



 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, June 5, 2019

WELL WORK PLUGGING PERMIT
 Vertical Plugging

CORE APPALACHIA OPERATING LLC
 414 SUMMERS STREET

CHARLESTON, WV 25301

Re: Permit approval for 1
 47-099-01314-00-00

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: 1
 Farm Name: CRUM, ELI
 U.S. WELL NUMBER: 47-099-01314-00-00
 Vertical Plugging
 Date Issued: 6/5/2019

I

47-099-01314A

06/07/2019

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.

- 1) Date April 2, 2019
- 2) Operator's Well No. 808768
- 3) API Well No. 47-099-01314

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 ___ or Underground storage ___) Deep ___ / Shallow X
- 5) Location: Elevation 644.97' Watershed Drag Creek of Tug Fork
District Lincoln County Wayne Quadrangle Webb
- 6) Well Operator Core Appalachia Operating, LLC 7) Designated Agent Jessica Greathouse
Address P.O. Box 6070 Address P.O. Box 6070
Charleston, WV 25362 Charleston, WV 25362
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Allen Flowers Name Precision Drilling (BOSS)
Address 165 Grassy Lick Lane Address 3978 N Elmdale Road
Liberty, WV 25124 Olney, IL 62450

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

SEE ATTACHED SHEET

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector



Date

4-9-2019

PLUGGING PROCEDURE
808766
WAYNE COUNTY, WEST VIRGINIA
API# 47-099-01314

BY: DMC
DATE: 2/25/19

Current Status

13 3/8" 48# @ 37'
10 3/4" 32# @ 242'
8 5/8 24# @ 778' Pulled
7" 20# @ 1123' Pulled
3 1/2" 9# @ 2484' w/TOC @ 1511'
1 1/2" @ 2451' w/ pkr @ 1765' in compression – Ran 3/22/2014
Berea: 1832-1836', 1862-1866'
Shale: Shot 1930-2747'
TD @ 2747'
Fresh Water @ 90'
Salt Water @ 545'
Coal @ 90-93'
Gas Show @ 1825'
Elevation 660.79'

1/8/2009 Swab Rig TD @ 2469', FL @ 2006' – thru 3 1/2"
2/7/2014 Echometer FL @ 1536'
3/22/2014 Swab Rig TD @ 2486'

Objective: Plug and abandon

★ IF 3 1/2" IS CEMENTED TO 1511',
THEN

- 1) Prepare road and location.
- 2) MIRU service rig and support equipment
- 3) Blow well down. Check TD.
- 4) Release pkr and TOOH w/ 1 1/2" tbg.
- 5) Cut 3 1/2" tbg at free point and pull.
- 6) Spot 150' cement plug at TD, ~ 1900 – 1750'.
- 7) TIH and tag cement plug.
- 8) Spot 6% gel from 1750 – 1170'.
- 9) Spot 100' cement plug from 1170 – 1070'.
- 10) Spot 6% gel from 1070 – 710'.
- 11) Spot 210' cement plug from 710 – 500'.
- 12) Spot 6% gel from 500 – 290'.
- 13) Attempt to pull 10 3/4" csg. If unsuccessful, shoot or rip holes @ 100', 90'.
- 14) Spot 100' cement plug from 290' – 190'.

1. TIH w/ WORK STRING
SPOT GEL FROM TD TO UP INTO
3 1/2" @ 2400'.
2. SET 150' CLASS A CEMENT PLUG
FROM 2534' TO 2384'. WOC, TAG PLUG
ADD CEMENT IN NEEDS.
3. GEL FROM 2384' TO 1875'.
4. SET 150' CLASS A CEMENT PLUG
FROM 1875' TO 1725'.
5. CUT 3 1/2" @ FREEPOINT @
≈ 1450'.
6. SET 100' CLASS A CEMENT
PLUG ACROSS CUT, 1500' - 1400'.
7. GEL TO 1170' @ SET 100' CLASS A
CEMENT PLUG FROM 1170' - 1070'.

AF 4-9-2019

15) Spot 6% gel from 190 – 150'.

16) Spot 150' cement plug from 150 – Surface.

17) Pull work string and top off w/cement.

18) Erect permanent monument (30" minimum height and 6" minimum diameter pipe) with API # (1/2" height numbering) and reclaim.

47-099-01314P
06/07/2019

AF 4-9-2019



STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION

UNIFIED MODEL GAS CR-1614X

0.0001

BOUNDELA 30

Quadrangle Naugatuck

Permit No. WAY-1314

WELL RECORD

Oil or Gas Well Gas (MINO)

Company: United Fuel Gas Company
Address: P. O. Box 1273, Charleston 25, W. Va.
Farm: Eli Crum Area 235
Location (waters): Drag Creek
Well No.: 8766 Elev. 660.79
District: Lincoln County: Wayne
The surface of tract is owned in fee by:
Address:
Mineral rights are owned by: Martha Crum Varney, et al
Address: Crum, W. Va.

