



 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

Wednesday, April 24, 2019
 WELL WORK PLUGGING PERMIT
 Vertical Plugging

CORE APPALACHIA OPERATING LLC
 414 SUMMERS STREET

CHARLESTON, WV 25301

Re: Permit approval for 823209
 47-043-02967-00-00

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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: 823209
 Farm Name: ELLIOTT, SHELVIA & ANNA
 U.S. WELL NUMBER: 47-043-02967-00-00
 Vertical Plugging
 Date Issued: 4/24/2019

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

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 under the terms of that agreement.

PLUGGING PROCEDURE
823209
LINCOLN COUNTY, WEST VIRGINIA
API# 47-043-02967

BY: DMC
DATE: 1/14/19

04/26/2019

Current Status

9 5/8" @ 354' w/ 177 cu ft cmt CTS
7" @ 1581' w/350 cu ft cmt CTS
4 1/2" @ 3567' w/183 cu ft cmt est. TOC @ 1500'
Devonian Shale: 2683-3450' - Frac
TD @ 3596'
Fresh Water @ Not Reported
Salt Water @ 912', 1815'
Coal @ 203-205'
Gas Show @ 2365', 2395', 3145'
Elevation 1032.02'
8/23/2011 Swab Rig TD @ 3555'

Objective: Plug and abandon

- 1) Prepare road and location.
- 2) MIRU service rig and support equipment.
- 3) Blow well down. Check TD.
- 3a) SPOT GEL ABOVE 2500'.
- 4) Spot 100' cement plug from 2663 – 2563'.
- 5) Spot 6% gel from 2563 – 2410'.
- 6) Spot 100' cement plug from 2410 – 2310'. CAS SHOW 2365', 2395'
- 7) Spot 6% gel from 2310 – 1865'.
- 8) Cut 4 1/2" at free point. TOOH w/ 4 1/2" csg.
- 9) Spot 100' cement plug from 1865 – 1765'.
- 10) Spot 6% gel from 1765 – 1635'.
- 11) Spot 100' cement plug from 1635 – 1535'.
- 12) Spot 6% gel from 1535 – 1500'.
- 13) Spot 100' cement plug from 1500 – 1400'.
- 14) Spot 6% gel from 1400 – 1080'.
- 15) Spot 100' cement plug from 1080 – 980'.
- 16) Spot 6% gel from 980 – 965'.
- 17) Spot 100' cement plug from 965 – 865'.
- 18) Spot 6% gel from 865 – 400'.
- 19) Spot 200' cement plug from 400' – 300'.
- 20) Spot 6% gel from 300 – ~~100'~~^{220'}.
- 21) Spot ~~100'~~^{220'} cement plug from ~~100'~~^{220'} to Surface.
- 22) Pull work string and top off w/cement.
- 23) Erect permanent monument (30" minimum height and 6" minimum diameter pipe) with API # (1/2" height numbering) and reclaim.

RECEIVED
Office of Oil and Gas
FEB 22 2019
WV Department of
Environmental Protection

04/26/2019

Division of Environmental Protection
Permitting
Office

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

Well Operator's Report of Well Work

Farm name: ELLIOTT, SHELVIA & ANNA Operator Well No.: 23209

LOCATION: Elevation: 1,032.02 Quadrangle: RANGER

District: LAUREL HILL County: LINCOLN
Latitude: 2650 Feet South of 38 Deg. 7 Min. 30 Sec.
Longitude 5960 Feet West of 82 Deg. 12 Min. 30 Sec.

Company: COLUMBIA NATURAL RESOURCE
P. O. BOX 6070
CHARLESTON, WV 25362-0000

Agent: W. A. WATSON, JR.

Inspector: DAVE BELCHER
Permit Issued: 08/14/97
Well work Commenced: 9/12/97
Well work Completed: 10/20/97
Verbal Plugging
Permission granted on: _____
Rotary Cable _____ Rig _____
Total Depth (feet) 3596
Fresh water depths (ft) ---
Salt water depths (ft) 912

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
9 5/8"	354	354	177
7"	1581	1581	350
4 1/2"		3567	183

Is coal being mined in area (Y/N)? N
Coal Depths (ft): 203-205

OPEN FLOW DATA

Producing formation DEVONIAN SHALE Pay zone depth (ft) 2683'-3
 Gas: Initial open flow --- MCF/d Oil: Initial open flow --- Bbl/d
 Final open flow 375 MCF/d Final open flow --- Bbl/d
 Time of open flow between initial and final tests 72 Hours
 Static rock Pressure 265 psig (surface pressure) after 72 Hours

Second producing formation _____ Pay zone depth (ft) _____
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours
 Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: COLUMBIA NATURAL RESOURCES, INC.

