



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 21, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510272, issued to ANTERO RESOURCES CORPORATION, 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 all 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 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: BLANCHE UNIT 2H
Farm Name: HAYMOND, ANNIE B.

API Well Number: 47-8510272

Permit Type: Horizontal 6A Well

Date Issued: 12/21/2015

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. Operator shall take additional measures with this permitted activity to avoid communication with offset wells. Such additional measures are described in the attached addendum. This addendum is part of the terms of the well work permit, and includes a description of depth and completed formations of offset wells. Also included is a description of monitoring activities that will take place during fracturing operations of the permitted well work.
2. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.
3. 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.
4. 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.
5. 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.
6. 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.

PERMIT CONDITIONS

7. 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.
8. 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.
9. 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.
10. 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.

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

1) Well Operator: Antero Resources Corporal 494488557 085 - Ritchie Clay Pennsboro 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Blanche Unit 2H Well Pad Name: Existing Eddy Pad

3) Farm Name/Surface Owner: Annie B. Haymond, et al Public Road Access: WV 74

4) Elevation, current ground: 971' Elevation, proposed post-construction: 971'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6600' TVD, Anticipated Thickness- 75 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6600' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 14,300' MD

11) Proposed Horizontal Leg Length: 7190'

12) Approximate Fresh Water Strata Depths: 150'

13) Method to Determine Fresh Water Depths: Mulvay Unit 1H (API# 47-085-10105) on same pad.

14) Approximate Saltwater Depths: 1536'

15) Approximate Coal Seam Depths: 611', 643'

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

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

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

Depth: _____

Seam: _____

Owner: _____

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OFFICE OF OIL AND GAS
DEC 04
Michael Hoff
12-2-15

WW-6B
(04/15)

API NO. 47-085 - 10272
 OPERATOR WELL NO. Blanche Unit 2H
 Well Pad Name: Existing Eddy 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, 424 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2400'	2400'	CTS, 1046 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	14,300'	14,300'	CTS, 3490 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

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12-2-15

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	Lead-HP02 & Tail-H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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 Office of Oil and Gas
 DEC 04 2015
 Michigan Department of
 Environmental Protection

WW-6B
(10/14)

API NO. 47-085 - 10272
OPERATOR WELL NO. Blanche Unit 2H
Well Pad Name: Existing Eddy Pad

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12-2-15

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): 15.24 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.60 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

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

*Note: Attach additional sheets as needed.

WW-9
(2/15)

API Number 47 - 085 - 10272
Operator's Well No. Blanche Unit 2H

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 49448857

Watershed (HUC 10) North Fork Hughes River Quadrangle Pennsboro 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 (*An associated frac pit will be used for flowback fluids)
085-WPA-00004

If so, please describe anticipated pit waste: Drilling and Flowback Fluids

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 60 mil

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number _____)
- 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 _____)

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12-2-15

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/Stiff 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 off site 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 *Cole Kilstrom*

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental and Regulatory Manager

DEC 04 2015
NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID: #20144028170
MY COMMISSION EXPIRES JULY 18, 2018

Subscribed and sworn before me this 14th day of October 2015, 20 15

Natalie Komp Notary Public

My commission expires July 18, 2018

Form WW-9

Operator's Well No. Blanche Unit 2H

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 15.24 acres Prevegetation pH _____

Lime 2-3 _____ 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
Annual Ryegrass	40

Seed Type	lbs/acre
Crownvetch	10-15
Perennial Ryegrass	20

*or type of grass seed requested by surface owner

*or type of grass seed requested by surface owner

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Gaff

Comments: Reseed & Mulch any disturbed areas per WDEP regulations. Maintain & upgrade F-n-s as necessary.

Notified
Office of Oil and Gas

DEC 04 2015

Title: Oil & Gas Inspector Date: 12-2-15

Field Reviewed? Yes No

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

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NOV 18 2015

WV Department of
Environmental Protection
12/25/2015



911 Address
4728 Mountain Drive
Pennsboro, WV 26415

Well Site Safety Plan

Antero Resources

Well Name: Cairo-Anna Unit 1H (API# 47-085-09962), Cairo-Anna Unit 3HRB (API# 47-085-10015), Anna Unit 2H (API# 47-085-09963), Blanche Unit 1H (API# 47-085-10036), Blanche Unit 2H, Blanche Unit 3H (API# 47-085-10041), Mulvay Unit 1H (API# 47-085-10105), Mulvay Unit 2H (API# 47-085-10106), Chandos Unit 2H (API# 47-085-10057)

Pad Location: EDDY PAD
 Ritchie County/Clay District

Michael Gaff
 12-2-15

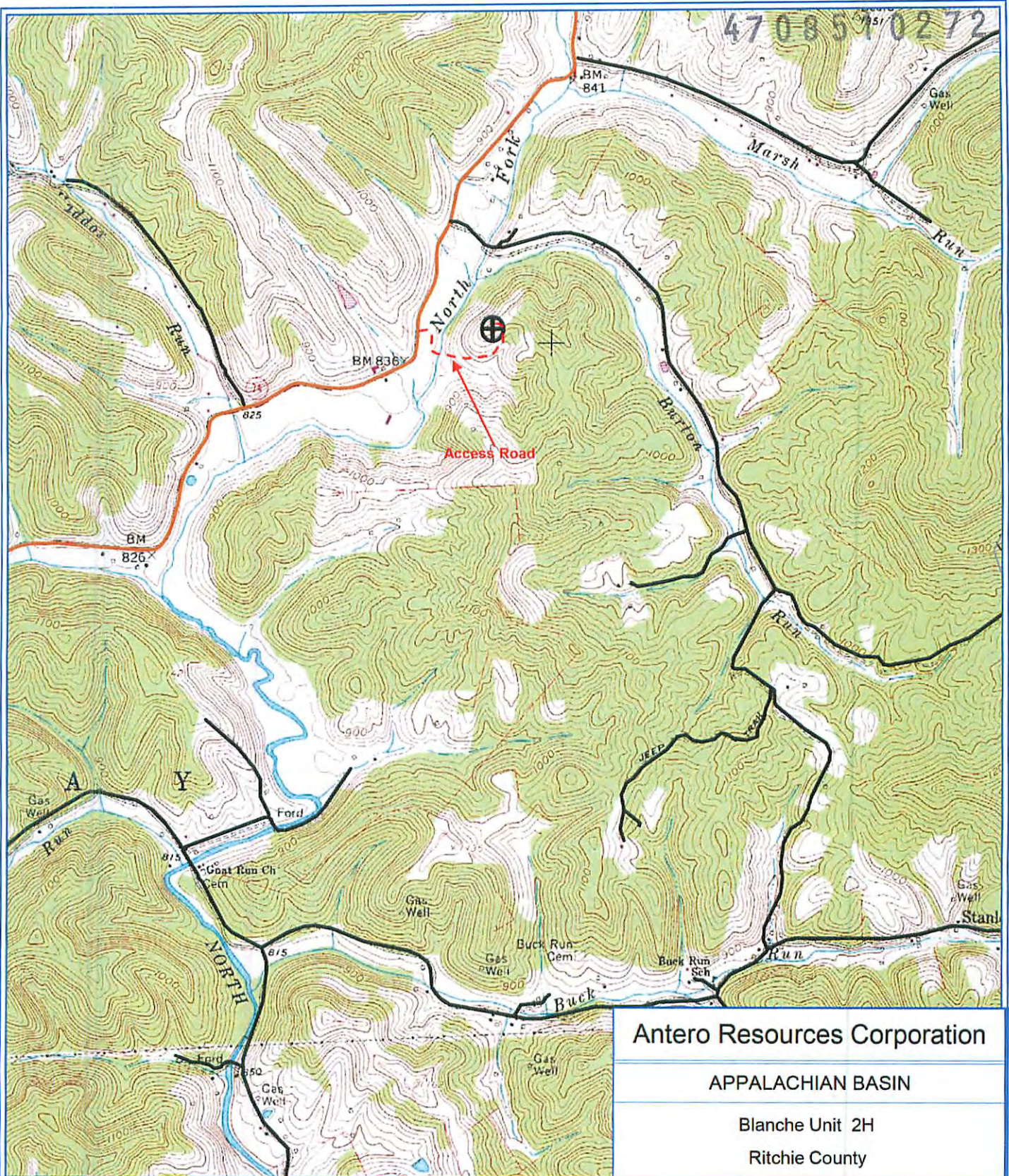
GPS Coordinates: Lat 39°20'02.83"/Long -80°55'11.37" (NAD83)

Driving Directions:

From South: From the intersection of I-64 and I-77 in Charlestone, WV, head north on I-77 for approximately 74.9 miles. At the intersections of I-77 and HWY 50 (Exit 176) near Parkersburg, turn right onto HWY 50 and head east for approximately 32.3 miles. Turn left on WV 74 (Pullman Drive) and follow for approximately 0.4 miles. Turn left on East Myles Avenue (Old US 50) and continue for approximately 0.7 miles into Pennsboro. Turn right onto Main Street. Take first left onto Masonic Avenue and then first right onto Broadway Street. Turn right onto Collins Avenue and then take first left onto Main Street. Turn right onto Wells Avenue which turns into 1st Street. In approximately 0.1 miles, take a slight right onto WV 74 and follow for 4.7 miles. Rig signs and location will be on the right.

