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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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://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 HEX UNIT 1H  
47-085-10332-00-00

**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

Operator's Well Number: HEX UNIT 1H  
Farm Name: RADALL BOND ET AL  
U.S. WELL NUMBER: 47-085-10332-00-00  
Horizontal 6A New Drill  
Date Modification Issued: July 11, 2018

Promoting a healthy environment.

07/13/2018

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: Hex Unit 1H 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: 19200' MD

11) Proposed Horizontal Leg Length: 9635' *11323 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

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

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JUN 6 2018  
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Environmental Protection

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#	19200'	19200' ✓	4872 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-HPOZ & Tar - 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			

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WW-6B  
(10/14)

API# 47-085-10332 PERMIT MODIFICATION

API NO. 47-085 - 10332

OPERATOR WELL NO. Hex Unit 1H

Well Pad Name: Hichman Pad

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:

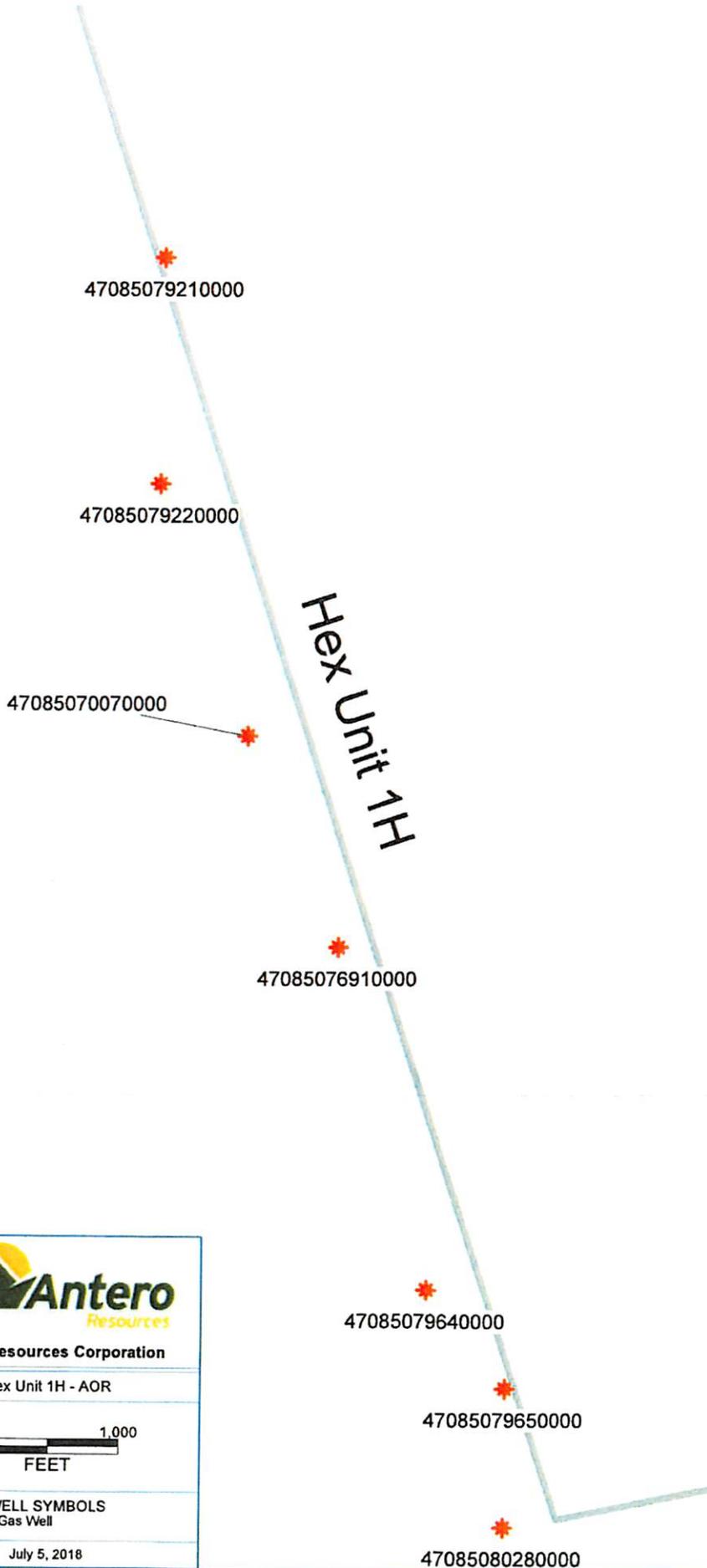
Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

