

#### 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, June 28, 2017 WELL WORK PERMIT Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION (A) 1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for LASER UNIT 3H

47-017-06830-00-00

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: LASER UNIT 3H.

Farm Name: WYCKOFF, GEORGE S. U.S. WELL NUMBER: 47-017-06830-00-00

Horizontal 6A / New Drill

Date Issued: 6/27/2017

Promoting a healthy environment.

API Number:	
API Number:	

### PERMIT CONDITIONS 0 4 7 0 6 8 7 0

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**

- 1. 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 shall be flow tested by the operator upon request of the drinking well owner prior to operating 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 4701700030

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.

#### 4701706830



March 31, 2017

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

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

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following applications for a new well work permit to explore for Marcellus Shale potential. Our **Canton** project is located in Doddridge County, WV. On the **new George Scott Pad** consists **one new horizontal** shallow well (Laser Unit 3H) that we are requesting approval to drill.

Attached you will find the following:

- Permit Application package
- > CD with copy of permit application

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

Thank you in advance for your consideration.

Sincerely,

Shelby Johnson Permitting Agent

Antero Resources Corporation

Enclosures

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WV Department of Environmental Protection

API NO. 47-017 -	
OPERATOR WELL NO.	Laser Unit 3H

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

#### VOLUNTARY STATEMENT OF NO OBJECTION

#### Instructions to Persons Named on Page WW-6A

Headwaters Middle Island Creek

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

#### **Comment and Waiver Provisions**

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: Provided, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

#### , hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through , including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows: State: West Virginia Easting: 522988m UTM NAD 83 County: Doddridge Northing: 4350947m District: West Union Public Road Access: Smithton Rd (Old US-50) Quadrangle: Smithburg 7.5' Generally used farm name: George S. Wyckoff

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON		
☐ SURFACE OWNER	Signature:		
☐ SURFACE OWNER (Road and/or Other Disturbance)	Print Name:		
☐ SURFACE OWNER (Impoundments/Pits)	EOD EVECUTION BY A CORPORATION	ON ETC	
☐ COAL OWNER OR LESSEE	FOR EXECUTION BY A CORPORATION COMPANY: RECEIVED	ON, ETC.	
☐ COAL OPERATOR	By: Office of Oil and	d Gas	
☐ WATER PURVEYOR	Signature: APR 0 3 201	17	
☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Date: RECEIVE	) J	

Oil and Gas Privacy Notice:

Watershed:

Environmental Protection 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. Erivironmental

WW-6B (04/15) API NO. 47-017 - 06830

OPERATOR WELL NO. Laser Unit 3H

Well Pad Name: George Scott Pad

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

1) Well Operator: Antero Res	sources Corporal 494	4507062	017 - Doddri	West Upi	Smithburg 7.5'
	Or	erator ID	County	District	Quadrangle
2) Operator's Well Number: La	iser Unit 3H	Well Pad	Name: Georg	ge Scott Pa	ad
3) Farm Name/Surface Owner:	George S. Wyckoff	_ Public Road	d Access: Smi	thton Rd (	Old US-50)
4) Elevation, current ground:	~1315' Elevation	on, proposed r	ost-construction	on: 1283'	
5) Well Type (a) Gas X	Oil	Unde	rground Storag	ge	
Other		- 0 A 7	0353	0	
(b)If Gas Sha	allow X	Deep _			
Hor	rizontal X	_			
6) Existing Pad: Yes or No No					
<ol> <li>Proposed Target Formation(s Marcellus Shale: 7600' TVD, A</li> </ol>	), Depth(s), Anticipated inticipated Thickness- 5	d Thickness and 5 feet, Associat	nd Expected Protected Protected Pressure- 2	essure(s): 950#	
8) Proposed Total Vertical Dept	h: 7600' TVD				
9) Formation at Total Vertical D	epth: Marcellus				
10) Proposed Total Measured D	epth: 19200' MD				
11) Proposed Horizontal Leg Le	ngth: 11162'				
12) Approximate Fresh Water St	trata Depths: 128	', 328', 433'			
13) Method to Determine Fresh	Water Depths: Offset v	vell records. Dept	hs have been adj	usted accordin	ng to surface elevations.
14) Approximate Saltwater Dept	hs: 596', 1504', 1750				
15) Approximate Coal Seam Dep	pths: 450'				
16) Approximate Depth to Possi	ble Void (coal mine, ka	arst, other): N	one Anticipate	ed	
17) Does Proposed well location directly overlying or adjacent to	an active mine?	<b>ECEIVED</b>	Gas No	Х	
(a) If Yes, provide Mine Info:	Name:	of Oil and			
a superior and a superior	Depth:	MAY 0 5 2017			
	Seam:	Departmo	nt of		
	Owner: Enviro	nmental Pr	Ciection		

5/4/17

API NO. 47- 017 -

OPERATOR WELL NO. Laser Unit 3H
Well Pad Name: George Scott Pad

18)

#### CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	80'	80'	CTS, 77 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	485' *see #19	485' *see #19	CTS, 674 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate				***************************************			
Production	5-1/2"	New	P-110	20#	19200'	19200'	4872 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	24"	0.438"	1530	50	Class A	
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	
Intermediate	1 3 1						
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Land-HyPOZ & Tell - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners						1	

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WV Department of Environmental Protection

API NO. 47- 017	14.0	
OPERATOR	MELL NO	1

Well Pad Name: George Scott 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): 31.57 Acres
- 22) Area to be disturbed for well pad only, less access road (acres): 5.94 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 bbis fresh water followed by 25 bbls bentonite mud, 10 bbis 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.

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 corve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, 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 Gas barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

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\*Note: Attach additional sheets as needed.

DAF 5/4/17 WV Department of Environness April Totection

#### LASER UNIT 3H (GEORGE SCOTT PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

UWI (APINum)	Well Name Well Number	Operator	Hist Oper	Elev	ī	D C	TD(SSTVD)	Producing Formations	Producible Formations not perf'd
47017040030000	COX ALICE M ET AL KCZ	CONSOL GAS COMPANY	DAC CORP	10	014	5187	-4173	Gordon, Benson	Warren, Riley
47017053500000	PHILLIPS 3	KEY OIL COMPANY	KEY OIL COMPANY	10	010	5474	-4464	Warren, Riley, Benson, Alexander	Gordon
47017057970000	COMMANIA	KEY OU COMPANY	KEY ON COMPANY	1 1	112	5792	-4479	Warren Riley Renton Alexander	Gordon

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API	Number	47 -	017
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#### Operator's Well No. Laser Unit 3H STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

#### FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Watershed (HUC 10) Headwaters Middle Island Creek Quadrangle Smithburg 7.5'	
Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes_	✓ No _
Will a pit be used? Yes No	
If so, please describe anticipated pit waste: No pit will be used at this site (O:filing and Flowback Fluids will be stored in tanks	s. Cuttings will be tanked and hauled off site.)
Will a synthetic liner be used in the pit? Yes No If so, what ml.? N/	Α
Proposed Disposal Method For Treated Pit Wastes:	
Land Application	
Underground Injection (UIC Permit Number_*UIC Permit # will be provided	
Reuse (at API Number Future permitted well locations when applicable. API# will be produced of Site Disposal (Supply form WW-9 for disposal location) (Meadowfill	
	Landfill Permit #SWF-1025/
Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite	and taken to landfill.
Orilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.	Surface - Air/Freshweter, Intermediate - Dust/Stiff Foam, Production - Water Based Mud or Synthetic Based Mud
-If oil based, what type? Synthetic, petroleum, etc. Synthetic	
Additives to be used in drilling medium? Please See Attachment	
Orill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Drill cuttings stored in tanks, re	emoved offsite and taken to landfill.
-If left in pit and plan to solidify what medium will be 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 Gas of any load of drill cuttings or assi West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the parties of the provided within 24 hours of rejection and the parties of the provided within 24 hours of rejection and the parties of the provided within 24 hours of rejection and the parties of the provided within 24 hours of rejection and the parties of the provided within 24 hours of rejection and the provided within	ociated waste rejected at any permittee shall also disclose
I certify that I understand and agree to the terms and conditions of the GENERAL WATER on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental provisions of the permit are enforceable by law. Violations of any term or condition of the general	Protection. I understand that the al permit and/or other applicable information submitted on this
aw or regulation can lead to enforcement action.  I certify under penalty of law that I have personally examined and am familiar with the	aware that there are significant
I certify under penalty of law that I have personally examined and am familiar with the pplication form and all attachments thereto and that, based on my inquiry of those individual btaining the information, I believe that the information is true, accurate, and complete. I am a cenalties for submitting false information, including the possibility of fine or imprisonment.	als immediately responsible for aware that there are significant RECEIVED Office of Oil and Ga
I certify under penalty of law that I have personally examined and am familiar with the pplication form and all attachments thereto and that, based on my inquiry of those individual obtaining the information, I believe that the information is true, accurate, and complete. I am a cenalties for submitting false information, including the possibility of fine or imprisonment.  Company Official Signature	aware that there are significant RECEIVED Office of Oil and Ga
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aw or regulation can lead to enforcement action.  I certify under penalty of law that I have personally examined and am familiar with the application form and all attachments thereto and that, based on my inquiry of those individual obtaining the information, I believe that the information is true, accurate, and complete. I am a cenalties for submitting false information, including the possibility of fine or imprisonment.  Company Official Signature  Company Official Title Environmental & Regulatory Manager  Subscribed and sworn before me this	aware that there are significant RECEIVED Office of Oil and Ga MAY 0 5 2017  VV Department of Environmental Protecti

Antero Resources Corporation

Fertilizer amount 500

Temporary

See attached table IV-3 for additional seed type (George Scott Design Page 43)

\*or type of grass seed requested by surface owner

Photocopied section of involved 7.5' topographic sheet.

lbs/acre

40

40

Lime 2-4

Mulch 2-3

Seed Type

Annual Ryegrass

Field Bromegrass

acreage, of the land application area.

as needed. Do not move vigo	equipment onto
complete esper DEP Regs.	
	47072
Title: D: H Gas Inspector Date: 5/4/1	7 RECEIVED
ield Reviewed? Yes () No	Office of Oil and Gas

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#### 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 Congor 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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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

470<sub>7706030</sub> 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

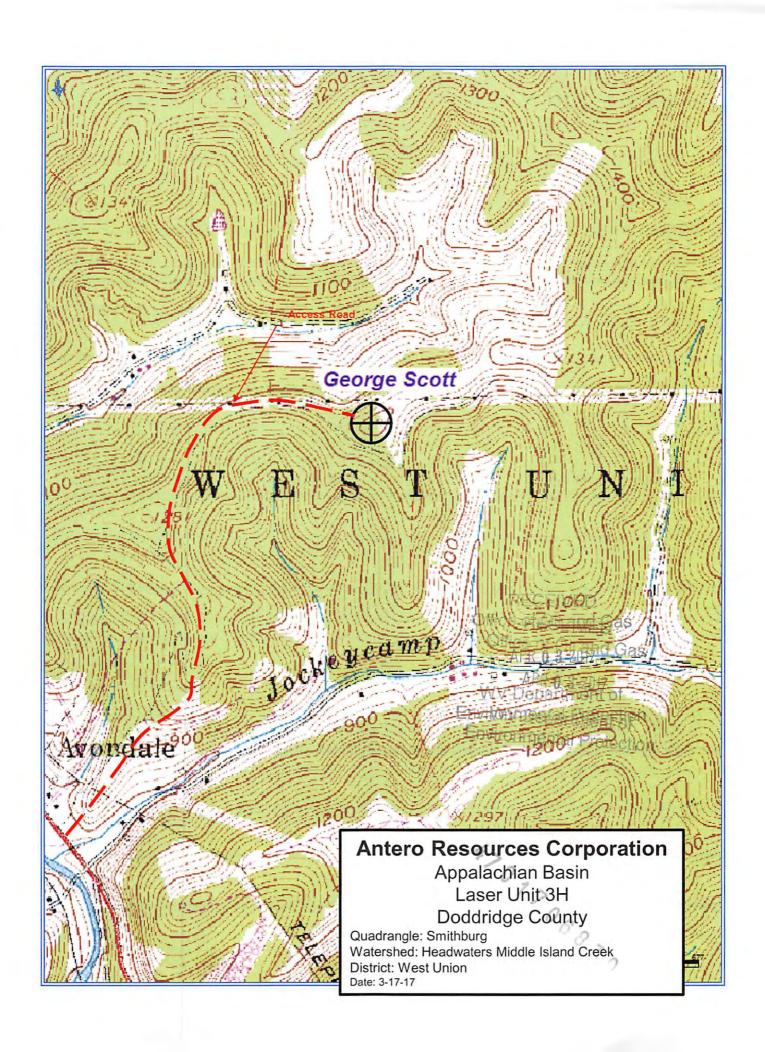
32. Mil-Lube

**Drilling Fluid Lubricant** 

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WV Department of Environmental Protection





#### 911 Address 1995 Smithton Road West Union, WV 26456

## Well Site Safety Plan Antero Resources

Well Name: Clipper Unit 1H-3H, Cortina Unit 1H-3H,

Lakota Unit 1H-3H, Laser Unit 1H-3H

Pad Location: GEORGE SCOTT PAD

Doddridge County/West Union District

**GPS Coordinates:** 

Entrance - Lat 39°17′50.7258″/Long -80°44′38.6556″ (NAD83)

Pad Center - Lat 39°18′27.7266″/Long -80°43′59.7144″ (NAD83)

#### **Driving Directions:**

From Clarksburg: Drive west on US-50 W for approximately 22 miles. Turn left onto CO Rte 50/22, go 0.2 miles. Turn right onto Smithton Rd, go 1.3 miles. Access road will be on the right. Once on the access road, continue on past the Peggy June pad to the George Scott Pad.

#### Alternate Route:

From Parkersburg: Drive on US-50 E for 46.3 miles. Turn left onto WV-18 N, go 0.6 miles. Turn right onto Davis St/Smithton Rd, go 2.0 miles. Access road will be on the left. Once on the access road, continue on past the Peggy June pad to the George Scott Pad.