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

4708510272



PETRA 1/26/2012 9:12:58 AM

Antero Resources Corporation

APPALACHIAN BASIN

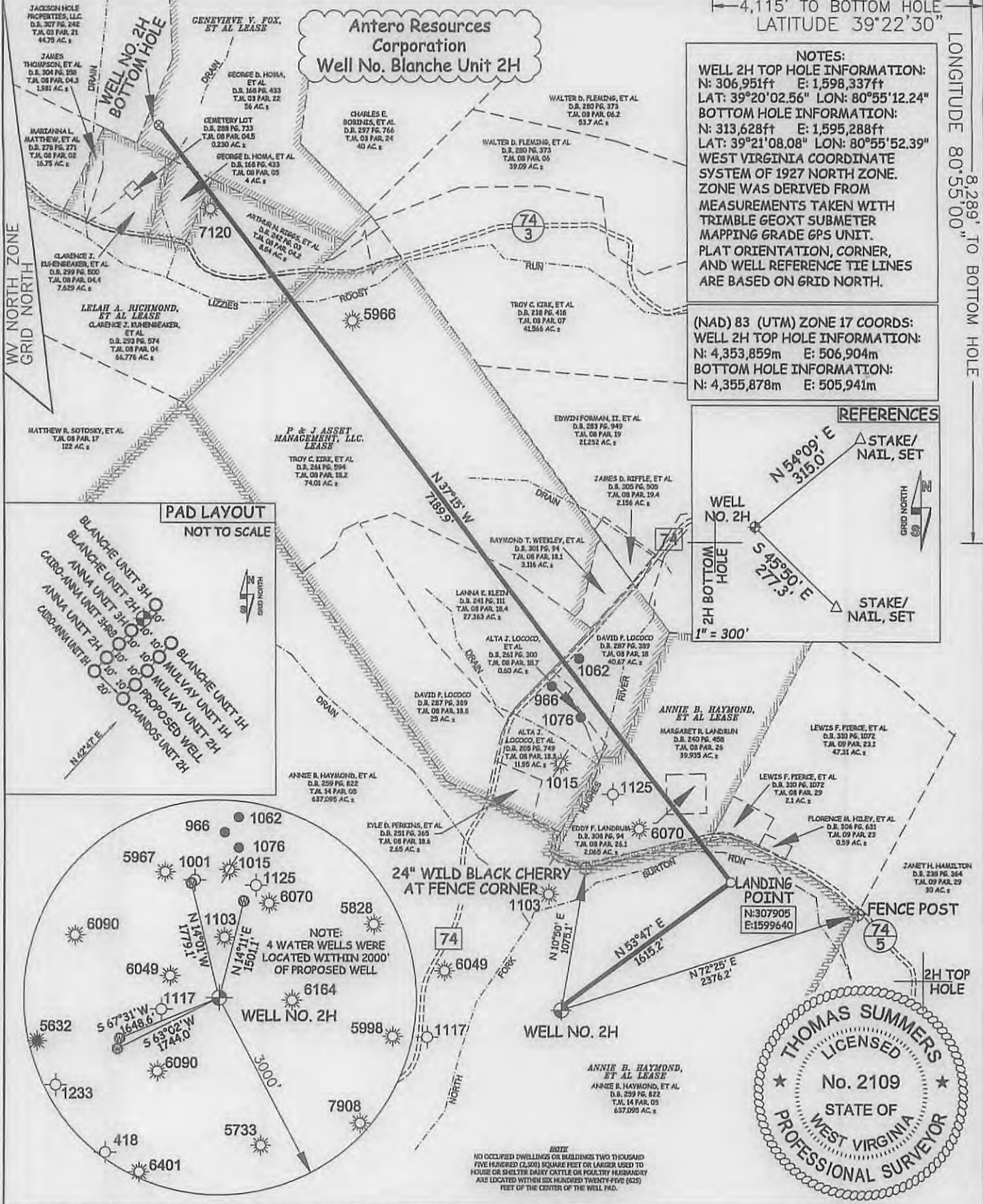
Blanche Unit 2H

Ritchie County



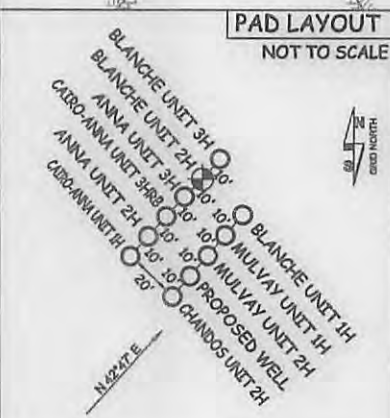
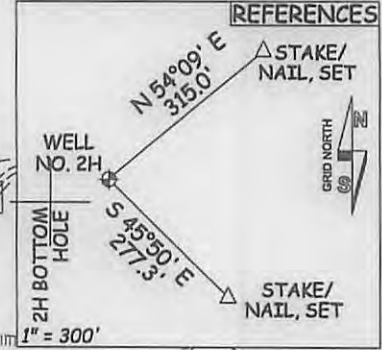
REMARKS: d Gas
 Office of Environmental Protection
 QUADRANGLE: PENNSBORO
 WATERSHED: NORTH FORK-HUGHES RIVER
 DISTRICT: CLAY
 1/8/2015

WV Department of Environmental Protection
 Date: 01/26/2012 12/25/2015

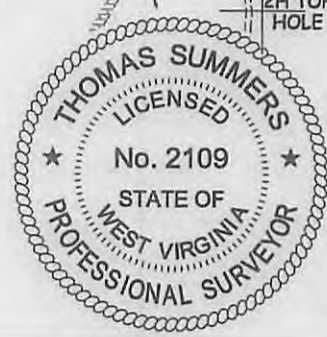


NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 306,951ft E: 1,598,337ft
LAT: 39°20'02.56" LON: 80°55'12.24"
BOTTOM HOLE INFORMATION:
N: 313,628ft E: 1,595,288ft
LAT: 39°21'08.08" LON: 80°55'52.39"
WEST VIRGINIA COORDINATE
SYSTEM OF 1927 NORTH ZONE.
ZONE WAS DERIVED FROM
MEASUREMENTS TAKEN WITH
TRIMBLE GEOXT SUBMETER
MAPPING GRADE GPS UNIT.
PLAT ORIENTATION, CORNER,
AND WELL REFERENCE TIE LINES
ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 4,353,859m E: 506,904m
BOTTOM HOLE INFORMATION:
N: 4,355,878m E: 505,941m



NOTE
NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,000) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



JOB # 13-001WA
DRAWING # BLANCHE2HR
SCALE 1" = 1000'

MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCT: ON STORAGE DEEP SHALLOW
LOCATION: ELEVATION 992' ORIGINAL - 971' AS BUILT WATERSHED NORTH FORK HUGHES RIVER

QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER ANNIE B. HAYMOND, ET AL ACREAGE 637.095 ACRES +/-
OIL & GAS ROYALTY OWNER ANNIE B. HAYMOND, ET AL; ANNIE B. HAYMOND, ET AL LEASE ACREAGE 700 ACRES +/-; 32 ACRES +/-
P & J ASSET MANAGEMENT, LLC.; LELAH A. RICHMOND, ET AL; GENEVIEVE V. FOX, ET AL 199.7 ACRES +/-; 78 ACRES +/-; 60 ACRES +/-

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,600' TVD 14,300' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP ST. ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 CHARLESTON, WV 25313

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

LEGEND
- - - - - Surface Owner Boundary Lines +/-
- - - - - Interior Surface Tracts +/-
x - x - x Existing Fence
⊕ Rebar, Found

THOMAS SUMMERS P.S. 2109
DATE 10/12/15

OPERATOR'S WELL# BLANCHE UNIT #2H
API WELL # 47 - 085 - 10272
STATE COUNTY PERMIT

12/25/2015

COUNTY NAME RITCHIE
PERMIT

WW-6A1

Operator's Well Number Blanche Unit 2H

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

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

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Annie B. Haymond, et al Lease (TM 14-5)</u>			
Annie B. Haymond & Eddy Landrum	Antero Resources Appalachian Corporation	1/8+	0253/1066
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Annie B. Haymond, et al Lease (TM 8-26)</u>			
Annie B. Haymond & Eddy Landrum	Antero Resources Appalachian Corporation	1/8+	0254/0737
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>P & J Asset Management, LLC Lease</u>			
P & J Asset Management, LLC	Antero Resources Appalachian Corporation	1/8+	0261/0460
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Lelah A. Richmond, et al Lease</u>			
Lelah Richmond, et al	Jack Burg	1/8	0157/0309
Jack Burg	Kepeco, Inc.	Memorandum of Assignment	0166/0354
Kepeco, Inc.	Union Drilling, Inc.	Merger	Corporation Record 0004/0322
Union Drilling, Inc.	Equitable Resources Exploration, Inc.	Merger	Corporation Record 0004/0673
Equitable Resources Exploration, Inc.	Equitable Resources Energy Company	Confirmatory Deed & Assignment	0230/0047
Equitable Resources Energy Company	Enervest East, L.P.	Assignment, Bill of Sale & Conveyance	0222/0273
Enervest East, L.P.	The Houston Exploration Company	Assignment, Bill of Sale & Conveyance	0234/0890
The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	Assignment and Assumption Agreement and Bill of Sale	0236/0650
Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC	Conversion	Corporation Record 0006/0625
Seneca-Upshur Petroleum, LLC	Antero Resources Appalachian Corporation	Assignment	0257/0541
Antero Resources Appalachian Corporation	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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WV Department of
Environmental Protection
12/25/2015

WW-6A1
(5/13)

Operator's Well No. Blanche Unit 2H

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Genevieve V. Fox, et al Lease</u>				
	Genevieve Fox, et al	Samuel D. Gaston	1/8	0165/0118
	Samuel D. Gaston	Kepeco, Inc.	Assignment	0168/0578
	Kepeco, Inc.	Union Drilling, Inc.	Merger	Corporation Record 0004/0322
	Union Drilling, Inc.	Equitable Resources Exploration, Inc.	Merger	Corporation Record 0004/0673
	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company	Confirmatory Deed	0230/0047
	Equitable Resources Energy Company	Enervest East, L.P.	& Assignment Assignment, Bill of Sale	0222/0273
	Enervest East, L.P.	The Houston Exploration Company	& Conveyance Assignment, Bill of Sale	0234/0890
	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	& Conveyance Assignment, Assumption	0236/0650
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC	Agreement & Bill of Sale	
	Seneca-Upshur Petroleum, LLC	Antero Resources Appalachian Corporation	Conversion	Corporation Record 0006/0625
	Antero Resources Appalachian Corporation	Antero Resources Corporation	*Partial Assignment	0258/0987
			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.

