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

September 30, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510247, issued to ANTERO RESOURCES CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

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

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: SNODGRASS UNIT 1H
Farm Name: CAMPBELL, JOHN A. & LINDA J.
API Well Number: 47-8510247
Permit Type: Horizontal 6A Well
Date Issued: 09/30/2015

API Number: 85-10247

PERMIT CONDITIONS

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

CONDITIONS

1. Operator shall take additional measures with this permitted activity to avoid communication with offset wells. Such additional measures are described in the attached addendum. This addendum is part of the terms of the well work permit, and includes a description of depth and completed formations of offset wells. Also included is a description of monitoring activities that will take place during fracturing operations of the permitted well work.

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

08510247

REVISED Addendum for Antero pads in Ritchie County, WV

Snodgrass Unit 1H John Campbell North Pad

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

▪Investigate all wells within 1320' of new wells - for all identified Marcellus vertical wells and any existing well(s) with an interval that is less than 1500 feet from the deepest formation drilled (including, but not specific to the Alexander formation) to the top of Marcellus:

- Contact operator of all wells
- Confirm well status, producing horizon, well completion/stimulation information
- Discuss plans to stimulate the horizontal Marcellus wells and the plans for monitoring potential impact on shallow wells
- Make sure all vertical wells (with an interval that is less than 1500 feet from the deepest formation drilled to the top of Marcellus) have adequate wellhead equipment, Including pressure gauges
- Provide shallow well operator with frac dates and develop plan for monitoring during stimulation
- If well waters out during frac, shut it in until after stimulation, and install adequate well control equipment prior to swabbing in the impacted shallow well

▪Control fracturing parameters during job to limit fracture height growth

- Limit rate and limit pressures for each segment of fracturing stages

47085 10247

WW-6B
(04/15)

API NO. 47- 085 - 10247
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North Pad

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

1) Well Operator: Antero Resources Corporat	494488557	085-Ritchie	Union	Pullman 7.5'
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: Snodgrass Unit 1H Well Pad Name: John Campbell North Pad

3) Farm Name/Surface Owner: Campbell, John A. & Linda J. Public Road Access: CR 9/7

4) Elevation, current ground: 1015' Elevation, proposed post-construction: 1015'

5) Well Type (a) Gas X Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow X Deep _____
Horizontal X

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6600' TVD, Anticipated Thickness- 50 feet, Associated Pressure- 3000#

8) Proposed Total Vertical Depth: 6600' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 16800' MD

11) Proposed Horizontal Leg Length: 7521'

12) Approximate Fresh Water Strata Depths: 275', 290'

13) Method to Determine Fresh Water Depths: Kuhn Unit 1H (API 47-085-10002) & Pullman Unit 2H (API 47-085-09978) on same pad.

14) Approximate Saltwater Depths: 1451, 1807'

15) Approximate Coal Seam Depths: 343'

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

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

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

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Environmental Protection

David W Cox 8-25-15

WW-6B
(04/15)

API NO. 47- 085 10247
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	375'	375' *See #19	CTS, 482 Cu. Ft
Coal	9-5/8"	New	J-55	36#	2400'	2400'	CTS, 977 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16800'	16800'	4243 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7,100	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	2500	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			

47085 10247

WW-6B
(10/14)

API NO. 47- 085 -
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North Pad

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

*Antero will be air drilling the fresh water string which makes it difficult to determine when freshwater is encountered, therefore we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 10.82 acres

22) Area to be disturbed for well pad only, less access road (acres): 2.65 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers
Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.
Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.
Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake
Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat
Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

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Form WW-9 Additives Attachment

SURFACE INTERVAL

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

INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

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

PRODUCTION INTERVAL

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

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

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47085 10247

WW-9
(2/15)

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

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494488557

Watershed (HUC 10) South Fork Hughes River Quadrangle Pullman 7.5'

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

Will a pit be used? Yes ☑ No ☐

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Dust/Stiff Foam, Production - Water Based Mud

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

Additives to be used in drilling medium? Please See Attachment

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

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

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

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

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

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

Company Official Signature _____

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental & Regulatory Manager

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 19 day of August 20 15

_____ Notary Public

My commission expires May 21, 2018

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Form WW-9

Operator's Well No. Snodgrass Unit 1H

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 10.82 existing acres Prevegetation pH 6.0

Lime 2-3 Tons/acre or to correct to pH 6.5

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Roads (3.86) + Drill Pad (2.65) + Frac Pit (3.12) + Spoil Piles (1.19) = 10.82 Existing Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	45	Tall Fescue	45
Annual Ryegrass	20	Annual Ryegrass	20

*or type of grass seed requested by surface owner

*or type of grass seed requested by surface owner

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: David w Boon

Comments: maintain all E&S during operation

Title: oil & gas inspector Date: 8-26-15

Field Reviewed? (✓) Yes ( ) No

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911 Address
760 Church St.
Pullman, WV 26421

Well Site Safety Plan
Antero Resources

Well Name: Kuhn Unit 1H, Pullman Unit 2H, Snodgrass Unit 1H, Snodgrass Unit 2H, Snodgrass Unit 3H

Pad Location: JOHN CAMPBELL NORTH PAD
Ritchie County/Union District

GPS Coordinates: Lat 39°10'51.4554"/Long -80°55'47.8056" (NAD83)

Driving Directions:

FROM EAST - From the intersection of I-79 and Hwy 50 near Bridgeport WV, head west on Hwy 50 for ~39.6 miles. Turn LEFT onto W Virginia 74 S, and follow for ~7.4 miles. Turn RIGHT onto Co Rd 9 (Main St) and continue for ~0.1 miles. Turn LEFT onto Co Rd 7/9 (Slab Creek Road) and continue for ~0.7 miles. Continue onto Co Rd 9/7/Left Fork Turtle Run for ~0.7 miles. Look for rig signs and location on the right. Drill site is right off the road.

FROM WEST - From the intersection of I-77 and Hwy 50 near Parkersburg WV, head east on Hwy 50 for ~ 32.3 miles. Turn RIGHT onto W Virginia 74 S, and follow for ~7.4 miles. Turn LEFT onto Co Rd 7/9 (Slab Creek Road) and continue for ~0.7 miles. Continue onto Co Rd 9/7/Left Fork Turtle Run for ~0.7 miles. Look for rig signs and location on the right. Drill site is right off the road.

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

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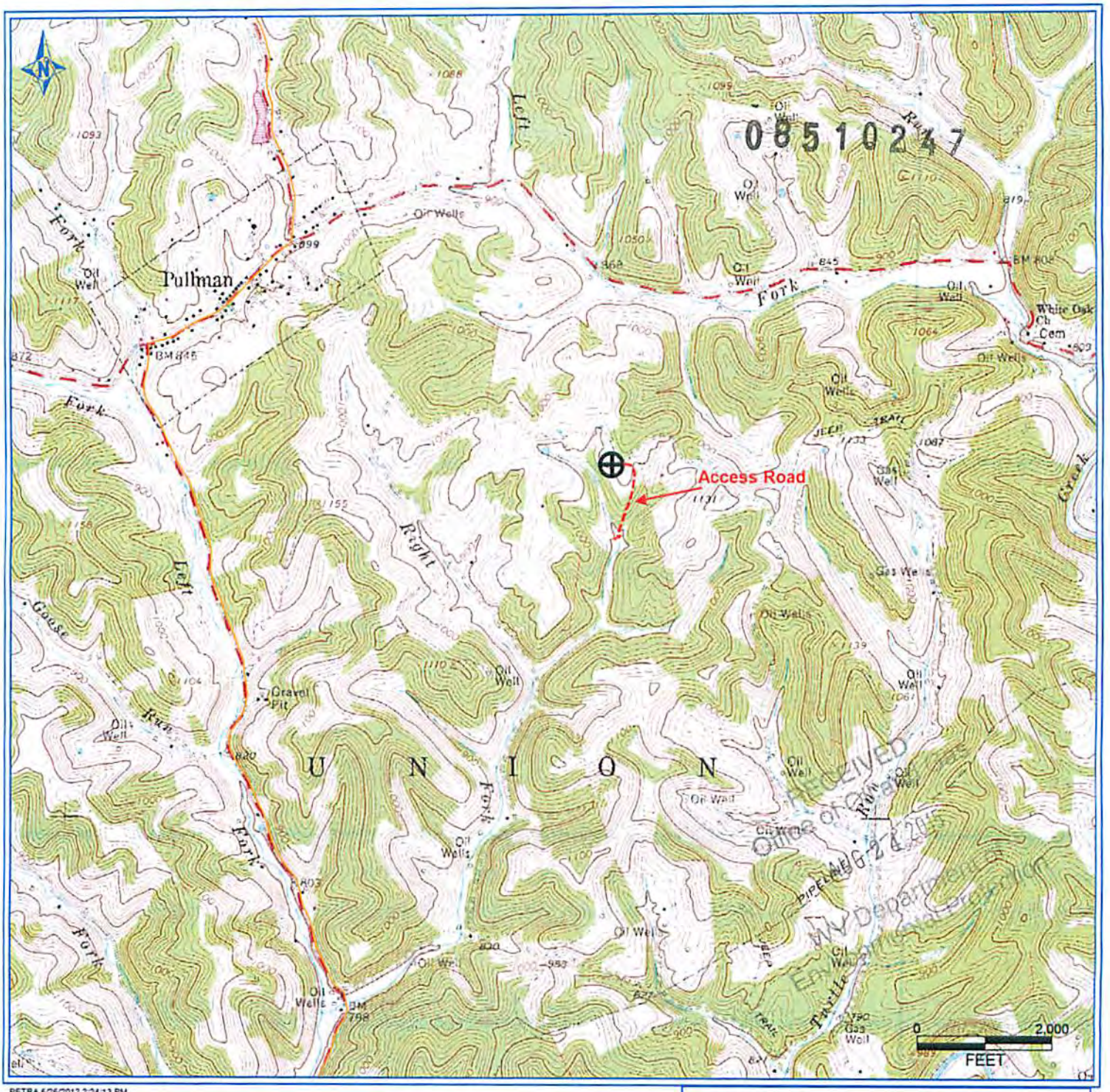
8-26-15



