

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

Harold D. Ward, Cabinet Secretary www.dep.wv.gov

Monday, June 14, 2021 WELL WORK PERMIT Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET DENVER, CO 80202

Re: Permit approval for BUSCH UNIT 1H

47-103-03404-00-00

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.

> Martin James A

Chief

Operator's Well Number: BUSCH UNIT 1H

Farm Name: WILLIAM L. & DELORES J. @

Horizontal 6A New Drill

U.S. WELL NUMBER: 47-103-03404-00-00

Date Issued: 6/14/2021

API Number:	

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.

API Number:	

PERMIT CONDITIONS

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.

API NO. 47-103	03404
OPERATOR WEL	L NO. Busch Unit 1H
Well Pad Name:	Gadd Pad

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

1) Well Operator:	Antero Res	ources Corp	ora	4945	07062	Wetzel	Green	Porters Falls 7.5'
•	· · ·				ator ID	County	District	Quadrangle
2) Operator's Wel	ll Number: Bu	sch Unit 1H			_ Well Pad	Name: Gadd	Pad	
3) Farm Name/Su	rface Owner:	William L. & Del	ores J	. Gadd	Public Roa	d Access: Eigh	ntmile Road	d
4) Elevation, curre	ent ground:	1223.8'	_ El	evation	, proposed	post-construction	on: <u>~1223</u>	.8
, , ,	n) Gas X other	Oi	1		Unde	erground Storag	ge	
(t	•	allow X			Deep			
6) Existing Pad: Y	es or No Yes	s			_	_		
7) Proposed Targe Marcellus Shale	•			-		•	• •	
8) Proposed Total	Vertical Dept	_{th:} 7400' T\	/D		_			
9) Formation at T				3				
10) Proposed Tota	al Measured D	epth: 1160	0'					
11) Proposed Hor	izontal Leg Le	ength: 973'						
12) Approximate	Fresh Water S	trata Depths:		350'				
13) Method to De14) Approximate		•	-		-02266			
15) Approximate	Coal Seam De	epths: 656', 9	971'					
16) Approximate				ne, kar	st, other):	None Anticipat	ted	
17) Does Propose directly overlying					es	No	X	RECEIVED Office of Oil and Gas
(a) If Yes, provi	de Mine Info:	Name:		-		<u>.</u>		MAY 1 3 2021
		Depth:						WV Department of
		Seam: _						Environmental Protection
		Owner:						

WW-6B (04/15) API NO. 47- 103 - 03404

OPERATOR WELL NO. Busch Unit 1H

Well Pad Name: Gadd 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#	80	80	CTS, 86 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	400 *see #19	400 *see #19	CTS, 556 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	11600	11600	2783 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners						1	

Bugan Harm 5-19-21

ТУРЕ	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	12,630	2500	Lead-H/POZ & Tall - 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	

WW-6B (10/14) API NO. 47- 103 - 03404

OPERATOR WELL NO. Busch Unit 1H

Well Pad Name: Gadd Pad

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

Drill a new horizontal shallow well into the 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): 34.16 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 17.00 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:

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*Note: Attach additional sheets as needed.

API Number 47 - 103 - 6340 Operator's Well No. Busch 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 494507062	
Watershed (HUC 10) Lower Fishing Creek	Quadrangle Porters Falls 7.5'	
Do you anticipate using more than 5,000 bbls of water to co Will a pit be used? Yes No V	omplete the proposed well work? Yes	No
If so, please describe anticipated pit waste: No pit will	ill be used at this site (Drilling and Flowback Fluids will be stored in tanks, Cutting	s 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	AND BOOK OF THE STATE OF THE ST	Constitution of
	rmit Number *UIC Permit # will be provided on Formit well locations when applicable. API# will be provided on	
	WW-9 for disposal location) (Meadowfill Land	
Other (Explain_	Northwestern Lan-	dfill Permit #SWF-1025/
Will closed loop system be used? If so, describe: Yes, fluid	ds stored in tanks, cuttings removed offsite and	taken to landfill.
Drilling medium anticipated for this well (vertical and horiz		Air/Freshwater, Intermediate - Foam, Production - Water Based Mud
-If oil based, what type? Synthetic, petroleum, etc.	Synthetic	
Additives to be used in drilling medium? Please See Attachr	ment	
Drill cuttings disposal method? Leave in pit, landfill, remov		d offsite and taken to landfill.
-If left in pit and plan to solidify what medium will		
-Landfill or offsite name/permit number? Meadowii		mit # SWF-1025/WV0109410)
Permittee shall provide written notice to the Office of Oil ar West Virginia solid waste facility. The notice shall be provide where it was properly disposed.		
I certify that I understand and agree to the terms at on August 1, 2005, by the Office of Oil and Gas of the West provisions of the permit are enforceable by law. Violation law or regulation can lead to enforcement action. I certify under penalty of law that I have person application form and all attachments thereto and that, be obtaining the information, I believe that the information penalties for submitting false information, including the post Company Official Signature.	t Virginia Department of Environmental Protons of any term or condition of the general penalty examined and am familiar with the infrased on my inquiry of those individuals it is true, accurate, and complete. I am away	ection. I understand that the rmit and/or other applicable formation submitted on this mmediately responsible for
company official digitature		MAY 1 3 2021
Company Official (Typed Name) Gretchen Kohler Company Official Title Senior Environmental & Regulatory N	Managar	
Company Official Title Senior Environmental & Regulatory N	vianager	'NV Department of Environmental Protection
Alth	MASIA AL	Lintechou
Subscribed and sworn before in this day of	f 11/10 , 20 11	
(1/1/(10/1/))	Notary Public	MEGAN GRIFFITH
My commission expires 3 3	2022	NOTARY PUBLIC STATE OF COLORADO
any commission capites	MYC	NOTARY ID 2006/168/202 DIMMISSION EXPIRES MARCH 13, 202

Form WW-9		Operator's V	Well No. Busch Unit 1H	
Antero Resources Co	rporation			
Proposed Revegetation Treatme	nt: Acres Disturbed 34.16 acre	Prevegetation pl	н	
Lime 2-4	_ Tons/acre or to correct to pH _	6.5		
Fertilizer type Hay or s	traw or Wood Fiber (will be used wh	ere needed)		
Fertilizer amount_500	lbs/	acre		
Mulch 2-3	Tons/act	re		
Access Road "A" (6.08		(17.00 acres) + Excess/Topsoil Material Stockp	ile (10.30 acres)= 34.16 Acres	
_	,	<u>Mixtures</u>		
_	orary	Perm		
Seed Type	lbs/acre	Seed Type Crownvetch	lbs/acre 10-15	
Annual Ryegrass	40			
Field Bromegrass	40	Tall Fescue	30	
See attached Table IV-3 for additiona	seed type (Gadd Pad Design)	See attached Table IV-4A for addition	d Table IV-4A for additional seed type (Gadd Pad Design)	
*or type of grass seed requ	ested by surface owner	*or type of grass seed requ	ested by surface owner	
	will be land applied, include dimarraea.	ion (unless engineered plans incluensions (L x W x D) of the pit, an	ading this info have been d dimensions (L x W), and area in	
Plan Approved by:	a tun			
Title: Inspect 2 Field Reviewed?		Date: 5-19-21		

Form WW-9 Additives Attachment

SURFACE INTERVAL

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

INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

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

PRODUCTION INTERVAL

- 1. Alpha 1655
 - Salt Inhibitor
- 2. Mil-Carb

Calcium Carbonate

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

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Drilling Fluild Solvent - Aliphatic Hydrocarbon

14. Ligco

Highly Oxidized Leonardite - Filteration Control Agent

15. Super Sweep

Polypropylene – Hole Cleaning Agent

16. Sulfatrol K

Drilling Fluid Additive - Sulfonated Asphalt Residuum

17. Sodium Chloride, Anhydrous

Inorganic Salt

18. D-D

Drilling Detergent - Surfactant

19. Terra-Rate

Organic Surfactant Blend

20. W.O. Defoam

Alcohol-Based Defoamer

21. Perma-Lose HT

Fluid Loss Reducer For Water-Based Muds

22. Xan-Plex D

Polysaccharide Polymer - Drilling Fluid Viscosifier

23. Walnut Shells

Ground Cellulosic Material - Ground Walnut Shells - LCM

24. Mil-Graphite

Natural Graphite - LCM

25. Mil Bar

Barite - Weighting Agent

26. X-Cide 102

Biocide

27. Soda Ash

Sodium Carbonate - Alkalinity Control Agent

28. Clay Trol

Amine Acid complex - Shale Stabilizer

29. Sulfatrol

Sulfonated Asphalt - Shale Control Additive

30. Xanvis

Viscosifier For Water-Based Muds

31. Milstarch

Starch - Fluid Loss Reducer For Water Based Muds

32. Mil-Lube

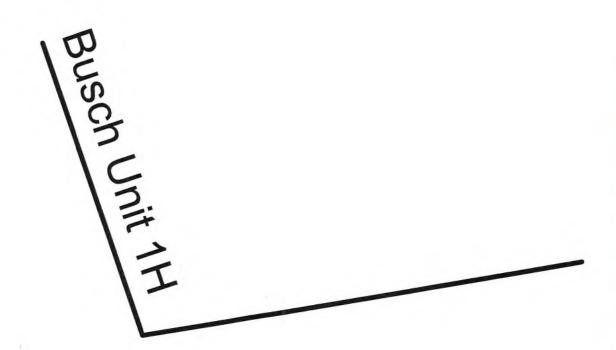
Drilling Fluid Lubricant

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06/18/2021



911 Address 2946 Eight Mile Road Reader, WV 26167

Well Site Safety Plan Antero Resources



Well Name: Blake Unit 1H, Busch Unit 1H-3H, Charlotte Unit 1H-2H, Peeler Unit 1H-3H

