



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 1H
47-103-03404-00-00

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 1H
Farm Name: WILLIAM L. & DELORES J. GADD
U.S. WELL NUMBER: 47-103-03404-00-00
Horizontal 6A New Drill
Date Modification Issued: August 2, 2021

Promoting a healthy environment.

08/06/2021

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 1H 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 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: 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: 23100' ✓

11) Proposed Horizontal Leg Length: 12,886' ✓

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

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

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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#	23100	23100 ✓	5944 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

Buyer - Hamm
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 + 0.05% C-21 + 0.05% C-22

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:

[Empty box for proposed borehole conditioning procedures]

*Note: Attach additional sheets as needed.



47103027970000

47103304770000

47103000040001

47103000040000

Busch Unit 1H

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JUL 21 2021
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47103307150000

47103000690000



Antero Resources Corporation

Busch Unit 1H - 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
47103027970000	HOWELL	10H	EQT PRODUCTION CO	STONE ENERGY CORP	13,186	Unknown	Marcellus	
47103304770000	J E SNIDER	1	UNKNOWN	UNKNOWN	1,892	Unknown	Big Injun	Alexander, Weir
4710300040000	MANUFACTURERS LT & HT	3383	MANUFACT LIGHT & HEAT	MANUFACT LIGHT & HEAT	1,641	Unknown	Big Injun	Alexander, Weir
4710300040001	MANUFACTURERS LT & HT	3383	SOUTHEASTERN GAS	UNKNOWN	2,741	Unknown	Big Injun	Alexander, Weir
47103307150000	A M ARGENSINGER	7219	HOPE NATURAL GAS	HOPE NATURAL GAS	1,726	Unknown	Keener	Big Injun, Alexander, Weir
47103000690000	L L MIDCAP	2	UNKNOWN	UNKNOWN	1,886	Unknown	Keener	Big Injun, Alexander, Weir

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1,591' to Top Hole

7,696' to Bottom Hole

LATITUDE 39 - 35 - 00

LONGITUDE 80 - 45 - 00

Antero Resources
Well No. Busch 1H
BHL MOD
Antero Resources Corporation

Sheet 1 of 3

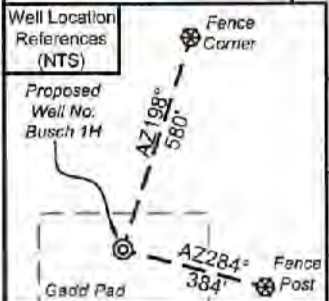
Busch Unit 1H
Bottom Hole

BTM Hole
7.5' Spot

See Detail
Page 2



Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Busch Unit 1H Top Hole coordinates are
N: 384,871.72' Latitude: 39°32'59.66"
E: 1,645,940.05' Longitude: 80°45'20.31"
Bottom Hole coordinates are
N: 396,870.36' Latitude: 39°34'55.43"
E: 1,639,997.90' Longitude: 80°46'38.30"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,377,840.376m N: 4,381,404.656m
E: 521,009.920m E: 519,139.735m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.



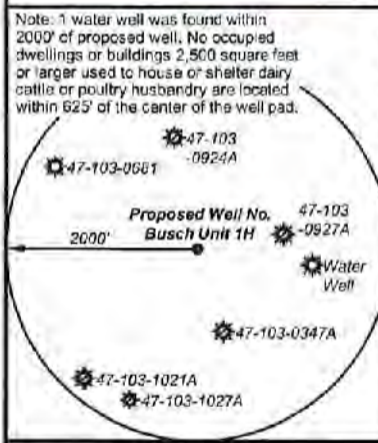
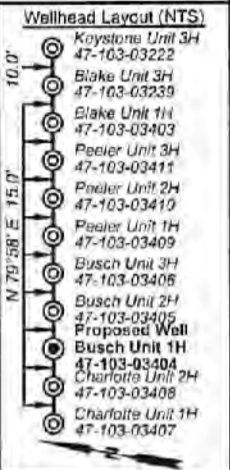
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

