



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, April 12, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION (A)
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for PUP UNIT 1H
47-017-06806-00-00

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: PUP UNIT 1H
Farm Name: SWISHER, LEONA
U.S. WELL NUMBER: 47-017-06806-00-00
Horizontal 6A / New Drill
Date Issued: 4/12/2017

Promoting a healthy environment.

04/14/2017

PERMIT CONDITIONS

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

CONDITIONS

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.

PERMIT CONDITIONS

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

WW-6B
(04/15)

API NO. 47-017 - 06806
OPERATOR WELL NO. Pup Unit 1H
Well Pad Name: Swisher Pad

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

1) Well Operator: Antero Resources Corpora 494507062 017 - Doddri New Milr New Milton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Pup Unit 1H Well Pad Name: Swisher Pad

3) Farm Name/Surface Owner: Leona Swisher Public Road Access: CR 25 (Meathouse Fork Road)

4) Elevation, current ground: 981' Elevation, proposed post-construction: 981'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow X Deep _____

Horizontal X

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7200' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3250#

8) Proposed Total Vertical Depth: 7200' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18700' MD

11) Proposed Horizontal Leg Length: 10982'

12) Approximate Fresh Water Strata Depths: 71', 89', 105'

13) Method to Determine Fresh Water Depths: Josie Unit 2H (API# 47-017-06265) and Swisher Unit 2H (API #47-017-06296) on same pad

14) Approximate Saltwater Depths: 1257'

15) Approximate Coal Seam Depths: None Identified

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No X

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WW-6B
(04/15)

API NO. 47- 017 -
OPERATOR WELL NO. Pup Unit 1H
Well Pad Name: Swahor 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#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	300'	300'	CTS, 417 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	18700'	18700'	4735 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	1.18
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	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Leed-HPOZ & Tol-H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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WW-6B
(10/14)

API NO. 47-017 - _____
 OPERATOR WELL NO. Pup Unit 1H _____
 Well Pad Name: Swisher 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.

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): 9.53 existing acres

22) Area to be disturbed for well pad only, less access road (acres): 3.39 existing 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

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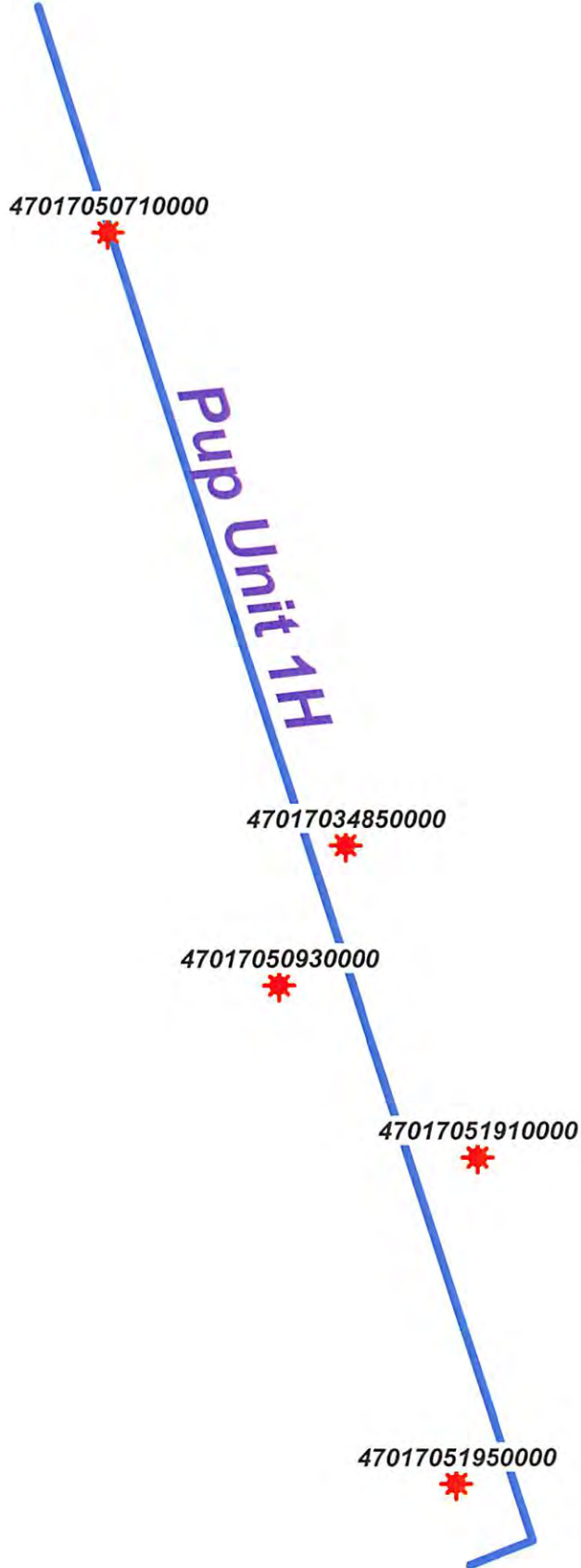
25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.
 Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.
 Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.
 Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

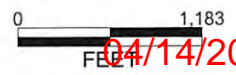
*Note: Attach additional sheets as needed.

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04/14/2017

PUP UNIT 1H (SWISHER PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

UWI (API Num)	Well Name	Well Number	Operator	Hist Oper	Elev	GR	TD	TD (STVD)	Perforated Interval MD (shallowest, deepest)	Perforated Formation(s)	Produible Formation(s) not part'd
4201205030000	GREATHOUSE ELDEN S	W115-W113	JAY-BEE OIL & GAS	JAY-BEE OIL & GAS	1207	5637	-4425	5822-5487	Warren, Riley, Benson, Alexander, Elk	Warren, Gantz, Gordon, Elkh, Speedley, Baltown, Bradford	
4201205010000	ROSS (DUSE) P	B 18-3	JAY-BEE OIL & GAS	JAY-BEE OIL & GAS	892	5460	-4468	5670-5195	Baltown, Riley, Benson, Elk	Warren, Gantz, Gordon, Elkh, Warren, Speedley, Bradford, Alexander	
4201205185000	DEWEYCKE DABRELL & BARBARA	B14-PC3	JAY-BEE OIL & GAS	JAY-BEE OIL & GAS	841	5458	-4517	4902-5321	Riley, Benson, Alexander, Elk	Warren, Gantz, Gordon, Elkh, Warren, Speedley, Baltown, Bradford, Alexander	
4201204850000	DOUGLAS HEIRS	1A	ANTERO RESOURCES CORPORATION	UNITED OPERATING CO	800	5350	-4450	7235-5234	Warren, Gantz, Gordon, Elkh, Speedley, Baltown, B	Warren, Speedley, Baltown, Elk	
4201205131000	NICHOLSON DOBRIENE	B14-A5	JAY-BEE OIL & GAS	JAY-BEE OIL & GAS	1123	5340	-4158	5212-5215	Benson	Warren, Gantz, Gordon, Elkh, Warren, Speedley, Baltown, Bradford, Riley	

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WW-9
(4/16)

API Number 47 - 017
Operator's Well No. Pup Unit 1H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) Headwaters Middle Island Creek Quadrangle New Milton 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 (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

Will a synthetic liner be used in the pit? Yes No If so, what ml.? N/A

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number UIC Permit # will be provided on Form WR-34)
- Reuse (at API Number Future permitted well locations when applicable. API # will be provided on Form WR-34)
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain Northwestern Landfill Permit #SWF-1025-WV0109410)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

Surface - Air/Freshwater, Intermediate - Dust/Suff Foam, Production - Water Based Mud

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Stored in tanks, removed 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)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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 or imprisonment.

