



west virginia department of environmental protection

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

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

Tuesday, October 23, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

CNX GAS COMPANY LLC
POST OFFICE BOX 1248

JANE LEW, WV 263786506

Re: Permit approval for WDTN19KHSM
47-061-01815-00-00

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

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

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

James A. Martin
Chief

Operator's Well Number: WDTN19KHSM
Farm Name: MICHAEL L. BARNHART ANI
U.S. WELL NUMBER: 47-061-01815-00-00
Horizontal 6A New Drill
Date Issued: 10/23/2018



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**ORDER
ISSUED UNDER
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: CNX Gas Company, LLC
1000 Consol Energy Drive
Canonsburg PA 15317

DATE: October 9, 2018
ORDER NO.: 2018-W-8

INTRODUCTION

This Order (hereinafter “Order”) is issued by the Office of Oil and Gas (hereinafter “OOG”), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to CNX Gas Company, LLC (hereinafter “CNX” or “Operator”), collectively the “Parties.”

FINDINGS OF THE CHIEF

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. CNX is a “person” as defined by W. Va. Code §22-6-1(n), with a corporate address as 1000 Consol Energy Drive, Canonsburg PA 15317
3. On August 9, 2018 CNX submitted a well work permit application identified as API# 47-061-01815. The proposed well is to be located on the WDTN 19 Pad in Battelle District of Monongalia County, West Virginia.
4. On August 9, 2018 CNX requested a waiver for Wetlands WET01-007, WET01-008, WET01-009, WET01-011 as outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-061-01815.

CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to...(3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “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. The Office of Oil and Gas grants the request for a waiver for Wetlands WET01-007, WET01-008, WET01-009, WET01-011 from well location restriction requirements in W.Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-061-001815. The Office of Oil and Gas hereby **ORDERS** that CNX shall meet the following site construction and operational requirements for the WDTN 19 Well Pad:

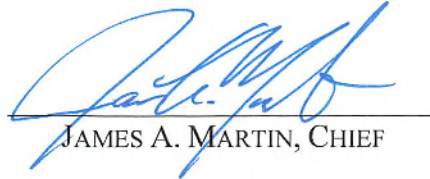
- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetlands WET01-007, WET01-008, WET01-009, WET01-011 shall be protected by triple stacked filter socks consisting of two twenty-four inch (24” filter socks and an eighteen inch (18”) filter sock along with silt fence. This along with rip-rap aprons, temporary and permanent vegetative cover will prevent sediment from reaching the wetlands
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 9th day of October, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:



JAMES A. MARTIN, CHIEF

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: WDTN19

Well Operator: CNX Gas Company, LLC

Well Number: WDTN19

Well Pad Name: WDTN19

County, District, Quadrangle of Well Location: Monongalia, Battelle, Wadestown

Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.

This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:

§22-6A-12(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.

§22-6A-12(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.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: WDTN19

Answer in the space provided, or use additional pages as necessary to fully answer the questions below:

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

The project is located West of Wise Run Road (Rd) / CR-6 in the Wadestown area of Monongalia County, WV. The proposed entrance is at 39.697803 and -80.332287 (NAD83 WVN). The limit of disturbance (LOD) of the WTN19 Well Site project is approximately 21.5 acres in size. The project includes a 2,100 foot access road, a 3.9 acre well pad, and excess material/topsoil stockpiles. The general site topography consists of a hillslope/ridgeline complex with moderately steep slopes draining generally to Wise Run & Shriver Run. Wise Run and Shriver Run are indirect tributaries to the Monongahela River, which is a traditionally navigable water (TNW). Vegetation communities include mixed deciduous forests with meadow areas in the Northeastern portions of the LOI. Wetland descriptions are provided on the attached pages.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

a. This pad is essential for gas production in this area. There would be stranded undeveloped acreage in the drilling unit if this pad were not constructed.

b. There are no feasible alternatives for this site. The current pad location is bound by wetlands to the West and ephemeral streams to the East. The current pad layout/width was reduced to the minimum allowable to safely operate/drill and complete the wells. Topography on the adjacent ridges is too severe to accommodate the proposed 2:1 cut/fill slopes and would result in impacting the delineated wetlands Northwest of the current pad location. Landowner constraints to the South/Southeast limit shifting the pad to the South.

c. Due to topographic and landowner constraints, the topsoil stockpile and excess stockpiles could not be moved to another location that was flat enough to provide the necessary soil capacity and be accessible during construction. Therefore, they must be located closer than 100' to Wetlands (WET01_007, WET01_008, WET01_009, WET01_0011). Wetland descriptions are continued on the attached pages.

WDTN19 Well Site

Section 2 continued

2d. The current proposed design is the least environmentally damaging practical alternative as there are no environmentally sensitive areas impacted by the well pad. The current pad location is bound by wetlands to the west and ephemeral streams to the East and is situated to avoid direct impact to sensitive environmental features. The current pad layout/width was reduced to the minimum allowable to safely operate/drill and complete the wells to avoid direct impact to streams or wetlands. Topography on the adjacent ridges is too severe to accommodate the proposed pad and would result in direct impact to the delineated wetlands northwest of the current pad location, if the pad had been sited there. The topsoil stockpile was broken up into two separate locations to minimize environmental impact/encroachment on the surrounding sensitive environmental features.

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: WDTN19

- 3. Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

The four wetlands as described below are located within 100' of the well pad LOD and will be protected by utilizing a combination of E&S controls listed below and under item 4.

WET01_007: Triple Stack Compost Filter Sock, Super Silt Fence, Rip-Rap aprons
Temporary and permanent vegetative cover will be located above the wetland.

WET01_008: Triple Stack Compost Filter Sock, Super Silt Fence, Rip-Rap aprons
Temporary and permanent vegetative cover will be located above the wetland.

WET01_009: Triple Stack Compost Filter Sock, Super Silt Fence, Rip-Rap aprons
Temporary and permanent vegetative cover will be located above the wetland.

WET01_011: Triple Stack Compost Filter Sock, Super Silt Fence, Rip-Rap aprons
Temporary and permanent vegetative cover will be located above the wetland.

- 4. Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

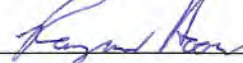
Additional E&S Controls that may be used during the construction of this site include:

Compost filter sock
Triple compost filter sock
Compost filter sock sediment trap
Super Silt Fence
Rip-rap lined channels
Rip-rap aprons
Rock check dams
Rock Construction Entrance
Diversion Ditches
Roadway culverts
Temporary and permanent seeding & mulching
All disturbed areas are to be seeded as soon as possible.

Specific implementation of these controls can be found in the Erosion and Sedimentation Control Plan submitted with the permit application.

OPERATOR: CNX Gas Company, LLC WELL NO: WDTN19KHSM

PAD NAME: WDTN19

REVIEWED BY: Raymond Hoon, Permitting Supervisor SIGNATURE: 

WELL RESTRICTIONS CHECKLIST

HORIZONTAL 6A WELL

RECEIVED
Office of Oil and Gas

AUG 9 2018

WV Department of
Environmental Protection

Well Restrictions

- At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR
 - DEP Waiver and Permit Conditions
- At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR
 - DEP Waiver and Permit Conditions
- At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR
 - DEP Waiver and Permit Conditions
- At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR
 - Surface Owner Waiver and Recorded with County Clerk, OR
 - DEP Variance and Permit Conditions
- At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR
 - Surface Owner Waiver and Recorded with County Clerk, OR
 - DEP Variance and Permit Conditions
- At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR
 - Surface Owner Waiver and Recorded with County Clerk, OR
 - DEP Variance and Permit Conditions

1 INTRODUCTION

Dieffenbauch & Hritz (D&H) was contracted by CNX Gas Company LLC to perform an environmental investigation of the proposed WDTN19 Well Site project. The purpose of this investigation was to determine the presence and delineate the extent of waters of the United States (WOUS) and waters of the state (WOS) of West Virginia (WV) within the confines of the limits of investigation (LOI). The LOI is approximately 48.31 acres in size and was created by placing a 150 foot (ft) buffer around the limits of disturbance (LOD) of the proposed project. The 150 ft buffer may have been extended to capture certain topographic features of interest (such as adjacent draws) or property boundaries. This report is intended to provide the user with the information required by federal and state agencies for a jurisdictional determination (JD). It is also to be utilized as a tool in the planning and design of the project in order to avoid and minimize impacts to these resources as required by Clean Water Act (CWA) Section 404/401 permitting.

1.1 Limits of the Investigation

This investigation was based upon an examination of the site conditions at the time of the walkover. It should be noted that habitat conditions change over time and that future investigations could observe different conditions and demarcate different WOUS and WOS of WV boundaries. This report describes the results of wetland and stream identifications within the LOI as presented to us. Should project limits change, the proximity to delineated resources should be re-evaluated.

2 SITE LOCATION

The LOI is located southwest of (W) Wise Run Road (Rd) near Wadestown in Monongalia County, WV, as shown on the Site Location Map (**Appendix A, Figure 1**). The following directions are provided to the LOI from 1000 Liberty Avenue (Ave), Pittsburgh, Pennsylvania (PA):

- Head west on Liberty Ave – go 194 ft
- Turn right onto 10th Street (St) – go 0.2 miles (mi)
- Turn left onto Fort Duquesne Boulevard – go 0.1 mi
- Continue straight onto 10th St Bypass – go 0.6 mi

-
- Keep right at the fork, follow signs for Interstate (I)-376 W / Airport / Fort Pitt Bridge and merge onto I-376 W / Fort Pitt Bridge – go 0.3 mi
 - Use the left lane to merge onto I-376 W / Fort Pitt Bridge – go 0.1 mi
 - Keep left to continue onto I-376 W – go 5.4 mi
 - Use the right 2 lanes to take exit 64A to merge onto I-79 South (S) toward Washington – go 21.1 mi
 - Keep left to stay on I-79 S, follow signs for I-70 East (E) / I-79 S / New Stanton / Morgantown – go 3.5 mi
 - Take exit 21 for I-79 S toward Morgantown – go 0.2 mi
 - Continue onto I-79 S – go 19.4 mi
 - Take exit 14 and merge onto PA-21 W – go 0.9mi
 - Turn right onto E High ST/Mt Morris Rd – go 1.2 mi
 - Turn left onto PA-218 S – go 13.4 mi
 - Turn right onto WV-7 W – go 4.4 mi
 - Turn right onto Stewarts Run / Wise Run – go 0.9mi
 - Arrive at destination on the left

3 METHODOLOGY

The investigation employed a two-pronged approach. First a desktop review of publicly available databases and client provided information was conducted. Secondly, a field investigation was conducted to physically delineate the extent of WOUS and WOS of WW within the LOI.

3.1 Desktop Review

Available sources of relevant background information were reviewed prior to conducting the field investigation. These sources included aerial photographs, U.S. Geological Survey (USGS) 7.5-Minute Topographic Quadrangle maps, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, Federal Emergency Management Administration (FEMA) Flood Insurance Rate Maps (FIRM), and the Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database. This information was used to focus the field delineation toward areas with a high potential to support WOUS and WOS of WW and to provide collaborative evidence for the delineations.

3.2 Field Investigation

The field investigation consisted of a site walkover and collection of data at sample plots and areas of interest (AOI) within the LOI to document and demarcate the extent of WOUS and WOS of WV. These features were photographed and the associated data points were located by utilizing a sub-meter global positioning system (GPS). The GPS data was post-processed to improve position accuracy and utilized to create maps through our in-house geographic information system (GIS) platform.

3.2.1 Delineation of Wetland Boundaries

The wetland delineation was performed according to the routine method as described in the *U.S. Army Corps of Engineers' (USACE) Wetland Delineation Manual, Technical Report Y-87-1 (1987)* and the *2012 Regional Supplement: Eastern Mountains and Piedmont Region (Version 2.0)*. Plant indicator statuses were obtained from the *Eastern Mountains and Piedmont 2016 Regional Wetland Plant List*.

Sample plots were established where the site ecology changed significantly or if an area exhibited wetland characteristics. Data from a representative wetland and associated upland sample plot were collected to document soil, vegetation, and hydrologic changes that occurred across the wetland boundary. In addition, data was collected within representative AOI to document general ecology found within these areas. Descriptions of soils, vegetation, and hydrology were collected at each sample plot location and recorded in notebooks. These sample plot data were later transferred to standard forms in preparation for this report.

Wetlands, when observed, were demarcated in the field using "Wetland Delineation" survey tape and/or wire flagging.

3.2.2 Stream Delineation

Streams were delineated based on the presence of a continuous bed and bank. Flow regime was determined based on the size of the channel, presence of water, status of flow, and geomorphologic position of the channel on the landscape. The ordinary high water mark (OHWM) was identified on both banks of the channel to measure width. OHWM depth was measured from the OHWM elevation to the deepest part of the channel or thalweg. GPS measurements were taken along the thalweg unless OHWM exceeded 10 ft where the GPS measurements were taken at the OHWM along each bank. Streams were demarcated using blue survey tape.

Stream flow regime was determined based on the methods described in the *North Carolina (NC) Division of Water Quality's (DWQ) Methodology for Identification of Intermittent and Perennial Streams and Their Origins, Version 4.11 (2010)*. The NC DWQ Stream Identification Form Version 4.11 was used to assign flow regime classification to all identified streams. The sum value of 26 parameters was used to assign the flow regime. A score less than 19 was defined as an ephemeral stream; a score 19 or greater and less than 30 was defined as an intermittent stream; and a score of 30 or more was determined to be a perennial stream.

Stream habitat was evaluated based on the methods described in the U.S. Environmental Protection Agency's (USEPA) *Rapid Bioassessment Protocols [RBP] for Use in Wadeable Streams and Rivers (1999)*. The RBP Habitat Assessment Field Data Sheet directs the investigation to assess 20 parameters regarding the habitat quality of the streams. The resulting RBP scores range from 0 – 200 and rank the stream's habitat quality as poor, marginal, suboptimal, or optimal.

3.2.3 Opinion of Jurisdiction

As of the writing of this report, the application of the definition of WOUS is the regulatory text of the 1986/1988 regulatory definition, the text in place prior to the 2015 Waters of the United States Rule, subject to subsequent guidance and court decisions. This is based on the Sixth Circuit, U. S. Court of Appeals (case no. 15-3751) nationwide suspension of the 2015 Rule as published on June 29, 2015. In response to the February 28, 2017 Executive Order, the agencies have proposed a rule that will codify the text in place prior to the 2015 rule (Federal Register Vol 82, No. 143 of July 27, 2017). The formal issuance is pending following completion of the comment period. Additionally, a new rule will be drafted in the short term future which may affect the definition. The regulatory framework currently applied includes the 1986/1988 regulatory definition and the judicial construct rendered by Supreme Court decisions, specifically, *Rapanos v. United States*, 547 U.S. 715 (2006); *Solid Waste Agency of N. Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001); *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121 (1985). Therefore, for the purposes of this report, the authors assume that:

- Aquatic features delineated as wetlands and ponds of any Cowardin Class are both WOUS and WOS of WV; and

-
- Aquatic features delineated as perennial, intermittent, and ephemeral streams are both WOUS and WOS of WV.

Hence, the user is cautioned to regard the jurisdictional status of these features to be preliminary. If these features become the subject of regulated activity and require federal or state permits, their jurisdictional status should be re-evaluated using the current and applicable guidance documents and court decisions. As a reminder, only the USACE and the USEPA can render an official JD as to the presence and extent of WOUS.

4 RESULTS

4.1 Desktop Review

A topographic map shows both natural and manmade features. D&H utilized the original USGS 7.5-Minute Topographic Map series (1945-1992), as recent digital topographic maps omit important features. The scene of the Wadestown Quadrangle (1956, field checked 1958, photorevised 1976) shows the LOI consists of a mixture of forested and unforested habitats. The LOI is located on a hillslope/ridgetop/valley complex draining generally to the southeast. Elevations range from approximately 1060 to 1360 feet above the National Geodetic Vertical Datum of 1929. Wise Run, a USGS blue line stream, is shown in the eastern portion of the LOI. (**Appendix A, Figure 2**).

The NWI maps were developed by the USFWS through stereoscopic analysis of false color infrared high-altitude aerial photographs published by the National High-Altitude Aerial Photograph (NHAP) program of the USGS. NWI maps provide useful background information on potential wetland locations, but should not be relied upon as the only source to determine the presence or absence of wetlands on a site. The NWI map depicting the site shows one R5UBH riverine system (Wise Run) is shown transecting the eastern portion of the LOI. The riverine system is shown as USGS National Hydrography Dataset (NHD) stream. A palustrine unconsolidated bottom permanently flooded diked/ impounded (PUBHh) pond located directly adjacent to the southeastern portion of the LOI (**Appendix A, Figure 3**).

Flood zones are geographic areas defined according to varying levels of flood risk by FEMA. Based on the FIRM depicting the site (Map Number 54061C0050E), a 100 year flood hazard area is not shown within or adjacent to the LOI (**Appendix A, Figure 3**).

A review of the SSURGO database developed by the NRCS was performed. The principal mapped soil types within the LOI include: Dormont and Guernsey silt loams (DgD), Gilpin-Culleoka-Upshur silt loams (GuE, GuF), and Lobdell-Holly silt loams (Lh) (**Appendix A, Figure 4**). Three NRCS National Cooperative Soil Survey Reports were run on the Web Soil Survey (WSS) database to obtain additional information on the soil types present within the LOI: Map Unit Description Report, Taxonomic Classification of the Soils Report, and Hydric Soils Report. These reports are presented in **Appendix B** and some of that information is summarized in **Table 1**.

Table 1. Soils within the project LOI.

Soil Series	Map Symbol	Soil Component	Drainage Class	Depth to Water Table	Frequency of Flooding	Frequency of Ponding
Dormont and Guernsey silt loams	DgD	Dormont	Moderately Well Drained	17 to 49 inches	None	None
		Guernsey	Moderately Well Drained	17 to 49 inches	None	None
Gilpin-Culleoka-Upshur silt loams	GuE, GuF	Gilpin	Well Drained	>80 inches	None	None
		Culleoka	Well Drained	>80 inches	None	None
		Upshur	Well Drained	>80 inches	None	None
Lobdell-Holly silt loams	Lh	Lobdell	Moderately Well Drained	24 to 42 inches	Occasional	None
		Holly	Poorly Drained	0 to 12 inches	Occasional	Frequent

Source: National Cooperative Soil Survey (NRCS)

Aerial imagery is low altitude photography of the landscape provided by both government and private sources. Aerial photographs were utilized to determine existing land use and ground cover. A 2016 aerial photograph scene shows the majority of the LOI consists of mixed deciduous forests with herbaceous meadows scattered throughout the eastern extent of the LOI. (**Appendix A, Figure 5**).

4.2 Field Investigation

Environmental Scientists from D&H visited the proposed WDTN19 Well Site on April 05 and 12, 2018 to identify streams and/or wetlands located within the LOI (**Appendix C**).

4.2.1 Site Ecology

The LOI is located near Wadestown in Monongalia County, WV. The general site topography consists of a hillslope/ridgetop/valley complex with gentle to moderate sideslopes

draining to Wise Run in the eastern portion of the LOI. The site indirectly drains to the Dunkard Creek, which is a traditionally navigable water (TNW).

Site vegetation communities include mixed deciduous forests with areas of herbaceous meadows in the eastern portion of the LOI.

The herbaceous meadows are dominated by white clover (*Trifolium repens*), orchard grass (*Dactylis glomerata*), Queen Anne's lace (*Daucus carota*), tall redtop (*Tridens flavus*), red clover (*Trifolium pratense*), common dandelion (*Taraxacum officinale*), white bedstraw (*Galium mollugo*), yellow foxtail (*Setaria pumila*), yarrow (*Achillea millefolium*), sand bittercress (*Cardamine parviflora*), timothy (*Phleum pratense*), broom sedge (*Andropogon virginicus*), and barnyard grass (*Echinochloa crus-galli*). The mixed deciduous forests are dominated by black cherry (*Prunus serotina*), American beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), white oak (*Quercus alba*), black walnut (*Juglans nigra*), American hornbeam (*Carpinus caroliniana*), shagbark hickory (*Carya ovata*), tupip poplar (*Liriodendron tulipifera*), American sycamore (*Plantanus occidentalis*), American elm (*Ulmus americana*), and white ash (*Fraxinus americana*) in the overstory. The understory is dominated by multiflora rose (*Rosa multiflora*), deertongue (*Dichanthelium clandestinum*), Japanese stiltgrass (*Microstegium vimineum*), Allegheny blackberry (*Rubus allegheniensis*), Japanese barberry (*Berberis thunbergii*), cutleaf toothwort (*cardamine concatenate*), spring beauty (*Claytonia virginica*), Christmas fern (*Polystichum arostichoides*), and woodland stonecrop (*Sedum ternatum*).

4.2.2 Waters of the United States and the State of West Virginia

In accordance with USACE methods, 16 palustrine emergent (PEM) wetlands were identified within the LOI. In addition, 12 ephemeral streams, two intermittent streams, and one perennial stream and one developed spring were identified. The delineated wetlands are presented in **Table 2** and delineated streams are presented in **Table 3**. Culverts identified within the LOI are presented in **Table 4**. The delineated features and identified culverts are illustrated on the Stream and Wetland Investigation Map (**Appendix A, Figure 5**). Photographs of the site are included in **Appendix D**. The USACE Wetland Determination Forms, used to determine the presence of upland and wetland areas, are presented in **Appendix E**. The NC DWQ Stream Identification Forms and USEPA RBP scores for each stream are presented in **Appendix F** and **Appendix G**, respectively.

4.2.3 Other Waters

DSPR01_001: (Photograph 99) is located adjacent to WET01_005 and is in the southeastern portion of the LOI. The developed spring is considered a WOUS and WOUS of WV.