Pad Location: GADD PAD

Wetzel County/Green District

GPS Coordinates:

Entrance - Lat 39°32′48.30″/Long -80°45′08.74″ (NAD83)

Pad Center - Lat 39°32′59.94″/Long -80°45′20.17″ (NAD83)

Driving Directions:

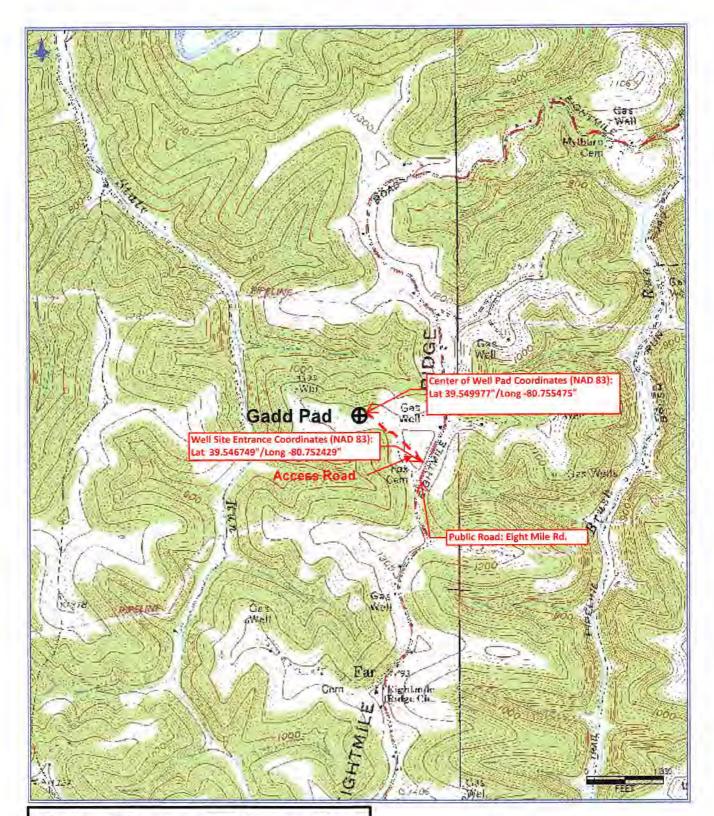
From Reader Fire Department: Head north on WV-20 N. toward Spice Lane for 0.5 miles. Turn left onto CO Rd/40/2 for 0.4 miles. Continue onto Eight Mile Road for 2.4 miles. Access road will be on your right.

Alternate Route:

From Middlebourne Post Office: Turn left onto WV-18 N/Main Street for 3.8 miles. Turn right toward Elk Fork for 302 feet. Continue onto Elk Fork Road for 0.4 miles. Turn right onto Elk Fork Road for 9.6 miles. Turn left onto Wetzel Tyler Ridge Road for 0.6 miles. Continue onto Eight Mile Road for 1.7 miles. Access road will be on the left.

