen, et ux	M. Murphy and E. H. Jennings & Brothers	1/8	8/102
M. Murphy and E. H. Jennings & Brothers	Jennings Oil Company	Assignment	24/184
Jennings Oil Company	John A. Murphy, Joseph L. Murphy, and Michael E. Murphy, trustees	Assignment	36/415
John A. Murphy, Joseph L. Murphy, and Michael E. Murphy, trustees	Murphy Oil Company	Assignment	40/126
Murphy Oil Company	Dilmur Oil Company	Assignment	91/740
Dilmur Oil Company	Targa Development, Inc.	Sale	217/450
Targa Development, Inc.	Antero Resources Appalachian Corporation	Assignment	257/362
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>I: N. M. Laughery Lease</u></b>			
N. M. Laughery	J. M. McIntyre	1/8	24/350
J. M. McIntyre	Carnegie Natural Gas Company		
Carnegie Natural Gas Company	Carnegie Production Company	Assignment	186/61
Carnegie Production Company	Equitable Production Company	Merger	WVSOS
Equitable Production Company	EQT Production Company	Name Change	WVSOS
EQT Production Company	Antero Resources Appalachian Corporation	Assignment	302/504
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523
<b><u>G: Mary Ann Swiger Lease</u></b>			
Mary Ann Swiger	Antero Resources Appalachian Corporation	1/8	282/597
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523
<b><u>H: Charles O. Dennison Trust Lease</u></b>			
Charles O. Dennison Trust	Antero Resources Appalachian Corporation	1/8+	305/264
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523
<b><u>G: Mary Ann Swiger Lease</u></b>			
Mary Ann Swiger	Antero Resources Appalachian Corporation	1/8	282/597
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523
<b><u>F: Grace Olive Rudder Lease</u></b>			
Grace Olive Rudder	Antero Resources Corporation	1/8+	521/156
<b><u>E: Ed Broome, Inc. Lease</u></b>			
Ed Broome, Inc	Antero Resources Corporation	1/8+	506/489
<b><u>D: Jefferson Minerals, LLC Lease</u></b>			
Jefferson Minerals, LLC	Antero Resources Corporation	1/8+	469/427
<b><u>A: O. W. O. Hardman, et al Lease</u></b>			
O. W. O Hardman, et al	Michael Murphy and S. H. Bradley	1/8	9/13
Michael Murphy and S. H. Bradley	E. H. Jennings and Brothers	Assignment	24/184
E. H. Jennings and Brothers	Jennings Oil Company Corporation	Assignment	24/184
Jennings Oil Company Corporation	John A. Murphy, Joseph L. Murphy and Michael E. Murphy Trustees	Assignment	36/415
John A. Murphy, Joseph L. Murphy and Michael E. Murphy Trustees	Murphy Oil Company	Assignment	40/123
Murphy Oil Company	Dilmur Oil Company	Assignment	91/730
Dilmur Oil Company	Targa Development Inc	Assignment	257/362
Targa Development Inc	Antero Resources Appalachian Corporation	Assignment	257/362
Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523
<b><u>B: Robert L. Wolfe Lease</u></b>			
Robert L. Wolfe	Antero Resources Corporation	1/8+	505/389

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
-----------------------	-----------------------	---------	-----------

**\*Cotenancy Utilization** - Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with development of certain royalty owners' interests in this tract.

**\*\*Pooling/Unitization** – Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners in this tract

\*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.

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b><u>A: O. W. O. Hardman, et al Lease</u></b>				
	O. W. O Hardman, et al	Michael Murphy and S. H. Bradley	1/8	9/13
	Michael Murphy and S. H. Bradley	E. H. Jennings and Brothers	Assignment	24/184
	E. H. Jennings and Brothers	Jennings Oil Company Corporation	Assignment	24/184
	Jennings Oil Company Corporation	John A. Murphy, Joseph L. Murphy and Michael E. Murphy Trustees	Assignment	36/415
	John A. Murphy, Joseph L. Murphy and Michael E. Murphy Trustees	Murphy Oil Company	Assignment	40/123
	Murphy Oil Company	Dilmur Oil Company	Assignment	91/730
	Dilmur Oil Company	Targa Development Inc	Assignment	257/362
	Targa Development Inc	Antero Resources Appalachian Corporation	Assignment	257/362
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Merger	46/523

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

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

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

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

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