

#### 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 Jim Justice , Governor Austin Caperton , Cabinet Secretary www.dep.wv.gov

Wednesday, October 04, 2017 WELL WORK PERMIT Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit approval for PETER UNIT 2H

47-017-06867-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: PETER UNIT 2H Farm Name: PHILLIP N. HILL ET AL

U.S. WELL NUMBER: 47-017-06867-00-00

Horizontal 6A / New Drill

Date Issued: 10/4/2017

Promoting a healthy environment.

API Number: 17-06867

## **PERMIT CONDITIONS**

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

#### **CONDITIONS**

- This proposed activity may require permit coverage from the United States Army Corps of Engineers
  (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed
  activity.
- 2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
- 3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
- 4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
- 5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well.
- 6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
- 7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
- 8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
- 9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
- 10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

API Number:	

## **PERMIT CONDITIONS**

047-017-06867

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B (04/15)

API	NO. 47-017				_
	OPERATOR W	ELL	NO.	Peter Unit 2H	
	Well Pad Nar	ne:	Existin	g Lemley Pad	

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

1) Well Operator:	Antero Res	ources Corpora	494507062	017-Doddrig	Grant	Smithburg 7.5'
-			Operator ID	County	District	Quadrangle
2) Operator's Wel	l Number: Pe	ter Unit 2H	Well Pad	Name: Existing	ng Lemley	Pad
3) Farm Name/Su	rface Owner:	Phillip N. Hill, et	al Public Road	d Access: CR-	30	
4) Elevation, curre	ent ground:	1304' El	evation, proposed p	post-construction	on: 1304'	
5) Well Type (a	) Gas X	Oil	Unde	erground Storag	e	
O	ther					
(b	)If Gas Sha	llow X	Deep			
		rizontal X				
6) Existing Pad: Y				SCIN-Leader State		
	39 (2		ipated Thickness at	100		
warcellus Shale	e. 7000 TVD, A		ss- 55 feet, Associa	ileu Fressure- Z	300#	
8) Proposed Total	Vertical Dept					
9) Formation at To	otal Vertical D	epth: Marcellus	<b>i</b>			
10) Proposed Tota	al Measured D	epth: 16300' M	D			
11) Proposed Hori	izontal Leg Le	ength: 8342'				
12) Approximate	Fresh Water S	trata Depths:	291', 345, 366'			
13) Method to De	termine Fresh	Water Depths:	Offset well records. Dep	oths have been adj	usted accord	ing to surface elevations.
14) Approximate	Saltwater Dep	ths: 1460', 1673	', 1700', 1710'			
15) Approximate	Coal Seam De	pths: 980'				
16) Approximate	Depth to Possi	ible Void (coal mi	ine, karst, other):	None Anticipat	ed	Office RECEIVED SEP
17) Does Proposed directly overlying			ms Yes	No	X	SEP 5 2017 Environmental Protection
(a) If Yes, provide	de Mine Info:	Name:				Protection
× 300		Depth:				
		Seam:				
		Owner:				

8/23/17

WW-6B (04/15)

API NO. 47-017\_-

OPERATOR WELL NO. Peter Unit 2H

Well Pad Name: Existing Lemley Pad

#### 18)

#### CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	<u>Grade</u>	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, 218 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	420' *see #19	420' *see #19	CTS, 379 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#	16300'	16300'	3735 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

ТҮРЕ	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"	0.438"	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	Office of CEIVE
Sizes:	N/A	SEP 5 20
Depths Set:	N/A	Environmental protection
		Protection



WW-6B (10/14)

ΔΡΙ	NO	47-017	_

OPERATOR WELL NO. Peter Unit 2H

Well Pad Name: Existing Lemley 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): Existing 27.26 acres
- 22) Area to be disturbed for well pad only, less access road (acres): Existing 4.31 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.

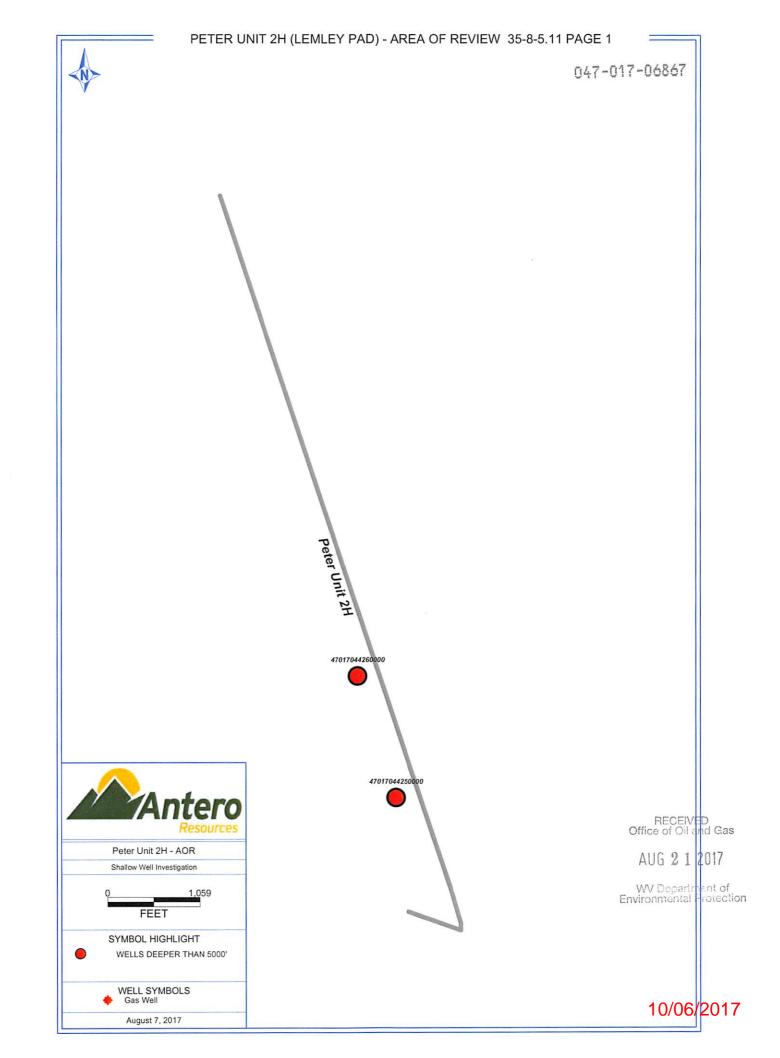
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls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

\*Note: Attach additional sheets as needed.



Page 3 of 3 10/06/2017

nvironmental Proteetion



# PETER UNIT 2H (LEMLEY PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

WI (APINUM)	Well Name	Well Number	Operator	Hist Oper	Ф
47017044250000 GLE	GLENVILLE STATE COLLEGE ALUMNI FOUND	1	BRAXTON O&G CORP	JACK PROD	5718
47017044260000	GLENVILLE STATE COLLEGE ALUMNI FOUND	2	BRAXTON O&G CORP	JACK PROD	5587
ox distance to well	ELEV GR	TD(SSTVD)	Gross Perf	Producing Formation(s)	Producible Formation(s) not perific
261	1250	4468	2194-5558	Big Injun, Bayard, Riley, Benson, Elk	Keener, Big Injun, Weir, Berea, Gordon, Bradfo
243	1185	4402	2178-5528	Big Injun, Bradford, Benson, Elk	

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Ver Di nedrijedi of Sudrammentsi Procedian WW-9 (4/16)

