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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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, August 30, 2019  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC  
6031 WALLACE ROAD EXTENSION  
SUITE 603  
WEXFORD, PA 15090


Re: Permit approval for DRAINER 2 TFP24 212  
47-091-01361-00-00

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: DRAINER 2 TFP24 212  
Farm Name: NORMAN C. AND ESSIE M.   
U.S. WELL NUMBER: 47-091-01361-00-00  
Horizontal 6A New Drill  
Date Issued: 8/30/2019

Promoting a healthy environment.

# PERMIT CONDITIONS

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

## CONDITIONS

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

API Number: \_\_\_\_\_

## PERMIT CONDITIONS

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



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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

Austin Caperton, Cabinet Secretary  
dep.wv.gov

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

TO: Arsenal Resources  
6031 Wallace Road Extension Suite 603  
Wexford, Pa 15090

DATE: August 6, 2019  
ORDER NO.: 2019-W-12

**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 Arsenal Resources (hereinafter "Arsenal" or "Operator"), collectively the "Parties."

**FINDINGS OF THE CHIEF**

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

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. Arsenal is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 6031 Wallace Road Extension Suite 603, Wexford, PA 15090.
3. On May 10, 2019 Arsenal submitted a well work permit application identified as API# 47-091-01361. The proposed well is to be located on the Drainer 2 TCP24 Pad in the Flemington District of Taylor County, West Virginia.
4. On May 10, 2019 Arsenal requested a waiver for Wetland P outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-091-01361.

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

## **ORDER**

West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetland P from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-091-01361. The Office of Oil and Gas hereby **ORDERS** that Arsenal shall meet the following site construction and operational requirements for the Drainer 2 TCP24 Well Pad:

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

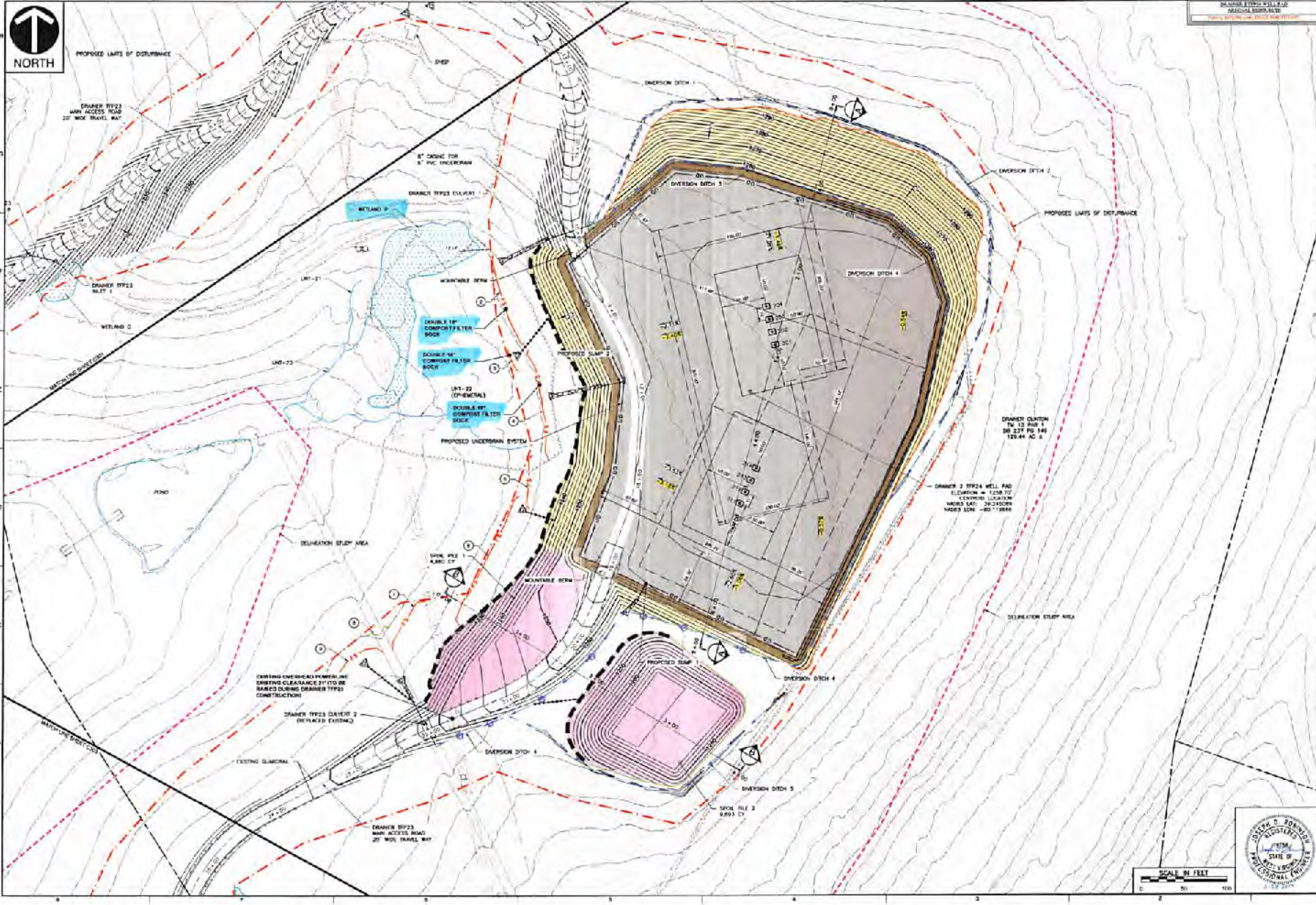
Thus ORDERED, the 6th day of August, 2019.

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

Attachment 1



DATE: 04/11/2018  
 TIME: 10:00 AM  
 PROJECT: DRAINER 2 TFP24 WELL PAD

REVISION RECORD

NO.	DATE	DESCRIPTION
1	04/11/2018	ISSUED FOR PERMITS

**ERC**  
 Civil & Environmental Consultants, Inc.  
 100 Main Street, Suite 200 - Sulphur, WV 26080  
 PH: 304.833.3118 | 855.488.8638 | Fax: 304.833.3227  
 www.ercwv.com

ARSENAL RESOURCES  
 Drainer 2 TFP24 Well Pad  
 FLEMINGTON DISTRICT  
 TAYLOR COUNTY, WEST VIRGINIA

SITE PLAN

DATE	BY	CHKD BY
APRIL 2018	ASB	ASB



SCALE IN FEET  
 0 50 100

PROJECT NO: **C302**



### **Purpose**

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near Arsenal Resources hydraulic fracturing in Taylor County, WV prior to hydraulic fracturing at the Drainer 2 TFP24 Pad, well #212.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,800' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Benson formations (approximately 4,700' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with best management practices and emergency action plans for this site. These additional measures include pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional well operators should implement, and assurance that the Division of Oil and Gas is notified of the timeline, as well as any issues that may arise during fracturing.

#### **1. Communications with Conventional Operators.**

Arsenal Resources, using available data (WV Geological Survey, WVDEP Website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in Attachment A.

Upon approval of this plan, Arsenal Resources will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in Attachment B.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to Arsenal Resources and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and ARSENAL RESOURCES if any changes in water, gas production, pressure or other anomalies are identified.

RECEIVED  
Office of Oil and Gas

MAY 10 2019

WV Department of  
Environmental Protection



## 2. Reporting

Arsenal Resources will provide information relating to the hydraulic fracturing schedule, communication with conventional operators, and ongoing monitoring of the work upon request of OOG or immediately after any event of any noted abnormalities.

RECEIVED  
Office of Oil and Gas  
MAY 10 2019  
WV Department of  
Environmental Protection

4709101361

Area of Review Report - Drainer 2 TFP24 Pad, 212 Lateral, Taylor County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
197-CH	091-00087	Union Drilling, Inc.	Plugged - 12/9/84	39.245783	-80.115257	4650	Benson	NA
A J Smith Heirs 2	091-00599	Diversified	Existing	39.256231	-80.122308	4662	Riley, Benson	NA
Ona Smith 1	091-00604	Diversified	Existing	39.260581	-80.121937	4550	Riley	NA
A J Smith Heirs 3	091-00680	Diversified	Existing	39.263336	-80.125925	4503	Riley, Benson	NA

RECEIVED  
Office of Oil and Gas  
MAY 10 2019  
WV Department of  
Environmental Protection



Click or tap to enter a date.

**Diversified**

Address

State

RE: Drainer 2 TFP24 Pad

Dear Sir/Madam,

Arsenal Resources has developed a Marcellus pad Drainer 2 TFP24 212, located in Taylor County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,800 TVD) and existing conventional natural gas wells included in the attached well list for which you are believed to be the operator.

Arsenal Resources anticipates conducting hydraulic fracturing at the Drainer 2 TFP24 212 Pad during the **Quarter of 2019**. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our newly planned wells. Plats for each well on this pad are attached.

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

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and Arsenal Resources if any changes in water, gas production, pressure or other anomalies are identified.

Please feel free to contact me at 724-940-1218 with any questions or comments. You may also contact the WV Office of Oil and Gas at 304-926-0499.

