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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)

Monday, July 15, 2024  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for Harlan Unit 1H  
47-103-03654-00-00

**Lateral Extension/ Forced Pooling**

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: Harlan Unit 1H  
Farm Name: Dallison Lumber Inc.  
U.S. WELL NUMBER: 47-103-03654-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 7/15/2024

Promoting a healthy environment.

07/19/2024

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

1) Well Operator: Antero Resources Corporation | 494507062 | 103 - Wetzel | Green | Pine Grove 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Harlan Unit 1H MOD Well Pad Name: Galmish Pad

3) Farm Name/Surface Owner: Dallison Lumber Inc. Public Road Access: McKimmie Ridge Road

4) Elevation, current ground: As-Built 1160.7 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: 7600' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 25000' MD

11) Proposed Horizontal Leg Length: 15219' \*Open to modification at a later date

12) Approximate Fresh Water Strata Depths: 45', 130'

13) Method to Determine Fresh Water Depths: 47103025550000 Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1961'

15) Approximate Coal Seam Depths: N/A

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: \_\_\_\_\_

CK# 4032648  
\$ 7500  
6/13/2024

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Environmental Protection

*[Handwritten signature and date]*  
6/12/24

WW-6B  
(04/15)

API NO. 47- 103 - 03654  
 OPERATOR WELL NO. Harlan Unit 1H MOD  
 Well Pad Name: Galmish 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	J-55	94#	100'	100' ✓	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300'	300' ✓	CTS, 313 Cu. Ft. ✓
Coal	9-5/8"	New	J-55	36#	3200'	3200' ✓	CTS, 1303 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	25000'	25000' ✓	CTS, 5372 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	20"	24"	0.375"	2250	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"	14,360	2500 ✓	Class G/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

07/19/2024

*[Handwritten signature]*  
 6/27/24

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

Drill a new horizontal shallow well into the Marcellus Shale.

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

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

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

Anticipated Max Pressure - 9300 lbs  
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 64.40 acres

22) Area to be disturbed for well pad only, less access road (acres): 17.53 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 G/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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Office of Oil and Gas Page 3 of 3

