



west virginia department of environmental protection

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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Thursday, March 23, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION (A)
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for ANDERSON UNIT 1H
47-085-10309-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: ANDERSON UNIT 1H
Farm Name: MARION R. BACHELOR, ET AL
U.S. WELL NUMBER: 47-085-10309-00-00
Horizontal 6A / New Drill
Date Issued: 3/23/2017

Promoting a healthy environment.

03/24/2017

PERMIT CONDITIONS

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

4700000000

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

4708510309



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

January 13, 2017

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Ms. Laura Adkins
601 57th Street
Charleston, WV 25304

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following applications for new well work permits to explore for Marcellus Shale potential. Our **Mountain** project is located in Ritchie County, WV. On the **existing Bachelor Pad** consists **five new horizontal** shallow well (Anderson Unit 1H & 2H and Raines Unit 1H-3H) that we are requesting approval to drill.

Attached you will find the following:

- Permit Application packages
- CD with copy of permit applications

If you have any questions please feel free to contact me at (303) 357-7233.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Kara Quackenbush". The signature is fluid and cursive.

Kara Quackenbush
Permitting Agent
Antero Resources Corporation

Enclosures

470

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, _____, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>498701m</u>
County:	<u>Ritchie</u>		Northing:	<u>4351349m</u>
District:	<u>Clay</u>	Public Road Access:		<u>CR 6/2</u>
Quadrangle:	<u>Ellenboro 7.5'</u>	Generally used farm name:		<u>Marion R. Bachelor, et al</u>
Watershed:	<u>North Fork Hughes River</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p> <p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: _____</p> <p>Date: _____</p>
---	--

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.

Office of Oil & Gas

JAN 17 2017 03/24/2017

WW-6B
(04/15)

API NO. 47-085 - 10309
OPERATOR WELL NO. Anderson Unit 1H
Well Pad Name: Bachelor Pad

47025 10309

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

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

2) Operator's Well Number: Anderson Unit 1H Well Pad Name: Bachelor Pad

3) Farm Name/Surface Owner: Marion R. Bachelor, et al Public Road Access: CR 6/2

4) Elevation, current ground: 1193' Elevation, proposed post-construction: 1193'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

Michael Goff
1/24/17

6) Existing Pad: Yes or No Yes

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

8) Proposed Total Vertical Depth: 6600' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17700 MD

11) Proposed Horizontal Leg Length: 10576'

12) Approximate Fresh Water Strata Depths: 357', 429', 505'

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

14) Approximate Saltwater Depths: 1042', 1207', 1390'

15) Approximate Coal Seam Depths: 386', 1627'

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

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

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

RECEIVED
Office of Oil and Gas

JAN 27 2017
Page 1 of 3

WV Depa 03/24/2017
Environmental Protection

WW-6B
(04/15)

API NO. 47- 085

4708510300

OPERATOR WELL NO. Anderson Unit 1H
Well Pad Name: Bachelor 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#	560' *see #19	560' *see #19	CTS, 778 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	17700'	17700'	4460 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

MAC
1/24/17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Less H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

RECEIVED
Office of Oil and Gas

JAN 27 2017
Page 2 of 3

03/24/2017
WV Department of
Environmental Protection

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 fresh water 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): 31.03 existing acres

22) Area to be disturbed for well pad only, less access road (acres): 5.43 existing acres

23) Describe centralizer placement for each casing string:

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

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

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

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.

RECEIVED
Office of Oil and Gas

*Note: Attach additional sheets as needed.