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

1

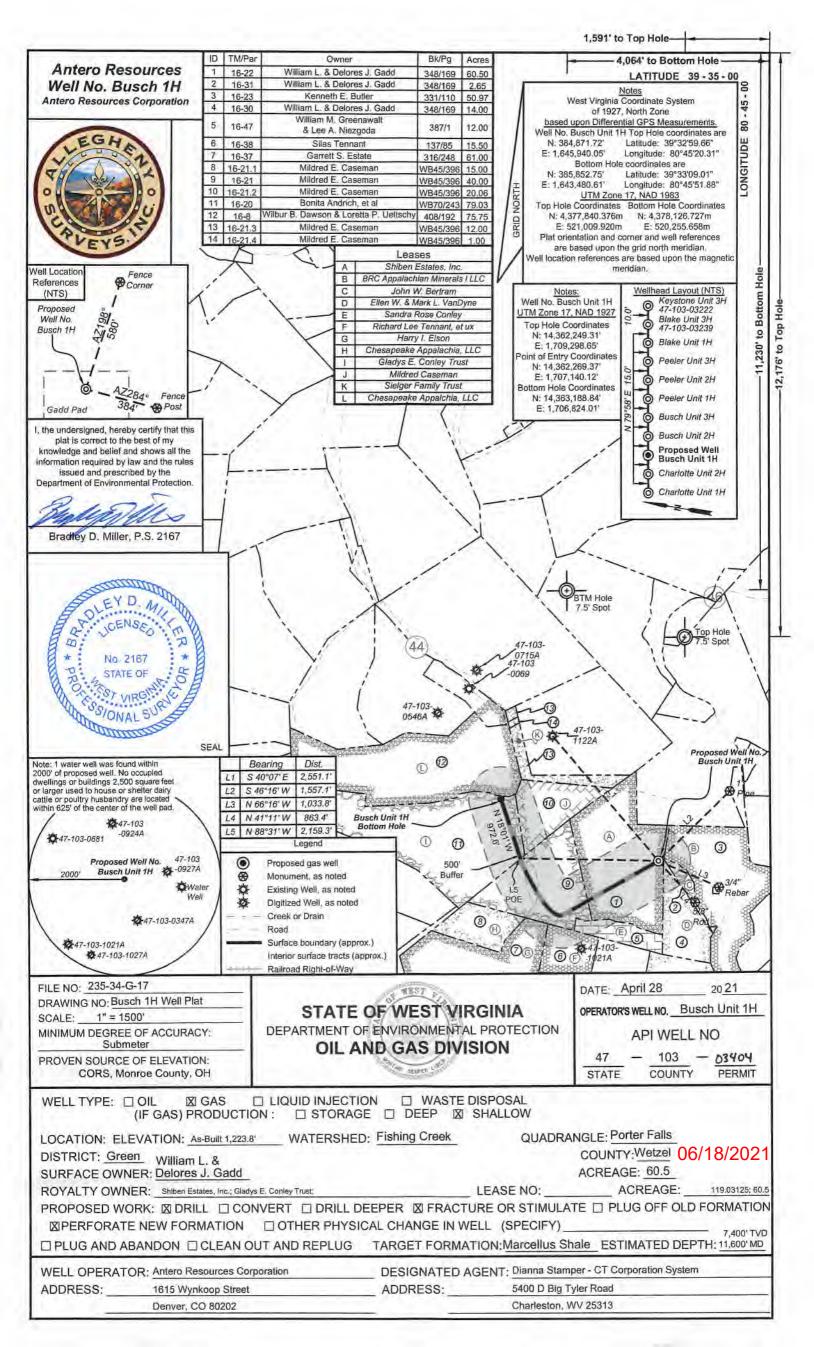


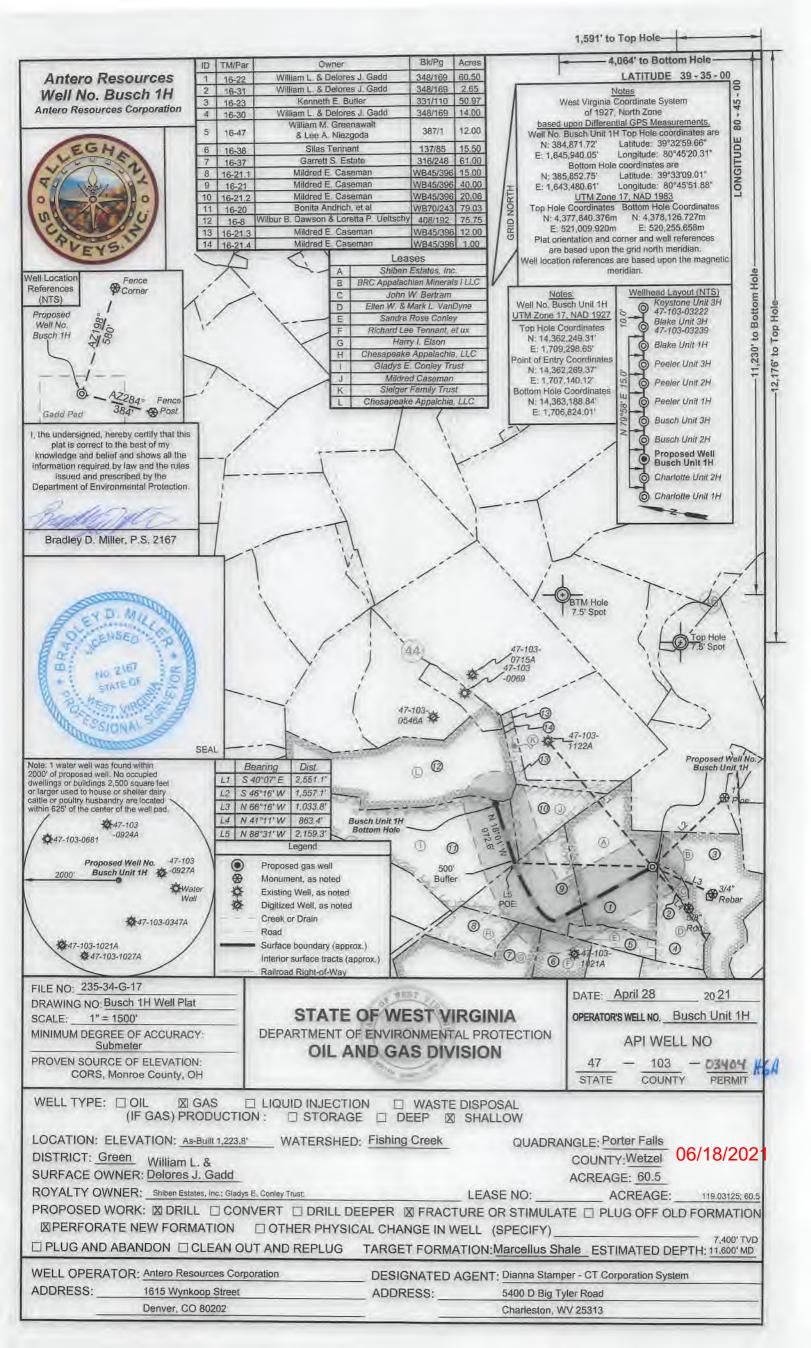
Antero Resources Corporation

Appalachian Basin GADD PAD Wetzel County

Quadrangle: Porters Falls Watershed: Fishing Creek

District: Green Date: 5-3-2021





Operator's Well Number

Busch Unit 1H

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

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

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

	Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
A	Shiben Estates Inc. Lease (TM 16 PCL 22) Shiben Estates Inc.	Antero Resources Corporation	1/8+	0176/0467

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

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:

	Donald VanDyke	Antero Resources Corporation	1/8+	0259/0556
Donald VanDyke Lease				
Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Lease Name or				

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

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

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

• WV Division of Water and Waste Management

• WV Division of Natural Resources WV Division of Highways

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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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:		\mathcal{O}
By:	Tim Rady	han ledy
Its:	VP of Land	

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

RE: Busch Unit 1H

Quadrangle: Porters Falls 7.5'

Wetzel County/Green District, West Virginia

Mr. Martin:

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

Sincerely,

Tom Kuhn Senior Landman



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

Date of Notic	re Certification: 5/6/2	API No. 47	- 103 -	
Date of Front	e continuenton.		Well No. Busch	Unit 1H
			ame: Gadd Pa	
Notice has b	oeen given:			
Pursuant to th	e provisions in West Virginia Code §	22-6A, the Operator has provided the req	uired parties w	ith the Notice Forms listed
	tract of land as follows:	•	•	
State:	West Virginia	UTM NAD 83 Easting:	521009.920	
County:	Wetzel	Northing:	4377840.376m	
District:	Green	Public Road Access:	Eightmile Road	
Quadrangle:	Porters Falls 7.5'	Generally used farm name:	William L. & Delo	res J. Gadd
Watershed:	Lower Fishing Creek			•
information re of giving the requirements Virginia Code	equired by subsections (b) and (c), se surface owner notice of entry to su of subsection (b), section sixteen of	red in subdivisions (1), (2) and (4), subsection sixteen of this article; (ii) that the recryoty pursuant to subsection (a), section to this article were waived in writing by the ender proof of and certify to the secretary to t	quirement was en of this artic the surface ow	deemed satisfied as a resul- cle six-a; or (iii) the notice vner; and Pursuant to Wes
that the Ope	West Virginia Code § 22-6A, the Oprator has properly served the required ECK ALL THAT APPLY	erator has attached proof to this Notice Cod parties with the following:	ertification	OOG OFFICE USE ONLY
☐ 1. NO	TICE OF SEISMIC ACTIVITY or	■ NOTICE NOT REQUIRED BECAUSEISMIC ACTIVITY WAS CONDUCT		RECEIVED/ NOT REQUIRED
☐ 2. NO	ΓΙCE OF ENTRY FOR PLAT SURV	EY or NO PLAT SURVEY WAS CO	ONDUCTED	☐ RECEIVED
■ 3. NO	TICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUIRED BECAUNOTICE OF ENTRY FOR PLAT SURVIVAS CONDUCTED or		☐ RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER BY SURFACE (PLEASE ATTACH)	CE OWNER	
■ 4. NO	ΓΙCE OF PLANNED OPERATION	RECE Office of O		□ RECEIVED
■ 5. PUE	BLIC NOTICE	MAY 1	3 2 021	□ RECEIVED
■ 6. NO	TICE OF APPLICATION	WV Depar		☐ RECEIVED

Required Attachments:

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

Certification of Notice is hereby given:

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

Well Operator: Antero Resources Corporation

By: Tim Rady Diana Its: VP of Land

Telephone: 303-357-7310 Address: 1615 Wynkoop Street

Denver, CO 80202

Facsimile: 303-357-7315

Email: mgriffith@anteroresources.com

NOTARY SEAL

MEGAN GRIFFITH NOTARY PUBLIC STATE OF COLORADO

NOTARY ID 20184011668 MY COMMISSION EXPIRES MARCH 13, 2022 Subscribed me this

My Commission Expires

Oil and Gas Privacy Notice:

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

> RECEIVED Office of Oil and Dec

WV Department of Environmental Protection

API NO. 47- 4710303404

OPERATOR WELL NO. Busch Unit 1H

Well Pad Name: Gadd Pad

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

Notice Time Requirem	nent: notice shall be prov	ided no later tha	n the filing date of permit application.	
Date of Notice: 7	Date Permit Applica	ntion Filed:	1/21	
PERMIT FOR AN	IV CEPTIE	CATE OF ADD	ROVAL FOR THE	
WELL WORK	CONST	RUCTION OF A	AN IMPOUNDMENT OR PIT	
Delivery method purse	uant to West Virginia C	ode § 22-6A-10	(b)	
PERSONAL	REGISTERED	☑ METH	OD OF DELIVERY THAT REQUIRES A	
SERVICE	MAIL	RECEI	PT OR SIGNATURE CONFIRMATION	
the surface of the tract or oil and gas leasehold beidescribed in the erosion operator or lessee, in the more coal seams; (4) The well work, if the surface impoundment or pit as dhave a water well, spring provide water for consurproposed well work active subsection (b) of this secretords of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R. § 35-8-5.7.a records of the sheriff required provision of this article to Code R.	n which the well is or is pring developed by the proposand sediment control plan event the tract of land on e owners of record of the stract is to be used for the pescribed in section nine of gor water supply source lonption by humans or dome vity is to take place. (c)(1) ction hold interests in the laured to be maintained pur of the contrary, notice to a quires, in part, that the ope	oposed to be local seed well work, if submitted pursual which the well properties that the urface tract or tra- placement, constraint on the faths article; (5) A cated within one estic animals; and If more than three ands, the applicant suant to section of lien holder is not trator shall also properties.	the well plat to each of the following persons: (1) The lated; (2) The owners of record of the surface tract or to the surface tract is to be used for roads or other land of the surface tract is to be used for roads or other land of the surface tract is to be used for roads or other land of the surface tract is to be used for roads or other land of the surface tract is to be used [sic] is known to be understoverlying the oil and gas leasehold being developed uction, enlargement, alteration, repair, removal or abackny surface owner or water purveyor who is known to thousand five hundred feet of the center of the well part (6) The operator of any natural gas storage field with the tenants in common or other co-owners of interests do the may serve the documents required upon the person of eight, article one, chapter eleven-a of this code. (2) No notice to a landowner, unless the lien holder is the lar rovide the Well Site Safety Plan ("WSSP") to the surface the surface of the surface	racts overlying the disturbance as The coal owner, derlain by one or ed by the proposed indoment of any the applicant to ad which is used to in which the escribed in the otwithstanding any adowner, W. Va.
			as provided in section 15 of this rule. Well Plat Notice is hereby provided to:	
SURFACE OWNER	(s)		☐ COAL OWNER OR LESSEE	
Name: William L. Gadd			Name: NO DECLARATIONS ON RECORD WITH COUNTY	
Address: 151 Loretta Avenu	ie	_	Address:	
Follansbee, WV 260	037			
Name: Kenneth Eric Butler		_	☐ COAL OPERATOR	RECENSI
Address: 1078 Bethany Pike		-5	Name:	Office of Milanutis.
Wellsburg, WV 2607	The state of the s	-	Address:	
	(s) (Road and/or Other Di	isturbance)	WATER BURNEYOR WORDING OF HISTORIA	MAY 1 8 7071
Name: William L. Gadd	/	_	WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE	
Address: 151 Loretta Avenu				WV Ochaniman in
Name & Konneth Frie Butter	uor /	-	Name: NONE IDENTIFIED WITHIN 1500'	Environmental Process
Name: Kenneth Eric Butler		4	Address:	
Address: 1078 Bethany Pike Wellsburg, WV 26		_	HODER ATOR OF ANY STATE BY A CASE OF STATE	A OF PIPE IS
And the second s	(s) (Impoundments or Pits	- T	OPERATOR OF ANY NATURAL GAS STOR	
			Name:	
Address:		-	Address:	
		-1	*Please attach additional forms if necessary	
			The state of the s	

API NO. 47OPERATOR WELL NO, Busch Unit 1H
Well Pad Name: Gadd Pad

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting <a href="https://www.department.org/www.d

Well Location Restrictions

WV Department of Environmental Programment

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

API NO. 47	
OPERATOR WELL NO	O. Busch Unit 1H
Well Pad Name: Gadd Pa	ad

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 comparates 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 MAY 1 3 2021

WV Department of Environmental Protection

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.

