



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

Wednesday, July 11, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for GRIFF UNIT 2H
47-085-10330-00-00

Lateral shift

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

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

Operator's Well Number: GRIFF UNIT 2H
Farm Name: RADALL BOND ET AL
U.S. WELL NUMBER: 47-085-10330-00-00
Horizontal 6A New Drill
Date Modification Issued: July 11, 2018

Promoting a healthy environment.

07/13/2018



July 5, 2018

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

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Ms. Laura Adkins
601 57th Street
Charleston, WV 25304

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following permit updates for Graben Unit 1H. We shifted the lateral well bore and need to modify the permit. Please see the table below for other wells on the Hichman pad that will need the following modifications. All wells are currently at Intermediate casing.

Wells Modifying	Wells dropping to be plugged	Wells moving less than 50' no modification needed.
Short Run Unit 2H	Graben Unit 2H	Centerville Unit 2H
Griff Unit 2H	Centerville Unit 1H	Short Run Unit 1H
Hex Unit 1H	Hex Unit 2H	Hex Unit 3H
Graben Unit 1H	Griff Unit 1H	Griff Unit 3H

Attached you will find the following:

- REVISED Mylar Plat
- REVISED WW-6B
- REVISED WW 6A1

If you have any questions please feel free to contact me at (303) 357-7182.

Thank you in advance for your consideration.

Sincerely,

Mallory Stanton
Permitting Supervisor
Antero Resources Corporation
Enclosures

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JUN 6 2018
WV Department of
Environmental Protection

07/13/2018

WW-6B
(04/15)

API NO. 47-085 - 10330

OPERATOR WELL NO. Griff Unit 2H

Well Pad Name: Hichman Pad

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

1) Well Operator: Antero Resources Corporation 494507062 085 - Ritchie Clay Pennsboro 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Griff Unit 2H Well Pad Name: Hichman Pad

3) Farm Name/Surface Owner: Radall Bond et al Public Road Access: CR-74/4 (Bond Run)

4) Elevation, current ground: 1250' Elevation, proposed post-construction: _____

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: 7000' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19900' MD

11) Proposed Horizontal Leg Length: 12444' *12438 original*

12) Approximate Fresh Water Strata Depths: 170', 238', 341' ✓ ✓

13) Method to Determine Fresh Water Depths: Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 2050', 2033', 1668' ✓

15) Approximate Coal Seam Depths: 868', 1675'

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

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Environmental Protection

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

WW-6B
(04/15)

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#	80'	80' ✓	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	395' *see #19	395' *see #19	CTS, 549 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500' ✓	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	19900'	19900'	5064 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
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	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

Kind:	N/A			RECEIVED Office of Oil and Gas
Sizes:	N/A			JUN 6 2018
Depths Set:	N/A			WV Department of Environmental Protection

WW-6B
(10/14)

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 28.61 acres

22) Area to be disturbed for well pad only, less access road (acres): 7.43 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

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25) Proposed borehole conditioning procedures:

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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.



47085073090000

Griff Unit 2H

47085079660000

47085081390000

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Antero Resources Corporation

Griff Unit 2H - AOR



WELL SYMBOLS
Gas Well

July 5, 2018

07/13/2018

UWI (API Num)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Productible Formation(s) not perf'd
47085075690000	GRIFFIN EDITH HESS	JK-1068	ENERGY CORP OF AMER	J & J ENTERPRISES	5617	4668-5049	Riley, Benson	Big Injun, Weir, Alexander
47085081390000	BOND GENE P ETAL	9	CONSOL GAS COMPANY	DAC CORP	5505	4629-5332	Riley, Benson, Alexander	Big Injun, Weir
47085075660000	TARLULLI	3	ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5994	4728-5126	Riley, Benson	Big Injun, Weir, Alexander

