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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, October 18, 2023  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

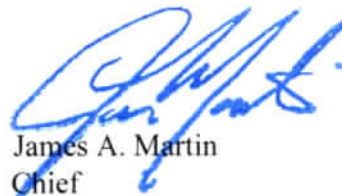
Re: Permit Modification Approval for HOLTZ UNIT 1H  
47-017-06962-00-00

**Extended Lateral Length**

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: HOLTZ UNIT 1H  
Farm Name: ANTERO RESOURCES CORPORATION  
U.S. WELL NUMBER: 47-017-06962-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 10/18/2023

Promoting a healthy environment.

10/20/2023

4701706962

WW-6B  
(04/15)

API NO. 47-017 -  
OPERATOR WELL NO. Holtz Unit 1H MOD  
Well Pad Name: Genevieve 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-Doddridge W. Union West Union 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Holtz Unit 1H MOD Well Pad Name: Genevieve Pad

3) Farm Name/Surface Owner: Antero Midstream, LLC Public Road Access: WV Route 18 N

4) Elevation, current ground: 886' 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: 7000' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18900' MD

11) Proposed Horizontal Leg Length: 9495'

12) Approximate Fresh Water Strata Depths: 308', 521'

13) Method to Determine Fresh Water Depths: 47-017-02319

14) Approximate Saltwater Depths: 1468'

15) Approximate Coal Seam Depths: None Identified

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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WV Department of  
Environmental Protection

10/20/2023

WW-6B  
(04/15)

API NO. 47- 017 -  
OPERATOR WELL NO. Holtz Unit 1H MOD  
Well Pad Name: Genevieve Pad

18)

**CASING AND TUBING PROGRAM**

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	571'	571'	CTS, 595 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#	18900'	18900'	CTS, 3835 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*Amos T. Reynolds 10-13-23*

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.438"	1530	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	12,630	2500	Class G/H	~1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

**PACKERS**

Kind:	N/A				RECEIVED Office of Oil and Gas
Sizes:	N/A				OCT 16 2023
Depths Set:	N/A				WV Department of Environmental Protection

WW-6B  
(10/14)

API NO. 47-017 -  
OPERATOR WELL NO. Holz Unit 1H MOD  
Well Pad Name: Genevieve Pad

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

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

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): 24.86 acres

22) Area to be disturbed for well pad only, less access road (acres): 7.69 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/L cement.  
Surface: Class A/L cement with 2-3% calcium chloride and 1/4 lb of flake  
Intermediate: Class A/L 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

25) Proposed borehole conditioning procedures:

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 pipe 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.

\*Note: Attach additional sheets as needed.

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Page 3 of 3

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WV Department of  
Environmental Protection

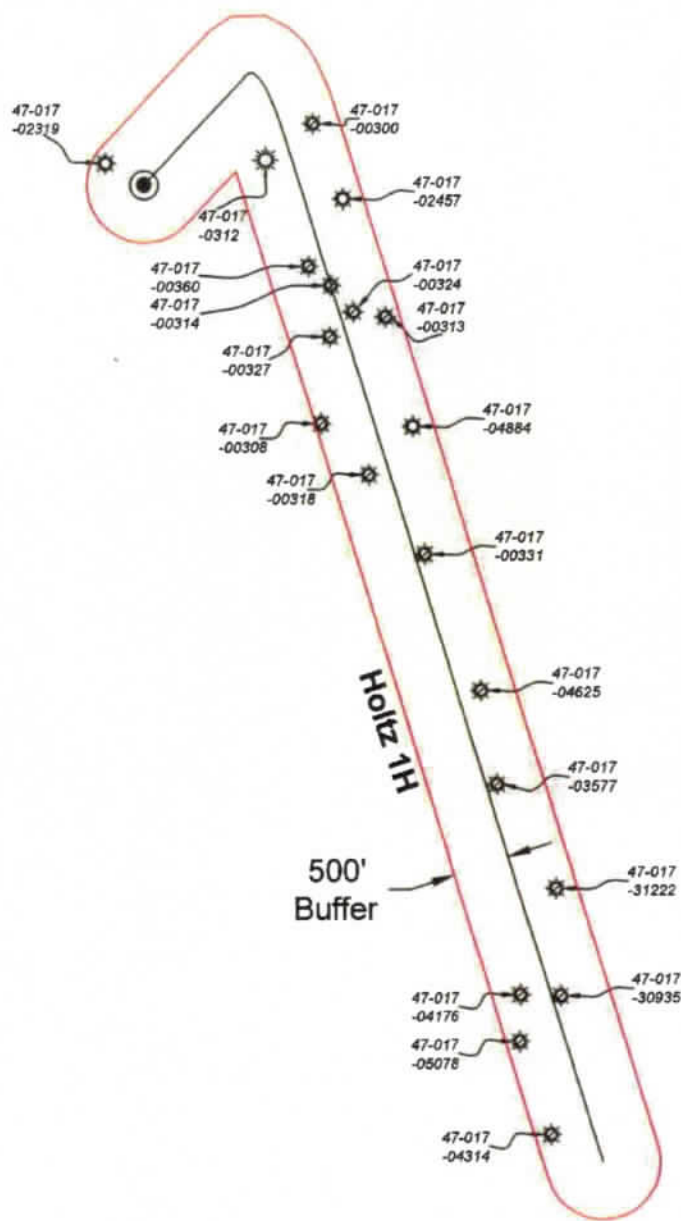
10/20/2023

**LEGEND**

- ⊙ Proposed gas well
- ⊛ Existing Well, as noted
- ⊛ Digitized Well, as noted



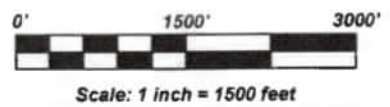
The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