API Number 47 - 017	-
Operator's Well No.	Peter Unit 2H

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

#### FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

	SI OUR MICHAELINI I IM
Operator Name Antero Resources Corporation	OP Code 494507062
Watershed (HUC 10) McElroy Creek	Quadrangle Smithburg 7.5'
Do you anticipate using more than 5,000 bbls of water to cor	mplete the proposed well work? Yes No
Will a pit be used? Yes No No	
	be used at this site (Orilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)
Will a synthetic liner be used in the pit? Yes	No ✓ If so, what ml.? N/A
Proposed Disposal Method For Treated Pit Wastes:	
Reuse (at API Number Future perm	mit Number_*UIC Permit # will be provided on Form WR-34 )  VW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)  Northwestern Landfill Permit #SWF-1025/  WV0109410
Will closed loop system be used? If so, describe: Yes, fluids	
Drilling medium anticipated for this well (vertical and horizo	ontal)? Air, freshwater, oil based, etc.  Surface - Akf-Freshwater, Intermediate - Dust/Stiff Foam, Production - Water Based Mud or Symthetic Based Mud
-If oil based, what type? Synthetic, petroleum, etc	Synthetic
Additives to be used in drilling medium? Please See Attachme	ent
Drill cuttings disposal method? Leave in pit, landfill, remove	ed offsite, etc. Drill cuttings stored in tanks, removed offsite and taken to landfill.
-If left in pit and plan to solidify what medium will b	ne used? (cement, lime, sawdust) N/A
-Landfill or offsite name/permit number?Meadowfill	Landfill (Permit #SWF-1032-98), Northwestern Landfill (Permit # SWF-1025/WV0109410)
Permittee shall provide written notice to the Office of Oil and West Virginia solid waste facility. The notice shall be provide where it was properly disposed.	Gas of any load of drill cuttings or associated waste rejected at any ed within 24 hours of rejection and the permittee shall also disclose
on August 1, 2005, by the Office of Oil and Gas of the West V provisions of the permit are enforceable by law. Violations law or regulation can lead to enforcement action.  I certify under penalty of law that I have personal application form and all attachments thereto and that, bas obtaining the information, I believe that the information is penalties for submitting false information, including the possi	SEP SEP
Company Official (Typed Name) Shawn Donovan	En. W. D. 2017
Company Official Title Environmental Specialist III	
Subscribed and sworn before me this   8th   day of	August, 2017  Notary Public
My commission expires 7/8/202	SHELBY MARIE JOHNSON NOTARY PUBLIC NOTARY PUBLIC STATE OF COLORADO NOTARY ID 20164025050 NY COMMISSION EXPIRES JULY 8, 2020
2/23/M	10/06/2017

Proposed Revegetation Treatme	ent: Acres Disturbed 27.26	existing acres Prevegetation pH	
Lime 2-4	Tons/acre or to correct to pl		
Fertilizer type Hay or	straw or Wood Fiber (will be used	where needed)	
Fertilizer amount 500	1	bs/acre	
Mulch_ 2-3	Tons	/acre	
	(9.01 acres) + Access Road "B" (1.39 acre	es) + Well Pad (4.31 acres) + Truck Turnaround Pad (1. Topsoil Material Stockpiles (5.65 acres) = 27.26 Acres	36 acres) + Centralized
		ed Mixtures	
Temp	orary	Perman	ent
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
See Table 3 for additional see type (	Lemley Pad Design Page 18)	See Table 4a for additional seed type (I	Lemley Pad Design Page 18)
or type of grass seed reque	ested by surface owner	*or type of grass seed reques	ted by surface owner
NOTE: No Essesses			
Attach: Maps(s) of road, location, pit and	will be land applied, include di	eation (unless engineered plans including mensions (L x W x D) of the pit, and d	ng this info have been limensions (L x W), and area in
Attach: Maps(s) of road, location, pit and rovided). If water from the pit water application a creage, of the land application a hotocopied section of involved	d proposed area for land applic will be land applied, include di area	cation (unless engineered plans including	ng this info have been limensions (L x W), and area in
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Attach: Maps(s) of road, location, pit and rovided). If water from the pit vereage, of the land application a hotocopied section of involved lan Approved by:	d proposed area for land applic will be land applied, include di area	cation (unless engineered plans including	limensions (L x W), and area in
Attach: Maps(s) of road, location, pit and rovided). If water from the pit vereage, of the land application a hotocopied section of involved lan Approved by:	d proposed area for land applicate will be land applied, include diarea.  7.5' topographic sheet.	cation (unless engineered plans including	limensions (L x W), and area in

#### Form WW-9 Additives Attachment

#### **SURFACE INTERVAL**

- 1. Fresh Water
- 2. Soap -Foamer AC
- 3. Air

#### **INTERMEDIATE INTERVAL**

#### STIFF FOAM RECIPE:

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 (11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard (9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

#### **PRODUCTION INTERVAL**

- 1. Alpha 1655
  - Salt Inhibitor
- 2. Mil-Carb
  - Calcium Carbonate
- 3. Cottonseed Hulls
  - Cellulose-Cottonseed Pellets LCM
- 4. Mil-Seal
  - Vegetable, Cotton & Cellulose-Based Fiber Blend LCM
- 5. Clay-Trol
  - Amine Acid Complex Shale Stabilizer
- 6. Xan-Plex
  - Viscosifier For Water Based Muds
- 7. Mil-Pac (All Grades)
  - Sodium Carboxymethylcellulose Filtration Control Agent
- 8. New Drill
  - Anionic Polyacrylamide Copolymer Emulsion Shale Stabilizer
- 9. Caustic Soda
  - Sodium Hydroxide Alkalinity Control
- 10. Mil-Lime
  - Calcium Hydroxide Lime
- 11. LD-9
- Polyether Polyol Drilling Fluid Defoamer
- 12. Mil Mica
  - Hydro-Biotite Mica LCM

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WV Department of Environmental Protection 13. Escaid 110

Drilling Fluild Solvent - Aliphatic Hydrocarbon

14. Ligco

Highly Oxidized Leonardite - Filteration Control Agent

15. Super Sweep

Polypropylene - Hole Cleaning Agent

16. Sulfatrol K

Drilling Fluid Additive - Sulfonated Asphalt Residuum

17. Sodium Chloride, Anhydrous

**Inorganic Salt** 

18. D-D

Drilling Detergent - Surfactant

19. Terra-Rate

Organic Surfactant Blend

20. W.O. Defoam

Alcohol-Based Defoamer

21. Perma-Lose HT

Fluid Loss Reducer For Water-Based Muds

22. Xan-Plex D

Polysaccharide Polymer - Drilling Fluid Viscosifier

23. Walnut Shells

Ground Cellulosic Material – Ground Walnut Shells – LCM

24. Mil-Graphite

Natural Graphite - LCM

25. Mil Bar

Barite - Weighting Agent

26. X-Cide 102

Biocide

27. Soda Ash

Sodium Carbonate – Alkalinity Control Agent

28. Clay Trol

Amine Acid complex – Shale Stabilizer

29. Sulfatrol

Sulfonated Asphalt - Shale Control Additive

30. Xanvis

Viscosifier For Water-Based Muds

31. Milstarch

Starch - Fluid Loss Reducer For Water Based Muds

32. Mil-Lube

**Drilling Fluid Lubricant** 

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WV Deportment of Environmental Protection



## 911 Address 3126 Morgans Run Rd West Union, WV 26456

# Well Site Safety Plan **Antero Resources**

Well Name:

Abram Unit 1H-2H, Peter Unit 1H-2H, Milo Unit

2H, Phebe Unit 1H-2H, Trainer Unit 1H-2H,

**Rollins Unit 2H** 

Pad Location: LEMLEY PAD

Doddridge County/Grant District

**GPS Coordinates:** 

Entrance - Lat 39°19'25.08"/Long -80°41'13.18" (NAD83)

Pad Center - Lat 39°19'34.87"/Long -80°40'48.39" (NAD83)

