



west virginia department of environmental protection

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

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

August 16, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-1706282, issued to ANTERO RESOURCES APPALACHIAN 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: KELLEY UNIT 2H
Farm Name: TRENT, JOHN S. JR AND JACQUI
API Well Number: 47-1706282
Permit Type: Horizontal 6A Well
Date Issued: 08/16/2013

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

1. 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.
2. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% (unless soil test results show a greater range of moisture content is appropriate and 95% compaction can still be achieved) of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.
3. 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.
4. 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.
5. 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.
6. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
7. 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.

WW - 6B
(3/13)

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

1) Well Operator: Antero Resources Appalachian Corporation 494488557 017-Doddridge Greenbrier Smithburg
Operator ID County District Quadrangle

2) Operator's Well Number: Kelley Unit 2H Well Pad Name: Susie Jane Pad

3 Elevation, current ground: -1269' Elevation, proposed post-construction: 1248'

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: 7400' TVD. Anticipated Thickness- 60 Feet, Associated Pressure- 3250#

7) Proposed Total Vertical Depth: 7400' TVD

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 13200' MD

10) Approximate Fresh Water Strata Depths: 38', 164', 173'

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

12) Approximate Saltwater Depths: None available

13) Approximate Coal Seam Depths: 291'

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): 36.35 acres

19) Area to be disturbed for well pad only, less access road (acres): 3.55 acres

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7-25-2013

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(3/13)

20)

CASING AND TUBING PROGRAM

| TYPE | Size | New or Used | Grade | Weight per ft. | FOOTAGE: For Drilling | INTERVALS: Left in Well | CEMENT: Fill-up (Cu. Ft.) |
|--------------|---------|-------------|-----------|----------------|-----------------------|-------------------------|---------------------------|
| Conductor | 20" | New | H-40 | 94# | 90' | 90' | CTS, 86 Cu. Ft. |
| Fresh Water | 13-3/8" | New | J-55/H-40 | 54.5#/ 48# | 300' | 300' | CTS, 417 Cu. Ft. |
| Coal | 9-5/8" | New | J-55 | 36# | 2480' | 2480' | CTS, 1010 Cu. Ft. |
| Intermediate | | | | | | | |
| Production | 5-1/2" | New | P-110 | 20# | 13200' | 13200' | 3223 Cu. Ft. |
| Tubing | 2-3/8" | New | N-80 | 4.7# | | 6900' | |
| Liners | | | | | | | |

*DCW
7-25-2013*

| TYPE | Size | Wellbore Diameter | Wall Thickness | Burst Pressure | Cement Type | Cement Yield |
|--------------|---------|-------------------|----------------|----------------|-----------------------|--------------------|
| 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 & Tail - 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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Office of Oil & Gas

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Appalachian Corporation OP Code 49448857

Watershed (HUC 10) Buffalo Calf Fork Quadrangle Smithburg

Elevation 1248' County Doddridge District Greenbrier

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 (*An associated frac pit will be used for flowback fluids)

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

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection: (UIC Permit Number _____)
- Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34)
- Off Site Disposal (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain _____)

*DCW
7-25-2013*

Will closed loop system be used? Yes

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Dual/Still Foam, Production - Water Based Mud

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

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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.

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-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)

WV Department of
Environmental Protection

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

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Gerard G. Alberts

Company Official Title Environmental & Regulatory Manager

Subscribed and sworn before me this 8th day of May, 20 13

[Signature] Notary Public

My commission expires 5/8/2013

SHAUNA REDICAN
Notary Public
State of Colorado

Form WW-9

Operator's Well No. Kelley Unit 2H

Antero Resources Appalachian Corporation

Proposed Revegetation Treatment: Acres Disturbed 36.35 Prevegetation pH _____

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

Road A (21.35) + Frac Pit (3.86) + Drill Pad (3.55) + Spoil Pad A (0.89) + Spoil Pad B (0.50) + Spoil Pad C (1.33) + Spoil Pad D (1.80) + Spoil Pad E (1.48) + Tank Offload Pad (0.48) + Truck Queue/Turnaround (1.11) = 36.35 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: Douglas Newlon

Comments: Preseed + Mulch install 1E + 5 for WV Dept regulations

Title: Oil & Gas Inspector Date: 7-25-2013

Field Reviewed? Yes No

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Water Management Plan: Primary Water Sources



WMP-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

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 multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted 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 JUL 01 2013

Source Summary

WMP-01261

API Number:

047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

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: |
|------------|------------|--------------------|---------------------------|------------------|-------------------|
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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: |
|------------|------------|--------------------|---------------------------|------------------|-------------------|
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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: |
|------------|------------|--------------------|---------------------------|------------------|-------------------|
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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 @ 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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 **McElroy Creek @ Sweeney Withdrawal** Doddridge Owner: **Bill Sweeney**

| | | | | | |
|------------|------------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 39.398123 | -80.656808 |

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) 6.66**

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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | 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 12/11/2013 End Date 12/11/2014 Total Volume (gal) 5,830,000 Max. daily purchase (gal) Intake Latitude: 39.174306 Intake Longitude: -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 12/11/2013 End Date 12/11/2014 Total Volume (gal) 5,830,000 Max. daily purchase (gal) Intake Latitude: 39.302006 Intake Longitude: -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 12/11/2013 End Date 12/11/2014 Total Volume (gal) 5,830,000 Max. daily purchase (gal) Intake Latitude: 39.277142 Intake Longitude: -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 12/11/2013 End Date 12/11/2014 Total Volume (gal) 5,830,000 Max. daily purchase (gal) Intake Latitude: 39.198369 Intake Longitude: -80.870969

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

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 12/11/2013 End Date 12/11/2014 Total Volume (gal) 5,830,000 Max. daily purchase (gal) Intake Latitude: 39.322363 Intake Longitude: -80.936771

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

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

DEP Comments:

Source Summary

WMP-01261

API Number:

047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | 500,000 | 39.346473 | -81.338727 |
| <input checked="" type="checkbox"/> 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | 1,000,000 | 39.399094 | -81.185548 |
| <input checked="" type="checkbox"/> 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: |
| 12/11/2013 | 12/11/2014 | 5,830,000 | | - | - |
| <input checked="" type="checkbox"/> 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: |
|------------|------------|--------------------|---------------------------|------------------|-------------------|
| 12/11/2013 | 12/11/2014 | 5,830,000 | 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- 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18888 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

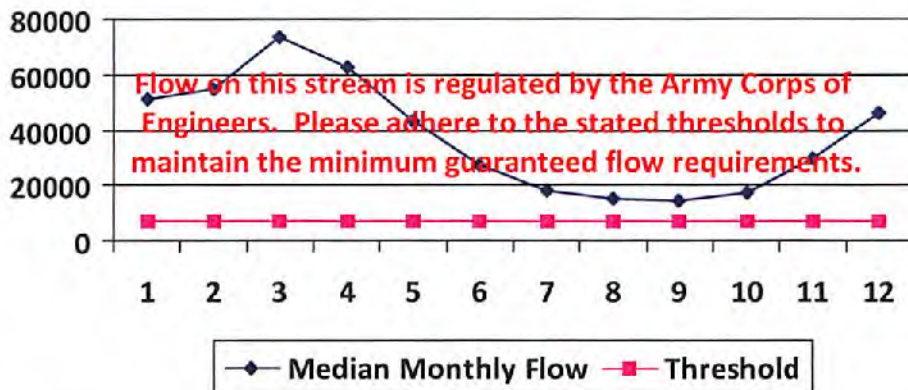
Reference Gaug: 9999998 Ohio River Station: Racine Dam

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- 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18889 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

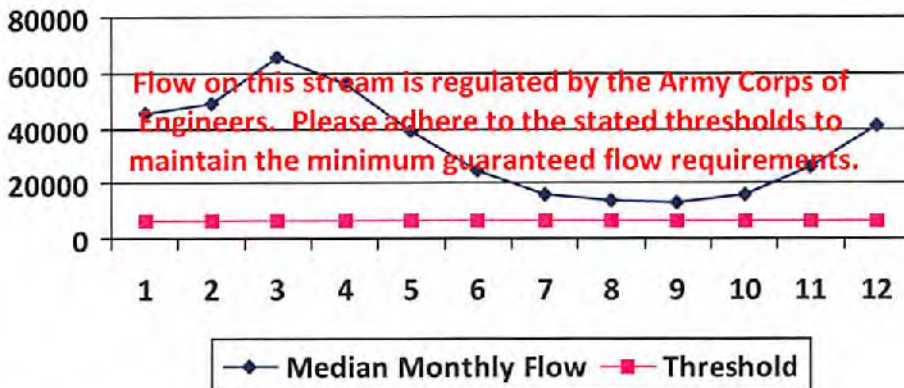
Reference Gaug: 9999999 Ohio River Station: Willow Island Lock & Dam

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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18891 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Total Volume from Source (gal): 5,830,000

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Regulated Stream? Stonewall Jackson Dam

Proximate PSD?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Gauged Stream?

Max. Truck pump rate (gpm):

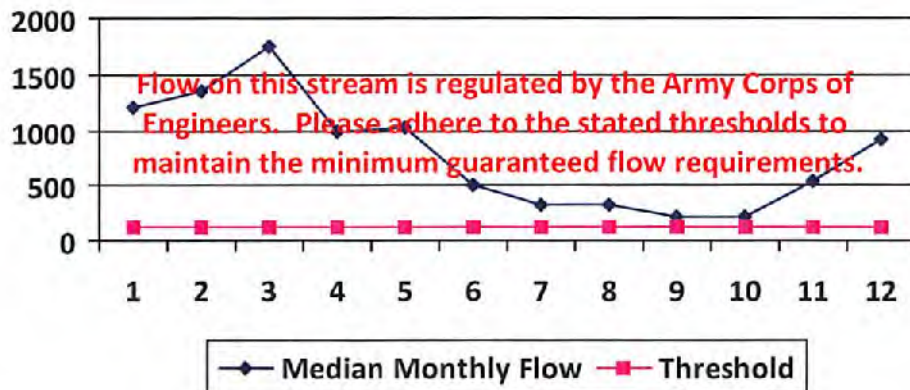
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

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- 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18874 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

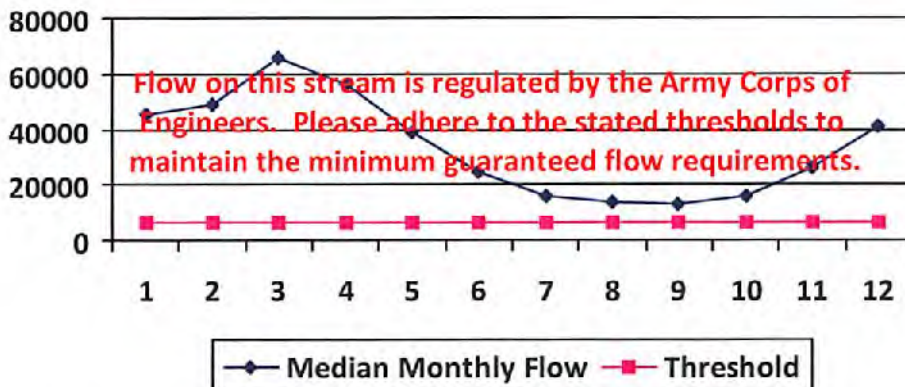
Reference Gaug: 9999999 Ohio River Station: Willow Island Lock & Dam

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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18875 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Regulated Stream? Stonewall Jackson Dam

Proximate PSD?

Gauged Stream?