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Office of Oil and Gas  
**OCT 16 2023**  
WV Department of  
Environmental Protection



Bridgeport Office Phone: (304) 848-5035 Fax: (304) 848-5037		172 Thompson Drive Bridgeport, WV 26330	
PARTY CHIEF: C. Lynch		DRAWN BY: J. Smith	
RESEARCH: J. Miller		PREPARED: July 5, 2023	
SURVEYED: Dec. 2016		PROJECT NO: 57-30-WU-14	
FIELD CREW: C.L., K.M.	Sheet 1 of 1	DRAWING NO: Holtz 1H AOR	

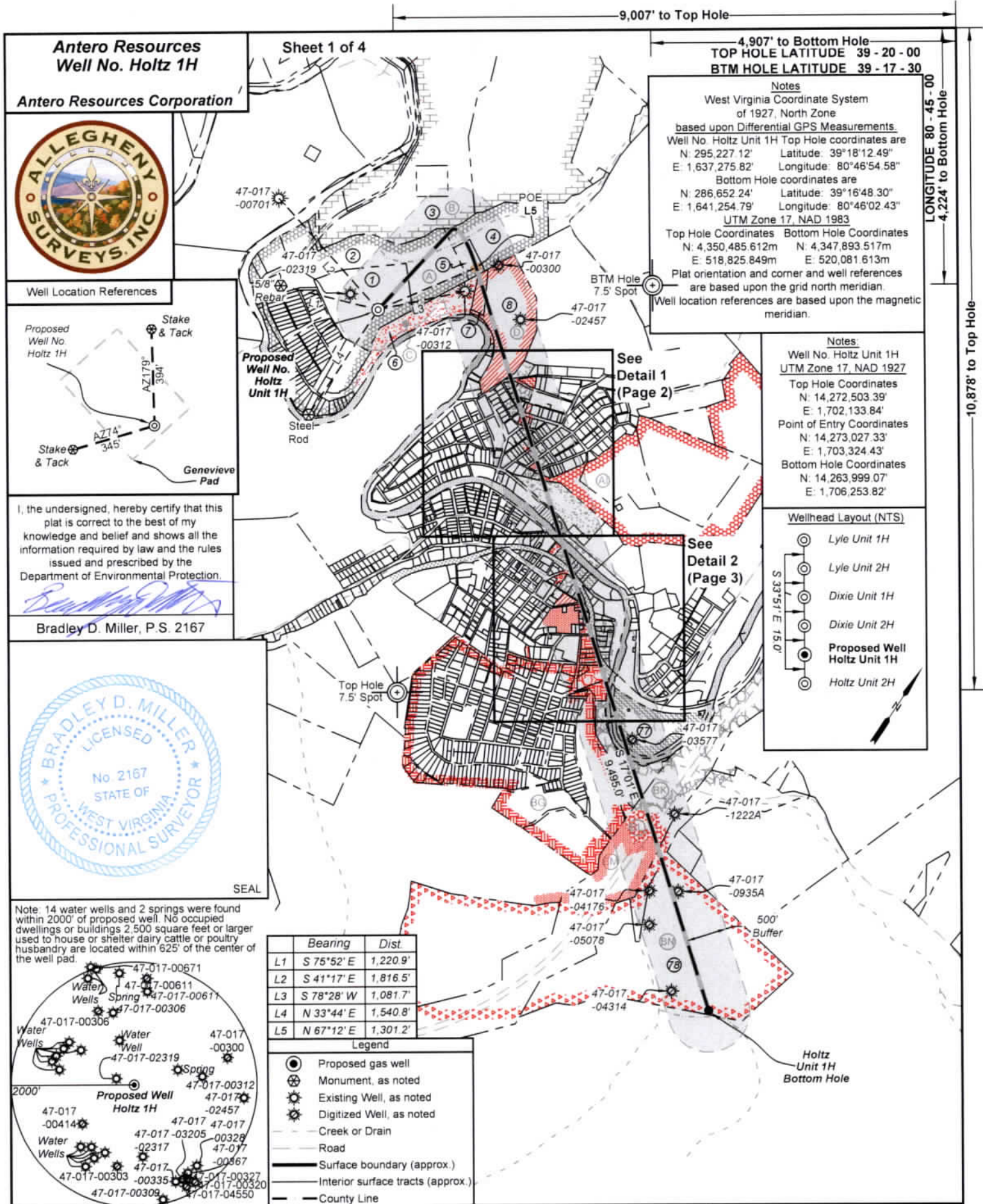




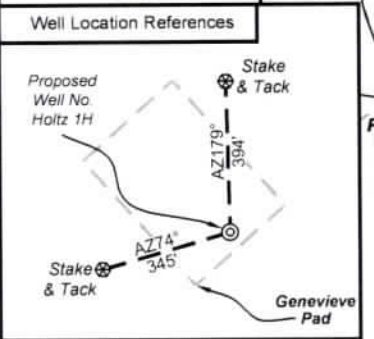
UWI (APRN#)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Productible Formation(s) not perforated
47017023190000	BETTY JANE LANGFITT	1	PILLAR ENERGY LLC	KEY OIL INC	5,241	5080 - 5146	Alexander	Warren, Speechly, Balltown, Riley, Benson
47017003120000	MARY H HOLLAND ET AL	1	ANJA RESOURCES	H&H OIL CO	1,971		Maxton, Big Injun	Gordon, Berea
47017003600000	REX UNDERWOOD	1	DIVERSIFIED PROD LLC	WEISS GABRIEL D	1,867		Big Injun	Alexander, Berea
47017003140000	LULA LONGSTRETH	1	SPENCER HUGH K ET AL	SPENCER HUGH K ET AL	1,842		Big Injun	Gordon, Berea
47017003270000	EARL DOTSON	1	BINGHAM A M	ROBERTS & YEATER	1,871		Big Injun	Gordon, Berea
47017003080000	BEULAH R SMITH	1	TOWER SERVICE	TOWER SERVICE	1,825		Big Injun	Alexander, Gordon, Berea
47017003180000	CHURCH OF CHRIST	1	TOWER SERVICE	TOWER SERVICE	1,817		Maxton, Keener, Big Injun	Alexander, Gordon, Berea
47017041760000	FARR C TRUST	2	HARPER CROSBY HOLDING	RARE EARTH MINERALS	5,280	3067 - 5044	Big Injun	Alexander, Berea
47017050780000	CHEUVRON/FARR	4	KEY OIL CO	KEY OIL CO	2,596	1776 - 2494	Maxton, Big Injun, Sitaw, Gordon, Fitch	Alexander, Berea
47017043140000	FARR C TRUST	6	HARPER CROSBY HOLDING	RARE EARTH MINERALS	2,590	2240 - 2240	Gordon	Alexander, Berea
47017003000000	GLENN MAXON	1	SIBERT & SMITH	SIBERT & SMITH	1,930		Big Injun	Gordon, Berea
47017024570000	MAXSON	833-1	HARPER CROSBY HOLDING	STALNAKER GENE INC	5,458		Alexander, Elk	Berea
47017003240000	JAMES B HEFLIN	1	UNION DRILLING CO	UNION DRILLING CO	1,865		Maxton, Big Injun	Berea
47017003130000	GOLDIE F WALLACE ET AL	1	SPUNLOCK H D	FUEL DORIS G	1,879		Big Injun	Alexander, Berea