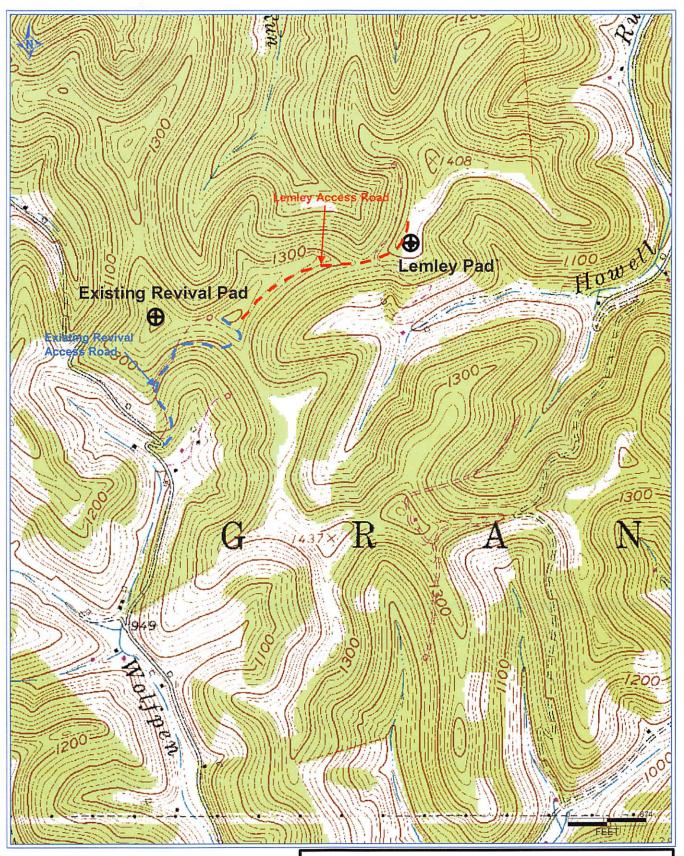
## **Driving Directions:**

From The intersection of US 50 and Interstate 79 near Bridgeport, WV travel west on US 50 approximately 19 miles. Turn right (north) onto Co Rt 9/Tarkiln Run and take the first left (west) toward Co Rt 3/Big Flint Rd. Turn right (north) onto Co Rt 3/Big Flint Rd and travel approximately 7.5 miles. Turn left onto Co Rt 5/Riggins Run Rd and travel south approximately 0.3 miles. Turn left onto Co Rt 30/Israel Fork and continue south approximately 2.5 miles. Turn left onto Main Camp Rd and continue approximately 0.2 miles to location.

#### Alternate Route:

From the intersection of HWY 19 and US-50 near West Union, head east on US-50 for 4.7 miles. Turn left onto Morgans Run/20 and continue for 1.5 miles. Continue straight onto Israels Fork for 1.7 miles. Follow the road up some switch backs, passed the water containment and the pad will be straight ahead.

