

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, May 20, 2024 WELL WORK PERMIT Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit approval for Shenango Unit 1H

47-103-03658-00-00

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

Operator's Well Number: Shenango Unit 1H

Farm Name: Dallison Lumber, Inc.

U.S. WELL NUMBER: 47-103-03658-00-00

Horizontal 6A New Drill

Date Issued: 5/24/2024

API Number:	
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4710303658

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

- 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 code 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. 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. Also, 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.
- 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.

WW-6B (04/15)

API NO. 47- 103 -		
OPERATOR WELL	NO.	Shenango Unit 1H
Well Pad Name:	Galmis	sh Pad

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

1) Well Operato	or: Antero Res	sources Corpora	494507062	103 - Wetze	Green	Pine Grove 7.5'
			Operator ID	County	District	Quadrangle
2) Operator's W	Vell Number: St	henango Unit 1F	Well Pad	Name: Galmi	sh Pad	
3) Farm Name/	Surface Owner:	Dallison Lumbe	er Inc. Public Roa	d Access: Mck	immie Rid	lge Road
4) Elevation, cu	irrent ground:	As-Built 1160.7 E	Elevation, proposed 1	post-construction	on:	
5) Well Type	(a) Gas X Other	Oil _	Unde	erground Storag	e	
		allow X	Deep			
		rizontal X	Всер			
6) Existing Pad	: Yes or No Ye	And the second s				
			cipated Thickness as ess- 55 feet, Associa			
8) Proposed Tot	tal Vertical Dept	th: 7500' TVD				
9) Formation at	Total Vertical I	Depth: Marcellu	S			
10) Proposed To	otal Measured D	Depth: 7500' M	D			
11) Proposed H	orizontal Leg Le	ength: 0' *Op	en to modification a	at a later date		
12) Approximat	te Fresh Water S	Strata Depths:	45', 130'			
13) Method to I	Determine Fresh	Water Depths:	47103025550000 Offset well	records. Depths have	been adjusted a	ccording to surface elevations.
14) Approximat	te Saltwater Dep	oths: 1961'				
15) Approximat	e Coal Seam De	epths: N/A				
16) Approximat	e Depth to Possi	ible Void (coal m	nine, karst, other):	None Anticipat	ed	
		n contain coal sea an active mine?	Yes	No	X	RECEIVE
(a) If Yes, pro	vide Mine Info:	Name:				Office of Oil and Gas
		Depth:				WAY 13 2024
		Seam:			E	WV Department of nvironmental Profession
		Owner:				Protection

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API NO. 47- 103

OPERATOR WELL NO. Shenango Unit 1H
Well Pad Name: Galmish Pad

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (1b/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300'	300'	CTS, 313 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3200'	3200'	CTS, 1303 Cu. Ft.
Intermediate					-		
Production	5-1/2"	New	P110-ICY	23#	7500'	7500'	CTS, 962 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners		-	7-				

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.375"	2250	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate				-		0.000742	1.10
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	14,360	2500	Class G/H	~1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			1.0
Liners				.,,200			

PACKERS

Kind:	N/A	Office of Oil and Gas
Sizes:	N/A	MAY 13 2024
Depths Set:	N/A	Environmental Protection

Page 2 of 3 05/24/2024 5-7-24

OPERATOR WELL NO. Shenango Unit 1H

Well Pad Name: Galmish 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): 64.40 acres

22) Area to be disturbed for well pad only, less access road (acres): 17.53 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/L cement.

Surface: Class A/L cement with 2-3% calcium chloride and 1/4 lb of flake Intermediate: Class A/L 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 G/H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

RECEIVED
Office of Oil and Gas

MAY 13 2024

WV Department of Environmental Protection

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

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5-7-24

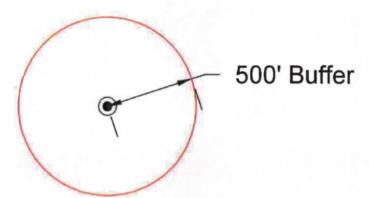
47 1 0 3 PEGEN 5 5 8

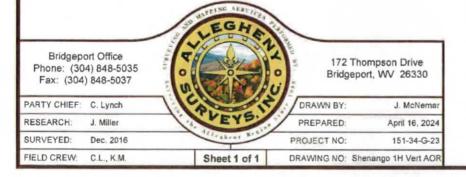
- Proposed gas well
- Existing Well, as noted
- Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone

Shenango 1H





RECEIVED Office of Oil and Gas

MAY 13 2024

WV Department of Environmental Protection



April 12, 2024

West Virginia Office of Oil and Gas Attn: Taylor Brewer 601 57th St SE Charleston, WV 25304

RE: Request for Variance – Class L Cement Cobb 1H, Walshin 1H, Pine 1H-2H, Harlan 1H-2H, Teocalli 1H, & Shenango 1H Wetzel County, WV

Mr. Brewer:

Pursuant to 35CSR8 Section 9.2.h.8, Antero Resources Corporation ("Antero") would like to implement the variance to allow Class L Cement in place of Class A cement relating to the construction of the following horizontal wells (Cobb 1H, Walshin 1H, Pine 1H-2H, Harlan 1H-2H, Teocalli 1H, & Shenango 1H) on the Galmish pad.