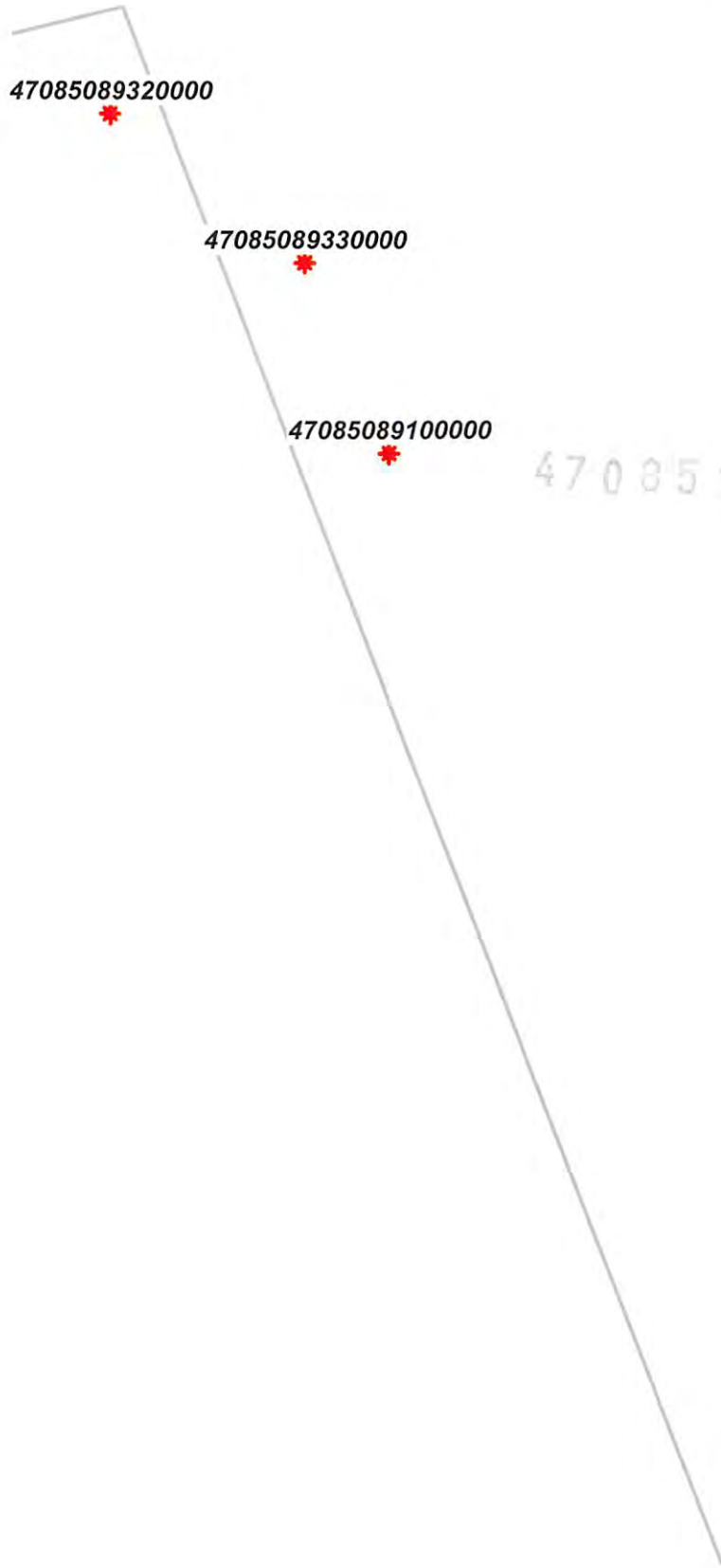
JAN 27 2017
Page 3 of 3

03/24/2017
WV Department of
Environmental Protection



Anderson Unit 1H - AOR

4708510309



4708510309

Received
Office of Oil & Gas
JAN 17 2017



06/24/2017

4708510309

UWI (APN#)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV GR	TD (SSTVD)	Perforated Interval (shallowest, deepest)	Perforated Formation(s)
4708508910000	ANDERSON M A	1	GASSEARCH CORPORATN	GASSEARCH CORPORATN	5108	1059	-4049	1984-4888	Keener, Big Injun, Weir, Gordon, Benson
4708508933000	BAKER	4	KEY OIL COMPANY	KEY OIL COMPANY	5066	1106	-3960	4582-4953	Riley, Benson
4708508932000	BAKER	3	KEY OIL COMPANY	KEY OIL COMPANY	5033	1062	-3971	4861-4864	Benson

APN - reasonably expected to penetrate a depth that could be within range of fracture propagation

Produced Formations not Perf'd

4708508910000	Maxton, Mississippian, Squaw, Keener, Gantz, Fifth, Riley,
4708508933000	Maxton, Mississippian, Squaw, Keener, Big Injun, Gantz, Fifth, Weir, Gordon,
4708508932000	Maxton, Mississippian, Squaw, Keener, Big Injun, Gantz, Fifth, Weir, Gordon, Riley,

4708510309

Received
Office of Oil & Gas
JAN 17 2017

WW-9
(2/15)

API Number 47 - 085 - _____
Operator's Well No. Anderson 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) North Fork Hughes River Quadrangle Ellenboro 7.5'

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

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

Proposed Disposal Method For Treated Pit Wastes:

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

*MAG
1/24/18*

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/Sluff 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

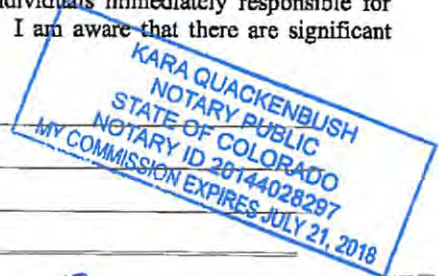
-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98), Northwestern Landfill (Permit # SWF-1025/WV0109410)

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

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

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

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



Subscribed and sworn before me this 13 day of January, 20 17

[Signature] Notary Public

My commission expires July 21, 2018

RECEIVED
Office of Oil and Gas

JAN 27 2017

WV 03/24/2017 of
Environmental Protection

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 31.03 acres Prevegetation pH _____

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

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road "A" (10.45 acres) + Access Road "B" (1.19 acres) + Well Pad (5.43 acres) + Water Containment Pad (3.19 acres) + Excess/Topsoil Material Stockpiles (10.77 acres) = 31.03 Acres

Temporary

Permanent

Seed Type	lbs/acre
Tall Fescue	40
Field Bromegrass	40

Seed Type	lbs/acre
Crownvetch	10-15
Tall Fescue	30

See attached Table IV-3 for additional seed type (Bachelor Pad Design Page 26)

See attached Table IV-4A for additional seed type (Bachelor Pad Design Page 26)

*or type of grass seed requested by surface owner

*or type of grass seed requested by surface owner

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Hoff

Comments: Seed & mulch any disturbed areas

4700510379

Title: Oil & Gas Inspector

Date: 1/24/17

Field Reviewed? Yes No

RECEIVED
Office of Oil and Gas

JAN 27 2017

WV Department of
Environmental Protection
03/24/2017

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

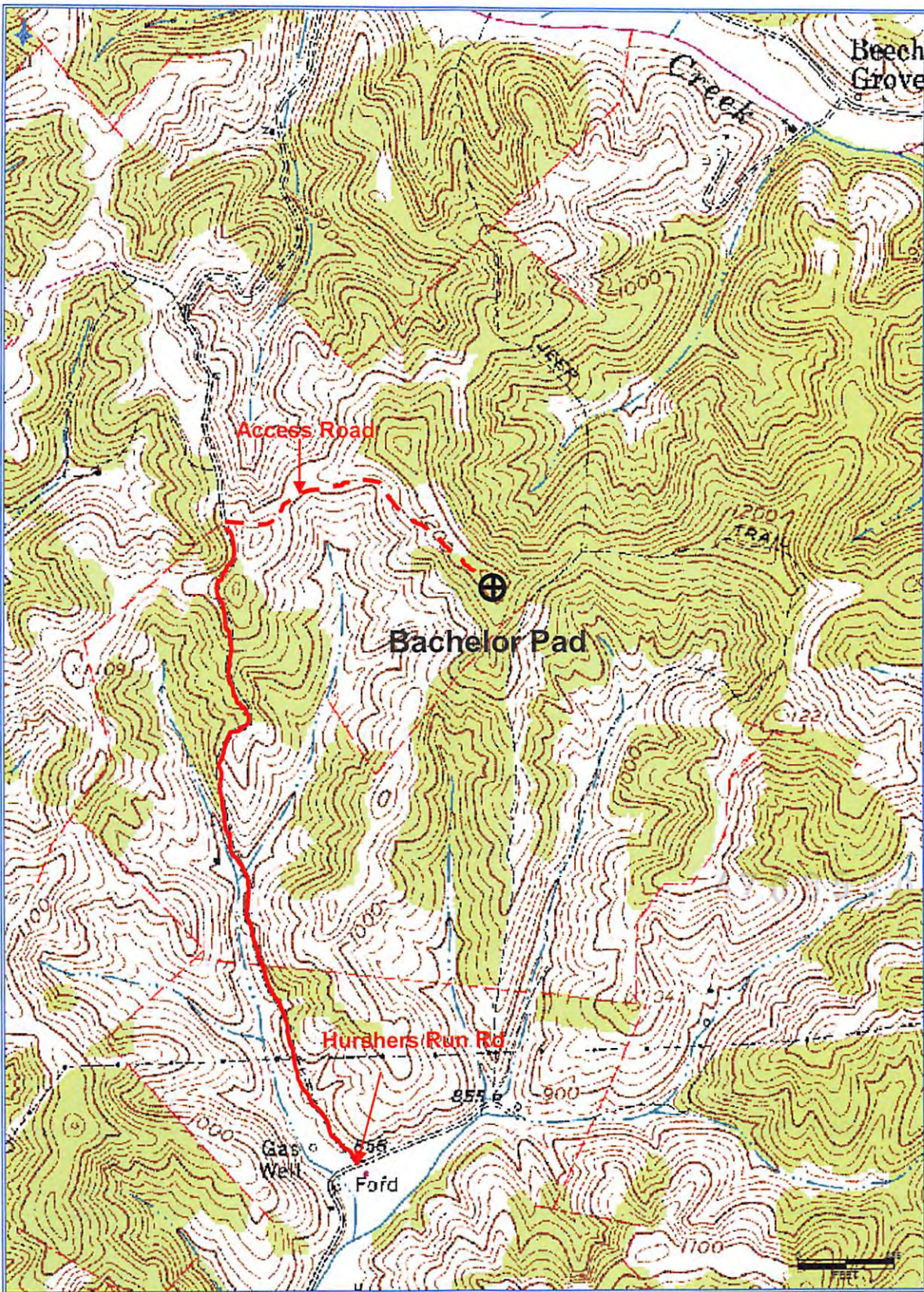
47008
Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

