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**west virginia** department of environmental protection

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

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

June 07, 2013

**WELL WORK PERMIT**

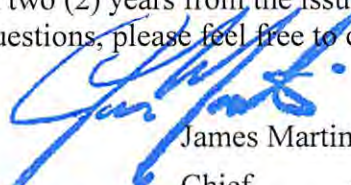
**Horizontal 6A Well**

This permit, API Well Number: 47-103298, issued to CNX GAS COMPANY LLC , is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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

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



James Martin  
Chief

Operator's Well No: AUD5HHS  
Farm Name: JENKINS, DANA L.  
**API Well Number: 47-103298**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 06/07/2013

**Promoting a healthy environment.**

**06/07/2013**



1-03298

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west virginia department of environmental protection

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

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

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

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

DATE: June 6, 2013

ORDER NO.: 2013-W-3

**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 FACT**

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 One Energy Drive, Jane Lew, WV 26378.
3. On February 14, 2013, CNX submitted applications for gas wells identified as API #s 47-001-03293, 47-001-03294, and 47-001-03295; and on March 25, 2013, API #s 47-001-03297, 47-001-03298, 47-001-03299 and, 47-001-03300, located on the AUD5HS Pad in Barbour County, West Virginia.
4. On May 15<sup>th</sup>, 2013, CNX requested a waiver for a wetland along the northern boundary ("wetland") of the proposed well pad outlined in Exhibit 1, from well location restriction requirements in W. Va. Code § 22-6A-12(b) for a gas well permit applications identified as API #s 47-001-03293, 47-001-03294, 47-001-03295, 47-001-03297, 47-001-03298, 47-001-03299 and, 47-001-03300, located on the AUD5HS Pad in Barbour County, West Virginia.

## CONCLUSIONS OF LAW

1. West Virginia Code § 22-1-6(d) requires, in part, that “[i]n 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 “[c]oncomitant 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 “[n]o 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 wellpad 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

Therefore, the Office of Oil and Gas grants CNX Gas Company LLC a waiver for this wetland from well location restriction requirements in W. Va. Code § 22-6A-12(b) for gas well permit applications identified as API #s 47-001-03293, 47-001-03294, 47-001-03295, 47-001-03297, 47-001-03298 , 47-001-03299 and, 47-001-03300, located on the AUD5HS Pad in Barbour County, West Virginia.. The Office of Oil and Gas hereby **ORDERS** that CNX Gas Company LLC shall meet the following site construction and operational requirements for the AUD5HS well pad:

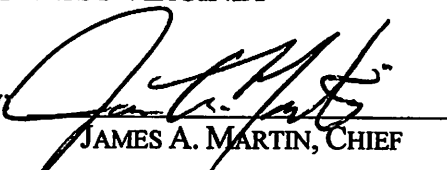
1. CNX Gas Company, LLC shall meet the following site construction and operational requirements for the AUD5HS well pad:
  - a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least two feet (2') in height;
  - b. Filter/silt socks and erosion control blankets shall be installed on all slopes and down gradient locations of the pad and topsoil pile areas steeper than 3H:1V, as erosion and sediment controlling BMPs;
  - c. The wetland shall have a compost filter sock installed no less than twenty-five feet (25') away from the northern boundary;
  - 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. Drilling muds 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 6<sup>th</sup> day of June 2013.

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

103298

OFFICE OF THE BARBOUR DEMOCRAT

I, John Eric Cutright, Publisher of The BARBOUR DEMOCRAT published in the City of Philippi, County of Barbour, and certify that the annexed:

LEGAL NOTICE

was duly printed in said paper two consecutive weeks on Wednesday, the 20<sup>TH</sup> day of March, 2013.

Given under my hand at Philippi, West Virginia, this 27<sup>TH</sup>

*[Signature]*, Publisher

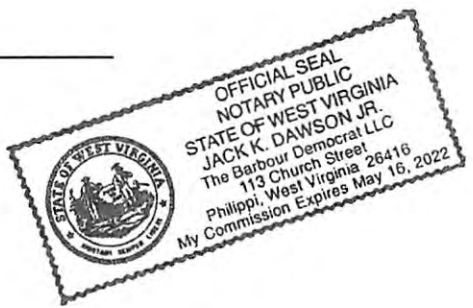
Printer's Fee.....

STATE OF WEST VIRGINIA  
COUNTY OF BARBOUR; to wit

Sworn to and subscribed before me this 27<sup>TH</sup> day of March, 2013.

*[Signature]*  
NOTARY PUBLIC

My Commission Expires May 16, 2022.



WW-PN (5-04-2012) Horizontal Natural Gas Well Work Permit Application Notice By Publication

Notice is hereby given: Pursuant to West Virginia Code 22-6A-10(e) prior to filing an application for a permit for a horizontal well the applicant shall publish in the county in which the well is located or is proposed to be located a Class II legal advertisement.

Paper: The Barbour Democrat  
 Public Notice Date: 03/20/13 & 3/27/13

The following applicant intends to apply for a horizontal natural well work permit which disturbs three acres or more of surface excluding pipelines, gathering lines and roads or utilizes more than two hundred ten thousand gallons of water in any thirty day period.