API NO. 47OPERATOR WELL NO. Busch Unit 1H
Well Pad Name: Gadd Pad

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

RECEIVED:

MAY 1 3 707

VV Department of Environment Promotion

API NO. 47OPERATOR WELL NO. Busch Unit 1H
Well Pad Name: Gadd Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation

Telephone: (303) 357-7310 Diana O. Hoff

Email: mgriffith@anteroresources.com

Address: 1615 Wynkoop Street

Denver, CO 80202

Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

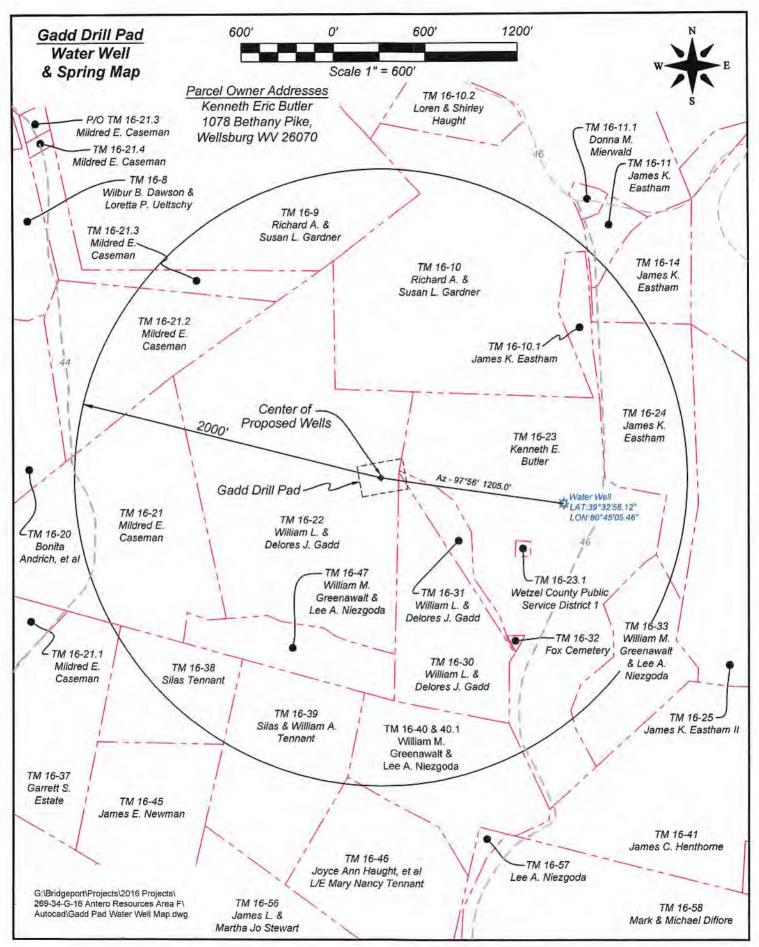
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory 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 deprivacyofficer@wv.gov.

MEGAN GRIFFITH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184011666
MY COMMISSION EXPIRES MARCH 13, 2022

RECEIVED
Office of Oil and Gage

MAY 1 3 2021

WV Department o: Environmental Probaction



WW-6A4 (1/12)

Operator Well No. Busch Unit 1H Multiple Wells on Gadd Pad

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

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

	ime Requ Noti <mark>ce: 0</mark> 3		Notice shall be	provided at least TE Date Permit Appl			permit application.	,	
Delivery	method	pursuant	o West Virgin	nia Code § 22-6A-16(b)				
□ на	ND		CERTIFIED I	MAIL					
	LIVERY			CEIPT REQUESTED					
receipt re drilling a of this su subsection and if ava	equested of horizont absection on may be ailable, fa	or hand deltal well: Pas of the determined in acsimile nu	very, give the ovided, That re the notice was writing by the nber and elect	least ten days prior to surface owner notice notice given pursuant was provided to the su surface owner. The r ronic mail address of	of its intent to subsection rface owner: notice, if require operator	to enter upon to n (a), section to Provided, ho uired, shall inc	the surface owner's en of this article sat wever, That the noti lude the name, addr	land for tisfies to ice requiress, tel	or the purpose of the requirements direments of this ephone number,
Name:	William L. G		to the SUK	FACE OWNER(S)	Name:	Kenneth Eric But	ler		
	151 Loretta	Avenue				1078 Bethany Pik	-		
		, WV 26037				Wellsburg, WV 26			
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Notice is Pursuant the surface State: County: District: Quadrang Watershe This No Pursuant facsimile related to located at the	to West 'Gree Owner' West 'Gree Owner' West 'Gree Port Control of the Control o	Virginia Construction of the construction of t	the purpose of the back to the purpose of the back to	drilling a horizontal w U' Pu Go -16(b), this notice sh ress of the operator a ned from the Secretary VV 25304 (304-926-0	rell on the tra IM NAD 83 ablic Road A cenerally used all include and the oper y, at the WA 450) or by w Authorized Address:	act of land as f Easting: Northing: ccess: I farm name: the name, add ator's authoriz / Department or visiting www.d	well operator has a collows: 521009.920 4377840,376m Eightmile Road William L. & Delores J. ress, telephone nur ted representative. A cof Environmental P ep.wv.gov/oil-and-g : Megan Griffith 1615 Wynkoop St. Denver, CO 80202	mber, a Additio Protection	WV Department Protection on headquarters, es/default.aspx.