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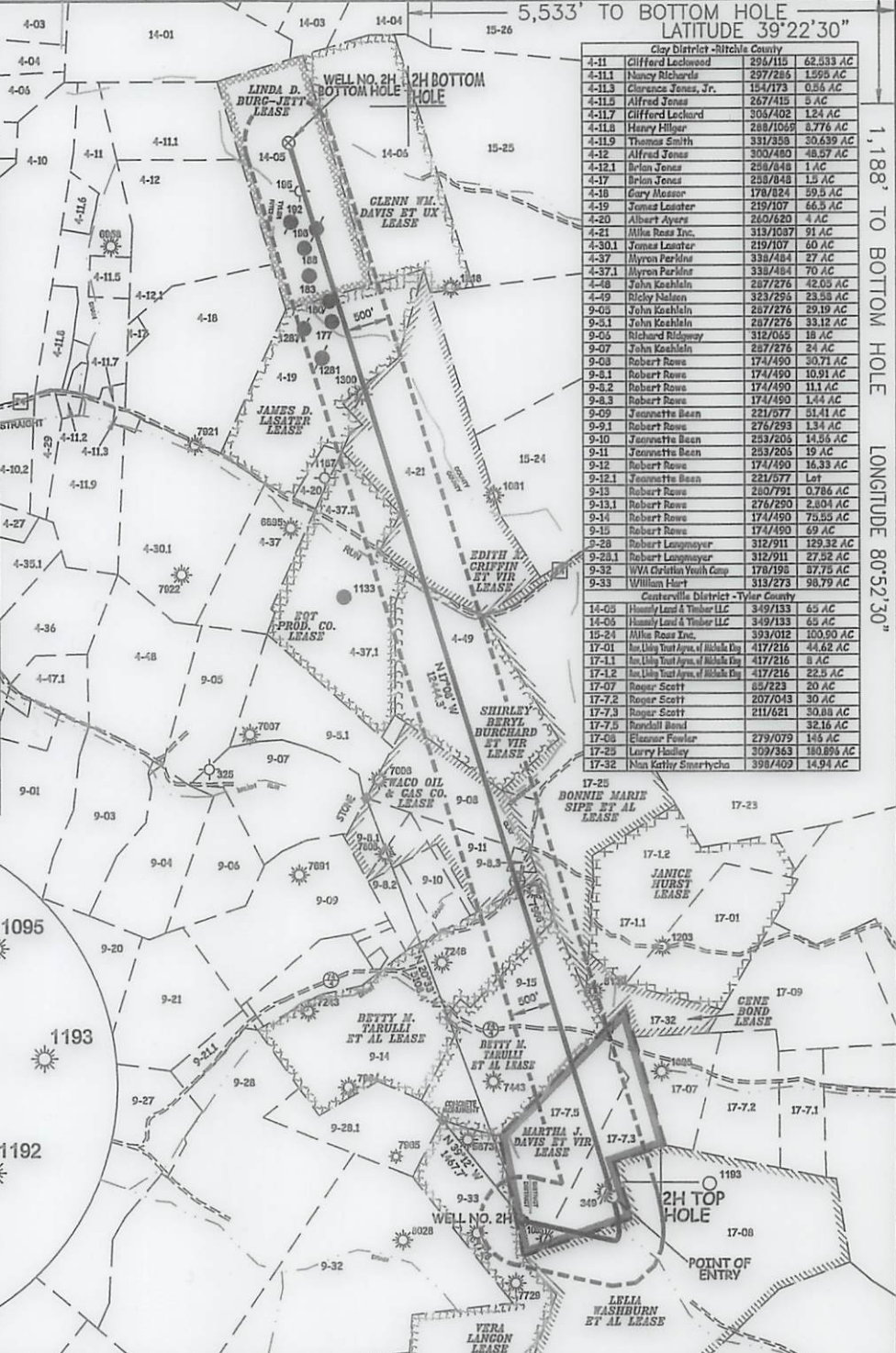
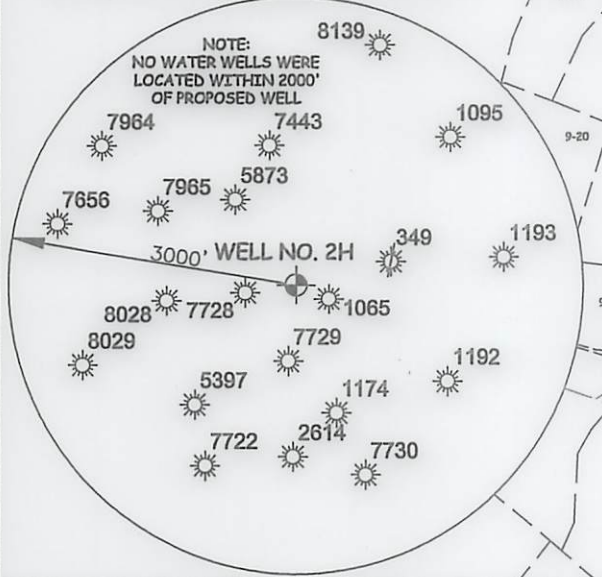
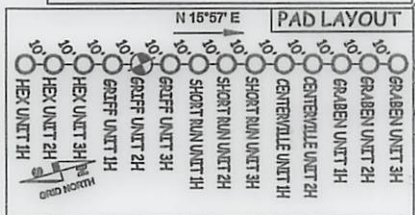
07/13/2018

