



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, March 14, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for CONVAIR UNIT 1H
47-017-06858-00-00

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: CONVAIR UNIT 1H
Farm Name: MATTEW W. ALEXANDER & LINDA MARIE MUMFORD
U.S. WELL NUMBER: 47-017-06858-00-00
Horizontal 6A New Drill
Date Modification Issued: 03/14/2018

Promoting a healthy environment.

WW-6B
(04/15)

PERMIT MODIFICATION API# 47-017-06858

API NO. 47-017 - 06858

OPERATOR WELL NO. Convair Unit 1H

Well Pad Name: Alexander 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 017-Doddridge West Union West Union 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Convair Unit 1H Well Pad Name: Alexander Pad

3) Farm Name/Surface Owner: Matthew W. Alexander & Linda Marie Muhly Public Road Access: CR 28 (Nutter Fork)

4) Elevation, current ground: ~1195' Elevation, proposed post-construction: 1181'

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: 7500' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3100#

8) Proposed Total Vertical Depth: 7500' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16500' MD

11) Proposed Horizontal Leg Length: 8394'

12) Approximate Fresh Water Strata Depths: 292', 297', 455'

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

14) Approximate Saltwater Depths: 1319', 1896', 2061'

15) Approximate Coal Seam Depths: 677', 839'

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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WW-6B
(04/15)

PERMIT MODIFICATION API# 47-017-06858

API NO. 47-017 - 06858

OPERATOR WELL NO. Convair Unit 1H

Well Pad Name: Alexander 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#	80'	80'	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	505' *see #19	505' *see #19	CTS, 702 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#	16500'	16500'	4130 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"	2730	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"	0.415"	12,630	2500	Lead-HPOZ & Tail-H	H/POZ~1.44 & H~1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

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PACKERS

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

WW-6B
(10/14)

PERMIT MODIFICATION API# 47-017-06858

API NO. 47- 017 - 06858

OPERATOR WELL NO. Convair Unit 1H

Well Pad Name: Alexander 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): 24.40 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.10 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.

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
<u>Charles Williams by Randy Williams, A.I.F. Lease</u>			
Charles Williams by Randy Williams, A.I.F.	Drilling Appalachian Corporation	1/8	LB0181/0615
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation	Assignment	LB0262/0600
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Larry Williams Lease</u>			
Larry Williams	Antero Resources Appalachian Corporation	1/8+	0267/0352
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>H. Ross Swiger, et ux Lease</u>			
H. Ross Swiger, Jr., et ux	Honor Resources Company	1/8	0295/0480
Honor Resources Company	EXCO Production Company, LLC; BG Production Company, LLC; EXCO Resources, LLC	Assignment	0299/0659
EXCO Production Company, LLC; BG Production Company, LLC; EXCO Resources, LLC	Antero Resources Appalachian Corporation	Assignment	0301/0551
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Joseph Freeman, et ux Lease</u>			
Joseph Freeman, et ux	G.H. Trainer and J.E. Trainer	1/8	0027/0233
G.H. Trainer and J.E. Trainer	W.W. Hepburn	Assignment	0034/0244
W.W. Hepburn	Eastern Petroleum Company	Assignment	0034/0256
Eastern Petroleum Company	Clifton Oil & Gas Company	Assignment	0041/0431
Clifton Oil & Gas Company	Quaker State Refining Corporation	Assignment	0056/0165
Quaker State Refining Corporation	QSE&P, Inc.	Assignment	0159/0474
QSE&P, Inc.	The Quaker State 1989 – 1 Drilling Fund, LP	Assignment	0160/0200
The Quaker State 1989 – 1 Drilling Fund, LP	Belden & Blake Corporation	Assignment	0175/0466
Belden & Blake Corporation	Peake Energy, Inc.	Assignment	0181/0567
Peake Energy, Inc.	North Coast Energy Eastern, Inc.	Name Change	0249/0343
North Coast Energy Eastern, Inc.	EXCO – North Coast Energy Eastern, Inc.	Name Change	0277/0068
EXCO – North Coast Energy Eastern, Inc.	EXCO Resources WV, Inc.	Name Change	Exhibit 2
EXCO Resources WV, Inc.	EXCO Production Company WV, LLC	Merger	0285/0083
EXCO Production Company (WV), LLC	Antero Resources Appalachian Corporation	Assignment	0285/0084
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Alice Marie Simunick Lease</u>			
Alice Marie Simunick	Antero Resources Corporation	1/8	421/601
<u>Peake Energy Lease</u>			
Peake Energy, Inc.	Drilling Appalachian Corporation	1/8	0181/0663
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation	Assignment	LB0262/0600
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Carole Hanlon Lease</u>			
Carole Hanlon	Antero Resources Corporation	1/8+	LB0330/0215

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*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.