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

WW-6A5 (1/12) Operator Well No. Busch Unit 1H

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

Date of Notic		ed no later than the filing date of hit Application Filed: 05/07/2021	of permit a	application.	
Delivery met	hod pursuant to West Virginia Coo	de § 22-6A-16(c)			
■ CERTI	FIED MAIL	☐ HAND			
	RN RECEIPT REQUESTED	DELIVERY			
return receipt the planned of required to be drilling of a damages to th (d) The notice of notice. Notice is her	V. Va. Code § 22-6A-16(c), no later requested or hand delivery, give the operation. The notice required by the provided by subsection (b), section horizontal well; and (3) A proposed he surface affected by oil and gas ope es required by this section shall be given by provided to the SURFACE OV is listed in the records of the sheriff at	surface owner whose land will be his subsection shall include: (1) ten of this article to a surface ow surface use and compensation a rations to the extent the damages wen to the surface owner at the a VNER(s)	be used for) A copy of wher whose agreement s are comp	the drilling of a horize of this code section; (2) a land will be used in containing an offer of the section of the section of	ontal well notice of 2) The information onjunction with the f compensation for ix-b of this chapter.
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to Woperation on	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp	ose of drilling a horizontal well	Bethany Pike 6070 dersigned w on the trac	et of land as follows:	KEGEWEI
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to V operation on State:	eby given: Vest Virginia Code § 22-6A-16(c), no	Address: 1078 B Wellsburg, WV 260 otice is hereby given that the under some of drilling a horizontal well of	Bethany Pike 6070 dersigned w on the trac casting:	et of land as follows: 521009.920	Office of OV and G
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to V operation on State: County:	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp	Address: 1078 B Wellsburg, WV 260 otice is hereby given that the under some of drilling a horizontal well of	Bethany Pike 5070 Hersigned w on the trac Zasting: Northing:	et of land as follows:	KEGEWEI
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to V operation on State: County: District:	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Wetzel	Address: 1078 B Wellsburg, WV 260 Poise of drilling a horizontal well of UTM NAD 83 Public Road Access	Bethany Pike 5070 dersigned w on the trac Casting: Northing: s:	et of land as follows: 521009.920 4377840.376m	PRESERVED
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to W operation on State: County: District: Quadrangle:	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Wetzel Green	Address: 1078 E Wellsburg, WV 260 etice is hereby given that the under cose of drilling a horizontal well of UTM NAD 83	Bethany Pike 5070 dersigned w on the trac Casting: Northing: s:	ct of land as follows: 521009.920 4377840.376m Eightmile Road	MAY 1 9 7021
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to V operation on State: County: District: Quadrangle: Watershed: This Notice S Pursuant to V to be provide horizontal we surface affect information r	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Wetzel Green Porters Falls 7.5' Lower Fishing Creek Shall Include: Vest Virginia Code § 22-6A-16(c), the ed by W. Va. Code § 22-6A-10(b) the ed by W. Va. Code § 22-6A-10(b) the ed by oil and gas operations to the related to horizontal drilling may be located at 601 57th Street, SE,	Address: 1078 B Wellsburg, WV 260 Address: 1078 B Book a horizontal well of the second address and the second address are compensioned from the Secretary, at	dersigned won the trace asting: Northing: s: n name: py of this c will be use taining an asable under the WV	et of land as follows: 521009.920 4377840.376m Eightmile Road William L. & Delores J. Gadd code section; (2) The insed in conjunction with offer of compensation er article six-b of this Department of Enviro	MAY 1 3 702 MAY 1 3 702 MAY 1 3 702 FOURTHERINA PROCESS Information required the drilling of a for damages to the chapter. Additional immental Protection
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to W operation on State: County: District: Quadrangle: Watershed: This Notice S Pursuant to W to be provide horizontal we surface affect information re headquarters, gas/pages/def	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Wetzel Green Porters Falls 7.5' Lower Fishing Creek Shall Include: Vest Virginia Code § 22-6A-16(c), the ed by W. Va. Code § 22-6A-10(b) the ed by oil and gas operations to the related to horizontal drilling may be located at 601 57th Street, SE, Grault.aspx.	Address: 1078 B Wellsburg, WV 260 Address: 1078 B Book a horizontal well of the second and second access are compensed and compensation agreement contextent the damages are compensed obtained from the Secretary, at Charleston, WV 25304 (304-9)	dersigned won the trace asting: Northing: s: n name: py of this c will be us ntaining an nsable under tt the WV	et of land as follows: 521009.920 4377840.376m Eightmile Road William L. & Delores J. Gadd code section; (2) The insed in conjunction with offer of compensation er article six-b of this Department of Environor by visiting www.delores.	MAY 1 3 7021 MAY 1 3 7021 FOURTHERN OF THE PROPERTY OF THE P
Name: William I Address: 1511 Follansbee, WV 2 Notice is her Pursuant to V operation on State: County: District: Quadrangle: Watershed: This Notice S Pursuant to V to be provide horizontal we surface affect information r headquarters,	eby given: Vest Virginia Code § 22-6A-16(c), no the surface owner's land for the purp West Virginia Wetzel Green Porters Falls 7.5' Lower Fishing Creek Shall Include: Vest Virginia Code § 22-6A-16(c), the ed by W. Va. Code § 22-6A-10(b) the ed by oil and gas operations to the related to horizontal drilling may be located at 601 57th Street, SE, Grault.aspx.	Address: 1078 B Wellsburg, WV 260 Expendit on the secretary, at Charleston, WV 25304 (304-9) Address: 1615 W	dersigned won the trace asting: Northing: s: n name: py of this c will be use taining an asable under the WV	et of land as follows: 521009.920 4377840.376m Eightmile Road William L. & Delores J. Gadd code section; (2) The insed in conjunction with offer of compensation er article six-b of this Department of Environor by visiting www.delores.	MAY 1 3 7021 MAY 1 3 7021 FOURTHERN OF THE PROPERTY OF THE P

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.

API NO. 47- 103 -	
OPERATOR WELL NO.	Busch Unit 1H
Well Pad Name: Gadd Pad	

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

State:	the well plat, all for proposed well work on the tract West Virginia	M NAD 83 Easting:	521009.920
County:	Wetzel	Winab 83 Northing:	4377840.376m
District:		lic Road Access:	
Quadrangle: Watershed:	Porters Falls 7.5' Ge	nerally used farm name:	William L. & Delores J. Gadd
	that I have no objection to the planned work describ	ed in these materials, and	I have no objection to a permit being
issued on tho	se materials.		
Mark to the state of	7 - 7 - 7 - 7 W		
*Please check	k the box that applies	FOR EXECUT	ION BY A NATURAL PERSON
	k the box that applies CE OWNER		
□ SURFA		Signature: Print Name:	
□ SURFAC	CE OWNER	Signature: Print Name: Date:	
□ SURFAC □ SURFAC	CE OWNER CE OWNER (Road and/or Other Disturbance)	Signature: Print Name: Date: FOR EXECUT	ION BY A CORPORATION, ETC.
□ SURFAC □ SURFAC □ SURFAC □ COAL C	CE OWNER CE OWNER (Road and/or Other Disturbance) CE OWNER (Impoundments/Pits) OWNER OR LESSEE	Signature: Print Name: Date: FOR EXECUT Company: By:	TION BY A CORPORATION, ETC.
□ SURFAC □ SURFAC □ SURFAC □ COAL C □ COAL C	CE OWNER CE OWNER (Road and/or Other Disturbance) CE OWNER (Impoundments/Pits) OWNER OR LESSEE OPERATOR	Signature: Print Name: Date: FOR EXECUT Company: By:	TION BY A CORPORATION, ETC.
□ SURFAC □ SURFAC □ SURFAC □ COAL C □ COAL C	CE OWNER CE OWNER (Road and/or Other Disturbance) CE OWNER (Impoundments/Pits) OWNER OR LESSEE	Signature: Print Name: Date: FOR EXECUT Company: By:	MAY 1 3 702

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.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

Byrd E. White, III Secretary of Transportation/ Commissioner of Highways 1900 Kanawha Boulevard East • Building Five • Room 110 Charleston, West Virginia 25305-0430 • (304) 558-3505

Jimmy Wriston, P. E. Deputy Secretary/ Deputy Commissioner

April 29, 2021

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 Gadd Pad, Wetzel County

Busch Unit 1H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0045 which has been issued to Antero Resources for access to the State Road for a well site located off Wetzel County Route 46 SLS MP 2.55.

This operator is in compliance with §22-6A-20 of the WV Code. 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 October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

MAY 1 3 202

WV Dopartment of Environmental Protection

Very Truly Yours,

Gary K. Clayton, P.E.

Regional Maintenance Engineer Central Office O&G Coordinator

Cc: Megan Griffith Antero Resources CH, OM, D-6 File

List of Anticipated Additives Used for Fracturing of 0 3 4 0 4 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 RE:	EIVED
Sodium Hydroxide	1310-73-2	Marria.
Sugar	57-50-1 MΔY :	3 20%
Surfactant	00439-31-0	
Suspending agent (solid)	14808-60-7 WV Dep.m	men. u
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7 Environmental	Protection
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	
Hexamthylene 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-olcompound with methyloxirane	38172-91-7	

LOCATION COORDINATES: ACCESS ROAD TA EMPRANCE LATITUDE 30.546279 LONGITUDE: -80.752428 (NAD 95) LATITUDE: 30.546871 LONGITUDE: -80.752428 (NAD 95) LATITUDE: 30.546871 LONGITUDE: -80.752807 (NAD 27) N. 43774620 S. B. S.3237.38 (UM 20%E) T. MICHOS

CENTER OF TANK
LATITUDE: 39.545036 LONGITUEE: -80.756107 (NAB 83)
LATITUDE: 39.548956 LONGITUDE: -80.756284 (NAD 27)
N 4377845.88 E 526954.63 (UTM 20ME) 17 METERS;

CENTROID OF PAD LATITUDE: 39.5498977 LONGITUDE: -80.755475 (NAD 83) LATITUDE: 39.549897 LONGITUDE: -80.755452 (NAD 27) N 4377338.50 E 521098.94 (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

APPROVED

MODIFICATION

WVDEP OOR

CHARLES E. COMPTON, III - SURVEYING COORDINATOR

NAVITUS ENGINEERING INC. CYRUS S KUMP, PE - PROJECT MANAGER/ENGINEER OFFICE: (889) 682-4185 CELL: (640) 686-8747

ENVIRONMENTAL:
SECA ENVIRONMENTAL CONSULTANTS, INC.
IVAN J. MALIONADO — ENVIRONMENTAL SPECIALIST
OFFICE (41E) 828-1001 CLLL (570) 776-5780

JM WILSON - LAND AGENT OFFICE: (304) 842-4410 CELL (304) 871 2708

7 / 10 / 2019

FLOODPLAIN NOTES
THE SITE IS LOCATED IN TLOOD ZONES IN PER FEMA MAP NUMBER #54103001760

ENTRANCE PERMIT:

ANTERIOR RESOURCES COMPORATION HAS OBTAINED AN ENGINEARMENT PERMIT (FORM MM-100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STERMA AND WELLAND BELIEVATIONS WERE PERFORMED BETWEEN AUGUST 5, 2017 & AUGUST 11, 2017
BY SYNCA SEVINONDENTAL CONSULTAINS, TO REVIEW THE SITE FOR WATERS AND WELLANDS THAT ARE
MOST LIKELY WITHIN THE REGULATORY PLEWISE OF THE U.S. ARMY DORRS OF ENGENEERS (USACE)
AND/OR THE WEST VIRIGINA DEPARTMENT OF POWEROMENTAL PROFICETION (1992B). THE SEPTEMBER 25,
2017 WELLAND BELIEVATION AND STREAM DENTHFICATION REPORT WAS PREPARED BY SWICE
ENVIRONMENTAL CONSULTAINTS AND SUMMARIZES THE RESULTS OF THE HELD ELEMENTON. THE MAD
DORS NOT, IN ANY WAY, MEPRICENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF
WATERS AND RELIEVANCE WHEN MAY DE REGULATED BY THE WAS OF THE HELD SUMMARIS.

