



 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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Friday, October 12, 2018
 WELL WORK PERMIT
 Horizontal 6A / Fracture

ANTERO RESOURCES CORPORATION
 1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for OXFD13CHS
 47-017-06576-00-00

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

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

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

James A. Martin
 Chief

Operator's Well Number: OXFD13CHS
 Farm Name: MORRIS, I.L.
 U.S. WELL NUMBER: 47-017-06576-00-00
 Horizontal 6A Fracture
 Date Issued: 10/12/2018

10/12/2018

FRAC PERMIT API# 47-017-06576

WW-6B
(04/15)

API NO. 47-017 - 06576 F
OPERATOR WELL NO. OXFD13CHS
Well Pad Name: Oxford 13 Pad

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

1) Well Operator: Antero Resources Corporation 494507062 017 - Dodd Southwest New Milton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: OXFD13CHS Well Pad Name: Oxford 13 Pad

3) Farm Name/Surface Owner: J.L. (Ike) Morris Public Road Access: CR 40

4) Elevation, current ground: 1152' Elevation, proposed post-construction: 1152'

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

(b) If Gas Shallow X Deep _____
Horizontal X _____

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6785' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3250#

8) Proposed Total Vertical Depth: 6785' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12516' MD

11) Proposed Horizontal Leg Length: 5140'

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12) Approximate Fresh Water Strata Depths: 290'

JUN 29 2018

13) Method to Determine Fresh Water Depths: OXFD13CHS (API #47-017-06576)

14) Approximate Saltwater Depths: 2175', 2510'

WV Department of
Environmental Protection

15) Approximate Coal Seam Depths: 294', 1650'

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

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

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

WAF
6/25/18

WW-6B
(04/15)

API NO. 47- 017 - 06576 **F**
 OPERATOR WELL NO. OXFD13CHS
 Well Pad Name: Oxford 13 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	J-55	94#	75'	75'	CTS, 72 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	1082'	1082'	CTS, 1503 Cu. Ft.
Coal	9-5/8"	New	HCK-55	36#	2843'	2843'	CTS, 1158 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	12506'	12506'	2928 Cu. Ft
Tubing							
Liners							

Existing

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	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 & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

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PACKERS

JUN 29 2018

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

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*DAF
6/25/18*

WW-6B
(10/14)

API NO. 47- 017 - 06576 *F*
 OPERATOR WELL NO. OXFD13CHS
 Well Pad Name: Oxford 13 Pad

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

This well has been drilled to TD - 12516'. Antero is requesting approval to perforate, fracture the existing horizontal shallow well and complete Marcellus Shale.

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): 16.34 existing acres

22) Area to be disturbed for well pad only, less access road (acres): 6.68 existing acres

23) Describe centralizer placement for each casing string:

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

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

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

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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.

DAF
6/25/16

WW-9
(4/16)

API Number 47 - 017 - 06576 F
Operator's Well No. OXFD13CHS

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) South Fork Hughes River Quadrangle New Milton 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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, etc. Drill 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)

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

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

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

Company Official Signature *Gretchen Kohler*

Company Official (Typed Name) Gretchen Kohler

Company Official Title Senior Environmental & Regulatory Manager

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JUN 29 2018

WV Department of
Environmental Protection

Subscribed and sworn before me this 13 day of June, 20 18

[Signature]

Notary Public

My commission expires March 29, 2022

KARIN COX
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184014160
MY COMMISSION EXPIRES MARCH 29, 2022

Form WW-9

Operator's Well No. OXFD13CHS *F*

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 16.34 acres Prevegetation pH _____

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

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road (6.27 acres) + Well Pad (6.68 acres) + Staging Area (0.44 acres) + Excess/Topsail Material Stockpiles (2.69 acres) = 16.34 Total Affected Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
Field Bromegrass	40	Tall Fescue	30
<small>See attached Table IV-3 for additional seed type (Oxford 13 Pad Design)</small>		<small>See attached Table IV-4A for additional seed type (Oxford 13 Pad Design)</small>	
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]*

Comments: _____

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JUN 29 2018

Title: O&G Gas Inspector

Date: 6/25/18

WV Department of
Environmental Protection

Field Reviewed? Yes No

17-06-576F
10/12/2018



911 Address
3314 Swinger Hollow
New Milton, WV 26411

Well Site Safety Plan

Antero Resources

Well Name: OXFD13 Unit AHS, BHS, CHS, DHS, EHS, FHS, and IHS

Pad Location: OXFORD 13 PAD
Doddridge County/Southwest & New
Milton District

GPS Coordinates:
Entrance - Lat 39°10'12.1"/Long -80°45'00.7" (NAD83)
Pad Center - Lat 39°10'07.2"/Long -80°51'51.5" (NAD83)

Driving Directions: From old post office/store in Oxford: Head east on S Fork of Hughes River toward Taylor Drain Rd for 1/2 miles. Turn right to stay on S Fork Hughes River for 5.7 miles. Slight left onto Cain Run for 0.2 miles. Turn right to stay on Cain Run for 0.7 miles. Lease road will be on your left.

Alternate Route: From the intersection HWY 50 & WV 18. Head east on WV-18 S toward Brushy Fork for 9.3 miles. Turn right onto Porto Rico Rd for 0.7 miles. Continue onto Toms Fork for 0.7 miles. Continue straight onto Co Rte 54/1 for 2.5 miles. Turn left onto Cain Run for 0.7 miles. Lease road will be on your left.

