

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

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Office of Oil and Gas

FEB 09 2021

WV Department of
Environmental Protection

API 47 - 095 - 02671 County Tyler District Ellsworth
Quad Middlebourne 7.5' Pad Name Hogue Pad Field/Pool Name -----
Farm name Michael J. & Melinda R. Hogue Well Number Fender Unit 2H
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 4369112.167m Easting 508772.583m
Landing Point of Curve Northing 4377635.065m Easting 507893.145m
Bottom Hole Northing 4368680.013m Easting 508580.237m

Elevation (ft) 1015' 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 2/10/2020 Date drilling commenced 3/6/2020 Date drilling ceased 3/31/2020
Date completion activities began 8/22/2020 Date completion activities ceased 9/10/2020
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 456' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1581' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 740' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
QCB
04/02/2021

API 47-095 - 02671 Farm name Michael J. & Melinda R. Hogue Well number Fender Unit 2H

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	24"	20"	80'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	575'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2697'	New	36#, H-40	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16085'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6921'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	109 sx	15.6	1.18	244	0'	8 Hrs.
Surface	Class A	327 sx	15.6	1.19	402	0'	8 Hrs.
Coal							
Intermediate 1	Class A	701 sx	15.6	1.18	1047	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	798 sx (Lead) 3040 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	2819	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16130' MD, 6386' TVD (BHL), 6408' (Deepest Point Drilled) Loggers TD (ft) 16130' MD

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

Plug back procedure N/A

Kick off depth (ft) 5870'

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

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

API 47- 095 - 02671 Farm name Michael J. & Melinda R. Hogue Well number Fender Unit 2H

PERFORATION RECORD

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

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)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

API 47- 095 - 02671 Farm name Michael J. & Melinda R. Hogue Well number Fender Unit 2H

PRODUCING FORMATION(S)	DEPTHS		
<u>Marcellus</u>	<u>6353' (TOP)</u>	<u>TVD</u>	<u>7057' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 4034 mcfpd Oil 146 bpd NGL --- bpd Water 20 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor H&P Drilling
Address 1437 South Boulder Avenue City Tulsa State OK Zip 74119

Logging Company KLX Energy Services
Address 1415 Louisiana Street, Suite 2900 City Houston State TX Zip 77002

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature  Title Permitting Agent Date 12.18.20

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

API 47-095-02671 Farm Name Michael J. & Melinda R. Hogue Well Number Fender Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/16/2020	16010.6	15966.2	60	Marcellus
2	8/17/2020	15753	15585	60	Marcellus
3	8/17/2020	15549.34524	15383.0714	60	Marcellus
4	8/17/2020	15347.41667	15181.1429	60	Marcellus
5	8/17/2020	15145.4881	14979.2143	60	Marcellus
6	8/18/2020	14943.55952	14777.2857	60	Marcellus
7	8/18/2020	14741.63095	14575.3571	60	Marcellus
8	8/18/2020	14539.70238	14373.4286	60	Marcellus
9	8/18/2020	14337.77381	14171.5	60	Marcellus
10	8/19/2020	14135.84524	13969.5714	60	Marcellus
11	8/19/2020	13933.91667	13767.6429	60	Marcellus
12	8/19/2020	13731.9881	13565.7143	60	Marcellus
13	8/19/2020	13530.05952	13363.7857	60	Marcellus
14	8/20/2020	13328.13095	13161.8571	60	Marcellus
15	8/20/2020	13126.20238	12959.9286	60	Marcellus
16	8/20/2020	12924.27381	12758	60	Marcellus
17	8/20/2020	12722.34524	12556.0714	60	Marcellus
18	8/20/2020	12520.41667	12354.1429	60	Marcellus
19	8/21/2020	12318.4881	12152.2143	60	Marcellus
20	8/21/2020	12116.55952	11950.2857	60	Marcellus
21	8/21/2020	11914.63095	11748.3571	60	Marcellus
22	8/21/2020	11712.70238	11546.4286	60	Marcellus
23	8/21/2020	11510.77381	11344.5	60	Marcellus
24	8/22/2020	11308.84524	11142.5714	60	Marcellus
25	8/22/2020	11106.91667	10940.6429	60	Marcellus
26	8/22/2020	10904.9881	10738.7143	60	Marcellus
27	8/22/2020	10703.05952	10536.7857	60	Marcellus
28	8/23/2020	10501.13095	10334.8571	60	Marcellus
29	8/23/2020	10299.20238	10132.9286	60	Marcellus
30	8/23/2020	10097.27381	9931	60	Marcellus
31	8/23/2020	9895.345238	9729.07143	60	Marcellus
32	8/23/2020	9693.416667	9527.14286	60	Marcellus
33	8/23/2020	9491.488095	9325.21429	60	Marcellus
34	8/24/2020	9289.559524	9123.28571	60	Marcellus
35	8/24/2020	9087.630952	8921.35714	60	Marcellus
36	8/24/2020	8885.702381	8719.42857	60	Marcellus
37	8/24/2020	8683.77381	8517.5	60	Marcellus
38	8/24/2020	8481.845238	8315.57143	60	Marcellus
39	8/25/2020	8279.916667	8113.64286	60	Marcellus
40	8/25/2020	8077.988095	7911.71429	60	Marcellus
41	8/25/2020	7876.059524	7709.78571	60	Marcellus
42	8/25/2020	7674.130952	7507.85714	60	Marcellus
43	8/25/2020	7472.202381	7305.92857	60	Marcellus
44	8/25/2020	7270.27381	7104	60	Marcellus