Total Volume from Source (gal): 5,830,000

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

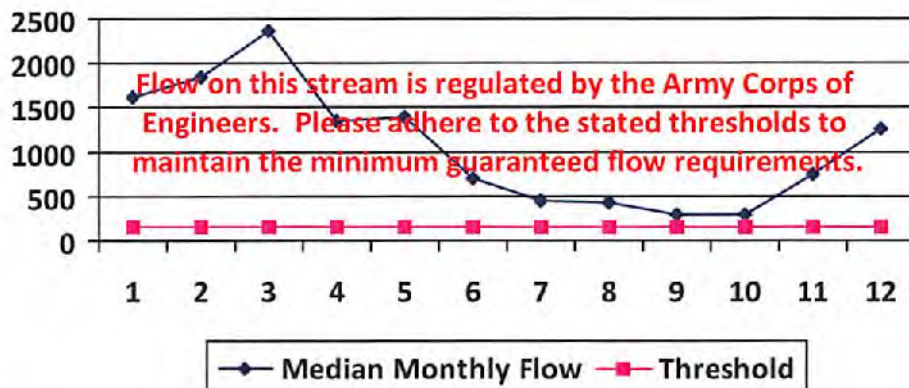
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

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 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18876 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream? Stonewall Jackson Dam

Max. Pump rate (gpm): 3,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

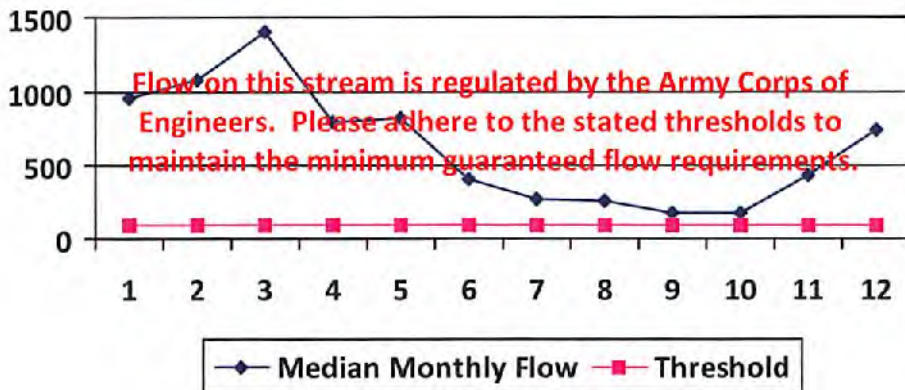
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18877 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

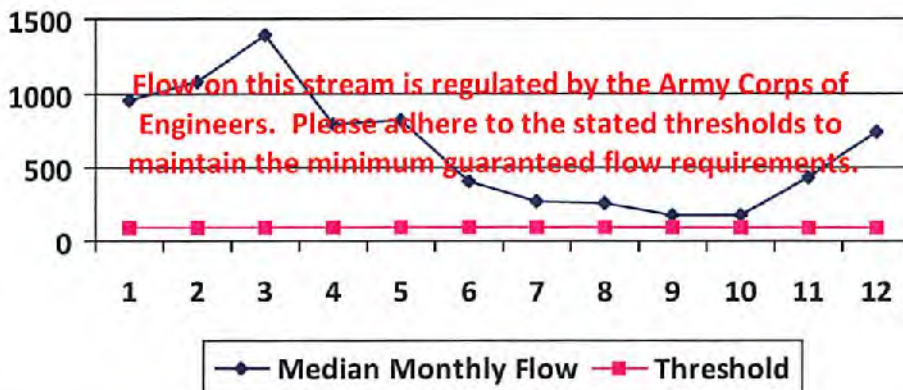
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18878 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

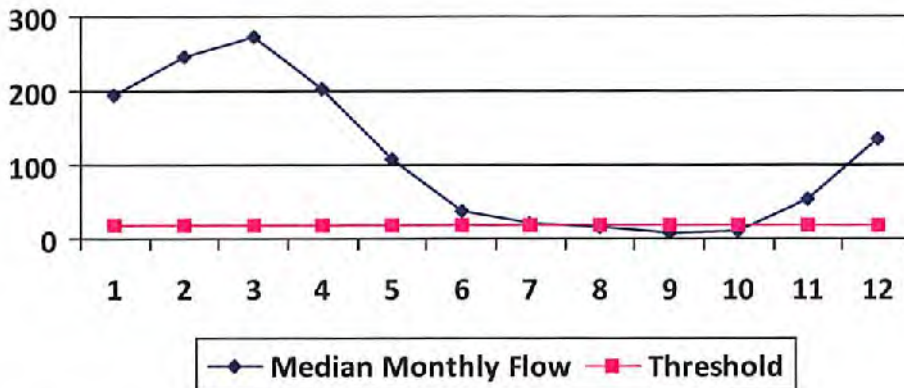
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18879 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Total Volume from Source (gal): 5,830,000

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Regulated Stream?

Proximate PSD?

Gauged Stream?

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

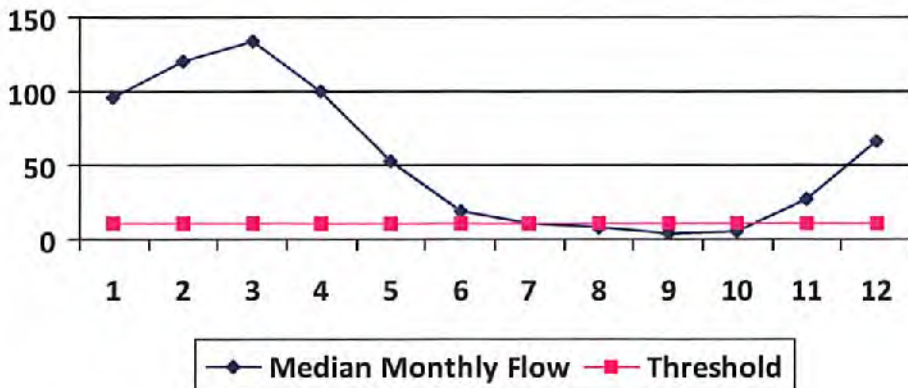
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18880 Source Name: McElroy Creek @ Sweeney Withdrawal
Bill Sweeney

Source Latitude: 39.398123

Source Longitude: -80.656808

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 45.16 County: Doddridge

Anticipated withdrawal start date: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 5,830,000

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?

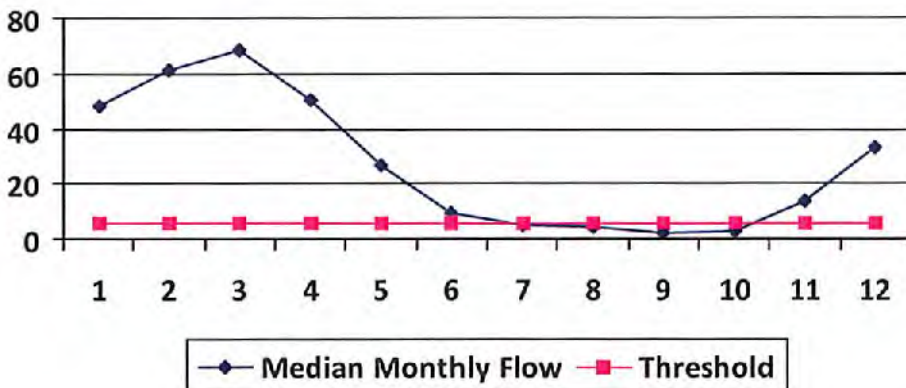
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 48.43 | 8.88 | 39.93 |
| 2 | 60.92 | 8.88 | 52.42 |
| 3 | 68.17 | 8.88 | 59.67 |
| 4 | 50.62 | 8.88 | 42.12 |
| 5 | 26.70 | 8.88 | 18.21 |
| 6 | 9.32 | 8.88 | 0.83 |
| 7 | 5.28 | 8.88 | -3.22 |
| 8 | 4.34 | 8.88 | -4.15 |
| 9 | 2.23 | 8.88 | -6.27 |
| 10 | 2.80 | 8.88 | -5.70 |
| 11 | 13.65 | 8.88 | 5.16 |
| 12 | 33.36 | 8.88 | 24.86 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 4.44

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 1.11

Ungauged Stream Safety (cfs): 1.11

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 6.66

"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- 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18881 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

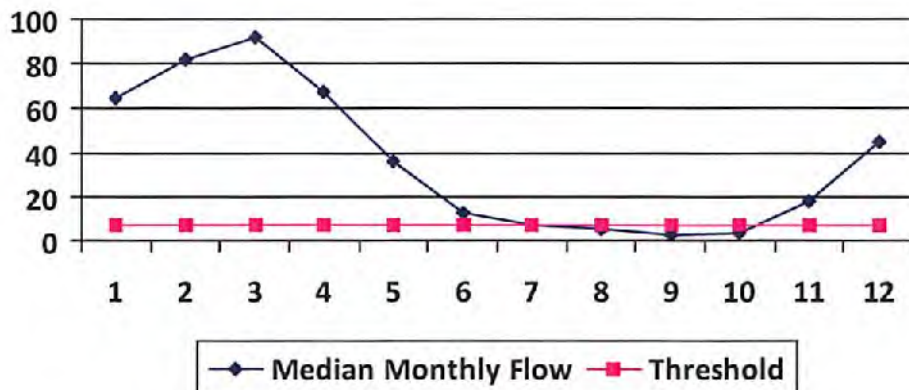
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 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 |
| 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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18882 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

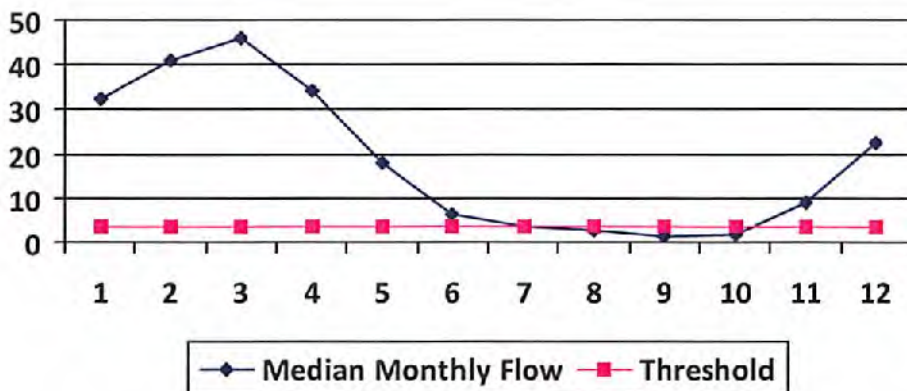
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

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- 01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18883 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

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

Anticipated withdrawal start date: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Total Volume from Source (gal): 5,830,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

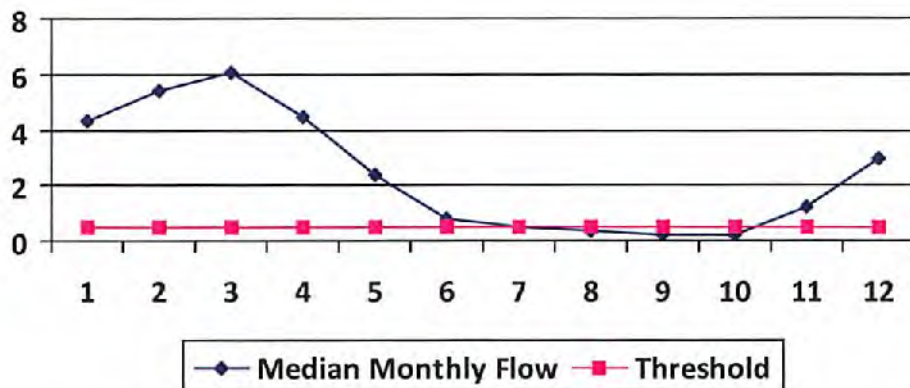
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | <u>Median monthly flow (cfs)</u> | <u>Threshold (+ pump)</u> | <u>Estimated Available water (cfs)</u> |
|-------|----------------------------------|---------------------------|--|
| 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 |
| <hr/> | |
| 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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18884 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