No other waters were identified within the confines of the LOI.

Table 2. Wetlands within the LOI.

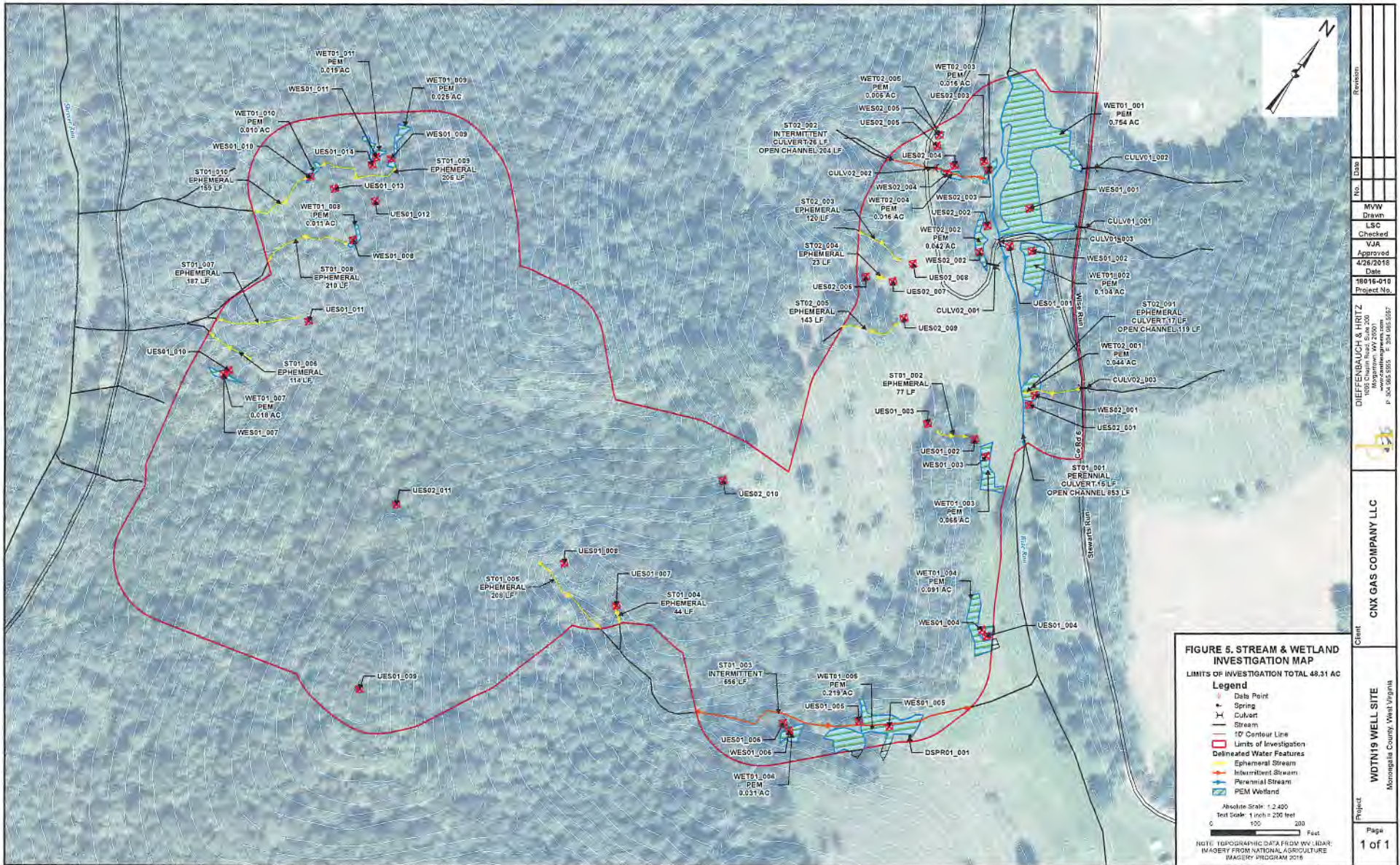
Water Feature Name	Cowardin Class	Wetland Area (Ac) ^γ	Wetland Data Point	Associated Upland Data Point	Associated Photographs
WET01_001	PEM	0.754	WES01_001	UES01_001	1 and 26
WET01_002	PEM	0.104	WES01_002	UES01_001	1 and 27
WET01_003	PEM	0.065	WES01_003	UES01_002	2 and 28
WET01_004	PEM	0.091	WES01_004	UES01_004	4 and 29
WET01_005	PEM	0.219	WES01_005	UES01_005	5 and 30
WET01_006	PEM	0.031	WES01_006	UES01_006	6 and 31
WET01_007	PEM	0.018	WES01_007	UES01_010	10 and 32
WET01_008	PEM	0.011	WES01_008	UES01_012	12 and 33
WET01_009	PEM	0.025	WES01_009	UES01_014	14 and 34
WET01_010	PEM	0.010	WES01_010	UES01_013	13 and 35
WET01_011	PEM	0.019	WES01_011	UES01_014	14 and 36
WET02_001	PEM	0.044	WES02_001	UES02_001	15 and 37
WET02_002	PEM	0.042	WES02_002	UES02_002	16 and 38
WET02_003	PEM	0.016	WES02_003	UES02_003	17 and 39
WET02_004	PEM	0.016	WES02_004	UES02_004	18 and 40
WET02_005	PEM	0.006	WES02_005	UES02_005	19 and 41
Totals		1.471			

PEM – Palustrine Emergent Wetland
^γ- Wetland area within LOI

Table 3. Streams within the LOI.

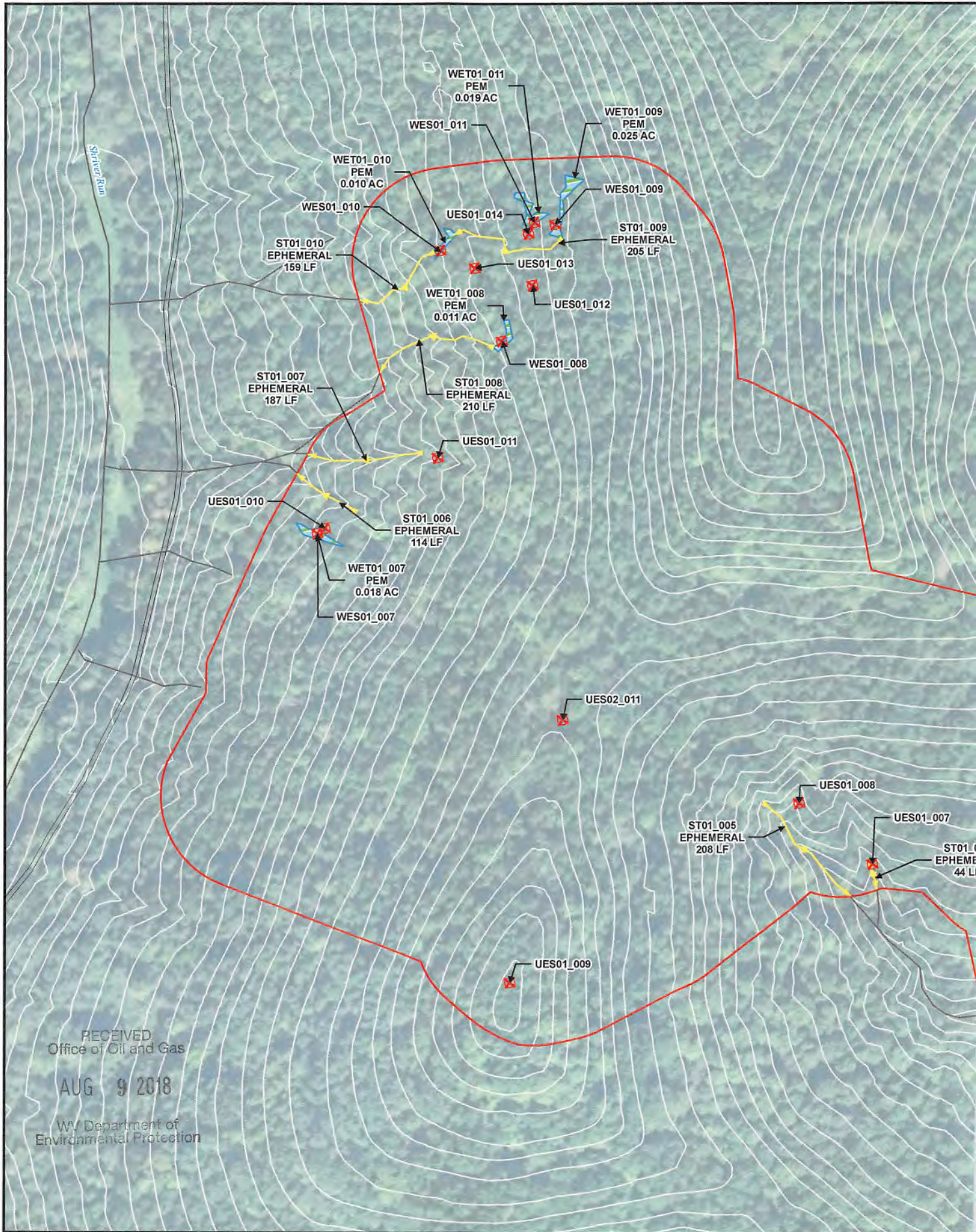
Water Feature Name	Cowardin Class	Flow Regime	NC DWQ Score	RBP Score	Substrate Type	Water Depth (inches)	OHWM Width (ft)	OHWM Depth (ft)	TOB Width (ft)	TOB Width (ft)	Open Channel Length (LF)	Culverted Channel Length (LF) ^γ	Stream Length (LF) ^γ	Associated Photographs
ST01_001	R3	Perennial	42.25	112	Clay/Gravel	12.00	4.5	3.0	9.0	5.0	853	15	868	42, 43 and 44
ST01_002	R6	Ephemeral	8.50	51	Silt/Gravel	0.25	0.2	0.3	1.5	1.0	77	-	77	45, 46 and 47
ST01_003	R4	Intermittent	25.00	121	Silt/Gravel	4.00	2.8	1.2	4.3	3.0	656	-	656	48, 49 and 50
ST01_004	R6	Ephemeral	14.50	80	Cobble/Gravel	Wet Channel	0.8	0.4	2.5	1.0	44	-	44	51, 52 and 53
ST01_005	R6	Ephemeral	18.50	89	Cobble/Gravel	Dry Channel	1.2	0.6	3.0	1.5	208	-	208	54, 55 and 56
ST01_006	R6	Ephemeral	16.00	87	Gravel/Clay	Wet Channel	0.8	0.4	3.0	2.5	114	-	114	57, 58 and 59
ST01_007	R6	Ephemeral	15.50	89	Cobble/Gravel	Wet Channel	0.9	0.5	3.0	1.5	187	-	187	60, 61 and 62
ST01_008	R6	Ephemeral	11.50	77	Gravel/Silt	Wet Channel	0.6	0.4	1.5	1.0	210	-	210	63, 64 and 65
ST01_009	R6	Ephemeral	11.50	68	Gravel/Silt	Wet Channel	0.8	0.3	1.7	1.0	205	-	205	66, 67 and 68
ST01_010	R6	Ephemeral	15.50	80	Cobble/Gravel	0.25	1.0	0.5	2.5	1.5	159	-	159	69, 70 and 71
ST02_001	R6	Ephemeral	17.75	108	Gravel/Bedrock	0.80	2.0	0.2	4.5	2.5	119	17	136	72, 73 and 74
ST02_002	R4	Intermittent	26.75	119	Cobble/Gravel/Bedrock	0.50	3.0	0.2	1.5	1.5	204	26	230	75, 76 and 77
ST02_003	R6	Ephemeral	10.00	94	Gravel/Silt	0.25	2.5	0.1	3.0	1.0	120	-	120	78, 79 and 80
ST02_004	R6	Ephemeral	10.25	59	Gravel/Silt	0.25	0.8	0.2	1.0	0.4	23	-	23	81, 82 and 83
ST02_005	R6	Ephemeral	7.50	56	Gravel/Silt	0.25	0.8	0.2	1.0	0.9	143	-	143	84, 85 and 86
Totals											3318	58	3380	

Water Depth – Observed during the time of investigation
 NC DWQ – North Carolina Division of Water Quality
 RBP – Rapid Bioassessment Protocol
 OHWM – Ordinary High Water Mark
^γ - Length of stream within LOI
^δ - Stream extends beyond LOI



Document Path: K:\CNX Waynesburg\1816010 - WDTN19\Mapping\10.3\FIG5_WDTN19_Stream&Wetland.mxd

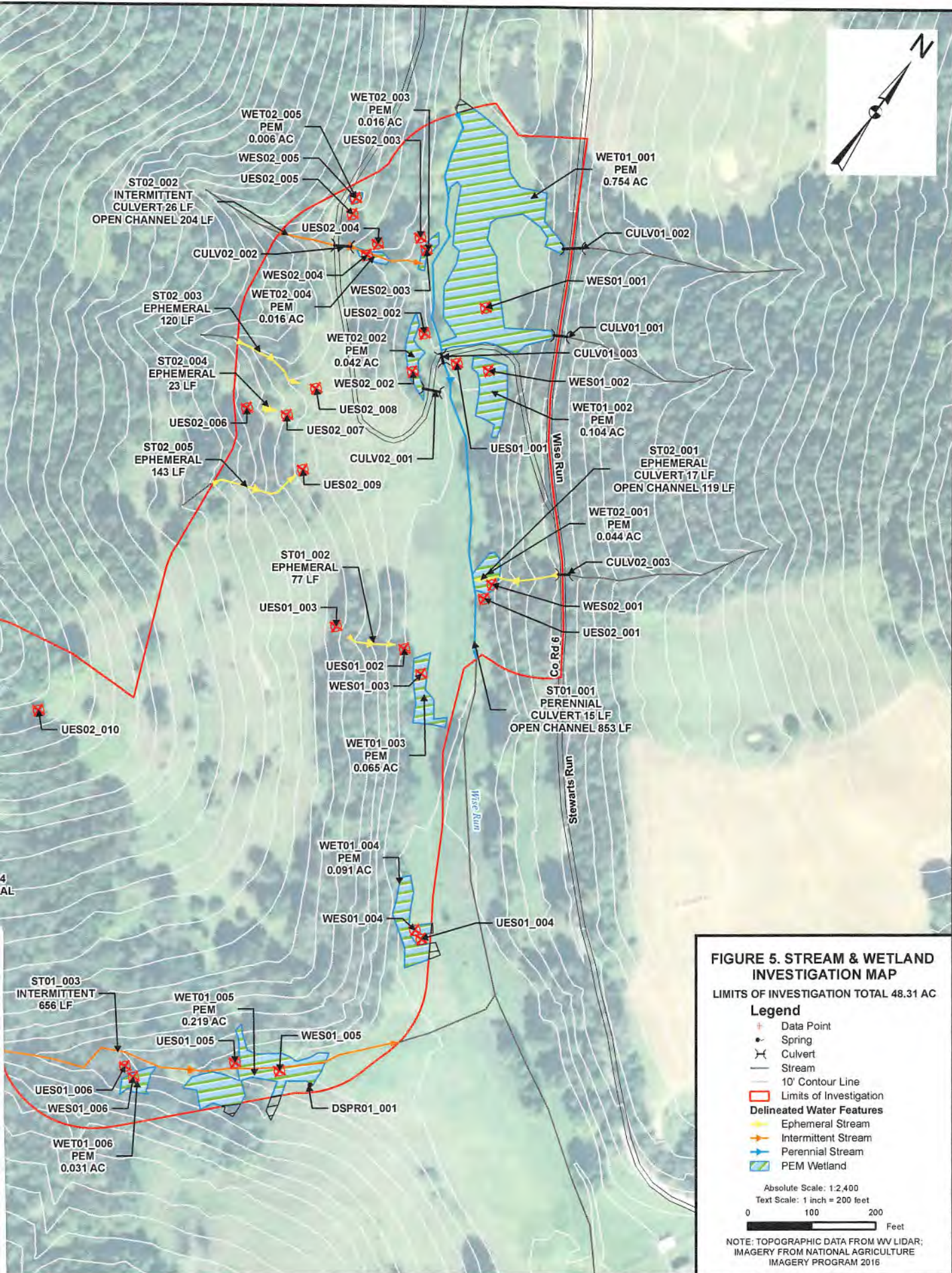
Revision	No.	Date	M/W
			Drawn
Client	CNX GAS COMPANY LLC		
	Monongalia County West Virginia		
Project	WDTN19 WELL SITE		
	Monongalia County West Virginia		
Page	1 of 1		
	Approved		
Date		4/26/2018	Checked
Project No.		1816-010	VJA
Client		DIEFFENBAUGH & HIRTZ	
Project		1038 Chain Road, Suite 200	
Address		Martinsburg, WV 26001	
Phone		P: 304.865.5505	
Fax		F: 304.865.5507	



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Revision	
Date	
No.	
MVW Drawn	
LSC Checked	
VJA Approved	
4/26/2018 Date	
18016-010 Project No.	
DIEFFENBAUCH & HRITZ 1095 Chaplin Road, Suite 200 Morgantown, WV 26501 www.dandhengineers.com P: 304.995.5555 F: 304.986.5557	
Client: CNX GAS COMPANY LLC	
Project: WDTN19 WELL SITE Monongalia County, West Virginia	
Page 1 of 1	

FIGURE 5. STREAM & WETLAND INVESTIGATION MAP
 LIMITS OF INVESTIGATION TOTAL 48.31 AC

- Legend**
- + Data Point
 - Spring
 - Culvert
 - Stream
 - 10' Contour Line
 - Limits of Investigation
 - Delineated Water Features**
 - Ephemeral Stream
 - Intermittent Stream
 - Perennial Stream
 - PEM Wetland

Absolute Scale: 1:2,400
 Text Scale: 1 inch = 200 feet

NOTE: TOPOGRAPHIC DATA FROM WV LIDAR;
 IMAGERY FROM NATIONAL AGRICULTURE
 IMAGERY PROGRAM 2016

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

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

1) Well Operator: CNX Gas Company, LLC 494458046 Monongalia Battelle Wadestown
Operator ID County District Quadrangle

2) Operator's Well Number: WDTN19KHSM Well Pad Name: WDTN19

3) Farm Name/Surface Owner: Barnhart Public Road Access: Wise Run Road / CR6

4) Elevation, current ground: 1274 Elevation, proposed post-construction: 1264.5

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No No *MDK 8/1/2018*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target formation is Marcellus Shale @ 7545'-7615' TVD, 70' thick, expected formation pressure ~4600 psi

8) Proposed Total Vertical Depth: 7590' TVD at TD (dependent upon formation dip)

9) Formation at Total Vertical Depth: Marcellus Shale (will not penetrate Onondaga)

10) Proposed Total Measured Depth: 13,528' MD at TD

11) Proposed Horizontal Leg Length: 5447'

12) Approximate Fresh Water Strata Depths: 125', 584', 845', 933', 938'

13) Method to Determine Fresh Water Depths: Offset well information

14) Approximate Saltwater Depths: 2440', 2680'

15) Approximate Coal Seam Depths: 584', 845', 933', 938'

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: See mine map

Depth: _____

Seam: _____

Owner: _____

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18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20	New	L/S	<94.0	129	100	96 / CTS
Fresh Water	13.375	New	J-55	54.5	1284	1255	872 / CTS
Coal	13.375	New	J-55	54.5	1284	1255	872 / CTS
Intermediate	9.625	New	J-55	36.0	2959	2930	980 / CTS
Production	5.5	New	P-110	20.0	13557	13528	2428 / TOC @ 2730
Tubing	2.375	New	J-55	4.7	Above assumes RF=29'	TBD	N/A
Liners	N/A						

MQK 8/1/2018

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20	24	0.375	N/A	N/A	Type 1	1.18
Fresh Water	13.375	17.5	0.380	2730	<500	Class A	1.19
Coal	13.375	17.5	0.380	2730	<500	Class A	1.19
Intermediate	9.625	12.25	0.352	3520	<2815	Class A	1.19
Production	5.5	8.75 x 8.5	0.361	12360	~10000 during frac	Class H	1.07
Tubing	2.375	N/A	0.190	7700	N/A	N/A	N/A
Liners	N/A						

PACKERS

Kind:	N/A			
Sizes:				
Depths Set:				

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WDTN019

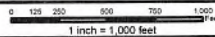
256 ft

666 ft

843 ft

Federal No. 2 Mine

- Legend**
- Well Location
 - Mine Workings
 - ▭ Mining Limits
 - ▭ Mined Out



Date: 7/19/2018	Prepared By: GIS
Revisions:	Approved By:

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**WDTN19
Mine Map**

WW-6B
(10/14)

API NO. 47- _____ - _____
OPERATOR WELL NO. WDTN19KHSM
Well Pad Name: WDTN19

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

Construct well pad and access road. Utilize conductor rig to set 20" conductor into solid rock and cement back to surface. MIRU drilling rig. Air drill 17-1/2" hole. Run and cement 13-3/8" fresh water/coal casing. Note that the FW/coal casing will be set just above elevation - the casing will NOT be set below ground level (setting depth to isolate sloughing formations and red beds below the Pittsburgh coal seam). Air drill 12-1/4" hole. Run and cement 9-5/8" intermediate casing. Air drill 8-3/4" production hole to curve KOP (this section is typically directionally drilled with a slant/tangent profile for anti-collision and for lateral spacing). Displace hole with 12.0-12.5 ppg SOBMs. Drill 8-1/2" curve from KOP to landing point. Continue drilling 8-1/2" lateral to TD (geosteering this section to remain in Marcellus target window). Perform clean-up cycle to condition well. Run and cement 5-1/2" production casing. Suspend well and skid to next well or RDMO drilling rig.