John A. ...
6/25/18

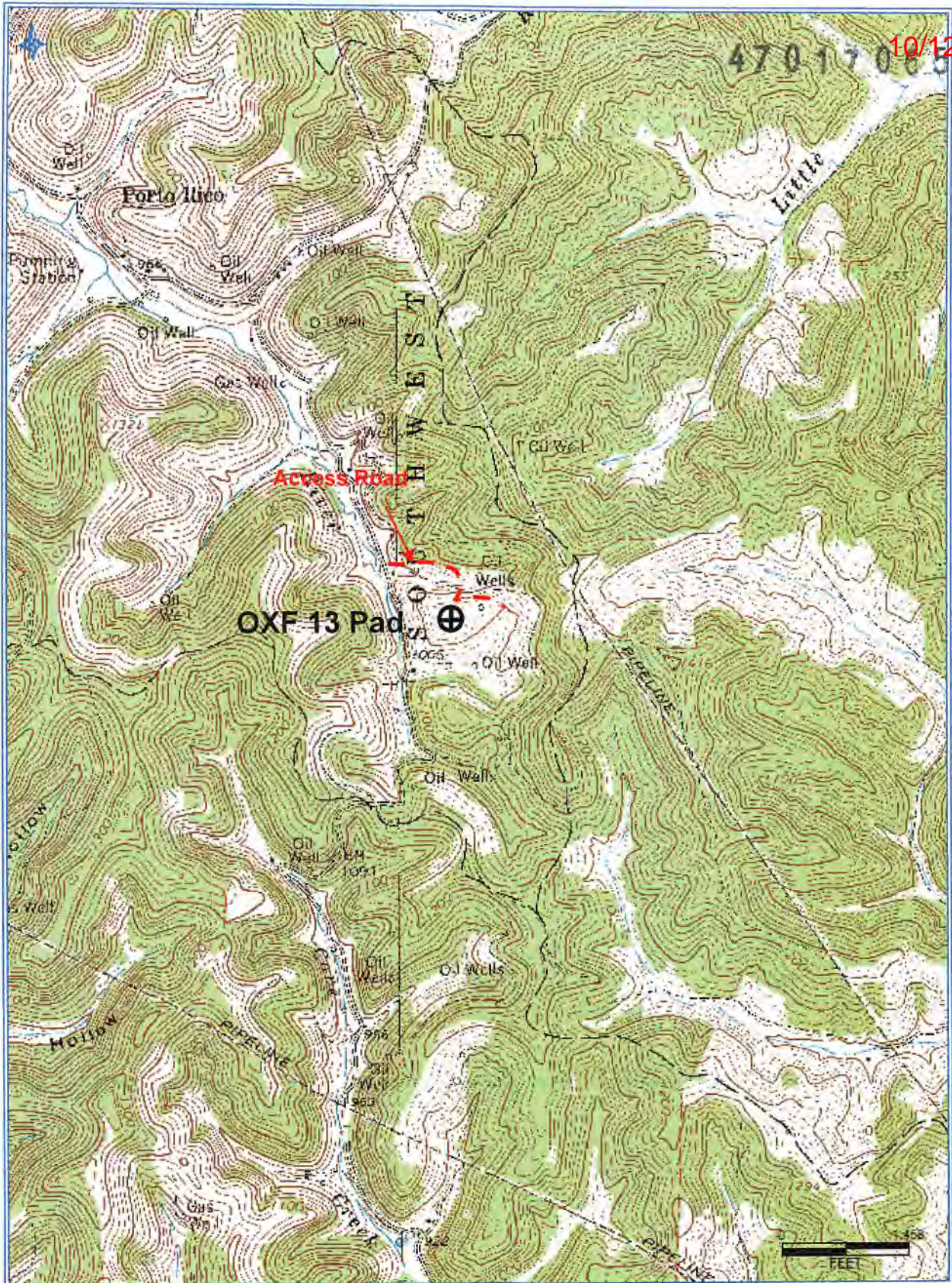
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EMERGENCY (24 HOUR) CONTACT 1-800-878-1373

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10/12/2018



Antero Resources Corporation
 Appalachian Basin
 OXF 13 Pad
 Ritchie County

Quadrangle: New Milton
 Watershed: South Fork Hughes River
 District: Doddridge
 Date: 6-11-2018