Applicant: CNX Gas Company, LLC Well Number: AUD5GHS, AUD5HHS, AUD5IHS, AUD5JHS  
 Address: PO Box 1248  
Jane Lew, WV 26378  
 Business Conducted: Natural gas production.  
 Location -  
 State: West Virginia County: Barbour  
 District: Union Quadrangle: Audra  
 UTM Coordinate NAD83 Northing: 4,328,489.38m, 4,328,485.69m, 4,328,481.78m, & 4,328,478.01m  
 UTM coordinate NAD83 Easting: 578,716.14m, 578,711.36m, 578,706.56m, & 578,701.80m  
 Watershed: Buckhannon River

Coordinate Conversion:  
 To convert the coordinates above into longitude and latitude, visit: [http://tagis.dep.wv.gov/convert/llutm\\_conus.php](http://tagis.dep.wv.gov/convert/llutm_conus.php)

Electronic notification:  
 To receive an email when applications have been received or issued by the Office of Oil and Gas, visit <http://www.dep.wv.gov/insidedep/Pages/DEPMailingLists.aspx> to sign up.

Reviewing Applications:  
 Copies of the proposed permit application may be reviewed at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE Charleston, WV 25304 (304-926-0450). Full copies or scans of the proposed permit application will cost \$15, whether mailed or obtained at DEP headquarters. Copies may be requested by calling the office or by sending an email to DEP.oog@wv.gov.

Submitting Comments:  
 Comments may be submitted online at <https://apps.dep.wv.gov/oog/comments/comments.cfm>, or by letter to Permit Review, Office of Oil and Gas, 601 57th Street, SE Charleston, WV 25304. Please reference the county, well number, and operator when using this option.

Regardless of format for comment submissions, they must be received no later than thirty days after the permit application is received by the Office of Oil and Gas.

For information related to horizontal drilling visit: [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx)  
 3-20,27

06/07/2013

# 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

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1. The subject application contains information which indicates that the proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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 fifty (50) 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 fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.

06/07/2013



**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION**

1) Well Operator: CNX Gas Company, LLC 494458046 Barbour Union Audra  
Operator ID County District Quadrangle

2) Operator's Well Number: AUD5HHS Well Pad Name: AUD5HS

3 Elevation, current ground: 1622' Elevation, proposed post-construction: 1620'

4) Well Type: (a) Gas  Oil   
Other \_\_\_\_\_  
(b) If Gas: Shallow  Deep \_\_\_\_\_  
Horizontal

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):  
Target - Marcellus, Depth - 7880, Thickness - 90', Pressure - 2642#

7) Proposed Total Vertical Depth: 8070'

8) Formation at Total Vertical Depth: Onondaga Group

9) Proposed Total Measured Depth: 15000'

10) Approximate Fresh Water Strata Depths: 72', 165', 505'

11) Method to Determine Fresh Water Depth: Reference Well # 33306 API # 47-001-02985 - Seneca Technology data base

12) Approximate Saltwater Depths: None Anticipated

13) Approximate Coal Seam Depths: 165', 505'

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

15) Does land contain coal seams tributary or adjacent to, active mine? No

16) Describe proposed well work: Drill and stimulate new horizontal Marcellus well. Well to be drilled to a TMD of 15000'. Well to be drilled to a TVD of 8070', formation at TVD - Huntersville Chert. Well will be plugged back to an approximate depth of 7200' (approximate due to exact Kick of point being unknown). Plugging back will be done using the displacement method and Class A type cement. A solid cement plug will be set from TD to KOP. If an unexpected void is encountered, plan will be to set casing at a minimum of 30' past void and cement to surface with approved Class A type cement. Well bore will not be drilled any deeper than 100' into the Onondaga Group, nor will there be any production, perforation, or stimulation of any formations below the target formation.

17) Describe fracturing/stimulating methods in detail:  
The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 16.62 Acres

19) Area to be disturbed for well pad only, less access road (acres): 11.88 Acres

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**MAY 20 2013**

**WV Department of**  
**Environmental Protection**

**06/07/2013**

*AM Count  
12-20-12*

20)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft.</b>	<b>FOOTAGE: For Drilling</b>	<b>INTERVALS: Left in Well</b>	<b>CEMENT: Fill -up (Cu. Ft.)</b>
Conductor	20"	N	L.S.	81.3#	30'	30'	Sand In
Fresh Water	13 3/8"	N	J-55	54.5#	600'	600'	CTS w/ approved Class A Type Cement
Coal							
Intermediate	9 5/8"	N	J-55	36#	2000'	2000'	CTS w/ approved Class A Type Cement
Production	5 1/2"	N	P-110	20#	15000'	15000'	2400 cu. ft. w/ 50/50 POZ Lead & Class A Tail
Tubing	2 3/8"	N	J-55	4.7#	8380'	8380'	
Liners							