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



SEAL

Notes:
Well No. Busch Unit 1H
UTM Zone 17, NAD 1927
Top Hole Coordinates
N: 14,362,249.31'
E: 1,709,298.65'
Point of Entry Coordinates
N: 14,361,774.10'
E: 1,707,387.71'
Bottom Hole Coordinates
N: 14,373,843.18'
E: 1,703,162.44'



	Bearing	Dist.
L1	S 40°07' E	2,551.1'
L2	S 46°16' W	1,557.1'
L3	N 66°16' W	1,033.8'
L4	N 41°11' W	863.4'
L5	S 77°00' W	1,969.8'

- 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 Right-of-Way

FILE NO: 235-34-G-17
DRAWING NO: Busch 1H 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 2021
OPERATOR'S WELL NO. Busch Unit 1H
API WELL NO. MOD
47 - 103 - 03404
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. & SURFACE OWNER: Delores J. Gadd COUNTY: Wayne
ROYALTY OWNER: Shiban Estates, Inc.; Gladys E. Conley Trust; Chesapeake Appalachia, LLC. LEASE NO: ACREAGE: 60.5
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
23,100' 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

08/06/2021

12,176' to Top Hole

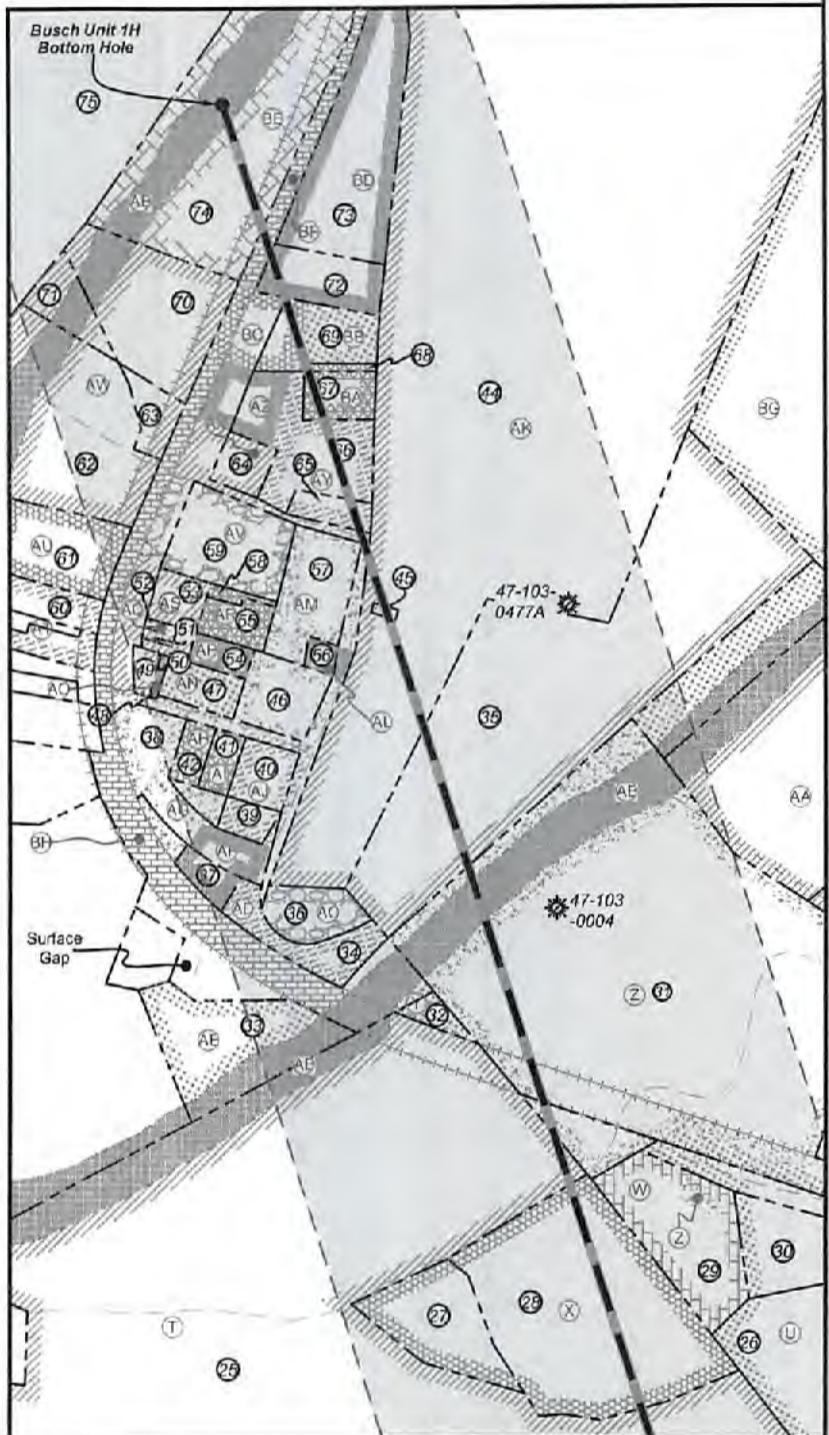
Antero Resources
Well No. Busch 1H
BHL MOD