PETRA 6/26/2012 2:24:13 PM

Antero Resources Corporation

APPALACHIAN BASIN

Snodgrass Unit 1H
Ritchie County

0 2,000 4,000
FEET

REMARKS
QUADRANGLE: PULLMAN
WATERSHED: SOUTH FORK HUGHES RIVER
DISTRICT: UNION

Date: 8/27/2012

08510247

WW-6A1

Operator's Well Number Snodgrass Unit 1H

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

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Freeman Campbell Lease			
Freeman Campbell, et ux	Key Oil Company	1/8	0227/0243
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
G. M. Harris Leas Lease			
G.M. Harris Pullman	Coffman Oil & Gas Co.	1/8	0085/0338
Coffman Oil & Gas Co.	United Operating Company, Inc.	Assignment	0117/0649
United Operating Company, Inc.	Buttes Resources Company	Assignment	0117/0738
Buttes Resources Company	Earl Stewart	Assignment	0128/0286
Earl Stewart	JJC	Assignment	0205/0483
JJC	Key Oil Company	Assignment	0229/0019
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
James A. Eliopulos, et al Lease			
James A. Eliopulos	Key Oil Company	1/8	0226/0474
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
B.C. Prunty, et al Lease			
B.C. Prunty & Ema Jane Prunty	Southwestern Development Co.	1/8	0092/0377
Southwestern Development, Co.	Billings Kirk Ruddock & Charles I. Corp as Trustees for Billings Kirk Ruddock	Assignment	0190/0718
Billings Kirk Ruddock & Charles I. Corp. as Trustees for Billings Kirk Ruddock	Adena Petroleum, Inc.	Assignment	0212/0273
Adena Petroleum, Inc.	Lippizan Petroleum, Inc.	Assignment	0222/0155
Lippizan Petroleum, Inc.	Reserve Resources, Inc.	Assignment	0256/0044
Reserve Resources, Inc.	Antero Resources Appalachian Corporation	Assignment	0256/1006
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Ruth Villers, et al Lease			
Ruth Villers	Key Oil Company	1/8	0228/0119
Key Oil Company	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

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

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

08510247

WW-6A1

Operator's Well Number Snodgrass Unit 1H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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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:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Charlie Ray Amos Lease			
Charlie Ray Amos	**Antero Resources Corporation**	**1/8+**	**0274/0223**
O.D. Cox, et al Lease			
O.D. Cox, et al	W.H. Mossor	1/8	0097/0193
W.H. Mossor	J & J Enterprises, Inc.	Assignment	0133/0004
J & J Enterprises, Inc.	Eastern American Energy Corporation	Confirmatory Deed	DB 0231/0732
Eastern American Energy Corporation	Energy Corporation of America	Certificate of Merger	Corp. Bk. 0006/0450
Energy Corporation of America	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	0259/0470
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

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

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

08510247

WW-6A1
(5/13)

Operator's Well No. Snodgrass Unit 1H

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

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Ford Snodgrass, et al Lease				
	Ford Snodgrass, et al	J. E. Beck & L.B. Coffman	1/8	0085/0494
	J. E. Beck	L. B. Coffman	Assignment	0087/0306
	L.B. Coffman	United Operating Company	Assignment	0118/0338
	United Operating Company	Buttes Resources Company	Assignment	0118/0247
	Buttes Resources Company	Earl Stewart	Assignment	0128/0286
	Earl Stewart	JJC	Assignment	0205/0483
	JJC	Key Oil Company	*Assignment & Bill of Sale	0229/0019
	Key Oil Company	Antero Resources Appalachian Corp.	*Partial Assignment of Oil & Gas Leases	0253/0747
	Antero Resources Appalachian Corp.	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

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

In Addition to the Office of Oil and Gas

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

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

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

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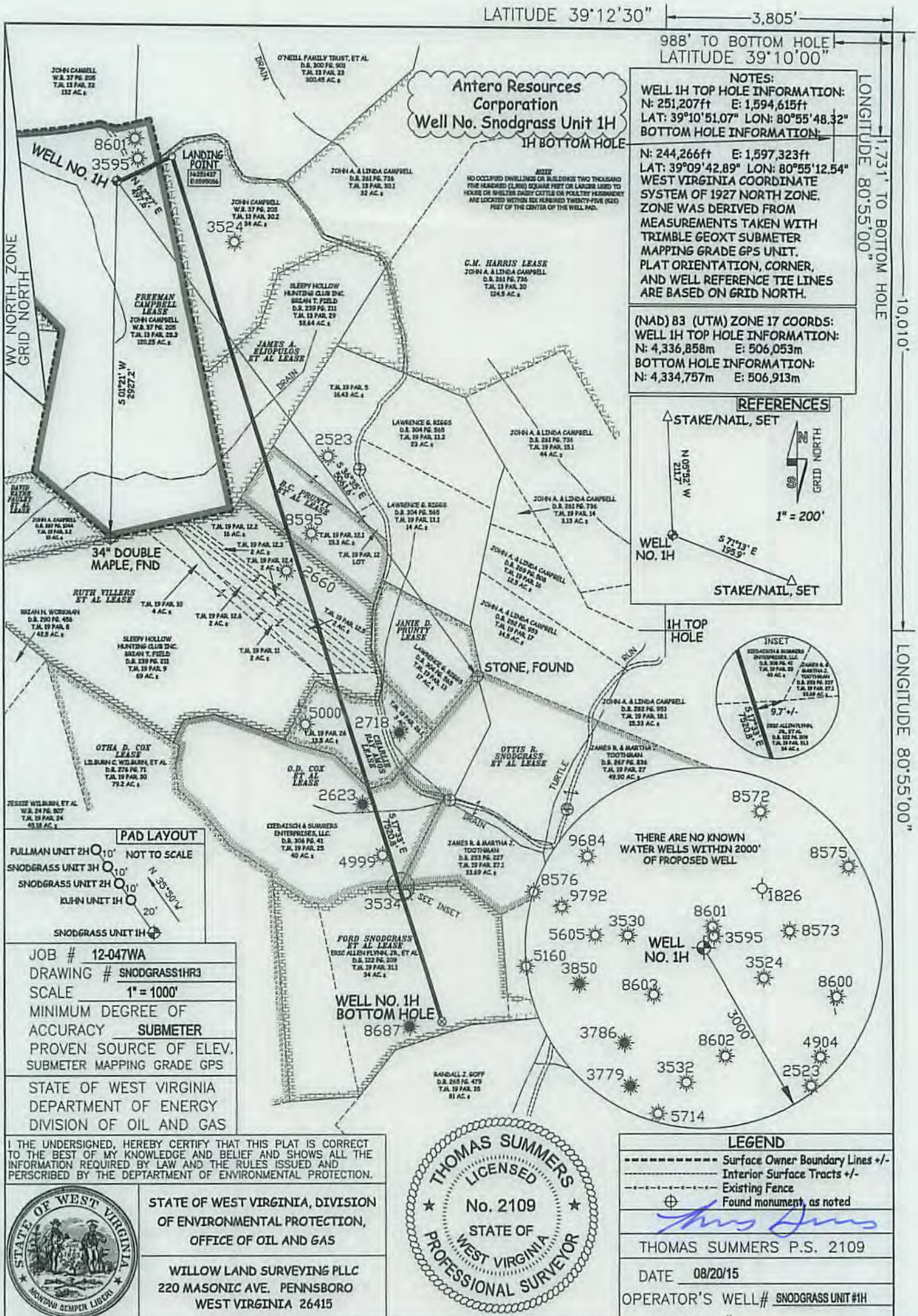
Well Operator: Antero Resources Corporation
By: Ward McNeilly
Its: VP, Reserves Planning & Midstream



NOTES:
WELL 1H TOP HOLE INFORMATION:
N: 251,207ft E: 1,594,615ft
LAT: 39°10'51.07" LON: 80°55'48.32"
BOTTOM HOLE INFORMATION:
N: 244,266ft E: 1,597,323ft
LAT: 39°09'42.89" LON: 80°55'12.54"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.
ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT.
PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 4,336,858m E: 506,053m
BOTTOM HOLE INFORMATION:
N: 4,334,757m E: 506,913m

REFERENCES

JOB #	12-047WA
DRAWING #	SNODGRASS1HR3
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	SUBMETER
PROVEN SOURCE OF ELEV.	SUBMETER MAPPING GRADE GPS

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

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

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

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

THOMAS SUMMERS
LICENSED
No. 2109
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

LEGEND
Surface Owner Boundary Lines +/-
Interior Surface Tracts +/-
Existing Fence
Found monument, as noted