<b>TYPE</b>	<b>Size</b>	<b>Wellbore Diameter</b>	<b>Wall Thickness</b>	<b>Burst Pressure</b>	<b>Cement Type</b>	<b>Cement Yield</b>
Conductor	20"	26"	0.438	2110	Class A Type	1.18
Fresh Water	13 3/8"	17 1/2"	0.380	2730	Class A Type	1.39
Coal						
Intermediate	9 5/8"	12 3/8"	0.352	3520	Class A Type	1.18
Production	5 1/2"	8 3/4" and 8 1/2"	0.361	12640	Class A Type	1.26
Tubing	2 3/8"	8 3/4" and 8 1/2"	0.190	7700	.....	.....
Liners						

**PACKERS**

Kind:	None			
Sizes:	None			
Depths Set:	None			

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21) Describe centralizer placement for each casing string. Conductor - No centralizers used. Fresh Water & Coal -  
Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Intermediate - Bow spring  
centralizers one on the first two joints and every fourth joint until inside surface casing. Production - Rigid bow spring  
centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve.  
(Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

22) Describe all cement additives associated with each cement type. Conductor - 2% CaCl2.  
Fresh Water/Coal - 2% CaCl2. Intermediate - 2% CaCl2. Production - 2.6% Cement extender, 0.7% Fluid loss additive,  
0.5% High Temperature Retarder, 0.2% Friction Reducer

23) Proposed borehole conditioning procedures. Conductor - The hole is drilled w/air and casing ran in air. Apart from insuring  
the hole is clean via air circulation at TD, there are no other conditioning procedures. Fresh Water/Coat - The hole is drilled w/air and casing is ran  
in air. Once casing is on bottom, the casing shoe will be cleared with fresh water and gel prior to cementing. Intermediate - The hole is drilled  
w/air and casing is ran in air. Once casing is on at bottom, the casing shoe will be cleared with fresh water and gel prior to cementing. (Note:  
Drilling soap may be utilized if the hole gets wet/damp during the drilling of all air holes with the exception of the conductor) Production -  
The hole will be drilled with synthetic oil base mud and once at TD the hole is circulated at a drilling pump rate until the hole is  
clean, Once casing is ran the hole is circulated for a minimum of one hole volume prior to pumping cement.

\*Note: Attach additional sheets as needed.

FEB 14 2013

## Cement Additives

- Conductor – 2% CaCl<sub>2</sub>
- Freshwater/Coal – 2% CaCl<sub>2</sub>
- Intermediate - 2% CaCl<sub>2</sub>
- Production -
  - 2.6% Cement extender
  - 0.7% Fluid Loss Additive
  - 0.5% High Temperature Retarder
  - 0.2% Friction Reducer

FEB 14 2013

06/07/2013

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

**CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE**

Operator Name CNX Gas Company, LLC OP Code 494458046

Watershed Buckhannon River Quadrangle Audra

Elevation 1622' County Barbour District Union

Description of anticipated Pit Waste: Fluids associated with the drilling of new gas wells

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

Will a synthetic liner be used in the pit? Yes . If so, what mil.? 60 ml

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Recycle on other well on same pad or adjacent pads)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air + Waterbased Mud

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

Additives to be used? Bactericide, Polymers and Weighting Agents

Will closed loop system be used? No


Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

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

-Landfill or offsite name/permit number? MeadowFill, S&S Landfill, and Northwestern Landfill

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.

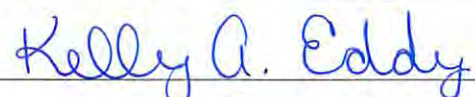
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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 

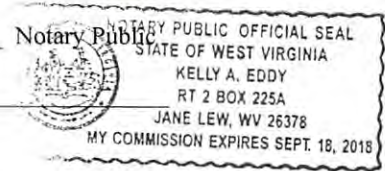
Company Official (Typed Name) Jeremy Jones

Company Official Title Designated Agent - General Manager WV Gas Operations

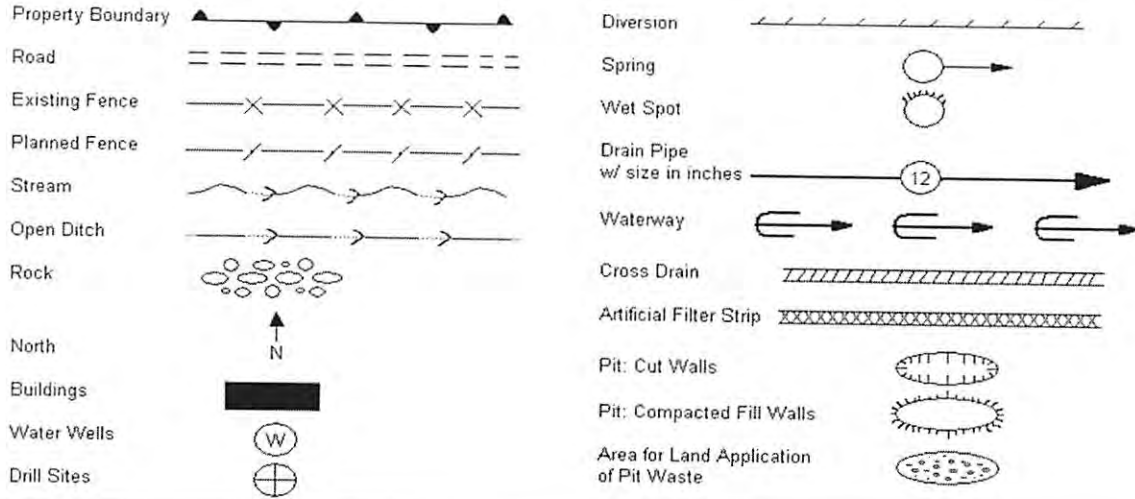
Subscribed and sworn before me this 20<sup>th</sup> day of March, 20 13