Sincerely,

Kelly Davis  
Permitting Specialist

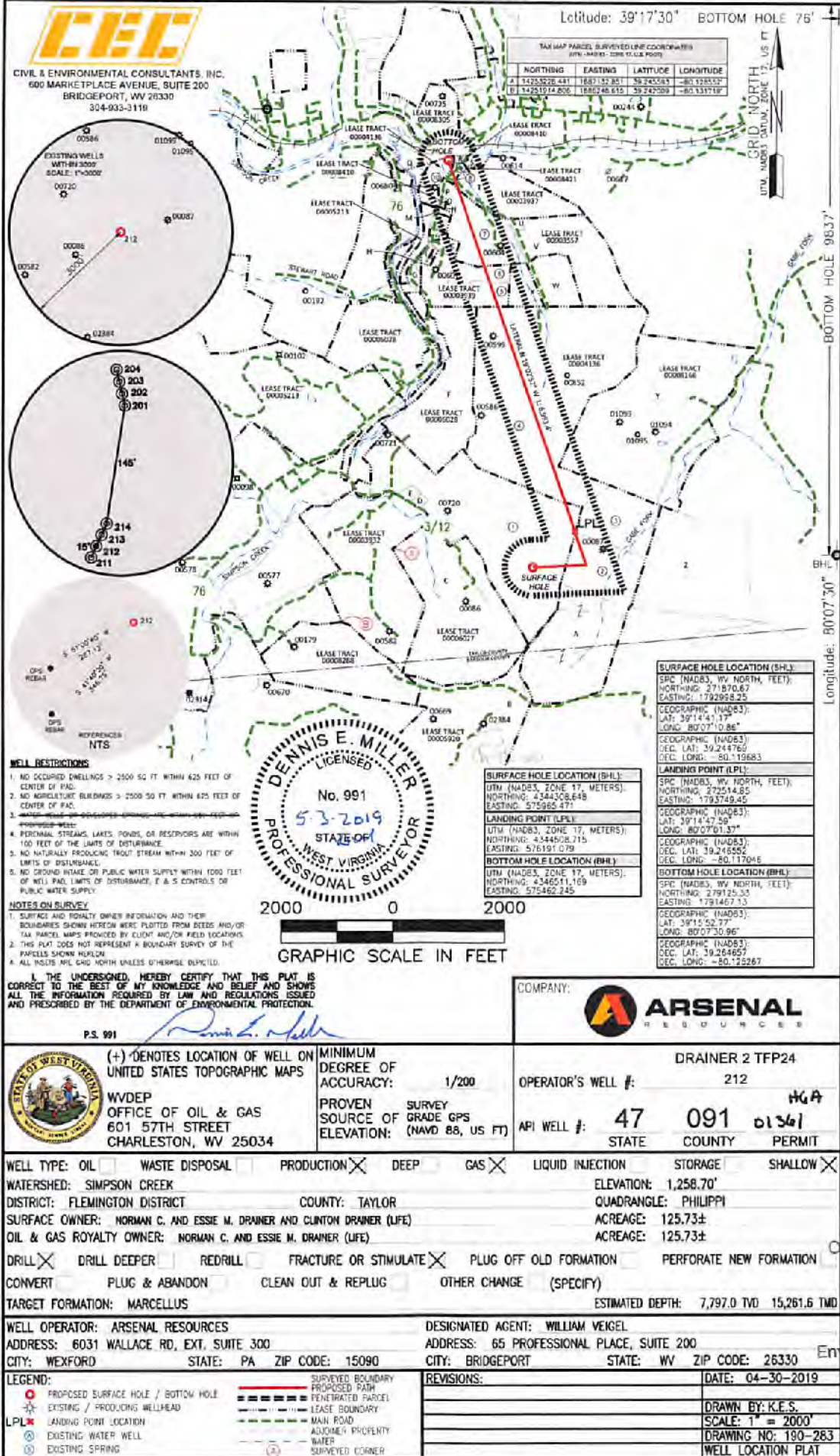
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MAY 10 2019  
WV Department of  
Environmental Protection

AOR- Attachment "B"

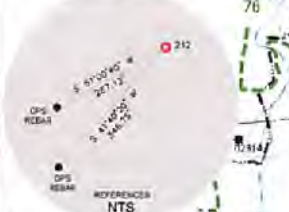
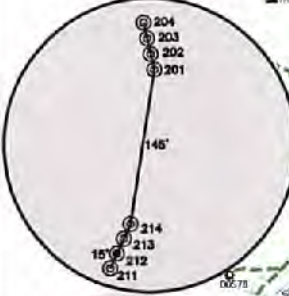
Latitude: 39°15'00"

SURFACE HOLE 102°95'

Latitude: 39°17'30" BOTTOM HOLE 76'



**C&E**  
 CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
 600 MARKETPLACE AVENUE, SUITE 200  
 BRIDGEPORT, WV 26330  
 304-933-3119



- WELL RESTRICTIONS**
- NO OCCUPIED DWELLINGS > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
  - NO AGRICULTURE BUILDINGS > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
  - ...
  - PERSONAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
  - NO NATURALLY PRODUCING "HOT" STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
  - NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD. LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

- NOTES ON SURVEY**
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
  - THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
  - ALL POINTS ARE GRID NORTH UNLESS OTHERWISE SPECIFIED.

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



SURFACE HOLE LOCATION (SHL)	
SPC (NAD83, WV NORTH, FEET):	NORTHING: 271870.67
EASTING: 1792968.25	
GEOGRAPHIC (NAD83):	LAT: 39°14'41.17"
LONG: 80°07'0.86"	
GEOGRAPHIC (NAD83):	DEC. LAT: 39.244769
DEC. LONG: -80.119683	
LANDING POINT (LPL)	
SPC (NAD83, WV NORTH, FEET):	NORTHING: 272514.85
EASTING: 1793749.45	
GEOGRAPHIC (NAD83):	LAT: 39°14'47.59"
LONG: 80°07'01.37"	
GEOGRAPHIC (NAD83):	DEC. LAT: 39.245552
DEC. LONG: -80.117046	
BOTTOM HOLE LOCATION (BHL)	
SPC (NAD83, WV NORTH, FEET):	NORTHING: 279125.33
EASTING: 1791467.13	
GEOGRAPHIC (NAD83):	LAT: 39°15'52.77"
LONG: 80°07'30.96"	
GEOGRAPHIC (NAD83):	DEC. LAT: 39.264657
DEC. LONG: -80.125267	

COMPANY: **ARSENAL RESOURCES**

P.S. 991  
 (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

DRAINER 2 TFP24  
 OPERATOR'S WELL #: 212  
 API WELL #: 47 091 01361  
 STATE COUNTY PERMIT

WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW

WATERSHED: SIMPSON CREEK ELEVATION: 1,258.70'

DISTRICT: FLEMINGTON DISTRICT COUNTY: TAYLOR QUADRANGLE: PHILIPPI

SURFACE OWNER: NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE) ACREAGE: 125.73±

OIL & GAS ROYALTY OWNER: NORMAN C. AND ESSIE M. DRAINER (LIFE) ACREAGE: 125.73±

DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,797.0 TVD 15,261.6 TMD

WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: WILLIAM VEIGEL  
 ADDRESS: 6031 WALLACE RD, EXT, SUITE 300 ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200  
 CITY: WEXFORD STATE: PA ZIP CODE: 15090 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330

LEGEND:  
 (+) PROPOSED SURFACE HOLE / BOTTOM HOLE  
 \* EXISTING / PRODUCING WELLHEAD  
 LPL LANDING POINT LOCATION  
 (W) EXISTING WATER WELL  
 (S) EXISTING SPRING

REVISIONS:  
 DATE: 04-30-2019  
 DRAWN BY: K.E.S.  
 SCALE: 1" = 2000'  
 DRAWING NO: 190-283  
 WELL LOCATION PLAT

RECEIVED  
 Office of Environmental Protection  
 MAY 10 2019  
 WV Dept. of Environmental Protection

AOR - Attachment "A"



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
 600 MARKETPLACE AVENUE, SUITE 200  
 BRIDGEPORT, WV 26330  
 304-933-3119

