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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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, September 14, 2018  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for CROWN UNIT 1H  
47-095-02453-00-00

**Lateral Shift**

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: CROWN UNIT 1H  
Farm Name: WEESE, ROGER R.  
U.S. WELL NUMBER: 47-095-02453-00-00  
Horizontal 6A New Drill  
Date Modification Issued:

Promoting a healthy environment.

WW-6B  
(04/15)

Permit Modification API# 47-095-02453  
API NO. 47-095 - 02453  
OPERATOR WELL NO. Crown Unit 1H  
Well Pad Name: Neat 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 095 - Tyler Meade Middlebourne 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Crown Unit 1H Well Pad Name: Neat Pad

3) Farm Name/Surface Owner: Roger R. Weese Public Road Access: CR 7

4) Elevation, current ground: 1005' 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: 6600' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

*DMH  
7-25-18  
JEB  
1/25/2018*

8) Proposed Total Vertical Depth: 6600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17800' MD

11) Proposed Horizontal Leg Length: 8664'

12) Approximate Fresh Water Strata Depths: 100', 121', 166'

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

14) Approximate Saltwater Depths: None Identified

15) Approximate Coal Seam Depths: 1441'

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: \_\_\_\_\_

**Received**

JUL 26 2018

Page 1 of 3

WW-6B  
(04/15)

API NO. 47- 095 - 02453  
OPERATOR WELL NO. Crown Unit 1H  
Well Pad Name: Neat Pad

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	80	80	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300	300	CTS, 417 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#	17800	17800	4487 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*DMH 7-25-18 JCB 7/25/2018*

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	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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JUL 25 2018



WW-6B  
(10/14)

API NO. 47-095 - 02453  
OPERATOR WELL NO. Crown Unit 1H  
Well Pad Name: Neat 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.

DmH  
7-25-18 JCB  
7/25/2015

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): 30.47 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.95 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

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.

Received

\*Note: Attach additional sheets as needed.

JUL 26 2018

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><u>Roger R. Weese Lease</u></b>			
Roger R. Weese	Antero Resources Appalachian Corporation	1/8+	0435/0766
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Ronnie Lee Smith Lease</u></b>			
Ronnie Lee Smith	Antero Resources Corporation	1/8+	0420/0406
<b><u>Roger R. Weese Lease</u></b>			
Roger R. Weese	Antero Resources Appalachian Corporation	1/8+	0435/0766
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Virginia Riggs Lease</u></b>			
Virginia Riggs	Antero Resources Corporation	1/8+	0436/0441
<b><u>Roy D. Hadley Lease</u></b>			
Roy D. Hadley	Chesapeake Appalachia LLC	1/8	0370/0187
Chesapeake Appalachia, LLC	Statoil USA Onshore Properties, Inc.	Assignment	0378/0735
Statoil USA Onshore Properties, Inc.	Antero Resources Corporation	Assignment	0544/0291
<b><u>The Joelynn Family Preservation Trust Lease</u></b>			
The Joelynn Family Preservation Trust	Antero Resources Corporation	1/8+	0466/0108
<b><u>Densel Ferrel, et ux Lease</u></b>			
Densel Ferrel, et ux	Warren R. Haught	1/8	0213/0358
Warren R. Haught	Warren Associates, Inc.	Assignment	0236/0642
Warren Associates, Inc.	Sancho Oil & Gas Corporation	Assignment	0369/0502
Sancho Oil & Gas Corporation	Republic Energy Ventures, LLC	Assignment	0375/0811
Republic Energy Ventures, LLC	Antero Resources Corporation	Assignment	0436/0216
<b><u>Frank Grass, et al Lease</u></b>			
Frank Grass, et al	Sancho Oil & Gas Corporation	1/8	0335/0601
Sancho Oil & Gas Corporation, et al	Antero Resources Corporation	1/8+	Exhibit 1

\*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.