My commission expires September 18, 2018







Proposed Revegetation Treatment: Acres Disturbed 16.75 Prevegetation pH 6.5

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

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Hay or Straw at 2 Tons/acre

Seed Mixtures

Seed Type	Area I lbs/acre	Seed Type	Area II lbs/acre
Orchardgrass	25	Orchardgrass	25
Birdsfoot Trefoil	15	Birdsfoot Trefoil	15
Landino Clover	10	Landino Clover	10

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: JAMcCourt

Comments: \_\_\_\_\_

Title: Inspector Date: 12-20-12

Field Reviewed?  Yes  No

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Department of Environmental Protection

✓ 3/25



## Water Management Plan: Secondary Water Sources



WMP-01109	API/ID Number	047-001-03298	Operator:	Consol Energy - WV
		AUD5HHS		

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

### Multi-site impoundment

Source ID:	14192	Source Name	Warder North Impoundment	Source start date:	5/1/2013
				Source end date:	5/1/2014
Source Lat:	39.192505	Source Long:	-80.025198	County	Barbour
Max. Daily Purchase (gal)		Total Volume from Source (gal):			3,696,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-189

APPROVED MAY 24 2013

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 14193	Source Name	Warder South Impoundment	Source start date:	5/1/2013
			Source end date:	5/1/2014
	Source Lat:	39.19097	Source Long:	-80.025198
			County	Barbour
	Max. Daily Purchase (gal)		Total Volume from Source (gal):	3,570,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-190



WMP-01109

API/ID Number 047-001-03298

Operator:

Consol Energy - WV

AUD5HHS

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

**Recycled Frac Water**

Source ID: 14194	Source Name	ALT 1 Flowback Pit	Source start date:	5/1/2013	
			Source end date:	5/1/2014	
Source Lat:	38.793967	Source Long:	80.183196	County	Barbour
Max. Daily Purchase (gal)		Total Volume from Source (gal):	3,977,064		

DEP Comments:

Source ID: 14195	Source Name	PHL 1 Flowback Pit	Source start date:	5/1/2013	
			Source end date:	5/1/2014	
Source Lat:	39.192372	Source Long:	-80.018833	County	Barbour
Max. Daily Purchase (gal)		Total Volume from Source (gal):	1,793,358		

DEP Comments:

06/07/2013

**Important:**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

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Source ID: 14196 Source Name Various

Source start date: 5/1/2013

Source end date: 5/1/2014

Source Lat:

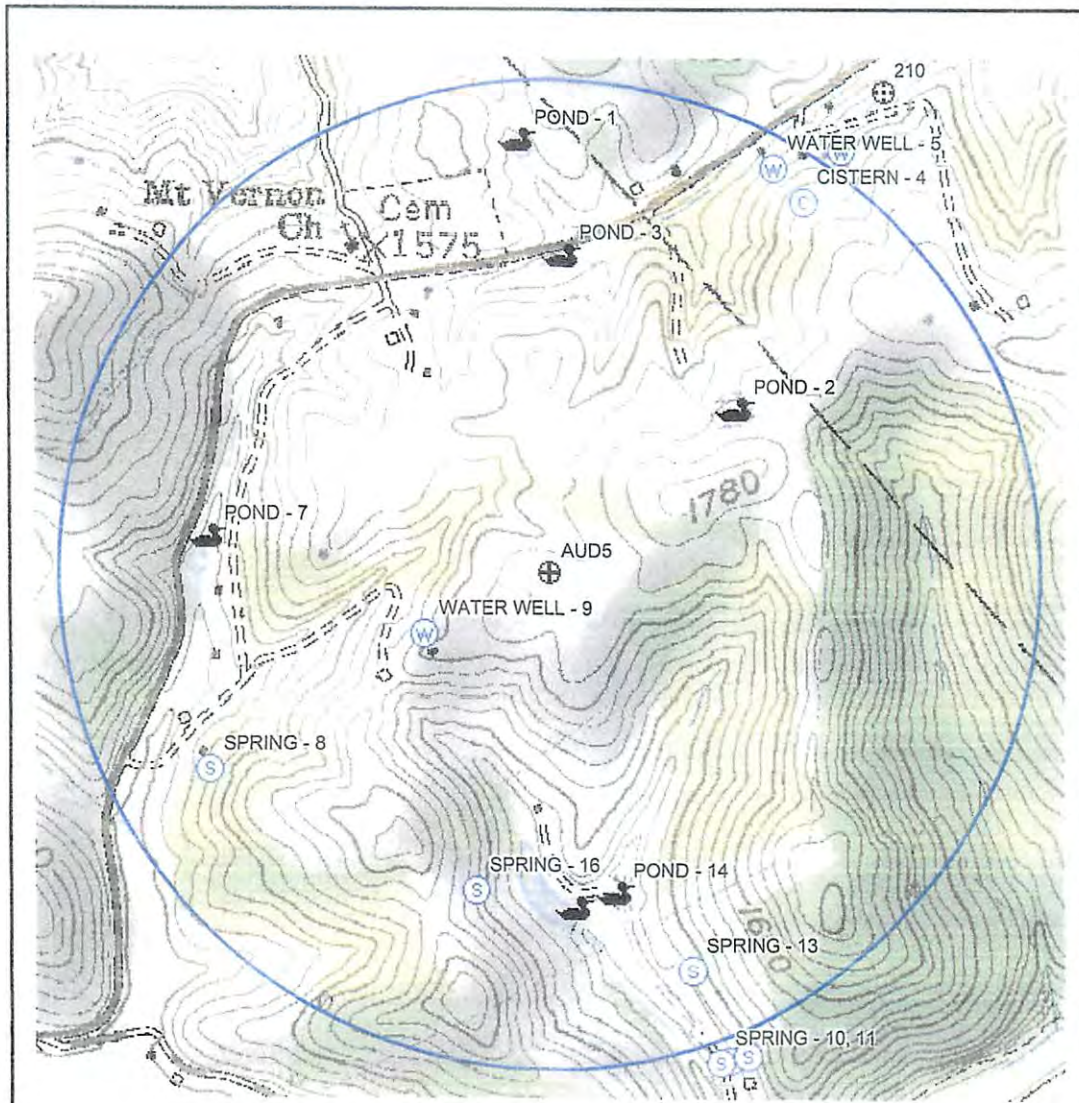
Source Long:

County

Max. Daily Purchase (gal)

Total Volume from Source (gal): 110,000

DEP Comments:



- 1, 221943.668, 1832410.503, 1562.451, "pond"
- 2, 220573.401, 1833506.819, 1640.938, "pond"
- 3, 221363.185, 1832635.691, 1540.707, "pond"
- 4, 221634.119, 1833862.689, 1618.017, "cistern"
- 5, 221796.589, 1833719.590, 1565.516, "waterwell"
- 6, 221883.137, 1834071.203, 1580.238, "waterwell"
- 7, 219951.108, 1830812.684, 1433.234, "pond"
- 8, 218796.096, 1830811.980, 1489.336, "spring"
- 9, 219451.968, 1831909.709, 1586.264, "waterwell"
- 10, 217306.147, 1833447.137, 1435.303, "spring"
- 11, 217297.414, 1833402.154, 1448.107, "spring"
- 12, 217328.623, 1833538.859, 1466.983, "spring"
- 13, 217755.762, 1833265.477, 1468.789, "spring"
- 14, 218138.742, 1832883.088, 1428.574, "pond"
- 15, 218065.575, 1832674.142, 1430.419, "pond"
- 16, 218171.800, 1832158.006, 1533.282, "spring"

COORDINATE BASIS  
NAD27 WV N STATE PLANE

FEB 14 2013

LAND SURVEYING SERVICES  
21 Cedar Lane  
Bridgeport, WV 26330  
304-842-2018

CNX Gas Company LLC P. O. Box 1248 Jane Lew, WV 26378		
<b>PLAT SHOWING WATER PURVEYORS WITHIN 2,500 FEET OF THE AUDSHS PAD CENTER</b>		
<b>DISTRICT</b> Union	<b>COUNTY</b> Barbour	<b>STATE</b> WV
<b>DATE</b> Oct. 26, 2012	<b>SCALE</b> 1" = 733.33 ft.	<b>DWG NO.</b> aud5wtrpur 06/07/2013



WELL REFERENCES:

S69-46E, 216.15' TO UTILITY POLE  
N23-06E, 369.62' TO 14" W. OAK

LATITUDE 39-07-30

SCALED COOR.:

8420' SOUTH  
1860' WEST

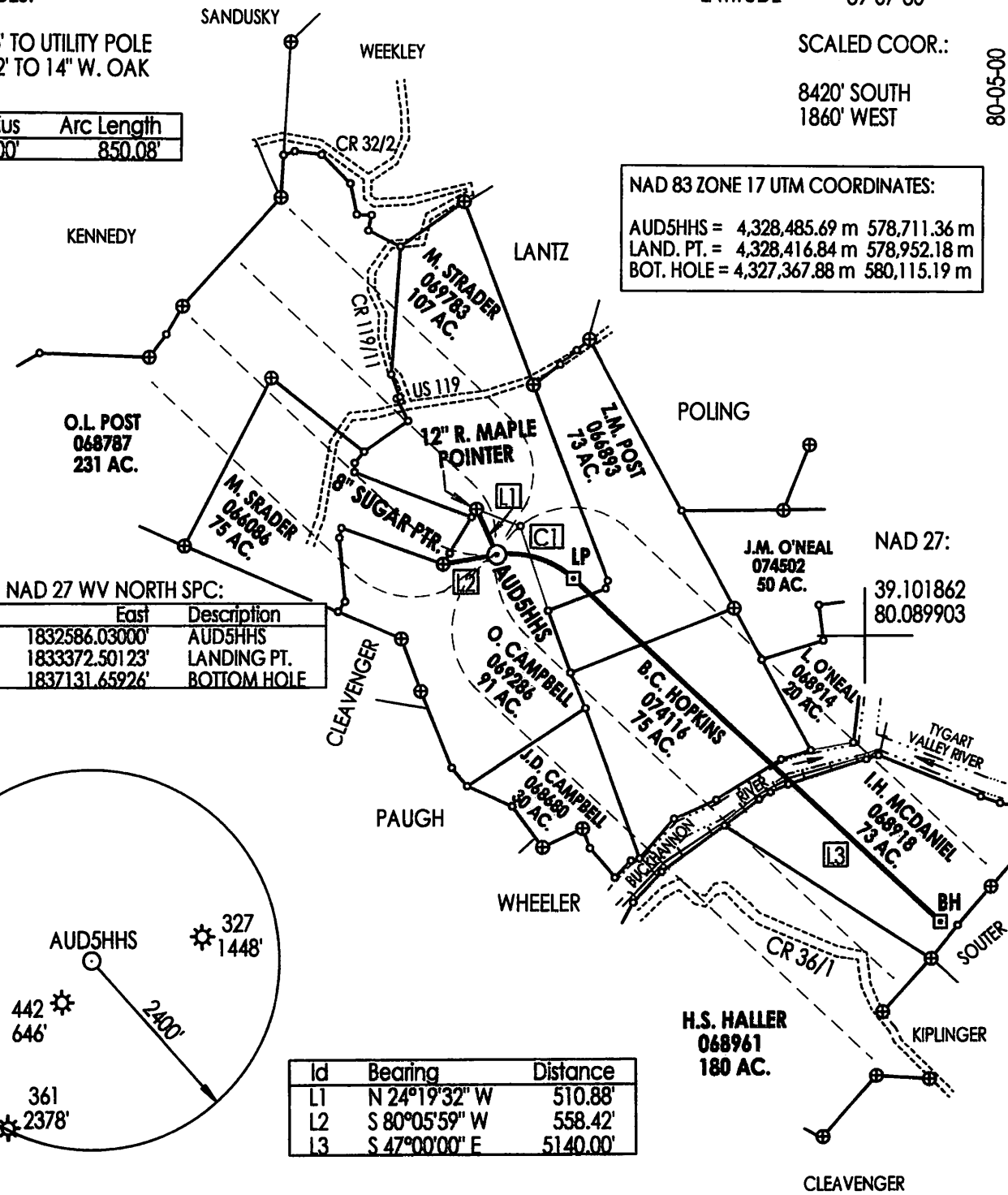
80-05-00

Id	Radius	Arc Length
C1	950.00'	850.08'

NAD 83 ZONE 17 UTM COORDINATES:

AUD5HHS = 4,328,485.69 m 578,711.36 m  
LAND. PT. = 4,328,416.84 m 578,952.18 m  
BOT. HOLE = 4,327,367.88 m 580,115.19 m

GRID NORTH

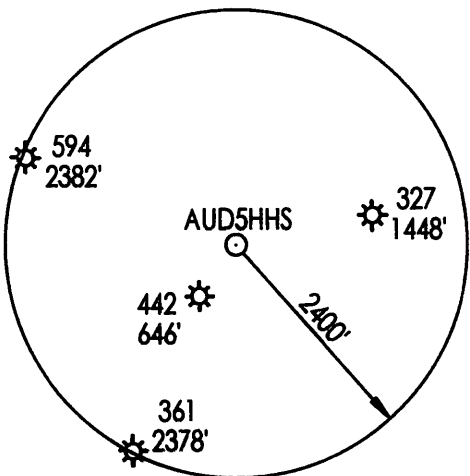


NAD 27 WV NORTH SPC:

North	East	Description
219760.54000'	1832586.03000'	AUD5HHS
219521.48472'	1833372.50123'	LANDING PT.
216016.01315'	1837131.65926'	BOTTOM HOLE

NAD 27:

39.101862  
80.089903



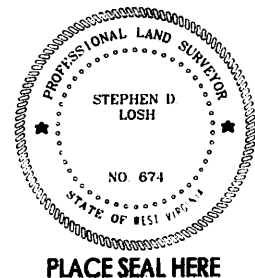
Id	Bearing	Distance
L1	N 24°19'32" W	510.88'
L2	S 80°05'59" W	558.42'
L3	S 47°00'00" E	5140.00'

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

FILE NUMBER: \_\_\_\_\_  
DRAWING NUMBER: CNXAUD5HHSR3.PCS  
SCALE: 1" = 1600'  
MINIMUM DEGREE OF ACCURACY: SUBMETER  
PROVEN SOURCE OF ELEVATION: RTK GPS SURVEY  
CENTIMETER SYSTEM

I THE UNDERSIGNED, HEREBY STATE 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 ENERGY.