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Charles C. Smith, et al Lease</u>			
Charles C. Smith, et al	Duncan Sartain	1/8	LB0068/0463
Duncan Sartain	Walter F. Tucker	Assignment	74/473
Walter F. Tucker	Roscoe B. G. Cowper	Assignment	77/502
Roscoe B. G. Cowper	Lawrence H. Aberegg	Assignment	98/233
Lawrence H. Aberegg	Hugh Spencer	Assignment	98/237
Hugh Spencer	J&J Enterprises, Inc.	Assignment	111/390
J&J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	LB0220/0602
Eastern American Energy Corporation	Energy Corporation of America	Assignment	LB0240/0498
Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	LB0272/0307
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Claude F. Smith, et al Lease</u>			
Claude F. Smith	Key Oil Company	1/8	0105/0237
Key Oil Company	J&J Enterprises, Inc.	Assignment	0141/0090
J&J Enterprises, Inc.	Eastern American Energy Corporation	Assignment	0159/0237
Eastern American Energy Corporation	Eastern Corporation of America	Certificate of Merger	0240/0498
Eastern Corporation of America	Antero Resources Appalachian Corporation	Assignment	0272/0307
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>William Ashburn Heirs Lease</u>			
William Ashburn Heirs	J.C. Smith	1/8	0056/0249
J.C. Smith	John W. Casto	List of Heirs	SF 0008/0071
John W. Casto	Antero Resources Corporation	Assignment	0333/0509

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WW-6A1
(5/13)

Operator's Well No. Convair Unit 1H

**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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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>William A. Farr Lease</u>				
	William A. Farr	Carolyn E. Farr Trust	1/8	LB0277/0644
	Clarence E. Sigley, Sr. Trustee for the Carolyn E. Farr Trust	Antero Resources Appalachian Corp.	Assignment	LB0281/0310
	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.

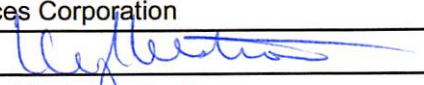
**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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

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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: Kevin Kilstrom 
Its: Senior Vice President - Production

**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.wvssos.com
E-mail: business@wvssos.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:

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/25/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments:
(attach additional pages if necessary)
- 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) 367-7310
Contact Name Phone Number
- 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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State of West Virginia

Certificate

*I, Natalie E. Tennant, Secretary of State of the
State of West Virginia, hereby certify that*

an Amended Certificate of Authority of

EXCO - NORTH COAST ENERGY EASTERN, INC.

was filed in my office as required by the provisions of the West Virginia Code and was found to conform to law.

Therefore I issue this

**CERTIFICATE OF AMENDMENT TO THE
CERTIFICATE OF AUTHORITY**

changing the name of the corporation to

EXCO RESOURCES (WV), INC.