Company Official Signature [Signature]
Company Official (Typed Name) Cole Kilstrom
Company Official Title Environmental & Regulatory Manager

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Subscribed and sworn before me this 30th day of January, 20 17

[Signature] Notary Public

My commission expires 7/8/2020



04/14/2017

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 9.53 acres Prevegetation pH _____

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type Hay or straw or Wood Fiber (will be used where needed)

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	45	Tall Fescue	45
Perennial Rye Grass	20	Perennial Rye Grass	20
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]* (Daniel Flack)

Comments: _____

Title Oil & Gas Inspector

Date: 2/1/17

Field Reviewed? Yes No

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

PRODUCTION INTERVAL

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

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13. Escaid 110
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K
Drilling Fluid Additive – Sulfonated Asphalt Residuuum
17. Sodium Chloride, Anhydrous
Inorganic Salt
18. D-D
Drilling Detergent – Surfactant
19. Terra-Rate
Organic Surfactant Blend
20. W.O. Defoam
Alcohol-Based Defoamer
21. Perma-Lose HT
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite
Natural Graphite – LCM
25. Mil Bar
Barite – Weighting Agent
26. X-Cide 102
Biocide
27. Soda Ash
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol
Amine Acid complex – Shale Stabilizer
29. Sulfatrol
Sulfonated Asphalt – Shale Control Additive
30. Xanvis
Viscosifier For Water-Based Muds
31. Milstarch
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube
Drilling Fluid Lubricant

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911 Address
3799 Meathouse Fork Rd
New Milton, WV 26411

Well Site Safety Plan

Antero Resources

Well Name: Swisher Unit 1H & 2H, Josie Unit 1H & 2H, New Milton Unit 1H & 2H, Pup Unit 1H & 2H

Pad Location: Swisher Pad
 Doddridge County/New Milton District

GPS Coordinates:

Entrance - Lat 39°12'31.5128"/Long -80°39'57.6953" (NAD83)

Pad Center - Lat 39°12'37.7263"/Long -80°39'58.0682" (NAD83)

Driving Directions:

From US 50 near Clarksburg: Head west on US 50 for 23 miles. Turn left onto County Route 50/16 and continue for 0.2 miles. Turn left to stay on Co RTE 50/16 and continue for 1.6 miles. Turn left onto WV 18 S and continue for 3.1 miles. Turn left onto Co RTE 25/Meathouse Fork and continue for 3.7 miles.

Alternate Route:

From West Union: Head south on WV-18 S (6.9mi). Turn Left onto Meathouse Firk Rd (3.7mi). Pad access will be on your left.

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

[Handwritten Signature]
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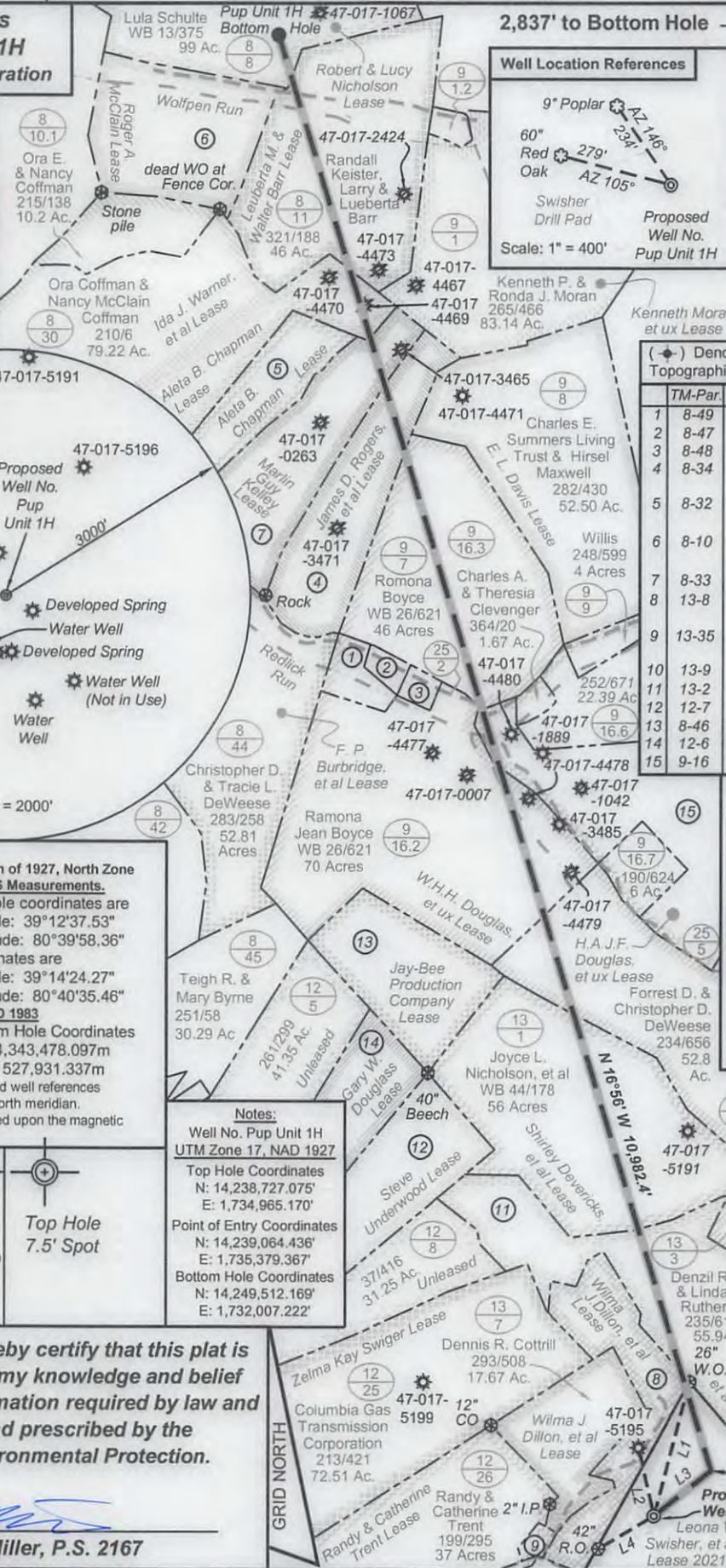
04/14/2017

**Antero Resources
Well No. Pup Unit 1H
Antero Resources Corporation**



Note: It appears 6 water wells and 2 springs were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

Scale: 1" = 2000'



Well Location References

Line	Bearing	Dist.
L1	S 14°55' W	1015.7'
L2	S 12°47' E	515.0'
L3	N 51°48' E	534.4'
L4	N 59°07' E	473.8'

Bottom Hole 7.5' Spot

(+) Denotes Location of Well on Topographical Maps United States

TM-Par.	Surface Owner	Bk/Pg	Acres
1 8-49	Terry Gale Boyce	200/30	4.0
2 8-47	Euna Gay Engstrom	WB 38/36	3.0
3 8-48	Ramona Boyce	WB 26/621	2.0
4 8-34	Norma Jean Martin	WB 88/275	25.0
5 8-32	Roger A. McClain II & Stacy L. McClain	288/303	15.18
6 8-10	Roger A. McClain II & Stacy L. McClain	288/303	28.58
7 8-33	Marlin G. Kelly, et al	294/665	36.75
8 13-8	Darrell W. & Barbara Devericks	229/260	17.84
9 13-35	Christopher R. Kelley & Brandi M. Trent	242/688	1.03
10 13-9	Leona Swisher	WB 33/535	56.99
11 13-2	Dennis R. Cottrill	293/508	40.25
12 12-7	Laura L. Hurst	179/17	35.0
13 8-46	Gary W./Judy Douglass	211/502	20.0
14 12-6	Gary W. Douglass, et al	233/136	35.0
15 9-16	Ramona J. Boyce	26/621	31.32

