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west virginia department of environmental protection

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

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

Thursday, October 7, 2023  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for Twig Unit 1H  
47-085-10498-00-00

**Lateral Extension**

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.



James A. Martin  
Chief

Operator's Well Number: Twig Unit 1H  
Farm Name: Pierce, Elmer W.  
U.S. WELL NUMBER: 47-085-10498-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 10/6/2023

Promoting a healthy environment.

10/06/2023

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

- 1) Well Operator: Antero Resources Corporation

494507062	085-Ritchie	Union	Oxford 7.5'
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Operator ID County District Quadrangle
- 2) Operator's Well Number: Twig Unit 1H MOD Well Pad Name: Cashew Pad
- 3) Farm Name/Surface Owner: Elmer W. Pierce Public Road Access: Sugar Run Road
- 4) Elevation, current ground: \_\_\_\_\_ Elevation, proposed post-construction: 1019'
- 5) Well Type (a) Gas \_\_\_\_\_ Oil X Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_  
(b) If Gas Shallow X Deep \_\_\_\_\_  
Horizontal X
- 6) Existing Pad: Yes or No Yes
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#
- 8) Proposed Total Vertical Depth: 6900' TVD
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 23000' MD
- 11) Proposed Horizontal Leg Length: 13886.5'
- 12) Approximate Fresh Water Strata Depths: 53', 236'
- 13) Method to Determine Fresh Water Depths: 47-085-07654
- 14) Approximate Saltwater Depths: 1709', 1847'
- 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 X
- (a) If Yes, provide Mine Info: Name: \_\_\_\_\_  
Depth: \_\_\_\_\_  
Seam: \_\_\_\_\_  
Owner: \_\_\_\_\_

 09/28/23

WW-6B  
(04/15)

API NO. 47- 085 - 10498  
 OPERATOR WELL NO. Twig Unit 1H MOD  
 Well Pad Name: Cashew Pad

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	100	100	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300	CTS, 313 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#	23000	23000	4868 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
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	Land-HP/POZ & TH - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

**PACKERS**

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

 09/28/23

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

Drill, perforate, fracture a new vertical 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): 33.75 acres

22) Area to be disturbed for well pad only, less access road (acres): 14.29 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

25) Proposed borehole conditioning procedures:

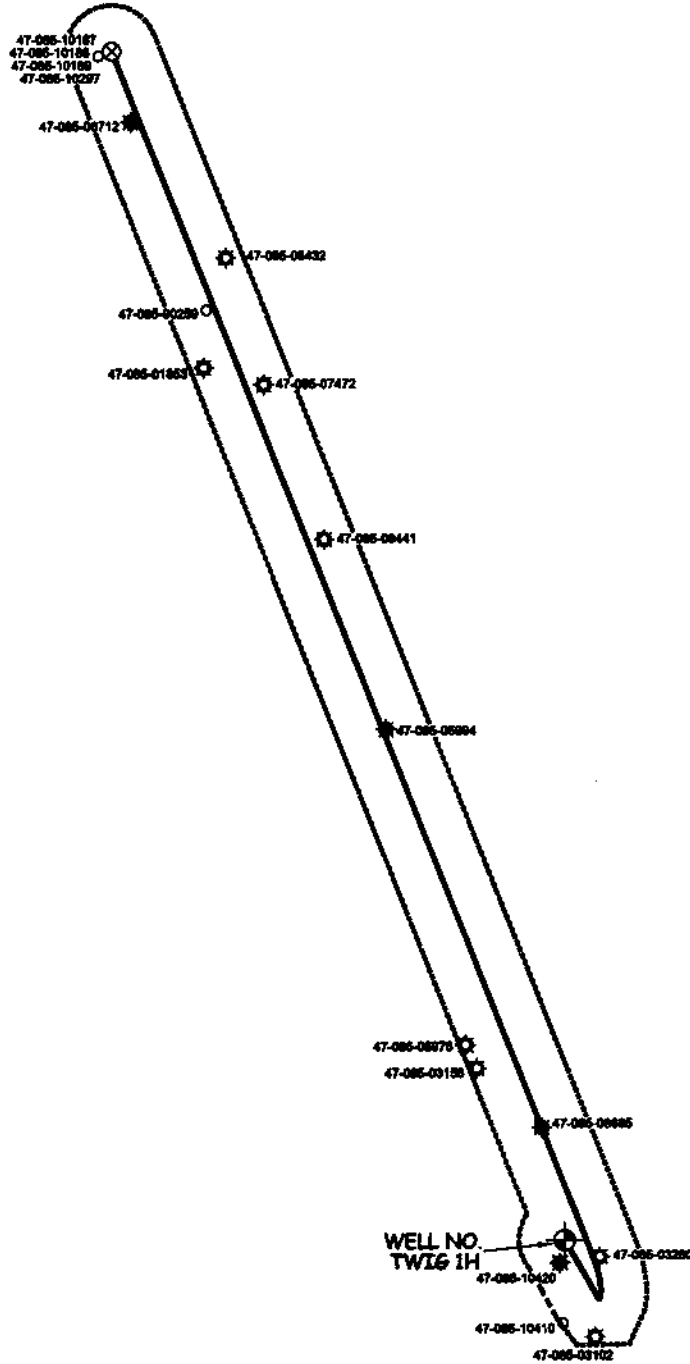
Conductor: blowhole clean with air, run casing, 10 bbls fresh water.  
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.  
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.