24 HOUR) CONTACT 1-800-878-1373



Office of Oil and Gas

AUG 2 1 2017

W Department of Environmental Projection

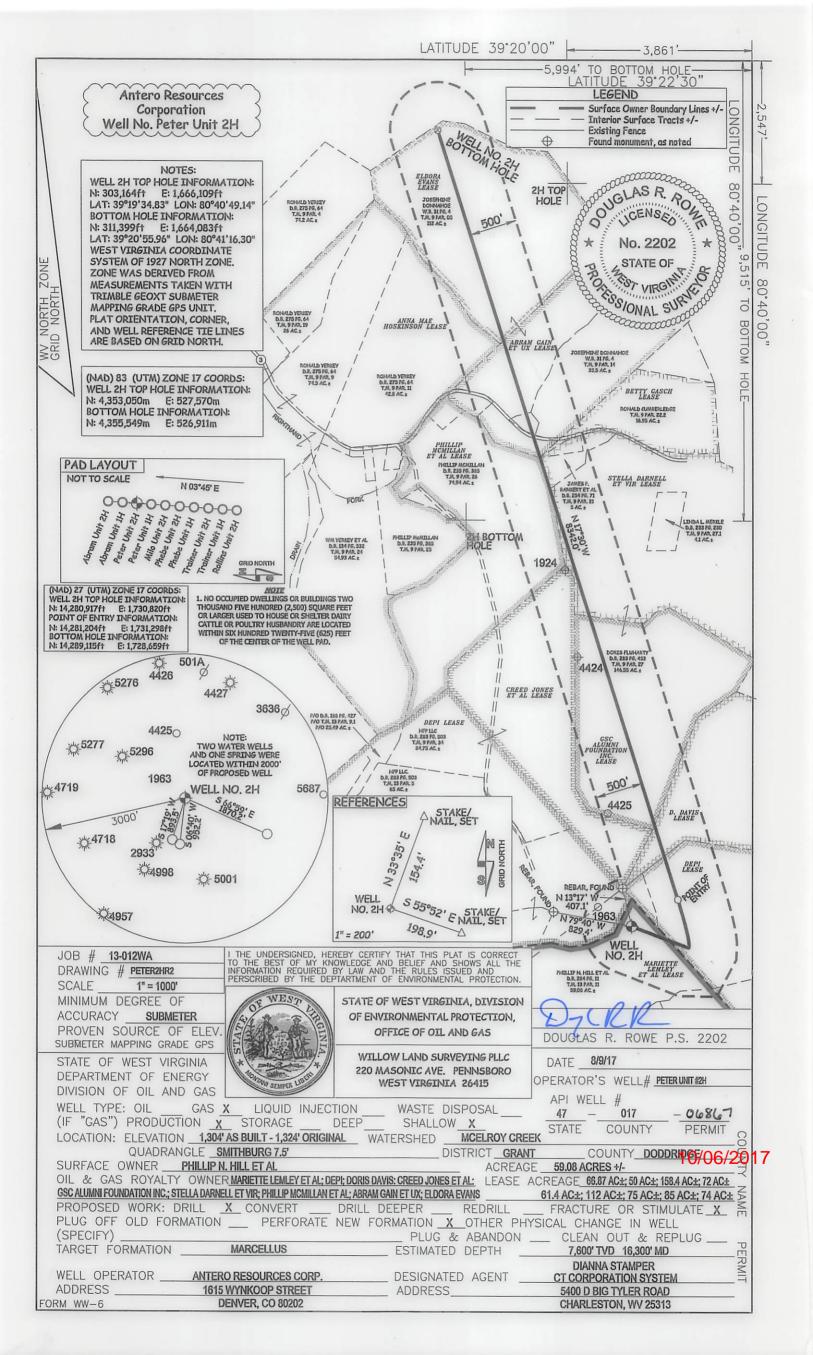
## **Antero Resources Corporation**

Appalachian Basin Peter Unit 2H

**Doddridge County** 

Quadrangle: Smithburg 7.5' Watershed: McElroy Creek

District: Grant Date: 8-04-2014 047-017-068640/06/2017



**Antero Resources Appalachian Corporation** 

#### Operator's Well Number

Peter Unit 2H

# 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
Mariette Lemley, et al Lease			
Mariette Lemley, et al	S&K Land Company	1/8	0114/0075
S&K Land Company	Mert Development, Inc.	Assignment	0115/0110
Mert Development, Inc.	Continental Reserves 1980-E	Assignment	0123/0022
Continental Reserves 1980-E	Appalachian Energy Development Corporation	Assignment	0150/0251
Appalachian Energy Development Corporation	Appalachian Energy Reserves, Inc		Recital in MB 0019/0210
Appalachian Energy Reserves, Inc	Jay Shearer	Assignment	0179/0146
Jay Shearer, individually and as President of Red Gas Company	Clowser Production Company	Assignment	0285/0420
Clowser Production Company	Antero Resources Appalachian Corporation	Assignment RECEIV	ED 0285/0417
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Char@eice of Oil a	and Gas Exhibit 1
DEPI Lease		1/8 AUG 2 1	2017
Dominion Exploration & Production Inc	Dominion Appalachian Development, LLC	1/8 AUG Z I	LD 0230/0410
Dominion Appalachian Development, LLC	Antero Resources Appalachian Corporation	Assignment	LB 0231/0145
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change V Deports Environmental	gent of <b>Exhibit 1</b> Protection
D. Davis Lease			
Deloris Nadine Davis	Jay-Bee Production Company	1/8	0215/0229
Jay-Bee Production Company	Antero Resources Appalachian Corporation	Assignment	301/373
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Creed Jones et al Lease			
Creed Jones et al	Charles A. F. Randolph	1/8	0028/0409
Charles A. F. Randolph	Hope Natural Gas Company	Assignment	0035/0237
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Confirmatory Deed	
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change	Exhibit 2
CNG Transmission Corporation	Dominion Transmission, Inc.	Certificate of Authority	AOI 0058/0362
Dominion Transmission, Inc.	Antero Resources Appalachian Corporation	Partial Assignment of Oil and Gas Lease*	0230/0113
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
GSC Alumni Foundation Inc. Lease			
Glenville State College Alumni Foundation, Inc.	Eastern American Energy Corporation	1/8	0178/0059
Eastern American Energy Corporation	Edward Mullooly	Assignment	0178/0640
Edward Mullooly	S. W. Jack Ventures	Assignment	0182/0054
S. W. Jack Ventures	Jack Production, Inc.	Assignment	0180/0344
Jack Production, Inc.	Mike Ross, Inc.	Assignment	0257/0461
Mike Ross, Inc.	Antero Resources Appalachian Corporation	Partial Assignment of Oil	0267/0401
Antore Becourses Annaleshier Corneration	Autora Banavirana Corporation	and Gas Lease*	Eubibis s
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Stella Darnell et vir Lease Stella Darnell et vir	Hope Natural Gas Company	1/8	0023/0047
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Confirmatory Deed	0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Supply Corporation  Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Supply Corporation  Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change	0230/0113
CNG Transmission Corporation	Dominion Transmission, Inc.	Certificate of Authority	AOI 0058/0362
Dominion Transmission, Inc.	Antero Resources Appalachian Corporation	Partial Assignment of Oil and Gas Lease*	0230/0113

**Antero Resources Corporation** 

Exhibit 1

Name Change

Operator's Well Number

Peter Unit 2H

# 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
Phillip McMillan et al Lease			
Phillip McMillan et al	Emax Oil Company	1/8+	0362/0085
Emax Oil Company	Antero Resources Corporation	Partial Assignment and Bill of Sale	0358/0154
Betty Gasch Lease			
Betty Gasch	Drilling Appalachian Corporation	1/8	0182/0328
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation	Assignment	0262/0600
Antero Resources Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Abram Gain et ux Lease			
Abram Gain et ux	Hope Natural Gas Company	Flat Rate	0023/0046
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Confirmatory DeedRECEIVED Assignmentifice of Oliana	DB 0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation		
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change	Exhibit 2
CNG Transmission Corporation	Dominion Transmission, Inc	Certificate of AuthAtil 2 1 2	
Dominion Transmission, Inc.	Antero Resources Appalachian Corporation	Partial Assignment of Oil	0230/0113
Antero Resources Appalachian Corporation	Antero Resources Corporation	and Gas Lease* Name Changeonmental Pr	ent of otection Exhibit 1
Anna Mae Hoskinson Lease			
Anna Mae Hoskinson	Antero Resources Appalachian Corporation	1/8+	0291/0353
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

<sup>\*</sup>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.

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

WW-6	A1
(5/13)	

Operator's Well No.	Peter Unit 2H
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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:

	Eldora Evans	Antero Resources Corporation	1/8+	0322/0603
Eldora Evans Lease				
Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Lease Name or				

<sup>\*</sup>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

AUG 2 1 2017

WV Department of 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:	Kevin Kilstrom
Its:	Senior Vice President - Production

Page 1 of \_\_\_\_

## FORM WW-6A1 EXHIBIT 1



JUN 1 0 2013

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

FILE ONE ORIGINAL (Two if you want a filed stamped copy returned to you) REE: \$25.00



Penney Barker, Manager
IN THE OFFICE OF Corporations Division
ECRETARY OF STATE Fax: (304)558-8381
Webler: www. uvest con

Website: www.wvsos.com
B-mail: business@wvsos.com

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

OF AUTHORITY. 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: Name under which the corporation was Antero Resources Appalachian Corporation authorized to transact business in WV: 2. Date Certificate of Authority was 6/25/2008 issued in West Virginia: Antero Resources Corporation 3. Corporate name has been changed to: (Attach one Certified Conv of Name Change as filed in home State of incorporation.) Antero Resources Corporation 4. Name the corporation elects to use in WV: (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.) (303) 357-7310 Alwn A. Schopp Contact Name Phone Number 7. Signature information (See below \*Important Legal Notice Regarding Signature): Title/Capacity; Authorized Person Print Name of Signer: Akyn A. Schopp Office of Oil and Gas June 10, 2013 Signature: Date: -AUG 2 1 2017 \*Important Legal Notice Regarding Signature: For West Virginia Code \$311)-1-129. 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 WV Department of Environmental Protection to the secretary of state for filing is guilty of a misdomesnor 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.

listed by the Office of the Secretary of State

W\1012 - 0446/2011 Walters Klumer Ordine

Form CF-4

Revised 4/13

# **EXHIBIT 2**





I. Ken Hechler, - Secretary of State of the State of West Virginia, hereby certify that originals of an application by

#### CONSOLIDATED GAS TRANSMISSION CORPORATION

for an amended certificate of authority to transact business in West Virginia are filed in my office, as required by the provisions of Chapter 31, Article 1, Sections 57 and 59 of the West Virginia Code and conform to law. Therefore, I issue this

#### AMENDED CERTIFICATE OF AUTHORITY

to transact business in West Virginia under the name of

#### CNG TRANSMISSION CORPORATION

and I attach to this certificate a duplicate original of the application.

Given under my hand and the Great Seal of the State of West Virginia, on this \_\_\_\_day of Kon: Theller Sicretary of State.

WW-60 (7-01)

DATE: August 18 , 20 17
OPERATOR'S
WELL NO. Peter Unit 2H

API NO: 47- O17
State County Permit No.

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

#### AFFIDAVIT

State of Colorado
County of Denver
I, Brett Kuhn  (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).
Signed:
Taken, subscribed and sworn to before me this day of RECEIVED Office of Oil and Gas AUG 2 1 2017 Notary Public VV Department of
My Commission expires:    My Commission expires:



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

August 18, 2017

West Virginia Department of Environmental Protection Chief, Office of Oil and Gas Attn: Mr. James Martin 601 57<sup>th</sup> Street SE Charleston, WV 25304

RE:

Peter Unit 2H

Quadrangle: Smithburg 7.5'

Doddridge County/Grant District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Peter Unit 2H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Peter Unit 2H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Brett Kuhi Landman Office of Oil and Gas

AUG 2 1 2017

WV Department of Environmental Protection

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE CERTIFICATION

Date of Notic	e Certification: 08/17/2017	AF	PI No. 47	'- 017 -	
		Op	erator's	Well No. Peter	Unit 2H
		W	ell Pad N	lame: Existing	Lemley Pad
Notice has b	peen given:				
	e provisions in West Virginia Code §	22-6A, the Operator has provide	ed the req	uired parties w	ith the Notice Forms listed
	tract of land as follows:				
State:	West Virginia		sting:	527570m	
County:	Doddridge	No	orthing:	4353050m	
District:	Grant	Public Road Access:		CR-30	
Quadrangle:	Smithburg 7.5'	Generally used farm	name:	Phillip N. Hill, et a	
Watershed:	McElroy Creek				
it has provide information re of giving the requirements Virginia Code	the secretary, shall be verified and sign the owners of the surface described equired by subsections (b) and (c), se surface owner notice of entry to su of subsection (b), section sixteen one § 22-6A-11(b), the applicant shall thave been completed by the applicant	ped in subdivisions (1), (2) and ction sixteen of this article; (ii) the rvey pursuant to subsection (a), f this article were waived in writender proof of and certify to the section.	(4), subs at the red section t iting by	ection (b), sec quirement was en of this artic the surface ow	tion ten of this article, the deemed satisfied as a result cle six-a; or (iii) the notice yner; and Pursuant to West
	West Virginia Code § 22-6A, the Oprator has properly served the require		Notice C	ertification	OOG OFFICE LIST
*PLEASE CHE	ECK ALL THAT APPLY				OOG OFFICE USE ONLY
☐ 1. NO1	TICE OF SEISMIC ACTIVITY or	■ NOTICE NOT REQUIRED SEISMIC ACTIVITY WAS CO			RECEIVED/ NOT REQUIRED
☐ 2. NO	ΠCE OF ENTRY FOR PLAT SURV	EY or 🔳 NO PLAT SURVEY	WAS CO	ONDUCTED	☐ RECEIVED
■ 3. NO	TICE OF INTENT TO DRILL or	NOTICE NOT REQUIRED NOTICE OF ENTRY FOR PLAWAS CONDUCTED or			RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER BY (PLEASE ATTACH)			,
■ 4. NO	TICE OF PLANNED OPERATION		RF	CENED Gas	☑ RECEIVED
■ 5. PUB	BLIC NOTICE			$c$ 9. $L^{CO}$ $\Gamma$	RECEIVED
■ 6. NO	TICE OF APPLICATION		M N	onmental Prote	RECEIVED