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Environmental Protection

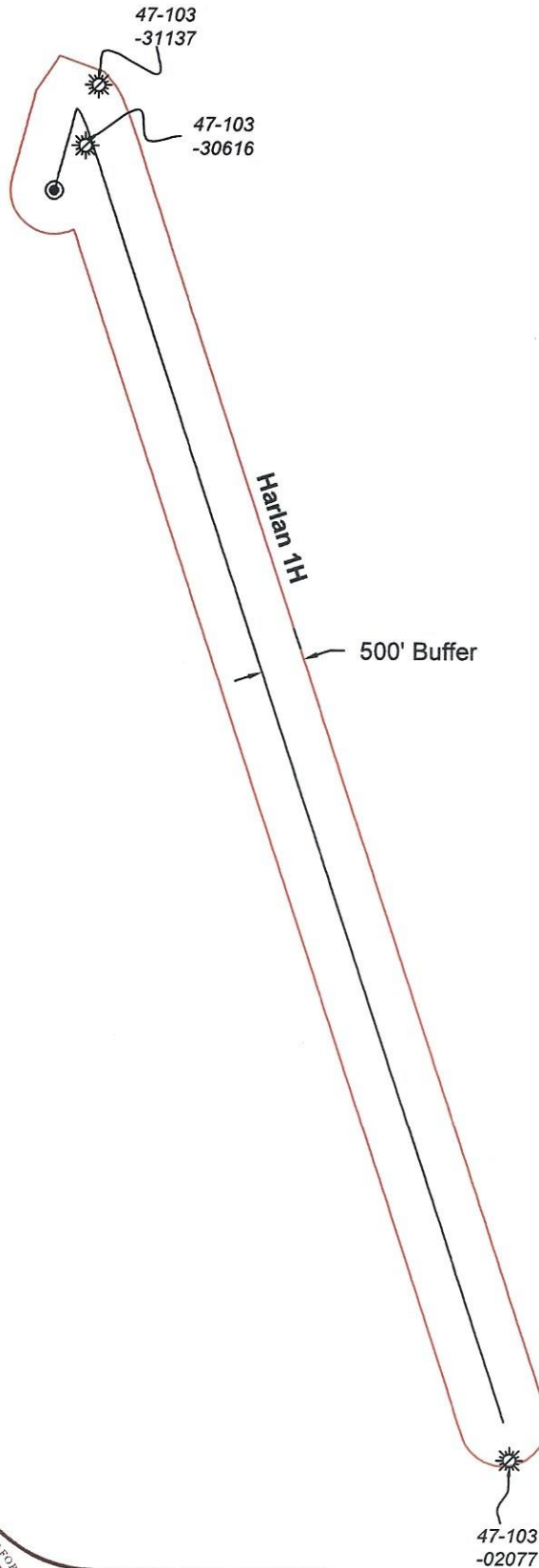
07/19/2024

**LEGEND**

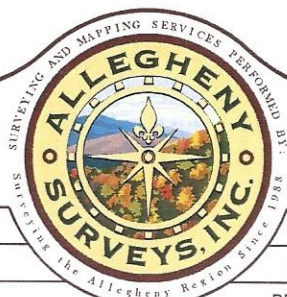
- Proposed gas well
- ☼ Existing Well, as noted
- ☼ Digitized Well, as noted



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



RECEIVED  
Office Of Oil and Gas  
JUN 25 2024  
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. McNemar
RESEARCH: J. Miller	PREPARED: March 12, 2024
SURVEYED: Dec. 2016	PROJECT NO: 124-34-G-18
FIELD CREW: C.L., K.M.	DRAWING NO: Harlan 1H AOR

Sheet 1 of 1



Scale: 1 inch = 2000 feet

07/19/2024

UWI (API Num)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47103306160000	J W HAINES 1	4850	UNKNOWN	UNKNOWN	2,891		Gordon Stray, Gordon	Weir, Benson, Alexander
47103311370000	ISAAC SMITH	6520	UNKNOWN	UNKNOWN				
47103020770000								

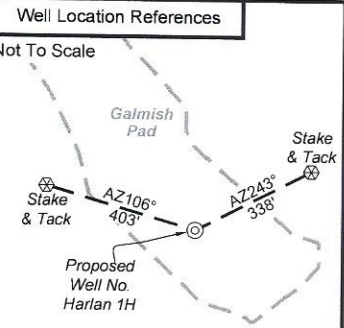
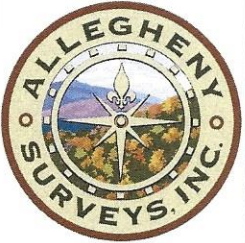
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Environmental Protection

07/19/2024

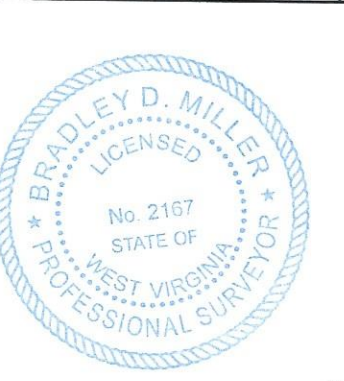
**Antero Resources**  
**Well No. Harlan 1H**  
**BHL MOD**  
**Antero Resources Corporation**



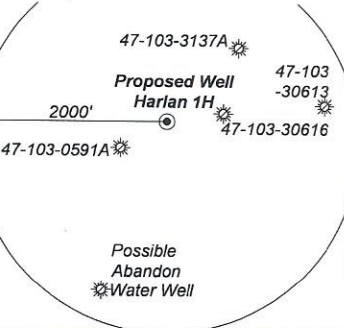
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*

