



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

June 30, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502272, issued to ANTERO RESOURCES CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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

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

James Martin
Chief

Operator's Well No: LUCY UNIT 3HD
Farm Name: MONROE, EDNA

API Well Number: 47-9502272

Permit Type: Horizontal 6A Well

Date Issued: 06/30/2015

Promoting a healthy environment.

07/03/2015

PERMIT CONDITIONS

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

CONDITIONS

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

07/03/2015



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.org

June 30, 2015

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-095-2272

COMPANY: Antero Resources Corporation

FARM: Estlack Pad Lucy Unit 3HD

COUNTY: Tyler DISTRICT: Center QUAD: Middlebourne

The deep well review of the application for the above company is **APPROVED TO DRILL TO TRENTON WITH A UTICA/POINT PLEASANT COMPLETION.**

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? N/A
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners; Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells, well name, and the name and address of the operator; none
4. Provided a plat showing that the proposed location is a distance of 400 feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Cindy Raines
Executive Assistant

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

1) Well Operator: Antero Resources Corporation 494488557 095 - Tyler Centerville Middlebourne 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Lucy Unit 3HD Well Pad Name: Estlack Pad

3) Farm Name/Surface Owner: Monroe, Edna Public Road Access: CR 30/1

4) Elevation, current ground: 1160' Elevation, proposed post-construction: 1141'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow _____ Deep

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant: 11,875' TVD, 95', 8400# Trenton: 12,000' TVD, 180', 8480#

8) Proposed Total Vertical Depth: 12,000' TVD (Deep Vertical) and 11,875' (Deep Horizontal)

9) Formation at Total Vertical Depth: Trenton (Deep Vertical) and Point Pleasant (Deep Horizontal)

10) Proposed Total Measured Depth: 19,200' MD (Deep Horizontal)

11) Proposed Horizontal Leg Length: 6682'

12) Approximate Fresh Water Strata Depths: 131', 161', 208'

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

14) Approximate Saltwater Depths: 772', 847', 1890', 1968'

15) Approximate Coal Seam Depths: 200'

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

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

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

Depth: _____

Seam: _____

Owner: _____

09502272

WW-6B
(04/15)

API NO. 47- 095
OPERATOR WELL NO. Lucy Unit 3HD
Well Pad Name: Estack 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	26"	New	H-40	154#	40'	40'	CTS, 49 Cu. Ft.
Fresh Water	18-5/8"	New	J-55/H-40	87.5#	300'	300'	CTS, 461 Cu. Ft.
Coal	13-3/8"	New	J-55	54.5#	2450'	2450'	CTS, 1737 Cu. Ft.
Intermediate	9-5/8"	New	P-110	47#	10,300'	10,300'	3347 Cu. Ft.
Production	5-1/2"	New	P-110	23#	19,200'	19,200'	2344 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#	11800'		
Liners							

MAC
5-28-15

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	26"	30"	0.325	900	50	Class A	1.18
Fresh Water	18-5/8"	24"	0.435	2250	1000	Class A	1.18
Coal	13-3/8"	17-1/2"	0.380	2740	1500	Class A	1.18
Intermediate	9-5/8"	12-1/4"	0.472	9440	2000	Class A	3.09/1.18
Production	5-1/2"	8-1/2"	0.415	16,510	2500	Link-H/POZ & Tub - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

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WV Department of
Environmental Protection

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

Antero plans to drill the vertical section of this well into the Trenton at ~12,000' TVD for purposes of logging and to gather information on the deeper stratigraphic intervals.

After logging is complete, we plan to plug back from TVD (~12,000') with solid cement to KOP in the Point Pleasant and, drill, perforate, fracture a new horizontal deep well and complete Point Pleasant. Please reference the well bore schematic included in the Deep Well Site Safety Plan (Exhibit 5) for additional details.

****No formation below the Point Pleasant will be perforated or stimulated in any manner.****

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

Antero plans to pump Slickwater into the Point Pleasant 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 - 13,000 psi

Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 38.12 acres

22) Area to be disturbed for well pad only, less access road (acres): 13.58 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.

Intermediate 2 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

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Intermediate 2: 100% Low Dense, 3%BWOW Potassium Chloride, Class A, 2%BWOC Gel, 3% BWOW Potassium Chloride

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

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

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

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

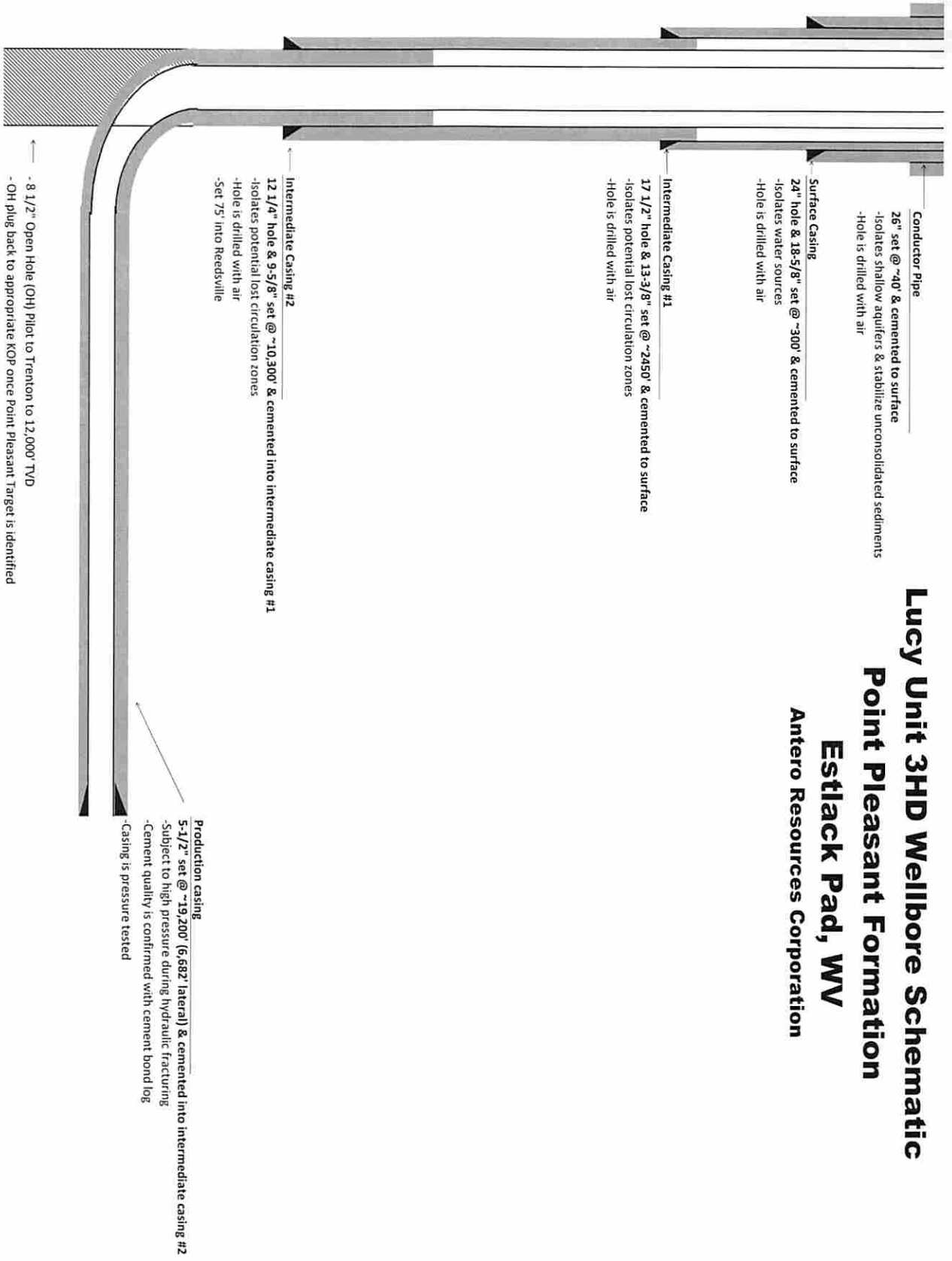
Intermediate 2: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

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.

