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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

## PERMIT MODIFICATION APPROVAL

March 31, 2016

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit Modification Approval for API Number 8510276, Well #: EARNEST UNIT 2H

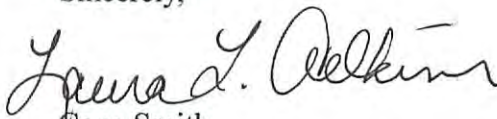
### Modified lateral

Oil and Gas Operator:

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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

  
for Gene Smith  
Assistant Chief of Permitting  
Office of Oil and Gas

Promoting a healthy environment.

04/01/2016

WW-6B  
(04/15)

API NO. 47-085 - 10276 MOD

OPERATOR WELL NO. Earnest Unit 2H

Well Pad Name: Zinn Pad

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

1) Well Operator: Antero Resources Corporal 494488557 085 - Ritchie Clay Pennsboro 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Earnest Unit 2H Well Pad Name: Zinn Pad

3) Farm Name/Surface Owner: Earnest E. Zinn, et al Public Road Access: CR 74/9

4) Elevation, current ground: 1135' Elevation, proposed post-construction: 1119'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6700' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6700' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16,300' MD

11) Proposed Horizontal Leg Length: 8348'

12) Approximate Fresh Water Strata Depths: 107', 431', 497'

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

14) Approximate Saltwater Depths: 1141', 1567'

15) Approximate Coal Seam Depths: 412', 741'

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: \_\_\_\_\_

**Received**  
**Office of Oil & Gas**

FEB 08 2016



WW-6B  
(04/15)

API NO. 47- 085 - 10276

OPERATOR WELL NO. Earnest Unit 2H

Well Pad Name: Zinn Pad

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#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	550'	550' *see #19	CTS, 764 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#	16,300'	16,300'	CTS, 4075 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	30"	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			
Sizes:	N/A			
Depths Set:	N/A			

Received  
Office of Oil & Gas

FEB 08 2016

WW-6B  
(10/14)

API NO. 47- 085 - 10276  
OPERATOR WELL NO. Earnest Unit 2H  
Well Pad Name: Zinn 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): 27.20 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.27 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% ACG-47 + 0.05% ACSA-51 + 0.2% ACR-20

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Office of Oil & Gas  
FEB 08 2016

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.



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>Harold H. Bloch, et ux Lease</u></b>			
Harold H. Bloch, et ux	Harvey K. Haymond	1/8	0131/0670
Harvey K. Haymond	J & J Enterprises, Inc.	Assignment	0156/0715
J & J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0231/0732
Eastern American Energy Corporation	Energy Corporation of America	Assignment	0306/0836
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0377
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>W.J. Collins, et ux Lease</u></b>			
William J. Collins, et ux	E.D. Willis	Flat Rate	0042/0055
E.D. Willis	E.M. Treat Oil & Gas Company	Memorandum of Agreement	0058/0447
E.M. Treat Oil & Gas Company	Consumers Gas Utility Company	Assignment	0058/0450
Consumers Gas Utility Company	W.C.P. Partnership	Assignment	0148/0522
W.C.P Partnership	Crude Oil and Gas, Inc.	Assignment and Agreement	0169/0509
Crude Oil and Gas, Inc.	Clarence E. Sigley, Sr.	Assignment	0260/0232
Clarence E. Sigley, Sr.	Antero Resources Appalachian Corporation	Assignment of Oil and Gas Lease	0262/0486
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Martha Taylor, et vir Lease</u></b>			
Martha F. Taylor	Antero Resources Corporation	1/8+	0270/0156
<b><u>Alfred DePhino, Jr., et ux Lease</u></b>			
Alfred M. DePhino, Jr., et ux	J & J Enterprises, Inc.	1/8	0172/0327
J & J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0231/0732
Eastern American Energy Corporation	Energy Corporation of America	Assignment	0306/0836
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0377
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>S.A. Cunningham, et ux Lease (TM 20-06)</u></b>			
S.A. Cunningham, et ux	Key Oil Company	1/8	0204/0128
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0253/0747
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>S.A. Cunningham Lease</u></b>			
S.A. Cunningham	Antero Resources Corporation	1/8+	0292/0307

\*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.