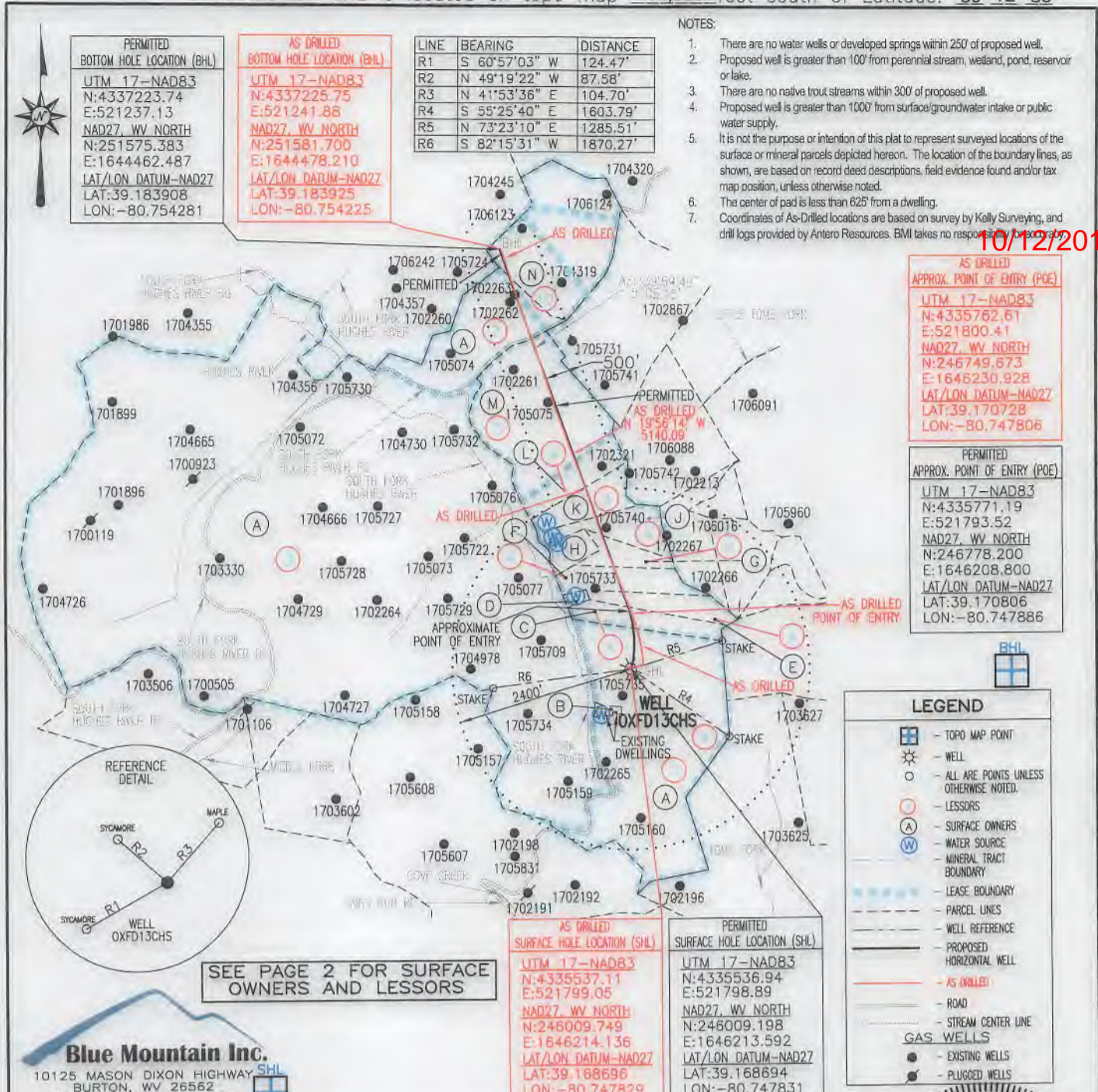
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AS DRILLED BHL is located on topo map 8,859 feet south of Latitude: 39° 12' 30"
 AS DRILLED SHL is located on topo map 14,389 feet south of Latitude: 39° 12' 30"

AS DRILLED BHL is located on topo map 11,148 feet west of Longitude: 80° 45' 00"
 AS DRILLED SHL is located on topo map 11,147 feet west of Longitude: 80° 42' 30"



FILE #: OXFD13CHS

DRAWING #: OXFD13CHS

SCALE: 1" = 2000'

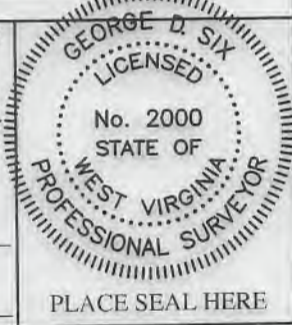
MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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

Signed: George D. Six

R.P.E.: _____ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

WELL Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: SOUTH FORK HUGHES RIVER ELEVATION: 1,152.4'±

COUNTY/DISTRICT: DODDRIDGE / SOUTHWEST QUADRANGLE: NEW MILTON, WV 7.5' (SHL) & OXFORD, WV 7.5' (BHL)

SURFACE OWNER: I. L. (IKE) MORRIS ACREAGE: 6603.75±

OIL & GAS ROYALTY OWNER: S. W. STOUT ET AL & J. P. MORGAN CHASE BANK ACREAGE: 1065.427±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,785'± TMD: 12,516±

WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT DIANNA STAMPER-CT CORPORATION SYSTEM
 Address 1615 WYNKOOP STREET Address 5400 D BIG TYLER ROAD
 City DENVER State CO Zip Code 80202 City CHARLESTON State WV Zip Code 25313

OXFD13CHS

PAGE 2 OF 2

10/12/2018

	SURFACE OWNER	DIST-TM/PAR
A	I. L. (IKE) MORRIS	7-10/2
B	JERRY L. & SHARON LEGGETT (SURV)	7-15/3.1
C	TYLER GARRETT BUNTING C/O LENORA BUNTING	7-15/1
D	JEFFREY LYNN & LINEY ELAINE MCKINNEY (SURV)	7-15/1.1
E	LINEY MCKINNEY	7-15/1.6
F	MARIE E. HYDE & RICHARD A. BAKER (SURV)	7-15/1.5
G	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.3
H	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.2
J	ROBERT K. SWIGER	7-15/1.4
K	WILLIAM L. JONES TRUST C/O ROBERT K. SWIGER (TRUSTEE)	7-11/8
L	ROBERT K. SWIGER	7-11/7
M	MAY REVOCABLE TRUST-EXEMPTION TRUST 1/2 INT. SUSAN V. DRENNAN 1/2 INT.	7-11/5
N	KEY OIL COMPANY	7-11/1