09502272

Lucy Unit 3HD Wellbore Schematic Point Pleasant Formation Estlack Pad, WV Antero Resources Corporation



Conductor Pipe
 26" set @ ~40' & cemented to surface
 -Isolates shallow aquifers & stabilize unconsolidated sediments
 -Hole is drilled with air

Surface Casing
 24" hole & 18-5/8" set @ ~300' & cemented to surface
 -Isolates water sources
 -Hole is drilled with air

Intermediate Casing #1
 17 1/2" hole & 13-3/8" set @ ~2450' & cemented to surface
 -Isolates potential lost circulation zones
 -Hole is drilled with air

Intermediate Casing #2
 12 1/4" hole & 9-5/8" set @ ~10,300' & cemented into intermediate casing #1
 -Isolates potential lost circulation zones
 -Hole is drilled with air
 -Set 75' into Reedsville

Production casing
 5-1/2" set @ ~19,200' (6,682' lateral) & cemented into intermediate casing #2
 -Subject to high pressure during hydraulic fracturing
 -Cement quality is confirmed with cement bond log
 -Casing is pressure tested

← 8 1/2" Open Hole (OH) Pilot to Trenton to 12,000' TVD
 -OH plug back to appropriate KOP once Point Pleasant Target is identified

WW-9
(2/15)

API Number 47 - 095

09502272

Operator's Well No. Lucy Unit 3HD

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

MAG
5-28-15

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494488557

Watershed (HUC 10) Headwaters Middle Island Creek Quadrangle Middlebourne 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 _____)
- Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-94)
- Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
- Other (Explain _____)

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

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

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

Additives to be used in drilling medium? Please See Attachment

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

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

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

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

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

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

Company Official Signature [Signature]

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental & Regulatory Manager

NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID # 20144028770
MY COMMISSION EXPIRES JULY 18, 2018

Subscribed and sworn before me this 26th day of May, 20 15

Natalie Komp Notary Public

My commission expires July 18, 2018

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WA
Enviro
Department of Environmental Protection
07/08/2015

09502272

Form WW-9

Operator's Well No. Lucy Unit 3HD

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 38.12 acres Prevegetation pH

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

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

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

Access Road "A" (8.33) + Well Pad (13.58) + Water Containment Pad (2.90) + Excess/Topsoil Material Stockpiles (13.31) = 38.12 Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10-15
		Tall Fescue	30
See attached Table IV-3 for additional seed type (Estlack Pad Design Page 26)		See attached Table IV-4a for additional seed type (Estlack Pad Design Page 26)	
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Hoff

Comments: Preseed & mulch any disturbed areas per WVAEA regs. Maintain & Upgrade E-n-s as necessary

Title: Oil & Gas Inspector Date: 5-28-15

Field Reviewed? Yes No

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Form WW-9 Additives Attachment

SURFACE INTERVAL

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

INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

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

PRODUCTION INTERVAL

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

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

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MAY 29 2015

WV Department of
Environmental Protection

07/03/2015

09 50 2272



Well Site Safety Plan

Antero Resources

Well Name: Lucy Unit 3HD (Deep Well)

Michael Gaff
5-28-15

Pad Location: ESTLACK PAD
Tyler County/ Centerville District

GPS Coordinates: Lat 39°24'50.78"/Long -80°52'40.42" (NAD83)

Driving Directions:

From Clarksburg: Drive west on US-50 W for 25 miles. At the town of West Union, turn right onto WV-18 N, go 0.6 miles. Turn left onto Davis St/Old U.S. 50 W, go 0.4 miles. Turn right onto WV-18 N/Sistersville Pike, go 14.4 miles. Turn left onto Purgatory Run Rd, go 2.3 miles. Access road to the pad will be on your right.

From Middlebourne, WV: Drive south out of Middlebourne on WV-18 S for 11.2 miles. Turn right onto Purgatory Run Rd, go 2.3 miles. Access road to the pad will be on your right.

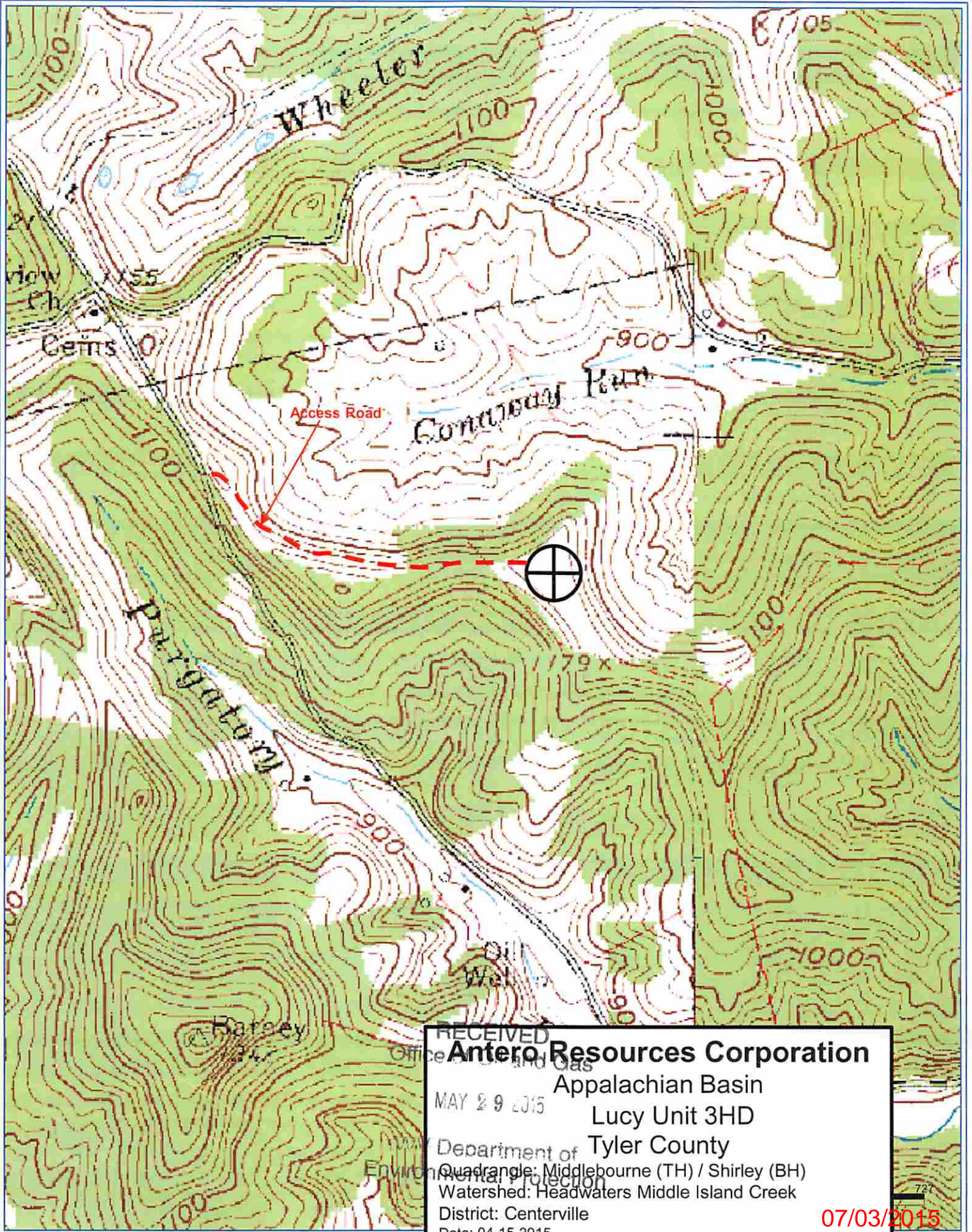
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EMERGENCY (24 HOUR) CONTACT 1-800-878-1379
WV Department of
Environmental Protection

07/03/2015

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Antero Resources Corporation
 Appalachian Basin
 Lucy Unit 3HD
 Tyler County
 Department of Environmental Protection
 Quadrangle: Middlebourne (TH) / Shirley (BH)
 Watershed: Headwaters Middle Island Creek
 District: Centerville
 Date: 04-15-2015

07/03/2015

LATITUDE 39°25'00"

LATITUDE 39°27'30" 2,140' TO BOTTOM HOLE

3HD TOP HOLE

LONGITUDE 80°52'30"