WELL BORE TABLE FOR SURFACE OWNERS		
TRACT	SURFACE OWNER	TAX PARCEL
1	NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE)	04-10-01
2	A. J. SMITH HEIRS	05-19-07
3	A. J. SMITH HEIRS	05-20-01
4	GERALD B. SMITH	04-09-40
5	BRENDA M. GAINES	04-09-28
6	BRENDA M. GAINES	04-09-27
7	ELEANOR D. GREATHOUSE	04-09-24
8	CO. RT. 13/3	
9	JOSEPH W. COSTILOW	04-09-21
10	CONNIE SUE SCOTT	04-09-21.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	ROBERT D. STOUT II	05-20-02
B	BECKWITH LUMBER COMPANY INC.	09-08-01
C	NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE)	04-10-03
D	RANDALL AND CHRYSTAL KELLEY	04-10-2.2
E	YRGINA SHAFFER AND ADA WAE ANGLIN AND ROBERT PYLE ET AL.	04-10-2.1
F	WILLIAM CLARK AND CRYSTAL BRAKE	04-09-39
G	KATHY L. BLAKE	04-09-30
H	KATHY L. BLAKE	04-09-30.1
I	JAMES P. AND BRENDA M. GAINES	04-09-28.2
J	MIRACLE MOUNTAIN MINISTRY	04-09-28.3
K	BRENDA M. GAINES	04-09-28.4
L	RONALD PAUL AND VICKIE LYNN CRIMM	04-09-23.2
M	ELEANOR D. GREATHOUSE	04-09-23.1
N	JAMES P. AND BRENDA M. GAINES	04-09-23
O	BRENDA M. GAINES	04-09-22
P	JEFFREY GREATHOUSE (LIFE) AND RANDALL GREATHOUSE AND SANDRA GREATHOUSE (LIFE)	04-10-2.1
Q	PETROLEUM DEVELOPMENT CORPORATION	04-09-54
R	ELEANOR D. GREATHOUSE	04-09-55
S	CSX TRANSPORTATION INC.	04-09-20
T	JOHNNA L. BAKER	04-09-19
U	KARL L. GREATHOUSE	04-09-24.3
V	ELEANOR D. GREATHOUSE	04-09-24
W	ELEANOR D. GREATHOUSE	04-09-25
X	ELEANOR D. GREATHOUSE	04-09-26
Y	JAMES F. AND ALICIA M. KINSEY (SUR)	05-20-04
Z	BECKWITH LUMBER COMPANY INC.	05-20-10

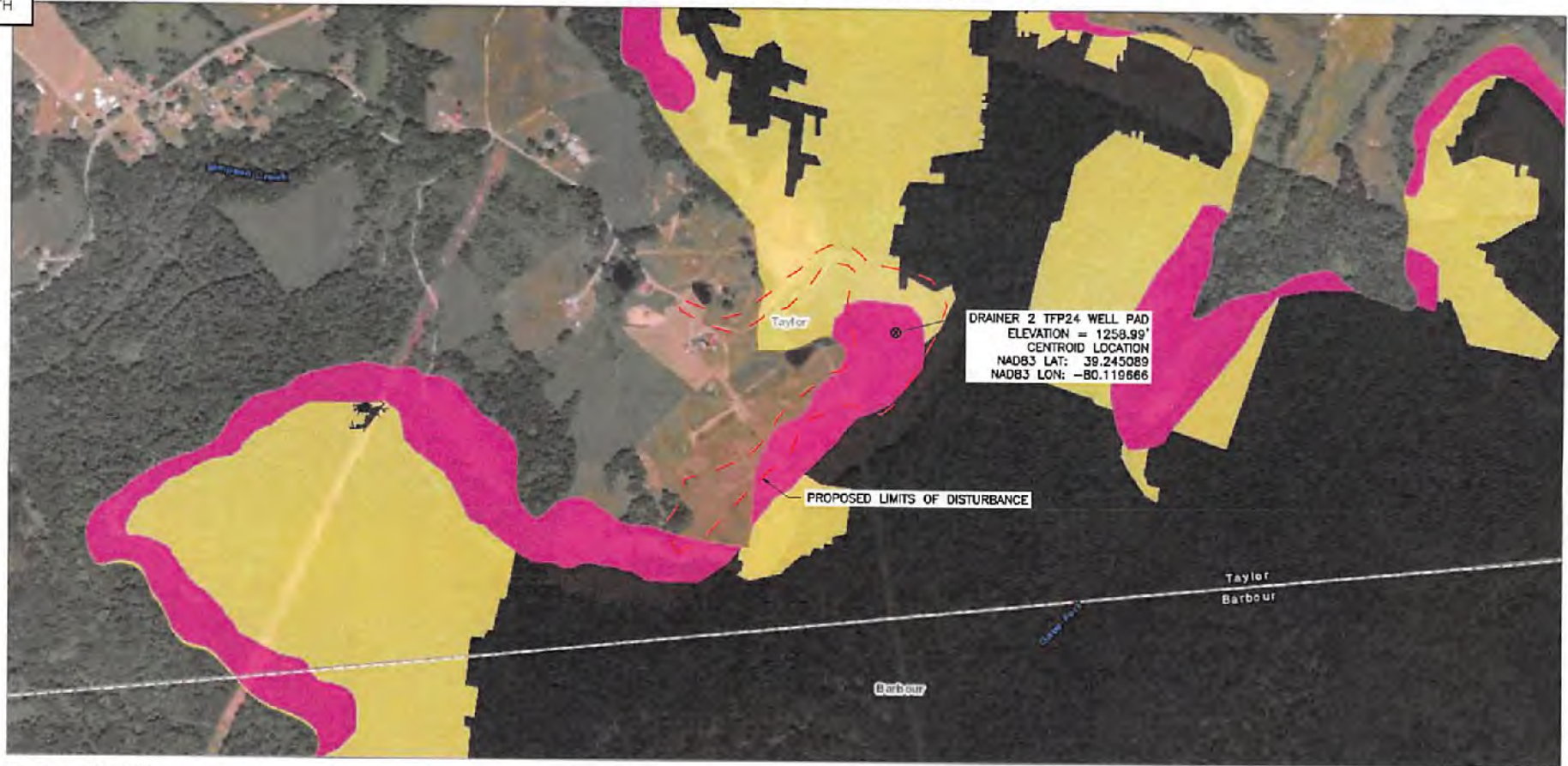
RECEIVED  
 Office of Oil and Gas  
 MAY 10 2019  
 WV Department of  
 Environmental Protection

REVISIONS:	COMPANY:		
	OPERATOR'S	DRAINER 2 TFP24	DATE: 04-30-2019
	WELL #:	47-091-01361 212	DRAWN BY: K.E.S.
	DISTRICT:	FLEMINGTON DISTRICT	SCALE: N/A
	COUNTY:	TAYLOR	DRAWING NO: 190-283
	STATE:	WV	WELL LOCATION PLAT 2

AOR - Attachment "A"

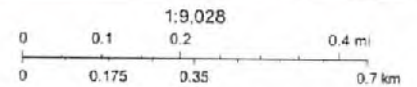



# Monongahela Group: Pittsburgh Coal



September 11, 2018

- Mask Other States
- County Labels
- Counties
- State Boundary
- Coal Bed Boundaries
- Adequate Data Control
- Coal Outcrop
- Final Map Extent
- Stratigraphic Termination
- Temporary Map Extent
- Mined and Remaining Coal
- Underground Mined
- Surface Mined
- Auger/Highwall Mined
- Remaining Coal



 <b>Civil &amp; Environmental Consultants, Inc.</b> 600 Marketplace Ave · Suite 200 · Bridgeport, WV 26330 Ph: 304.933.3119 · Fax: 304.933.3327 www.cecinc.com		ARSENAL RESOURCES DRAINER 2 TFP24 WELL PAD COURT HOUSE DISTRICT TAYLOR COUNTY, WEST VIRGINIA  PITTSBURG COAL MAP EXHIBIT	
DRAWN BY:	DBS	CHECKED BY:	JDR
DATE:	FEBRUARY 2019	DWG SCALE:	AS SHOWN
APPROVED BY:	JDR	PROJECT NO.:	190-283
FIGURE NO.:			<b>1</b>

WV Department of Environmental Protection  
 Office of Oil and Gas  
 RECEIVED  
 MAY 10 2019  
 LP: 2/26/2019 10:07 AM





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

1) Well Operator: Arsenal Resources      494519412      Taylor      Fleming      Philippi  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Drainer 2 TFP24 212      Well Pad Name: Drainer 2 TFP24

3) Farm Name/Surface Owner: Norman C. and Essie M. Drainer & Clinton Drainer      Public Road Access: CR 3/12

4) Elevation, current ground: 1,253.31'      Elevation, proposed post-construction: 1,258.70'

5) Well Type    (a) Gas    X      Oil                                Underground Storage                            
Other                            
(b) If Gas    Shallow    X      Deep                            
Horizontal    X                          

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Target Formation- Marcellus Shale, Top- 7,722.0ft, Bottom- 7,811.0ft, Anticipated Thickness- 89ft, Associated Pressure- 0.5 psi/ft

8) Proposed Total Vertical Depth: 7,797 ft. ✓

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 15,261.6 ft. ✓

11) Proposed Horizontal Leg Length: 6,993 ft ✓

12) Approximate Fresh Water Strata Depths: 15', 138', 341', 781' ✓

13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (091-00086, 091-00087, 091-00720) ✓

14) Approximate Saltwater Depths: 1,185'

15) Approximate Coal Seam Depths: Eik Lick - 329', Harlem - 405', Bakerstown - 485', Brush Creek - 584', Upper Freeport - 643', Lower Freeport - 701', Upper Kittanning - 765', Middle Kittanning - 817', Lower Kittanning - 842', Clarion - 901' ✓

16) Approximate Depth to Possible Void (coal mine, karst, other): None Known

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine?      Yes                                No      None Known

(a) If Yes, provide Mine Info:    Name:                       
Depth:                       
Seam:                       
Owner:                     

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Environmental Protection

WW-6B  
(04/15)