LATITUDE 39°22'30" 2,686'

Antero Resources Corporation
Well No. Griff Unit 2H

NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 308,392ft E: 1,608,422ft
LAT: 39°20'18.36" LON: 80°53'04.19"
BOTTOM HOLE INFORMATION:
N: 320,566ft E: 1,605,761ft
LAT: 39°22'18.27" LON: 80°53'40.46"
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 2H TOP HOLE INFORMATION:
N: 4,354,349m E: 509,969m
BOTTOM HOLE INFORMATION:
N: 4,358,045m E: 509,096m



Clay District - Ritchie County		
4-11	Clifford Lockwood	335/115 62.583 AC
4-11	Henry Richard	257/255 1395 AC
4-11.3	Clarence Jones, Jr.	154/173 0.56 AC
4-11.9	Alfred Jones	267/415 5 AC
4-11.7	Clifford Lockard	306/402 1.24 AC
4-11.8	Henry Hilger	288/1069 8.776 AC
4-11.9	Thomas Smith	331/358 30.639 AC
4-12	AHFRD Jones	300/480 48.57 AC
4-12.1	Brian Jones	258/848 1 AC
4-17	Brian Jones	258/848 1.5 AC
4-18	Gary Mason	178/224 19.5 AC
4-19	James Lanster	219/107 66.5 AC
4-20	Albert Ayers	260/620 4 AC
4-21	Alma Ross Inc.	313/1037 91 AC
4-30.1	James Lanster	219/107 60 AC
4-37	Myron Parline	338/484 27 AC
4-37.1	Myron Parline	338/484 70 AC
4-48	John Koshlein	287/276 42.05 AC
4-49	Ricky Nelson	323/295 23.55 AC
9-08	John Koshlein	287/276 29.19 AC
9-11	John Koshlein	287/276 33.12 AC
9-05	Richard Ridgeway	312/055 18 AC
9-07	John Koshlein	287/276 24 AC
9-08	Robert Rowe	174/490 30.71 AC
9-8.1	Robert Rowe	174/490 10.91 AC
9-8.2	Robert Rowe	174/490 11.1 AC
9-8.3	Robert Rowe	174/490 1.44 AC
9-9	Jeanette Bean	231/577 31.41 AC
9-9.1	Robert Rowe	276/253 1.34 AC
9-10	Jeanette Bean	233/203 14.55 AC
9-11	Jeanette Bean	233/203 19 AC
9-12	Robert Rowe	174/490 16.33 AC
9-12.1	Jeanette Bean	231/577 Lot
9-13	Robert Rowe	280/791 0.786 AC
9-13.1	Robert Rowe	276/250 2.904 AC
9-14	Robert Rowe	174/490 76.55 AC
9-15	Robert Rowe	174/490 69 AC
9-28	Robert Leasonoy	312/911 129.32 AC
9-28.1	Robert Leasonoy	312/911 27.52 AC
9-32	WV Christian Youth Camp	178/193 87.75 AC
9-33	William Hart	313/273 98.79 AC