GEOTECHNICAL NOTES:

GEOUTE-CHINICAL PULLS.

SUBJUSTED HINTSTIGATION OF THE SITE MAS PREPORTED BY PENNSYLVALLA SOLE, BOCK, INC.

A SUBJUSTED HINTSTIGATION OF THE SITE MAS PREPORTED BY PENNSYLVALLA SOLE, BOCK, INC.

BOCK, INC. DATE: ANNABY 22, 2014, SETALTE THE RESULTS OF THE SUBSURFACE INVESTIGATION.

THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS SEPORM THEE USES IN THE

PREPARATION OF THISSY FLANS. PLANS REFER TO THE SUBSURFACE INVESTIGATION REPORT TO

PREPARATION OF THIS PLANS. PLANS REFER TO THE SUBSURFACE INVESTIGATION REPORT TO

PREPARATION OF THIS PLANS.

PROJECT CONTACTS:

OPERATOR: ANTERO RESOURCES CORPORATION 535 WHITE OAKS BUY! BRIDGEPORT, WY 26330 PHONE. (304) 842-4100

FAX: (304) 842-4108 ELI WAGONER - ENVIRONMENTAL ENGINEER OFFICE (304) 842-4068 CELL (304) 476-9770

JON MCEVERS - OPERATIONS SUPERINTENDENT DEFICE: (303) 357-6799 CELL: (303) 806-3423

AARON KUNZLER - CONSTRUCTION SUPERVISOR

AMON KUNZLER - CONSTRUCTION SUPERVISOR CELL (469) 257-6344 ROBERT 8 MRSS - FIELD FINNIESE FINNISTAMUM 501. & ROCK. INC. FIRST MANUS - FROM THE MANUS - FROM TH

- 13ML AND MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE AND COMPLETE AND PERMANENTS STABILIZED, MAINTENANCE MUST INCLUDE DISSECTION OF ALL BROSSON AND SEQUENT CONTROLS AFTER EACH BUNOFF EVENT IN EXCESS OF 0.5" AND ON A DIMERKLY BASIS.
- THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FIRST, STABILIZATION BUSY BE INTRIVED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FIRST STABILIZATION MEANS THAT ALL SOLL-DISTURBENC ACTIVITIES ARE COMPLETED, AND THAT ETHERS A PERMANENT VECTORITY COVER WITH A DENSITY OF TOO OR GREATER HAS REPRESENTED FOR THAT THE SURFACE LINE BEEN STABLISTED BY HAND COVER SICH AS PAYMENT OR DULLENCES IT SHOULD BE MOTED THAT THE OTE REQUIREMENT REFERS TO THE STILE AREA SCHOOL AND HAD DELIVERY AS A PROPERTY OF THE STILE.
- ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WYDEP
- ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY SEEDED.
- THE AS-BUILT INFORMATION SHOWN MEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF NOVEMBER JR. 2418. MAYINUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANCES MAKE TO THE SITE ATTEM THE ABOVE MENTIONED DATES.
- THE EXISTING CONTABUNENT EERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 190% CONTABNENT OF ALL PLUIDS PRIOR TO DRILLING OPERATIONS
- THE EXISTING ECONESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO EXSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

REPRODUCTION NOTE

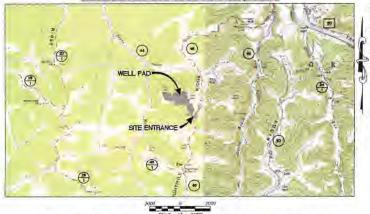
PARSE PLANS WARD CREATED TO BE PURTED IN 22 KM (ASSI II) DAMER, HALF SCALE GRAWINGS HEF DN (1707 HANS) BI PAFER

GADD WELL PAD & WATER CONTAINMENT PAD

AS-BUILT AND EROSION & SEDIMENT CONTROL IMPROVEMENT PLAN

GREEN DISTRICT, WETZEL COUNTY, WEST VIRGINIA LOWER FISHING CREEK & UPPER FISHING CREEK WATERSHED

USGS 7.5 PORTERS FALLS & PINE GROVE QUAD MAP



WEST VIRGINIA COUNTY MAP



(NOT TO SCALE)

AS BUILT CERTIFICATIONS:
THE DRAWINGS, CONSTRUCTION HOTES, AND REFERENCE
DIAGRAMS ATTACHED LIBERTO HAVE BERN PREPARED
RECORDANCE WITH THE WEST VIRGINA CORE OF STATE
RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE
OF DIL AND GAS CES 33-6.

WVDOH COUNTY ROAD MAP



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

SHEET INDEX

- 1 COVER SHEET
- 2 LEGEND
- 3 OUTDALL PLAN SHIPPY MINEY
- 4 ACCESS ROAD AS-BUILT PLAN
- 5 ACCESS ROAD & WELL PAD AS-BUILT PLAN
- 6 WELL PAD & STOCKPILE AS-BUILT PLAN
- 7 ACCESS ROAD AS-BUILT PROFILES
- 8 WELL PAD AS-BUILT SECTIONS
- 9-10 STOCKFILE AREA AS-BUILT SECTIONS
- 11-12 CONSTRUCTION DETAILS

GADD LIMITS OF DISTR	RBANCE	AREA (AC)	
Total Site		Modified	Total
Access Road "A" (1,275')	6.08	0.00	6.08
Co. Rt. 46 Bump Out	0.78	0.00	0.78
Well Pad	15.79	0.21	17.00
Excess/Topsoil Material Stockpiles	10.30	0.00	10.30
Total Affected Area	33.95	0.21	34.16
Total Wooded Acres Disturbed	26.19	0.17	28.36
Impacts to Co	RE 46 R	W	
Access Rand "A" (4")	D 04	0.00	0.04
Co Rt 48 Bump Out	0.06	0.00	0.06
Total Affected Area	0.10	0.00	0.10
Total Wooded Acres Disturbed	0.00	0.00	0.00
Impacts to Kenneth Eric Butler	& Kennett	E Buller Th	115-23
Access Road "A"	1.22	000	1.22
Co. Rt. 48 Bump Out	0.72	0.00	0.72
Well Pad	3.32	0.00	3.32
Excess/Topsoil Material Stockpiles	3.27	0.00	3.27
Total Affected Area	8.53	0.00	8,53
Total Wooded Acres Disturbed	5.71	0.00	5.71
Invocts to William L. & De	doras J. G	add TM 15-31	0
Access Road "A" (663")	3.23	0.00	3.23
Well Pad	1,28	0.00	1.28
Total Affected Area	4.51	0.00	4.51
Total Wooded Acres Disturbed	3.99	0.00	3.99
Impacts to Wittem L & De	Home J. G	add TM 16-31	
Access Road "A" (588')	1.59	0.00	1.59
Well Pad	0.50	0.00	0.50
Excess/Topsoil Material Stockpiles	0.18	0.00	0.16
Total Affected Area	2.25	0.00	2.25
Total Wooded Aures Disturbed	1.71	0.00	1.71
Impacts to William L. & Do	iones J. G	add TM 16-22	2
Well Pad	11.69	0.21	11.90
Excess/Topsoil Material Stockpiles	6.87	0.00	6.87
Total Affected Ama	18.56	0.21	18.77
Total Wooded Acres Disturbed	14.78	0.17	14.95

