



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, April 6, 2020
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for PEGGY UNIT 1H
47-017-06898-00-00

Extend Lateral 2920' to 11107' and Extend Total Measured Depth 12400' to 20750'. Updated Leases included.

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.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is positioned above the printed name and title.

James A. Martin
Chief

Operator's Well Number: PEGGY UNIT 1H
Farm Name: SAMUEL AND PEGGY SMITH
U.S. WELL NUMBER: 47-017-06898-00-00
Horizontal 6A New Drill
Date Modification Issued: 04/06/2020

Promoting a healthy environment.

WW-6B
(04/15)

API NO. 47-017 - 06898
OPERATOR WELL NO. Peggy Unit 1H
Well Pad Name: Peggy June Pad

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

1) Well Operator: Antero Resources Corporation 494507062 017 - Doddri West Uni Smithburg 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Peggy Unit 1H Well Pad Name: Peggy June Pad

3) Farm Name/Surface Owner: Samuel and Peggy Smith Public Road Access: Smithton Rd (Old US-50)

4) Elevation, current ground: 1275' Elevation, proposed post-construction: _____

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- 2950#

8) Proposed Total Vertical Depth: 7400' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 20750' MD

11) Proposed Horizontal Leg Length: 11107'

12) Approximate Fresh Water Strata Depths: 145', 215', 320'

13) Method to Determine Fresh Water Depths: 47-017-04853

14) Approximate Saltwater Depths: 1603'

15) Approximate Coal Seam Depths: 1601'

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

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

WW-6B
(04/15)

API NO. 47- 017 - 06898
OPERATOR WELL NO. Peggy Unit 1H
Well Pad Name: Peggy June Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	370 *see #19	370 *see #19	CTS, 514 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	20750	20750	5298 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	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"	0.361"	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							

PACKERS

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

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Environmental Protection

WW-6B
(10/14)

API NO. 47- 017 - 06898

OPERATOR WELL NO. Peggy Unit 1H

Well Pad Name: Peggy June Pad

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

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs

Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 40.52 Acres

22) Area to be disturbed for well pad only, less access road (acres): 8.89 Acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

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25) Proposed borehole conditioning procedures:

MAR 30 2020

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate well capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

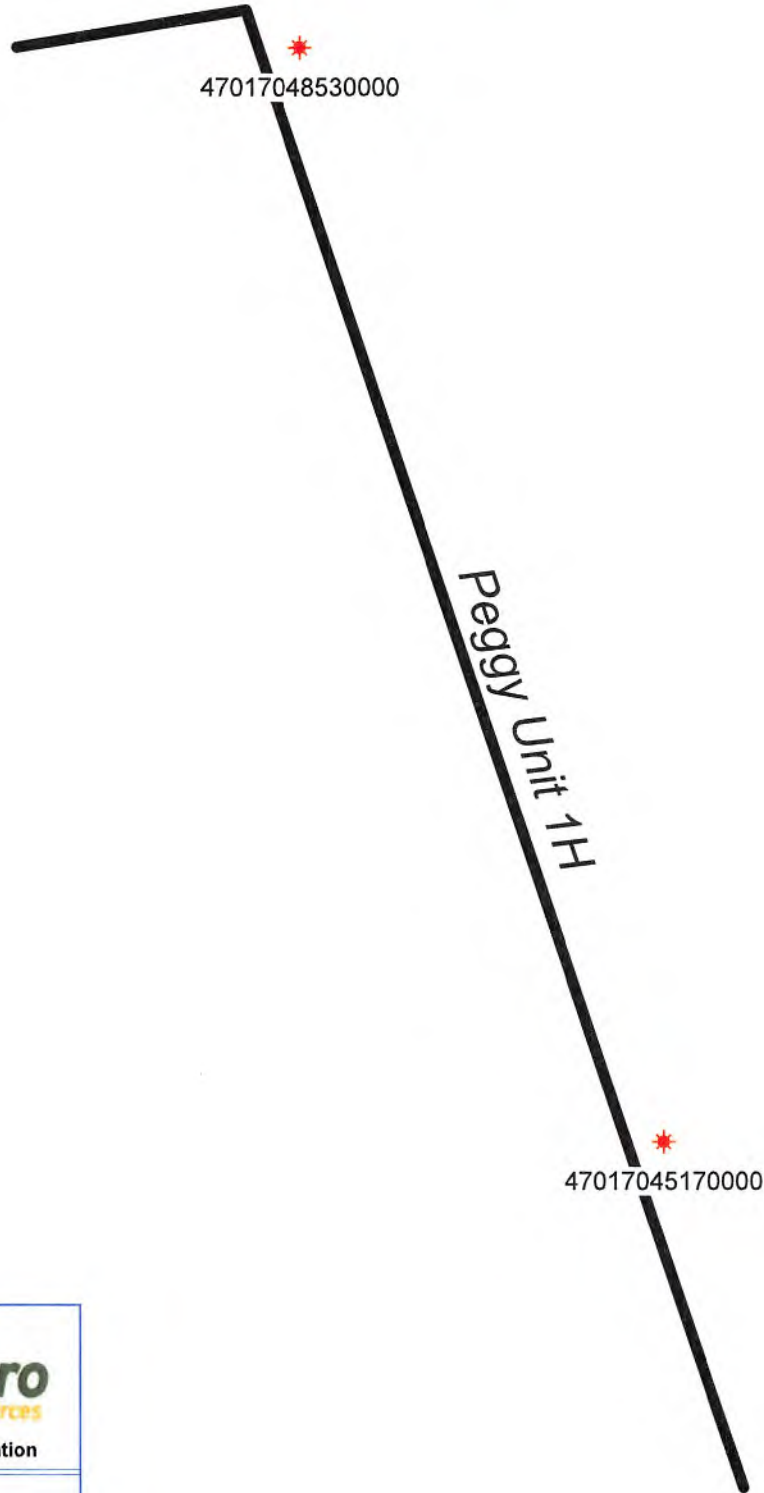
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