Antero Resources Corporation

Sheet 2 of 3



Leases	
A	Shiben Estates, Inc.
B	BRC Appalachian Minerals I LLC
C	John W. Bertram
D	David A. Dickey
E	Sandra Rose Conley
F	Richard Lee Tennant, et ux
G	Harry I. Elson
H	Chesapeake Appalachia, LLC
I	Gladys E. Conley Trust
J	Mildred Caseman
K	Sielger Family Trust
L	Chesapeake Appalachia, LLC
M	Loretta Paulette Ueltschy
N	Donald E. Dawson, et ux
O	Lee & Hall Royalties
P	Richard B. Dallison, et ux
Q	Paul H. Abel
R	Ridgetop Royalties, LLC
S	Ridgetop Royalties, LLC
T	Leslie A. Lively
U	Bounty Minerals, LLC
V	Robert D. Loy, et ux
W	Beulah I. Snider
X	Emma Ruth Taylor
Y	Leslie A. Lively
Z	Antero Minerals
AA	Richards Resources
AB	WVDNR
AC	San-Dee N. Stradley
AD	Michelle R. Mason
AE	OPEN
AF	Phillip Willey
AG	Antero Minerals
AH	Jeffrey J. Ellis
AI	Joyce Cain
AJ	Barbara Sue Thomas
AK	SanDee Nieboer Stradley
AL	Roberta Lyn Sommerville
AM	Steven J. Melott
AN	Joyce Cain
AO	OPEN
AP	Allen G. Cain, et ux
AQ	Rodney Dale Weekley, et ux
AR	Jodie J. Dawson
AS	Raymond E. Lasure, et ux
AT	Kimberly A. Miller
AU	Rodney Dale Weekley, et ux
AV	Amelia Ann Bocher & Roy L. Vancamp
AW	Leo E. Bassett, et ux
AX	David Wilson
AY	Peggy Ann Dawson Supplemental Needs Trust
AZ	John R. Morgan
BA	James David Alawine
BB	Elwood L. & Carmen Y. Blake
BC	John R. Morgan
BD	Michelle R. Mason
BE	Allen G. Morgan
BF	CSX Transportation
BG	David E. Bowyer
BH	CSX Transportation



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Denver, CO 80202 Charleston, WV 25313