#### **Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

#### Certification of Notice is hereby given:

THEREFORE, I Kevin Kilstrom , have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Antero Resources Corporation

Kevin Kilstrom

By: Its: Senior Vice President - Production

Telephone: 303-357-7310 Address: 1615 Wynkoop Street

Denver, CO 80202

Facsimile: 303-357-7315

Email: shjohnson@anteroresources.com

NOTARY SEAL SHELBY MARIE JOHNSON NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20164026060
MY COMMISSION EXPIRES JULY 8, 2020

Notary Public

My Commission Expires

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WW-6A (9-13)

047-017-06867 API NO. 47- 017 -

OPERATOR WELL NO. Peter Unit 2H
Well Pad Name: Existing Lemley Pad

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application. Date of Notice: 8/18/2017 Date Permit Application Filed: 8/18/2017 Notice of: PERMIT FOR ANY ☐ CERTIFICATE OF APPROVAL FOR THE WELL WORK CONSTRUCTION OF AN IMPOUNDMENT OR PIT Delivery method pursuant to West Virginia Code § 22-6A-10(b) ☐ REGISTERED ☑ METHOD OF DELIVERY THAT REQUIRES A ☐ PERSONAL **SERVICE** MAIL RECEIPT OR SIGNATURE CONFIRMATION Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule. RECEIVED Office of Oil and Gas ☐ Application Notice ☐ WSSP Notice ☐ E&S Plan Notice ☐ Well Plat Notice is hereby provided to: AUG 2 1 2017 ☐ COAL OWNER OR LESSEE ☐ SURFACE OWNER(s) Name: NO DECLARATIONS ON RECORD WITH COUNTY Name: PLEASE SEE ATTACHMENT Address: WV Department of Address: Environmental Protection COAL OPERATOR Name: Name: NO DECLARATIONS ON RECORD WITH COUNTY Address: Address: SURFACE OWNER(s) (Road and/or Other Disturbance) WATER PURVEYOR(s)/OWNER(s) OF WATER WELL. Name: PLEASE SEE ATTACHMENT SPRING OR OTHER WATER SUPPLY SOURCE Address: Name: PLEASE SEE ATTACHMENT Address: Name: Address: DOPERATOR OF ANY NATURAL GAS STORAGE FIELD ☐ SURFACE OWNER(s) (Impoundments or Pits) Name: Address: Name: Address: \*Please attach additional forms if necessary

WW-6A (8-13)

RECEIVED Office of Oil and Gas

047-017-06867 API NO. 47- 017

OPERATOR WELL NO. Peter Unit 2H

AUG 2 1 2017

Well Pad Name: Existing Lemley Pad

WV Department of Environmental Protection

#### Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

#### This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting <a href="www.dep.wv.gov/oil-and-gas/pages/default.aspx">www.dep.wv.gov/oil-and-gas/pages/default.aspx</a>.

#### **Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items WW-6A (8-13)

API NO. 47-017

OPERATOR WELL NO. Peter Unit 2H
Well Pad Name: Existing Lemtley Pad

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

#### Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

#### Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

#### Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

#### Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

\*\*RECEIVED\*\*

\*\*RECEIVED\*\*

\*\*Green Collins Comments\*\*

\*\*Chief Collins Coll

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57<sup>th</sup> St. SE
Charleston, WV 25304
(304) 926-0450

AUG 2 1 2017

WW Department of Environmental Protection

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

API NO. 47- 017

OPERATOR WELL NO. Peter Unit 2H

Well Pad Name: Existing Lemley Pad

#### Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

#### **Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <a href="http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx">http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx</a> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

#### **Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Office of Oil and Gas

AUG 2 1 2017

WV Department of Environmental Protection

WW-6A (8-13)

API NO. 47-017

OPERATOR WELL NO. Peter Unit 2H

Well Pad Name: Existing Lemley Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation

Telephone: (303) 357-7310 Email: shjohnson@anteroresources.com Address: 1615 Wynkoop Street

Denver, CO 80202

Facsimile: 303-357-7315

#### Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

SHELBY MARIE JOHNSON NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20164026060
MY COMMISSION EXPIRES JULY 8, 2020 Subscribed and sworn before me this 18th day of Avgvst

047-017-06867

My Commission Expires

AUG 2 1 2017 WV Department of Environmental Protection

#### WW-6A Notice of Application Attachment (LEMLEY PAD - Peter Unit 2H):

List of Surface Owner(s) with Proposed Disturbance associated with Lemley Well Pad:

WELL PAD – These owners were notified of all well work permit applications, and have executed signed Surface Use Agreements with Antero Resources Corporation.

**TM 13 PCL 5** 

Owner:
Address:

HFP LLC / PO Box 418

Kenova, WV 25530

TM 13 PCL 11, 11.2, 35

Owner:

Brian D. Lemley & Christy M. Lemaster

Address:

1105 20<sup>th</sup> St.

Vienna, WV 26105

Owner:

Rick A. Lemaster & Christy M. Lemaster /

Address:

1305 18th St.

Vienna, WV 26105

Owner: Address: Jefferey D. Hill / 35 Timberland Dr.

Parkersburg, WV 26104

Owner:

Craig A. Hill

Address: 15 James Ct.

Parkersburg, WV 26105

Owner:
Address:

Phillip N. Hill 7 3509 11th Ave.

Vienna, WV 26105

Owner:

Phillip N. Hill (2<sup>nd</sup> Address)

Address:

35 Timberland Dr.

Parkersburg, WV 26104

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Environmental Protection

#### ROAD AND/OR OTHER DISTURBANCE

TM 13 PCL 11, 35, 11.2

Owner:

Brian D. Lemley & Christy M. Lemaster

Address:

1105 20<sup>th</sup> St.

Vienna, WV 26105

Owner:

Rick A. Lemaster & Christy M. Lemaster

Address:

1305 18<sup>th</sup> St.

Vienna, WV 26105

Owner:

Jefferey D. Hill

Address:

35 Timberland Dr.

Parkersburg, WV 26104

Owner:

Craig A. Hill

Address:

15 James Ct.

Parkersburg, WV 26104

\*Please note the additional surface tracts with disturbance shown on the pad design are NOT overlying the Oil & Gas leasehold being developed by the proposed well; therefore, are not required to be notified per WV Code 22-6A-10.

#### WW-6A Notice of Application Attachment (LEMLEY PAD – Peter Unit 2H) continued:

#### ROAD AND/OR OTHER DISTURBANCE CONT.

Owner:

Phillip N. Hill 3509 11<sup>th</sup> Ave.

Address:

Vienna, WV 26105

Owner:

Phillip N. Hill (2<sup>nd</sup> Address)

Address:

35 Timberland Dr.

Parkersburg, WV 26104

#### WATER SOURCE OWNERS

2 wells: 893.5' and 952.2'

Owner:

Brian D. Lemley & Christy M.