 09/28/25  
Page 3 of 3

10/06/2023

# CASHEW PAD ANTERO RESOURCES CORPORATION



WILLOW LAND SURVEYING, PLLC  
P.O. BOX 17, PENNSBORO, WV 26415  
(304) 659-1717

JOB #: 22-005WA

FILE: TWIG1HAOR.DWG

SCALE : 1-INCH = 2000-FEET

0'                      2000'                      4000'                      6000'



DATE: 09/09/23

DRAWN BY: T.B.S.

10/06/2023

UWI (API Num)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest - deepest)	Perforated Formation(s)	Producible Formation(s) (not perf'd)
47085032600000	R L KESTER	3	R & R OIL & GAS LLC	OIL STATES SALES	2,013		Big Injun	Weir, Berea, Benson, Alexander
47085031020000	R L KESTER	2	R & R OIL & GAS LLC	OIL STATES SALES	1,900		Maxton, Big Injun	Weir, Berea, Benson, Alexander
47085104200000	EL LICK UNIT	2H	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP	20,905	6074 - 20778	Marcollis	Weir, Berea, Benson, Alexander
47085086850000	WHITEHAIR	2	KEY OIL CO	KEY OIL CO	5,391	3248 - 5090	Warren, Speechley, Balltown, Riley, Benson, Alexander	Weir
47085031560000	D SMITH	1	R & R OIL & GAS LLC	BEAR RUN OIL	2,010		Big Injun	Weir, Berea, Benson, Alexander
47085059750000	SIMS C DALE	1	BETA HELIX ENERGY LLC	CHASE PETROLEUM CO	5,225	3598 - 5015	Lower Huron, Alexander	Weir, Benson
47085059940000	THACKER R D ET AL	1	BETA HELIX ENERGY LLC	CHASE PETROLEUM CO	5,450	3393 - 5229	Lower Huron, Alexander	Weir, Benson
47085084410000	PRUNTY LEE HEIRS	4	KEY OIL CO	KEY OIL CO	5,552	3525 - 5375	Warren, Speechley, Balltown, Riley, Benson, Alexander	Weir
47085074720000	PRUNTY BILL ET AL	1	BONNETTS PRODUCTION CO	FAIR ENTERPRISES	5,285	3147 - 5119	Lower Huron	Weir, Benson
47085018530000	LEE PRUNTY ESTATE	1	ALLEGHENY LAND&MINI	ALLEGHENY LAND&MINI	1,876		Big Injun	Weir, Benson, Alexander
47085902590000	PRUNTY LEE HEIRS	1	KEY OIL CO	KEY OIL CO	5,318	3277 - 5100	Warren, Speechley, Balltown, Riley, Benson, Alexander	Weir
47085084320000	BROADWATER HEIRS	1	BETA HELIX ENERGY LLC	CHASE PETROLEUM CO	4,600	3204 - 4381	Warren, Lower Huron	Weir, Benson, Alexander
47085067120000	BROADWATER HEIRS	2H	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP				
47085101870000	BROADWATER UNIT	3H	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP				
47085101890000	BROADWATER UNIT	4H	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP				
47085102970000	ALLENDER UNIT	1H	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP				
47085104100000	CASHW	5V	ANTERO RESOURCES CORP	ANTERO RESOURCES CORP				