THOMAS SUMMERS P.S. 2109

DATE 08/20/15
OPERATOR'S WELL# SNODGRASS UNIT #1H
API WELL # 47 – 085 – 10247 H6A
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,012' ORIGINAL - 1,015' AS-DRILLED WATERSHED SOUTH FORK HUGHES RIVER
QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE
SURFACE OWNER JOHN A. & LINDA J. CAMPBELL ACREAGE 120.25 ACRES +/-
OIL & GAS ROYALTY OWNER FREEMAN CAMBELL; G.M. HARRIS; JAMES A. ELIOPULOS ET AL; B.C. PRUNTY ET AL; RUTH VILLERS ET AL; CHARLIE RAY AMOS; O.D. COX ET AL; FORD SNODGRASS ET AL
LEASE ACREAGE 120.25 ACRES±; 200 ACRES±; 39 ACRES±; 15.3 ACRES ±; 100 ACRES±; 15.5 ACRES±; 54 ACRES±; 65 ACRES±
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) ___ PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,600' TVD 16,800' MD

WELL OPERATOR ANTERO RESOURCES CORP.
ADDRESS 1615 WYNKOOP STREET
DENVER, CO 80202

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6

FORM WW-6A1
EXHIBIT 1

08510247

FILED

JUN 10 2013

IN THE OFFICE OF SECRETARY OF STATE

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

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

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

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

APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

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

1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation

2. Date Certificate of Authority was issued in West Virginia: 6/25/2008

3. Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)

4. Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)

5. Other amendments:
(attach additional pages if necessary)

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

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

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

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

Signature: [signature] — Date: June 10, 2013

*Important Legal Notice Regarding Signature: Per West Virginia Code §31D-1-129, Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

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08510247

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

August 19, 2015

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

RE: Snodgrass Unit 1H
Quadrangle: Pullman 7.5'
Ritchie County/Union District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Snodgrass Unit 1H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Snodgrass Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Haley West
Landman

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(1/12)

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

08510247

Date of Notice Certification: 08/19/2015

API No. 47- 085 -

Operator's Well No. Snodgrass Unit 1H

Well Pad Name: John Campbell North

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:	West Virginia	UTM NAD 83 Easting:	506053m
County:	Ritchie	Northing:	4336858m
District:	Union	Public Road Access:	CR 9/7
Quadrangle:	Pullman 7.5'	Generally used farm name:	Campbella, John A. & Linda J.
Watershed:	South Fork Hughes River		

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

*PLEASE CHECK ALL THAT APPLY

OOG OFFICE USE ONLY

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

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Required Attachments:

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

WW-6AC
(1/12)

08510247

Certification of Notice is hereby given:

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

Well Operator:	Antero Resources Corporation	Address:	1615 Wynkoop Street
By:	Ward McNeilly		Denver, CO 80202
Its:	VP, Reserves Planning & Midstream	Facsimile:	303-357-7315
Telephone:	303-357-7310	Email:	asteele@anteroresources.com

NOTARY SEAL
KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 19 day of August 2015

Notary Public

My Commission Expires July 21, 2018

Oil and Gas Privacy Notice:

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

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WW-6A
(9-13)

API NO. 47- 085-10247
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North

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: 8/21/2015 **Date Permit Application Filed:** 8/21/2015

Notice of:

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

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

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

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to:

☑ SURFACE OWNER(s)
Name: John A. and Linda J. Campbell
Address: 505 Oxford Road
Pullman, WV 26421
Name:
Address:

☐ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name:
Address:
Name:
Address:

☐ SURFACE OWNER(s) (Impoundments or Pits)
Name:
Address:

☐ COAL OWNER OR LESSEE
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address:

☐ COAL OPERATOR
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address:

☐ WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE
Name: NONE IDENTIFIED WITHIN 2000'
Address:

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name:
Address:

*Please attach additional forms if necessary

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WW-6A
(8-13)

API NO. 47- 085 - 06351024
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North

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

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

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

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

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

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

Well Location Restrictions
Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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.**

WW-6A
(8-13)

API NO. 47-085-10247
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

(1) The proposed well work will constitute a hazard to the safety of persons;
(2) The plan for soil erosion and sediment control is not adequate or effective;
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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Office of Oil and Gas
AUG 24 2015
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 085 - 10247
OPERATOR WELL NO. Snodgrass Unit 1H
Well Pad Name: John Campbell North

Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 21 day of August 2015

Notary Public

My Commission Expires July 21, 2018

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AUG 24 2015
WV Department of
Environmental Protection

WW-6A4
(1/12)

08510247
Operator Well No. Snodgrass Unit 1H
Multiple Wells on John Campbell North Pad

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 01/06/2015 **Date Permit Application Filed:** 08/21/2015

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

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: John A. Campbell & Linda J. Campbell
Address: 505 Oxford Road
Pullman, WV 26421

Name:
Address:

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

State: West Virginia
County: Ritchie
District: Union
Quadrangle: Pullman 7.5'
Watershed: Right Fork of Slab Creek

UTM NAD 83 Easting: 506053m
Northing: 4336858m
Public Road Access: CR 9/7
Generally used farm name: Campbell, John A. & Linda J.

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

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

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

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AUG 24 2015
WV Department of
Environmental Protection

WW-6A5
(1/12)

0851024

Operator Well No. Snodgrass Unit 1H

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

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**
Date of Notice: 08/21/2015 **Date Permit Application Filed:** 08/21/2015

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 A. & Linda J. Campbell
Address: 505 Oxford Road
Pullman, WV 26421

Name:
Address:

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

State: West Virginia
County: Ritchie
District: Union
Quadrangle: Pullman 7.5'
Watershed: South Fork Hughes River

UTM NAD 83 Easting: 506053m
Northing: 4336858m
Public Road Access: CR 9/7
Generally used farm name: Campbell, John A. & Linda J.

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

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

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

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

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WV Department of
Environmental Protection

085102

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

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

April 17, 2015

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

Subject: DOH Permit for the John Campbell North Pad, Doddridge County
Snodgrass Unit 1H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #04-2012-1081 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Doddridge County Route 48 SLS.

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

Very Truly Yours,

Gary K. Clayton

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

Cc: Ashlie Steele
Antero Resources Corporation
CH, OM, D-4
File

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AUG 24 2015
WV Department of
Environmental Protection

08510247

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

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Office of Oil and Gas

AUG 24 2015

WV Department of
Environmental Protection

85-10247

WVDEP OOG
ACCEPTED AS-BUILT
9/29/2015

JOHN CAMPBELL NORTH DRILL PAD

AS-BUILT PLAN

ANTERO RESOURCES CORPORATION

API# 8509978
API# 8509979
API# 8509980
API# 8509981
API# 8509996
API# 8509997
API# 8509998
API# 8510002
API# 8510247

PULLMAN QUAD

0 1000 2000 3000

West Virginia Coordinate System of 1983
State Plane Grid North
Elevations Based on NAVD88
Established By Survey Grade GPS & OPUS Post-Processing

AFFECTED TAX PARCELS: 13/28.3
UNION DISTRICT

TM 13 - PCL 28 John Campbell
MB 37/205 120.25 Acres
(Affected area from Proposed Access Roads = 1.503 feet, 3.86 Acres)
(Affected area from Proposed Drill Pad = 2.65 Acres)
(Affected area from Proposed Frac. Pit = 3.12 Acres)
(Affected area from Proposed Spoil Piles = 1.19 Acres)

Well Table			
As-built Well Number Unit 3H API # 47-085-10247 UTM NAD83 N: 4371961.4 m UTM NAD83 E: 1567994.221 m LAT NAD83: 39.181044 LON NAD83: -80.829634	Proposed Well Designation Unit 3H API # 47-085-10247 UTM NAD83 N: 4371961.4 m UTM NAD83 E: 1567994.221 m LAT NAD83: 39.181044 LON NAD83: -80.829634	Proposed Well Designation Unit 2H API # 47-085-10246 UTM NAD83 N: 4371961.4 m UTM NAD83 E: 1567994.221 m LAT NAD83: 39.181044 LON NAD83: -80.829634	As-built Well Number Unit 1H API # 47-085-10245 UTM NAD83 N: 4371961.4 m UTM NAD83 E: 1567994.221 m LAT NAD83: 39.181044 LON NAD83: -80.829634
Proposed Well Designation Unit 1H API # 47-085-10244 UTM NAD83 N: 4371961.4 m UTM NAD83 E: 1567994.221 m LAT NAD83: 39.181044 LON NAD83: -80.829634			

Notes:

A. This map is based on the Grid North Meridian. Its coordinate base is derived from the West Virginia Coordinate System of 1983, North Zone, based upon OPUS GPS observations taken at the site. Elevations shown hereon are based on NAVD88 datum.

B. The purpose of this map is to show existing topographic features of an as-built gas well drill pad.

C. This map is not a boundary survey. Surface tract lines shown hereon are based upon deeds of record found in the Office of the Clerk of Ritchie County, West Virginia and boundary evidence (shown hereon) found at the time of survey.

D. Miss Utility was not contacted at the time of this survey.

E. Total Disturbed Area = 10.82 Acres.

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 §22-6 & 35-4-21 & 35-CSR-8. The information reflects a temporary fracture pond. The computed above grade storage volume is less than 15 acre feet. Filling method is pumped, and the pond is lined.