RECEIVED
Office of Oil and Gas

EMERGENCY (24 HOUR) CONTACT 1-800-878-1373

WV Department of Environmental Protection

## 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/Pag
V.B. Chapman Lease			
V.B. Chapman, et ux	J.L. Mann	1/8	LB 0020/0162
J.L. Mann, et ux	W.S. Hoskins, Trustee for the Rock Run Oil & Company	Gas Assignment	LB 0024/0003
Rock Run Oil & Gas Company	Columbian Carbon Company	Assignment	LB 0027/0471
Columbian Caron Company	Columbian Fuel Corpóration	Assignment	LB 0079/0202
Columbian Fuel Corporation	Cities Service Oil Company	Merger	Exhibit 2
Cities Service Oil Company	Cities Service Company	Assignment	LB 0103/0328
Cities Service Company	Cities Service Oil & Gas Corporation	Assignment	LB 0132/0177
Cities Service Oil & Gas Corporation	OXY USA Inc.	Name Change	DB 0205/0614
DXY USA Inc.	Ashland Exploration, Inc.	Assignment	LB 0160/0679
Ashland Exploration, Inc.	Ashland Exploration Holdings, Inc.	Name Change	Exhibit 3
Ashland Exploration Holdings, Inc.	Blazer Energy Corporation	Assignment	LB 0181/0421
Blazer Energy Corporation	Eastern States Oil & Gas, Inc.	Name Change	Exhibit 4
Eastern States Oil & Gas, Inc.	Equitable Production-Eastern States, Inc.	4 > Name Change	Exhibit 5
Equitable Production Company	EQT Production Company	Name Change	DB 0281/0346
QT Production Company	Antero Resources Corporation	Assignment	LB 0325/0539
ohnson B. Smith, et ux Lease		$\sim$ $^{\circ}$ $^{\circ}$ $^{\circ}$ $^{\circ}$	
ohnson B. Smith, et ux	Eastern Oil Company	1/8	LB 0022/0231
astern Oil Company	A.W. Stevens	Assignment	LB 0042/0328
A.W. Stevens	Eastern Union Gas Company	Assignment	LB 0042/0330
astern Union Gas Company	Pittsburgh & West Virginia Gas Company	Assignment	DB 0085/0334
Pittsburgh & West Virginia Gas Company	Equitable Gas Company	Assignment	DB 0121/0257
equitable Gas Company, a division of Equitable Resources, Inc.	Equitrans, Inc.	Assignment	LB 0154/0475
Equitrans, Inc.	EQT Capital Corporation	Name Change	Exhibit 6
EQT Capital Corporation	Antero Resources Corporation	Assignment	LB 0325/0528
Appalachian Royalties Inc. Lease			
Appalachian Royalties Inc.	Antero Resources Corporation	1/8+	357/79
2.S. Cowman, et ux Lease		DECOMBE	Plakeli:
P.S. Cowman, et ux	W.D. Gribble	0#: 1/8 0 部 60 60 60 60 60 60 60 60 60 60 60 60 60	0051/0364
V.D. Gribble	Nell Gribble	Approsement Book &	16 Gags/0055
Nell Gribble	Carolyn Farr & Marian Goodwin	Appraisement Book	0006/0157
Marian Goodwin	Carolyn Farr	Assignation of APP 0	3 2017 0126/0065
Carolyn Far	Clarence Sigley, Executor	will V J ZUP	0025/0024
Clarence Sigley	Antero Resources Appalachian Corporation	/Assignment/ Dance	0271/0551
Antero Resources Appalachian Corporation	Antero Resources Corporation	Environmentaling	figent of 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.

#### 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
Dixie J. Craig Lease			
Dixie J. Craig	Antero Resources Corporation	1/8+	0434/0003
Edgar Davisson, et ux Lease			
Edgar Davisson, et ux	The Carter Oil Company	1/8	LB 0020/0050
The Carter Oil Company	Hope Natural Gas Company	Assignment	LB 0042/0410
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Merger	DB 0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	LB 0135/0583
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change & Merger	Exhibit 7
CNG Transmission Corporation	Dominion Transmission, Incorporated	Name Change & Merger	Exhibit 8
Dominion Transmission, Incorporated	Consol Energy Holdings, LLC	Assignment	LB 0245/0001
Consol Energy Holdings, LLC, et al	CNX Gas Company, LLC	Merger	DB 0292/0469
Ed Broome, Inc. Lease			
Ed Broome, Inc.	Antero Resources Corporation	1/8	0304/0135
Lorelei Phillips, et al Lease			
Lorelei Phillips, et al	Key Oil Company	1/8	0210/0328
Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
Antero Resources Appalachian Corporation	Antero Resources Corporation	•	Exhibit 1
		Name Change	
Marie K. Cox, et al Lease		7 - 1/8	
Marie K. Cox, et al	Stanley N. Vaughn	₹ <del>→</del> 1/8	0063/0380
Stanley N. Vaughn	Ferrell L. Prior	Assignment of Oil & Gas	0064/0203
Ralph W. Hoyer, Trustee of the Bankruptcy Estate of Ferrell Prior, an individual d/b/a	Waco Oil & Gas Company, Inc.	Leasehold Bstate Assignment	0129/0428
Waco Oil & Gas Company, Inc.	John H. Underwood	Assignment & Bill of Sale 🤈	0165/0397
John H. Underwood	Drilling Appalachian Corporation	Corrected Assignment of ECEIV	0168/0147
		Oil & Gas Lease	
Drilling Appalachian Corporation	Antero Resources Appalachian Corporation		1710 <b>(3)278/</b> 0307
Antero Resources Appalachian Corporation	Antero Resources Corporation	& Gas Leases Name Change APR 0 3 2	2017 Exhibit 1

WV Department of

<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.

#### 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:

	George Benton White	Antero Resources Corporation	1/8	343/594
George Benton White 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: 0,20000

- 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

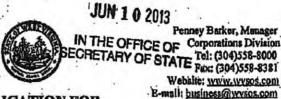
The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or Gas nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected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

> Well Operator: Antero Resources Corporation, By: Ward McNeilly Its: Senior Vice President - Reserves Planning and Midstream

FILE

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

FILE ONE ORIGINAL (Two if you want a Med stamped copy returned to you) FEE: \$25:00



#### APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

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

\*\*\*\* 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 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 Copy 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 filling, listing a contact person and phone number may avoid having to return or reject the document.) Alwn A. Schopp (303) 357-7310 Contact Name Phone Number 7. Signature information (See below \*Important Legal Notice Regarding Signature): Title/Capacity: Authorized Person Print Name of Signer: Aleyn A. Schop June 10, 2013 Signature: \*I*mportant Legal Notice Regariting Signaturg*: Per West Virginia Code <u>5311)-1-129</u>. Penalty for signing false document Any person vite 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 misdomesnor and, upon conviction thereof, shall be fined not more than one thousand dallers or confined in the county or regional jall not more than one year, or both. WV Department of Environmental Protection

listed by the Office of the Secretary of Sinte

Porm CF-



## Office of Secretary of State.

J. Elisha C. Bukes. Secretary of State of the State of Delaware, do hereby certify that the above and foregoing is a true and correct copy of Certificate of Ownership of the "CITIES SERVICE OIL COMPANY", merging the "COLUMBIAN FUEL CORPORATION", pursuant to Section 253 of the General Corporation Law of the State of Delaware, as received and filed in this office the first day of July, A.D. 1968, at 8:30 o'clock A.M.