47017048840000	SHANNON	3	SPENCER ENTERPRISES	SPENCER ENTERPRISES	2,775	1926 - 2646	Big Injun, Gordon	Alexander, Berea
47017003310000	L & E HOSKINSON	1	GUM E B & ASSOC	GUM E B & ASSOC	1,813		Maxton, Big Injun, Gantz	Alexander, Berea
47017046250000	BEE MELISSA	1	KEY OIL CO	KEY OIL CO	5,117	3000 - 4976	Speechley, Riley, Benson, Alexander	Berea
47017035770000								
47017031220000	JOHNSTON CHARLES D	1	R & R OIL & GAS LLC	SCOTT JAMES F	5,448	2280 - 5305	Gordon, Benson	Alexander, Berea
47017309350000	LEWIS MAXWELL B-A	GW-65	COLUMBIAN CARBON CO	COLUMBIAN CARBON CO	1,690		Big Injun, Gordon	Alexander, Berea

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WV Department of  
Environmental Protection

4701706962



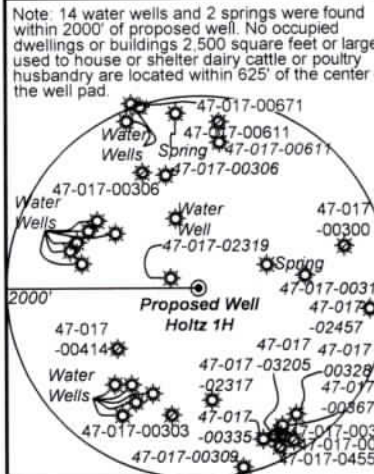
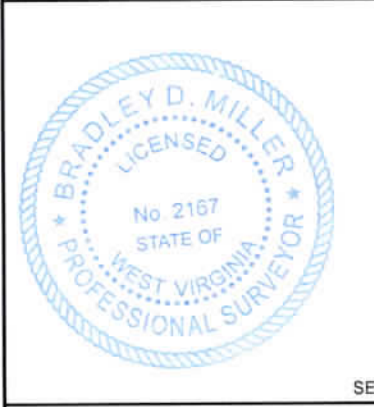
**Antero Resources**  
Well No. Holtz 1H



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 75°52' E	1,220.9'
L2	S 41°17' E	1,816.5'
L3	S 78°28' W	1,081.7'
L4	N 33°44' E	1,540.8'
L5	N 67°12' E	1,301.2'

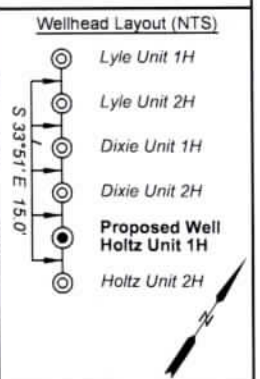
- Legend
- Proposed gas well
  - ⊗ Monument, as noted
  - ⊙ Existing Well, as noted
  - ⊙ Digitized Well, as noted
  - Creek or Drain
  - Road
  - Surface boundary (approx.)
  - Interior surface tracts (approx.)
  - County Line

9,007' to Top Hole

4,907' to Bottom Hole  
TOP HOLE LATITUDE 39 - 20 - 00  
BTM HOLE LATITUDE 39 - 17 - 30

Notes  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Holtz Unit 1H Top Hole coordinates are  
N: 295,227.12' Latitude: 39°18'12.49"  
E: 1,637,275.82' Longitude: 80°46'54.58"  
Bottom Hole coordinates are  
N: 286,652.24' Latitude: 39°16'48.30"  
E: 1,641,254.79' Longitude: 80°46'02.43"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,350,485.612m N: 4,347,893.517m  
E: 518,825.849m E: 520,081.613m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

Notes:  
Well No. Holtz Unit 1H UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,272,503.39'  
E: 1,702,133.84'  
Point of Entry Coordinates  
N: 14,273,027.33'  
E: 1,703,324.43'  
Bottom Hole Coordinates  
N: 14,263,999.07'  
E: 1,706,253.82'



