

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-095-02798 County Tyler District Ellsworth  
Quad Porter Falls 7.5' Pad Name Furbee Field/Pool Name -----  
Farm name Antero Midstream LLC Well Number Atwood Unit 1H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4375469m Easting 518720m  
Landing Point of Curve Northing 4375532.15m Easting 519224.11m  
Bottom Hole Northing 4371023m Easting 520801m

Elevation (ft) 1223' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)  
Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 7/26/2022 Date drilling commenced 9/30/2022 Date drilling ceased 12/18/2022  
Date completion activities began 2/1/2023 Date completion activities ceased 4/1/2023  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 880' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 959' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft 431' Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by:

**APPROVED**

09/22/2023

*SMW*  
8/10/23

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API 47- 095 - 02798 Farm name Antero Midstream LLC Well number Atwood Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	28"	20"	125.5'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	983'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3410'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	23282'	New	23#, P-110IC	N/A	Y
Tubing		2-3/8"	7120'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	198 sx	15.6	1.18	233	0'	8 Hrs.
Surface	Class A	768 sx	15.6	1.20	921	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1128 sx	15.6	1.20	1353	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	2689 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.26 (Tail)	3388	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 23282' MD, 6991' TVD (BHL), 7015' TVD (Deepest Point Drilled) Loggers TD (ft) 23282' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6357

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

Conductor - 0  
Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface  
Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface  
Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED N/A

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API 47- 095 - 02798 Farm name Antero Midstream LLC Well number Atwood Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>*PLEASE SEE ATTACHED EXHIBIT 1</b>					


Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								


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09/22/2023 DM 8/10/23

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6861' (TOP)	TVD	7322' (TOP) MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole --- \_\_\_\_\_ psi DURATION OF TEST --- \_\_\_\_\_ hrs

OPEN FLOW Gas 11401.73 mcfpd Oil 356.97 bpd NGL --- bpd Water 331.72 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

**\*PLEASE SEE ATTACHED EXHIBIT 3**


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Please insert additional pages as applicable.

Drilling Contractor H & P Drilling  
Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Logging Company Nine Energy Services  
Address 6500 West Fwy City Fort Worth State TX Zip 76116

Cementing Company Schlumberger US Land  
Address 3600 Briarpark Drive City Houston State TX Zip 77042

Stimulating Company Halliburton  
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Stefan Gaspar Telephone 303-357-6959  
Signature  Title Permitting Agent Date 6/22/23

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

09/22/2023  
DM  
8/10/23

LATITUDE 39°32'30"

9,126'

LATITUDE 39°30'00"

2,337' TO BOTTOM HOLE

Antero Resources Corporation  
Well No. Atwood Unit 1H

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 377,217ft E: 1,638,297ft  
LAT: 39°31'42.94" LON: 80°46'56.48"  
BOTTOM HOLE INFORMATION:  
N: 362,514ft E: 1,644,883ft  
LAT: 39°29'18.55" LON: 80°45'29.81"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.  
SYSTEM WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 4,375,469m E: 518,720m  
BOTTOM HOLE INFORMATION:  
N: 4,371,023m E: 520,801m

(NAD) 27 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 14,354,470ft E: 1,701,787ft  
POINT OF ENTRY INFORMATION:  
N: 14,354,910ft E: 1,703,368ft  
BOTTOM HOLE INFORMATION:  
N: 14,339,884ft E: 1,708,615ft

MINERAL OWNERSHIP

A	ELSIE M. SWEELY
B	BLAINE LOILER
C	OMA ANN FERRELL
D	JON MICHAEL DUMARS ETUX
E	HAUGHT FAMILY TRUST
F	H 3 LLC
G	CLARENCE MUTSCHELKNAUS
H	ROBERT LOUIS BARD
I	ELIZABETH ANN GREENLIEF
K	SUSAN LANCASTER GREEN
M	ELIZABETH C. MORRISON RICHIE
N	CLARENCE MUTSCHELKNAUS, SR. ET AL
O	BRC APPALACHIAN MINERALS I LLC
P	H 3 LLC
Q	BILLIE BLOYD
R	JETT CARNEY GILL
S	BRC APPALACHIAN MINERALS I LLC
T	ED BROOME INC.
U	BRC APPALACHIAN MINERALS I LLC
V	ANDREW HAUGHT ET UX
W	KAREN & ROGER ENTERPRISES LLC
X	JENNIFER PARFITT
Y	JENNIFER PARFITT