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

04/01/2016

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Chapter 22, Article 6A, Section 5(a)(5)  
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>Helen M. Griffith Lease</b>			
Helen M. Griffith	Antero Resources Appalachian Corporation	1/8+	0292/0307
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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

Received  
Office of Oil & Gas  
FEB 08 2016



WW-6A1  
(5/13)

Operator's Well No. Earnest Unit 2H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b>George A. Dotson Lease</b>	George A. Dotson	J & J Enterprises, Inc.	$\frac{1}{8}$	0174/0357
	J & J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0231/0732
	Eastern American Energy Corporation	Energy Corporation of America	Assignment	0306/0836
	Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0377
	Antero Resources Appalachian Corp.	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

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Office of Oil & Gas  
FEB 08 2016

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: Kevin Kilstrom *[Signature]*  
 Its: Senior VP of Production

8

WW-60  
(7-01)

DATE: February 4, 20 16  
OPERATOR'S  
WELL NO. Earnest Unit 2H

API NO: 47- 085 10276  
State County Permit No.

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

A F F I D A V I T

State of West Virginia  
County of Ritchie

I, Tom Kuhn (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).

Signed: [Signature] NATALIE KOMP  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID # 20144028170  
MY COMMISSION EXPIRES JULY 18, 2018

Taken, subscribed and sworn to before me this 4<sup>th</sup> day of February, 20 16.

[Signature]  
Notary Public

My Commission expires: July 18, 2018

Received  
Office of Oil & Gas  
FEB 08 2016



FORM WW-6A1  
EXHIBIT 1

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.wvscos.com  
E-mail: business@wvscos.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.)

<u>Alvyn A. Schopp</u>	<u>(303) 367-7310</u>
Contact Name	Phone Number

Received  
Office of Oil & Gas  
FEB 08 2016

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

Print Name of Signer: <u>Alvyn A. Schopp</u>	Title/Capacity: <u>Authorized Person</u>
Signature: <u><i>Alvyn A. Schopp</i></u>	Date: <u>June 10, 2013</u>

*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.



LATITUDE 39°20'00"

6,105'

1,425' TO BOTTOM HOLE  
LATITUDE 39°20'00"