08/06/2021



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	40	31-16	Barbara Sue Thomas	457/139	0.30
2	16-31	William L. & Delores J. Gadd	348/169	2.65	41	31-15	Carl J. Lancaster Est.	WB66/516	0.17
3	16-23	Kenneth E. Butler	331/110	50.97	42	31-14	Jeffrey J. Ellis	466/868	0.17
4	16-30	William L. & Delores J. Gadd	348/169	14.00	43	12-11	Timothy L. & Michael A. McDiffitt	385/189	131.34
5	16-47	William M. Greenawalt & Lea A. Niezgoda	387/1	12.00	44	7-53	Easterling Trust	446/376	32.98
					45	31-9	Columbia Gas Trans Corp.	263/164	0.02
6	16-38	Silas Tennant	137/85	15.50	46	31-11	Steven J. Melott	420/137	---
7	16-37	Garrett S. Estate	316/248	61.00	47	31-28	Carl J. Lancaster Est.	WB66/516	0.28
8	16-21.1	Mildred E. Caseman	WB45/396	15.00	48	31-26.1	Michael or Melissa Scyoc	461/631	0.06
9	16-21	Mildred E. Caseman	WB45/396	40.00	49	31-26	Raymond E. & Catherine H. Lasure	249/435	0.09
10	16-21.2	Mildred E. Caseman	WB45/396	20.06	50	31-25	Raymond E. & Catherine H. Lasure	259/151	0.03
11	16-20	Bonita Andrich, et al	WB70/243	79.03	51	31-24	Raymond E. & Catherine H. Lasure	249/435	0.03
12	16-8	Wilbur B. Dawson & Loretta P. Ueltschy	408/192	75.75	52	31-12	Rodney Dale Weekley	302/79	0.03
13	16-21.3	Mildred E. Caseman	WB45/396	12.00	53	31-12.2	Raymond E. & Catherine H. Lasure	249/435	0.28
14	16-21.4	Mildred E. Caseman	WB45/396	1.00	54	31-12.3	Allen G. & Joyce E. Cain	316/133	0.16
15	16-3	Wilbur B. Dawson & Loretta P. Ueltschy	408/192	49.80	55	31-12.1	Jody J. Dawson	344/149	0.25
16	16-3.1	Donald E. & Carolyn L. Dawson	332/114	10.00	56	31-10	M E Church	134/457	0.08
17	12-55	Bradley W. Ueltschy	330/37	100.00	57	31-8	Steven J. Melott	420/400	0.75
18	12-49	John W. & Rosalie M. Ueltschy	362/403	86.55	58	31-7.1	Jody J. Dawson	344/149	0.06
19	12-50	Richard B. & Jaynee C. Dallison	399/288	37.00	59	31-7	Danny R. & Christina F. Booher	285/134	0.80
20	12-39	Martin E. Rodgers	421/621	60.00	60	31-27.1	Kimbarly A. Miller	406/527	0.15
21	12-26	Martin E. Rodgers	419/493	50.40	61	31-27	Rodney D. Weekley	302/79	1.40
22	12-40	Martin E. Rodgers	421/621	60.00	62	31-23	Lee E. & Charlotte D. Bassett	395/29	1.42
23	12-30	Martin E. Rodgers	363/413	51.08	63	31-22	Lee E. & Charlotte D. Bassett	395/29	0.50
24	12-27	Martin E. Rodgers	363/413	3.08	64	31-6	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.23
25	12-18	Leslie A. Lively	387/229	39.63					
26	12-20.1	Jerome E. II & Benita K. Staley	415/329	13.34	65	31-5	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.25
27	12-18.2	Charles A. Loy	331/320	1.18					
28	12-18.1	Martha R. Campbell	254/495	3.37	66	31-4	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.98
29	12-19	Beulah I. Snider	WB45/396	1.30					
30	12-20	Bonnie Ueltschy	WB70/248	0.75	67	31-4.1	James David Alawine	479/446	0.50
31	12-5	Columbia Gas Trans Corp.	263/164	11.70	68	31-4.3	James David Alawine	479/446	0.05
32	31-20	B&O RR Co.	---	0.14	69	31-4.2	Elwood & Carman Y. Blake	371/617	0.58
33	31-35	Kenneth Scyoc, et al	AP10/559	1.10	70	31-21	Lee E. & Charlotte D. Bassett	395/29	2.50
34	31-19	Paul Abel Trust	329/377	0.66	71	31-23.1	Lee E. & Charlotte D. Bassett	395/29	0.33
35	12-4	Easterling Trust	448/376	7.16	72	31-1	Elwood & Carman Y. Blake	371/649	0.39
36	12-3	Easterling Trust	448/376	0.50	73	7-52	Ronnie Lee Powers	340/248	1.00
37	31-18	Philip Wiley	379/245	0.33	74	7-51	Shawn C. Stackpole	408/622	4.12
38	31-13	Clair Phillip Dawson, Jr.	471/210	0.25	75	7-50	Bradley W. & Kimberly Ueltschy	342/710	79.78
39	31-17	Barbara Sue Thomas	457/139	0.17					