(SIGNED) \_\_\_\_\_  
STEPHEN D. LOSH, P.S. #674



STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS  
#10 McJUNKIN ROAD  
NITRO, WV 25143-2506

LAND SURVEYING SERVICES  
21 CEDAR LANE, BRIDGEPORT, WV 26330  
PHONE: 304-842-2018 OR 842-5762

DATE: JANUARY 17, 2013

OPERATORS WELL NO.: AUD5HHS

API WELL NO. 47-001-03298 H6A

STATE WV COUNTY BARBOUR PERMIT SEE ABOVE

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  CBM   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1621.50' (494.24 m) WATERSHED BUCKHANNON RIVER

DISTRICT UNION COUNTY BARBOUR

QUADRANGLE AUDRA LEASE NUMBER SEE ABOVE

SURFACE OWNER DANA L. JENKINS ACREAGE 50.00 (10-42)

OIL & GAS ROYALTY OWNER O. CAMPBELL, ET. AL. LEASE ACREAGE 1005.00

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION   
PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE (SPECIFY) HORIZONTAL

PLUG & ABANDON  CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD = 8120' TMD = 15000'

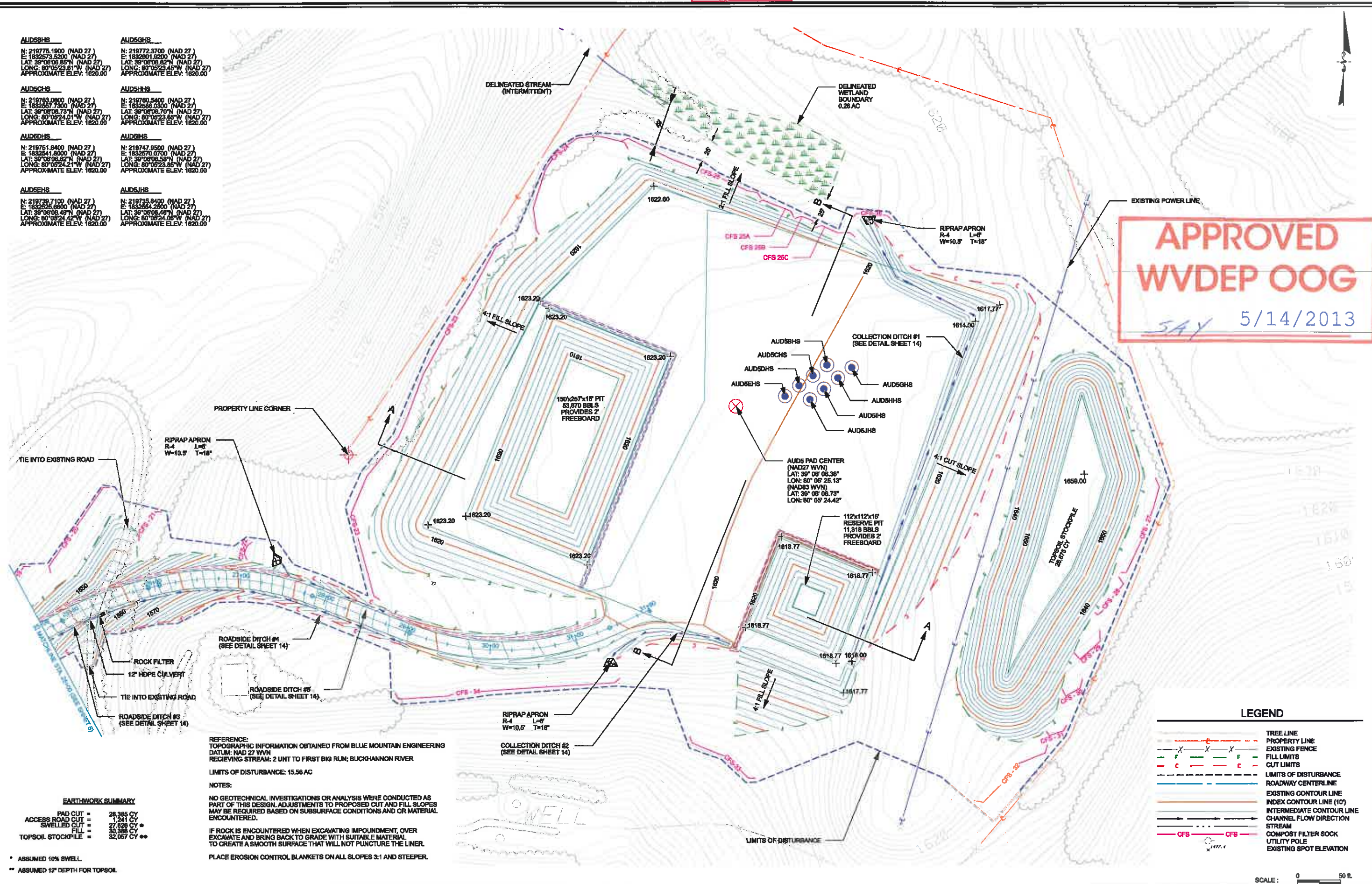
WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT JEREMY JONES