LONGITUDE 80°55'00" 11,962' TO BOTTOM HOLE

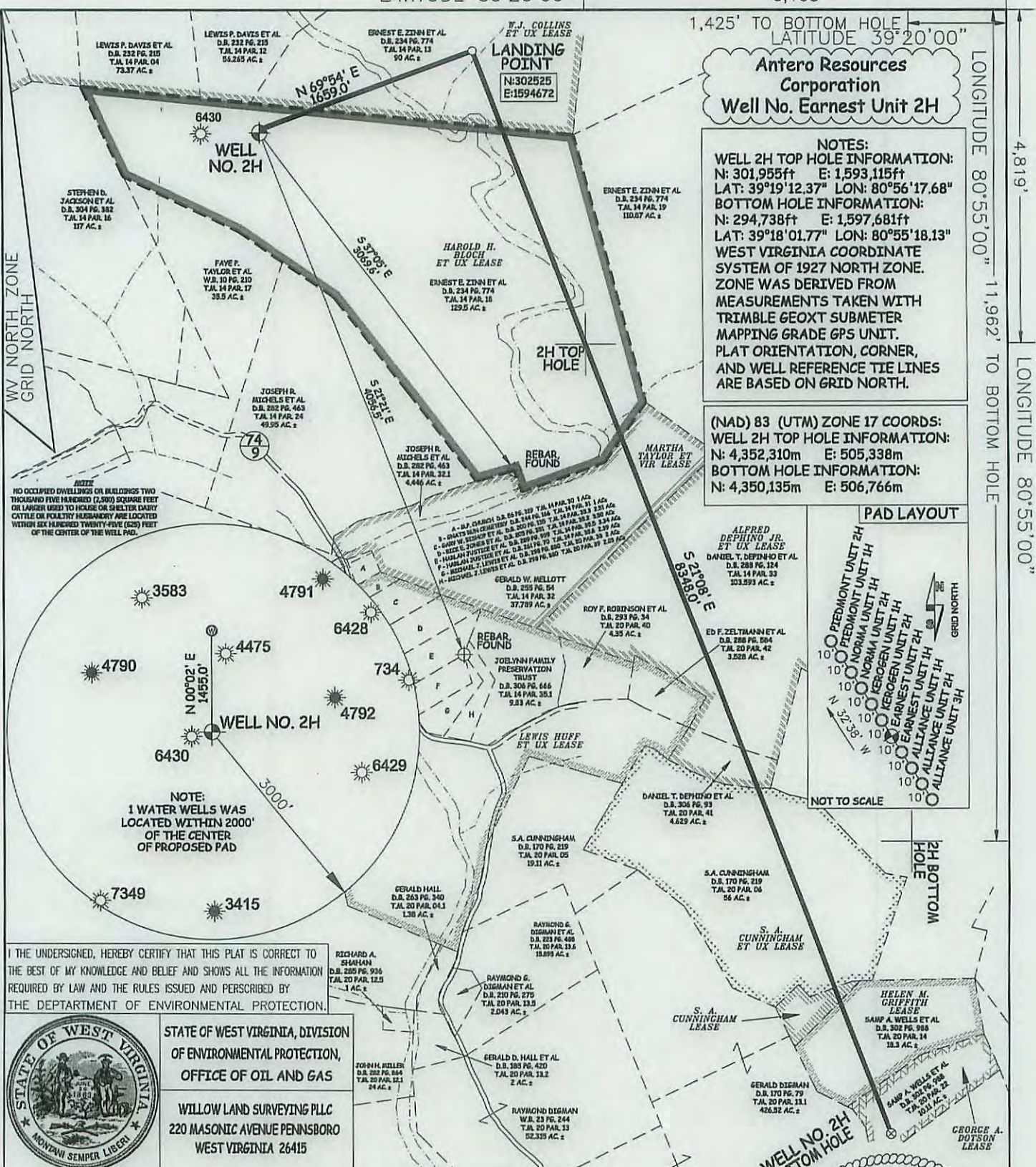
4,819' LONGITUDE 80°55'00"

### Antero Resources Corporation Well No. Earnest Unit 2H

**NOTES:**  
**WELL 2H TOP HOLE INFORMATION:**  
 N: 301,955ft E: 1,593,115ft  
 LAT: 39°19'12.37" LON: 80°56'17.68"  
**BOTTOM HOLE INFORMATION:**  
 N: 294,738ft E: 1,597,681ft  
 LAT: 39°18'01.77" LON: 80°55'18.13"  
 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: 4,352,310m E: 505,338m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,350,135m E: 506,766m

#### PAD LAYOUT



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.

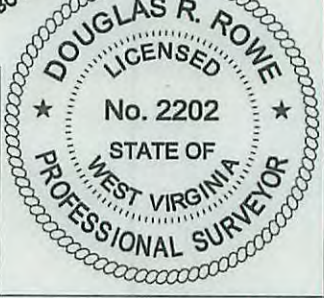
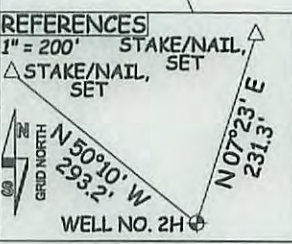


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
 WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415

JOB # 15-047WA  
 DRAWING # EARNEST2H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