Antero only plans to use this method if Class A cement is not available to be use due to supply issues. Please see Order No 2022-14 attached.

If you have any questions or need further information, please feel free to contact Mallory Turco, Permitting Manager, at (303) 357-7182 or email at mturco@anteroresources.com.

Sincerely,

Stefan Gaspar Permitting Agent

Antero Resources Corporation

Office Of Oil and Gas

APR 17 2024

WV Department of Environmental Protection



west virginia department of environmental protection

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

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

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

IN THE MATTER OF A VARIANCE FROM LEGISLATIVE RULE 35CSR4)	ORDER NO.	2022-14
SECTION 11.5 AND LEGISLATIVE RULE 35CSR8 SECTION 9.2.h.8.,)		
RELATING TO THE CEMENTING OF OIL AND GAS WELLS)		

REPORT OF THE OFFICE

In response to industry requests, the West Virginia Department of Environmental Protection, Office of Oil and Gas has reviewed the proposed use of American Petroleum Institute (API) Class L cement to be used in place of API Class A cement for well construction.

FINDINGS OF FACT

- 1. On July 14, 2022, Northeast Natural Energy (NNE) submitted a variance request from Legislative Rule 35CSR8 Section 9.2.h.8., for the use of API Class L center in place of API Class A cement, relating to the construction of horizontal wells.
- 2. Laboratory analysis submitted by NNE on July 14, 2022, indicates API Class Incement is comparable to API Class A cement and thereby satisfies the requirement west Virginia Code.
- 3. Contemporaneously, the Chief of the Office of Oil and Gas also chose to consider a variance to Legislative Rule 35CSR4 Section 11.5., for the use of API Class L cement in place of API Class A cement, relating to the construction of vertical wells.

 On August 18, 2022, the Office of Oil and Gas provided public notice of acceptance of public comments on the variance consideration. During the 20-day public comment period, no comments were received.

CONCLUSIONS OF LAW

Pursuant to Article 6 and Article 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to Legislative Rule 35CSR4, Section 18 and Legislative Rule 35CSR8, Section 14, the Chief of the Office of Oil and Gas may grant a variance from any requirement of these rules.

ORDER

It is ordered that the Class L cement product approved and monogramed by API is approved for use in place of API Class A cement for well construction subject to the provisions of Legislative Rule 35CSR4 and Legislative Rule 35CSR8.

Dated this, the 13th day of September, 2022.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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

James Martin, Chief Office of Oil and Gas

Office Of Oil and Gas

APR 17 2024

WV Department of Environmental Protection

WW-9 (4/16)

API	Number	47.	103
Δ III	Number	+ / ·	- 100

Operator's Well No. Shenango 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) Fishing Creek Quadrangle Pine Grove 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:
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 legetings when applicable. API# 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 Wetzel County Landfill (Permit #SWF-1021)
Will closed loop system be used? If so, describe: Yes, fluids stored in tanks, cuttings removed offsite and taken to landfill.
Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate-Dust/Stiff Foam, Production - Water Based Mud
-If oil based, what type? Synthetic, petroleum, etc. Synthetic
Additives to be used in drilling medium? Please See Attachment
Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etcDrill cuttings 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) Wetzel County Landfill (Permit #SWF-1021)
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 composible 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
Stefan GASPAr Notary Public STEFAN GASPAR
Stefan Gaspar My commission expires November 15 2026 Notary Public STEFAN GASPAR NOTARY PUBLIC STATES PUBLIC ST

Proposed Revegetation Treatme	ent: Acres Disturbed 64.40 ac	Prevegetation p	Н
Lime 2-4	_ Tons/acre or to correct to pH	6.5	
Fertilizer type Hay or s	straw or Wood Fiber (will be used w	where needed)	
Fertilizer amount 500	lbs	s/acre	
Mulch 2-3	Tons/ac	cre	
.Gray's Spo	Peak Access Road (19.82 acres) + Access Ro il Pile 2 (2.06 acres) + Spoil Pile 3 (2.57 acres	ad (9.87 acres) + Well Pad (17.53 acres) + Spoil s) + Spoil Pile 4 (4.02 acres) + Topsoil/Stripping = 64.40 acres	Pile 1 (3.00 acres) + Pile (5.53 acres)
Temp	orary	Perm	anent
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
Field Bromegrass	40	Tall Fescue	30
See attached Table IV-3 for additional	seed type Galmish Rad Design)	Con allert and Table 197 A. C. 1991	
	seed type Gairnish Fad Design)	See attached Table IV-4A for additional	al seed type Galmish Pad Design
*or type of grass seed requ Attach: Maps(s) of road, location, pit and provided). If water from the pit started application a	ested by surface owner d proposed area for land applica will be land applied, include dim area.	*or type of grass seed requirements of the pit, and the p	ested by surface owne
*or type of grass seed requ Attach: Maps(s) of road, location, pit an	ested by surface owner d proposed area for land applica will be land applied, include dim area.	*or type of grass seed requirements of the control of the pit, and the control of the	ested by surface owne
*or type of grass seed requestatach: Maps(s) of road, location, pit and provided). If water from the pit vacreage, of the land application application of the land approved by:	d proposed area for land applica will be land applied, include dimarea. 7.5' topographic sheet.	*or type of grass seed requirements of the control of the pit, and the control of the	ested by surface owne
*or type of grass seed requestatach: Maps(s) of road, location, pit and provided). If water from the pit vacreage, of the land application application of the land approved by:	d proposed area for land applica will be land applied, include dimarea. 7.5' topographic sheet.	*or type of grass seed requirements of the control of the pit, and the control of the	ested by surface owner ading this info have been d dimensions (L x W), and
*or type of grass seed requestatach: Maps(s) of road, location, pit an provided). If water from the pit vacreage, of the land application application of the land approved by:	d proposed area for land applica will be land applied, include dimarea. 7.5' topographic sheet.	*or type of grass seed requirements of the control of the pit, and the control of the	ested by surface owne