PARCEL	LESSOR
1,4,7	S.W. STOUT ET AL
10	GENEVIEVE STOUT SUMMERS

PERMITTED SURFACE HOLE LOCATION (SHL)	PERMITTED APPROX. POINT OF ENTRY (POE)	PERMITTED BOTTOM HOLE LOCATION (BHL)
<u>UTM 17-NAD83</u> N:4335536.94 E:521798.89 <u>NAD27, WV NORTH</u> N:246009.200 E:1646213.600 <u>LAT/LON DATUM-NAD27</u> LAT:39.168694 LON:-80.747831	<u>UTM 17-NAD83</u> N:4335771.19 E:521793.52 <u>NAD27, WV NORTH</u> N:246778.200 E:1646208.800 <u>LAT/LON DATUM-NAD27</u> LAT:39.170806 LON:-80.747886	<u>UTM 17-NAD83</u> N:4337223.74 E:521237.13 <u>NAD27, WV NORTH</u> N:251575.383 E:1644462.487 <u>LAT/LON DATUM-NAD27</u> LAT:39.183908 LON:-80.754281
<u>AS DRILLED</u> <u>SURFACE HOLE LOCATION (SHL)</u> <u>UTM 17-NAD83</u> N:4335536.94 E:521798.89 <u>NAD27, WV NORTH</u> N:246009.200 E:1646213.600 <u>LAT/LON DATUM-NAD27</u> LAT:39.168694 LON:-80.747831	<u>AS DRILLED</u> <u>APPROX. POINT OF ENTRY (POE)</u> <u>UTM 17-NAD83</u> N:4335762.61 E:521800.41 <u>NAD27, WV NORTH</u> N:246749.673 E:1646230.928 <u>LAT/LON DATUM-NAD27</u> LAT:39.170728 LON:-80.747806	<u>AS DRILLED</u> <u>BOTTOM HOLE LOCATION (BHL)</u> <u>UTM 17-NAD83</u> N:4337225.75 E:521241.88 <u>NAD27, WV NORTH</u> N:251581.700 E:1644478.210 <u>LAT/LON DATUM-NAD27</u> LAT:39.183925 LON:-80.754225

FEBRUARY 05, 2018

47-017-06576F

10/12/2018

WW-6A1
(5/13)Operator's Well No. OXFD13CHS

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Genevieve Stout Summers Lease</u>				
	Genevieve Stout Summers	Interstate Drilling Inc	1/8	0177/0623
	Murvin Oil Company	Key Oil Company	Assignment	0178/0085
	Key Oil Company	Antero Resources Appalachian Corporation	Assignment	0256/0285
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

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

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Office of Oil and Gas
JUN 14 2018
WV Department of
Environmental Protection

**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

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 CorporationBy: Kevin KilstromIts: Senior Vice President - Production

Operator's Well Number **OXFD13CHS**
FRAC PERMIT API #47-017-06576 

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 –

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>S.W Stout et al Lease</u>			
S.W Stout , et al	M.G. Zinn	1/8	11/464
M.G. Zinn	The Carter Oil Company	Assignment	14/127
The Carter Oil Company	Hope Natural Gas Company	Assignment	42/410
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	143/345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	135/583
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Assignment	328/398
CNG Transmission Corporation	Dominion Transmission Corporation	Assignment	328/393
Dominion Transmission Corporation	CNX Gas Company LLC	Assignment	293/252
CNX Gas Company LLC	Antero Resources Corporation	Assignment	348/700

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 Environmental Protection

*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.

FORM WW-6A1
EXHIBIT 1

17-06576F

FILED

JUN 10 2013



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

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

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

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

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

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/25/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments: (attach additional pages if necessary)
- Name and phone number of contact person. (This is optional; however, if there is a problem with the filing, listing a contact person and phone number may avoid having to return or reject the document.)
Alwyn A. Schopp (303) 367-7310
Contact Name Phone Number
- Signature information (See below **Important Legal Notice Regarding Signature**):
Print Name of Signer: Alwyn A. Schopp Title/Capacity: Authorized Person
Signature: [Handwritten Signature] Date: June 10, 2013

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

Form CF-1

Issued by the Office of the Secretary of State

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Office of Oil and Gas
JUN 14 2013
West Virginia
Department of
Environmental Protection



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

June 12, 2018

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

RE: OXFD13CHS
Quadrangle: New Milton 7.5'
Doddridge County/Southwest District, West Virginia

Wellbore is existing

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the OXFD13CHS 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 OXF13CHS horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tyler Adams", is written over a light blue horizontal line.

Tyler Adams
Landman

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Office of Oil and Gas
JUN 14 2018
WV Department of
Environmental Protection

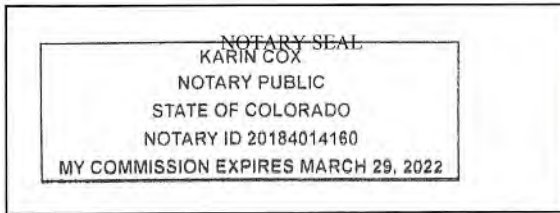
10/12/2018

WW-6AC
(1/12)

Certification of Notice is hereby given:

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

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Kevin Kilstrom</u> <i>[Signature]</i>		<u>Denver, CO 80202</u>
Its:	<u>Senior Vice President - Production</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7182</u>	Email:	<u>kcox@anteroresources.com</u>



Subscribed and sworn before me this 12 day of June 2018.
[Signature] Notary Public
 My Commission Expires March 29, 2022

Oil and Gas Privacy Notice:

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

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JUN 14 2018
WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- 017 - 06576 10/12/2018
OPERATOR WELL NO. OXFD13CHS
Well Pad Name: Oxford 13 Pad

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

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

Date of Notice: 6/13/2018 **Date Permit Application Filed:** 6/13/2018

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: I.L. Morris
 Address: PO Box 397
Glennville, WV 26351
 Name: _____
 Address: _____

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

Name: I.L. Morris
 Address: PO Box 397
Glennville, WV 26351
 Name: Tyler and Lenora Bunting
 Address: PO Box 105
Smithburg, WV 26436

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY
 Address: _____

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY
 Address: _____

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

Name: PLEASE SEE ATTACHMENT
 Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
 Address: _____

*Please attach additional forms if necessary

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 JUN 14 2018
 WV Department of
 Environmental Protection

WW-6A
(8-13)

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Office of Oil and Gas
Office of Oil and Gas

JUN 14 2018

FRAC PERMIT API # 47-017-06576 F

API NO. 47- 017 - 06576 10/12/2018

OPERATOR WELL NO. OXFD13CHS

Well Pad Name: Oxford 13 Pad

WV Department of
Environmental Protection
WV Department of
Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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(8-13)

FRAC PERMIT API # 47-017-06576 F
API NO. 47- 017 - 06576 10/12/2018
OPERATOR WELL NO. OXFD13CHS
Well Pad Name: Oxford 13 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.