04/02/2021

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	8/16/2020	61.87	8471.82	8599.77	3575.09	186320	208288	N/A
2	8/17/2020	78.15	8688.43	6231	3886.53	413680	332585	N/A
3	8/17/2020	75.79	8819.69	6505.48	3687.55	411440	319983	N/A
4	8/17/2020	79.59	8646.59	6320.55	3770.8	410740	316980	N/A
5	8/17/2020	79.49	8814.29	6739	3899.46	411650	316462	N/A
6	8/18/2020	82.33	8534.69	6408	3961.04	408540	319551	N/A
7	8/18/2020	76.74	8760.68	6974.62	3604.95	408000	309777	N/A
8	8/18/2020	76.76	8796	5329	3777	411540	308310	N/A
9	8/18/2020	79.15	8858	6591	4020	410460	308401	N/A
10	8/19/2020	79	8935	6343	4065	409420	306730	N/A
11	8/19/2020	80.48	8805.36	6835	3699.12	410940	312376	N/A
12	8/19/2020	80.64	9039	6767	3794	411280	305813	N/A
13	8/19/2020	83.79	8944	5811	4055	410700	303700	N/A
14	8/20/2020	83.93	8852	5548	4056	414480	303679	N/A
15	8/20/2020	86.35	8758	4435	4091	412480	304573	N/A
16	8/20/2020	82.34	8832	3452	4004	411660	302535	N/A
17	8/20/2020	83.54	8810	3597	4159	411820	299977	N/A
18	8/20/2020	83.89	8844	4373	4101	414480	304104	N/A
19	8/21/2020	85.5	8771	4531	4042	417980	306954	N/A
20	8/21/2020	85.35	8999	5390	4026	421160	305513	N/A
21	8/21/2020	87.09	8931	4779	4089	415060	301674	N/A
22	8/21/2020	84.91	8826	5373	3813	411160	304978	N/A
23	8/21/2020	88.13	8802	4988	4079	408480	302338	N/A
24	8/22/2020	84.91	8541	5184	4109	409240	295620	N/A
25	8/22/2020	92.01	8646	4625	3585	410580	295296	N/A
26	8/22/2020	89.88	8483	3386	4079	413180	293917	N/A
27	8/22/2020	93.89	8580	3407	4113	412420	298628	N/A
28	8/23/2020	93.31	8616	3413	4387	408360	295423	N/A
29	8/23/2020	91.21	8355	3826	4154	408500	295012	N/A
30	8/23/2020	92.37	8554	4362	4028	410160	287179	N/A
31	8/23/2020	93.87	8577	4841	4072	411740	291538	N/A
32	8/23/2020	93.9	8692	5960	4159	411740	294786	N/A
33	8/23/2020	94.44	8763	4706	4078	408900	291777	N/A
34	8/24/2020	95.22	8675	4817	4241	409360	292542	N/A
35	8/24/2020	94.46	8621	4953	4151	407680	292206	N/A
36	8/24/2020	85.87	8105	4879	4206	409980	291373	N/A
37	8/24/2020	92.55	8325	3925	3867	412080	289631	N/A
38	8/24/2020	94.99	8551	3314	4128	411640	294932	N/A
39	8/25/2020	95.11	8486	2924	4326	414720	292920	N/A
40	8/25/2020	94.35	8436.92	3443	4041	413840	295605	N/A
41	8/25/2020	95.21	8501.84	5615	4238.73	411620	289854	N/A
42	8/25/2020	90.87	8311.57	6432	4029.19	413560	291542	N/A
43	8/25/2020	95.17	8530	4359	3910	411360	292248	N/A
44	8/25/2020	95.22	8159	4313	3623	412940	290102	N/A
	AVG=	86.2	8,684	5,110	4,005	16,649,210	12,241,009	TOTAL

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Silty Sandstone	75	175	75	175
Siltstone	175	275	175	275
Shaly Siltstone	275	335	275	335
Silty Shale	335	555	335	555
Silty Sandstone	555	575	555	575
Shale	575	955	575	955
Shaly Sandstone	955	1,035	955	1,035
Sandstone	1,035	1,215	1,035	1,215
Sandy Shale	1,215	1,255	1,215	1,255
Shaly Siltstone	1,255	1,315	1,255	1,315
Sandstone	1,315	1,435	1,315	1,435
Shaly Sandstone	1,435	1,515	1,435	1,515
Sandy Shale	1,515	1,517	1,515	N/A
Big Lime	1,532	2,101	1,528	2,128
Fifty Foot Sandstone	2,101	2,333	2,113	2,364
Gordon	2,333	2,663	2,349	2,700
Fifth Sandstone	2,663	2,775	2,685	2,814
Bayard	2,775	3,581	2,799	3,637
Speechley	3,581	3,736	3,622	3,796
Balltown	3,736	4,259	3,781	4,332
Bradford	4,259	4,529	4,317	4,607
Benson	4,529	4,849	4,592	4,935
Alexander	4,849	5,915	4,920	6,100
Sycamore	5,778	5,885	5,939	6,070
Middlesex	5,885	5,969	6,085	6,224
Burkett	5,969	5,994	6,239	6,281
Tully	5,994	6,016	6,296	6,345
Marcellus	6,016	NA	6,345	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/16/2020
Job End Date:	8/25/2020
State:	West Virginia
County:	Tyler
API Number:	47-095-02671-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	FENDER 2H
Latitude:	39.47147000
Longitude:	-80.89818000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,406
Total Base Water Volume (gal):	13,125,973
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	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	87.82823	Density = 10.00
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16849	