Form WW-9 Additives Attachment

SURFACE INTERVAL

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

<u>INTERMEDIATE INTERVAL</u>

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



13. Escaid 110

Drilling Fluild Solvent - Aliphatic Hydrocarbon

14. Ligco

Highly Oxidized Leonardite - Filteration Control Agent

15. Super Sweep

Polypropylene - Hole Cleaning Agent

16. Sulfatrol K

Drilling Fluid Additive - Sulfonated Asphalt Residuum

17. Sodium Chloride, Anhydrous

Inorganic Salt

18. D-D

Drilling Detergent - Surfactant

19. Terra-Rate

Organic Surfactant Blend

20. W.O. Defoam

Alcohol-Based Defoamer

21. Perma-Lose HT

Fluid Loss Reducer For Water-Based Muds

22. Xan-Plex D

Polysaccharide Polymer – Drilling Fluid Viscosifier

23. Walnut Shells

Ground Cellulosic Material - Ground Walnut Shells - LCM

24. Mil-Graphite

Natural Graphite - LCM

25. Mil Bar

Barite - Weighting Agent

26. X-Cide 102

Biocide

27. Soda Ash

Sodium Carbonate – Alkalinity Control Agent

28. Clay Trol

Amine Acid complex - Shale Stabilizer

29. Sulfatrol

Sulfonated Asphalt – Shale Control Additive

30. Xanvis

Viscosifier For Water-Based Muds

31. Milstarch

Starch - Fluid Loss Reducer For Water Based Muds

32. Mil-Lube

Drilling Fluid Lubricant

Office Of Oil and Gas

APR 17 2024

WV Department of Environmental Protection



47 1 0 3 0 3 6 5 8 911 Address 2080 McKimmie Ridge Road, Reader, WV 26167

Well Site Safety Plan Antero Resources

Well Name: GALMISH UNIT 5V, COBB UNIT 1H, HARLAN UNIT 1H-2H, PINE UNIT 1H-2H, TEOCALLI UNIT 1H, SHENANGO UNIT 1H, WALSHIN UNIT 1H

Pad Location: GALMISH PAD

Wetzel County/Green District

GPS Coordinates:

Entrance - Lat 39.586601 /Long -80.704527 (NAD83)
Pad Center - Lat 39.577676 /Long -80.695615 (NAD83)

Driving Directions:

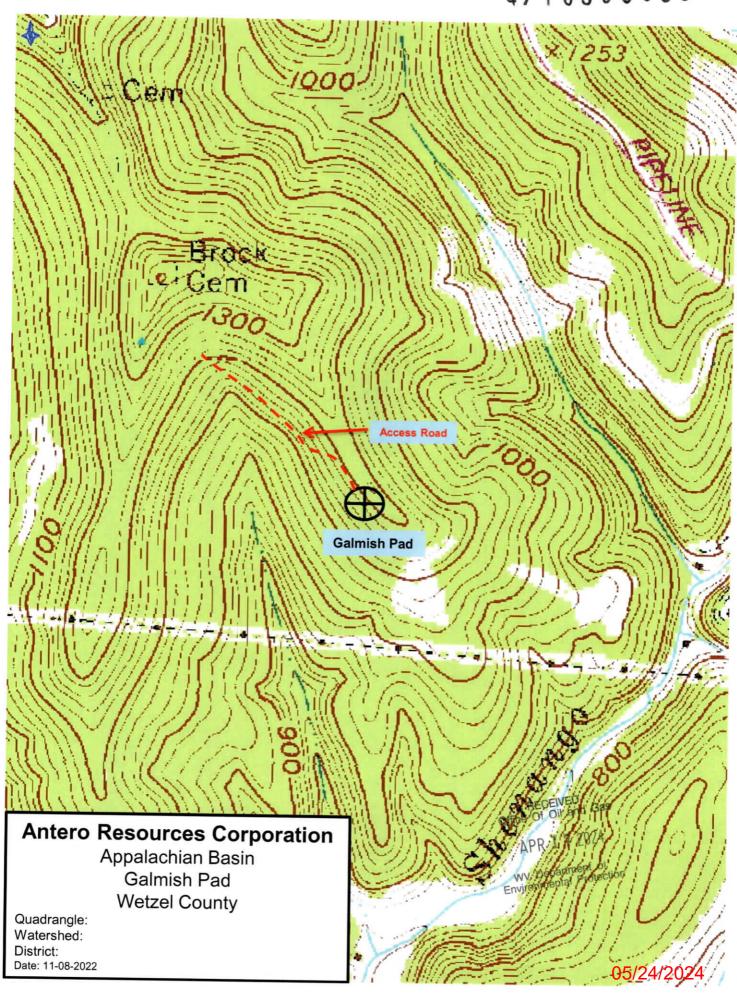
- 1. From WV-20, turn east onto North Fork Road.
- 2. Immediately turn left onto CO. 15/17 (N Fork Rd) and travel for 2.2 miles
- 3. Turn left onto WV-17(Barker Run Rd) and continue for 2.3 miles.
- 4. Turn left onto CO. 17/1 (Morgan Ashland Ridge Rd) and continue for 2.7 miles.
- 5. Turn left onto CO. 52 (McKimmie Ridge Rd) and travel for 1.3 miles.
- 6. The Galmish Lease Road will be on the left.