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

Run CBL to ~60 degrees in the curve and back to surface to determine production casing TOC. Test production casing and toe prep well. MIRU stimulation/hydraulic fracturing equipment. Fracture well by pumping required number of stages utilizing plug-and-perf method. Max anticipated treating pressure is <10,000 psi and max anticipated treating pump rate is 80-90 bpm. Number of stages and stage spacing to be finalized after drilling. After last stimulation stage, drill out frac plugs and clean-out well to PBTD. Flow back and clean-up well. Tie well into production. Run tubing when required.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 21.0

22) Area to be disturbed for well pad only, less access road (acres): 12.6

23) Describe centralizer placement for each casing string:

Fresh water/coal string: centralize shoe joint and every 3rd joint to surface - utilize bow spring centralizers. Intermediate string: centralize shoe joint and every 3rd joint to surface - utilize bow spring centralizers. Production string: centralize every joint from shoe to KOP and then every 3rd joint from KOP to TOC - utilize single piece/rigid bow centralizers. Actual centralizer placement may be changed based on hole conditions.

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

Fresh water/coal string: Class A cement with 1%-3% CaCl₂ and 1/4 pps cello-flake/LCM. Intermediate string: Class A cement with 0%-2% CaCl₂ and 1/4 pps cello-flake/LCM. Production string: Class H cement or Class H: Poz blend with dry blend and/or liquid additives including retarder, suspension agent, gas block, defoamer, fluid loss control, extender, dispersant, anti-settling agent. Actual cement blends may vary slightly depending upon cementing service company utilized.

25) Proposed borehole conditioning procedures:

Air sections are typically vertical holes - will ensure the hole is clean at section TD prior to TOOH to run casing (may require mist and/or soap to clean the hole). For the production hole - once at TD, circulate at max flowrate with max rotation until the shakers clean-up (typically requires multiple bottoms-up). For the production casing - once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.

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*Note: Attach additional sheets as needed.

WDTN19K Cement Additives

Fresh water/coal string: Class A cement with 1%-3% CaCl₂ and 1/4 pps cello-flake/LCM. Intermediate string: Class A cement with 0%-2% CaCl₂ and 1/4 pps cello-flake/LCM. Production string: Class H cement or Class H:Poz blend with dry blend and/or liquid additives including retarder, suspension agent, gas block, defoamer, fluid loss control, extender, dispersant, anti-settling agent. Actual cement blends may vary slightly depending upon cementing service company utilized.

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DRILLING WELL PLAN
WDTN-19K-HSM (Marcellus HZ)
Marcellus Shale Horizontal
Monongalia County, WV

Ground Elevation			1265 GL Elevation			WDTN-19K-HSM SHL			N 435744.2, E 1764898.45 (NAD27)		
Azimuth			133.5°			WDTN-19K-HSM LP			N 436056.68, E 1765379.56 (NAD27)		
WELLBORE DIAGRAM			WDTN-19K-HSM BHL			N 432307.02, E 1769330.89 (NAD27)					
HOLE	CASING	GEOLOGY	MD	TVD	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS		
	24"	20" L/S			AIR	To Surface	N/A	N/A	Stabilize surface fill/soil		
	17-1/2"	13-3/8" 54.5# J-55 BTC	Conductor	100	100	AIR / FW Mist	15.6 ppg Class A + 1% to 3% CaCl2 + 1/4 pps Flake 20% OH Excess Yield = 1.19 TOC @ surface	Centralize every 3rd joint from shoe to surface Bow spring centralizers	Ensure the hole is clean at section TD	Set through fresh water zones Set through coal zones Cemented to surface 13-3/8" shoe NOT to be set deeper than ground level	
			Shallowest Fresh Water		125						
			Waynesburg 1 Coal		584						
			Sewickley Coal		845						
			Roof Coal		933						
	Pittsburgh Coal		938								
	FW/Coal Casing		1255	1255							
	12-1/4"	9-5/8" 36.0# J-55 LTC	Salt Sand		1990	AIR / Soap	15.6 ppg Class A + 0% to 2% CaCl2 + 1/4 pps Flake 20% OH Excess Yield = 1.19 TOC @ surface	Centralize every 3rd joint from shoe to surface Bow spring centralizers	Soap the hole as needed and ensure the hole is clean at section TD	Set through potential salt water zones Cemented to surface Casing to be set ~200'-250' below the Big Injun base	
			Big Lime		2350						
Big Injun				2440							
Price				2680							
Intermediate Casing		2930	2930								
8-3/4" Tangent 8-1/2" Curve & Lateral	5-1/2" 20.0# P-110 VAR	50 Foot		3130	AIR	15.2 ppg Class H 50:50 Class H:Poz with additives (retarder, suspension agent, gas block, defoamer, fluid loss, extender, etc.) 10% OH Excess Yield = 1.07 TOC @ >= 200' above 9-5/8" shoe	Centralize every joint from shoe to KOP - then every 3rd joint from KOP to TOC Single-piece/rigid bow centralizers	Once at TD, circulate at max flowrate with max rotation until shakers clean-up (typically requires multiple bottoms-up) Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement	Note: For all strings, actual centralizer placements may be changed due to hole conditions Note: For all strings, actual cement blends may vary slightly depending upon service company utilized		
		Gordon		3265							
		Fifth		3390							
		Bayard		3440							
		Elks		5040							
		Cashaqua		7235							
		Burkett		7380							
		Tully		7405							
		Hamilton		7440							
		Marcellus		7545							
Production Casing		13528	7590								

LP @ +/- 7590' TVD

8-3/4" x 8-1/2" Hole - Cemented Long String
5-1/2" 20.0# P-110 VAR

+/- 5447' Lateral

TD @ +/- 7590' TVD

4706101815

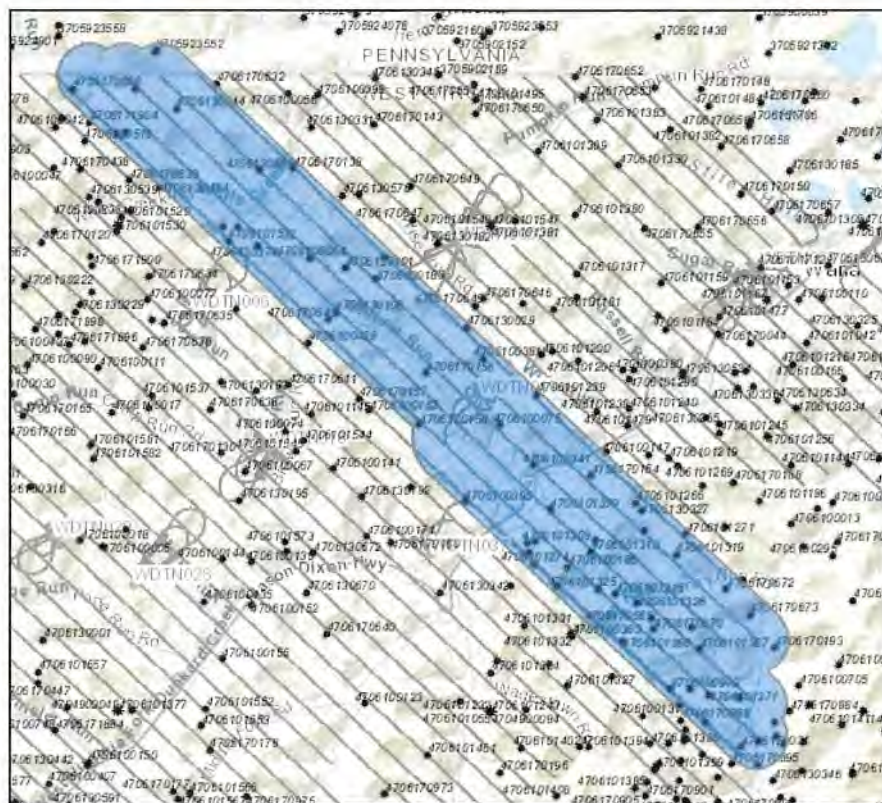
WDTN19 Pad Frac - SOG Review

In accordance with WVDEP 35CSR8 Section 5.11, all known shallow oil and gas (SOG) wells have been identified within a 1000' radius of the WDTN19 pad. Any SOG well that falls within the Area of Review (AOR) has been reviewed and is provided in a list that includes API, Operator, Well Name, Well Number, Current Status, Total Depth, and Permit Date.

The Marcellus Shale of the Wadestown area is found at an approximate True Vertical Depth (TVD) of 7900'. In the Wadestown area, there were very few wells that produced from formations deeper than the Bayard Sand (approximately 3500'). Based on our experience with frac communication and shallow wells, CNX Geology feels that it is highly unlikely for communication to occur with any wells producing in the area above the WDTN19 Pad.

The current hypothesis for SOG Communication is that Marcellus frac fluids and pressure intersect and migrate up a nearby fault that acts as a conduit for upward migration and intersection with high permeability reservoirs of the Alexander and Benson. These reservoirs are not developed in the Wadestown. Geomechanical data is collected from dipole sonic logs. CONSOL's nearest sonic data is from the NV20CCV well (Figure 2), approximately 19.8 miles north of the Wadestown area. Frac modeling (Figure 3) of the Marcellus in the area does not show significant upward frac growth.

Figure 1. A 1000' buffer around the WDTN19 Pad was reviewed. No known SOG Communication events have occurred in this area.

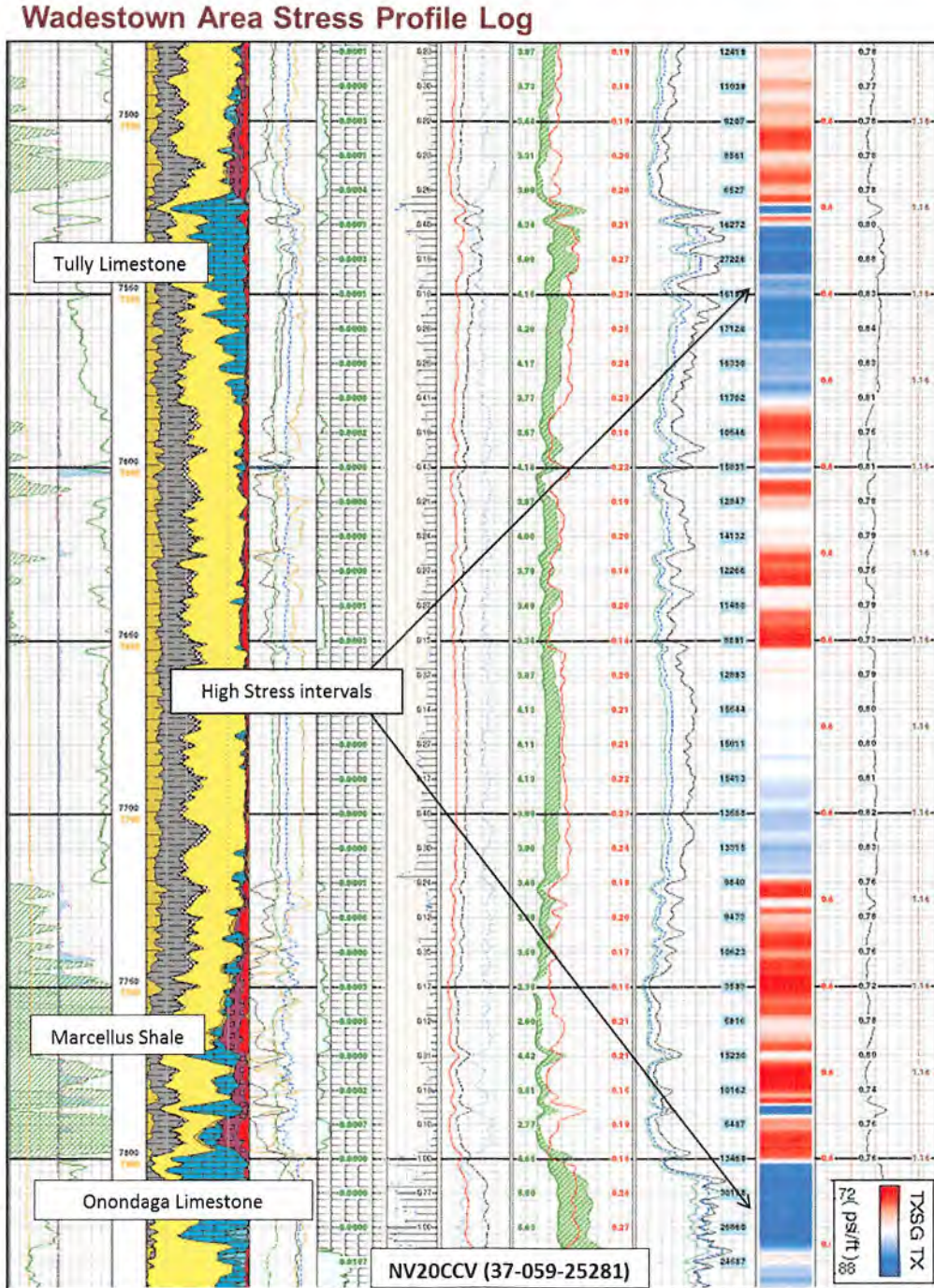


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Figure 2. Stratigraphic intervals of high stress should serve as adequate confining layers, or frac barriers, for a Marcellus frac, seen below in the Wadestown Area Stress Profile log. The Tully and Onondaga are competent frac barriers here.



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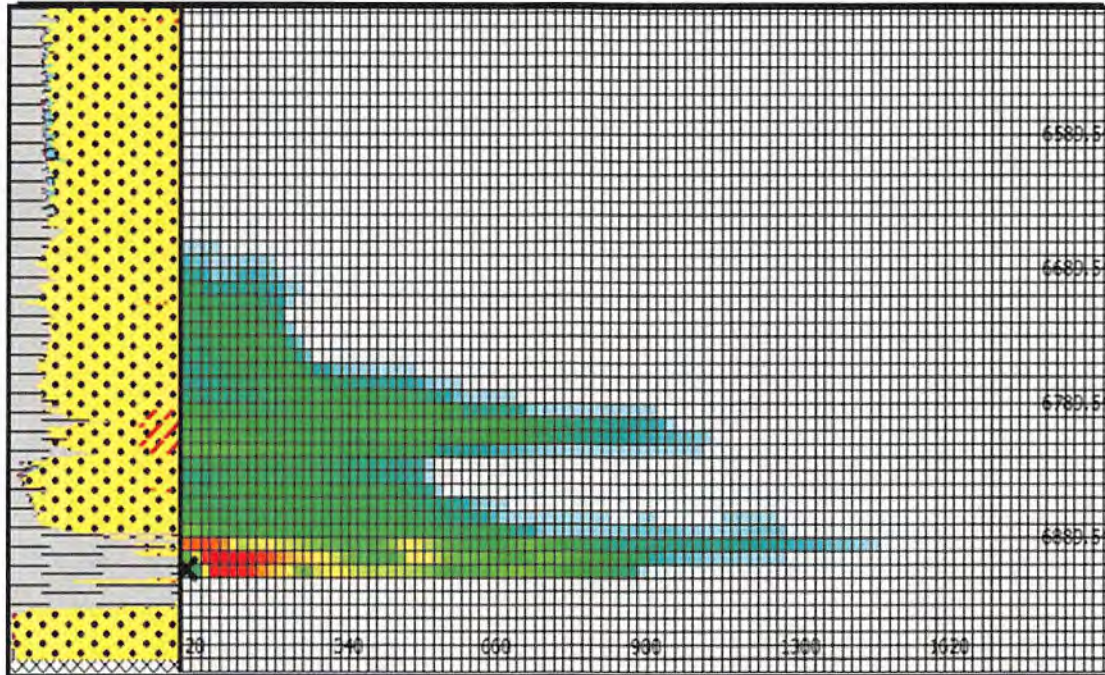
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Figure 3. Stratigraphic intervals of high stress should serve as adequate frac barriers for a Marcellus frac. The frac modeling example below is from the Oxford area of western Doddridge County, where the Hamilton and Tully are much thinner than Wadestown. Frac modeling only yields frac height of approximately 300'.

SOG Communication: OXFD13CHS Frac Simulation

AMERICA'S ENERGY STARTS HERE.



Frac Simulation of the Oxford area, Doddridge County, WV. Model of 300 stage spacing yields frac height of 260 feet. Tully Limestone (~25'), Tully-Hamilton (~55'), Marcellus-Alexander (1500')

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WDTN19 Pad Frac SOG Review / CRSD Review Tuesday, August 1, 2018

API	STATE	COUNTY	LATITUDE	LONGITUDE	OPERATOR	STATUS	WELL_NAME	WELL_NO	TD	FMTD	ELEVATION
3705928552	PA	Greene	39.72300433	-80.37137135	CNX GAS CO LLC	Proposed But Never Materi	CONSOLIDATION COAL COMPANY B20			0	1137
3705928673	PA	Greene	39.72315348	-80.37120213	CNX GAS CO LLC	VA	CONSOLIDATION COAL	B20	1148	MONONGAHELA	1132
4706100064	WV	Monongalia	39.70543333	-80.35398285	Manufacturers Light & Heat Co.	Gas	E J Hennen		2533	Big Injun (undiff)	1427
4706100075	WV	Monongalia	39.69122242	-80.33276963	Hope Natural Gas Company	Gas	C L Eakin		3402	Fifth	1133
4706100159	WV	Monongalia	39.68103028	-80.32958219	Oper in Min.owner fid,no code assgn(Orphan well proj)	not available	John O Harker	1	0		1034
4706100183	WV	Monongalia	39.70369942	-80.34666193	Pittsburgh & WV Gas	Gas	M M Wise et ux		2942	Fifty-foot	1183
4706100186	WV	Monongalia	39.67903336	-80.32508867					0		1376
4706100941	WV	Monongalia	39.68778142	-80.32888155	Consolidated Gas Supply Corp.	Dry w/ Gas Show	C L Eakin		5520	Benson	1144
4706100981	WV	Monongalia	39.69687749	-80.33464688	Hope Natural Gas Company	Gas	Sol Shriver		3452	Bayard	1190
4706100995	WV	Monongalia	39.69459724	-80.33675919	Consolidated Gas Supply Corp.	not available	C Tennent		0		1076
4706100561	WV	Monongalia	39.71611917	-80.37469091	EQT Production Company		Consolidation Coal Company	37	0		1111
4706100949	WV	Monongalia	39.66851128	-80.31369896	Eastern Associated / Peabody Coal Company	not available	Donzel Ammons	F2-440	0	undetermined unit	1300
4706101259	WV	Monongalia	39.69383253	-80.32864187	CNG Producing Co.	not available	Howard Shriver		0		1044
4706101266	WV	Monongalia	39.68455253	-80.31756467	Eastern Associated / Peabody Coal Company	not available	Mary A McKeny		0		1300
4706101271	WV	Monongalia	39.68187256	-80.31198568	Hope Natural Gas Company	not available	Lewis Barr	2	0		1223
4706101273	WV	Monongalia	39.69034727	-80.32938616	Bettelle Oil Co.	Oil w/ Gas Show	Alonzo Edwards	1	3300	Fifth	1085
4706101274	WV	Monongalia	39.67930526	-80.32901412	Hope Natural Gas Company	not available	John O Harker		0		1088
4706101278	WV	Monongalia	39.6822085	-80.31662758	Philadelphia Oil Co.	not available	J & H E Cross		0		1277
4706101281	WV	Monongalia	39.6813624	-80.3220674	Oper in Min.owner fid,no code assgn(Orphan well proj)	Dry w/ Gas Show	Edna M Helmick et al	1	3746	Greenland Gap Fm	1286
4706101303	WV	Monongalia	39.66769437	-80.30593012	----- unknown -----	not available	S E Eddy	1	0		1089
4706101309	WV	Monongalia	39.6812173	-80.32882522	CNG Producing Co.	not available	Eastern Associated Coal		0		1059
4706101310	WV	Monongalia	39.68034737	-80.32265033	CNG Producing Co.	not available	Eastern Assoc Coal		0		1289
4706101318	WV	Monongalia	39.67672135	-80.31981422	Hope Natural Gas Company	Gas	Thomas J Cowell	1	3424	Bayard	1124
4706101319	WV	Monongalia	39.68005651	-80.31305956	CNG Producing Co.	not available	Clyde Cottrell		0		1219
4706101321	WV	Monongalia	39.66711327	-80.31268592	----- unknown -----	not available	Mary E Myers		0		1220
4706101322	WV	Monongalia	39.67744726	-80.32638209	CNG Producing Co.	not available	Arthur & Bessie Cowell		0		1456
4706101325	WV	Monongalia	39.67715633	-80.32169019	CNG Producing Co.	not available	Arthur & Bessie T Cowell		0		1191
4706101326	WV	Monongalia	39.67599637	-80.31737425	CNG Producing Co.	not available	Arthur/Bessie T Cowell		0		1102
4706101366	WV	Monongalia	39.67266128	-80.31906208	CNG Producing Co.	not available	Richard A Barthelemew		0		1209
4706101367	WV	Monongalia	39.67193639	-80.31045022	CNG Producing Co.	not available	Jackie W Miller Jr		0		1574
4706101371	WV	Monongalia	39.66802133	-80.30930305	Oper in Min.owner fid,no code assgn(Orphan well proj)	Oil w/ Gas Show	Gladys King	2	3206	Gordon	1212
4706101379	WV	Monongalia	39.68397237	-80.3271554	CNG Producing Co.	Oil and Gas	Eastern Assoc Coal Co	2	3500	Bayard	1101
4706101391	WV	Monongalia	39.66565028	-80.30968392	----- unknown -----	not available	Mary E Myers	8	0		1305
4706101428	WV	Monongalia	39.66449137	-80.30179807	Northwest Fuel Development	Methane (CBM)	Nelson D & Cheryl Gallagher	29	1145	Pittsburgh coal	1431
4706101531	WV	Monongalia	39.70804325	-80.36205679	CNX Gas Co. LLC (North)	Methane (CBM)	Terra Firma Company		1200	Pittsburgh coal	1184
4706101532	WV	Monongalia	39.70688321	-80.3651827	CNX Gas Co. LLC (North)	Methane (CBM)	Terra Firma Company		912	Pittsburgh coal	1252

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WDTN19 PAD GEOLOGICAL PROGNOSIS

GEOLOGICAL PROGNOSIS			
WELL NAME: STATE: COUNTY: DISTRICT: 7.5' QUADRANGLE: PROSPECT AREA: ELEVATION:	WDTN19 Vertical Marcellus WEST VIRGINIA MONONGALIA BATTELLE WADESTOWN WADESTOWN 1265'	GEOLOGIST: CAE DATE SUBMITTED: 8/1/2018 TARGET FM: MARCELLUS PROJECTED TD: 7830'	
<u>ESTIMATED DEPTHS:</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>GAS CHECKS</u>
WAYNESBURG 1 COAL	679	682	
SEWICKLEY COAL	937	943	
ROOF COAL	1000	1002	
PITTSBURGH COAL	1031	1039	
SALT SAND	2050	2185	2250
BIG LIME	2340	2430	
BIG INJUN SAND	2430	2670	2850
PRICE FM	2670	3120	
50 FT SAND	3120	3160	3350
GORDON SAND	3255	3330	3500
5TH SAND	3380	3400	3560
BAYARD SAND	3430	3440	3600
ELKS	5030	5080	4500
CASHAQUA	7225	7370	5500
BURKET SHALE	7370	7395	6500
TULLY LIMESTONE	7395	7430	7000
HAMILTON SHALE	7430	7535	7600
MARCELLUS SHALE	7535	7605	
TD		7695	TD AND AFTER 4.5" CSG
FRESH WATER:	456		SALT WATER: 2600

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WDTN19 PAD WITH 1000' AREA OF REVIEW



The WDTN19 Pad to be frac'd is in an area of no known frac communication with shallow wells.