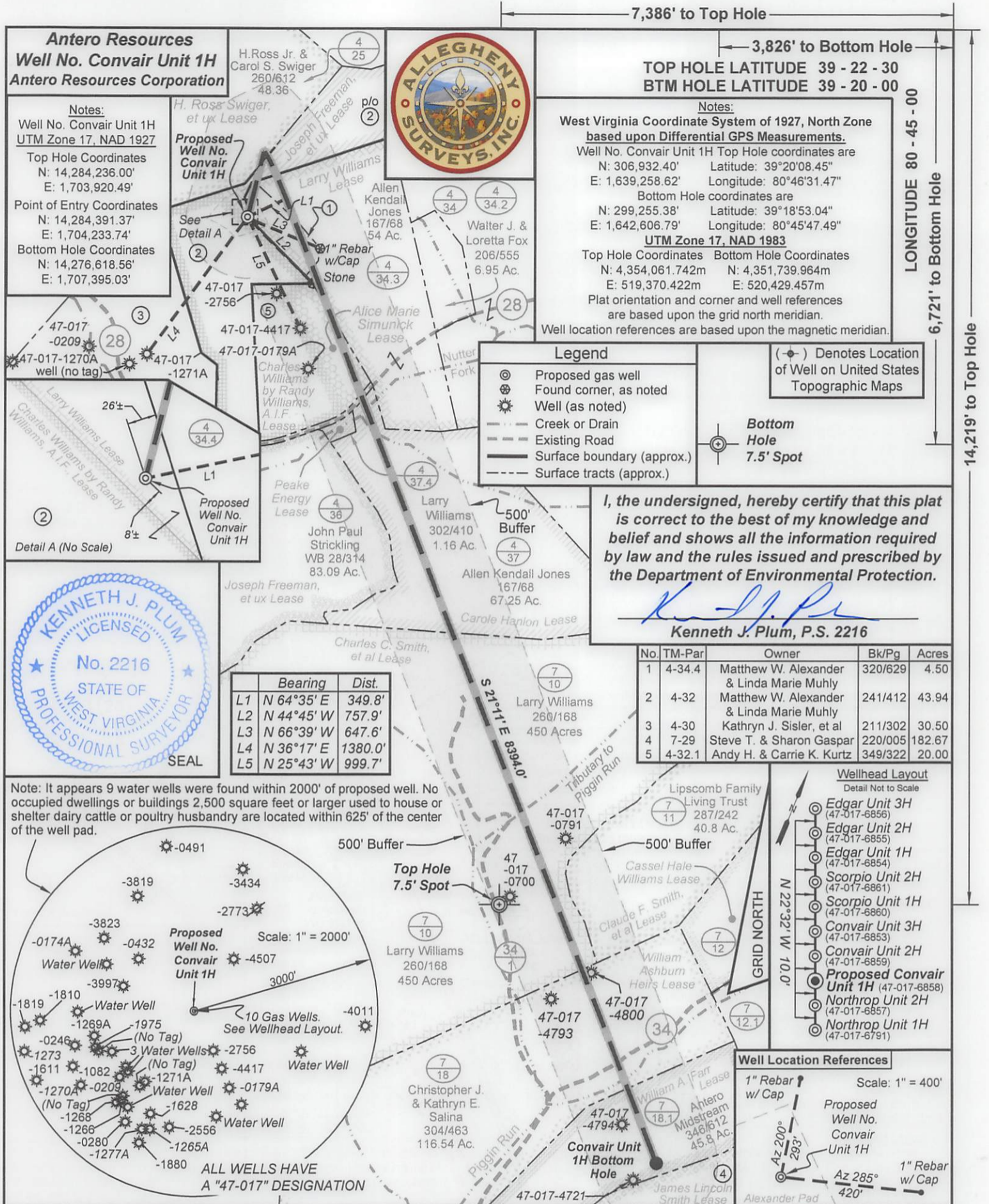
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WV Department of
Environmental Protection



*Given under my hand and the
Great Seal of the State of
West Virginia on this day of
December 2, 2009*

Natalie E. Tennant

Secretary of State



Antero Resources
Well No. Convair Unit 1H
Antero Resources Corporation

Notes:
 Well No. Convair Unit 1H
 UTM Zone 17, NAD 1927
 Top Hole Coordinates
 N: 14,284,236.00'
 E: 1,703,920.49'
 Point of Entry Coordinates
 N: 14,284,391.37'
 E: 1,704,233.74'
 Bottom Hole Coordinates
 N: 14,276,618.56'
 E: 1,707,395.03'

7,386' to Top Hole
 3,826' to Bottom Hole
TOP HOLE LATITUDE 39 - 22 - 30
BTM HOLE LATITUDE 39 - 20 - 00

Notes:
 West Virginia Coordinate System of 1927, North Zone
 based upon Differential GPS Measurements.
 Well No. Convair Unit 1H Top Hole coordinates are
 N: 306,932.40' Latitude: 39°20'08.45"
 E: 1,639,258.62' Longitude: 80°46'31.47"
 Bottom Hole coordinates are
 N: 299,255.38' Latitude: 39°18'53.04"
 E: 1,642,606.79' Longitude: 80°45'47.49"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,354,061.742m N: 4,351,739.964m
 E: 519,370.422m E: 520,429.457m
 Plat orientation and corner and well references
 are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

Legend

- Proposed gas well
- Found corner, as noted
- Well (as noted)
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Surface tracts (approx.)