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Pup Unit 1H Top Hole coordinates are N: 260,895.97' Latitude: 39°12'37.53" E: 1,669,550.91' Longitude: 80°39'58.36"
Bottom Hole coordinates are N: 271,732.71' Latitude: 39°14'24.27" E: 1,666,772.12' Longitude: 80°40'35.46"
UTM Zone 17, NAD 1983
Top Hole Coordinates N: 4,340,190.828m E: 528,832.975m
Bottom Hole Coordinates N: 4,343,478.097m E: 527,931.337m
Plate orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

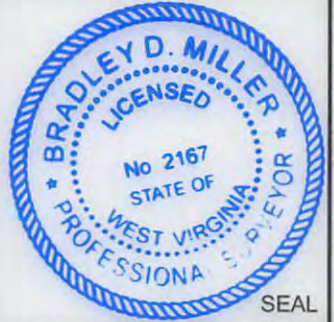
Legend

- Proposed gas well
- Found corner, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Surface tracts (approx.)
- Well (Active)
- Well (Plugged)

Top Hole 7.5' Spot

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

Bradley D. Miller, P.S. 2167



FILE NO: 86-30-NM-13
DRAWING NO: Pup Unit 1H Well Plat 11-16
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: December 21 2016
Operator's Well No. Pup Unit 1H
API WELL NO
47 - 017 - 06806
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-built 981' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: New Milton
DISTRICT: New Milton COUNTY: Doddridge
SURFACE OWNER: Leona Swisher ACREAGE: 56.99
ROYALTY OWNER: Mary Maxine Welch, et al; Marlin Guy Kelley; Aleta B. Chapman; Shirley Devericks, et al LEASE NO: 20215 ACREAGE: 56; 56.99; 60.75

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 7,200' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 18,700' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

04/14/2017

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
 Chapter 22, Article 6A, Section 5(a)(5)
 IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Leon W. Swisher, et al Lease 20215</u>			
Leon W. Swisher, et al	Bluestone Energy Partners	1/8	0251/0247
Bluestone Energy Partners	Antero Resources Bluestone LLC, a wholly owned subsidiary of Antero Resources Appalachian Corporation	Affidavit Regarding Merger	DB 0288/0001
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Wilma J. Dillon, et al Lease</u>			
Wilma J. Dillon, et al	Jay-Bee Production Company	1/8	0203/0694
Jay-Bee Production Company	Antero Resources Appalachian Corporation	Assignment of Oil and Gas Leases	0301/0373
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Mary Maxine Welch, et al Lease</u>			
Mary Maxine Welch, et al	Jay-Bee Production Company	1/8	0209/0168
Jay-Bee Production Company	Antero Resources Appalachian Corporation	Assignment of Oil and Gas Leases	0301/0373
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Shirley Devericks, et al Lease</u>			
Shirley Devericks, et al	Jay-Bee Production Company	1/8	0204/0240
Jay-Bee Production Company	Antero Resources Appalachian Corporation	Assignment of Oil and Gas Leases	0301/0373
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	

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*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

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

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>W. H. H. Douglas, et ux Lease</u>			
W. H. H. Douglas, et ux	Hope Natural Gas Co.	1/8	0033/0411
Hope Natural Gas Co.	Consolidated Gas Supply Corp.	Confirmatory Deed	DB 0143/0345
Consolidated Gas Supply Corp.	Consolidated Gas Transmission Corp.	Assignment	0135/0383
Consolidated Gas Transmission Corp.	CNG Development Company	Assignment and Agreement	0139/0041
CNG Development Company	United Operating Company	Assignment	0150/0188
United Operating Company	Peake Energy, Inc.	Assignment	0183/0207
Peake Energy, Inc.	North Coast Energy Eastern, Inc	Certificate of Amendment to the Certificate of Authority	DB 0249/0343
North Coast Energy Eastern, Inc, by J. Douglas Ramsey Ph.D.	EXCO-North Coast Energy Eastern, Inc	Affidavit of Name Change	DB 0277/0068
EXCO-North Coast Energy Eastern, Inc	EXCO Resources (WV), Inc.	Certificate of Amendment to the Certificate of Authority	Exhibit 2
EXCO Resources (WV), Inc.	EXCO Production Company (WV), LLC	Certificate of Merger	Exhibit 3
EXCO Production Company (WV), LLC, et al	Antero Resources Appalachian Corporation	Assignment, Bill of Sale and Conveyance	0285/0084
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>H.A.J.F. Douglas, et ux Lease</u>			
H.A.J.F. Douglas, et ux	G.B. Travis	1/8	0031/0216
G.B. Travis	J.E. Trainer	Assignment	0035/0035
J.E. Trainer Estate, by special commissioner	Luther G. Pigott & Frank E. Michael	Assignment	0054/0269
Franklin E. Michaels, et ux	Luther G. Pigott	Deed and Assignment	DB 0158/0226
Luther G. Pigott, et ux	Carolyn P. Erambert	Assignment	0100/0726
Carolyn P. Erambert	United Operating Company	Assignment	0101/0305
United Operating Company	Peake Energy, Inc.	Assignment	0183/0207
Peake Energy, Inc.	North Coast Energy Eastern, Inc	Certificate of Amendment to the Certificate of Authority	DB 0249/0343
North Coast Energy Eastern, Inc, by J. Douglas Ramsey Ph.D.	EXCO-North Coast Energy Eastern, Inc	Affidavit of Name Change	DB 0277/0068
EXCO-North Coast Energy Eastern, Inc	EXCO Resources (WV), Inc.	Certificate of Amendment to the Certificate of Authority	Exhibit 2
EXCO Resources (WV), Inc.	EXCO Production Company (WV), LLC	Certificate of Merger	Exhibit 3
EXCO Production Company (WV), LLC, et al	Antero Resources Appalachian Corporation	Assignment, Bill of Sale and Conveyance	0285/0084
Antero Resources Appalachian Corp.	Antero Resources Corporation	Name Change	Exhibit 1