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*Note: Attach additional sheets as needed.

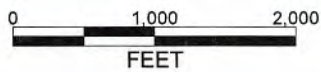
PEGGY UNIT 1H (PEGGY JUNE PAD)- AREA OF REVIEW 35-8-5.11

PERMIT MODIFICATION API # 47-017-06898



Antero Resources Corporation

Peggy Unit 1H - AOR



WELL SYMBOLS
Gas Well

October 14, 2019

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UWI (APINum)	Well Name	Well Number	Operator	Hist Oper	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47017048530000	SMITH JOHN SAMUEL & PEGGY JUNE	6789	ALLIANCE PETR CORP	DOMINION EXPL&PROD	5523	1882 - 5390	Lo Maxton, Big Injun, Gordon, Benson, Alexander	Warren, Riley
47017045170000	HARSHBARGER	1	GREYLOCK OPCO LLC	EASTERN AMERICAN ENE	5103	2162 - 5045	Berea, Gordon, Riley, Alexander	Speechley

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LATITUDE 39°20'00"

10,759'

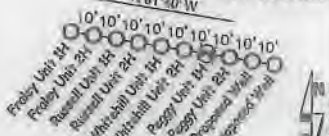
LATITUDE 39°17'30" 5,704' TO BOTTOM HOLE

Antero Resources Corporation Well No. Peggy Unit 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 294,991ft E: 1,647,312ft LAT: 39°18'11.55" LON: 80°44'46.87" BOTTOM HOLE INFORMATION: N: 284,707ft E: 1,652,360ft LAT: 39°16'30.60" LON: 80°43'40.88" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE 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: 4,350,465m E: 521,885m BOTTOM HOLE INFORMATION: N: 4,347,357m E: 523,475m

PAD LAYOUT NOT TO SCALE

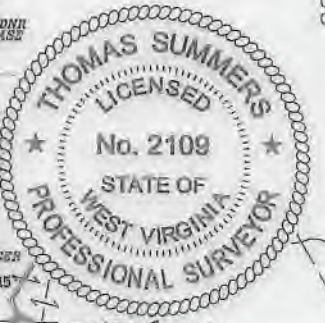


NO WATER WELL WERE LOCATED WITHIN 2000' OF CENTER OF PAD



Table listing landowners and lease information for the West Union District - Doddridge County.

Table listing landowners and lease information for the West Union District - Doddridge County.



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 PERFORMED 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 26115

NOTE: 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.

