



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Monday, August 2, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

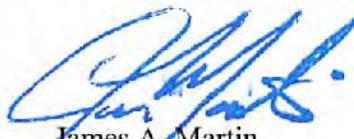
Re: Permit Modification Approval for BUSCH UNIT 2H
47-103-03405-00-00

Lateral Extension

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: BUSCH UNIT 2H
Farm Name: WILLIAM L. & DELORES J. GADD
U.S. WELL NUMBER: 47-103-03405-00-00
Horizontal 6A New Drill
Date Modification Issued: August 2, 2021

Promoting a healthy environment.

08/06/2021

CK # 231406
5000
7/8/21

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

1) Well Operator: Antero Resources Corporation 494507062 103-Wetzel Green Porters Falls 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Busch Unit 2H MOD Well Pad Name: Gadd Pad

3) Farm Name/Surface Owner: William L. & Delores J. Gadd Public Road Access: Eightmile Road

4) Elevation, current ground: 1223.8' Elevation, proposed post-construction: ~1223.8

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7400' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7400' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 21,100'

11) Proposed Horizontal Leg Length: 11,619'

12) Approximate Fresh Water Strata Depths: 350'

13) Method to Determine Fresh Water Depths: 47-095-02266

14) Approximate Saltwater Depths: 1887', 1917'

15) Approximate Coal Seam Depths: 656', 971'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No X

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

Depth: _____

Seam: _____

Owner: _____

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WV Department of
Environmental Protection

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, 86 Cu. Ft. |
| Fresh Water | 13-3/8" | New | J-55 | 54.5# | 400 *see #19 | 400 *see #19 | CTS, 556 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# | 21,100 | 21,100 | 5394 Cu. Ft |
| Tubing | 2-3/8" | New | N-80 | 4.7# | | | |
| Liners | | | | | | | |

Byron Harris
7-28-21

| 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 H/POZ & 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 | | | |

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

Drill a new horizontal shallow well into the 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): 34.16 acres

22) Area to be disturbed for well pad only, less access road (acres): 17.00 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 + 0.2% CR-20
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% CR-20

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25) Proposed borehole conditioning procedures:

*Note: Attach additional sheets as needed.



47103304770000

Busch Unit 2H

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47103311220001

47103311220000

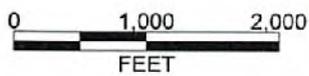
47103006810001

47103006810000



Antero Resources Corporation

Busch Unit 2H - AOR



WELL SYMBOLS
Gas Well
Plugged Gas Well

July 15, 2021

08/06/2021

| UWI (API Num) | Well Name | Well Number | Operator | Historical Operator | TD | Perforated Interval (shallowest, deepest) | Perforated Formation(s) | Producible Formation(s) not perf'd |
|----------------|------------|-------------|--------------------|-----------------------|-------|---|-------------------------|------------------------------------|
| 47103006810000 | W GODD | 1075 | ROSS & WHARTON GAS | CONSOL GAS SUPPLY CRP | 2,025 | Unknown | Big Injun, Gordon | Weir, Berea, Benson, Alexander |
| 47103006810001 | GODD | 1075 | ROSS & WHARTON GAS | CONSOL GAS SUPPLY CRP | 2,897 | Unknown | Big Injun, Gordon | Weir, Berea, Benson, Alexander |
| 47103311220000 | J W STALEY | 883 | HOPE NATURAL GAS | HOPE NATURAL GAS | 2,011 | Unknown | Big Injun | Weir, Berea, Benson, Alexander |
| 47103311220001 | J W STALEY | 883 | UNKNOWN | UNKNOWN | 2,204 | Unknown | Big Injun | Weir, Berea, Benson, Alexander |
| 47103304770000 | J E SNIDER | 1 | UNKNOWN | UNKNOWN | 1,892 | Unknown | Big Injun | Weir, Berea, Benson, Alexander |