10/06/2023

LATITUDE 39°12'30"

6,883'

LATITUDE 39°12'30"

180' TO BOTTOM HOLE

1H BOTTOM HOLE

Antero Resources Corporation Well No. Twig 1H

Union District - Ritchie County	
9-9.1	Naomi Cunningham
9-14	John Louke
9-15	Marvin Osborne
9-15.1	Marvin Osborne
9-16	Marvin Osborne
9-18	Jack Guthrie Trust
9-19	Twila Evtits
9-20	Twila Evtits
9-20.1	Mark Morrison
9-20.2	Brian Bonner
9-21	Stephanie Knight
9-22	Stephanie Knight
9-23	Marvin Osborne
14-3.3	Mary Harms
14-4	Stephanie Knight
14-4.1	Stephanie Knight
14-11	Nathaniel Hendricks
14-11.6	Nathaniel Hendricks
14-11.7	Nathaniel Hendricks
14-11.8	Nathaniel Hendricks
14-17	Ralph Thacker
14-20	David Wezley
15-1	Timothy Alexander
15-1.1	Ralph Thacker
15-2	Ralph Thacker
15-3	Larry Gander
15-4	Stout Valley Trust
15-5	Larry Gander
15-6	Ralph Thacker
15-7	Stephanie Knight
15-8	Stephanie Knight
21-1	Ralph Thacker
21-2	Brier Fork Trust
21-3	Dallas Smith Et Al
21-4	Larry Gander
21-4.1	Joseph Bianchini
21-4.2	Maria Bianchini
21-4.3	Joseph Bianchini
21-5	James Beck Et Al
21-6	WF Smith
21-6.1	Luis Gander
21-7	Elmer Pierce
21-7.1	Larry Gander
21-7.2	Larry Gander
21-8.4	Brian Vansont
21-10	James Beck
21-10.1	Harvey Shepler
21-10.2	James Beck

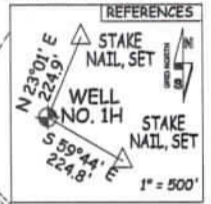
Southwest District - Doddridge County	
1-1	Jeffrey Polan
4-2	Cevasco Family Trust
4-10	James Webb
4-11	Juanita Leggett
4-14	Juanita Leggett
4-16	James Webb
4-18	James Webb
4-19.3	CNG Transmission Corp.
4-19.4	CNG Transmission Corp.
4-19.5	Dana Hurst
4-19.7	James Webb
4-19.8	James Webb
4-19.9	James Webb
4-21	Anthony Ayers
4-22	Reed Zinn
4-24	I.L. Morris
4-25	Tina Osborne
4-25.1	Stanley Chipp
4-28.3	Alfred Farley
4-31	Vicki Moore
4-31.2	Bradley Davis
4-34	Carl Revin
8-1	Richard Brown
8-3	Randall Russell
8-4	John Gray Hrs
8-5	Larry Gander
12-1	David Bell

NOTES:  
 WELL 1H TOP HOLE INFORMATION:  
 N: 247,740ft E: 1,615,110ft  
 LAT: 39°10'19.94" LON: 80°51'27.40"  
 BOTTOM HOLE INFORMATION:  
 N: 260,707ft E: 1,610,198ft  
 LAT: 39°12'27.37" LON: 80°52'32.29"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

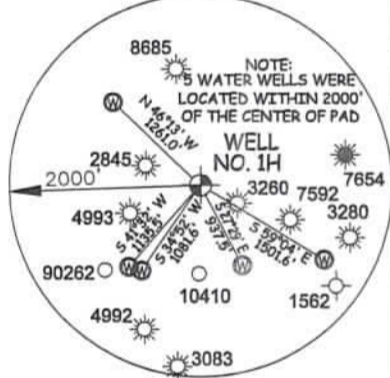
(NAD) 83 (UTM) ZONE 17 COORDS:  
 WELL 1H TOP HOLE INFORMATION:  
 N: 4,335,906m E: 512,315m  
 BOTTOM HOLE INFORMATION:  
 N: 4,339,831m E: 510,752m