RECEIVED  
Office of Oil and Gas

**\*\*CONTINUED ON NEXT PAGE\*\***

JUL 16 2018

WV Department of  
Environmental Protection



WW-6A1  
(5/13)

Operator's Well No. Crown 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
<u>Richard Hall Barnard Lease</u>	Richard Hall Barnard	Antero Resources Corporation	1/8+	0442/0065

\*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

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: Kevin Kilstrom  
 Its: Senior VP - Production

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Office of Oil and Gas  
  
JUL 16 2018  
  
WV Department of  
Environmental Protection

FILED

JUN 10 2013

Natalie E. Tennant  
Secretary of State  
1900 Kanawha Blvd E  
Bldg 1, Suite 157-K  
Charleston, WV 25305



Fenney Barker, Manager  
Corporations Division  
Tel: (304)358-8000  
Fax: (304)358-8381  
Website: www.wvnot.com  
E-mail: business@wvnot.com

APPLICATION FOR  
AMENDED CERTIFICATE  
OF AUTHORITY

Office Hours: Monday - Friday  
8:30 a.m. - 5:00 p.m. ET

FILE ONE ORIGINAL  
(Two if you want a filed  
stamp; copy returned to you)  
FEE: \$25.00

In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby applies for an Amended Certificate of Authority and submits the following statement:

- 1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachia Corporation
- 2. Date Certificate of Authority was issued in West Virginia: 6/28/2009
- 3. Corporate name has been changed to: Antero Resources Corporation  
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- 4. Name the corporation elects to use in WV: Antero Resources Corporation  
(due to home state name not being available)
- 5. Other amendments: \_\_\_\_\_  
(attach additional pages if necessary)

6. Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)

Alwyn A. Schopp (303) 367-7310  
Contact Name Phone Number

7. Signature information (See below *\*Important Legal Notice Regarding Signatures\**):

Print Name of Signer: Alwyn A. Schopp Title/Capacity: Authorized Person  
Signature: [Handwritten Signature] Date: June 10, 2013

*\*Important Legal Notice Regarding Signatures\** For West Virginia Code §31D-1-12b. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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Office of Oil and Gas  
JUL 16 2013  
WV Department of  
Environmental Protection




Crown Unit 1H



Antero Resources Corporation

Crown Unit 1H - AOR



 WELL SYMBOLS  
Gas Well

July 6, 2018

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Office of Oil and Gas

JUL 16 2018

WV Department of  
Environmental Protection



<b>UWI (APINum)</b>	<b>Well Name</b>	<b>Well Number</b>	<b>Operator</b>	<b>Historical Operator</b>
47095013780000	MYERS JAMES	1	RED GAS COMPANY	CHESTERFIELD EN CORP
47095013780001	MYERS	1	APPALACHIAN ENGY DEV	APPALACHIAN ENGY DEV

CROWN UNIT 1H (NEAT PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

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Office of Oil and Gas

JUL 16 2018

W. Virginia Department of  
Environmental Protection



LATITUDE 39°27'30"

5,924'

LATITUDE 39°25'00"