ELLSWORTH DISTRICT - TYLER COUNTY

12-05	ROSALIE HENRY
12-06	ANTERO MIDSTREAM LLC
12-07	COASTAL FOREST RESOURCES CO.
12-09	COASTAL FOREST RESOURCES CO.
12-14	ANTERO MIDSTREAM LLC
12-15	PATRICIA NYE
12-16	PATRICIA NYE
12-17	ANTERO MIDSTREAM LLC
12-18	ANTERO MIDSTREAM LLC
12-19	JON DUMARS
12-20	SHA YOHO
12-20.1	SHA YOHO
12-21	SHA YOHO
12-22	RALPH THACKER
12-23	ROBERT BARD
12-24	CHARLES EASTHAM
12-25	MARGARET LANCASTER
12-26	MARGARET LANCASTER
12-32	CARL WILCOX

ELLSWORTH DISTRICT - TYLER COUNTY

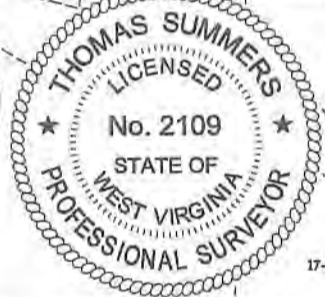
17-04	ERWAIN PECK
17-07	GILBERT EDDY
17-08	RICHARD MATORIKOWSKI
17-09	ERWAIN PECK
17-10	THOMAS JOBES
17-10.1	CHARLES EASTHAM
17-10.2	THOMAS JOBES
17-11	ELIZABETH RICHIE
17-12	FREDERICK SHATZER
17-13	CHARLES EASTHAM
17-14	WILLIAM TITUS
17-14.1	AMUEL LEEK
17-14.2	SANDRA SHREVE
17-14.3	FRED SHREVE
17-14.4	FRED SHREVE
17-14.5	PEGGY LOUB
17-14.6	RONALD SHAVER
17-14.7	MICHAEL MARTIN
17-14.8	SANDRA SHREVE
17-14.9	FRED SHREVE
17-14.10	MICHAEL MARTIN
17-15	JEROME FLAUGHER
17-19	CLARENCE CLARK
17-20	KEITH MALINIKY
17-20.1	KEITH MALINIKY
17-21	RODNEY ADAMS
17-22	STEVEN MELOTT
17-23	MARJORIE STALEY
17-24	SHAWNNA STALEY
17-24.1	DAWN HADLEY
17-25	ELIZABETH MENGES
17-26	RICHARD NEFF
17-27	HAMMETT LAND & MINERALS LLC
17-28	ARTHUR PECK
17-29	HAMMETT LAND & MINERALS LLC
17-32	SHALYN MCGRAW
17-37	BONNIE HENTHORN
17-37.1	JOHN COOPER
17-37.2	PATRICK KELLER
17-38	PATRICK KELLER
17-38.1	PATRICK KELLER
17-39	PATRICK KELLER
17-39.1	PATRICK KELLER
17-39.2	PATRICK KELLER
17-40.1	RODNEY ADAMS
17-41	ROBERT BALL
17-45	EQT PRODUCTION CO.
17-46	EQT PRODUCTION CO.
17-47	JOHN BASSETT
17-48	JEREMY JURY
17-49	MARTHA MENGES
17-51	MARTHA MENGES
17-51	JONATHAN COOPER
17-52	ANTERO RESOURCES CORP.
17-59	MICHAEL BEEGLE
23-11	JENNIFER WILLIAMS
23-12	TERRY JOY
23-13	JOSEPH FERRELL
23-14	WANDA PARR
23-15	HARLEY LEMASTERS
23-16	RICK STALEY
23-17	RICK STALEY
23-18	RICK STALEY
23-28	RICHARD NEFF

WV NORTH ZONE GRID NORTH

4,171' TO BOTTOM HOLE

LONGITUDE 80°45'00"

LONGITUDE 80°45'00"



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



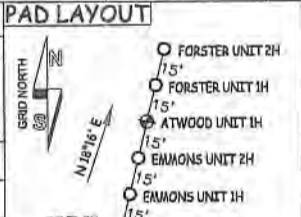
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