Bradley D. Miller, P.S. 2167

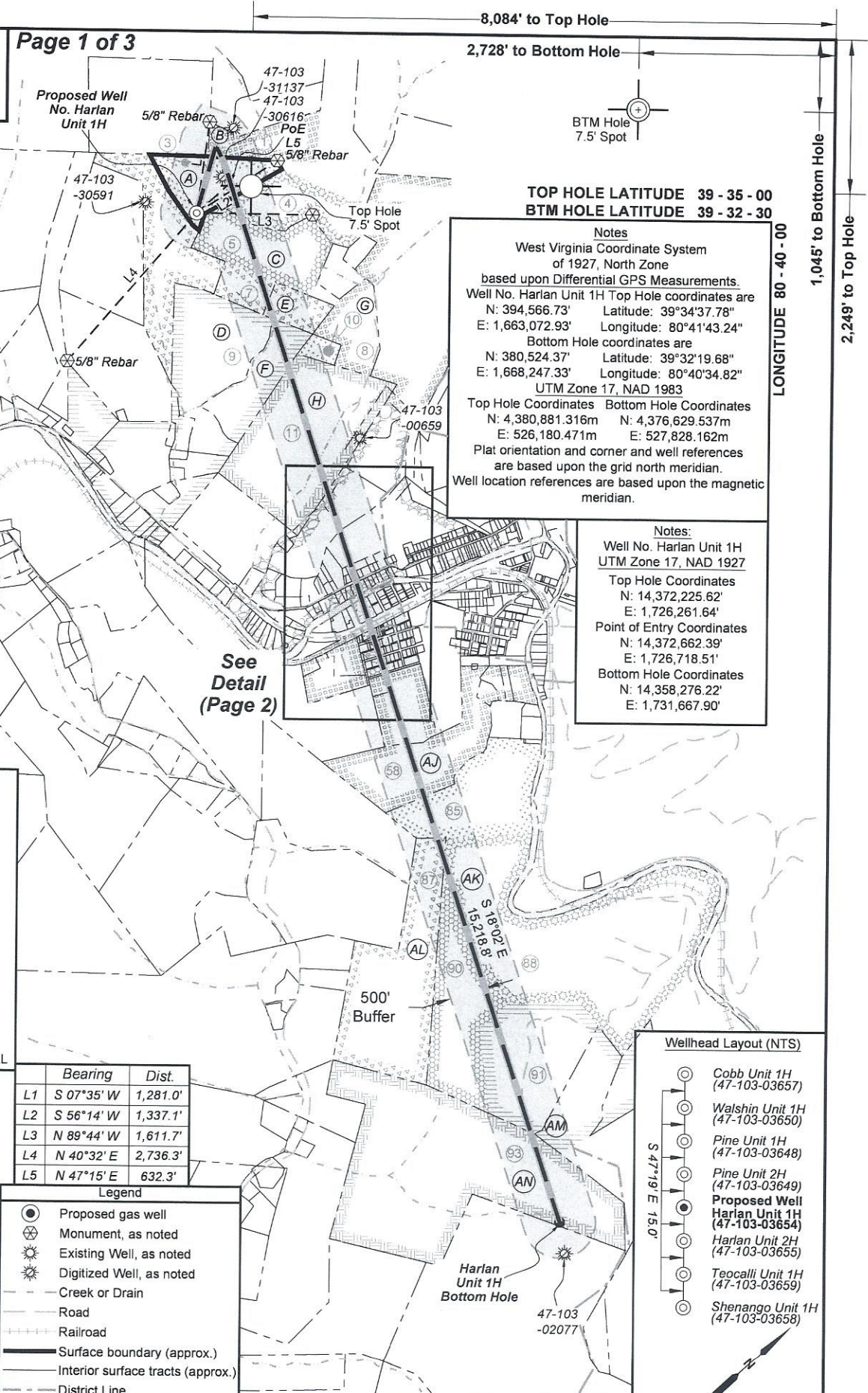


Note: 1 water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



	Bearing	Dist.
L1	S 07°35' W	1,281.0'
L2	S 56°14' W	1,337.1'
L3	N 89°44' W	1,611.7'
L4	N 40°32' E	2,736.3'
L5	N 47°15' E	632.3'