FILE NO: 57-30-WU-14  
DRAWING NO: Holtz Unit 1H Well Plat  
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: October 10 2023  
OPERATOR'S WELL NO. Holtz Unit 1H  
API WELL NO  
47 - 017 - D6962  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 886' WATERSHED: Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union Antero COUNTY: Doddridge  
SURFACE OWNER: Resources Corp. ACREAGE: 16.5  
ROYALTY OWNER: Claude F. Smith, et ux LEASE NO: ACREAGE: 90

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ 7,000' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,900' MD

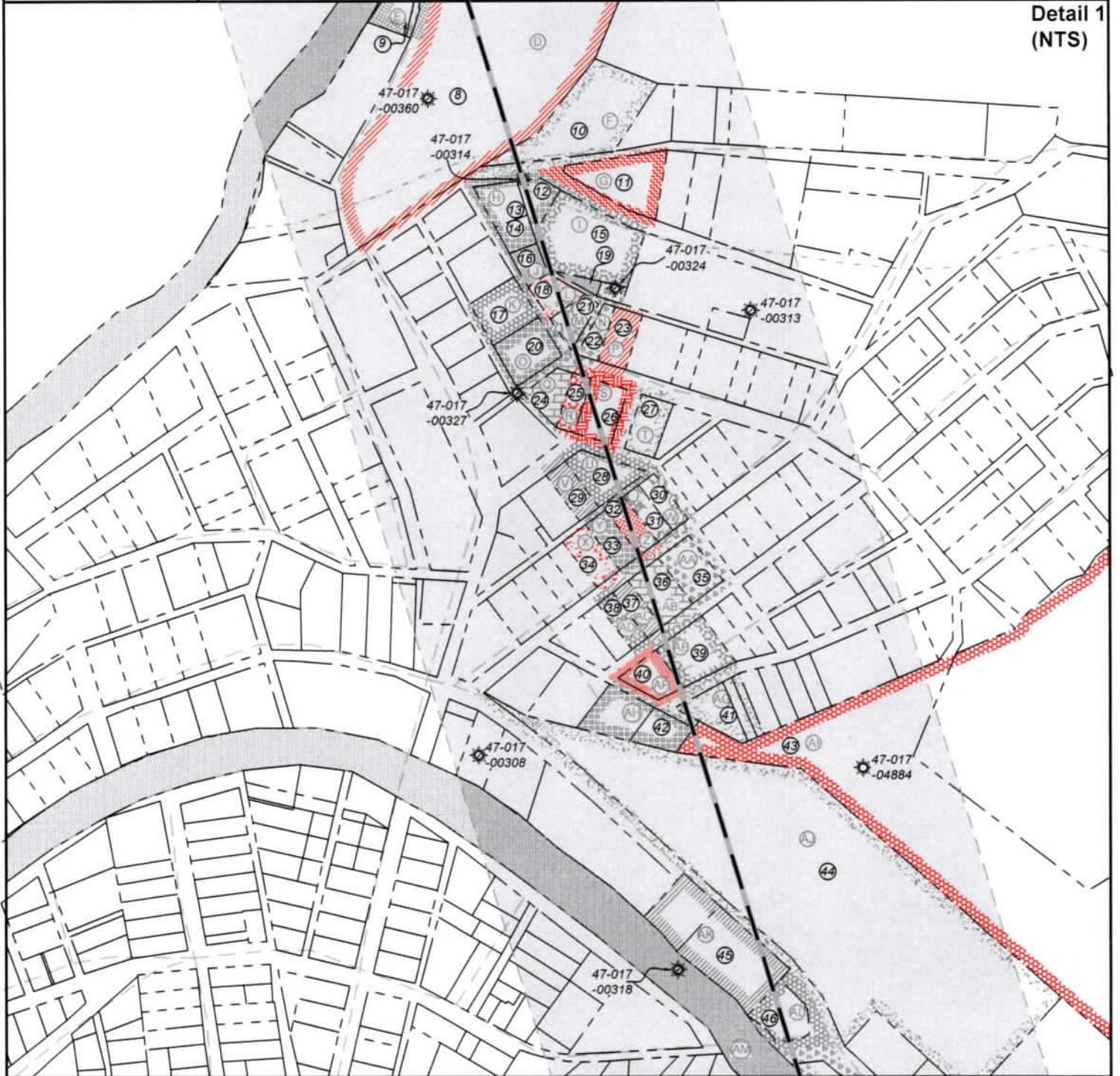
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd  
Denver, CO 80202 Bridgeport, WV 26330

LONGITUDE 80 - 45 - 00  
4,224' to Bottom Hole  
10,878' to Top Hole





Detail 1  
(NTS)



FILE NO: 57-30-WU-14  
DRAWING NO: Holtz Unit 1H Well Plat  
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: October 10 2023  
OPERATOR'S WELL NO. Holtz Unit 1H  
API WELL NO  
47 - 017 - 01962  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 886' WATERSHED: Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union Antero COUNTY: Doddridge  
SURFACE OWNER: Resources Corp. ACREAGE: 16.5  
ROYALTY OWNER: Claude F. Smith, et ux LEASE NO: ACREAGE: 90

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ 7,000' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,900' MD

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ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330