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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

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

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

Well Operator: Antero Resources Corporation

By: Kevin Kilstrom

Its: VP of Production

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Page 1 of 1
12/25/2015

FORM WW-6A1
EXHIBIT 1

FILED

JUN 10 2013

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



Penny Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvscs.com
E-mail: business@wvscs.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 (303) 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: [Handwritten Signature] Date: June 10, 2013

***Important Legal Notice Regarding Signature:** For West Virginia Code §31D-1-129. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered 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
NOV 18 2015

4708510272



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

October 15, 2015

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

RE: Blanche Unit 2H
Quadrangle: Pennsboro 7.5'
Ritchie County/Clay District, West Virginia

Mr. Martin:

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

Sincerely,

Spencer Booth
Senior Landman

A handwritten signature in blue ink, appearing to read "Spencer Booth", is written over the typed name and title.

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

Date of Notice Certification: 11/09/2015

API No. 47- 085 -

Operator's Well No. Blanche Unit 2H

Well Pad Name: Eddy 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>506,904m</u>
County:	<u>Ritchie</u>		Northing:	<u>4,353,859m</u>
District:	<u>Clay</u>	Public Road Access:		<u>WV 74</u>
Quadrangle:	<u>Pennsboro 7.5'</u>	Generally used farm name:		<u>Annie B. Haymond, et al</u>
Watershed:	<u>North Fork Hughes River</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.

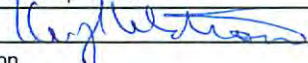
<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" 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: 40px;"><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>
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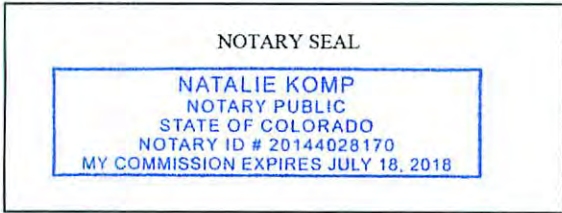
Required Attachments:

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>VP of Production</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>asteale@anteroresources.com</u>



Subscribed and sworn before me this 9th day of NOV 2015.
Natalie Komp Notary Public
 My Commission Expires July 18, 2018

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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WV Department of
Environmental Protection **12/25/2015**

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: 11/9/2015 **Date Permit Application Filed:** 11/9/2015

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: Annie B. Haymond (Life Estate) & Eddy F. Landrum
 Address: 4884 Mountain Drive
Pennsboro, WV 26415

Name: Annie B. Haymond (Life Estate) & Eddy F. Landrum (2nd address)
 Address: 365 Burton Run Road
Pennsboro, WV 26415

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: NO DECLARATIONS ON RECORD WITH COUNTY
 Address: _____

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: NONE IDENTIFIED WITHIN 1500'
 Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
 Address: _____

*Please attach additional forms if necessary

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 WV Department of Environmental Protection

WW-6A
(8-13)

API NO. 47- 085 -
OPERATOR WELL NO. Blanche Unit 2H
Well Pad Name: Eddy Pad

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 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 wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

WW-6A
(8-13)

API NO. 47- 085 -
OPERATOR WELL NO. Blanche Unit 2H
Well Pad Name: Eddy Pad

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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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NOV 18 2015

WV Department of
Environmental Protection 12/25/2015

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.

RECEIVED
Office of Oil and Gas

NOV 18 2015

WV Department of
Environmental Protection 12/25/2015

WW-6A
(8-13)

API NO. 47-085 -
OPERATOR WELL NO. Blanche Unit 2H
Well Pad Name: Eddy Pad

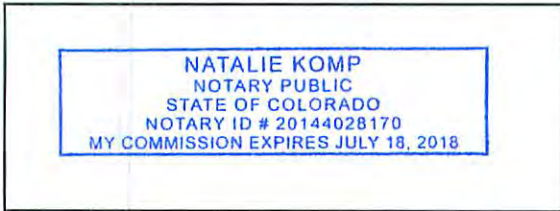
Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: asteele@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 9th day of NOV 2015.

Natalie Komp Notary Public

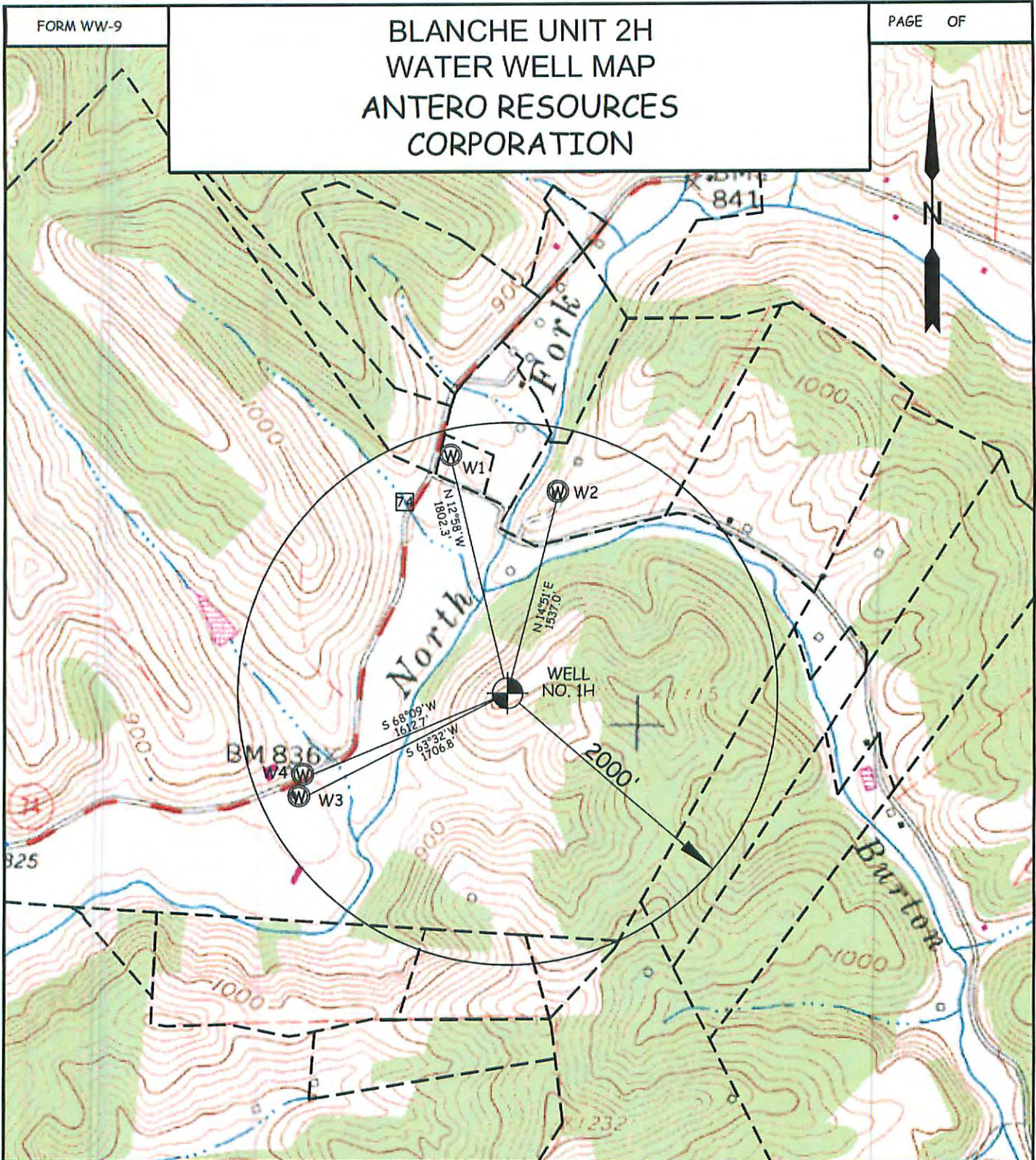
My Commission Expires July 18, 2018

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WV Department of Environmental Protection
12/25/2015

FORM WW-9

BLANCHE UNIT 2H WATER WELL MAP ANTERO RESOURCES CORPORATION

PAGE OF



WELL	SURFACE OWNER	ADDRESS	WELL LATITUDE	WELL LONGITUDE
W1	KYLE PERKINS ET AL	814 VIRGINIA ST. E. CHARLESTON, WV 25301	39° 20' 55.45"	80° 55' 18.07"
W2	MARGARET LANDRUM	233 BURTON RUN ROAD, PENNSBORO, WV 26415	39° 20' 17.00"	80° 55' 07.85"
W3	ANNIE HAYMOND	4884 MOUNTAIN DR. PENNSBORO, WV 26415	39° 19' 54.51"	80° 55' 31.86"
W4	ANNIE HAYMOND	4884 MOUNTAIN DR. PENNSBORO, WV 26415	39° 19' 56.09"	80° 55' 31.50"

WILLOW LAND SURVEYING, PLLC
P.O. BOX 17, PENNSBORO, WV 26415
(304) 659-1717

TOPO SECTION(S) OF :
PENNSBORO 7.5' QUAD.
JOB #: 12-127WA
FILE: CAIRO-ANNA1HWATERMAP

DATE: 05/07/14

DRAWN BY: A.J.S.