(⊙) Denotes Location of Well on United States Topographic Maps

Bottom Hole
 7.5' Spot

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

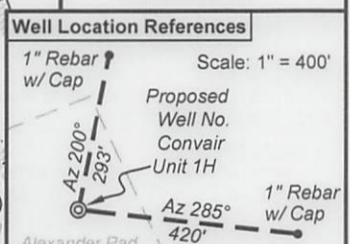
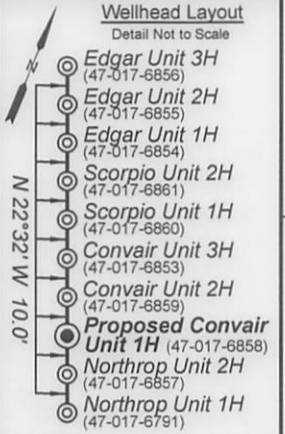
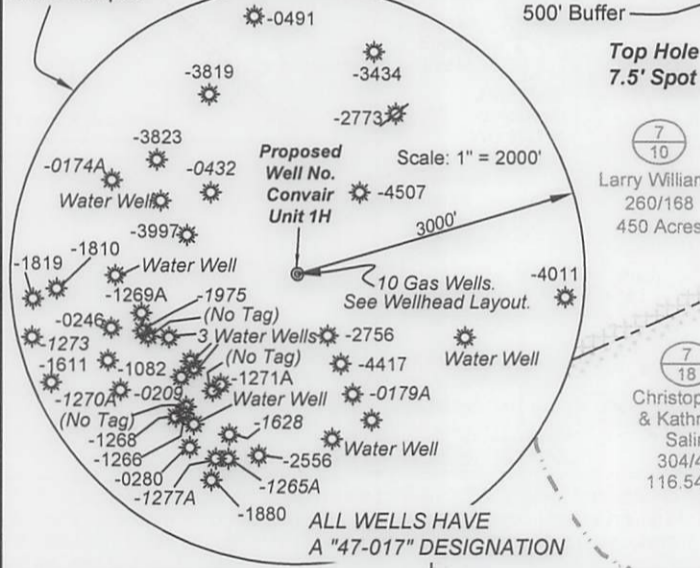
Kenneth J. Plum
Kenneth J. Plum, P.S. 2216



	Bearing	Dist.
L1	N 64°35' E	349.8'
L2	N 44°45' W	757.9'
L3	N 66°39' W	647.6'
L4	N 36°17' E	1380.0'
L5	N 25°43' W	999.7'

No	TM-Par	Owner	Bk/Pg	Acres
1	4-34.4	Matthew W. Alexander & Linda Marie Muhly	320/629	4.50
2	4-32	Matthew W. Alexander & Linda Marie Muhly	241/412	43.94
3	4-30	Kathryn J. Sisler, et al	211/302	30.50
4	7-29	Steve T. & Sharon Gaspar	220/005	182.67
5	4-32.1	Andy H. & Carrie K. Kurtz	349/322	20.00

Note: It appears 9 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



FILE NO: 47-30-WU-14
 DRAWING NO: Convair 1H Well Plat 07-16
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: November 15, 20 17
 Operator's Well No. Convair Unit 1H
 API WELL NO
 47 - 017 - 06858
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Existing Grade - 1195' Proposed Grade - 1181' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 DISTRICT: West Union COUNTY: Doddridge
 SURFACE OWNER: Matthew W. Alexander & Linda Marie Muhly H. Ross Swiger, et ux; Joseph Freeman, et ux ACREAGE: 48.36; 6.25
 William Ashburn Heirs; Alice Marie Simunick
 ROYALTY OWNER: Larry Williams; Carole Hanlon; Charles C. Smith, et al; William A. Farr LEASE NO: ACREAGE: 120; 450; 45.8
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - Add Curve to POE
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,500' TVD
 16,500' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