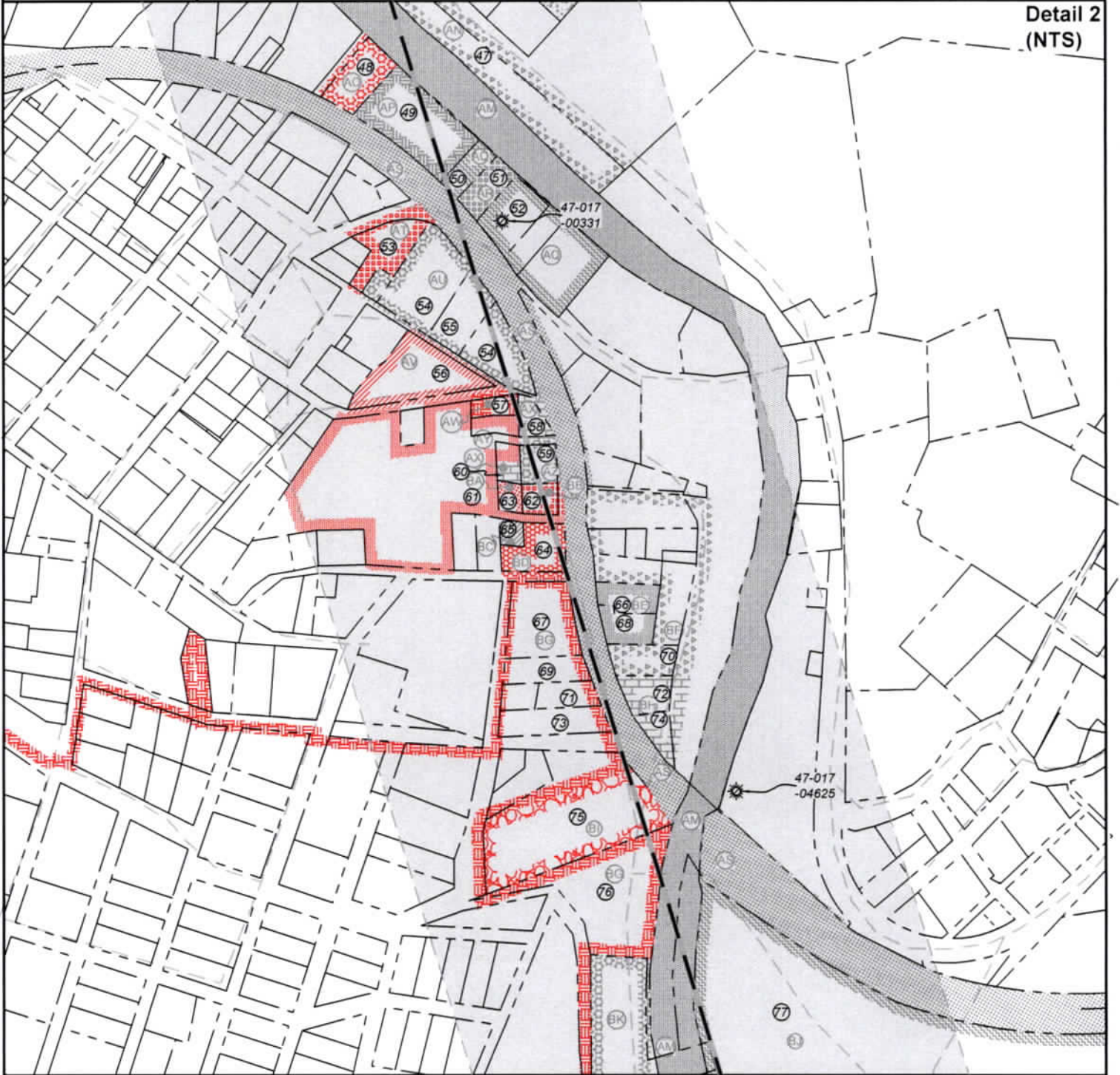
Antero Resources  
Well No. Holtz 1H

Sheet 3 of 4

Antero Resources Corporation



Detail 2  
(NTS)



FILE NO: 57-30-WU-14  
DRAWING NO: Holtz Unit 1H Well Plat  
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: October 10 2023  
OPERATOR'S WELL NO. Holtz Unit 1H  
API WELL NO  
47 - 017 - 06962  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built: 886' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union

DISTRICT: West Union Antero COUNTY: Doddridge

SURFACE OWNER: Resources Corp. ACREAGE: 16.5

ROYALTY OWNER: Claude F. Smith, et ux LEASE NO: \_\_\_\_\_ ACREAGE: 90

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,900' MD 7,000' TVD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330



Antero Resources Corporation



Leases	
A	Claude F. Smith, et ux
B	G. Frank Ash, et al
C	Harnet M. Jarvis, et al
D	Lawrence G. Maxson
E	Fred Miracle
F	Charles E. Maxson
G	Harry Grant & Joellen I. Trent
H	Evon K. Allen & George T. Ball
I	Patsy P. Zeigler
J	Alan D. Bunting
K	Nancy E. Dotson
L	Kendra L. Mascaro
M	Helen Moore
N	Carol N. Fox
O	Roy L. & Dora J. Porter
P	Pooled Tract
Q	Araiza Revival Ministries, Inc.
R	Pooled Tract
S	Pooled Tract
T	Angela Hope McClain Special Needs Trust
U	Joseph D. & Doris A. Pauley
V	James Edward Ross

Leases	
W	Carrie A. Booher Beaver
X	Theresa Louise Bright
Y	Bradford & Nancy Crouse
Z	Pooled Tract
AA	Colby W. & Stasha Jett
AB	Barry L. & Barbara J. Riffle
AC	Clinton D. Means, et ux
AD	Debra J. Boyce
AE	Jacqueline S. Bonnelli
AF	Lya Burgess
AG	Jacqueline Burgess
AH	Joe E. & Melissa A. Cross
AI	Earnest Spence Shannon, et al
AJ	Phillip D. McGill Jr.
AK	Mark A. McGill
AL	Frank E. McGill
AM	WVDNR
AN	Roy A. Myers
AO	Pooled Tract
AP	William Leo Tarbet
AQ	Doddridge Land Development Corp
AR	L. Donald Cinci III