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

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017



Antero Resources Corporation

Appalachian Basin Office of Oil & Gas

Anderson Unit 1H JAN 17 2017

Ritchie County

Quadrangle: Ellenboro

Watershed: North Fork Hughes River

District: Clay

Date: 3-16-2016

03/24/2017



911 Address
1246 Pinewood Ln.
Pennsboro, WV 26415

Well Site Safety Plan

Antero Resources

Well Name: Raines Unit 1H, Raines Unit 2H, Raines Unit 3H,
Anderson Unit 1H, Anderson Unit 2H, Anderson
Unit 3H

Pad Location: BACHELOR PAD
Ritchie County/Clay District

Michael Goff
1/24/17

GPS Coordinates:

Entrance - Lat 39°18'47.268"/Long -81°1'24.441" (NAD83)
Pad Center - Lat 39°18'41.6952"/Long -81°0'54.3384" (NAD83)

Driving Directions:

From the intersection of i79 and HWY 50: Travel west on US-50 for 41.3 miles. Turn right onto Bunnell run Rd, go 0.5 miles. Turn left onto Lamberton Rd/Old U.S. 50 E, go 2.2 miles. Turn right onto Hushers Run, go 1.2 miles. Turn left onto Hurshers Run Rd, go 1.2 miles, access road will be on your right.

Alternate Route:

From the town of Pennsboro, head west on Collins Ave toward Depot St (.1mi). Turn left on Eagle Dr (433ft). Turn right on W. Myles Ace/Old U.S. 50E (3.1mi). Turn right onto Hushers Run Rd (.7mi). Turn Left to continue on Hushers Run Rd. Access road will be on you right after about .7mi.

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

RECEIVED
Office of Oil and Gas

JAN 27 2017

WV Department of
Environmental Protection

03/24/2017

LATITUDE 39°20'00"

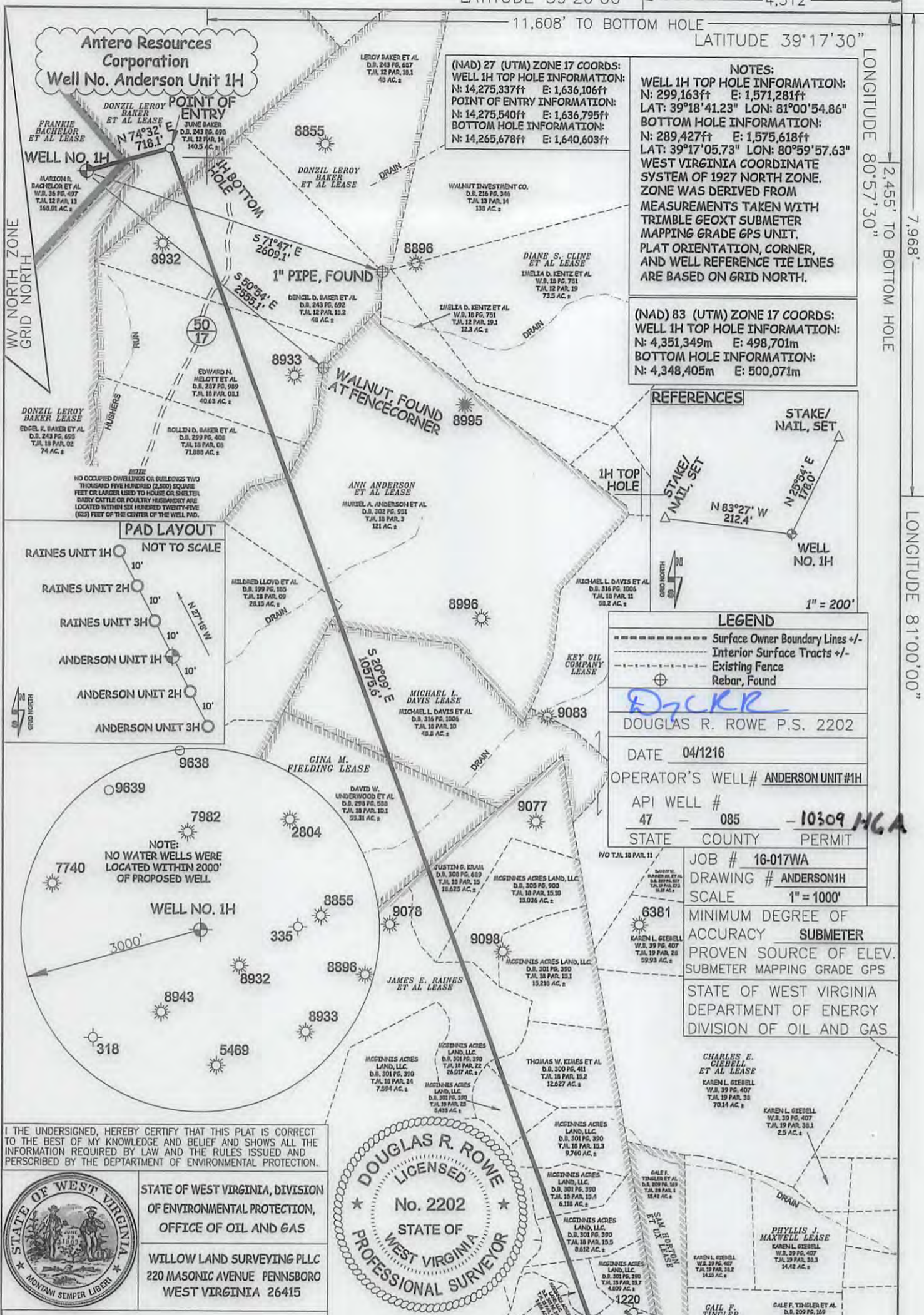
4,312'

LATITUDE 39°17'30"

LONGITUDE 80°57'30"

7,968'

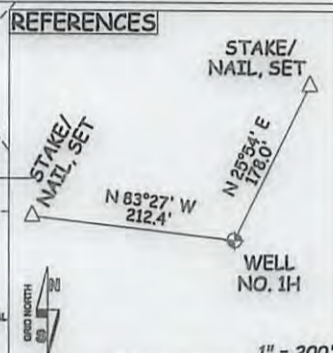
LONGITUDE 81°00'00"