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1,576' to Top Hole

6,487' to Bottom Hole

LATITUDE 39 - 35 - 00

LONGITUDE 80 - 45 - 00

12,173' to Top Hole

Sheet 1 of 2

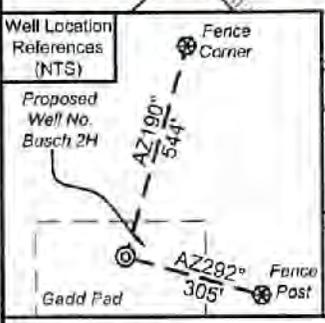
Antero Resources
Well No. Busch 2H
BHL MOD
Antero Resources Corporation



Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Busch Unit 2H Top Hole coordinates are
N: 364,874.34' Latitude: 39°32'58.66"
E: 1,645,954.82' Longitude: 80°45'20.12"
Bottom Hole coordinates are
N: 395,712.41' Latitude: 39°34'46.13"
E: 1,641,194.37' Longitude: 80°46'22.85"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,377,841.250m N: 4,381,118.906m
E: 521,014.406m E: 519,509.109m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

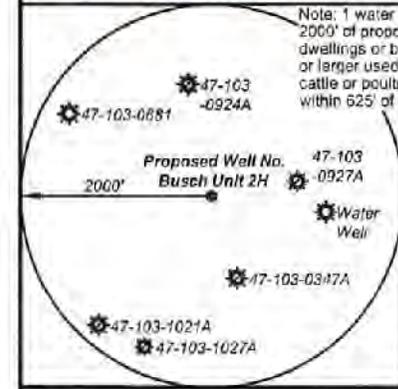
Notes
Well No. Busch Unit 2H UTM Zone 17, NAD 1927
Top Hole Coordinates
N: 14,362,252.18'
E: 1,709,313.37'
Point of Entry Coordinates
N: 14,362,033.77'
E: 1,708,185.00'
Bottom Hole Coordinates
N: 14,373,005.66'
E: 1,704,374.33'

| Bearing | Dist. |
|---------------|----------|
| L1 S 40°24' E | 2,558.7' |
| L2 S 45°58' W | 1,544.6' |
| L3 N 65°48' W | 1,021.4' |
| L4 N 40°19' W | 855.7' |
| L5 S 80°00' W | 1,149.7' |

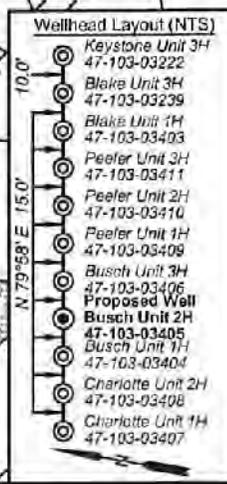


I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167



- Legend**
- Proposed gas well
 - ⊙ Monument, as noted
 - ⊛ Existing Well, as noted
 - ⊚ Digitized Well, as noted
 - Creek or Drain
 - Road
 - Surface boundary (approx.)
 - Interior surface tracts (approx.)
 - Railroad



FILE NO: 235-34-G-17
DRAWING NO: Busch 2H Well Plat
SCALE: 1" = 1500'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Monroe County, OH