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3705923552	PA	Greene	39.72300433	-80.37137135	CNX GAS CO LLC	Proposed But Never Materi	CONSOLIDATION COAL COMPANY B20			0	1137
3705923673	PA	Greene	39.72315348	-80.3712013	CNX GAS CO LLC	VA	CONSOLIDATION COAL	B20	1148	MONONGAHELA	1132
4706100064	WV	Monongalia	39.70549393	-80.35398285	Manufacturers Light & Heat Co.	Gas	E J Hennen		2533	Big Injun (undiff)	1427
4706100075	WV	Monongalia	39.69122242	-80.39276963	Hope Natural Gas Company	Gas	C L Eakin		9402	Fifth	1133
4706100159	WV	Monongalia	39.68103028	-80.32958219	Oper in Min. owner fld, no code assign(Orphan well proj)	not available	John O Harker	1	0		1034
4706100183	WV	Monongalia	39.70369342	-80.34666193	Pittsburgh & WV Gas	Gas	M M Wise et ux		2942	Fifty-foot	1183
4706100186	WV	Monongalia	39.67903936	-80.32508867					0		1376
4706100341	WV	Monongalia	39.68778142	-80.32888155	Consolidated Gas Supply Corp.	Dry w/ Gas Show	C L Eakin		5520	Benson	1144
4706100381	WV	Monongalia	39.69687749	-80.39464688	Hope Natural Gas Company	Gas	Soi Shriver		9452	Boyard	1190
4706100395	WV	Monongalia	39.68458724	-80.39675919	Consolidated Gas Supply Corp.	not available	C Tennant		0		1076
4706100561	WV	Monongalia	39.71611917	-80.37469091	ECGT Production Company		Consolidation Coal Company	37	0		1111
4706100949	WV	Monongalia	39.66851128	-80.31369896	Eastern Associated / Peabody Coal Company	not available	Donzel Ammons	F2-440	0	undetermined unit	1300
4706101239	WV	Monongalia	39.69983253	-80.32864187	CNG Producing Co.	not available	Howard Shriver		0		1044
4706101266	WV	Monongalia	39.68455253	-80.31756467	Eastern Associated / Peabody Coal Company	not available	Mary A McKeny		0		1300
4706101271	WV	Monongalia	39.68187256	-80.31198568	Hope Natural Gas Company	not available	Lewis Barr	2	0		1223
4706101273	WV	Monongalia	39.68034727	-80.32938616	Bettelle Oil Co.	Oil w/ Gas Show	Alonzo Edwards	1	3500	Fifth	1085
4706101274	WV	Monongalia	39.67930526	-80.32901412	Hope Natural Gas Company	not available	John O Harker		0		1088
4706101278	WV	Monongalia	39.6822085	-80.31662758	Philadelphia Oil Co.	not available	J & H E Cross		0		1277
4706101291	WV	Monongalia	39.6813624	-80.3220674	Oper in Min. owner fld, no code assign(Orphan well proj)	Dry w/ Gas Show	Edna M Helmick et al	1	9746	Greenland Gap Fm	1286
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4706101310	WV	Monongalia	39.68054797	-80.32263093	CNG Producing Co.	not available	Eastern Assoc Coal		0		1289
4706101318	WV	Monongalia	39.67672135	-80.31981422	Hope Natural Gas Company	Gas	Thomas J Cowell	1	9424	Boyard	1124
4706101319	WV	Monongalia	39.68005651	-80.31905956	CNG Producing Co.	not available	Clyde Cottrell		0		1219
4706101321	WV	Monongalia	39.66711327	-80.31268592	----- unknown -----	not available	Mary E Myers		0		1220
4706101322	WV	Monongalia	39.67744726	-80.32698209	CNG Producing Co.	not available	Arthur & Bessie Cowell		0		1456
4706101325	WV	Monongalia	39.67715638	-80.32169019	CNG Producing Co.	not available	Arthur & Bessie T Cowell		0		1191
4706101326	WV	Monongalia	39.67599697	-80.31737425	CNG Producing Co.	not available	Arthur/Bessie T Cowell		0		1102
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4706101532	WV	Monongalia	39.70688921	-80.3631827	CNX Gas Co. LLC (North)	Methane (CBM)	Terra Firma Company		912	Pittsburgh coal	1252

All producing SOG wells above the WDTN19 Marcellus pad were less than 3500' TD, or have been plugged.

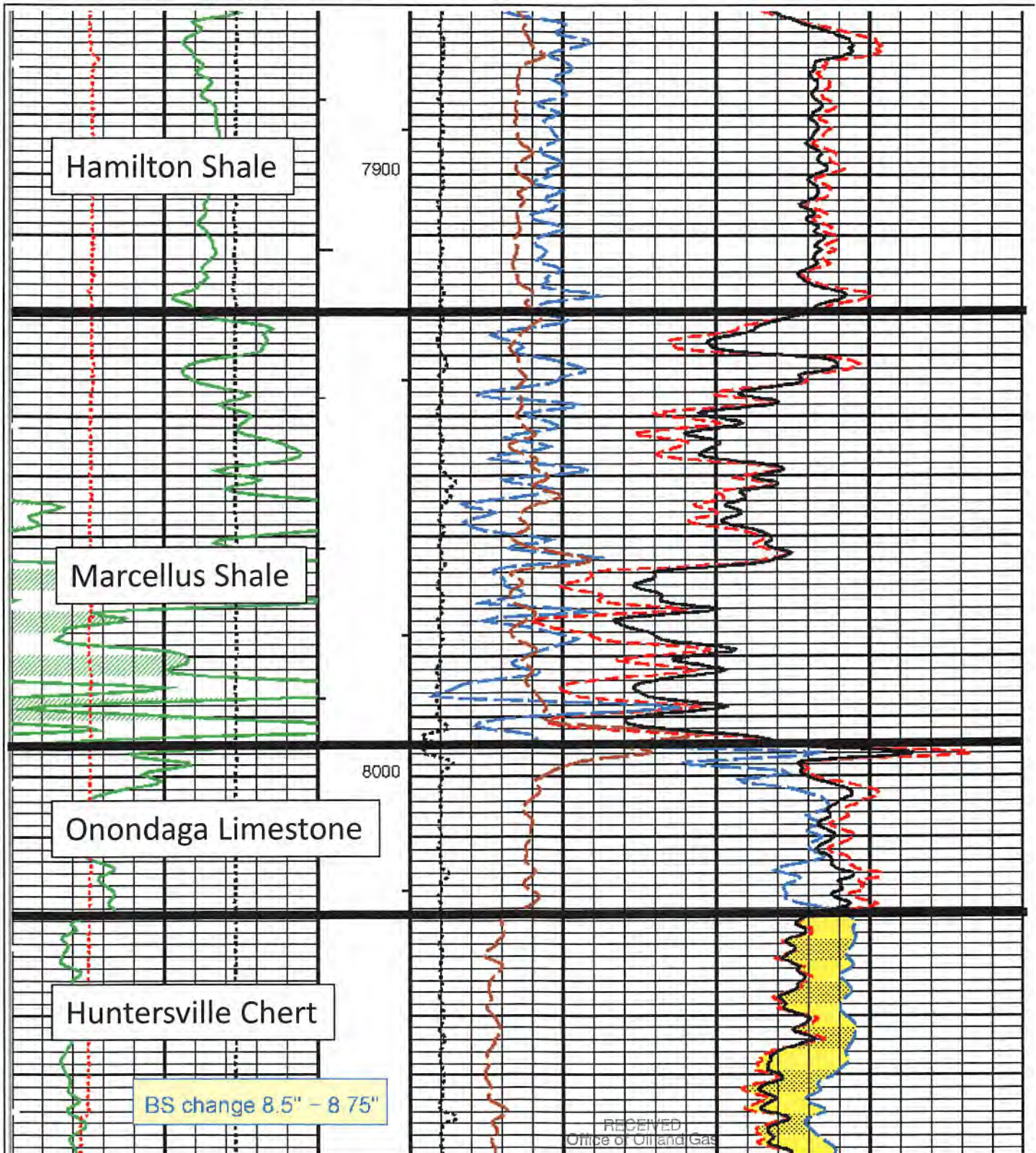
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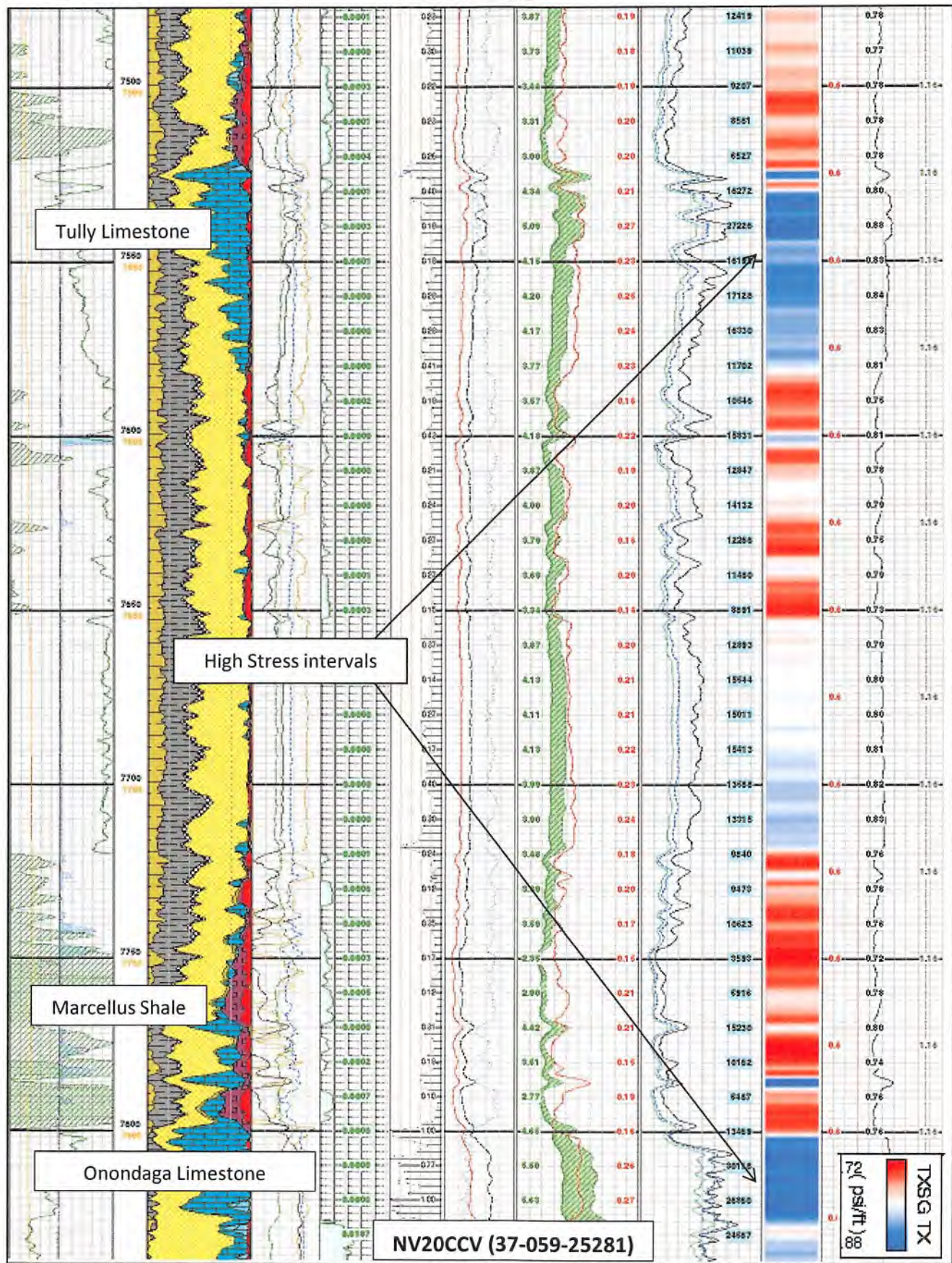
WADESTOWN Area Type Log Esther Clark 3H (47-061-01623)

- The Tully Limestone in conjunction with the Hamilton Shale is the confining layer for the Marcellus Shale frac.



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Wadestown Area Stress Profile Log



61-01815



CNX Resources
CNX Center
1000 CONSOL Energy Drive
Canonsburg, PA 15317-6506
phone: (724) 485 – 4040
e-mail: PCR@cnx.com
web: www.consolenergy.com
CNX Gas Production Team

[Conventional Well Operator]
[Address]
[State]

Re: Monongalia County Hydraulic Fracturing Notice

Dear Sir or Madam,

CNX Gas Company LLC (CNX) has developed a Utica/Marcellus pad WDTN19 located in Monongalia County, West Virginia. Through CNX’s evaluation pursuant to WV Code 35 CSR 8(5.11), you have been identified as the owner or operator of a well within a 500’ radius of the surface location or lateral section of the wellbore. Due to the apparent presence of unique geological conditions, communication between CNX hydraulic fracturing operations and the identified well is a possibility. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in monitoring for changes that would indicate communication between your well(s) and our planned operation.

CNX anticipates conducting hydraulic fracturing activity at the WDTN19 Pad beginning as early as 3rd Quarter 2020 (Oct-Dec) and potentially continuing through 1st Quarter 2021 (Jan-March). Plats for each well being hydraulically fractured on this pad are included for your reference.

We recommend that conventional operators conduct the following activities before, during, and after fracturing operations.

- Inspect surface equipment prior to fracturing, to establish mechanical integrity and confirm well conditions.
- Monitor wells during and after fracturing and monitor for abnormal increases in fluid, gas, or pressure.
- Inspect and upgrade master valves or other necessary equipment for wellhead integrity as you see fit.
- Notify the OOG and CNX if any changes in fluid, gas production, pressure, or other conditions that cause abnormal risk or concern.

Please feel free to contact CNX’s Production Control Room at 724-485-4040 (staffed 24/7) with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0499.

Sincerely,
CNX Production

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WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. WDTN19KHSM

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CNX Gas Company, LLC OP Code 494458046

Watershed (HUC 10) Dunkard Creek Quadrangle Wadestown

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 pits

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 47-001-00561, 47-097-01514, 47-097-01613, 34-013-2-0609)
- Reuse (at API Number WDTN5 wells API TBD)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain No pits)

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.
Vertical: air from spud/surface to curve kick-off point (KOP)
Horizontal: synthetic oil-based mud (SOBM) from curve KOP to lateral TD

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

Additives to be used in drilling medium? Bactericide, Polymers, and Weighting Agents

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc.
Land Application of soil conductor cuttings only, rock cuttings will be taken to an approved Landfill

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

-Landfill or offsite name/permit number? See attached.

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 Raymond Hoon

Company Official (Typed Name) Raymond Hoon

Company Official Title Permitting Supervisor

Subscribed and sworn before me this 1st day of August, 2018

Judy L. Snyder

Notary Public Commonwealth of Pennsylvania

My commission expires 10-31-2021

Notarial Seal
JUDY L SNYDER - Notary Public
CECIL TWP, WASHINGTON COUNTY
My Commission Expires Oct 31, 2021

CNX Gas Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 21.0 Prevegetation pH 6.5

Lime according to pH test Tons/acre or to correct to pH 7.0

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch hay or straw @ 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	25	Orchard Grass	25
Birdsfoot Trefoil	15	Birdsfoot Trefoil	15
Ladino Clover	10	Ladino Clover	10

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Maury J. Kauter*

Comments: Pending Army Corp. sign off for wetlands, floodplain and stream crossing.

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Title: Inspector

Date: 8/1/2018

Field Reviewed? Yes No

Disclaimer: Vendors have been approved for the below category by ENV. UPDATED AGREEMENT with MSCM MUST BE CONFIRMED.

USE APPROVED NON-HAZARDOUS WASTE DISPOSAL FACILITIES (Version 05-23-2016)															
Republic Services (Above Waste)		Gas Specific Waste Streams			Other Accepted Waste Streams										Contact Information
Landfill	Location	Drill Cuttings	Waste Liquors	Waste Brine	Contaminated Soil (Including Petroleum)	Construction & Demolition Waste	Industrial Waste	Sludge	Frishie Ashes	Non-Frishie Ashes	Process Waste	Solidification Services	Municipal Solid Waste		
McLean Corp.	Bonnington	IL	X	X	X	X	X	X	X	X	X		X		
BRG/Coler Corp.	Charleston	IL	X	X	X	X	X	X	X	X	X		X		
Brief yard Disposal	Dearyville	IL	X	X	X	X	X	X	X	X	X		X		
Southern Illinois Reclaim	De Soto	IL												X	
Lee Corp.	Dixon	IL	X	X	X	X	X	X	X	X	X		X		
Upper Rock Island	East Moline	IL	X	X	X	X	X	X	X	X	X		X		
Bond Corp.	Greensville	IL	X	X	X	X	X	X	X	X	X		X		
Illinois LandCorp.	Harveysville	IL	X	X	X	X	X	X	X	X	X		X		
Litchfield-Hillsboro	Litchfield	IL	X	X	X	X	X	X	X	X	X		X		
Barrington	Morris	IL	X	X	X	X	X	X	X	X	X		X		
Lavin-ston	Paris	IL	X	X	X	X	X	X	X	X	X		X		
Scams	Rosana	IL	X	X	X	X	X	X	X	X	X		X		
Stamco Valley	Springfield	IL	X	X	X	X	X	X	X	X	X	X	X		
Benson Valley	Frankfort	KY	X	X	X	X	X	X	X	X	X		X		
Blue Ridge	Irving	KY	X	X	X	X	X	X	X	X	X		X		
Morehead	Morehead	KY	X	X	X	X	X	X	X	X	X		X		
Green Valley	Rush	KY	X	X	X	X	X	X	X	X	X		X		
Cherokee Run	Bellefontaine	OH			X	X	X	X	X	X	X		X		
Williams Center	Bryan	OH			X	X	X	X	X	X	X		X		
Conroy Environmental	Care	OH			X	X	X	X	X	X	X		X		
Celina	Celina	OH			X	X	X	X	X	X	X		X		
Carbon-Limestone**	Lowellville	OH	X	X	X	X	X	X	X	X	X	X	X		
Countrywide Landfill**	East Sycara	OH	X	X	X	X	X	X	X	X	X	X	X		
Lorain Center	Oberlin	OH			X	X	X	X	X	X	X		X		
Oakland Marsh	Sibley	OH			X	X	X	X	X	X	X		X		
Imperial	Imperial	PA			X	X	X	X	X	X	X		X		
Conestoga	Maryantown	PA			X	X	X	X	X	X	X		X		
Brunswick	Lawrenceville	VA			X	X	X	X	X	X	X		X		
Kins and Open	Little Plymouth	VA			X	X	X	X	X	X	X		X		
Old Dominion	Richmond	VA			X	X	X	X	X	X	X		X		
Sycamore	Hamlet	WV			X	X	X	X	X	X	X		X		
Short Creek	Wheeling (Short Creek)	WV	X	X	X	X	X	X	X	X	X		X		
Center Valley	Church Hill	TN												X	

317-921-1667 or 480-627-2700
1-800-634-0215

Jack Palermo:
work: 330-536-8013
cell: 330-806-9660

Barben Hazzany:
work: 330-536-8013 x 120
cell: 330-623-7267

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AUG 9 2018
WV Department of
Environmental Protection