Custerwille District - Tyler County		
14-03	Humby Land & Timber LLC	349/133 63 AC
14-04	Humby Land & Timber LLC	349/133 63 AC
15-21	Alma Ross Inc.	393/012 100.90 AC
17-01	Ray (Ray) and Joyce (Joyce) of Blaine Bay	437/216 44.82 AC
17-11	Ray (Ray) and Joyce (Joyce) of Blaine Bay	437/216 8 AC
17-12	Ray (Ray) and Joyce (Joyce) of Blaine Bay	437/216 22.5 AC
17-07	Roger Scott	62/223 20 AC
17-7.2	Roger Scott	207/043 30 AC
17-7.3	Roger Scott	211/621 30.88 AC
17-7.5	Randall Bond	320/043 32.16 AC
17-08	Eleanor Fowler	279/079 145 AC
17-25	Larry Hadley	309/363 180.895 AC
17-32	Nan Kathy Smartycha	398/409 14.94 AC

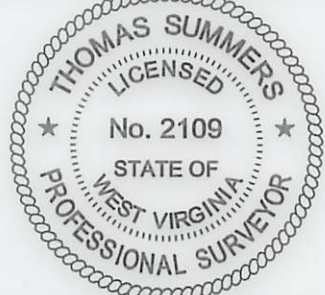
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 14,285,180ft E: 1,673,075ft
POINT OF ENTRY INFORMATION:
N: 14,285,478ft E: 1,674,073ft
BOTTOM HOLE INFORMATION:
N: 14,297,304ft E: 1,670,212ft

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.



JOB # 17-007WA	LEGEND	REFERENCES
DRAWING # GRIFF2HR	--- Surface Owner Boundary Lines +/-	
SCALE 1" = 2000'	- - - Interior Surface Tracts +/-	
MINIMUM DEGREE OF ACCURACY SUBMETER	- x - x - Existing Fence	
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS	Found monument, as noted	
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS	THOMAS SUMMERS P.S. 2109	
	DATE 07/05/18	
	OPERATOR'S WELL# GRIFF UNIT #2H	

WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>	47	085	10330
(IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	STATE	COUNTY	PERMIT
LOCATION: ELEVATION 1,250' AS BUILT	WATERSHED NORTH FORK HUGHES RIVER		
QUADRANGLE PENNSBORO 7.5'	DISTRICT CLAY	COUNTY RITCHIE	
SURFACE OWNER RADALL BOND ET AL	ACREAGE 32.16 ACRES +/-		
OIL & GAS ROYALTY OWNER MARTHA J. DAVIS ET VIR; LELIA WASHBURN ET AL; BETTY M. TARULLI ET AL;	LEASE ACREAGE 70 AC±; 150 AC±; 69 AC±;		
BETTY M. TARULLI ET AL; WACO OIL & GAS CO.; SHIRLEY BERYL BURCHARD ET VIR; EDITH A. GRIFFIN ET VIR;	76 AC±; 56 AC±; 60 AC±; 91 AC±;		
JAMES D. LASATER; LINDA D. BURG-JETT	66.5 AC±; 65 AC±		
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input checked="" type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/>			
PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input checked="" type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL			
(SPECIFY) MOD-BHL	PLUG & ABANDON	CLEAN OUT & REPLUG	
TARGET FORMATION MARCELLUS	ESTIMATED DEPTH 7,000' TVD 19,900' MD		
WELL OPERATOR ANTERO RESOURCES CORP.	DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM		
ADDRESS 1615 WYNKOOP ST.	ADDRESS 5400 D BIG TYLER ROAD		
FORM WW-6 DENVER, CO 80202	CHARLESTON, WV 25313		