*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

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INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>James D. Rogers, et al Lease</u>			
James D. Rogers, Successor Trustee of the Charles O. Dennison Trust	Honor Resources Company	1/8	0294/0483
Honor Resources Company	Exco Production Company (WV), LLC, et al	Assignment of Oil and Gas Leases	0299/0659
Exco Production Company (WV), LLC, et al	Antero Resources Appalachian Corporation	Assignment, Bill of Sale and Conveyance	0301/0551
<u>Marlin Guy Kelley Lease</u>			
Marlin Guy Kelley	Antero Resources Appalachian Corporation	1/8	0262/0409
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Aleta B. Chapman Lease 8-32</u>			
Aleta B. Chapman	Antero Resources Appalachian Corporation	1/8	0256/0411
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Aleta B. Chapman Lease 8-30</u>			
Aleta B. Chapman	Antero Resources Appalachian Corporation	1/8	0256/0406
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Leuberta M. & Walter Barr Lease</u>			
Leuberta M. Barr & Walter Barr	Tenmile Land, LLC	1/8+	0287/0536
Tenmile Land, LLC	Antero Resources Appalachian Corporation	Assignment	0294/0631
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Robert & Lucy Nicholson Lease				
	Robert Nicholson & Lucy Nicholson, h/w	G. B. Travis	1/8	0031/0222
	G.B. Travis	J.E. Trainer	Assignment	0035/0035
	J.E. Trainer Estate, by special commissioner	Luther G. Pigott & Frank E. Michael	Assignment	0054/0269
	Franklin E. Michaels, et ux	Luther G. Pigott	Deed and Assignment	DB 0158/0226
	Luther G. Pigott, et ux	Carolyn P. Erambert	Assignment	0100/0726
	Carolyn P. Erambert	United Operating Company	Assignment	0101/0305
	United Operating Company	Peake Energy, Inc.	Assignment	0183/0207
	Peake Energy, Inc.	North Coast Energy Eastern, Inc.	Certificate of Amendment to the Certificate Authority	DB 0249/0343
	North Coast Energy Eastern, Inc., by J. Douglas Ramsey Ph.D.	EXCO-North Coast Energy Eastern, Inc.	Affidavit of Name Change	DB 0277/0068
	EXCO-North Coast Energy Eastern, Inc.	EXCO Resources (WV), Inc.	Certificate of Amendment to the Certificate Authority	Exhibit 2
	EXCO Resources (WV), Inc.	EXCO Production Company (WV), LLC	Certificate of Merger	Exhibit 3
	EXCO Production Company (WV), LLC, et al	Antero Resources Appalachian Corporation	Assignment, Bill of Sale and Conveyance	0285/0084
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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

Well Operator: Antero Resources Corporation
 By: Kevin Kilstrom
 Its: Senior Vice President - Production

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Page 1 of _____

FILED

JUN 10 2013

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



Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsos.com
E-mail: business@wvsos.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

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

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

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/25/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of Incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments: _____
(attach additional pages if necessary)
- Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)
Alvyn A. Schopp (304) 367-7310
Contact Name Phone Number
- Signature information (See below *Important Legal Notice Regarding Signature*):
Print Name of Signer: Alvyn A. Schopp Title/Capacity: Authorized Person
Signature: [Signature] Date: June 10, 2013

***Important Legal Notice Regarding Signature:** For West Virginia Code §31D-1-122. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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Revised 4/13
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WV Department of
Environmental Protection

State of West Virginia



Certificate

*I, Natalie E. Tennant, Secretary of State of the
State of West Virginia, hereby certify that*

an Amended Certificate of Authority of

EXCO - NORTH COAST ENERGY EASTERN, INC.

was filed in my office as required by the provisions of the West Virginia Code and was found to conform to law.

Therefore I issue this

CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the corporation to

EXCO RESOURCES (WV), INC.



Given under my hand and the
Great Seal of the State of
West Virginia on this day of
December 2, 2009
Office of Oil and Gas

FEB 01 2017

Natalie E. Tennant
Environmental Protection
Secretary of State

State of West Virginia



Certificate

I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

by the provisions of the West Virginia Code, Articles of Merger were received and filed

MERGING EXCO RSOUCES (PA), LLC, A QUALIFIED TX ORGANIZATION WITH EXCO RESOURCES (WV), LLC, A QUALIFIED TX ORGANIZATION, AS SURVIVORS AND CREATING THE FOLLOWING NON-QUALIFIED TX ORGANIZATIONS: BG NATURAL GAS PRODUCTION COMPANY (PA), LLC, APPALACHIA MIDSTREAM, LLC, EXCO RSOUCES (XA), LLC, BG NATURAL GAS PRODUCTION COMPANY (WV), LLC AND EXCO PRODUCTION COMPANY (PA), LLC. **IN THE MERGER EXCO RESOURCES (WV), LLC CHANGED ITS NAME TO EXCO PRODUCTION COMPANY (WV), LLC.**

Therefore, I hereby issue this

CERTIFICATE OF MERGER



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

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Office of Oil and Gas July 1, 2010

FEB 01 2017
Natalie E. Tennant
WV Department of Environmental Protection
Secretary of State

04/14/2017

4701706806



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

January 30, 2017


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

RE: Well Name: Pup Unit 1H
Quadrangle: New Milton
Doddridge County/New Milton District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Pup Unit 1H 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 Pup Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,


Brett Kuhn
Landman

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Environmental Protection

04/14/2017

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

Date of Notice Certification: 01/30/2017

API No. 47- 017 -
Operator's Well No. Pup Unit 1H
Well Pad Name: Swisher Pad

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>528832.975m</u>
County: <u>Doddridge</u>	UTM NAD 83 Northing: <u>4340190.828m</u>
District: <u>New Milton</u>	Public Road Access: <u>CR 25 (Meathouse Fork Rd)</u>
Quadrangle: <u>New Milton 7.5'</u>	Generally used farm name: <u>Leona Swisher</u>
Watershed: <u>Headwaters Middle Island Creek</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

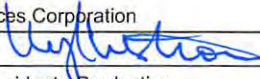
<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p>RECEIVED Office of Oil and Gas FEB 01 2017 WV Department of Environmental Protection</p>
--	--

Required Attachments:

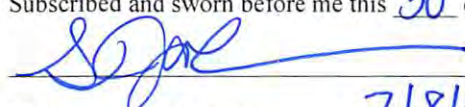
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Certification of Notice is hereby given:

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

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Kevin Kilstrom</u> 		<u>Denver, CO 80202</u>
Its:	<u>Senior Vice President - Production</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>(303) 357-7310</u>	Email:	<u>shjohnson@anteroresources.com</u>



Subscribed and sworn before me this 30 day of January 2017
 Notary Public
 My Commission Expires 7/8/2020

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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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: 1/30/2017 **Date Permit Application Filed:** 1/30/2017

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A 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:

SURFACE OWNER(s)

Name: Leoan Swisher
Address: 3816 Meathouse Fork Road
New Milton, WV 26411

Name: Leoan Swisher (2nd Address)
Address: RR 1 Box 210
New Milton, WV 26411

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Consolidation Coal Company c/o Leatherwood, INC
Address: CNX Center 1000 Consol Energy Dr.
Canonsburg, PA 15317

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE

Name: PLEASE SEE ATTACHMENT
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____
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*Please attach additional forms if necessary

FEB 01 2017

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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 wellhead or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2013, 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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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.**

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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 <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> 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.

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Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: shjohnson@anteroresources.com

Address: 1615 Wynkoop Street
Denver, CO 80202
Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 30 day of Jan, 2017.
[Signature] Notary Public
My Commission Expires 7/8/2020