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



8,084' to Top Hole  
 2,728' to Bottom Hole

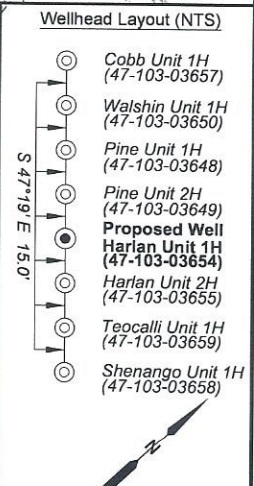
BTM Hole 7.5' Spot

TOP HOLE LATITUDE 39 - 35 - 00  
 BTM HOLE LATITUDE 39 - 32 - 30

Notes  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
 Well No. Harlan Unit 1H Top Hole coordinates are  
 N: 394,566.73' Longitude: 80°41'43.24"  
 E: 1,663,072.93' Longitude: 80°40'34.82"  
 Bottom Hole coordinates are  
 N: 380,524.37' Latitude: 39°32'19.68"  
 E: 1,668,247.33' Longitude: 80°40'34.82"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,380,881.316m N: 4,376,629.537m  
 E: 526,180.471m E: 527,828.162m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.

LONGITUDE 80 - 40 - 00  
 1,045' to Bottom Hole  
 2,249' to Top Hole

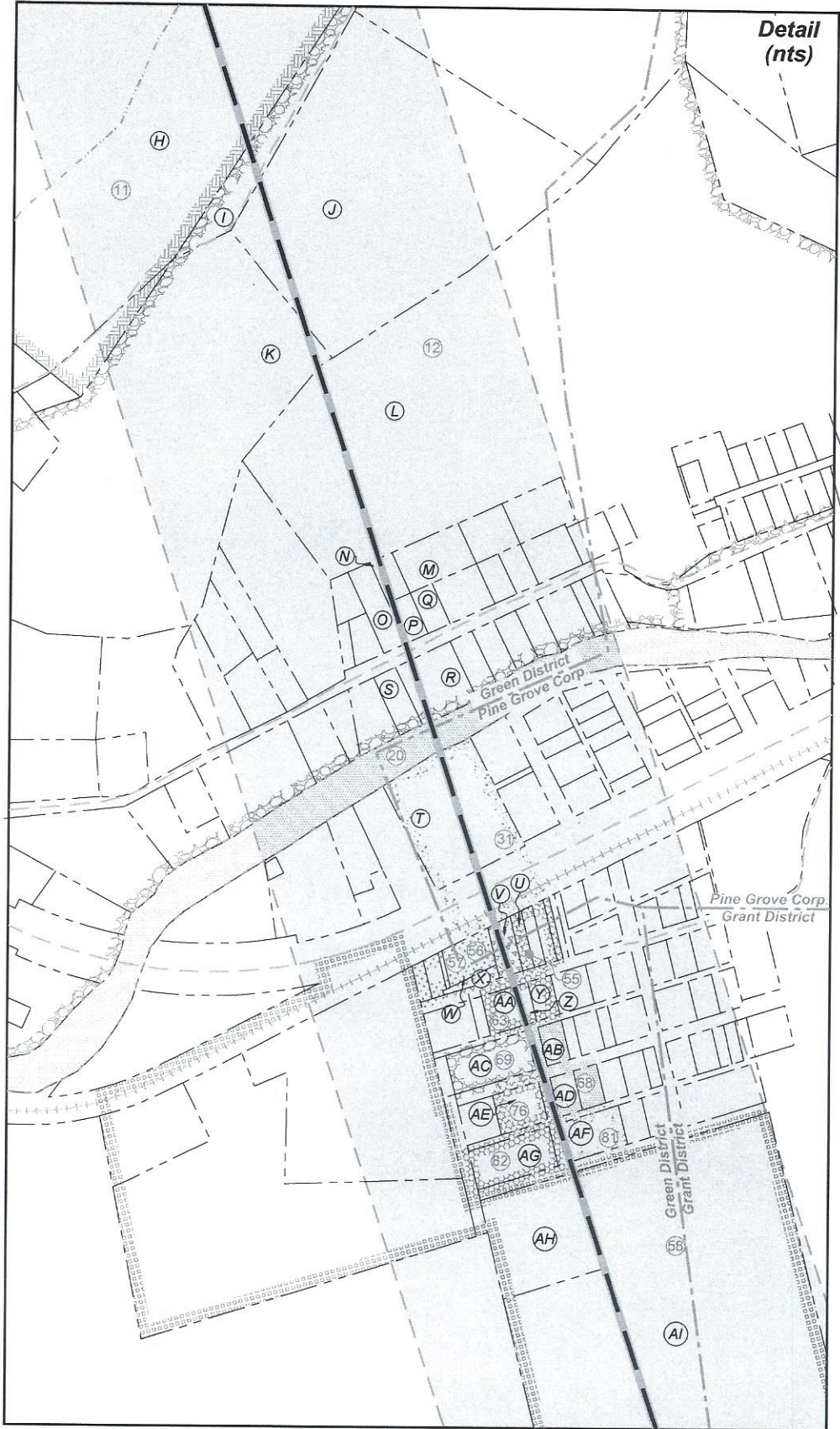
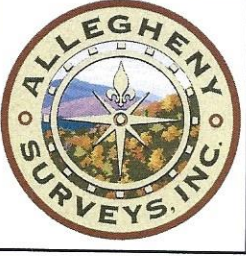
Notes:  
 Well No. Harlan Unit 1H  
 UTM Zone 17, NAD 1927  
 Top Hole Coordinates  
 N: 14,372,225.62'  
 E: 1,726,261.64'  
 Point of Entry Coordinates  
 N: 14,372,662.39'  
 E: 1,726,718.51'  
 Bottom Hole Coordinates  
 N: 14,358,276.22'  
 E: 1,731,667.90'