DOUGLAS R. ROWE P.S. 2202  
 DATE 01/12/16



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

WELL TYPE: OIL ___ GAS <input checked="" type="checkbox"/> LIQUID INJECTION ___ WASTE DISPOSAL ___	OPERATOR'S WELL #	EARNEST UNIT #2H
(IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE ___ DEEP ___ SHALLOW <input checked="" type="checkbox"/>	API WELL #	47 - 085 - 1074MOD
LOCATION: ELEVATION ORIG 1,135' - PROPOSED 1,119'	STATE	CLAY
WATERSHED NORTH FORK HUGHES RIVER	COUNTY	RITCHIE
QUADRANGLE PENNSBORO 7.5'	DISTRICT	CLAY
SURFACE OWNER ERNEST E. ZINN ET AL	ACREAGE	129.5 ACRES +/-
OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; W.J. COLLINS ET UX; MARTHA TAYLOR ET VIR;	LEASE ACREAGE	131.5 ACRES +/-; 575 ACRES +/-; 44.46 ACRES +/-
ALFRED DEPHINO JR. ET UX; S.A. CUNNINGHAM ET UX; S.A. CUNNINGHAM; HELEN M. GRIFFITH; GEORGE A. DOTSON		112 ACRES +/-; 56 ACRES +/-; 3.2 ACRES +/-; 15.8 ACRES +/-
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER <input checked="" type="checkbox"/> REDRILL ___ FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION <input checked="" type="checkbox"/>		
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL		
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___	ESTIMATED DEPTH	6,700' TVD 16,300' MD
TARGET FORMATION MARCELLUS	DIANNA STAMPER	
WELL OPERATOR ANTERO RESOURCES CORP.	DESIGNATED AGENT	CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET	ADDRESS	5400 D BIG TYLER ROAD
DENVER, CO 80202		CHARLESTON, WV 25313



LATITUDE 39°20'00"

6,105'

1,425' TO BOTTOM HOLE  
LATITUDE 39°20'00"

LONGITUDE 80°55'00" 11,962' TO BOTTOM HOLE

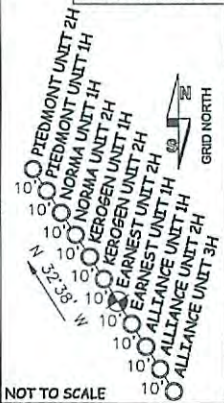
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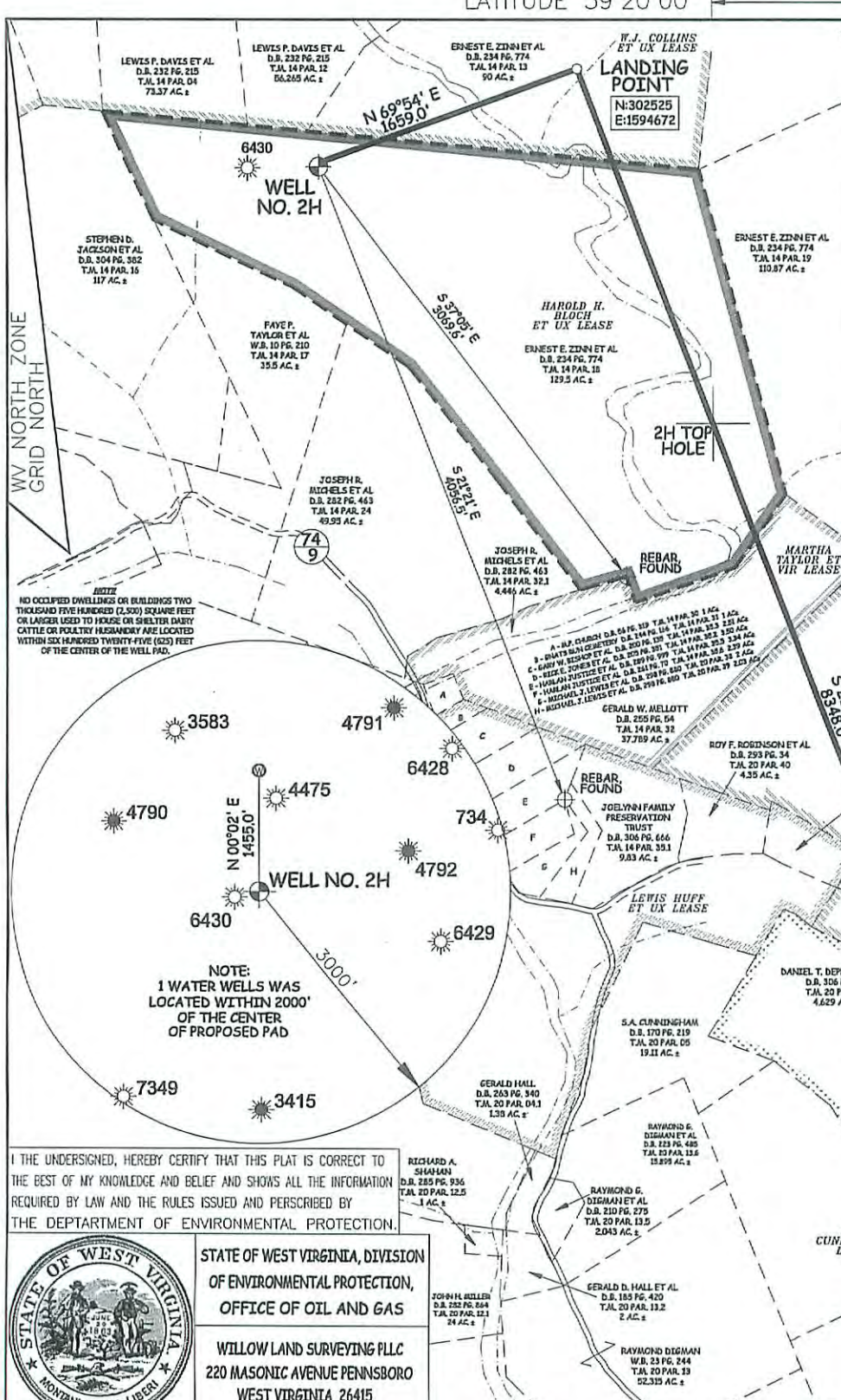
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#### PAD LAYOUT