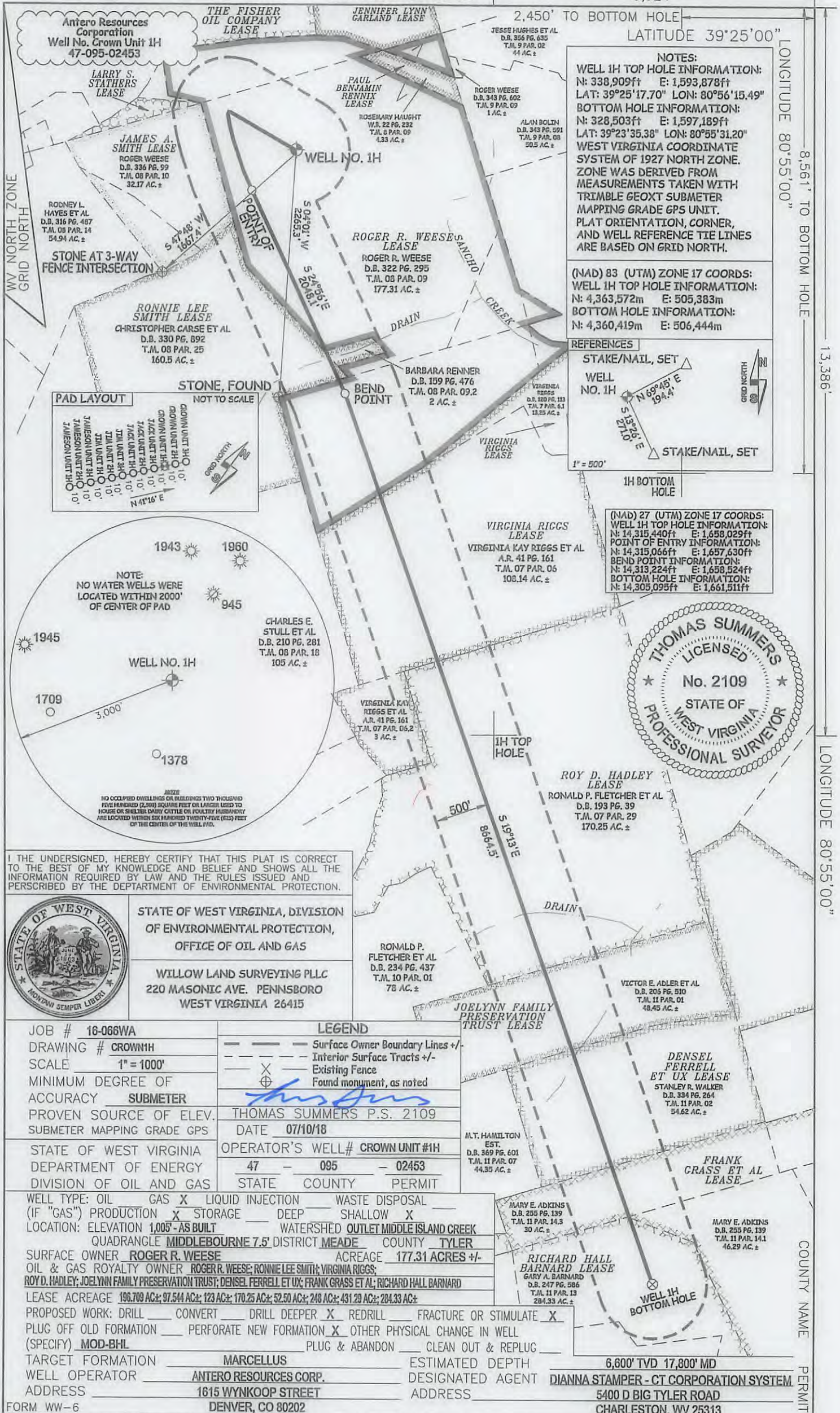
LONGITUDE 80°55'00"

8,561' TO BOTTOM HOLE

LONGITUDE 80°55'00"

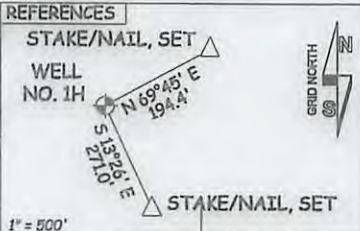
COUNTY NAME

PERMIT

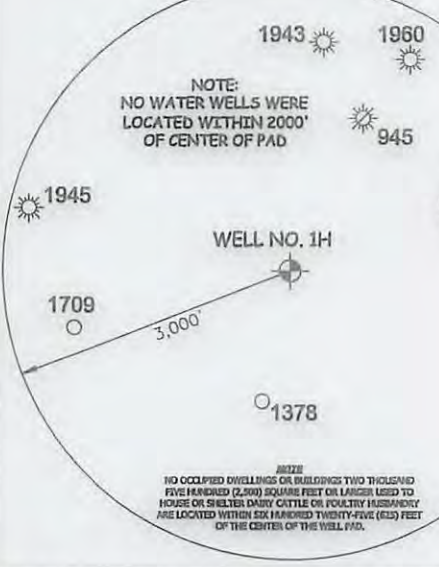
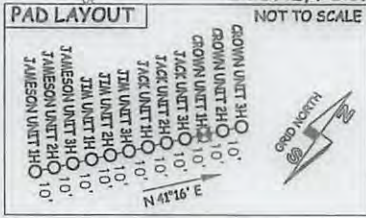
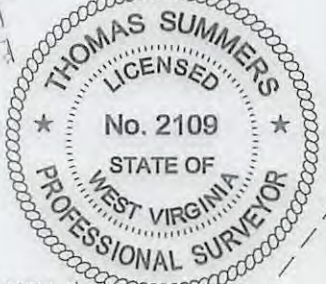