FILE NO: 124-34-G-18  
 DRAWING NO: Harlan 1H Well Plat  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY:  
 Submeter  
 PROVEN SOURCE OF ELEVATION:

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

DATE: May 16 2024  
 OPERATOR'S WELL NO: 47-103-03654  
 API WELL NO: 47-103-03654

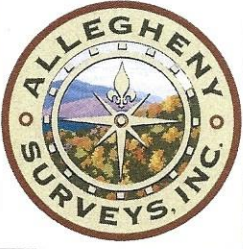


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STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 OIL AND GAS DIVISION

DATE: May 16 2024  
 OPERATOR'S WELL NO: Harlan 1H  
 07/19/2024  
 API WELL NO  
 47 - 103 - 03654





Leases	
1	BRC Appalachian Minerals I, LLC
3	Robert Barry Myers, Jr.
4	Robert Barry Myers, Jr.
5	Aunix Energy, LLC
7	Freeda Marie Brown
8	Jay Michael Myers
9	Bounty Minerals, LLC
10	William J. Patterson
11	David E. Bowyer
12	T.H. & Mary M. Alley
20	WVDNR
31	Nancy R. & Richard G. Duffield, Jr.
55	Patti Jo & Dennis Dean McCardle
56	Gloria Diane Fluharty
57	Christopher B. Vanderhof, et ux
58	Antero Minerals, LLC
63	Timothy L. Wilcox
68	Victoria Dee Nolan
69	Ryan & Sabrina Watson
76	Ryan & Sabrina Watson
81	Teresa A. Stackhouse
82	Donald E. & Tina M. Harrison
85	Chesapeake Appalachia, LLC
87	J.L. Newman
88	H3, LLC
90	BRC Appalachian Minerals I, LLC
91	A. J. Witchterman, et al
93	Ridgetop Appalachia, LLC