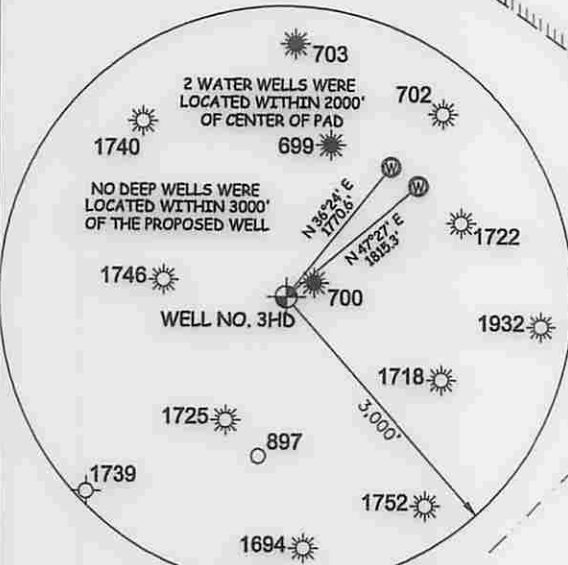
LONGITUDE 80°52'30"

9,322' TO BOTTOM HOLE

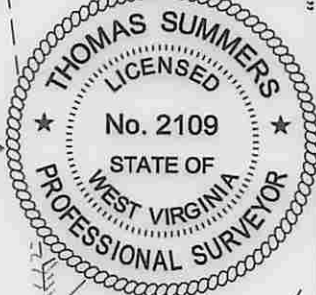
NOTES:
WELL 3HD TOP HOLE INFORMATION:
 N: 335,925ft E: 1,610,667ft
 LAT: 39°24'50.81" LON: 80°52'40.98"
BOTTOM HOLE INFORMATION:
 N: 342,733ft E: 1,609,493ft
 LAT: 39°25'57.91" LON: 80°52'57.28"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 3HD TOP HOLE INFORMATION:
 N: 4,362,749m E: 510,513m
BOTTOM HOLE INFORMATION:
 N: 4,364,817m E: 510,120m

WV NORTH ZONE GRID NORTH



Antero Resources Corporation
 Well No. Lucy Unit 3HD
 189.13 Unit Acres



LEGEND

---+---	Unit Boundary Lines +/-
---+---	Interior Surface Tracts +/-
-X-	Existing Fence
⊕	Found monument, as noted

THOMAS SUMMERS P.S. 2109

DATE 05/20/15

OPERATOR'S WELL # LUCY UNIT #3HD

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

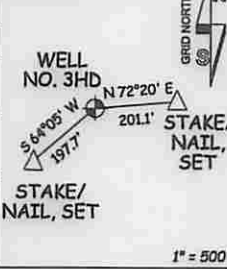


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

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

JOB # 15-008WA
 DRAWING # LUCY3HDR2
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

REFERENCES



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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 095 - 0227246A
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___ STATE COUNTY PERMIT COUNTY NAME
 LOCATION: ELEVATION 1,160' - ORIGINAL 1,141' - PROPOSED WATERSHED HEADWATERS MIDDLE ISLAND CREEK 07/03/2015
 QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT CENTERVILLE COUNTY TYLER
 SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
 OIL & GAS ROYALTY OWNER CARL W. NOLAN; CARL W. NOLAN; CARL BAKER; LEASE ACREAGE 116 AC ±; 170 AC ±; 87 AC ±;
 WVDNR; MELVIN WILEY ET UX; REGINA M. BUCK 553.16 AC ±; 378 AC ±; 309.55 AC ±
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X
 PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) ___ PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH 12,000' TVD 19,200' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM PERMIT
 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>E. Thomas Estlack, et ux Lease</u>			
E. Thomas Estlack, et ux Sancho Oil and Gas Corporation	Sancho Oil and Gas Corporation Antero Resources Corporation	1/8 Assignment	0330/0834 0437/0381
<u>Carl W. Nolan Lease (TM 8-5)</u>			
Carl W. Nolan, single Warren R. Haught, as an individual Sancho Oil and Gas Corporation	Warren R. Haught Sancho Oil and Gas Corporation Antero Resources Corporation	1/8 Assignment Assignment	0214/0578 0376/0182 0436/0177
<u>Carl W. Nolan Lease (TM 8-6)</u>			
Carl W. Nolan, single Warren R. Haught, as an individual Sancho Oil and Gas Corporation	Warren R. Haught Sancho Oil and Gas Corporation Antero Resources Corporation	1/8 Assignment Assignment	0214/0578 0376/0182 0436/0177
<u>Carl Baker Lease</u>			
Carl Baker, et al Sancho Oil and Gas Corporation	Sancho Oil and Gas Corporation Antero Resources Corporation	1/8 Assignment	0333/0908 0436/0177
<u>WVDNR Lease</u>			
West Virginia Division of Natural Resources	Antero Resources Corporation	1/8+	0467/0249
<u>Melvin Wiley, et ux Lease</u>			
Melvin Wiley, et ux Sancho Oil and Gas Corporation	Sancho Oil and Gas Corporation Antero Resources Corporation	1/8 Assignment	0337/0078 0436/0177

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

CONTINUED ON NEXT PAGE

07/03/2015

**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>Regina M. Buck Lease</u>				
	Regina M. Buck	Antero Resources Appalachian Corporation	1/8+	0416/0430
	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.				

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

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

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

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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: Kevin Kilstrom
 Its: VP of Production

09502272

FILED

JUN 10 2013

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



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

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

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

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

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

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

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

7. 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.

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Revised 4/13

Form CP-1

Issued by the Office of the Secretary of State

MAY 29 2015



May 26, 2015

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

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

RE: Lucy Unit 3HD
Quadrangle: Middlebourne 7.5'
Tyler County/Centerville District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Lucy Unit 3HD horizontal deep 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 Lucy Unit 3HD 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 "Jared Hurst", is written over a horizontal dashed line.

Jared Hurst
Senior Landman

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07/03/2015

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

09502272

Date of Notice Certification: 05/28/2015

API No. 47- 095 -
Operator's Well No. Lucy Unit 3HD
Well Pad Name: Estlack Pad

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Eastings: <u>510,513m</u>
County: <u>Tyler</u>		Northing: <u>4,362,749m</u>
District: <u>Centerville</u>	Public Road Access: <u>CR 30/1</u>	
Quadrangle: <u>Middlebourne 7.5'</u>	Generally used farm name: <u>Monroe, Edna</u>	
Watershed: <u>Headwaters Middle Island Creek</u>		

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
<p>RECEIVED Office of Oil and Gas MAY 29 2015</p>	

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Required Attachments:

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

09 50 2272

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: Antero Resources Corporation
By: Kevin Kilstrom
Its: VP of Production
Telephone: 303-357-7310

Address: 1615 Wynkoop Street
Denver, CO 80202
Facsimile: 303-357-7315
Email: asteele@anteroresources.com



Subscribed and sworn before me this 29th day of May 2015.
Natalie Komp Notary Public
My Commission Expires July 18, 2018

Oil and Gas Privacy Notice:

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

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07/03/2015

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: 5/29/2015 Date Permit Application Filed: 5/29/2015

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: Edna Monroe
Address: 2543 Conaway Run Rd.
Alma, WV 26320

Name: Thomas E. and Crystalee Estlack
Address: 1054 Chestnut Ridge Rd.
Morgantown, WV 26505

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

*PLEASE NOTE THE ADDITIONAL SURFACE TRACTS WITH DISTURBANCE SHOWN ON PAD DESIGN ARE **NOT** OVERLYING THE OIL & GAS LEASEHOLD BEING DEVELOPED BY THE PROPOSED WELL; THEREFORE, ARE NOT REQUIRED TO BE NOTIFIED PER WV CODE 22-6A-10. ANTERO HAS SECURED A SIGNED AGREEMENT WITH THE RELATED PARTIES

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

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address: _____

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

Name: NONE IDENTIFIED WITHIN 1500'
Address: _____

* 2 water wells are identified but are located greater than 1500' from subject pad location

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

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*Please attach additional forms if necessary

MAY 29 2015

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.

