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**west virginia** department of environmental protection

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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

November 08, 2013

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-8510060, 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: HENDERSHOT UNIT 1H  
Farm Name: DEWBERRY, LINDA C. ., TRUST

**API Well Number: 47-8510060**

**Permit Type: Horizontal 6A Well**

Date Issued: 11/08/2013

**Promoting a healthy environment.**

## 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

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1. The Office of Oil and Gas has approved your permit application, which includes your addendum. Please be advised that the addendum is part of the terms of the well work permit, and will be enforced as such. The Office of Oil and Gas must receive a copy of all data collected, and submitted in a timely fashion, but no later than the WR35 submittal.
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 fifty (50) 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.
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

## **PERMIT CONDITIONS**

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.

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

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

2) Operator's Well Number: Hendershot Unit 1H Well Pad Name: Charlene Pad

3 Elevation, current ground: -1115 Elevation, proposed post-construction: 1106'

4) Well Type: (a) Gas  Oil  Underground Storage   
Other \_\_\_\_\_  
(b) If Gas: Shallow  Deep   
Horizontal

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):  
Marcellus Shale: 6500' TVD, Anticipated Thickness- 75 Feet, Associated Pressure- 2800#

7) Proposed Total Vertical Depth: 6500' TVD

8) Formation at Total Vertical Depth: Marcellus Shale

9) Proposed Total Measured Depth: 15,000' MD

10) Approximate Fresh Water Strata Depths: 213', 251'

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

12) Approximate Saltwater Depths: 503', 1433', 1628'

13) Approximate Coal Seam Depths: None reported

14) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: No

16) Describe proposed well work: Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale

17) Describe fracturing/stimulating methods in detail:  
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."

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 7.80 acres

19) Area to be disturbed for well pad only, less access road (acres): 7.80 acres

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14.86 acres  
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20)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft.</u>	<u>FOOTAGE: For Drilling</u>	<u>INTERVALS: Left in Well</u>	<u>CEMENT: Fill-up (Cu. Ft.)</u>
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#	315'	315'	CTS, 438 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2450'	2450'	CTS, 998 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	15000'	15000'	3733 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

<u>TYPE</u>	<u>Size</u>	<u>Wellbore Diameter</u>	<u>Wall Thickness</u>	<u>Burst Pressure</u>	<u>Cement Type</u>	<u>Cement Yield</u>
Conductor	20"	24"	0.438"	1530	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	Class A	1.18
Intermediate						
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	Lead-H/POZ & Tall - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200		
Liners						

PACKERS

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

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21) 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.

22) Describe all cement additives associated with each cement type. \_\_\_\_\_  
Conductor: no additives, Class A cement.  
Surface: Class A cement with 2% calcium and 1/4 lb flake, 5 gallons of clay treat  
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

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

\*Note: Attach additional sheets as needed.

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WV Dept. of Environmental Protection  
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WW-9  
(5/13)

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API Number 47 - 085  
Operator's Well No. Hendershot Unit 1H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494488557

Watershed (HUC 10) Bunnell Run Quadrangle Pennsboro 7.5'

Elevation 1106' County Ritchie District Clay

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes X No \_\_\_\_\_

Will a pit be used for drill cuttings? Yes \_\_\_\_\_ No X  
If so, please describe anticipated pit waste: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

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

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 (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? Yes

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Dust/Silt Foam, Production - Water Based Mud  
-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Stored in tanks, removed offsite and taken to landfill.  
-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98)

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.

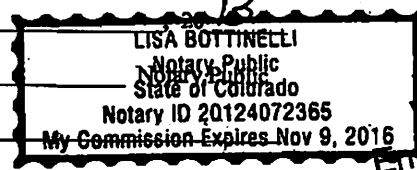
Company Official Signature *Cole Kilstrom*

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental Specialist

Subscribed and sworn before me this 9 day of Aug

*Lisa Bottinelli*  
My commission expires 11/9/2016



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85-010060

Form WW-9

Operator's Well No. Hendershot Unit 1H

**Antero Resources Corporation**

Proposed Revegetation Treatment: Acres Disturbed 14.86 Prevegetation pH 6.2

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

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum) Hay or straw or Wood Fiber (will be used where needed)

Mulch 2-3 Tons/acre  
Access Road A (4.57) + Drill Pad (7.80) + Spoil Pad A (1.65) + Spoil Pad B (.84) = 14.86 Acres

**Seed Mixtures**

Seed Type	Area I (Temporary) lbs/acre
Tall Fescue	45
Perennial Rye Grass	20

\*or type of grass seed requested by surface owner

Seed Type	Area II (Permanent) lbs/acre
Tall Fescue	45
Perennial Rye Grass	20

\*or type of grass seed requested by surface owner

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: Maintain all P&S when and drilling process proceed and muck all out area no less than 2 ton per acre.

Title: oil & gas inspector Date: 9-19-13

Field Reviewed?  Yes  No

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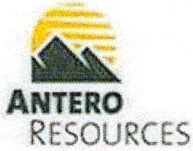
**List of Anticipated Additives Used for Fracturing or  
Stimulating Well**

<b>Additives</b>	<b>Chemical Abstract Service Number (CAS #)</b>
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	proprietary
Anionic polymer	proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	(Proprietary)
Demulsifier Base	(Proprietary)
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7

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***Addendum for Antero pads in Ritchie County, WV***

Hendershot Unit 1H – Charlene Pad

The following outlines the process to be undertaken by Antero Resources prior to and during completion process of wells.

- Investigate all wells within 1320' of new wells when within the defined Alexander to Marcellus <1500' window and all Marcellus vertical wells
  - contact operator of all wells
  - confirm well status, producing horizon, well completion/stimulation information
  - discuss plans to stimulate the horizontal Marcellus wells and the plans for monitoring Potential impact on shallow wells
  - make sure all vertical Marcellus to Alexander wells have adequate wellhead equipment, Including pressure gauges
  - provide shallow well operator with frac dates and monitor during stimulation
  - if well waters out during frac, shut it in until after stimulations, and install adequate well Control equipment prior to swabbing in the impacted shallow well
- Control fracturing parameters during job to limit fracture height growth
  - limit rate and limit pressures for each segment of fracturing stages
- Tracers demonstrate that we rarely reach offset wells at 660' offset
  - will use tracers at each lateral

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# Water Management Plan: Primary Water Sources



WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

**Important:**

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

**DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.**

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

**APPROVED** OCT 04 2013

## Source Summary

WMP-01482

API Number:

047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

## Stream/River

● Source **Ohio River @ Ben's Run Withdrawal Site** Tyler Owner: **Ben's Run Land Company Limited Partnership**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.46593	-81.110781

Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **3,360** Min. Gauge Reading (cfs): **6,468.00** Min. Passby (cfs)

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: <http://www.erh.noaa.gov/ohrfc//flows.shtml>

● Source **West Fork River @ JCP Withdrawal** Harrison Owner: **James & Brenda Raines**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.320913	-80.337572

Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): **2,000** Min. Gauge Reading (cfs): **175.00** Min. Passby (cfs) **146.25**

DEP Comments:

● Source **West Fork River @ McDonald Withdrawal** Harrison Owner: **David Shrieves**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.16761	-80.45069

Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): **3,000** Min. Gauge Reading (cfs): **175.00** Min. Passby (cfs) **106.30**

DEP Comments:

● Source **West Fork River @ GAL Withdrawal** Harrison Owner: **David Shrieves**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.16422	-80.45173

Regulated Stream? **Stonewall Jackson Dam** Ref. Gauge ID: **3061000** **WEST FORK RIVER AT ENTERPRISE, WV**

**Max. Pump rate (gpm): 2,000**    **Min. Gauge Reading (cfs): 175.00**    **Min. Passby (cfs) 106.30**

DEP Comments:

● Source **Middle Island Creek @ Mees Withdrawal Site** Pleasants Owner: **Sarah E. Mees**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.43113	-81.079567

Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

**Max. Pump rate (gpm): 3,360**    **Min. Gauge Reading (cfs): 52.59**    **Min. Passby (cfs) 47.63**

DEP Comments:

● Source **Middle Island Creek @ Dawson Withdrawal** Tyler Owner: **Gary D. and Rella A. Dawson**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.379292	-80.867803

Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

**Max. Pump rate (gpm): 3,000**    **Min. Gauge Reading (cfs): 76.03**    **Min. Passby (cfs) 28.83**

DEP Comments:

● Source **McElroy Creek @ Forest Withdrawal** Tyler Owner: **Forest C. & Brenda L. Moore**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.39675	-80.738197

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

**Max. Pump rate (gpm): 1,000**    **Min. Gauge Reading (cfs): 74.77**    **Min. Passby (cfs) 13.10**

DEP Comments:

● Source **Meathouse Fork @ Gagnon Withdrawal** Doddridge Owner: **George L. Gagnon and Susan C. Gagnon**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.26054	-80.720998

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

**Max. Pump rate (gpm): 1,000**    **Min. Gauge Reading (cfs): 71.96**    **Min. Passby (cfs) 11.74**

DEP Comments:

● Source **Meathouse Fork @ Whitehair Withdrawal** Doddridge Owner: **Elton Whitehair**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.211317	-80.679592

Regulated Stream? Ref. Gauge ID: **3114500** MIDDLE ISLAND CREEK AT LITTLE, WV

**Max. Pump rate (gpm): 1,000**    **Min. Gauge Reading (cfs): 69.73**    **Min. Passby (cfs) 7.28**

DEP Comments:



● Source **Tom's Fork @ Erwin Withdrawal** **Doddridge** Owner: **John F. Erwin and Sandra E. Erwin**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.174306	-80.702992

Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

**Max. Pump rate (gpm): 1,000** **Min. Gauge Reading (cfs): 69.73** **Min. Passby (cfs) 0.59**

DEP Comments:

● Source **Arnold Creek @ Davis Withdrawal** **Doddridge** Owner: **Jonathon Davis**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.302006	-80.824561

Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

**Max. Pump rate (gpm): 1,000** **Min. Gauge Reading (cfs): 69.73** **Min. Passby (cfs) 3.08**

DEP Comments:

● Source **Buckeye Creek @ Powell Withdrawal** **Doddridge** Owner: **Dennis Powell**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.277142	-80.690386

Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

**Max. Pump rate (gpm): 1,000** **Min. Gauge Reading (cfs): 69.73** **Min. Passby (cfs) 4.59**

DEP Comments:

● Source **South Fork of Hughes River @ Knight Withdrawal** Ritchie Owner: **Tracy C. Knight & Stephanie C. Knight**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.198369	-80.870969

Regulated Stream? Ref. Gauge ID: **3155220** SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WVA

**Max. Pump rate (gpm): 3,000**    **Min. Gauge Reading (cfs): 39.80**    **Min. Passby (cfs) 1.95**

DEP Comments:

● Source **North Fork of Hughes River @ Davis Withdrawal** Ritchie Owner: **Lewis P. Davis and Norma J. Davis**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		39.322363	-80.936771

Regulated Stream? Ref. Gauge ID: **3155220** SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WVA

**Max. Pump rate (gpm): 1,000**    **Min. Gauge Reading (cfs): 35.23**    **Min. Passby (cfs) 2.19**

DEP Comments:

## Source Summary

WMP-01482

API Number:

047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

### Purchased Water

● Source **Ohio River @ Select Energy** Pleasants Owner: **Select Energy**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000	500,000	39.346473	-81.338727

Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999998 Ohio River Station: Racine Dam

**Max. Pump rate (gpm): 1,680**      **Min. Gauge Reading (cfs): 7,216.00**      **Min. Passby (cfs)**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: <http://www.erh.noaa.gov/ohrfc//flows.shtml>

● Source **Middle Island Creek @ Solo Construction** Pleasants Owner: **Solo Construction, LLC**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000	1,000,000	39.399094	-81.185548

Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

**Max. Pump rate (gpm):**      **Min. Gauge Reading (cfs): 6,468.00**      **Min. Passby (cfs)**

DEP Comments: Elevation analysis indicates that this location has the same elevation as Middle Island Creek's pour point into the Ohio River. As such, it is deemed that water flow at this location is heavily influenced by the Ohio River.

● Source **Claywood Park PSD** Wood Owner: **Claywood Park PSD**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000		-	-

Regulated Stream? Ref. Gauge ID: 9999998 Ohio River Station: Racine Dam

**Max. Pump rate (gpm):**      **Min. Gauge Reading (cfs): 7,216.00**      **Min. Passby (cfs)**

DEP Comments: Elevation analysis indicates that this location has approximately the same elevation as Little Kanawha's pour point into the Ohio River. As such, it is deemed that water flow at this location is heavily influenced by the Ohio River.

Source **Sun Valley Public Service District** **Harrison** Owner: **Sun Valley PSD**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
9/18/2013	9/18/2014	9,150,000	200,000	-	-

Regulated Stream? **Stonewall Jackson Dam** Ref. Gauge ID: **3061000** **WEST FORK RIVER AT ENTERPRISE, WV**

**Max. Pump rate (gpm):** **Min. Gauge Reading (cfs): 171.48** **Min. Passby (cfs)**

DEP Comments:

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator: Antero Resources

Hendershot Unit 1H

Source ID: 25687 Source Name Ohio River @ Select Energy  
Select Energy

Source Latitude: 39.346473

Source Longitude: -81.338727

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Pleasants

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?  Tier 3?

Max. Pump rate (gpm): 1,680

Regulated Stream? Ohio River Min. Flow

Max. Simultaneous Trucks:

Proximate PSD?

Max. Truck pump rate (gpm)

Gauged Stream?

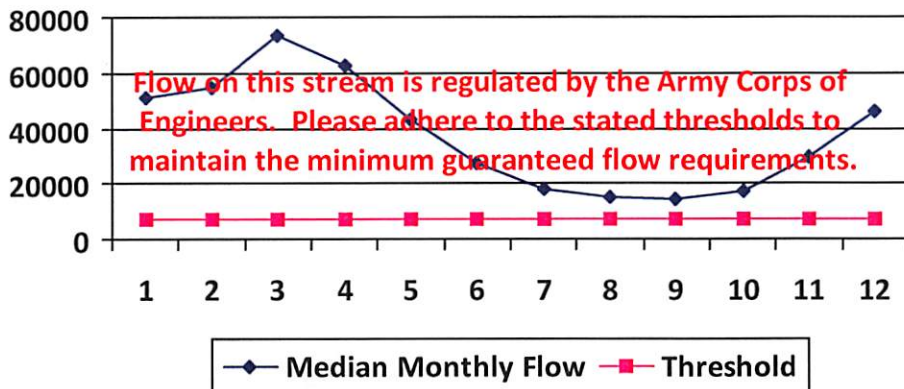
Reference Gaug 9999998 Ohio River Station: Racine Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 7216

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	50,956.00	-	-
2	54,858.00	-	-
3	73,256.00	-	-
4	62,552.00	-	-
5	43,151.00	-	-
6	27,095.00	-	-
7	17,840.00	-	-
8	14,941.00	-	-
9	14,272.00	-	-
10	17,283.00	-	-
11	29,325.00	-	-
12	46,050.00	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 3.74

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25688    Source Name: Middle Island Creek @ Solo Construction  
Solo Construction, LLC

Source Latitude: 39.399094

Source Longitude: -81.185548

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000    County: Pleasants

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?     Tier 3?

Max. Pump rate (gpm):

Regulated Stream?    Ohio River Min. Flow

Max. Simultaneous Trucks:

Proximate PSD?    City of St. Marys

Max. Truck pump rate (gpm)    0

Gauged Stream?

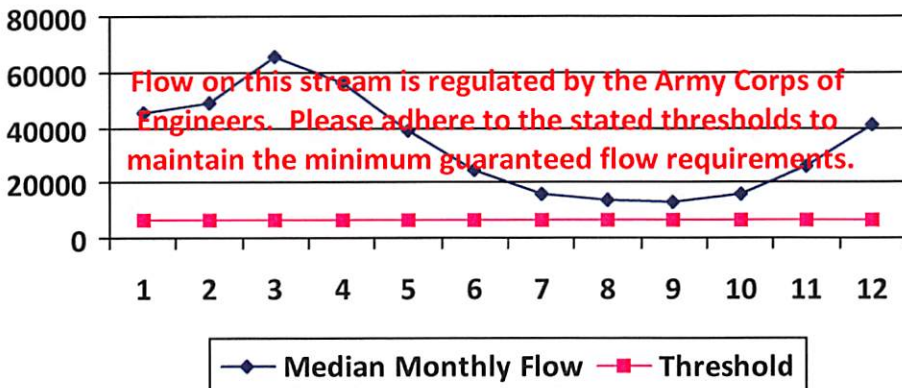
Reference Gaug: 9999999    Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25689    Source Name: Claywood Park PSD  
 Claywood Park PSD

Source Latitude: -  
 Source Longitude: -

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 25000    County: Wood

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?     Tier 3?

Max. Pump rate (gpm):

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?    Claywood Park PSD

Max. Truck pump rate (gpm): 0

Gauged Stream?

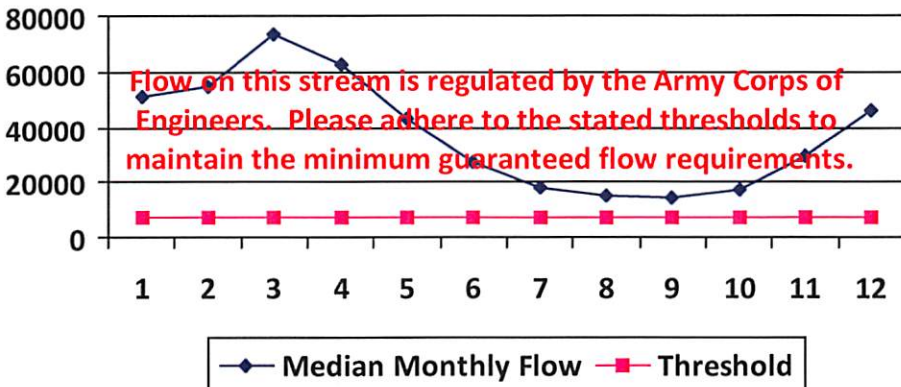
Reference Gaug: 9999998    Ohio River Station: Racine Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 7216

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	50,956.00	-	-
2	54,858.00	-	-
3	73,256.00	-	-
4	62,552.00	-	-
5	43,151.00	-	-
6	27,095.00	-	-
7	17,840.00	-	-
8	14,941.00	-	-
9	14,272.00	-	-
10	17,283.00	-	-
11	29,325.00	-	-
12	46,050.00	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

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Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25690    Source Name: Sun Valley Public Service District  
Sun Valley PSD

Source Latitude: -  
Source Longitude: -

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 391.85    County: Harrison

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Trout Stream?     Tier 3?