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In Testimony	Whereof, Ih	ave hereunto set my h	and
		thirtieth	
		in the year of our	
		dand Ostaty out	

·· APR 0 3 2017

Olisha Double Intal Protection Secretary of State

& Flow

Ass's Secretary of State





I. Ken Hechler. Secretary of State of the State of West Virginia, hereby certify that

originals of an application by

#### ASHEAND EXPLORATION, INC.

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

ASHLAND EXPLORATION HOLDINGS, EVC. and I attach to this certificate a duplicate original of the application.

Given under my hand and the

Great Seal of the State of RESERVED West Virginia. on this of Oil and

SET NIFE TO JAM OF APR 0 3 201

SETTEMBER 19 % W/V Department

Environmental Pro

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FORM WW-6A1 **EXHIBIT 4** 

tate of Mest Mirginia

I, Ken Hechler, Secretary of State of the State of West Virginia, hereby certify that

the following and hereto attached is a true copy of the articles of merger of EASTERN STATES OIL & GAS, INC., a qualified Virginia and BLAZER ENERGY CORP., a qualified Delaware corp.

Therefore, I hereby issue this CERTIFICATE OF MERGER, merging EASTERN STATES OIL & GAS, INC. with and into BLAZER ENERGY CORP., the survivor.

4701706830



Given under my hand and the Great Seal of the State of West Virginia on this

Twentieth Belled day of



I, Ken Hechler, Secretary of State of the State of West Virginia, hereby certify that

originals of the Application for Amended Certificate of Authority of

EASTERN STATES OIL & GAS, INC.

are filed in my office, signed and verified, as required by the provisions of West Virginia Code §§31-1-57 and 59 and conform to law. Therefore, I issue this

## CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the corporation to

#### **EQUITABLE PRODUCTION - EASTERN STATES, INC.**

and I attach to this certificate a duplicate original of the Application for Amended Certificate of Authority.

WEST WEST WAR AND THE REAL PROPERTY OF THE PARTY OF THE P

Given under my hand and the Great Seal of the State of West Virginia on this day of WV Department of

Environmental Protection

Secretary of State

EXHIBIT 6, Page 1

3043570551

BOOK 512 ME 781.

ARTICLES OF MERGER

KENTUCKY WEST VIRGINIA GAS COMPANY

a West Virginia Company

Into

FILED MOYNAW 1995 IN THE OFFICE OF SECRETARY OF STATE WEST VIRGINIA

EQT CAPITAL CORPORATION

a Delaware Company

Pursuant to the provisions of Section 38, Article 1, Chapter 31 of the Code of West Virginia, 1931, as amended, the undersigned corporation adopts the following Articles of Merger for the purpose of merging a subsidiary corporation into the undersigned as the surviving corporation:

The undersigned foreign corporation is incorporated under the laws of Delaware and the laws of such jurisdiction permit such a merger.

The following Plan of Merger was adopted by the undersigned corporation in the manner prescribed by the laws of the jurisdiction under which it is organized.

This Plan of Merger dated as of November 20, 1995, is among EQT Capital Corporation ("EQT"), a Delaware corporation, Equitrans, Inc. ("Equitrans"), a Delaware corporation and Kantucky West Virginia Gas Company ("Kentucky West"), a West Virginia corporation. The terms of the merger shall be as follows:

- Equitrans and Kentucky West shall merge into EQT. EQT shall be the surviving corporation with its corporate identity, existence, purposes, powers, franchises, rights and immunities unimpaired.
- The issued and outstanding shares of common stock of Equitrans and Kentucky West, shall without further action on the part of Equitrans, Kentucky West or EQT, be cancelled and of no further effect as of the Effective Date of the merger (as defined below).
- A Certificate of Merger shall be filed as required by law with the Secretary of State of the State of West Virginia and the Secretary of State of the State of Delaware. The Effective Date of the merger shall be the last date of filing with the respective secretaries of state (the "Effective Date"). On the Effective Date, Equitrans and Kentucky West will cease to exist as separate corporations and EQT will succeed to all of the assets, rights, privileges, immunities, powers, duties and liabilities of Equitrans and Kentucky West in accordance with the provisions of the West Virginia Corporation Act and of the Delaware General Corporation Law.
- The current Certificate of Incorporation of EQT shall be its Certificate of Incorporation on and after the Effective Date of the merger.

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APR 0 3 2017

WV Department of Environmental Protection

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#### FORM WW-6A1 EXHIBIT 6, Page 2

BOOK 512 PAGE 782

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 This Plan of Merger shall be executed by the corporate officers of Kentucky West, Equitrans and EQT.

The number of outstanding shares of each class of the subsidiary corporation and the number of such shares of each class owned by the surviving corporation are as follows:

Name of Subsidiary	Number of Shares Outstanding	Designation of	Number of Shares Owned by Surviving Corporation
Kentucky West Virginia Gas	331,754	Common	331,754

A copy of the Plan of Merger set forth above was mailed on September 1, 1995 to each Shareholder of the subsidiary corporation.

The undersigned corporation hereby: (a) agrees that it may be served with process in the State of West Virginia in any proceeding for the enforcement of the rights of a dissenting shareholder of the above-mentioned subsidiary corporation against the surviving corporation; (b) irrevocably appoints the Secretary of State of the State of West Virginia as its agent to accept service of process in any such proceeding; and (c) agrees that it will promptly pay to the dissenting shareholders of such domestic corporation the amount, if any, to which they shall be entitled under Section 123, Articles 1, Chapter 31 of the Code of West Virginia with respect to the rights of dissenting shareholders.

Dated November 20, 1995.

EOT CAPITAL CORPORATION

Ite Dragident

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RECEIVED
Office of Oil and Gas

APR 0 3 2017 .