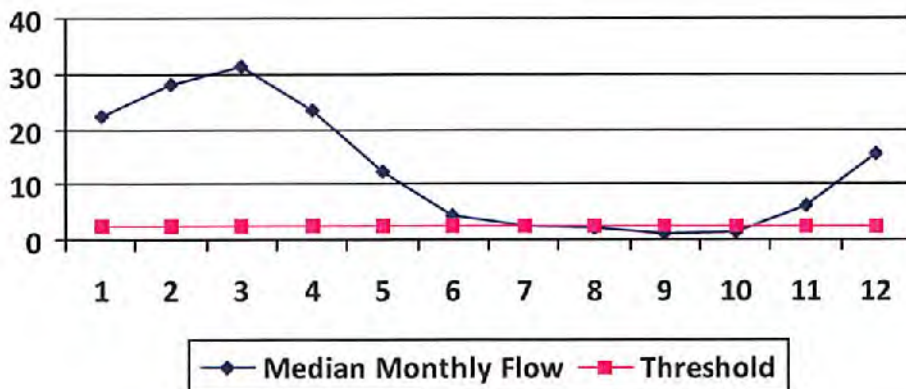
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 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- 01261

API/ID Number: 047-017-06282

Operator: Antero Resources

Kelley Unit 2H

Source ID: 18885 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

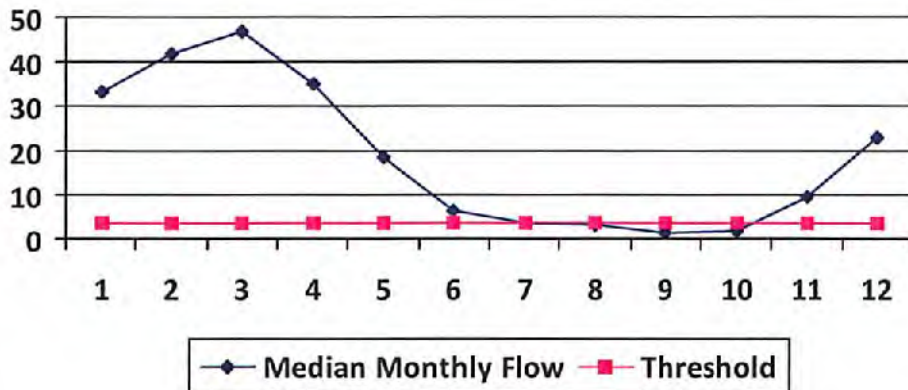
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18886 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

Anticipated withdrawal start date: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 3,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

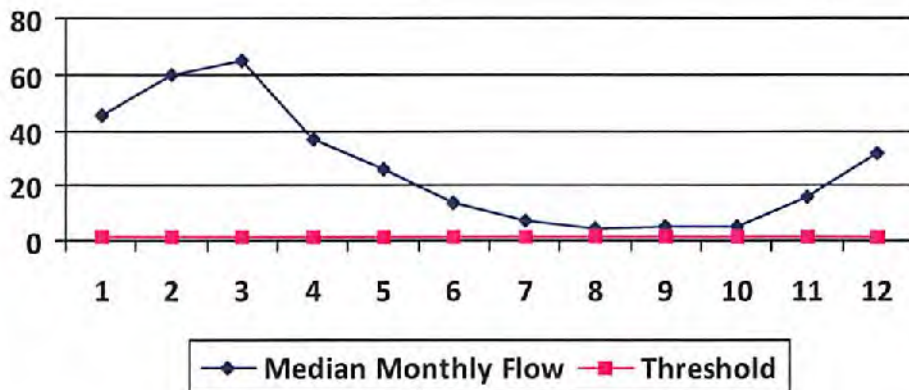
Reference Gaug: 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

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 |
| 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-01261

API/ID Number: 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

Source ID: 18887 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: 12/11/2013

Anticipated withdrawal end date: 12/11/2014

Endangered Species? Mussel Stream?

Trout Stream? Tier 3?

Total Volume from Source (gal): 5,830,000

Regulated Stream?

Max. Pump rate (gpm): 1,000

Proximate PSD?

Max. Simultaneous Trucks: 0

Gauged Stream?

Max. Truck pump rate (gpm): 0

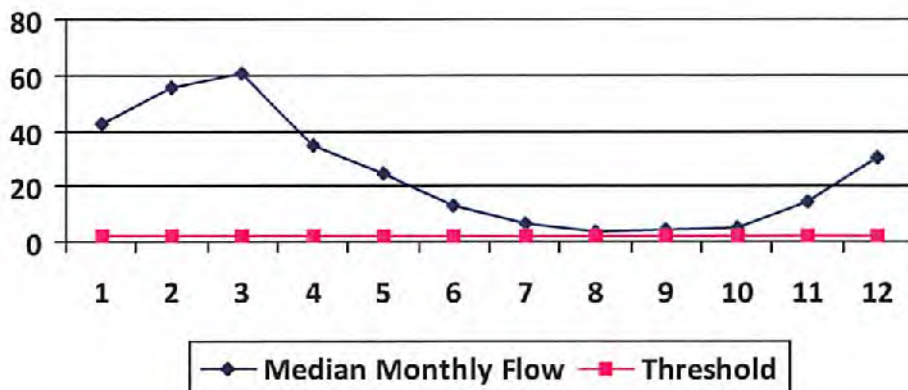
Reference Gaug: 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

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 |
| 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-01261

API/ID Number 047-017-06282

Operator:

Antero Resources

Kelley Unit 2H

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: | 18892 | Source Name: | City of Salem Reservoir (Lower Dog Run) | | Source start date: | 12/11/2013 |
| | | | Public Water Provider | | Source end date: | 12/11/2014 |
| Source Lat: | 39.28834 | Source Long: | -80.54966 | County: | Harrison | |
| Max. Daily Purchase (gal) | 1,000,000 | Total Volume from Source (gal): | 5,830,000 | | | |

DEP Comments:

Kelley Unit 2H

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: | 18893 | Source Name | Pennsboro Lake | | Source start date: | 12/11/2013 | |
| | | | | | Source end date: | 12/11/2014 | |
| | | Source Lat: | 39.281689 | Source Long: | -80.925526 | County | Ritchie |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | | 5,830,000 |

DEP Comments:

| | | | | | | | |
|------------|-------|---------------------------|---|---------------------------------|--------------------|------------|-----------|
| Source ID: | 18894 | Source Name | Powers Lake (Wilderness Water Park Dam) | | Source start date: | 12/11/2013 | |
| | | | | | Source end date: | 12/11/2014 | |
| | | Source Lat: | 39.255752 | Source Long: | -80.463262 | County | Harrison |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | | 5,830,000 |

DEP Comments:

Kelley Unit 2H

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: 18895 | Source Name | Powers Lake Two | Source start date: | 12/11/2013 |
| | | | Source end date: | 12/11/2014 |
| | Source Lat: | 39.247604 | Source Long: | -80.466642 |
| | | | County | Harrison |
| | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | 5,830,000 |

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.

Other

| | | | | | | | |
|------------|-------|---------------------------|----------------------------|---------------------------------|--------------------|------------|----------|
| Source ID: | 18896 | Source Name | Poth Lake (Landowner Pond) | | Source start date: | 12/11/2013 | |
| | | | Private Owner | | Source end date: | 12/11/2014 | |
| | | Source Lat: | 39.221306 | Source Long: | -80.463028 | County | Harrison |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | 5,830,000 | |
| | | DEP Comments: | | | | | |

| | | | | | | | |
|------------|-------|---------------------------|----------------------------------|---------------------------------|--------------------|------------|---------|
| Source ID: | 18897 | Source Name | Williamson Pond (Landowner Pond) | | Source start date: | 12/11/2013 | |
| | | | | | Source end date: | 12/11/2014 | |
| | | Source Lat: | 39.19924 | Source Long: | -80.886161 | County | Ritchie |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | 5,830,000 | |
| | | DEP Comments: | | | | | |

Kelley Unit 2H

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: 18898 | Source Name | Eddy Pond (Landowner Pond) | | Source start date: | 12/11/2013 |
| | | | | Source end date: | 12/11/2014 |
| | Source Lat: | 39.19924 | Source Long: | -80.886161 | County |
| | | | | | Ritchie |
| | Max. Daily Purchase (gal) | | | Total Volume from Source (gal): | 5,830,000 |

DEP Comments:

| | | | | | |
|------------------|---------------------------|--|--------------|---------------------------------|------------|
| Source ID: 18899 | Source Name | Hog Lick Quarry Industrial Facility | | Source start date: | 12/11/2013 |
| | | | | Source end date: | 12/11/2014 |
| | Source Lat: | 39.419272 | Source Long: | -80.217941 | County |
| | | | | | Marion |
| | Max. Daily Purchase (gal) | 1,000,000 | | Total Volume from Source (gal): | 5,830,000 |

DEP Comments:

Kelley Unit 2H

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.

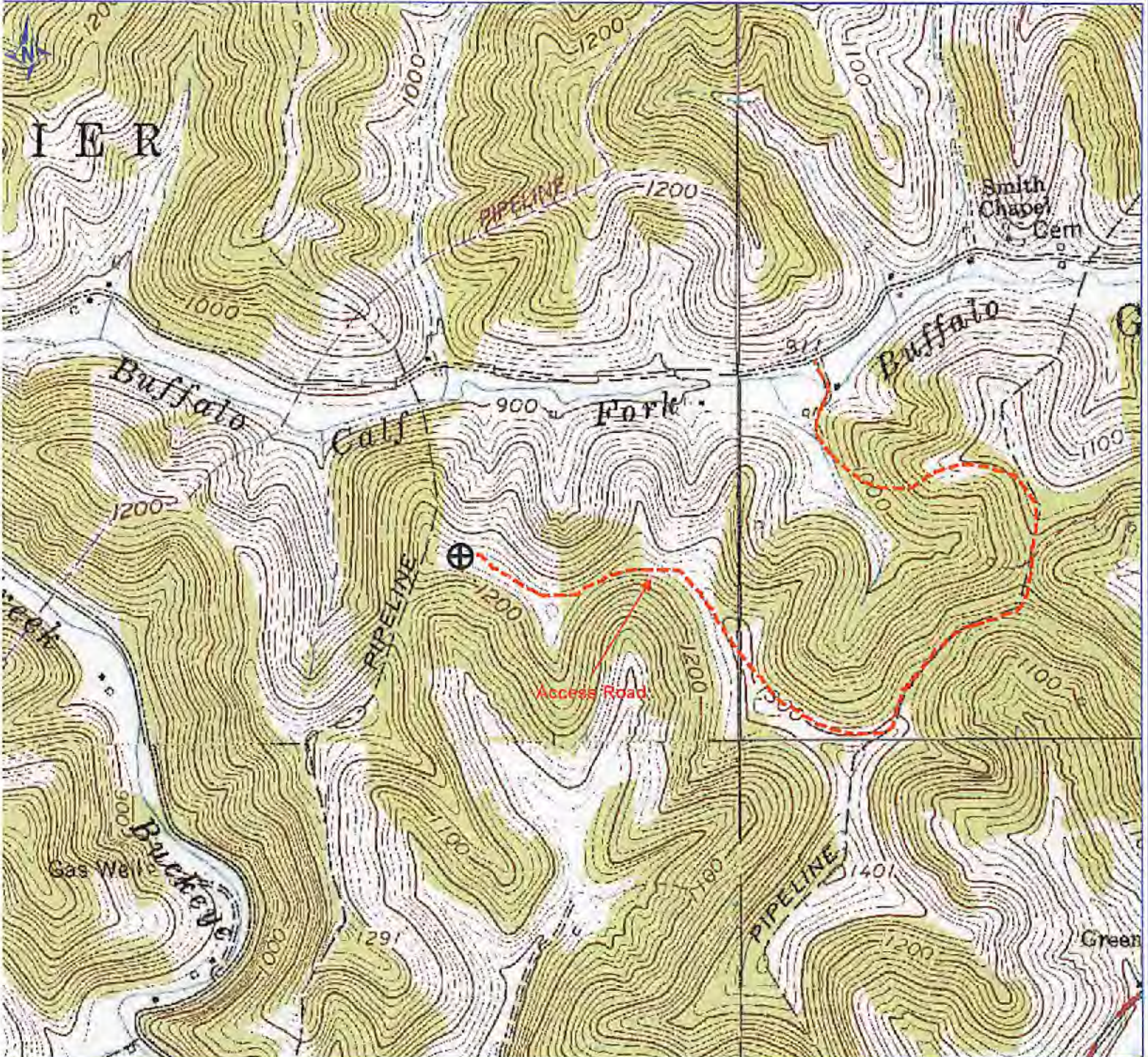
| | | | | |
|---------------------------|-------------|--|--------------------|------------|
| Source ID: 18900 | Source Name | Glade Fork Mine Industrial Facility | Source start date: | 12/11/2013 |
| | | | Source end date: | 12/11/2014 |
| Source Lat: | 38.965767 | Source Long: | -80.299313 | County |
| | | | | Upshur |
| Max. Daily Purchase (gal) | 1,000,000 | Total Volume from Source (gal): | 5,830,000 | |