(NAD) 27 (UTM) ZONE 17 COORDS:
 WELL 1H TOP HOLE INFORMATION:
 N: 14,275,337ft E: 1,636,106ft
 POINT OF ENTRY INFORMATION:
 N: 14,275,540ft E: 1,636,795ft
 BOTTOM HOLE INFORMATION:
 N: 14,265,678ft E: 1,640,603ft

NOTES:
 WELL 1H TOP HOLE INFORMATION:
 N: 299,163ft E: 1,571,281ft
 LAT: 39°18'41.23" LON: 81°00'54.86"
 BOTTOM HOLE INFORMATION:
 N: 289,427ft E: 1,575,618ft
 LAT: 39°17'05.73" LON: 80°59'57.63"
 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: 4,351,349m E: 498,701m
 BOTTOM HOLE INFORMATION:
 N: 4,348,405m E: 500,071m



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

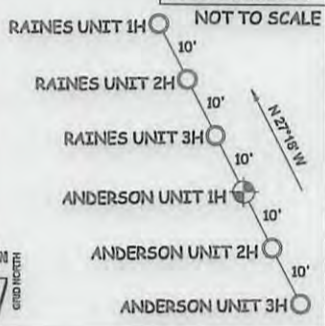
DOUGLAS R. ROWE P.S. 2202

DATE 04/12/16
 OPERATOR'S WELL # ANDERSON UNIT #1H
 API WELL # 47 - 085 - 10309 HGA
 STATE COUNTY PERMIT

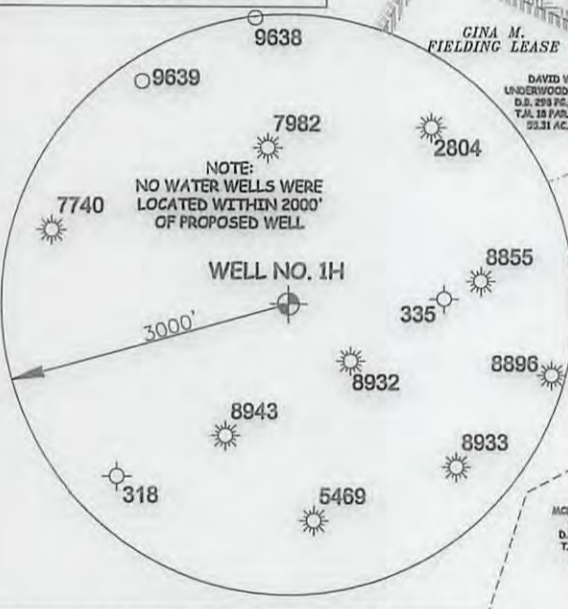
JOB # 16-017WA
 DRAWING # ANDERSON1H
 SCALE 1" = 100'

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

PAD LAYOUT



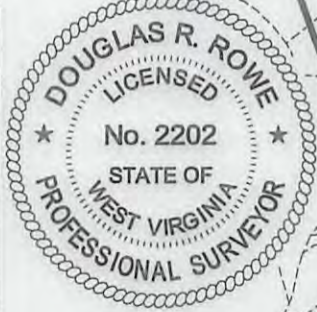
NOTE:
 NO WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL.



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



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVENUE PENNSBORO WEST VIRGINIA 26415



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,228' ORIGINAL - 1,193' PROPOSED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE ELLENBORO 7.5' (TH) PENNSBORO 7.5' (BH) DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER MARION R. BACHELOR ET AL
 OIL & GAS ROYALTY OWNER FRANKIE BACHELOR ET AL; DONZIL LEROY BAKER; DONZIL LEROY BAKER ET AL; DONZIL LEROY BAKER ET AL;
 ANN ANDERSON ET AL; MICHAEL L. DAVIS; GINA M. FIELDING; JAMES E. RAINES ET AL
 ACREAGE 168.01 ACRES +/-
 LEASE ACREAGE 168 AC±; 74 AC±; 140.5 AC±; 189 AC±;
 160 AC±; 48.8 AC±; 68.2 AC±; 300 AC±
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,600' TVD 17,700' MD
 WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 CHARLESTON, WV 25313
 PERMIT

03/24/2017

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Frankie Bachelor, et al Lease</u>			
Frankie Bachelor, et al	Consolidated Gas Supply Corporation	1/8	0123/0038
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0169/0756
Consolidated Gas Transmission Corporation	CNG Development Company	Assignment	0176/0601
CNG Development Company	CNG Producing Company	Merger	Harrison County 1131/1015
CNG Producing Company	Dominion Exploration & Production, Inc.	Name Change	Exhibit 2
Dominion Exploration & Production, Inc.	CNX Gas Company, LLC	Affidavit of Name Changes and Mergers	0253/0841
CNX Gas Company, LLC	Antero Resources Corporation	Assignment	0269/0429
<u>Donzil Leroy Baker, et al Lease (TM 18-2)</u>			
Donzil Leroy Baker	Antero Resources Appalachian Corporation	1/8+	0261/0467
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Donzil Leroy Baker, et al Lease (TM 12-14)</u>			
Donzil Leroy Baker	Antero Resources Appalachian Corporation	1/8+	0261/0481
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Donzil Leroy Baker, et al Lease (TM 18-8)</u>			
Donzil Leroy Baker	Antero Resources Appalachian Corporation	1/8+	0261/0474
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Ann Anderson, et al Lease</u>			
Ann Anderson, et al	Clarence Mutschelknaus	1/8	0232/0822
Clarence Mutschelknaus	Antero Resources Appalachian Corporation	Assignment	0259/0874
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Michael L. Davis Lease</u>			
Michael L. Davis	Antero Resources Corporation	1/8+	0279/0588
<u>Gina M. Fielding Lease</u>			
Gina M. Fielding	Antero Resources Corporation	1/8+	0279/0612

Received
Office of Oil & Gas
JAN 17 2017

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

CONTINUED ON NEXT PAGE

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

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>James E. Raines, et al Lease</u>	James E. Raines, et al	Antero Resources Corporation	1/8+	0279/0612

*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.