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

DATE: July 19 20 21
OPERATOR'S WELL NO. Busch Unit 2H
API WELL NO MOD
47 - 103 - 03405
STATE COUNTY PERMIT

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

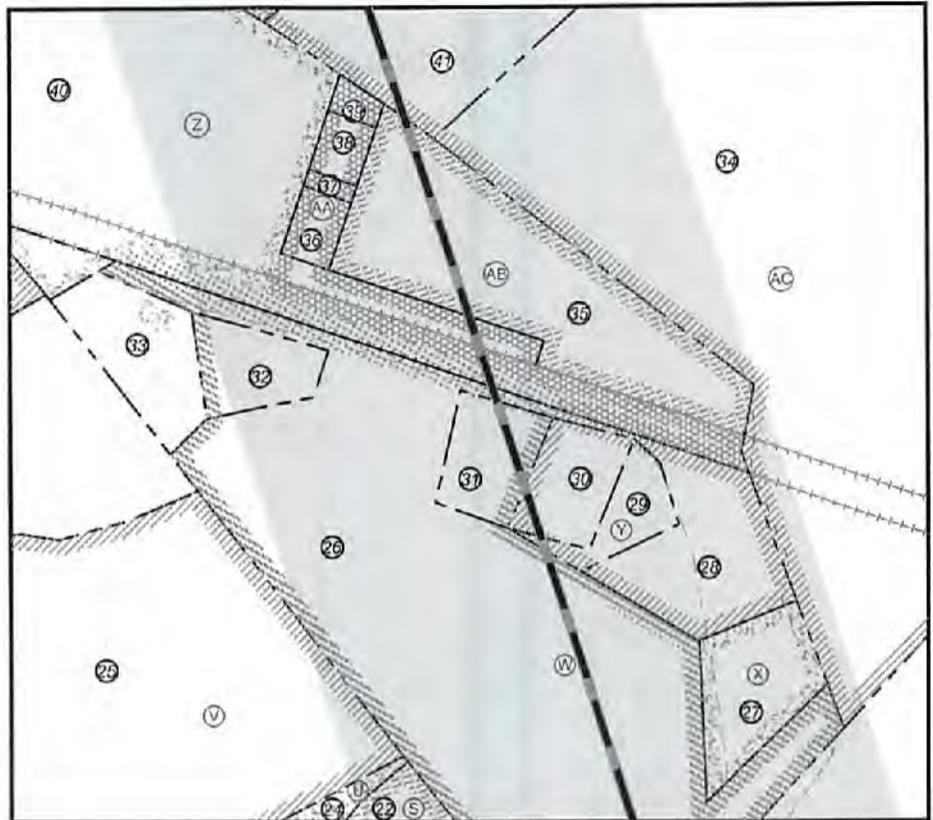
LOCATION: ELEVATION: As-Built 1,223.8' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls

DISTRICT: Green William L. & Raymond P. Gaston, et ux (2); Richard Resources; WVDNR; Robert D. Loy, et ux; COUNTY: Wayne
SURFACE OWNER: Delores J. Gadd Richard B. Dallison, et ux; Ridgeloop Royalties, LLC; Thomas E. Morris; ACREAGE: 60.5
ROYALTY OWNER: Shlben Estates, Inc.; Mildred Caseman; Bounty Minerals, LLC; LEASE NO: ACREAGE: 60.5; 119.03125;
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,400' TVD
21,100' 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



| Leases | |
|--------|----------------------------------|
| A | Shiben Estates, Inc. |
| B | John W. Bertram |
| C | BRC Appalachian Minerals I LLC |
| D | David A. Dickey |
| E | Sandra Rose Conley |
| F | Gladys E. Conley Trust |
| G | Mildred Caseman |
| H | Sielger Family Trust |
| I | Chesapeake Appalachia, LLC |
| J | Thomas E. Morris |
| K | Donald E. Dawson, et ux |
| L | Lee & Hall Royalties |
| M | Bradley Warren Ueltschy |
| N | Shiben Estates, Inc. |
| O | WV Division of Natural Resources |
| P | Richard B. Dallison, et ux |
| Q | Donald VanDyke |
| R | Paul H. Abel |
| S | Ridgetop Royalties, LLC |
| T | Rita Cain Sherman |
| U | Ridgetop Royalties, LLC |
| V | Leslie A. Lively |
| W | Bounty Minerals, LLC |
| X | Benita K. & Jerome E. Staley, II |
| Y | Raymond P. Gaston, et ux |
| Z | Antero Minerals |
| AA | Robert D. Loy, et ux |
| AB | Raymond P. Gaston, et ux |
| AC | Richards Resources |
| AD | David E. Bowyer |
| AE | WV Division of Natural Resources |
| AF | SanDoe Nieboer Stadley |