MCLEROY DISTRICT - TYLER COUNTY

2-04	LLOYD WEEKLEY
2-9.2	WILLIAM LACY
2-9.3	SANDRA JOCHUM
2-10	WANDA PARR
2-11	THOMAS FERRELL

JOB # 20-014WA  
DRAWING # ATWOOD1HAD  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND  
--- Surface Owner Boundary Lines +/-  
--- Interior Surface Tracts +/-  
--- Proposed Well Path  
--- As Drilled Well Path  
THOMAS SUMMERS P.S. 2109



NOTE  
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.  
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.  
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.  
4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.  
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

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

DATE 05/11/23  
OPERATOR'S WELL# ATWOOD UNIT #1H

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ 47 - 095 - 02798  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X STATE COUNTY PERMIT  
LOCATION: ELEVATION 1,223'-AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK  
QUADRANGLE PORTER FALLS 7.5' DISTRICT ELLSWORTH COUNTY TYLER  
SURFACE OWNER ANTERO MIDSTREAM LLC ACREAGE 50 ACRES +/-

OIL & GAS ROYALTY OWNER ELAINE L. OILER; H 3 LLC; HAUGHT FAMILY TRUST; CLARENCE MUTSCHELKNAUS; LEASE ACREAGE 50 AC +/- 14 AC +/- 12.5 AC +/- 6 AC +/-  
ELIZABETH ANN GREENLIEF; ROBERT LOUIS BARD; SUSAN LANCASTER GREEN; CLARENCE MUTSCHELKNAUS, SR. ET AL; 24 AC +/- 30 AC +/- 49.33 AC +/- 71.75 AC +/-  
BRC APPALACHIAN MINERALS I LLC; H 3 LLC; BILLIE BLOYD; JETT CARNEY GILL; ED BROOME INC.; ANDREW HAUGHT ET UX; 93.25 AC +/- 40.75 AC +/- 70 AC +/- 10.38 AC +/- 109.25 AC +/- 351.25 AC +/-  
JENNIFER PARFITT; JENNIFER PARFITT 13 AC +/- 15.5 AC +/-