47 09 101361

API NO. 47- 091 -  
OPERATOR WELL NO. Drainer 2 TFP24 212  
Well Pad Name: Drainer 2 TFP24

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	26	Used		102.7	80	80	CTS
Fresh Water	13.375	New	J-55	54.5	865	865	CTS
Coal							
Intermediate	9.625	New	J-55	40	2400	2400	CTS
Production	5.5	New	P-110	20	15,261	15,261	TOC @ 2,250
Tubing							
Liners							

*Ernest L. Loyolek*  
4-24-19

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
Conductor	26	36			0	Class A, 3% CaCl2	1.2
Fresh Water	13.375	17.5	0.38	2,730	900	Class A, 3% CaCl2	1.2
Coal							
Intermediate	9.625	12.25	0.395	3,950	1,500	Class A, 3% CaCl2	1.29
Production	5.5	8.5-8.75	0.361	12,640	9,500	Class A/50:50 Poz	1.29/1.34
Tubing					5,000		
Liners					N/A		

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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

The well will be started with a conductor rig drilling a 36" hole to Conductor programmed depth then running 26" casing and circulate cement back to surface. The conductor rig will move out and the drilling rig will move in and rig up. The drilling rig will then spud a 17 1/2" hole and drill to fresh water casing (Surface) to the programmed depth, Run 13- 3/8" casing and cement to surface. The rig will continue drilling a 12- 1/4" intermediate hole to the programmed depth, run 9- 5/8" casing and cement to surface. The rig will then continue to drill an 8- 3/4" hole to a designed KOP. We will then start drilling the curve and lateral section to the programmed total measured depth, run 5 1/2" casing and cement according to the program.

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

The well will be completed using a plug and perforation method and stimulated with a slickwater and sand slurry. The anticipated maximum rate will be 90 bpm and the maximum pressure will be 9,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 19.41

22) Area to be disturbed for well pad only, less access road (acres): 7.10

## 23) Describe centralizer placement for each casing string:

26" - No centralizers 13 3/8" - one bow spring centralizer on every other joint 9 5/8" - one bow spring centralizer every third joint from TD to surface 5 1/2" - one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 2,500'; there will be no centralizers from 2,500 to surface.

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

26" will be circulated to surface. The 13 3/8" casing will be cemented to surface with Class A cement and no greater than 3% CaCl (calcium chloride). The 9 5/8" casing will be cemented to surface with Class A cement, & no greater than 3% calcium chloride. The 5 1/2" production string will be cemented back to 2,250' (+/- 150' above the casing shoe for the 9 5/8") with Class A and 50/50 Poz cement retarded (to extend pumpability) cellophane flaked for fluid loss, Bentonite gel as an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to insure the cement is of proper weight to placement and possibly gypsum gas blocking additive to aid in blocking/gas migration (in combination with other additive mentioned here, helps cement achieve a "right angle" set) during the plastic phase of the cement set-up.

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## 25) Proposed borehole conditioning procedures:

Top holes will be drilled with fresh water KOP. At KOP, the wellbore will be loaded with synthetic oil based mud, barite-weighted mud system with such properties as to build a filter-cake on the face of the bore-hole. This will provide lubricity as well as stabilizing the well bore. We will begin rotating the drill string and mud will be circulated upon reaching TD until no further cuttings are observed coming across the shaker screens. Once clean mud is circulated back to surface, we will pull three stands of drill pipe, load the hole, pull three strands and load the hole. The weight indicator on the rig will be monitored for any occurrences of drag and if any are noticed, we will re-run the previous stand of pipe pulled across and circulate 2x bottoms up while watching shakers for signs of cuttings. Once at the base curve, the string will be continuously rotated while pumping 2x bottoms up. We will pull three stands and fill the hole until we reach the vertical section of the well.

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\*Note: Attach additional sheets as needed.

<b>Well Name # Drainer 2 TFP 24 212</b>		
<b>CEMENT ADDITIVES</b>		
	<b>Name</b>	<b>Purpose</b>
Additive #1:	Bentonite	Helping fluid loss, reducing free water
Additive #2:	Calcium Chloride	Accelerator for low temp application
Additive #3:	Celloflake	Loss circulation additive
Additive #4:	Gypsum	Used for thixotropic properties
Additive #5:	Lignosulfonate	Low temp cement retarder
Additive #6:	Naphthalene Based Dispersant	Used to improve rheological properties of cement
Additive #7:	Cellulose	Help with fluid loss

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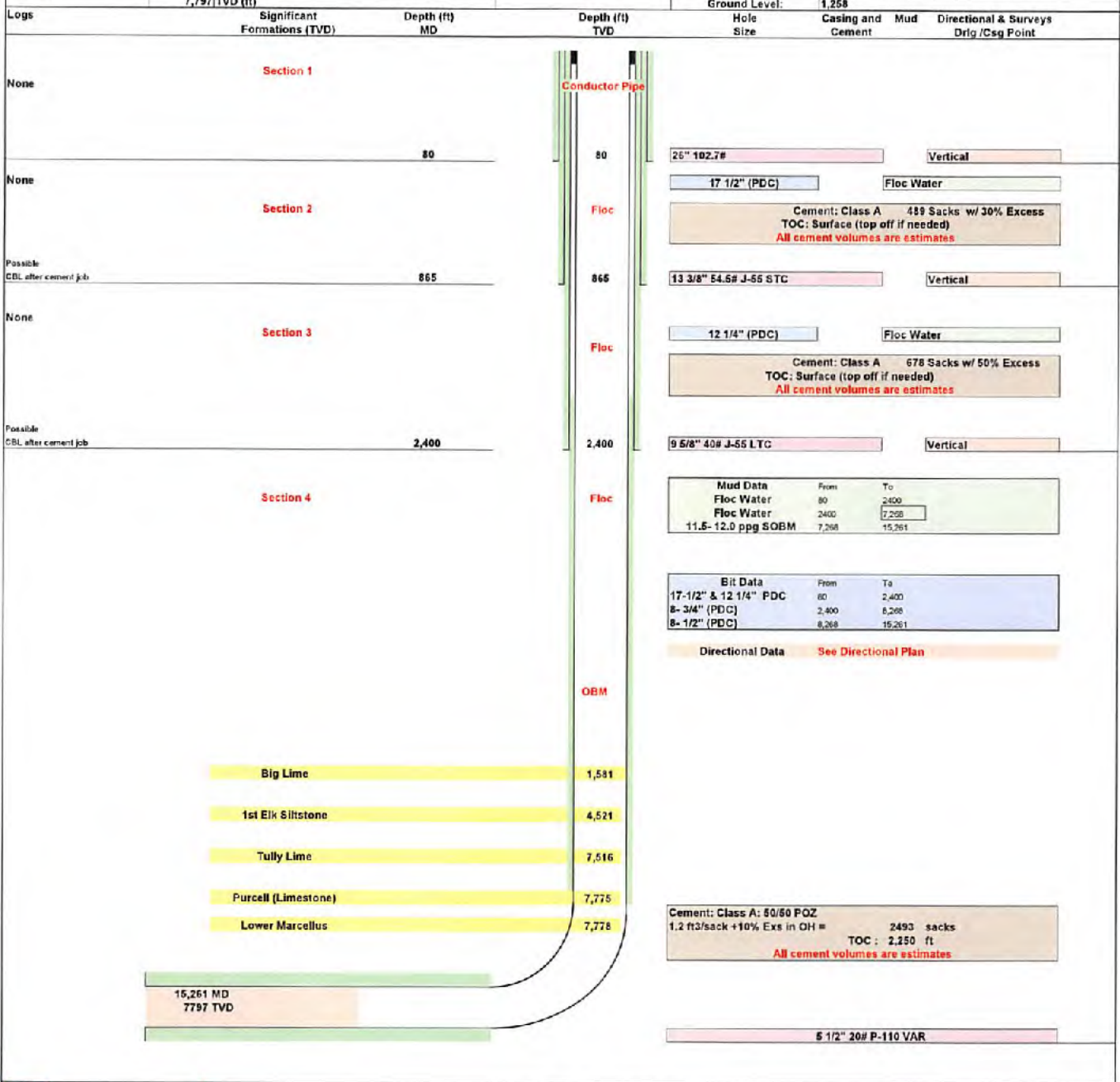
WV Department of  
Environmental Protection



Arsenal Resources  
Drainer 2 TFP24 212  
Casing Design  
Directional Plan # 1 QES

Other Names:	N/A
Surface Location:	TBD
Bottom Hole Location:	TBD
Total Depth:	15,261 MD (ft) 7,797 TVD (ft)

County:	Taylor		
State:	West Virginia		
AFE #:	XX	API #:	XX
RKB:	27		
Ground Level:	1,258		



Revision 1  
Note: Not drawn to scale  
Date Last Revised: 15-Apr-15  
Jarrett Toms  
Cement Outside Casing Seal Assembly in Annulus

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WW-9  
(4/16)

API Number 47 - 091 -  
Operator's Well No. Drainer 2 TFP24 212

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Arsenal Resources OP Code 494519412