(NAD) 27 (UTM) ZONE 17 COORDS:  
 WELL 1H TOP HOLE INFORMATION:  
 N: 14,224,670ft E: 1,680,771ft  
 POINT OF ENTRY INFORMATION:  
 N: 14,224,562ft E: 1,681,056ft  
 BOTTOM HOLE INFORMATION:  
 N: 14,237,549ft E: 1,675,645ft

NOTE  
 NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



RECEIVED  
 Office of Oil and Gas  
 SEP 21 2023  
 WV Department of Environmental Protection



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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



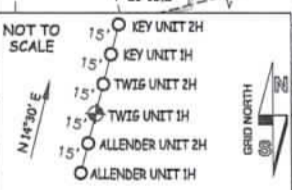
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
 WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 23-007WA  
 DRAWING # TWIG1HS  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND  
 — Surface Owner Boundary Lines +/-  
 - - - Adjoining Surface Tracts +/-  
 ⊕ Found monument, as noted  
 THOMAS SUMMERS P.S. 2109

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

DATE 09/06/23  
 OPERATOR'S WELL # TWIG 1H



WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ 47 - 085 - 10498  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X STATE COUNTY PERMIT  
 LOCATION: ELEVATION 1,019' -AS-BUILT WATERSHED SOUTH FORK HUGHES RIVER  
 QUADRANGLE OXFORD 7.5' DISTRICT UNION COUNTY RITCHIE  
 SURFACE OWNER ELMER W. PIERCE ACREAGE 67.78 ACRES +/- 10/06/2023  
 OIL & GAS ROYALTY OWNER R. F. KIESTER ET AL LEASE ACREAGE 70 AC.±

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER X REDRILL \_\_\_ FRACTURE OR STIMULATE X  
 PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL  
 (SPECIFY) MOD-BHL PLUG & ABANDON CLEAN OUT & REPLUG  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 23,000' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS  
 ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAK BLVD.  
 FORM WW-6 DENVER, CO 80202 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

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>R. F. Kiestler et al Lease:</u></b>			
R. F. Kiestler, et al	G.L. Yaste	1/8	105/504
G. L. Yaste	D. L. Y., Inc	Assignment	112/302
D. L. Y., Inc	Betty Jean Stalnaker & Rosalee Roberts	Assignment	132/565
Betty Jean Stalnaker & Rosalee Roberts	R & S Gas Company	Assignment	147/548
R & S Gas Company	BET-RO Inc	Assignment	147/554
BET-RO Inc	Roberts Energy Corporation	Assignment	240/36
<b>Roberts Energy Corporation</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>329/138</b>
<b><u>B. Guy Whitehair, et ux Lease:</u></b>			
B. Guy Whitehair, et ux	L.E Mossor and Harry	1/8	107/346
L.E Mossor and Harry	Francis Friestad	Assignment	89/497
Francis Friestad	W.H. Thomson	Assignment	152/213
W.H. Thomson	BET-RO INC	Assignment	177/11
BET-RO INC	Jesam Energy	Assignment	204/134
Jesam Energy	Roberts Energy	Assignment	204/705
Roberts Energy	Key Oil Company	Assignment	258/619
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	263/629
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>46/523</b>
<b><u>Eddy D. Beck Lease:</u></b>			
<b>Eddy D. Beck</b>	<b>Antero Resources Corporation</b>	<b>1/8+</b>	<b>318/650</b>
<b><u>Carol S. Love Lease:</u></b>			
Carol S. Love	Williard E. Ferrell	1/8	107/32
Willard E. Ferrell	Colleen F. Selsor	Will	42/15
Colleen F. Selsor	Bet-Ro, Inc.	Assignment	196/651
Bet-Ro, Inc.	Jesam Energy	Assignment	239/165
Jesam Energy	Roberts Energy	Assignment	239/564
Roberts Energy	Key Oil Company	Assignment	254/588
Key Oil Company	Antero Resources Appalachian Corporation		
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>15/705</b>
<b><u>C. Dale Sims, et ux Lease:</u></b>			
C. Dale Sims, et ux	Chase Petroleum, Inc	1/8	146/730
Chase Petroleum, Inc	Continental Reserves 1983-1	Assignment	176/835
Continental Reserves 1983-1	Abarta Oil and Gas Company, Inc.	Assignment	247/569
<b>Abarta Oil and Gas Company, Inc.</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>311/111</b>
<b><u>Boyd Guy Whitehair, et al Lease:</u></b>			
Boyd Guy Whitehair, et al	United Operating Company	1/8	126/164
United Operating Company	Lyle T. Coffman	Assignment	271/161
<b>Lyle T. Coffman</b>	<b>Antero Resources Corporation</b>	<b>Assignment</b>	<b>271/744</b>



INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>Belle Martin, et al Lease:</u></b>			
Belle Martin, et al	Alton Skinner	1/8	132/661
Alton Skinner	Crystal G. Skinner and Desari S. Garrett	Assignment	216/391
Crystal G. Skinner and Desari S. Garrett	DC Petroleum, Inc.	Assignment	247/245
DC Petroleum, Inc.	Antero Resources Appalachian Corporation	Assignment	254/789
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705
<b><u>Boyd Guy Whitehair, et al Lease:</u></b>			
Boyd Guy Whitehair, et al	United Operating Company	1/8	126/164
United Operating Company	Lyle T. Coffman	Assignment	271/161
Lyle T. Coffman	Antero Resources Corporation	Assignment	271/744
<b><u>D. Ralph Hacker Lease:</u></b>			
D. Ralph Hacker	Antero Resources Corporation	1/8+	329/491
<b><u>Haught Family Trust Lease:</u></b>			
Haught Family Trust	Antero Resources Corporation	1/8+	332/95
<b><u>Charles E. Nicholson Lease:</u></b>			
Charles E. Nicholson	Key Oil Company	1/8	230/274
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	258/509
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705
<b><u>D.W. Gray and M.E. Gray Lease:</u></b>			
D. W. Gray and M.E. Gray	M. G. Taylor	1/8	30/148
M. G. Taylor	Tri State Gas Company	Assignment	26/39
Tri State Gas Company	Hope Natural Gas Company	Assignment	26/93
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	143/345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	135/583
Consolidated Gas Transmission Corporation	CNG Development	Assignment	139/41
CNG Development	Dominion Exploration and Production INC	Merger	WVSOS
Dominion Exploration and Production INC	Dominion Transmission INC	Assignment	244/528
Dominion Transmission INC	Consol Energy Holdings LLC XVI	Assignment	245/1
Consol Energy Holdings LLC XVI	Consol Gas Company	Merger	292/469
Consol Gas Company	CNX	Merger	292/469
CNX	Noble Energy	Assignment	339/642
Noble Energy	Antero Resources Corporation	Assignment	323/303

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
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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>William F. Prunty Lease</u></b>			
William F. Prunty	Farr Enterprises	1/8	180/549
Farr Enterprises	Key Oil	Assignment	224/545
Key Oil	Antero Resources Appalachian Corporation	Assignment	256/488
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705
<b><u>William F. Prunty, et al Lease:</u></b>			
William F. Prunty, et al	Farr Enterprises	1/8	180/549
Farr Enterprises	Key Oil	Assignment	224/545
Key Oil	Antero Resources Appalachian Corporation	Assignment	256/488
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705
<b><u>C.O. Wise, et al Lease:</u></b>			
C.O. Wise, et al	W. D. Gribble	1/8	79/209
W. D. Gribble	Carolyn E. Farr	Will	3/97
Carolyn E. Farr	Carolyn E. Farr trust by its trustee Clarence E Sigley	Deed	220/233
Carolyn E. Farr trust by its trustee Clarence E Sigley	Antero Resources Appalachian Corporation	Assignment	223/509
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705

**\*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.**

**\*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.**

**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)**

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- (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;
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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Wills G. Nicholson Lease</u>				
	Wills G. Nicholson	Clarence W. Mutschelknaus	1/8	146/36
	Clarence W. Mutschelknaus	Alton Skinner	Assignment	162/16
	Alton Skinner	Alton L. Skinner, II, Crystal G. Skinner and Desari S. Garrett	Will	216/391
	Alton L. Skinner, II, Crystal G. Skinner and Desari S. Garrett	DC Petroleum	Assignment	170/583
	DC Petroleum	Antero Resources Appalachian Corporation	Assignment	254/133
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	15/705

**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