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL  
(SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,991' TVD 23,282' MD  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS  
ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAKS BLVD  
DENVER, CO 80202 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/1/2023	23156.6	23113.6	60	Marcellus
2	2/2/2023	23074.56709	22908.4026	60	Marcellus
3	2/2/2023	22872.76966	22706.6051	60	Marcellus
4	2/2/2023	22670.97222	22504.8077	60	Marcellus
5	2/3/2023	22469.17479	22303.0103	60	Marcellus
6	2/3/2023	22267.37735	22101.2128	60	Marcellus
7	2/3/2023	22065.57991	21899.4154	60	Marcellus
8	2/3/2023	21863.78248	21697.6179	60	Marcellus
9	2/4/2023	21661.98504	21495.8205	60	Marcellus
10	2/4/2023	21460.18761	21294.0231	60	Marcellus
11	2/4/2023	21258.39017	21092.2256	60	Marcellus
12	2/5/2023	21056.59274	20890.4282	60	Marcellus
13	2/5/2023	20854.7953	20688.6308	60	Marcellus
14	2/5/2023	20652.99786	20486.8333	60	Marcellus
15	2/5/2023	20451.20043	20285.0359	60	Marcellus
16	2/6/2023	20249.40299	20083.2385	60	Marcellus
17	2/6/2023	20047.60556	19881.441	60	Marcellus
18	2/6/2023	19845.80812	19679.6436	60	Marcellus
19	2/6/2023	19644.01068	19477.8462	60	Marcellus
20	2/7/2023	19442.21325	19276.0487	60	Marcellus
21	2/7/2023	19240.41581	19074.2513	60	Marcellus
22	2/7/2023	19038.61838	18872.4538	60	Marcellus
23	2/7/2023	18836.82094	18670.6564	60	Marcellus
24	2/8/2023	18635.0235	18468.859	60	Marcellus
25	2/8/2023	18433.22607	18267.0615	60	Marcellus
26	2/8/2023	18231.42863	18065.2641	60	Marcellus
27	2/9/2023	18029.6312	17863.4667	60	Marcellus
28	2/9/2023	17827.83376	17661.6692	60	Marcellus
29	2/9/2023	17626.03632	17459.8718	60	Marcellus
30	2/9/2023	17424.23889	17258.0744	60	Marcellus
31	2/10/2023	17222.44145	17056.2769	60	Marcellus
32	2/10/2023	17020.64402	16854.4795	60	Marcellus
33	2/10/2023	16818.84658	16652.6821	60	Marcellus
34	2/10/2023	16617.04915	16450.8846	60	Marcellus
35	2/11/2023	16415.25171	16249.0872	60	Marcellus
36	2/11/2023	16213.45427	16047.2897	60	Marcellus
37	2/11/2023	16011.65684	15845.4923	60	Marcellus
38	2/12/2023	15809.8594	15643.6949	60	Marcellus
39	2/12/2023	15608.06197	15441.8974	60	Marcellus
40	2/12/2023	15406.26453	15240.1	60	Marcellus
41	2/12/2023	15204.46709	15038.3026	60	Marcellus
42	2/12/2023	15002.66966	14836.5051	60	Marcellus
43	2/12/2023	14800.87222	14634.7077	60	Marcellus
44	2/13/2023	14599.07479	14432.9103	60	Marcellus
45	2/13/2023	14397.27735	14231.1128	60	Marcellus
46	2/13/2023	14195.47991	14029.3154	60	Marcellus
47	2/13/2023	13993.68248	13827.5179	60	Marcellus
48	2/13/2023	13791.88504	13625.7205	60	Marcellus
49	2/13/2023	13590.08761	13423.9231	60	Marcellus
50	2/14/2023	13388.29017	13222.1256	60	Marcellus
51	2/14/2023	13186.49274	13020.3282	60	Marcellus
52	2/14/2023	12984.6953	12818.5308	60	Marcellus
53	2/14/2023	12782.89786	12616.7333	60	Marcellus
54	2/14/2023	12581.10043	12414.9359	60	Marcellus
55	2/14/2023	12379.30299	12213.1385	60	Marcellus
56	2/15/2023	12177.50556	12011.341	60	Marcellus
57	2/15/2023	11975.70812	11809.5436	60	Marcellus
58	2/15/2023	11773.91068	11607.7462	60	Marcellus
59	2/15/2023	11572.11325	11405.9487	60	Marcellus
60	2/16/2023	11370.31581	11204.1513	60	Marcellus
61	2/16/2023	11168.51838	11002.3538	60	Marcellus
62	2/16/2023	10966.72094	10800.5564	60	Marcellus
63	2/16/2023	10764.9235	10598.759	60	Marcellus
64	2/16/2023	10563.12607	10396.9615	60	Marcellus
65	2/16/2023	10361.32863	10195.1641	60	Marcellus
66	2/16/2023	10159.5312	9993.36667	60	Marcellus
67	2/17/2023	9957.733761	9791.56923	60	Marcellus
68	2/17/2023	9755.936325	9589.77179	60	Marcellus
69	2/17/2023	9554.138889	9387.97436	60	Marcellus
70	2/17/2023	9352.341453	9186.17692	60	Marcellus
71	2/17/2023	9150.544017	8984.37949	60	Marcellus
72	2/17/2023	8948.746581	8782.58205	60	Marcellus
73	2/18/2023	8746.949145	8580.78462	60	Marcellus
74	2/18/2023	8545.151709	8378.98718	60	Marcellus
75	2/18/2023	8343.354274	8177.18974	60	Marcellus
76	2/18/2023	8141.556838	7975.39231	60	Marcellus
77	2/18/2023	7939.759402	7773.59487	60	Marcellus
78	2/18/2023	7737.961966	7571.79744	60	Marcellus
79	2/18/2023	7536.16453	7370	60	Marcellus

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Office of Oil and Gas  
JUN 23 2023  
WV Department of  
Environmental Protection