1,188' TO BOTTOM HOLE
LONGITUDE 80°52'30"
1,319'

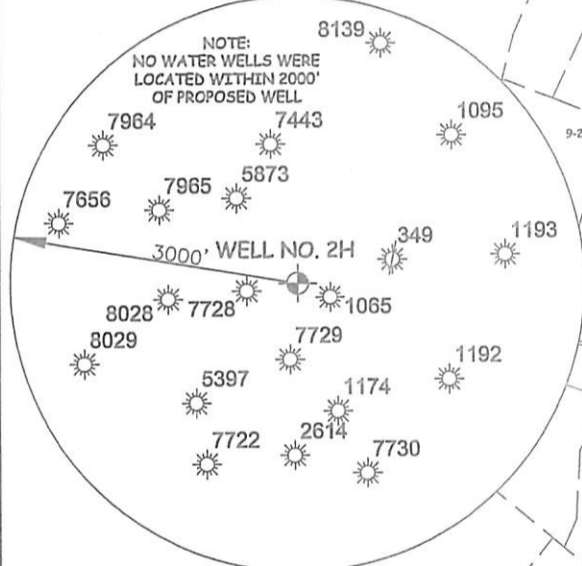
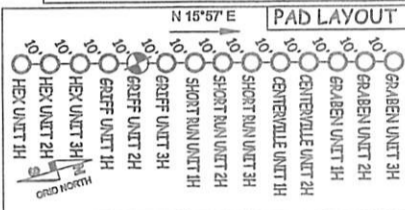
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4-11.9	Thomas Smith	331/358 30.639 AC
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9-9.3	Robert Rowe	174/490 14.4 AC
9-09	Jeanette Bean	221/577 51.41 AC
9-9.1	Robert Rowe	276/293 1.34 AC
9-10	Jeanette Bean	253/205 14.56 AC
9-11	Jeanette Bean	253/205 19 AC
9-12	Robert Rowe	174/490 16.33 AC
9-12.1	Jeanette Bean	221/577 147
9-13	Robert Rowe	280/791 0.788 AC
9-13	Robert Rowe	276/290 2.804 AC
9-14	Robert Rowe	174/490 75.55 AC
9-15	Robert Rowe	174/490 69 AC
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9-33	William Hart	313/273 58.79 AC
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17-32	Nan Kathy Smartychus	398/409 14.94 AC

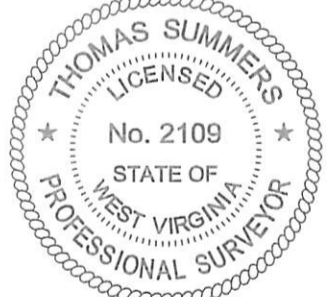
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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

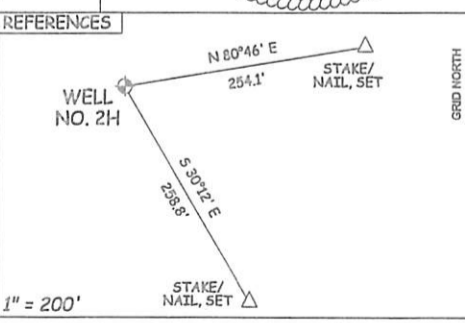
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JOB # 17-007WA
 DRAWING # GRIFF2HR
 SCALE 1" = 2000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND
 - - - - - Surface Owner Boundary Lines +/-
 - - - - - Interior Surface Tracts +/-
 - x - x - Existing Fence
 ⊕ Found monument, as noted
 THOMAS SUMMERS P.S. 2109
 DATE 07/05/18
 OPERATOR'S WELL# GRIFF UNIT #2H



WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 085 - 10330
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,250' AS BUILT WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER RADALL BOND ET AL ACREAGE 32.16 ACRES +/-
 OIL & GAS ROYALTY OWNER MARTHA J. DAVIS ET VIR; LELIA WASHBURN ET AL; BETTY M. TARULLI ET AL; LEASE ACREAGE 70 AC±; 150 AC±; 69 AC±;
 BETTY M. TARULLI ET AL; WACO OIL & GAS CO.; SHIRLEY BERYL BURCHARD ET VIR; EDITH A. GRIFFIN ET VIR; 76 AC±; 56 AC±; 60 AC±; 91 AC±;
 JAMES D. LASATER; LINDA D. BURG-JETT 66.5 AC±; 65 AC±
 PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER REDRILL ___ FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) MOD-BHL PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,000' TVD 19,900' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

WW-6A1
(5/13)

Operator's Well No. Griff Unit 2H

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

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Linda D. Burg-Jett Lease</u>	Linda D. Burg-Jett Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0400/0312 Exhibit 1

*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

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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: Diana Hoff 
Its: Vice President - Operations

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Martha J. Davis, et vir Lease</u>			
Martha J. Davis, et vir	Exxon Corporation	1/8	0209/0272
Exxon Corporation	XTO Energy, Inc.	Assignment	0359/0150
XTO Energy, Inc.	Antero Resources Corporation	Assignment	0423/0613
<u>Lelia Washburn, et al Lease</u>			
Lelia Washburn & heir of W.M. Ash & Mary T. Ash	Union Carbide Corporation	1/8	0177/0232
Union Carbide Corporation	Perkins Oil & Gas, Inc.	Assignment	Unrecorded – Exhibit 2
Perkins Oil & Gas, Inc.	Eastern Intermountain Energy, Inc.	Assignment	0266/0099
Eastern Intermountain Energy, Inc.	Appalachian Energy Development, Inc.	Assignment	0266/0170
Appalachian Energy Development, Inc.	Perkins Oil & Gas, Inc.	Assignment	0268/0197
Perkins Oil & Gas, Inc.	Antero Resources Corporation	*Partial Assignment of Oil & Gas Leases	0419/0547
<u>Betty M. Torulli, et al Lease (TM 9-15)</u>			
Betty M. Torulli, et al	J & J Enterprises, Inc.	1/8	0182/0071
J & J Enterprises, Inc.	Eastern Penn. Exploration	Assignment	0179/0609
Eastern Penn. Exploration	Eastern American Energy Corporation	Assignment	0218/0187
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	0006/0450
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0397
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Betty M. Torulli, et al Lease (TM 9-14)</u>			
Betty M. Torulli, et al	J & J Enterprises, Inc.	1/8	0168/0629
J & J Enterprises, Inc.	Eastern Penn. Exploration	Assignment	0179/0609
Eastern Penn. Exploration	Eastern American Energy Corporation	Assignment	0218/0187
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	0006/0450
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0397
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Waco Oil & Gas Co. Lease</u>			
Waco Oil & Gas Co., Inc.	Antero Resources Corporation	1/8+	0281/0282

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WV Department of
Environmental Protection

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INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
 Chapter 22, Article 6A, Section 5(a)(5)
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(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>Shirley Beryl Burchard, et vir Lease</u>			
Shirley Beryle Burchard, et vir	Antero Resources Appalachian Corporation	1/8+	0306/0853
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Edith A. Griffin, et vir Lease</u>			
Edith A. Griffin	J & J Enterprises, Inc.	1/8	0164/0609
J & J Enterprises, Inc.	Eastern Penn. Exploration	Assignment	0179/0609
Eastern Penn. Exploration	Eastern American Energy Corporation	Assignment	0218/0187
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	0006/0450
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0264/0266
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>James D. Lasater Lease (TM 4-19)</u>			
James D. Lasater	Antero Resources Corporation	1/8+	0293/0191