**NOTES:**  
 WELL 1H TOP HOLE INFORMATION:  
 N: 338,909ft E: 1,593,878ft  
 LAT: 39°25'17.70" LON: 80°56'15.49"  
 BOTTOM HOLE INFORMATION:  
 N: 328,503ft E: 1,597,189ft  
 LAT: 39°23'35.38" LON: 80°55'31.20"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS 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: 4,363,572m E: 505,383m  
 BOTTOM HOLE INFORMATION:  
 N: 4,360,419m E: 506,444m



**(NAD) 27 (UTM) ZONE 17 COORDS:**  
 WELL 1H TOP HOLE INFORMATION:  
 N: 14,315,440ft E: 1,658,029ft  
 POINT OF ENTRY INFORMATION:  
 N: 14,315,066ft E: 1,657,630ft  
 BEND POINT INFORMATION:  
 N: 14,313,224ft E: 1,658,524ft  
 BOTTOM HOLE INFORMATION:  
 N: 14,305,095ft E: 1,661,511ft



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

JOB # 16-066WA  
 DRAWING # CROWN1H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. THOMAS SUMMERS P.S. 2109  
 SUBMETER MAPPING GRADE GPS

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

DATE 07/10/18  
 OPERATOR'S WELL# CROWN UNIT #1H  
 47 - 095 - 02453  
 STATE COUNTY PERMIT

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

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
 LOCATION: ELEVATION 1,005' AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK  
 QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT MEADE COUNTY TYLER  
 SURFACE OWNER ROGER R. WEESE ACREAGE 177.31 ACRES +/-  
 OIL & GAS ROYALTY OWNER ROGER R. WEESE; RONNIE LEE SMITH; VIRGINIA RIGGS;  
 ROY D. HADLEY; JOELYNN FAMILY PRESERVATION TRUST; DENSEL FERRELL ET UX; FRANK GRASS ET AL; RICHARD HALL BARNARD  
 LEASE ACREAGE 196.709 AC±; 97.544 AC±; 123 AC±; 170.25 AC±; 52.50 AC±; 248 AC±; 431.29 AC±; 284.33 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 6,600' TVD 17,800' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

M.T. HAMILTON EST. D.B. 369 PG. 601 T.M. 11 PAR. 07 44.35 AC.±

MARY E. ADKINS D.B. 255 PG. 139 T.M. 11 PAR. 14.3 30 AC.±

RICHARD HALL BARNARD LEASE GARY A. BARNARD D.B. 247 PG. 586 T.M. 11 PAR. 13 284.33 AC.±

MARY E. ADKINS D.B. 255 PG. 139 T.M. 11 PAR. 14.1 46.29 AC.±

WELL 1H BOTTOM HOLE







LATITUDE 39°27'30"

5,924'

LATITUDE 39°25'00"

LONGITUDE 80°55'00"

8,561' TO BOTTOM HOLE

13,386'

LONGITUDE 80°55'00"

COUNTY NAME

PERMIT

Antero Resources Corporation  
Well No. Crown Unit 1H  
47-095-02453

THE FISHER OIL COMPANY LEASE

JENNIFER LYNN GARLAND LEASE

JESSE HUGHES ET AL  
D.B. 354 PG. 635  
T.M. 9 PAR. 02  
44 AC. ±

LARRY S. STATHERS LEASE

PAUL BENJAMIN RENNIX LEASE

ROGER WEESE  
D.B. 343 PG. 602  
T.M. 9 PAR. 03  
1 AC. ±

JAMES A. SMITH LEASE

ROGER WEESE  
D.B. 336 PG. 99  
T.M. 08 PAR. 10  
32.17 AC. ±

WELL NO. 1H

ROSEMARY HAUGHT  
W.D. 22 PG. 232  
T.M. 8 PAR. 09  
4.33 AC. ±

ALAN BOLIN  
D.B. 343 PG. 591  
T.M. 9 PAR. 03  
50.5 AC. ±

RODNEY L. HAYES ET AL  
D.B. 316 PG. 487  
T.M. 08 PAR. 14  
54.94 AC. ±

STONE AT 3-WAY FENCE INTERSECTION

RONNIE LEE SMITH LEASE  
CHRISTOPHER CARSE ET AL  
D.B. 330 PG. 892  
T.M. 08 PAR. 25  
160.5 AC. ±

ROGER R. WEESE SANCHEZ LEASE  
ROGER R. WEESE  
D.B. 322 PG. 295  
T.M. 08 PAR. 09  
177.31 AC. ±

DRAIN

BARBARA RENNIX  
D.B. 159 PG. 476  
T.M. 08 PAR. 09.2  
2 AC. ±

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 4,363,572m E: 505,383m  
BOTTOM HOLE INFORMATION:  
N: 4,360,419m E: 506,444m