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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(8-13)

API NO. 47- 017 - 06576 **10/12/2018**
OPERATOR WELL NO. OXFD13CHS
Well Pad Name: Oxford 13 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.

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(8-13)

API NO. 47- 017 - 06576
OPERATOR WELL NO. OXFD13CHS
Well Pad Name: Oxford 13 Pad

10/12/2018

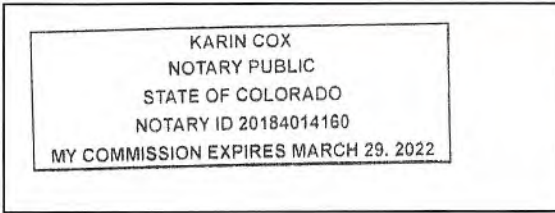
Notice is hereby given by:

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



Subscribed and sworn before me this 13 day of June 2018.

Karin Cox Notary Public

My Commission Expires March 29, 2022

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17-06576F
10/12/2018

WW-6A Notice of Application Attachment (Oxford 13 Pad):

List of Owners with Proposed Disturbance associated with Oxford 13 Well Pad:

WATER SOURCE OWNERS –

Owner: Jeffrey & Liney McKinney
Address: 2616 Rube Leggett Rd
New Milton, WV 26411

Owner: CNX Gas Co. LLC
Address: 1000 Consol Energy Dr
Canonsburg, PA 15317

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10/12/2018

Oxford 13 Pad Water Well Map

West Virginia Doddridge County Southwest District



TM 11-8
William L. Jones
Trust

TM 18-1.4
Charles A.
Schneider

Water Well
LAT: 39° 10' 24.0"
LON: 80° 45' 04.2"

TM 15-1.4
Jerry & Sharon
Leggett

TM 18-1.5
Charles A.
Schneider

TM 18-1.1
Jack & Wanda
Wright

TM 15-1.2
Kevin & Teresa
Mullen

TM 15-1.3
Kevin & Teresa
Mullen

TM 18-1.6
Charles A.
Schneider

TM 15-1.5
Marie E. Hyde &
Richard A. Baker

TM 15-1.1
Jeffrey & Liney
McKinney
Water Well
LAT: 39° 10' 17.1"
LON: 80° 45' 01.1"

TM 15-1.6
Liney McKinney

TM 18-1
Jack & Wanda
Wright

**TM 15-1.1
Jeffrey and Liney McKinney
2616 Rube Leggett Rd
New Milton, WV 26411**

TM 15-1
Tyler G. Bunting

TM 18-2
IL Morris

TM 10-2
IL Morris

Water Well
LAT: 39° 10' 01.5"
LON: 80° 44' 56.6"

N 30°11'W 1937.5'
N 37°20'W 1214.5'
S 33°24'W 731.5'

TM 15-3.1
CNX Gas Co. LLC
**TM 15-3.1
CNX Gas Co. LLC (TM 15-3.1)
1000 Consol Energy Dr
Canonsburg, PA 15317**

2000'

TM 18-8
IL Morris

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Office of Oil and Gas
JUN 14 2018

WV Department of
Environmental Protection

(Cove Dist.) TM 2-1
CNX Gas Co. LLC



17-06576F

10/12/2018

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application. **Date of Notice:** 10/10/2017 **Date Permit Application Filed:** 06/13/2018

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JUN 14 2018

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

WV Department of
Environmental Protection

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

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

Name: I.L. Morris
Address: PO Box 397
Glenville, WV 26351

Name: _____
Address: _____

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 521799m
County: Doddridge Northing: 4335537m
District: Southwest Public Road Access: CR-40
Quadrangle: New Milton 7.5' Generally used farm name: I.L. Morris
Watershed: South Fork Hughes River

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: Antero Resources Appalachian Corporation
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7310
Email: kcox@anteroresources.com
Facsimile: 303-357-7315

Authorized Representative: Karin Cox
Address: 1615 Wynkoop St.
Denver, CO 80202
Telephone: 303-357-7310
Email: kcox@anteroresources.com
Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

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

WW-6A5
(1/12)

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

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.****Date of Notice:** 06/13/2018 **Date Permit Application Filed:** 06/13/2018RECEIVED
Office of Oil and Gas

JUN 14 2018

WV Department of
Environmental Protection**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: I. L. Morris
Address: PO Box 397
Glenville, WV 26351

Name: _____
Address: _____

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>521799m</u>
County:	<u>Doddridge</u>		Northing:	<u>4335537m</u>
District:	<u>Southwest</u>	Public Road Access:	<u>CR 40</u>	
Quadrangle:	<u>New Milton 7.5'</u>	Generally used farm name:	<u>I. L. (Ike) Morris</u>	
Watershed:	<u>South Fork Hughes River</u>			

This Notice Shall Include:

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

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

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

Oil and Gas Privacy Notice:

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

10/12/2018



4701706576F

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Thomas J. Smith, P. E.
Secretary of Transportation/
Commissioner of Highways

June 12, 2018

Jill M. Newman
Deputy Commissioner

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

RECEIVED
Office of Oil and Gas

JUN 14 2018

Subject: DOH Permit for the OXFD 13 Well Pad, Doddridge County
OXFD13CHS Well Site ✓

WV Department of
Environmental Protection

Dear Mr. Martin,

This well site will be accessed from Permit #04-2014-0079 transferred to Antero Resources for access to the State Road for a well site located off of Doddridge County 40 SLS.