MC B-8614	Halliburton	Biocide																			
						Listed Below															
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant																			
						Listed Below															
HYDROCHLORI C ACID, 22 BAUME	Halliburton	Solvent																			
						Listed Below															
Legend LD-2990	MultiChem	Friction Reducer																			
						Listed Below															
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker																			
						Listed Below															
WG-36 GELLING AGENT	Halliburton	Gelling Agent																			
						Listed Below															
HAI-501	Halliburton	Acid Corrosion Inhibitor																			
						Listed Below															
Legend LD-2555	MultiChem	Additive																			
						Listed Below															

Excelerate LX-15	Halliburton	Friction Reducer								
					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	Proprietary	100.00000	11.96857			
			Complex Amine Compound	Proprietary	Proprietary	60.00000	0.03536			
			Hydrochloric acid	7647-01-0	Proprietary	30.00000	0.03496			
			Hydrotreated light petroleum distillate	64742-47-8	Proprietary	30.00000	0.02126			
			Complex Amine Compound	Proprietary	Proprietary	60.00000	0.00716			
			Guar gum	9000-30-0	Proprietary	100.00000	0.00603			
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	Proprietary	5.00000	0.00354			
			Surfactant	Proprietary	Proprietary	5.00000	0.00295			
			Glutaraldehyde	111-30-8	Proprietary	30.00000	0.00213			
			Polyethoxylated fatty amine salt	61791-26-2	Proprietary	30.00000	0.00070			
			Ethoxylated alcohols	Proprietary	Proprietary	5.00000	0.00060			
			Surfactant	Proprietary	Proprietary	5.00000	0.00060			
			Organic chloride compound	Proprietary	Proprietary	1.00000	0.00059			
			Alkoxyated polyhydric alcohol	Proprietary	Proprietary	1.00000	0.00059			
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	Proprietary	5.00000	0.00035			
			Methanol	67-56-1	Proprietary	100.00000	0.00029			
			Alkoxyated polyhydric alcohol	Proprietary	Proprietary	1.00000	0.00012			
			Ethoxylated alcohols	Proprietary	Proprietary	1.00000	0.00012			
			Organic chloride compound	Proprietary	Proprietary	1.00000	0.00012			
			Ammonium persulfate	7727-54-0	Proprietary	100.00000	0.00011			

		Ethanol	64-17-5	1.00000	0.00007
		Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007
		Modified thiourea polymer	Proprietary	30.00000	0.00007
		Oxylated phenolic resin	Proprietary	30.00000	0.00003
		Acrylamide	79-06-1	0.10000	0.00002
		Organic salt #1	Proprietary	0.10000	0.00001
		Propargyl alcohol	107-19-7	5.00000	0.00001
		Hexadecene	629-73-2	5.00000	0.00001
		Phosphoric acid	7664-38-2	0.10000	0.00001
		Formaldehyde	50-00-0	0.01000	0.00001
		Sodium hydroxide	1310-73-2	0.01000	0.00001
		Organic salt #1	Proprietary	0.01000	0.00001
		Nitrated acetate salt	Proprietary	0.01000	0.00001
		Sodium glycolate	2836-32-0	0.01000	0.00001
		Organic salt #2	Proprietary	0.01000	0.00001
		Nitrated acetate salt	Proprietary	0.01000	0.00000
		Organic salt #2	Proprietary	0.01000	0.00000
		Sodium glycollate	2836-32-0	0.01000	0.00000
		Organic salt #3	Proprietary	0.01000	0.00000
		C.I. pigment Orange 5	3468-63-1	1.00000	0.00000
		Ethylene oxide	75-21-8	0.01000	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)