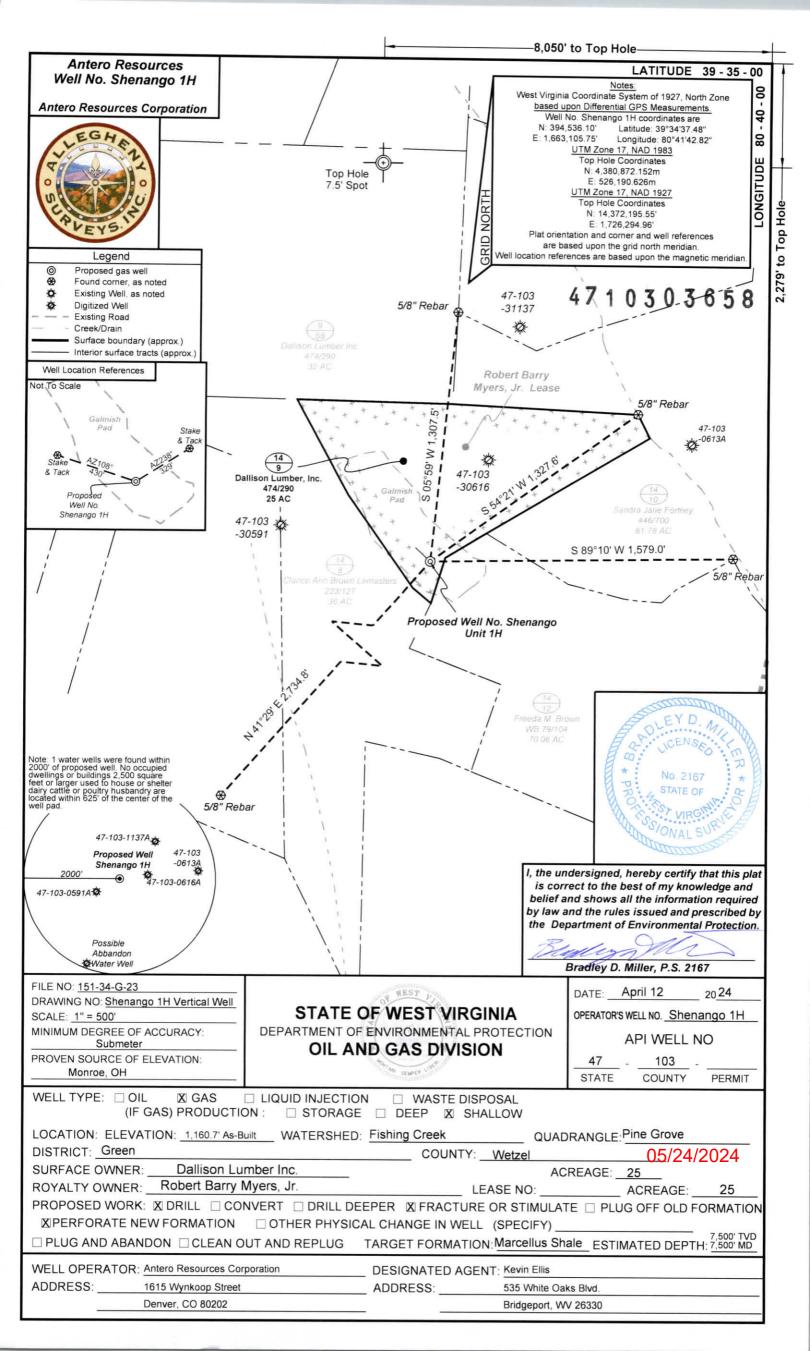
EMERGENCY (24 HOUR) CONTACT 1-800-878-1373

RECEIVED
Office of Oil and Gas
MAY 1 3 2024
WW Department of
Environmental Protection

1







WW-6A1	
(5/13)	

Operator's Well No. Shenango Uni	t 1H
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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 Robert Barry Myers, Jr. Lease	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
	Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	300A/0634

*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.