DEP Comments:

Recycled Frac Water

| | | | | |
|---------------------------|-------------|---------------------------------|--------------------|------------|
| Source ID: 18901 | Source Name | Kelley Unit 1H | Source start date: | 12/11/2013 |
| | | | Source end date: | 12/11/2014 |
| Source Lat: | | Source Long: | | County |
| Max. Daily Purchase (gal) | | Total Volume from Source (gal): | 5,830,000 | |

DEP Comments:



ETRA 4/25/2013 12:49:05 PM

Received
Office of Oil & Gas

Antero Resources Corp

APPALACHIAN BASIN

Kelley Unit 2H

Doddridge County

REMARKS
QUADRANGLE: NEW MILTON, SMITHBU
WATERSHED: BUFFALO CALF FORK
DISTRICT: GREENBRIER

By: ECM



2,231' to Top Hole

681' to Bottom Hole

TOP HOLE LATITUDE 39 - 17 - 30
BTM HOLE LATITUDE 39 - 15 - 00

LONGITUDE 80 - 37 - 30
3,942' to Bottom Hole

13,757' to Top Hole

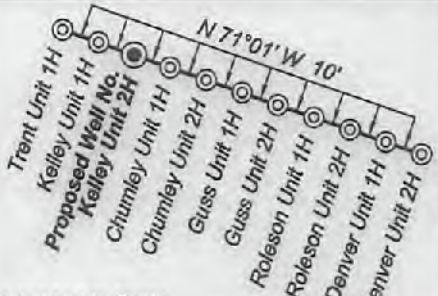
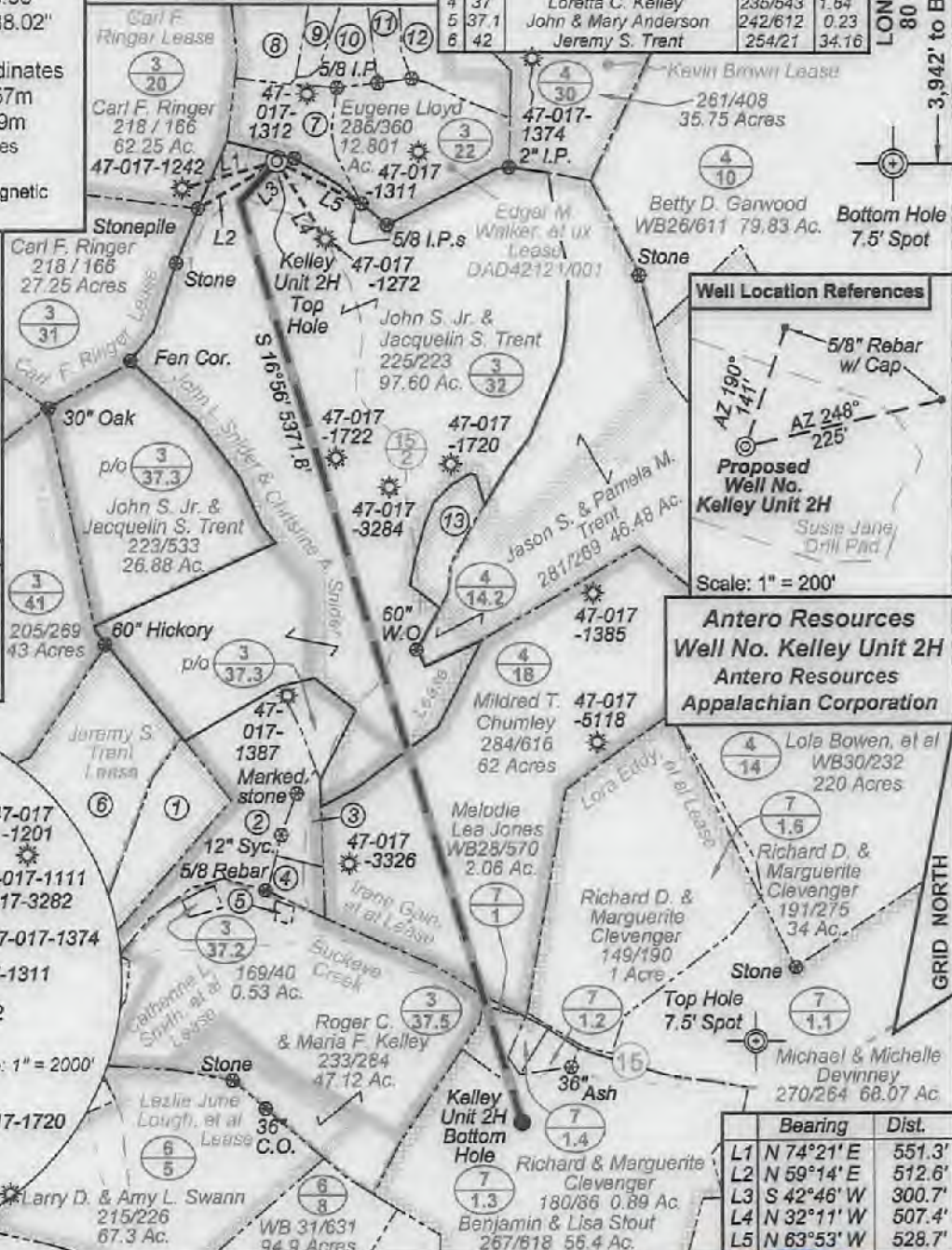
GRID NORTH

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Kelley Unit 2H Top Hole coordinates are
N: 276,577.63' Latitude: 39°15'13.76"
E: 1,679,366.66' Longitude: 80°37'56.17"
Bottom Hole coordinates are
N: 271,218.01' Latitude: 39°14'20.96"
E: 1,680,727.05' Longitude: 80°37'38.02"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,345,018.153m N: 4,343,392.257m
E: 531,743.704m E: 532,185.379m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Legend

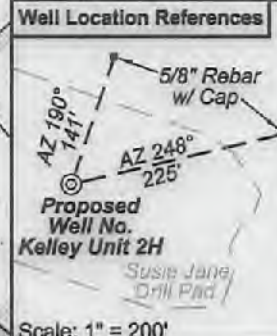
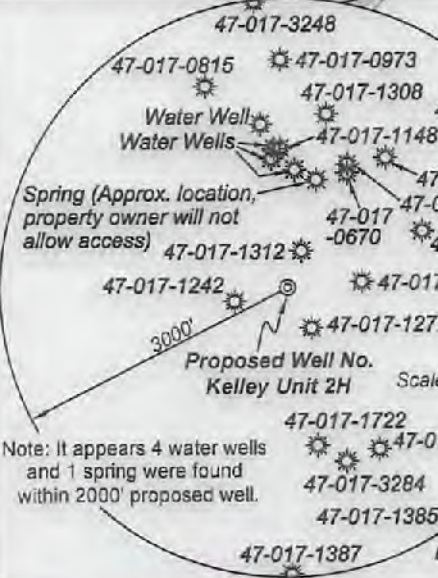
- ⊙ Proposed gas well
- ⊙ Found corner, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)
- Existing Fenceline

| Par. | Tax Map 3 Owner | DB/Pg | Acres |
|------|---------------------------------|---------|-------|
| 1 | 42.1 Rodney H. & Terry L. Trent | 270/439 | 7.05 |
| 2 | 37.4 Rodney H. & Terry L. Trent | 215/48 | 12.97 |
| 3 | 37.6 Stephen M. Kelley | 253/698 | 2.0 |
| 4 | 37 Loretta C. Kelley | 235/643 | 1.64 |
| 5 | 37.1 John & Mary Anderson | 242/612 | 0.23 |
| 6 | 42 Jeremy S. Trent | 254/21 | 34.16 |



Detail Not to Scale

| Par. | Tax Map 3 Owner | DB/Pg | Acres |
|------|---------------------------------|---------|-------|
| 7 | 22.2 Sharon M. Davis | 198/595 | 5.09 |
| 8 | 22.7 Linda Burnside | 198/607 | 7.62 |
| 9 | 22.6 Eugene Errol Lloyd | 198/604 | 2.55 |
| 10 | 22.5 Eugene Errol Lloyd | 286/360 | 2.80 |
| 11 | 22.4 Eugene Errol Lloyd | 286/360 | 2.02 |
| 12 | 22.3 Eugene Errol Lloyd | 286/360 | 6.12 |
| 13 | 14.1 John Jr. & Jacquelin Trent | 225/223 | 6.15 |



Scale: 1" = 200'

Antero Resources
Well No. Kelley Unit 2H
Antero Resources
Appalachian Corporation

| Bearing | Dist. |
|---------|-------------------|
| L1 | N 74°21' E 551.3' |
| L2 | N 59°14' E 512.6' |
| L3 | S 42°46' W 300.7' |
| L4 | N 32°11' W 507.4' |
| L5 | N 63°53' W 528.7' |

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 regulations issued and prescribed by the Department of Environmental Protection.

Kenneth J. Plum
Kenneth J. Plum, P.S. 2216



FILE NO: 105-30-G-13
DRAWING NO: 105-13 Kelley 2H Well Plat
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: April 25 2013
OPERATOR'S WELL NO. Kelley Unit 2H
API WELL NO
47 - 017 - 6282 H6A
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: 1248' WATERSHED: Buffalo Calf Fork QUADRANGLE: New Milton & Smithburg
DISTRICT: Greenbrier COUNTY: Doddridge
SURFACE OWNER: John S. Jr. & Jacquelin S. Trent Irene Gain, et al ACREAGE: 97.60
ROYALTY OWNER: John L. Snider & Christine A. Snider, Lora Eddy, et al LEASE NO: ACREAGE: 98.9; 65; 166.25
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____ 7,400' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 13,200' MD

WELL OPERATOR: Antero Resources Appalachian Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

2,231' to Top Hole

681' to Bottom Hole

TOP HOLE LATITUDE 39 - 17 - 30
BTM HOLE LATITUDE 39 - 15 - 00

LONGITUDE
80 - 37 - 30

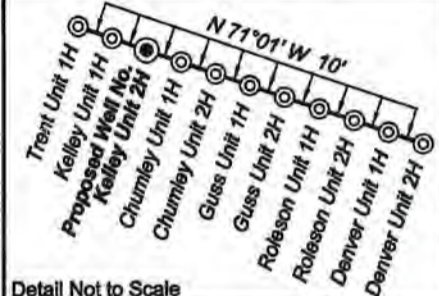
3,942' to Bottom Hole

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7-25-2013

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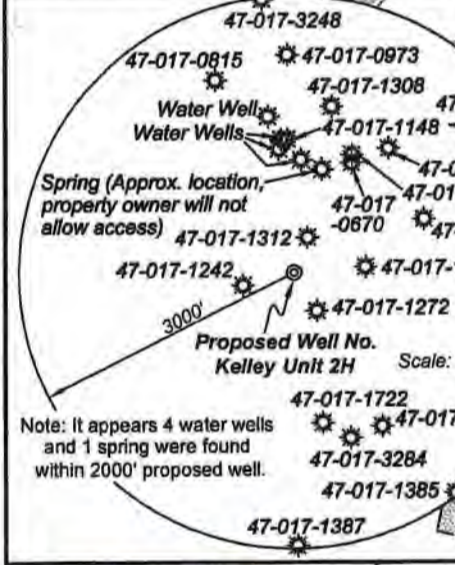
- Legend**
- ⊙ Proposed gas well
 - ⊙ Found corner, as noted
 - Creek or Drain
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 - Surface boundary (approx.)
 - Interior surface tracts (approx.)
 - *** Existing Fenceline