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

Very Truly Yours,

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

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

Cc: Karin Cox
Antero Resources
CH, OM, D-4
File

List of Anticipated Additives Used for Fracturing or Stimulating Well

47 01706576F

RECEIVED
Office of Oil and Gas
JUN 14 2016
West Virginia Department of Environmental Protection

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	Proprietary
Anionic polymer	Proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	Proprietary
Demulsifier Base	Proprietary
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
Guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	Proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamethylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-olcompound with methyloxirane	38172-91-7

LOCATION COORDINATES:

ACCESS ROAD ENTRANCE
 LATITUDE: 38.170636 LONGITUDE: -80.750180 (NAD 83)
 LATITUDE: 38.169836 LONGITUDE: -80.750577 (NAD 83)
 N 432872.03 E 432872.03 UTM ZONE 17 METERS

CENTROID OF WELL PAD
 LATITUDE: 38.169836 LONGITUDE: -80.749727 (NAD 83)
 LATITUDE: 38.169834 LONGITUDE: -80.749704 (NAD 83)
 N 432554.45 E 556881.42 UTM ZONE 17 METERS

GENERAL DESCRIPTION:

THE ACCESS ROAD AND WELL PAD HAVE BEEN CONSIDERED AS INDIVIDUAL MATERIALS SHALE GAS WELLS.

FLOODPLAIN NOTES:

THIS SITE IS LOCATED IN FLOODZONE "X" PER FEMA FLOOD MAP #540100225C

MISS UTILITY STATEMENT:

ANTERO RESOURCES CORPORATION HAS NOTIFIED MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THIS DESIGN.

ENTRANCE PERMIT:

ANTERO RESOURCES CORPORATION HAS OBTAINED AN ENCROACHMENT PERMIT (FORM MM-100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, WHICH IS COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:

STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN JULY, 2016 BY KLEINFELDER TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE JULY 27, 2016 STREAM AND WETLAND DELINEATION INDEX MAP WAS PREPARED BY KLEINFELDER AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT/OWNER AGENCIES BE CONSULTED IN AN EFFORT TO OBTAIN WRITTEN CONTRACTS THAT DEFINE THE DELINEATION SHOWN ON THIS PROJECT PRIOR TO BEGINNING CONSTRUCTION OF THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S. INCLUDING WETLAND FILLS AND STREAM CHANNELS.

PROJECT CONTACTS:

OPERATOR:
 ANTERO RESOURCES CORPORATION
 235 WHITE OAKS BLVD
 BIDDINGFORD, WV 26036
 PHONE: (304) 842-4100
 FAX: (304) 842-4102

CHARLES E. UPHOFF, III - SURVEYING COORDINATOR
 CELL: (304) 710-8449

MARK HUDSON - LAND AGENT
 CELL: (304) 898-8332

ENGINEER/SURVEYOR:
 NAVITUS ENGINEERING, INC.
 CYRIL S. KUMS, PE - PROJECT MANAGER/ENGINEER
 OFFICE: (800) 682-1188 CELL: (540) 988-6747

ENVIRONMENTAL:

KLEINFELDER
 MATT ALBERT - PROJECT MANAGER
 (724) 772-7072 CELL: (609) 417-5086

GEOTECHNICAL:

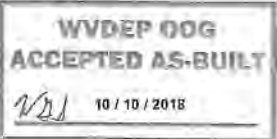
PEMSKY/VAHNS SOIL & ROCK, INC.
 CHRISTOPHER W. RAMOS - PROJECT ENGINEER
 OFFICE: (412) 372-4000 CELL: (412) 588-0962

RESTRICTIONS NOTES:

- THERE ARE NO LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD AND JOE TERRY ARE WETLAND AREAS THAT HAVE BEEN DETERMINED BY THE USACE AND ARE ADJACENT TO A PERENNIAL STREAM ADJACENT TO THE ACCESS ROAD WHICH HAS REMAINDER UNDISTURBED.
- THERE ARE NO NATURALLY PRODUCING FRESHWATER STREAMS WITHIN 200 FEET OF THE WELL PAD AND NO FRESHWATER OR GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND JOE TERRY.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELL PAD BEING DRILLED.
- THERE IS AN OCCUPIED DWELLING 545 FEET FROM THE CENTER OF THE WELL PAD. A DEEP WALKER IS REQUIRED.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,000 SQUARE FEET WITHIN 600 FEET OF THE CENTER OF THE WELL PAD.

NOTES:

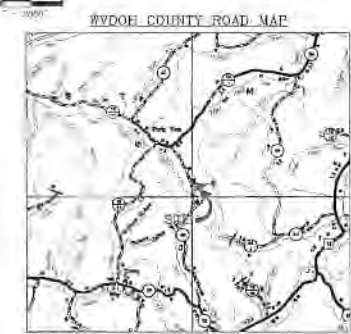
- ALL IMPACTS MUST REMAIN TO PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMITS OF DISTURBANCE ARE COMPLETELY AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RAINFALL EVENT IN EXCESS OF 0.5" AND ON A WEEKLY BASIS.
- THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS ALL SOIL-EROSION ACTIVITIES ARE COMPLETED AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT APPLIES TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
- ALL PERMANENT EROSION CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WVDEP.
- ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND PERMANENTLY RESTORED.
- THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS DATA FROM ANTERO RECEIVED JUNE 16, 2017. THE WELL PAD AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE WELL PAD AREA AND PRODUCTION EQUIPMENT AS OF JULY 16, 2016. ANY OTHER ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
- THE EXISTING COMMITMENT FROM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
- THE EXISTING ACCESS TO THE WELL PAD SHALL HAVE THE MOUNTABLE BARRIERS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.



OXFORD 13 WELL PAD AS-BUILT AND EROSION & SEDIMENT CONTROL IMPROVEMENT PLAN

SOUTHWEST & NEW MILTON DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA
 WHITE OAK CREEK SOUTH FORK HUGGLES RIVER WATERSHED

USGS 7.5 OXFORD & NEW MILTON QUAD MAP



WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
 CALCULATED BASED ON NAD83
 ESTABLISHED BY SURVEY CHAIN CIP & UPIS
 DATE: 10/10/2018

REPRODUCTION NOTE
 THESE PLANS WERE PREPARED FOR THE OXFORD 13 WELL PAD AND JOE TERRY AREAS. THESE PLANS WERE REVISED FOR THE OXFORD 13 WELL PAD AND JOE TERRY AREAS. THESE PLANS WERE REVISED FOR THE OXFORD 13 WELL PAD AND JOE TERRY AREAS. THESE PLANS WERE REVISED FOR THE OXFORD 13 WELL PAD AND JOE TERRY AREAS.