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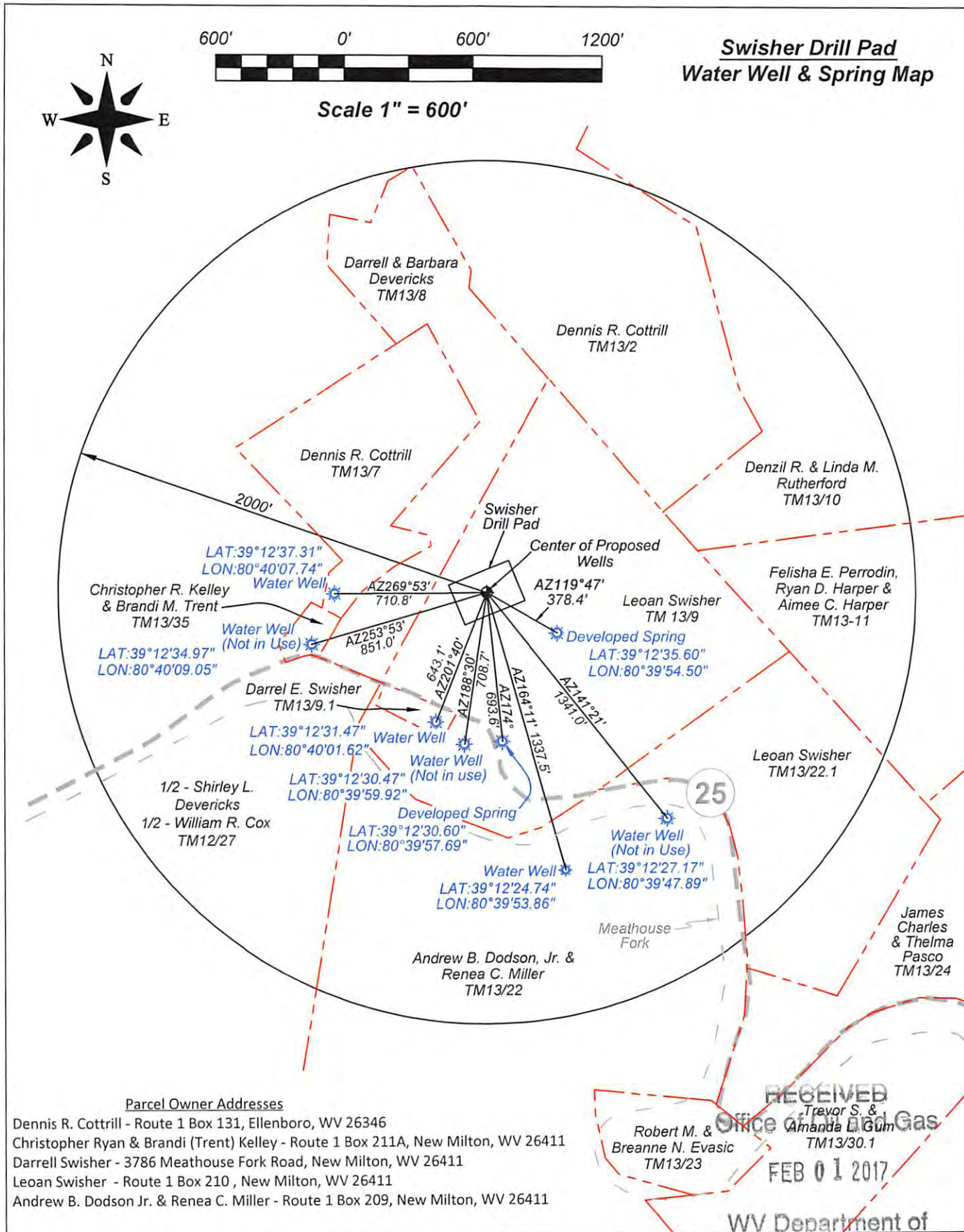


600' 0' 600' 1200'



Scale 1" = 600'

Swisher Drill Pad Water Well & Spring Map



Parcel Owner Addresses

- Dennis R. Cottrill - Route 1 Box 131, Ellenboro, WV 26346
- Christopher Ryan & Brandi (Trent) Kelley - Route 1 Box 211A, New Milton, WV 26411
- Darrell Swisher - 3786 Meathouse Fork Road, New Milton, WV 26411
- Leoan Swisher - Route 1 Box 210, New Milton, WV 26411
- Andrew B. Dodson Jr. & Renea C. Miller - Route 1 Box 209, New Milton, WV 26411

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List of Owners with Proposed Disturbance associated with Swisher Well Pad:

WATER SOURCE OWNERS -	
Owner:	Dennis R. Cottrill
Address:	RR 1 Box 131 Ellenboro, WV 26346
Owner:	Christopher Ryan & Brandi (Trent) Kelley
Address:	RR 1 Box 211A New Milton, WV 26411
Owner:	Darrell Swisher
Address:	3786 Meathouse Fork Road New Milton, WV 26411
Owner:	Leoan Swisher
Address:	RR Box 210 New Milton, WV 26411
Owner:	Andrew B. Dodson Jr. & Renea C. Miller
Address:	RR 1 Box 209 New Milton, WV 26411

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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 Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 11/30/2016 **Date Permit Application Filed:** 01/30/2017

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Leolan Swisher (2nd Address) Name: _____
Address: 3816 Meathouse Fork Rd. RR 1 Box 210 Address: _____
New Milton, WV 26411 New Milton, WV 26411

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 510401.4184m (Approximate Pad Center)
County: Doddridge Northing: 4340187.237m (Approximate Pad Center)
District: New Milton Public Road Access: CR 25
Quadrangle: New Milton 7.5' Generally used farm name: Swisher, Leolan
Watershed: Headwaters Middle Island Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: Antero Resources Appalachian Corporation Authorized Representative: Kara Quackenbush
Address: 1615 Wynkoop St. Address: 1615 Wynkoop St.
Denver, CO 80202 Office of Oil and Gas
Telephone: 303-357-7323 Telephone: 303-357-7323
Email: kquackenbush@anteroresources.com Email: kquackenbush@anteroresources.com
Facsimile: 303-357-7315 Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

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

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

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 01/30/2017 **Date Permit Application Filed:** 01/30/2017

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Leoan Swisher Name: Leoan Swisher (2nd Address)
Address: 3816 Meathouse Fork Road Address: RR 1 Box 210
New Milton, WV 26411 New Milton, WV 26411

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 528832.975m
County: Doddridge Northing: 4340190.828m
District: New Milton Public Road Access: CR 25 (Meathouse Fork Rd)
Quadrangle: New Milton 7.5' Generally used farm name: Leona Swisher
Watershed: Headwaters Middle Island Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Antero Resources Corporation Address: 1615 Wynkoop Street
Telephone: (303) 357-7310 Denver, CO 80202
Email: shjohnson@anteroresources.com Facsimile: 303-357-7315

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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.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

Reissued December 16, 2016

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 Swisher Pad, Doddridge County
Pup Unit 1H Well site 47-017-06806

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2012-0661 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of County Route 25 SLS in Doddridge County.

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

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

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Cc: Kara Quackenbush
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
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Silica, 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

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API# 1706261
 API# 1706265
 API# 1706295
 API# 1706296
 API# 1706542
 API# 1706557
 API# 1706558
 API# 1706582

SWISHER DRILL PAD SITE AS-BUILT PLAN & ROAD PROFILES



ANTERO RESOURCES CORPORATION

Electronic version of these plans may be viewed at: Q:\OIL GAS\SAY FILES\REVIEWS



	NORTH	EAST	LA111 UAL	LONGITUDE
SWISHER UNIT 24	289220.4852	182824.43210	29-12-27 8 100	-85-31-58.4182
SWISHER UNIT 24	289215.2833	182828.7890	29-12-27 8 000	-85-31-58.7027
JOSE UNIT 04	289217.5781	182827.5438	29-12-27 8 011	-85-31-58.1822
JOSE UNIT 04	289220.8132	182827.8011	29-12-27 7 203	-85-31-58.0587
NEWINGTON UNIT 111	289241.5892	182829.19822	29-12-27 7 810	-85-31-57.8311
NEWINGTON UNIT 211	289248.2023	182828.18222	29-12-27 8 002	-85-31-57.8381
PLU UNIT 11	289212.5261	182818.18020	29-12-27 8 110	-85-31-57.7171
PLU UNIT 12	289238.6138	182818.3424	29-12-27 8 853	-85-31-57.8201

PROJECT LOCATION

AFFECTED TAX PARCELS: 1 FROM SWISHER WB 33 PG 535 TAX 11 PARCEL 5 NEW MILTON DISTRICT PROJECT LOCATION SCALE 1" = 2000'

WELL LOCATION RESTRICTIONS

THE PAD COMPLES WITH THE FOLLOWING RESTRICTIONS:

- 200' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 65' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 200SF USED FOR POLY OR DRARY REARING FROM THE CENTER OF THE PAD
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO NATURAL REPRODUCING TROUT STREAM
- 100' OF SURFACE GRASS GROUND WATER WITHIN 100' TO A PUBLIC WATER SUPPLY

PROJECT CONTACTS

ANTHERO RESOURCE CORP.
 ANTHONY BARNETT, ILLU ENR/REG
 204-626-2405 OFFICE
 204-673-8100 CELL
 ELI WAGNER, ENVIRONMENTAL ENGINEER
 204-622-2042, EXT. 211
 OFFICE 204-470-6270

JOHN KAVAN, ENGINEER
 817-264-1553
 AARON KUNZLER, CONSTRUCTION SUPERVISOR
 405-277-8344

ELI WAGNER & ENGINEER
 WHITE BROTHERS CONSULTING LLC
 LEE SNYDER, P.E.
 304-850-0488
 KIMBERLY T. WHITE, P.P.
 304-851-4477

MISS UTILITY OF WEST VIRGINIA
 1-800-245-4848
 WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!