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.



**Antero**  
Resources

Antero Resources Corporation

Hex Unit 1H - AOR

0 1,000  
FEET

WELL SYMBOLS  
Gas Well

July 5, 2018

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API# 47-085-10332 PERMIT MODIFICATION

UWI (API#)	Well Name	Well Number	Operator	Historical Operator	TD	Approx Distance to well	ELEV. GR	TD (SSVD)	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Productible Formation(s) not perf'd
47085079210000	PIERPOINT WILLIAM	1	SCHULTZ RUN GAS	COASTAL CORP THE	5316	833	902	-4414	4411-4804	Riley, Benson	Big Injun, Weir, Alexander
47085079220000	PIERPOINT WILLIAM	2	SCHULTZ RUN GAS	COASTAL CORP THE	5245	89.3	1111	-4134	4615-5004	Riley, Benson	Big Injun, Weir, Alexander
47085079230000	PIERPOINT WILLIAM	2	ENERGY CORP OF AMER	KCPD INCORPORATED	5995	60	1101	-4894	4576-4970	Riley, Benson	Big Injun, Weir, Alexander
47085079310000	RIDGEWAY C & S ETAL	WK-171	ALLIANCE PETR CORP	UNION DRILLING CO	5460	84	1127	-4333	4616-5012	Benson, Alexander	Big Injun, Weir, Riley
47085079610000	ROWE HADSEL	2550	TRIAD HUNTER LLC	APPALACHIAN ENGY DEV	5550	72	1251	-4299	4685-5371	Riley, Benson, Alexander	Big Injun, Weir
47085079650000	VALENTINE ANNA	2	TRIAD HUNTER LLC	APPALACHIAN ENGY DEV	5500	198	1114	-4386	4972-5294	Benson, Alexander	Big Injun, Weir, Riley
47085086228000	DOTSON CLIFFORD ETAL	1	TRIAD HUNTER LLC	APPALACHIAN ENERGY	5350	88	983	-4167	4445-5149	Riley, Benson, Alexander	Big Injun, Weir

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LATITUDE 39°22'30" 2,696'

LATITUDE 39°22'30"

LONGITUDE 80°52'30" 2,838' TO BOTTOM HOLE

1,357'

LONGITUDE 80°52'30"

Antero Resources Corporation Well No. Hex Unit 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 308,353ft E: 1,608,411ft LAT: 39°20'17.98" LON: 80°53'04.32" BOTTOM HOLE INFORMATION: N: 318,942ft E: 1,604,045ft LAT: 39°22'01.96" LON: 80°54'01.98" 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: 4,354,338m E: 509,965m BOTTOM HOLE INFORMATION: N: 4,357,541m E: 508,581m