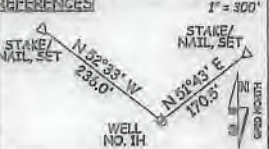
JOB # 19-029WA DRAWING # PEGGY1HMOD SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND: Surface Owner Boundary Lines +/- Interior Surface Tracts +/- Existing Fence Found monument, as noted

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,272,435ft E: 1,712,169ft POINT OF ENTRY INFORMATION: N: 14,272,763ft E: 1,713,846ft BOTTOM HOLE INFORMATION: N: 14,262,240ft E: 1,717,386ft

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

DATE 03/24/20 OPERATOR'S WELL# PEGGY UNIT #1H

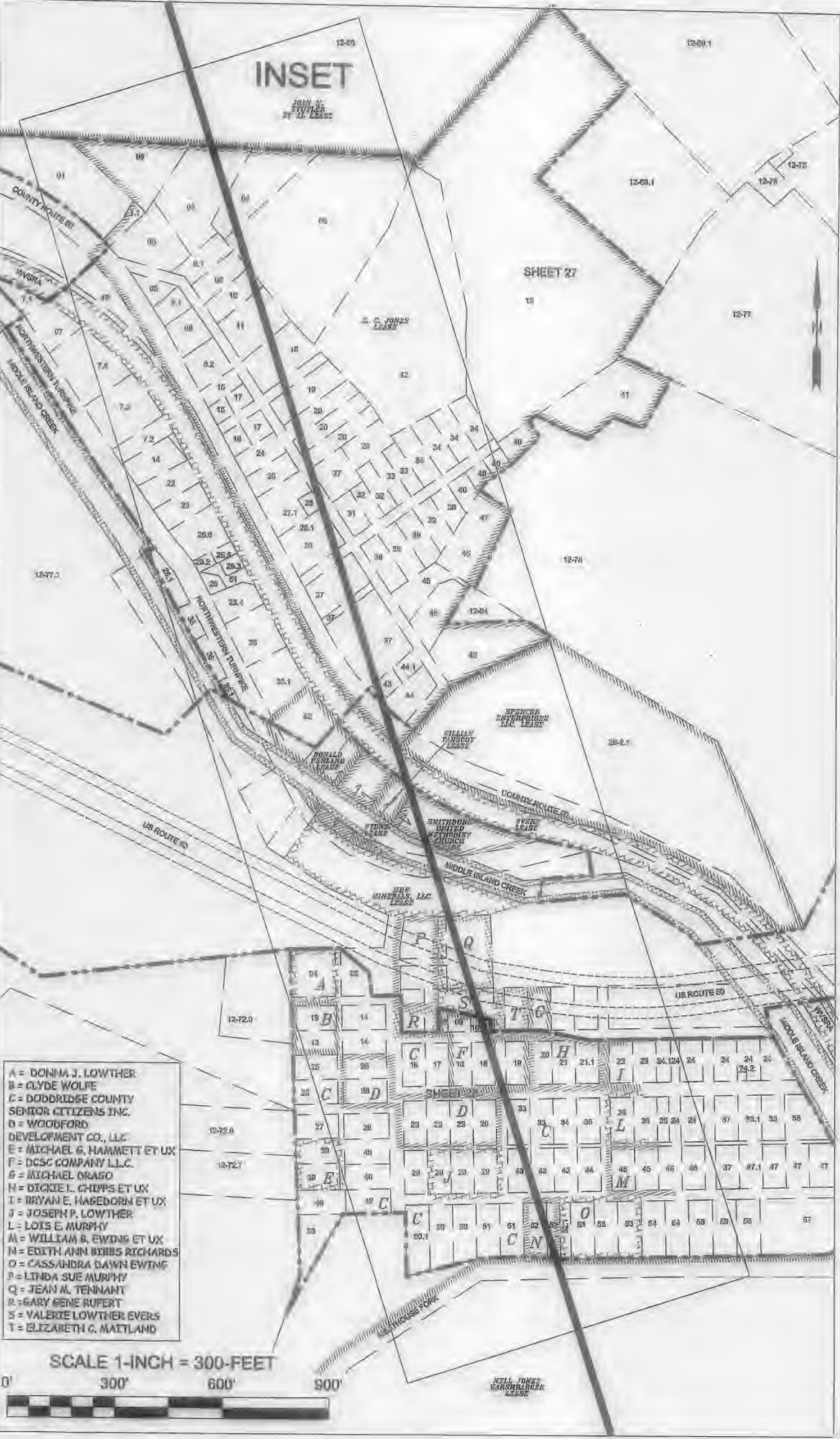


Form containing well details: WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 - 017 - 06898 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT LOCATION: ELEVATION 1,275' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK QUADRANGLE SMITHBURG 7.5 DISTRICT WEST UNION COUNTY DODDRIDGE SURFACE OWNER SAMUEL AND PEGGY SMITH ACREAGE 28.956 ACRES +/- OIL & GAS ROYALTY OWNER ELAINE DEBOLT; R.L. BARNES ET UX; JOAN M. STUTLER ET AL; LEASE ACREAGE 84.8 AC.±; 222 AC.±; 100 AC.±; EOT PRODUCTION COMPANY; E.C. JONES; WYSRA; WILLIAM VANSOY; 75 AC.±; 300 AC.±; 301.19 AC.±; 0.36 AC.±; SMITHBURG UNITED METHODIST CHURCH; WVDNR; MBW MINERALS, LLC; JEAN M. TENNANT; 2.02 AC.±; 54.48 AC.±; 1 AC.±; 0.75 AC.±; VALERIE LOWTHER EVERS; DCSC COMPANY LLC; DODDRIDGE COUNTY SENIOR CITIZENS INC.; 1.27 AC.±; 1.02 AC.±; 3.55 AC.±; EDITH ANN BIBBS RICHARDS; NELL JONES HARSHBARGER; PAULA LAFFERTY; 0.36 AC.±; 69 AC.±; 44.9 AC.±; GEM HOLDINGS LLC; KENNETH KOEFLF 27.63 AC.±; 27.94 AC.±; PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD - BHL PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,400' TVD 20,750' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD DENVER, CO 80202 CHARLESTON, WV 25313