SCALE : 1-INCH = 1000- FEET



NOV 16 2015

12/25/2015

4708510272

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: 01/06/2015 **Date Permit Application Filed:** 11/09/2015

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: Annie Haymond & Eddy Landrum
Address: 365 Burton Run Rd.
Pennsboro, WV 26415

Name: Annie Haymond & Eddy Landrum (2nd Address)
Address: 4884 Mountain Dr.
Pennsboro, WV 26415

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: 507m114m (Approximate Well Coordinates)
County: Ritchie Northing: 4,354,122m (Approximate Well Coordinates)
District: Clay Public Road Access: WV 74
Quadrangle: Pennsboro 7.5' Generally used farm name: Haymond, Annie B., et al
Watershed: North Fork Hughes River

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 Corporation
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7323
Email: asteele@anteroresources.com
Facsimile: 303-357-7315

Authorized Representative: Ashlie Steele
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7323
Email: asteele@anteroresources.com
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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Office of Oil and Gas
NOV 18 2015
WV Department of
Environmental 12/25/2015

WW-6A5
(1/12)

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: 11/09/2015 **Date Permit Application Filed:** 11/09/2015

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: Annie B. Haymond (Life Estate) & Eddy F. Landrum

Address: 4884 Mountain Drive

Pennsboro, WV 26415

Name: Annie B. Haymond (Life Estate) & Eddy F. Landrum (2nd address)

Address: 365 Burton Run Road

Pennsboro, WV 26415

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:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>506,904m</u>
County:	<u>Ritchie</u>		Northing:	<u>4,353,859m</u>
District:	<u>Clay</u>	Public Road Access:	<u>WV 74</u>	
Quadrangle:	<u>Pennsboro 7.5'</u>	Generally used farm name:	<u>Annie B. Haymond, et al</u>	
Watershed:	<u>North Fork Hughes River</u>			

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
Telephone: (303) 357-7310
Email: asteelle@anteroresources.com

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

Oil and Gas Privacy Notice:

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12/25/2015



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

October 15, 2015

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 Eddy Pad, Ritchie County
 Blanche Unit 2H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #03-2012-0286 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of WV Route 74 in Ritchie 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

Cc: Ashlie Steele
 Antero Resources Corporation
 CH, OM, D-3
 File

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 Office of Oil and Gas

NOV 18 2015

WV Department of
 Environmental Protection 12/25/2015

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

LOCATION COORDINATES

EX ACCESS ROAD ENTRANCE
 LATITUDE: 39.233498 LONGITUDE: -80.823645 (NAD 83)
 N 4355810.19 E 5065580.53 (UTM ZONE 17 METERS)

CENTROID OF EX WELL PAD
 LATITUDE: 39.234119 LONGITUDE: -80.819625 (NAD 83)
 N 4356412.89 E 507113.64 (UTM ZONE 17 METERS)

CENTROID OF EX ASSOCIATED PIT
 LATITUDE: 39.233498 LONGITUDE: -80.820509 (NAD 83)
 N 4353769.30 E 5068006.81 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION

THE ACCESS ROAD(S), WELL PAD, AND ASSOCIATED PIT HAVE BEEN CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTE

THE SITE IS LOCATED IN FLOOD ZONES 'A' & 'X' PER FEMA FLOOD MAP #54085C0125C. NO ADDITIONAL DISTURBANCE IS PROPOSED WITHIN FLOOD ZONE 'A'.

ENVIRONMENTAL NOTES

STREAM AND WETLAND DELINEATIONS WERE PERFORMED ON NOVEMBER 9, 2011 AND COMPLETED ON MARCH 26, 2012 BY POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE MAY 3, 2012 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

GEOTECHNICAL NOTE

NO SOIL STUDIES OR SUBSURFACE INVESTIGATIONS WERE PERFORMED AND ANALYZED FOR THE DESIGN OF THIS SITE.

PROJECT CONTACTS

OPERATOR:

ANTERO RESOURCES CORPORATION
 535 WHITE OAK BLVD.
 HUNTSVILLE, WV 26030
 PHONE: (304) 842-4100
 FAX: (304) 842-4102

ELI WAGONER - ENVIRONMENTAL ENGINEER
 OFFICE: (304) 842-4058 CELL: (304) 476-9770

JOHN KARWAK - OPERATIONS SUPERINTENDENT
 CELL: (817) 360-1553

AARON HUNTZLER - CONSTRUCTION SUPERVISOR
 CELL: (405) 227-8344

ANTHONY SMITH - FIELD ENGINEER
 OFFICE: (304) 842-4058 CELL: (304) 673-6199

MARK HUTTON - LAND AGENT
 CELL: (304) 656-6214

ENGINEER/SURVEYOR:

NAVITUS ENGINEERS, INC.
 CYNTHY S. KEMP, PE - PROJECT MANAGER/ENGINEER
 OFFICE: (866) 662-4185 CELL: (540) 656-5747

ENVIRONMENTAL:

POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS
 TIMOTHY R. FERRELLON M.S. - STAFF SCIENTIST I
 OFFICE: (504) 348-1400 CELL: (304) 380-6247

RESTRICTIONS NOTES:

1. THERE ARE NO WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE IS AN EXISTING PERENNIAL STREAM CROSSING THAT HAS BEEN PERMITTED BY THE APPROPRIATE AGENCIES.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 500 FEET OF THE WELL PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
4. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 655 FEET OF THE CENTER OF THE WELL PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 655 FEET OF THE CENTER OF THE WELL PAD.

NOTES:

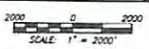
1. ALL BMP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE REINVESTMENT OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RAINFALL EVENT IN EXCESS OF 0.5" AND ON A WEEKLY BASIS.
2. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
3. ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP.
4. ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.

EDDY WELL PAD & ASSOCIATED PIT

AS-BUILT AND EROSION & SEDIMENT CONTROL IMPROVEMENT PLAN

CLAY DISTRICT, RITCHIE COUNTY, WEST VIRGINIA
 CABIN RUN-NORTH FORK HUGHES RIVER WATERSHED

USGS 7.5 PENNSBORO QUAD MAP



WEST VIRGINIA COUNTY MAP



WVDOH COUNTY ROAD MAP



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

AS-BUILT CERTIFICATION
 THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED BY ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OR. AND GAS 1-55-4-21, 1-52-6A, & CES 35-5.

**WVDEP OOG
 ACCEPTED AS-BUILT**
[Signature]
12-3-2015

SHEET INDEX

- 1 - COVER SHEET
 - 2 - OVERALL PLAN SHEET INDEX
 - 3 - ACCESS ROAD AS-BUILT PLAN
 - 4 - WELL PAD AS-BUILT PLAN
 - 5 - ACCESS ROAD AS-BUILT PROFILES
 - 6 - WELL PAD AS-BUILT SECTIONS
- APPENDIX - WELL PAD & ASSOCIATED PIT AS-BUILTS AND ASSOCIATED PIT CERTIFICATION FROM OTHERS

EDDY LIMITS OF DISTURBANCE AREA (AC)			
Total Site			
Inspects to Annie B. Raymond (LFEJ) & Eddy F. Lindstrom TM 14-06			
	Permitted	Additional	Total
Total Affected Area	14.92	0.32	15.24

Proposed	WW North	WW North	UTM (METERS)	NAD 83 Lat. & Long
Peak Name	640 ZF	640 83	Zone 17	
Caro-Anne Unit 1H (Drilled Well)	N 309602.50	N 309554.62	N 433948.61	LAT 39-29-01.3462
APW 47-285-2002	E 1588110.70	E 1588069.83	E 506695.05	LONG 80-55-11.8560
Arns Unit 3H (Drilled Well)	N 309628.07	N 309562.39	N 433951.85	LAT 39-29-02.6241
APW 47-285-2003	E 1588113.32	E 1588079.25	E 506697.68	LONG 80-55-11.8793
Caro-Anne Unit 3HRG (Drilled Well)	N 309625.58	N 309570.00	N 433884.32	LAT 39-29-02.7000
APW 47-285-1001E-2G	E 1588373.86	E 1588282.89	E 506699.66	LONG 80-55-11.8904
Arns Original Location (P&A) Unit 2H	N 309643.21	N 309577.53	N 433886.63	LAT 39-29-03.7767
Blanche Unit 2H	E 158825.53	E 1588289.47	E 506911.63	LONG 40-55-11.7951
APW 47-285-1002B	N 309603.74	N 309585.05	N 433884.55	LAT 39-29-02.8817
Blanche Unit 3H (Drilled Well)	E 1588337.12	E 1588399.05	E 506923.60	LONG 40-55-11.6255
APW 47-285-1004I	N 309659.27	N 309592.58	N 433881.28	LAT 39-29-02.8266
Blanche Unit 1H (Drilled Well)	E 1588413.70	E 1588392.53	E 506909.67	LONG 40-55-11.5436
APW 47-285-1003E	N 309617.53	N 309571.65	N 433885.00	LAT 39-29-02.7200
Mulvey Unit 1H (Drilled Well)	E 1588502.14	E 1588511.07	E 506928.24	LONG 40-55-11.4321
APW 47-285-1018B	N 309630.00	N 309594.32	N 433882.68	LAT 39-29-02.6470
Mulvey Unit 2H	E 1588341.52	E 1588304.48	E 506926.27	LONG 40-55-11.5143
APW 47-285-1019E	N 309627.47	N 309564.78	N 433886.35	LAT 39-29-02.5751
Unnamed	E 1588318.97	E 1588307.30	E 506924.21	LONG 40-55-11.5566
Unnamed	N 309714.05	N 309549.26	N 433884.03	LAT 39-29-02.4967
Chandos Unit 2H	E 1588332.39	E 1588291.32	E 506922.34	LONG 40-55-11.6788
APW 47-285-1005F	N 309627.42	N 309611.74	N 433884.75	LAT 39-29-02.4213
Well Pad Elevation		E 158825.88	E 506920.37	LONG 40-55-11.7811

NOTES:

1. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF MARCH 14, 2014. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE WELL PAD AREA AND PRODUCTION EQUIPMENT AS OF JANUARY 07, 2015. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
2. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
3. THE EXISTING EGREGES TO THE WELL PAD SHALL HAVE THE MOUNTAIN BERM REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