10,072' to Bottom Hole

6,702' to Top Hole

LATITUDE 39 - 30 - 00

LONGITUDE 80 - 52 - 30

10,288' to Top Hole

Antero Resources
Well No. Fender Unit 2H
As-Drilled
Antero Resources Corporation



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

Page 1 of 2

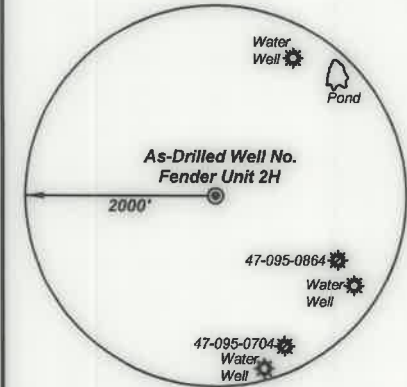
Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Fender Unit 2H Top Hole coordinates are
N: 356,901.76' Latitude: 39°28'17.30"
E: 1,605,305.83' Longitude: 80°53'53.45"
POE coordinates are
N: 355,494.20' Latitude: 39°28'03.29"
E: 1,604,650.97' Longitude: 80°54'01.52"
Bottom Hole coordinates are
N: 363,886.39' Latitude: 39°29'25.81"
E: 1,601,936.22' Longitude: 80°54'37.81"
UTM Zone 17, NAD 1983
Top Hole Coordinates POE Coordinates
N: 4,369,112.167m N: 4,368,680.013m
E: 508,772.583m E: 508,580.237m
Bottom Hole Coordinates
N: 4,371,222.898m
E: 507,710.497m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheeny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

Wellhead Layout

- Kramer Unit 2H (47-095-02677)
- Kramer Unit 1H (47-095-02673)
- Lancaster Unit 3H (47-095-02676)
- Lancaster Unit 2H (47-095-02675)
- Lancaster Unit 1H (47-095-02674)
- Fender Unit 3H (47-095-02672)
- As-Drilled Fender Unit 2H (47-095-02671)
- Fender Unit 1H (47-095-02670)

	Bearing	Dist.
L1	S 46°44' E	1,401.2'
L2	S 25°50' E	1,544.8'
L3	N 75°27' W	922.4'
L4	N 08°58' W	1,426.9'



Note: 3 water wells and 1 pond 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.

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

FILE NO: 17-54-E-19
DRAWING NO: Fender Unit 2H As-Drilled
SCALE: 1" = 1500'
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: December 30 2020
OPERATOR'S WELL NO. Fender 2H
API WELL NO
47 - 095 - 02671
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,015' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Ellsworth James M. Glover, et ux (2); Charles E. Anderson, et ux BRC Appalachian Minerals I, LLC; Terry Lee Fiber; Robert C. Kramer; Ruth E. Blake (2); Betty Lou Hadley; Tustin Family Trust; James F. Doan, et ux; Joe & Shirley Varese; Peter W. & Irmagard E. Guenter, Joint Living Trust; COUNTY: Tyler
SURFACE OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2) ACREAGE: 192.0
ROYALTY OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2) LEASE NO: ACREAGE: 192.0
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 16,130' 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

DENVER, CO 80505 ADDRESS: 1812 WYLNKOOP STREET
 CHESTER, WV 25713 ADDRESS: 2400 D BIG TYER ROAD
 MEG OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dennis Stumpher - CT Corporation System

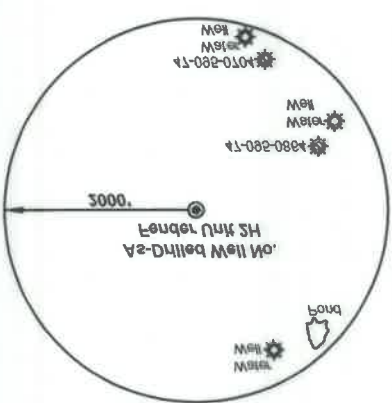
PING AND AVOIDANCE CLEAN OUT AND REGRIND TARGET FORMATION: Marcelsburg shale ESTIMATED DEPTH: 10,130. MD
 PRESERVE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled EST. DATE: 12/30/20
 PROPOSED WORK: DRILL COMPLET DRIFT DEEPEN FRACTURE OR STIMULATE PING OFF OLD FORMATION
 PROPERTY OWNER: Michael J. & Michelle R. Hogue: Alan L. Mallon, et ux (S); David L. Lancaster, et ux (S) LEASE NO: ACSBEAGE: 1812-28-0-382
 SURFACE OWNER: Michael J. & Michelle R. Hogue: John E. Biske (S); Barry Lon Hadeke; Linda Emily Tuter; James E. Doser, et ux; ACSBEAGE: 1850
 DISTRICT: Elizabethtown: BSC Appalachia Minerals LLC; Terry Lee Fisher; Robert C. Kramer; James M. Glover, et ux (S); Charles E. Anderson, et ux COUNTY: Tyler 33-004-0-0142
 LOCATION: ELEVATION: As-Drift 1,012. WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middleboro 035515038082
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 WELL TYPE: OIL GAS FLUID INJECTION WASTE DISPOSAL



STATE: WV COUNTY: 092 PERMIT: 17521
 API WELL NO:
 OPERATORS WELL NO: Fender Unit 2H
 DATE: December 30 2020

MAPDIT, Hambleville, WV
 PROVEN SOURCE OF ELEVATION:
 Surveyer
 MINIMUM DEGREE OF ACCURACY:
 SCALE: 1" = 1200'
 DRAWING NO: Fender Unit 2H As-Drilled
 FILE NO: 11-24-E-18

the center of the well pad
 interpretation is located within 652.2 of
 north or greater daily center of benching
 3,000 adjacent feet or larger pad to
 no occupied dwellings or buildings
 within 5000. of proposed well
 hole. The following table is a
 Note:

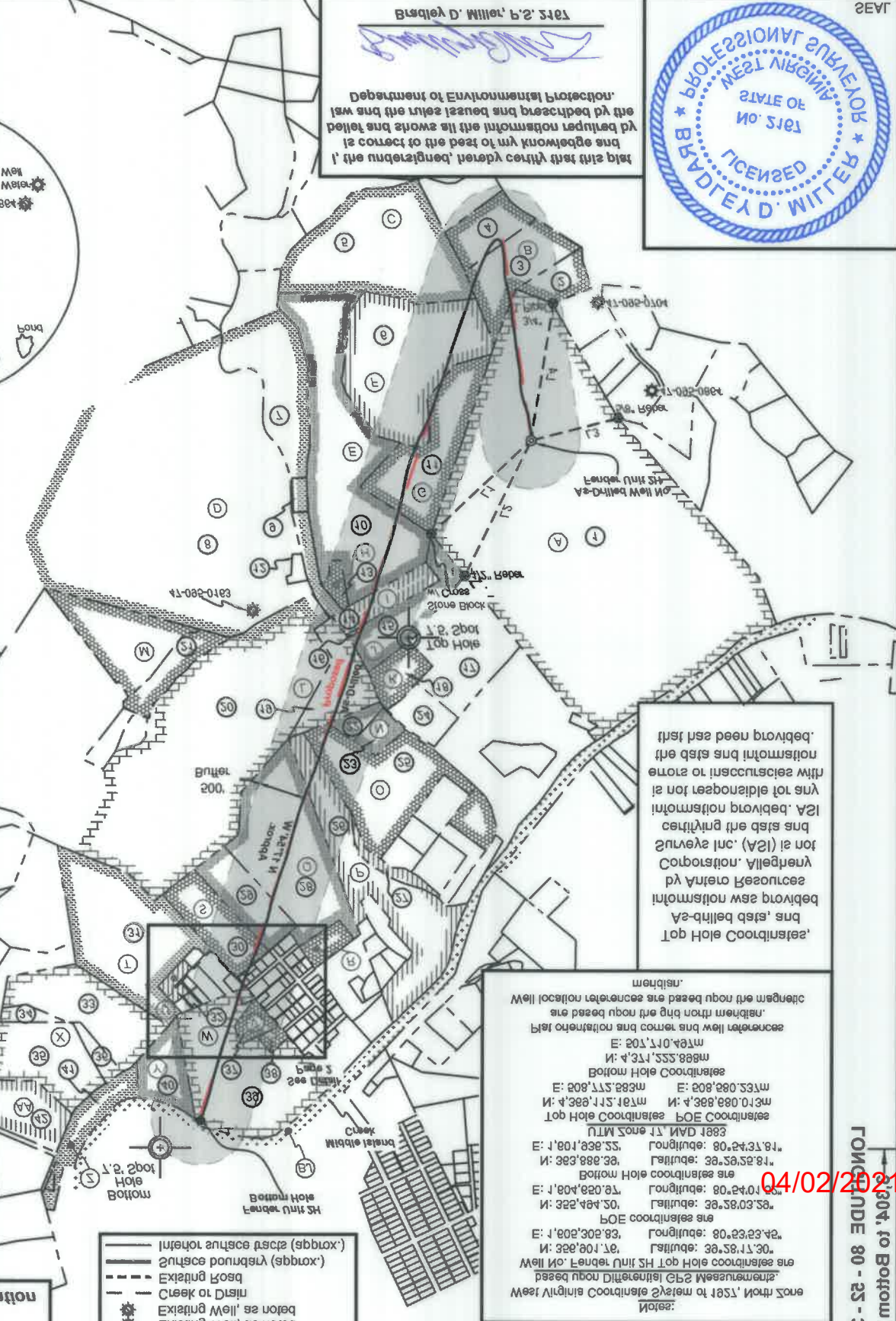


Bradley D. Miller, P.S. 2787
 Department of Environmental Protection,
 law and the rules issued and prescribed by the
 State and shows all the information required by the
 law in connection with the proposed well.
 I, the undersigned, hereby certify that this plan



Bearing	Dist.
N 08.28, W	1'450.8,
N 32.31, W	855.4,
S 32.20, E	1'244.8,
S 48.44, E	1'401.5,

GRID NORTH
 (41-082-05810) Fender Unit 1H
 (41-082-05811) Fender Unit 2H
 (41-082-05815) As-Drilled
 (41-082-05816) Fender Unit 3H
 (41-082-05817) Lancaster Unit 1H
 (41-082-05818) Lancaster Unit 2H
 (41-082-05819) Lancaster Unit 3H
 (41-082-05813) Kramer Unit 1H
 (41-082-05814) Kramer Unit 2H



this has been provided,
 the data and information
 errors or inaccuracies with
 is not responsible for any
 information provided.
 certifying the data and
 surveys inc. (SI) is not
 Corporation. All liability
 Antero Resources
 information was provided
 As-Drilled data and
 Top Hole Coordinates.