Total Volume from Source (gal): 9,150,000

Regulated Stream?    Stonewall Jackson Dam

Max. Pump rate (gpm):

Proximate PSD?

Max. Simultaneous Trucks:

Gauged Stream?

Max. Truck pump rate (gpm)

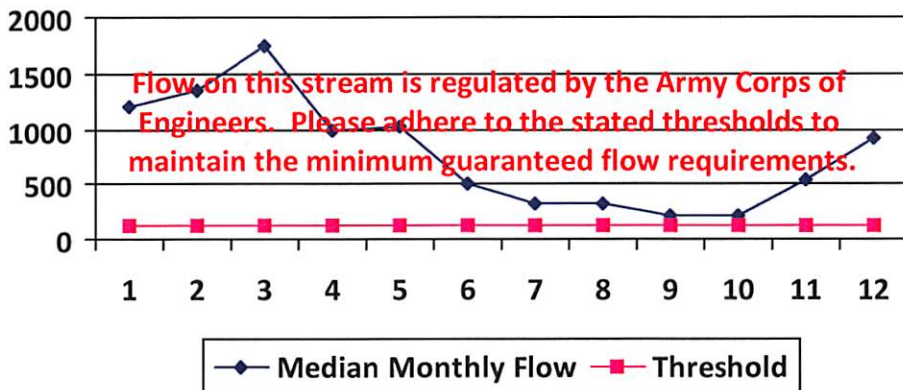
Reference Gaug: 3061000    WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	1,200.75	-	-
2	1,351.92	-	-
3	1,741.33	-	-
4	995.89	-	-
5	1,022.23	-	-
6	512.21	-	-
7	331.86	-	-
8	316.87	-	-
9	220.48	-	-
10	216.17	-	-
11	542.45	-	-
12	926.12	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs):

Downstream Demand (cfs):

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25673 Source Name Ohio River @ Ben's Run Withdrawal Site  
Ben's Run Land Company Limited Partnership

Source Latitude: 39.46593  
Source Longitude: -81.110781

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Tyler

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?  Tier 3?

Max. Pump rate (gpm): 3,360

Regulated Stream? Ohio River Min. Flow

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

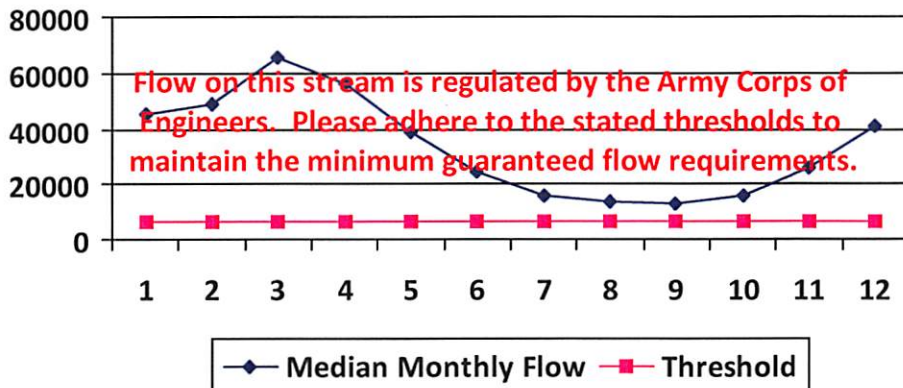
Reference Gaug 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): -  
 Upstream Demand (cfs): 0.00  
 Downstream Demand (cfs): 0.00  
 Pump rate (cfs): 7.49  
 Headwater Safety (cfs): 0.00  
 Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -  
 Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator: Antero Resources

Hendershot Unit 1H

Source ID: 25674    Source Name: West Fork River @ JCP Withdrawal  
James & Brenda Raines

Source Latitude: 39.320913  
Source Longitude: -80.337572

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 532.2    County: Harrison

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 2,000

Regulated Stream?    Stonewall Jackson Dam

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

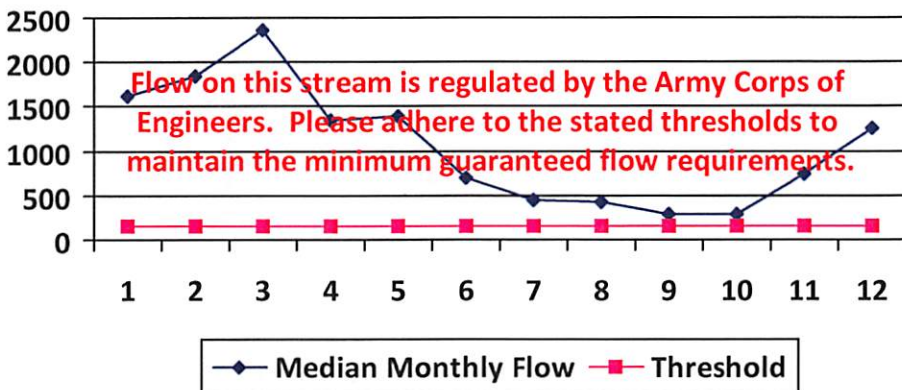
Reference Gaug: 3061000    WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	1,630.82	-	-
2	1,836.14	-	-
3	2,365.03	-	-
4	1,352.59	-	-
5	1,388.37	-	-
6	695.67	-	-
7	450.73	-	-
8	430.37	-	-
9	299.45	-	-
10	293.59	-	-
11	736.74	-	-
12	1,257.84	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	24.29
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25675    Source Name: West Fork River @ McDonald Withdrawal  
David Shrieves

Source Latitude: 39.16761  
Source Longitude: -80.45069

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 314.91    County: Harrison

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 3,000

Regulated Stream?

Stonewall Jackson Dam

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

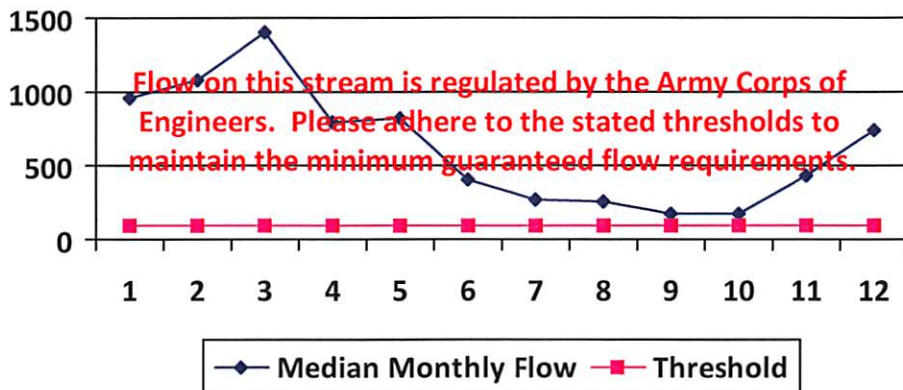
Reference Gaug: 3061000    WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	964.98	-	-
2	1,086.47	-	-
3	1,399.42	-	-
4	800.34	-	-
5	821.52	-	-
6	411.64	-	-
7	266.70	-	-
8	254.66	-	-
9	177.19	-	-
10	173.72	-	-
11	435.94	-	-
12	744.28	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	24.29
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.68
Headwater Safety (cfs):	24.27
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25676 Source Name: West Fork River @ GAL Withdrawal  
David Shrieves

Source Latitude: 39.16422

Source Longitude: -80.45173

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 313.67 County: Harrison

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 2,000

Regulated Stream? Stonewall Jackson Dam

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

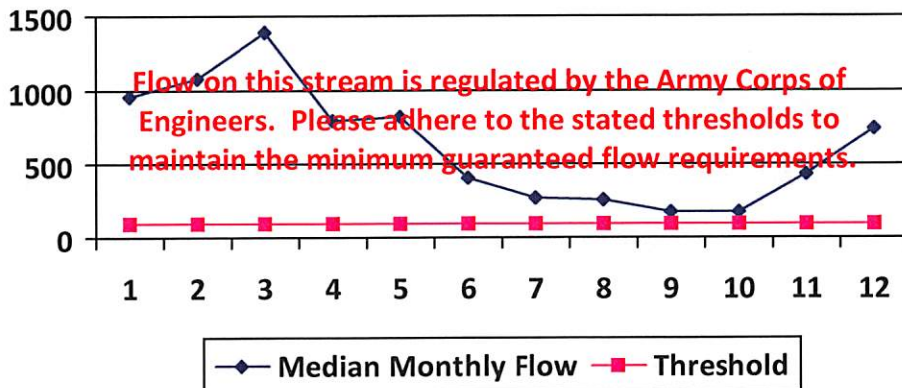
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	961.18	-	-
2	1,082.19	-	-
3	1,393.91	-	-
4	797.19	-	-
5	818.28	-	-
6	410.02	-	-
7	265.65	-	-
8	253.65	-	-
9	176.49	-	-
10	173.04	-	-
11	434.22	-	-
12	741.35	-	-

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	24.29
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	24.18
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25677 Source Name: Middle Island Creek @ Mees Withdrawal Site  
Sarah E. Mees

Source Latitude: 39.43113

Source Longitude: -81.079567

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 484.78 County: Pleasants

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Trout Stream?  Tier 3?

Total Volume from Source (gal): 9,150,000

Regulated Stream?

Max. Pump rate (gpm): 3,360

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

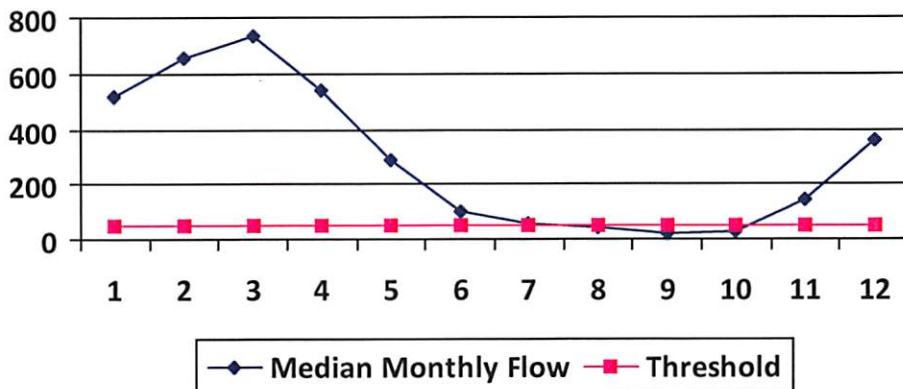
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	519.88	55.12	465.14
2	653.95	55.12	599.22
3	731.75	55.12	677.01
4	543.38	55.12	488.65
5	286.64	55.12	231.90
6	100.10	55.12	45.36
7	56.65	55.12	1.91
8	46.64	55.12	-8.10
9	23.89	55.12	-30.85
10	30.01	55.12	-24.72
11	146.56	55.12	91.83
12	358.10	55.12	303.37

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 47.63

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 7.49

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 52.49

Passby at Location (cfs): 47.63

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25678    Source Name: Middle Island Creek @ Dawson Withdrawal  
Gary D. and Rella A. Dawson

Source Latitude: 39.379292

Source Longitude: -80.867803

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 181.34    County: Tyler

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?     Tier 3?

Max. Pump rate (gpm): 3,000

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

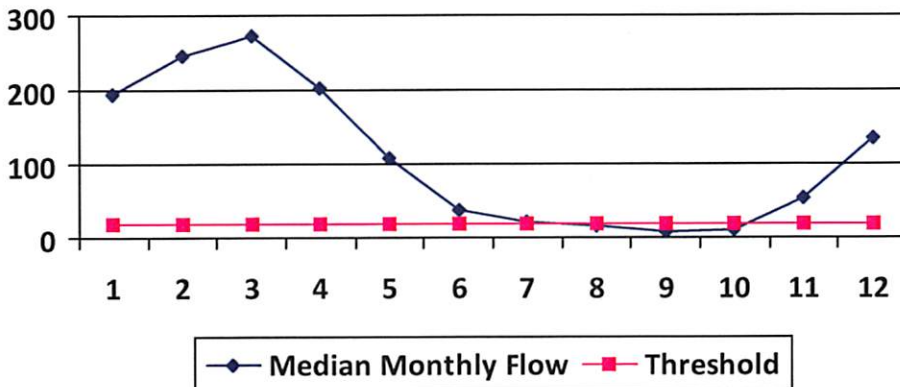
Reference Gaug: 3114500    MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	194.47	42.06	152.68
2	244.62	42.06	202.83
3	273.72	42.06	231.93
4	203.26	42.06	161.47
5	107.22	42.06	65.43
6	37.44	42.06	-4.35
7	21.19	42.06	-20.60
8	17.45	42.06	-24.34
9	8.94	42.06	-32.85
10	11.23	42.06	-30.56
11	54.82	42.06	13.04
12	133.96	42.06	92.17

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 17.82

Upstream Demand (cfs): 13.10

Downstream Demand (cfs): 6.55

Pump rate (cfs): 6.68

Headwater Safety (cfs): 4.45

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 76.03

Passby at Location (cfs): 28.82

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25679 Source Name: McElroy Creek @ Forest Withdrawal  
Forest C. & Brenda L. Moore

Source Latitude: 39.39675

Source Longitude: -80.738197

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 88.85 County: Tyler

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Total Volume from Source (gal): 9,150,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- Endangered Species?
- Trout Stream?
- Regulated Stream?
- Proximate PSD?
- Gauged Stream?
- Mussel Stream?
- Tier 3?

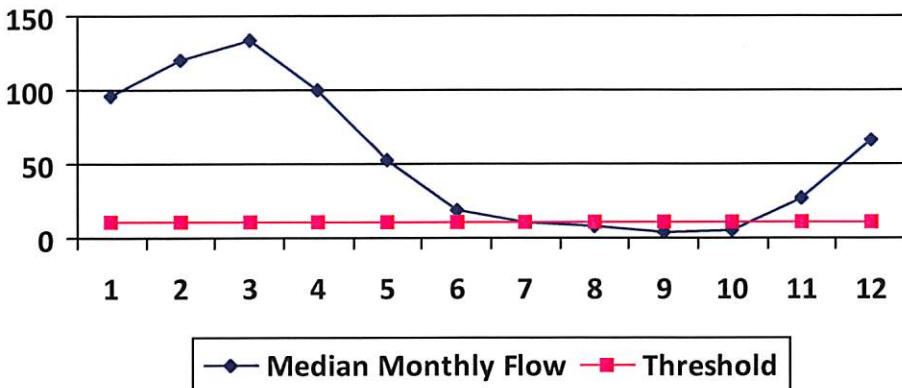
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	95.28	19.78	75.68
2	119.86	19.78	100.25
3	134.11	19.78	114.51
4	99.59	19.78	79.99
5	52.54	19.78	32.93
6	18.35	19.78	-1.26
7	10.38	19.78	-9.22
8	8.55	19.78	-11.05
9	4.38	19.78	-15.23
10	5.50	19.78	-14.10
11	26.86	19.78	7.26
12	65.63	19.78	46.03

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 8.73

Upstream Demand (cfs): 4.46

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 2.18

Ungauged Stream Safety (cfs): 2.18

Min. Gauge Reading (cfs): 74.19

Passby at Location (cfs): 13.09

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25680    Source Name: Meathouse Fork @ Gagnon Withdrawal  
George L. Gagnon and Susan C. Gagnon

Source Latitude: 39.26054  
Source Longitude: -80.720998

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 60.6    County: Doddridge

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

- Endangered Species?     Mussel Stream?
- Trout Stream?     Tier 3?
- Regulated Stream?
- Proximate PSD?
- Gauged Stream?

Total Volume from Source (gal): 9,150,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

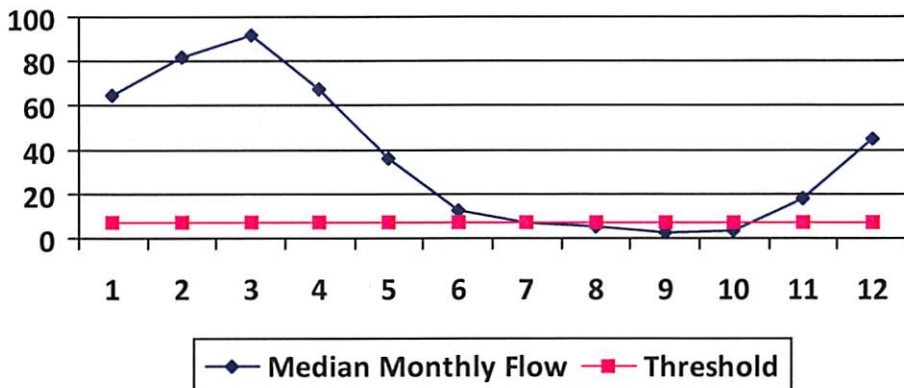
Reference Gaug: 3114500    MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	64.99	13.39	51.70
2	81.75	13.39	68.46
3	91.47	13.39	78.19
4	67.93	13.39	54.64
5	35.83	13.39	22.55
6	12.51	13.39	-0.77
7	7.08	13.39	-6.20
8	5.83	13.39	-7.45
9	2.99	13.39	-10.30
10	3.75	13.39	-9.53
11	18.32	13.39	5.04
12	44.76	13.39	31.48

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs):	5.95
Upstream Demand (cfs):	2.23
Downstream Demand (cfs):	2.81
Pump rate (cfs):	2.23
Headwater Safety (cfs):	1.49
Ungauged Stream Safety (cfs):	1.49
<hr/>	
Min. Gauge Reading (cfs):	71.96
Passby at Location (cfs):	11.74

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25681    Source Name: Meathouse Fork @ Whitehair Withdrawal  
Elton Whitehair

Source Latitude: 39.211317

Source Longitude: -80.679592

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 30.37    County: Doddridge

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?     Mussel Stream?

Trout Stream?     Tier 3?