FILE NO: 235-34-G-17
 DRAWING NO: Busch 1H Well Plat
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1,591' to Top Hole

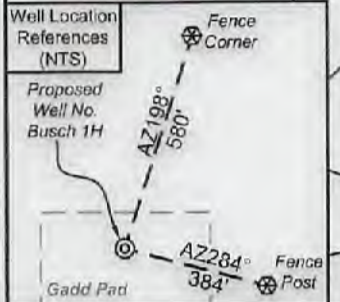
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LATITUDE 39 - 35 - 00

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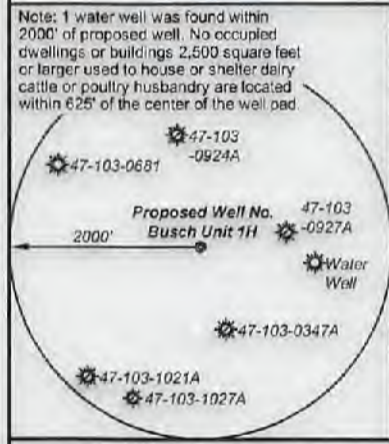
Antero Resources
Well No. Busch 1H
BHL MOD
Antero Resources Corporation

Sheet 1 of 3



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

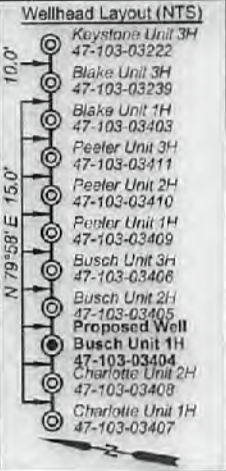


	Bearing	Dist.
L1	S 40°07' E	2,551.1'
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Top Hole Coordinates
N: 14,362,249.31'
E: 1,709,298.65'
Point of Entry Coordinates
N: 14,361,774.10'
E: 1,707,387.71'
Bottom Hole Coordinates
N: 14,373,943.18'
E: 1,703,162.44'



FILE NO: 235-34-G-17
DRAWING NO: Busch 1H 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 1H
API WELL NO. 47 - 103 - 03404
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. & SURFACE OWNER: Delores J. Gadd COUNTY: Wayne
ROYALTY OWNER: Shiben Estates, Inc.; Gladys E. Conley Trust; Chesapeake Appalachia, LLC. LEASE NO: ACREAGE: 60.5
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: 23,100' 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