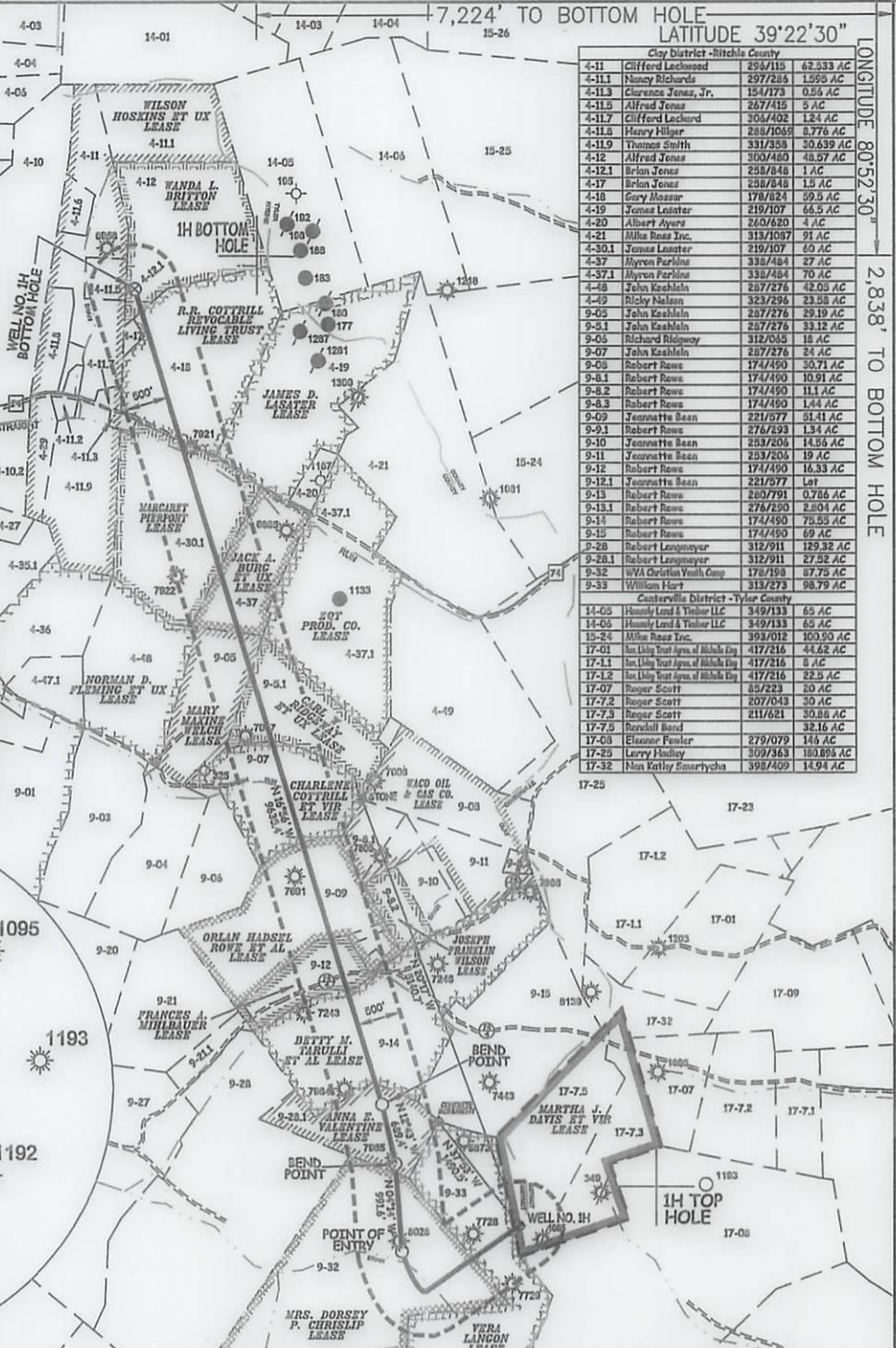
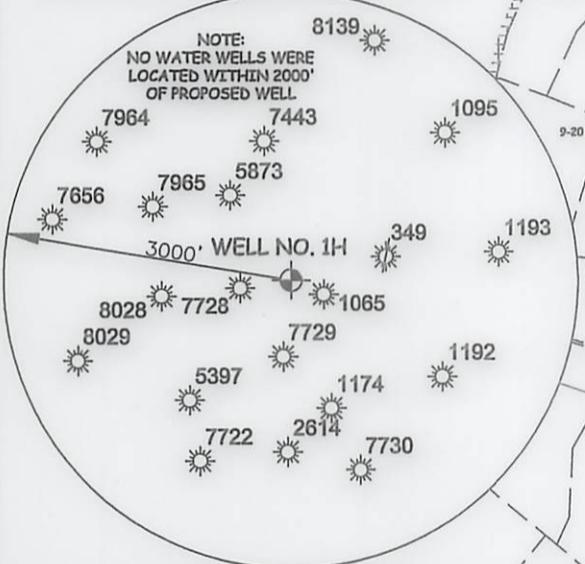
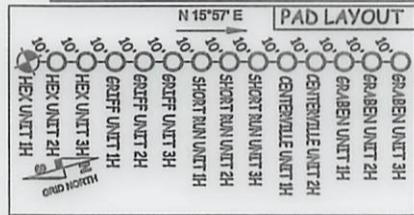