Total Volume from Source (gal): 9,150,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

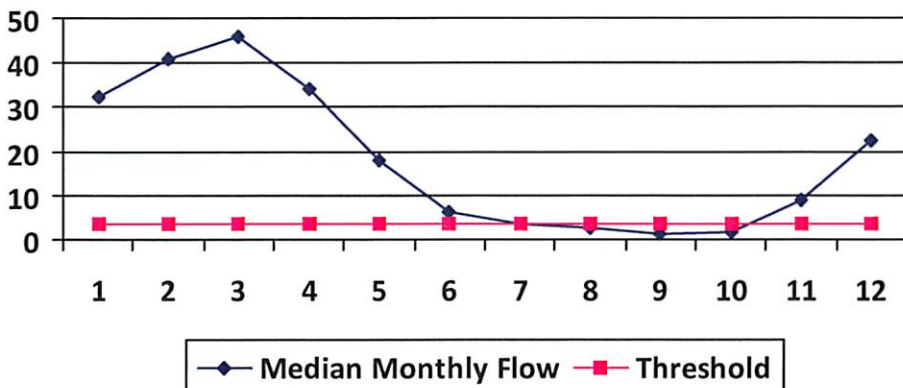
Reference Gaug: 3114500    MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	32.57	6.70	26.15
2	40.97	6.70	34.55
3	45.84	6.70	39.42
4	34.04	6.70	27.62
5	17.96	6.70	11.54
6	6.27	6.70	-0.15
7	3.55	6.70	-2.87
8	2.92	6.70	-3.50
9	1.50	6.70	-4.92
10	1.88	6.70	-4.54
11	9.18	6.70	2.76
12	22.43	6.70	16.01

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 2.98

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 2.81

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.75

Ungauged Stream Safety (cfs): 0.75

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 7.29

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25682 Source Name: Tom's Fork @ Erwin Withdrawal  
John F. Erwin and Sandra E. Erwin

Source Latitude: 39.174306

Source Longitude: -80.702992

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 4.01 County: Doddridge

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?  Tier 3?

Max. Pump rate (gpm): 1,000

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm) 0

Gauged Stream?

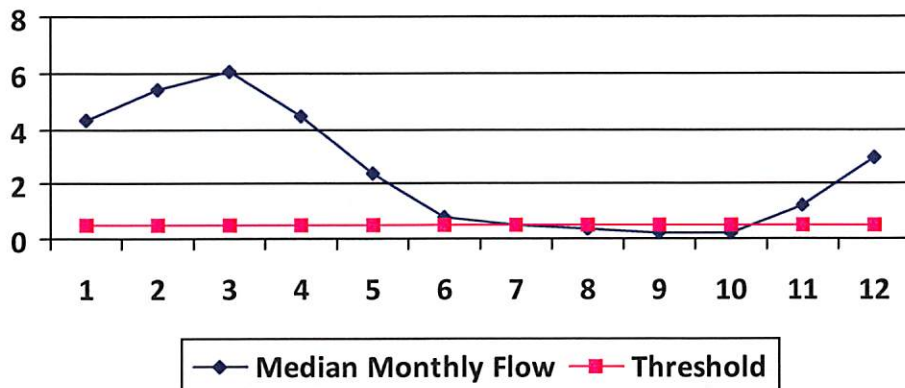
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	4.30	2.82	1.88
2	5.41	2.82	2.98
3	6.05	2.82	3.63
4	4.49	2.82	2.07
5	2.37	2.82	-0.05
6	0.83	2.82	-1.60
7	0.47	2.82	-1.96
8	0.39	2.82	-2.04
9	0.20	2.82	-2.23
10	0.25	2.82	-2.18
11	1.21	2.82	-1.21
12	2.96	2.82	0.54

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 0.39

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.10

Ungauged Stream Safety (cfs): 0.10

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 0.59

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25683 Source Name: Arnold Creek @ Davis Withdrawal  
Jonathon Davis

Source Latitude: 39.302006

Source Longitude: -80.824561

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 20.83 County: Doddridge

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?  Tier 3?

Max. Pump rate (gpm): 1,000

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

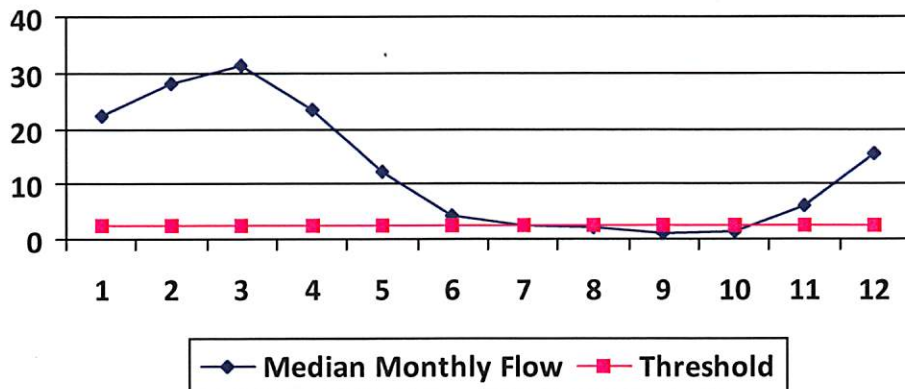
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	22.34	5.30	17.29
2	28.10	5.30	23.05
3	31.44	5.30	26.39
4	23.35	5.30	18.30
5	12.32	5.30	7.26
6	4.30	5.30	-0.75
7	2.43	5.30	-2.62
8	2.00	5.30	-3.05
9	1.03	5.30	-4.03
10	1.29	5.30	-3.76
11	6.30	5.30	1.25
12	15.39	5.30	10.34

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 2.05

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.51

Ungauged Stream Safety (cfs): 0.51

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 3.07

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP-01482

API/ID Number: 047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

Source ID: 25684 Source Name: Buckeye Creek @ Powell Withdrawal  
Dennis Powell

Source Latitude: 39.277142

Source Longitude: -80.690386

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 31.15 County: Doddridge

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Endangered Species?  Mussel Stream?

Total Volume from Source (gal): 9,150,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 1,000

Regulated Stream?

Max. Simultaneous Trucks: 0

Proximate PSD?

Max. Truck pump rate (gpm): 0

Gauged Stream?

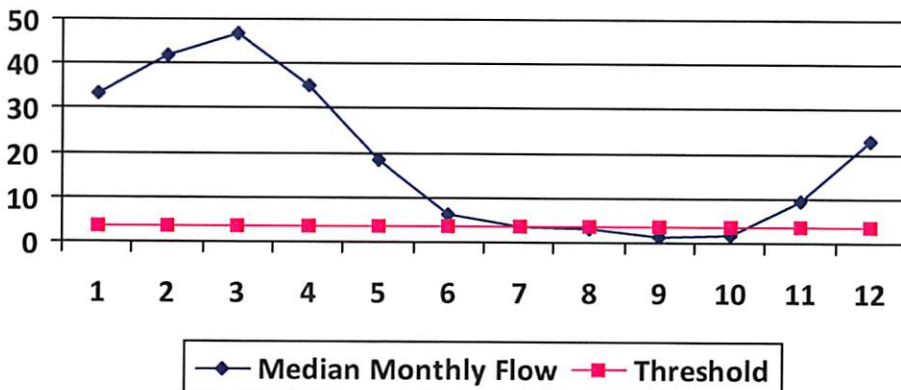
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	33.41	6.82	26.95
2	42.02	6.82	35.56
3	47.02	6.82	40.56
4	34.92	6.82	28.46
5	18.42	6.82	11.96
6	6.43	6.82	-0.03
7	3.64	6.82	-2.82
8	3.00	6.82	-3.46
9	1.53	6.82	-4.92
10	1.93	6.82	-4.53
11	9.42	6.82	2.96
12	23.01	6.82	16.55

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 3.06

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.77

Ungauged Stream Safety (cfs): 0.77

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 4.59

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator: Antero Resources

Hendershot Unit 1H

Source ID: 25685 Source Name South Fork of Hughes River @ Knight Withdrawal  
Tracy C. Knight & Stephanie C. Knight

Source Latitude: 39.198369  
Source Longitude: -80.870969

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 16.26 County: Ritchie

- Endangered Species?  Mussel Stream?
- Trout Stream?  Tier 3?
- Regulated Stream?
- Proximate PSD?
- Gauged Stream?

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

Total Volume from Source (gal): 9,150,000

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

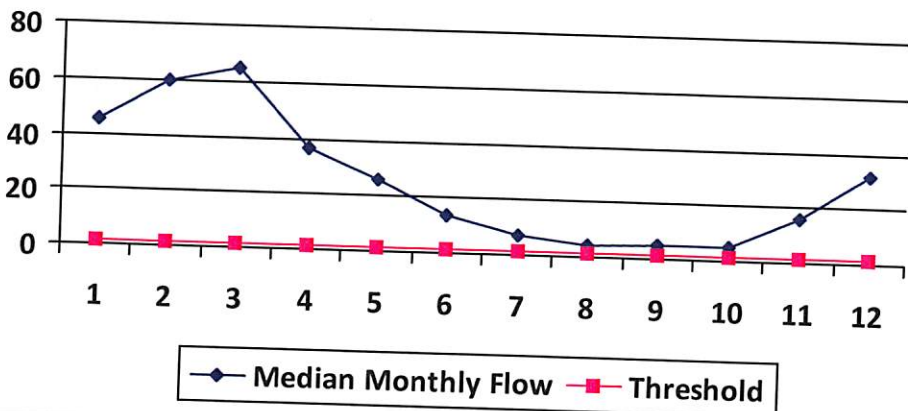
Reference Gaug 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Drainage Area (sq. mi.) 229.00

Gauge Threshold (cfs): 22

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	45.67	14.26	31.44
2	59.55	14.26	45.31
3	65.21	14.26	50.97
4	36.87	14.26	22.63
5	25.86	14.26	11.63
6	13.90	14.26	-0.33
7	6.89	14.26	-7.34
8	3.98	14.26	-10.25
9	4.79	14.26	-9.45
10	5.20	14.26	-9.04
11	15.54	14.26	1.30
12	32.06	14.26	17.82

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 1.56  
 Upstream Demand (cfs): 5.62  
 Downstream Demand (cfs): 0.00  
 Pump rate (cfs): 6.68  
 Headwater Safety (cfs): 0.39  
 Ungauged Stream Safety (cfs): 0.00

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Min. Gauge Reading (cfs): 39.80  
 Passby at Location (cfs): 1.95

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

## Source Detail

WMP- 01482

API/ID Number: 047-085-10060

Operator: Antero Resources

Hendershot Unit 1H

Source ID: 25686 Source Name North Fork of Hughes River @ Davis Withdrawal  
Lewis P. Davis and Norma J. Davis

Source Latitude: 39.322363  
Source Longitude: -80.936771

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 15.18 County: Ritchie

Anticipated withdrawal start date: 9/18/2013

Anticipated withdrawal end date: 9/18/2014

- Endangered Species?  Mussel Stream?
- Trout Stream?  Tier 3?
- Regulated Stream?
- Proximate PSD?
- Gauged Stream?

Total Volume from Source (gal): 9,150,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

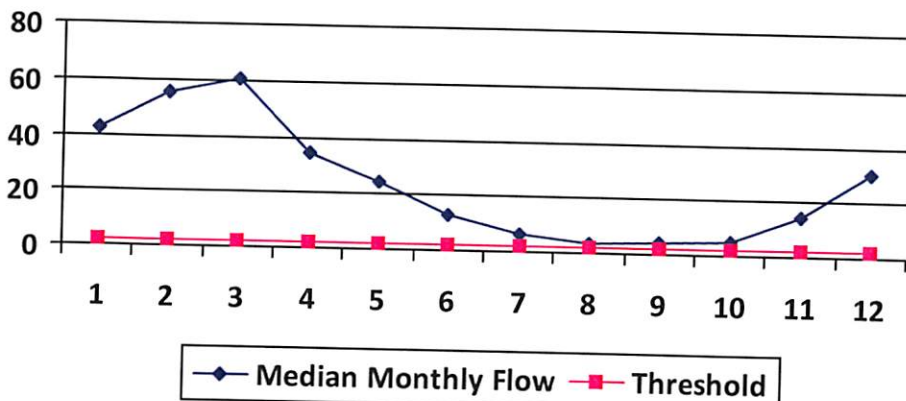
Reference Gaug 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Drainage Area (sq. mi.) 229.00

Gauge Threshold (cfs): 22

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	42.64	4.42	38.36
2	55.59	4.42	51.32
3	60.88	4.42	56.60
4	34.42	4.42	30.14
5	24.15	4.42	19.87
6	12.98	4.42	8.70
7	6.44	4.42	2.16
8	3.72	4.42	-0.56
9	4.47	4.42	0.19
10	4.85	4.42	0.57
11	14.50	4.42	10.23
12	29.93	4.42	25.65

### Water Availability Profile



### Water Availability Assessment of Location

Base Threshold (cfs): 1.46  
 Upstream Demand (cfs): 0.00  
 Downstream Demand (cfs): 0.00  
 Pump rate (cfs): 2.23  
 Headwater Safety (cfs): 0.36  
 Ungauged Stream Safety (cfs): 0.36

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Min. Gauge Reading (cfs): 35.23  
 Passby at Location (cfs): 2.19

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



## Water Management Plan: Secondary Water Sources



WMP- 01482	API/ID Number	047-085-10060	Operator:	Antero Resources
Hendershot Unit 1H				

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

### Lake/Reservoir

Source ID:	25691	Source Name	City of Salem Reservoir (Lower Dog Run)		Source start date:	9/18/2013
			Public Water Provider		Source end date:	9/18/2014
Source Lat:	39.28834	Source Long:	-80.54966	County	Harrison	
Max. Daily Purchase (gal)	1,000,000	Total Volume from Source (gal):	9,150,000			
DEP Comments:						

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	25692	Source Name	Pennsboro Lake		Source start date:	9/18/2013	
					Source end date:	9/18/2014	
		Source Lat:	39.281689	Source Long:	-80.925526	County	Ritchie
		Max. Daily Purchase (gal)		Total Volume from Source (gal):	9,150,000		
DEP Comments:							

Source ID:	25693	Source Name	Powers Lake (Wilderness Water Park Dam)		Source start date:	9/18/2013	
					Source end date:	9/18/2014	
		Source Lat:	39.255752	Source Long:	-80.463262	County	Harrison
		Max. Daily Purchase (gal)		Total Volume from Source (gal):	9,150,000		
DEP Comments:							



**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
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Source ID:	25694	Source Name	Powers Lake Two		Source start date:	9/18/2013
					Source end date:	9/18/2014
	Source Lat:	39.247604	Source Long:	-80.466642	County	Harrison
	Max. Daily Purchase (gal)			Total Volume from Source (gal):	9,150,000	
	DEP Comments:					

WMP-01482

API/ID Number

047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

**Other**

Source ID:	25695	Source Name	Poth Lake (Landowner Pond)		Source start date:	9/18/2013
			Private Owner		Source end date:	9/18/2014
Source Lat:	39.221306	Source Long:	-80.463028	County	Harrison	
Max. Daily Purchase (gal)		Total Volume from Source (gal):	9,150,000			
DEP Comments:						

Source ID:	25696	Source Name	Williamson Pond (Landowner Pond)		Source start date:	9/18/2013
					Source end date:	9/18/2014
Source Lat:	39.19924	Source Long:	-80.886161	County	Ritchie	
Max. Daily Purchase (gal)		Total Volume from Source (gal):	9,150,000			
DEP Comments:						

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	25697	Source Name	Eddy Pond (Landowner Pond)		Source start date:	9/18/2013	
					Source end date:	9/18/2014	
		Source Lat:	39.19924	Source Long:	-80.886161	County	Ritchie
		Max. Daily Purchase (gal)		Total Volume from Source (gal):		9,150,000	
DEP Comments:							

Source ID:	25698	Source Name	Hog Lick Quarry Industrial Facility		Source start date:	9/18/2013	
					Source end date:	9/18/2014	
		Source Lat:	39.419272	Source Long:	-80.217941	County	Marion
		Max. Daily Purchase (gal)	1,000,000	Total Volume from Source (gal):		9,150,000	
DEP Comments:							

WMP-01482

API/ID Number

047-085-10060

Operator:

Antero Resources

Hendershot Unit 1H

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

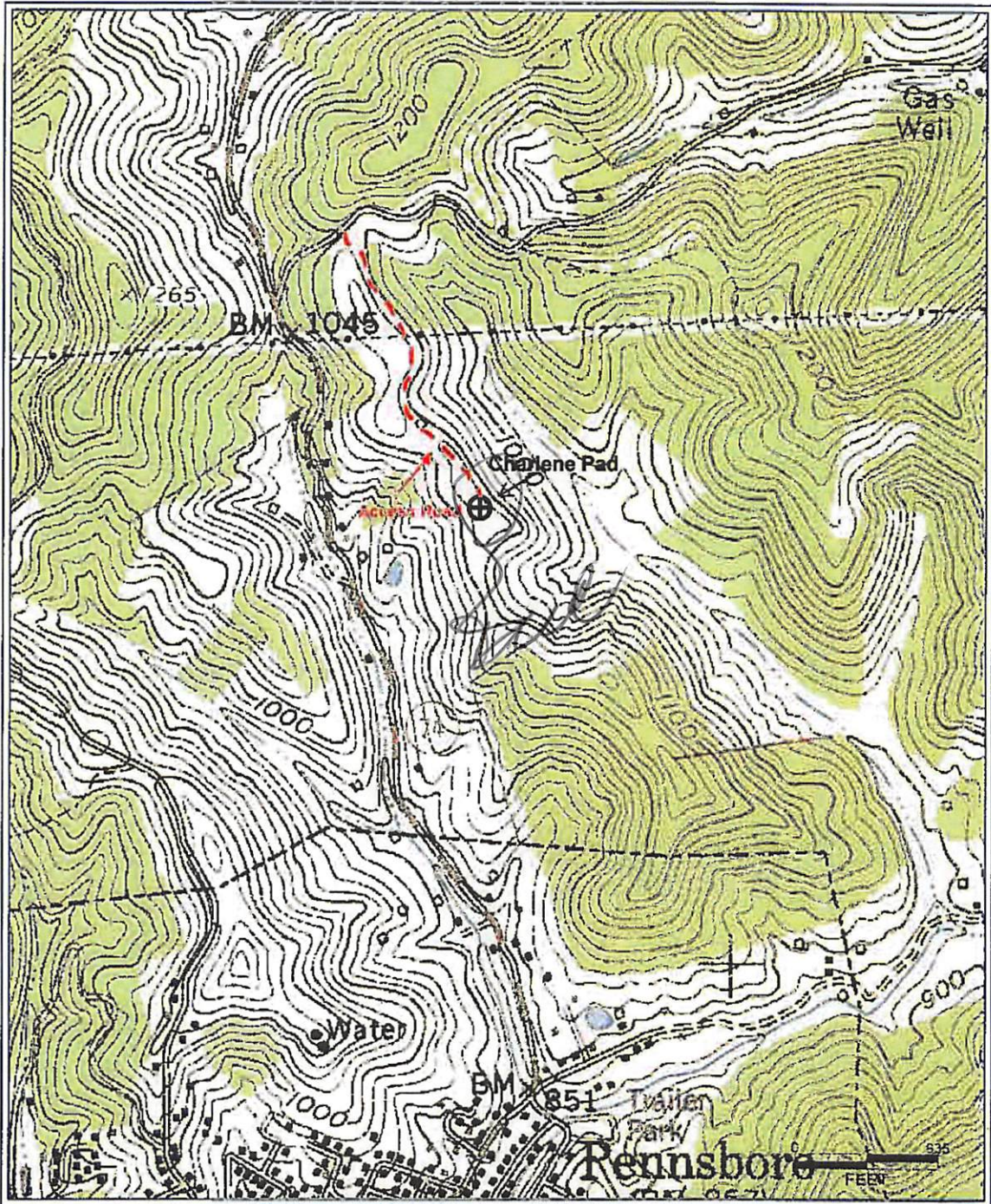
- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	25699	Source Name	Glade Fork Mine Industrial Facility		Source start date:	9/18/2013
					Source end date:	9/18/2014
	Source Lat:	38.965767	Source Long:	-80.299313	County	Upshur
	Max. Daily Purchase (gal)	1,000,000	Total Volume from Source (gal):	9,150,000		
DEP Comments:						