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****CONTINUED ON NEXT PAGE****

07/13/2018

FILED

JUN 10 2013

Natalie E. Tennant
Secretary of State
1900 Kanawha Blvd E
Bldg 1, Suite 157-K
Charleston, WV 25305



Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsof.com
E-mail: business@wvsof.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

Office Hours: Monday - Friday
8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed
stamped copy returned to you)
FEE: \$25.00

**** In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby ****
applies for an Amended Certificate of Authority and submits the following statement:

- 1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- 2. Date Certificate of Authority was issued in West Virginia: 6/25/2008
- 3. Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- 4. Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- 5. Other amendments: _____
(attach additional pages if necessary)

6. Name and phone number of contact person. (This is optional; however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)

Alvyn A. Schopp

(303) 357-7310

Contact Name

Phone Number

7. Signature information (See below *Important Legal Notice Regarding Signature*):

Print Name of Signer: Alvyn A. Schopp

Title/Capacity: Authorized Person

Signature: *Alvyn A. Schopp*

Date: June 10, 2013

***Important Legal Notice Regarding Signature:** For West Virginia Code §31D-1-129. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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FORM WW-6A1
EXHIBIT 2 PAGE 1

By assignment dated December 12, 1986, and recorded in Deed Book 266, Page 99, Perkins Oil & Gas, Inc., a West Virginia corporation, assigned unto Eastern Intermountain Energy, Inc., a West Virginia corporation, that certain lease for oil and gas drilling and production purposes, dated February 21, 1967, and executed by Lelia Washburn, et al. Union Carbide Corporation, as lessee, and embracing 150 acres, more or less, excepting and reserving for the benefit of the said Assignor, its successors and assigns, a 1/4 overriding royalty in all oil and gas produced from the well now existing on the subject property and further reserving "all oil, gas and other minerals in sands below the Alexander Sand."

We were unable to find any instrument of record assigning the subject lease from Union Carbide Petroleum Corporation to Perkins Oil & Gas, Inc. Our opinions expressed herein are subject to the correctness of our assumption that Union Carbide Petroleum Corporation conveyed all their right, title and interest in and to the captioned property to Perkins Oil & Gas, Inc. by means of an unrecorded, mis-indexed or destroyed assignment.

REQUIREMENT: We recommend that you obtain any unrecorded assignment or farmout agreement to verify that Perkins Oil & Gas, Inc. obtained proper title to the interest in the lease recorded in Deed Book 177, Page 232.

12. By assignment dated December 12, 1986, and recorded in Deed Book 266, Page 99, Perkins Oil & Gas, Inc., a West Virginia corporation, assigned unto Eastern Intermountain Energy, Inc., a West Virginia corporation, that certain lease for oil and gas drilling and production purposes, dated February 21, 1967, and executed by Lelia Washburn, et al. Union Carbide Corporation, as lessee, and embracing 150 acres, more or less, excepting and reserving "all oil, gas and other minerals in sands below the Alexander Sand." Our opinions expressed herein are subject to the correctness of our assumption that said assignment did not assign any rights to the Marcellus Shale formation. Because we believe said assignment did not assign any rights to the Marcellus Shale formation, at your express instructions, we did not follow it forward.

REQUIREMENT: If you require further information regarding said assignment, please advise.

13. Our opinions expressed herein are subject to the correctness of our assumption that Chapman J. Stuart, as named in Deed Book 3, Page 465, and C. J. Stuart, as named in Deed Book 3, Page 536, are the same person.

14. Our opinions expressed herein are subject to the correctness of our assumption that A.M. Greathouse, as named in Deed Book 3, Page 529, and Albert M. Greathouse, as named in Deed Book 5, Page 140, are the same person.

15. Our opinions expressed herein are subject to the correctness of our assumption that William M. Ash, as named in Deed Book 25, Page 33, and W. M. Ash, as named in Deed Book 79, Page 208, are the same person.

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