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Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred 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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Environmental Protection

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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MAY 19 2015

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.**

WV Department of
Environmental Protection

0502272
HOURS (30) DAYS

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

RECEIVED
Office of Oil and Gas

MAY 9 2015

WV Department of
Environmental Protection

WW-6A
(8-13)

09502272
API NO. 47-095
OPERATOR WELL NO. Lucy Unit 3HD
Well Pad Name: Estlack Pad

Notice is hereby given by:

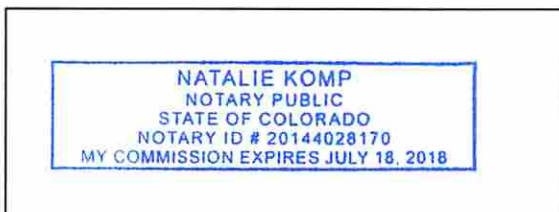
Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
Email: asteelle@anteroresources.com



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 28th day of May 2015.

Natalie Komp Notary Public

My Commission Expires July 18, 2018

RECEIVED
Office of Oil and Gas
MAY 29 2015
WV Department of
Environmental Protection

07/03/2015

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

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

Date of Notice: 11/13/2014 **Date of Planned Entry:** *11/24/2014

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

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)
 Name: Edna Monroe
 Address: 2543 Conaway Run Rd.
Alma, WV 26320

Name: E. Thomas Estlack & Crystalee Estlack
 Address: 1054 Chestnut Ridge Road
Morgantown, WV 26505

Name: _____
 Address: _____

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

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

*please attach additional forms if necessary

RECEIVED
Office of Oil and Gas
MAY 29 2015
WV Department of Environmental Protection

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>Approx. 39.413599, -80.877396</u>
County: <u>Tyler</u>	Public Road Access: <u>CR 30/1</u>
District: <u>Centerville</u>	Watershed: <u>Headwaters Middle Island Creek</u>
Quadrangle: <u>Middlebourne</u>	Generally used farm name: <u>Monroe, Edna</u>

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

Notice is hereby given by:

Well Operator: <u>Antero Resources Corporation</u>	Address: <u>1615 Wynkoop Street</u>
Telephone: <u>(303) 357- 7310</u>	<u>Denver, CO 80202</u>
Email: <u>asteele@anteroresources.com</u>	Facsimile: <u>(303) 357-7315</u>

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-6A3 Notice of Entry For Plat Survey Attachment:

09502272

Mineral Owners:

Tax ID: 8-5

Owner: Edna Monroe
Address: 2543 Conaway Run Rd.
Alma, WV 26320

Tax ID: 8-24.3

Owner: E. Thomas Estlack & Crystalee Estlack
Address: 1054 Chestnut Ridge Rd.
Morgantown, WV 26505

RECEIVED
Office of Oil and Gas
MAY 29 2015
WV Department of
Environmental Protection

07/03/2015

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: 05/29/2015 **Date Permit Application Filed:** 05/29/2015

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: Edna Monroe
Address: 2543 Conaway Run Rd.
Alma, WV 26320

Name: Thomas E. and Crystalee Estlack
Address: 1054 Chestnut Ridge Rd.
Morgantown, WV 26505

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>510,513m</u>
County: <u>Tyler</u>	Northing: <u>4,362,749m</u>
District: <u>Centerville</u>	Public Road Access: <u>CR 30/1</u>
Quadrangle: <u>Middlebourne 7.5'</u>	Generally used farm name: <u>Monroe, Edna</u>
Watershed: <u>Headwaters Middle Island Creek</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: asteale@anteroresources.com

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

Oil and Gas Privacy Notice:

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

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Office of Oil and Gas

MAY 29 2015

WV Department of
Environmental Protection

07/03/2015



09502272

09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

CNX Gas Company LLC
One Energy Drive
Jane Lew, WV 26378

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated



~~040002300~~

09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

American Energy – Marcellus LLC
Post Office Box 13678
Oklahoma City, OK 73113

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



~~04902394~~
09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

JB Exploration I, LLC
3570 Shields Hill Road
Cairo, WV 26337

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



04/02/2015

09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Sancho Oil & Gas Corporation
210 Second Street, 2nd Floor
St. Marys, WV 26170

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



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09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Lori Herbold
122 S Fifth Avenue
Paden City, WV 26159

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Ms. Herbold:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



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09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Charles E Seders, Jr
7348 California City Boulevard
California City, CA 93505

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Mr. Seders:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



04/20/2015

09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Donald E Baker
130 Scenery Hill Road
Wellsburg, WV 26070

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Mr. Baker:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



04/09/2015
09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Richard L McCracken
3856 Valley Vista Drive
Chino Hills, CA 91709

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Mr. McCracken:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



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west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

Clara Louise Stevens
842 Sugar Creek Road
Middlebourne, WV 26149

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Ms. Stevens:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



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09502272

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

SWN Production Company LLC
10000 Energy Drive
Spring, TX 77389

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015



09502272

0490239/14

west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Earl Ray Tomblin, Governor
Barry K. Lay, Chairman
dep.wv.gov

June 10, 2015

StatOil USA Onshore Properties
2103 Citywest Boulevard, Suite 800
Houston, TX 77389

RE: Intentional Deviation of New Deep Well - Lucy Unit 3HD

Dear Sir:

Please be advised that Antero Resources Corporation has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received **in writing** by June 25, 2015 the application will be processed in the normal manner.

If you have any questions please call me at (304) 926-0499, extension 1656.

Sincerely,

Cindy Raines
Executive Assistant

encl: as stated

07/03/2015

09502272
~~0409102694~~



March 28, 2015

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

West Virginia Oil & Gas Conservation Commission
Attn: Cindy Raines
501 57th Street
Charleston, WV 25304

Ms. Cindy Raines:

Antero Resources Corporation (Antero) would like to submit the following application for a new DEEP well work permit to explore the Point Pleasant formation. Our **Middlebourne** project is located in Tyler County, WV. The site consists of one proposed unit boundary which Antero has named the **Lucy Unit** consisting of one multi-well pad encompassed by **seven** separate leases. This multi-well pad consists of **one** horizontal (DEEP) well that we are requesting approval to drill.

Antero plans to drill the vertical section of this well into the Trenton at approximately 12,000' TVD for purposes of logging and to gather information on the deeper stratigraphic intervals. After logging is complete, we plan to plug back to appropriate KOP once Point Pleasant target is identified, drill, perforate, fracture a new horizontal deep well and complete Point Pleasant. No formation below the Point Pleasant will be perforated or stimulated in any manner.

Attached you will find the following:

- Permit Application package
- Deviation Notification List and Exhibit showing 1500 foot radius around wellbore
- Signed Consent & Easement
- Voluntary Unit Affidavit
- CD with copy of permit application

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

Ashlie Steele
Permitting Supervisor
Antero Resources Corporation

Enclosures

RECEIVED
Office of Oil and Gas

MAY 29 2015

WV Department of
Environmental Protection

07/03/2015

09502272
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ANTERO RESOURCES CORPORATION - PROPOSED LUCY UNIT 3HD					
List of Offset Operators & Unleased Mineral Owners within 1500 feet of Wellbore					
Surface, Tax Map and Parcel	Name	Address	City	State	Zip
1-8-4	CNX Gas Company LLC	One Energy Drive	Jane Lew	WV	26378
p/o 1-3-1	American Energy - Marcellus, LLC	PO Box 13678	Oklahoma City	OK	73113
1-4-6.4	JB Exploration I, LLC	3570 Shields Hill Road	Cairo	WV	26337
1-4-6.4	Sancho Oil & Gas Corporation	210 Second Street, 2nd Floor	St. Mary's	WV	26170
1-4-6.4	Lori Herbold	122 S. Fifth Avenue	Paden City	WV	26159
1-4-6.4	Charles E. Seders, Jr.	7348 California City Blvd.	California City	CA	93505
1-4-6.4	Donald E. Baker	130 Scenery Hill Road	Wellsburg	WV	26070
1-4-6.4	Richard L. McCracken	3856 Valle Vista Drive	Chino Hills	CA	91709
1-4-6.4	Clara Louise Stevens	842 Sugar Creed Road	Middlebourne	WV	26149
1-8-7	Southwestern Production Company, LLC	10000 Energy Drive	Spring	TX	77389
1-8-7	Statoil USA Onshore Properties Inc.	2103 City West Blvd, Suite 800	Houston	TX	77042
1-7-19	Heirs and Assigns of Lawrence J. Corbly and Elizabeth Holland Corbly, husband and wife	Address Unknown (circa 1905)	Cabell County	WV	
1-7-19	Heirs and Assigns of Branson Lee Corbly and Martha J. Corbly, husband and wife	Address Unknown (circa 1905)	Putnam County	WV	
1-7-19	Heirs and Assigns of Mary Corbly	Address Unknown (circa 1905)	Tyler County	WV	
1-3-1; 1-3-4; 1-4-6.3; 1-4-6.4; 1-4-12.1; 1-7-5; 1-7-19; 1-8-1; 1-8-5; 1-8-6; 1-8-7.1; 1-8-24.3; 1-8-25	Antero Resources Corporation	1615 Wynkoop Street	Denver	CO	80202