Project Contacts

Antero Resources

Anthony Smith - Construction
304-869-3405 Off. 304-673-6196 Cell

Ryan Ward, Environmental Engineer (ALLSTAR)
866-213-2666 ext 311 Off. 304-692-7477 Cell

John Kawcak, Engineer
817-368-1553

Dusty Woods
817-771-1436

Aaron Kunzler, Construction Manager
405-227-8344

Surveyor & Engineer

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

Tom Corathers, PE, PS - Homer Brothers Engineers
304-624-6445 Office

FLOODPLAIN CONDITIONS		
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:		NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:		NO
HEC-RAS STUDY COMPLETED:		N/A
FLOODPLAIN SHOWN ON DRAWINGS:		N/A
FIRM MAP NUMBER(S) FOR SITE:	54085C0225C	
ACREAGE OF CONSTRUCTION IN FLOODPLAIN:	N/A	

SITE LOCATIONS STATE PLANE NAD 83 WV NORTH ZONE		
	LATITUDE	LONGITUDE
Center of Pad	39.180950°	-80.829048°
Center of Pad (UTM ESTF Feet)	N14338816.84	E1662267.84
Center of Pit	39.181797°	-80.829367°
Graph Access (Road)	39.181780°	-80.829114°

1 INCH = 1 MILE

Well Location Restrictions:

All Pad and Fracture Pit limits comply with the following restrictions:

* 250' from an existing well or developed spring used for human or domestic animals
* 625' occupied dwelling or barn greater 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 naturally reproducing trout streams.
* 100' of surface or ground water intake to a public water supply.

SHEET INDEX

COVER SHEET / LOCATION MAP 1
AS-BUILT PLAN 2
AS-BUILT FRAC PIT 3
AS-BUILT ROAD PROFILES 4

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!!

811
Know what's below.
Call before you dig.

Note: Pad was designed with a berm around the well pad perimeter and a mountable berm at the access onto the well pad. As built well pad deviates from the design with respect to the berms. These berms will be constructed prior to the commencement of future drilling operations per WVDEP.

As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge. Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2011.

DATE	REVISIONS
1-08-2013	AS-BUILT FRAC PIT, TOPOGRAPHY & INFORMATION
2-25-2014	ADDED FRAC PIT FENCE
2-26-2014	UPDATED WELL CONFIGURATIONS & WELL TABLE
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS DETAILS

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

Homer Bros. Engineers
Civil, Mining, Environmental and Consulting Engineering

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

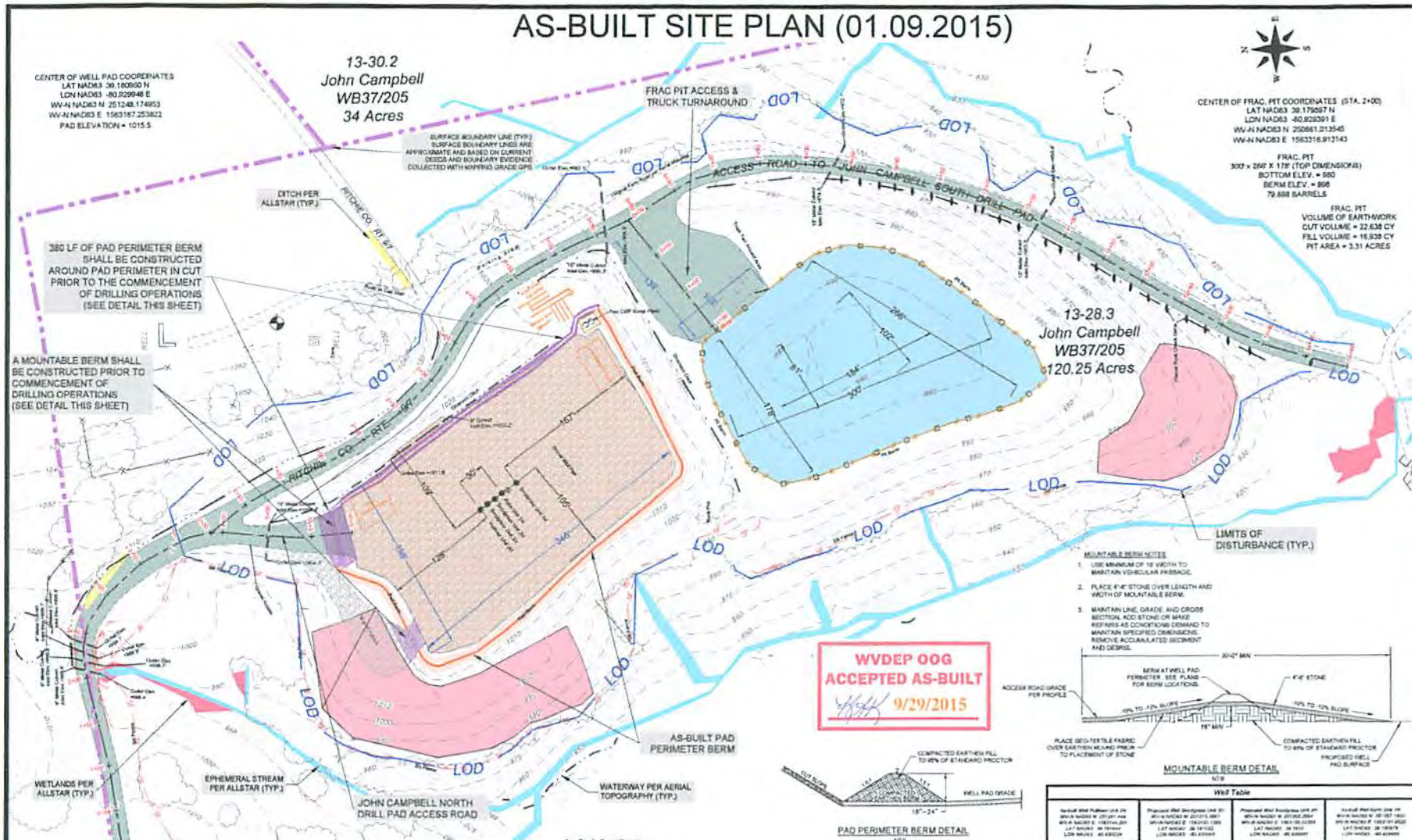
AS-BUILT COVER SHEET/LOCATION MAP
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT RITCHIE COUNTY

Date: 1-09-2015
Scale: AS SHOWN
Designed By: JSR & TW
File No.:
Page 1 of 4

085-10247

85-010247

AS-BUILT SITE PLAN (01.09.2015)



Note: Pad was designed with a berm around the well pad perimeter and a mountable berm at the access onto the well pad. As built well pad deviates from the design with respect to the berms. These berms will be constructed prior to the commencement of future drilling operations per WVDEP

As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge. Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2011

Legend

- As-Built Road Area
- As-Built Drill Pad Area
- As-Built Impoundment Area
- As-Built Gravel Areas
- As-Built Excess Material Storage Area
- As-Built 2' Contour
- As-Built 10' Contour
- As-Built Tree Line
- As-Built Woven Wire Fence
- As-Built Silt Fence
- As-Built Rock Check Dam

DATE	REVISIONS
2-24-2014	ADDED AS BUILT WELL LOCATIONS, PULLMAN 2H & KUHN 1H
2-26-2014	UPDATED WELL TABLE & WELL COORDINATES
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS DETAILS

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

Hornor Bros. Engineers
Since 1902
Civil, Mining, Environmental and Consulting Engineering

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT SITE PLAN
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

Date: 1-09-2015
Scale: 1"=50'
Designed By: RJK
File No.
Page 1 of 4

0980
010247

85-10247

AS-BUILT FRAC. PIT

NOTE:
SPECIFIED FENCE AND SAFETY LINES TO BE PLACED BEFORE FILLING OPERATIONS BEGIN

13-30.2
John Campbell
WB37/205
34 Acres

SURFACE BOUNDARY LINE (TYP.)
SURFACE BOUNDARY LINES ARE APPROXIMATE AND BASED ON CURRENT DEEDS AND BOUNDARY EVIDENCE COLLECTED WITH MAPPING GRADE GPS

WATERWAY PER AERIAL TOPOGRAPHY (TYP.)

DITCH PER ALLSTAR (TYP.)

EPHEMERAL STREAM PER ALLSTAR (TYP.)

ALLSTAR AOI

WETLANDS PER ALLSTAR (TYP.)

RT. 97

RITCHIE CO.

AS-BUILT PAD PERIMETER BERM

13-28.3
John Campbell
WB37/205
120.25 Acres

380 LF OF PAD PERIMETER BERM SHALL BE CONSTRUCTED AROUND PAD PERIMETER IN CUT PRIOR TO THE COMMENCEMENT OF DRILLING OPERATIONS (SEE DETAIL SHEET 2)

A MOUNTABLE BERM SHALL BE CONSTRUCTED PRIOR TO COMMENCEMENT OF DRILLING OPERATIONS (SEE DETAIL SHEET 2)

WVDEP OOG
ACCEPTED AS-BUILT
9/29/2015

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

Legend
- AS-BUILT 2' Contour
- AS-BUILT 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- Existing Tree Line
- Existing Utility Pole
- Existing Gas Line CL
- Existing Water Line CL
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Woven Wire Fence
- Proposed Silt Sock
- Proposed Super Silt Fence
- Proposed Rock Check Dam

FRAC. PIT VOLUMES

ELEVATION	CY	BARRELS	GALLONS	ACRE-FT	UNINCISED ACRE-FT
980 (BOTTOM)	0	0	0	0	0
982	772	3,711	155,886	0.478	0
984	2,027	9,749	409,482	1.257	0
986	3,576	17,197	722,339	2.217	0.599
988	5,443	26,174	1,099,393	3.374	1.756
990	7,852	36,797	1,545,587	4.743	3.125
992	10,228	49,161	2,065,754	6.340	4.722
994	13,194	63,443	2,664,807	8.178	6.560
996 (FULL CAPACITY)	16,574	79,698	3,347,551	10.273	8.655
998 (TOP BERM)	20,394	98,067	4,119,119	12.641	11.023

CENTER OF FRAC. PIT COORDINATES (STA. 2+00)
LAT NAD83 39.179897 N
LON NAD83 -80.929391
WV-N NAD83 N 250861.013545
WV-N NAD83 E 1563316.913143

FRAC. PIT
300' x 266' X 178' (TOP DIMENSIONS)
BOTTOM ELEV. = 980
BERM ELEV. = 998
79,698 BARRELS

FRAC. PIT
VOLUME OF EARTHWORK
CUT VOLUME = 22,638 CY
FILL VOLUME = 16,936 CY
PIT AREA = 3.31 ACRES

Well Table

As-built Well Pullman Unit 2H	Proposed Well Shreckgross Unit 2H	Proposed Well Shreckgross Unit 3H	As-built Well Rule Unit 1H
Proposed Well Shreckgross Unit 1H			

As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge. Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

This AS-BUILT certifies that that this Frac. Pit was constructed in reasonably close conformance with the design drawings. The attached reference drawing is a representation of the Frac. Pit as constructed and the above grade storage does not exceed 15 acre feet. The AS-BUILT information was field surveyed prior to the installation of the approved liner. The 60 mil HDPE textured liner was installed over a 10 oz. felt under-layment and seams tested in accordance with the Manufacturer's installation instructions. It is recommended this Frac Pit is included in the existing comprehensive maintenance and inspection program for Frac. Pits to insure the continued safe operation.