ID	TM-Par	Owner	Bk/Pg	Acres
A	14-9	Dallison Lumber, Inc.	474/290	25.00
B	14-10	Sandra Jane Fortney	446/700	61.78
C	14-12	Freeda M. Brown	WB79/104	70.06
D	14-30.1	Richard D. & Josielie V. Chapple	310/327	44.75
E	14-11	Freeda M. Brown	WB79/104	8.00
F	14-30.10	Cynthia L. & Terry L. Adams	347/706	20.67
G	14-15	Freeda M. Brown	WB79/104	33.00
H	14-32	Community Sportsman Club	176/370	79.52
I	14-33.2	Community Sportsman Club	268/56	1.06
J	14-33.5	Ronnie Lee & Debra Lee Robinson	315/134	8.10
K	14-33.3	Carlton G. & Barbara P. Norris	285/193	12.32
L	14-40	Larry D. & Melinda J. Kinkade	285/577	25.63
M	4-3	Rodney L. & Brenda K. Lasure	403/20	0.43
N	4-2	Lisa A. & Calvin R. Stackpole, Jr.	344/34	0.43
O	4-12	Rhonda Kay Spencer	471/51	0.29
P	4-13	Lisa A. & Calvin R. Stackpole, Jr.	344/34	0.14
Q	4-14	Rodney L. & Brenda K. Lasure	403/20	0.14
R	4-22	John E. & Debra K. Hall	285/736	0.55
S	4-21	Carol J. McDougal	291/136	0.23
T	4-86	Nancy R. & Richard G. Duffield, Jr.	359/37	1.63
U	4-34	Dennis D. & Patti McCardle	426/766	0.10
V	4-33	Phillip E. & Ralph Gainer	392/593	0.19
W	4-32	Christopher B. & Melinda S. Vanderhoff	443/201	0.34
X	4-41	Phillip E. & Ralph Gainer	392/593	0.08
Y	4-47	Timothy L. Wilcox	437/835	0.14
Z	4-90	Timothy L. Wilcox	437/835	0.07
AA	4-46	Timothy L. Wilcox	437/835	0.21
AB	4-56	Robert D. Nolan	A104/64	0.14
AC	4-55	Ryan & Sabrina Watson	475/619	0.48
AD	4-65	Robert D. Nolan	A104/64	0.14
AE	4-64	Ryan & Sabrina Watson	471/201	0.28
AF	4-76	Teresa A. Stackhouse	396/377	0.34
AG	4-75	Donald Eugene & Tina Marie Harrison	325/164	0.48
AH	18-11	Donald E. & Tina M. Harrison	320/404	1.50
AI	16-1	Brian E. & Goldie M. Higgins	398/578	23.50
AJ	16-2	Robert D. & Nancy L. Streets	219/100	33.70
AK	16-8	Dominion Gathering & Processing, Inc.	460/781	572.05
AL	18-3.1	Dominion Gathering & Processing, Inc.	460/781	150.00
AM	16-41	Consolidated Gas Transmission Corp.	302/113	25.00
AN	18-10	Paul U. & Betty A. Garber Revocable Living Trust	474/722	150.00

FILE NO: 124-34-G-18  
DRAWING NO: Harlan 1H Well Plat  
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Submeter  
PROVEN SOURCE OF ELEVATION:

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

DATE: May 16 2024  
OPERATOR'S WELL: ~~07/10/2024~~  
API WELL NO  
47 103 03654

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>3: Robert Barry Myers, Jr. Lease</u> Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	300A/0634
<u>1: BRC Appalachian Minerals I, LLC Lease</u> BRC Appalachian I, LLC BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC	BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC Antero Resources Corporation	1/8 Assignment Assignment Assignment Merge	102A/0505 103A/0470 157A/0540 177A/0533 0013/0311
<u>3: Robert Barry Myers, Jr. Lease</u> Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	300A/0634
<u>4: Robert Barry Myers, Jr. Lease</u> Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	304A/0413
<u>5: Aunix Energy, LLC Lease</u> Aunix Energy, LLC	Antero Resources Corporation	1/8+	305A/0014
<u>7: Freeda Marie Brown Lease</u> Freeda Marie Brown	Antero Resources Corporation	1/8+	308A/0508
<u>9: Bounty Minerals, LLC Lease</u> Bounty Minerals, LLC	Antero Resources Corporation	1/8+	296A/0314
<u>11: David E. Bowyer Lease</u> David E. Bowyer	Antero Resources Corporation	1/8+	336A/0777
<u>12: T.H. &amp; Mary M. Alley Lease</u> T.H. & Mary M. Alley L.G. Robinson Tri-State Gas Company South Penn Oil Company Hope Natural Gas Company Consolidated Gas Transmission Corporation CNG Transmission Corporation Eastern States Oil & Gas Inc. Equitable Production – Eastern States Inc. Equitable Production Company EQT Production Company	L.G. Robinson Tri-State Gas Company South Penn Oil Company Hope Natural Gas Company Consolidated Gas Transmission Corporation CNG Transmission Corporation Eastern States Oil & Gas Inc. Equitable Production – Eastern States Inc. Equitable Production Company EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment Name Change Assignment Name Change Name Change Name Change Assignment	0048/0572 0059/0415 0073/0185 138A/0641 066A/0069 0013/0151 076A/0232 0013/0014 0013/0014 0013/0014 230A/0801
<u>20: WVDNR Lease</u> WVDNR	Antero Resources Corporation	1/8+	323A/0541
<u>31: Nancy R. &amp; Richard G. Duffield, Jr. Lease</u> Nancy R. & Richard G. Duffield, Jr.	Antero Resources Corporation	1/8+	330A/0499
<u>56: Gloria Diane Fluharty Lease</u> Gloria Diane Fluharty	Antero Resources Corporation	1/8+	352A/0821