47085-0918

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

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

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

Received
Office of Oil & Gas
JAN 17 2017

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

Well Operator: Antero Resources Corporation
 By: Kevin Kilstrom
 Its: Senior VP of Production

FORM WW-6A1
EXHIBIT 1

4708570309

FILED

JUN 10 2013

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



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

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

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

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

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/25/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments: _____
(attach additional pages if necessary)

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

Alvyn A. Schopp (303) 367-7310
Contact Name Phone Number

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

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

Signature: [Handwritten Signature] Date: June 10, 2013

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

Form CF-4

Issued by the Office of the Secretary of State

Received
Office of Oil & Gas
Revised 4/13

JAN 17 2017

State of West Virginia



Certificate

I, Ken Hechler, Secretary of State of the
State of West Virginia, hereby certify that

originals of an application by

CNG PRODUCING COMPANY

for an amended certificate of authority to transact business in West Virginia are filed in my office,
as required by the provisions of Chapter 31, Article 1, Sections 57 and 59 of the West Virginia
Code and conform to law. Therefore, I issue this

AMENDED CERTIFICATE OF AUTHORITY

to transact business in West Virginia under the name of

DOMINION EXPLORATION & PRODUCTION, INC.

and I attach to this certificate a duplicate original of the application.



Received
Office of Oil & Gas
JAN 17 2017

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

May 10, 2000

Secretary of State
03/24/2017



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

January 13, 2017

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

470831-700

RE: Anderson Unit 1H
Quadrangle: Ellenboro 7.5'
Ritchie County/Clay District, West Virginia

Mr. Martin:

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Tom Kuhn", is written over a horizontal line.

Tom Kuhn
Senior Landman

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

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

Date of Notice Certification: 01/12/2016

API No. 47- 085 - _____
Operator's Well No. Anderson Unit 1H
Well Pad Name: Bachelor Pad

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>498701m</u>
County: <u>Ritchie</u>	Northing: <u>4351349m</u>
District: <u>Clay</u>	Public Road Access: <u>CR 6/2</u>
Quadrangle: <u>Ellenboro 7.5'</u>	Generally used farm name: <u>Marion R. Bachelor, et al</u>
Watershed: <u>North Fork Hughes River</u>	

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

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

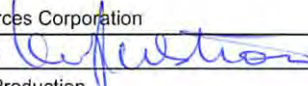
Required Attachments:

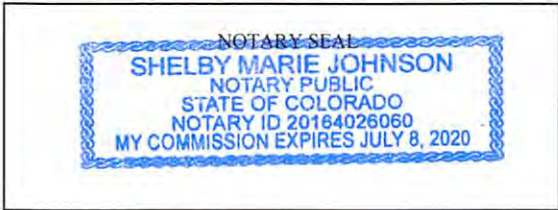
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Received
Office of Oil & Gas
JAN 17 2016

Certification of Notice is hereby given:

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

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



Subscribed and sworn before me this 12th day of January.

Shelby Marie Johnson Notary Public

My Commission Expires 7/8/2020

Oil and Gas Privacy Notice:

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

4708510309

Received
Office of Oil & Gas
JAN 17 2017

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

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

Date of Notice: 1/13/2017 **Date Permit Application Filed:** 1/13/2017

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

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

Name: PLEASE SEE ATTACHMENT
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

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

Name: NONE IDENTIFIED WITHIN 1500'
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a 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

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

Received
Office of Oil & Gas
JAN 17 2017

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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.

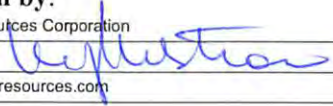
4708510300
Received
Office of Oil & Gas
JAN 17 2017

WW-6A
(8-13)

API NO. 47-085 -
OPERATOR WELL NO. Anderson Unit 1H
Well Pad Name: Bachelor Pad

Notice is hereby given by:

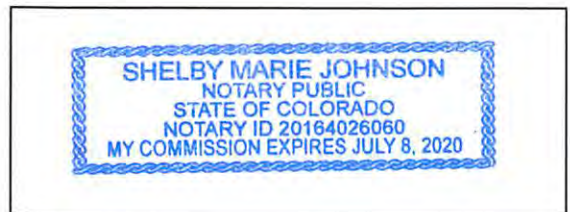
Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: kquackenbush@anteroresources.com



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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 13th day of Jan., 2017.
Shelby Marie Johnson Notary Public
My Commission Expires 7/8/2020

4708510309

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

WW-6A Notice of Application Attachment (BACHELOR PAD):
List of Surface Owner(s) with Proposed Disturbance associated with Bachelor Well Pad:

TM 12 PCL 13

Owner: Marion Ray Bachelor
Address: 2375 192nd Road
 Sabetha, KS 66534

Owner: Margo Kiehl
Address: 31 Brook Ter
 Brockport, NY 14420

Owner: Mary Lee Lilly & Percy Lilly
Address: 110 Mohawk Street
 Tiffin, OH 44883

Owner: Joseph Robert Leonian
Address: 343 Cornell Avenue
 Morgantown, WV 26505

Owner: John Michael Leonian
Address: 820 Price Street
 Morgantown, WV 26505

Owner: Bailey Ann Mills
Address: 611 Churchill Drive
 Charleston, WV 25314

Owner: Rita Jarvis
Address: 15 Mountaineer Drive
 Williamstown, WV 26187

Owner: Ridgewood Development, LLC
Address: 955 Bull Creek Road
 Waverly, WV 26184

Owner: William Paul Harper
Address: 4884 Cooper Road
~~Athens, OH 45701~~

Owner: Jo Ellen Day
Address: 14 Ashwood Drive
 Vienna, WV 26105

Owner: Nila Ash Salor
 (Revocable Trust by Joseph F.
 Silek, Jr.)
Address: 43 Chester Street
 Front Royal, VA 22630

Owner: David Paul Lococo
Address: P.O. Box 542212
 Merritt Island, FL 32954

Owner: Mary Lynn Lococo
Address: 151 Leisure Blvd.
 Pompano Beach, FL 33064

Owner: Donald Vincent Lococo
Address: 27 Hi Barlow Road
 Newtown, CT 06470

Owner: Rose Marie VanHeuveln
Address: 760 NE 114th Street
 Biscayne Park, FL 33161

Owner: Theresa Lee Robertson
Address: 3258 Lincoln Way
 Hollywood, FL 33026

Owner: Martha Sue Muzio
Address: 6201 Wilmington Way
 Flowery Branch, GA 30542

Owner: Michelle Lococo Bushmire
Address: 4473 Swilcan Bridge Lane North
 Jacksonville, FL 32224

Owner: Elizabeth Florence Lococo
Address: 1083 Lake Washington Blvd. N,
 Apt D415
 Renton, WA 98056

TM 18 PCL 2

Owner: Edgel K. & Betty Baker
Address: 357 Little Beason Road
 Pennsboro, WV 26415

Owner: John Anthony Baker (Heir of Betty Baker)
Address: 304 East Raymond Ave.
 Pennsboro, WV 26415

Owner: Timothy Olan Baker (Heir of Betty Baker)
Address: 1607 Niagra Street
 Parkersburg, WV 26101

Owner: Kimberly LeDawn McCloy
 (Heir of Betty Baker)
Address: 440 Hale Street
 Harrisville, WV 26362

Owner: Kimberly LeDawn McCloy
 (Heir of Betty Baker) (2nd Address)
Address: 415 Gobblers Lane
 Harrisville, WV 26362

Received
 Office of Oil & Gas
 JAN 17 2017

03/24/2017

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

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

Date of Notice: 2/17/2016 **Date of Planned Entry:** *2/27/2016

*Please note that this is an estimated date. Antero may begin surveying seven (7) days but no more than forty-five (45) after your receipt of this notice (whichever comes first).