INSET

JOHN W. STUYLER
BY A.G. LEASE

SHEET 27



- A = DONNA J. LOWTHER
- B = CLYDE WOLFE
- C = DODDRIDGE COUNTY SENIOR CITIZENS INC.
- D = WOODFORD DEVELOPMENT CO., LLC
- E = MICHAEL G. HAMMETT ET UX
- F = DCSC COMPANY LLC.
- G = MICHAEL DRAGO
- H = DICKIE L. CHIPPS ET UX
- I = BRYAN E. HAGEDORN ET UX
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- N = EDITH ANN BIBBS RICHARDS
- O = CASSANDRA DAWN EWING
- P = LINDA SUE MURPHY
- Q = JEAN M. TENNANT
- R = GARY GENE RUPERT
- S = VALERIE LOWTHER EVERS
- T = ELIZABETH C. MATTLAND

SCALE 1-INCH = 300-FEET



NEIL JONES BARBER
LEASE

LATITUDE 39°20'00"

10,759'

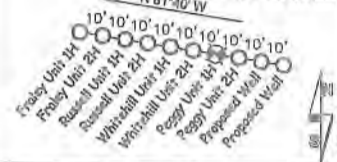
LATITUDE 39°17'30" 5,704' TO BOTTOM HOLE

Antero Resources Corporation Well No. Peggy Unit 1H

NOTES: WELL 1H TOP HOLE INFORMATION: N: 294,991ft E: 1,647,312ft LAT: 39°18'11.55" LON: 80°44'46.87" BOTTOM HOLE INFORMATION: N: 284,707ft E: 1,652,360ft LAT: 39°16'30.60" LON: 80°43'40.88" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT TAPMETER 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: 4,350,465m E: 521,885m BOTTOM HOLE INFORMATION: N: 4,347,357m E: 523,475m

PAD LAYOUT NOT TO SCALE



NO WATER WELL WERE LOCATED WITHIN 2000' OF CENTER OF PAD



Table listing landowners and lease types for West Union District - Doddridge County. Includes names like Senior Citizens, DCSC Company, and Edith Richards.

Table listing landowners and lease types for West Union District - Doddridge County. Includes names like Joseph Towner, Mark Richards, Robert Moore, Karen Adams, Denver Cox Jr., Virginia Williams, Alfred Dotsen, etc.