NAVITUS
 ENERGY ENGINEERING
 Telephone: (888) 682-4185 www.NavitusEE.com

DATE	REVISION

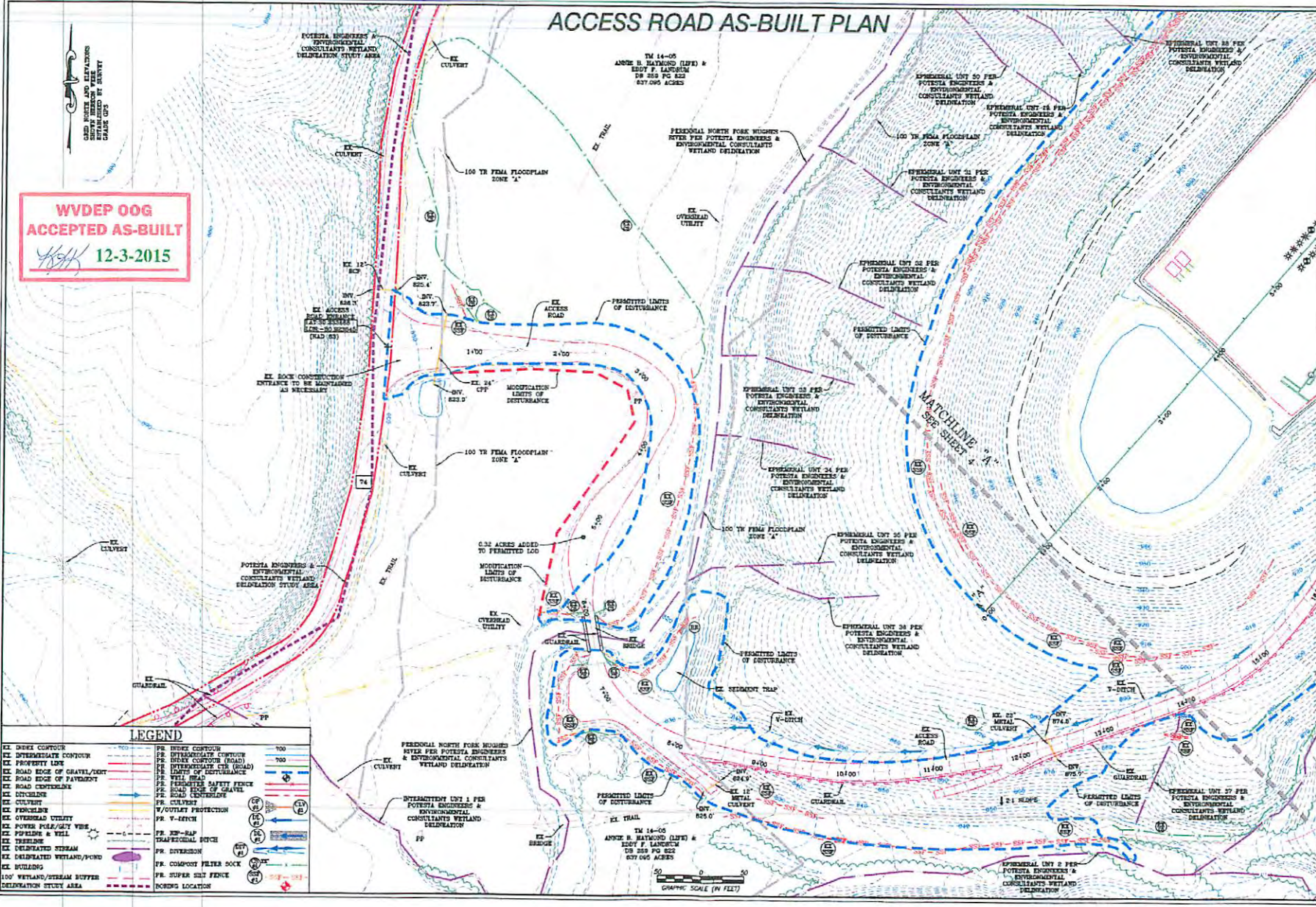
Antero
 THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

COVER SHEET
EDDY
 WELL PAD & ASSOCIATED PIT
 CLAY DISTRICT
 RITCHIE COUNTY, WEST VIRGINIA

DATE: 01/09/2015
 SCALE: AS SHOWN
 SHEET 1 OF 8

ACCESS ROAD AS-BUILT PLAN

**WVDEP OOG
ACCEPTED AS-BUILT**
WJK
12-3-2015



LEGEND	
EX INDEX CONTOUR	PR INDEX CONTOUR
EX INTERMEDIATE CONTOUR	PR INTERMEDIATE CONTOUR
EX PROPERTY LINE	PR INDEX CONTOUR (ROAD)
EX ROAD EDGE OF GRAVEL/LEFT	PR INTERMEDIATE CUT (ROAD)
EX ROAD EDGE OF PAVEMENT	PR LIMITS OF DISTURBANCE
EX ROAD CENTERLINE	PR WELL HEAD
EX DISTURBANCE	PR PERIMETER SAFETY FENCE
EX CULVERT	PR ROAD EDGE OF GRAVEL
EX FENCELINE	PR ROAD INTERLOCK
EX OVERHEAD UTILITY	PR CULVERT
EX POWER POLE/OUT VEBE	PR W/OUTLET PROTECTION
EX POWERLINE & WELL	PR 9-5-DITCH
EX TRAIL	PR TRAVELING BITCH
EX DELINEATED STREAM	PR DIVERSION
EX DELINEATED WETLAND/PCWD	PR COMPOUND FILTER DOCK
EX BUILDING	PR SUPER SILT FENCE
EX 100' WETLAND/STREAM BUFFER	PR BORING LOCATION





NO.	DATE	REVISION



THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

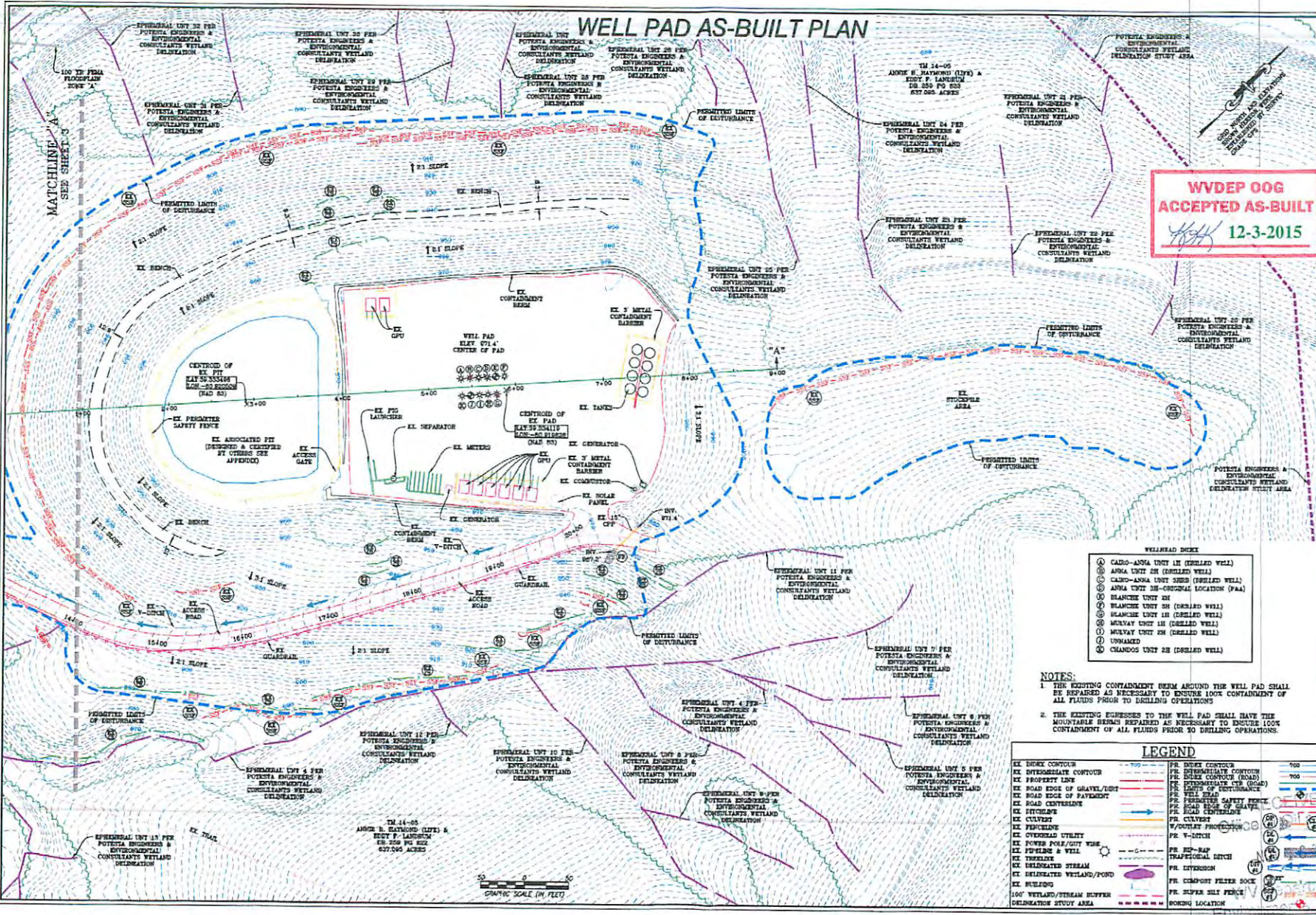
ACCESS ROAD AS-BUILT PLAN

EDDY
WELL PAD & ASSOCIATED PIT
SUNNYSIDE DISTRICT VIRGINIA
RICHIE COUNTY, WEST VIRGINIA



DATE: 01/09/2015
SCALE: 1" = 50'
SHEET 3 OF 6

WELL PAD AS-BUILT PLAN



**WVDEP O&G
ACCEPTED AS-BUILT**
[Signature]
12-3-2015

- WELLHEAD SCHEDULE**
- ① CARO-APPA UNIT 1H (DREADED WELL)
 - ② ANNA UNIT 2H (DREADED WELL)
 - ③ CARO-APPA UNIT 22H (DREADED WELL)
 - ④ ANNA UNIT 2H-ORIGINAL LOCATION (P&A)
 - ⑤ BLANCHIE UNIT 2H (DREADED WELL)
 - ⑥ BLANCHIE UNIT 1H (DREADED WELL)
 - ⑦ MURRAY UNIT 1H (DREADED WELL)
 - ⑧ MURRAY UNIT 2H (DREADED WELL)
 - ⑨ UNGRADED
 - ⑩ CHANGOS UNIT 2H (DREADED WELL)