| ID | TM/Par | Owner | Bk/Pg | Acres | ID | TM/Par | Owner | Bk/Pg | Acres |
|----|---------|---|----------|--------|----|---------|-----------------------------------|----------|--------|
| 1 | 16-22 | William L. & Delores J. Gadd | 348/169 | 60.50 | 23 | 12-31 | Bruce Allen Lawhorne, et al | 419/878 | 40.00 |
| 2 | 16-23 | Kenneth E. Butler | 331/110 | 50.97 | 24 | 12-27 | Martin E. Rogers | 363/413 | 3.08 |
| 3 | 16-31 | William L. & Delores J. Gadd | 348/169 | 2.65 | 25 | 12-18 | Leslie A. Lively | 387/229 | 39.63 |
| 4 | 16-30 | William L. & Delores J. Gadd | 348/169 | 14.00 | 26 | 12-20.1 | Jerome E. II & Benita K. Staley | 415/329 | 13.34 |
| 5 | 16-47 | William M. Greenawalt & Lee A. Niezgoda | 387/1 | 12.00 | 27 | 12-29 | Jerome E. II & Benita K. Staley | 415/329 | 1.50 |
| 6 | 16-39 | Silas & William A. Tennant | WB27/97 | 23.30 | 28 | 12-28 | Jerome E. II & Benita K. Staley | 415/329 | 2.05 |
| 7 | 16-38 | Silas Tennant | 137/85 | 15.50 | 29 | 12-22.1 | Donnie L. Arnett | 440/892 | 0.56 |
| 8 | 16-21 | Mildred E. Caseman | WB45/396 | 40.00 | 30 | 12-22 | Donnie L. Arnett | 440/892 | 0.87 |
| 9 | 16-21.2 | Mildred E. Caseman | WB45/396 | 20.06 | 31 | 12-21 | Tammy J. Ueltschy | 370/707 | 0.90 |
| 10 | 16-21.3 | Mildred E. Caseman | WB45/396 | 12.00 | 32 | 12-20 | Bonnie Ueltschy | WB70/248 | 0.75 |
| 11 | 16-9 | Richard A. & Susan L. Gardner | 341/281 | 66.50 | 33 | 12-19 | Beulah I. Snider | WB45/396 | 1.3 |
| 12 | 16-8 | Wilbur B. Dawson & Loretta P. Ueltschy | 408/192 | 75.75 | 34 | 12-11 | Timothy L. & Michael A. McDiffitt | 385/189 | 131.34 |
| 13 | 16-21.4 | Mildred E. Caseman | WB45/396 | 1.00 | 35 | 12-10 | Charles & Wilda Lee Loy | 299/009 | 4.85 |
| 14 | 16-3.1 | Donald E. & Carolyn L. Dawson | 332/114 | 10.00 | 36 | 12-6 | Robert D. & Catherine M. Loy | 357/199 | 0.08 |
| 15 | 12-55 | Bradley W. Ueltschy | 330/37 | 100.00 | 37 | 12-7 | Robert D. & Catherine M. Loy | 357/199 | 0.33 |
| 16 | 12-49 | John W. & Rosalie M. Ueltschy | 362/403 | 86.55 | 38 | 12-3 | Robert D. & Catherine M. Loy | 357/199 | 0.27 |
| 17 | 12-41 | Robert W. & Bradley W. Ueltschy | 341/261 | 29.00 | 39 | 12-9 | Robert D. & Catherine M. Loy | 357/199 | 0.16 |
| 18 | 13-27 | Donald P. Vandyke & Mark L. Vandyke | 410/241 | 123.80 | 40 | 12-5 | Columbia Gas Trans Corp. | 263/164 | 11.70 |
| 19 | 12-42 | Donald P. Vandyke & Mark L. Vandyke | 410/241 | 29.65 | 41 | 12-11.1 | Timothy L. & Tammy D. McDiffitt | 431/388 | 6.66 |
| 20 | 12-50 | Richard B. & Jaynee C. Dallison | 399/286 | 37.00 | 42 | 12-4 | Easterling Trust | 446/376 | 7.16 |
| 21 | 12-39 | Martin E. Rogers | 421/621 | 60.00 | 43 | 7-53 | Easterling Trust | 446/376 | 32.98 |
| 22 | 12-30 | Martin E. Rogers | 363/413 | 51.08 | 44 | 7-54 | James Ronald Long | 283/207 | 10.00 |