NOT TO SCALE



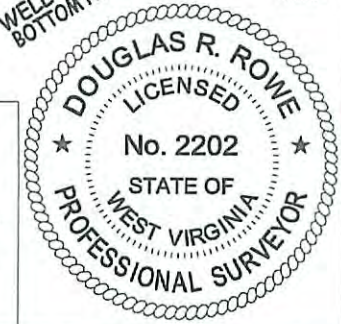
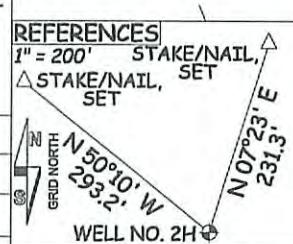
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 WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415

JOB # 15-047WA  
 DRAWING # EARNEST2H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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



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

DOUGLAS R. ROWE P.S. 2202  
 DATE 01/12/16

OPERATOR'S WELL# EARNEST UNIT #2H  
 API WELL # 47 - 085 - 10276 MOD  
 LOCATION: ELEVATION ORIG 1,135' - PROPOSED 1,119' WATERSHED NORTH FORK HUGHES RIVER STATE COUNTY PERMIT  
 QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE  
 SURFACE OWNER ERNEST E. ZINN ET AL ACREAGE 129.5 ACRES +/-  
 OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; W.J. COLLINS ET UX; MARTHA TAYLOR ET VIR; LEASE ACREAGE 131.5 ACRES +/-; 575 ACRES +/-; 44.46 ACRES +/-  
 ALFRED DEPHINO JR. ET UX; S.A. CUNNINGHAM ET UX; S. A. CUNNINGHAM; HELEN M. GRIFFITH; GEORGE A. DOTSON 112 ACRES +/-; 56 ACRES +/-; 3.2 ACRES +/-; 15.8 ACRES +/-  
 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 ESTIMATED DEPTH 6,700' TVD 16,300' MD  
 TARGET FORMATION MARCELLUS  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM  
 DENVER, CO 80202 CHARLESTON, WV 25313





February 4, 2016

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: Mr. Taylor Brewer  
601 57<sup>th</sup> Street  
Charleston, WV 25304

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for four approved wells on the approved Zinn Pad. We are requesting to extend the horizontal laterals which will change the BHLs of the Alliance Unit 1H (API# 47-085-10274), Alliance Unit 2H (API# 47-0 85-10275), Earnest Unit 1H (API# 47-085-10273), and Earnest Unit 2H (API# 47-085-10276). Please note that the new bottom hole locations will be drilling through new leases, and a revised Form WW-6A1 has been included.

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the updated BHLs and Measured Depths
- REVISED Form WW-6A1, which shows the new leases being drilled through
- REVISED Mylar Plat, which shows the new Lateral Lengths and Estimated Measured Depths

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Ashlie Steele".

Ashlie Steele  
Permitting Supervisor  
Antero Resources Corporation

Enclosures

Received  
Office of Oil & Gas  
FEB 08 2016

04/01/2016