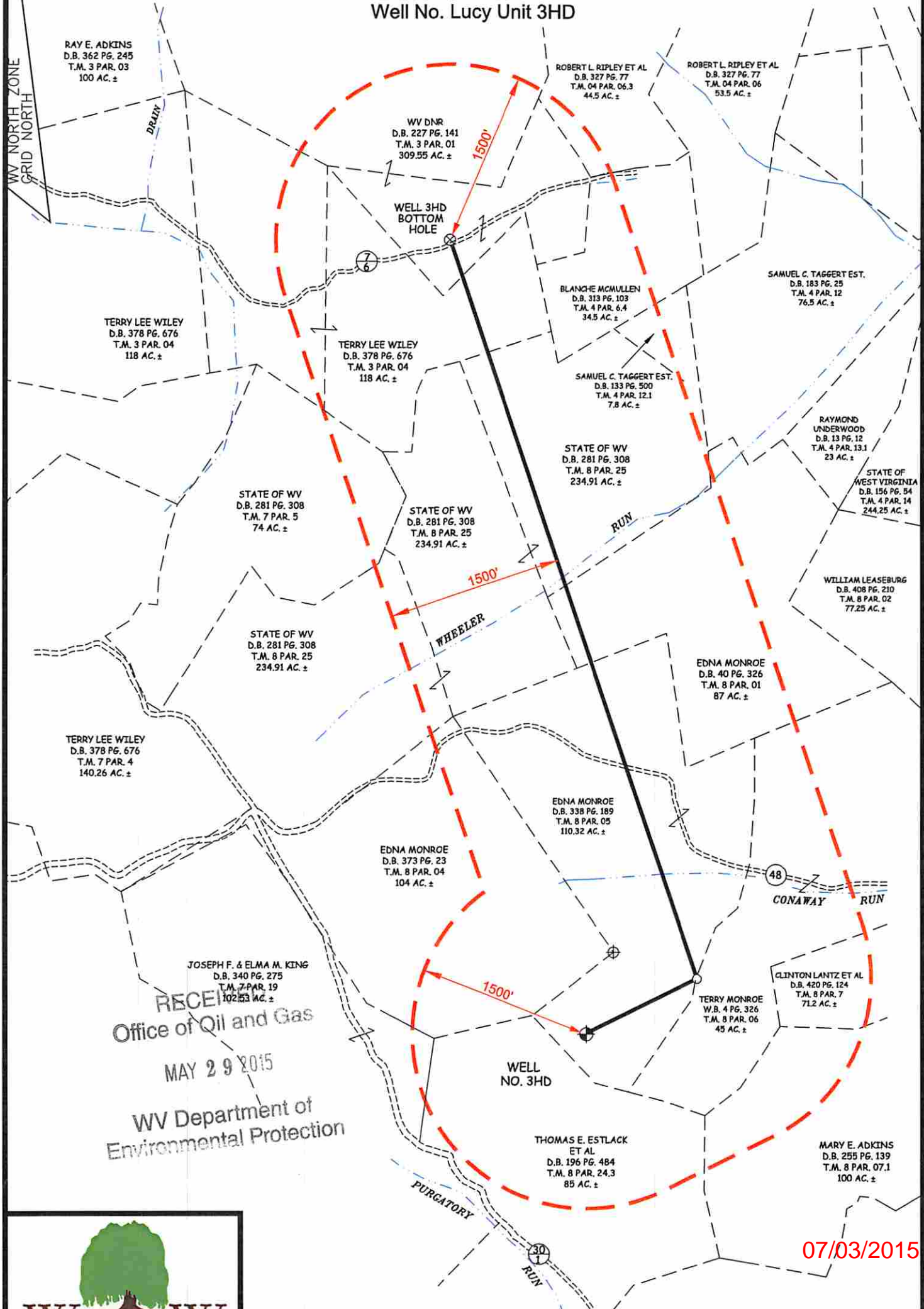
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WV Department of
Environmental Protection

07/03/2015

EXHIBIT MAP FOR ANTERO RESOURCES CORP. Well No. Lucy Unit 3HD

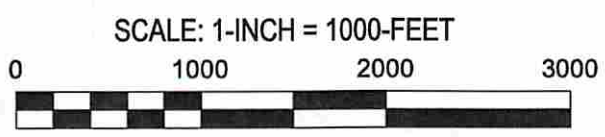


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WILLOW
• LAND SURVEYING PLLC •

P.O. BOX 17
PENNSBORO, WV 26415
304-659-1717



LEGEND	
	Unit Boundary Lines +/-
	Interior Surface Tracts +/-
	Existing Fence

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~~00090213904~~

LATITUDE 39°25'00" -562'

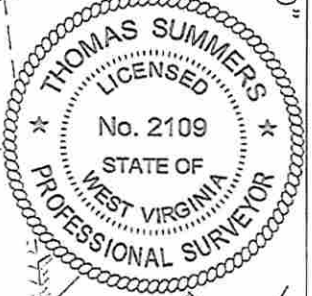
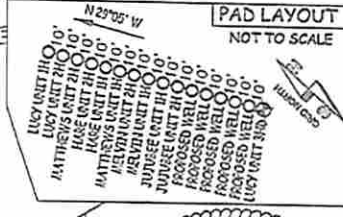
LATITUDE 39°27'30" 2.140' TO BOTTOM HOLE

LONGITUDE 80°52'30"
 9.322' TO BOTTOM HOLE

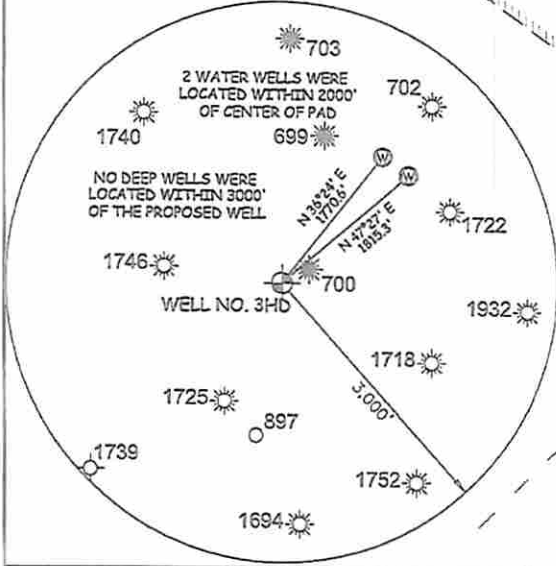
NOTES:
 WELL 3HD TOP HOLE INFORMATION:
 N: 335,925ft E: 1,610,667ft
 LAT: 39°24'50.81" LON: 80°52'40.98"
 BOTTOM HOLE INFORMATION:
 N: 342,733ft E: 1,609,493ft
 LAT: 39°25'57.91" LON: 80°52'57.28"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
 WELL 3HD TOP HOLE INFORMATION:
 N: 4,362,749m E: 510,513m
 BOTTOM HOLE INFORMATION:
 N: 4,364,817m E: 510,120m