DESCRIPTION OF PAD	LATITUDE	LONGITUDE
MAIN ACCESS ROAD	39-12-37.7263	-85-31-58.0899
DRILL PAD	39-12-31.5128	-85-31-57.8553
TANK FARM	39-12-31.5128	-85-31-57.7327
WOODED AREA	39-12-38.8139	-85-31-51.1610

DESCRIPTION	AREA
MAIN ACCESS ROAD TO PAD AND TANK FARM	2.33
DRILL PAD	3.30
TANK FARM AND SPILL PAD	3.91
TOTAL	9.54
TOTAL WOODED AREA	2.08

DESCRIPTION	FEET
COUNTY ROUTE TO DRILL PAD	586
DRILL PAD TO TANK FARM	348
TOTAL	1,291

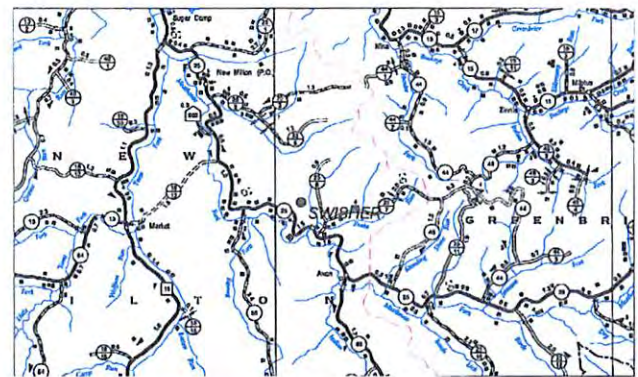
STREAM & IMPACT CAUSE	CULVERT (LF)	PILES/CULVERT STRUCTURES (LF)	CONST. DISTURB. TO LOD (LF)	TOTAL IMPACT (LF)
STREAM 2 (MAIN ROAD)	0	0	8	8
TOTAL			8	8

STREAM & IMPACT CAUSE	CULVERT (LF)	PILES/CULVERT STRUCTURES (LF)	CONST. DISTURB. TO LOD (LF)	TOTAL IMPACT (LF)
STREAM 1 (MAIN ROAD)	122	14	10	237
STREAM 1 (MAIN ROAD)	20	0	0	20
TOTAL				257

DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PLANS ASSIGNED FROM COUNTY FLOODPLAIN COORDINATION	NO
FLOOD HAZ STUDY COMPLETE	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER REF FOR SITE	6401703200
ACRES OF CONSTRUCTION IN FLOODPLAIN	N/A

COVER PAGE & LOCATION MAP	1
AS-BUILT PLAN SHEET	2
AS-BUILT PAD ROAD AND TANK FARM ROAD PROFILES	3

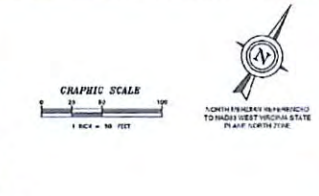
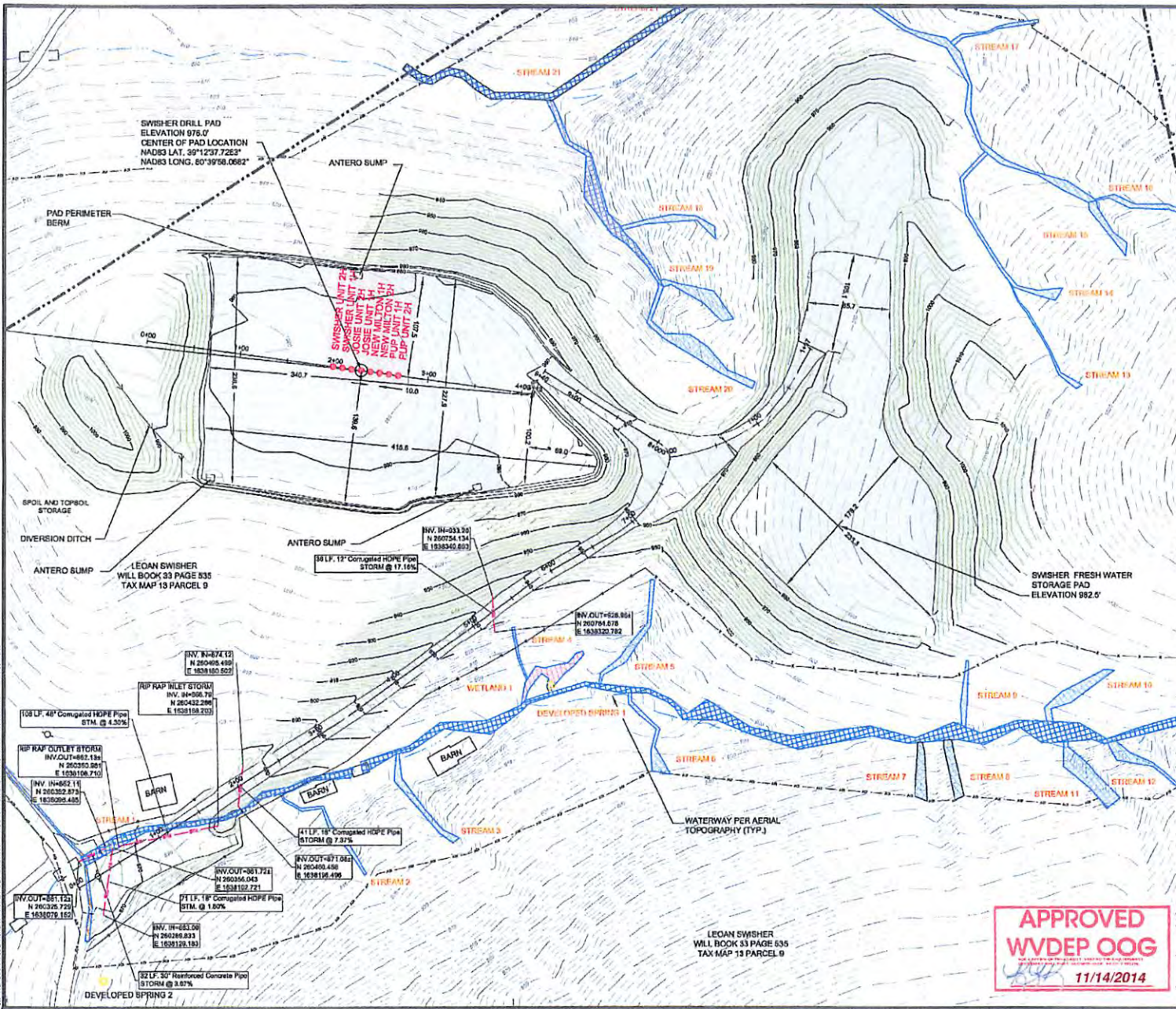
DESIGN CERTIFICATION:
 THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS REG-491.
 811-100 PLANS:
 ANTIPOD OF COLLEGE VALLEY OBTAIN AN ENCROACHMENT PERMIT (SAS 100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.