Table with columns: Casing and Tubing, Used in Drilling, Left in Well, Packers. Rows include sizes like 16, 13 3/8, 10 3/4, 8 1/2, 7, 5 3/16, 3, 2 and packer types like Hookwall, 32" x 7" x 16", 1903'.

Drilling commenced: 9-14-60
Drilling completed: 11-17-60
Date Shot: 11-18-60 From 175 To 277
With: 8300 Independent
Open Flow: 10ths Water in, 10ths Merc. in
Volume: 158,000 - Berea 113 M; Shale 45 M Cu. Ft.
Rock Pressure: 255 lbs. 48 hr.
Oil: bbls., 1st 24 hrs.
WELL ACIDIZED
WELL FRACTURED

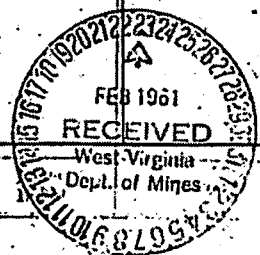
Table with columns: CASING CEMENTED, SIZE, No. Ft., Date. Includes COAL WAS ENCOUNTERED AT 90 FEET 36 INCHES.

RESULT AFTER TREATMENT

ROCK PRESSURE AFTER TREATMENT

Fresh Water: 90 Feet Salt Water: 545 Feet

Large table with columns: Formation, Color, Hard or Soft, Top, Bottom, Oil, Gas or Water, Depth, Remarks. Lists geological layers like Surface, Sand, Slate, Coal, etc. with depths and flow data.



808766
47-099-01314P
8766

UNITED FUEL GAS COMPANY
COMPANY

WAY 1314
06/07/2019

SERIAL WELL NO. 8766

LEASE NO. 44631

MAP SQUARE 16-31

RECORD OF WELL NO. 8766 on the			CASING AND TUBING				TEST BEFORE SHOT	
11 Crum #1	farm of 235 Acres		SIZE	WEIGHT	USED IN DRILLING	LEFT IN WELL	0	/10 of Water in 1" inch
in Lincoln District			13-3/8"	48#	37'	37'		/10 of Merc. in _____ inch
Wayne County			10-3/4"	32#	242'	242'	Volume 0	Cu. ft.
State of: West Virginia			8-5/8"	24#	778'	None	TEST AFTER SHOT	
Field: Central Division			7"	20#	1123'	None	14	/10 of Water in 2" inch
Rig Commenced August 22, 1960			3-1/2"	9#	2484'	2484'		/10 of Merc. in _____ inch
Rig Completed August 31, 1960							Volume 158 MCF	Cu. ft.
Drilling Commenced September 14, 1960							After Dig. Out Cement _____ Hours After Shot	
Drilling Completed November 17, 1960							Rock Pressure 48 Hr. 255#	
Drilling to cost _____ per foot							Date Shot 11-18-60	
Contractor is: J. T. Gallaspie							8300# Ind. Gelatin Size of Torpedo _____	
Address: Hurricane, W. Va.							SHUT IN Date 12-11-60	
							Oil Flowed _____ bbls. 1st 24 hrs.	
							Oil Pumped _____ bbls. 1st 24 hrs.	
Driller's Name Jack Sowards			3-1/2" in.	Tubing		Tubing or Casing		
Pete Davis				Size of Packer 3-1/2" X 7"			Well abandoned and	
				Kind of Packer Hookwall			Plugged _____ 19	
Drilling Permit No. WAY-1314				1st. Perf. Set _____ from _____				
Elevation: 660.79				2nd Perf. Set _____ from _____				

DRILLER'S RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
Surface	0	35	35	Frac. 12-2-60 W/15,000 Gal. Water and
Sand	35	60	25	25,000# Sand- 0/10 before Fracture
Slate	60	90	30	Water @ 90' - 1 BPH
Coal	90	93	3	
Slate	93	145	52	
Sand	145	180	35	
Slate	180	215	35	
Sand	215	235	20	
Slate	235	355	120	
Lime Shell	355	375	20	
Slate	375	400	25	
Sand	400	435	35	
Slate	435	521	86	
Salt Sand	521	746	225	Water @ 545' - Hole Full
Slate	746	766	20	
Lime Shells	766	776	10	
Salt Sand	776	850	74	