LeMaster

Address:

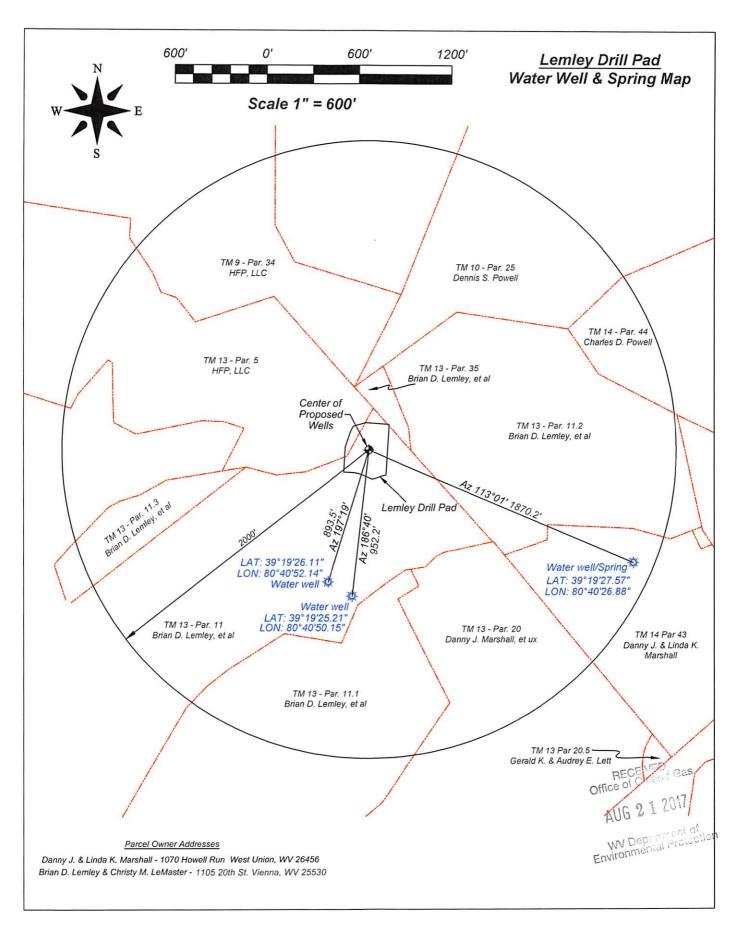
1105 20<sup>th</sup> St.

Vienna, WV 25330

\*Please note there is one additional water source located on the attached map, however it is located greater than 1500' from the proposed well location

> RECEIVED Office of Oil and Gas AUG 2 1 2017

WW Department of Environmental Protection



Operator Well No. Peter Unit 2H

Multiple Wells on Lemley Pad

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Date of Noti	Requirement: Notice shall be ce: 11/30/2016	provided at least TEN (10) days prior to filing a Date Permit Application Filed: 08/18/2017	permit application.
Delivery me	thod pursuant to West Virgin	ia Code § 22-6A-16(b)	
☐ HAND	■ CERTIFIED N	4411	
DELIV		CEIPT REQUESTED	
DELIV	EKI KETUKN KE	CEIFT REQUESTED	
receipt reque drilling a hor of this subsection m	sted or hand delivery, give the rizontal well: <i>Provided</i> , That notion as of the date the notice way be waived in writing by the	east ten days prior to filing a permit application, surface owner notice of its intent to enter upon the otice given pursuant to subsection (a), section te as provided to the surface owner: <i>Provided, how</i> surface owner. The notice, if required, shall included in mail address of the operator and the operator	ne surface owner's land for the purpose of n of this article satisfies the requirements never, That the notice requirements of this nude the name, address, telephone number,
	ereby provided to the SURI	3.7	
	ASE SEE ATTACHED	Name:	
Address:		Address:	
State: County: District:	West Virginia Doddridge Grant		544072.46m (Approximate Pad Center) 4339285.77m (Approximate Pad Center) CR-30
Quadrangle:	Smithburg 7.5'	0.00 1 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 1	Phillip N. Hill, et al
Watershed:	McElroy Creek	Generally used farm name.	Filmip N. Film, et al
Pursuant to facsimile nur related to ho	mber and electronic mail addre	16(b), this notice shall include the name, address of the operator and the operator's authorized from the Secretary, at the WV Department of V 25304 (304-926-0450) or by visiting <a href="https://www.de.gov.net/www.de.gov.net/">www.de.gov.net/www.de.gov.net/</a>	d representative. Additional information f Environmental Protection headquarters,
			3.11.4.3.22.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.
Notice is he	reby given by:	Andharia I Dannardai	ALIC 9 1 2017
Notice is he Well Operato	Antero Resources Appalachian Cor	•	Kara Quackenbush AUG 2 1 2017
Notice is he	Antero Resources Appalachian Cor 1615 Wynkoop St.	Authorized Representative: Address:	Kara Quackenbush AUG 2 1 2017 1615 Wynkoop St.
Notice is he Well Operato Address:	Antero Resources Appalachian Cor 1615 Wynkoop St. Denver, CO 80202	Address:	Kara Quackenbush AUG 2 1 2017  1615 Wynkoop St.  Denver, CO 80202 Finvironmental Protection
Notice is he Well Operato Address:	Antero Resources Appalachian Cor 1615 Wynkoop St. Denver, CO 80202 303-357-7323	Address:  Telephone:	Kara Quackenbush AUG 2 1 2017  1615 Wynkoop St.  Denver, CO 80202 Environmental Protection 303-357-7323
Notice is he Well Operato Address:	Antero Resources Appalachian Cor 1615 Wynkoop St. Denver, CO 80202	Address:  Telephone:	Kara Quackenbush AUG 2 1 2017  1615 Wynkoop St.  Denver, CO 80202

#### Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at <a href="deprivacyofficer@wv.gov">deprivacyofficer@wv.gov</a>.

## WW-6A4 Notice of Intent to Drill Attachment:

#### **Surface Owners:**

Tax Parcel ID: 13-5

Owner: HFP LLC Address: PO Box 418

Kenova, WV 25530

#### **Surface Owners:**

Tax Parcel ID: 13-11, 11.2, 35

Owner: Brian D. Lemley & Christy M.

Lemaster

**Address:** 1105 20<sup>th</sup> St.

Vienna, WV 26105

Owner: Jefferey D. Hill Address: 35 Timberland Dr.

Parkersburg, WV 26104

Owner: Craig A. Hill Address: 15 James Ct.

Parkersburg, WV 26104

Owner: Phillip N. Hill Address: 3509 11<sup>th</sup> Ave.

Vienna, WV 26105

WW-6A5 (1/12)

Operator Well No. Peter Unit 2H

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF PLANNED OPERATION

Notice Date of	Time F f Notice	Requirement: notice shall	be provided no Date Permit A	o later than the filin pplication Filed: 0	g date of permi	t application.
Deliver	ry meth	od pursuant to West Vi	ginia Code § 3	22-6A-16(c)		
		ED MAIL N RECEIPT REQUESTE	D	HAND DELIVERY		
the plair required drilling damage	nned op d to be p of a ho es to the notices	eration. The notice requested or hand delivery eration. The notice requestroyided by subsection (borizontal well; and (3) A surface affected by oil and	f, give the surfa lired by this su ), section ten of proposed surfa d gas operation	to the extent the course to the course owner whose large the course of the course owner are to the course of the c	d will be used for ude: (1) A copy face owner who usation agreement amages are com	ication, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the nt containing an offer of compensation for pensable under article six-b of this chapter. sted in the records of the sheriff at the time
(at the a Name:	ddress l	y provided to the SURF isted in the records of the SEE ATTACHMENT	sheriff at the t	ime of notice): Name:	s:	
Pursuan operation State: County: District:	on on th	e surface owner's land fo Vest Virginia Doddridge Grant	r the purpose of	f drilling a horizont  UTM NAD  Public Road	Easting: Northing: Access:	well operator has developed a planned ct of land as follows:  527570m  4353050m  CR-30
Quadrar Watersh		mithburg 7.5'		Generally us	ed farm name:	Phillip N. Hill, et al
Pursuan to be pr horizont surface a informat	t to West rovided tal well; affected tion relations, lo	by W. Va. Code § 22-6 and (3) A proposed surfa- by oil and gas operation atted to horizontal drilling acated at 601 57 <sup>th</sup> Street.	A-10(b) to a sunce use and consist to the extent arms be obtain	urface owner whos mpensation agreement the damages are control the secret med from the sec	e land will be un t containing an compensable und	code section; (2) The information required used in conjunction with the drilling of a offer of compensation for damages to the er article six-b of this chapter. Additional Department of Environmental Protection or by visiting <a href="https://www.dep.wv.gov/oil-and-">www.dep.wv.gov/oil-and-</a>
Well Op	erator:	Antero Resources Corporation		Address:	1615 Wynkoop Stree	et.
Telepho	ne:	(303) 357-7310			Denver, CO 80202	
Email:		shjohnson@anteroresources.com		Facsimile:	303-357-7315	
	Gas Pr	ivacy Notice:	11.0			

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at <a href="deprivacyofficer@wv.gov">deprivacyofficer@wv.gov</a>.