**Recycled Frac Water**

Source ID:	25700	Source Name	Livingston Unit 2H		Source start date:	9/18/2013
					Source end date:	9/18/2014
	Source Lat:		Source Long:		County	
	Max. Daily Purchase (gal)		Total Volume from Source (gal):	9,150,000		
DEP Comments:						

plat spotted  
85-010060 ✓ 10/4

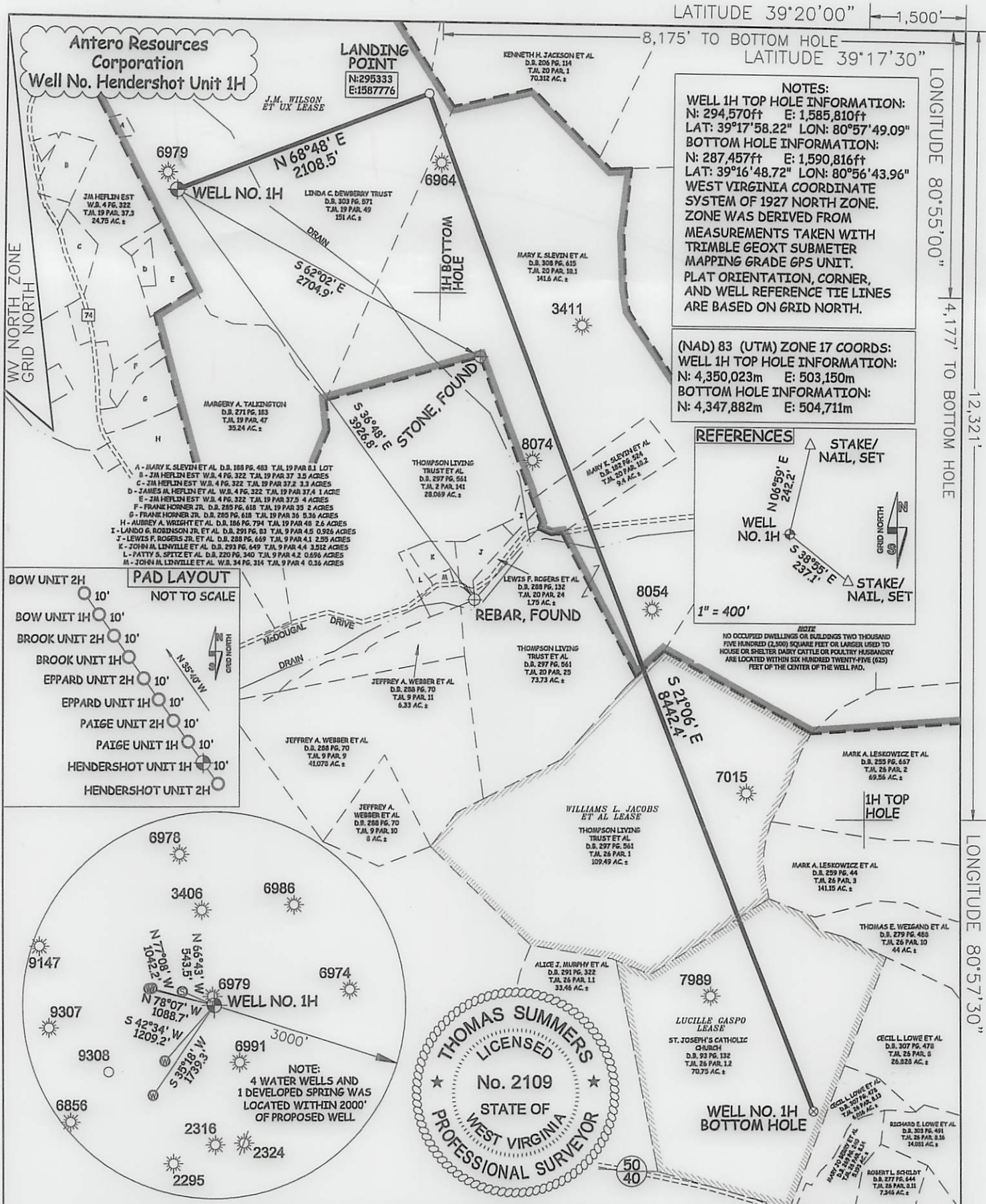


PETRA AR0015 10-20-01 AM

**Antero Resources Corporation**  
Appalachian Basin  
Hendershot Unit 1H  
Ritchie County  
Office of Oil and Gas

Quadrangle: Pennsboro  
Watershed: North Fork Hughes River  
District: Clay  
Date: 8-6-2013

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SEP 20 2013  
WV Department of  
Environmental Protection



LATITUDE 39°20'00" | 1,500'

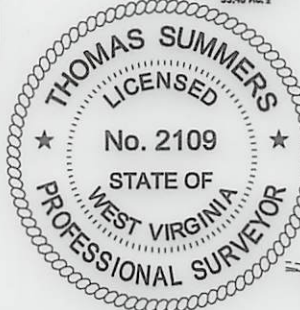
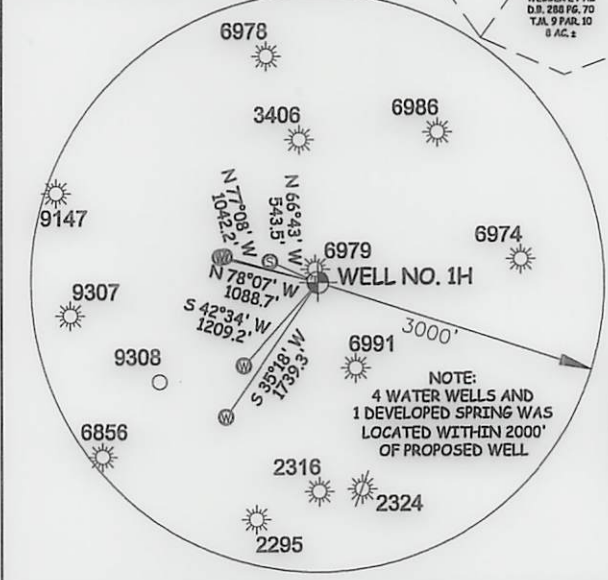
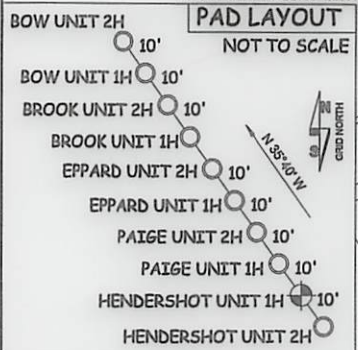
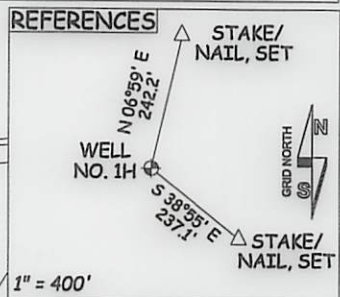
8,175' TO BOTTOM HOLE  
LATITUDE 39°17'30"

LONGITUDE 80°55'00" | 4,177' TO BOTTOM HOLE

LONGITUDE 80°57'30" | 12,321'

**NOTES:**  
**WELL 1H TOP HOLE INFORMATION:**  
 N: 294,570ft E: 1,585,810ft  
 LAT: 39°17'58.22" LON: 80°57'49.09"  
**BOTTOM HOLE INFORMATION:**  
 N: 287,457ft E: 1,590,816ft  
 LAT: 39°16'48.72" LON: 80°56'43.96"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

**(NAD) 83 (UTM) ZONE 17 COORDS:**  
**WELL 1H TOP HOLE INFORMATION:**  
 N: 4,350,023m E: 503,150m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,347,882m E: 504,711m



JOB # 13-043WA  
 DRAWING # HENDERSHOT1H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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 Existing Fence

⊕ Rebar, Found

THOMAS SUMMERS P.S. 2109

DATE 08/01/13

OPERATOR'S WELL# H6A

API WELL # 47 - 085 - 10060

STATE COUNTY PERMIT

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

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL

(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X

LOCATION: ELEVATION 1,106' WATERSHED BUNNELL RUN

QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER LINDA C. DEWBERRY TRUST ACREAGE 151 ACRES +/-

OIL & GAS ROYALTY OWNER J.M. WILSON ET UX; WILLIAMS L. JACOBS ET AL; LEASE ACREAGE 503.3 ACRES±; 85 ACRES±;

LUCILLE GASPO 71 ACRES±

PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X

PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,500' TVD 15,000' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1625 17TH STREET ADDRESS CT CORPORATION SYSTEM

DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD

DENVER, CO 80202 ADDRESS CHARLESTON, WV 25313



85-010060

## Well Site Safety Plan Antero Resources

**Well Name:** Hendershot Unit 1H, Hendershot Unit 1H, Paige Unit 1H, Paige Unit 2H

**Pad Location:** CHARLENE PAD  
Ritchie County/ Clay District

**GPS Coordinates:** Lat 39°17'59.27" Long -80°57'49.21" (NAD83)

### Driving Directions:

From US-50 heading east turn left onto Co Rd 10/Cabin Run (.3 mi). Turn left onto Co Rd 50/43 (.4 mi). Continue onto Co Rd 50/40/Old US 50 E (2.8 mi). Turn right onto Grey St (.1mi), then slight left to stay on Grey St (.1 mi). Sharp left onto E Penn Ave (.1 mi) and then take the 2<sup>nd</sup> right onto 1<sup>st</sup> St (446 ft). Slight right onto WV-74 N/Mountain Dr, continue to follow WV-74 N (1.1 mi). Slight right, and access road will be on the right.

*JUL*  
*9-19-13*

RECEIVED  
Office of Oil and Gas  
SEP 20 2013

WV Department of  
Environmental Protection  
SSP Page 1

Operator's Well Number Hendershot Unit 1H

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>J.M. Wilson et ux Lease</b>			
J. M. Wilson, et ux	Carnegie Natural Gas Company	1/8	0032/0157
Carnegie Natural Gas Company	Ferrell Drilling Company	Assignment	0116/0543
Ferrell Drilling Company	Seco Oil & Gas, Inc.	Assignment	0165/0701
Seco Oil & Gas, Inc.	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0259/0693
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>
<b>Williams L. Jacobs et al Lease</b>			
Williams Jacobs, et al	Kepco, Inc.	1/8	0164/0721
Kepco, Inc.	Eastern Kentucky Production Company	Name Change	Exhibit 2
Eastern Kentucky Production Company	Kepco Resources, Inc.	Assignment	0188/0061
Kepco Resources, Inc.	Union Drilling, Inc.	Merger	CR 0004/0322
Union Drilling, Inc.	Equitable Resources Exploration, Inc.	Assignment	DB 0227/0201
Equitable Resources Exploration, Inc.	Equitable Resources Energy Company	Merger	CR 0004/0674
Equitable Resources Energy Company	Enervest East Limited Partnership	Assignment	0222/0273
Enervest East Limited Partnership	The Houston Exploration Company	Assignment	0234/0890
The Houston Exploration Company	Seneca-Upshuer Petroleum, Inc.	Assignment	0236/0650
Seneca-Upshuer Petroleum, Inc.	Seneca-Upshuer Petroleum, LLC	Assignment	DB 0311/0863
Seneca-Upshuer Petroleum, LLC, et al	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0258/0978
<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>

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

Received

Aug 16 2013

WV Dept. of Environmental Protection



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

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- (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
<b>Lucille Gaspo Lease</b>	Lucille Gaspo	Equitable Resources Exploration Division, Division of Equitable Resources ENER	1/8	0203/0282
	Equitable Resources Exploration Division, Division of Equitable Resources ENER	Eastern Pennsylvania Exploration Company, et al	Assignment	0209/0060
	Eastern Pennsylvania Exploration Company, et al	Eastern American Energy Corporation	Assignment	0218/0187
	Eastern American Energy Corporation	Energy Corporation of America	Assignment	DB 0306/0836
	Energy Corporation of America	Antero Resources Appalachian Corporation	Assignment	0257/0377
	<b>Antero Resources Appalachian Corporation</b>	<b>Antero Resources Corporation</b>	<b>Name Change</b>	<b>Exhibit 1</b>

\*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: Ward McNeilly *W. McNeilly*  
 Its: Vice President of Engineering

**Received**  
 AUG 16 2013  
 Page 1 of \_\_\_\_\_  
 Office of Oil and Gas  
 WV Dept. of Environmental Protection

FILED

JUN 10 2013

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



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

APPLICATION FOR  
AMENDED CERTIFICATE  
OF AUTHORITY

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

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

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

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/26/2008
- 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)

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

Alvyn A. Schopp	(303) 357-7310
Contact Name	Phone Number

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

Print Name of Signer: Alvyn A. Schopp Title/Capacity: Authorized Person

Signature: *Alvyn A. Schopp* Date: June 10, 2013

**Important Legal Notice Regarding Signature:** Per West Virginia Code §311-1-129, Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered 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.

Received  
Revised 4/13

AUG 16 2013

FORM WW-6A1  
EXHIBIT 2

85 10060 ✓

85 10060

# Commonwealth of Kentucky

OFFICE OF  
SECRETARY OF STATE

DREXELL R. DAVIS  
*Secretary*



FRANKFORT,  
KENTUCKY

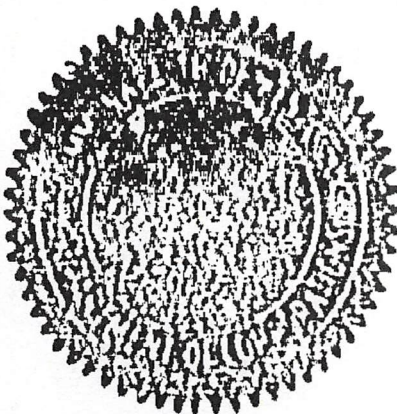
## CERTIFICATE OF AMENDMENT TO ARTICLES OF INCORPORATION

*I, DREXELL R. DAVIS, Secretary of State of the Commonwealth of Kentucky, do hereby certify that Amended Articles of Incorporation of*

**KEPCO, INC.**

**CHANGING NAME TO EASTERN KENTUCKY PRODUCTION COMPANY**

*amended pursuant to Kentucky Revised Statutes, 271A. (2003) duly signed and verified or acknowledged according to law, have been filed in my office by said corporation, and that all taxes, fees and charges payable upon the filing of said Articles of Amendment have been paid.*



SECRETARY OF STATE

Given under my hand and seal of Office as Secretary of State,  
at Frankfort, Kentucky, this 15TH  
day of AUGUST, 19 85.

*Drexell R. Davis*  
SECRETARY OF STATE

Received

AUG 1-6 2013

Office of Oil and Gas  
ASSISTANT SECRETARY OF STATE  
Dept. of Environmental Protection



August 8, 2013

Antero Resources  
1625 17th Street  
Denver, Colorado 80202  
Office 303.357.7310  
Fax 303.357.7315

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

RE: Hendershot Unit 1H  
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 Hendershot Unit 1H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Hendershot Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Sloane Ford  
Landman

Received

AUG 16 2013

Office of Oil and Gas  
WV Dept. of Environmental Protection

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

Date of Notice Certification: 08/09/2013

API No. 47- 085 -

Operator's Well No. Hendershot Unit 1H

Well Pad Name: Charlene 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>503,150m</u>
County:	<u>Ritchie</u>		Northing:	<u>4,350,023m</u>
District:	<u>Clay</u>	Public Road Access:	<u>CR 74/9</u>	
Quadrangle:	<u>Pennsboro 7.5'</u>	Generally used farm name:	<u>Linda C. Dewberry Trust</u>	
Watershed:	<u>Bunnell Run</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.

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:

\*PLEASE CHECK ALL THAT APPLY

- 1. NOTICE OF SEISMIC ACTIVITY or  NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or  NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or  NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

**OOG OFFICE USE ONLY**

- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED
- RECEIVED

**Required Attachments:**

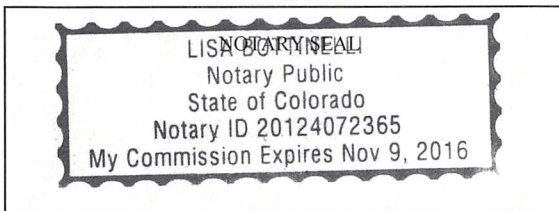
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Received  
Office of Oil and Gas  
WV Dept. of Environmental Protection

**Certification of Notice is hereby given:**

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

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1625 17th Street</u>
By:	<u>Ward McNeilly</u> <i>W. McNeilly</i>		<u>Denver, CO 80202</u>
Its:	<u>Vice President of Engineering</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>(303) 357-7310</u>	Email:	<u>amihalcin@anteroresources.com</u>



Subscribed and sworn before me this 9 day of Aug 2013.  
*Lisa B. Seal* Notary Public  
 My Commission Expires 11/9/2016

**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](mailto:depprivacyofficer@wv.gov).

Received

AUG 16 2013

Office of Oil and Gas  
WV Dept. of Environmental Protection

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

**85 10060**

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

**Date of Notice:** 08/12/2013 **Date Permit Application Filed:** 08/12/2013

**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.

**Notice is hereby provided to:**

- SURFACE OWNER(s)  
Name: Linda C. Dewberry, Trustee of Linda C. Dewberry Trust ✓  
Address: 4009 Amhurst Court  
Matthew, NC 28104  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

- SURFACE OWNER(s) (Road and/or Other Disturbance) ✓  
Name: Mary K. Stevin and William Yeck  
Address: P.O. Box 143  
Pennsboro, WV 26415  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

- SURFACE OWNER(s) (Impoundments/Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

- COAL OWNER OR LESSEE  
Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

- COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

- WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE ✓  
Name: PLEASE SEE ATTACHMENT  
Address: \_\_\_\_\_

- OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Received**  
AUG 16 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

WW-6A  
(5-12)

85 10060  
API NO. 47- 085  
OPERATOR WELL NO. Hendershot Unit 1H  
Well Pad Name: Charlene 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 also 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.