DATE: 04/20/14
 SHEET: 1 OF 3
 PROJECT: SWISHER DRILL PAD SITE
 COUNTY: DODDIDGE COUNTY, WV
 CLIENT: ANTERO RESOURCES CORPORATION
 DESIGNER: ELI WAGNER & ENGINEER
 SCALE: AS SHOWN

THIS DOCUMENT IS PREPARED FOR ANTERO RESOURCES CORPORATION
 SWISHER DRILL PAD SITE
 NEW MILTON DISTRICT
 DODDIDGE COUNTY, WV

4701706806



- NOTES**
1. THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 56072222C, DODDRIIDGE COUNTY, WV.
 2. SUMPS WERE IN PLACE AT TIME OF SURVEY. THEY WERE NOT PLUMBED.
 3. ALL EXISTING TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING WITH A FLIGHT DATE OF 4-10-11.
 4. PAD AND ROAD WERE GRAVELED AT TIME OF SURVEY. ALL SLOPES WERE SEEDED.
 5. AREA SHADDED IN GREY IS THE PROPOSED SIFP.
 6. ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR.

***CUMULATIVE VOLUMES PER PLAN**

DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
SWISHER DRILL PAD	6,201	7,811	2,610
TANK FARM	14,333	6,676	20,009
SWISHER PAD	8,552	8,224	3,228
SPOIL PADS	0	37,484	-37,484
TOTAL	29,086	59,995	-30,909

*THE EARLY WORK QUANTITIES PROVIDED ARE AN ESTIMATE FOR CONSTRUCTION. THE QUANTITIES SHOWN MAY BE GREATER OR LESS THAN ACTUALLY EXCAVATED. THE ENGINEER IS NOT RESPONSIBLE FOR VARIANCES FROM THE ESTIMATED QUANTITIES AND/OR NOT COMPY TO THEIR ACCURACY.

***CUMULATIVE VOLUMES AS BUILT**

DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
SWISHER DRILL PAD	6,201	7,811	2,610
TANK FARM	14,333	6,676	20,009
SWISHER PAD	8,552	8,224	3,228
SPOIL PADS	0	37,484	-37,484
TOTAL	29,086	59,995	-30,909

*THE EARLY WORK QUANTITIES ARE BASED ON AN AS-BUILT SURVEY DATED 8-10-13. THE SIFP QUANTITY IS APPROXIMATE.

LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- SILT FENCE
- SUPER SILT FENCE
- SILT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING TREE LINE
- PROPOSED WOOD WIRE FENCE
- N4PW PERENNIAL STREAM
- P4PW PERENNIAL STREAM
- I4PW INTERMITTENT
- P0W WETLANDS
- DITCH
- SF, SSP AND SILT SOCK INDICATOR

APPROVED WVDEP OOG
 11/14/2014

DATE: 8/14/2014
 SHEET: 2 OF 3
 PROJECT: SWISHER DRILL PAD SITE
 CLIENT: ANTERO RESOURCES CORPORATION
 ENGINEER: [Signature]
 LICENSE: 14278
 STATE: WV

AS-BUILT PLAN SHEET
SWISHER DRILL PAD SITE
NEW MILTON DISTRICT
DODDRIIDGE COUNTY, WV

NO.	DATE	BY	REVISION

4701706806

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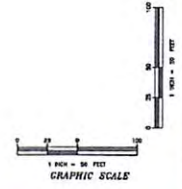
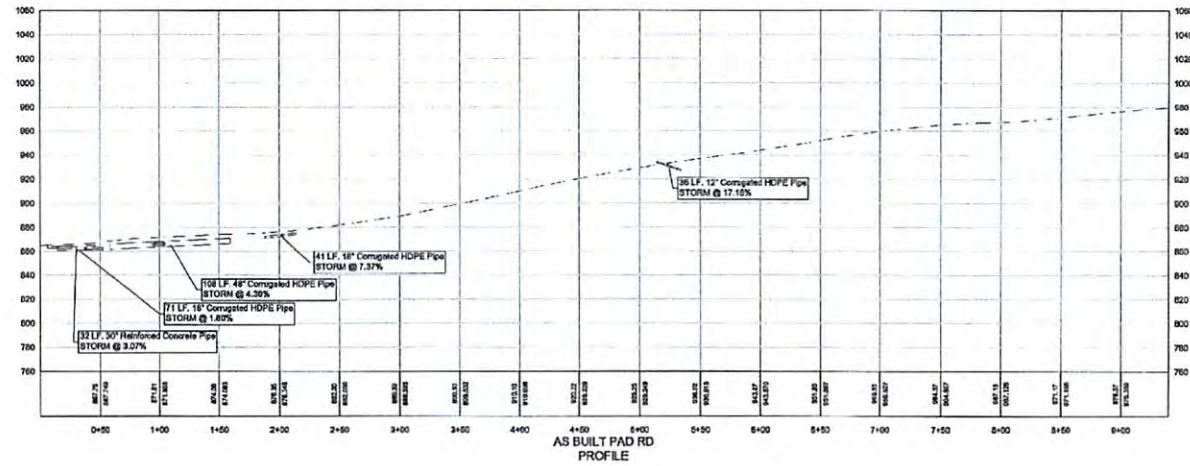
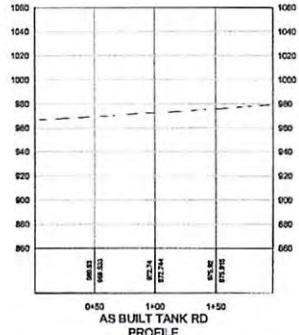
APPROVED
WVDEP OOG
11/14/2014

DATE 11/14/2014	SHEET 3	TOTAL SHEETS 3
 WATER BUREAU CONSULTING, LLC ENGINEERING AND SURVEYING 401 PAUL ROAD, SUITE 218 CHARLOTTE, NC 28205 www.wbnc.com		