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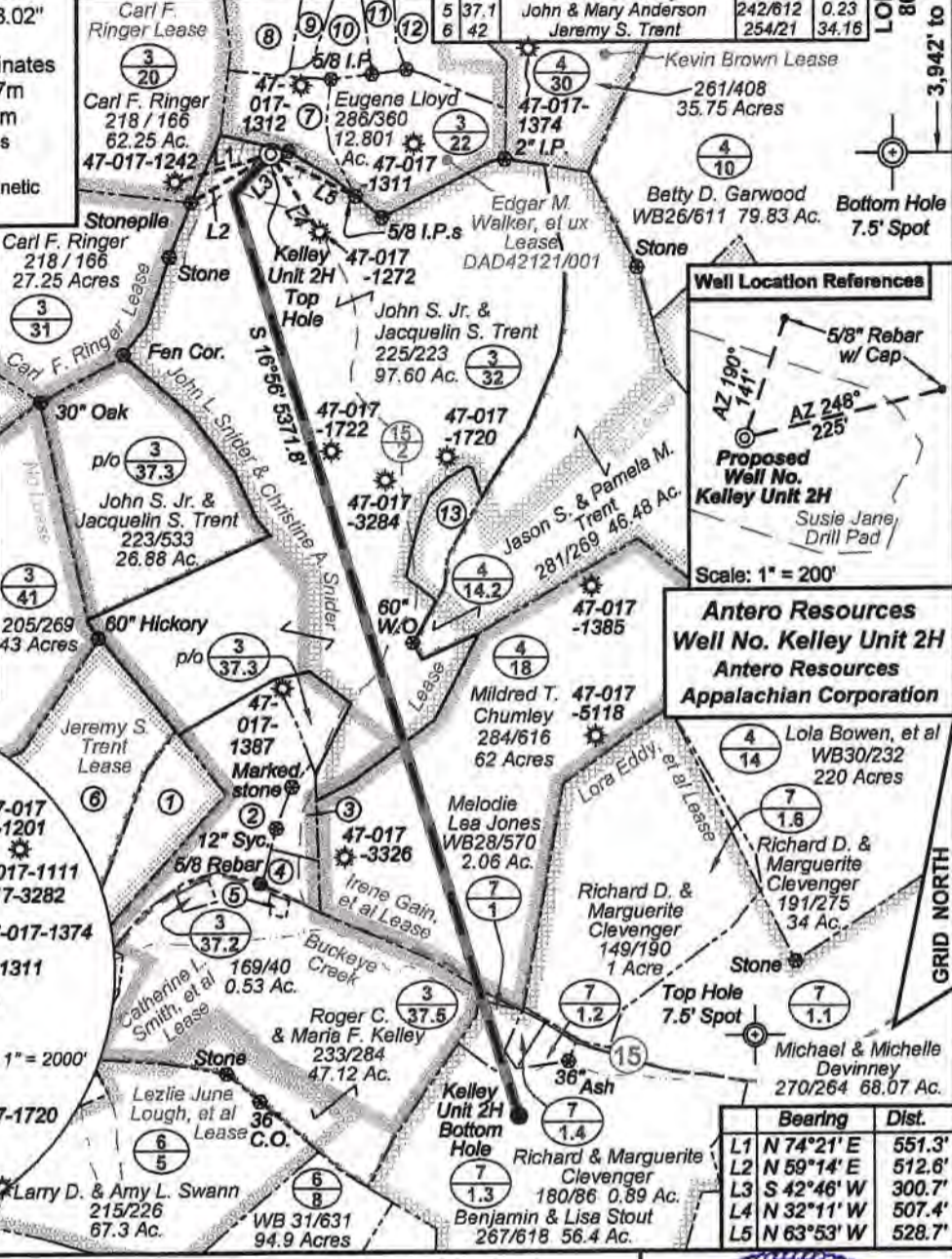


Detail Not to Scale

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| 12 | 22.3 Eugene Errol Lloyd | 286/360 | 6.12 |
| 13 | 14.1 John Jr. & Jacquelin Trent | 225/223 | 6.15 |



Note: It appears 4 water wells and 1 spring were found within 2000' proposed well.



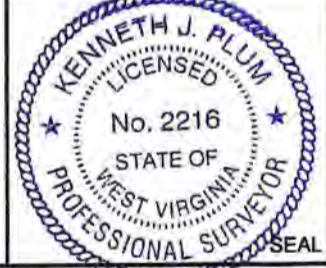
Antero Resources
 Well No. Kelley Unit 2H
 Antero Resources
 Appalachian Corporation

| Bearing | Dist. |
|---------------|--------|
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| L2 N 59°14' E | 512.6' |
| L3 S 42°46' W | 300.7' |
| L4 N 32°11' W | 507.4' |
| L5 N 63°53' W | 528.7' |



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Kenneth J. Plum
 Kenneth J. Plum, P.S. 2216



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 DRAWING NO: 105-13 Kelley 2H Well Plat
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: April 25 2013
 OPERATOR'S WELL NO. Kelley Unit 2H
 API WELL NO. 47-017-06282
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: 1248' WATERSHED: Buffalo Calf Fork QUADRANGLE: New Milton & Smithburg
 DISTRICT: Greenbrier COUNTY: Doddridge
 SURFACE OWNER: John S. Jr. & Jacquelin S. Trent Irene Gain, et al ACREAGE: 97.60
 ROYALTY OWNER: John L. Snider & Christine A. Snider, Lora Eddy, et al LEASE NO: ACREAGE: 98.9; 65; 166.25
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 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,400' TVD 13,200' MD
 WELL OPERATOR: Antero Resources Appalachian Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1825 17th Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

WW-6A1

Operator's Well Number Kelley Unit 2H

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

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

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

| Grantor, lessor, etc. | Grantee, lessee, etc. | Royalty | Book/Page |
|--|--|--|-------------------------------|
| ✓ <u>Edgar M. Walker, et ux Lease DAD 42121/001</u> | | | |
| Edgar M. Walker, et ux | Dorthea Webber | 1/8 | 0063/0405 |
| Dorthea Webber, et vir | Jeffrey Evan Webber, et al | Assignment | 0093/0388 |
| Jeffrey Evan Webber, et al | Aries Petroleum Corporation | Assignment | 0122/0259 |
| Aries Petroleum Corporation | Chesterfield Energy Corporation | Assignment and Agreement | 0128/0678 |
| Chesterfield Energy Corporation | Chesterfield Energy Drilling | Sublease of Oil and Gas Drilling | 0135/0181 |
| Chesterfield Energy Drilling | Dominion Appalachian Development, LLC | Assignment and Conveyance | 0176/0011 |
| Dominion Appalachian Development, LLC | Antero Resources Appalachian Corporation | *Partial Assignment of Oil and Gas Leases | 0230/0113 |
| ✓ <u>John L. Snider & Christine A. Snider Lease</u> | | | |
| Christine A. Snider as Trustee of the John L. Snider Revocable Trust Dated June 27, 1995 | Midwest Energy, Inc. | 1/8 | 0218/0693 |
| Midwest Energy, Inc. | Antero Resources Appalachian Corporation Received Office of Oil & Gas | Assignment Of Oil and Gas Lease | 0264/0610 |
| ✓ <u>Catherine L. Smith et al Lease</u> | | | |
| Charlotte J. Greathouse Tenmile Land, LLC | Tenmile Land, LLC Antero Resources Appalachian Corporation | 1/8 Assignment | 0250/0637 0279/0098 |
| ✓ <u>Irene Gain et al Lease</u> | | | |
| Irene Gain Richard L. McQuaid | Richard L. McQuaid Clarence W. Mutschelknaus | 1/8 Assignment & Agreement | 0132/0455 0133/0105 |
| Clarence W. Mutschelknaus Bluestone Energy Partners | Bluestone Energy Partners Antero Resources Appalachian Corporation | Assignment Affidavit Regarding Merger | 0251/0427 0288/0001 |

CONTINUED ON NEXT PAGE

**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 |
|--------------------------------|--|--|---------|-----------|
| ✓ <u>Lora Eddy et al Lease</u> | Christine A. Snider, heir of John Lynn Snider | Antero Resources Appalachian Corporation | 15% | 0274/0180 |

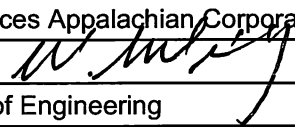
**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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:

Received
Office of Oil & Gas

- 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 Appalachian Corporation
 By: Ward McNeilly 
 Its: Vice President of Engineering

17-6282



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

May 1, 2013

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

RE: Well Name: Kelley Unit 2H
Quadrangle: Smithburg
Doddridge County/Greenbrier District, West Virginia

Mr. Martin:

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

Sincerely,

Houston Eagleston
Landman

Received
Office of Oil & Gas

MAY 1 2013

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

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

Date of Notice: 05/09/2013 **Date Permit Application Filed:** 05/09/2013

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: John S. Trent Jr. and Jacqueline S. Trent

Address: RR 1 Box 375
Salem, WV 26426

Name: Sharon M. (Carty) Davis

Address: RR 2 Box 172
Bristol, WV 26426

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

*PLEASE NOTE ADDITIONAL SURFACE TRACTS WITH DISTURBANCE SHOWN ON PAD DESIGN ARE **NOT** OVERLYING THE OIL & GAS LEASEHOLD BEING DEVELOPED BY THE PROPOSED WELL; THEREFORE, ARE NOT REQUIRED TO BE NOTIFIED PER WV CODE 22-6A-10. ANTERO HAS SECURED SIGNED SUAS WITH ALL RELATED PARTIES

SURFACE OWNER(s) (Impoundments/Pits)

*PLEASE NOTE ADDITIONAL SURFACE TRACTS WITH DISTURBANCE SHOWN ON PAD DESIGN ARE **NOT** OVERLYING THE OIL & GAS LEASEHOLD BEING DEVELOPED BY THE PROPOSED WELL; THEREFORE, ARE NOT REQUIRED TO BE NOTIFIED PER WV CODE 22-6A-10. ANTERO HAS SECURED SIGNED SUAS WITH ALL RELATED PARTIES

COAL OWNER OR LESSEE

Name: Consolidation Coal Company; c/o Leatherwood, Inc.; CNX Center

Address: Attn: Don Puglio; 1000 Consol Energy Drive
Canonsburg, PA 15317

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
Office of Oil & Gas

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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

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.