By: [Signature]
Date: 1/6/98

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04/26/2019

WELL # 23209

PERFORATIONS:

Stage 1, Perforations: 55 holes from 2683' to 3450'Stage 2, Perforations: holes from to Stage 3, Perforations: holes from to Stage 4, Perforations: holes from to

FRACTURING:

1ST STAGE: DEVONIAN SHALE

Perforations from 2683' - 3450', Acid gal. HCL,
 Breakdown @ 1579 PSI, Avg. Rate 55,050 SCF/D,
 ATP 2213 PSI, Total H₂O Bbl., Total sand #
 Total N₂ 1,579,600 Scf. I.S.I.P. 2366 psi 15 min. 984 psi

2ND STAGE:

Perforations from - , Acid gal. HCL,
 Breakdown @ PSI, Avg. Rate BPM,
 ATP PSI, Total H₂O Bbl., Total sand #
 Total N₂ Scf. I.S.I.P. 15 min.

3RD STAGE:

Perforations from - , Acid gal. HCL,
 Breakdown @ PSI, Avg. Rate BPM,
 ATP PSI, Total H₂O Bbl., Total sand #
 Total N₂ Scf. I.S.I.P. 15 min.

4TH STAGE:

Perforations from - , Acid gal. HCL,
 Breakdown @ PSI, Avg. Rate BPM,
 ATP PSI, Total H₂O Bbl., Total sand #
 Total N₂ Scf. I.S.I.P. 15 min.

Well Completion Data

CNR Well #: 23209
Permit #: 47-043-02967
County: Lincoln
District: Laurel Hill
Prospect: Harts Creek
Field: Harts Creek North

	Top	Base
<u>Sand/Shale</u>	<u>0</u>	<u>870</u>
<u>Salt Sand</u>	<u>870</u>	<u>1155</u>
<u>Maxon Sand</u>	<u>1155</u>	<u>1545</u>
<u>Little Lima</u>	<u>1545</u>	<u>1590</u>
<u>Greenbrier Limestone</u>	<u>1590</u>	<u>1740</u>
<u>McCrary</u>	<u>1740</u>	<u>1810</u>
<u>Big Injun</u>	<u>1810</u>	<u>1815</u>
<u>Pocono Shale</u>	<u>1815</u>	<u>2355</u>
<u>Berea Sand</u>	<u>2355</u>	<u>2425</u>
<u>Upper Devonian</u>	<u>2425</u>	<u>3130</u>
<u>Lower Huron Shale</u>	<u>3130</u>	<u>3460</u>
<u>Ontonagon Shale</u>		
<u>Rhinestreet Shale</u>		

Depth Mcf

Show Gas 1 3145

Show Gas 2 2395

Show Gas 3 2365

Show Gas 4

Show Oil 1

Show Oil 2

Show Oil 3

Show Water 1815

Intermediate Csg 1581

Logger TD 3595

Formation @ TD Lower Huron

Logging Suite: GR, LDT, CNL, DJ, T, A TD to intermediate casing point. GR to surface. Memory PL as needed.

Logging Date: 9/19/97

WW-4A
Revised 6-07

1) Date: February 19, 2019
2) Operator's Well Number 823209 **04/26/2019**

3) API Well No.: 47 - 47-043 - 02967

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

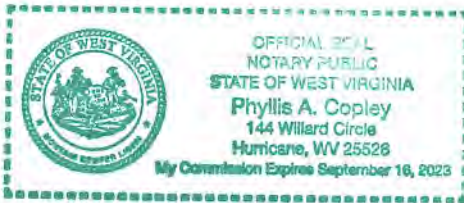
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Anna L. Elliott</u>	Name <u>Lexington Coal Company, LLC - Attention: Dave Decker</u>
Address <u>986 Tenmile Road</u>	Address <u>123 Long Shoals Branch</u>
<u>Branchland, WV 25506</u>	<u>Alum Creek, WV 25003</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Southern Region Industrial, Inc.</u>
	Address <u>Three Commercial Place</u>
	<u>Norfolk, VA 23510</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Jeffery L. Smith</u>	(c) Coal Lessee with Declaration
Address <u>5369 Big Tyler Road</u>	Name <u>Lexington Coal Company, LLC - Attention: Dave Decker</u>
<u>Cross Lanes, WV 25313</u>	Address <u>123 Long Shoals Branch</u>
Telephone <u>681-313-6743</u>	<u>Alum Creek, WV 25003</u>

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.