FILE NO: 235-34-G-17
 DRAWING NO: Busch 2H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 CORS, Monroe County, OH



DATE: July 19 2021
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 API WELL NO **1109**
 47 - 103 - 03405
 STATE COUNTY PERMIT

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6,487' to Bottom Hole

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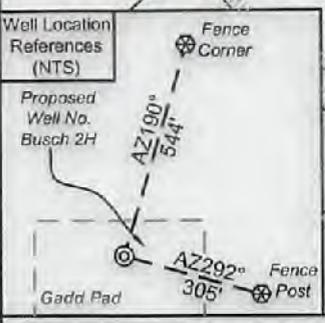
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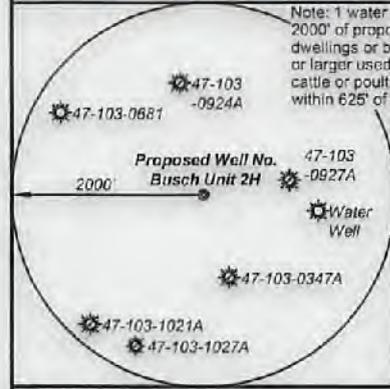
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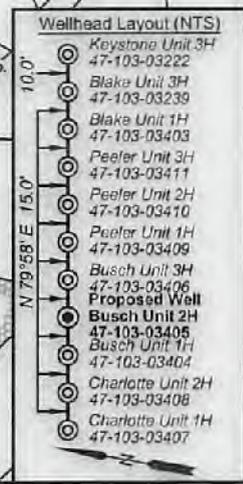


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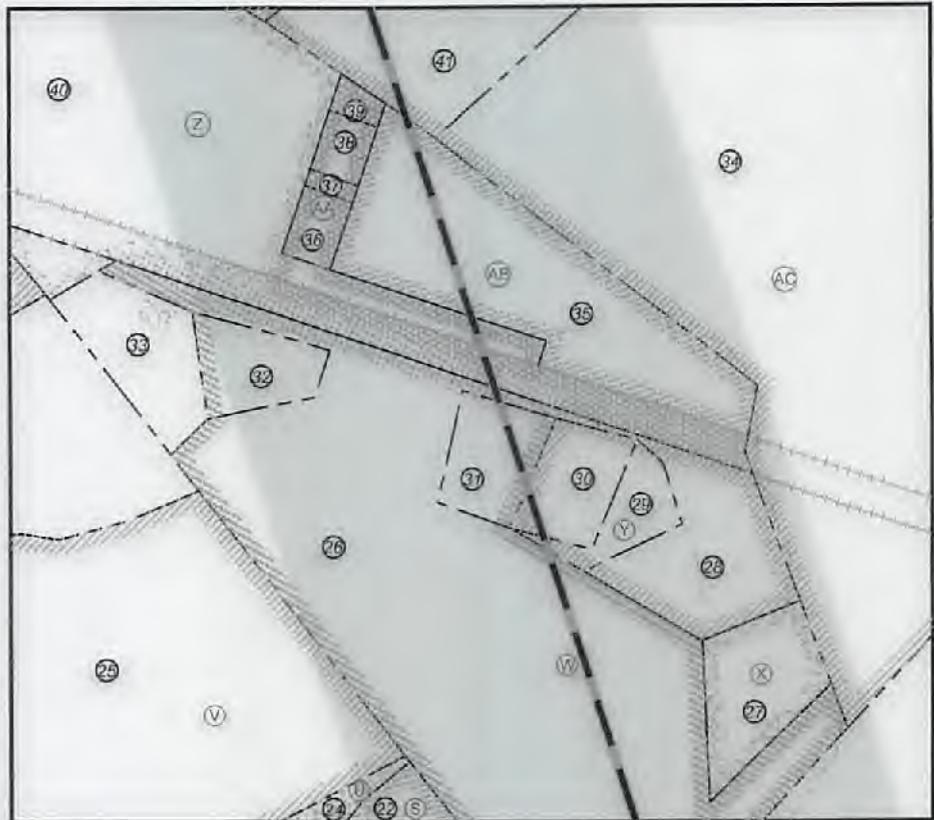
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Antero Resources
Well No. Busch 2H
BHL MOD
 Antero Resources Corporation