Leases	
AS	WV State Rail Authority
AT	Pooled Tract
AU	Lorraine L. Bnsell
AV	Steven R. Chipps, et ux
AW	Richard G. Robinson Living Trust
AX	Velva B. Jacobs
AY	Pooled Tract
AZ	Jerry L. Six
BA	Velva B. Jacobs
BB	Pooled Tract
BC	June Reed
BD	Pooled Tract
BE	Denver & Linda Burnside
BF	Charles Jr. & Barbara L. Wellings
BG	Mary A. Stuart, et al
BH	Tamela B. & Robert Beamer
BI	Pooled Tract
BJ	Timothy C. Phillips
BK	WV Department of Highways
BL	Michael W. McGuane
BM	Michael W. McGuane
BN	Joseph Cheuront & W.S. Stuart

ID	TM-Par	Owner	Bk/Pg	Acres
1	11-3	Antero Resources Corp.	431/528	16.50
2	11-4	Paul D. & Sharon K. Weekley	186/743	17.30
3	7-26	Barbara Jean Travis & Sharon K. Weekley	WB62/674	61.46
4	7-28	Barbara Jean Travis & Sharon K. Weekley	WB62/674	14.50
5	11-5	Barbara Jean Travis & Sharon K. Weekley	WB62/674	2.19
6	11-4.1	Mary Lou Holland	286/313	9.55
7	11-6.2	Charles E. Maxson	278/454	2.03
8	11-6	Charles E. Maxson	278/454	18.40
9	11-97	Fred Miracle	252/659	0.22
10	1-158	Charles E. Maxson	196/671	0.50
11	1-8.1	H. Grant & Joellen I. Trent	186/523	0.35
12	1-27	Evon Kathleen Allen & George Thomas Ball	257/187	0.12
13	1-22	Evon K. Allen	AP28/304	0.16
14	1-24	Evon K. Allen & George Thomas Ball	246/369	0.10
15	1-27.1	Patsy P. Zeigler	193/805	0.54
16	1-24.1	Ruthie Bunting	387/142	0.09
17	1-71	Marvin D. & Nancy Dotson	WB65/80	0.24
18	1-25	Ruthie Bunting	387/142	0.10
19	1-23	Ruthie Bunting	387/142	0.10
20	1-72	Roy Lee & Dora Jean Porter	295/317	0.25
21	1-26	Helen Moore	247/143	0.13
22	1-28	Carol N. Fox	257/176	0.10
23	1-29	Brian Keith McCloy	372/116	0.17
24	1-73	Webb & Son Holdings LLC	480/192	0.15
25	1-75	Joe D. & Doris A. Pauley	474/196	0.11
26	1-76	Joe D. & Doris A. Pauley	474/196	0.22
27	1-77	Angela Hope McClain Special Needs Trust	WB39/583	0.19
28	1-78	Joseph D. Pauley	287/001	0.25
29	1-79	James Edward Ross	273/680	0.14
30	1-88	Carrie A. Booher	303/176	0.11
31	1-86	Carrie A. Booher	303/176	0.11
32	1-84	Tabitha J. L. & Anthony R. Smith	284/704	0.14
33	1-82	Bradford & Nancy Crouse	171/459	0.14
34	1-81	Alice T. Rieke	AP29/38	0.17
35	1-85	Colby W. Jett & Stasha A. Moran	376/422	0.22
36	1-83	Berry L. & Barbara J. Riffle	311/109	0.22
37	1-129.1	Jesse Aaron Hileman	430/634	0.11
38	1-129	Debra J. Boyce	260/69	0.11
39	1-97	Jacqueline S. Bonnelli	WB76/674	0.30

ID	TM-Par	Owner	Bk/Pg	Acres
40	1-130	William E. Thompson	511/186	0.17
41	1-132	Lya Burgess	AP57/201	0.24
42	1-131	Joe E. & Melissa A. Cross	223/684	0.15
43	11-23	Justin E. & Melissa Ann Holtz	342/354	23.77
44	1-151	Francis John Noll	288/86	3.75
45	3-62	Francis John Noll	288/86	0.43
46	3-62.1	Travis Auto Parts	190/743	0.11
47	3-311	Randall L. Bonnelli & Loeta F. Riddle	455/145	1.43
48	3-98	Harvey S. Randolph	AP35/521	0.30
49	3-99	Delgreta Lee Tarbet	WB34/568	0.79
50	3-99.1	Edward Jett	253/355	0.16
51	3-100	Edward Jett	253/355	0.21
52	3-307	Edward Jett	253/355	0.35
53	3-158	Robert L. Holland	154/659	---
54	3-159	Lorraine L. Brisell	236/169	1.98
55	3-159.1	Lorraine L. Brisell	236/169	0.28
56	3-226	Steven R. Chipps & Nathaniel A. Hoskinson	389/117	0.60
57	4-58.1	Vance L. Underwood & Velva Blanch Jacobs	302/273	0.09
58	4-58	Velva B. Jacobs	373/375	0.12
59	4-60	Velva B. Jacobs	373/375	0.14
60	4-59	Velva B. Jacobs	373/375	0.07
61	4-64	Robert L. Holland	163/143	2.50
62	4-62	Brian N. & Verose L. Mason	362/57	0.11
63	4-61	Velva B. Jacobs	278/457	0.09
64	4-66	Michael & Candice Gamache	262/724	0.28
65	4-63	June Reed, et al	AB50/239	0.06
66	4-67	Webb & Son Holdings LLC	427/719	0.17
67	4-66.1	Michael & Candice Gamache	262/724	0.60
68	4-67.1	Webb & Son Holdings LLC	427/719	0.17
69	4-72.1	Smith Family Revocable Living Trust	446/512	0.28
70	4-68	Charles & Barbara L. Wellings	295/88	0.21
71	4-71	Norma S. Bowyer	318/625	0.15
72	4-69	Robert L. & Tamera B. Beamer	283/709	0.19
73	4-72	Smith Family Revocable Living Trust	446/512	0.53
74	4-70	Robert L. & Tamera B. Beamer	283/709	0.14
75	4-91	James L. McAfee	WB55/71	0.50
76	11-72	James L. McAfee	WB55/71	12.58
77	11-77	Board of Education	94/229	10.26
78	15-4	E. Properties LTD	201/396	115.03