09/22/2023  
JM  
8/10/23

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	2/1/2023	75.49	10056	10382	4211	175340	275467	N/A
2	2/2/2023	74.43278	9836.469	7065.44	4178.705	402320	304842	N/A
3	2/2/2023	86.18	10506	5528	4256	412960	311882	N/A
4	2/2/2023	85.99	10204	5459	3978	400880	308168	N/A
5	2/3/2023	89.25	10376	5225	4168	404480	313006	N/A
6	2/3/2023	87.08	10061	5512	4011	412550	323180	N/A
7	2/3/2023	87.76	10208	5282	4192	412570	315620	N/A
8	2/3/2023	90.43	10533	9897	4219	414170	304037	N/A
9	2/4/2023	88.31	10282	9274	4085	398140	282410	N/A
10	2/4/2023	87.84	9829	5407	3927	407640	297160	N/A
11	2/4/2023	93.04	10572	10348	3738	418460	290890	N/A
12	2/5/2023	90.05	10021	10210	3554	419440	343382	N/A
13	2/5/2023	86.59	9987	6347	3602	400140	286322	N/A
14	2/5/2023	94.1	10518	5434	3672	409900	293597	N/A
15	2/5/2023	93.73691	10408.42	5913.47	3535.637	396850	287677	N/A
16	2/6/2023	94.35923	10317.34	6204.34	3208.693	397380	289470	N/A
17	2/6/2023	94.8	9954	3643	3667	416540	293953	N/A
18	2/6/2023	95.69	10039	5087	3809	409180	287660	N/A
19	2/6/2023	93.64	9983	5811	3796	407020	292663	N/A
20	2/7/2023	96.5703	9965.318	5543.94	3535.203	415780	294751	N/A
21	2/7/2023	94.7	9984	6054	4483	420850	303236	N/A
22	2/7/2023	93.35	9960	6781	4059	414360	294603	N/A
23	2/7/2023	93.74	9805	6277	3102	409080	288417	N/A
24	2/8/2023	96.66	9993	6365	3337	397140	287804	N/A
25	2/8/2023	94.8	10075	6525	3992	414870	294948	N/A
26	2/8/2023	93.63	9831	5571	3779	397140	282399	N/A
27	2/9/2023	95.81	9871	6095	3441	416490	297406	N/A
28	2/9/2023	94.74	9995	7275	3393	410290	289237	N/A
29	2/9/2023	97.45	9984	7094	3422	413330	288213	N/A
30	2/9/2023	96.27	9900	6557	3907	416900	294109	N/A
31	2/10/2023	95.12	9756	5440	4344	411100	287697	N/A
32	2/10/2023	94.41	9522	5785	3768	414760	289120	N/A
33	2/10/2023	97.01	9800	5938	3590	415200	294876	N/A
34	2/10/2023	97.26	9380	5773	4413	403920	284684	N/A
35	2/11/2023	97.74	9778	5916	4595	409110	286264	N/A
36	2/11/2023	96.94	9695	5568	3922	413170	296418	N/A
37	2/11/2023	96.92	9550	5822	4011	407420	295527	N/A
38	2/12/2023	97.98	9623	6185	3908	417280	305897	N/A
39	2/12/2023	96.32	9737	7469	3881	410620	287321	N/A
40	2/12/2023	99.28	9937	6267	3802	413900	294408	N/A
41	2/12/2023	99.18	9962	5884	4109	416110	302503	N/A
42	2/12/2023	97.34	9757	4658	4136	415410	282161	N/A
43	2/12/2023	99.11	9369	5570	3943	417310	287488	N/A
44	2/13/2023	97.9	9284	6350	4330	416330	359640	N/A
45	2/13/2023	98.57	9446	6128	4030	414550	293621	N/A
46	2/13/2023	98.83	9080	6027	4000	409250	290698	N/A
47	2/13/2023	97.94	8856	5363	4477	418480	296050	N/A
48	2/13/2023	98.81	9060	6098	3994	413900	290939	N/A
49	2/13/2023	97.91	9065	5355	4036	413870	291587	N/A
50	2/14/2023	97.73	9029	6008	4112	402370	284493	N/A
51	2/14/2023	98.93	9013	5928	4620	415920	290704	N/A
52	2/14/2023	99.36	9009	5651	4186	412040	291738	N/A
53	2/14/2023	99.24	8827	5851	3982	416200	304502	N/A
54	2/14/2023	99.35	8645	4976	4105	420490	306972	N/A
55	2/14/2023	96.46	8415	3517	3977	398040	296524	N/A
56	2/15/2023	97.19915	8365.333	3771.91	3680.988	414230	301442	N/A
57	2/15/2023	99.1	8536	5859	4068	414280	291128	N/A
58	2/15/2023	98.71	8868	6300	4007	417340	293210	N/A
59	2/15/2023	97.59	8721	3605	4107	409220	296788	N/A
60	2/16/2023	98.01	8541	4030	3787	412930	294278	N/A
61	2/16/2023	97.30336	8811.784	6323.66	3869.941	413110	305920	N/A
62	2/16/2023	99.48	8862	5998	4192	415150	306098	N/A
63	2/16/2023	99.29	8702	4808	4190	419860	301999	N/A
64	2/16/2023	98.92	8772	5961	4516	408050	285076	N/A
65	2/16/2023	98.06578	8596.917	3939.26	4199.421	402740	288243	N/A
66	2/16/2023	97.44338	8549.435	4566.36	4041.297	417120	292612	N/A
67	2/17/2023	97.16	8398	4652	4647	398530	277250	N/A
68	2/17/2023	99.92	8393	5505	4524	417430	284107	N/A
69	2/17/2023	99.2	8369	5570	5173	415490	281264	N/A
70	2/17/2023	99.46	8475	5546	4010	415770	282940	N/A
71	2/17/2023	99.33	7989	5324	4262	415710	288259	N/A
72	2/17/2023	98.59239	8024.874	6123.25	4096.217	410910	282669	N/A
73	2/18/2023	99.26	8038	3980	4034	404200	287137	N/A
74	2/18/2023	98.57	7927	3545	4266	401910	288718	N/A
75	2/18/2023	99.44	8058	5203	3741	410960	282865	N/A
76	2/18/2023	99.75	7879	5763	4067	419070	286781	N/A
77	2/18/2023	99.47	7958	5765	4000	419468	286670	N/A
78	2/18/2023	99.31	7786	5709	3999	405700	276760	N/A
79	2/18/2023	99.11	7570	5912	3904	406340	285194	N/A
	AVERAGE	95.6	9,327	5,892	3,999	32,244,458	23,255,749	0