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)
 Name: PLEASE SEE ATTACHMENT
 Address: _____

 Name: _____
 Address: _____

 Name: _____
 Address: _____

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

MINERAL OWNER(s)
 Name: PLEASE SEE ATTACHMENT
 Address: _____

 *please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>Approx. 39.311582, -81.015094 (Pad Center Coordinates)</u>
County: <u>Ritchie</u>	Public Road Access: <u>CR 6/2</u>
District: <u>Clay</u>	Watershed: <u>North Fork Hughes River</u>
Quadrangle: <u>Ellenboro</u>	Generally used farm name: <u>Bachelor, Marion Ray</u>

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

Notice is hereby given by:

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

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

Received
 Office of Oil & Gas
 JAN 17 2017

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.

Tax Map 12 Parcel 13
Tax Map 18 Parcel 2

03/24/2017

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

Surface Owners:

Tax Parcel ID: 3-12-13

Owner: Marion Ray Bachelor
Address: 2375 192nd Road
Sabetha, KS 66534

Owner: Margo Kiehl
Address: 31 Brook Ter
Brockport, NY 14420

Owner: Mary Lee Lilly
Address: 110 Mohawk Street
Tiffin, OH 44883

Owner: Joseph Robert Leonian
Address: 343 Cornell Avenue
Morgantown, WV 26505

Owner: John Michael Leonian
Address: 820 Price Street
Morgantown, WV 26505

Owner: Bailey Ann Mills
Address: 611 Churchill Drive
Charleston, WV 25314

Owner: Rita Jarvis
Address: 15 Mountaineer Drive
Williamstown, WV 26187

Owner: Ridgewood Development, LLC
Address: 955 Bull Creek Road
Waverly, WV 26184

Owner: William Paul Harper
Address: 4884 Cooper Road
Athens, OH 45701

Owner: Jo Ellen Harper Day
Address: 14 Ashwood Drive
Vienna, WV 26105

Owner: Nila Ash Salor
(Revocable Trust by Joseph F. Silek, Jr.)
Address: 43 Chester Street
Front Royal, VA 22630

Owner: David Paul Lococo
Address: P.O. Box 542212
Merritt Island, FL 32954

Owner: Mary Lynn Lococo
Address: 151 Leisure Blvd.
Pompano Beach, FL 33064

Owner: Donald Vincent Lococo
Address: 27 Hi Barlow Road
Newtown, CT 06470

Owner: Rose Marie VanHeuveln
Address: 760 NE 114th Street
Biscayne Park, FL 33161

Owner: Theresa Lee Robertson
Address: 3258 Lincoln Way
Hollywood, FL 33026

Owner: Martha Sue Muzio
Address: 6201 Wilmington Way
Flowery Branch, GA 30542

Owner: Michelle Lococo Bushmire
Address: 4473 Swilcan Bridge Lane North
Jacksonville, FL 32224

Owner: Elizabeth Florence Lococo
Address: 1083 Lake Washington Blvd. N, Apt D415
Renton, WA 98056

Surface Owners:

Tax Parcel ID: 3-18-2

Owner: Betty Baker
Address: 357 Little Beason Road
Pennsboro, WV 26415

Mineral Owners:

Tax Parcel ID: 3-12-13

Owner: Marion Ray Bachelor
Address: 2375 192nd Road
Sabetha, KS 66534

Owner: Margo Kiehl
Address: 31 Brook Ter
Brockport, NY 14420

Owner: William Paul Harper
Address: 14 Ashwood Drive
Vienna, WV 26105

Received
Office of Oil & Gas
JAN 17 2017

03/24/2017

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

Owner: Jo Ellen Harper Day
Address: 14 Ashwood Drive
Vienna, WV 26105

Owner: David Paul Lococo
Address: P.O. Box 541072
Merritt Island, FL 32954

Owner: Mary Lynn Lococo
Address: P.O. Box 541072
Merritt Island, FL 32954

Owner: Donald Vincent Lococo
Address: P.O. Box 541072
Merritt Island, FL 32954

Owner: Rose Marie VanHueveln
Address: 760 NE 114th Street
Biscayne Park, FL 33161

Owner: Theresa Lee Robertson
Address: 3258 Lincoln Way
Hollywood, FL 33026

Owner: Martha Sue Lococo
Address: P.O. Box 541072
Merritt Island, FL 32954

Owner: Michelle L. Bushmire
Address: 14129 N. 107th St.
Scottsdale, AZ 85255

Owner: Elizabeth F. Lococo
Address: PO Box 541072
Merritt Island, FL 32954

Owner: Rita Jarvis
Address: 15 Mountaineer Dr.
Williamstown, WV 28187

Owner: Nila Ash Saylor
Address: 68 Sweetbrier Ct.
Front Royal, VA 22630

Owner: Armen Leonian
Address: Box 7 Star Rt.
Woodside, CA 94064

Owner: Mary Lee Lilly
Address: 110 Mohawk St.
Tiffin, OH 44883

Owner: Bailey Ann Mills
Address: 611 Churchill Dr.
Charleston, WV 25314

Mineral Owners:

Tax Parcel ID: 3-18-2

Owner: Carolyn G. Farr
Address: PO Box 1126
Bridgeport, WV 26330

Owner: Jean Lawhead Blagg
Address: 8400 Vamo Road – Unit 663
Sarasota, FL 34231

Owner: June L. Baker
Address: HC 83 Box 49
Ellenboro, WV 26346

Owner: Rollin D. Baker and Mina R. Baker
Address: 1338 Hushers Run Rd.
Pennsboro, WV 26415

Owner: Virgel Bunner
Address: RR 2 Box 71
Pennsboro, WV 26415

Owner: Samuel Anthony Baker
Address: Star Route Box 48
Harrisville, WV 26362

Owner: Mark D. Baker
Address: Star Route Box 48
Harrisville, WV 26362

Owner: Donzil Leroy Baker
Address: Star Route Box 48
Harrisville, WV 26362

Owner: Linda Collins Baker
Address: 159 Mahone Rd.
Harrisville, WV 26362

Owner: Ricky J. Baker, David L. Baker, Roy S. Baker, and Okey S. Baker
Address: 312 Davys Rd.
Harrisville, WV 26362