WW-6A Notice of Application Attachment:

Water Well Owners:

Owner: Mount Hebron Baptist Church Trustees (2 water wells)

Address: Rt 1 Box 400 ✓
Salem, WV 26426

Address: (Second Address)
1294 Buffalo Calf Rd. ✓
Salem, WV 26426

Owner: Denver & Linda Burnside ✓

Address: Rt. 1 Box 398C
Salem, WV 26426

Address: (Second Address)
10 Penny Lane ✓
Salem, WV 26426

Owner: Eugene Errol Lloyd (1 Spring) ✓

Address: 108 Water St.
Salem, WV 26426

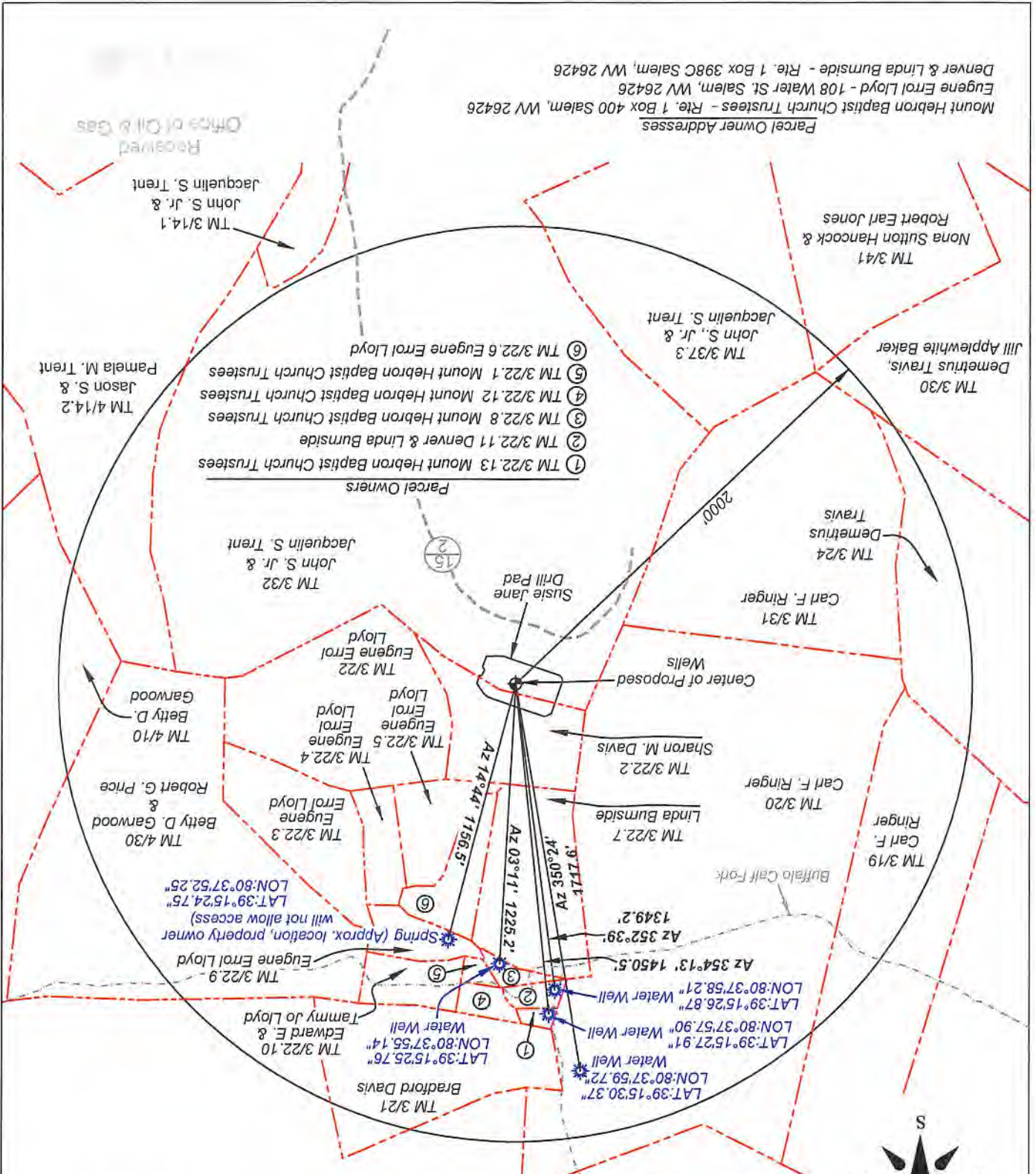
Note: On attached water well map, 1 other water well owner is identified but they are located greater than 1500' from the subject well pad location

Received
Office of Oil & Gas

**Susie Jane Drill Pad
Water Well & Spring Map**



Scale 1" = 600'



Parcel Owners

- ① TM 3/22.13 Mount Hebron Baptist Church Trustees
 - ② TM 3/22.11 Denver & Linda Burnside
 - ③ TM 3/22.8 Mount Hebron Baptist Church Trustees
 - ④ TM 3/22.12 Mount Hebron Baptist Church Trustees
 - ⑤ TM 3/22.1 Mount Hebron Baptist Church Trustees
 - ⑥ TM 3/22.6 Eugene Errol Lloyd
- Parcel Owner Addresses
 Mount Hebron Baptist Church Trustees - Rte. 1 Box 400 Salem, WV 26426
 Eugene Errol Lloyd - 108 Water St. Salem, WV 26426
 Denver & Linda Burnside - Rte. 1 Box 398C Salem, WV 26426

Received
 Office of Oil & Gas

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

Date of Notice Certification: 05/08/2013

API No. 47- 017 - 6282
Operator's Well No. Kelley Unit 2H
Well Pad Name: Susie Jane 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>531,743.704m</u> |
| County: | <u>Doddridge</u> | | Northing: | <u>4,345,018.153m</u> |
| District: | <u>Greenbrier</u> | Public Road Access: | <u>CR 42</u> | |
| Quadrangle: | <u>Smithburg</u> | Generally used farm name: | <u>Trent, John S. Jr & Jacquelin S.</u> | |
| Watershed: | <u>Buffalo Calf Fork</u> | | | |

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

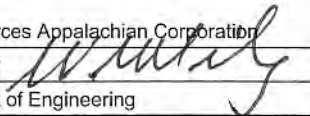
| | |
|--|---|
| <p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or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

Required Attachments:

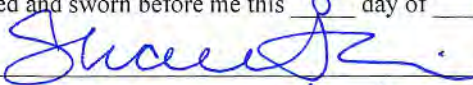
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Certification of Notice is hereby given:

THEREFORE, I 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 Appalachian Corporation</u> | Address: | <u>1625 17th Street</u> |
| By: | <u>Ward McNeilly</u>  | | <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 8th day of May, 2013.
 Notary Public
 My Commission Expires 5/18/2015

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.

Received
Office of Oil & Gas

**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: 4/2/2013 **Date of Planned Entry:** 4/11/2013

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: John S. Trent Jr. and Jacqueline S. Trent
 Address: Rt. 1 Box 375
Salem, WV 26426

Name: Sharon M. Davis
 Address: RR 2 Box 172
Bristol, WV 26426

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: Consolidation Coal Company; c/o Leatherwood, Inc. CNX Center
 Address: Attn: Don Puglio, 1000 Consol Energy Drive
Canonsburg, PA 15317

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>39.2538952, -80.6320413</u> |
| County: <u>Doddridge</u> | Public Road Access: <u>CR 42</u> |
| District: <u>Greenbrier</u> | Watershed: <u>Buffalo Calf Fork</u> |
| Quadrangle: <u>Smithburg</u> | Generally used farm name: <u>Trent, John S. Jr & Jacquelin S.</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 57th 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.

Notice is hereby given by:

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

Address: 1625 17th Street
Denver, CO 80202

Facsimile: 303-357-7315

Received
Office of Oil & Gas

Oil and Gas Privacy Notice:

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

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

Mineral Owners:

Owner: Dorothy Lee Sauder, agent
Address: 3236 Clearview Dr. ✓
Marietta, GA 30060

Owner: John L. and Christine A. Snider Revocable Trust
Address: PO Box 290729 ✓
Port Orange, FL 32129

Owner: Wilma May Walker;
Thomas E. Freeman, POA
Address: 1653 Barn Swallow Rd. ✓
Marietta, GA 30062

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Office of Oil & Gas

213

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 04/08/2013 ✓ **Date Permit Application Filed:** 05/09/2013

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

- HAND DELIVERY
- CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: John S. Jr. & Jacqueline S. Trent ✓
Address: RR 1 Box 375
Salem, WV 26426

Name: Sharon M. (Carty) Davis ✓
Address: RR 2 Box 172
Bristol, WV 26426

Notice is hereby given:

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

| | | | | |
|-------------|--------------------------|---------------------------|---|-----------------------|
| State: | <u>West Virginia</u> | UTM NAD 83 | Easting: | <u>531,743.704m</u> |
| County: | <u>Doddridge</u> | | Northing: | <u>4,345,018.153m</u> |
| District: | <u>Greenbrier</u> | Public Road Access: | <u>CR 42</u> | |
| Quadrangle: | <u>Smithburg</u> | Generally used farm name: | <u>Trent, John S. Jr & Jacquelin S.</u> | |
| Watershed: | <u>Buffalo Calf Fork</u> | | | |

This Notice Shall Include:

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

Notice is hereby given by:

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

Authorized Representative: Ashlie Mihalcin
Address: 1625 17th Street
Denver, CO 80202
Telephone: (303) 357-7310
Email: amihalcin@anteroresources.com
Facsimile: 303-357-7315

Received
Office of Oil & Gas

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.

17-6282

WW-6A5
(1/12)

Operator Well No. Kelley Unit 2H

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: 05/09/2013 ✓ **Date Permit Application Filed:** 05/09/2013

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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

HAND
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: John S. Trent Jr. and Jacqueline S. Trent
Address: RR 1 Box 375
Salem, WV 26426

Name: Sharon M. (Carty) Davis
Address: RR 2 Box 172
Bristol, WV 26426

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>531,743.704m</u> |
| County: | <u>Doddridge</u> | | Northing: | <u>4,345,018.153m</u> |
| District: | <u>Greenbrier</u> | Public Road Access: | <u>CR 42</u> | |
| Quadrangle: | <u>Smithburg</u> | Generally used farm name: | <u>Trent, John S. Jr & Jacquelin S.</u> | |
| Watershed: | <u>Buffalo Calf Fork</u> | | | |

This Notice Shall Include:

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

Received
Office of Oil & Gas

Well Operator: Antero Resources Appalachian 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.

Form WW-9 Additives Attachment

SURFACE INTERVAL

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

INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

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

PRODUCTION INTERVAL

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

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2013

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

Received
Office of Oil & Gas

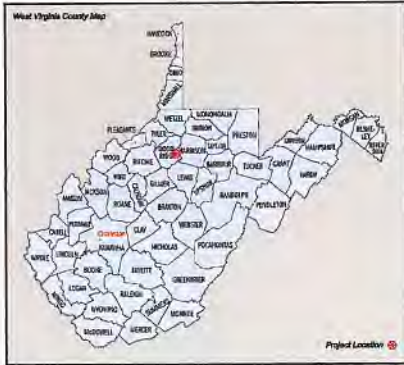
List of Anticipated Additives Used for Fracturing or Stimulating Well

| Additives | Chemical Abstract Service Number (CAS #) |
|--|--|
| Fresh Water | 7732-18-5 |
| 2 Phosphobutane 1,2,4 tricarboxylic acid | 37971-36-1 |
| Ammonium Persulfate | 7727-54-0 |
| Anionic copolymer | proprietary |
| Anionic polymer | proprietary |
| BTEX Free Hydrotreated Heavy Naphtha | 64742-48-9 |
| Cellulase enzyme | (Proprietary) |
| Demulsifier Base | (Proprietary) |
| Ethoxylated alcohol blend | Mixture |
| Ethoxylated Nonylphenol | 68412-54-4 |
| Ethoxylated oleylamine | 26635-93-8 |
| Ethylene Glycol | 107-21-1 |
| Glycol Ethers | 111-76-2 |
| guar gum | 9000-30-0 |
| Hydrogen Chloride | 7647-01-0 |
| Hydrotreated light distillates, non-aromatic, BTEX free | 64742-47-8 |
| Isopropyl alcohol | 67-63-0 |
| liquid, 2,2-dibromo-3-nitrilopropionamide | 10222-01-2 |
| Microparticle | proprietary |
| Petroleum Distillates (BTEX Below Detect) | 64742-47-8 |
| Polyacrylamide | 57-55-6 |
| Propargyl Alcohol | 107-19-7 |
| Propylene Glycol | 57-55-6 |
| Quartz | 14808-60-7 |
| 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 |