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
CORPORATION

AS-BUILT PROFILES
ROAD PROFILES
SWISHER DRILL PAD SITE
NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV



NO.	DATE	BY

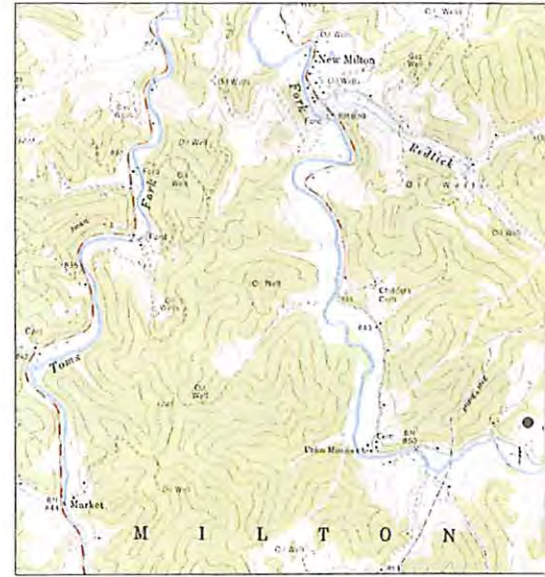
4701706806

SWISHER DRILL AS-BUILT PLAN & R

ANTERO RESOURCES



● PROJECT LOCATION



WATERSHED (HUC8): LITTLE MUSKINGUM-MIDDLE ISLAND

NEW MILTON 7.5

PROJECT CONTACTS

ANTERO RESOURCES
ANTHONY SMITH, FIELD ENGINEER
304-869-3405 OFFICE
304-873-0150 CELL

ELI WAGONER, ENVIRONMENTAL ENGINEER
304-622-3842, EXT. 311
OFFICE 304-476-9770

JOHN KAWCAK, ENGINEER
817-368-1553

AARON KUNZLER, CONSTRUCTION SUPERVISOR
405-277-8344

SURVEYOR & ENGINEER
WHITE BROTHERS CONSULTING, LLC
LEE SNYDER, P.S.
304-550-9484
TIMOTHY T. WHITE, P.E.
304-561-4477

SITE LOCATIONS STATE PLANE NAD 83 (WV NORTH ZONE)		
	LATITUDE	LONGITUDE
CENTER OF PAD	39-12-37.7203	-80-39-58.0682
BEGIN ACCESS ROAD	39-12-31.5128	-80-39-57.6953
CENTER OF PAD (UTM 83-17 M)	N 4340187.237	E 528824.568
CENTER OF TANK	39-12-38.9129	-80-39-51.1619

LENGTH (FEET)	
DESCRIPTION	FEET
COUNTY ROUTE TO DRILL PAD	956
DRILL PAD TO TANK FARM	345
TOTAL	1,301

LOD AREAS (ACRES)	
DESCRIPTION	AREA
MAIN ACCESS ROAD TO PADS AND TANK FARM	2.33
DRILL PAD	3.39
TANK FARM AND SPOIL PAD	3.81
TOTAL	9.53
TOTAL WOODED AREA	2.05

AFFECTED TAX PARCELS: LEON S
WB 33
TM 13 P
NEW MILT

STREAM & IMP

STREAM 2 (MAIN

STREAM & IMP

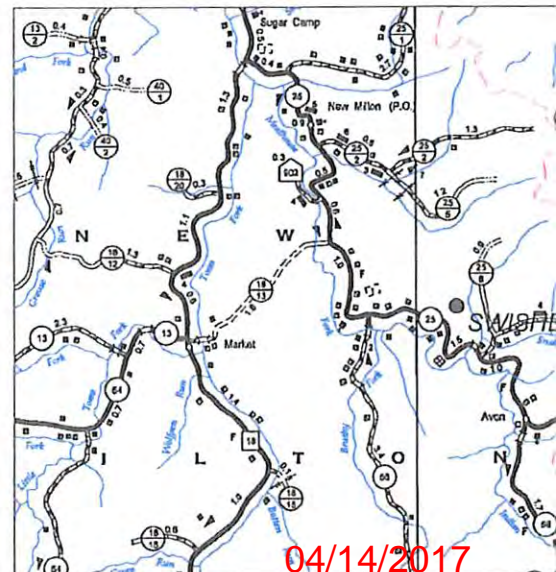
STREAM 1 (MAIN

STREAM 1 (MAIN

MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
WEST VIRGINIA STATE LAW REQUIRES
THAT YOU CALL TWO BUSINESS DAYS
BEFORE YOU DIG IN THE STATE OF
WEST VIRGINIA. IT'S THE LAW!!



Know what's below.
Call before you dig.



04/14/2017

L PAD SITE ROAD PROFILES

CORPORATION



NORTH MERIDIAN REFERENCED
TO NAD83 WEST VIRGINIA STATE
PLANE NORTH ZONE

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
6-05-2014	1	3

WB
White Brothers Consulting, LLC
ENGINEERING AND SURVEYING
4400 CHARLES ST. SUITE 106
CHARLESTON, WV 25312
(304) 530-9484
www.white-brothers.com



PROJECT LOCATION
SCALE 1" = 2000'

DRILL PAD ELEVATION 976.0'

WELL HEAD LAYOUT STATE PLANE NAD 83 (WV NORTH ZONE)				
	NORTH	EAST	LATITUDE	LONGITUDE
SWISHER UNIT 2H	260909.4880	1638054.5219	39-12-37.6108	-80-39-58.4192
SWISHER UNIT 1H	260913.2630	1638063.7820	39-12-37.6403	-80-39-58.3022
JOSIE UNIT 2H	260917.0381	1638073.0420	39-12-37.6876	-80-39-58.1852
JOSIE UNIT 1H	260920.8132	1638082.3021	39-12-37.7263	-80-39-58.0682
NEW MILTON UNIT 1H	260924.5883	1638091.5622	39-12-37.7648	-80-39-57.9511
NEW MILTON UNIT 2H	260928.3633	1638100.8222	39-12-37.8033	-80-39-57.8341
PUP UNIT 1H	260932.1384	1638110.0823	39-12-37.8418	-80-39-57.7171
PUP UNIT 2H	260935.9135	1638119.3424	39-12-37.8803	-80-39-57.6001

WELL LOCATION RESTRICTIONS

THE PAD COMPLIES WITH THE FOLLOWING RESTRICTIONS:

- 25' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2500SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD
- 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKES, POND OR RESERVOIR
- 300' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TROUT STREAMS
- 1000' OF SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

Handwritten signature: David C. Jones



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
CORPORATION

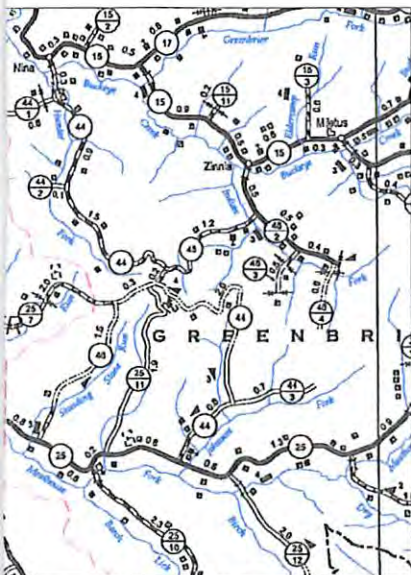
AS-BUILT PLAN
AND ROAD PROFILES
SWISHER DRILL PAD SITE
NEW MILTON DISTRICT
DODDRIDGE COUNTY, WV

SWISHER
PG 535
ARCCEL 9
DISTRICT

EPIHEMERAL STREAM IMPACTS (LINEAR FEET)				
IMPACT CAUSE	CULVERT (LF)	INLETS/OUTLETS STRUCTURES (LF)	CONST. DISTURB TO LOD (LF)	TOTAL IMPACT (LF)
ROAD	0	0	8	8
TOTAL				8
PERENNIAL STREAM IMPACTS (LINEAR FEET)				
IMPACT CAUSE	CULVERT (LF)	INLETS/OUTLETS STRUCTURES (LF)	CONST. DISTURB TO LOD (LF)	TOTAL IMPACT (LF)
ROAD	122	14	101	237
ROAD	20	0	0	20
TOTAL				257

FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54017C0235C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

SHEET INDEX	
COVER PAGE & LOCATION MAP	1
AS-BUILT PLAN SHEET	2
AS-BUILT PAD ROAD AND TANK FARM ROAD PROFILES	3



Received
Office of Oil & Gas
5 017

DESIGN CERTIFICATION
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERE TO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS §35-4-21.

MM-109 PERMIT
ANTERO RESOURCES WILL OBTAIN AN ENCROACHMENT PERMIT (MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

REVISION
SHEET NUMBER

04/14/2017