Watershed (HUC 10) Simpson Creek Quadrangle Philippi

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 \_\_\_\_\_ )
- Reuse (at API Number Various )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: Yes, the closed loop system will contain all of the drilling medium and drill cuttings on location and then be taken to a landfill.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vertical, Freshwater, Horizontal, Oil Based, Mud

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

Additives to be used in drilling medium? Bentonite, Soap & Polymer Sticks, Soda Ash, Sodium Bicarbonate, Defoamer, Base Oil, Emulsifiers, Lime, Barite

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, sawdust) N/A

-Landfill or offsite name/permit number? Meadowfill Landfill/Waste Management, Westmoreland Sanitary Landfill, Apex Landfill

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 *William Veigel*  
Company Official (Typed Name) William Veigel  
Company Official Title Designated Agent

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Subscribed and sworn before me this 22nd day of April, 2019

WV Department of Environmental Protection

Kelly A. Davis  
My commission expires September 18, 2023



**Arsenal Resources**

Proposed Revegetation Treatment: Acres Disturbed 19.41 Prevegetation pH 6.8 Average

Lime 2.67 Tons/acre or to correct to pH 6.4

Fertilizer type 10-20-20

Fertilizer amount 1000 lbs/acre

Mulch 3-4 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	129	Orchard Grass	129
Rye	93	Rye	93
Clover	24	Clover	24
Timothy	45	Timothy	45

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Amos L. Reynolds*

Comments: Re-seed and mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade erosion and sediment control measures where needed per the West Virginia Erosion and Sediment Control Field Manual.

Title: OIL & GAS INSPECTOR

Date: 4-24-19

Field Reviewed?  Yes  No

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**ARSENAL**

R E S O U R C E S

## **SITE SAFETY PLAN**

### **Drainer 2 TFP 24 #212**

**911 Address:**

**635 Ross Rd**

**Flemington, WV 26347**

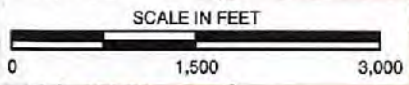
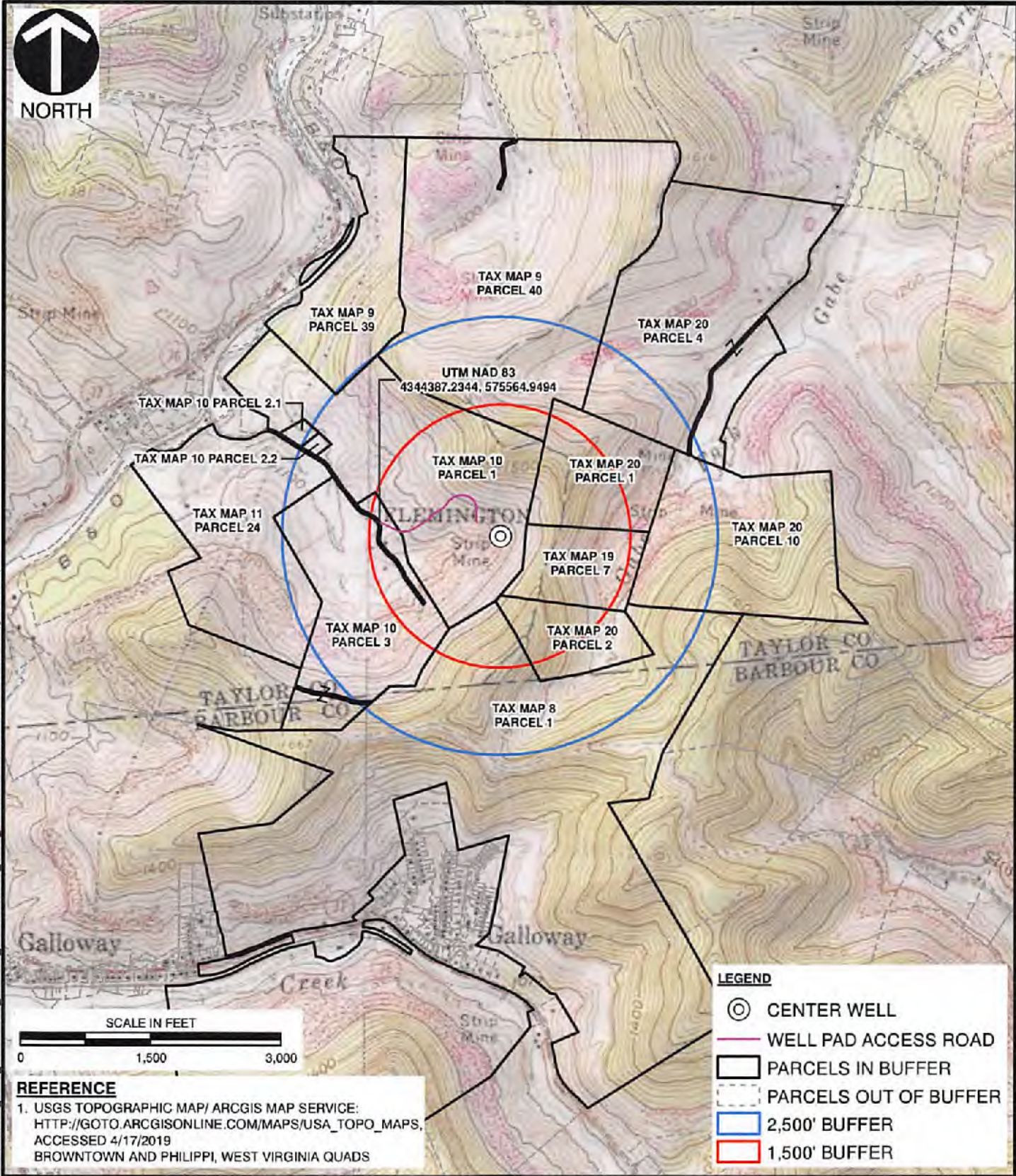
*David C. Reynolds*  
4-24-19

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**REFERENCE**  
 1. USGS TOPOGRAPHIC MAP/ ARCGIS MAP SERVICE:  
[HTTP://GOTO.ARCGISONLINE.COM/MAPS/USA\\_TOPO\\_MAPS](http://GOTO.ARCGISONLINE.COM/MAPS/USA_TOPO_MAPS),  
 ACCESSED 4/17/2019  
 BROWNTOWN AND PHILIPPI, WEST VIRGINIA QUADS

**LEGEND**

- CENTER WELL
- WELL PAD ACCESS ROAD
- PARCELS IN BUFFER
- PARCELS OUT OF BUFFER
- 2,500' BUFFER
- 1,500' BUFFER



**Civil & Environmental Consultants, Inc.**  
 600 Marketplace Avenue, Suite 200 - Bridgeport, WV 26330-9121  
 Ph: 304-933-3119 • Toll: 855-488-9539 • Fax: 304-933-3327  
[www.cecinc.com](http://www.cecinc.com)

ARSENAL RESOURCES RECEIVED  
 DRAINER 2 TFP24 WELL PAD Office of Oil and Gas  
 TAYLOR COUNTY, WEST VIRGINIA  
 MAY 10 2019

USGS SITE LOCATION MAP  
 WV Department of Environmental Protection

DRAWN BY: GSK	CHECKED BY: DBS	APPROVED BY: DRAFT*	FIGURE NO: 1
DATE: 04/17/2019	SCALE: 1" = 1,500'	PROJECT NO: 190-283.2105	

I:\svr-bridgeport\190-283-GIS\Maps\Task\_2105\_ENGIWELL\_SAFETY\_PLAN\190283\_2105\_SITE.mxd - 4/17/2019 - 3:06:55 PM (gkucukuck)

Latitude: 39°15'00"

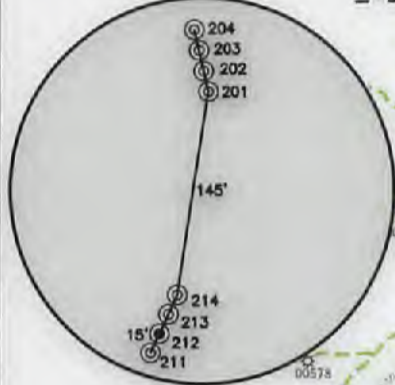
SURFACE HOLE 10095'

Latitude: 39°17'30" BOTTOM HOLE 76'



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
600 MARKETPLACE AVENUE, SUITE 200  
BRIDGEPORT, WV 26330  
304-933-3119

TAX MAP PARCEL SURVEYED LINE COORDINATES (UTM - NAD83 - ZONE 17 US FOOT)			
NORTHING	EASTING	LATITUDE	LONGITUDE
A 1435328.444	1882132.057	39.285593	-80.128557
B 1825.915.806	1886258.071	39.342002	-80.151719



**WELL RESTRICTIONS**

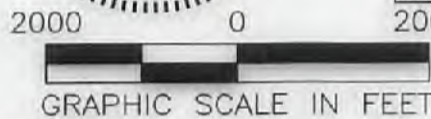
- NO OCCUPIED CIRCUMS x 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
- NO AGRICULTURAL BUILDINGS x 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
- WATER WELLS OR DEVELOPED STREAMS ARE WITHIN 500 FEET OF CENTER OF PAD.
- PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO DRIVING WITHIN OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, P & S CONTROLS OR PUBLIC WATER SUPPLY.