4706101815

Waste Management Industrial Landfills			Gas Specific Waste Streams			Other Accepted Waste Streams								Contact Information	
Landfill	Location		Drill * Cuttings	Waste Liners	Waste Brine	Contaminated Soil (Including Petroleum)	Construction & Demolition Waste	Industrial Waste	Sludge	Friable Asbestos	Non-Friable Asbestos	Process Waste	Solidification Services	Municipal Solid Waste	
Alden Landfill	Washington	PA	X	X		X	X	X	X			X	X	X	Scott Allen: 412-604-2256
South Hills (Armoni)	South Park	PA	X	X		X	X	X	X			X	X	X	
Kelly Run	Elizabeth	PA	X	X		X	X	X	X			X	X	X	
Valley Landfill	Irwin	PA	X	X		X	X	X	X			X	X	X	
Byrry (open Landfill)	Blairsville	PA	X	X		X	X	X						X	
Charleston Landfill	Charleston	WV	X	X		X	X	X	X			X		X	
Kanawha (open)	Charleston	WV	X	X		X	X	X	X			X		X	
Meadow Hill Landfill	Bridgeton	WV	X	X		X	X	X	X	X	X	X	X	X	
Northwestern Landfill	Parkersburg	WV	X	X		X	X	X	X			X	X	X	
S&S Omdine Landfill	Clerksburg	WV	X	X		X	X	X	X			X		X	
American Landfill	Waynesburg	OH	X	X		X	X	X	X	X	X	X	X	X	
Suburban RDF	Glenford	OH	X	X		X	X	X	X	X	X	X	X	X	
Coehoont Landfill***	Coehoont	OH	X	X		X	X	X	X					X	
Mohamint Landfill	New Springfield	OH	X	X		X	X	X						X	
Additional Landfills			Gas Specific Waste Streams			Other Accepted Waste Streams								Contact Information	
Landfill	Location		Drill * Cuttings	Waste Liners	Waste Brine	Contaminated Soil (Including Petroleum)	Construction & Demolition Waste	Industrial Waste	Sludge	Friable Asbestos	Non-Friable Asbestos	Process Waste	Solidification Services	Municipal Solid Waste	
Westmoreland Waste (WWLC Group)	111 Conner Lane, Belle Vernon, PA 15012	PA	X	X		X	X	X	X	X	X		X	X	Mike Horne: 412-552-4427 Mark Thomas: 724-929-7694
MAX Environmental (Baker Enclike)	200 Max Drive, Butler, PA 15019	PA	X	X		X	X	X	X				X	X	Carl Spadaro: 412-343-4900 cell: 412-445-9789
MAX Environmental (Yuhon Enclike)	233 MAX Lane, Yukon, PA 15898	PA	X	X		X	X	X	X				X	X	
Apex Sanitary Landfill (Apex Environmental)	11 County Road 78, Amsterdam, Ohio 43903	OH	X	X		X	X	X	X				X	X	Joe Teterick: 740-275-2887 joet@eis-company.com
Rampke, Mt. Sterling (Rampke Consolidated)	30 Larson Rd, Jeffersonville, KY 40337	KY	X	X		X	X	X		X	X			X	Carl Walter: 513-623-2471
Lanier Ridge Landfill (Waste Connections of KY)	3612 E State Highway 592, Lilw, KY 40740	KY	X	X		X	X	X		X	X	X		X	Drew Crouch: Work: 606-864-7996 Cell: 606-219-0261
Advanced Disposal	Chemung Valley 1184 McClellandtown Rd, McClellandtown, PA 15458	PA	X	X		X	X	X	X					X	Tony Labosse 6184 Route 219, Brockway, PA 15824 814-590-9906
	Greentree Landfill; 635 Toby Rd.; Kossay, PA	PA	X	X		X	X	X	X					X	
	Moestler Landfill; 7035 Glades Pike Rd.; Somerset, PA	PA	X	X		X	X	X	X					X	

** Ohio "TENORM" - requires Radium 226/228 analysis by land before leaving the well pad. Solid waste landfills in Ohio can only accept TENORM waste with combined concentration less than 5 picocuries per gram above the natural background level.
 *** Accepts drilling wastes but profile for disposal is not currently completed.
 X Waste stream accepted by facility.
 Waste stream is not or may not be accepted by facility. Contact facility directly to verify waste streams accepted.
 Note: New PADEP rules regarding "TENORM" testing requirement are pending.
 * Drill Cuttings include fine sand for the purpose of this table (Contact facility directly to verify waste streams accepted).

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Approval Sheet

The Office of Oil and Gas and the Oil and Gas Conservation Commission have set forth minimum requirements for necessary equipment and procedures that must be addressed in a Safety Plan ("Plan") and shall be submitted and approved prior to drilling a deep well. A deep well shall be any well which meets the definition as provided for in Chapter 22C, Article 9 of the West Virginia Code.

A site specific Safety Plan must be submitted with each deep well application or no later than one week prior to spudding. Approved Plans shall be maintained and available at the drilling rig at all times.

The Office of Oil and Gas must approve all changes and modifications to previously approved plans.

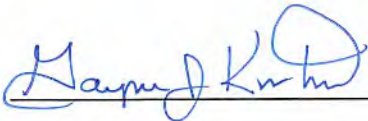
This plan has met the requirements of the Policy Statement Deep Well Drilling Procedures and Site Safety Plan Requirements as set forth by:

West Virginia Division of Environmental Protection, Office of Oil and Gas

And

West Virginia Oil and Gas Conservation Commission.

Approved this day _____ of month _____, 20__ by

 _____

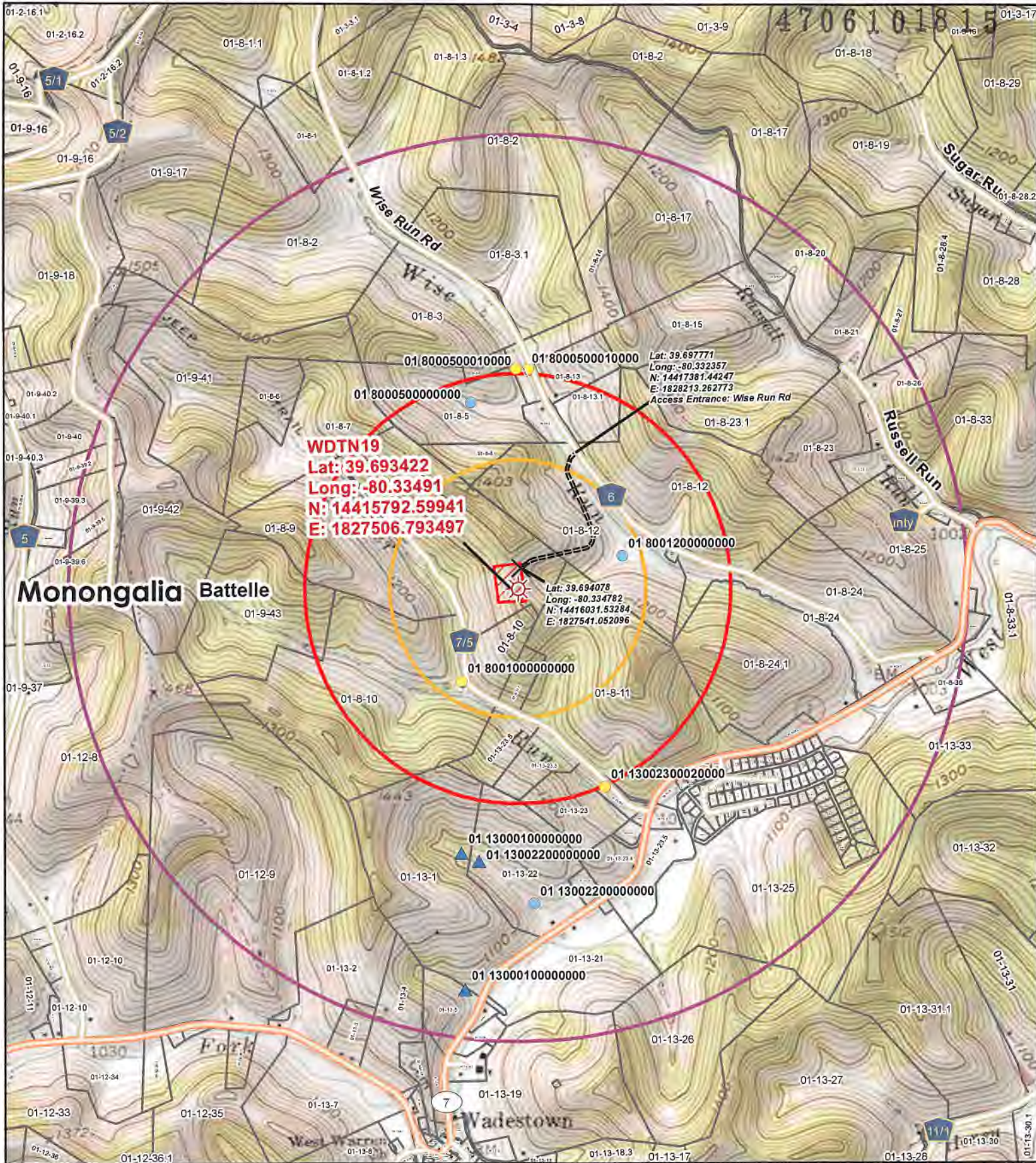
Date: 8/1/2018

Date: _____

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Office of Oil and Gas

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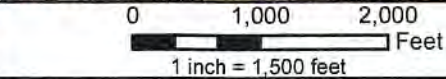
WV Department of
Environmental Protection



WDTN19
 Lat: 39.693422
 Long: -80.33491
 N: 14415792.59941
 E: 1827506.793497

Lat: 39.694078
 Long: -80.334782
 N: 14416031.63284
 E: 1827541.052096

Monongalia Battelle



Legend

- WDTN19 Well
- Well
- Spring
- Pond
- Access Points
- Access Road
- 1,500 Foot Buffer
- 2,500 Foot Buffer
- 1 Mile Buffer
- Well Pad
- Surface Parcel



Original Date: 8/6/2018 Prepared By: GIS
 Revision Date: 8/6/2018 Approved By: GIS

Topographic Well Map
WDTN19

This map is property of CNX Resources Corp. and contains information that is proprietary and confidential in nature and may not be copied or reproduced without prior written consent.
 © Copyright CNX Resources Corp. 2018

BHL is located on topo map 8,819 feet south of Latitude: 39° 42' 30"
 SHL is located on topo map 5,422 feet south of Latitude: 39° 42' 30"

NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
3. There are no native trout streams within 300' of proposed well.
4. Proposed well is greater than 1000' from surface groundwater intake or public water supply.
5. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
6. There are no existing buildings within 625' of proposed well.

SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4393944.87
 E:556994.09
 NAD83, WV NORTH
 N:435781.460
 E:1733461.599
 LAT/LON-NAD83
 LAT:39°41'36.4084"
 LON:80°20'06.9811"

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4394042.52
 E:557139.09
 NAD83, WV NORTH
 N:436093.934
 E:1733942.723
 LAT/LON-NAD83
 LAT:39°41'39.5407"
 LON:80°20'00.8632"

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4392920.22
 E:558361.97
 NAD83, WV NORTH
 N:432344.205
 E:1737893.905
 LAT/LON-NAD83
 LAT:39°41'02.8413"
 LON:80°19'09.8781"

LEGEND

- + - TOPO MAP POINT
- ☼ - WELL
- - ALL ARE POINTS UNLESS OTHERWISE NOTED.
- ① - LESSORS
- - - - - MINERAL TRACT BOUNDARY
- - - - - PARCEL LINES
- LEASE BOUNDARY
- - - - - WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

EXISTING GAS WELLS

- - EXISTING WELLS
- ⊙ - PLUGGED WELLS
- ⊘ - ABANDONED WELLS

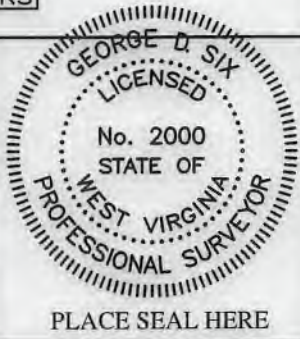
LINE	BEARING	DISTANCE
R1	S 41°31'47" W	72.95'
R2	S 05°55'43" W	84.56'
R3	S 16°03'17" E	74.13'
R4	N 35°32'16" W	2370.13'
R5	S 88°21'16" W	1878.07'
R6	S 07°10'14" W	1330.16'

SEE PAGE 2 AND 3 FOR SURFACE OWNERS AND LESSORS

FILE #: WDTN19KHSM
 DRAWING #: WDTN19KHSM
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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

Signed: George D. Six
 R.P.E.: _____ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

DATE: JULY 18, 2018
 OPERATOR'S WELL #: WDTN19KHSM
 API WELL #: 47 61 01815 HLA
 STATE COUNTY PERMIT

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

WATERSHED: DUNKARD CREEK ELEVATION: 1264.5'

COUNTY/DISTRICT: MONONGALIA/BATTELLE QUADRANGLE: WADESTOWN, WV 7.5'

SURFACE OWNER: MICHAEL L. BARNHART AND VIRGINIA M. BARNHART, TRUSTEES OF MICHAEL L. BARNHART LIVING TRUST DATED OCTOBER 18, 2004 ACREAGE: 115.000±

OIL & GAS ROYALTY OWNER: THREE RIVERS ROYALTY II, LLC, ET AL. ACREAGE: 915.343±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

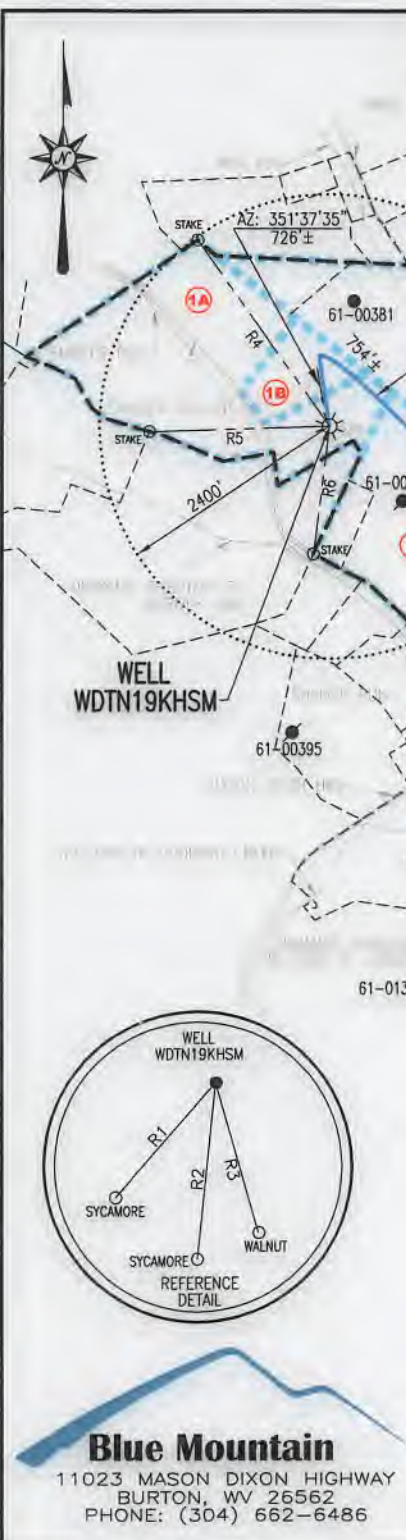
PERFORATE NEW FORMATION PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE

(SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,590± TMD: 13,528±

WELL OPERATOR: CNX GAS COMPANY LLC DESIGNATED AGENT: CHRIS TURNER

Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
 City: CANONSBURG State: PA Zip Code: 15317 City: JANE LEW State: WV Zip Code: 26378



BHL is located on topo map 8,819 feet west of Longitude: 80° 17' 30"
 SHL is located on topo map 5,422 feet west of Longitude: 80° 20' 00"

Blue Mountain
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

WDTN19KHSM

PAGE 2 OF 4

	SURFACE OWNER	LESSOR	DIST-TM/PAR
1A	MICHAEL L. BARNHART AND VIRGINIA BARNHART, TRUSTEES OF THE MICHAEL L. BARNHART LIVING TRUST DATED OCTOBER 18, 2004	THREE RIVERS ROYALTY II, LLC ELIZABETH LUCY MARCH DEBORAH MANNING KATHERINE REW BECKER JACK T. LIVENGOOD AND MARY JO LIVENGOOD SARAH CASEY SHERIDAN A. E. HENNEN III ROBERT DOUGLAS HENNEN MARY HENNEN JOHN K. HENNEN DAVID MICHAEL HENNEN KATHLEEN FARMER DIANE GONCALVES PATRICK NORTH ANNE W. HANING MORGAN HANING BARBARA HANING ZACHARAY C. HANING CATHERINE HANING COLEMAN, FKA CATHERINE G. HANING, A MARRIED WOMAN DEALING IN HER SOLE AND SEPARATE PROPERTY GAIL T. BELLUCCI ALMA E. KIRKLAND REVOCABLE LIVING TRUST AGREEMENT, BANK OF OKLAHOMA N.A., SOLE SUCCESSOR TRUSTEE PAMELA ALTOFF (FKA PAMELA BREWER) SHERRY LEMONS MELISSA KUBISCHKE FKA MELLISSA GRAHAM STEPHEN D. KIRKLAND LOUISE KIRKLAND BERG CHRISTINE A. KIRKLAND CATHERINE C. KIRKLAND HUGH KIRKLAND	P/O 1-8/9
1B	MICHAEL L. BARNHART AND VIRGINIA BARNHART, TRUSTEES OF THE MICHAEL L. BARNHART LIVING TRUST DATED OCTOBER 18, 2004	THREE RIVERS ROYALTY II, LLC JACK T. LIVENGOOD AND MARY JO LIVENGOOD ELIZABETH LUCY MARCH KATHERINE REW BECKER DEBORAH MANNING	P/O 1-8/9
2	CHESTER E. & BARBARA J. DEBERRY MICHAEL D. TENNANT CNX RCPC LLC	WILLIAM B. RICHARDSON, JR.	1-8/11 1-8/11.1 1-13/24 P/O 1-13/25 P/O 1-13B/81 P/O 1-13B/82 P/O 1-13B/83 P/O 1-13B/84 P/O 1-13B/85 P/O 1-13B/86 P/O 1-13B/87
3	KENNETH W. & DONNA P. EFAW BARBARA S. & GREGORY L. SHRIVER BARBARA S. SHRIVER HOWARD A. SHRIVER ESTATE JAMES A. & PAMELA L. WATSON GREGORY LYNN SHRIVER DONALD L. & LINDA L. WHITE JACKIE & PEGGY SUE WILSON ERNEST & LINDA HARKER RANDY DAVID & SANDRA HELMICK MICHAEL TENNANT CONSOLIDATED GAS TRANSMISSION WOLF PEN KNOB DEVELOPMENT	S. H. SHIVER AND LUCRETIA SHIVER, HIS WIFE	1-8/8 1-8/12.1 1-8/12 1-8/24 1-8/24.1 1-8/24.2 1-8/24.3 1-8/25 1-8/25.1 1-8/25.2 1-8/25.3 1-8/25.4 1-8/36 P/O 1-13B/66 P/O 1-13B/67 P/O 1-13B/68 P/O 1-13B/69 P/O 1-13B/70 P/O 1-8/33 P/O 1-8/33.1

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
 N:4393944.87
 E:556994.09
 NAD83, WV NORTH
 N:435781.460
 E:1733461.599
 LAT/LON-NAD83
 LAT:39°41'36.4084"
 LON:80°20'06.9811"

APPROX. LANDING POINT
UTM 17-NAD83(M)
 N:4394042.52
 E:557139.09
 NAD83, WV NORTH
 N:436093.934
 E:1733942.723
 LAT/LON-NAD83
 LAT:39°41'39.5407"
 LON:80°20'00.8632"

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
 N:4392920.22
 E:558361.97
 NAD83, WV NORTH
 N:432344.205
 E:1737893.905
 LAT/LON-NAD83
 LAT:39°41'02.8413"
 LON:80°19'09.8781"

WDTN19KHSM

PAGE 3 OF 4

	SURFACE OWNER	LESSOR	DIST-TM/PAR
	CNX RCPC LLC	S. H. SHIVER AND LUCRETIA SHIVER, HIS WIFE	1-13/33 1-13B/72 1-13B/73 1-13B/74 1-13B/71 P/O 1-13B/75 P/O 1-13B/76 P/O 1-13B/77 P/O 1-13B/78 P/O 1-13B/79 P/O 1-13B/80 P/O 1-13B/81 P/O 1-13B/82
4	CNX RCPC LLC	NORMAN CORE, GREGORY SHRIVER, AND FRANCIS M. BLAND, TRUSTEES OF WEST WARREN BAPTIST CHURCH	P/O 1-13/25 1-13B/1 1-13B/2 1-13B/3 1-13B/4 1-13B/5 1-13B/6 1-13B/7 1-13B/8 1-13B/9 1-13B/10 1-13B/11 1-13B/12 1-13B/13 1-13B/14 1-13B/15 1-13B/16 1-13B/17 1-13B/18 1-13B/19 1-13B/20 1-13B/21 1-13B/22 1-13B/23 1-13B/24 1-13B/25 1-13B/26 1-13B/27 1-13B/28 1-13B/29 1-13B/30 1-13B/31 1-13B/32 1-13B/33 1-13B/34 1-13B/35 1-13B/36 1-13B/37 1-13B/38 1-13B/39 1-13B/40 1-13B/41 1-13B/42 1-13B/43 1-13B/44 1-13B/45 1-13B/51 1-13B/53 1-13B/54 1-13B/55 1-13B/56 P/O 1-13B/72 P/O 1-13B/73 P/O 1-13B/74

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47-061-01815

WDTN19KHSM

PAGE 4 OF 4

	SURFACE OWNER	LESSOR	DIST-TM/PAR	
4	CNX RCPC LLC	NORMAN CORE, GREGORY SHRIVER, AND FRANCIS M. BLAND, TRUSTEES OF WEST WARREN BAPTIST CHURCH	P/O 1-13B/75 P/O 1-13B/76 P/O 1-13B/77 P/O 1-13B/78 P/O 1-13B/79 P/O 1-13B/80 P/O 1-13B/81 P/O 1-13B/82 P/O 1-13B/83 P/O 1-13B/84 P/O 1-13B/85	
	DONNIE L. & BARBARA LYNN MCDOUGAL		1-13B/46	
	ERIK DAVID PRIDE		1-13B/47	
	EDGAR J. & BETTY J. HUGGINS		1-13B/48	
	DAVID F. & VALERIE D. CONAWAY		1-13B/49	
	PAT L. & BEVERLY K. PARK		1-13B/50	
	WILLIAM E. & MARY HARKER		1-13B/52	
	ERNEST E. & LINDA L. HARKER		1-13B/57	
	ROY DALE, TWYLA CHISLER & CRYSTAL SPEARS		1-13B/58	
	JIMMIE & MARCIA L. BARTLETT		1-13B/59	
	JOHN R. & KATHY J. HOCKENBERRY		1-13B/60	
	DAVID K. & PAMELA S. RUSH		1-13B/61	
	LEROY W. & BARBARA J. NUCE		1-13B/62	
	MITCHELL L. & LENA D. HOLMES		1-13B/63	
	SUSAN B. ROSS		1-13B/64	
	BASIL DAWSON		1-13B/65	
	CONSOLIDATED GAS TRANSMISSION		1-13B/66 1-13B/67 1-13B/68 1-13B/69 1-13B/70 1-13B/71	
	5	W. BRENT LEGAN	WILLIAM B. LEGAN AND MICHELE R. LEGAN,	1-13/32
		VERNON L. SIMPSON	INDIVIDUALLY AND AS H/W ZANA L. LEGAN	1-13/36

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LAT/LON-NAD83
LAT:39°41'02.8413"
LON:80°19'09.8781"

WW-6A1
(5/13)

Operator's Well No. WDTN19KHSM

**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
-------------------------	-----------------------	-----------------------	---------	-----------

See attached.