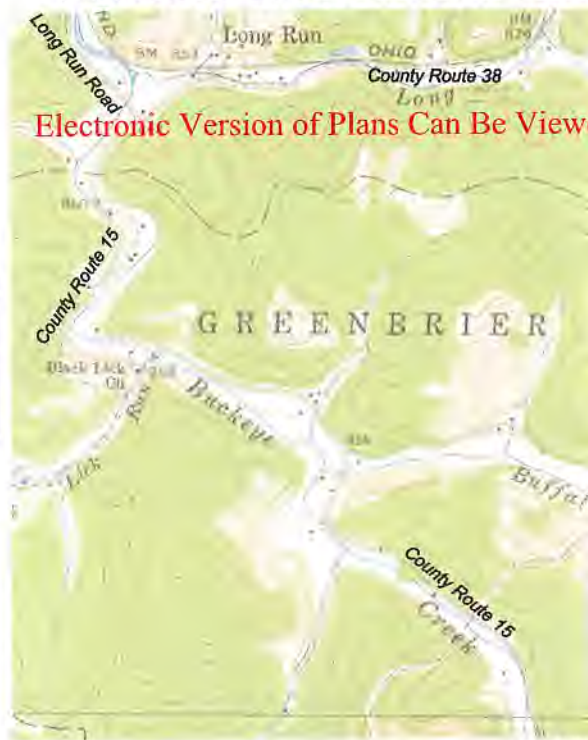
Received
Office of Oil & Gas

11/10/03

SUSIE J.
SITE DESIGN, CONSTRUCTION,
EROSION & SEDIMENTATION CONTROL
ANTERO RESOURCES APPLICATION



API#1706282
 API#1706306
 API#1706307



Electronic Version of Plans Can Be Viewed

| Well Table | | | | | | |
|--|--|---|---|--|--|--|
| Left Blank Intentionally | Prop. Well Trent Unit 1H WVN NAD83 N: 279523.48 WVN NAD83 E: 1647908.54 LAT NAD83: 38.2529154 LON NAD83: -80.6321957 | Prop. Well Kelley Unit 1H WVN NAD83 N: 279817.24 WVN NAD83 E: 1647915.30 LAT NAD83: 38.2529160 LON NAD83: -80.6321951 | Prop. Well Kelley Unit 2H WVN NAD83 N: 279813.86 WVN NAD83 E: 1647905.75 LAT NAD83: 38.2530082 LON NAD83: -80.6320914 | Prop. Well Chumley Unit 1H WVN NAD83 N: 279915.80 WVN NAD83 E: 1647908.00 LAT NAD83: 38.2533992 LON NAD83: -80.6320570 | Prop. Well Chumley Unit 2H WVN NAD83 N: 279917.36 WVN NAD83 E: 1647914.36 LAT NAD83: 38.2533912 LON NAD83: -80.6320285 | |
| Prop. Well Gus Unit 1H WVN NAD83 N: 279644.23 WVN NAD83 E: 1647954.12 LAT NAD83: 38.2533824 LON NAD83: -80.6319910 | Prop. Well Gus Unit 2H WVN NAD83 N: 279639.86 WVN NAD83 E: 1647953.58 LAT NAD83: 38.2536728 LON NAD83: -80.6319574 | Prop. Well Roaleson Unit 1H WVN NAD83 N: 279597.72 WVN NAD83 E: 1647973.03 LAT NAD83: 38.2533862 LON NAD83: -80.6319238 | Prop. Well Roaleson Unit 2H WVN NAD83 N: 279594.07 WVN NAD83 E: 1647982.43 LAT NAD83: 38.2533868 LON NAD83: -80.6318964 | Prop. Well Denver Unit 1H WVN NAD83 N: 279597.22 WVN NAD83 E: 1647961.85 LAT NAD83: 38.2534680 LON NAD83: -80.6318566 | Prop. Well Denver Unit 2H WVN NAD83 N: 279597.96 WVN NAD83 E: 1648001.40 LAT NAD83: 38.2533894 LON NAD83: -80.6318233 | |

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

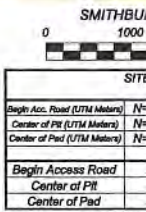
Bill Yetzer, P.S., E.I. - Allegheny Surveys Inc.
 304-848-5035 Off. 304-619-4937 Cell

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

Well Location Restrictions:

All Pad and Fracture Pit construction complies with the following restrictions.

- * 250' from an existing 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.

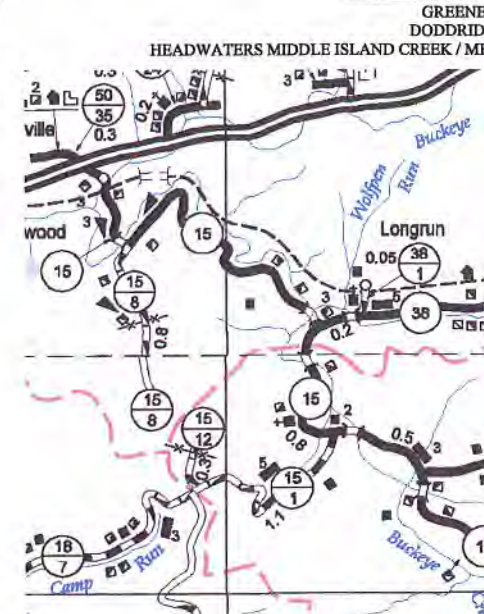


| FLOODPLAIN CONDITIONS | |
|---|-------------|
| DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN: | YES |
| PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR: | YES |
| HEC-RAS STUDY COMPLETED: | YES |
| FLOODPLAIN SHOWN ON DRAWINGS: | YES |
| FIRM MAP NUMBER(S) FOR SITE: | 54017C0165C |
| ACREAGES OF CONSTRUCTION IN FLOODPLAIN: | 1.04 Acres |

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.**



WELL PAD CONSTRUCTION PLAN, & EROSION CONTROL PLANS ANTERO CORPORATION

FILE: QOIL GAS\SAY FILES\REVIEWS



UTM QUAD
2000 3000

| EASTING | | NORTHING | |
|------------------|---------------|----------|-------------|
| 77 m | E=532552.07 m | 08 | N=4022700.1 |
| 78 m | E=532374.98 m | 09 | N=4022700.1 |
| 79 m | E=531748.06 m | 10 | N=4022700.1 |
| LONGITUDE | | | |
| 08 | -80.6227001 | 09 | -80.6227001 |
| 09 | -80.6247871 | 10 | -80.6247871 |
| 10 | -80.6320413 | 11 | -80.6320413 |

Design Certification

The drawings, construction notes, and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §35-4-21. The information reflects a temporary frac pit pond. The computed above grade storage volume is less than 15 acre feet, filling method pumped, pond is lined.

DISTRICT
COUNTY, WV
BUCKEYE CREEK WATERSHEDS



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

| Property Owner Information - Susie Jane Pad | | | | | |
|---|-----------------|-----------|-------------|------------------------|--------------|
| Greenbrier District - Doddridge County | | | | | |
| Owner | TM/Parcel | Deed/Page | Total Acres | Type of Disturbance | Acreage |
| Betty D. Garwood | 4/10.2 | WB26/611 | 31 | Access Road A | 1.33 |
| | | | | Tank Offload Pad | 0.48 |
| | | | | Total | 1.81 |
| Betty D. Garwood | 4/10 | WB26/611 | 29.83 | Access Road A | 10.21 |
| | | | | Frac Pit | 0.69 |
| | | | | Spoil Pad A | 0.89 |
| | | | | Truck Queue/Turnaround | 0.13 |
| | | | | Total | 12.10 |
| Betty D. Garwood | 4/10.1 | WB26/611 | 16.775 | Access Road A | 2.80 |
| | | | | Frac Pit | 1.26 |
| | | | | Total | 4.06 |
| Jason S. and Pamela M. Trent | 4/14.2 | 281/269 | 46.48 | Access Road A | 1.24 |
| | | | | Frac Pit | 1.91 |
| | | | | Truck Queue/Turnaround | 0.98 |
| | | | | Total | 4.45 |
| Betty D. Garwood and Robert G. Price | TM 4/Par 30 | 261/408 | 35.75 | Access Road A | 0.48 |
| | | | | Spoil Pad C | 0.62 |
| | | | | Total | 1.10 |
| John S. Jr. and Jaquelin S. Trent | TM 3 / Par 32 | 225/223 | 97.60 | Access Road A | 3.14 |
| | | | | Spoil Pad D | 1.76 |
| | | | | Spoil Pad E | 1.48 |
| | | | | Spoil Pad C | 0.01 |
| | | | | Total | 8.84 |
| Eugene Errol Lloyd | TM 3/Par 22 | 286/360 | 12.801 | Access Road A | 2.00 |
| | | | | Spoil Pad C | 0.70 |
| | | | | Total | 2.74 |
| Sharon M. Carty | TM 3 / Par 22.2 | 198/595 | 5.805 | Access Road A | 0.15 |
| | | | | Total | 1.10 |
| Grand Total | | | | | 36.35 |

| LOD Area (ac) | |
|---|--------------|
| Road A (8,331 ft) | 21.35 |
| Frac Pit | 3.86 |
| Drill Pad | 3.55 |
| Spoil Pad A | 0.89 |
| Spoil Pad B | 0.50 |
| Spoil Pad C | 1.33 |
| Spoil Pad D | 1.80 |
| Spoil Pad E | 1.48 |
| Tank Offload Pad | 0.48 |
| Truck Queue / Turnaround | 1.11 |
| Total Affected Area | 36.35 |
| Total Wooded Acres Disturbed | 31.76 |
| Total Linear Feet of Access Road | 8,331 |

| Perennial Stream Impact (Linear feet) | | | | |
|---------------------------------------|--------------|-------------------------------|-----------------------------|-------------------|
| Stream and Impact Cause | Culvert (LF) | Intake/Outlet Structures (LF) | Constr. Disturb To LOD (LF) | Total Impact (LF) |
| DPM 001 (RD.A) | 60 | 15 | 15 | 90 |

DRAWING INDEX

- COVER SHEET/LOCATION MAP
- SCHEDULE OF QUANTITIES
- CONSTRUCTION, EROSION, & SEDIMENT CONTROL NOTES
- EXISTING CONDITIONS
- PLAN SHEET INDEX
- 1-13 SITE PLANS
- 14 DRILL PAD BASELINE PROFILE & CROSS SECTIONS
- 15 FRACTURE PIT BASELINE PROFILE & CROSS SECTIONS
- 16-17 ACCESS ROAD A CROSS SECTIONS
- 18 DETAILS
- 19 RECLAMATION PLAN

**APPROVED
WVDEP OOG**
5/8 7/30/2013

| DATE | REVISIONS |
|---------|--|
| 3-7-13 | Revised Well Layout |
| 3-22-13 | Revised Access Road A Alignment |
| 4-11-13 | Updated Per New Antero Standards |
| 5-7-13 | Updated Per Floodplain Ordinance |
| 6-18-13 | Updated Per New Antero / DEP Standards |



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



L&W ENTERPRISES, INC.
P.O. BOX 806
14 SOUTH GROVE ST.
PETERSBURG, WV 26447
PH: 304-357-4818
FAX: 304-357-2254
EMAIL: KIRK@CTLINK.NET



**ANTERO
RESOURCES**

THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP

COVER SHEET/LOCATION MAP

SUSIE JANE PAD
GREENBRIER DISTRICT
DODDRIE COUNTY, WV

Date: 9/25/12

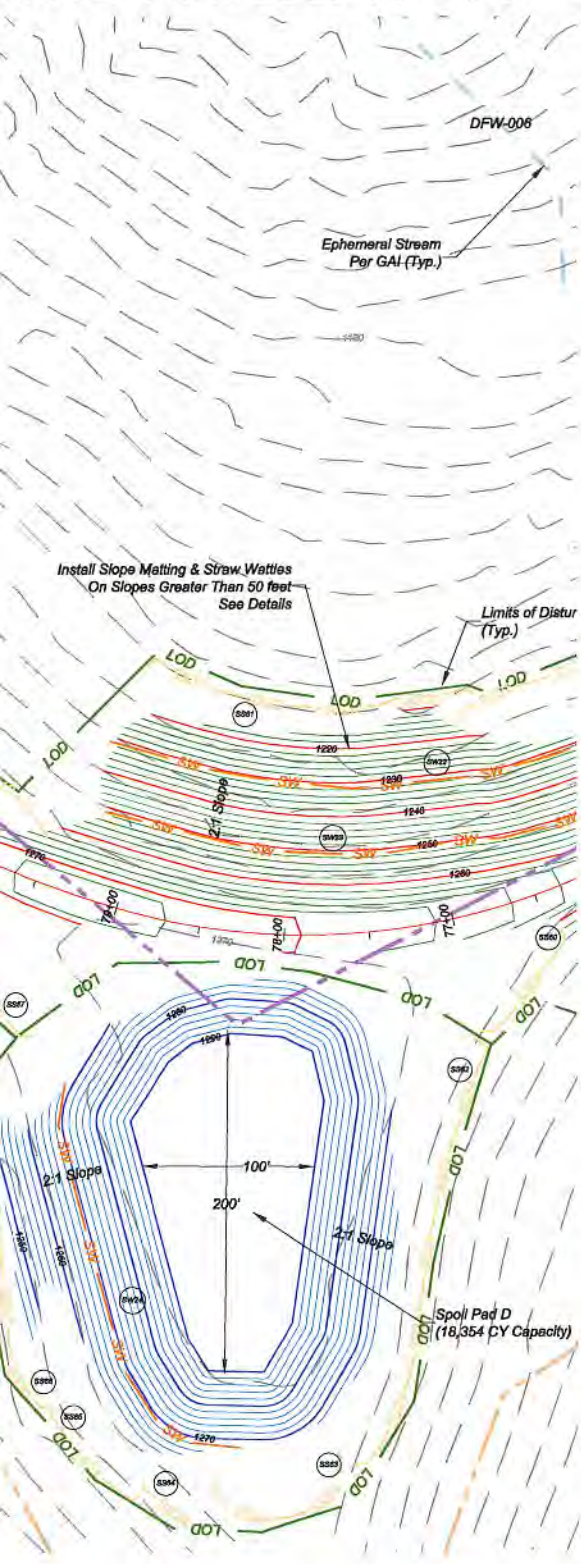
Scale: N/A

Designed By: CKW/CKM

File No. Antero 209-12

Page 1 of 19

ROAD A STA: 79+00 - 83+50



**APPROVED
WVDEP OOG**
 JAY 7/30/2013



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



L&W ENTERPRISES, INC.