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

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WV Department of Environmental Protection

JOB # 19-029WA DRAWING # PEGGY1HMOD SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

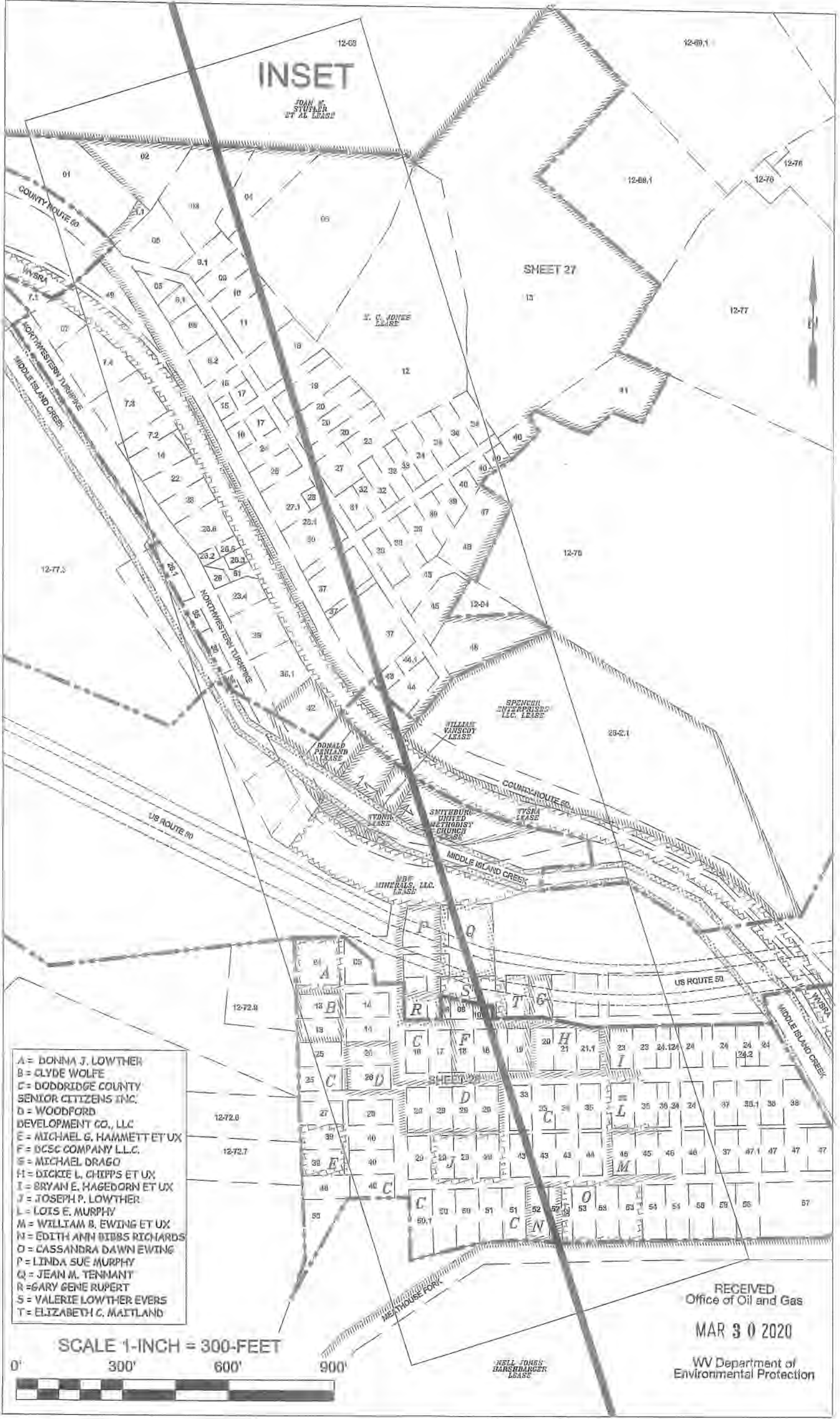
LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Existing Fence, Found monument, as noted. Signature of Thomas Summers. THOMAS SUMMERS P.S. 2109 DATE 03/24/20 OPERATOR'S WELL# PEGGY UNIT #1H