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2011

DATE	REVISIONS
1-09-2015	AS-BUILT FRAC. PIT, TOPOGRAPHY & INFORMATION
2-25-2014	ADDED FRAC PIT FENCE
2-26-2014	UPDATED WELL CONFIGURATIONS & WELL TABLE
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS DETAILS

Date: 1-09-2015
Scale: 1"=50'
Designed By: TBC
File No.
Page 1 of 4

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

Hornor Surveying Bros. Engineers
1202 Kanawha Blvd., East, Suite 300
Charleston, West Virginia 25301 (304) 345-3900

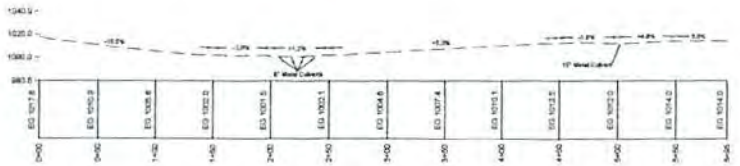
ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

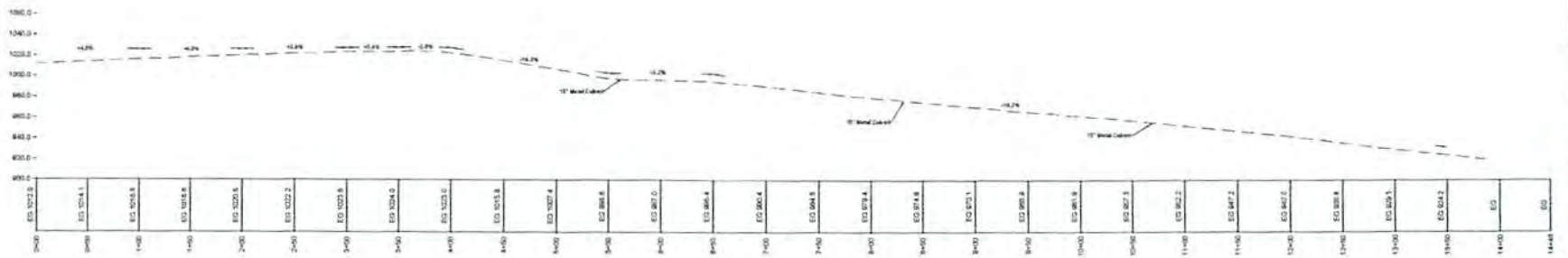
AS-BUILT FRAC. PIT
JOHN CAMPBELL NORTH
DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

85-10247

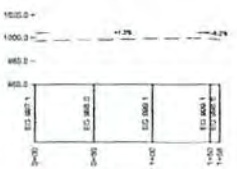
WVDEP OOG
ACCEPTED AS-BUILT
9/29/2015



MAIN ACCESS ROAD
(ACCESS TO NORTH PAD)



MAIN ACCESS ROAD-2
(ACCESS TO SOUTH PAD)



FRAC. PIT ACCESS ROAD

GRAPHIC SCALE

PROFILES:
HORIZONTAL 1"=50'
VERTICAL 1"=50'

As-Built Certification
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge.

DATE	REVISIONS

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

Hornor Bros. Engineers
Civil, Mining, Environmental and Consulting Engineering

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT ROADS PROFILES

THOMPSON NORTH DRILL PAD SITE

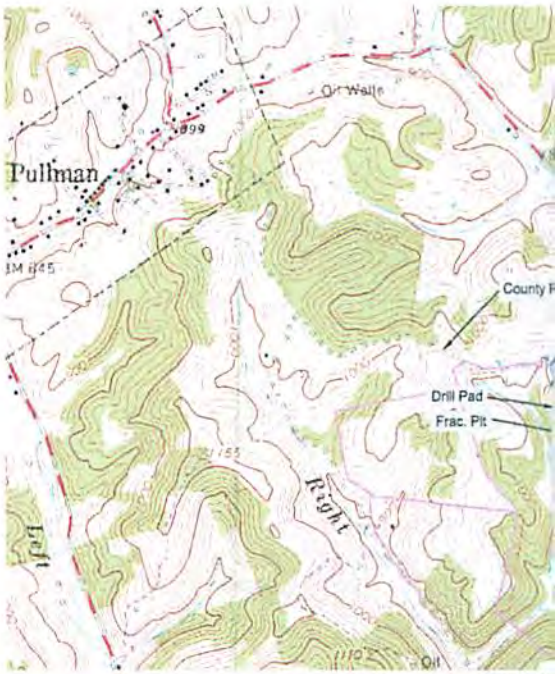
UNION DISTRICT
RITCHIE COUNTY, WV

Date: 9-9-2015
Scale: 1"=50'
Design:
File No:
Page: 4 of 4

JOHN CAMPBELL N

AS-BUILT

ANTERO RESOURCE



Project Contacts

Antero Resources

AnthonySmith - Construction
304-869-3405 Off. 304-673-6196 Cell

Ryan Ward, Environmental Engineer (ALLSTAR)
866-213-2666, ext 311 Off. 304-692-7477 Cell

John Kawcak, Engineer
817-368-1553

Dusty Woods
817-771-1436

Aaron Kunzler, Construction Manager
405-227-8344

Surveyor & Engineer

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

Tom Corathers, PE, PS - Hornor Brothers Engineers
304-624-6445 Office

FLOODPLAIN CONDITIONS		
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:		NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:		NO
HEC-RAS STUDY COMPLETED:		N/A
FLOODPLAIN SHOWN ON DRAWINGS:		N/A
FIRM MAP NUMBER(S) FOR SITE:	54085C0225C	
ACREAGE OF CONSTRUCTION IN FLOODPLAIN:	N/A	

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

811

Know what's below.
Call before you dig.

Note: Pad was designed with a berm aro
the well pad perimeter and a mountab
berm at the access onto the well pad. A
built well pad deviates from the desig
with respect to the berms. These berms
be constructed prior to the commenceme
future drilling operations per WVDEP

4708516247

ORTH DRILL PAD
PLAN
S CORPORATION

JAD

3000 0 3000

NS NORTH ZONE)	
TITUDE	LONGITUDE
180960'	-80.929946'
8516.641984	E1660267.691239
197897'	-80.929391'
181866'	-80.930111'

CALE Project Location

West Virginia Coordinate System of 1983
State Plane Grid North
Elevations Based on NAVD88
Established By Survey Grade GPS & OPUS Post-Processing

AFFECTED TAX PARCELS: 13/28.3
UNION DISTRICT

TM 13 - PCL 28 John Campbell
WB 37/205 120.25 Acres
(Affected area from Proposed Access Roads = 1,503 feet, 3.86 Acres)
(Affected area from Proposed Drill Pad = 2.65 Acres)
(Affected area from Proposed Frac. Pit = 3.12 Acres)
(Affected area from Proposed Spoil Piles = 1.19 Acres)

Well Table			
As-built Well Pullman Unit 2H WV-N NAD83 N: 251281.444 WV-N NAD83 E: 1563144.231 LAT NAD83: 39.181044 LON NAD83: -80.930024	Proposed Well Snodgrass Unit 3H WV-N NAD83 N: 251273.3567 WV-N NAD83 E: 1563150.1265 LAT NAD83: 39.181022 LON NAD83: -80.930003	Proposed Well Snodgrass Unit 2H WV-N NAD83 N: 251268.2894 WV-N NAD83 E: 1563156.02208 LAT NAD83: 39.1810 LON NAD83: -80.929981	As-built Well Kuhn Unit 1H WV-N NAD83 N: 251257.1650 WV-N NAD83 E: 1563161.9529 LAT NAD83: 39.180978 LON NAD83: -80.929960
Proposed Well Snodgrass Unit 1H WV-N NAD83 N: 251241.057499 WV-N NAD83 E: 1563173.708704 LAT NAD83: 39.180934 LON NAD83: -80.929918			

Notes:

A. This map is based on the Grid North Meridian. Its coordinate base is derived from the West Virginia Coordinate System of 1983, North Zone, based upon OPUS GPS observations taken at the site. Elevations shown hereon are based on NAVD88 datum.

B. The purpose of this map is to show existing topographic features of an as-built gas well drill pad.

C. This map is not a boundary survey. Surface tract lines shown hereon are based upon deeds of record found in the Office of the Clerk of Ritchie County, West Virginia and boundary evidence (shown hereon) found at the time of survey.