Sheet 2 of 2



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| E | Sandra Rose Conley |
| F | Gladys E. Conley Trust |
| G | Mildred Caseman |
| H | Stelger Family Trust |
| I | Chesapeake Appalachia, LLC |
| J | Thomas E. Morris |
| K | Donald E. Dawson, et ux |
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| M | Bradley Warren Ueltschy |
| N | Shiben Estates, Inc. |
| O | WV Division of Natural Resources |
| P | Richard B. Dallison, et ux |
| Q | Donald VanDyke |
| R | Paul H. Abel |
| S | Ridgetop Royalties, LLC |
| T | Rita Cain Sherman |
| U | Ridgetop Royalties, LLC |
| V | Leslie A. Lively |
| W | Bounty Minerals, LLC |
| X | Benita K. & Jerome E. Staley, II |
| Y | Raymond P. Gaston, et ux |
| Z | Antero Minerals |
| AA | Robert D. Loy, et ux |
| AB | Raymond P. Gaston, et ux |
| AC | Richards Resources |
| AD | David E. Bowyer |
| AE | WV Division of Natural Resources |
| AF | SanDee Nieboer Stadley |



| ID | TM/Par | Owner | Bk/Pg | Acres | ID | TM/Par | Owner | Bk/Pg | Acres |
|----|---------|---|----------|--------|----|---------|------------------------------------|----------|--------|
| 1 | 16-22 | William L. & Delores J. Gadd | 348/169 | 60.50 | 23 | 12-31 | Bruce Allen Lawhorne, et al | 419/878 | 40.00 |
| 2 | 16-23 | Kenneth E. Butler | 331/110 | 50.97 | 24 | 12-27 | Martin E. Rogers | 363/413 | 3.08 |
| 3 | 16-31 | William L. & Delores J. Gadd | 348/169 | 2.65 | 25 | 12-18 | Leslie A. Lively | 387/229 | 39.63 |
| 4 | 16-30 | William L. & Delores J. Gadd | 348/169 | 14.00 | 26 | 12-20.1 | Jerome E. II & Benita K. Staley | 415/329 | 13.34 |
| 5 | 16-47 | William M. Greenawalt & Lee A. Niezgoda | 387/1 | 12.00 | 27 | 12-29 | Jerome E. II & Benita K. Staley | 415/329 | 1.50 |
| 6 | 16-39 | Silas & William A. Tennant | WB27/97 | 23.30 | 28 | 12-28 | Jerome E. II & Benita K. Staley | 415/329 | 2.05 |
| 7 | 16-38 | Silas Tennant | 137/85 | 15.50 | 29 | 12-22.1 | Donnie L. Arnett | 440/892 | 0.55 |
| 8 | 16-21 | Mildred E. Caseman | WB45/396 | 40.00 | 30 | 12-22 | Donnie L. Arnett | 440/892 | 0.87 |
| 9 | 16-21.2 | Mildred E. Caseman | WB45/396 | 20.06 | 31 | 12-21 | Tammy J. Ueltschy | 370/707 | 0.90 |
| 10 | 16-21.3 | Mildred E. Caseman | WB45/396 | 12.00 | 32 | 12-20 | Bonnie Ueltschy | WB70/248 | 0.75 |