Proposed Well Name	WW North NAD 27	WW.North	Zone 17	NAD 83 Lat & Long
Metchiess	N 384809 70	N 354905 51	N 4377838 90	LAT 39-32-69 900A
UNETH	E 1545771.69	E 1814331.24	E 820958 64	LONG -80-45-21-8168
Matchiess	N 334570 15	N DMSES OF	N GITTING CO.	LAT 19-32-69 GM2
Unit 2H	E 1545781.08	E 1014341.23	E 525581 68	LONG -80-45-71 8814
Charlotte	N 384670.60	N 384906.40	N.4377839.29	LAT 39-32-69.9121
Unit 1H	E 1645791.67	E 1814051 22	E 520964 72	LONG-80-45-21 3639
Charlotte.	N 384671.CA	N 384905.85	N 4077(00 47	LAT 39-32-69:0170
Unit 2H	E 1545701 56	£ 1814361.21	E 520967.76	LONG -80-45-21-4088
Busch	N 384871.49	N 384907.30	N 4377839-65	LAT 39-32-59-9237
Unit 1H	E 1045811.85	E 1814371.20	E 520975 80	LONG -8045-21.3090
Busch	N 384971 54	N 284907.75	N 4077839 84	LAT 30-32-59-9256
Minit 2H	E 1645021.64	£ 1814361 19	£ 520973.64	LONG 40-45-21 1816
Peeler	N 384872 50	N 298508-41	N 4377840.07	CAT 39-37-59:9520
Unit 1H	E 1845044.97	E 1814504.52	E 521011 41	LONG -80-45-10-8073
Paelar	N 354874.34	14.254910.15	N 4377641,25	LAT 39-32-69 9716
Unit 2H	E 1545904 RZ	E 1016514 30	C 521014 41	LDNO -20-45-19 4819
Pasier	N 384879 05	N 384911.83	N 437784 L85	LAT 89-32-59 9002
Linit 3H	E 1945064 50	E 1914524 21	E \$21017.40	LONG -50-45-19-3995
Blake	N 384977 82	N 284913.64	N 4377842 41	EAT 39-33-00 0096
Unit 114	p readolf 51	£ 1614554.06	£ 521020.30	LONG-80-45-19-2311
Keyetone West	N 294879 EX	H 384015.38	64377842.09	LAT :0-3540 (02/4
Unif til	E 1645984 36	E 1614543 10	E 521023.58	LONG-80-45-19,1057
Blake	N 384851.31	(4 394917.13	N 4377843.57	LAT 39-33-00 0400
Unii 2H	E 1649994 20	E 1614853 75	E 527020, 37	LONG 1945 W 9825
Keystone West	N 354653 05	M Setbig 85	N-4377644 1S.	LAT 39-33-03 OWN
Unit 2H	E 1849004 05	E 1814563.60	E 52 1029 38	LONG -80-45-18 E550
Blake	N 384990 03	N 384525.85	N 4377846.45	LAT 39-33-00, 1760
Unit 3H	E 1848043 44	€ 1614002.96	E 521041.32	LONG-80-45-18-3534
Keystone	N 354891.77	N 384627.56	N 4377847.05	LAT 39-33-00 1575
Unit 3H	E 1546053 27	E 1814812 32	E 521044 31	LONG-8045-19 2262

100000000000000000000000000000000000000	Permanent Impacts		Temp impacts	Temp. Disturb.	W. 603 Tono Car	
Stream and Impact Cause		Injets/Outlets Structures (LF)	Controls (LF)	Distance to LOD.(LF)	Total Impact (LF)	
SB (Well Pad)	94	0	82	19	150	
\$10 (Well Pad)	0	0	24	9	24	
S17 (Well Pad)	99	- 0	10	0	109	

S EERING ENGIN



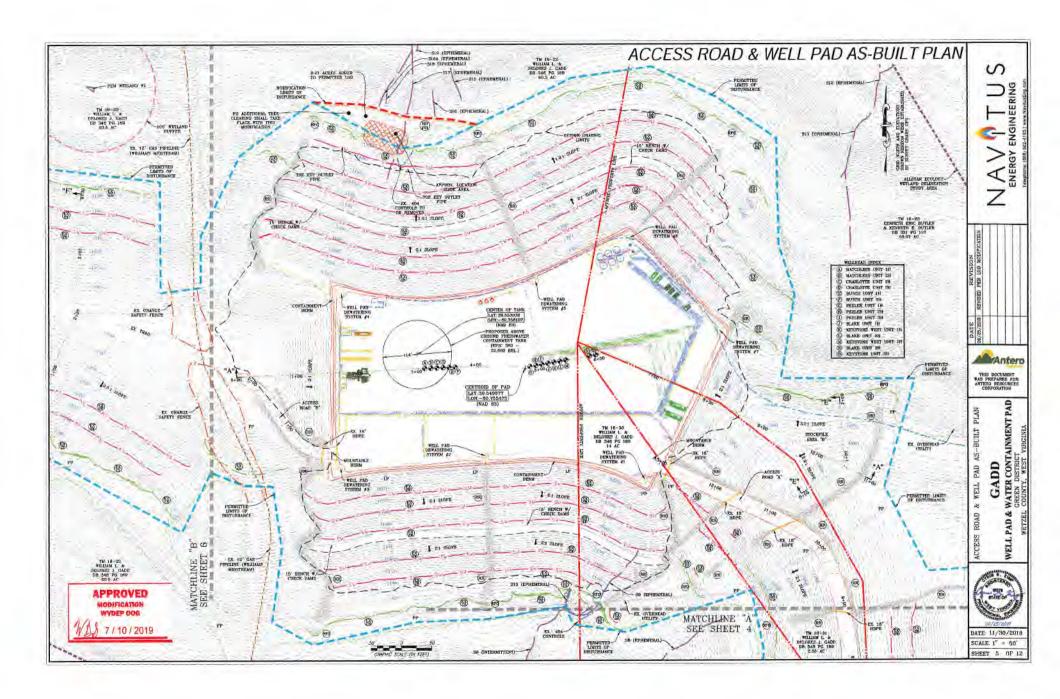
PAD

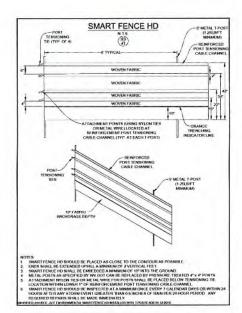
WATER CONTAINMENT GREEN DISTRICT GADD

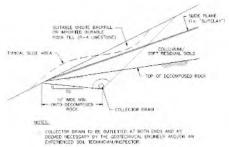
8 PAD



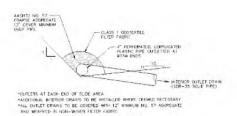
DATE: 11/30/2018 SCALE AS SHOWN SHEET 1 OF 12







D1 TYPICAL SLIDE REPAIR DETAIL (2500) NOT TO SCALE



COLLECTOR DRAIN DETAIL NOT TO SCALE

S NAV TU

DATE REVISED PER LOD MODIFICATION



THIS DOCUMENT WAS PREPARED FOR: ANTERO RESOURCES CORPORATION

CONSTRUSTION DETAILS

GADD
WATER CONTAINMENT PAD
GREEN DISTRICT WELL PAD &



DATE: 11/30/2018 SCALE: AS SHOWN SHEET 11 OF 12

LOCATION COORDINATES:
ACCESS ROAD 'A' ENTRANCE
LATITUDE: 39.56749 LONGITUDE: -80.732429 (MAD B3)
N 4377492.08 E 581271.68 (UTM ZONE 17 METERS)

CENTER OF TANK CANTEN OF 1886 LATITUDE: 29 550320 LONGITUDE: -80 754914 (NAD 85) N 4377077.78 E 521057.04 (UTM 20NE 17 METERS)

CENTROID OF PAD LATITUDE: 39.540803 LONGITUDE: -80.755603 (NAD 83) N 4377840.82 E 620807.86 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION:

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

FLOODPLAIN NOTES: THE PROPOSED SITE IS LOCATED IN PLOOD ZONES 'X" PER FEMA MAP NUMBERS \$54103C0175C.

MISS UTILITY STATEMENT:
ANTRO RESOURCES COMPORTION VILL NORTHY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF
UTILITIES PRIOR TO THIS PROJECT DESIGN. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE
CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ANTERIO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT FERMIT (FORM MM-169) FROM THE WEST VIRGUMA DEPARTMENT OF TRANSPORTATION BUYESION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND RULLAND DELIGITATIONS WERE PERFORMED BETWEEN ADGUST 5, 2017 & AUGUST 11, 2017
BY SWAC AND DELIGITATIONS WERE PERFORMED BETWEEN ADGUST 5, 2017 & AUGUST 11, 2017
BY SWAC AND DELIGITATION OF THE SEGULATION FOR THE STE FOR WATERS AND WELLANDS THAT ARE
MOST LIBELY WITHIN THE REQUILATION PURPOSED PROVIDED THE STEP FOR WATERS AND WEST WEST WESTERN DELIVERY DELIVERY OF THE STEP FOR THE STEP FOR

GEOTECHNICAL NOTES:
A SUBSHIPFATE DATSTIGATION OF THE PROPOSED SITE WAS PERFORMED BY PERSONNAMA BOIL &
SOCK, INC. RESTRUCTS DECEMBER 12 & DECEMBER 22, 2017. THE REPORT PREPARED BY
PENRSYLVARIA SOIL & BOCK, INC. DATED ANABET 22, 2019. REPLICITS THE RESILIES OF THE
SUBCEDIFICAL PRESTIGATION. THE REPORTANCE AND RECOMMENDATIONS CONTAINED IN THIS REPORT
PRINTEDITATION REPORT BY PENSYLVANIA SOIL & ROCK, INC. POR ADDITIONAL INFORMATION, AS

PROJECT CONTACTS:

OPERATOR: ANTERO RESOURCES CORPORATION 525 WHITE GAKS BLVD. BRIDGEPORT. WY 26330 PHONE: (304) 842-4100 FAX: (304) 842-4102

ELI WAGDNER - ENVIRONMENTAL ENGINEER OFFICE: (304) 842-4068 CFLL: (304) 476-8770

ION MCEVERS - OPERATIONS SUPERINTENDENT OFFICE (303) 357-6709 CELL (303) 608-2423

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

ROBERT B. WIRKS - FIELD ENGINEER OFFICE: (304) 842-4100 CELL: (304) 627-7405 CHARLES E. COMPTON. III - SURVEYING COORDINATOR CELL: (204) 719-5449

APPROVED

2/27/2018

JIM WILSON - LAND AGENT OFFICE: (304) 842-4419 CKLL: (304) 671-3708

ENGINEER/SURVEYOR, NATUUS ENGINEERING, DIC. CYRUS S. KUMP, PE - PROJECT MANAGER/ENGINEER OFFICE: (888) 662-4185 CELL: (540) 686-8747

ENVIRONMENTAL SWCA ENVIRONMENTAL CONSULTANTS, INC. IVAN J. MALDONADO — ENVIRONMENTAL SPECIALIST OFFICE (412) 839-1001 CELL- (670) 778-5768

GEOTECHNICAL:
PENNSYLVANA SOIL & ROCK, INC.
CHRISTOPHER *. SAMOS = PROJECT ENGINEER
OFFICE: (412) 372-4000 CELL: (412) 589-0082

RESTRICTIONS NOTES:
1. THERE ARE NO PERENDAL STREAMS, WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 78ET OF THE WESL, PAD AND LID.