## 047-017-06867

## WW-6A5 Notice of Planned Operation Attachment (LEMLEY PAD):

#### List of Surface Owner(s):

**TM 13 PCL 5** 

Owner:

HFP, LLC

Address:

PO Box 418

Kenova, WV 25530

TM 13 PCL 11, 11.2, 35

Owner:

Brian D. Lemley & Christy M. Lemaster

Address:

1105 20<sup>th</sup> St.

Vienna, WV 26105

Owner:

Rick A. Lemaster & Christy M. Lemaster

Address:

1305 18th St.

Vienna, WV 26105

Owner: Address: Jefferey D. Hill 35 Timberland Dr.

Parkersburg, WV 26104

Owner:

Craig A. Hill 15 James Ct.

Address:

Parkersburg, WV 26105

Owner: Address:

Phillip N. Hill 3509 11<sup>th</sup> Ave.

Vienna, WV 26105

Owner:

Phillip N. Hill (2<sup>nd</sup> Address)

Address:

35 Timberland Dr.

Parkersburg, WV 26104

Office of Change Gas AUG 2 1 2017 10/06/2017



#### WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

## **Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110 Charleston, West Virginia 25305-0430 • (304) 558-3505

Thomas J. Smith, P. E. Secretary of Transportation/ Commissioner of Highways

Jim Justice Governor

Reissued July 31, 2017

James A. Martin, Chief Office of Oil and Gas Department of Environmental Protection 601 57<sup>th</sup> Street, SE Charleston, WV 25304

Subject: DOH Permit for the Lemley Pad, Doddridge County
Peter Unit 2H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2013-0425 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Doddridge County Route 30 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.

Regional Maintenance Engineer Central Office O&G Coordinator

Cc: Shelby Johnson

Antero Resources Corporation

CH, OM, D-4

File

Office of Oil and Gas

AUG 2 1 2017

# List of Anticipated Additives Used for Fracturing or Stimulating Well 047-017-06867

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	Proprietary
Anionic polymer	Proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	Proprietary
Demulsifier Base	Proprietary
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
Guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	Proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamthylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8 R
Coco amine	68603-67-8 Pi 61791-14-8 Of <sup>ri</sup> C <sup>®</sup>
2-Propyn-1-olcompound with methyloxirane	38172-91-7 A\\

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10/06/2017

ACCESS BOAD ENTRANCE ACCESS ROAD ENTRANCE LATITUDE: 39.323633 LONGITUDE: -80.686993 (NAD 83) N 4352738.19 E 526979.95 (UTM ZONE 17 METERS)

CENTROID OF IMPOUNDMENT
LATITUDE: 39.324698 LONGITUDE: -80.686529 (NAD 83)
N 4352856.57 E 527019.53 (UTM ZONE 17 METERS)

CENTROID OF WELL LATITUDE: 39.328353 LONGITUDE: -80.680107 (NAD 83) N 4353042.18 E 527572.42 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION

THE WELL PAD, CENTRALIZED FRESHWATER IMPOUNDMENT AND ACCESS ROAD(S) HAVE BEEN CONSTRUCTED TO AND IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTE

THE SITE IS LOCATED IN FLOODZONE "X" PER FEMA FLOOD MAPS #54017C0135C & #54017C0130C

GEOTECHNICAL NOTE
A SUBSURFACE INVESTIGATION OF THE SITE WAS PERFORMED BY TERRA TESTING, INC UNDER THE
SUPERVISION OF REINFACEMENT DECEMBER 4, 2013 - LANUARY 24, 2014. THE REPORT
ESCALATE OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN
THIS REPORT WAS USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE
INVESTIGATION REPORT BY KLEMPELDER FOR ADDITIONAL INFORMATION. AS NEEDED.

ENVIRONMENTAL NOTES

ENVIRONMENTAL NOTES 
WETHAND RELIARATIONS WERE PRIFORMED ON DECEMBER 03, 2012, JANUARY 10 2013, & JUNE 4, 2013 BY 
ALISTAN RECOLORY, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE 
REGULATIONY PRIVETE OF THE LUS, AMEN' CORPS OF EMORREES (URLEAS) MANJOR ITS WEST VERSIONAL 
DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE JUNE 05, 2013 STREAM & WETLAND DELINEATION 
NEXT MAY WAS PREVAMED BY ALLITHAN RECOLORY, LLC AND SUMMARIZES THE RESULTS OF THE FIELD 
DELINEATION. THE EXHIBIT DOES NOT, IN MAY WAY, REPRESENT A JUNESDICTIONAL DETERMINATION OF THE 
LAMPAGIAL LINES OF WATERS AND WETLANDS WHICH MAY BE RECULATED BY THE USAGE 08 THE WYDEP.

ENGINEER/SURVEYOR: NAVITUS ENGINEERING, INC. CYRUS S. KUMP, PE - PROJECT MANAGER/ENGINEER

ENVIRONMENTAL:

GEOTECHNICAL:

MANAGER/ENGINEER OFFICE: (888) 662-4185 CELL: (540) 686-6747

ALLSTAR ECOLOGY
RYAN WARD - ENVIRONMENTAL SPECIALIST
OFFICE: (304) 692-7477

OFFICE: (724) 772-7072 CELL: (704) 400-1103

IA D FREGOSI-ENGINEER

#### PROJECT CONTACTS

OPERATOR: ANTERO RESOURCES CORPORATION ANTERO RESOURCES CON 535 WHITE OAKS BLVD. BRIDGEPORT, WV 26330 PHONE: (304) 842-4100 FAX: (304) 842-4102

ELI WAGONER - ENVIRONMENTAL ENGINEER OFFICE: (304) 842-4068 CELL: (304) 476-9770 JOHN KAWCAK - OPERATIONS SUPERINTENDENT CELL: (817) 368-1553

CHRIS BROWN - WATER RESOURCES

OFFICE: (304) 842-4367 CELL: (304) 877-8233 SHAWN BENNETT - CONSTRUCTION SUPERVISOR OFFICE: (304) 842-4341 CELL: (304) 641-0071

ROBERT B. WIRKS - FIELD ENGINEER OFFICE: (304) 842-4100 CELL: (304) 627-7405

MARK JOHNSON - SURVEYING COORDINATOR

WARK HUTSON - LAND AGENT

CELL: (304) 669-8315

- RESTRICTIONS NOTES:

  1. THERE ARE NO PERENNIAL STREAMS, WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FERT OF THE CENTRALIZED FRESHWATER IMPOUNDMENT AND LOD.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE CENTRALIZED FRESHWATER IMPOUNDMENT AND LOD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE CENTRALIZED FRESHWATER IMPOUNDMENT AND LOD.
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE CENTRALIZED FRESHWATER IMPOUNDMENT.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE CENTRALIZED FRESHWATER IMPOUNDMENT.

