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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, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

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

Friday, September 30, 2016  
WELL WORK PERMIT  
Vertical / Plugging

CNX GAS COMPANY LLC  
POST OFFICE BOX 1248

JANE LEW, WV 263786506

Re: Permit approval for 10844  
47-045-00868-00-00

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: 10844  
Farm Name: BOONE COUNTY COAL  
U.S. WELL NUMBER: 47-045-00868-00-00  
Vertical / Plugging  
Date Issued: 9/30/2016

Promoting a healthy environment.

09/30/2016

# PERMIT CONDITIONS

West Virginia Code § 22-6-11 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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged within two years of the date of issuance of this permit.

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_\_/ Gas X/ Liquid injection \_\_\_\_/ Waste disposal \_\_\_\_/  
(If "Gas, Production X or Underground storage \_\_\_\_ ) Deep \_\_\_\_/ ShallowX

5) Location: Elevation 1391 ft. Watershed Spruce Fork  
District Logan County Logan Quadrangle Amhersdale

6) Well Operator CNX Gas Company LLC 7) Designated Agent Anthony Kendziora  
Address 627 Claypool Hill Mall Road Address One Dominion Drive  
Cedar Bluff, VA 24609 Jane Lew, WV 26378

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Jeffery Smith Name Skyline Contracting Inc.  
Address 5369 Big Tyler Road Address PO Box 663  
Cross Lanes, WV 25313 Oakwood, VA 24631

10) Work Order: The work order for the manner of plugging this well is as follows:  
**see attached plugging procedures**

RECEIVED  
Office of Oil and Gas

AUG 26 2016

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence. WV Department of Environmental Protection

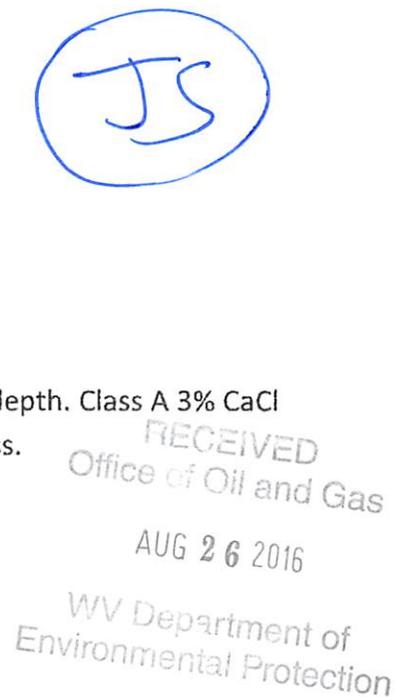
Work order approved by inspector Jeffrey Smith Date 8-16-16

09/30/2016

API 47-045-00868 Plugging ProcedureWell # 10844

1. Verify total depth 3453'.
2. Run free-point survey on 4-1/2" casing.
3. Run tubing to TD. Set plug of Class A 3% CaCl cement from established TD to approximately 50' below free point or a point at least 100' above the Big Lime Perforations (2818' -2826').
4. Cut 4-1/2" casing at free-point.
5. Cement through 4-1/2" casing while pulling the free pipe to approximately 100' below the 8-5/8" casing shoe. (Approx. 1635').
6. Run free-point survey on 8-5/8" casing.
7. Run tubing to previous cement top (1635'). Cement across the 8-5/8" shoe to a minimum of 50' above shoe, bringing cement top to approximately 50' below the 8-5/8" free-point.
8. Cut 8-5/8" casing at free-point and remove from well.
9. Cement from top of previous cement to approximately 100' below the 11-3/4" casing shoe (Approx 463').
10. Run free-point survey on 11-3/4" csg.
11. Pull 11-3/4" and 20" casing if free.
12. Cement from 463' to surface.
13. Install 4-1/2" X 4' steel monument with API# and Date.

NOTE: A 100' gel spacer will be placed at approximately half the well depth. Class A 3% CaCl cement will be utilized throughout the entire cementing process.