SHEET INDEX:

- COVER SHEET
- AS-BUILT
- MATERIAL QUANTITIES, STORM DRAINAGE & EAS COMPUTATIONS
- OVERALL PLAN SHEET INDEX & VOLUMES
- ACCESS ROAD & STOCKPILE AS-BUILT PLAN
- WELL PAD GRADING PLAN
- ACCESS ROAD AS-BUILT PROFILE & DISTANCES
- WELL PAD STAGING AREA & STOCKPILE AS-BUILT SECTIONS
- CONSTRUCTION DETAILS
- WELL PAD & ACCESS ROAD RECLAMATION PLAN
- ACCESS ROAD & STOCKPILE RECLAMATION PLAN

Well Name	W (North) NAD 83	E (East) NAD 83	UTM (METERS) Zone 17	NAD 83 Lat. & Long.
OXFD13FH1	N 24900.53	E 164205.16	N 432934.02	LAT 38-19-07.516 LONG 80-44-21.217
API 8470-17-0632	E 164152.40	E 164173.22	E 521792.85	LAT 38-19-07.548 LONG 80-44-21.094
OXFD13FH2	N 24833.68	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0648	E 164174.47	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH3	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0667	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH4	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0676	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH5	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0685	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH6	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0694	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094

Well Name	W (North) NAD 83	E (East) NAD 83	UTM (METERS) Zone 17	NAD 83 Lat. & Long.
OXFD13FH7	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0703	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH8	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0712	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH9	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0721	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH10	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0730	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094
OXFD13FH11	N 24809.16	E 164203.14	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
API 8470-17-0739	E 164152.38	E 164173.22	E 521792.85	LAT 38-19-07.502 LONG 80-44-21.094

Well Name	W (North) NAD 83	E (East) NAD 83	UTM (METERS) Zone 17	NAD 83 Lat. & Long.
WVDF04	N 44032.46	E 164205.16	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
WVDF05	N 44032.46	E 164205.16	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
WVDF06	N 44032.46	E 164205.16	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094
WVDF07	N 44032.46	E 164205.16	N 432934.02	LAT 38-19-07.502 LONG 80-44-21.094

OXFORD 13 LIMITS OF DISTURBANCE AREA (AC)

Category	Area (Ac)
Access Road (1.810')	6.27
Staging Area	0.44
Well Pad	6.88
Excavation/Stockpile Material Stockpiles	2.69
Total Affected Area	16.24
Total Wooded Acres Disturbed	0.60
Impacts to E. Morris TM-10-2	13.48
Access Road (1.810')	5.07
Staging Area	0.44
Well Pad	6.88
Excavation/Stockpile Material Stockpiles	0.26
Total Affected Area	13.48
Impacts to Tyler and Lanore Bunting TM-15-4	11.00
Excavation/Stockpile Material Stockpiles	0.46
Total Affected Area	0.46
Total Wooded Acres Disturbed	0.00
Impacts to E. Morris TM-10-2	2.29
Access Road (1.810')	13.48
Excavation/Stockpile Material Stockpiles	2.23
Total Affected Area	2.43
Total Wooded Acres Disturbed	0.00

OXFORD 13 SPHERICAL STREAM IMPACT (LINEAR FEET)

Stream and Impact Cause	Permanent Impacts		Temp. Disturb.	Temp. Disturb. Distance (LF)	Total Impact (LF)
	Current/Fill (LF)	Inlets/Outlets/Structures (LF)			
Oxford 13 PL KLF-Stream02 (Access Road)	0	0	0	12	0
Oxford 13 PL KLF-Stream03 (Access Road)	0	0	0	0	0
Hinter Hills to Oxford 13 SWL Stream_23 (Access Road)	0	0	0	54	0
Hinter Hills to Oxford 13 SWL Stream_06 (Access Road)	0	0	0	0	0
Hinter Hills to Oxford 13 SWL Stream_04 (Well Pad)	0	0	0	38	0
KLF-Stream02 (Well Pad)	0	0	0	4	0

OXFORD 13 WETLAND IMPACT (SQUARE FEET)

Wetland and Impact Cause	Area within L.O.D. (SF)	Temporary Disturbance (SF)	Total Impact (AC)
Oxford 13 PL KLF-Wetland03 (Access Road)	4	4	0.00
Oxford 13 PL KLF-Wetland04 (Access Road)	163	163	0.00
Hinter Hills to Oxford 13 SWL Wetland_03 (Access Road)	1,990	1,280	0.00
Hinter Hills to Oxford 13 SWL Wetland_04 (Access Road)	267	267	0.00
Hinter Hills to Oxford 13 SWL Wetland_02 (Stockpile Area "B")	1,821	1,221	0.00
Oxford 13 PL KLF-Wetland08 (Access Road)	26	26	0.00
Hinter Hills to Oxford 13 SWL Wetland_01 (Well Pad)	1,552	1,552	0.00

MISS UTILITY of West Virginia
 1-800-245-4888
 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!