"Co-tenancy utilization - Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with the development of pertain rowalty current interests in the tract

*Pooling/Unitization - Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain number in this trace

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

APR 1 7 2024

WV Department of Environmental Protection

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:

Max Green

Its:

Vice President of Land

Page 1 of 1

April 15, 2024

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

RE:

Shenango Unit 1H

Quadrangle: Pine Grove 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 Shenango 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 Shenango Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Kelsey Silipo Staff Landman

Kery Esup

Office Of Oil and Gas

APR 1 7 2074

WV Department or Environmental Protection

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

Date of Noti	ce Certification: 04/15/2024	API	No. 47- 103	
			rator's Well No. S	nenango Unit 1H
Notice has	haan -!		l Pad Name: _Galm	
Notice has	oeen given:			
below for the	tract of land as follows:	e § 22-6A, the Operator has provided	the required parties	with the Notice Forms liste
State:	West Virginia			
County:	Wetzel	UTM NAD 83 East		
District:	Green	Public Road Access:	thing: 4380872.152m	
Quadrangle:	Pine Grove 7.5'	Generally used farm n	ame: Dallison Lumbe	
Watershed:	Fishing Creek		diffe. Damson Ediffe	a tilC.
it has provide information re of giving the requirements Virginia Code	ed the owners of the surface descrequired by subsections (b) and (c), surface owner notice of entry to of subsection (b), section sixteen	o, every permit application filed un shall contain the following informat ribed in subdivisions (1), (2) and (4 section sixteen of this article; (ii) that survey pursuant to subsection (a), so of this article were waived in writi tender proof of and certify to the sec- ant.	ion: (14) A certifica), subsection (b), s the requirement was ection ten of this ar	tion from the operator that (ection ten of this article, the is deemed satisfied as a resu ticle six-a; or (iii) the notice
mai me Ope	West Virginia Code § 22-6A, the Crator has properly served the requirect ALL THAT APPLY	perator has attached proof to this Nored parties with the following:	otice Certification	OOG OFFICE USE
_				ONLY
		NOTICE NOT REQUIRED E SEISMIC ACTIVITY WAS CON	IDUCTED	☐ RECEIVED/ NOT REQUIRED
☐ 2. NOT	ICE OF ENTRY FOR PLAT SUR	VEY or 🔳 NO PLAT SURVEY W	AS CONDUCTED	☐ RECEIVED
■ 3. NOT	ICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUIRED ENTRY FOR PLAT WAS CONDUCTED or	BECAUSE SURVEY	RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER BY SU (PLEASE ATTACH)	JRFACE OWNER	
■ 4. NOT	ICE OF PLANNED OPERATION			RECEIVED
5. PUB	LIC NOTICE		RECEIVED Office Of Oil and Ga	RECEIVED
■ 6. NOT	ICE OF APPLICATION		APR 17 2020	RECEIVED
Required At	tachments:		Wy Department C Environmental Prote	etion

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.

Telephone:

Certification of Notice is hereby given:

4710303658

THEREFORE, I Tom Waltz , 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.

Address:

Well Operator: Antero Resources Corporation By: Tom Waltz Its: VP of Completions

1615 Wynkoop Street Denver, CO 80202

Facsimile: 303-357-7315

Email:

mturco@anteroresources.com

COLORADO

303-357-7310

Subscribed and sworn before me this 16 day of April 2024.

My Commission Expires November 15

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 Gas

> > APR 17 2024

WV Department of Environmental Protection

WW-6A (9-13)

API 407471100 3 0 3 6 5 8

OPERATOR WELL NO. Shenango Unit 1H Well Pad Name: Galmish Pad

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

rouce Time Requirement: notice shall be provided no later the	han the filing date of permit application.
Date of Notice: 4/15/2024 Date Permit Application Filed: 4/15/2024 Notice of:	16/2024
PERMIT FOR ANY WELL WORK CONSTRUCTION OF	PPROVAL FOR THE AN IMPOUNDMENT OR PIT
Delivery method pursuant to West Virginia Code § 22-6A-1	(0(b)
SERVICE MAIL RECH	HOD OF DELIVERY THAT REQUIRES A EIPT OR SIGNATURE CONFIRMATION
registered mail or by any method of delivery that requires a receipt sediment control plan required by section seven of this article, and the surface of the tract on which the well is or is proposed to be loc oil and gas leasehold being developed by the proposed well work, it described in the erosion and sediment control plan submitted pursu operator or lessee, in the event the tract of land on which the well pursue more coal seams; (4) The owners of record of the surface tract or tractile work, if the surface tract is to be used for the placement, const impoundment or pit as described in section nine of this article; (5) have a water well, spring or water supply source located within one provide water for consumption by humans or domestic animals; and proposed well work activity is to take place. (c)(1) If more than the subsection (b) of this section hold interests in the lands, the applicate records of the sheriff required to be maintained pursuant to section provision of this article to the contrary, notice to a lien holder is not Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide water purveyor or surface owner subject to notice and water testing	notice to a landowner, unless the lien holder is the landowner. W. Va. provide the Well Site Safety Plan ("WSSP") to the surface owner and any 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)	□ COAL OWNER OR LESSEE
Name: PLEASE SEE ATTACHMENT	Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address:	Address:
Name:	COAL OPERATOR RECEIVED
	COAL OPERATOR Name: NO DECLARATIONS ON RECORD WITH COUNTY Address:
Address:	Name: NO DECLARATIONS ON RECORD WITH COUNTY
SURFACE OWNER(s) (Road and/or Other Disturbance)	Address: APR 17 2024
Name: Antero Midstream LLC	TIPEACE OWNER OF WATER moderant of
Address: 1615 Wynkoop St	SURFACE OWNER OF WANTER PROPERTY OF AND/OR WATER PURVEYOR(S)
Denver, CO 80202	Name: NONE WITHIN 1500'
Name:	Address:
Address:	
	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
☐ SURFACE OWNER(s) (Impoundments or Pits)	Name:
Name:	Address:
Address:	
	*Please attach additional forms if necessary

WW-6A (8-13)

API NO. 47- 103

OPERATOR WELL NO. Shenango Unit 1H

Well Pad Name: Galmish Pad

Notice is hereby given:

4710303658

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

WV Department of Environmental Protection

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 design of the design of

API NO. 47- 103

OPERATOR WELL NO. Shenango Unit 1H

Well Pad Name: Galmish Pad

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.