D. Miss Utility was not contacted at the time of this survey.

E. Total Disturbed Area = 10.82 Acres.

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 §22-6 & 35-4-21 & 35-CSR-8. The information reflects a temporary fracture pond. The computed above grade storage volume is less than 15 acre feet, filling method is pumped, and the pond is lined.

Well Location Restrictions:

All Pad and Fracture Pit limits comply with the following restrictions.

* 250' from an existing well or developed spring used for human or domestic animals.
* 625' occupied dwelling or barn greater 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 naturally reproducing trout streams.
* 100' of surface or ground water intake to a public water supply.

SHEET INDEX

COVER SHEET / LOCATION MAP	1
AS-BUILT PLAN	2
AS-BUILT FRAC PIT	3
AS-BUILT ROAD PROFILES	4

As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge. Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2011

DATE	REVISIONS
1-08-2013	AS-BUILT FRAC. PIT, TOPOGRAPHY & INFORMATION
2-25-2014	ADDED FRAC PIT FENCE
2-26-2014	UPDATED WELL CONFIGURATIONS & WELL TABLE
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS/DETAILS

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

Hornor Bros. Engineers
Since 1902
Civil, Mining, Environmental and Consulting Engineering
140 South 3rd Street, Post Office Box 366,
Oxford, West Virginia, 26301 (304) 624-6445

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT COVER SHEET/LOCATION MAP
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

Date: 1-09-2015
Scale: AS SHOWN
Designed by: RJR/ACT/DC
File No. [illegible]
Page 1 of 4

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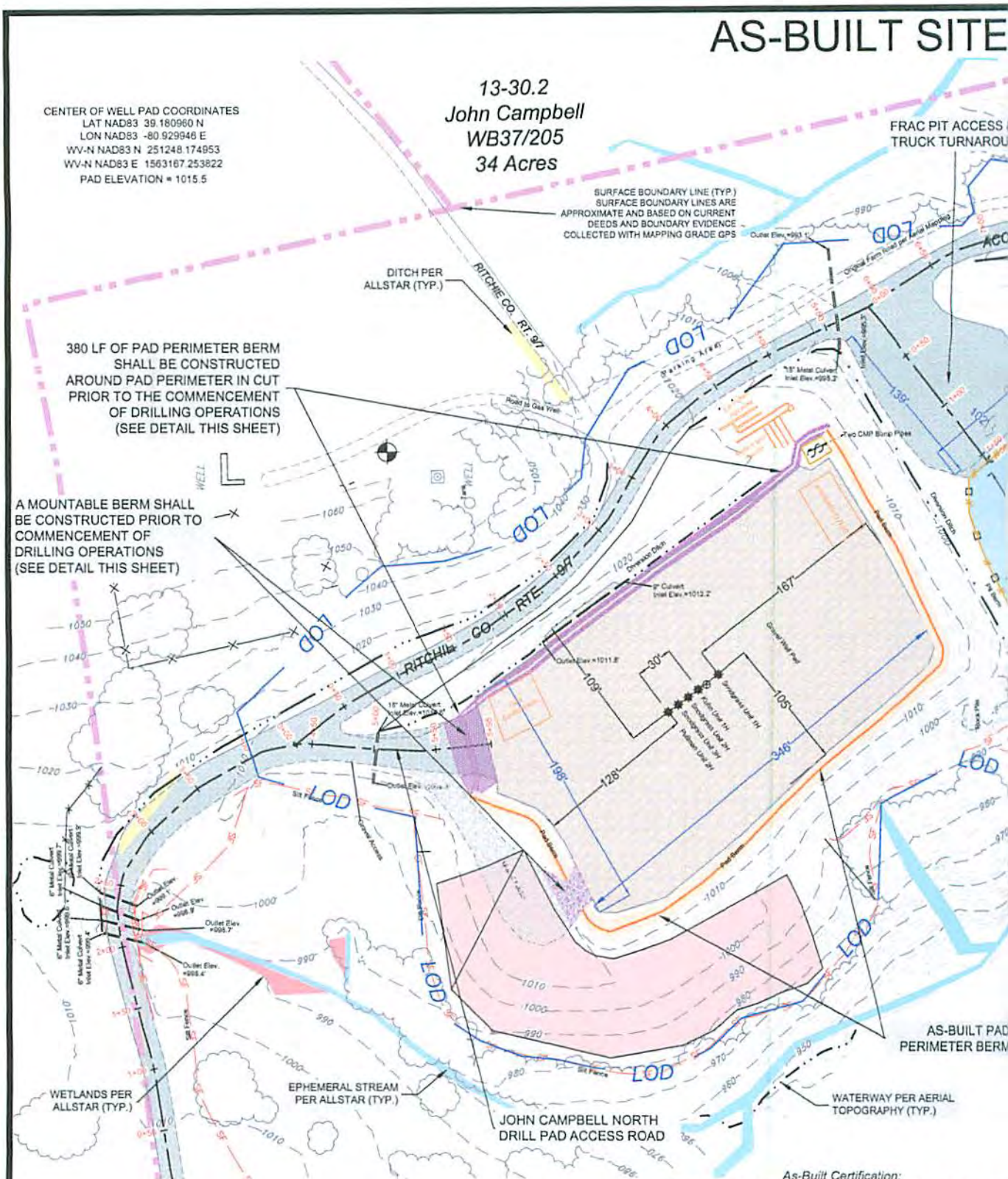
Office of Oil and Gas
AUG 28 2015
WV Department of Environmental Protection

8-26-15

AS-BUILT SITE



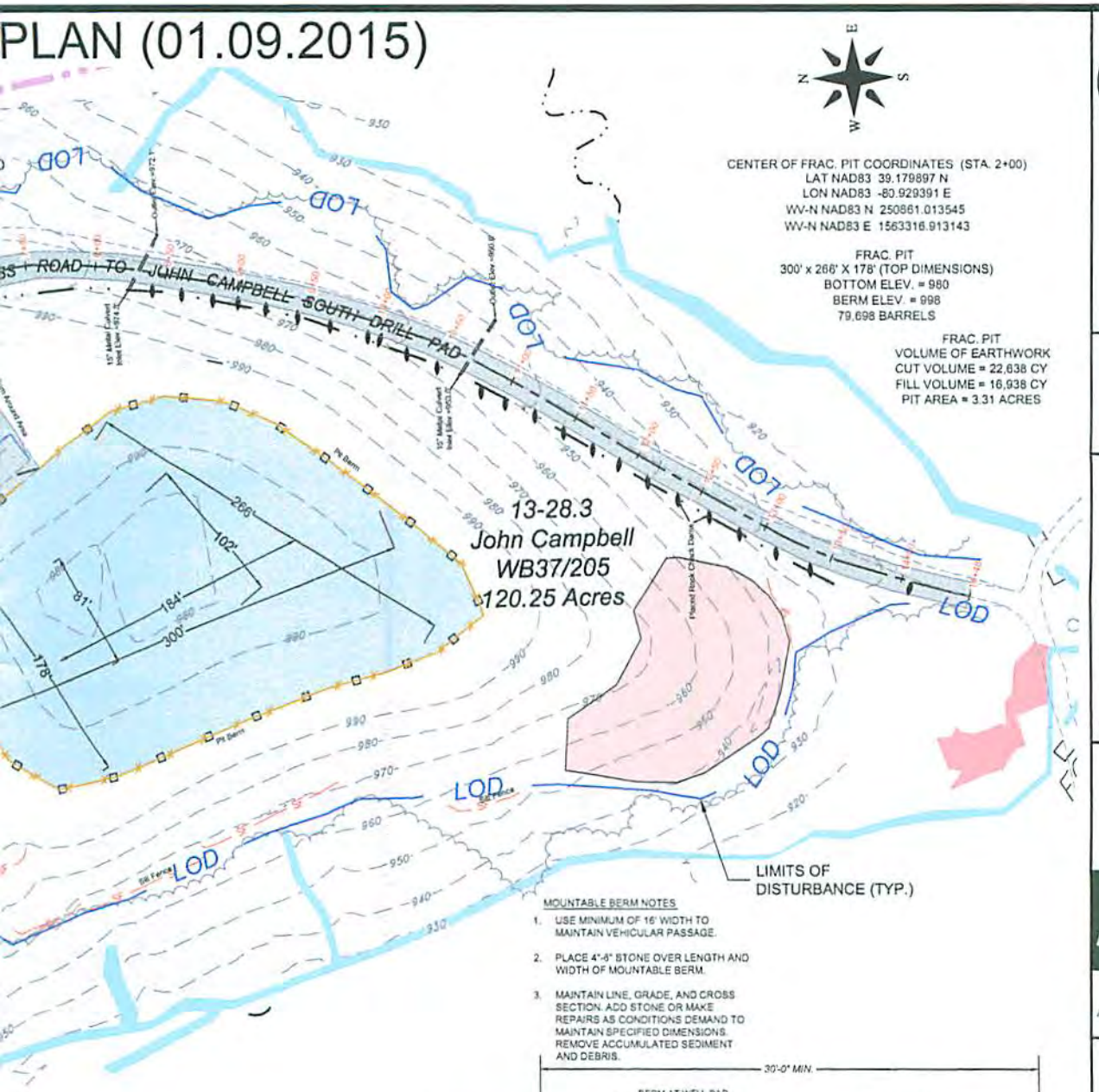
Note: Pad was designed with a berm around the well pad perimeter and a mountable berm at the access onto the well pad. As built well pad deviates from the design with respect to the berms. These berms will be constructed prior to the commencement of future drilling operations per WVDEP

As-Built Certification:
These drawings have been prepared from actual field survey and reflect the locations and as-built conditions known to exis following construction of this site, to the best of my knowledg Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 201

4708510247.