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## EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Shaly Siltstone, tr LS	90'	274	90	274
Sandy Siltstone, Coal	274	334	274	334
Silty Sandstone	334	424	334	424
Shaly Siltstone, occ LS	424	634	424	634
Sandy Siltstone, occ LS	634	964	634	964
Shaly Siltstone, occ SS	964	1,024	964	1,024
Shaly Siltstone	1,024	1,434	1,024	1,434
Sandy Siltstone, occ Shale	1,434	1,524	1,434	1,524
Silty Sandstone, tr coal	1,524	1,614	1,524	1,614
Silty Sandstone, coal, tr shale	1,614	1,734	1,614	1,734
Silty Sandstone, occ shale	1,734	1,884	1,734	1,884
Shaly Sandstone, coal, occ slst	1,884	2,124	1,884	2,124
Silty Sandstone, coal, occ Shale	2,124	2,086	2,124	2,107
Big Lime	2,112	2,784	2,107	2,840
Fifty Foot Sandstone	2,784	3,002	2,814	3,068
Gordon	3,002	3,212	3,042	3,285
Fifth Sandstone	3,212	3,446	3,259	3,528
Bayard	3,446	3,886	3,502	3,989
Speechley	3,886	4,122	3,963	4,237
Balltown	4,122	4,524	4,211	4,656
Bradford	4,524	5,097	4,630	5,253
Benson	5,097	5,549	5,227	5,724
Alexander	5,549	6,695	5,698	6,961
Sycamore	6,552	6,669	6,787	6,935
Middlesex	6,669	6,764	6,935	7,081
Burkett	6,764	6,798	7,081	7,149
Tully	6,798	6,861	7,149	7,322
Marcellus	6,861	NA	7,322	NA

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/1/2023
Job End Date:	2/18/2023
State:	West Virginia
County:	Tyler
API Number:	47-095-02798-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Beech Run Atwood Unit 1H
Latitude:	39.52859000
Longitude:	-80.78236000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,015
Total Base Water Volume (gal):	24,529,486
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Produced Water Mixture	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.20618	Density = 8.34
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.13913	

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Chemstream StimSTREAM FR 2800	Chemstream, Inc.	Friction Reducer					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
HYDROCHLORI C ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	13.58750	
			Hydrochloric acid	7647-01-0	30.00000	0.03915	

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			Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01550	
			Guar gum	9000-30-0	100.00000	0.00481	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00310	
			Glutaraldehyde	111-30-8	30.00000	0.00258	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00043	
			Methanol	67-56-1	100.00000	0.00024	
			Ammonium persulfate	7727-54-0	100.00000	0.00015	
			Ethanol	64-17-5	1.00000	0.00009	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00005	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Ethoxylated alcohols	Proprietary	5.00000	0.00001	
			Hexadecene	629-73-2	5.00000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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