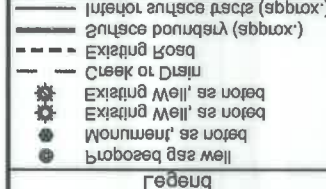
Well location references are based upon the magnetic
 North. The well location is based upon the grid north
 of the well location. The well location is based upon the
 following coordinates:

BOHOLE COORDINATES	
N: 4311.25258888m	E: 207.110487m
N: 208.28000000m	E: 208.28000000m
N: 4.36898910m	E: 4.36898910m
TOP HOLE COORDINATES	
N: 4311.25258888m	E: 207.110487m
N: 208.28000000m	E: 208.28000000m
N: 4.36898910m	E: 4.36898910m
BOHOLE COORDINATES	
N: 4311.25258888m	E: 207.110487m
N: 208.28000000m	E: 208.28000000m
N: 4.36898910m	E: 4.36898910m

Well No. Fender Unit 2H Top Hole coordinates are
 based upon Differential GPS Measurement
 West Virginia Coordinate System of 1851 North Zone
 Notes:



Antero Resources Corporation
 As-Drilled
Well No. Fender Unit 2H
 Antero Resources



LATITUDE 38 - 30 - 00
 LONGITUDE 80 - 25 - 30
 10,588. to Top Hole
 10,015. to Bottom Hole

10,072' to Bottom Hole

6,702' to Top Hole

LATITUDE 39 - 30 - 00

LONGITUDE 80 - 52 - 30

10,288' to Top Hole

Antero Resources
Well No. Fender Unit 2H
As-Drilled
Antero Resources Corporation



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

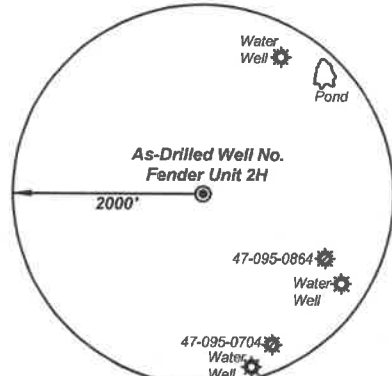
Page 1 of 2

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Fender Unit 2H Top Hole coordinates are
N: 356,901.76' Latitude: 39°28'17.30"
E: 1,605,305.83' Longitude: 80°53'53.45"
POE coordinates are
N: 355,494.20' Latitude: 39°28'03.29"
E: 1,604,650.97' Longitude: 80°54'01.52"
Bottom Hole coordinates are
N: 363,886.39' Latitude: 39°29'25.81"
E: 1,601,936.22' Longitude: 80°54'37.81"
UTM Zone 17, NAD 1983
Top Hole Coordinates POE Coordinates
N: 4,369,112.167m N: 4,368,680.013m
E: 508,772.583m E: 508,580.237m
Bottom Hole Coordinates
N: 4,371,222.898m
E: 507,710.497m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheeny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

- Wellhead Layout**
- Kramer Unit 2H (47-095-02677)
 - Kramer Unit 1H (47-095-02673)
 - Lancaster Unit 3H (47-095-02676)
 - Lancaster Unit 2H (47-095-02675)
 - Lancaster Unit 1H (47-095-02674)
 - Fender Unit 3H (47-095-02672)
 - Fender Unit 2H (47-095-02671) As-Drilled
 - Fender Unit 1H (47-095-02670)

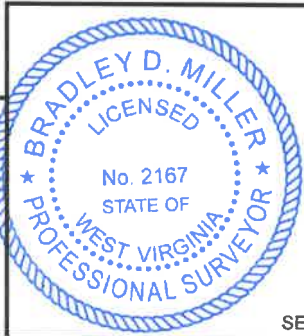
	Bearing	Dist.
L1	S 46°44' E	1,401.2'
L2	S 25°50' E	1,544.8'
L3	N 75°27' W	922.4'
L4	N 08°58' W	1,426.9'



Note: 3 water wells and 1 pond 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.

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

FILE NO: 17-54-E-19
DRAWING NO: Fender Unit 2H As-Drilled
SCALE: 1" = 1500'
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: December 30 2020
OPERATOR'S WELL NO. Fender 2H
API WELL NO
47 - 095 - 02671
STATE COUNTY PERMIT