Owner: Sharon S. Baker
Address: 1274 Hushers Run Rd.
Pennsboro, WV 26415

Received
Office of Oil & Gas
JAN 17 2017

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

Owner: Betty Baker
Address: 357 Little Beason Rd
Pennsboro, WV 26415

Owner: Roger Lee Baker
Address: 7617 Gillespie Run Rd.
Harrisville, WV 26362

Owner: Elisa L. Barnhart
Address: 659 Farleys Run Rd.
Pennsboro, WV 26415

Owner: Erosa L. Carr
Address: 659 Farleys Run Rd.
Pennsboro, WV 26415

Owner: Eva L. Collins
Address: 659 Farleys Run Rd.
Pennsboro, WV 26415

Owner: Evonne L. Furbey
Address: 659 Farleys Run Rd.
Pennsboro, WV 26415

Owner: Justin R. Smith
Address: 659 Farleys Run Rd.
Pennsboro, WV 26415



Received
Office of Oil & Gas
JAN 17 2017

**WW-6A5 Notice of Planned Operations Attachment (BACHELOR PAD):
List of Surface Owner(s) with Proposed Disturbance associated with Bachelor Well Pad:**

TM 12 PCL 13

Owner: Marion Ray Bachelor
Address: 2375 192nd Road
Sabetha, KS 66534

Owner: Margo Kiehl
Address: 31 Brook Ter
Brockport, NY 14420

Owner: Mary Lee Lilly & Percy Lilly
Address: 110 Mohawk Street
Tiffin, OH 44883

Owner: Joseph Robert Leonian
Address: 343 Cornell Avenue
Morgantown, WV 26505

Owner: John Michael Leonian
Address: 820 Price Street
Morgantown, WV 26505

Owner: Bailey Ann Mills
Address: 611 Churchill Drive
Charleston, WV 25314

Owner: Rita Jarvis
Address: 15 Mountaineer Drive
Williamstown, WV 26187

Owner: Ridgewood Development, LLC
Address: 955 Bull Creek Road
Waverly, WV 26184

Owner: William Paul Harper
Address: 4884 Cooper Road
Athens, OH 45701

Owner: Jo Ellen Day
Address: 14 Ashwood Drive
Vienna, WV 26105

Owner: Nila Ash Salor
Address: (Revocable Trust by Joseph F. Silek, Jr.)
43 Chester Street
Front Royal, VA 22630

Owner: David Paul Lococo
Address: P.O. Box 542212
Merritt Island, FL 32954

Owner: Mary Lynn Lococo
Address: 151 Leisure Blvd.
Pompano Beach, FL 33064

Owner: Donald Vincent Lococo
Address: 27 Hi Barlow Road
Newtown, CT 06470

Owner: Rose Marie VanHeuveln
Address: 760 NE 114th Street
Biscayne Park, FL 33161

Owner: Theresa Lee Robertson
Address: 3258 Lincoln Way
Hollywood, FL 33026

Owner: Martha Sue Muzio
Address: 6201 Wilmington Way
Flowery Branch, GA 30542

Owner: Michelle Lococo Bushmire
Address: 4473 Swilcan Bridge Lane North
Jacksonville, FL 32224

Owner: Elizabeth Florence Lococo
Address: 1083 Lake Washington Blvd. N, Apt D415
Renton, WA 98056

TM 18 PCL 2

Owner: Edgel K. & Betty Baker
Address: 357 Little Beason Road
Pennsboro, WV 26415

Owner: John Anthony Baker (Heir of Betty Baker)
Address: 304 East Raymond Ave.
Pennsboro, WV 26415

Owner: Timothy Olan Baker (Heir of Betty Baker)
Address: 1607 Niagra Street
Parkersburg, WV 26101

Owner: Kimberly LeDawn McCloy
(Heir of Betty Baker)
Address: 440 Hale Street
Harrisville, WV 26362

Owner: Kimberly LeDawn McCloy
(Heir of Betty Baker) (2nd Address)
Address: 415 Gobblers Lane
Harrisville, WV 26362

Received
Office of Oil & Gas

JAN 7 2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

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

Reissued January 5, 2017

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 Bachelor Pad, Ritchie County
Anderson Unit 1H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #03-2016-0090 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Ritchie County Route 6/2 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,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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