10844 (1966) 47-045-00868

4500868P

20" set @ 18'

11<sup>3</sup>/<sub>4</sub>" set @ 363' 42# csg. 30 bags cement

8<sup>5</sup>/<sub>8</sub>" set @ 1535' 24# csg. 30 bags cement

4<sup>1</sup>/<sub>2</sub>" set @ 3453' 10.5# csg. 300 bags cement

6<sup>1</sup>/<sub>2</sub>" DTD @ 3453'

Big Lime Perfs	2818' to 2826'	3 shots/ft	24 holes
Berea Sand Perfs	3367' to 3375'	3 shots/ft	24 holes

4500868P



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION 6

Rotary   
Spudder   
Cable Tools   
Storage

Quadrangle LOGAN

Permit No. LOG-868

**WELL RECORD**

Oil or Gas Well GAS  
(KIND)

Company Consolidated Gas Supply Corporation  
Address 115 West Main Street Clarksburg, W. Va.  
Farm Boon County Coal Company Acres 29,000  
Location (waters) Sandy Fork  
Well No. 10811 Elev. 1,391'  
District Logan County Logan  
The surface of tract is owned in fee by Kelly-Hatfield  
Land Co. Address Huntington, W. Va.  
Mineral rights are owned by Island Creek Coal Co.  
Address Amnerstdale W. Va.  
Drilling commenced June 23, 1966  
Drilling completed July 11, 1966  
Date Shot Not Shot From          To           
With           
Open Flow          /10ths Water in          Inch  
         /10ths Merc. in          Inch  
Volume          Cu. Ft.  
Rock Pressure          lbs.          hrs.  
Oil          bbls., 1st 24 hrs.  
WELL ACIDIZED (DETAILS) 8,000 Gals.  
WELL FRACTURED (DETAILS) Haliburton 8/2/66 32,160 Gal Water 60,000# Sand

Casing and Tubing	Used in Drilling	Left in Well
Size		
<del>18</del> 20"	18	18
<del>113/11</del> "	360	360
10		
<del>8 5/8</del> "	1,535	1,535
6 3/4		
5 3/16		
4 1/2	3,453	3,453
3		
2		
Liners Used	360	360

Packers  
Kind of Packer Steel Shoe  
Size of 113/11 85/8 1 1/2  
Depth set 360'  
1,535' & 3,453'  
Perf. top 2818'  
Perf. bottom 2826'  
Perf. top 3367'  
Perf. bottom 3376'

Attach copy of cementing record.  
CASING CEMENTED 4 1/2 SIZE 3,453 No. Ft. 7/11/66 Date  
Amount of cement used (bags) 100 Cu. Feet.  
Name of Service Co. Well Service Co.  
COAL WAS ENCOUNTERED AT 320 FEET Mined Out          INCHES  
522 FEET 60 INCHES FEET INCHES  
FEET INCHES FEET INCHES  
WELL FRACTURED (DETAILS) Haliburton 8/2/66 32,160 Gal Water 60,000# Sand

RESULT AFTER TREATMENT (Initial open Flow or bbls.) 273,000CF.  
ROCK PRESSURE AFTER TREATMENT 630 HOURS 24  
Fresh Water 30 & 86 Feet Salt Water 1481 & 1560 Feet  
Producing Sand Big Lime & Berea Depth 2818 & 3367'

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Soil			00	26			
Sand			26	36	Water	30	Fresh
Sandy Shale			36	245	Water	86	Fresh
lime			245	256			
shaly Sand			256	320			
COAL			320	338			Mined Out
Sandy Shale			338	522			
COAL			522	526			
Shale			526	988			
Sand			988	1280			
Shale			1280	1356			
Sandy Shale			1356	2083	Water	1481 & 1560	
MAXTON			2083	2190			
Shale			2190	2206			
Sed Rock			2206	2230			
Shale			2230	2262			
Lower MAXTON			2262	2349			
Shale			2349	2510			
LITTLE LIME			2510	2543			
Shale			2543	2545			
BIG LIME			2545	2886	Gas	2766	Show
Sand			2886	2902			
Shale			2902	3235			
BEIR			3235	3292	gas	3236	Show



09/30/2016

(OVER)

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Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Shale			3292	3363			
BEREA			3363	3399	Gas	3370	Show
Elate			3399	3453			
TOTAL DEPTH				3453			

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Office of Oil and Gas

Date December 20 19 66  
APPROVED CONSOLIDATED GAS SUPPLY CORP. Owner

By P. L. Barger WV Director of  
Environmental Protection

09/30/2016

4500868P

WW-4A  
Revised 6-07

1) Date: \_\_\_\_\_  
2) Operator's Well Number \_\_\_\_\_  
10844  
3) API Well No.: 47 - 045 - 00868

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:

(a) Name Ark Land Company  
Address City Place One Suite 300  
St. Louis, MO 63141