- NOTES:**
- THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
 - THE EXISTING EGRESSSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

LEGEND

EX INDEX CONTOUR	PR INDEX CONTOUR	100
EX INTERMEDIATE CONTOUR	PR INTERMEDIATE CONTOUR	100
EX PROPERTY LINE	PR INDEX CONTOUR (ROAD)	700
EX ROAD EDGE OF GRAVEL/DIRT	PR INTERMEDIATE CONTOUR (ROAD)	700
EX ROAD EDGE OF PAVEMENT	PR PERIMETER SAFETY FENCE	
EX ROAD CENTERLINE	PR WELL BELL	
EX EGRESS	PR PERIMETER SAFETY FENCE	
EX CULTIVATED	PR ROAD EDGE OF GRAVEL	
EX FENCELINE	PR ROAD CENTERLINE	
EX OVERHEAD UTILITY	PR CULTIVATED	
EX POWER POLE/OUT WIRE	PR V-DITCH	
EX FENCE & WALL	PR PR-REP TRAPEZOIDAL DITCH	
EX TRAPEZOID	PR INTERSECTION	
EX DELINEATED STREAM	PR CONDUIT FLETER SOCK	
EX DELINEATED WETLAND/POND	PR SUPER SILL FENCE	
EX BUILDING	PR SOREQ LOCATION	
EX WETLAND/STREAM BUFFER		
EX DENALI STUDY AREA		

NAVITUS
ENERGY ENGINEERING

Antero
THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

EDDY
WELL PAD & ASSOCIATED PIT
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

DATE: 01/09/2015
SCALE: 1" = 50'
SHEET: 11 OF 6

LOCATION COORDINATES

EX. ACCESS ROAD ENTRANCE
LATITUDE: 39.333688 LONGITUDE: -80.923645 (NAD 83)
N 4353810.19 E 506580.53 (UTM ZONE 17 METERS)

CENTROID OF EX. WELL PAD
LATITUDE: 39.334119 LONGITUDE: -80.919826 (NAD 83)
N 4354121.89 E 507113.94 (UTM ZONE 17 METERS)

CENTROID OF EX. ASSOCIATED PIT
LATITUDE: 39.333498 LONGITUDE: -80.920509 (NAD 83)
N 4353789.32 E 506850.61 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION

THE ACCESS ROAD(S), WELL PAD, AND ASSOCIATED PIT HAVE BEEN CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTE

THE SITE IS LOCATED IN FLOOD ZONES "A" & "X" PER FEMA FLOOD MAP #54085C0125C. NO ADDITIONAL DISTURBANCE IS PROPOSED WITHIN FLOOD ZONE "A".

ENVIRONMENTAL NOTES

STREAM AND WETLAND DELINEATIONS WERE PERFORMED ON NOVEMBER 9, 2011 AND COMPLETED ON MARCH 28, 2012 BY POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE MAY 3, 2012 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

GEOTECHNICAL NOTE

NO SOIL STUDIES OR SUBSURFACE INVESTIGATIONS WERE PERFORMED AND ANALYZED FOR THE DESIGN OF THIS SITE.

PROJECT CONTACTS

OPERATOR:

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

ELI WAGONER - ENVIRONMENTAL ENGINEER
OFFICE: (304) 842-4068 CELL: (304) 476-9770

JOHN KAWCAK - OPERATIONS SUPERINTENDENT
CELL: (817) 368-1553

AARON KUNZLER - CONSTRUCTION SUPERVISOR
CELL: (405) 227-8344

ANTHONY SMITH - FIELD ENGINEER
OFFICE: (304) 842-4208 CELL: (304) 673-6196

MARK HUTSON - LAND AGENT
CELL: (304) 669-8315

ENGINEER/SURVEYOR:

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

ENVIRONMENTAL:

POTESTA ENGINEERS AND ENVIRONMENTAL CONSULTANTS
TIMOTHY R. FERGUSON M.S. - STAFF SCIENTIST I
OFFICE: (304) 342-1400 CELL: (304) 382-8217

RESTRICTIONS NOTES:

1. THERE ARE NO WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE IS AN EXISTING PERENNIAL STREAM CROSSING THAT HAS BEEN PERMITTED BY THE APPROPRIATE AGENCIES.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
4. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

NOTES:

1. ALL BMP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT IN EXCESS OF 0.5" AND ON A BIWEEKLY BASIS.
2. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
3. ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP.
4. ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.

EDDY WELL PAD & ASSOCIATED AS-BUILT AND EROSION CONTROL IMPROVEMENTS

CLAY DISTRICT, RITCHIE COUNTY
CABIN RUN-NORTH FORK HUGHES

USGS 7.5 PENNSBORO QUAD



2000 0 20
SCALE: 1" = 2000'

WEST VIRGINIA COUNTY MAP



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

12/25/2015

ASSOCIATED PIT & SEDIMENT MANAGEMENT PLAN

WEST VIRGINIA
RIVER WATERSHED

D MAP



WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
NORTH ZONE, NAD83
ELEVATION BASED ON NAVD88
ESTABLISHED BY SURVEY GRADE GPS & OPUS
POST-PROCESSING

SHEET INDEX

- 1 - COVER SHEET
- 2 - OVERALL PLAN SHEET INDEX
- 3 - ACCESS ROAD AS-BUILT PLAN
- 4 - WELL PAD AS-BUILT PLAN
- 5 - ACCESS ROAD AS-BUILT PROFILES
- 6 - WELL PAD AS-BUILT SECTIONS

APPENDIX - WELL PAD & ASSOCIATED PIT AS-BUILTS
AND ASSOCIATED PIT CERTIFICATION FROM OTHERS

EDDY LIMITS OF DISTURBANCE AREA (AC)			
Total Site			
Impacts to Annie B. Haymond (LIFE) & Eddy F. Landrum TM 14-05			
	Permitted	Additional	Total
Total Affected Area	14.92	0.32	15.24

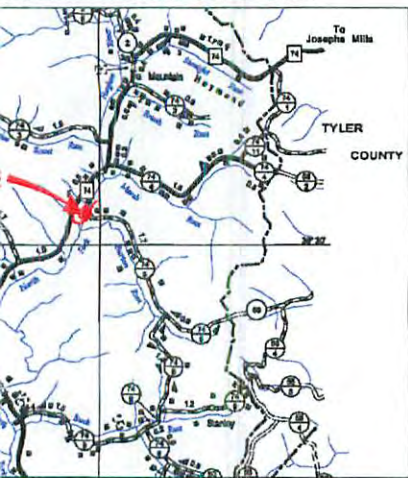
Proposed Well Name	WV North NAD 27	WV North NAD 83	UTM (METERS) Zone 17	NAD 83 Lat & Long
Cairo-Anna Unit 1H (Drilled Well)	N 306920.50	N 306954.82	N 4353849.61	LAT 39-20-02.5482
APW 47-085-0962	E 1598310.70	E 1566866.63	E 506895.70	LONG -80-55-11.9560
Anna Unit 2H (Drilled Well)	N 306928.07	N 306962.39	N 4353851.95	LAT 39-20-02.6241
APW 47-085-0963	E 1598317.32	E 1566876.25	E 506897.68	LONG -80-55-11.8733
Cairo-Anna Unit 3HRB (Drilled Well)	N 306935.68	N 306970.00	N 4353854.30	LAT 39-20-02.7003
APIR 47-085-10015-RB	E 1598323.95	E 1566882.89	E 506899.66	LONG -80-55-11.7904
Anna Original Location (P&A) Unit 3H	N 306943.21	N 306977.53	N 4353856.63	LAT 39-20-02.7757
	E 1598330.53	E 1566889.47	E 506901.63	LONG -80-55-11.7081
Blanche Unit 2H	N 306950.74	N 306985.06	N 4353858.85	LAT 39-20-02.8511
APW 47-085-10037	E 1598337.12	E 1566896.05	E 506903.60	LONG -80-55-11.6258
Blanche Unit 3H (Drilled Well)	N 306958.27	N 306992.58	N 4353861.28	LAT 39-20-02.9266
APW 47-085-10041	E 1598343.70	E 1566902.63	E 506905.57	LONG -80-55-11.5436
Blanche Unit 1H (Drilled Well)	N 306937.53	N 306971.85	N 4353855.01	LAT 39-20-02.7230
APW 47-085-10036	E 1598352.14	E 1566911.07	E 506906.24	LONG -80-55-11.4321
Mulvay Unit 1H (Drilled Well)	N 306930.00	N 306964.32	N 4353852.68	LAT 39-20-02.6475
APW 47-085-10105	E 1598345.55	E 1566904.49	E 506906.27	LONG -80-55-11.5143
Mulvay Unit 2H	N 306922.47	N 306956.79	N 4353850.35	LAT 39-20-02.5721
APW 47-085-10108	E 1598338.97	E 1566897.60	E 506904.31	LONG -80-55-11.5966
Unnamed	N 306914.95	N 306949.26	N 4353848.03	LAT 39-20-02.4967
	E 1598332.39	E 1566891.32	E 506902.34	LONG -80-55-11.6788
Chandos Unit 2H	N 306907.42	N 306941.74	N 4353845.70	LAT 39-20-02.4213
APW 47-085-10057	E 1598325.80	E 1566884.74	E 506900.37	LONG -80-55-11.7611
Well Pad Elevation	971.4			

NOTES:

- THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF MARCH 14, 2014. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE WELL PAD AREA AND PRODUCTION EQUIPMENT AS OF JANUARY 07, 2015. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
- THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS
- THE EXISTING EGRESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

Michael Stoff
12-2-15

WVDOH COUNTY ROAD MAP



5000 0 5000
SCALE: 1" = 5000'

AS-BUILT 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 § 35-4-21, § 22-6A, & CRS 35-8.