FILE NO: 57-30-WU-14  
DRAWING NO: Holtz Unit 1H Well Plat  
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: October 10 2023  
OPERATOR'S WELL NO. Holtz Unit 1H  
API WELL NO  
47 - 017 - 06A62  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: As-Built: 886' WATERSHED: Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union Antero COUNTY: Dodds  
SURFACE OWNER: Resources Corp. ACREAGE: 16.5  
ROYALTY OWNER: Claude F. Smith, et ux LEASE NO: \_\_\_\_\_ ACREAGE: 90  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ 7,000' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,900' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis  
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.  
Denver, CO 80202 Bridgeport, WV 26330

WW-6A1

Operator's Well Number

Holtz Unit 1H MOD

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>A: Claude F. Smith, et ux Lease</b>			
Claude F. Smith	Key Oil Company	1/8	104/704
Key Oil Company	XOIL Drilling Partners LP	Assignment	105/566
XOIL Drilling Partners LP	XPLOR Corporation	Assignment	146/649
XPLOR Corporation	Venus Exploration	Merge	WV SOS
Venus Exploration Inc	Allegheny Interests Inc	Assignment	184/512
Allegheny Interests Inc	Rubin Resources Inc	Assignment	187/685
Rubin Resources Inc	Petro Edge Energy LLC	Assignment	230/666
Petro Edge Energy LLC	Statoil USA Onshore Properties Inc	Assignment	285/71
Statoil USA Onshore Properties Inc	EQT Production Company	Assignment	428/356
EQT Production Company	Antero Resources Corporation	Agreement	385/268
<b>C: Harriet M. Jarvis, et al Lease</b>			
Harriet M. Jarvis	Robert L. Holland	1/8	62/298
Robert L. Holland	H & H Oil Company	Name Change	1/467
H & H Oil Company	Midwest Energy, Inc	Assignment	268/600
Midwest Energy, Inc	Antero Resources Corporation	Assignment	520/94
<b>D: Lawrence G. Maxson Lease</b>			
Lawrence G. Maxson	Petroleum Services, Inc	1/8	108/535
Petroleum Services, Inc	S & K Land Company	Assignment	110/288
S & K Land Company	Gene Stalnaker	Assignment	112/281
Gene Stalnaker	Angus Energy Inc	Assignment	166/372
Angus Energy Inc	Stalnaker Energy Corporation	Name Change	WV SOS
Stalnaker Energy Corporation	Antero Resources Corporation	Assignment	479/372
<b>F: Charles E. Maxson Lease</b>			
Charles E. Maxson	Antero Resources Corporation	1/8+	470/105
<b>H: Evon K. Allen &amp; George T. Ball Lease</b>			
Evon K. Allen & George Thomas Ball	Antero Resources Corporation	1/8+	459/278
<b>I: Patsy P. Zeigler Lease</b>			
Patsy P. Zeigler	Antero Resources Corporation	1/8	454/210
<b>J: Alan D. Bunting Lease</b>			
Alan D. Bunting	Antero Resources Corporation	1/8+	466/329
<b>L: Kendra L. Mascaro Lease</b>			
Kendra L. Mascaro	Antero Resources Corporation	1/8+	512/556
<b>M: Helen Moore Lease</b>			
Helen Moore	Antero Resources Corporation	1/8+	510/297
<b>N: Carol N. Fox Lease</b>			
Carol N. Fox	Antero Resources Corporation	1/8+	464/487
<b>Q: Araiza Revival Ministries, Inc. Lease</b>			
Araiza Revival Ministries, Inc.	Antero Resources Corporation	1/8+	517/4
<b>R: Pooled Tract</b>			

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Office of Oil and Gas

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WV Dept of  
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Operator's Well Number

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>S: Pooled Tract</b>			
<b>U: Joseph D. &amp; Doris A. Pauley Lease</b> Joseph D. Pauley & Doris Ann Pauley	Antero Resources Corporation	1/8+	515/677
<b>Z: Pooled Tract</b>			
<b>Y: Bradford &amp; Nancy Crouse Lease:</b> Bradford and Nancy Crouse	Antero Resources Corporation	1/8+	511/299
<b>AB: Barry L. &amp; Barbara J. Riffle Lease:</b> Barry L. & Barbara J. Riffle	Antero Resources Corporation	1/8+	504/324
<b>AC: Clinton D. Means, et ux Lease:</b> Clinton D. Means, et ux	Antero Resources Corporation	1/8+	500/190
<b>AE: Jacqueline S. Bonnell Lease:</b> Jacqueline S. Bonnell	Antero Resources Corporation	1/8+	504/294
<b>AF: Lya Burgess Lease:</b> Lya Burgess	Antero Resources Corporation	1/8+	500/221
<b>AG: Jacqueline Burgess Lease:</b> Jacqueline Burgess	Antero Resources Corporation	1/8+	456/161
<b>AH: Joe E. &amp; Melissa A. Cross Lease:</b> Joe E. and Melissa A. Cross	Antero Resources Corporation	1/8+	511/253
<b>AI: Earnest Spence Shannon, et al Lease</b> Earnest Spence Shannon, et al Duncan Sartan D. Lee Jones	Duncan Sartan D. Lee Jones Bayard Thurman Cowper III, and Roscoe B. G. Cowper Lawrence H. Abregg	1/8 Assignment Assignment Assignment	73/285 73/467 98/111 98/120
Bayard Thurman Cowper III, and Roscoe B. G. Cowper Lawrence H. Abregg Hugh K. Spencer	Hugh K. Spencer Ronald B. Spencer and Rhonda S. Rossetti as co trustees of the Hugh K. Spencer Marital B Trust Spencer Enterprises, LLC	Assignment Will Book	98/230 93/68
Ronald B. Spencer and Rhonda S. Rossetti as co trustees of the Hugh K. Spencer Marital B Trust Spencer Enterprises, LLC Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	Assignment Merger	764/93 46/523
<b>AJ: Phillip D. McGill Jr. Lease</b> Phillip D. McGill	Antero Resources Corporation	1/8+	473/550
<b>AK: Mark A. McGill Lease</b> Mark A. McGill	Antero Resources Corporation	1/8+	515/186