**NOTES ON SURVEY**

- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- ALL ASPECTS ARE GRID NORTH UNLESS OTHERWISE DESIGNATED.

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

P.S. 991



<b>SURFACE HOLE LOCATION (SHL):</b>
SPC (NAD83, WV NORTH, FEET):
NORTHING: 271870.67
EASTING: 1792985.25
GEOGRAPHIC (NAD83):
LAT: 39°14'21.17"
LONG: -80°07'10.86"
GEOGRAPHIC (NAD83):
DEC. LAT: 39.244759
DEC. LONG: -80.119683
<b>LANDING POINT (LPL):</b>
SPC (NAD83, WV NORTH, FEET):
NORTHING: 272514.85
EASTING: 1793747.45
GEOGRAPHIC (NAD83):
LAT: 39°14'47.59"
LONG: -80°07'01.37"
GEOGRAPHIC (NAD83):
DEC. LAT: 39.246552
DEC. LONG: -80.117046
<b>BOTTOM HOLE LOCATION (BHL):</b>
SPC (NAD83, WV NORTH, FEET):
NORTHING: 279159.33
EASTING: 1791467.16
GEOGRAPHIC (NAD83):
LAT: 39°15'53.37"
LONG: -80°07'30.96"
GEOGRAPHIC (NAD83):
DEC. LAT: 39.264857
DEC. LONG: -80.125267

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

WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

COMPANY: ARSENAL RESOURCES

DRAINER 2 TFP24

OPERATOR'S WELL #: 212

API WELL #: 47 091 0136/HG

STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION X DEEP GAS X LIQUID INJECTION STORAGE SHALLOW X

WATERSHED: SIMPSON CREEK ELEVATION: 1,258.70'

DISTRICT: FLEMINGTON DISTRICT COUNTY: TAYLOR QUADRANGLE: PHILIPPI

SURFACE OWNER: NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE) ACREAGE: 125.73±

OIL & GAS ROYALTY OWNER: NORMAN C. AND ESSIE M. DRAINER (LIFE) ACREAGE: 125.73±

DRILL X DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,797.0 TVD 15,261.6 TMD

WELL OPERATOR: ARSENAL RESOURCES DESIGNATED AGENT: WILLIAM VEIGEL

ADDRESS: 6031 WALLACE RD, EXT. SUITE 300 ADDRESS: 65 PROFESSIONAL PLACE, SUITE 200

CITY: WEXFORD STATE: PA ZIP CODE: 15090 CITY: BRIDGEPORT STATE: WV ZIP CODE: 26330

LEGEND:	PROPOSED SURFACE HOLE / BOTTOM HOLE	SURVEYED BOUNDARY	REVISIONS:	DATE: 04-30-2019
	EXISTING / PRODUCING WELLHEAD	PROPOSED PATH		DRAWN BY: K.E.S.
LPL X	LANDING POINT LOCATION	PENETRATED PARCEL	DATE: 04-30-2019	SCALE: 1" = 2000'
	EXISTING WATER WELL	LEASE BOUNDARY		DRAWING NO: 190-283
	EXISTING SPRING	MAIN ROAD		WELL LOCATION PLAT
		ADJACENT PROPERTY		
		WATER		
		SURVEYED CORNER		



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
600 MARKETPLACE AVENUE, SUITE 200  
BRIDGEPORT, WV 26330  
304-933-3119

WELL BORE TABLE FOR SURFACE OWNERS		
TRACT	SURFACE OWNER	TAX PARCEL
1	NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE)	04-10-01
2	A. J. SMITH HEIRS	05-19-07
3	A. J. SMITH HEIRS	05-20-01
4	GERALD B. SMITH	04-09-40
5	BRENDA M. GAINES	04-09-28
6	BRENDA M. GAINES	04-09-27
7	ELEANOR D. GREATHOUSE	04-09-24
8	CO. RT. 13/3	
9	JOSEPH W. COSTILOW	04-09-21
10	CONNIE SUE SCOTT	04-09-21.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	ROBERT D. STOUT II	05-20-02
B	BECKWITH LUMBER COMPANY INC.	09-08-01
C	NORMAN C. AND ESSIE M. DRAINER AND CLINTON DRAINER (LIFE)	04-10-03
D	RANDALL AND CRYSTAL KELLEY	04-10-2.2
E	VIRGINIA SHAFFER AND ADA MAE ANGLIN AND ROBERT PYLE ET AL	04-10-2.1
F	WILLIAM CLARK AND CRYSTAL BRAKE	04-09-39
G	KATHY L. BLAKE	04-09-30
H	KATHY L. BLAKE	04-09-30.1
I	JAMES P. AND BRENDA M. GAINES	04-09-28.2
J	MIRACLE MOUNTAIN MINISTRY	04-09-28.3
K	BRENDA M. GAINES	04-09-28.4
L	RONALD PAUL AND VICKIE LYNN CRIMM	04-09-23.2
M	ELEANOR D. GREATHOUSE	04-09-23.1
N	JAMES P. AND BRENDA M. GAINES	04-09-23
O	BRENDA M. GAINES	04-09-22
P	JEFFREY GREATHOUSE (LIFE) AND RANDALL GREATHOUSE AND SANDRA GREATHOUSE (LIFE)	04-10-2.1
Q	PETROLEUM DEVELOPMENT CORPORATION	04-09-54
R	ELEANOR D. GREATHOUSE	04-09-55
S	CSX TRANSPORTATION INC.	04-09-20
T	JOHNNA L. BAKER	04-09-19
U	KARL L. GREATHOUSE	04-09-24.3
V	ELEANOR D. GREATHOUSE	04-09-24
W	ELEANOR D. GREATHOUSE	04-09-25
X	ELEANOR D. GREATHOUSE	04-09-26
Y	JAMES F. AND ALICIA M. KINSEY (SUR)	05-20-04
Z	BECKWITH LUMBER COMPANY INC.	05-20-10

REVISIONS:

COMPANY:



OPERATOR'S DRAINER 2 TFP24  
WELL #: 47-091-01361-46A 212

DATE: 04-30-2019

DRAWN BY: K.E.S.

SCALE: N/A

DRAWING NO: 190-283

WELL LOCATION PLAT 2

DISTRICT:  
FLEMINGTON DISTRICT

COUNTY:  
TAYLOR

STATE:  
WV

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
-------------------------	-----------------------	-----------------------	---------	-----------

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

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

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

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

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Office of Oil and Gas  
MAY 10 2019  
WV Department of  
Environmental Protection

Well Operator: Arsenal Resources  
 By: William Veigel  
 Its: Designated Agent

## Attachment to WW-6A1, Drainer 2 TFP 24 212

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
1 (00004271)	James B Ross and Alma E Ross, Husband and Wife	Union Drilling Inc	12.50%	40/504	134
	Union Drilling Inc	Equitable Resources Exploration Inc		9/427	
	Equitable Resources Exploration Inc	Equitable Resources Energy Company		10/79	
	Equitable Resources Energy Company	Enervest East Limited Company		22/181	
	Enervest East Limited Company	The Houston Exploration Company		27/99	
	The Houston Exploration Company	Seneca-Upshur Petroleum Inc		27/426	
	Seneca-Upshur Petroleum Inc	Seneca-Upshur Petroleum LLC		31/427	
1 (00004272)	Ann Ross Dunn and John R Dunn, Her Husband	Union Drilling Inc	12.50%	40/489	134
	Union Drilling Inc	Equitable Resources Exploration Inc		9/427	
	Equitable Resources Exploration Inc	Equitable Resources Energy Company		10/79	
	Equitable Resources Energy Company	Enervest East Limited Company		22/181	
	Enervest East Limited Company	The Houston Exploration Company		27/99	
	The Houston Exploration Company	Seneca-Upshur Petroleum Inc		27/426	
	Seneca-Upshur Petroleum Inc	Seneca-Upshur Petroleum LLC		31/427	
2, 3, 4, 10 (00004127)	Clara Smith, a widow	Petroleum Development Corporation	12.50%	42/495	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004128)	Anna Kay Smith, a widow	Petroleum Development Corporation	12.50%	42/584	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004129)	Big W Smith and Keith Ann Smith, his wife	Petroleum Development Corporation	12.50%	42/488	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	

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**Attachment to WW-6A1, Drainer 2 TFP 24 212**

	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004130)	Augustis B Smith and Mary A Smith, his wife	Petroleum Development Corporation	12.50%	41/531	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004131)	Denver D Smith and Bertie Smith, his wife	Petroleum Development Corporation	12.50%	41/513	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004132)	Richard G Smith, single	Petroleum Development Corporation	12.50%	42/1	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004133)	Murrel Wilson and O B Wilson, her husband	Petroleum Development Corporation	12.50%	41/568	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004134)	Carolyn Kay Stuart and Gail B Stuart, he husband	Petroleum Development Corporation	12.50%	41/593	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004135)	Kimberly Ann Corley Vollman and Richard A Vollman, her husband	Petroleum Development Corporation	12.50%	42/235	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004136)	Elizabeth Stout: by Robert D Stout, her Attorney-in-fact	Petroleum Development Corporation	12.50%	41/521	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004137)	Virginia Smith, a widow	Petroleum Development Corporation	12.50%	41/552	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004138)	Virginia Joy Stemple and Frank D Stemple, her husband	Petroleum Development Corporation	12.50%	41/564	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	