(b) Name \_\_\_\_\_  
Address \_\_\_\_\_

(c) Name \_\_\_\_\_  
Address \_\_\_\_\_

5) (a) Coal Operator

Name \_\_\_\_\_  
Address \_\_\_\_\_

(b) Coal Owner(s) with Declaration

Name \_\_\_\_\_  
Address \_\_\_\_\_

(c) Coal Lessee with Declaration

Name \_\_\_\_\_  
Address \_\_\_\_\_

6) Inspector Jeffery Smith  
Address 5369 Big Tyler Road  
Cross Lanes, WV 25313  
Telephone 681-313-6743

**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Katherine L. Jursa, Notary Public  
Cecil Twp., Washington County  
My Commission Expires Oct. 29, 2017  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Well Operator CNX Gas Company LLC  
By: [Signature]  
Its: Manager - Gas Permitting  
Address 627 Claypool Hill Mall Road  
Cedar Bluff, VA 24609  
Telephone 276-596-5137

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Office of Oil and Gas

AUG 26 2016

WV Department of  
Environmental Protection

Subscribed and sworn before me this 17th day of August, 2016  
Katherine L. Jursa Notary Public  
My Commission Expires 10-29-2017

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a 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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

09/30/2016

4500868P

WW-9  
(2/15)

API Number 47 - 045 - 00868  
Operator's Well No. 10844

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) 0505000903 Quadrangle Amherstdale

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

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 2D0550319 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: a pumper truck with a flow back tank will be used in lieu of a pit.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

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

Additives to be used in drilling medium? \_\_\_\_\_

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

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

-Landfill or offsite name/permit number? \_\_\_\_\_

(JS)

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 *Matt Hanley*  
Company Official (Typed Name) Matt Hanley  
Company Official Title Manager Gas Permitting Southern Region

RECEIVED  
Office of Oil and Gas  
AUG 26 2016

WV Department of  
Environmental Protection

Subscribed and sworn before me this 17<sup>th</sup> day of August, 20 16

Katherine L. Jursa Notary Public

My commission expires 10-29-2017

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Katherine L. Jursa, Notary Public  
Cecil Twp., Washington County  
My Commission Expires 10/29/2017  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

CNX Gas Company LLC

Proposed Revegetation Treatment: Acres Disturbed 1.5 Prevegetation pH to be determined

Lime based on pH Tons/acre or to correct to pH 7

Fertilizer type 10-20-20

Fertilizer amount 550 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre	Seed Type	lbs/acre
orchard grass	25		
birdsfoot trefoil	15		
lidino clover	10		

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jeffrey Smith

Comments: All sediment Control to be removed before release.

Title: Oil & Gas Inspector

Date: 8-16-16

Field Reviewed? (X) Yes ( ) No

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AUG 26 2016

WV Department of Environmental Protection



Legend

- CNX Upper Devonian Well Pad Centers - Proposed Labels
- CNX Upper Devonian Well Laterals - Drilled Labels
- CNX Upper Devonian Well Laterals - Proposed Labels

0 500 1,000 1,700 3,400 5,100 Feet

Date: 6/24/2016 Prepared By: Web AppBuilder

**EMPOWER ENERGY**  
CONSOL ENERGY  
for ArcGIS

*This product was generated by CONSOL Energy's WEB Map. Intended for Internal Use Only.*

ArcGIS Web Map  
**09/30/2016**  
**WELL # 10844**  
047-045-00868

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-045-00868 WELL NO.: 10844  
 FARM NAME: Boone County Coal Company  
 RESPONSIBLE PARTY NAME: CNX Gas Company LLC  
 COUNTY: Logan DISTRICT: Logan  
 QUADRANGLE: Amherstdale  
 SURFACE OWNER: Ark Land Company  
 ROYALTY OWNER: Ark Land Company  
 UTM GPS NORTHING: 4,186,759.06 m.  
 UTM GPS EASTING: 431,296.68 m. GPS ELEVATION: 1391 ft.

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS \_\_\_\_: Post Processed Differential \_\_\_\_