| 11 | 16-9 | Richard A. & Susan L. Gardner | 341/281 | 66.50 | 33 | 12-19 | Beulah I. Snider | WB45/396 | 1.3 |
| 12 | 16-6 | Wilbur B. Dawson & Loretta P. Ueltschy | 408/192 | 75.75 | 34 | 12-11 | Timothy L. & Michael A. McDifflitt | 385/189 | 131.34 |
| 13 | 16-21.4 | Mildred E. Caseman | WB45/396 | 1.00 | 35 | 12-10 | Charles & Wilda Lee Loy | 299/009 | 4.65 |
| 14 | 16-3.1 | Donald E. & Carolyn L. Dawson | 332/114 | 10.00 | 36 | 12-6 | Robert D. & Catherine M. Loy | 357/199 | 0.08 |
| 15 | 12-55 | Bradley W. Ueltschy | 330/37 | 100.00 | 37 | 12-7 | Robert D. & Catherine M. Loy | 357/199 | 0.33 |
| 16 | 12-49 | John W. & Rosalie M. Ueltschy | 362/403 | 86.55 | 38 | 12-8 | Robert D. & Catherine M. Loy | 357/199 | 0.27 |
| 17 | 12-41 | Robert W. & Bradley W. Ueltschy | 341/261 | 29.00 | 39 | 12-9 | Robert D. & Catherine M. Loy | 357/199 | 0.16 |
| 18 | 13-27 | Donald P. Vandyke & Mark L. Vandyke | 410/241 | 123.80 | 40 | 12-5 | Columbia Gas Trans Corp. | 263/164 | 11.70 |
| 19 | 12-42 | Donald P. Vandyke & Mark L. Vandyke | 410/241 | 29.65 | 41 | 12-11.1 | Timothy L. & Tammy D. McDifflitt | 431/389 | 6.66 |
| 20 | 12-50 | Richard B. & Jaynee C. Dallison | 399/288 | 37.00 | 42 | 12-4 | Easterling Trust | 446/376 | 7.16 |
| 21 | 12-39 | Martin E. Rogers | 421/621 | 60.00 | 43 | 7-53 | Easterling Trust | 446/376 | 32.98 |
| 22 | 12-30 | Martin E. Rogers | 363/413 | 51.08 | 44 | 7-54 | James Ronald Long | 283/207 | 10.00 |

FILE NO: 235-34-G-17
 DRAWING NO: Busch 2H Well Plat
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 CORS, Monroe County, OH


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

DATE: July 19 20 21
 OPERATOR'S WELL NO. Busch Unit 2H
 API WELL NO **1100**
 47 - 103 - 03405
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,223.8' WATERSHED: Fishing Creek QUADRANGLE: Porter Falls

DISTRICT: Green William L. & Raymond P. Gaston, et ux (2); Richard Resources; WVDNR; Robert D. Loy, et ux; COUNTY: West Virginia 08/06/2021 13798;

SURFACE OWNER: Delores J. Gadd Richard B. Dallison, et ux; Ridgetop Royalties, LLC; Thomas E. Morris; ACREAGE: 60.5 4.83; 15; 190; 37;

ROYALTY OWNER: Shiben Estates, Inc.; Mildred Caseman; Bounty Minerals, LLC; LEASE NO: ACREAGE: 60.5; 119.03125; 2,56875; 51.07;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,400' TVD 21,100' 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