WV Department of Environmental Protection



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

FORM WW-6A1 **EXHIBIT 8** 



## Certificate

I, Ken Hechler, Secretary of State of the State of West Virginia, hereby certify that

riginals of an application by

#### **CNG 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

#### **DOMINION TRANSMISSION, INC.**

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

WV May 10, 2000 to Thele



March 31, 2017

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

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: Laser Unit 3H

Quadrangle: Smithburg 7.5'

Doddridge County/West Union District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Laser Unit 3H 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 Laser Unit 3H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely

Brett Kuhn Landman

4701706830

Office of Oil and Gas

APR 0 3 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: 03/30/2017		<b>API No. 47</b>	- 017	
		(	Operator's	Well No. Lase	r Unit 3H
		7	Well Pad N	ame: George	Scott Pad
Notice has b					
	e provisions in West Virginia Code §	§ 22-6A, the Operator has provi	ded the req	uired parties v	with the Notice Forms listed
	tract of land as follows:				
State:	West Virginia		Easting:	522988m	
County:	Doddridge		Northing:	4350947m	
District:	West Union	Public Road Acces		Smithton Rd (Old	
Quadrangle:	Smithburg 7.5'	Generally used far	m name:	George S. Wyck	off
Watershed:	Headwaters Middle Island Creek				
it has provide information re of giving the requirements Virginia Code	the secretary, shall be verified and seed the owners of the surface described equired by subsections (b) and (c), see surface owner notice of entry to surface owner notice o	bed in subdivisions (1), (2) an ection sixteen of this article; (ii) arvey pursuant to subsection (a f this article were waived in vender proof of and certify to the	d (4), subst that the rec ), section to vriting by t	ection (b), sequirement was en of this article surface ov	ction ten of this article, the deemed satisfied as a result cle six-a; or (iii) the notice wner; and Pursuant to West
that the Ope	West Virginia Code § 22-6A, the Oprator has properly served the require		s Notice Co	ertification	OOG OFFICE USE ONLY
☐ 1. NO1	FICE OF SEISMIC ACTIVITY or	■ NOTICE NOT REQUIRE SEISMIC ACTIVITY WAS			RECEIVED/ NOT REQUIRED
☐ 2. NO	ΓICE OF ENTRY FOR PLAT SURV	/EY or 🔳 NO PLAT SURVE	Y WAS CC	NDUCTED	☐ RECEIVED
■ 3. NO	FICE OF INTENT TO DRILL or	NOTICE NOT REQUIRED NOTICE OF ENTRY FOR PARTY OF			☐ RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER B (PLEASE ATTACH)	Y SURFAC	CE OWNER	
■ 4. NO	FICE OF PLANNED OPERATION	(PLEASE ATTACH)	00	) w.	RECEIVED
■ 5. PUB	BLIC NOTICE	• -			THE PERVED
■ 6. NO	TICE OF APPLICATION			ounca Ot	THE RECEDED AND
<b>5</b>				APR	<b>6 3</b> 2017

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 sopy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Parms 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-I1(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 Ward McNeilly , 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/

Antero Resources Corporation

By: Ward McNeilly W. Mull.

Its: Senior Vice President - Reserves Planning and Midstrea.

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

Subscribed and sworn before me this 30 day of March

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.

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PEGEIVED
Office of Oil and Gas

APR 0 3 2017

WV Department of
Environmental Protection

WW-6A (9-13)

API NO. 47- 017 OPERATOR WELL NO. Laser Unit 3H
Well Pad Name: George Scott 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: 3/31/2017 Date Permit Application Filed: 3/31/2017 Notice of: 7 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 ☐ PERSONAL ✓ METHOD OF DELIVERY THAT REQUIRES A **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. ☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to: FI SURFACE OWNER(s) COAL OWNER OR LESSEE Name: NO DECLARATIONS ON RECORD WITH COUNTY Name: PLEASE SEE ATTACHMENT Address: Address: □ 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 WAITER WELL FOR SUPPLY SQUECE Please note there is 1 water source, than 1500' Name: PLEASE SEE ATTACHMENT Address: \_\_\_ Name: NONE IDENTIFIED WITHIN 1500' Name: Address: Address: OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name:

Address:

FIVEOUR

OF ☐ SURFACE OWNER(s) (Impoundments or Pits) Environmental Protection Name: Address: Address: \_\_\_\_ \*Please attach additional forms if necessary

API NO. 47- 017

OPERATOR WELL NO. Laser Unit 3H

Well Pad Name: George Scott Pad

#### 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 fadius 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 page 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

API NO. 47-017 OPERATOR WELL NO. Laser Unit 3H Well Pad Name: George Scott 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:

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten White article may file written Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (o), section yet which 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 applicant's proposed well work to the Secretary at:

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

WV 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. Laser Unit 3H

Well Pad Name: George Scott 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

APR 0 3 2017

WV Department of Environmental Protection

API NO. 47-017 OPERATOR WELL NO. Laser Unit 3H
Well Pad Name: George Scott 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 <a href="deepprivacyofficer@wv.gov">deepprivacyofficer@wv.gov</a>.

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

Subscribed and sworn before me this 3

lay of March 2017

Notary Public

My Commission Expires

4701706830

Office of Oil and Gas

APR 0 3 2017

WV Department of Erivironmental Protection

#### WW-6A Notice of Application Attachment (GEORGE SCOTT PAD):

#### List of Surface Owner(s) with Proposed Disturbance associated with George Scott 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 12 PCL 12, TM 8 PCL 52

John S. & Peggy J. Smith Owner:

142 N. 6<sup>th</sup> St. Address:

Paden City, WV 26159

John S. & Peggy J. Smith (2<sup>nd</sup> Address) Owner:

2721 Glenmore Ave Address:

Pittsburgh, PA 15216

**TM 8 PCL 36** 

Paul Amos Smith Owner: Address: 140 Belvue Dr.

Los Gatos, CA 95032

TM 12 PCL 13.1, TM 8 PCL 36.1

George S. & Susan R. Wyckoff Owner:

Address: PO Box 102

Smithburg, WV 26436

ROAD AND/OR OTHER DISTURBANCE – These owners has executed a signed Agreement with Antero Resources Corporation. However, they were only notified if their tract is overlying the oil and gas leasehold being developed by the proposed well work as outlined in WV Code 22-6A-10(b)(2).

**TM 12 PCL 12** (ON LEASE)

TM 8 PCL 52 (ON LEASE)

TM 12 PCL 11 (OFF LEASE) John S. & Peggy J. Smith

142 N. 6<sup>th</sup> St. Address:

Owner:

Paden City, WV 26159

John S. & Peggy J. Smith (2<sup>nd</sup> Address) Owner:

2721 Glenmore Ave Address:

Pittsburgh, PA 15216

TM 8 PCL 36 (ON LEASE)

Owner: Paul Amos Smith

Address: 140 Belvue Dr.

Los Gatos, CA 95032

TM 12 PCL 13.1 (ON LEASE)

**TM 8 PCL 36.1** (ON LEASE)

Owner: George S. & Susan R. Wyckoff

Address:

PO Box 102

Smithburg, WV 26436

**TM 12 PCL 17** (OFF LEASE)

Owner: George M. & Sandra A.

Wyckoff

Address: 191 Jockey Camp Rd.