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>AL: Frank E. McGill Lease:</u> Frank E. McGill	Antero Resources Corporation	1/8+	480/131
<u>AN: Roy A. Myers Lease</u> Roy A. Myers	Antero Resources Corporation	1/8+	515/308
<u>AM: WVDNR Lease</u> WVDNR	Antero Resources Corporation	1/8+	517/553
<u>AP: William Leo Tarbet Lease</u> William Leo Tarbet	Antero Resources Corporation	1/8+	468/263
<u>AQ: Doddridge Land Development Corporation Lease</u> Doddridge Land Development Corporation	Antero Resources Corporation	1/8+	519/579
<u>AS: WV State Rail Authority Lease</u> West Virginia State Rail Authority Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Name Change	253/409 46/523
<u>AU: Lorraine L. Brisell Lease</u> Lorraine L. Brisell	Antero Resources Corporation	1/8+	512/154
<u>AV: Steven R. Chipps, et ux Lease:</u> Steven R. Chipps, et ux	Antero Resources Corporation	1/8+	519/668
<u>AW: Richard G. Robinson Living Trust Lease:</u> Richard G. Robinson Living Trust	Antero Resources Corporation	1/8+	481/304
<u>AY: Pooled Tract</u>			
<u>AX: Velva B. Jacobs Lease</u> Velva B. Jacobs	Antero Resources Corporation	1/8+	511/304
<u>AZ: Jerry L. Six Lease</u> Jerry L. Six	Antero Resources Corporation	1/8+	511/372
<u>BB: Pooled Tract</u>			
<u>BY: Pooled Tract</u>			
<u>BD: Pooled Tract</u>			

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>BG: Mary A. Stuart, et al Lease:</b> Mary A. Stuart, et al Lewis Maxwell Southern Carbon Company Empire Oil Company	Lewis Maxwell Southern Carbon Company Empire Oil Company Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust	1/8 Assignment Assignment Company Incorporated Trust Created	19/214 34/391 356/361 116/162 120/233
Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	Assignment Name Change	171/541 46/523
<b>AS: WV State Rail Authority Lease:</b> West Virginia State Rail Authority Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	253/409 46/523
<b>BG: Mary A. Stuart, et al Lease:</b> Mary A. Stuart, et al Lewis Maxwell Southern Carbon Company Empire Oil Company	Lewis Maxwell Southern Carbon Company Empire Oil Company Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust	1/8 Assignment Assignment Company Incorporated Trust Created	19/214 34/391 356/361 116/162 120/233
Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	Assignment Name Change	171/541 46/523
<b>BI: Pooled Tract</b>			
<b>BG: Mary A. Stuart, et al Lease:</b> Mary A. Stuart, et al Lewis Maxwell Southern Carbon Company Empire Oil Company	Lewis Maxwell Southern Carbon Company Empire Oil Company Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust	1/8 Assignment Assignment Company Incorporated Trust Created	19/214 34/391 356/361 116/162 120/233
Carolyn E. Farr, P D Farr, & William E Farr directors Carolyn E Farr Trust Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	Assignment Name Change	171/541 46/523
<b>AM: WVDNR Lease</b> WVDNR	Antero Resources Corporation	1/8+	517/553
<b>BJ: Timothy C. Phillips Lease:</b> Timothy C. Phillips	Antero Resources Corporation	1/8+	488/365
<b>BK: WV Department of Highways Lease</b> WV Department of Highways	Antero Resources Corporation	1/8+	521/1
<b>BL: Michael W. McGuane Lease</b> Michael W. McGuane	Antero Resources Corporation	1/8	485/61

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WW-6A1

Operator's Well Number Holtz Unit 1H MOD

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
BM: Michael W. McGuane Lease; Michael W. McGuane	Antero Resources Corporation	1/8	485/61

\*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.

\*Cotenancy Utilization - Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with development of certain royalty owners' interests in this tract.

\*\*Pooling/Unitization - Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners in this tract

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WV Department of  
Environmental Protection

10/20/2023

WW-6A1  
(5/13)

Operator's Well No. Holtz Unit 1H MOD

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b>BN: Joseph Cheuront &amp; W.S. Stuart Lease:</b>				
	Joseph Cheuront & W.S. Stuart	Lewis Maxwell	1/8	19/216
	Lewis Maxwell	Southern Carbon Company	Assignment	244/77
	Southern Carbon Company	Empire Oil Company, John M. Gribble	Assignment	24/277
	Empire Oil Company, John M. Gribble	WD Gribble	Death	3/067
	WD Gribble	Carolyn E. Farr	Death	4/256
	Carolyn E. Farr	Clarence E. Sigley, Trustee, Carolyn E. Farr Trust	Assignment	220/233
	Clarence E. Sigley, Trustee, Carolyn E. Farr Trust	Tri County Oil & Gas Inc	Assignment	198/670
	Tri County Oil & Gas Inc	May Gas Inc	Assignment	204/43
	May Gas Inc	Harper Crosby Holdings LLC	Assignment	309/238
	Harper Crosby Holdings LLC	Piney Holdings Inc	Assignment	309/275
	Piney Holdings Inc	Antero Resources Corporation	Assignment	400/655

**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: Senior Vice President of Land