ADDRESS P. O. BOX 1248 JANE LEW, WV 26378 ADDRESS P. O. BOX 1248 JANE LEW, WV 26378

COUNTY NAME PERMIT



<b>AUD5BHS</b> N: 219776.1900 (NAD 27) E: 1832573.5000 (NAD 27) LAT: 39°08'08.85"N (NAD 27) LONG: 80°05'23.81"W (NAD 27) APPROXIMATE ELEV: 1620.00	<b>AUD5GHS</b> N: 219772.8700 (NAD 27) E: 1832561.8200 (NAD 27) LAT: 39°08'08.82"N (NAD 27) LONG: 80°05'23.45"W (NAD 27) APPROXIMATE ELEV: 1620.00
<b>AUD5CHS</b> N: 219783.0800 (NAD 27) E: 1832567.7300 (NAD 27) LAT: 39°08'09.73"N (NAD 27) LONG: 80°05'24.01"W (NAD 27) APPROXIMATE ELEV: 1620.00	<b>AUD5IHS</b> N: 219780.5400 (NAD 27) E: 1832568.0300 (NAD 27) LAT: 39°08'09.70"N (NAD 27) LONG: 80°05'23.85"W (NAD 27) APPROXIMATE ELEV: 1620.00
<b>AUD5DHS</b> N: 219751.8400 (NAD 27) E: 1832841.8000 (NAD 27) LAT: 39°08'09.62"N (NAD 27) LONG: 80°05'24.21"W (NAD 27) APPROXIMATE ELEV: 1620.00	<b>AUD5JHS</b> N: 219747.8500 (NAD 27) E: 1832570.0700 (NAD 27) LAT: 39°08'09.59"N (NAD 27) LONG: 80°05'23.85"W (NAD 27) APPROXIMATE ELEV: 1620.00
<b>AUD5EHS</b> N: 219739.7100 (NAD 27) E: 1832525.6800 (NAD 27) LAT: 39°08'08.46"N (NAD 27) LONG: 80°05'24.42"W (NAD 27) APPROXIMATE ELEV: 1620.00	<b>AUD5KHS</b> N: 219735.8400 (NAD 27) E: 1832564.2800 (NAD 27) LAT: 39°08'08.46"N (NAD 27) LONG: 80°05'24.05"W (NAD 27) APPROXIMATE ELEV: 1620.00



**APPROVED**  
**WVDEP OOG**  
5/14/2013

REFERENCE:  
TOPOGRAPHIC INFORMATION OBTAINED FROM BLUE MOUNTAIN ENGINEERING  
DATUM: NAD 27 WVN  
RECEIVING STREAM: 2 UNT TO FIRST BIG RUN; BUCKHANNON RIVER

LIMITS OF DISTURBANCE: 15.58 AC

NOTES:  
NO GEOTECHNICAL INVESTIGATIONS OR ANALYSIS WERE CONDUCTED AS PART OF THIS DESIGN. ADJUSTMENTS TO PROPOSED CUT AND FILL SLOPES MAY BE REQUIRED BASED ON SUBSURFACE CONDITIONS AND/OR MATERIAL ENCOUNTERED.  
IF ROCK IS ENCOUNTERED WHEN EXCAVATING IMPOUNDMENT, OVER EXCAVATE AND BRING BACK TO GRADE WITH SUITABLE MATERIAL TO CREATE A SMOOTH SURFACE THAT WILL NOT PUNCTURE THE LINER.  
PLACE EROSION CONTROL BLANKETS ON ALL SLOPES 3:1 AND STEEPER.

**EARTHWORK SUMMARY**

PAD CUT	=	28,385 CY
ACCESS ROAD CUT	=	1,241 CY
SWELLED CUT	=	27,528 CY
FILL	=	30,388 CY
TOPSOIL STOCKPILE	=	32,057 CY

\* ASSUMED 10% SWELL  
\*\* ASSUMED 12" DEPTH FOR TOPSOIL

**LEGEND**

	TREE LINE
	PROPERTY LINE
	EXISTING FENCE
	FILL LIMITS
	CUT LIMITS
	LIMITS OF DISTURBANCE
	ROADWAY CENTERLINE
	EXISTING CONTOUR LINE
	INDEX CONTOUR LINE (10')
	INTERMEDIATE CONTOUR LINE
	CHANNEL FLOW DIRECTION
	STREAM
	COMPOST FILTER SOCK
	UTILITY POLE
	EXISTING SPOT ELEVATION

SCALE: 0 50 ft.

Revision	
Author	
Check	
Drawn	
Scale	1"=100'
Date	AUGUST 2012
Project No.	1120028
Client	CHX GAS COMPANY LLC
Project	AUD5HS WELL SITE
Sheet	6
Design No.	

Dieffenbach & Hritz  
Morgantown, WV