Well Operator Core Appalachia Operating, LLC

By: [Signature] Jessica Greathouse

Its: Manager - EHS & Administration Services

Address P.O. Box 6070

Charleston, WV 25362

Telephone 304-353-5240

Subscribed and sworn before me this 20th day of February 2019

Phyllis A. Copley Notary Public

My Commission Expires September 16, 2023

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.

FEB 22 2019

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Core Appalachia Operating, LLC OP Code 494518671

Watershed (HUC 10) Tenmile Creek of Guyandotte River Quadrangle Ranger

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: Plugging returns/Cement - Will utilize above ground tanks

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 20

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Any fluid recovered will be hauled to a Core tank battery and disposed of properly)

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

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. NO DRILL CUTTINGS EXPECTED.

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

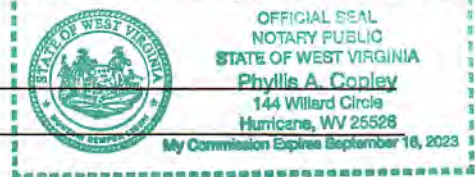
-Landfill or offsite name/permit number? _____

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 April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

Company Official Signature [Signature]
Company Official (Typed Name) Jessica Greathouse
Company Official Title Manager - EHS and Administrative Services



Subscribed and sworn before me this 20th day of February, 2019
Phyllis A. Copley Notary Public

My commission expires September 16, 2023

Proposed Revegetation Treatment: Acres Disturbed 1 +/- Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or equivalent

Fertilizer amount _____ lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Fescue	40	Red Fescue	15
Alsike	5	Alsike Clover	5
Annual Rye	15		

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, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? () Yes () No

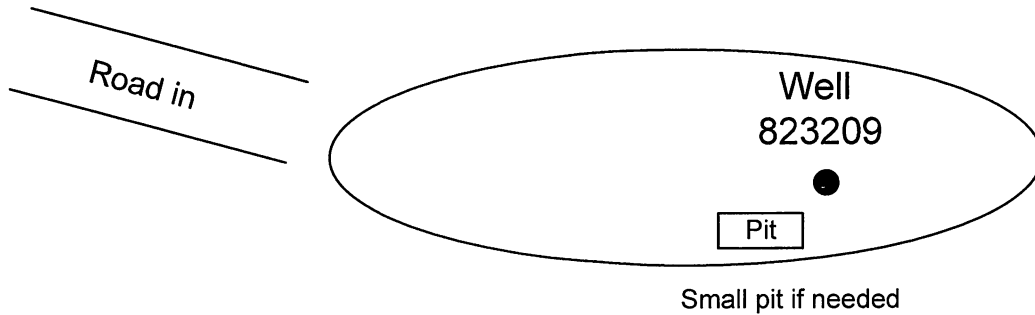
CORE APPALACHIA OPERATING, L.L.C.