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2, 3, 4, 10 (00004139)	Donald D Smith, single	Petroleum Development Corporation	12.50%	41/556	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004140)	John W Smith and Deborah L Smith, his wife	Petroleum Development Corporation	12.50%	42/250	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004141)	Ernest T Smith and Ada Smith, his wife	Petroleum Development Corporation	12.50%	41/517	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004142)	Kenneth Smith and Beatrice Smith, his wife	Petroleum Development Corporation	12.50%	41/572	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004143)	Michael Smith and Rebecca Smith, his wife	Petroleum Development Corporation	12.50%	42/98	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004144)	Francelle Eich and Robert Eich, her husband	Petroleum Development Corporation	12.50%	41/501	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004145)	Eleanor Greathouse, a widow, Ona Smith; by Eleanor Greathouse her Attorney-in-fact	Petroleum Development Corporation	12.50%	41/657	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004146)	Pearl Fundak and Frank Fundak, her husband	Petroleum Development Corporation	12.50%	41/497	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004147)	Evelyn Martin and James E Martin, her husband	Petroleum Development Corporation	12.50%	41/649	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004148)	Betty Lou Shockey, single	Petroleum Development Corporation	12.50%	41/601	356

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	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004149)	Hazel Postlethwait, a widow	Petroleum Development Corporation	12.50%	41/560	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 4150	Kathleen Roach, single	Petroleum Development Corporation	12.50%	41/613	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004151)	Connie Sue Scott and Roy A Scott, her husband	Petroleum Development Corporation	12.50%	41/609	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004152)	Carrie Jeanette Smith, a widow	Petroleum Development Corporation	12.50%	41/509	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004153)	Alva O Phillips, widower	Petroleum Development Corporation	12.50%	41/505	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004154)	Cheryl Lynn Corley Hall and Theodore Hall, her husband	Petroleum Development Corporation	12.50%	41/661	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
2, 3, 4, 10 (00004155)	Sarah Shields	Petroleum Development Corporation	12.50%	41/641	356
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
5, 6 (00003939)	James P Gaines and Brenda M Gaines, his wife	Petroleum Development Corporation	12.50%	43/74	33.5
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	
	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
7, 8 (00003557)	Ono D Smith, widow by Eleanor Greathouse, her Attorney in fact and Eleanor Greathouse, widow, in her own right	Petroleum Development Corporation	12.50%	41/365	75.6
	Petroleum Development Corp	PDC Mountaineer LLC		30/698	

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	PDC Mountaineer LLC	River Ridge Energy, LLC		8/554	
8, 9 (00008021)	Joseph W Costilow, a single man	Mar Key LLC	12.50%	69/7	1.75

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**Business and Licensing**

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**Business Organization Detail**

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**MAR KEY LLC**

<b>Organization Information</b>								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC   Limited Liability Company	7/11/2011		7/11/2011	Domestic	Profit			

<b>Organization Information</b>			
<b>Business Purpose</b>	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		<b>Capital Stock</b>
<b>Charter County</b>		<b>Control Number</b>	99Q1F
<b>Charter State</b>	WV	<b>Excess Acres</b>	
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR
<b>At Will Term Years</b>		<b>Par Value</b>	

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<b>Authorized Shares</b>

<b>Addresses</b>	
<b>Type</b>	<b>Address</b>
<b>Designated Office Address</b>	65 PROFESSIONAL PLACE SUITE 200 BRIDGEPORT, WV, 26330
<b>Mailing Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Type</b>	<b>Address</b>

<b>Officers</b>	
<b>Type</b>	<b>Name/Address</b>
<b>Member</b>	ARSENAL RESOURCES ENERGY LLC 6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090
<b>Organizer</b>	PAUL M HERZING 560 EPSILON DR. PITTSBURGH, PA, 15238 USA
<b>Type</b>	<b>Name/Address</b>

<b>Annual Reports</b>	
<b>Date filed</b>	MAY 10 2019

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3/30/2017
6/20/2016
6/30/2015
4/28/2014
6/28/2013
5/8/2012
Date filed

For more information, please contact the Secretary of State's Office at 304-558-8000.

Tuesday, November 28, 2017 — 9:44 AM

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## West Virginia Secretary of State — Online Data Services

### Business and Licensing

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### Business Organization Detail

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### SENECA-UPSHUR PETROLEUM, LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC   Limited Liability Company	2/12/1973		2/12/1973	Domestic	Profit			

Organization Information			
<b>Business Purpose</b>	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		<b>Capital Stock</b>
<b>Charter County</b>		<b>Control Number</b>	0
<b>Charter State</b>	WV	<b>Excess Acres</b>	0
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR
<b>At Will Term Years</b>		<b>Par Value</b>	
<b>Authorized Shares</b>			

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<b>Addresses</b>	
Type	Address
<b>Designated Office Address</b>	65 PROFESSIONAL PLACE SUITE 200 BRIDGEPORT, WV, 26330
<b>Mailing Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

<b>Officers</b>	
Type	Name/Address
<b>Member</b>	RIVER RIDGE ENERGY, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
<b>Organizer</b>	TAMMY J OWEN 300 SUMMERS STREET, STE 1500 PO BOX 2107 CHARLESTON, WV, 25328 USA
Type	Name/Address

<b>DBA</b>			
DBA Name	Description	Effective Date	Termination Date
KEYSPAN PRODUCTION & DEVELOPMENT COMPANY	TRADENAME	6/11/2004	
NATIONAL GRID	TRADENAME	8/17/2007	
NATIONAL GRID PRODUCTION AND DEVELOPMENT	TRADENAME	12/5/2008	5/9/2012
DBA Name	Description	Effective Date	Termination Date

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<b>Name Changes</b>

**Addresses**

Type	Address
<b>Designated Office Address</b>	65 PROFESSIONAL PLACE SUITE 200 BRIDGEPORT, WV, 26330
<b>Mailing Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
<b>Notice of Process Address</b>	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302
<b>Principal Office Address</b>	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

**Officers**

Type	Name/Address
<b>Member</b>	RIVER RIDGE ENERGY, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
<b>Organizer</b>	TAMMY J OWEN 300 SUMMERS STREET, STE 1500 PO BOX 2107 CHARLESTON, WV, 25328 USA
Type	Name/Address

**DBA**

DBA Name	Description	Effective Date	Termination Date
KEYSPAN PRODUCTION & DEVELOPMENT COMPANY	TRADENAME	6/11/2004	
NATIONAL GRID	TRADENAME	8/17/2007	
NATIONAL GRID PRODUCTION AND DEVELOPMENT	TRADENAME	12/5/2008	5/9/2012
DBA Name	Description	Effective Date	Termination Date

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7/18/2018

WV SOS - Business and Licensing - Corporations - Online Data Services

Date	Old Name
3/28/2011	SENECA-UPSHUR PETROLEUM, INC.
Date	Old Name

Date	Amendment
6/15/2016	AMENDMENT FILED CHANGING FROM A MANAGER-MANAGED CO. TO A MEMBER-MANAGED CO. >> REMOVED ROBERT KOZEL & STEPHEN A. BISHOP AS MANAGERS & ADDED SOLE MEMBER (C IMAGE).
3/28/2011	CONVERSION: FROM SENECA-UPSHUR PETROLEUM, INC. TO SENECA-UPSHUR PETROLEUM, LLC
7/25/1997	MERGER; MERGING LITTLE SWISS DRILLING COMPANY, A QUAL WV CORP AND PALACE VALLEY PETROLEUM COMPANY, A QUAL WV CORP WITH AND INTO SENECA-UPSHUR PETROLEUM, INC., A QUAL WV CORP, THE SURVIVOR.
Date	Amendment

## Annual Reports

### Filed For

2018  
2017  
2016  
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1999
1998
<b>Date filed</b>

For more information, please contact the Secretary of State's Office at 304-558-8000.

Wednesday, July 18, 2018 — 1:13 PM

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**Agreement to Drill, Complete and Operate Oil & Gas Wells**

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Arsenal Resources LLC, a West Virginia limited liability company ("Arsenal"), River Ridge Energy, LLC, a Delaware limited liability company ("River Ridge"), and River Ridge Energy, Holdings, LLC, a Delaware limited liability company ("River Ridge Holdings"), is effective as of March 1, 2017. (the "Effective Date") and sets forth the terms pursuant to which Arsenal will drill, complete and operate the Wells (as defined below) on behalf of River Ridge and River Ridge Holdings. Arsenal, River Ridge, and River Ridge Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

1. **Term:** This Agreement is effective from the Effective Date until terminated by Arsenal on the one hand or River Ridge and River Ridge Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** River Ridge and River Holdings authorize Arsenal to undertake and perform, on River Ridge and River Ridge Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by River Ridge or River Ridge Holdings. River Ridge, River Ridge Holdings and Arsenal are affiliates with a common parent. Arsenal was formed to operate oil and gas leasehold acreage held by River Ridge, River Ridge Holdings and certain other affiliates. Arsenal agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by River Ridge or River Ridge Holdings from time to time as directed by River Ridge or River Ridge Holdings (collectively, the "Wells").
3. **No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
4. **Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

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IN WITNESS WHEREOF, Arsenal, River Ridge, and River Ridge Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

**ARSENAL RESOURCES LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

**RIVER RIDGE ENERGY, LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

**RIVER RIDGE HOLDINGS, LLC**

By: Joel E. Symonds  
Name: Joel E. Symonds  
Title: Vice President - Land

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People Powered. Asset Strong.