PLAN (01.09.2015)



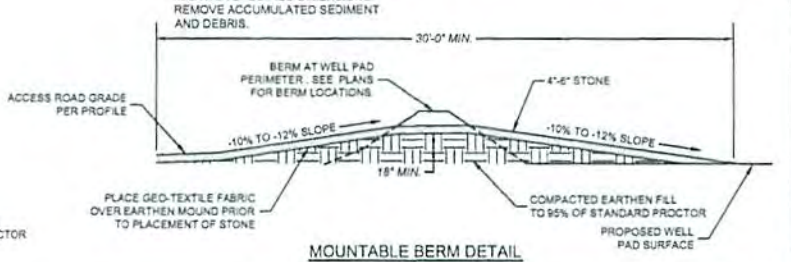
CENTER OF FRAC. PIT COORDINATES (STA. 2+00)
LAT NAD83 39.179897 N
LON NAD83 -80.929391 E
WV-N NAD83 N 250861.013545
WV-N NAD83 E 1563316.913143

FRAC. PIT
300' x 266' X 178' (TOP DIMENSIONS)
BOTTOM ELEV. = 980
BERM ELEV. = 998
79,698 BARRELS

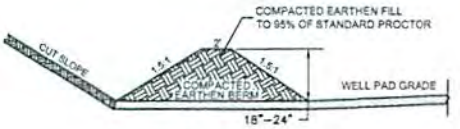
FRAC. PIT
VOLUME OF EARTHWORK
CUT VOLUME = 22,638 CY
FILL VOLUME = 16,938 CY
PIT AREA = 3.31 ACRES

MOUNTABLE BERM NOTES

1. USE MINIMUM OF 16' WIDTH TO MAINTAIN VEHICULAR PASSAGE.
2. PLACE 4"-6" STONE OVER LENGTH AND WIDTH OF MOUNTABLE BERM.
3. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS.



MOUNTABLE BERM DETAIL
NTS



PAD PERIMETER BERM DETAIL
NTS

Legend

- As-Built Road Area
- As-Built Drill Pad Area
- As-Built Impoundment Area
- As-Built Gravel Areas
- As-Built Excess Material Storage Area
- 1330 — As-Built 2' Contour
- As-Built 10' Contour
- As-Built Tree Line
- As-Built Woven Wire Fence
- SF — As-Built Silt Fence
- As-Built Rock Check Dam

Well Table

As-built Well Pullman Unit 2H WV-N NAD83 N: 251251.444 WV-N NAD83 E: 1563144.231 LAT NAD83: 39.181044 LON NAD83: -80.930024	Proposed Well Snodgrass Unit 3H WV-N NAD83 N: 251273.3957 WV-N NAD83 E: 1563150.1255 LAT NAD83: 39.181022 LON NAD83: -80.930003	Proposed Well Snodgrass Unit 2H WV-N NAD83 N: 251255.2894 WV-N NAD83 E: 1563156.02208 LAT NAD83: 39.1810 LON NAD83: -80.929981	As-built Well Kuhn Unit 1H WV-N NAD83 N: 251257.1550 WV-N NAD83 E: 1563161.9520 LAT NAD83: 39.180978 LON NAD83: -80.929960
Proposed Well Snodgrass Unit 1H WV-N NAD83 N: 251241.057498 WV-N NAD83 E: 1563173.708704 LAT NAD83: 39.180934 LON NAD83: -80.929918			

DATE	REVISIONS
2-24-2014	ADDED AS BUILT WELL LOCATIONS, PULLMAN 2H & KUHN 1H
2-26-2014	UPDATED WELL TABLE & WELL COORDINATES
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS DETAILS

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

Hornor Bros. Engineers
Since 1902
Civil, Mining, Environmental and Consulting Engineering
140 South Third Street, Post Office Box 308,
Clarksburg, West Virginia, 26301 (304) 624-4645

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT SITE PLAN
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

Date: 1-09-2015
Scale: 1"=50'
Designed by: BR
File No.
Page 2 of 4

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Office of Oil and Gas
AUG 28 2015
WV Department of Environmental Protection

8-26-15

AS-BUILT

NOTE:
SPECIFIED FENCE AND SAFETY LINES TO BE PLACED BEFORE FILLING OPERATIONS BEGIN

13-30.2
John Campbell
WB37/205
34 Acres

SURFACE BOUNDARY LINE (TYP.)
SURFACE BOUNDARY LINES ARE APPROXIMATE AND BASED ON CURRENT DEEDS AND BOUNDARY EVIDENCE COLLECTED WITH MAPPING GRADE GPS

DITCH PER ALLSTAR (TYP.)

RITCHIE CO. RT. 9/7

RITCHIE CO. RT. 9/7 (Aerial Mapping)

167'
30'
109'
105'
346'
198'
128'

380 LF OF PAD
SHALL
AROUND PAD
PRIOR TO THE
OF DRIL
(SE

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

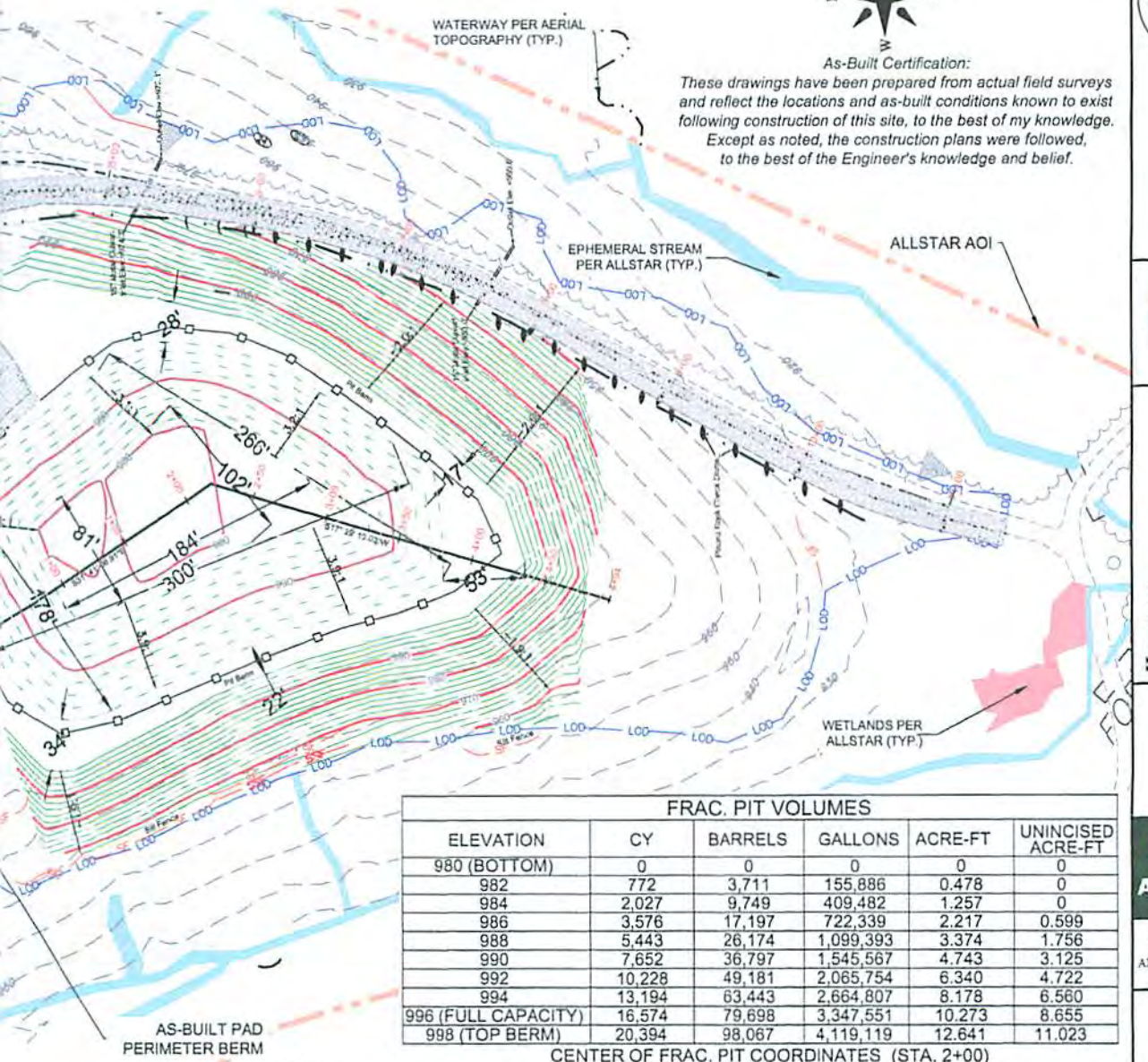
A MOUNTABLE BERM SHALL BE CONSTRUCTED PRIOR TO COMMENCEMENT OF DRILLING OPERATIONS (SEE DETAIL SHEET 2)

Except for the "as-built" survey, all topographic information shown hereon is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2011

This AS-BUILT certifies that that this Frac. Pit was constructed in reasonably close conformance with th The attached reference drawing is a representation of the Frac. Pit as constructed and the above grade 15 acre feet. The AS-BUILT information was field surveyed prior to the installation of the approved liner liner was installed over a 10 oz. felt under-layment and seams tested in accordance with the Manufactu is recommended this Frac Pit is included in the existing comprehensive maintenance and inspection pro the continued safe operation.

4708510247

FRAC. PIT



As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge. Except as noted, the construction plans were followed, to the best of the Engineer's knowledge and belief.