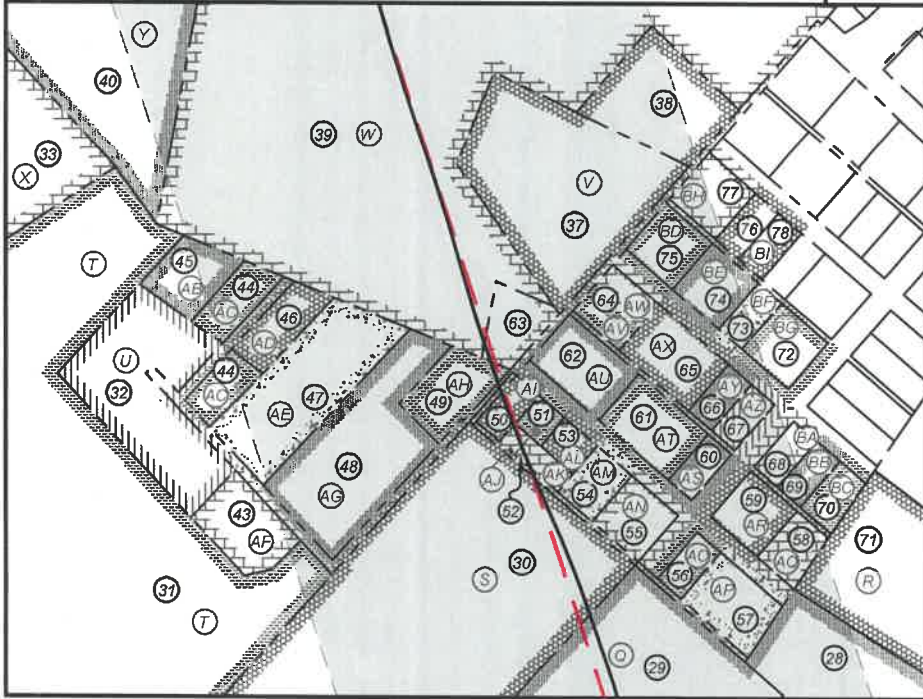
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built 1,015' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Ellsworth James M. Glover, et ux (2); Charles E. Anderson, et ux BRC Appalachian Minerals I, LLC; Terry Lee Fiber; Robert C. Kramer; Ruth E. Blake (2); Betty Lou Hadley; Tustin Family Trust; James F. Doan, et ux; Joe & Shirley Varese; Peter W. & Irmagard E. Guenter, Joint Living Trust; COUNTY: Tyler
SURFACE OWNER: Michael J. & Melinda R. Hogue ROYALTY OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2) LEASE NO: ACREAGE: 192.0
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 16,130' 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



Detail



Leases	
A	Michael J. & Melinda R. Hogue
B	James F. Doan, et ux
C	Ryan L. Walton, et ux
D	The Swan Living Trust
E	David L. Lancaster, et ux
F	Ryan L. Walton, et ux
G	David L. Lancaster, et ux
H	Kenneth W. Lancaster
I	Terry Lee Fiber
J	Joe & Shirley Varese
K	Leeman W. Mason, et ux
L	Peter W. & Irmagard Guenter Joint Living Trust
M	Thomas & Cynthia H. Hall
N	BRC Appalachian Minerals I, LLC
O	Robert C. Kramer
P	Charles E. Anderson, et ux
Q	Ruth E. Blake
R	Earnestine Pelikan & David Leasure
S	Betty Lou Hadley
T	Sam Maxson
U	Larry K. Spencer
V	Tustin Family Trust
W	Tustin Family Trust
X	BRC Appalachian Minerals I, LLC
Y	Nellie M. Wilson, et al
Z	Arthur D. Haught
AA	Mary Frances Carpenter
AB	Larry K. Spencer
AC	Larry K. Spencer
AD	Harold L. Holloway, Jr., et ux
AE	Michael H. Glover, et ux
AF	Betty Lou Hadley
AG	Jordan L. & Michael P. Haught
AH	James M. Glover, et ux
AI	James M. Glover, et ux
AJ	April N. DeLong
AK	Ruth Blake
AL	Ruth Blake
AM	Betty Lou Hadley
AN	James D. Anderson & Tracy A. Doll
AO	Betty Lou Hadley
AP	Bessie L. Matthews, et vir
AQ	Betty Lou Hadley
AR	Betty Lou Hadley
AS	Betty Lou Hadley
AT	Stephen D. Ashley, et ux
AU	James M. Glover, et ux
AV	Martha J. Hayes, et vir
AW	Betty Lou Hadley
AX	Betty Lou Hadley
AY	Betty Lou Smith
AZ	Betty Hadley
BA	Laura June Smith
BB	Kathryn Knowlton
BC	Crystal Christophel
BD	Timothy Stanley, et ux
BE	Donald E. Huffman
BF	Betty Lou Hadley
BG	Betty Lou Hadley
BH	Nancy Glover
BI	William H. Eddy
BJ	WV DNR