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

**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.

**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.

**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 wellpad 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 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.

**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 57<sup>th</sup> 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.**

**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.

AUG 16 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

WW-6A  
(5-12)

85 10060  
API NO. 47- 085 -  
OPERATOR WELL NO. Hendershot Unit 1H  
Well Pad Name: Charlene Pad

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.

**Notice is hereby given by:**

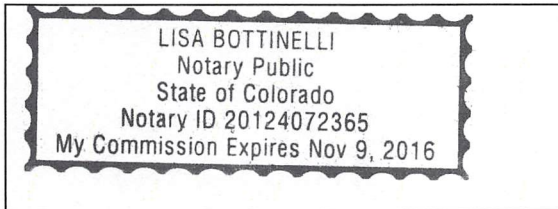
Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7310  
Email: amihalcin@anteroresources.com

*W. Melick*

Address: 1625 17th 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 [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 8 day of Aug 2013.  
Lisa Bottinelli Notary Public  
My Commission Expires 11/9/2016

Received  
AUG 16 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

## WW-6A Notice of Application Attachment:

85 10060

### Water Well Owners:

✓ **Owner:** JM Heflin Estate and Mae H. Brannon  
Cheryl Yoak  
**Address:** 427 Pyles Ave.  
Mannington, WV 26582

✓ **Owner:** Jerry L. Jett et al  
**Address:** 1236 Mountain Drive  
Pennsboro, WV 26415

✓ **Owner:** Susie Cronin  
**Address:** 1027 Mountain Drive  
Pennsboro, WV 26415

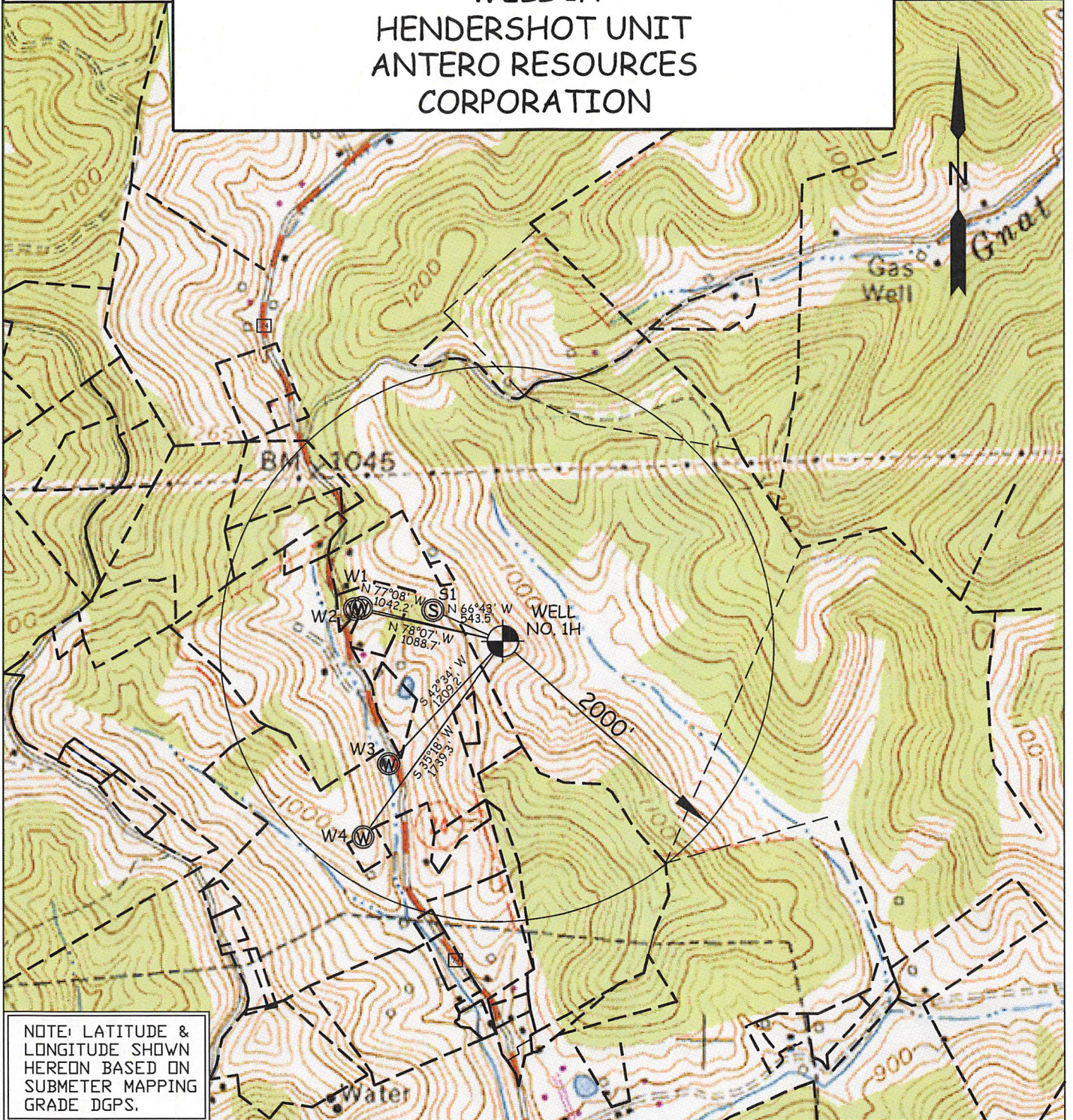
**Note: On attached water well map, 1 other water well is identified but is located greater than 1500' from the subject well pad location)**

Received

AUG 16 2013

Office of Oil and Gas  
WV Dept. of Environmental Protection

**WELL 1H  
HENDERSHOT UNIT  
ANTERO RESOURCES  
CORPORATION**



WELL	SURFACE OWNER	ADDRESS	DISTRICT-TAX MAP-PARCEL	WELL LATITUDE	WELL LONGITUDE
W1	JERRY JETT ET AL	1236 Mountain Drive Pennsboro, WV 26415	3-19-19	39° 18' 00.35"	80° 58' 02.06"
W2	JERRY JETT	1236 Mountain Drive Pennsboro, WV 26415	3-19-18	39° 18' 00.27"	80° 58' 02.68"
W3	SUSIE CRONIN	1027 Mountain Drive Pennsboro, WV 26415	3-19-33.2	39° 17' 49.29"	80° 57' 59.31"
W4	FRANK FOLIO ET AL	PO BOX 10211 SV-24 VAN NUYS, CA 91410	3-19-33.4	39° 17' 44.03"	80° 58' 01.57"
S1	J.M. HEFLIN EST	427 PYLES AVENUE MANNINGTON, WV 26582	3-19-37.3	39° 18' 00.27"	80° 57' 55.48"

WILLOW LAND SURVEYING, PLLC P.O. BOX 17, PENNSBORO, WV 26415 (304) 659-1717	TOPO SECTION(S) OF : PENNSBORO 7.5' QUAD.	SCALE : 1-INCH = 1000-FEET 0'      1000'      2000'      3000'
	JOB #: 13-043WA	
DATE: 08/08/13	DRAWN BY: C.J.P.	FILE: HENDERSHOT1HWATERMAP

REC'D  
 6 2013  
 WV Dept. of Environmental Protection

85 10060

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 6/21/2013 **Date of Planned Entry:** 7/2/2013

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(S)

Name: Linda C. Dewberry, Trustee of Linda C. Dewberry Trust ✓  
Address: 4009 Amhurst Court  
Matthew, NC 28104

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address: \_\_\_\_\_

MINERAL OWNER(S)

Name: PLEASE SEE ATTACHMENT ✓  
Address: \_\_\_\_\_

\*please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.2995307, -80.9636298</u>
County: <u>Ritchie</u>	Public Road Access: <u>CR 74/9</u>
District: <u>Clay</u>	Watershed: <u>Bunnell Run</u>
Quadrangle: <u>Pennsboro 7.5'</u>	Generally used farm name: <u>Linda C. Dewberry Trust</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

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

Address: 1625 17th 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](mailto:depprivacyofficer@wv.gov).

Received  
AUG 19 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

# WW-6A3 Notice of Entry For Plat Survey Attachment:

## Mineral Owners:

85 10060

- ✓ **Owner:** Charlene Hood  
**Address:** 100 Shayne Ln.  
Latrobe, PA 15650
- ✓ **Owner:** Sandy Wargo  
**Address:** 1039 Highfield Rd.  
Bethel Park, PA 15102
- ✓ **Owner:** Anita Heflin Allen  
**Address:** 2116 North Ohio St.  
Arlington, VA 22205
- ✓ **Owner:** Anita Heflin Allen, AIF for Gladys Heflin  
**Address:** 2116 North Ohio St.  
Arlington, VA 22205
- ✓ **Owner:** Charles Hitt, Jr.  
**Address:** 479 Bank St. Ext. Apt. 708  
Bridgeville, PA 15017
- ✓ **Owner:** Billy Hitt  
**Address:** 6871 Douglas St.  
Hollywood, FL 33024
- ✓ **Owner:** Aubrey Wright and Rosa Wright  
**Address:** 690 Mountain Dr.  
Pensboro, WV 26415
- ✓ **Owner:** Linda C. Dewberry, Trustee of Linda C. Dewberry Trust  
**Address:** 4009 Amhurst Ct.  
Matthew, NC 28104

Received

Office of Oil and Gas  
WV Dept. of Environmental Protection

85-10060

**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:** 08/12/2013      **Date Permit Application Filed:** 08/12/2013

**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: Linda C. Dewberry, Trustee of Linda C. Dewberry Trust ✓      Name: \_\_\_\_\_  
Address: 4009 Amhurst Court      Address: \_\_\_\_\_  
Matthew, NC 28104      \_\_\_\_\_

**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>503,150m</u>
County:	<u>Ritchie</u>		Northing:	<u>4,350,023m</u>
District:	<u>Clay</u>	Public Road Access:		<u>CR 74/9</u>
Quadrangle:	<u>Pennsboro 7.5'</u>	Generally used farm name:		<u>Linda C. Dewberry Trust</u>
Watershed:	<u>Bunnell Run</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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1625 17th Street</u>
Telephone:	<u>(303) 357-7310</u>		<u>Denver, CO 80202</u>
Email:	<u>amihalcin@anteroresources.com</u>	Facsimile:	<u>303-357-7315</u>

**Oil and Gas Privacy Notice:**

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Received  
Aug 16 2013  
Office of Oil and Gas  
WV Dept of Environmental Protection



85 10060

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

August 7, 2013

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

**Subject: DOH Permit for the Charlene Pad, Ritchie County  
Hendershot Unit 1H Well site**

Dear Mr. Martin,

This well site will be accessed from a DOH permit #03-2013-0316 which has been requested by Antero Resources Corporation for access to the State Road for a well site located off of Route 74/9 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 Mihalcin  
Antero Resources Corporation  
CH, CHH, OM, D-3  
File

E.E.O./AFFIRMATIVE ACTION EMPLOYER

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Subdivision 3.3.e A listing of the anticipated additives that may be used in the water used for fracturing or stimulating the well. (A listing of the additives that were actually used in the fracturing or stimulating of the well shall be submitted as part of the completion report required by W. Va. Code 22-6-22.)

**FRACTURING/ STIMULATING INTERVAL**

<b>Additive</b>	<b>Chemical Abstract Service Number (CAS #)</b>
1. Fresh Water	7732-18-5
2. 2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
3. Ammonium Persulfate	7727-54-0
4. Anionic copolymer	Proprietary
5. Anionic polymer	Proprietary
6. BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
7. Cellulase enzyme	(Proprietary)
8. Demulsifier Base	(Proprietary)
9. Ethoxylated alcohol blend	Mixture
10. Ethoxylated Nonylphenol	68412-54-4
11. Ethoxylated oleylamine	26635-93-8
12. Ethylene Glycol	107-21-1
13. Glycol Ethers	111-76-2
14. Guar gum	9000-30-0
15. Hydrogen Chloride	7647-01-0
16. Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
17. Isopropyl alcohol	67-63-0
18. liquid, 2,2-dibromo-3-nitropropionamide	10222-01-2
19. Microparticle	Proprietary
20. Petroleum Distillates (BTEX Below Detect)	64742-47-8
21. Polyacrylamide	57-55-6
22. Propargyl Alcohol	107-19-7
23. Propylene Glycol	57-55-6
24. Quartz	14808-60-7
25. Sillica, crystalline quartz	7631-86-9
26. Sodium Chloride	7647-14-5
27. Sodium Hydroxide	1310-73-2
28. Sugar	57-50-1
29. Surfactant	68439-51-0
30. Suspending agent (solid)	14808-60-7
31. Tar bases, quinoline derivs, benzyl chloride-quatemized	72480-70-7

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**Antero Resources Corporation Site Construction Plan for  
Charlene Pad**

*Antero Resources Corporation (Antero) is submitting the following Site Construction Plan in compliance with §35-8-5.5. This plan is submitted in conjunction with the Charlene Pad Site Design, Construction Plan, & Erosion & Sediment Control Plans prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection and Office of Oil and Gas, and certified by Allegheny Surveys, Inc., a West Virginia registered professional engineer.*

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**Requirement §5.5.a.** *The plan should describe the nature and purpose of the construction project and identify the procedures for construction that will be used to achieve site stability. The plan shall be considered conditions of the permit and be enforceable as such.*

**Antero Response**

The nature and purpose of the subject project is to perforate, fracture, and complete one or more horizontal shallow wells. Procedures to achieve site stability include seeding and mulching of earth disturbed areas and implementation of erosion and sediment best management practices (BMPs). Details of seeding and mulching rates as well as procedures for installation and maintenance of erosion and sediment BMPs are outlined on page 3 of "Charlene Pad Site Design, Construction Plan, & Erosion & Sediment Control Plans" (Site Design) prepared and certified by Allegheny Surveys, Inc. of West Virginia.

These procedures will be considered as conditions of the permit and shall be inspected and maintained for continual compliance measures outlined in §35-8-5.5.

**Requirement §5.5.b.1** *A vicinity map location the site in relation to the surrounding area and roads;*

**Antero Response**

Please refer to the vicinity map on Sheet 1 for the location the site in relation to the surrounding area and roads.

**Requirement §5.5.b.1** *A plan view site map at a scale of one inch equal to one hundred feet (1"=100') or greater that shows appropriate detail of all site features and:*

**Requirement §5.5.b.A.** *Clearly identifies the limit of disturbance for the project;*

**Antero Response**

The limit of disturbance for the Charlene Pad can be found on "Site Plans" on Sheets 6-7 of the Site Design.

**Requirement §5.5.b.2.B.** *Provides existing topographic information on a contour interval that affords sufficient detail to illustrate site terrain conditions*

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WV Dept. of Environmental Protection

**Antero Response**

Please refer to the "Existing Conditions" map on Sheet 4 of the Site Design for the current topographic conditions for the constructed pad on a contour interval that affords sufficient detail to illustrate site terrain conditions.

*Requirement §5.5.b.2.C. Identifies proposed cut and fill areas with grading contours at an interval that provides sufficient detail to accurately depict slope ratios, indicating top and bottom of slopes; and*

**Antero Response**

Please refer to the "Site Plans" on Sheet 6-7 as well as the "Drill Pad Baseline Profile & Cross Sections," and "Access Road A Cross Sections" on Sheets 8-9 of the Site Design for proposed cut and fill areas with grading contours.

*Requirement §5.5.b.2.D. Identifies any existing structures, roads, water bodies, and other critical areas within the area that would most likely be affected by the construction.*

**Antero Response**

Please refer to "Site Plans" of the Site Design on Sheet 6-7 for the map identifying any structures, roads, water bodies, and other critical areas within the area of interest that would be most likely affected by construction.

*Requirement §5.5.b.3. A cross-section of the length and width of the location, providing cut and fill volumes; and*

**Antero Response**

Please refer to the "Site Plans" on Sheet 6-7 as well as the "Drill Pad Baseline Profile & Cross Sections," and "Access Road A Cross Sections" on Sheets 8-9 for a cross-section of the location. The cut and fill volumes can be found in "Schedule of Quantities" on sheet 2.

*Requirement §5.5.b.4. Any other engineering designs or drawings necessary to construct the project.*

**Antero Response**

All other engineering designs and drawings necessary to construct this project are included in the Site Plans on page 6-7.

*Requirement §5.5.c. At a minimum, site construction shall be conducted in accordance with the following criteria:*

**Antero Response**

All Antero contractors shall be notified of and comply with the measures outlined in Section 5.5.c. of §35-8-5.5.

*Requirement §5.5.c.1. All woody material, brush, and trees shall be cleared from the site area and kept to the minimum necessary for proper construction, including the installation of necessary sediment controls. Trees six inches in diameter and larger shall be cut and logs stacked;*

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**Antero Response**

The Site Design outlines measures to maintain compliance with Section 201 of the WVDOH Specifications which outlines clearing and grubbing measures. Please refer to Construction, Erosion, & Sediment Control Notes on sheet 3 of the Site Design.

*Requirement §5.5.c.2. Topsoil shall be removed from construction areas and stockpiled for reuse during reclamation. In woodland areas, tree stumps, large roots, large rocks, tree and leaf debris, and ground vegetation shall be removed prior to actual site constructions;*

**Antero Response**

The Site Design outlines procedures for stripping and stocking topsoil. Please refer to Construction, Erosion, & Sediment Control Notes on sheet 3 of the Site Design. In addition, soil for stockpiling and use as fill shall be further compliant with measures outlined in Section 5.5.c.2. of §35-8-5.5.

*Requirement §5.5.c.3. No embankment fill shall be placed on frozen material;*

**Antero Response**

All Antero contractors shall be notified of and comply with measures outlined in Section 5.5.c.3. of §35-8-5.5.

*Requirement §5.5.c.4. The fill material shall be clean mineral soil, free of roots, woody vegetation, stumps, sod, large rocks, frozen soil or other objectionable material;*

**Antero Response**

The Site Design outlines procedures for stripping and stocking topsoil. Please refer to Construction, Erosion, & Sediment Control Notes on sheet 3 of the Site Design. In addition, soil shall be further defined to the measures outlined in Section 5.5.c.4 of §35-8-5.5.

*Requirement §5.5.c.5. Embankment material shall exhibit adequate soil strength and contain the proper amount of moisture to ensure that compaction will be achieved;*

**Antero Response**

All Antero contractors shall be notified of and comply with measures outlined in Section 5.5.c.5. of §35-8-5.5.