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Office Of Oil and Gas

JUN 25 2024

WV Department of  
Environmental Protection

07/19/2024

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;
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>63: Timothy L. Wilcox Lease</u> Timothy L. Wilcox	Antero Resources Corporation	1/8+	327A/0188
<u>69: Ryan &amp; Sabrina Watson Lease</u> Ryan & Sabrina Watson	Antero Resources Corporation	1/8+	334A/0608
<u>68: Victoria Dee Nolan Lease</u> Victoria Dee Nolan	Antero Resources Corporation	1/8+	345A/0156
<u>76: Ryan &amp; Sabrina Watson Lease</u> Ryan & Sabrina Watson	Antero Resources Corporation	1/8+	334A/0611
<u>82: Donald E. &amp; Tina M. Harrison Lease</u> Donald E. & Tina M. Harrison	Antero Resources Corporation	1/8+	340A/0805
<u>81: Teresa A. Stackhouse Lease</u> Teresa A. Stackhouse	Antero Resources Corporation	1/8+	341A/0558
<u>58: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	292A/0795
<u>85: Chesapeake Appalachia, LLC</u> Chesapeake Appalachia, LLC SWN Production Company LLC Antero Exchange Properties LLC	SWN Production Company LLC Antero Exchange Properties LLC Antero Resources Corporation	1/8 Assignment Merger	157A/0634 177A/0533 0013/0311
<u>87: J.L. Newman Lease</u> J.L. Newman South Penn Oil Company Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Eastern States Oil & Gas Inc Equitable Production - Eastern States Inc Equitable Production Company EQT Production Company	South Penn Oil Company Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corporation CNG Transmission Corporation Eastern States Oil & Gas Inc Equitable Production - Eastern States Inc Equitable Production Company EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Name Change Assignment Name Change Name Change Name Change Assignment	0073/0459 002A/0299 0233/0387 066A/0069 0013/0151 076A/0232 0013/0014 0013/0014 0013/0014 230A/0801
<u>88: H3, LLC Lease</u> H3, LLC	Antero Resources Corporation	1/8+	347A/0174
<u>90: BRC Appalachian Minerals I, LLC Lease</u> BRC Appalachian Minerals I LLC BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC	BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC Antero Resources Corporation	1/8 Assignment Assignment Assignment Merge	102A/0505 103A/0470 157A/0540 177A/0533 0013/0311

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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
<b>91: A.J. Witcherman, et al Lease</b>			
A.J. Wichterman et al	Hope Natural Gas Company	1/8	0107/0420
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0233/0387
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	066A/0069
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Merge	0013/0151
CNG Transmission Corporation	Eastern States Oil & Gas Inc	Assignment	076A/0232
Eastern States Oil & Gas Inc	Equitable Production - Eastern States Inc	Name Change	0013/0014
Equitable Production - Eastern States Inc	Equitable Production Company	Name Change	0013/0014
Equitable Production Company	EQT Production Company	Name Change	0013/0014
EQT Production Company	Antero Resources Corporation	Assignment	230A/0801

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\*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.

\*Co-tenancy 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.

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
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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 –

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- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>93: Ridgetop Appalachia, LLC Lease</u>	Ridgetop Appalachia, LLC	Antero Resources Corporation	1/8+	304A/0061

\*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.

\*Co-tenancy utilization – Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with the 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.

**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: Max Green   
 Its: Vice President of Land

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