RECEIVED
Office of Oil and Gas

AUG 9 2018

WV Department of
Environmental Protection

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

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

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

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

Well Operator: CNX Gas Company, LLC

By: Raymond Hoon

Its: Permitting Supervisor

Attachment - Form WW-6A-1 for WDTN19KHSM						
<u>Tract ID</u>	<u>Tax Map & Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
1A	p/o 1-8-9	205228000	Three Rivers Royalty II, LLC	CNX Gas Company LLC	Not less than 1/8	DB 1616/658
			Elizabeth Lucy March	CNX Gas Company LLC	Not less than 1/8	DB 1613/434
			Deborah Manning	CNX Gas Company LLC	Not less than 1/8	DB 1627/648
			Katherine Rew Becker	CNX Gas Company LLC	Not less than 1/8	DB 1625/420
			Jack T. Livengood and Mary Jo Livengood	CNX Gas Company LLC	N/A - Deed	DB 1611/52
			Sarah Casey Sheridan	CNX Gas Company LLC	Not less than 1/8	DB 1621/340
			A. E. Hennen III	CNX Gas Company LLC	Not less than 1/8	DB 1620/166
			Robert Douglas Hennen	CNX Gas Company LLC	Not less than 1/8	DB 1622/183
			Mary Hennen	CNX Gas Company LLC	Not less than 1/8	DB 1620/155
			John K. Hennen	CNX Gas Company LLC	Not less than 1/8	DB 1621/324
			David Michael Hennen	CNX Gas Company LLC	Not less than 1/8	DB 1620/176
			Kathleen Farmer	CNX Gas Company LLC	Not less than 1/8	DB 1620/160
			Diane Goncalves	CNX Gas Company LLC	N/A - Deed	DB 1629/420
			Patrick North	CNX Gas Company LLC	N/A - Deed	DB 1629/411
			Anne W. Haning	CNX Gas Company LLC	Not less than 1/8	DB 1620/171
			Morgan Haning	CNX Gas Company LLC	Not less than 1/8	DB 1622/168
			Barbara Haning	CNX Gas Company LLC	N/A - Deed	DB 1622/101
			Zacharay C. Haning	CNX Gas Company LLC	Not less than 1/8	DB 1622/209
			Catherine Haning Coleman, fka Catherine G. Haning, a married woman dealing in her sole and separate property	CNX Gas Company LLC	Not less than 1/8	DB 1622/173
			Gail T. Bellucci	Northeast Natural Energy LLC	Not less than 1/8	DB 1630/159
			Northeast Natural Energy LLC	CNX Gas Company LLC	Assignment	AB 137/287
			Alma E. Kirkland Revocable Living Trust Agreement, Bank of Oklahoma N.A., Sole Successor Trustee	CNX Gas Company LLC	Not less than 1/8	Unrecorded (attached hereto) ✓
			Pamela Altoff (FKA Pamela Brewer)	CNX Gas Company LLC	Not less than 1/8	1614/660
			Sherry Lemons	CNX Gas Company LLC	Not less than 1/8	1613/388
			Melissa Kubischke fka Melissa Graham	CNX Gas Company LLC	Not less than 1/8	1613/383
			Stephen D. Kirkland	CNX Gas Company LLC	Not less than 1/8	1614/654
			Louise Kirkland Berg	CNX Gas Company LLC	Not less than 1/8	1613/419
			Christine A. Kirkland	CNX Gas Company LLC	Not less than 1/8	1613/429
Catherine C. Kirkland	CNX Gas Company LLC	Not less than 1/8	1613/424			
Hugh Kirkland	CNX Gas Company LLC	N/A - Deed	1611/49			
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
1B	p/o 1-8-9	189014000	Three Rivers Royalty II, LLC	CNX Gas Company LLC	Not less than 1/8	DB 1616/658
			Jack T. Livengood and Mary Jo Livengood	CNX Gas Company LLC	N/A - Deed	DB 1611/52
			Elizabeth Lucy March	CNX Gas Company LLC	Not less than 1/8	DB 1613/434
			Katherine Rew Becker	CNX Gas Company LLC	Not less than 1/8	DB 1625/420
			Deborah Manning	CNX Gas Company LLC	Not less than 1/8	DB 1627/648
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
2	1-8-11 1-8-11.1 1-13-24 1-13-25 1-13B-81 1-13B-82 1-13B-83 1-13B-84 1-13B-85 1-13B-86 1-13B-87	204980000	William B. Richardson Jr.	CNG Producing Company	Not less than 1/8	DB 1134/620
			CNG Production Company LLC	Dominion Exploration and Production, Inc.	Merger	
			Dominion Exploration and Production, Inc.	Antero Resources Appalachian Corporation	Assignment	AB 102/797
			Dominion Transmission, Inc.			
			Dominion Appalachian Development LLC			
			Antero Resources Appalachian Corporation	Dominion Exploration and Production, Inc.	Assignment	AB 103/594
			Dominion Exploration and Production, Inc.	Consol Gas Company	Corporate Name Change	CB 60/7
			Consol Gas Company	CNX Gas Company LLC	Merger	CNB 2/424
			CNX Gas Company LLC	Noble Energy, Inc.	50% Assignment	AB 113/458
			Noble Energy, Inc.	CNX Gas Company LLC	50% Assignment	AB 131/339

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Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
3	1-8-8 1-8-12 1-8-12.1 1-8-24 1-8-24.1 1-8-24.2 1-8-24.3 1-8-25 1-8-25.1 1-8-25.2 1-8-25.3 1-8-25.4 1-8-36 1-13-33 1-13B-71 1-13B-72 1-13B-73 1-13B-74 1-8-33 1-8-33.1 1-13B-66, 67, 68, 69, 70, 75, 76 1-13B-77, 78, 79, 80, 81, 82	189893000	S. H. Shiver and Lucretia Shiver, his wife	South Penn Oil Company	Not less than 1/8	DB 52/400
			South Penn Oil Company	Hope Natural Gas Company	Assignment	Unrecorded
			Henry D. Shriver and Barbara E. Shriver, his wife, and Virginia Taylor Perry and Graves H. Perry, her husband	Hope Natural Gas Company	Lease Modification	DB 296/105
			Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	DB 633/144
			Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	AB 16/198
			Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Name Change	DB 1144/656
			Anne D. Coon, Betty Rodriguez, Anne Barr, Wilma S. Shriver, Ralph Shriver, William R. Shriver, Jack L. Shriver, George H. Shriver and Geraldine L. Shriver	CNG Transmission Corporation	Lease Modification	DB 1108/324
			Virginia Taylor Perry	CNG Transmission Corporation	Lease Modification	DB 1108/339
			CNG Transmission Corporation	CNG Producing Company	Assignment	AB 51/416
			CNG Producing Company	Dominion Exploration and Production Inc.	Merger	AB 72/449
			Dominion Exploration & Production, Inc., Dominion Transmission, Inc. and Dominion Appalachian Development, LLC	Antero Resources Appalachian Corporation	Assignment	AB 102/797
			Antero Resources Appalachian Corporation	Dominion Transmission, Inc.	Assignment	AB 103/606
			Dominion Transmission, Inc.	CONSOL Energy Holdings LLC XVI	Assignment	AB 108/64
			CONSOL Energy Holdings LLC XVI	CONSOL Gas Company	Merger	CR 60/18
			CONSOL Gas Company	CNX Gas Company, LLC	Merger	CB 2/424
			CNX Gas Company, LLC	Noble Energy, Inc.	50% Assignment	AB 113/458
			Noble Energy, Inc.	CNX Gas Company, LLC	50% Assignment	AB 123/528
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
4	1-13-25 1-13B-1 through 71 1-13B-72 through 85	204978000	Norman Core, Gregory Shriver, and Francis M. Bland, Trustees of West Warren Baptist Church	CNG Producing Company	Not less than 1/8	DB 1141/491
			William B. Richardson	CNG Producing Company	Not less than 1/8	DB 1142/547
			CNG Producing Company	Dominion Exploration and Production Inc.	Merger	
			Dominion Exploration and Production Inc., Dominion Transmission Inc., Dominion Appalachian Development LLC	Antero Resources Appalachian Corporation	Assignment	AB 102/797
			Antero Resources Appalachian Corporation	Dominion Exploration and Production Inc.	Assignment	AB 103/594
			Dominion Exploration and Production Inc.	Consol Gas Company	Name Change	CB 60/7
			Consol Gas Company	CNX Gas Company LLC	Merger	CNB 2/424
			CNX Gas Company LLC	Noble Energy, Inc.	50% Assignment	AB 113/458
			Noble Energy, Inc.	CNX Gas Company LLC	50% Assignment	AB 131/339
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
5	1-13-32 1-13-36	243453000	William B. Legan and Michele R. Legan, Individually and as h/w Zana L. Legan	Dominion Exploration and Production, Inc.	Not less than 1/8	DB 1259/214
			William C. Legan	Dominion Exploration and Production, Inc.	Ratification	DB 1260/155
			Dominion Exploration and Production Inc., Dominion Transmission Inc., Dominion Appalachian Development LLC	Antero Resources Appalachian Corporation	Assignment	AB 102/797
			Antero Resources Appalachian Corporation	Dominion Exploration and Production Inc.	Assignment	AB 103/594
			William B. Legan and Michele R. Legan, individually and as h/w	Dominion Exploration and Production Inc.	Lease Modification	DB 1409/746
			Dominion Exploration and Production Inc.	Consol Gas Company	Name Change	CB 60/7
			CONSOL Gas Company	CNX Gas Company LLC	Merger	AB 120/383
			CNX Gas Company LLC	Noble Energy Inc.	50% Assignment	AB 113/458
			Noble Energy Inc.	CNX Gas Company LLC	50% Assignment	AB 131/339

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3 of 3

THE STATE OF WEST VIRGINIA §
 §
COUNTY OF MONONGALIA §

MEMORANDUM OF OIL & GAS LEASE
9693

KNOW ALL MEN BY THESE PRESENTS:

That by Oil and Gas Lease dated **April 19, 2018**, by and between **BOKF, NA, as Sole Trustee of the Alma Kirkland Revocable Trust**, whose address is P.O. Box 3499, Tulsa, Oklahoma 74101, hereinafter called "Lessor", and **CNX Gas Company, LLC, a Virginia limited liability company**, whose address is 1000 CONSOL Energy Drive, Canonsburg, Pennsylvania 15317-6506, hereinafter called "Lessee". Lessor has granted, leased and let to Lessee for exploration and production of oil and gas, all of Lessor's present right, title and interest in and to that certain property situated in **Monongalia County, West Virginia**, and described on Exhibit "A" attached hereto and incorporated hereby by reference.

The above described Oil and Gas Lease is for a term of **five (5)** years from **April 19, 2018** and contains other terms and provisions which are by reference incorporated herein and made a part hereof in all respects as though the same were fully set forth herein. Such lease is granted subject to all of the terms, conditions and obligations more fully set forth in said Oil & Gas Lease.

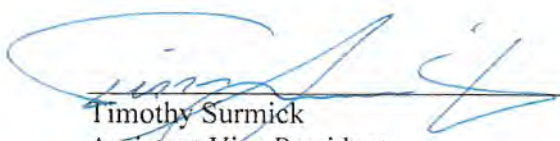
This instrument may be executed in any number of counterpart originals, each of which shall be considered an original for all intents and purposes, and when placed together shall constitute the one original document.

An executed copy of the Oil and Gas Lease is in possession of the Lessee.


IN WITNESS WHEREOF, this instrument is executed effective the **19th** day of **April, 2018**.

CNX GAS COMPANY LLC

ALMA KIRKLAND REVOCABLE TRUST



Timothy Surnick
Assistant Vice President
(Lessee)



Greg Collins
Senior Vice President
BOKF, NA, as Sole Trustee
(Lessor)

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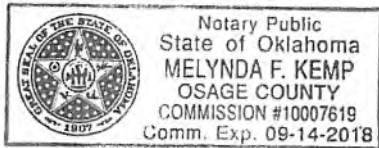
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STATE OF OKLAHOMA § CORPORATE ACKNOWLEDGMENT
§
COUNTY OF TULSA §

Before me, the undersigned authority, on this 19th day of April, 2018, personally appeared Greg Collins, known to me to be the identical person whose name is subscribed on the foregoing instrument as Senior Vice President of BOKF, NA and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity stated, and as the act and deed of said national banking association.

WITNESS my hand and official seal the day and year last above written.

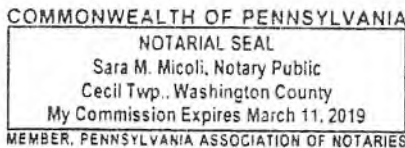


Melinda F. Kemp
Notary Public

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF WASHINGTON

The foregoing instrument was acknowledged before me on the 11th day of June, 2018 by Timothy Surmick, who acknowledged himself to be the Assistant Vice President of CNX Gas Company LLC, a Virginia limited liability company, and that he as such, being authorized to do so, executed the foregoing instrument on behalf of CNX Gas Company LLC.

In witness hereof, I hereunto set my hand and official seal.



Sara M. Micoli
Notary Public
My commission expires: 03/11/2019

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EXHIBIT "A"

This Exhibit "A" is attached to and made a part of that certain Oil and Gas Lease effective **April 19, 2018** between **BOKF, NA, as Sole Trustee of the Alma Kirkland Revocable Trust**, as Lessor, and **CNX Gas Company, LLC**, a Virginia limited liability company, as Lessee, covering the following described property:

All of those certain tracts, lots, or parcels of land lying and being in the District of Battelle, in the County of Monongalia, State of West Virginia, bounded and described as follows:

Tract 1:

BEING a tract of 67.94 acres of land as conveyed to Elizabeth Shriver by a partition deed dividing the William Haines homestead between the said Elizabeth Shriver and Frank E. Liming and his wife, Lillie Ethel Liming, said deed of partition being recorded in the records of the Office of the Clerk of the County Commission of Monongalia County, West Virginia, in Deed Book No. 167, at page 155, and dated the 26th day of July, 1920, which said deed contains a plat more fully describing said tract of land; reference is here made to said deed for a full description of said property; and being the same real estate conveyed to L. Eileen Hawker, from Kinsey E. Shriver and Ora M. Shriver, his wife, by deed dated April 3, 1985, which said deed is recorded in the Office of the Clerk of the County Commission of Monongalia County, West Virginia, in Deed Book 923, at page 490, to which deed and aforesaid plat reference is here made for all pertinent purposes.

Said description being contained in **Deed Book 1023, at page 217.**

Tract 2:

Beginning at two chestnuts, corner in the original line, then with S.H. Shriver and Thomas Wise, N. 54 W. 82.5 poles (mistakenly called 157.7 poles in Deed Book No. 17, at page 414) to a hickory; thence with Frank Cross S. 54 W. 142.3 poles to a chestnut oak; thence with an agreed line between parties S. 82-1/2 E. 20.8 poles to a white oak, S. 61-1/2 E. 16 poles to a stone pile, S. 32 E. 20 poles to a stone near a white oak stump, S. 66-1/2 E. 41.2 poles to a stake; thence N. 81-1/2 E. 34 poles to a stake in road; thence S. 6 E. 21 poles to a stake, N. 60 E. 56. 5 poles to a stone, S. 36-1/2 E. 9.8 poles to a suger; thence with an original line N. 25 E. 44 poles to a dogwood; thence N. 54 W. 21.2 poles; thence with an agreed line S. 63-1/2 W. 66 poles to a stake, N. 36 W. 26.5 poles to a white oak; thence N. 41 E. 60 poles to the place of beginning, containing 100-5/8 acres, more or less.

Said description being contained in **Deed Book 1012, at page 660.**

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AUG 9 2018

WV Department of
Environmental Protection

WHEREAS the South Penn Oil Company (hereinafter styled the Oil Company) a corporation organized under the laws of the State of Pennsylvania, is the owner of the oil, together with the mining rights and privileges appurtenant thereto, and the Hope Natural Gas Company, (hereinafter styled the Gas Company), a corporation organized under the laws of the State of West Virginia, is the owner of the gas, together with the mining rights and privileges appurtenant thereto, in, under and upon certain lands situate in the County of Monongalia and State of West Virginia, and being the same oil and gas rights and privileges demised, granted and created in and by those certain leases or grants, each of which is designated in the schedule hereto attached by reference to its date, the name of the lessor or grantor, lessee or grantee, the number of acres and district in which said lands are situate and the place of public record if such lease or grant has heretofore been recorded; the said instruments, whether leases or grants, being hereinafter referred to as leases:

AND WHEREAS it is deemed necessary for the purpose of protecting the interests and rights of both of said companies under said leases and effecting economy in testing said lands that they enter into certain mutual covenants with respect thereto.

THEREFORE it is agreed between said ^{Oil} Company and said Gas Company, each of them covenanting for itself, its successors and assigns, as follows, viz:

First:-- That the Oil Company shall have the right at any time hereafter during the terms granted by said leases and by all renewals and extensions thereof, to enter upon any and all of the lands demised thereby and drill so many wells thereon as it may desire for the purpose of obtaining oil, with the right to construct, lay and operate upon said lands such derricks, machinery, pipes, pumps, tanks and structures as may be necessary to obtain, store and remove said oil as fully as such rights of entry and other rights are conferred upon the lessee by the lease or leases under which said entry may be made, and that the Gas Company shall have the right at any and all times hereafter during the

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AUG 9 2018
West Virginia Department of
Environmental Protection

terms granted by said leases and all extensions and renewals thereof, to enter upon any and all of the lands demised by said leases and drill so many wells thereon as it may desire for the purpose of obtaining gas with the right to construct, lay and operate upon said lands such derricks, machinery, pipes, pumps, tanks and structures as may be necessary to obtain, store and remove said gas as fully as such rights of entry and other rights are conferred upon the lessee by the lease or leases under which said entry may be made.

Second:- That on and after the First day of April 1902, each of said companies shall bear one-half of all rentals or penalties which may by the terms of said leases and each of them become payable for delay in operating thereunder, and one-half of all expenses which have been or may be incurred in making payment and keeping account of said rentals, and recording said leases. The Gas Company shall, however, attend to the matter of paying said rentals, and the Oil Company shall, from time to time, reimburse the Gas Company for one-half thereof upon demand being made for such reimbursement; but the Company which may first drill under said leases or either of them shall, at its own expense, cause the necessary examination of title to be made and any defects found therein to be corrected.

Third:-- That if either of said Companies shall, at any time or times, desire to avoid payment or further delay rentals under one or more of said leases, it may give the other Company written notice thereof, specifying the lease or leases under which it desires to avoid such payment, and the Company receiving such notice shall be obliged within fifteen days thereafter to elect whether it will join with the Company giving the notice, in surrendering the leases specified, or accept an assignment from the Company giving the notice, of its interest therein. The Company giving any such notice shall not have the power to withdraw or revoke the same during said fifteen days, and the Company receiving the notice may at its option take an assignment of all the leases therein specified, or join in surrendering all of them, or may accept an assignment of one or more of them and join in surrendering the others, but must as to each lease specified in

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AUG 9 2018

WV Department of
Environmental Protection

3.

the notice and not later than the last of said fifteen days, indicate in writing to the Company giving the notice, its election either to accept an assignment or join in surrendering the same. In case of an election to join in surrendering any lease, each of said companies shall pay one-half of all rentals and expenses incurred in connection therewith, to and including the date of surrender. In case of an election to take an assignment of any lease or leases after notice as aforesaid, the Company whose duty it may be to make such assignment, shall immediately execute and deliver the same, and shall pay one-half of all rentals accruing for any rental period then current and unexpired, computed to and including the last of said fifteen days. Should the Company receiving any such notice fail to indicate its election as above required, the Company giving the notice may, in such case, assign its interest in any or all of the leases specified in the notice to the Company so failing to indicate its election, and the latter Company shall, after such assignment, be deemed to have assumed the payment of all rentals and the performance of all covenants maturing under the lease or leases so assigned after the expiration of said fifteen days; but if the Company giving such notice shall retain or except from such assignment any lease as to which there shall be such failure to indicate an election, the respective rights and liabilities of said Companies thereunder shall remain as if no notice concerning such lease had been given.