*Requirement §5.5.c.6. Earthen fill slopes should be constructed with slopes no steeper than a ratio of two to one (2:1);*

**Antero Response**

The Site Design outlines all earthen fill slopes to be constructed with slopes no steeper than a ratio of two to one (2:1).

*Requirement §5.5.c.7. Fill material will be placed in lifts or layers over the length of the fill. Lift thickness of soil shall be as thin as the suitable random excavated material will permit, typically from six to twelve (12) inches; and*

**Antero Response**

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85 10060

Please refer to the Construction, Erosion, & Sediment Control Notes on sheet 3 of the Site Design. Fill shall be placed in horizontal lifts of maximum loose depth of 12 inches. Compaction will be performed with a compactor with a minimum of five ton static drum weight vibratory roller or five ton static drum weight sheeps footed compactor as appropriate for the type of soil material at the site or other compactor approved by the Engineer.

**Requirement §5.5.c.8.** *The size of rock lifts shall not exceed thirty-six (36) inches. The rock shall not be greater in any dimension than thirty-six (36) inches;*

**Antero Response**

All Antero contractors shall be notified of and comply with measures outlined in Section 5.5.c.8. of §35-8-5.5.

**Requirement §5.5.c.9.** *Compaction shall be obtained by compaction equipment or by routing the hauling equipment over the fill so that the entire surface of each fill lift is compacted by at least one wheel or tread track of equipment or by a compactor. Each lift shall be compacted before beginning the next lift;*

**Antero Response**

Compaction compliance measures are outlined in the Construction, Erosion, & Sediment Control Notes on page 3. Compaction is required with a compactor with a minimum of five ton static drum weight vibratory roller or five ton static drum weight sheeps footed compactor as appropriate for the type of soil material at the site or other compactor approved by the Engineer.

**Requirement §5.5.c.10.** *Surface water diversion ditches shall be constructed above the disturbed area to intercept water and to divert surface water runoff around the site; and*

**Antero Response**

Construction, Erosion and Sediment Control Notes on page 3 of the Site Design identifies the surface diversions used to prevent surface water and subsurface water from flowing on to the well pad and coming into contact with the stormwater associated with the well pad. Additional Erosion & Sediment BMPs will be used to prevent sediment discharges from the project.

**Requirement §5.5.c.11.** *In areas of steep terrain, a terraced bench shall be constructed at the base of the slope where fill is to be placed, creating a toe foundation and aid in holding fill material. Additional terracing shall be constructed from each additional fifty (50) vertical feet of slope and shall be a minimum of ten (10) feet wide.*

**Antero Response**

All Antero contractors shall be notified of and comply with the measures outlined in Section 5.5.c.11. of §35-8-5.5.

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## Antero Resources Corporation Erosion and Sediment Control Plan for Charlene Pad

*Antero Resources Corporation (Antero) is submitting the following narrative and set of drawings in compliance with §35-8-5.4. This plan is submitted in conjunction with the Charlene Pad Site Design, Construction Plan, & Erosion & Sediment Control Plans prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection and Office of Oil and Gas, and certified by Allegheny Survey, Inc., a West Virginia registered professional engineer.*

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**Requirement §5.4.b.1.** *A general sequence of events that describe in relative terms how and when each construction phase (i.e. clearing and grubbing, mass grading, stabilization) will occur and when each erosion and sediment control best management practice ("BMP") will be installed;*

### **Antero Response:**

The following includes a general sequence of events that describe in relative terms how and when each construction phase is anticipated to occur and erosion and sediment control BMPs to be installed. Please refer to the Charlene Pad Site Design, Construction Plan, & Erosion & Sediment Control Plans (Site Design) prepared and certified by Allegheny Surveys, Inc. for specific construction measures. Compliance with the measures outlined in the Site Construction Plan (§35-8-5.4) submitted in conjunction with this plan will also be maintained.

- 1) A pre-construction conference will be held on site with contractor to review the construction drawings and provide any requested guidance.
- 2) Construct the construction entrance.
- 3) Construct all proposed sediment control devices as soon as clearing and grubbing operations allow. Diversions and sediment basins shall be seeded and mulched immediately.
- 4) Clear and grub, remove topsoil and place at an area determined in the field where erosion will not take place. Topsoil stockpile to be seeded and mulched. Silt fence shall be constructed around topsoil stockpiles.
- 5) Grading operations as required. Cut slopes and fill slopes shall be topsoiled if needed. Ditch lines shall be cleaned. All ditches will have at least grass lining protection or greater based on ditch slope with the following determination; 0 to 3%- grass lined, 3 to 9 %- jute matting, and 9% or greater- TRM.
- 6) Culvert inlet and outlet protection shall be constructed immediately upon placement of inlets and culverts. Installation of matting and/or rip rap to occur once ditches are constructed.
- 7) When final grade is achieved, topsoil to be placed on all disturbed areas not lined. Seed all disturbed areas as required. A soil sample should be taken and tested to determine recommended rates. If no soils sample is taken the following rates should be applied as a minimum; lime at a rate of 4 tons per acre. Fertilize at a rate of 500 lbs. of 10-20-10 per acre. Seed with 45 lbs. per acre of tall fescue and 20 lbs. per acre of perennial rye grass.
- 8) Lime, fertilizer, and seed will be applied by hand or using a hydro-seeder. Hydro-mulch products shall be installed in accordance with manufacturers specifications.
- 9) Final seeding must occur within 7 days of final grading.

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- 10) When site is stabilized with established turf growth over 70%, all erosion and sediment control measures can be removed and repair/stabilize those areas in accordance with state standards.
- 11) Make modifications for permanent Stormwater management.
- 12) Final site inspection.
- 13) A notice of termination shall be filed with WVDEP upon final stabilization.

**Requirement §5.4.b.2.** *A description of the stabilization methods to be used, including the application rates for temporary and permanent seeding and mulching, and provide the timeframes for establishing stabilization*

**Antero Response:**

Stabilization methods used include seeding and mulching of disturbed areas as well as the implementation of erosion and sediment control BMPs. Please refer to Construction, Erosion & Sediment Control Notes on sheet 3 and Details on sheet 10 for detailed descriptions of the different stabilization methods to be used. Seeding and mulching is to be in accordance with the WVDOT Standard Specifications unless specified otherwise in the plans or unless specified otherwise by the construction engineer or Antero representative. Please refer to number 11 under Erosion Control Notes on sheet 3 of the Site Design for more specific information regarding application, liming, and mulching rates.

Erosion and Sediment BMPs will be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMPs. In a timely manner after earth disturbance activities cease, Antero shall stabilize any areas disturbed by the activities. During non-germination periods, mulch must be applied at the specified rates. Disturbed areas which are not at finish grade and which will be re-disturbed within 1 year will be stabilized in accordance with the temporary vegetative stabilization and specifications. Disturbed areas which are finished grade or which will not be re-disturbed within 1 year will be stabilized in accordance with the permanent vegetative stabilization specification. Please refer to "Construction, Erosion, & Sediment Control Notes" on sheet 3 for more information regarding timeframes for establishing stabilization and erosion and sediment BMPs.

The site shall be considered to have achieved full stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics to resist sliding and other movements. Until the site achieves final stabilization, Antero will assure that the best management practices (BMPs) are implemented, inspected, operated, and maintained. As such, Antero will maintain written inspection logs. All maintenance work, including cleaning, repair, replacement, regarding, and re-stabilization shall be performed immediately upon discovery of deficiency. After final stabilization has been achieved, temporary erosion and sediment BMPs controls will be removed. Areas disturbed during removal of the BMPs will be stabilized immediately.

**Requirement §5.4.b.3.** *Details of specifications for the erosion and sediment control BMPs employed on the project.*

**Antero Response:**

Please refer to the "Construction, Erosion, & Sediment Control Notes" on sheet 3 and Details on sheet 10 in the Site Design for specifications including instructions for installation, inspection, and maintenance for erosion and sediment control BMPs employed at this site.

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**Requirement §5.4.c.1.** *A vicinity map locating the site in relation to the surrounding area and roads;*

**Antero Response:**

A "Vicinity Map" locating the site in relation to the surrounding area and roads is included on page 1 the Site Design.

**Requirement §5.4.c.2.** *A plan view site map at a scale of one inch equal to one hundred feet (1"=100') or greater, showing appropriate detail of all site features, including the identification of site access that provides for a stabilized construction entrance and exit to reduce tracking of sediment onto public or private roads; and*

**Antero Response:**

"Site Plans" maps are included on sheets 6-7 of the Site Design. Specific design and layout and inspection and maintenance notes for a stabilized construction entrance are included in the "Construction, Erosion & Sediment Control Notes" verbiage on sheet 3.

**Requirement §5.4.c.3.** *The location of all proposed erosion and sediment control BMPs*

**Antero Response:**

"Site Plans" maps included on pages 6-7 of the Site Design locate all proposed erosion and sediment control BMPs.

Received

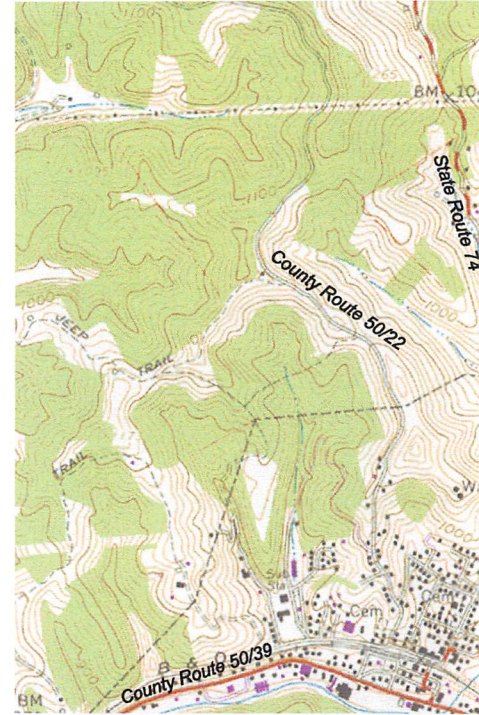
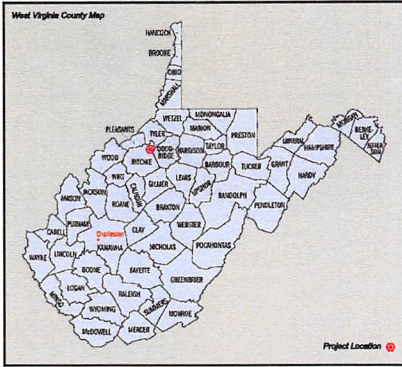
AUG 16 2018

Office of Oil and Gas  
WV Dept. of Environmental Protection



API#8510060

# CHAR SITE DESIGN, CO EROSION & SEDIM ANTERO RESOU



Well Table				
<b>Prop. Well Henderahot Unit 2H</b> NAD83 N: 294595.30 NAD83 E: 1554374.85 NAD83 LAT: 39.299554 NAD83 LON: -80.963445 NAD27 N: 294502.35 NAD27 E: 1558915.67 NAD27 LAT: 39.299483 NAD27 LON: -80.963614	<b>Prop. Well Henderahot Unit 1H</b> NAD83 N: 294804.42 NAD83 E: 1554386.83 NAD83 LAT: 39.299586 NAD83 LON: -80.963468 NAD27 N: 294370.47 NAD27 E: 1558309.84 NAD27 LAT: 39.299506 NAD27 LON: -80.963636	<b>Prop. Well Palge Unit 1H</b> NAD83 N: 294812.55 NAD83 E: 1554382.89 NAD83 LAT: 39.299608 NAD83 LON: -80.963487 NAD27 N: 294576.80 NAD27 E: 1558304.01 NAD27 LAT: 39.299528 NAD27 LON: -80.963656	<b>Prop. Well Palge Unit 2H</b> NAD83 N: 294820.67 NAD83 E: 1554387.16 NAD83 LAT: 39.299630 NAD83 LON: -80.963508 NAD27 N: 294586.72 NAD27 E: 1558798.18 NAD27 LAT: 39.299652 NAD27 LON: -80.963678	<b>Prop. Well Eppard Unit 1H</b> NAD83 N: 294828.80 NAD83 E: 1554381.54 NAD83 LAT: 39.299652 NAD83 LON: -80.963529 NAD27 N: 294594.85 NAD27 E: 1558792.35 NAD27 LAT: 39.299572 NAD27 LON: -80.963697
<b>Prop. Well Eppard Unit 2H</b> NAD83 N: 294836.92 NAD83 E: 1554345.51 NAD83 LAT: 39.299674 NAD83 LON: -80.963550 NAD27 N: 294602.97 NAD27 E: 1558786.52 NAD27 LAT: 39.299694 NAD27 LON: -80.963719	<b>Prop. Well Brook Unit 1H</b> NAD83 N: 294845.05 NAD83 E: 1554339.69 NAD83 LAT: 39.299696 NAD83 LON: -80.963571 NAD27 N: 294611.10 NAD27 E: 1558780.60 NAD27 LAT: 39.299617 NAD27 LON: -80.963742	<b>Prop. Well Brook Unit 2H</b> NAD83 N: 294853.17 NAD83 E: 1554333.85 NAD83 LAT: 39.299718 NAD83 LON: -80.963593 NAD27 N: 294619.22 NAD27 E: 1558774.86 NAD27 LAT: 39.299639 NAD27 LON: -80.963761	<b>Prop. Well Bow Unit 1H</b> NAD83 N: 294861.30 NAD83 E: 1554328.02 NAD83 LAT: 39.299741 NAD83 LON: -80.963614 NAD27 N: 294627.35 NAD27 E: 1558769.03 NAD27 LAT: 39.299661 NAD27 LON: -80.963783	<b>Prop. Well Bow Unit 2H</b> NAD83 N: 294869.42 NAD83 E: 1554322.19 NAD83 LAT: 39.299763 NAD83 LON: -80.963635 NAD27 N: 294635.47 NAD27 E: 1558763.20 NAD27 LAT: 39.299683 NAD27 LON: -80.963803

**Project Contacts**

**Antero Resources**

Tom Wince - Construction Manager  
304-869-3405 Off. 304-483-0933 Cell

Mike Ash - Survey Coordinator  
304-380-6181 Cell

Roger Dunlap - Survey Coordinator  
304-651-5588

Ell Wagoner, Environmental Engineer  
304-622-3842, ext 311 Off. 304-476-9770 Cell

John Kawcak, Engineer  
817-368-1553

Dusty Woods  
817-771-1436

Aaron Kunzler, Construction Supervisor  
405-227-8344

Anthony Smith, Field Engineer  
304-869-3405 Off. 304-673-6196 Cell

**Surveyor & Engineer**

Bill Yetzer, PS, EI, - Allegheny Surveys Inc.  
304-848-5035 Off. 304-619-4937 Cell

Kirk Wilson, PE - L&W Enterprises, Inc  
304-257-4818 Off. 304-668-0365 Cell

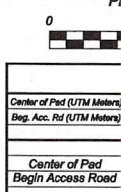
**Environmental Consultants**

Walter Vaseika - Wetland Specialist - AllStar Ecology  
304-906-5536

**Well Location Restrictions:**

All Pad construction complies with the following restrictions.

- \* 250' from closest proposed well to an existing water well or developed spring used for human or domestic animals.
- \* 625' from occupied dwelling or barn greater than 2500 SF used for poultry or dairy measured from the center of the pad.
- \* 100' from edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.
- \* 300' from edge of disturbance to a naturally reproducing trout stream.
- \* 1000' of a surface or ground water intake to a public water supply.



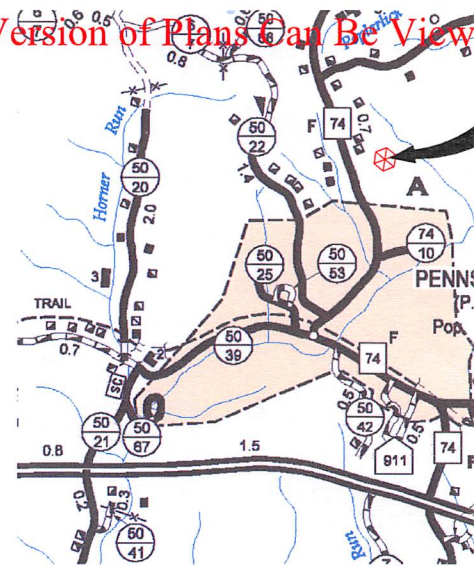
FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N / A
FLOODPLAIN SHOWN ON DRAWINGS:	N / A
FIRM MAP NUMBER(S) FOR SITE:	54085C0115C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N / A

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!!**



**Know what's below.  
Call before you dig.**

Electronic Version of Plans Can Be View



# CHARLENE PAD CONSTRUCTION PLAN, & EROSION CONTROL PLANS ANTERO RESOURCES CORPORATION

**APPROVED  
WVDEP OOG**  
SAY 11/6/2013



West Virginia State Plane Coordinate System  
North Zone, NAD83  
Elevations Based on NAVD88  
Established By Survey Grade GPS & OPUS Post-Processing



Allegheny Surveys, Inc.  
172 Thompson Drive  
Bridgeport, WV 26330  
(304) 848-5035



Property Owner Information - Charlene Pad					
Clay District - Ritchie County					
Owner	TM/Parcel	Deed/Page	Total Acres	Type of Disturbance	Acree
Linda C. Dewberry Trust	19/49(a)	303/571	0.7	Road A	0.29
Linda C. Dewberry Trust	19/49	291/36	151	Road A	4.06
				Spoil Pad A	1.65
				Spoil Pad B	0.84
				Drill Pad	7.80
				<b>Total</b>	<b>14.35</b>
Mary K. Slevin	19/8.1	188/483	80 Poles	Road A	0.22
				<b>Total</b>	<b>0.22</b>
				<b>Grand Total</b>	<b>14.86</b>

LOD Area (ac)	
Access Road A (1,866 ft)	4.57
Drill Pad	7.80
Spoil Pad A	1.65
Spoil Pad B	0.84
<b>Total Affected Area</b>	<b>14.86</b>
<b>Total Wooded Acres Disturbed</b>	<b>8.25</b>
<b>Total Linear Feet of Access Road</b>	<b>1,866</b>



L&W ENTERPRISES, INC.