Antero Resources Corporation
 Well No. Lucy Unit 3HD
 189.13 Unit Acres



WV NORTH ZONE GRID NORTH



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

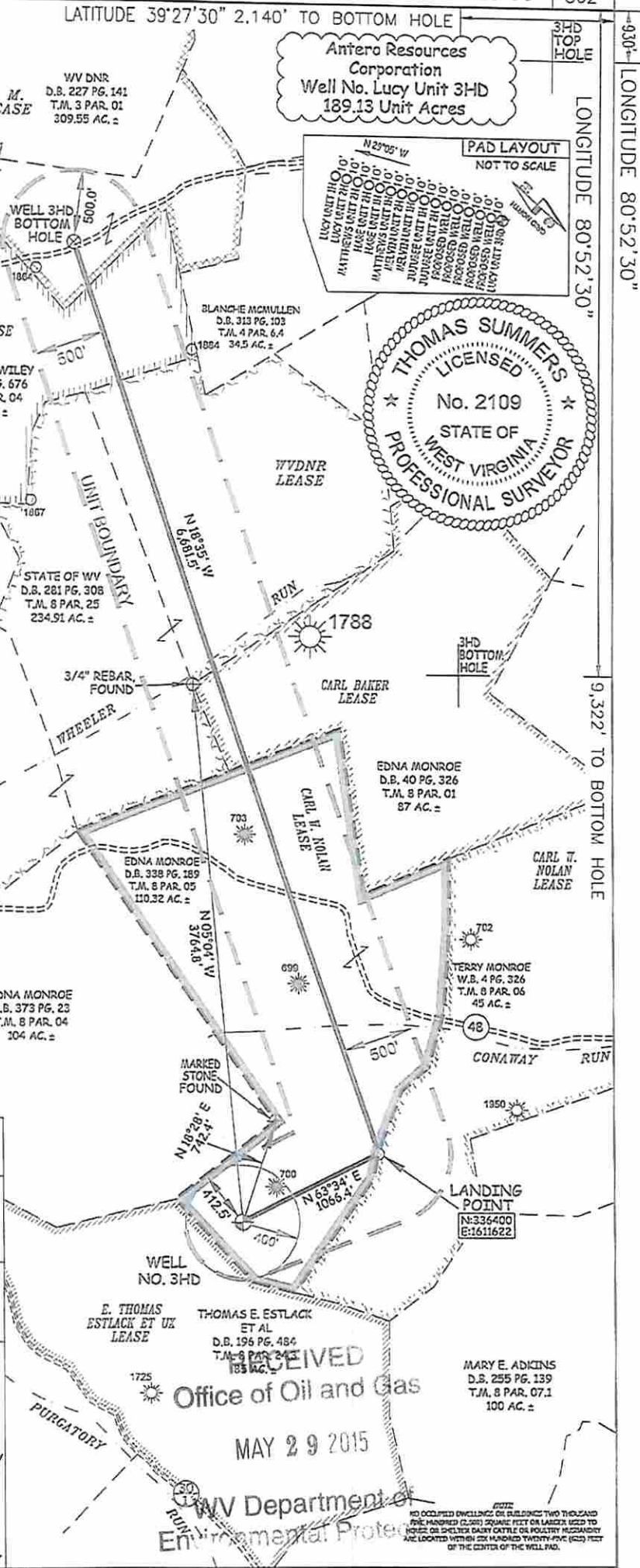
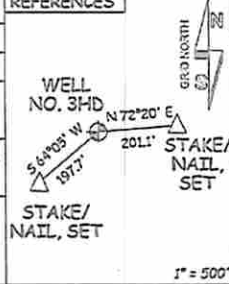
THOMAS SUMMERS P.S. 2109
 DATE 05/20/15
 OPERATOR'S WELL# LUCY UNIT #3HD

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



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

JOB # 15-008WA
 DRAWING # LUCY3HDR2
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS



RECEIVED
 Office of Oil and Gas
 MAY 29 2015
 WV Department of Environmental Protection

NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND (2,000) SQUARE FEET OR LARGER, USED TO HOUSE OR SHEPHERD DAIRY CATTLE OR POLICRY HERDSHIP ARE LOCATED WITHIN 200 HUNDRED TWENTY-FIVE (200) FEET OF THE CENTER OF THE WELL PAD.

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL 47 - 095 -
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,160' - ORIGINAL 1,141' - PROPOSED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE MIDDLEBOURNE 7.5 DISTRICT CENTERVILLE COUNTY TYLER
 SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
 OIL & GAS ROYALTY OWNER CARL W. NOLAN; CARL W. NOLAN; CARL BAKER; LEASE ACREAGE 116 AC.; 170 AC.; 87 AC.;
 WVDNR; MELVIN WILEY ET UX; REGINA M. BUCK 553.16 AC.; 378 AC.; 309.55 AC.;
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH 12,000' TVD 19,200' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

07/03/2015

09502272
04302304

CERTIFICATE OF CONSENT AND EASEMENT

Pay 5/15/2015

ORIGINAL RESOURCES MINING: LEBLON MINING,
325 WHITE OAK BLVD
BRIARCLIFF, WV 26300-4649

We, the undersigned, for valuable consideration of \$10⁰⁰ (ten dollars) the receipt and sufficiency of which are hereby acknowledged, being all the owners of the surface of that certain lot, tract or parcel of land located in Centerville District, Tyler County, State of West Virginia, shown on the attached plat or survey, do hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to Antero Resources Corporation, its successors or assigns, for the drilling and operation of a deep well for the purpose of production of oil or gas at the location shown on the attached plat or survey.

Executed this 13th day of May, 2015.

Edna Monroe

STATE OF WEST VIRGINIA

COUNTY OF Tyler To-Wit

I, Ariel Monroe-Bassett, a Notary Public in and for the aforesaid County and State, do hereby certify that Edna Monroe, whose name is signed to the writing above, bearing date on the 13 day of May, 2015, has this day acknowledged the same before me, in my said County and State.

Given under my hand this 13 day of May, 20 15.

Ariel Monroe-Bassett

My Commission expires on:

February 8, 2020

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



Tarrence R. Henington
TYLER COUNTY 11:24:28 AM
Instrument No 104880
Date Recorded 05/15/2015
Document Type RP
Pages Recorded 3
Book-Page 493-675
Recording Fee: \$11.00
Additional Fee: \$0.00

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Office of Oil and Gas

MAY 29 2015

WV Department of
Environmental Protection

07/03/2015

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[Handwritten signature]
FOL 5/15/2015

CERTIFICATE OF CONSENT AND EASEMENT

of \$10⁰⁰ (ten dollars)

We, the undersigned, for valuable consideration, the receipt and sufficiency of which are hereby acknowledged, being all the owners of the surface of that certain lot, tract or parcel of land located in Centerville District, Tyler County, State of West Virginia, shown on the attached plat or survey, do hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to Antero Resources Corporation, its successors or assigns, for the drilling and operation of a deep well for the purpose of production of oil or gas at the location shown on the attached plat or survey.

ANTERO RESOURCES ATTN: LESLEY HINZMAN
535 WHITE OAKS BLVD
FARGO, ND 58203-6649

Executed this 13th day of May, 2015.

E. Thomas Estlack, Crystale T. Estlack

STATE OF WEST VIRGINIA

COUNTY OF Morganlia To-Wit

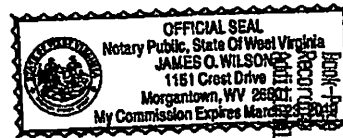
I, James O. Wilson, a Notary Public in and for the aforesaid County and State, do hereby certify that E. Thomas + Crystale T. Estlack, whose names ^{are} signed to the writing above, bearing date on the 13th day of May, 2015, has this day acknowledged the same before me, in my said County and State.

Given under my hand this 13 day of May, 2015.