Table listing landowners and acreage for various leases in Clay District - Ritchie County and Cantersville District - Tyler County.

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.

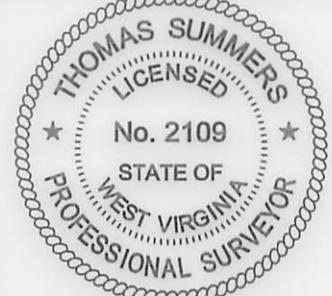


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

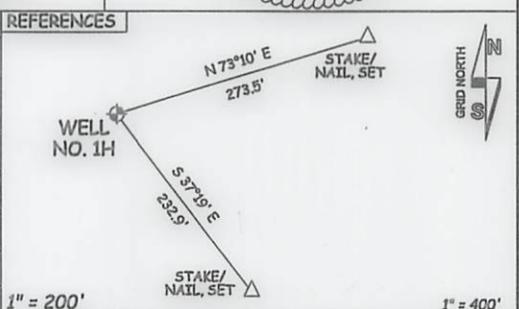
(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,285,142ft E: 1,673,064ft POINT OF ENTRY INFORMATION: N: 14,284,829ft E: 1,671,734ft BEND POINT HOLE INFORMATION: N: 14,285,816ft E: 1,671,644ft BEND POINT INFORMATION: N: 14,286,486ft E: 1,671,481ft BOTTOM HOLE INFORMATION: N: 14,295,653ft E: 1,668,524ft

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 # 17-006WA DRAWING # HEX1HR1 SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND: Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Existing Fence Found monument, as noted



Form containing well type, location, owner information, and proposed work details.

LATITUDE 39°22'30" 2,696'

LATITUDE 39°22'30"

LONGITUDE 80°52'30"

2,838' TO BOTTOM HOLE

13,357'