Proposed Well Name	WV North NAD 27	WW North NAD 83	UTM (METERS) Zone 17	NAD 83 Lat & Long
Abram	N 303183.78	N 303219.85	N 4353056 37	LAT 39-19-35 3332
Unit 2H	E 1666110 D7	E 1634069 09	E 527569 BO	LONG -80-40-48-4886
Abram	N 303173.50	N 303209.88	N 4353063.32	LAT 39-19-35 2345
Unit 1H	E 1586109 42	E 1634668 44	E 527569.75	LDNG -80-40-48 4962
Peter	N 203163.52	N 302160 90	N 4353050 28	LAT 39-19-35 1358
Unit 2H	E 1555106.75	E 1634667.78	E 527569 60	LONG -80-40-48 5019
Feter Unit 1H	N 303153.55	N 303169 92	N 4353047.24	LAT 39-19-35 CS71
47-017-06570	E 1586108 11	E 1634667.13	E 527569.45	LONG -80-40-48 5085
Mile Unit 2H	N 303143.57	N 302179.94	N 4353044 19	LAT 39-19-34 9384
47-017-06569	E. 1556107 45	E 1634066 45	E 527509 31	LONG -80-40-48 5152
Phebe	N 303133.50	N 303169.97	N 4353041.15	LAT 39-19-34 8397
Unit 2H	E 1886106 80	E 1634065.62	E 527569 15	LONG -80-40-48.5218
Phebe	N 303123.91	N 303159.99	N 4353038.11	LAT 39-19-31.7409
Unit 1H	E 1666106 15	E 1634665 17	E 527569 01	LONG -80-40-48 5285
Trainer	N 303113.93	N 303159.01	N 4353035.06	LAT 39-19-34 6422
Unit 2H	E 150010549	E 1634064.51	E 527568.85	LONG -80-40-48 5352
Trainer	N 303103.16	N 303140.03	N 4363032.02	LAT 39-19-34 5435
Unit 1H	E 1656104 84	E 1634663 86	E 527568 71	LONG -80-40-48 5418
Rollins Unit 2H	N 303093.97	N 303130.05	N 4353028.96	LAT 39-19-34 4445
47-017-06571	E 1600104 18	E 1634063.21	E 527568.50	LONG 80-40-48-5485

### LEMLEY WELL PAD & CENTRALIZED FRESHWATER IMPOUNDMENT

#### AS-BUILT AND EROSION & SEDIMENT CONTROL IMPROVEMENT PLAN ACCEPTED AS-BUILT

GRANT DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA FLINT RUN & WOLFPEN RUN WATERSHEDS

USGS 7.5 SMITHBURG QUAD MAPS



WEST VIRGINIA COUNTY MAP



AS—BUILT CERTIFICATION:
THE DIMANINGS, CONSTRUCTION NOTES, AND
REFERENCE DIAGRAMS ATTACHED HERRTO HAVE
BEEN PERPARED IN ACCORDANCE WITH THE
WEST VIRGINA, CODE OF STATE RULES, DIVISION
OF ENVIRONMENTAL PROTECTION, OFFICE OF OL.
AND GAS 136-4-21, 122-48, & CRS 35-6.



MISS Utility of West Virginia 1-800-245-4848 West Virginia State Law (Section XIV: Chapter 24-C) Requires that you call two business days before you dig in the state of West Virginia. IT'S THE LAW!!

#### SHEET INDEX

- 1 COVER SHEET
- 2 LEGEND
- 3 OVERALL PLAN SHEET INDEX
- ACCESS ROAD & CENTRALIZED FRESHWATER IMPOUNDMENT AS-BUILT PLAN
- 5 ACCESS ROAD AS-BUILT PLAN
- 6 ACCESS DOAD & WELL DAD AS-BUILT DIAN
- 7 ACCESS ROAD AS-BUILT PROFILES
- 8 WELL PAD AS-BUILT SECTIONS
- 9 CENTRALIZED FRESHWATER IMPOUNDMENT

10 - CONSTRUCTION DETAILS

APPENDIX - REVIVAL ACCESS ROAD AS-BUILT (BY OTHERS)

LEMLEY LIMITS OF DISTURBANCE	AREA (AC)
Total Site	
Access Road "A" (2,195")	9.01
Access Road "B" (737)	1.39
Wel Pad	4.31
Truck Turnaround Pad	1.36
Certralized Impoundment	5.54
Excess/Topsoil Material Stockpiles	5.65
Total Affected Area	27.26
Total Wooded Acres Disturbed	22.64
Impacts to Mt. Salem Revival Grounds	Inc. TM 13-10
Access Road "A" (62")	0.24
Centralized Impoundment	0.16
Total Affected Area	0.40
Total Wooded Acres Disturbed	0.39
impacts to Mt. Salem Revival Grounds,	Inc. TM 13-10.
Access Road "A" (296)	1.21
Truck Turneround Pad	1.30
Certralized Impoundment	4.18
Total Affected Area	6.59
Total Wooded Acres Disturbed	5.63
Impacts to Jeffery D. Hill & Craig A. H	III TM 13-11.3
Access Road "A" (1021')	3.76
Truck Turnaround Pad	0.06
Centralized Impoundment	1.20
Total Affected Area	5.02
Total Wooded Acres Disturbed	5.02

Impacts to Jeffery D. Hill & Craig A. H	(III TM 13-1
Access Road "A" (583')	2.11
Access Road "B" (169')	0.32
Well Pad	2.89
Excess/Topsoil Material Stockpiles	0.57
Total Affected Area	5.89
Total Wooded Acres Disturbed	4.45
Impacts to Jeffery D. & Craig A. Hill	TM 13-35
Access Road "A" (103")	0.12
Access Road "B" (118")	0.14
Well Pad	1.07
Total Affected Area	1.33
Total Wooded Acres Disturbed	1,17
Impacts to HFP, LLC, TM 1:	3-5
Access Road "A" (130')	1.57
Access Road "B" (202')	0.52
Wel Pad	80.0
Total Affected Area	2.17
Total Wooded Acres Disturbed	2.17
Impacts to Jeffery D. & Craig A. Hill	TM 13-11.2
Access Road "B" (248")	0.41
Well Pad	0.27
Excess/Topsoil Material Stockpiles	5.08
Total Affected Area	5.76
Total Wooded Acres Disturbed	3.80

WVDEP OOG

VA 3/30/2017

- NOTES:

  1. DURING INITIAL FILLING OF THE IMPOUNDMENT, VISUAL INSPECTION OF THE SURROUNDING EMANAGEMENT SLOPES WILL BE PREFORMED BY FIELD PERSONNEL FOR EVERY 2 FERT OF DEFINING EMANAGEMENT STORAGE ST
- ALL BUYS WIST REMAIN IN PLACE AND PUNCTIONAL UNTIL ALL AREAS WITHIN THE LIBIT OF DISTRIBUTION, AIR COMPLETE AND PERMANENTHY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL REGISION AND SEDIMENT CONTROLS ATTER EACH ROWNEY EVENT IN EXCESS OF 0.5" AND 0.4 A BUYEREAUY BASES.
- THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHENT OF PINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRODE. FINAL STABILIZATION MARSS HATA ALL SOLD-DISTURBING ACTIVITIES ARE COMPLETED. AND THAT STHER A PERSANAENT VECKTATIVE COVER WITH A DESIST! OF YOU'VE GREATER HAS BEEN STABILIZED OF THAT THE SURVECE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAYMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70TE REQUIREMENT REPERS TO THE TOTAL AREA VECKTATED AND NOT JUST A PERCENT OF THE SITE.
- ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WYDEP.
- ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.

- NOTES:

  1. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE
  THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE
  THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED REFLECTING TO THE
  FINAL GRADING OF THE WELL PAD AREA AS OF JANUARY 28, 2015 NAUTUS ENGINEERING IS NOT
  REFFORMED TOWN ANY CARGOS MADE TO THE SITE ATTER THE ARMYE METHORY DATA

  OF THE STREAM OF THE STREAM
- THE EXISTING EGRESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.



DATE: 02/03/2015 SCALE: AS SHOWN

S ENGINEERING



THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

CENTRALIZED FRESHWATER SHEET LEMLEY COVER :