PO BOX 826
14 SOUTH GLOVE ST.
PETERSBURG, WV 26847
PH: 304-257-4818
FAX: 304-257-2224
EMAIL: KUR@GTLINK.NET



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP

SITE PLAN (8) - ACCESS ROAD A STA: 79+00 - 83+50

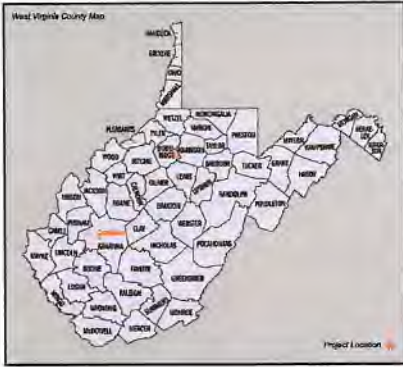
SUSIE JANE PAD
GREENBRIER DISTRICT
DODDRIDGE COUNTY, WV

| Legend | |
|------------------------------------|---|
| — 1330 — Existing 2' Contour | — 1330 — Proposed Check Dam |
| — 1330 — Existing 10' Contour | — Proposed Culvert W/ Inlet & Outlet Protection |
| — Existing Tree Line | — SW — Proposed Straw Wattles |
| — E — Existing Utility Line / Pole | — Proposed Silt Soxx w/ Diameter |
| — Surface Owner Property Line | — Proposed 2' Contour |
| — GAS — Existing Gas Line CL | — Proposed 10' Contour |
| — LOD — Limits of Disturbance | — Proposed Rip-Rap |
| → Proposed Diversion Ditch | * Silt Soxx Diameter in Inches |
| — 1330 — Proposed 2' Contour | * Super Silt Fence Can be Substituted for Silt Soxx of any Size |
| — 1330 — Proposed 10' Contour | |
| — SF — Proposed Super Silt Fence | |

| DATE | REVISIONS |
|---------|--|
| 3-7-13 | Revised Well Layout |
| 4-11-13 | Updated Per New Antero Standards |
| 6-18-13 | Updated Per New Antero / DEP Standards |

| |
|------------------------|
| Date: 9/25/12 |
| Scale: 1" = 50' |
| Designed By: CKW/CKM |
| File No. Antero 209-12 |
| Page 13 of 19 |

SUSIE J. ... SITE DESIGN, CONSTRUCTION EROSION & SEDIMENTATION ANTERO RESOURCES APPROPRIATION



| Well Table | | | | | | |
|---|--|--|--|--|--|--|
| Left Blank Intentionally | Prop. Well Trent Unit 1H WV-N NAD83 N: 278220.49 WV-N NAD83 E: 1947296.84 LAT NAD83: 39.2539154 LON NAD83: -80.6321587 | Prop. Well Kelley Unit 1H WV-N NAD83 N: 278112.24 WV-N NAD83 E: 1947916.30 LAT NAD83: 39.2539168 LON NAD83: -80.6329918 | Prop. Well Kelley Unit 2H WV-N NAD83 N: 278151.59 WV-N NAD83 E: 1947926.75 LAT NAD83: 39.2539082 LON NAD83: -80.6329918 | Prop. Well Chamley Unit 1H WV-N NAD83 N: 278070.60 WV-N NAD83 E: 1947335.50 LAT NAD83: 39.2538962 LON NAD83: -80.6329973 | Prop. Well Chamley Unit 2H WV-N NAD83 N: 278027.36 WV-N NAD83 E: 1947444.38 LAT NAD83: 39.2538912 LON NAD83: -80.6329236 | |
| Prop. Well Gus Unit 1H WV-N NAD83 N: 27804.23 WV-N NAD83 E: 1947954.12 LAT NAD83: 39.2538824 LON NAD83: -80.6319010 | Prop. Well Gus Unit 2H WV-N NAD83 N: 27800.98 WV-N NAD83 E: 1947963.58 LAT NAD83: 39.2538778 LON NAD83: -80.6319274 | Prop. Well Robeson Unit 1H WV-N NAD83 N: 278587.72 WV-N NAD83 E: 1947973.03 LAT NAD83: 39.2539652 LON NAD83: -80.6319229 | Prop. Well Robeson Unit 2H WV-N NAD83 N: 278584.47 WV-N NAD83 E: 1947982.49 LAT NAD83: 39.2539591 LON NAD83: -80.6318904 | Prop. Well Denver Unit 1H WV-N NAD83 N: 278591.22 WV-N NAD83 E: 1947991.46 LAT NAD83: 39.2539490 LON NAD83: -80.6318588 | Prop. Well Denver Unit 2H WV-N NAD83 N: 278587.96 WV-N NAD83 E: 1948001.40 LAT NAD83: 39.2539394 LON NAD83: -80.6318233 | |

Douglas Newlin
7-25-2013

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
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Eli Wagoner, Environmental Engineer
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Anthony Smith, Field Engineer
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Surveyor & Engineer

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304-848-5035 Off. 304-619-4937 Cell

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

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All Pad and Fracture Pit construction complies with the following restrictions.

- * 250' from an existing 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: | YES |
| PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR: | YES |
| HEC-RAS STUDY COMPLETED: | NO |
| FLOODPLAIN SHOWN ON DRAWINGS: | YES |
| FIRM MAP NUMBER(S) FOR SITE: | 54017C0165C |
| ACREAGES OF CONSTRUCTION IN FLOODPLAIN: | 1.73 Acres |

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.**



ANE PAD CONSTRUCTION PLAN, & SILT CONTROL PLANS APPALACHIAN CORPORATION



SALEM QUAD
2000 3000

| CORNER | NORTHING | EASTING |
|--------|-------------|-------------|
| 1 | 532552.07 m | 532374.98 m |
| 2 | 532552.07 m | 531748.05 m |
| 3 | 532552.07 m | 531748.05 m |
| 4 | 532552.07 m | 531748.05 m |

Design Certification

The drawings, construction notes, and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §35-4-21. The information reflects a temporary frac pit pond. The computed above grade storage volume is less than 15 acre feet, filling method pumped, pond is lined.



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

| Property Owner Information - Susie Jane Pad | | | | | |
|---|-----------------|-----------|-------------|------------------------|--------------|
| Greenbrier District - Doddridge County | | | | | |
| Owner | TM/Parcel | Deed/Page | Total Acres | Type of Disturbance | Acres |
| Betty D. Garwood | 4/10.2 | WB26/611 | 31 | Access Road A | 1.33 |
| | | | | Tank Offload Pad | 0.48 |
| | | | | Total | 1.81 |
| Betty D. Garwood | 4/10 | WB26/611 | 29.83 | Access Road A | 10.21 |
| | | | | Frac Pit | 0.69 |
| | | | | Spoil Pad A | 0.89 |
| | | | | Truck Queue/Turnaround | 0.13 |
| | | | | Spoil Pad B | 0.18 |
| Total | 12.10 | | | | |
| Betty D. Garwood | 4/10.1 | WB26/611 | 16.775 | Access Road A | 2.80 |
| | | | | Frac Pit | 1.26 |
| | | | | Total | 4.06 |
| Jason S. and Pamela M. Trent | 4/14.2 | 281/269 | 46.48 | Access Road A | 1.24 |
| | | | | Frac Pit | 1.91 |
| | | | | Truck Queue/Turnaround | 0.98 |
| | | | | Spoil Pad B | 0.32 |
| | | | | Total | 4.45 |
| Betty D. Garwood and Robert G. Price | TM 4/Par 30 | 261/408 | 35.75 | Access Road A | 0.48 |
| | | | | Spoil Pad C | 0.62 |
| | | | | Total | 1.10 |
| John S. Jr. and Jaquelin S. Trent | TM 3 / Par 32 | 225/223 | 97.60 | Access Road A | 3.14 |
| | | | | Spoil Pad D | 1.76 |
| | | | | Spoil Pad E | 1.48 |
| | | | | Spoil Pad C | 0.01 |
| | | | | Drill Pad | 2.45 |
| | | | | Total | 8.84 |
| Eugene Errol Lloyd | TM 3/Par 22 | 286/360 | 12.801 | Access Road A | 2.00 |
| | | | | Spoil Pad C | 0.70 |
| | | | | Spoil Pad D | 0.04 |
| | | | | Total | 2.74 |
| Sharon M. Carty | TM 3 / Par 22.2 | 198/595 | 5.805 | Access Road A | 0.15 |
| | | | | Drill Pad | 1.10 |
| | | | | Total | 1.25 |
| Grand Total | | | | | 36.35 |

| LOD Area (ac) | |
|---|--------------|
| Road A (8,331 ft) | 21.35 |
| Frac Pit | 3.86 |
| Drill Pad | 3.55 |
| Spoil Pad A | 0.89 |
| Spoil Pad B | 0.50 |
| Spoil Pad C | 1.33 |
| Spoil Pad D | 1.80 |
| Spoil Pad E | 1.48 |
| Tank Offload Pad | 0.48 |
| Truck Queue / Turnaround | 1.11 |
| Total Affected Area | 36.35 |
| Total Wooded Acres Disturbed | 31.76 |
| Total Linear Feet of Access Road | 8,331 |

| Perennial Stream Impact (Linear Feet) | | | | |
|---------------------------------------|--------------|------------------------------|----------------------------|-------------------|
| Stream and Impact Cause | Culvert (LF) | Inlet/Outlet Structures (LF) | Conc. Disturb. to LOD (LF) | Total Impact (LF) |
| (F) W-LOD (RD A) | 02 | 15 | 18 | 35 |

DRAWING INDEX

- 1 COVER SHEET/LOCATION MAP
- 2 SCHEDULE OF QUANTITIES
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- 16-17 ACCESS ROAD A CROSS SECTIONS
- 18 DETAILS
- 19 RECLAMATION PLAN

| DATE | REVISIONS |
|---------|----------------------------------|
| 3-7-13 | Revised Well Layout |
| 3-22-13 | Revised Access Road A Alignment |
| 4-11-13 | Updated Per New Antero Standards |
| 5-7-13 | Updated Per Floodplain Ordinance |



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



L&W ENTERPRISES, INC.

PH: 304-257-4818
FAX: 304-257-2224
EMAIL: KIN@CTLINK.NET



THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

COVER SHEET/LOCATION MAP

SUSIE JANE PAD
GREENBRIER DISTRICT
DODDRIERGE COUNTY, WV

| |
|------------------------|
| Date: 9/25/12 |
| Scale: N/A |
| Designed By: CKW/CCKM |
| File No. Antero 209-12 |
| Page 1 of 19 |