4710303658

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 the applicant specific 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) map filed with the secretary. 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

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.

WW-6A (8-13)

4710303658 API NO. 47-103

OPERATOR WELL NO. Shenango Unit 1H

Well Pad Name: Galmish 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 <a href="http://www.dep.wv.gov/oil-and-gas/Horizontal-dep.wv.gov/oil-and-gas/ 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

- (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 Office Of Oil and Gas

> > APR 1 7 2024

WV Department of Environmental Protection

API NO. 47- 103

OPERATOR WELL NO. Shenango Unit 1H

4710303658

Well Pad Name: Galmish Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation

Telephone: (303) 357-7310

mturco@anteroresources.com Email:

1615 Wynkoop Street Address:

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.

STEFAN GASPAR NOTARY PUBLIC STATE OF COLORADO

Subscribed and sworn before me this 16 day of April 2024.

tefan Gaspar Notary Public n Expires November 15, 2026

My Commission Expires

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APR 1 7 2024

WV Department of Environmental Protection

WW-6A Attachment - Notice of Application:

Surface Owners:

TM 5-14-9

Owner:

Dallison Lumber Inc.

Address:

PO Box 159

Jacksonburg, WV 26377

TM 5-14-12

Owner:

Freeda M. Brown '

Address:

PO Box 235

Pine Grove, WV 26419

TM 5-14-8

Owner:

Clarice Ann Brown LeMasters -

Address:

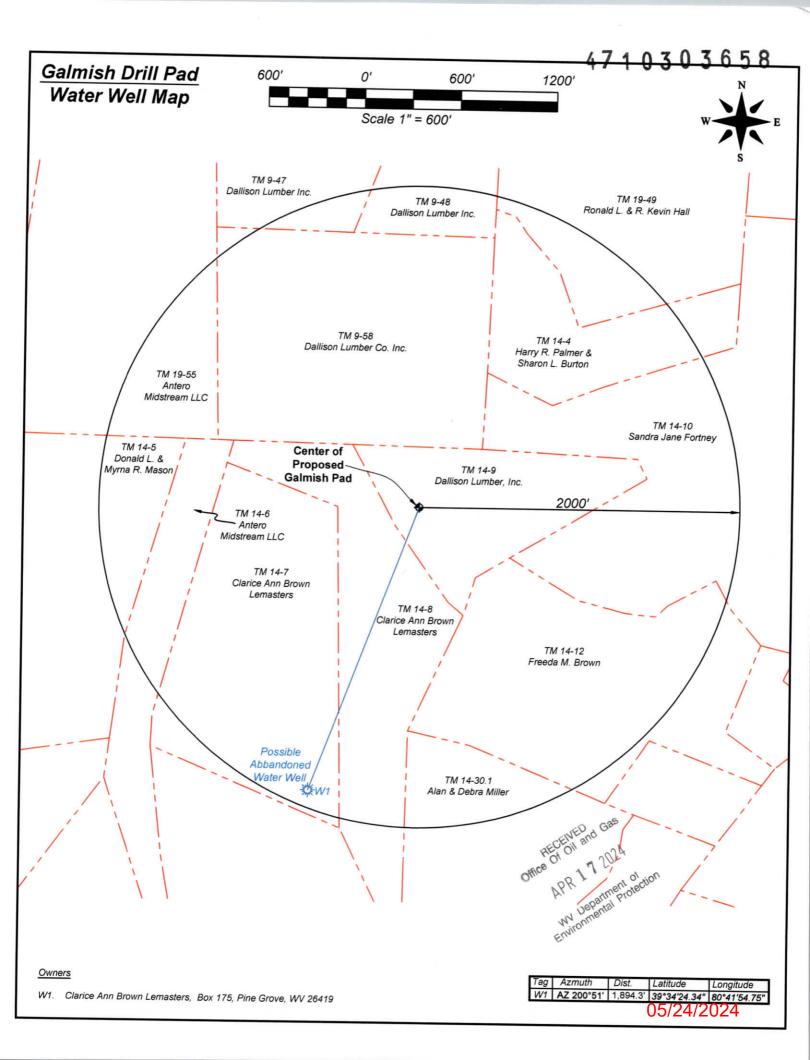
PO Box 175

Pine Grove, WV 26419

Office RECEIVED Of Oil and Gas

APR 1 7 2024

WV Department of Environmental Protection



4710303658 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 own

Notice Time Date of Notic	Requirement: Notice shall be provided to: Output Date Po		a permit application.
Delivery met	hod pursuant to West Virginia Code §	22-6A-16(b)	
☐ HAND	CERTIFIED MAIL		
DELIVE		OUESTED	
	TETOTE (RECEILT RE		
drilling a hori of this subsect subsection ma	zontal well: <i>Provided</i> , That notice given ion as of the date the notice was provided.	n pursuant to subsection (a), section to d to the surface owner: <i>Provided, ho</i>	n, an operator shall, by certified mail return the surface owner's land for the purpose of en of this article satisfies the requirements wever, That the notice requirements of this lude the name, address, telephone number, or's authorized representative.
Notice is her	eby provided to the SURFACE OV	WNER(s):	
Name: PLEA	SE SEE ATTACHMENT		
Address:		Address:	
State: County: District: Quadrangle: Watershed: This Notice S Pursuant to W facsimile numberelated to horize	West Virginia Wetzel Green Pine Grove 7.5' Fishing Creek Shall Include: est Virginia Code § 22-6A-16(b), this per and electronic mail address of the contal drilling may be obtained from the	UTM NAD 83 Easting: Northing: Public Road Access: Generally used farm name: notice shall include the name, addroperator and the operator's authorized	well operator has an intent to enter upon ollows: 526190.626m 4380872.152m McKimmie Ridge Rd Dallison Lumber Inc. eess, telephone number, and if available, and representative. Additional information of Environmental Protection headquarters, ap.wv.gov/oil-and-gas/pages/default.aspx.
Notice is here		Authorized Representative: Address:	Mallory Stanton 1615 Wynkoop St.
Tolombo	Denver, CO 80202		Denyer © 0.80202
Telephone: Email:	303-357-7310	Telephone:	362-35)-7310 DA
Facsimile:	mturco@anteroresources.com	Email:	mturco@anteroresources.com
Oil and Gas F	Privacy Notice: iil and Gas processes your personal infor	Facsimile:	303-957-7315 ment bediton

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-6A4 Attachment - Notice of Intent to Drill:

Surface Owners:

TM 5-14-9

Owner:

Dallison Lumber Inc.

Address:

PO Box 159

Jacksonburg, WV 26377

TM 5-14-12

Owner:

Freeda M. Brown

Address:

PO Box 235

Pine Grove, WV 26419

TM 5-14-8

Owner:

Clarice Ann Brown LeMasters

Address:

PO Box 175

Pine Grove, WV 26419

Office Of Oil and Gas

APR 17 2024

APR 17 rotection

Environmental Protection

STATE OF WEST VIRGINIA 4710303658 DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF PLANNED OPERATION

Date of No	otice: 04/16/2024 Date Permit A	no later than the filir Application Filed: _0	g date of permi	t application.
Delivery n	nethod pursuant to West Virginia Code §	22-6A-16(c)		
■ CER	TIFIED MAIL URN RECEIPT REQUESTED			
the planned required to drilling of damages to	d operation. The notice required by this s be provided by subsection (b), section ten of a horizontal well; and (3) A proposed surf the surface affected by oil and gas operation	subsection shall incl of this article to a surface use and competents to the autom the	ude: (1) A copy face owner who	ication, an operator shall, by certified mail for the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the nt containing an offer of compensation for apensable under article six-b of this chapter, sted in the records of the sheriff at the time
(at the addr	ereby provided to the SURFACE OWNE ess listed in the records of the sheriff at the SE SEE ATTACHMENT	time of notice): Name:	SS:	
Pursuant to	West Virginia Code § 22-6A-16(c), notice in the surface owner's land for the purpose of West Virginia Wetzel Green Pine Grove 7.5' Fishing Creek	UTM NAD	Easting: Northing:	well operator has developed a planned act of land as follows: 526190.626m 4380872.152m McKimmie Ridge Road Dallison Lumber Inc.
Pursuant to to be providuorizontal was surface affection of the provided the provided to the p	Shall Include: West Virginia Code § 22-6A-16(c), this not ded by W. Va. Code § 22-6A-10(b) to a strell; and (3) A proposed surface use and conceted by oil and gas operations to the extended to horizontal drilling may be obtain a located at 601 57th Street, SE, Charles and Conceted by Charles and Conceted by Oil and Street, SE, C	mpensation agreement the damages are continued from the Secure	nt containing an ompensable under	offer of compensation for damages to the er article six-b of this chapter. Additional
Well Operate	OIT: Antero Resources Corporation	Address:	1615 Wynkoop Stree	t
Telephone: Email:	(303) 357-7310 mturco@anteroresources.com	Facsimile:	Denver, CO 80202	NED 4 GAS
Oil and Gas	Privacy Notice: f Oil and Gas processes your personal infor		303-357-7315 e, address and te	elephone number, as pastion distregulatory

duties. Your personal information may be disclosed to other State agencies or third parties in the normal coarse of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requirements. 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 Attachment - Notice of Planned Operation:

Surface Owners:

TM 5-14-9

Owner:

Dallison Lumber Inc.

Address:

PO Box 159

Jacksonburg, WV 26377

TM 5-14-12

Owner:

Freeda M. Brown

Address:

PO Box 235

Pine Grove, WV 26419

TM 5-14-8

Owner:

Clarice Ann Brown LeMasters

Address:

PO Box 175

Pine Grove, WV 26419

Office Of Oil and Gas

Office Of Oil and Gas

APR 17 2034

APR 17 2034

Environmental Protection

Environmental

API NO. 47- 103 OPERATOR WELL NO. Shenango Unit 1H
Well Pad Name: Galmish 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 Ι, _ , 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: West Virginia Easting: 526190.626m UTM NAD 83 County: Wetzel Northing: 4380872.152m District: Green Public Road Access: McKimmie Ridge Road Quadrangle: Pine Grove 7.5' Generally used farm name: Dallison Lumber Inc. Watershed: Fishing Creek 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.