Fourth:- That the Oil Company shall have the right to purchase any well or wells now or hereafter owned by the Gas Company on said lands which are, or at completion shall be found, or shall afterwards become, non-productive of gas in paying quantities, and the Gas Company shall have the right to purchase any well or wells now or hereafter owned by the Oil Company on said lands which are, or at completion shall be found, or shall afterwards become, non-productive of oil in paying quantities; but such right of purchase shall not arise in favor of either Company as to any well until the Company owning the well shall have had reasonable opportunity to thoroughly drill and test the same for its own purposes.

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AUG 9 2018

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Fifth:— For the purpose of carrying into effect the provisions of the fourth paragraph hereof, it shall be the duty of the Gas Company as often as a right of purchase shall arise in favor of the Oil Company under said fourth paragraph, to give said Oil Company immediate written notice thereof, and shall be the duty of Oil Company as often as a right of purchase shall arise in favor of said Gas Company under said Fourth paragraph to give the Gas Company immediate written notice thereof. With every such notice there shall be submitted a record of the well and a statement showing the cost of sinking it, and the Company receiving such notice, record and statement shall, within thirty days after receiving the same, elect whether or not it will purchase the well to which the notice, record and statement relate. In case the Company receiving any such notice, record and statement shall elect not to purchase the well, the same with its equipment and products, both oil and gas, shall thereafter belong entirely to the other Company, subject to the payment of all royalties upon said products; but in case of an election to purchase such well, the Company making such election shall, at the end of said thirty days, pay to the other Company the cost of sinking the well, in estimating which cost nothing shall be taken into account but the drilling, rig and casing. Failure to pay for any well at or before the end of said thirty days shall be equivalent to an election not to purchase and shall work a forfeiture of the right of purchase. After such purchase, the purchasing Company shall be sole owner of the well, its rig and casing and its products, both oil and gas, subject to the payments of all royalties thereon. During the thirty days immediately following any notice above provided for, the Company having a right of purchase, shall be permitted to examine and test the well specified in the notice, and for that purpose to use the machinery and appliances belonging to the well, furnishing all fuel and labor necessary to operate the same. If the Company making such test shall elect not to purchase the well tested, it shall pay to the Company owning the well a fair compensation for the use of said machinery and appliances, the value of any of them lost or destroyed in making

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AUG 9 2018

WV Department of
Environmental Protection

5.

the test, and shall at its own expense, if requested by the owner of the well, pull the casing and plug the hole according to law, without liability, however, for any casing unavoidably left in the hole. Neither Company shall have the right to permanently abandon or plug any well without giving the other Company the notice and affording it an opportunity to make the test hereinbefore provided for, unless the right to such notice and to make such test shall have been waived.

Sixth:-- That the Oil Company shall use every reasonable precaution and device to prevent the waste of gas from all wells it may drill or operate upon said lands and to prevent salt water or other liquids from entering into the gas bearing sands through which such wells may have been or may be drilled, and the Gas Company shall use every reasonable precaution and device to prevent the waste of oil from all wells it may drill or operate upon said lands, and to prevent salt water or other liquids from entering into the oil bearing sands through which such wells may have been or may be drilled; and that it shall be allowed to collect from the Oil Company the regular fixed rate per month, for any and all wells furnished with gas for pumping, whether the gas for pumping be furnished from the lines of said Gas Company, or from the casing head of any of the pumping wells. Provided herewith that the payment for gas from the casing head shall only apply to the leases or farms where the Gas Company owns the gas right.

Seventh:-- That in case any wells drilled under any of said leases by either of said Companies now are, or at completion shall be found, or shall afterwards become, productive of both oil and gas in paying quantities under such conditions that both can be saved and utilized, the Company owning such well shall give immediate written notice to the other Company that the same is productive of both oil and gas, and with such notice shall submit a record of the well, and a statement showing the cost of drilling it, and of its equipment, and the Company not at the time owning the well shall, if it elects, to take and utilize the

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AUG 9 2018

WV Department of
Environmental Protection

6.

product thereof belonging to it, furnish the separating devices required to separate such product from that belonging to the Company owning the well, and the Company not owning the well shall pay to the Company owning it such part of the cost of the drilling and equipment and such part of the subsequent expense of operating and maintaining the well as may be equitable and as nearly as may be in proportion to the value of the output of oil and gas, allowance being made for the difference in the operating expenses incident to the respective products. Should the Company not owning the well in such case, elect not to take or utilize the product thereof belonging to it, or having elected to take or utilize the said product, fail to pay said share of the cost of said drilling and equipment within fifteen days after receiving said written notice, the right to take or utilize such product shall be forfeited and both products shall thereafter belong exclusively to the Company owning the well. During said fifteen days every reasonable opportunity shall be given the Company not owning the well to inspect it and determine its probable output.

Eighth:-- That in computing the fifteen days and thirty days following any notice given under the provisions of this agreement, the day upon which said notice shall be received by the Company to which it may be directed, shall be excluded; that all such notices may be given by mail addressed to the South Penn Oil Company, or to the Hope Natural Gas Company as the case may be, Vandergrift Building, Pittsburg, Pa., both of said companies now having their offices in that building. Either Company may by writing require all notices intended for it to be addressed otherwise than above provided.

Ninth:-- The said Oil Company shall pay to the persons entitled thereto, all royalties and gas rentals which may by the terms of said leases or either of them, become payable for oil and gas obtained and utilized by it, and that the Gas Company shall pay to the persons entitled thereto, all such royalties and gas rentals for oil and gas obtained and utilized by it.

Tenth:-- That for and in consideration of the covenants and

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AUG 9 2018

WV Department of
Environmental Protection

7.

agreements heretofore mentioned, and the prompt monthly payments hereafter, the Gas Company agrees to furnish the gas for any or all pumping wells belonging to the Oil Company, which may be within a reasonable distance from the Gas Company's lines and which the Oil Company may desire connected thereto at a uniform rate of Five (\$5.00) Dollars per well per month; and to furnish gas to the drilling wells it may drill at Four (\$4.00) Dollars per day of twenty four hours, or Two (\$2.00) Dollars per day for a day of twelve hours. This rate to apply to gas used in drilling cleaning out old wells, or running the tools in new ones after a torpedo, but no account shall be made for less time than one half day of twelve hours. That the rate for running water stations now established and to which gas is furnished shall be Two (\$2.) Dollars per day, and that if any new water stations are established hereafter by the Oil Company the rate shall be the same if the same horse power is used, or a proportionate amount if larger boiler capacity is placed in the new stations.

Eleventh:- That in case either of said Companies shall decide not to drill upon any lease affected by this agreement but permit such lease to become void by expiration of its term, the company so deciding shall give the other company prompt written notice thereof so as whenever practicable to afford the Company receiving the notice an opportunity to drill upon the lease or get an extension of its term if it shall so desire.

IN WITNESS WHEREOF both of said companies have caused their corporate seals to be hereto attached and the same to be duly attested: this First day of April A. D. 1902.

Attest: [Signature]
SECRETARY

SOUTH PENN OIL CO.
By [Signature]
HOPE NATURAL GAS CO.

Attest: [Signature]
ASSISTANT SECRETARY

By [Signature]
President

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STATE OF PENNSYLVANIA, County of Allegheny, SS:

I, Christy Payne a Notary Public in and for said County and State do certify that R. W. Curfins personally appeared before me in my said County of Allegheny and being duly sworn did depose and say: that he is the Secretary of the South Penn Oil Company described in the foregoing instrument bearing date the 1st day of April A.D. 1902 authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said instrument is the corporate seal of the said South Penn Oil Company, and that the said instrument was signed and sealed by him in behalf of said corporation by its authority duly given. And the said R. W. Curfins acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and notarial seal this 3rd day of January A.D. 1903. Christy Payne Notary Public. Seal: SOUTH PENN OIL COMPANY

STATE OF PENNSYLVANIA, County of Allegheny, SS:

I, Christy Payne a Notary Public in and for said County and State do certify that John R. Corrin personally appeared before me in my said County of Allegheny and being duly sworn did depose and say: that he is the Assistant Secretary of the Hope Natural Gas Company described in the foregoing instrument bearing date the 1st day of April A. D. 1902 authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said instrument is the corporate seal of the said Hope Natural Gas Company, and that the said instrument was signed and sealed by him in behalf of said corporation by its authority duly given. And the said John R. Corrin acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and notarial seal this 3rd day of January A.D. 1903. Christy Payne Notary Public. Seal: Hope Natural Gas Company

Notary Public Seal: Hope Natural Gas Company

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May 15, 1903.

It is agreed that the provision on Page Seven (7) of the foregoing contract, relating to the price to be paid for gas used for running water stations, which reads as follows, viz: "That the rate for running water stations now established and to which gas is furnished, shall be Two Dollars per day, and that if any new water stations are established by hereafter by the Oil Company, the rate shall be the same if the same horse power is used, or a proportionate amount if larger boiler capacity is placed in the new stations" shall be construed so that the price to be paid for gas used to run water stations, now and hereafter established, shall be at the rate of One Dollar per day of twenty four hours or fractional part thereof for each boiler while the same is in actual use in such stations.

It is also further agreed that the South Penn Oil Company shall be allowed credit for all payments heretofore made in excess of the said rate of One Dollar per day of twenty four hours for each boiler while in actual use.

WITNESS the corporate seals of the parties to the foregoing contract duly attested the date above written.

Attest: *D.W. Cummins*
Secretary.

SOUTH PENN OIL COMPANY
BY *J.H. ...*
Vice President.

Attest: *Jno. P. Corrie*
Assistant Secretary.

HOPE NATURAL GAS COMPANY
BY _____
President.

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U.S. Department of
Environmental Protection

ScheduleMonongalia County

<u>Date</u>	<u>Lessors</u>	<u>Lessees</u>	<u>Acres</u>	<u>Dist.</u>	<u>Recorded</u>	
					<u>Book</u>	<u>Page</u>
May 27 1889	J.C.Conaway & Mary N., his wife	C. J. Ford	50	Clay	27	4
Aug.19 1889	Milton Varner & wife	A. Warner	137	Do.	27	131
May 27 1889	M.A.&A.C.Ammons	C. J. Ford	300	Do.	27	1
Aug.14 1890	M.&S.E.Tennant	Wm.Stevenson	40	Do.	29	382
May 3 1895	Eliz. Tennant	South Penn Oil Co.	64	Do.	42	47
Feb.27 1894	D.C.Core & Etta his wife	A. L. Lowrie	209	Do.	39	83
Apr. 9 1895	Abraham Shriver	South Penn Oil Co.	355	Battelle	42	17
Oct.19 1897	Henry & C.Fox, his wife	Do.	101	Do.	46	506
Apr.20 1899	M.J.Garrison et al.	Wm. Stevenson	300	Do.	52	32
Jan. 3 1899	D.B.Harker et al.	Battelle Oil Co.	188	Do.	48	399
Apr. 8 1895	E.C.&M.J.Tennant	South Penn Oil Co.	88	Do.	39	499
Mar. 7 1900	S.H.&L.C.Shriver	Do.	600	Do.	52	400
Feb. 3 1898	J. & L. Parks	Do.	93	Do.	48	130
May 10 1893	Eli Collins	Battelle Oil Co.	100	Do.	36	270
Feb. 3 1898	Jos. & L. Parks	South Penn Oil Co.	135	Do.	48	133

116

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Monongalia County.

<u>Date.</u>	<u>Lessors.</u>	<u>Lessee</u>	<u>Acres, District,</u>	<u>Recorded.</u>
				<u>Book, Page</u>
2127 May 25, 1897,	A.J. & M.J. Cumberledge,	South Penn Oil Co.	48. Battelle,	46, 191
2726 July 16, 1901,	Almeda, W.F. & Clarence Dorsey & W.F. Dorsey, Gdn.	South Penn Oil Co.	Int. in 200, Cass,	59, 499.
Oct. 29, 1901,	Frank Cox, Gdn. of Albert P., Nellie E. and Geo. W. Dorsey, and Spec. Com'r.	South Penn Oil Co.	Int. in 200, Cass,	65, 64.

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Erika Whetstone
Permitting Manager
Work: 724-485-4035
Mobile: 724-317-2224
Email: erikawhetstone@cnx.com

CNX Center
1000 CONSOL Energy Drive
Canonsburg, PA 15317-6506
724-485-4000

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304-2345

RE: Road Letter WDTN19 Well Pad

To Whom it May Concern:

CNX Gas Company LLC (CNX) has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plans.

If any further information or correspondence is required, please contact me at (724)485-4035 or ErikaWhetstone@cnx.com.

Sincerely,

A handwritten signature in blue ink that reads 'Erika Whetstone'.

Erika Whetstone
Permitting Manager

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WV Department of
Environmental Protection

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

Date of Notice Certification: 8-8-18

API No. 47- _____ - _____
Operator's Well No. WDTN19KHSM
Well Pad Name: WDTN19

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>556994.0940</u>
County: <u>Monongalia</u>		Northing: <u>4393944.8720</u>
District: <u>Battelle</u>	Public Road Access: <u>Wise Run Road / CR6</u>	
Quadrangle: <u>Wadestown</u>	Generally used farm name: <u>Barnhart</u>	
Watershed: <u>Dunkard 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 type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been notified 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.

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Environmental Protection

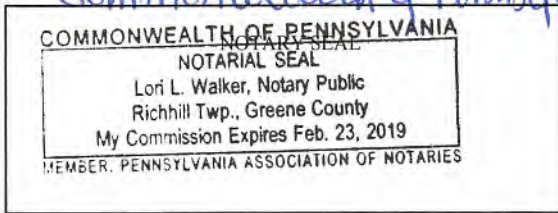
Certification of Notice is hereby given:

THEREFORE, I Raymond Hoon, 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: CNX Gas Company, LLC
By: Raymond Hoon
Its: Permitting Supervisor
Telephone: 724-485-3540

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Facsimile: _____
Email: RaymondHoon@CNX.com

Commonwealth of Pennsylvania County of Washington



Subscribed and sworn before me this 8th day of August 2018.
Lori L Walker Notary Public
My Commission Expires February 23, 2019

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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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: 8-7-18 Date Permit Application Filed: 8-8-18

Notice of:

- [X] 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 [X] 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.

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

[X] SURFACE OWNER(s) Name: Michael L. Bamhart Living Trust Address: 1262 Gem Bridge Rd. Needmore, PA 17238

Name: Address:

[X] SURFACE OWNER(s) (Road and/or Other Disturbance) Name: Barbara S. Shriver Address: 70 Wise Run Road Wana, WV 26590

Name: Address:

[] SURFACE OWNER(s) (Impoundments or Pits) Name: Address:

[X] COAL OWNER OR LESSEE Name: See attached Address:

[] COAL OPERATOR Name: Address:

[X] SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s) Name: See attached Address:

[] OPERATOR OF ANY NATURAL GAS STORAGE FIELD Name: Address:

*Please attach additional forms if necessary

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(8-13)

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WV Department of
Environmental Protection

4706101815

API NO. 47- _____
OPERATOR WELL NO. WDTN19KHSM
Well Pad Name: WDTN19

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. WDTN19KHSM
Well Pad Name: WDTN19

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WV Department of
Environmental Protection

WW-6A
(8-13)

4706101815
API NO. 47- -
OPERATOR WELL NO. WDTN19KHSM
Well Pad Name: WDTN19

Notice is hereby given by:

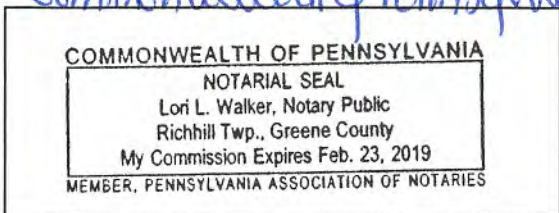
Well Operator: CNX Gas Company, LLC
Telephone: 724-485-3540
Email: RaymondHoon@CNX.com *Raymond Hoon*

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Facsimile: _____

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.

Commonwealth of Pennsylvania County of Washington



Subscribed and sworn before me this 8th day of August 2018.

Lori L Walker Notary Public

My Commission Expires February 23, 2019

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WV Department of
Environmental Protection

WW-6A Notice of Application

Coal Owners:

Kathryn W. Becker
819 NE 128th Street
Seattle, WA 98125

Deborah W. Manning
P.O. Box 895
Plymouth, CA 95669

Mary Jo W. Livengood
P.O. Box 52
Lucinda, PA 16235

Elizabeth W. March
P.O. Box 82
Bally, PA 19503

George Cummins Jr
31 Atisvigi Court
Brevard, NC 28712

CONSOL RCPC, LLC
1000 Consol Energy Drive
Canonsburg, PA 15317

Surface Owner of Water Well and/or Water Purveyor(s):

BARR, NELSON E & VIRGINIA L
503 Wise Run Road
Wana, WV 26590

BECKNER, TROY DAVID & JANET LEE SMITH (LIFE-TROY LEE & MARY JANE)
11 Mona Lane
Wadestown, WV 26590

TENNANT, BYRON D & BERNICE E
182 Dunkard Valley Boulevard
Core, WV 26541

EFAW, KENNETH W & DONNA P
509 Wise Run Road,
Wana, WV 26590

SAGO, DAVID K & RAMONA J
9580 Mason Dixon Highway
Wadestown, WV 26590

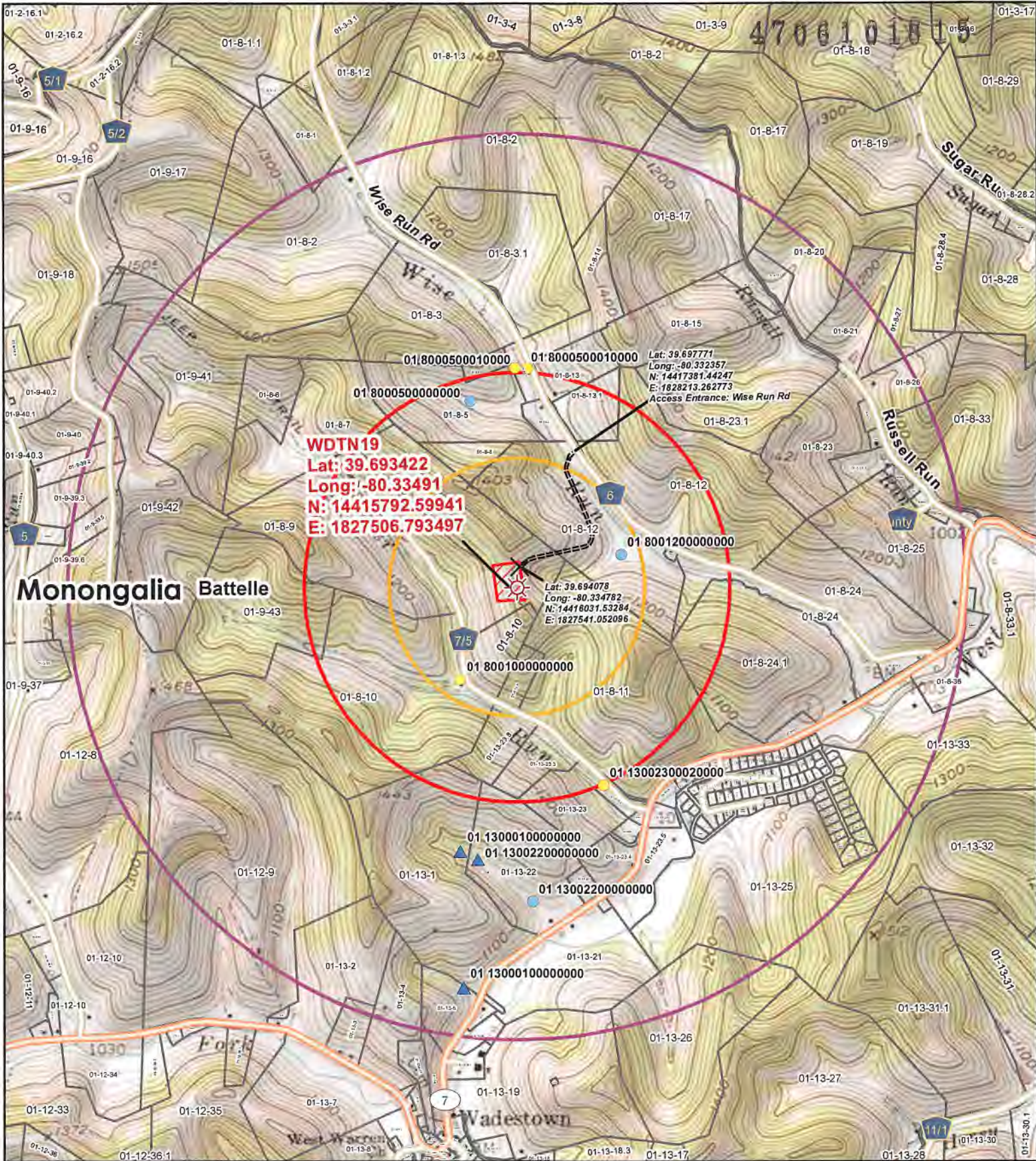
SANDERS, DOUGLAS S & KIMBERLY J
9664 Mason Dixon Highway
Wadestown, WV 26590