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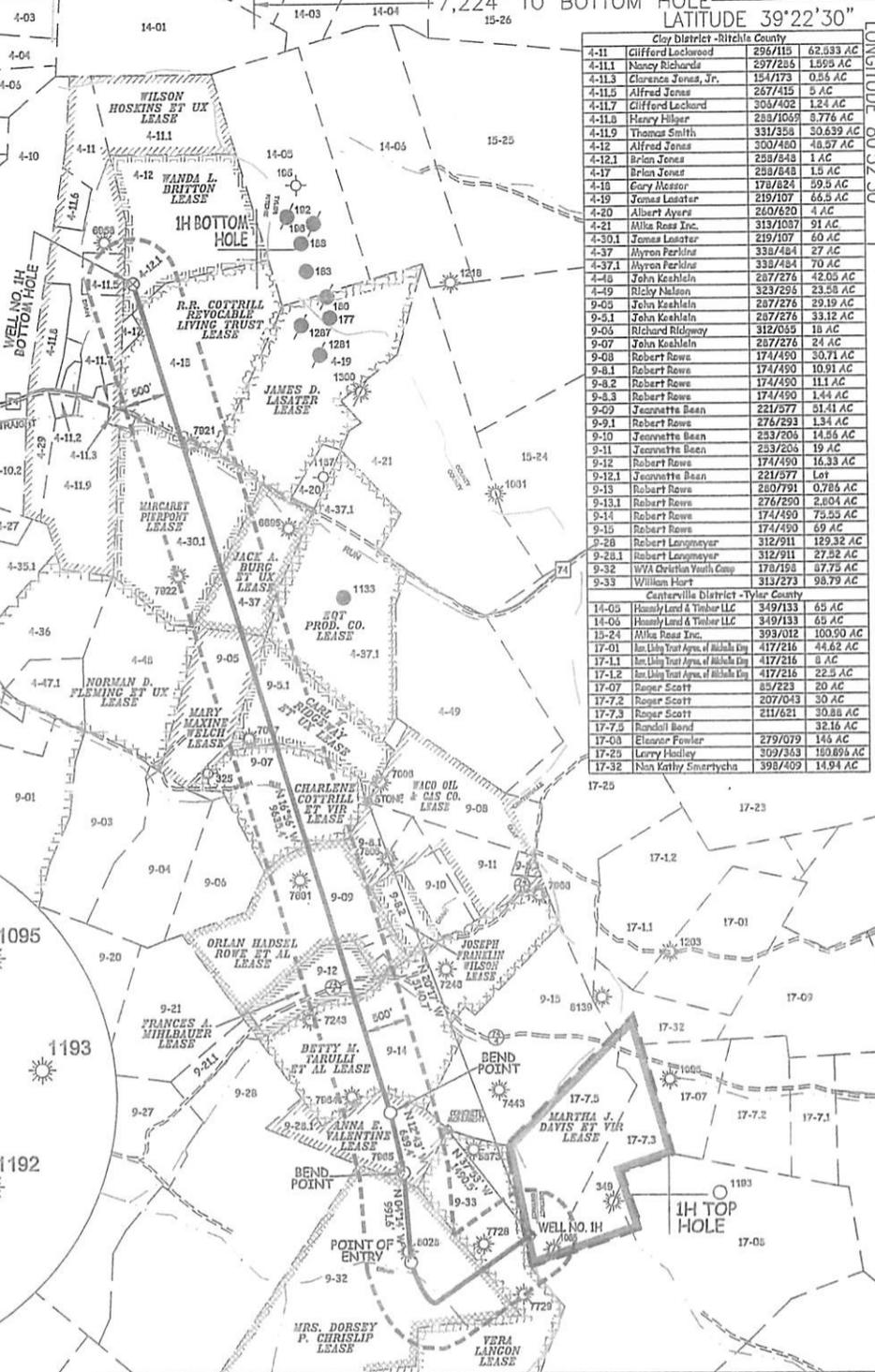
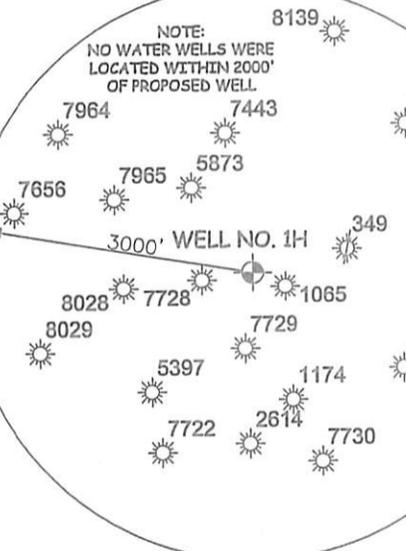
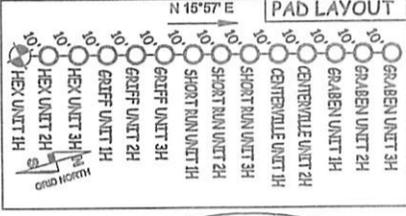


Table listing land leases with columns for owner name, acreage, and other details.