- 2 THERE ARE NO NATURALLY PRODUCING THOUT STREAMS WITHIN 200 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FRET OF THE WELL PAD AND LOB. THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 PEET OF THE WELL(S) BEING DERLED.
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

REPRODUCTION NOTE

THESE PLANS WERE CREATED TO BE PLOTTED ON SERVE (ARSE D) WATER HAD WOALD UNDOTING AND UN STATT LANGE BY PAPER.

GADD WELL PAD & WATER CONTAINMENT PAD SITE DESIGN & CONSTRUCTION PLAN. **EROSION & SEDIMENT CONTROL PLANS** WVDEP OOG

GREEN DISTRICT, WETZEL COUNTY, WEST VIRGINIA LOWER FISHING CREEK & UPPER FISHING CREEK WATERSHED

USGS 7.5 PORTERS FALLS & PINE GROVE QUAD MAP



WEST VIRGINIA COUNTY MAP



(NOT TO SCALE)

WVDOH COUNTY ROAD MAP

DESIGN CERTIFICATION:
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE
DIAGRAMS ATTACHED BERRIT HAVE REEN PREPARED IN
ACCORDANCE WITH THE WEST VINGINAL CODE OF STATE
RULES, DYNSHOM OF ENVIRONMENTAL PROTECTION, OFFICE
OF OIL AND GAS CES 05-6.

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

COVER SCORE OF THE CONTRICTION AND LEGEND LEGEND MATERIAL QUANTITIES STORM DRAINAGE & EAS COMPUTATIONS STORM DRAINAGE & FEATURES FEATURES

- STORM TRAINING TO THE CONDUCTATIONS
- EXISTING CONDITIONS
- EXISTING CONDITIONS
- EXISTING CONDITIONS
- EXISTING STRUCTURES & PEATURES
- COVERAL PLAN SHEET INDEX & VOLUMES
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- COVERAGE PLAN SHEET PLAN
- ACCESS ROAD PROPILES
- COVERAGE PLAN SHEET PLAN
- COVERAGE PLAN
- COVERA

GADO LIMITS OF DISTURBANCE AR	EA (AC)
Total Site	
Access Road "A" (1,275')	5.46
Co. Rt. 46 Bump Out	0.78
Wet Pad	16.79
Excess/Topsoil Material Stockpiles	10,30
Total Affected Area	33.33
Total Wooded Acres Disturbed	26.11
Impacts to Co. Rt. 46 R/W	
Access Road "A" (4")	0.04
Co. Rt. 46 Bump Out	0.06
Total Affected Area	0.10
Total Wooded Acres Disturbed	0.00
Impacts to Kenneth Eric Butter & Kenneth E.	Buder TM 18-23
Access Road "A"	0.60
Co. Rt. 46 Bump Out	0.72
Wet Pad	3,32
Excess/Topsoil Material Stockpiles	3.27
Total Affected Area	7.91
Total Wooded Acres Disturbed	5.63
impacts to William L. & Delores J. Gadd	TM 18-30
Access Road "A" (583")	3.23
Well Pad	1.28
Total Affected Area	4.51
Total Wooded Agres Disturbed	3.99
Impacts to William L. & Delores J. Gadd	TM 16-31
Access Road "A" (588")	1,59
Well Pad	0.50
Excess/Topsoil Material Stockpiles	0.16
Total Affected Area	2.25
Total Wooded Acres Disturbed	1.71
Impacts to William L. & Delores J. Gadd	
Well Pad	11.69
Excess/Topsoil Material Stockpiles	6.87
Total Affected Area	13.56
Total Wooded Acres Disturbed	14.78

Proposed WWII Name	WV North NAD 27	W North	UTM (METERS) Zone 17	NAD BILLI E Long
Matchiess	N 384957.35	N 384903.17	N 4377536.90	LAT 39-32-59-9372
Unit 1H	E 1041915 43	E 1614474.98	E 521002.44	LONG -80-45-19 6635
Matchiese	N 364809 10	ni 386904,92:	N 4377639.50	LAT 29 32 59 9159
Unit 254	E 1845925 28	E 1814454 EZ	E 521006 43	1,DNG-66-45-19 4501
Charlotte	14 354675 65	N 384905.86	N 4377846.09	LAT 39-32-59, 9344
Unit 1H	E 1645936 12	E 1814494 67	E 821008 42	LONG-80-45-19.7327
Charlotte	N 364872 59	ri anime 4c	N 4377840.87	LAT 39-32-59.5530
Unit 2H	E 1041044.97	E 1614004 02	52101141	CONG -80-45-19.6073
Busch	19.30/07/4-34	N 30491C 15	N-4377841-25	LAT 3P-32-59.9718
Unit 1H	E 1645954 82	E 1614514.38	0.521014.41	1.29c3 -40-45-12 4519
Busch	N 384976 08	N 284911 89	N 43/7841 83	LAT 29-30-69 \$902
Unit 254	E 1645064.66	E 1814524.21	E 521017.40	LONG-80-45-10.3565
Paulor	N 384877.92	14 384913.64	14 4377842.41	LAT 39-33-00.0058
Unititle	E 1041674 51	E 1014574.05	E 521020 09	LONG 80-45-19-2114
Peoler	N 2646772 67	N 364915,38	N 4371842 99	LAT 35-31-00 0274
Unit 21	E 1645/84 30	E 1014543 90	E 621022 38	LONG-80-45-19 1057
Peober	N 384981 31	N 384917.12	N 4377843 57	LAT 36-33-00 0460
Unit 3H	E 1545994.20	E 1514553.75	E 521025.37	LCNG-80-45-16.9903
Blake	N 354861.05	N 384918.87	N 4377844.16	LAT 35-33-00.0646
Ciret 19	£ 1646034.05	E 1614503.62	E 521029 30	LCNG-80-45-18 8550
Keystone West	N 354864 BD	N 394020 61	N 4327844 74	LAT 39-30-00 0932
Unit TH	E 1646013.90	E 1614573.44	E \$21002,35	LONG 80-45-18.7296
Blake	N 384896 54	N 384072 36	N 4377845 32	LAT 85-33-00 1018
UNI 2H	E 1845023 74	E 1614583.29	E 521005.34	LONG -83-45-18 6042
Knystone West	N 364889.29	N 384904.10	N 4377846.90	LAT 39-33-00 1204
Unit 2H	€ 1045033.50	E 1014563.14	E 521035.33	LONG 80-45-18 4788
Bloke	14 264891,03	N 384925 15	N. 4377846.45	LAT 35-33-00 1395
Unit 3H	E 1045043 44	E 1614812 98	E 521041 32	1.0140 -86-45-18.3634
Keystone	9-384891 37	N 384927 56	N 4377847 D6	LAT 38-33-00 1575
Unit 3H	E 1648053.27	E 1614812.62	E 521044.31	LONG 80-45-18-2282
Well Pad Elevation	1.222.0			

	Parma	nent Impacts	Temp, impacts	Temp. Disturb.	Total Impact
Stream and Impact Cause		Inlets/Outlets Structures (LF)	Cofferdam' E&S Controls (LF)	Distance to L.O.D. (LF)	(LF)
59 (Well Pad)	94	0	62	19	156
S10 (Well Pad)	0	0	24	9	24
S17 (Well Pad)	20	. 0	28	9	48

S ENGINEERING

PERVISION REVISED PER STORE COMMENTS POLIS REVISED PER STORE COMMENTS PER STORE COMMENTS PER STORE COMMENTS	SION CONTIDUATION CONTIDUATION ORA & GEOTECH VDEP COMMENTS
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PAD WATER CONTAINMENT GREEN DISTRICT COVER

PAD &



DATE 12/08/2017 SCALE: AS SHOWN SHEET 1 OF 35