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4708510272

REVISION	DATE



COVER SHEET
EDDY
WELL PAD & ASSOCIATED PIT
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA



DATE: 01/09/2015
SCALE: AS SHOWN
SHEET 1 OF 8

12/25/2015

ACCESS ROAD

TM 14-05
ANNIE B. HAYMOND (LIFE) &
EDDY F. LANDRUM
DB 259 PG 822
637.095 ACRES

GRID NORTH AND ELEVATIONS
SHOWN HEREON WERE
ESTABLISHED BY SURVEY
GRADE GPS

POTESTA ENGINEERS &
ENVIRONMENTAL
CONSULTANTS WETLAND
DELINEATION STUDY AREA

EX. ACCESS
ROAD ENTRANCE
LAT: 39.333688
LON: -80.923646
[NAD 83]

EX. ROCK CONSTRUCTION
ENTRANCE TO BE MAINTAINED
AS NECESSARY

POTESTA ENGINEERS &
ENVIRONMENTAL
CONSULTANTS WETLAND
DELINEATION STUDY AREA

PERENNIAL NORTH FORK-HUGHES
RIVER PER POTESTA ENGINEERS &
ENVIRONMENTAL CONSULTANTS
WETLAND DELINEATION

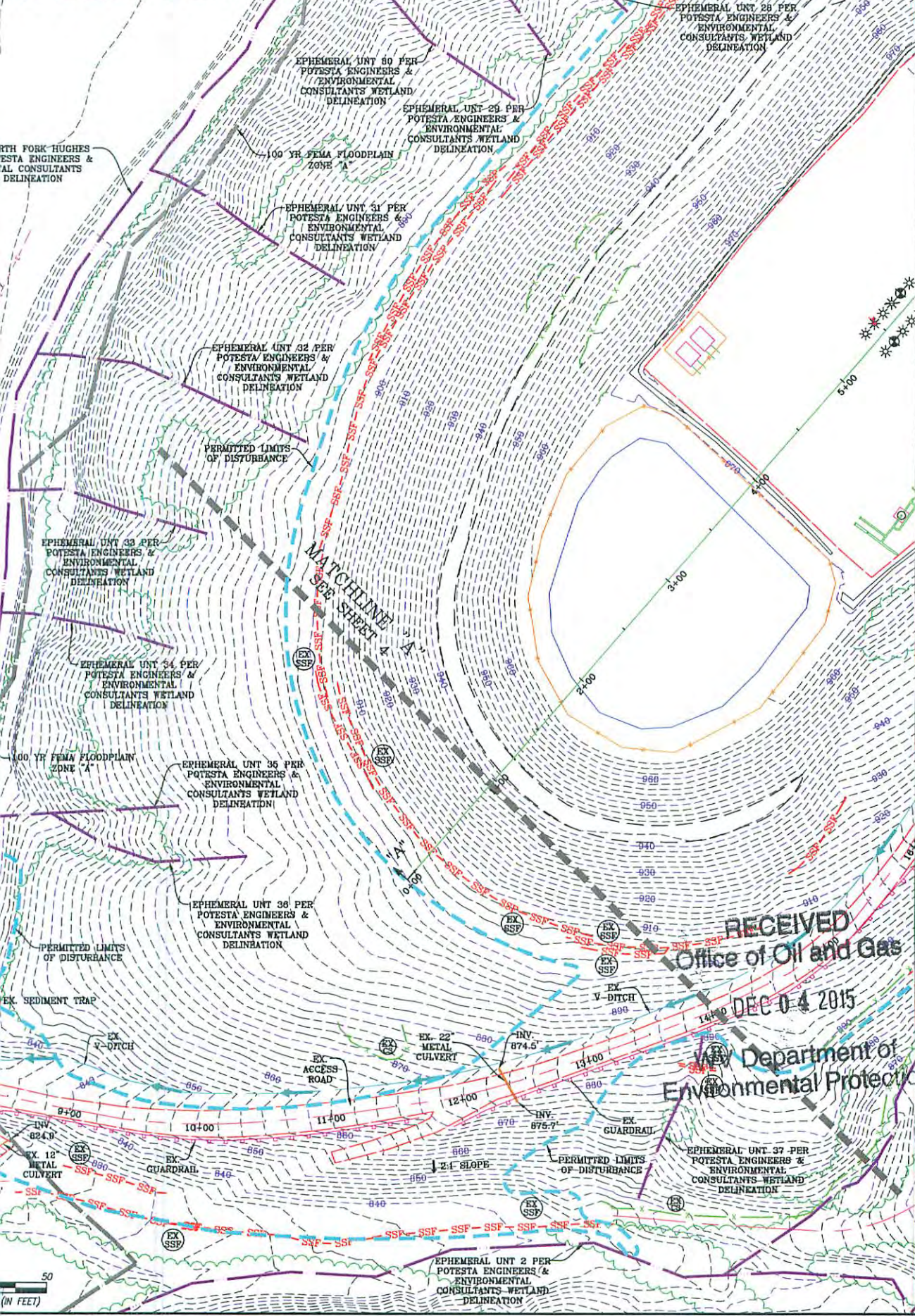
INTERMITTENT UNT 1 PER
POTESTA ENGINEERS &
ENVIRONMENTAL CONSULTANTS
WETLAND DELINEATION

TM 14-05
ANNIE B. HAYMOND (LIFE) &
EDDY F. LANDRUM
DB 259 PG 822
637.095 ACRES

LEGEND

EX. INDEX CONTOUR	- 700	PR. INDEX CONTOUR	- 700
EX. INTERMEDIATE CONTOUR	- - - - -	PR. INTERMEDIATE CONTOUR	- - - - -
EX. PROPERTY LINE	- - - - -	PR. INDEX CONTOUR (ROAD)	- - - - -
EX. ROAD EDGE OF GRAVEL/DIRT	- - - - -	PR. INTERMEDIATE CTR (ROAD)	- - - - -
EX. ROAD EDGE OF PAVEMENT	- - - - -	PR. LIMITS OF DISTURBANCE	- - - - -
EX. ROAD CENTERLINE	- - - - -	PR. WELL HEAD	⊗
EX. DITCHLINE	- - - - -	PR. PERIMETER SAFETY FENCE	⊗
EX. CULVERT	- - - - -	PR. ROAD EDGE OF GRAVEL	- - - - -
EX. FENCELINE	- - - - -	PR. ROAD CENTERLINE	- - - - -
EX. OVERHEAD UTILITY	- - - - -	PR. CULVERT	⊗
EX. POWER POLE/GUY WIRE	- - - - -	W/OUTLET PROTECTION	⊗
EX. PIPELINE & WELL	- - - - -	PR. V-DITCH	⊗
EX. TREELINE	- - - - -	PR. RIP-RAP	⊗
EX. DELINEATED STREAM	- - - - -	PR. TRAPEZOIDAL DITCH	⊗
EX. DELINEATED WETLAND/POND	- - - - -	PR. DIVERSION	⊗
EX. BUILDING	- - - - -	PR. COMPOST FILTER SOCK	⊗
100' WETLAND/STREAM BUFFER	- - - - -	PR. SUPER SILT FENCE	⊗
DELINEATION STUDY AREA	- - - - -	BORING LOCATION	⊗