(NAD) 27 (UTM) ZONE 17 COORDS: WELL 1H TOP HOLE INFORMATION: N: 14,272,435ft E: 1,712,169ft POINT OF ENTRY INFORMATION: N: 14,272,763ft E: 1,713,846ft BOTTOM HOLE INFORMATION: N: 14,262,240ft E: 1,717,386ft REFERENCES: 1" = 300' STAKE/MAIL, SET

Form containing well details: WELL TYPE: OIL (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X LOCATION: ELEVATION 1,275' - AS BUILT QUADRANGLE SMITHBURG 7.5 DISTRICT WEST UNION COUNTY DODDRIDGE SURFACE OWNER SAMUEL AND PEGGY SMITH ACREAGE 28.956 ACRES +/- OIL & GAS ROYALTY OWNER ELAINE DEBOLT; R.L. BARNES ET UX; JOAN M. STUTLER ET AL; LEASE ACREAGE 84.8 AC +/- 222 AC +/- 100 AC +/- EQT PRODUCTION COMPANY; E.C. JONES; WVSRA; WILLIAM VANSKOY; 75 AC +/- 300 AC +/- 301.19 AC +/- 0.36 AC +/- SMITHBURG UNITED METHODIST CHURCH; WVDNR; MBW MINERALS, LLC; JEAN M. TENNANT; 2.02 AC +/- 54.48 AC +/- 1 AC +/- 0.75 AC +/- VALERIE LOWTHER EVERS; DCSC COMPANY LLC; DODDRIDGE COUNTY SENIOR CITIZENS INC.; 1.27 AC +/- 1.02 AC +/- 3.55 AC +/- EDITH ANN BIBBS RICHARDS; NELL JONES HARSHBARGER; PAULA LAFFERTY; 0.36 AC +/- 69 AC +/- 44.9 AC +/- GEM HOLDINGS LLC; KENNETH KOEBLE 27.63 AC +/- 27.94 AC +/- PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD - BHL PLUG & ABANDON CLEAN OUT & REPLUG TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,400' TVD 20,750' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD DENVER, CO 80202 CHARLESTON, WV 25313

INSET

JOAN K. STUFER ET AL LEASE



12-68

12-69.1

SHEET 27

S. C. JONES LEASE

SPENCER INTERESTED L.C. LEASE

WILLIAM VANSOY LEASE

DONALD PHILLIPS LEASE

SMITHBURGH UNITED METHODIST CHURCH LEASE

WBF MINERALS, L.L.C. LEASE

COUNTY ROUTE 60

MIDDLE ISLAND CREEK

US ROUTE 50

US ROUTE 50

MIDDLE ISLAND CREEK

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SCALE 1-INCH = 300-FEET



RECEIVED
Office of Oil and Gas

MAR 30 2020

WV Department of Environmental Protection

NELL JONES BARSHARGER LEASE

WW-6A1
(5/13)

Operator's Well No. Peggy Unit 1H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<i>BH</i> ✓ <u>Kenneth Koebel Lease</u>	<u>Kenneth Koebel</u>	<u>Antero Resources Corporation</u>	<u>1/8 +</u>	<u>0453/0001</u>

*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

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

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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Environmental Protection