FRAC. PIT VOLUMES					
ELEVATION	CY	BARRELS	GALLONS	ACRE-FT	UNINCISED ACRE-FT
980 (BOTTOM)	0	0	0	0	0
982	772	3,711	155,886	0.478	0
984	2,027	9,749	409,482	1.257	0
986	3,576	17,197	722,339	2.217	0.599
988	5,443	26,174	1,099,393	3.374	1.756
990	7,652	36,797	1,545,567	4.743	3.125
992	10,228	49,181	2,065,754	6.340	4.722
994	13,194	63,443	2,664,807	8.178	6.560
996 (FULL CAPACITY)	16,574	79,698	3,347,551	10.273	8.655
998 (TOP BERM)	20,394	98,067	4,119,119	12.641	11.023

CENTER OF FRAC. PIT COORDINATES (STA. 2+00)
LAT NAD83 39.179897 N
LON NAD83 -80.929391
WV-N NAD83 N 250861.013545
WV-N NAD83 E 1563316.913143

FRAC. PIT
300' x 266' X 178' (TOP DIMENSIONS)
BOTTOM ELEV. = 980
BERM ELEV. = 998
79,698 BARRELS

FRAC. PIT
VOLUME OF EARTHWORK
CUT VOLUME = 22,638 CY
FILL VOLUME = 16,938 CY
PIT AREA = 3.31 ACRES

13-28.3
John Campbell
WB37/205
120.25 Acres

ERIMETER BERM
E CONSTRUCTED
RIMETER IN CUT
OMMENCEMENT
NG OPERATIONS
DETAIL SHEET 2)

Well Table			
As-built Well Pullman Unit 2H WV-N NAD83 N: 251251.444 WV-N NAD83 E: 1563144.231 LAT NAD83: 39.181044 LON NAD83: -80.930024	Proposed Well Snodgrass Unit 3H WV-N NAD83 N: 251273.3597 WV-N NAD83 E: 1563150.1265 LAT NAD83: 39.181022 LON NAD83: -80.930003	Proposed Well Snodgrass Unit 2H WV-N NAD83 N: 251265.2694 WV-N NAD83 E: 1563155.02208 LAT NAD83: 39.1810 LON NAD83: -80.929981	As-built Well Kuhn Unit 1H WV-N NAD83 N: 251257.1550 WV-N NAD83 E: 1563161.9530 LAT NAD83: 39.180979 LON NAD83: -80.929960
Proposed Well Snodgrass Unit 1H WV-N NAD83 N: 251241.057499 WV-N NAD83 E: 1563173.708704 LAT NAD83: 39.180934 LON NAD83: -80.929918			

Legend

- AS-BUILT 2' Contour
- AS-BUILT 10' Contour
- Existing 2' Contour
- Existing 10' Contour
- Existing Tree Line
- Existing Utility Pole
- Existing Gas Line CL
- Existing Water Line CL
- Proposed 2' Contour
- Proposed 10' Contour
- Proposed Woven Wire Fence
- Proposed Silt Sock
- Proposed Super Silt Fence
- Proposed Rock Check Dam

design drawings.
orage does not exceed
The 60 mil HDPE textured
r's installation instructions. It
ram for Frac. Pits to insure

DATE	REVISIONS
1-08-2013	AS-BUILT FRAC. PIT, TOPOGRAPHY & INFORMATION
2-25-2014	ADDED FRAC PIT FENCE
2-26-2014	UPDATED WELL CONFIGURATIONS & WELL TABLE
1-08-2015	ADD PIPING & EQUIPMENT FROM 12-2014 SURVEY, BERMS DETAILS

RECEIVED
Office of Oil and Gas
JAN 09 2015

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

Hornor Bros. Engineers
Since 1902
Civil, Mining, Environmental and Consulting Engineering
140 South Third Street, Post Office Box 306, Clarksburg, West Virginia, 26301 (304) 624-6448

ANTERO RESOURCES

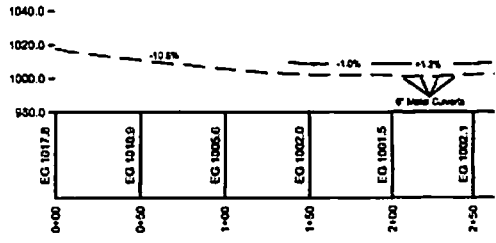
THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT FRAC. PIT
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

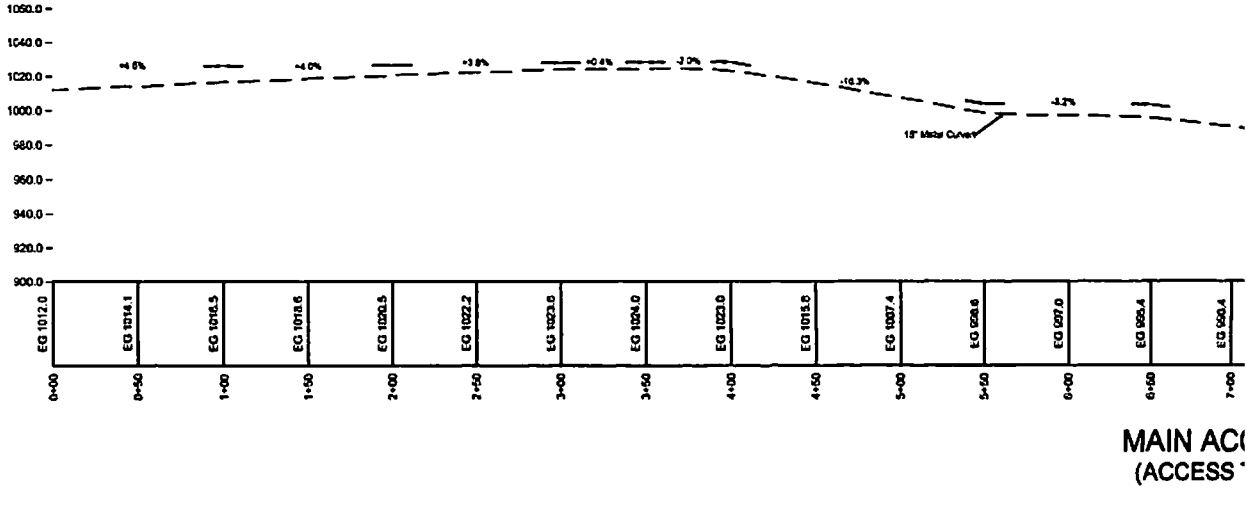
Date: 1-09-2015
Scale: 1"=50'
Designed By: TBC
File No. [illegible]
Page 1 of 4

WV Department of Environmental Protection

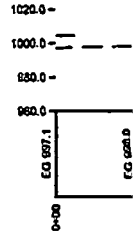
Due 8-26-15



MAIN AC
(ACCESS 1



MAIN AC
(ACCESS 1



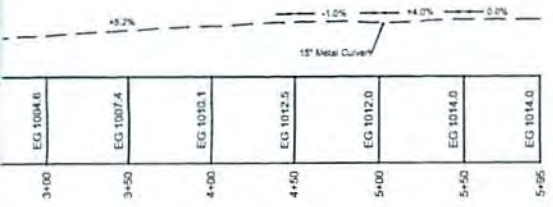
FRAC. PIT

GRAPHIC SCALE

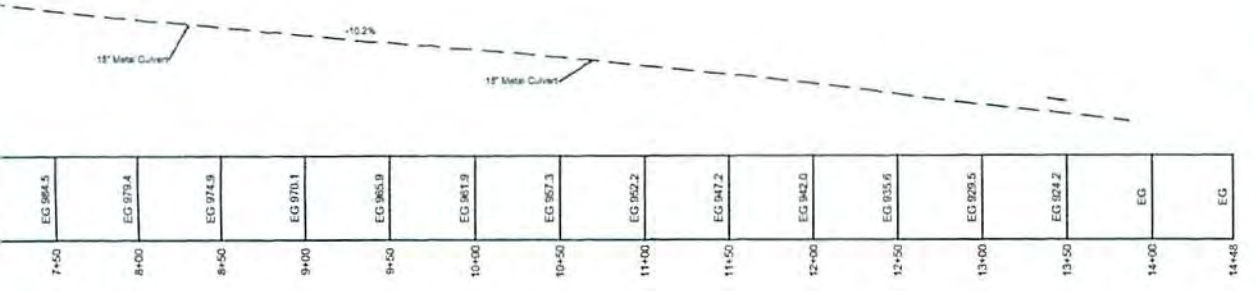
(IN FEET)
1 inch = 50 ft.

PROFILES:
HORIZONTAL: 1"=50'
VERTICAL: 1"=50'

47085 10247



CESS ROAD
O NORTH PAD)



ESS ROAD-2
O SOUTH PAD)

CCESS ROAD

As-Built Certification:
These drawings have been prepared from actual field surveys and reflect the locations and as-built conditions known to exist following construction of this site, to the best of my knowledge.

DATE	REVISIONS

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

Hornor
Since 1902 Bros. Engineers
Civil, Mining, Environmental and Consulting Engineering
140 South Third Street, Post Office Box 386,
Clarksburg, West Virginia, 26301 (304) 624-6445

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

AS-BUILT ROADS PROFILES
JOHN CAMPBELL NORTH DRILL PAD SITE
UNION DISTRICT
RITCHIE COUNTY, WV

Date: 1-09-2015
Scale: 1"=50'
Designed By: JDR
File No. [illegible]
Page 4 of 4

RECEIVED
Office of Oil and Gas
AUG 28 2015
WV Department of Environmental Protection