12,176' to Top Hole

08/06/2021

Antero Resources
Well No. Busch 1H
BHL MOD
 Antero Resources Corporation



Leases	
A	Shiben Estates, Inc.
B	BRC Appalachian Minerals I LLC
C	John W. Bertram
D	David A. Dickey
E	Sandra Rose Conley
F	Richard Lee Tennant, et ux
G	Harry I. Elson
H	Chesapeake Appalachia, LLC
I	Gladys E. Conley Trust
J	Mildred Caseman
K	Sietger Family Trust
L	Chesapeake Appalachia, LLC
M	Loretta Paulette Ueltschy
N	Donald E. Dawson, et ux
O	Lee & Hall Royalties
P	Richard B. Dallison, et ux
Q	Paul H. Abel
R	Ridgetop Royalties, LLC
S	Ridgetop Royalties, LLC
T	Leslie A. Lively
U	Bounty Minerals, LLC
V	Robert D. Loy, et ux
W	Beulah I. Snider
X	Emma Ruth Taylor
Y	Leslie A. Lively
Z	Antero Minerals
AA	Richards Resources
AB	WVDNR
AC	San-Dee N. Stradley
AD	Michelle R. Mason
AE	OPEN
AF	Phillip Wiley
AG	Antero Minerals
AH	Jeffrey J. Ellis
AI	Joyce Cain
AJ	Barbara Sue Thomas
AK	SanDee Nieboer Stradley
AL	Roberta Lyn Sommerville
AM	Steven J. Melott
AN	Joyce Cain
AO	OPEN
AP	Allen G. Cain, et ux
AQ	Rodney Dale Weekley, et ux
AR	Jodie J. Dawson
AS	Raymond E. Lasure, et ux
AT	Kimberly A. Miller
AU	Rodney Dale Weekley, et ux
AV	Amelia Ann Bocher & Roy L. Vancamp
AW	Lee E. Bassett, et ux
AX	David Wilson
AY	Peggy Ann Dawson Supplemental Needs Trust
AZ	John R. Morgan
BA	James David Alawine
BB	Elwood L. & Carmen Y. Blake
BC	John R. Morgan
BD	Michelle R. Mason
BE	Allen G. Morgan
BF	CSX Transportation
BG	David E. Bowyer
BH	CSX Transportation



FILE NO: 235-34-G-17
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 Submeter
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 CORS, Monroe County, OH

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

DATE: July 19 2021
 OPERATOR'S WELL NO. Busch Unit 1H
 API WELL NO **Mod**
 47 - 103 - 03404
 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. & SURFACE OWNER: Delores J. Gadd COUNTY: Wayne ACREAGE: 60.5
 ROYALTY OWNER: Shiben Estates, Inc.; Gladys E. Conley Trust; Chesapeake Appalachia, LLC; LEASE NO: _____ ACREAGE: _____