SHRIVER, BARBARA S
70 Wise Run Road
Wana, WV 26590

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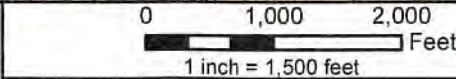
WV Department of
Environmental Protection



WDTN19
 Lat: 39.693422
 Long: -80.33491
 N: 14415792.59941
 E: 1827506.793497

Lat: 39.694078
 Long: -80.334782
 N: 14416031.53284
 E: 1827541.052096

Monongalia Battelle



Legend

- WDTN19 Well
- Well
- Spring
- Pond
- Access Points
- Access Road
- 1,500 Foot Buffer
- 2,500 Foot Buffer
- 1 Mile Buffer
- Well Pad
- Surface Parcel



Original Date: 8/6/2018	Prepared By: GIS
Revision Date: 8/6/2018	Approved By: GIS

Topographic Well Map
WDTN19

This map is property of CNX Resources Corp. and contains information that is proprietary and confidential in nature and may not be copied or reproduced without prior written consent.
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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 07/11/2018 **Date Permit Application Filed:** 8-8-18

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: Michael L. Barnhart Living Trust
Address: 1262 Gem Bridge Rd.
Needmore, PA 17238

Name: _____
Address: _____

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 556994.0940
County: Monongalia Northing: 4393944.8720
District: Battelle Public Road Access: Wise Run Road / CR6
Quadrangle: Wadestown Generally used farm name: Barnhart
Watershed: Dunkard Creek

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: CNX Gas Company, LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Telephone: 724-485-3540
Email: RaymondHoon@CNX.com
Facsimile: _____

Authorized Representative: Raymond Hoon, Permitting Supervisor
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Telephone: 724-485-3540
Email: RaymondHoon@CNX.com
Facsimile: _____

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

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WV Department of
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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: 8-7-18 Date Permit Application Filed: 8-8-18

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

- CERTIFIED MAIL RETURN RECEIPT REQUESTED
- HAND 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: <u>Michael L. Barnhart Living Trust</u>	Name: _____
Address: <u>1262 Gem Bridge Rd.</u> <u>Needmore, PA 17238</u>	Address: _____

Notice is hereby given:

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

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>556994.0940</u>
County: <u>Monongalia</u>	Northing: <u>4393944.8720</u>
District: <u>Battelle</u>	Public Road Access: <u>Wise Run Road / CR6</u>
Quadrangle: <u>Wadestown</u>	Generally used farm name: <u>Barnhart</u>
Watershed: <u>Dunkard 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: <u>CNX Gas Company, LLC</u>	Address: <u>1000 Consol Energy Drive</u>
Telephone: <u>724-485-3540</u>	<u>Canonsburg, PA 15317</u>
Email: <u>RaymondHoon@CNX.com</u>	Facsimile: _____

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
AUG 9 2018
WV Department of
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Bond

KNOW ALL MEN BY THESE PRESENTS:

BOND NO CMS0260702

That CNX Gas Company, LLC
 Address CNX Center, 1000 CONSOL Energy Dr, Canonsburg PA 15317 Phone No 724-485-4000
 as principal, and RLI Insurance Company, a corporation, organized
 and existing under the laws of the State of Illinois, with principal office at
P. O. Box 3967, Peoria, IL 61612, and duly licensed
 and authorized to do business in the State of West Virginia as surety, are held and firmly bound unto the State
 of West Virginia in the just and full sum of Two Hundred Fifty Thousand and NO/100
 Dollars (\$:250,000.00), for the payment whereof well and truly to be made, we bind ourselves, our heirs,
 executors, administrators, successors and assigns jointly and severally by these presents

WITNESS the signatures and seals of said principal and surety, both thereunto duly authorized this 6th day
 of July, 2011

The condition of the above obligation is such, that whereas, the above bound principal has filed with West
 Virginia Division of Highways its written application for a permit to install for heavy hauling on all
(his, its, etc.)
'state local service' roads within District Four in accordance with WV Code 17-1-2B and as defined in
WV Code 17-4-2(d) (herein referred to as "Covered Roads") District Four is made up of six counties.
Harrison, Doddridge, Marion, Monongalia, Taylor and Preston
 along bridges, roads and highways in the State of West Virginia, in manner and form prescribed by The West
 Virginia Division of Highways, which may result in damage to said bridges, roads, highways, shoulders, and
 ditches thereof

Now, if the said CNX Gas Company, LLC
 principal, shall properly repair any and all damages that may result to said bridges, roads, highways, shoulders, and
 ditches, upon which it may perform work, to as good condition as when same was entered upon, as determined by
 the District Engineer of The West Virginia Division of Highways having jurisdiction over the work permitted, or
 pay damages therefore in an amount sufficient to properly restore such bridges, roads, highways, shoulders, and
 ditches to such original condition, and shall reimburse The West Virginia Division of Highways for all inspection
 costs incurred by it in connection with said work and repairs of such damages and faithfully comply with all terms,
 provisions and conditions of said permit and save harmless West Virginia Division of Highways and the State of
 West Virginia from all losses resulting from the conduct of said work or repairs; then this obligation to be void,
 otherwise to remain in full force and effect

By execution of this bond the Principal and the Surety affirm that the text above is a verbatim reproduction of
 The West Virginia Division of Highways Bond Form SM-6, Revised 5-19-05. Attached notarized signatures and
 Power-of-Attorney are a part of this contract.

(SEAL)

(SEAL)

CNX Gas Company, LLC
A Corporation
 By Stephen W. Johnson
 Its Stephen W. Johnson, Manager

(SEAL)

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 Office of Oil and Gas

AUG 9 2018

WV Department of
 Environmental Protection

RLI Insurance Company
A Corporation
 By Heldi A. Noltheisen
 Its Heldi A. Noltheisen Its Attorney-in-Fact

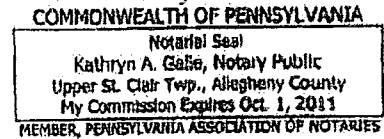
STATE OF Pennsylvania

COUNTY OF Washington, TO-WIT:

I, Kathryn A. Galie, a Notary Public in and for the County and State aforesaid, do hereby certify that Stephen W. Johnson, whose name is signed to the foregoing writing, bearing date the 6th day of July, 2011, has this day acknowledged the same before me in my said County and State

Given under my hand this 8th day of July, 2011
My commission expires October 1, 2011

Kathryn A. Galie
Notary Public



STATE OF _____

COUNTY OF _____, TO-WIT:

I, _____, a Notary Public in and for the County and State aforesaid, do hereby certify that _____, who signed the foregoing writing bearing date the _____ day of _____, 20____, for _____ a corporation, has this day in my said County, before me, acknowledged the said writing to be the act and deed of said corporation.

Given under my hand this _____ day of _____, 20____
My commission expires _____

Notary Public

STATE OF Missouri

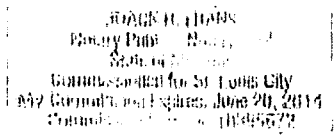
COUNTY OF St. Louis City, TO-WIT:

I, JoAnn R. Frank, a Notary Public in and for the County and State aforesaid, do hereby certify that Heidi A. Notheisen, who signed the foregoing writing bearing date the 6th day of July, 20 11, for RLI Insurance Company

a corporation, has this day in my said County, before me, acknowledged the said writing to be the act and deed of said corporation.

Given under my hand this 6th day of July, 20 2011
My commission expires June 20, 2014

JoAnn R. Frank
Notary Public



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Office of Oil and Gas

AUG 9 2018

WV Department of
Environmental Protection

AUG 9 2018

WV Department of
Environmental Protection



RLI Surety
P.O. Box 3967 | Peoria, IL 61612-3967
Phone: (800)645-2402 | Fax: (309)689-2036
www.rlicorp.com

POWER OF ATTORNEY

RLI Insurance Company

Know All Men by These Presents:

That this Power of Attorney is not valid or in effect unless attached to the bond which it authorizes executed, but may be detached by the approving officer if desired.

That **RLI Insurance Company**, an Illinois corporation, does hereby make, constitute and appoint:

Pamela A. Beelman, Cynthia L. Choren, Heidi A. Notheisen, Debra C. Schneider, JoAnn R. Frank, Karen L. Rojder, Sandra L. Ham,
jointly or severally.

in the City of Saint Louis, State of Missouri its true and lawful Agent and Attorney in Fact, with full power and authority hereby conferred, to sign, execute, acknowledge and deliver for and on its behalf as Surety, the following described bond.

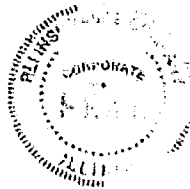
Any and all bonds provided the bond penalty does not exceed Twenty Five Million Dollars (\$25,000,000.00).

The acknowledgment and execution of such bond by the said Attorney in Fact shall be as binding upon this Company as if such bond had been executed and acknowledged by the regularly elected officers of this Company

The RLI Insurance Company further certifies that the following is a true and exact copy of the Resolution adopted by the Board of Directors of RLI Insurance Company, and now in force to-wit:

"All bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or Agents who shall have authority to issue bonds, policies or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

IN WITNESS WHEREOF, the RLI Insurance Company has caused these presents to be executed by its Vice President with its corporate seal affixed this 31st day of March, 2010.



RLI Insurance Company

By: [Signature]
Roy C. Die Vice President

State of Illinois }
County of Peoria } SS

CERTIFICATE

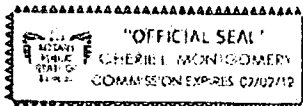
On this 31st day of March, 2010, before me, a Notary Public, personally appeared Roy C. Die, who being by me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of the RLI Insurance Company and acknowledged said instrument to be the voluntary act and deed of said corporation.

I, the undersigned officer of RLI Insurance Company, a stock corporation of the State of Illinois, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable; and furthermore, that the Resolution of the Company as set forth in the Power of Attorney, is now in force. In testimony whereof, I have hereunto set my hand and the seal of the RLI Insurance Company this 6th day of July, 2011.

By: [Signature]
Cherie L. Montgomery Notary Public

RLI Insurance Company

By: [Signature]
Roy C. Die Vice President



61-01815



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

October 18, 2018

Jill M. Newman
Deputy Commissioner

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

Subject: DOH Permit for the WDTN19 Pad, Monongalia County
WDTN19KHSM Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #04-2017-0900 for the subject site to CNX Gas Company LLC, for access to the State Road for the well site located off of Monongalia County Route 6.

The operator has signed an 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
Regional Maintenance Engineer
Central Office Oil & Gas Coordinator

Cc: Shannon Miller
CNX Gas Company LLC
CH, OM, D-4
File

Section V – Proposed Additives to be used in Fracturing or Stimulations

Type: Water CAS: 7732-18-5

Type: Silica CAS: 14808-60-7

Type: Hydrochloric Acid CAS: 7647-01-0

Type: Copolymer of Two Propenamide CAS: 69418-26-4

Type: Petroleum distillate CAS: 64742-47-8

Type: Glutaraldehyde CAS: 111-30-8

Type: Ethylene glycol CAS: 107-21-1

Type: Diethylene glycol mono n-butyl ether CAS: 112-34-5

Type: Oleic acid diethanolamide CAS: 93-83-4

Type: Alcohols, C12-16, ethoxylated CAS: 68551-12-2

Type: Quaternary ammonium compound CAS: 68424-85-1

Type: Ammonium chloride CAS: 12125-02-9

Type: Short chained glycol ether CAS: 112-34-5

Type: Ethoxylated (C10-16) alcohols CAS: 68002-97-1

Type: Metanol CAS: 67-56-1

Type: Formaldehyde CAS: 50-00-0

Type: Thiourea CAS: 62-56-6

Type: Acetophenone CAS: 98-86-2

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Office of Oil and Gas

AUG 9 2018

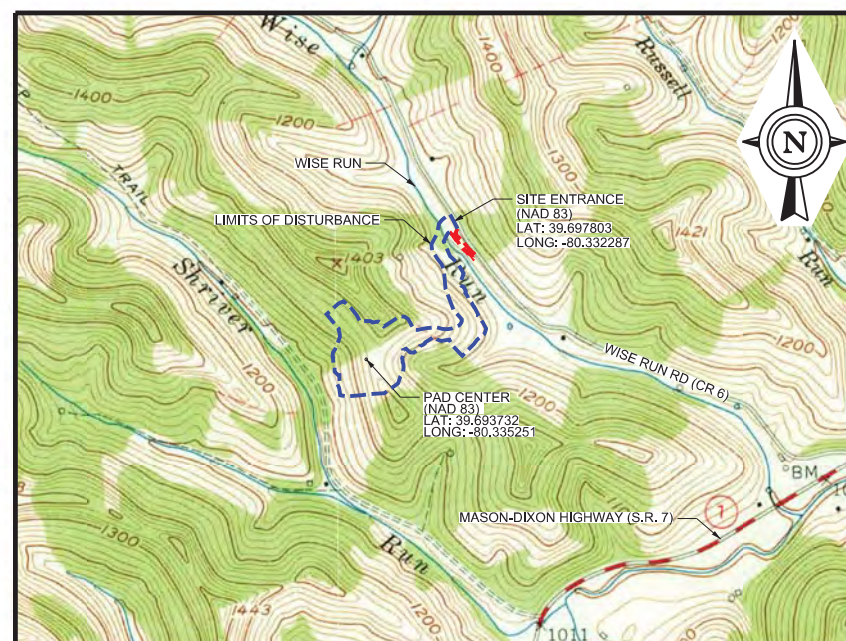
WV Department of
Environmental Protection

EROSION & SEDIMENT CONTROL PLAN & SITE RESTORATION PLAN

WDTN19 WELL SITE MONONGALIA COUNTY, WEST VIRGINIA FOR



DISTURBANCE BREAKDOWN			
LANDOWNER	DISTURBANCE FROM ACCESS ROAD & STOCKPILES (ACRES)	DISTURBANCE FROM WELL PAD & STOCKPILES (ACRES)	TEMPORARY DISTURBANCE (ACRES)
MICHAEL L. BERNHART LIVING TRUST 31-01-8-0009-0000	22	11.9	0.0
BARBARA S. SHRIVER 31-01-8-0012-0000	7.0	0.0	0.4



REFERENCES: UNITED STATES GEOLOGICAL SURVEY - WADESTOWN QUADRANGLE, WV, 7.5 MINUTE SERIES



PROJECT NO. 1816010
SEPTEMBER 2018



DIEFFENBAUCH & HRITZ



INDEX	
DRAWING NO.	TITLE
1	TITLE SHEET
2	GENERAL NOTES
3	EXISTING SITE PLAN
4	SOILS PLAN
5	OVERALL SITE PLAN
6 - 7	PROPOSED SITE PLAN
8	ACCESS ROAD PROFILE
9	ACCESS ROAD CROSS SECTIONS
10	WELL PAD TYPICAL SECTIONS
10A	STOCKPILE CROSS SECTIONS
11	TOE BENCH DETAILS
12-14	E&S DETAILS
15	SITE RESTORATION PLAN
16	REVEGETATION PLAN
17	QUANTITY SUMMARY

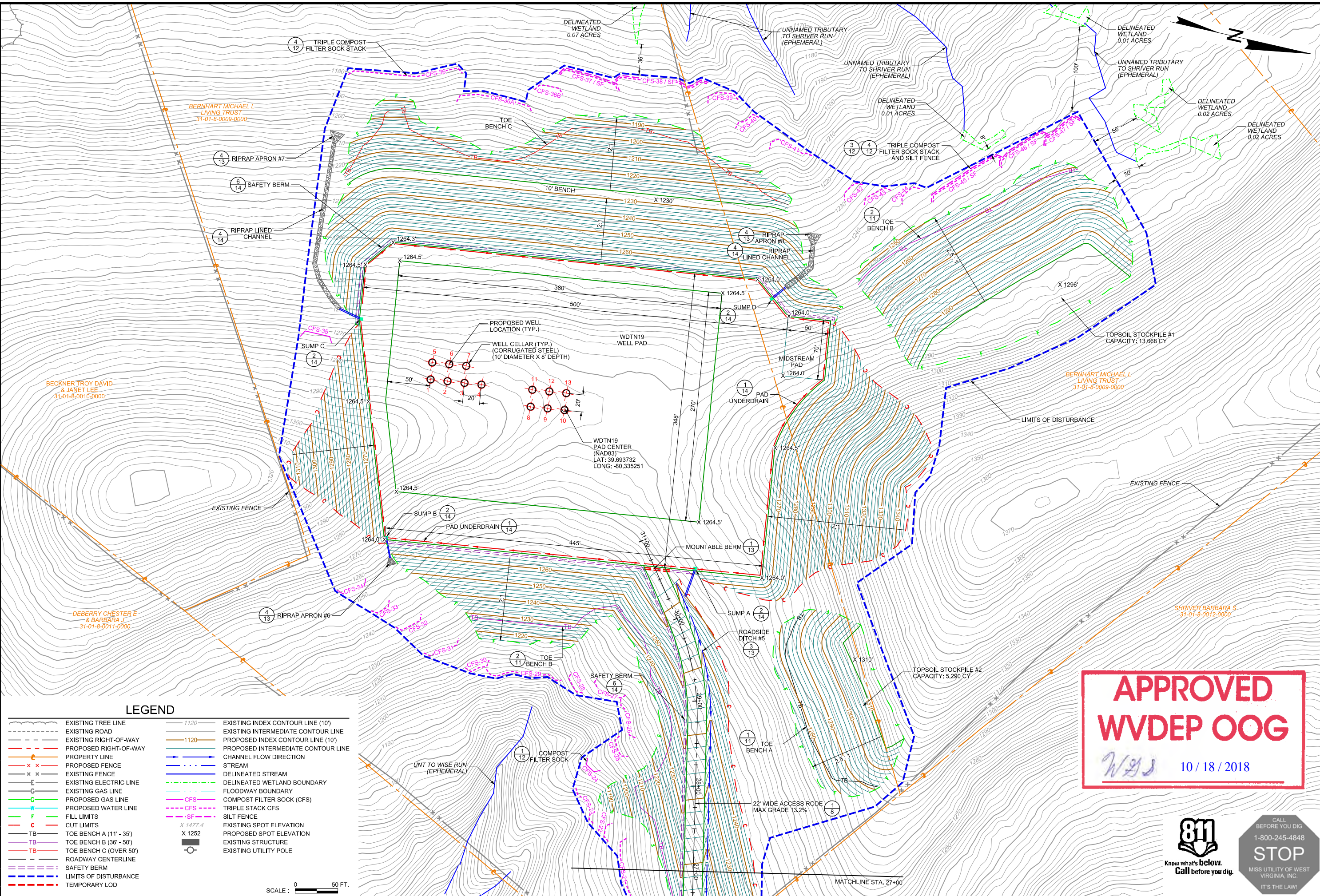
K:\CNX\Weynesburg\1816010 - WDTN19\Plans\E&S\SD01 - TITLE SHEET.dgn 9/25/2018 9:12:43 AM

1:2000



REVISION	NO.	DATE
JLM / MRJ DRAWN		
BKB CHECKED		
HLP APPROVED		
SEP 2018 DATE		
1816010 PROJECT NO.		
DIEFFENBAUCH & HRITZ, LLC 105 Churchman's Alley, Suite 200 Martinsburg, WV 26501 www.dandhengineers.com P: 304.986.5555 F: 304.986.5557		
CLIENT		
PROJECT		
TITLE		

K:\CNX\Weynesburg\1816010-WDTN19\Plans\E&S\SD07_PROPOSED SITE PLAN.dgn 9/25/2018 9:12:59 AM 1:100



LEGEND

- EXISTING TREE LINE
- EXISTING ROAD
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- PROPERTY LINE
- PROPOSED FENCE
- EXISTING FENCE
- EXISTING ELECTRIC LINE
- EXISTING GAS LINE
- PROPOSED GAS LINE
- PROPOSED WATER LINE
- FILL LIMITS
- CUT LIMITS
- TB TOE BENCH A (11' - 35')
- TOE BENCH B (36' - 50')
- TOE BENCH C (OVER 50')
- ROADWAY CENTERLINE
- SAFETY BERM
- LIMITS OF DISTURBANCE
- TEMPORARY LOD
- 1120 EXISTING INDEX CONTOUR LINE (10')
- 1120 EXISTING INTERMEDIATE CONTOUR LINE
- 1120 PROPOSED INDEX CONTOUR LINE (10')
- 1120 PROPOSED INTERMEDIATE CONTOUR LINE
- CHANNEL FLOW DIRECTION
- STREAM
- DELIMITED STREAM
- DELIMITED WETLAND BOUNDARY
- FLOODWAY BOUNDARY
- CFS COMPOST FILTER SOCK (CFS)
- CFS TRIPLE STACK CFS
- SF SILT FENCE
- X 1477.4 EXISTING SPOT ELEVATION
- X 1252 PROPOSED SPOT ELEVATION
- EXISTING STRUCTURE
- EXISTING UTILITY POLE

SCALE: 0 50 FT.

APPROVED
WVDEP OOG
W/S 10/18/2018



REVISION	
DATE	
NO.	
JLM / MRJ DRAWN	
BKB CHECKED	
HLP APPROVED	
SEP 2018 DATE	
1816010 PROJECT NO.	
DIEFFENBAUGH & HRITZ, LLC	
10500 Clarksburg Rd, Suite 200	
Morgantown, WV, 26501	
www.dandhengineers.com	
P: 304.985.5555 F: 304.985.5557	
CLIENT	
PROJECT	WDTN19 WELL SITE
TITLE	PROPOSED SITE PLAN
DRAWING NO.	7