ID	TM/Par	Owner	Bk/Pg	Acres
1	20/108	Michael J. & Melinda R. Hogue	348/404	192.00
2	26/46.10	Leon & Drema Gall Ison	359/311	4.98
3	26/46.5	Richard Doty	493/673	13.14
4	26/46.4	Timothy F. & Jasmine Y. Kanz	415/716	8.10
5	26/22	Ryan Lee & Melinda Jo Walton	342/687	36.50
6	26/21	Ryan Lee & Melinda Jo Walton	342/687	35.90
7	26/20	Kenneth & Brenda Lancaster	210/502	20.00
8	20/102	Antero Midstream LLC	575/69	203.59
9	20/103	Kenneth & Brenda Lancaster	210/341	1.20
10	20/104	David Lancaster	210/505	57.00
11	20/107	David L. & Kathy A. Lancaster	314/344	18.89
12	20/102.1	Terrell Lee Henderson	445/302	0.951
13	20/104.1	Kenneth & Brenda Lancaster	328/13	1.796
14	20/105.1	Terry Lee Fiber	335/682	6.06
15	20/105	Joe & Shirley Varese	352/736	11.322
16	20/105.2	Terry Lee Fiber	336/480	0.098
17	20/106	Eugene F. & Phyllis A. Howell	223/371	19.76
18	20/106.1	Lee Ann Hall	486/806	5.493
19	20/99	Pioneer Land Company LLC	431/414	10.00
20	20/85	Pioneer Land Company LLC	431/414	83.10
21	20/83.5	Thomas & Cynthia Hall	392/229	6.416
22	20/93.1	Vernon Stevens	423/703	2.14
23	20/93.5	Nina Smith & Mary Bennett	308/115	2.88
24	20/106.2	Nancy Forester	328/633	5.429
25	20/93	Robert C. Kramer	547/650	23.964
26	20/92	Charles & Doris Anderson	210/359	27.00
27	20/94	Charles & Doris Anderson	217/398	2.806
28	20/86	Ruth E. Blake	317/103	23.75
29	20/44.1	Ruth E. Blake	317/103	10.17
30	20/44.2	Roy D. Hadley & Betty L. Gulley	295/375	11.27
31	20/43	Janet Neff, et al	429/173	35.00
32	20A/1	William G. & Larry K. Spencer	296/368	1.71
33	20/42	Janet Neff, et al	429/173	20.23
34	20/42.1	Kenneth & Mary Ashley	351/771	1.889
35	20/41	Kenneth & Mary Ashley	194/365	15.79
36	20/41.1	Janet Neff, et al	429/173	2.218
37	20/46.1	Betty Tustin	WB45/156	2.476
38	20/47	Betty Tustin	WB45/156	1.00
39	20/46	Betty Tustin	WB45/156	29.66

ID	TM/Par	Owner	Bk/Pg	Acres
40	20/45	Nellie M. Wilson	337/462	8.00
41	20/40.1	Gary & Margaret Rymer	232/12	7.07
42	20/40	William H. & Judy M. White	352/566	9.31
43	20A/6	Roy D. & Betty Lou Hadley	353/558	0.53
44	20A/3.1	Larry K. Spencer	425/56	0.524
45	20A/2	Wanda M. Spencer, et al	AR50/170	0.45
46	20A/3	Harold L. & Debra C. Holloway	225/51	0.366
47	20A/5	Michael H. & Vola J. Glover	208/103	1.38
48	20A/7	Jordan L. & Michael P. Haught	522/391	1.66
49	20A/8	James M. & Sara K. Glover	434/163	0.44
50	20A/9	James M. & Sarah M. Glover	578/622	0.17
51	20A/10	April N. DeLong	437/806	0.11
52	20A/10.1	Ruth E. Blake	348/604	0.16
53	20A/11	Ruth E. Blake	343/574	0.14
54	20A/12	Roy D. & Betty Lou Hadley	304/366	0.25
55	20A/13	James D. Anderson & Tracy A. Doll	400/425	0.33
56	20A/55	Roy D. & Betty Lou Hadley	350/341	0.17
57	20A/54	Bessie L. Matthews, et vir	521/634	0.46
58	20A/52	Betty Lou Hadley	579/652	0.24
59	20A/53	Deloris Gulley	AR40/97	0.33
60	20A/14	Roy D. Hadley	332/696	0.17
61	20A/15	Stephen D. & Brenda J. Ashley	317/183	0.50
62	20A/16	James M. Glover	330/197	0.50
63	20/46.2	James & Sara Glover	350/386	0.386
64	20A/17	Chris L. Hayes & Martha J. Tennant	343/212	0.17
65	20A/18	Roy D. Hadley	WB23/305	0.66
66	20A/19	Roy D. Hadley	WB23/305	0.17
67	20A/20	Betty Hadley	470/683	0.17
68	20A/50	Betty Lou Hadley	579/652	0.17
69	20A/51	Shir A. Henderson	WB19/379	0.17
70	20A/51.1	Crystal Christophel	WB19/379	0.16
71	20/86.1	Earnest Leasure, et al	321/160	0.37
72	20A/21	Roy D. Hadley	317/674	3.00
73	20A/22	Roy Hadley	WB23/305	0.17
74	20A/23	Connie Sue Tanner	327/883	0.33
75	20A/24	Timothy & Tonya Stanley	581/792	0.33
76	20A/26.1	Evelyn S. Smith	328/95	0.165
77	20A/25	Nancy Glover	147/104	0.33
78	20A/26	Evelyn S. Smith	332/681	0.165

FILE NO: 17-54-E-19
 DRAWING NO: Fender Unit 2H As-Drilled
 SCALE: 1" = 1500'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV



DATE: December 30 2020
 OPERATOR'S WELL NO. Fender 2H
 API WELL NO
 47 - 095 - 02671
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,015' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne 28.065;
 DISTRICT: Ellsworth James M. Glover, et ux (2); Charles E. Anderson, et ux 0.21224; 29.805;
 SURFACE OWNER: Michael J. & Melinda R. Hogue BRC Appalachian Minerals I, LLC; Terry Lee Fiber; Robert C. Kramer; COUNTY: Tyler 23.964; 0.1613;
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; Ryan L. Walton, et ux (2); David L. Lancaster, et ux (2) ACREAGE: 192.0 04/08/2025 11:28:52
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 18.89; 58.27275;
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 16,130' MD 191.5; 35.9; 36.5

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