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
23,100' MD

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



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	40	31-16	Barbara Sue Thomas	457/139	0.30
2	16-31	William L. & Delores J. Gadd	348/169	2.65	41	31-15	Carl J. Lancaster Est.	WB66/516	0.17
3	16-23	Kenneth E. Butler	331/110	50.97	42	31-14	Jeffrey J. Ellis	466/868	0.17
4	16-30	William L. & Delores J. Gadd	348/169	14.00	43	12-11	Timothy L. & Michael A. McDuffitt	385/189	131.34
5	16-47	William M. Greenawalt & Lee A. Niezgoda	387/1	12.00	44	7-53	Easterling Trust	446/376	32.98
6	16-38	Silas Tennant	137/85	15.50	45	31-9	Columbia Gas Trans Corp.	263/164	0.02
7	16-37	Garrett S. Estate	316/248	61.00	46	31-11	Steven J. Melott	420/137	---
8	16-21.1	Mildred E. Caseman	WB45/396	15.00	47	31-28	Carl J. Lancaster Est.	WB66/516	0.28
9	16-21	Mildred E. Caseman	WB45/396	40.00	48	31-26.1	Michael or Melissa Soyoc	461/681	0.06
10	16-21.2	Mildred E. Caseman	WB45/396	20.06	49	31-26	Raymond E. & Catherine H. Lasure	249/435	0.09
11	16-20	Bonita Andrich, et al	WB70/243	79.03	50	31-25	Raymond E. & Catherine H. Lasure	258/151	0.03
12	16-8	Wilbur B. Dawson & Loretta P. Ueltschy	408/192	75.75	51	31-24	Raymond E. & Catherine H. Lasure	249/435	0.03
13	16-21.3	Mildred E. Caseman	WB45/396	12.00	52	31-12	Rodney Dale Weekley	302/79	0.03
14	16-21.4	Mildred E. Caseman	WB45/396	1.00	53	31-12.2	Raymond E. & Catherine H. Lasure	249/435	0.28
15	16-3	Wilbur B. Dawson & Loretta P. Ueltschy	408/192	49.80	54	31-12.3	Allen G. & Joyce E. Cain	316/133	0.16
16	16-3.1	Donald E. & Carolyn L. Dawson	332/114	10.00	55	31-12.1	Jody J. Dawson	344/149	0.25
17	12-55	Bradley W. Ueltschy	330/37	100.00	56	31-10	M E Church	134/457	0.08
18	12-49	John W. & Rosalie M. Ueltschy	362/403	86.55	57	31-8	Steven J. Melott	420/400	0.75
19	12-50	Richard B. & Jaynee C. Dallison	399/286	37.00	58	31-7.1	Jody J. Dawson	344/149	0.06
20	12-39	Martin E. Rodgers	421/621	60.00	59	31-7	Danny R. & Christina F. Booher	285/134	0.80
21	12-26	Martin E. Rodgers	419/493	50.40	60	31-27.1	Kimberly A. Miller	406/527	0.15
22	12-40	Martin E. Rodgers	421/621	60.00	61	31-27	Rodney D. Weekley	302/79	1.40
23	12-30	Martin E. Rodgers	363/413	51.08	62	31-23	Lee E. & Charlotte D. Bassett	395/29	1.42
24	12-27	Martin E. Rodgers	363/413	3.08	63	31-22	Lee E. & Charlotte D. Bassett	395/29	0.50
25	12-18	Leslie A. Lively	387/229	39.63	64	31-6	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.23
26	12-20.1	Jerome E. II & Benita K. Stalay	415/329	13.34	65	31-5	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.25
27	12-18.2	Charles A. Loy	331/320	1.18	66	31-4	The Peggy Ann Dawson Supplemental Needs Trust	471/214	0.98
28	12-18.1	Martina R. Campbell	254/495	3.37	67	31-4.1	James David Alawine	479/448	0.50
29	12-19	Beulah I. Snider	WB45/396	1.30	68	31-4.3	James David Alawine	479/448	0.05
30	12-20	Bonnie Ueltschy	WB70/248	0.75	69	31-4.2	Elwood & Carman Y. Blake	371/617	0.58
31	12-5	Columbia Gas Trans Corp.	263/164	11.70	70	31-21	Lee E. & Charlotte D. Bassett	395/29	2.50
32	31-20	B&O RR Co.	---	0.14	71	31-23.1	Lee E. & Charlotte D. Bassett	395/29	0.33
33	31-35	Kenneth Soyoc, et al	AP10/559	1.10	72	31-1	Elwood & Carman Y. Blake	371/649	0.39
34	31-19	Paul Abel Trust	328/377	0.66	73	7-52	Ronnie Lee Powers	340/248	1.00
35	12-4	Easterling Trust	446/376	7.16	74	7-51	Shawn C. Stackpole	406/622	4.12
36	12-3	Easterling Trust	446/376	0.50	75	7-50	Bradley W. & Kimberly Ueltschy	342/710	79.78
37	31-18	Phillip Wiley	379/245	0.33					
38	31-13	Clair Phillip Dawson, Jr.	471/210	0.25					
39	31-17	Barbara Sue Thomas	457/139	0.17					

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



DATE: July 19 20 21
 OPERATOR'S WELL NO. Busch Unit 1H
 API WELL NO **MOD**
 47 - 103 - 03404
 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. & SURFACE OWNER: Delores J. Gadd COUNTY: West Virginia
 ROYALTY OWNER: Shiben Estates, Inc., Gladys E. Conley Trust, Chesapeake Appalachia, LLC. LEASE NO: _____ ACREAGE: 60.5
 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: 23,100' 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