West Union, WV 26436

TM 8 PCL 51 (OFF LEASE)

Robert L. Holland 3 0 Owner:

225 Watchung Fork Address:

Westfield, NJ 07090

TM 12 PCL 14 (OFF LEASE)

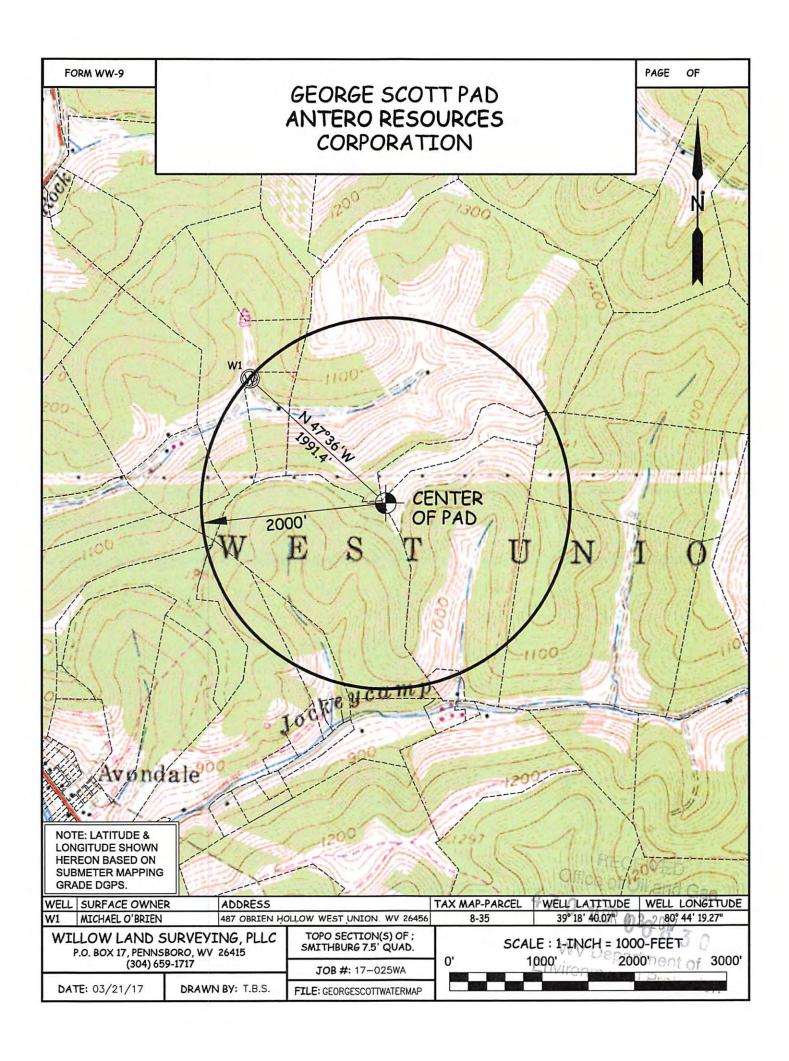
L.W. Coulehan & Chad W. Owner: Johnson

Address:

Office of Cil and 109 Platinum Drive. Suffes

APR 0 3 2017

WV Department of Environmental Protection



#### 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 Notic	Requirement: Notice shall be provided at l ce: 03/01/2017 Date Pern	east TEN (10) days prior to filing a nit Application Filed: 03/31/2017	permit application.
Delivery me	thod pursuant to West Virginia Code § 22	-6A-16(b)	
☐ HAND	■ CERTIFIED MAIL		
DELIVE		IESTED	
DELIVI	RETURN RECEILT REQU	DESTED	
receipt reque drilling a hor of this subsec subsection m and if availab	V. Va. Code § 22-6A-16(b), at least ten days sted or hand delivery, give the surface owner izontal well: <i>Provided</i> , That notice given postion as of the date the notice was provided to any be waived in writing by the surface owner only, facsimile number and electronic mail address.	or notice of its intent to enter upon the pursuant to subsection (a), section to the surface owner: <i>Provided, hower.</i> The notice, if required, shall includes of the operator and the operator	the surface owner's land for the purpose of en of this article satisfies the requirements wever. That the notice requirements of this ude the name, address, telephone number,
Notice is he	reby provided to the SURFACE OWN		
	SE SEE ATTACHMENT	Name:	
Address:		Address:	<del></del> )
State: County: District:	wner's land for the purpose of drilling a hori West Virginia  Doddridge West Union	UTM NAD 83 Easting: Northing: Public Road Access:	522997.65m (Approximate Pad Center) 4350957.47m (Approximate Pad Center) Smithton Road (Old US-50)
Quadrangle:	Smithburg 7.5'	_ Generally used farm name:	George S. Wyckoff
Pursuant to ' facsimile nur related to hor	Shall Include: West Virginia Code § 22-6A-16(b), this modern and electronic mail address of the operizontal drilling may be obtained from the State of the Street, SE, Charleston, WV 25304 (30)	otice shall include the name, addr perator and the operator's authorize Secretary, at the WV Department o	ed representative. Additional information f Environmental Protection headquarters,
Notice is he	reby given by:		
	T: Antero Resources Appalachian Corporation	Authorized Representative:	Samantha Klaas
Address:	1615 Wynkoop St.	Address:	1615 Wynkoop St.
	Denver, CO 80202		Denver, CO 80202
Telephone:	303-357-7310	Telephone:	303-357-7310
Email:	sklaas@anteroresources.com	Email:	sklaas@anteroresources.com
Facsimile:	303-357-7315	Facsimile:	303-357-7315
Oil and Ga	s Privacy Notice:		Office of Oil and Com

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. Environmental Prima PCL 36

TM 8 PCL 36.1 TM 8 PCL 52 TM 12 PCL 12 TM 12 PCL 13.1

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

#### **Surface Owners:**

Tax Parcel ID: 8-8-36

Owner:

Paul Amos Smith 140 Belvue Dr

Address:

Los Gatos, CA 95032

Tax Parcel ID: 8-8-36.1; 8-12-13.1

Owner:

George and Susan Wyckoff

Address:

Po Box 102

Smithburg, WV 26436

Tax Parcel ID: 8-8-52; 8-12-12

Owner:

John Samuel Smith & Peggy June Smith

Address:

142 N. 6<sup>th</sup> St.

Paden City, WV 26159

470 17 0 60 30

Office of Oil and Gas

APR 0 3 2017

WV Department of Environmental Protection

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

Notice Time Date of Notice	Requirement: notice shall be pro ee: 03/31/2017 Date P		plater than the filing pplication Filed: 03/3		application.
Delivery met	hod pursuant to West Virginia	Code § 2	22-6A-16(c)		
	FIED MAIL		HAND		
RETUR	RN RECEIPT REQUESTED		DELIVERY		
return receipt the planned of required to be drilling of a ladamages to the (d) The notice of notice.	requested or hand delivery, give operation. The notice required by provided by subsection (b), section region (c) and (d) A propose surface affected by oil and gas	the surfa by this su ion ten o sed surfa operation e given t	tice owner whose land absection shall inclu- if this article to a surf- ace use and compens as to the extent the da to the surface owner a	I will be used for de: (1) A copy ace owner whose sation agreement amages are com	cation, 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 address	s listed in the records of the sheri:				
Name: PLEA	SE SEE ATTACHMENT		Name:		
Address:			Address	s:	
	the surface owner's land for the p West Virginia Doddridge West Union Smithburg 7.5'		of drilling a horizonta  UTM NAD 8  Public Road	I well on the tra Easting: Northing:	well operator has developed a planned act of land as follows:  522988m  4350947m  Smithton Rd (Old US-50)  George S. Wyckoff
Watershed:	Headwaters Middle Island Creek				
to be provide horizontal we surface affect information re	Vest Virginia Code § 22-6A-16(c) d by W. Va. Code § 22-6A-10(l) ll; and (3) A proposed surface used by oil and gas operations to telated to horizontal drilling may located at 601 57th Street, SE,	b) to a see and co the extent be obta	surface owner whose impensation agreement the damages are considered from the Secret	e land will be on the containing are compensable und cary, at the WV	code section; (2) The information required used in conjunction with the drilling of an offer of compensation for damages to the der article six-b of this chapter. Additional Department of Environmental Protection or by visiting