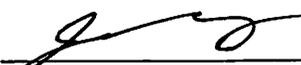
Real-Time Differential \_\_\_\_

Mapping Grade GPS X: Post Processed Differential \_\_\_\_

Real-Time Differential X

4. **Letter size copy of the topography map showing the well location.**

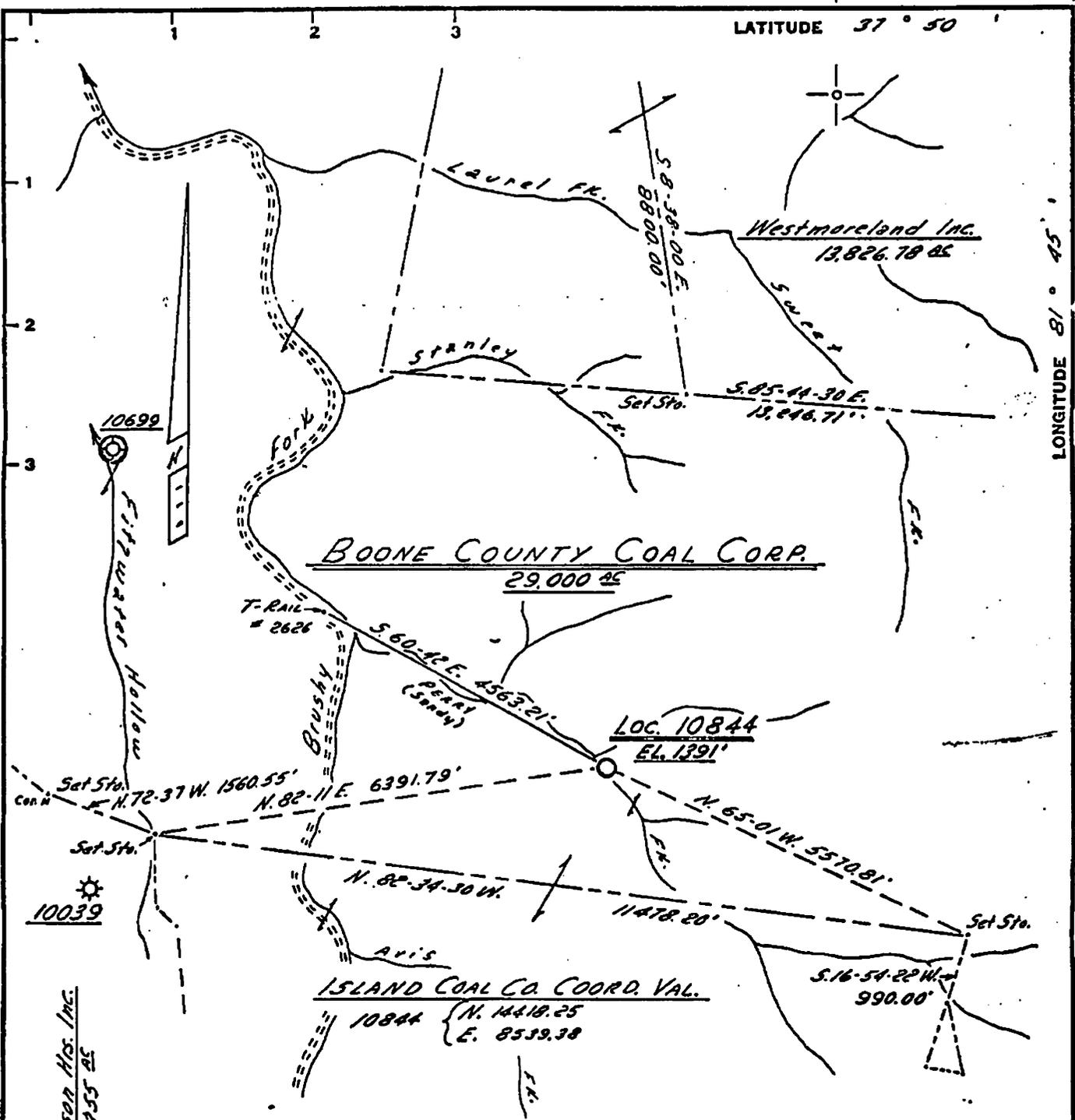
I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

  
Signature

Faceman Production  
Title

8/17/16  
Date

8,600



Minimum Error of Closure 1' in 2500'  
 Source of Elevation Levels From U.S.C. & G.S. BM-E191 1958 EL. 1264.00'  
Std. Disc. in Conc. Wall-Sub. Sta.

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

New Location   
 Drill Deeper   
 Abandonment

MAP SHEET - 183 W 5-III W-68 F.B. 1385 P. 14-17

RECEIVED  
 Office of Oil and Gas

AUG 20 2016

Company	CONSOL. GAS SUPPLY CORP.	
Address	CLARKSBURG, WEST VIRGINIA	
Farm	BOONE COUNTY COAL CORP.	
Tract	Acres	29,000 Lease No. 60352
Well (Farm) No.	Serial No.	10844
Elevation (Spirit Level)	1391'	
Quadrangle	LOGAN S.E.	
County	District	LOGAN LOGAN
Engineer	Jackson M. Farwell	
Engineer's Registration No.	2397	
File No.	Drawing No.	
Date	Scale	5-2-66 1" = 2,000'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON

WELL LOCATION MAP  
 FILE NO. 206-868

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.