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 |
|----|---|------------------------------|---------|-----------|
| A | <u>Shiben Estates Inc. Lease</u> Shiben Estates Inc. | Antero Resources Corporation | 1/8+ | 0176/0467 |
| F | <u>Gladys E. Conley Trust Lease</u> Gladys E. Conley Trust | Antero Resources Corporation | 1/8+ | 0180/0443 |
| G | <u>Mildred Caseman Lease</u> Mildred Caseman | Antero Resources Corporation | 1/8+ | 0240/0093 |
| H | <u>Siegler Family Trust Lease</u> Siegler Family Trust | Antero Resources Corporation | 1/8+ | 0184/0070 |
| J | <u>Thomas E. Morris Lease</u> Thomas E. Morris | Antero Resources Corporation | 1/8+ | 0162/0479 |
| L | <u>Lee & Hall Royalties Lease</u> Lee & Hall Royalties | Antero Resources Corporation | 1/8+ | 0246/0701 |
| P | <u>Richard B. Dallison et ux Lease</u> Richard B. Dallison et ux | Antero Resources Corporation | 1/8+ | 0253/0565 |
| S | <u>Ridgetop Royalties LLC Lease</u> Ridgetop Royalties LLC | Antero Resources Corporation | 1/8+ | 0231/0818 |
| W | <u>Bounty Minerals, LLC Lease</u> Bounty Minerals, LLC | Antero Resources Corporation | 1/8+ | 251A/587 |
| Y | <u>Raymond P. Gaston et ux Lease</u> Raymond P. Gaston et ux | Antero Resources Corporation | 1/8+ | 193A/4 |
| AA | <u>Robert D. Loy et ux Lease</u> Robert D. Loy et ux | Antero Resources Corporation | 1/8+ | 200A/215 |
| AB | <u>Raymond P. Gaston et ux Lease</u> Raymond P. Gaston et ux | Antero Resources Corporation | 1/8+ | 247A/710 |

RECEIVED
Office of Oil and Gas
JUL 21 2021
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.

08/06/2021

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| Grantor, lessor, etc. | Grantee, lessee, etc. | Royalty | Book/Page |
|-----------------------|-----------------------|---------|-----------|
|-----------------------|-----------------------|---------|-----------|

AC

Richards Resources Lease
Richards Resources

Antero Resources Corporation

1/8+

173A/109

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
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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:

| Lease Name or Number | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|---|----------------------------------|------------------------------|---------|-----------|
| <i>AE</i> <u>WV Division of Natural Resources Lease</u> | WV Division of Natural Resources | Antero Resources Corporation | 1/8+ | 0256/0524 |

*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

RECEIVED
Office of Oil and Gas
JUL 21 2021
WV Department of
Environmental Protection

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.

Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act

Well Operator: Antero Resources Corporation
By: Tim Rady
Its: VP of Land

CK# 231405

\$ 5,000

7/8/21



July 20, 2021

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 57th Street
Charleston, WV 25304

RECEIVED
Office of Oil and Gas

JUL 21 2021

WV Department of
Environmental Protection

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for approved well on the Gadd Pad. We are requesting to extend the wellbore for the Busch Unit 1H-3H, Blake Unit 1H, Charlotte Unit 1H & 2H and Peeler Unit 1H-3H all expedited.

Attached you will find the following documents:

- REVISED Form WW-6B
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat

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

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Mallory Stanton".

Mallory Stanton
Permitting Supervisor
Antero Resources Corporation

Enclosures

08/06/2021



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Re: Expedited Modification H6A Horizontal Well Work Permit (API: 47-103-03405)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Tue, Aug 3, 2021 at 7:30 AM

To: Mallory Stanton <mstanton@anteroresources.com>, Dani DeVito <ddevito@shalepro.com>

Cc: "Harris, Bryan O" <bryan.o.harris@wv.gov>, Scott Lemley <slemley@wvassessor.com>

I have attached a copy of the newly issued well [permit](#) number "BUSCH UNIT 2H", API (47-103-03405). This will serve as your copy.

If you have any questions, then [please](#) contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

 **47-103-03405 - mod.pdf**
1274K

08/06/2021