J. O. Wilson

My Commission expires on: March 23, 2019

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304



TERESA R. HAMILTON
TYLER COUNTY 11:36:53 AM
INSTRUMENT 10104881
DATE RECORDED 05/15/2015
DOCUMENT TYPE DE
Pages Recorded 3
Book Page 483-676
Record Fee \$11.00
\$5.00

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Office of Oil and Gas

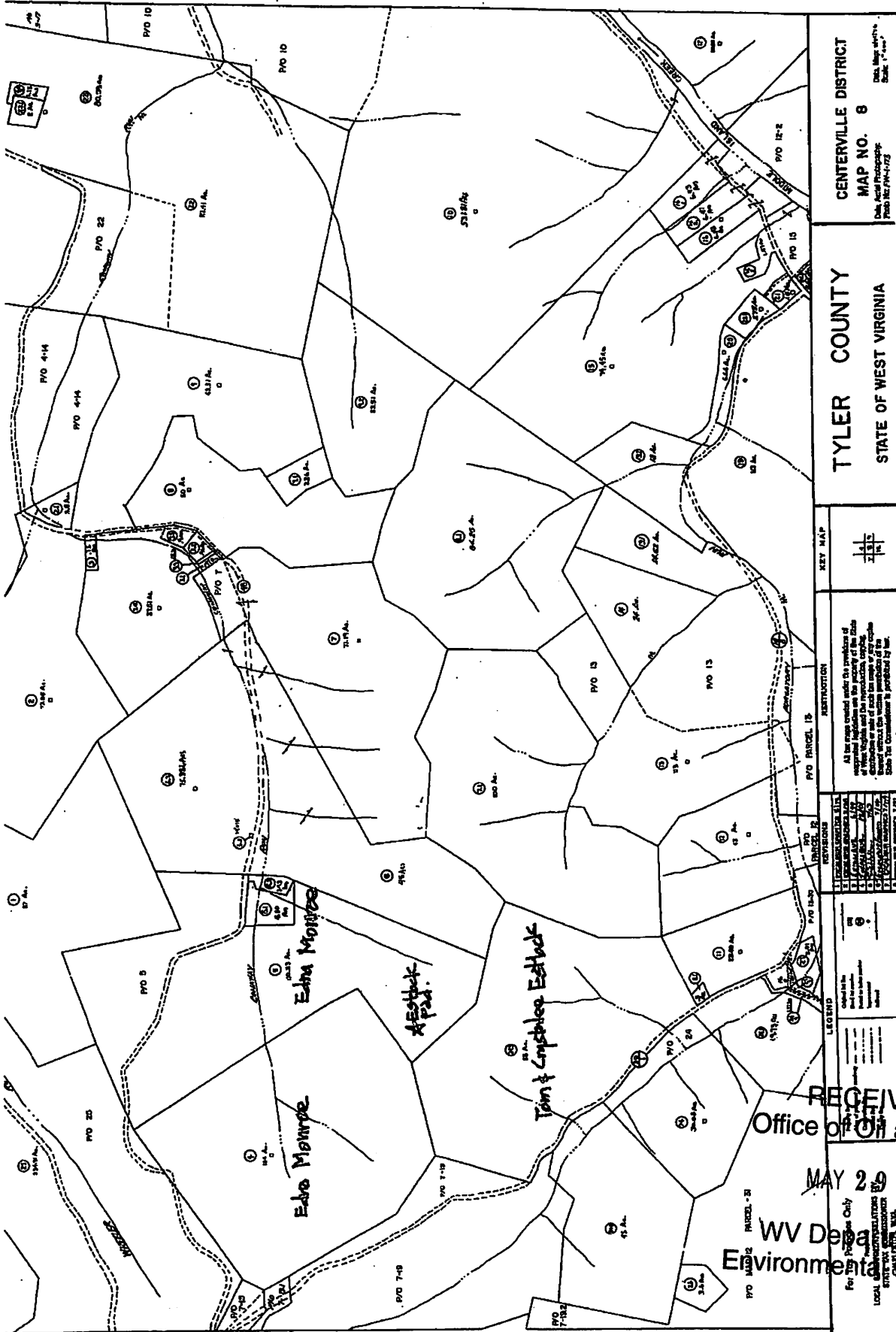
MAY 29 2015

WV Department of
Environmental Protection

07/03/2015

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CENTERVILLE DISTRICT
 MAP NO. 8
 Date: May 29, 2015
 Photo No. PVO-1-123

TYLER COUNTY
 STATE OF WEST VIRGINIA

KEY MAP

RESTRICTION
 All the maps issued under the provisions of the Public View Order Act are subject to the provisions of the State of West Virginia and the restrictions, copying, reproduction, distribution and use of the same are prohibited without the express permission of the State. See the Constitution for more details.

REVISIONS
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WV Department of Environmental Protection

07/03/2015

AFFIDAVIT
Voluntary Unit

~~04902594~~

09502272

The undersigned affiant, Jared Hurst being first duly sworn, says that he/she is the Landman, for Antero Resources Corporation (Antero), with an address of 1615 Wynkoop Street, Denver, CO 80202.

Affiant further states as follows:

THAT, Antero intends to drill a deep well in Centerville District, Tyler County, West Virginia. Known and referred to as the Lucy Unit # 3HD (the "well"), which will be drilled to Trenton formation and completed in the Utica formation;

THAT, Antero is applying to the WV Department of Environmental Protection ("WVDEP"), Office of Oil and Gas for the requisite authority and permit to drill, complete and operate the well.

THAT, Antero owns the oil and gas leasehold rights (the "Lease") to all lands within at least 400 feet of the well.

THAT, Antero has created a voluntary 189.13 acre unit around the Well (the "Unit") for the purpose of consolidating the Leases within the Unit, in compliance with the rules and regulations of the WVDEP and the provisions of the Leases;


THAT, Antero, by and through its representatives, has contacted each lessor of the Leases within the Unit ("the lessors") and explained the facts presented above, as well as the purpose and the intent of the voluntary Unit;**

THAT, the Lessors understand, agree to and acknowledge their inclusion in the voluntary Unit and their rights to a proportionate share of the royalties from the production and/or revenues derived from the Well, as set forth in each of the Leases, and;

By: [Signature]
Title: Landman

Taken, subscribed and sworn before me this 21st day of May, 2015.

My commission expires on:

AFFIX Notary Seal 

Natalie Komp
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**OR HAS THE PRIOR AUTHORIZATION UNDER ITS OIL AND GAS LEASEHOLD TO FORM THIS VOLUNTARY UNIT

MAY 20 2015
WV Department of
Environmental Protection

07/03/2015



09 50 2272

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

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

May 11, 2015

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

Subject: DOH Permit for the Estlack Pad, Tyler County
Lucy Unit 3HD Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2014-0751 which has been issued to Antero Resources Corporation. The well site is located off of Tyler County Route 30/1 SLS.

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

Very Truly Yours,

Gary K. Clayton

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

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MAY 29 2015

WV Department of
Environmental Protection

Cc: Ashlie Steele
Antero Resources Corporation
CH, OM, D-6
File

09502272

**List of Anticipated Additives Used for Fracturing or
Stimulating Well**

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	proprietary
Anionic polymer	proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	(Proprietary)
Demulsifier Base	(Proprietary)
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitropropionamide	10222-01-2
Microparticle	proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7

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ESTLACK WELL PAD & WATER CONTAINMENT PAD SITE DESIGN & CONSTRUCTION PLAN, EROSION & SEDIMENT CONTROL PLANS

APR# 9502254

APPROVED
WVDEP OOG
MAY 15 2015

LOCATION COORDINATES:
NAD 83
Easting: 438794.81 Northing: 408825.77
UTM ZONE 17 N
Easting: 438794.81 Northing: 408825.77
UTM ZONE 17 N
Easting: 438794.81 Northing: 408825.77
UTM ZONE 17 N

GENERAL DESCRIPTION:
THE ACCESS ROAD TO THE WELL PAD AND WATER CONTAINMENT PAD IS BEING CONSTRUCTED TO ADJACENT TO THE EXISTING ROAD AND TO THE WEST SIDE OF THE WELL PAD.

FLOODPLAIN NOTES:
THE PROPOSED SITE IS LOCATED WITHIN FLOOD ZONE X FOR FEMA FLOOD MAP #4606C0160C.

MISS UTILITY STATEMENT: VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. TICKET #445871087 IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:
ANTHROPOLOGICAL INVESTIGATION WILL BE OBTAINED FROM THE STATE OF WEST VIRGINIA PRIOR TO CONSTRUCTION OF THE WELL PAD AND WATER CONTAINMENT PAD.

ENVIRONMENTAL NOTES:
THE PROPOSED SITE IS LOCATED WITHIN FLOOD ZONE X FOR FEMA FLOOD MAP #4606C0160C.