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

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

Operator's Well Number Peggy Unit 1H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Elaine Debolt Lease</u>			
Elaine Debolt	Antero Resources Corporation	1/8+	0433/0306
<u>RL Barnes et ux Lease</u>			
RL Barnes et ux	South Penn Oil Company	1/8	0019/0071
South Penn Oil Company	Hope Natural Gas Company	Assignment	0023/0424
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0143/0345
Consolidated Gas Supply Corporation	CNG Transmission Corporation	Name Change	0332/0563
CNG Transmission Corporation	Dominion Transmission Inc.	Name Change	0332/0570
Dominion Transmission Inc.	Consol Energy Holdings	Assignment	0245/0001
Consol Energy Holdings	Consol Gas Company	Merger	0292/0469
Consol Gas Company	CNX Gas Company	Merger	0293/0252
CNX Gas Company	Antero Resources Corporation	Assignment	0317/0379
<u>Joan M. Stutler et al Lease (TM 12 PCL 59)</u>			
Joan M. Stutler et al	Hugh Spencer	1/8	0092/0489
Hugh Spencer	Estate of Hugh K. Spencer	Will	0033/0068
Estate of Hugh K. Spencer	Ronald B. Spencer	Assignment	0251/0529
Ronald B. Spencer	Spencer Enterprises LLC	Assignment	0251/0529
Spencer Enterprises LLC	Antero Resources Corporation	1/8+	0392/0271
<u>EQT Production Company Lease</u>			
EQT Production Company	Antero Resources Corporation	1/8+	0371/0288
<u>Joan M. Stutler et al Lease (TM 12 PCL 59)</u>			
Joan M. Stutler et al	Hugh Spencer	1/8	0092/0489
Hugh Spencer	Estate of Hugh K. Spencer	Will	0033/0068
Estate of Hugh K. Spencer	Ronald B. Spencer	Assignment	0251/0529
Ronald B. Spencer	Spencer Enterprises LLC	Assignment	0251/0529
Spencer Enterprises LLC	Antero Resources Corporation	1/8+	0392/0271
<u>EC Jones et al Lease</u>			
EC Jones et al	NS Snyder	1/8	0018/0492
NS Snyder	Carnegie Natural Gas Company	Assignment	0092/0715
Carnegie Natural Gas Company	Carnegie Production Company	Assignment	0186/0061
Carnegie Production Company	EQT Production Company	Name Change	0448/0650
EQT Production Company	Antero Resources Corporation	Assignment	0325/0539
<u>Spencer Enterprises Lease</u>			
Spencer Enterprises	Antero Resources Corporation	1/8+	0448/0650

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WV Department of
Environmental Protection

Operator's Well Number Peggy Unit 1H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
✓ <u>WVSRA Lease</u> WVSRA	Antero Resources Corporation	1/8+	0253/0409
✓ <u>William Vanscoy Lease</u> William Vanscoy	Antero Resources Corporation Antero Resources Corporation	1/8+ 1/8+	0450/0347 0450/0347
✓ <u>Smithburg United Methodist Church Lease</u> Smithburg United Methodist Church	Antero Resources Corporation	1/8+	0466/0166
✓ <u>WVDNR Lease</u> WVDNR	Antero Resources Corporation	1/8+	0483/0188
✓ <u>MBW Minerals LLC Lease</u> MBW Minerals LLC	Antero Resources Corporation	1/8+	0487/0426
✓ <u>Jean M. Tennant Lease</u> Jean M. Tennant	Antero Resources Corporation	1/8+	0452/0056
✓ <u>Valerie Lowther Evers Lease</u> Valerie Lowther Evers	Antero Resources Corporation	1/8+	0451/0252
✓ <u>DCSC Company Lease</u> DCSC Company	Antero Resources Corporation	1/8+	0420/0445
✓ <u>Doddridge County Senior Citizens Inc. Lease</u> Doddridge County Senior Citizens Inc.	Antero Resources Corporation	1/8+	0420/0438
✓ <u>Woodford Development Company Lease</u> Woodford Development Company	Antero Resources Corporation	1/8+	0463/0453
✓ <u>Edith A. Richards Lease</u> Edith A. Richards	Antero Resources Corporation	1/8+	0452/0304
✓ <u>Paula Lafferty Lease</u> Paula Lafferty	Antero Resources Corporation	1/8+	0481/0668
✓ <u>Nell Jones Harshbarger Lease</u> Nell Jones Harshbarger Eastern American Energy Corporation Energy Corporation of America	Eastern American Energy Corporation Energy Corporation of America Antero Resources Corporation	1/8 Conveyed Assignment	0184/0681 0240/0498 0328/0648

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
GEM Holdings LLC Lease GEM Holdings LLC	Antero Resources Corporation	1/8+	0455/0426

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March 27, 2020

Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Ms. Laura Adkins
601 57th Street
Charleston, WV 25304

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following permit modification for an approved well on the existing Peggy June Pad: Peggy Unit 1H (API # 47-017-06898).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the updated POE & Measured Depth
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plat, which shows the new Lateral Length & Estimated Measured Depth
- AOR & As-Built Design

If you have any questions please feel free to contact me at (303) 357-7223.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in black ink that appears to read "MGriffith".

Megan Griffith
Permitting Agent
Antero Resources Corporation

Enclosures

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