NAVITUS ENERGY ENGINEERING
 1000 S. MAIN ST. SUITE 100
 CHARLOTTE, NC 28202
 TEL: (704) 366-1111 FAX: (704) 366-1112
 WWW.NAVITUS-EE.COM

COVER SHEET
OXFORD 13 WELL PAD
 SOUTHWEST & NEW MILTON DISTRICT
 DODDRIDGE COUNTY, WEST VIRGINIA

DATE: 10/04/2017
 SCALE: AS SHOWN
 SHEET 1 OF 16

WELL PAD & ACCESS ROAD AS-BUILT PLAN

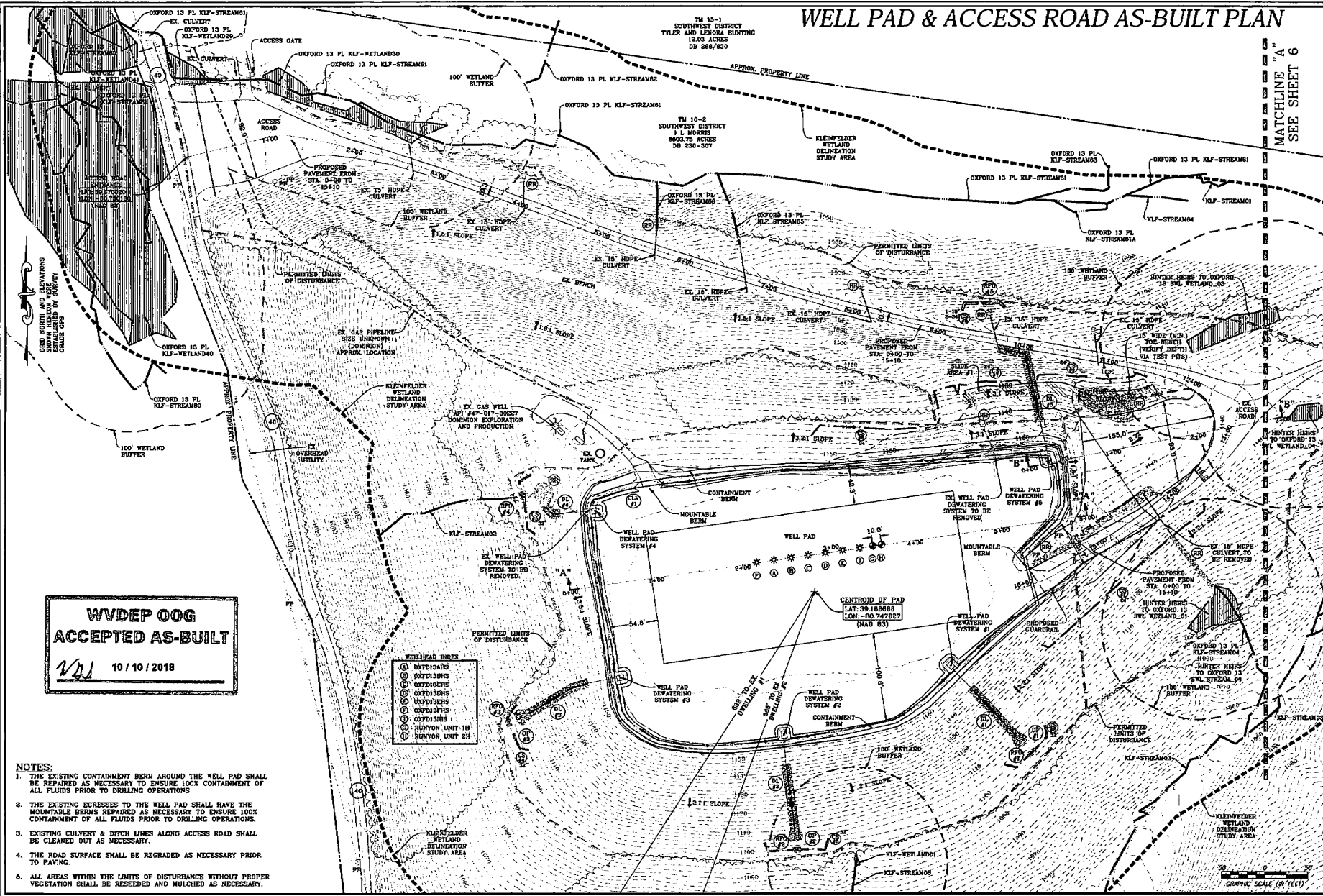
TM 15-1
SOUTHWEST DISTRICT
TYLER AND LEVORA ROUTING
12.03 ACRES
DB 286/830

TM 10-2
SOUTHWEST DISTRICT
L. H. MOORE
8603.75 ACRES
DB 230-307

MATCHLINE "A"
SEE SHEET 6

NAVITUS
ENERGY ENGINEERING

Telephone: (888) 682-1181 | Email: navitus@navitus.com



**WVDEP OOG
ACCEPTED AS-BUILT**

WJ 10/10/2018

- WELLHEAD INDEX**
- ① OXYGENS
 - ② OXYGENS
 - ③ OXYGENS
 - ④ OXYGENS
 - ⑤ OXYGENS
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- NOTES:**
- THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
 - THE EXISTING EXPRESSSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.
 - EXISTING CULVERT & DITCH LINES ALONG ACCESS ROAD SHALL BE CLEANED OUT AS NECESSARY.
 - THE ROAD SURFACE SHALL BE REGRADED AS NECESSARY PRIOR TO PAVING.
 - ALL AREAS WITHIN THE LIMITS OF DISTURBANCE WITHOUT PROPER VEGETATION SHALL BE RESEEDED AND MULCHED AS NECESSARY.

DATE	REVISION	REVISION BY
01/09/2008	REVISED PER WELLS	
07/12/2008	REVISED PER WELLS COMMENTS	
07/27/2008	REVISED PER WELLS PAD REVISION	
08/05/2008	REVISED PER WETLAND DELINEATION	
08/05/2008	REVISED PER WETLAND DELINEATION	



THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

WELL PAD & ACCESS ROAD AS-BUILT PLAN
OXFORD 13
WELL PAD
SOUTHWEST & NEW MILTON DISTRICT
DODDRIEGE COUNTY, WEST VIRGINIA



DATE: 10/04/2017
SCALE: 1" = 50'
SHEET 5 OF 19