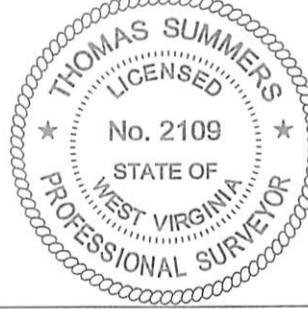
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

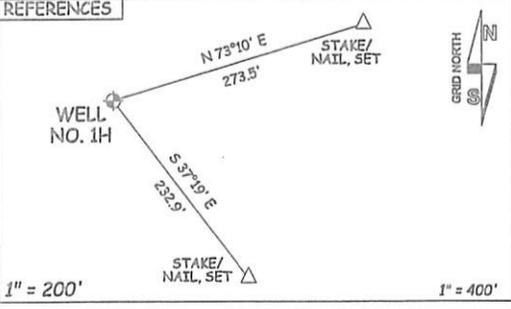
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JOB # 17-006WA DRAWING # HEX1HR1 SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Existing Fence, Found monument, as noted. THOMAS SUMMERS P.S. 2109 DATE 07/05/18 OPERATOR'S WELL# HEX UNIT #1H



WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 085 10332 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,250' AS BUILT WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RYCHIE SURFACE OWNER RADALL BOND ET AL ACREAGE 32.16 ACRES +/- OIL & GAS ROYALTY OWNER MARTHA J. DAVIS ET VIR; VERA LANGON; MRS. DORSEY P. CHRISLIP; ANNA E. VALENTINE; LEASE ACREAGE 70 AC±; 98.79 AC±; 87.75 AC±; 28 AC±; BETTY M. TARULLI ET AL; FRANCES A. MIHLBAUER; ORLAN HADSEL ROWE ET AL; CHARLENE COTTRILL ET VIR; CARL W. RIDGEWAY ET UX; 76 AC±; 19.59 AC±; 57 AC±; 24 AC±; 33 AC±; MARY MAXINE WELCH; JACK A. BURG ET UX; MARGARET PIERPONT; R.R. COTTRILL REVOCABLE LIVING TRUST; WANDA L. BRITTON 29.33 AC±; 27 AC±; 60 AC±; 59.5 AC±; 48.57 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 7,000' TVD 19,200' 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

WW-6A1  
(5/13)

**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>Wanda L. Britton Lease</u>				
Wanda L. Britton	Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation	1/8 +	0253/0406
Antero Resources Appalachian Corporation		Antero Resources Corporation	Name Change	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

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 *Diana O. Hoff*  
 Its: Vice President - Operations

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>Martha J. Davis, et vir Lease</u></b>			
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
<b><u>Vera Langon Lease</u></b>			
Vera Langon	Appco Oil & Gas Corporation	1/8	0138/0430
Appco Oil & Gas Corporation	Appalachian Energy Reserves, Inc.	Assignment	0197/0734
Appalachian Energy Reserves, Inc.	Appalachian Energy Development, Inc.	Assignment	0229/0100
Appalachian Energy Development, Inc.	Triad Energy Corp of WV	Assignment	0229/0108
Triad Energy Corp of WV	Triad Hunter, LLC	Assignment	0250/0196
Triad Hunter, LLC	Antero Resources Corporation	Assignment	0270/0270
<b><u>Mrs. Dorsey P. Chrislip Lease</u></b>			
Mrs. Dorsey P. Chrislip	Appalachian Energy Reserves, Inc.	1/8	0210/0063
Appalachian Energy Reserves, Inc.	Appalachian Energy Development, Inc.	Assignment	0229/0100
Appalachian Energy Development, Inc.	Triad Energy Corporation	Assignment	0229/0108
Triad Energy Corporation	Triad Hunter, LLC	Assignment	0250/0196
Triad Hunter, LLC	Antero Resources Corporation	Assignment	0270/0270
<b><u>Anna E. Valentine Lease</u></b>			
Anna E. Valentine, widow	Eastern American Energy Corporation	1/8	0204/0309
Eastern American Energy Corporation	Appalachian Energy Reserves, Inc.	Assignment	0207/0556
Appalachian Energy Reserves, Inc.	Appalachian Energy Development, Inc.	Assignment	0229/0100
Appalachian Energy Development, Inc.	Triad Energy Corporation	Assignment	0229/0108
Triad Energy Corporation	Triad Hunter, LLC	Assignment	0250/0196
Triad Hunter, LLC	Antero Resources Corporation	Assignment	0270/0270
<b><u>Betty M. Tarulli, et al Lease</u></b>			
Betty M. Tarulli, 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
<b><u>Frances A. Muhlbauer Lease</u></b>			
Frances A. Muhlbauer	Antero Resources Corporation	1/8+	0279/0390