PO BOX 826  
14 SOUTH GROVE ST.  
PETERSBURG, WV 26847  
PH: 304-257-4818  
FAX: 304-257-2224  
EMAIL: KIRK@CTLINC.NET



PENNSBORO QUAD  
2000 3000

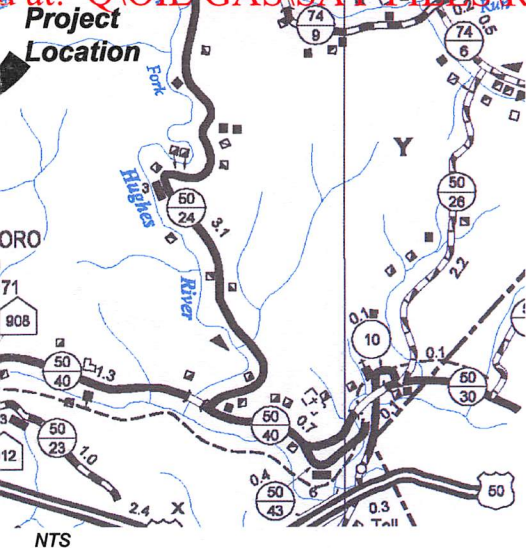
E POINT LOCATIONS NAD 83	
-4350046.87 m	E=503132.88 m
-4350806.34 m	E=502867.88 m
LATITUDE	LONGITUDE
39.299797	-80.963689
39.304839	-80.966737

Ephemeral Stream Impact (Linear feet)					
Stream and Impact Cause	Culvert (LF)	Inlet/Outlet Structures Fill (LF)	Slope Fill (LF)	Constr. Disturb. To LOD (LF)	Total Impact (LF)
Stream 2 - Access Road A	10	36	0	18	64
Stream 6 - Access Road A	0	0	65	15	80
<b>Total Ephemeral Impact</b>	<b>10</b>	<b>36</b>	<b>65</b>	<b>33</b>	<b>144</b>
<b>Total Stream Impacts</b>					<b>144</b>

PENNSBORO, RITCHIE COUNTY, WV  
NORTH FORK HUGHES RIVER  
WATERSHEDS

Antero will obtain an Encroachment Permit ( Form MM-109 )  
from the West Virginia Department of Transportation  
Division of Highways, prior to commencement of any  
construction activities.

at: Q/OIL GAS SAY FILES REVIEWS



**DRAWING INDEX**

- 1 COVER SHEET/LOCATION MAP
- 2 SCHEDULE OF QUANTITIES
- 3 CONSTRUCTION, EROSION, & SEDIMENT CONTROL NOTES
- 4 EXISTING CONDITIONS
- 5 PLAN SHEET INDEX
- 6-7 SITE PLANS
- 8 DRILL PAD BASELINE PROFILE & CROSS SECTIONS
- 9 ACCESS ROAD A CROSS SECTIONS
- 10 DETAILS
- 11 RECLAMATION PLAN

DATE	REVISIONS
8-2-13	Updated Well Layout
11-6-13	Revised Per DEP Comments (Sheets: 3 and 11)



THIS DOCUMENT  
PREPARED FOR  
ANTERO RESOURCES  
CORPORATION

COVER SHEET/LOCATION MAP

**CHARLENE PAD**  
CLAY DISTRICT  
RITCHIE COUNTY, WV

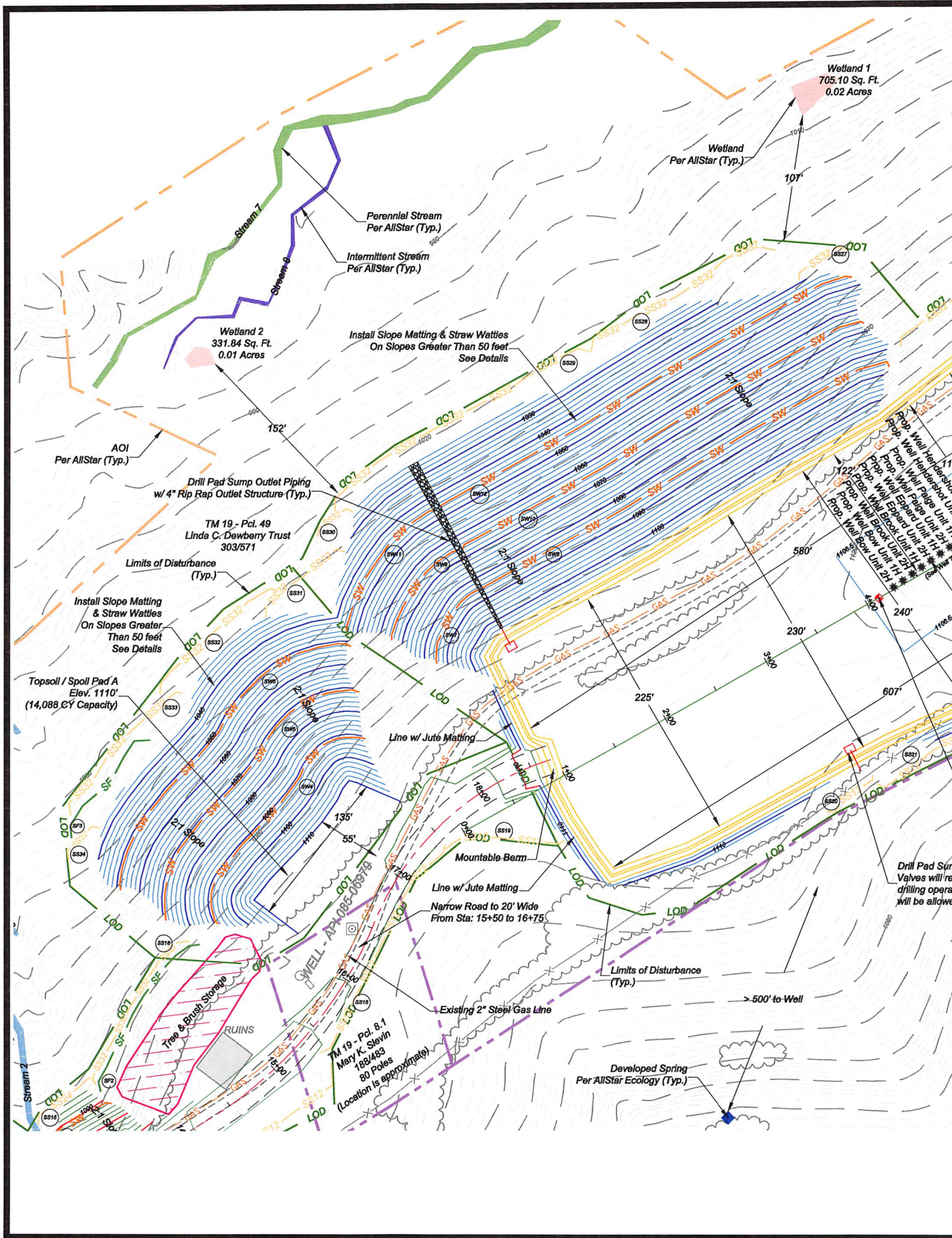
Date: 7/12/13

Scale: N/A

Designed By: CKW/CKM

File No. Antero 140-13

Page 1 of 11



Wetland 1  
705.10 Sq. Ft.  
0.02 Acres

Wetland  
Per AllStar (Typ.)

Perennial Stream  
Per AllStar (Typ.)

Intermittent Stream  
Per AllStar (Typ.)

Wetland 2  
331.84 Sq. Ft.  
0.01 Acres

Install Slope Matting & Straw Watties  
On Slopes Greater Than 50 feet  
See Details

AOI  
Per AllStar (Typ.)

Drill Pad Sump Outlet Piping  
w/ 4" Rip Rap Outlet Structure (Typ.)

TM 19 - Pcl. 49  
Linda C. Dewberry Trust  
303/571

Limits of Disturbance  
(Typ.)

Install Slope Matting & Straw Watties  
On Slopes Greater Than 50 feet  
See Details

Topsail / Spoil Pad A  
Elev. 1110'  
(14,088 CY Capacity)

Line w/ Jute Matting

Mountable Berm

Line w/ Jute Matting

Narrow Road to 20' Wide  
From Sta: 15+50 to 16+75

Existing 2" Steel Gas Line

Limits of Disturbance  
(Typ.)

> 500' to Well

Developed Spring  
Per AllStar Ecology (Typ.)

TM 19 - Pcl. 8.1  
Mary K. Stevin  
188/483  
80 Poles  
(Location is approximate)

Tree & Brush Storage

RUINS

Drill Pad Sump  
Valves will re  
drilling opera  
will be allowe

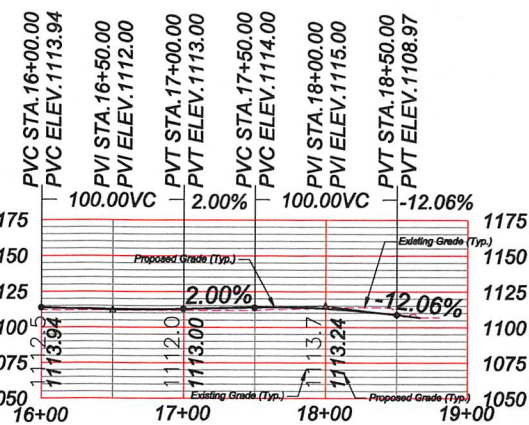
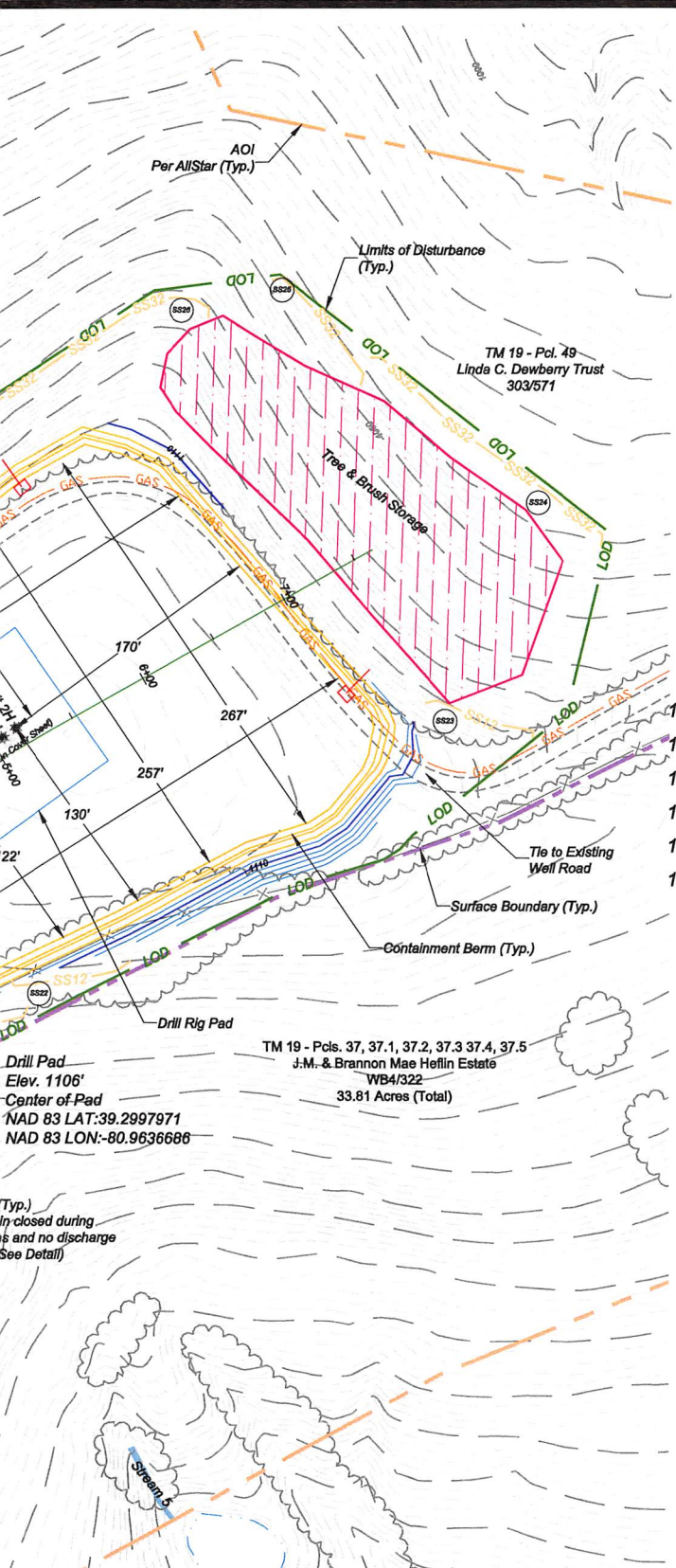
# SITE PLAN (2) ACCESS ROAD A STA: 16+00 - 18+66



Allegheny Surveys, Inc.  
172 Thompson Drive  
Bridgeport, WV 26330  
(304) 848-5035



**APPROVED  
WVDEP OOG**  
SAY 11/6/2013



**Access Road A Profile**  
Sta: 16+00 - 18+66  
Horizontal & Vertical Scale 1" = 60'

LINED DITCH TREATMENT vs SLOPE of DITCH  
Line with Jute Matting if slope is less than 3%  
Line with turf reinforcement matting (TRM) if slope is greater than 3%  
\*Turf reinforcement matting shall be Excelsior Recyclax or Landlok TRM 435 or equal

Legend	
	Existing 2' Contour
	Existing 10' Contour
	Existing Tree Line
	Existing Utility Line / Pole
	Surface Owner Property Line
	Existing Gas Line CL
	Limits of Disturbance
	Proposed Diversion Ditch
	Proposed 2' Contour
	Proposed 10' Contour
	Proposed Super Silt Fence
	Proposed Check Dam
	Proposed Culvert W/ Inlet & Outlet Protection
	Proposed Straw Wattles
	Proposed Silt Soxx w/ Diameter
	Proposed 2' Contour
	Proposed 10' Contour
	Proposed 10' Contour
	Proposed Rip-Rap

\* Silt Soxx Diameter in Inches  
\* Super Silt Fence Can be Substituted for Silt Soxx of any Size

Drill Pad  
Elev. 1106'  
Center of Pad  
NAD 83 LAT: 39.2997971  
NAD 83 LON: -80.9636686

TM 19 - Pcls. 37, 37.1, 37.2, 37.3, 37.4, 37.5  
J.M. & Brannon Mae Hefflin Estate  
WB4/322  
33.81 Acres (Total)

(Typ.)  
In closed during  
is and no discharge  
See Detail)

**L&W ENTERPRISES, INC.**  
PO BOX 826  
14 SOUTH GROVE ST.  
PETERSBURG, WV 26847  
PHONE: 304-257-4818  
FAX: 304-257-2224  
EMAIL: KIRK@CTLINK.NET

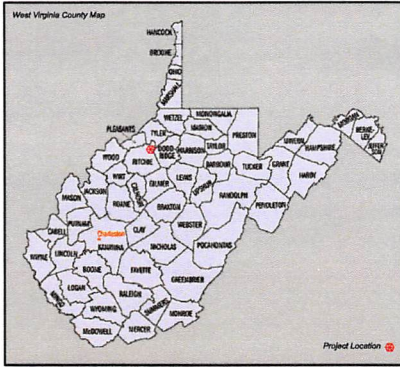
THIS DOCUMENT  
PREPARED FOR  
ANTERO RESOURCES  
CORPORATION

**CHARLENE PAD**  
CLAY DISTRICT  
RITCHIE COUNTY, WV

DATE	REVISIONS	Date: 7/12/13
8-2-13	Updated Well Layout	Scale: 1" = 50'
		Designed By: CKW/CKM
		File No. Antero 140-13
		Page 7 of 11

SITE PLAN (2) - ACCESS ROAD A STA: 16+00 - 18+66

# CHAPTER 24-C SITE DESIGN, CONSTRUCTION, EROSION & SEDIMENTATION ANTERO RESOURCES



Well Table				
<b>Prop. Well Hendershot Unit 2H</b> NAD83 N: 294396.30 NAD83 E: 1554374.85 NAD83 LAT: 39.299564 NAD83 LON: -80.963445 NAD27 N: 294502.35 NAD27 E: 1558116.87 NAD27 LAT: 39.299483 NAD27 LON: -80.963614	<b>Prop. Well Hendershot Unit 1H</b> NAD83 N: 294604.42 NAD83 E: 1554368.83 NAD83 LAT: 39.299586 NAD83 LON: -80.963486 NAD27 N: 294570.47 NAD27 E: 1558090.84 NAD27 LAT: 39.299506 NAD27 LON: -80.963636	<b>Prop. Well Paige Unit 1H</b> NAD83 N: 294612.65 NAD83 E: 1554362.99 NAD83 LAT: 39.299608 NAD83 LON: -80.963487 NAD27 N: 294578.60 NAD27 E: 1558094.01 NAD27 LAT: 39.299528 NAD27 LON: -80.963656	<b>Prop. Well Paige Unit 2H</b> NAD83 N: 294620.67 NAD83 E: 1554357.16 NAD83 LAT: 39.299630 NAD83 LON: -80.963508 NAD27 N: 294586.72 NAD27 E: 1558398.18 NAD27 LAT: 39.299650 NAD27 LON: -80.963678	<b>Prop. Well Eppard Unit 1H</b> NAD83 N: 294628.80 NAD83 E: 1554351.34 NAD83 LAT: 39.299652 NAD83 LON: -80.963529 NAD27 N: 294594.85 NAD27 E: 1558792.35 NAD27 LAT: 39.299672 NAD27 LON: -80.963697
<b>Prop. Well Eppard Unit 2H</b> NAD83 N: 294636.92 NAD83 E: 1554345.51 NAD83 LAT: 39.299674 NAD83 LON: -80.963550 NAD27 N: 294602.97 NAD27 E: 1558786.52 NAD27 LAT: 39.299694 NAD27 LON: -80.963719	<b>Prop. Well Brook Unit 1H</b> NAD83 N: 294645.06 NAD83 E: 1554339.68 NAD83 LAT: 39.299696 NAD83 LON: -80.963571 NAD27 N: 294611.10 NAD27 E: 1558780.69 NAD27 LAT: 39.299617 NAD27 LON: -80.963742	<b>Prop. Well Brook Unit 2H</b> NAD83 N: 294653.17 NAD83 E: 1554333.85 NAD83 LAT: 39.299718 NAD83 LON: -80.963593 NAD27 N: 294619.22 NAD27 E: 1558774.86 NAD27 LAT: 39.299639 NAD27 LON: -80.963761	<b>Prop. Well Bow Unit 1H</b> NAD83 N: 294661.30 NAD83 E: 1554328.02 NAD83 LAT: 39.299741 NAD83 LON: -80.963614 NAD27 N: 294627.35 NAD27 E: 1558769.03 NAD27 LAT: 39.299661 NAD27 LON: -80.963783	<b>Prop. Well Bow Unit 2H</b> NAD83 N: 294669.42 NAD83 E: 1554322.19 NAD83 LAT: 39.299763 NAD83 LON: -80.963635 NAD27 N: 294635.47 NAD27 E: 1558763.20 NAD27 LAT: 39.299683 NAD27 LON: -80.963803

**Project Contacts**

**Antero Resources**

Tom Wince - Construction Manager  
304-869-3405 Off. 304-483-0933 Cell

Mike Ash - Survey Coordinator  
304-380-6181 Cell

Roger Dunlap - Survey Coordinator  
304-651-5588

Eli Wagoner, Environmental Engineer  
304-622-3842, ext 311 Off. 304-476-9770 Cell

John Kawcak, Engineer  
817-368-1553

Dusty Woods  
817-771-1436

Aaron Kunzler, Construction Supervisor  
405-227-8344

Anthony Smith, Field Engineer  
304-869-3405 Off. 304-673-6196 Cell

**Surveyor & Engineer**

Bill Yetzer, PS, EI - Allegheny Surveys Inc.  
304-848-5035 Off. 304-619-4937 Cell

Kirk Wilson, PE - L&W Enterprises, Inc  
304-257-4818 Off. 304-668-0365 Cell

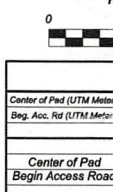
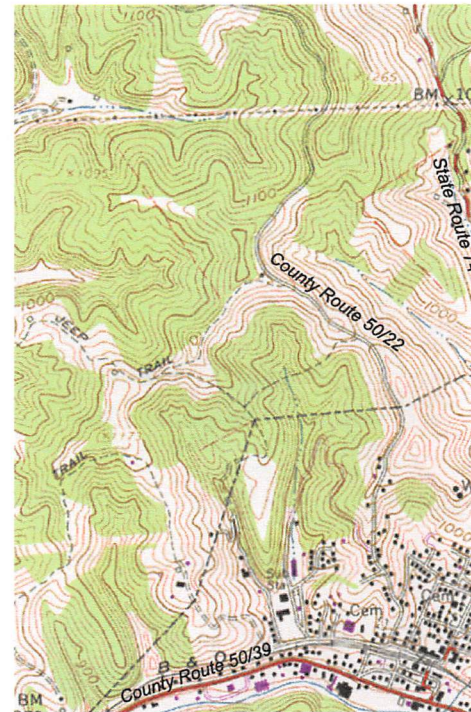
**Environmental Consultants**

Walter Veselka - Wetland Specialist - AllStar Ecology  
304-906-5536

**Well Location Restrictions:**

All Pad construction complies with the following restrictions.