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-6A5 Notice of Planned Operations Attachment (GEORGE SCOTT PAD):

#### List of Surface Owner(s) with Proposed Disturbance associated with George Scott Well Pad:

#### TM 12 PCL 12, TM 8 PCL 52

Owner:

John S. & Peggy J. Smith

Address:

142 N. 6<sup>th</sup> St.

Paden City, WV 26159

Owner:

John S. & Peggy J. Smith (2<sup>nd</sup> Address)

Address:

2721 Glenmore Ave

Pittsburgh, PA 15216

**TM 8 PCL 36** 

Owner:
Address:

Paul Amos Smith 140 Belvue Dr.

Los Gatos, CA 95032

TM 12 PCL 13.1, TM 8 PCL 36.1

Owner:

George S. & Susan R. Wyckoff

Address:

PO Box 102

Smithburg, WV 26436

47077000030

PECEIVED
Office of Oil and Gas

APR 0 3 2017

WV Department of Environments Protection



#### WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

## Division of Highways 1900 Kanawha Boulevard East • Building Five • Room 110

Charleston, West Virginia 25305-0430 • (304) 558-3505

Jim Justice Governor

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

February 22, 2017

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

Subject: DOH Permit for the George Scott Pad, Doddridge County

Laser Unit 3H Well Site

47-017-06830

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2016-0698 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Doddridge County Route 50/30 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, 470170683 -

Gary K. Clayton, P.E.

Regional Maintenance Engineer VED

Central Office O&G Coordinator | and Gas

Environmental Protection

Cc: Shelby Johnson

Antero Resources Corporation

CH, OM, D-4

File

## List of Anticipated Additives Used for Fracturing or Stimulating Well

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
Propulana Glucal	- 0 4 7 0 0 107-19-Z
Propylene Glycol	1 V V 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	<i>1</i> 5827 <sub>-</sub> 60-8
Hexamthylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5 OI OII and Ga
2-Propenoic acid, polymer with 2 propenamide	9003-06,9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-57 0 3 2017
Diethylene Glycol	111/46,6
Methenamine	Enjoyat-opartment of
Polyethylene polyamine	00003-07-8" (Cal Pinta
Coco amine	
2-Propyn-1-olcompound with methyloxirane	38172-91-7

ACCESS ROAD ENTRANCE LATITUDE 39:297424 LONGITUDE -80.744071 (NAD 83) N 4349814.16 E 522068.28 (UTM ZONE 17 METERS)

CENTROID OF PAD

LATITUDE: 39 307702 LONGITUDE: -80 733254 (NAD 83)
N 4350957 47 E 522997 85 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION:

THE ACCESS ROAD(S), AND WELL PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS

APPROVED

WVDEP OOG

A/3 1 6/13/2017

CHARLES E. COMPTON, III - SURVEYING COORDINATOR (304) 719-6440

CYRUS S KUMP, PE - PROJECT MANAGER/ENGINEER OFFICE (888) 662-4185 CELL (540) 686-6747

ENVIRONMENTAL; ALISTAR ECOLOGY LLC RYAN L WARD - ENVIRONMENTAL SCIENTIST (BB6) 213-2656 CELL (DO4) 592-7477

GEOTECHNICAL
PENNSYLVANIA SOIL & ROCK, INC.
CHRISTOPHER W SAMIOS - PROJECT ENGINEER
(412) 372-4000 CELL (412) 589-0662

MARK HUTSON - LAND AGENT CELL (304) 669-6315

ENGINEER/SURVEYOR:

FLOODPLAIN NOTES:
THE PROPOSED SITE IS LOCATED WITHIN FEMA FLOOD ZONE 'X' PER FEMA FLOOD MAP #54617C0140C

MISS UTILITY STATEMENT.

AND REPORT OF THE LOCATING OF THE PROPERTY OF THE PROPERTY OF THE LOCATION OF THE LOC

AMERICA SECURITY AND AMERICAN WILL OBTAIN AN ENGROACHMENT PERMIT (PORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PHIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND BETLAND BELIFEATIONS WERE PERFORMED IN JANUARY, OCTOBER, & NOVEMBER 2014, JULY
& DETEMBER 2015, & JANUARY 2017 BY ALISTAR ECOLOGY TO REVIEW THE SITE FOR WATERS AND
WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF
ENCINCIPES (USAGE) AND/OR THE WEST VIRENIAN BEPARTMENT OF ENVIRONMENTAL PROTECTION (WYDEP)
THE JANUARY S. 2017 STREAM AND WETLAND DELINEATION INDEX MATS WERE PREPARED BY ALISTAR
WEDGLACY AND SUBMEMBER AND WETLAND DELINEATION INDEX MATS WERE PREPARED BY ALISTAR
WHICH MAY BE RECULATED BY THE STREAM OF THE LANGE OF UNITS OF WATERS AND WETLAND
WHICH MAY BE RECULATED BY THE USAGE OR THE WORD. HITS STRONGLY RECOMMENDED THAT THE
DELINEATION SHOWN ON THIS EXHIBIT PRIOR TO ENVASION CONSTRUCTION ON THE PROPERTY DESCRIBED
BEENIN THE DEVELOPER'S HALL DAYAR THE PROPORTION FOR THE SEEDEM. AND/OR STATE
REQULATION MEDICAL PRIOR TO ANY PROPOSED MPACES TO WATERS OF THE U.S., INCLUDING WETLAND
THE AND STREAM PROSENSES.

GEOTECHNICAL NOTES:
THE PROPOSED ACCESS ROAD CUT SLOPE (15:1) SHALL BE FIELD VERIFIED BY A CERTIFIED CONTENTION OF THE PROPOSED SLOPES ARE ABSQUATE PRIOR TO CONTENTION OF THE PROPOSED SLOPES ARE ABSQUATE PRIOR TO THE GEOTECHNICAL ENGINEER OR PROJECT DESIGN ENGINEER DURING CONSTRUCTION.

#### PROJECT CONTACTS:

OPERATOR: AMERO RESOURCES CORPORATION 535 WHITE OARS BLVD BRIDGEPORT, WV 26330 PHONE (304) 842-4100 FAX: (304) 842-4102

ELI WAGONER - ENVIRONMENTAL ENGINEER DETTICE (304) B42-4068 CELL (304) 476-9770 JON MOEVERS - OPERATIONS SUPERINTENDENT

OFFICE (303) 357-6799 CELL: (303) 808-2423

ROBERT B WIRKS - FIELD ENGINEER DFFICE (204) 842-4100 CELL: (304) 627-7405

RESTRICTIONS NOTES:

1 THERE ARE NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD THERE IS A WETLAND ADJACENT TO ACCESS ROAD "C" THAT WILL REMAIN UNDISTURBED.

- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPHINGS WITHIN 250 FERT OF THE WELL(S) BEING DRILLED
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625-FEET OF THE CENTER OF THE WELL PAD.

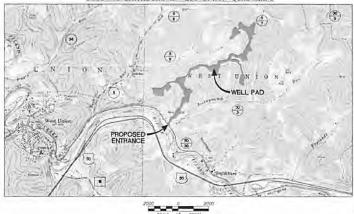
#### REPRODUCTION NOTE

THESE PLANS WERE CREATED FOR COLOR PLOTTING AND ANY REPREDUCTIONS IN GRAY SCALE OR COLOR MAY RESULT IN A 103S OF NEORWATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES

#### GEORGE SCOTT WELL PAD SITE DESIGN & CONSTRUCTION PLAN. **EROSION & SEDIMENT CONTROL PLANS**

WEST UNION DISTRICT, DODDRIDGE COUNTY COUNTY, WEST VIRGINIA NUTTER FORK-MIDDLE ISLAND CREEK WATERSHED

USGS 7.5 SMITHBURG & WEST UNION QUAD MAPS



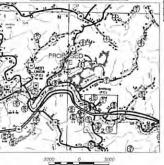
WEST VIRGINIA COUNTY MAP



(NOT TO SCALE)

DESIGN CERTIFICATION:
THE DRAWINGS, CONSTRUCTION NOTES, AND
REFERENCE DIAGRAMS ATTACHED HIRETO HAVE
BEEN PREPARED IN ACCORDANCE WITH THE
WEST VISIONAL CODE OF STATE RULLES, DIVISION
OF ENVISIONMENTAL, PROTECTION, OFFICE OF OIL
AND GAS CERS 33-8.

WVDOH COUNTY ROAD MAP



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

#### SHEET INDEX:

- COVER SHEET CONSTRUCTION AND EAS CONTROL NOTES

NAD 27 NAD 83 Zone 17 4 1915 15 71 N 291555 40 N 4200945 94 1650939 39 E 1619498 20 E 52596 I 91 1296516 MI N 296582 55 N 4360948 I

1650048 08 F 18105/17 78 F 577084 86

1850977 71 E 1819536 54 E 522903 65 E 1830977 73 E 19195,36.54 E 5,229/3 65 N 299505 46 N 298541.14 N 4,000944 85 E 1630987 33 E 1619846 12 E 5,22965 59 N 296502 61 N 296336 29 N 4,350944 03

E 1819555.71 N 295535.44

E 1531004 49 E 1611665 29 E 52002 45 1 290495 90 N 290532 59 N 490042 39 E 1651010 07 E 1619574 68 E 52005 39 N 290494 05 N 290529 74 N 495041 57

E 1851035 24 E 1819654 05 E 523011 28 N 296458.35 N 296524 54 N 430639 93 E 1651644 63 E 1619603 63 E 523014 19

¥ 200514 VA

1551006.45

E 1619807 78 E 527484 86 N 298549 70 N 4350947 30 E 1619817 37 E 52987 76 N 298546 25 N 4350646 49

E 1619626.95 E 522900.72 N 290544.00 N 4900045.60

F. MITHANS 29 F STREET AS

- 2 CONTRICUTION AND EAS CONTROL NOTES
  2 CONTROL QUANTITIES
  3 STORM DRAINGE & RES COMPUTATIONS
  512 KUSTRING CONDITIONS FEATURES
  513 ENTROL STRUCTURE STRUCTURES
  514 ACCESS ROAD FLAT NICK & VOLUMES
  51-16 ACCESS ROAD FLAT NICK & VOLUMES

SEORGE SCOTT LIMITS OF DIS	CE500 - CE506 C	GEO
Total Site		1
Access Road "B" (3,500"	12.93	
Access Road "C" (247)	0.92	

Total Site	1
Access Road "B" (3,500')	12.93
Access Road "C" (247)	0.92
Access Road "D" (169')	0.72
Well Pad	5.94
Excess/Topsoil Material Stockpiles	1108
Total Affected Area	31.57
Total Wooded Acres Disturbed	25 41
Impacts to George M. & Sandra A. Wycki	Off TM 12-1
Access Road "B"	0.15
Total Affected Area	0.15
Total Wooded Acres Disturbed	0.11
Impacts to John S. & Peggy J. Smith	TM 12-11
Access Road "B" (816")	3.10
Total Affected Area	3.16
Total Wooded Acres Disturbed	1.59
Impacts to John S. & Paggy J. Smith	TM 12-12
Access Road "B" (1.061")	4.20
Access Road "D"	0.05
Well Pad	0.21
Total Affected Area	4.45
Total Wooded Acres Disturbed	4 38
Impacts to John S. & Peggy J. Smith	TM E-52
Access Road "B" (836')	3 26
Access Road "D"	0.22
Well Pad	2.44
Total Affected Area	5.92

Total Wooded Acres Disturbed

Lekuta Unit 2H

PLANE NAVDEN

Impacts to Paul Amos Smith TM	8-36
Access Road "B" (224)	0.97
Well Pad	0.48
Total Affected Area	1.43
Total Wooded Acres Disturbed	1.42
Impacts to George S. Wyckoff TM 1	2-13.1
Access Road "C" (174')	0.64
Access Road "D" (169')	0.45
Well Pad	2 13
Excess/Topso I Material Stockpiles	3.88
Total Affected Area	7.10
Total Wooded Acres Disturbed	3.46
Impacts to George S. & Susan R. Wycko	# TM B-36.1
Access Road "B" (561)	1.19
Access Road "C" (73")	0.28
Well Pad	0.70
Excess/Topso I Material Stockpiles	0.12
Total Affected Area	2.29
Total Wooded Acres Disturbed	1.77
Impacts to Robert L. Holland TM	8-51
Excess/Topso I Material Stockpiles	0.86
Total Affected Area	0.86
Total Wooded Acres Disturbed	0.75
spaces to L.W. Coulehan Chad W. Johns	on TM 12-14
Excess/Topso / Material Stockpries	6.20
Total Affected Area	6.20
Total Wooded Acres Disturbed	6.20

LONG -80 43-59 8826 LAT 38-16-27 3194 LONG -80-43-59 7801

LAT 30-18-27 2025

LONG -80-43-59 5377 LAT 39-18-27 2656

LONG #0-43-59 5153

AT 15.16.27 2119

CNG -80-43-59 1480 LAT 35-16-27 1581

WW North UTM (METERS) NAD 23 Lat & Long LONG -80-44-00 3723 LAT 39 18-27 4269 LONG -80-44-00 2490 LONG -80-44-90 1275 LONG -80-44-90 1275 LAT 36-18-27 3731



DATE 03/30/2017

S EERING ENGINE

Antero

THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES COMPORATION

GEORGE SCOTT
WELL PAD
WEST UNION DISTRICT
RIDGE COUNTY, WEST VIRG