Cc: Kara Quackenbush
Antero Resources Corporation
CH, OM, D-3
File

Received
Office of Oil & Gas
JAN 17 2017

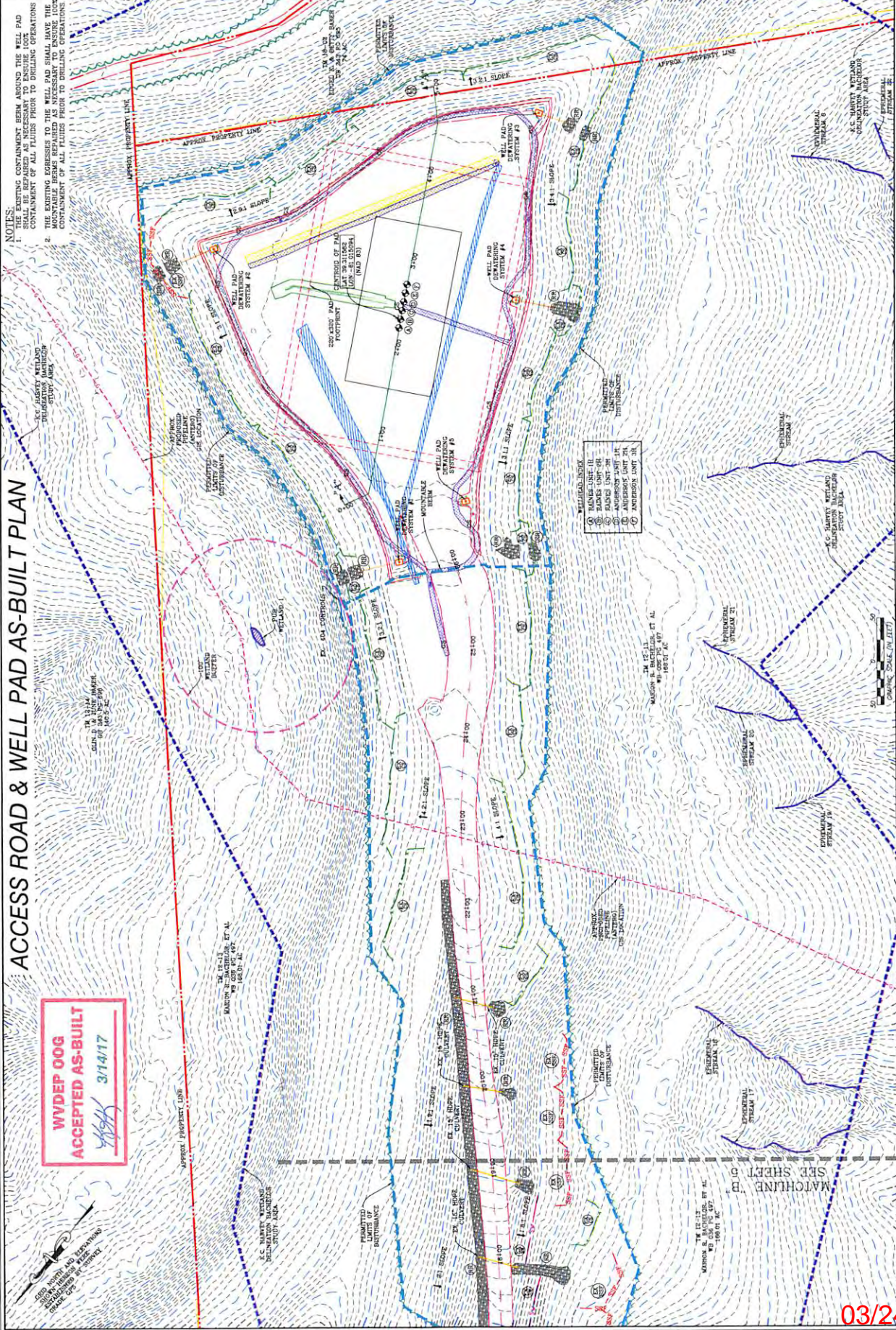
03/24/2017

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
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamethylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-ol compound with methyloxirane	38172-91-7

Received
 Office of Oil & Gas
 JAN 17 2017

03/24/2017



ACCESS ROAD & WELL PAD AS-BUILT PLAN

NOTES:
1. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED TO THE ORIGINAL DESIGN AND THE CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
2. THE EXISTING BENCHES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BENCHES REPAIRED AS NECESSARY TO ENSURE LOCK CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

WVDEP 000G
ACCEPTED AS-BUILT
3/14/17

- WELLHEAD INDEX**
- ① MAINLINE UNIT #1
 - ② MAINLINE UNIT #2
 - ③ MAINLINE UNIT #3
 - ④ MAINLINE UNIT #4
 - ⑤ MAINLINE UNIT #5
 - ⑥ MAINLINE UNIT #6
 - ⑦ MAINLINE UNIT #7
 - ⑧ MAINLINE UNIT #8
 - ⑨ MAINLINE UNIT #9
 - ⑩ MAINLINE UNIT #10



03/24/2017

LOCATION COORDINATES:

ACCESS ROAD ENTRANCE
LATITUDE: 39.313130 LONGITUDE: -81.023456 (NAD 83)
N 4351526.19 E 497977.90 (UTM ZONE 17 METERS)

CENTER OF TANK "A"
LATITUDE: 39.314146 LONGITUDE: -81.020823 (NAD 83)
N 4351638.83 E 498204.94 (UTM ZONE 17 METERS)

CENTER OF TANK "B"
LATITUDE: 39.314215 LONGITUDE: -81.020319 (NAD 83)
N 4351646.46 E 498248.37 (UTM ZONE 17 METERS)

CENTROID OF PAD
LATITUDE: 39.311582 LONGITUDE: -81.015094 (NAD 83)
N 4351354.21 E 498698.69 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION:

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

FLOODPLAIN NOTES:

THE SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54085C0100C.

MISS UTILITY STATEMENT:

ANTERO RESOURCES CORPORATION HAS NOTIFIED MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN; TICKET #1604013832.

ENTRANCE PERMIT:

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

ENVIRONMENTAL NOTES:

STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN OCTOBER 2014 AND JANUARY 2016 BY KC HARVEY ENVIRONMENTAL, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE JANUARY 08, 2016 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY KC HARVEY ENVIRONMENTAL, LLC AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

GEOTECHNICAL NOTES:

A SUBSURFACE INVESTIGATION OF THE SITE WAS PERFORMED BY PENNSYLVANIA SOIL & ROCK, INC. BETWEEN FEBRUARY 25, 2016 & MARCH 2, 2016. THE REPORT PREPARED BY PENNSYLVANIA SOIL & ROCK, INC., DATED MARCH 10, 2016, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY PENNSYLVANIA SOIL & ROCK, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

PROJECT CONTACTS:

CHARLES E. COMPTON, III - SURVEYING COORDINATOR
CELL: (304) 719-6449

OPERATOR:

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

JIM WILSON - LAND AGENT
OFFICE: (304) 842-4419 CELL: (304) 671-2708

ENGINEER/SURVEYOR:

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

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

JON McEVERS - OPERATIONS SUPERINTENDENT
OFFICE: (303) 357-6799 CELL: (303) 808-2423

ENVIRONMENTAL:

KC HARVEY ENVIRONMENTAL, LLC
SHANNON THOMPSON - STAFF SCIENTIST
OFFICE: (740) 373-1970 CELL: (970) 398-8250

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

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

GEOTECHNICAL:

PENNSYLVANIA SOIL & ROCK, INC.
CHRISTOPHER W. SAMIOS - PROJECT ENGINEER
OFFICE: (412) 372-4000 CELL: (412) 589-0662

RESTRICTIONS NOTES:

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

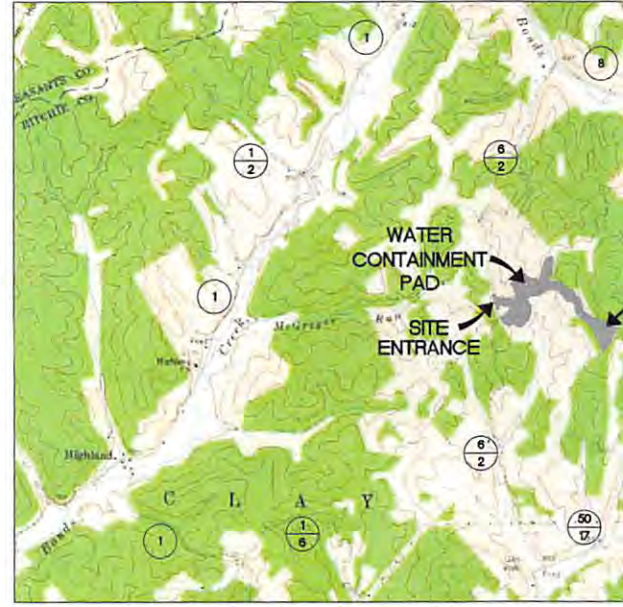
NOTES:

1. ALL BMP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT IN EXCESS OF 0.5" AND ON A BIWEEKLY BASIS.
2. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
3. ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP.
4. ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.
5. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF NOVEMBER 29, 2016. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
6. THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS
7. THE EXISTING EGRESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

BACHELOR WELL PAD & WATER CONTAINMENT PAD AS-BUILT AND EROSION CONTROL IMPROVEMENTS

CLAY DISTRICT, RITCHIE COUNTY
BONDS CREEK WATER

USGS 7.5 ELLENBORO & PENNSYLVANIA



WEST VIRGINIA COUNTY MAP



(NOT TO SCALE)

AS-BUILT CERTIFICATIONS:

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 CRS 35-8.

03/24/2017