RESTRICTIONS NOTES:
1. THERE ARE NO PERSONAL UTILITY LINES, POWER, OR TELEPHONE WITHIN 100 FEET OF THE WELL PAD AND LOD. THERE IS A WETLAND ADJACENT TO ACCESS ROAD 'A' THAT WILL REMAIN UNDISTURBED.

2. THERE ARE NO NATURALLY OCCURRING THREAT STREAMS WITHIN 200 FEET OF THE WELL PAD AND LOD.

3. THERE ARE NO OVERWATER DRAINAGE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.

4. THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELL PAD AND LOD.

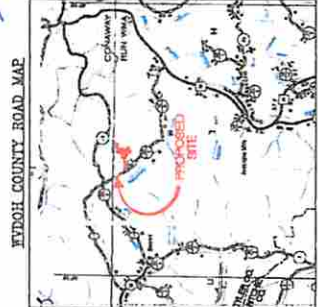
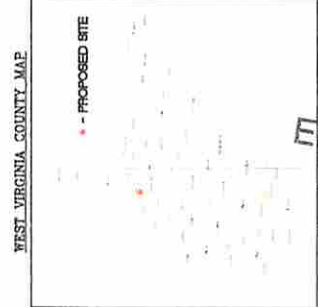
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 200 FEET OF THE CENTER OF THE WELL PAD.

6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 200 FEET OF THE CENTER OF THE WELL PAD.

REPRODUCTION NOTE:
THESE PLANS WERE CREATED FOR COLOR PRINTING AND ANY REPRODUCTIONS IN GRAY SCALE OR COPIES MAY RESULT IN A LOSS OF INFORMATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.



Michael Goff
5-28-15



MISS Utility of West Virginia
1-800-546-4848
West Virginia State Law
(Section 20-2-2a)
Requires that you call two
business days before you dig in
the state of West Virginia.
IT'S THE LAW!!

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West Virginia Department of
Environmental Protection

NAVITUS ENERGY ENGINEERING
Telephone: (857) 652-4122 | www.navituseng.com

DATE	REVISION



WELL PAD & WATER CONTAINMENT PAD
ESTLACK
COVER SHEET
TYLER COUNTY, WEST VIRGINIA



ESTLACK LIMITS OF DISTURBANCE AREA (AD)	Total Area
Access Road 'A' (12,244)	6.33
Water Containment Pad	13.06
Well Pad	13.31
Excavation/Opport. Material Stockpiles	33.12
Total Affected Area	65.82
Total Wooded Acres Disturbed	79.50
Impacts to Soil, Wetlands, and Wetlands	79.50
Access Road 'A' (12,244)	6.33
Water Containment Pad	13.06
Well Pad	13.31
Excavation/Opport. Material Stockpiles	33.12
Total Affected Area	65.82
Total Wooded Acres Disturbed	79.50
Impacts to Soil, Wetlands, and Wetlands	79.50
Access Road 'A' (12,244)	6.33
Water Containment Pad	13.06
Well Pad	13.31
Excavation/Opport. Material Stockpiles	33.12
Total Affected Area	65.82
Total Wooded Acres Disturbed	79.50
Impacts to Soil, Wetlands, and Wetlands	79.50

Proposed	WV State	WV State	UTM (Easting)	UTM (Northing)
Well Pad	13.31	13.31	438794.81	408825.77
Water Containment Pad	13.06	13.06	438794.81	408825.77
Excavation/Opport. Material Stockpiles	33.12	33.12	438794.81	408825.77
Total Affected Area	65.82	65.82	438794.81	408825.77
Total Wooded Acres Disturbed	79.50	79.50	438794.81	408825.77
Impacts to Soil, Wetlands, and Wetlands	79.50	79.50	438794.81	408825.77

5-28-15
MAG

NAVITUS ENERGY ENGINEERING
 Telephone: (800) 692-4195 | www.navitus.com

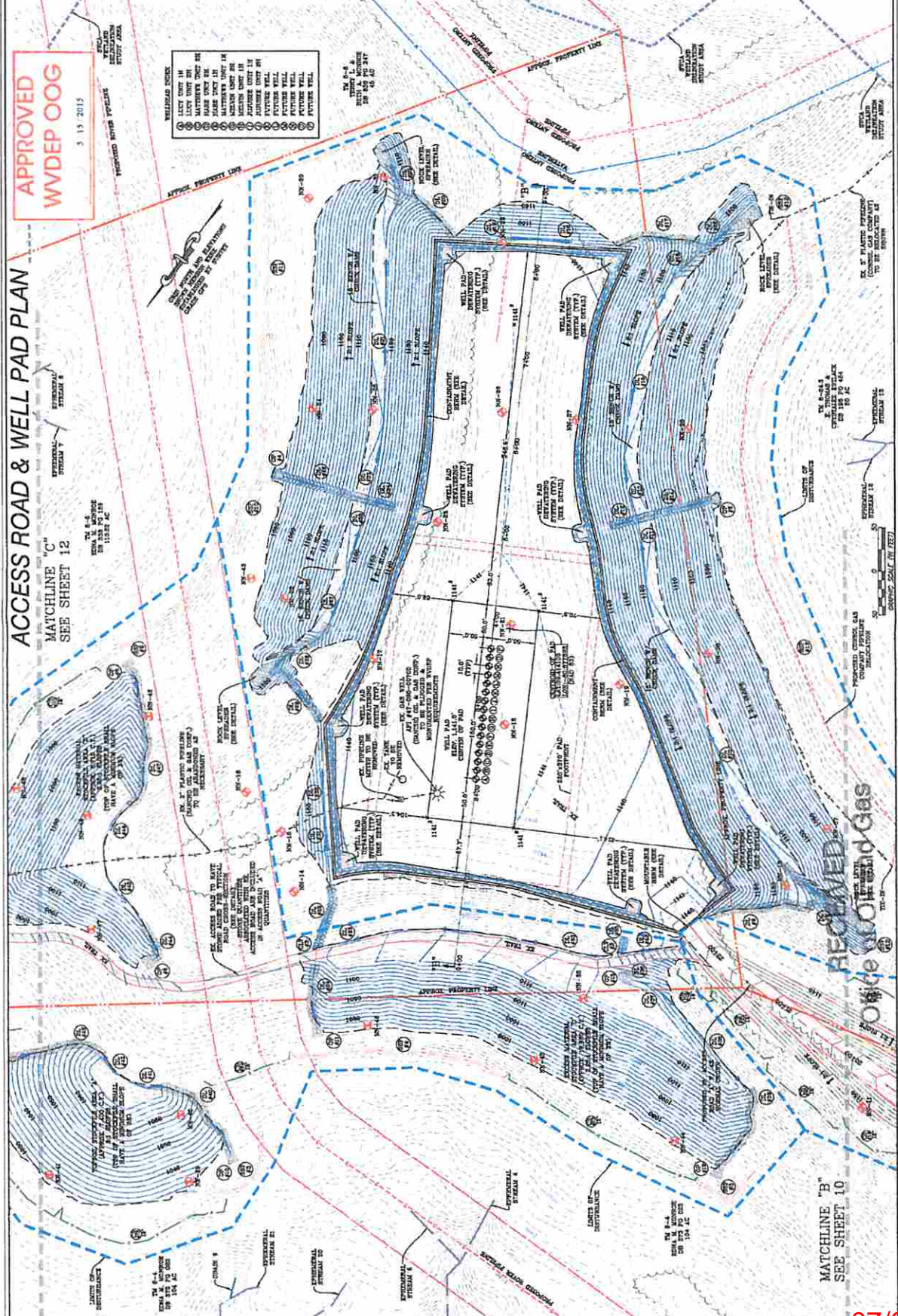
DATE	REVISION

Antero
 ANTERO ENERGY SERVICES
 ANTERO OIL & GAS CORPORATION

ESTLACK
 WELL PAD & WATER CONTAINMENT PAD
 TILER COUNTY, WEST VIRGINIA

ACCESS ROAD & WELL PAD PLAN

DATE 04/09/2015
 SCALE 1" = 50'
 SHEET 11 OF 30



APPROVED
WVDEP OOG
 3.13.2015

ACCESS ROAD & WELL PAD PLAN
 MATCHLINE "C"
 SEE SHEET 12

RECEIVED
Office of Coal and Gas

MAY 29 2015

WV Department of
 Environmental Protection

07/03/2015