7,386' to Top Hole

3,826' to Bottom Hole

TOP HOLE LATITUDE 39 - 22 - 30
BTM HOLE LATITUDE 39 - 20 - 00

LONGITUDE 80 - 45 - 00

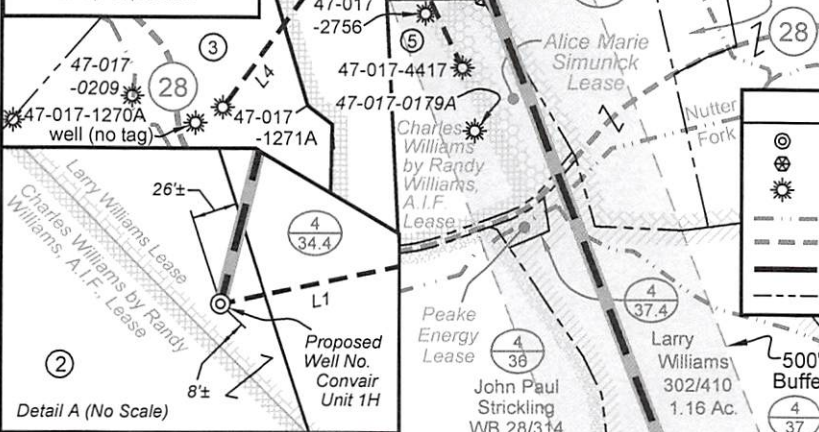
14,219' to Top Hole

Antero Resources
Well No. Convair Unit 1H
Antero Resources Corporation



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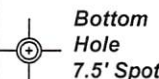
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based upon Differential GPS Measurements.
Well No. Convair Unit 1H Top Hole coordinates are
N: 306,932.40' Latitude: 39°20'08.45"
E: 1,639,258.62' Longitude: 80°46'31.47"
Bottom Hole coordinates are
N: 299,255.38' Latitude: 39°18'53.04"
E: 1,642,606.79' Longitude: 80°45'47.49"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,354,061.742m N: 4,351,739.964m
E: 519,370.422m E: 520,429.457m
Plat orientation and corner and well references
are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.



Legend

- Proposed gas well
- Found corner, as noted
- Well (as noted)
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Surface tracts (approx.)

(-o-) Denotes Location of Well on United States Topographic Maps



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

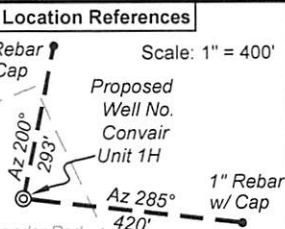
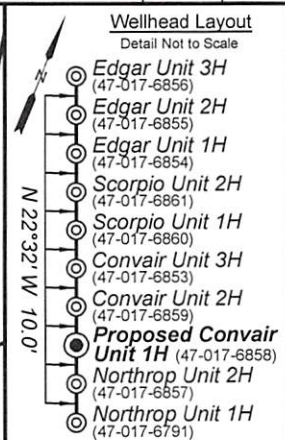
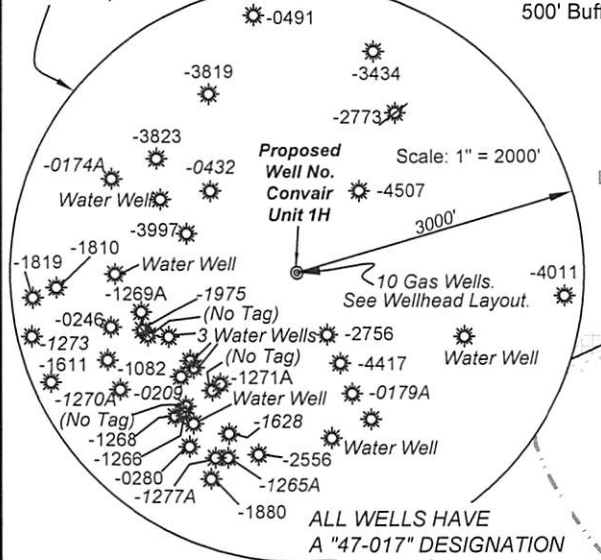
Kenneth J. Plum, P.S. 2216



	Bearing	Dist.
L1	N 64°35' E	349.8'
L2	N 44°45' W	757.9'
L3	N 66°39' W	647.6'
L4	N 36°17' E	1380.0'
L5	N 25°43' W	999.7'

No.	TM-Par	Owner	Bk/Pg	Acres
1	4-34.4	Matthew W. Alexander & Linda Marie Muhly	320/629	4.50
2	4-32	Matthew W. Alexander & Linda Marie Muhly	241/412	43.94
3	4-30	Kathryn J. Sisler, et al	211/302	30.50
4	7-29	Steve T. & Sharon Gaspar	220/005	182.67
5	4-32.1	Andy H. & Carrie K. Kurtz	349/322	20.00

Note: It appears 9 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



FILE NO: 47-30-WU-14
DRAWING NO: Convair 1H Well Plat 07-16
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: November 15, 20 17
Operator's Well No. Convair Unit 1H
API WELL NO. 47-017-06858
STATE COUNTY MECA PERM

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: Existing Grade - 1195' Proposed Grade - 1181' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union Matthew W. Alexander & Linda Marie Muhly H. Ross Swiger, et ux; Joseph Freeman, et ux COUNTY: Doddridge ACREAGE: 43.94 120; 450; 45.8
SURFACE OWNER: William Ashburn Heirs; Alice Marie Simunick
ROYALTY OWNER: Larry Williams; Carole Hanlon; Charles C. Smith, et al; William A. Farr LEASE NO: ACREAGE: 60; 428.51; 71.5
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - Add Curve to POE 7,500' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 16,500' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313