47-043-02967P

04/26/2019

Diagram of Well 823209
API 47-043-02967
Field Office – Hamlin
County - Lincoln

Surface Owner:
Anna L. Elliot



Sediment Control

Note: No Land Application if pit is used

Site Plan

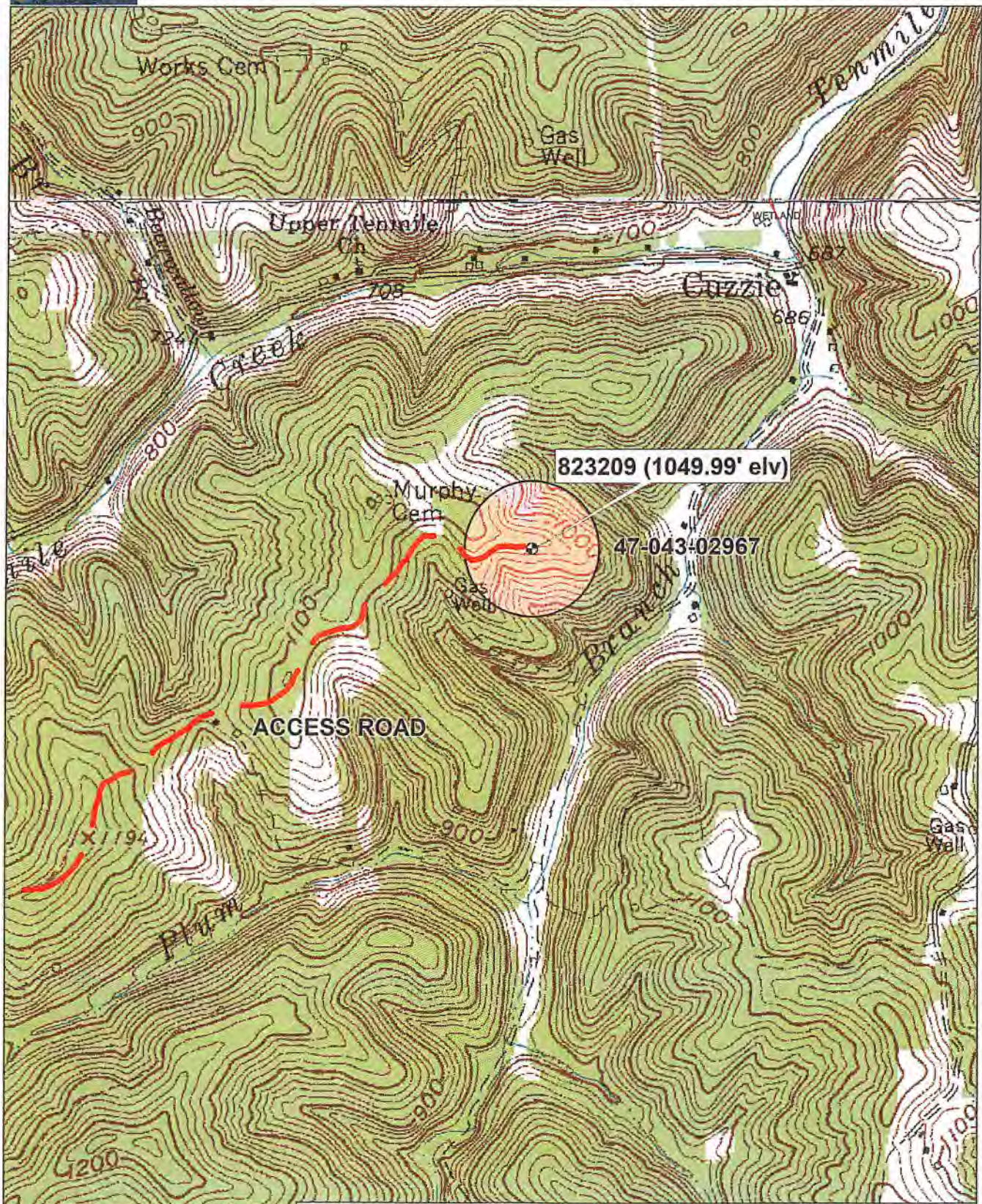
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Office of Oil and Gas

FEB 22 2019

WV Department of
Environmental Protection

Prepared by: Kris Aldridge
Date: 2/19/2019

No Scale



WELL 823209 P&A TOPO MAP

RECEIVED
Office of Oil and Gas

Scale 1 : 12,000

FEB 22 2019



1" = 227.0 ft Data Zoom 14-1

Data use subject to license.

© DeLorme. XMap® 8.

www.delorme.com



WW-7
8-30-06



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

API: 47-043-02967 WELL NO.: 823209

FARM NAME: CNR MIN TR 1

RESPONSIBLE PARTY NAME: Core Appalachia Operating, LLC

COUNTY: Lincoln DISTRICT: Laurel Hill

QUADRANGLE: Ranger

SURFACE OWNER: Anna L. Elliott

ROYALTY OWNER: Core Appalachia Production, LLC

UTM GPS NORTHING: 4219624.24m

UTM GPS EASTING: 392303.09m GPS ELEVATION: 320.04m [1049.99]

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

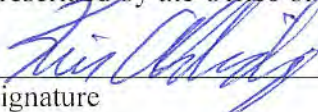
Real-Time Differential

Mapping Grade GPS : Post Processed Differential

Real-Time Differential

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

EHS Specialist

Title

2/18/19

Date