	JED 4 Gas
*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON
■ SURFACE OWNER	Signature: Office of 7 2024
■ SURFACE OWNER (Road and/or Other Disturbance)	Print Name: APR APR Date:
☐ SURFACE OWNER (Impoundments/Pits)	FOR EXECUTION BY A CORPORATION, ETC.
☐ COAL OWNER OR LESSEE	Company: Antero Midstream LLC
☐ COAL OPERATOR	By: Tom Waltz Its: VP of Completions
☐ WATER PURVEYOR	Signature: Jom Wal
□ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Date: 03/18/2024

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.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

Office of the District Engineer/Manager **District Four**

Post Office Box 4220 · Clarksburg, West Virginia 26302 · (304) 842-1500

Alanna J. Keller, P.E. Deputy Secretary of Transportation Deputy Commissioner of Highways

Jimmy Wriston, P. E. Secretary of Transportation Commissioner of Highways

March 11, 2024

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 Galmish Well Pad, Wetzel County Shenango Unit 1H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2022-0075 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off Wetzel County Route 52 SLS MP 2.08.

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 March 6, 2023. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Stephen G. Johnson, P.E.

Director of Operations

RECEIVED Gas Office Of Oil and Gas APR 17 2024

WV Department of Environmental Protection Environmental

Cc: Stefan Gaspar Antero Resources OM, D-6 File

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

FRACTURING/STIMULATING INTERVAL

	Additive	Chemical Abstract Service Number (CAS #)
1.	Fresh Water	7732-18-5
2.	2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
3.	Ammonium Persulfate	7727-54-0
4.	Anionic copolymer	Proprietary
5.	Anionic polymer	Proprietary
6.	BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
7.	Cellulase enzyme	(Proprietary)
8.	Demulsifier Base	(Proprietary)
9.	Ethoxylated alcohol blend	Mixture
	Ethoxylated Nonylphenol	68412-54-4
	Ethoxylated oleylamine	26635-93 RECEIVED
	Ethylene Glycol	107-2/fide Of Oil and Gas
	. Glycol Ethers . Guar gum	111-76-2 9000-3040 R 1 7 2024
	. Hydrogen Chloride	9000-30#0 1/ 2 -
	Hydrotreated light distillates, non-aromatic, BTEX free	7647-01-0 Department of WY Department of Protection
	Isopropyl alcohol	64742 My Department Protection
	Liquid, 2,2-dibromo-3- nitrilopropionamide	67-63-0
	Microparticle	10222-01-2
	Petroleum Distillates (BTEX Below Detect)	Proprietary
	Polyacrylamide	64742-47-8
	Propargyl Alcohol	57-55-6
	Propylene Glycol	107-19-7
	Quartz	57-55-6
	Sillica crystalline quartz	14808-60-7
	Sodium Chloride	7631-86-9
	Sodium Hydroxide	7647-14-5
	Sugar	1310-73-2
	Surfactant	57-50-1
	Suspending agent (solid)	68439-51-0
	Tar bases, quinolone derivs, benzyl chloride-quarternized	14808-60-7
	Solvent Naptha, petroleum, heavy aliph	72480-70-7
	Soybean Oil, Me ester	64742-96-7
	Copolymer of Maleic and Acrylic Acid	67784-80-9
	DETA Phosphonate	52255-49-9 45827-69-9
	Hexamythylene Triamine Penta	15827-60-8
	Phosphino Carboxylic acid polymer	34690-00-1 71050-53-0
	Hexamethylene diamine penta	71050-62-9
	2-Propenoic acid, polymer with 2 propenamide	23605-74-5
	Hexamethylene diamine penta (methylene phosphonic aci	9003-06-9
	Diethylene Glycol	
	Methenamine	111-46-6 100-97-0
	Polyethylene polyamine	68603-67-8
	Coco amine	61791-14-8
	2-Propyn-1-olcompound with methyloxirane	
		38172-91-7

OPERATOR: Antero Resources Corporation	WELL NO: Shenango Unit 1H
PAD NAME: Galmish Pad	
REVIEWED BY: Stefan Gaspar	SIGNATURE: Qqw
WELL RESTRICTION HORIZONTAL	
Well Restrictions	

\checkmark	At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR
	DEP Waiver and Permit Conditions
$\overline{\mathbf{A}}$	At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR
	DEP Waiver and Permit Conditions
<u>√</u>	At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR
	DEP Waiver and Permit Conditions
\checkmark	At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR
	Surface Owner Waiver and Recorded with County Clerk, OR
	DEP Variance and Permit Conditions
\checkmark	At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR
	Surface Owner Waiver and Recorded with County Clerk, OR
	DEP Variance and Permit Conditions RECEIVED Office Of Oil and Gas
\checkmark	At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center
	Surface Owner Waiver and Recorded with County Clerk, OR DED No. 110.000 110.0000 11
	DEP Variance and Permit Conditions
	05/04/0004