- \* 250' from closest proposed well to an existing water well or developed spring used for human or domestic animals.
- \* 625' from occupied dwelling or barn greater than 2500 SF used for poultry or dairy measured from the center of the pad.
- \* 100' from edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.
- \* 300' from edge of disturbance to a naturally reproducing trout stream.
- \* 1000' of a surface or ground water intake to a public water supply.

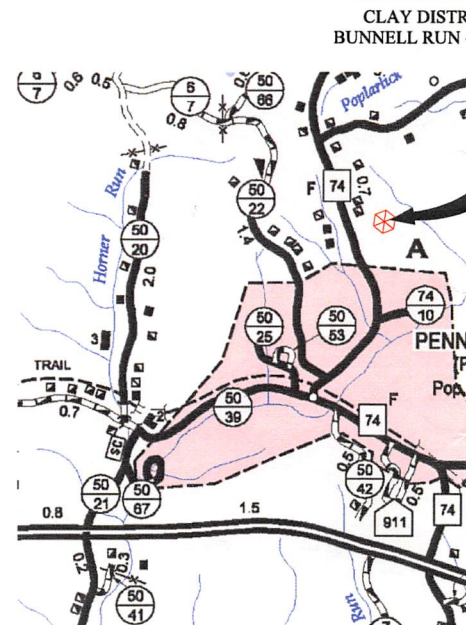


FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N / A
FLOODPLAIN SHOWN ON DRAWINGS:	N / A
FIRM MAP NUMBER(S) FOR SITE:	54085C0115C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N / A

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!!**



**Know what's below.  
Call before you dig.**



85-010060

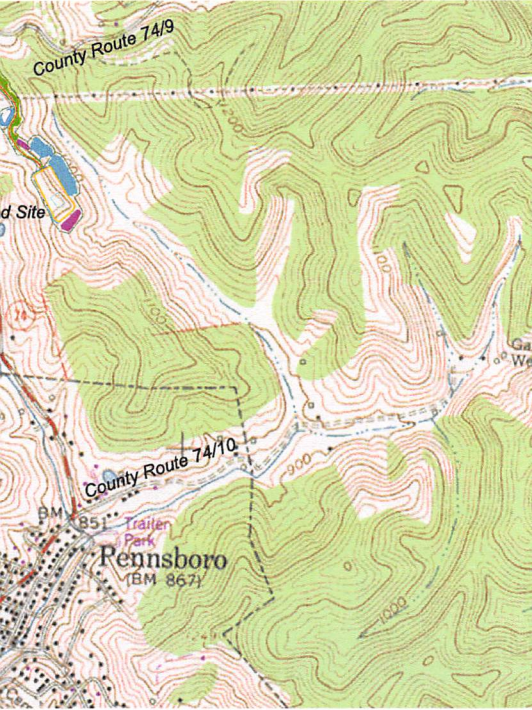
# CHARLENE PAD CONSTRUCTION PLAN, & EROSION CONTROL PLANS ANTERO RESOURCES CORPORATION



West Virginia State Plane Coordinate System  
North Zone, NAD83  
Elevations Based on NAVD88  
Established By Survey Grade GPS & OPUS Post-Processing



Allegheny Surveys, Inc.  
172 Thompson Drive  
Bridgeport, WV 26330  
(304) 848-5035



Property Owner Information - Charlene Pad					
Clay District - Ritchie County					
Owner	TM/Parcel	Deed/Page	Total Acres	Type of Disturbance	Acreage
Linda C. Dewberry Trust	19/49(a)	303/571	0.7	Road A	0.29
Linda C. Dewberry Trust	19/49	291/36	151	Road A	4.06
				Spoil Pad A	1.65
				Spoil Pad B	0.84
				Drill Pad	7.80
				<b>Total</b>	<b>14.35</b>
Mary K. Slevin	19/8.1	188/483	80 Poles	Road A	0.22
				<b>Total</b>	<b>0.22</b>
				<b>Grand Total</b>	<b>14.86</b>

LOD Area (ac)	
Access Road A (1,866 ft)	4.57
Drill Pad	7.80
Spoil Pad A	1.65
Spoil Pad B	0.84
<b>Total Affected Area</b>	<b>14.86</b>
<b>Total Wooded Acres Disturbed</b>	<b>8.25</b>
<b>Total Linear Feet of Access Road</b>	<b>1,866</b>



L&W ENTERPRISES, INC.

PH: 848-5035  
PO BOX 626  
14 SOUTH GLENVIEW ST.  
PETERSBURG, WV 26847  
EMAIL: KIRK@CTLINK.NET

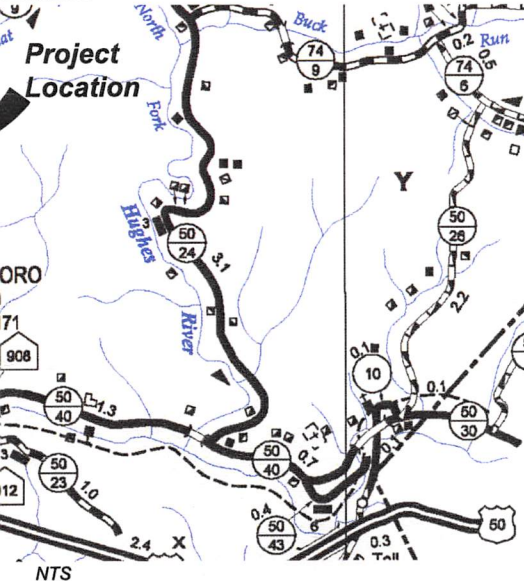


SCALE: 1" = 2000'

ELEVATION LOCATIONS	
NAD 83	
-4350046.87 m	E=503132.88 m
-4350606.34 m	E=502867.88 m
LATITUDE	
39.298797	-80.963669
39.304839	-80.966737

Ephemeral Stream Impact (Linear feet)					
Stream and Impact Cause	Culvert (LF)	Inlet/Outlet Structures Fill (LF)	Slope Fill (LF)	Constr. Disturb. To LOD (LF)	Total Impact (LF)
Stream 2 - Access Road A	10	36	0	18	64
Stream 6 - Access Road A	0	0	65	15	80
<b>Total Ephemeral Impact</b>	<b>10</b>	<b>36</b>	<b>65</b>	<b>33</b>	<b>144</b>
<b>Total Stream Impacts</b>					<b>144</b>

PENNSBORO, RITCHIE COUNTY, WV  
NORTH FORK HUGHES RIVER  
WATERSHEDS



Antero will obtain an Encroachment Permit ( Form MM-109 )  
from the West Virginia Department of Transportation  
Division of Highways, prior to commencement of any  
construction activities.

**DRAWING INDEX**

- 1 COVER SHEET/LOCATION MAP
- 2 SCHEDULE OF QUANTITIES
- 3 CONSTRUCTION, EROSION, & SEDIMENT CONTROL NOTES
- 4 EXISTING CONDITIONS
- 5 PLAN SHEET INDEX
- 6-7 SITE PLANS
- 8 DRILL PAD BASELINE PROFILE & CROSS SECTIONS
- 9 ACCESS ROAD A CROSS SECTIONS
- 10 DETAILS
- 11 RECLAMATION PLAN

RECEIVED  
Office of Oil and Gas  
SEP 20 2013

DATE	REVISIONS
8-2-13	Updated Well Layout

WV Department of  
Environmental Protection



THIS DOCUMENT  
PREPARED FOR  
ANTERO RESOURCES  
CORPORATION

COVER SHEET/LOCATION MAP  
**CHARLENE PAD**  
CLAY DISTRICT  
RITCHIE COUNTY, WV

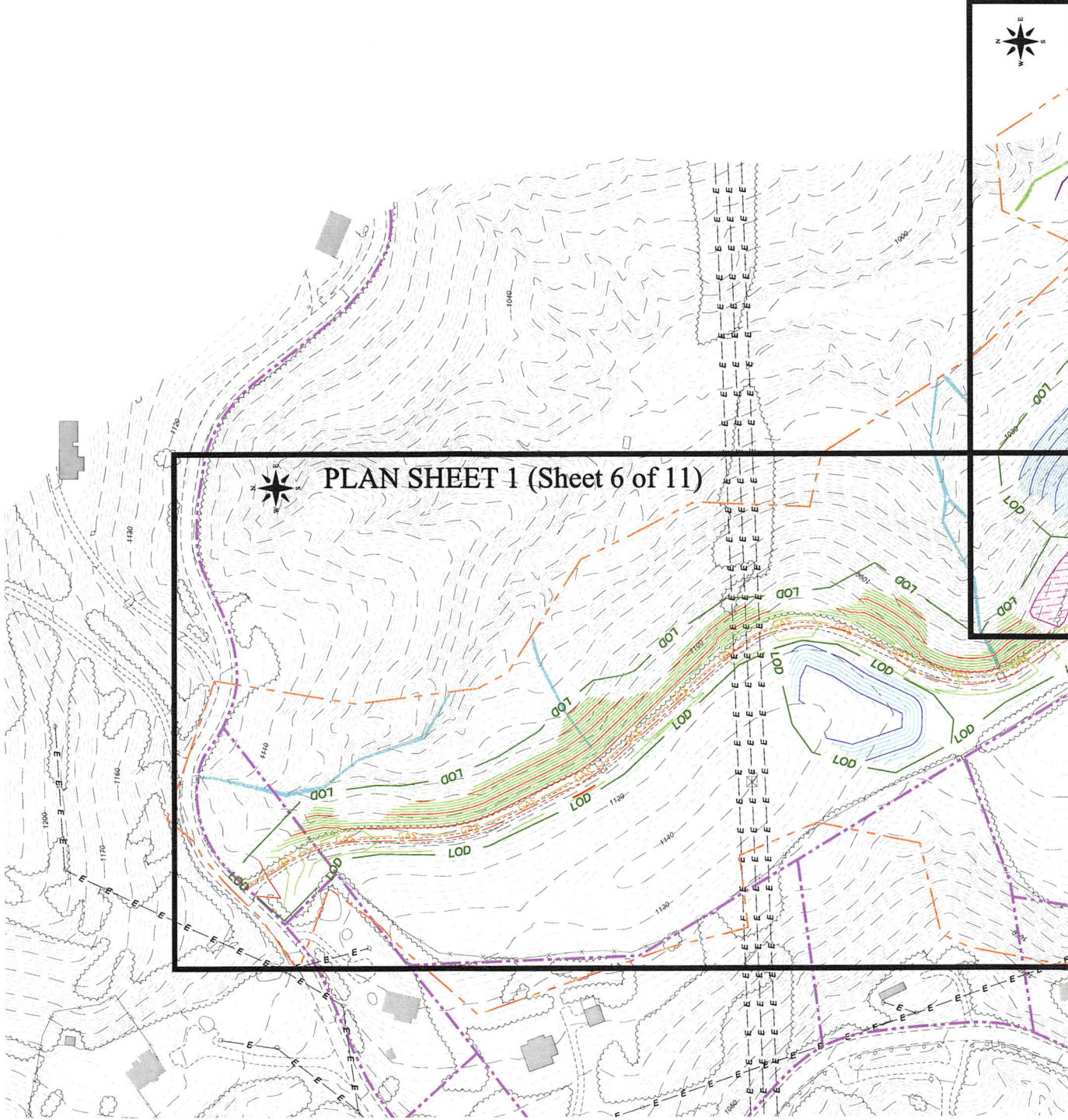
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Date: 7/2/13  
Scale: N/A  
Designed by: CLK/CKM  
File No. Antero 140-13  
Page 1 of 11

# PLAN SHEET

All topographic information shown hereon  
is based on aerial photography provided by  
Blue Mountain Aerial Mapping with a flight date of  
March 2013

## PLAN SHEET 2 (

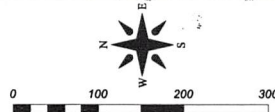


NOTE: All surface boundary line shown hereon are based on current Deeds and  
boundary evidence collected with mapping grade GPS receivers.

85-010060

# INDEX

Sheet 7 of 11)



Allegheny Surveys, Inc.  
172 Thompson Drive  
Bridgeport, WV 26330  
(304) 848-5035



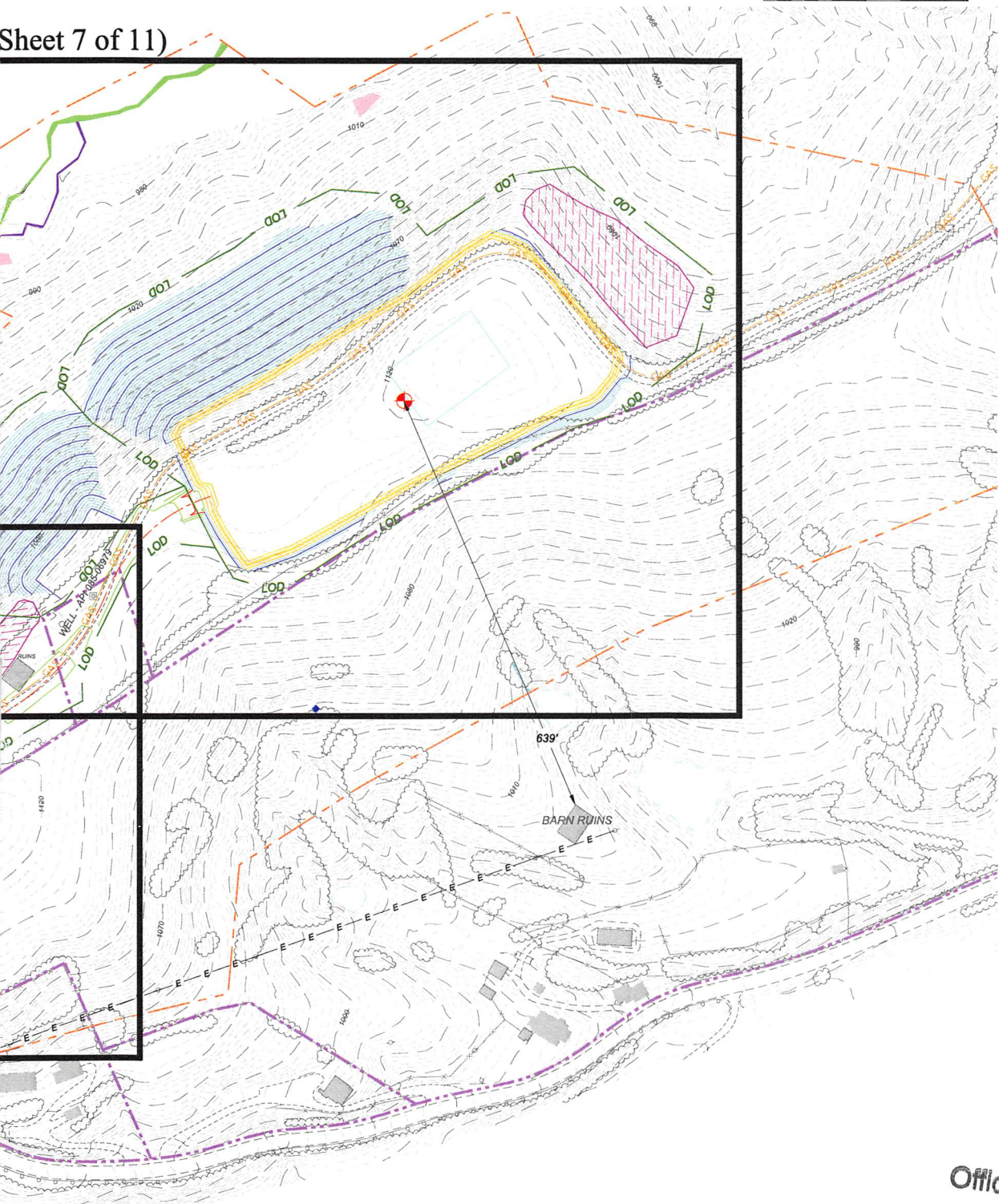
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PLAN SHEET INDEX  
CHARLENE PAD  
CLAY DISTRICT  
RITCHIE COUNTY, WV



### Legend

- Existing 2' Contour
- Existing 10' Contour
- Existing Tree Line
- Existing Utility Pole / Line
- Existing Gas Line CL

DATE	REVISIONS

RECEIVED  
Office of Oil and Gas

Date: 8/12/13  
Scale: 1" = 100'

Designed By: CKW/CKM

WV Department of  
Environmental Protection