14193; 11438; 49.6;
 50.62; 51.07; 60;
 190; 10; 1.16; 40.16;
 1.279; 4.55; 13.28; 4.125;
 2.6; 0.65; 0.40; 0.86961;
 0.406;

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 (TM 16 PCL 22)</u> Shiben Estates Inc.	Antero Resources Corporation	1/8+	0176/0467
I	<u>Gladys E. Conley Trust Lease</u> Gladys E. Conley	Antero Resources Corporation	1/8+	180A/443
	<u>Chesapeake Appalachia LLC Lease</u> Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC	SWN Production Company Antero Exchange Properties LLC Antero Resources Corporation	1/8 Assignment Merger	157A/640 177A/533 13/311
M	<u>Loretta Paulette Ueltschy Lease</u> Loretta Paulette Uelstchy	Antero Resources Corporation	1/8+	252A/878
N	<u>Donald E. Dawson et ux Lease</u> Donald E. Dawson et ux	Antero Resources Corporation	1/8+	240A/376
O	<u>Lee & Hall Royalties Lease</u> Lee & Hall Royalties	Antero Resources Corporation	1/8+	246A/701
Q	<u>Paul H. Abel Lease</u> Paul H. Abel	Antero Resources Corporation	1/8+	184A/164
R	<u>Ridgetop Royalties LLC Lease</u> Ridgetop Royalties LLC	Antero Resources Corporation	1/8+	231A/818
S	<u>Ridgetop Royalties LLC Lease</u> Ridgetop Royalties LLC	Antero Resources Corporation	1/8+	185A/716
T	<u>Leslie A. Lively Lease</u> Leslie A. Lively	Antero Resources Corporation	1/8+	204A/835
X	<u>Emma Ruth Taylor Lease</u> Emma Ruth Taylor	Antero Resources Corporation	1/8+	200A/752

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

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
Z	<u>Antero Minerals Lease</u> Antero Minerals	Antero Resources Corporation	1/8	495/157
AB	<u>WVDNR Lease</u> WVDNR	Antero Resources Corporation	1/8+	256A/524
AK	<u>SanDee Nieboer Stadley Lease</u> SanDee Nieboer Stadley	Antero Resources Corporation	1/8+	239A/307
Am	<u>Steven J. Melott Lease</u> Steven J. Melott	Antero Resources Corporation	1/8+	220A/793
AY	<u>Peggy Ann Dawson Supplemental Needs Trust Lease</u> Peggy Ann Dawson Supplemental Needs Trust	Antero Resources Corporation	1/8+	248A/931
BA	<u>James David Alawine Lease</u> James Davis Alawine	Antero Resources Corporation	1/8+	248A/570
BB	<u>Elwood L. & Carmen Y. Blake Lease</u> Elwood L. & Carmen Y. Blake	Antero Resources Corporation	1/8+	254A/320
BC	<u>John R. Morgan Lease</u> John R. Morgan	Antero Resources Corporation	1/8+	252A/243
BD	<u>Michelle R. Mason Lease</u> Michelle R. Mason Stone Energy Corporation EQT Production Company	Stone Energy Corporation EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment	112A/626 183A/305 230A/801
BF	<u>CSX Transportation Lease</u> CSX Transportation	Antero Resources Corporation	1/8	255A/709
BE	<u>Allen G. Morgan Lease</u> Allen G. Morgan	Antero Resources Corporation	1/8+	246A/945

**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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- (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
AB <u>WVDNR Lease</u>	WVDNR	Antero Resources Corporation	1/8+	256A/524

*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.

RECEIVED
 Office of Oil and Gas
 JUL 21 2021
 WV Department of
 Environmental Protection
**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: Tim Rady
 Its: VP of Land



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

Expedited Modification H6A Horizontal Well Work Permit (API: 47-103-03404)

1 message

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

Tue, Aug 3, 2021 at 7:27 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 1H", API (47-103-03404). 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

 **47-103-03404 - mod.pdf**
1602K

08/06/2021