AS-BUILT PLAN



NAVITUS
ENERGY ENGINEERING

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REVISION	DATE

Antero Resources

THIS DOCUMENT WAS PREPARED FOR:
ANTERO RESOURCES CORPORATION

ACCESS ROAD AS-BUILT PLAN

EDDY
WELL PAD & ASSOCIATED PIT
CLAY DISTRICT
RITCHIE COUNTY, WEST VIRGINIA

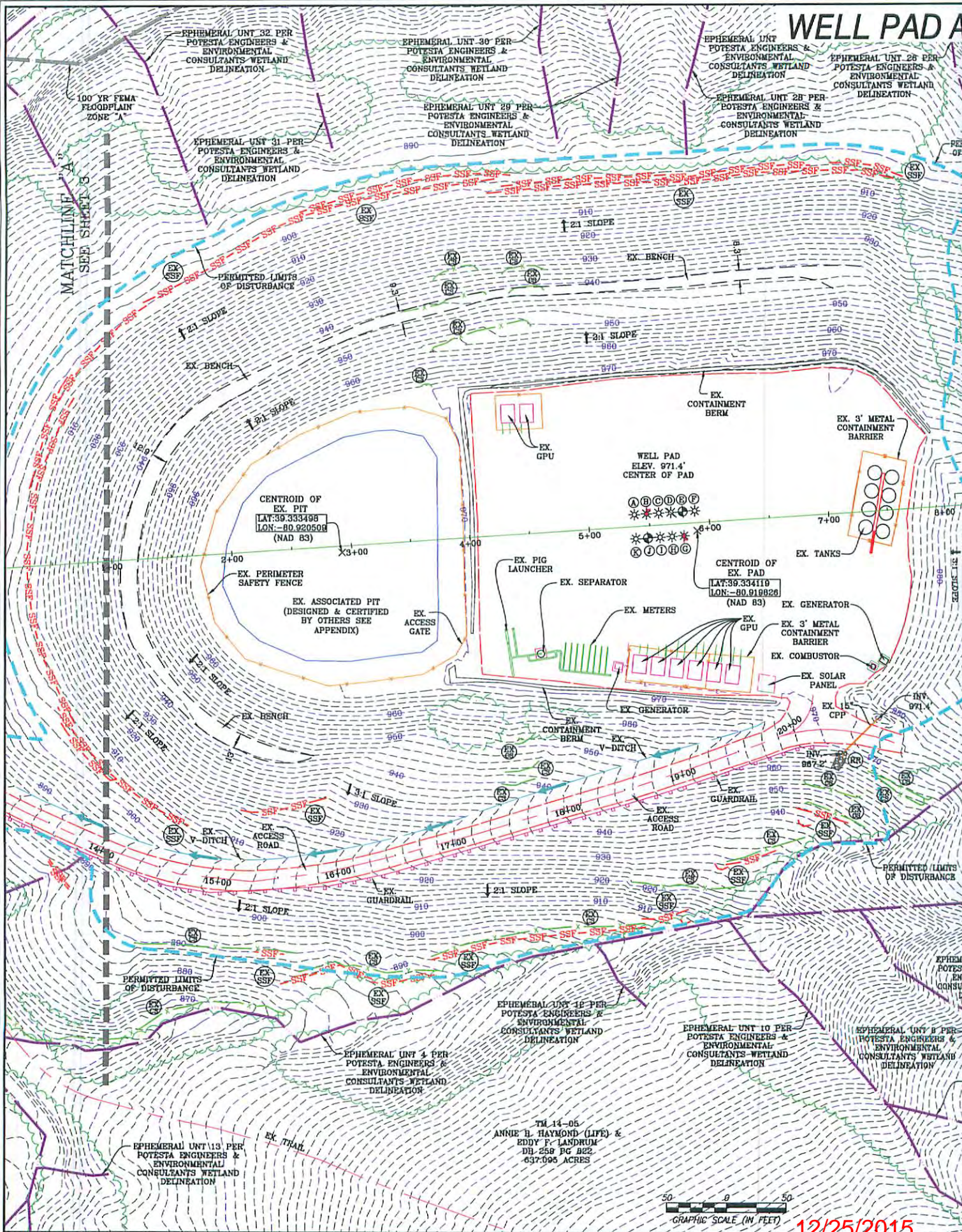
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Office of Oil and Gas
DEC 04 2015
West Virginia Department of Environmental Protection

PROFESSIONAL ENGINEER & SURVEYOR
REGISTERED
1978
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
01/09/2015

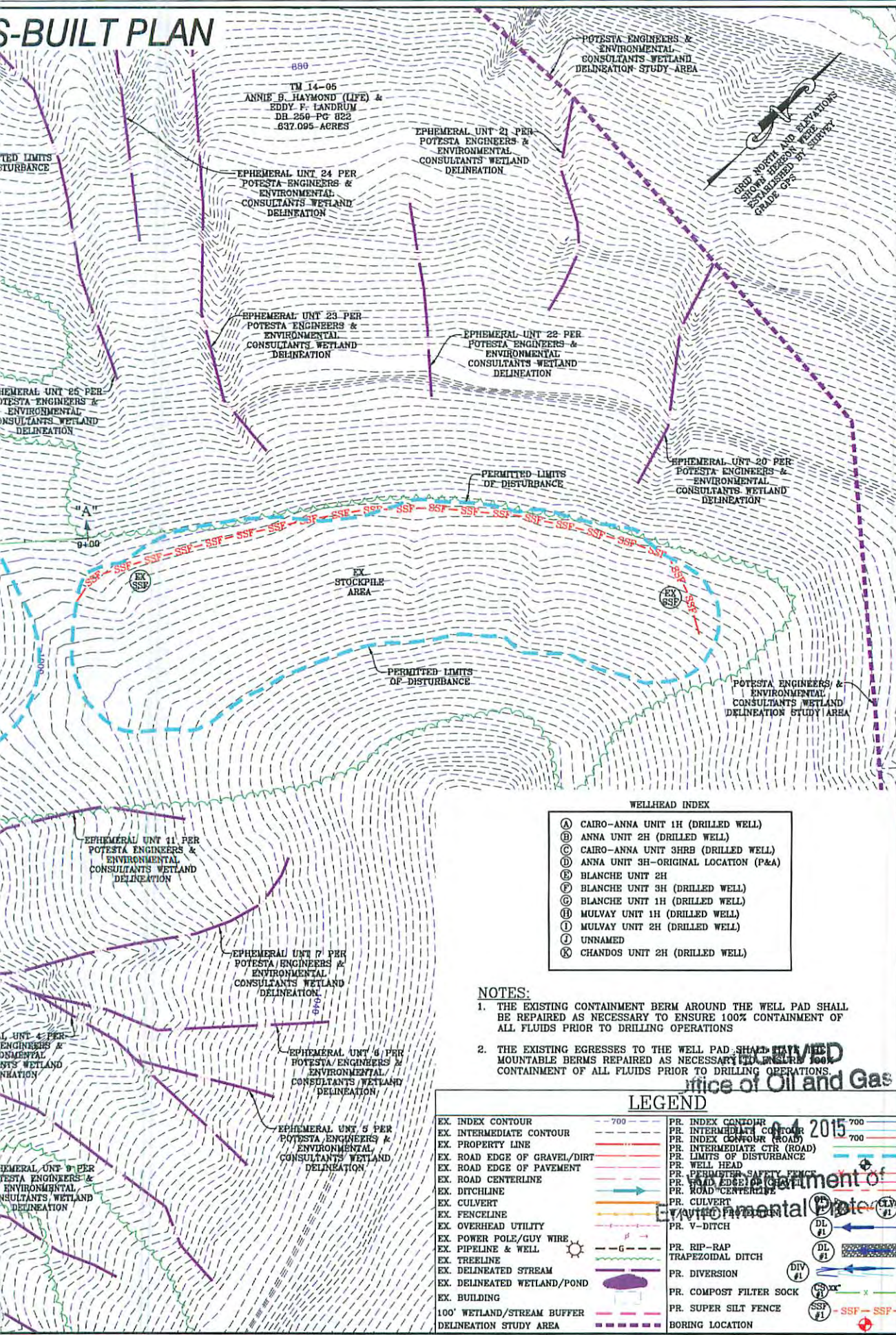
DATE: 01/09/2015
SCALE: 1" = 50'
SHEET 3 OF 8

12/25/2015

WELL PAD A



AS-BUILT PLAN



899
 TM 14-05
 ANNIE B. HAYMOND (LIFE) &
 EDDY F. LANDRUM
 DB 256-PG 822
 837.095 ACRES

POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION STUDY AREA

EPHEMERAL UNIT 21 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 24 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 23 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 22 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 20 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EX STOCKPILE
 AREA

EPHEMERAL UNIT 11 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 7 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 6 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

EPHEMERAL UNIT 5 PER
 POTESTA ENGINEERS &
 ENVIRONMENTAL
 CONSULTANTS WETLAND
 DELINEATION

WELLHEAD INDEX

- (A) CAIRO-ANNA UNIT 1H (DRILLED WELL)
- (B) ANNA UNIT 2H (DRILLED WELL)
- (C) CAIRO-ANNA UNIT 3HR (DRILLED WELL)
- (D) ANNA UNIT 3H-ORIGINAL LOCATION (P&A)
- (E) BLANCHE UNIT 2H
- (F) BLANCHE UNIT 3H (DRILLED WELL)
- (G) BLANCHE UNIT 1H (DRILLED WELL)
- (H) MULVAY UNIT 1H (DRILLED WELL)
- (I) MULVAY UNIT 2H (DRILLED WELL)
- (J) UNNAMED
- (K) CHANDOS UNIT 2H (DRILLED WELL)

NOTES:

1. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS
2. THE EXISTING EGREGESSES TO THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS

LEGEND

EX. INDEX CONTOUR	--- 700 ---	PR. INDEX CONTOUR	--- 700 ---
EX. INTERMEDIATE CONTOUR	--- 700 ---	PR. INTERMEDIATE CONTOUR	--- 700 ---
EX. PROPERTY LINE	---	PR. INDEX CONTOUR (ROAD)	---
EX. ROAD EDGE OF GRAVEL/DIRT	---	PR. INTERMEDIATE CTR (ROAD)	---
EX. ROAD EDGE OF PAVEMENT	---	PR. LIMITS OF DISTURBANCE	---
EX. ROAD CENTERLINE	---	PR. WELL HEAD	---
EX. DITCHLINE	---	PR. PERIMETER SAFETY FENCE	---
EX. CULVERT	---	PR. ROAD EDGE OF PAVEMENT	---
EX. FENCELINE	---	PR. ROAD CENTERLINE	---
EX. OVERHEAD UTILITY	---	PR. V-DITCH	---
EX. POWER POLE/GUY WIRE	---	PR. RIP-RAP	---
EX. PIPELINE & WELL	---	PR. TRAPEZOIDAL DITCH	---
EX. TREELINE	---	PR. DIVERSION	---
EX. DELINEATED STREAM	---	PR. COMPOST FILTER SOCK	---
EX. DELINEATED WETLAND/POND	---	PR. SUPER SILT FENCE	---
EX. BUILDING	---	BORING LOCATION	---
100' WETLAND/STREAM BUFFER	---		
DELINEATION STUDY AREA	---		

REVISION	DATE

THIS DOCUMENT WAS PREPARED FOR:
 ANTERO RESOURCES CORPORATION

WELL PAD AS-BUILT PLAN

EDDY

WELL PAD & ASSOCIATED PIT
 CLAY DISTRICT
 RITCHIE COUNTY, WEST VIRGINIA

12-2-15

01/09/2015

DATE: 01/09/2015
 SCALE: 1" = 50'
 SHEET 1 OF 6

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12/25/2015