REFERENCES

STAKE/NAIL, SET

WELL NO. 1H

N 69°45' E

194.4'

S 53°21' E

537.0'

1" = 500'

STAKE/NAIL, SET

1H BOTTOM HOLE

(NAD) 27 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 14,315,440ft E: 1,658,029ft  
POINT OF ENTRY INFORMATION:  
N: 14,315,066ft E: 1,657,630ft  
BEND POINT INFORMATION:  
N: 14,313,224ft E: 1,658,524ft  
BOTTOM HOLE INFORMATION:  
N: 14,305,095ft E: 1,661,511ft

VIRGINIA RIGGS LEASE

VIRGINIA KAY RIGGS ET AL  
A.R. 41 PG. 161  
T.M. 07 PAR. 06  
108.14 AC. ±

NOTE:  
NO WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD

WELL NO. 1H

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.

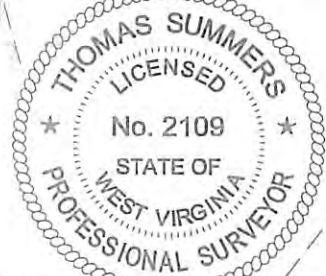
CHARLES E. STULL ET AL  
D.B. 210 PG. 281  
T.M. 08 PAR. 18  
105 AC. ±

VIRGINIA KAY RIGGS ET AL  
A.R. 41 PG. 161  
T.M. 07 PAR. 05.2  
3 AC. ±

1H TOP HOLE

ROY D. HADLEY LEASE

RONALD P. FLETCHER ET AL  
D.B. 193 PG. 39  
T.M. 07 PAR. 29  
170.25 AC. ±



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

RONALD P. FLETCHER ET AL  
D.B. 234 PG. 437  
T.M. 10 PAR. 01  
78 AC. ±

JOE LYNN FAMILY PRESERVATION TRUST LEASE

VICTOR E. ADLER ET AL  
D.B. 206 PG. 510  
T.M. 11 PAR. 01  
48.45 AC. ±

DENSEL FERRELL ET UX LEASE  
STANLEY R. WALKER  
D.B. 334 PG. 264  
T.M. 11 PAR. 02  
34.62 AC. ±

FRANK GRASS ET AL LEASE

M.T. HAMILTON EST.  
D.B. 369 PG. 601  
T.M. 11 PAR. 07  
44.35 AC. ±

MARY E. ADKINS  
D.B. 255 PG. 139  
T.M. 11 PAR. 14.3  
30 AC. ±

RICHARD HALL BARNARD LEASE  
GARY A. BARNARD  
D.B. 247 PG. 586  
T.M. 11 PAR. 13  
284.35 AC. ±

MARY E. ADKINS  
D.B. 255 PG. 139  
T.M. 11 PAR. 14.1  
46.29 AC. ±

WELL 1H BOTTOM HOLE

JOB # 16-066WA  
DRAWING # CROWN1H  
SCALE 1" = 1000'  
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  
THOMAS SUMMERS P.S. 2109  
DATE 07/10/18  
OPERATOR'S WELL# CROWN UNIT #1H  
47 - 095 - 02453  
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
LOCATION: ELEVATION 1,005' - AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK  
QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT MEADE COUNTY TYLER  
SURFACE OWNER ROGER R. WEESE ACREAGE 177.31 ACRES +/-  
OIL & GAS ROYALTY OWNER ROGER R. WEESE; RONNIE LEE SMITH; VIRGINIA RIGGS;  
ROY D. HADLEY; JOE LYNN FAMILY PRESERVATION TRUST; DENSEL FERRELL ET UX; FRANK GRASS ET AL; RICHARD HALL BARNARD  
LEASE ACREAGE 196.709 AC. ±; 97.544 AC. ±; 123 AC. ±; 170.25 AC. ±; 52.50 AC. ±; 248 AC. ±; 431.29 AC. ±; 204.33 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 6,600' TVD 17,800' MD  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

RECEIVED  
Office of Oil and Gas

JUL 16 2018

WV Department of  
Environmental Protection