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Office of Oil and Gas  
JUN 6 2018  
WV Department of Environmental Protection

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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;
- (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>Orlan Hadsel Rowe, et al Lease</u></b>			
Orlan Hadsel Rowe, et al	J & J Enterprises, Inc.	1/8	0196/0737
J & J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0231/0732
Eastern American Energy Corporation	Enervest East Limited Partnership	Assignment	0233/0317
Enervest East Limited Partnership	The Houston Exploration Company	Assignment	0234/0890
The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	Assignment	0236/0650
Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC	Assignment	0311/0863
Seneca-Upshur Petroleum, LLC	Antero Resources Appalachian Corporation	Assignment	0258/0987
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b><u>Charlene Cottrill, et vir Lease</u></b>			
Charlene Cottrill, et vir	Antero Resources Appalachian Corporation	1/8+	0263/0589
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b><u>Carl W. Ridgeway, et ux Lease</u></b>			
Carl W. Ridgeway, et ux	Chase Petroleum, Inc.	1/8	0157/0540
Chase Petroleum, Inc.	Kepeco, Inc.	Assignment	0164/0198
Kepeco, Inc.	J & J Enterprises, Inc.	Assignment	0208/0132
J & J Enterprises, Inc.	Eastern American Energy Corporation	Merger	0231/0732
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	0006/0450
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0397
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b><u>Mary Maxine Welch Lease</u></b>			
Mary Maxine Welch	Antero Resources Appalachian Corporation	1/8	0256/0104
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b><u>Jack A. Burg, et ux Lease</u></b>			
Jack A. Burg, et ux	J & J Enterprises, Inc.	1/8	0161/0049
J & J Enterprises, Inc.	Eastern Pennsylvania Exploration	Assignment	0179/0609
Eastern Pennsylvania 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
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>

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WV Department of Environmental Protection

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

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>Margaret Pierpont Lease</u></b>			
Margaret Pierpont	Harvey Haymond	1/8	0205/0401
Harvey Haymond	Coastal Corporation	Assignment	0205/0547
Coastal Corporation	Pardee Gas Company	Merger	0004/0801
Pardee Gas Company	Pardee Exploration Company	Assignment	0208/0544
Pardee Exploration Company	Pardee Resources Group, Inc.	Merger	0005/0830
Pardee Resources Group, Inc.	Pardee Minerals, LLC	Merger	0006/0726
Pardee Minerals, LLC	Antero Resources Appalachian Corporation	Assignment	0256/0314
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b><u>R. R. Cottrill Revocable Living Trust Lease</u></b>			
R. R. Cottrill Revocable Living Trust	Antero Resources Corporation	1/8+	0293/0201

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 Environmental Protection

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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  
IN THE OFFICE OF Corporations Division  
SECRETARY OF STATE Tel: (304)558-8000  
Fax: (304)558-8381

Website: [www.wvsos.com](http://www.wvsos.com)  
E-mail: [business@wvsos.com](mailto:business@wvsos.com)

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**

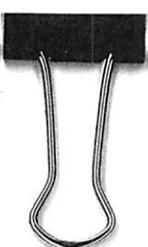
**APPLICATION FOR  
AMENDED CERTIFICATE  
OF AUTHORITY**

\*\*\*\* 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:** Per 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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WV Department of  
Environmental Protection



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 57<sup>th</sup> 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

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JUN 6 2018  
WV Department of  
Environmental Protection

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

07/13/2018