APPROVED

[Signature]
DIVISION SUPERINTENDENT

808766 47-099-01314 P

06/07/2019

SERIAL WELL NO. 8766

LEASE NO. 44631

MAP SQUARE 16-31

Way-1314

DRILLER'S RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
Black Slate	850	935	85	
Red Rock	935	975	40	
Slate	975	1030	55	
Red Rock	1030	1040	10	
Maxon Sand	1040	1075	35	
Little Lime	1075	1091	16	
Pencil Cave	1091	1093	2	
Big Lime	1093	1271	178	
Keener Sand	1271	1291	20	
Black Lime Shell	1291	1310	19	
Injun Sand	1310	1350	40	
Slate	1350	1392	42	
Shell	1392	1405	13	
Slate	1405	1790	385	
Shale	1790	1823	33	
Berea Sand	1823	1863	40	Gas @ 1825' - 2/10 W-1"
Slate	1863	1865	2	
Lime Shell	1865	1915	50	
White Slate	1915	1930	15	
Brown Shale	1930	2015	85	
White Slate	2015	2210	195	
Brown Shale	2210	2348	138	
White Slate	2348	2420	72	
Brown Shale	2420	2727	307	
White Slate	2727	2747	20	When Dlg. Comp.-Not enough gas to gauge
TOTAL DEPTH	2747'			

47-099-01314P

06/07/2019

WW-4A
Revised 6-07

1) Date: April 2, 2019
2) Operator's Well Number
808766
3) API Well No.: 47 - 47-099 - 01314

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>Quercus West Virginia</u>	Name <u>None</u>
Address <u>19045 Stone Mountain Road</u>	Address _____
<u>Abingdon, Virginia 24210</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>None found</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Allen Flowers</u>	(c) Coal Lessee with Declaration
Address <u>165 Grassy Lick Lane</u>	Name <u>None</u>
<u>Liberty, WV 25124</u>	Address _____
Telephone <u>304-552-8308</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: 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 3rd day of April 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.

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Office of Oil and Gas

APR 5 2019

WV Department of
Environmental Protection

06/07/2019

WW-9
(5/16)

API Number 47 - 099 - 01314
Operator's Well No. 808766

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) Drag Creek of Tug Fork Quadrangle Webb

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.

-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 3rd day of April, 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: Alan Flowers

Comments: Pre seed & mulch all affected areas.

2nd. review to inspect prior to seeding.

Title: Inspector Date: 4-9-2019

Field Reviewed? Yes No

47-099-0134P

06/07/2019

CORE APPALACHIA OPERATING, L.L.C.

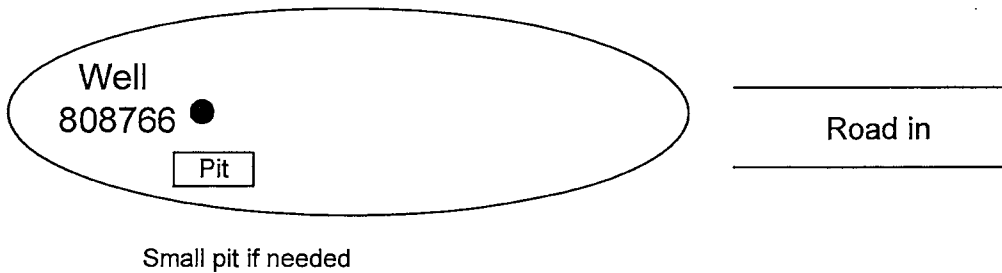
Diagram of Well 808766

API 47-099-01314

Field Office – Kermit

County - Wayne

Surface Owner:
Quercus West
Virginia, LLC



Note: No Land Application if pit is used

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Environmental Protection

Site Plan

Prepared by: Kris Aldridge
Date: 4/1/2019

No Scale



808766 (644.97'elv)

47-099-01314

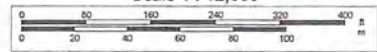
WELL 808766 P&A TOPO MAP

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Office of Oil and Gas

APR 5 2019

WV Department of
Environmental Protection

Scale 1 : 12,000



Data use subject to license.

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www.delorme.com



WW-7
8-30-06



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

API: 47-099-01314 WELL NO.: 808766

FARM NAME: Eli Crum 1

RESPONSIBLE PARTY NAME: Core Appalachia Operating, LLC

COUNTY: Wayne DISTRICT: Lincoln

QUADRANGLE: Webb

SURFACE OWNER: Quercus West Virginia LLC

ROYALTY OWNER: Everett & Diann Hannah

UTM GPS NORTHING: 4203004.24m

UTM GPS EASTING: 373109.27m GPS ELEVATION: 196.59m [644.97' elv]

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.

Chris Caldwell
Signature

EHS Specialist
Title

4/1/19
Date

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Office of Oil and Gas

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