April 15, 2019

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

RE: Ownership of Roadways; Drainer 2 TFP 24 Well(s)

Dear Mr. Martin:

In preparation of filing a permit application for the above-referenced well, the Title Department of Arsenal Resources has conducted a thorough title examination in order to determine the ownership of the oil and gas underlying all roadways crossed by the proposed well(s). The findings of the title examination show that some of the roadways crossed by the proposed well(s) may be owned in fee by the West Virginia Department of Transportation, Division of Highways and that some are only right of ways. If owned in fee by the West Virginia Department of Transportation, Division of Highways, a lease covering its interest in the roadway or roadways has been properly obtained and provided in the application materials. If a right of way only, the oil and gas underlying such roadway or roadways is owned by the adjoining landowners and is also covered by the leaseholds provided in the application materials.

If you have any questions, concerns or need further information, please do not hesitate to contact me at the address listed below.

Sincerely,

A handwritten signature in blue ink that reads 'Hillary N. Prjebel'.

Hillary N. Prjebel  
Senior Title Reviewer

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6031 Wallace Road Ext, Suite 300  
Wexford, PA 15090  
P: 724-940-1100  
F: 800-428-0981  
www.arsenalresources.com

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

Date of Notice Certification: 5-7-19

API No. 47- 091  
Operator's Well No. Drainer 2 TFP24 212  
Well Pad Name: Drainer 2 TFP24

**Notice has been given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>575965.471</u>
County:	<u>Taylor</u>		Northing:	<u>4344308.648</u>
District:	<u>Flemington</u>	Public Road Access:		<u>CR 3/12</u>
Quadrangle:	<u>Philippi</u>	Generally used farm name:		<u>Drainer 2</u>
Watershed:	<u>Simpson Creek</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
--	---

**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

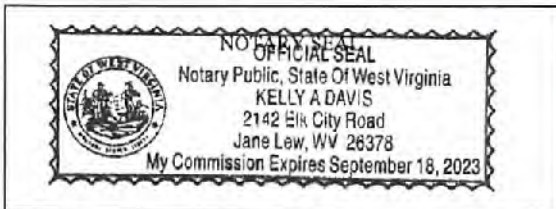
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**Certification of Notice is hereby given:**

THEREFORE, I William Veigel, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: Arsenal Resources  
By: William Veigel  
Its: Designated Agent  
Telephone: 724-940-1218

Address: 6031 Wallace Road Extension, Suite 300  
Wexford, PA 15090  
Facsimile: 304-848-9134  
Email: kdavis@arsenalresources.com



Subscribed and sworn before me this 7<sup>th</sup> day of May 2019.  
Kelly A. Davis Notary Public  
My Commission Expires September 18, 2023

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 5-7-19 Date Permit Application Filed: 5-8-19

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

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

SURFACE OWNER(s)

Name: Clinton Drainer  
 Address: 307 Ross Road  
Flemington, WV 26347  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Clinton Drainer  
 Address: 307 Ross Road  
Flemington, WV 26347  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)

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

COAL OWNER OR LESSEE

Name: See Attached  
 Address: \_\_\_\_\_

COAL OPERATOR

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

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: See Attached  
 Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

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

\*Please attach additional forms if necessary

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**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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

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**Time Limits and Methods for Filing Comments.**

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WW-6A  
(8-13)

API NO. 47-091 -  
OPERATOR WELL NO. Drainer 2 TFP24 212  
Well Pad Name: Drainer 2 TFP24

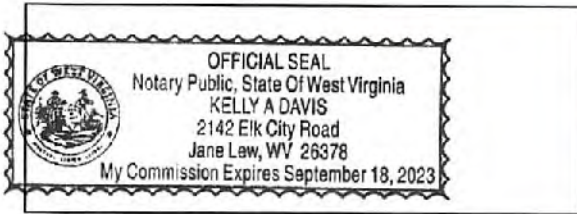
**Notice is hereby given by:**

Well Operator: Arsenal Resources *W. Davis*  
Telephone: 724-940-1218  
Email: kdavis@arsenalresources.com

Address: 65 Professional Place, Suite 200  
Bridgeport, WV 26330  
Facsimile: 304-848-9134

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 7<sup>th</sup> day of May, 2019.

Kelly A. Davis Notary Public

My Commission Expires September 18, 2023

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**Arsenal Resources**  
**Drainer 2 TFP24 212**  
**WW-6A Notice of Application, Attachment (Page 1 of 2)**

**Coal Owner or Lessee:**

Pittsburgh-Ligonier, Inc.  
1409 Greene Street  
Marietta, OH 45750

Philippi Development, Inc.  
Anker West Virginia Mining Company  
City Place One, Suite 300  
St. Louis, MO 63141

Tygart East Company  
1900 Grant Building  
Pittsburgh, PA 15219

James J. LaRosa  
136 Carriage Lane  
Bridgeport, WV 26330

**Water Purveyors:**

Beckwith Lumber Company Inc.  
P.O. Box 39  
Slatyfork, WV 26291

William Clark Brake and Crystal Raneau  
32 Substation Road  
Flemington, WV 26347-6456

Drainer Clinton  
307 Ross Road  
Flemington, WV 26347

Ross A. Dunn  
2540 Shade Park Drive  
Akron, OH 44333

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Arsenal Resources  
Drainer 2 TFP24 212

WW-6A Notice of Application, Attachment (Page 2 of 2)

**Water Purveyors (Continued):**

J.B. Dunn  
6281 Cheryl Place  
Painesville, OH 44077

Eleanor Greathouse  
486 Substation Rd  
Flemington, WV 26347

Randall and Chrystal Kelley  
PO Box 134  
Flemington, WV 26347

James and Alicia Kinsey  
1152 Bosley Hollow Rd  
Flemington, WV 26347

Virginia Shaffer & Ada Mae Anglin  
& Robert Pyle & et al  
9897 Stuthers Road  
New Middleton, OH 44442

AJ Smith Heirs  
PO Box 432  
Chatham, VA 25431

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**DRAINER 2 TFP24  
ARSENAL RESOURCES  
WATER PURVEYOR MAILING LIST**

TAX MAP	PARCEL	COUNTY	DISTRICT	Owner Name	Care Of	Address
8	1	BARBOUR	PLEASANT	BECKWITH LUMBER CO INC		PO BOX 39 SLATYFORK, WV 26291
20	10	BARBOUR	PLEASANT	BECKWITH LUMBER CO INC		PO BOX 39 SLATYFORK, WV 26291
9	39	TAYLOR	FLEMINGTON	BRAKE WILLIAM CLARK & CRYSTAL RANEAU & SURV		32 SUBSTATION RD FLEMINGTON WV 263478456
10	1	TAYLOR	FLEMINGTON	DRAINER CLINTON	C/O CLINTON & CANDANCE DRAINER IRR	307 ROSS RD FLEMINGTON, WV 26347
10	3	TAYLOR	FLEMINGTON	DRAINER CLINTON	C/O CLINTON & CANDANCE DRAINER IRR	307 ROSS RD FLEMINGTON, WV 26347
11	24	TAYLOR	FLEMINGTON	DUNN ROSS A	C/O ROSS DUNN	2540 SHADE PARK DR AKRON, OH 44333
11	24	TAYLOR	FLEMINGTON	DUNN JOHN B	C/O ROSS DUNN	6281 CHERYL PLACE PAINESVILLE, OH 44077
9	40	TAYLOR	FLEMINGTON	GREATHOUSE ELEANOR D		486 SUBSTATION RD FLEMINGTON WV 26347
10	2.2	TAYLOR	FLEMINGTON	KELLEY RANDALL & CHRYSTAL & SURV		PO BOX 134 FLEMINGTON, WV 26347
20	4	TAYLOR	COURT HOUSE	KINSEY JAMES F & ALICIA M & SURV		1152 BOSELY HOLLOW RD FLEMINGTON WV 26347
10	2.1	TAYLOR	FLEMINGTON	SHAFFER VIRGINIA & ADA MAE ANGLIN & ROBERT PYLE & ET AL	C/O ADAMAE ANGLIN	9897 STRUTHERS RD NEW MIDDLETOWN, OH 44442
20	2	TAYLOR	COURT HOUSE	SMITH A J HEIRS	C/O PERRY BARBARA	PB BOX 432 CHATHAM, VA 24531
19	7	TAYLOR	COURT HOUSE	SMITH A J HEIRS	C/O PERRY BARBARA	PB BOX 432 CHATHAM, VA 24531
20	1	TAYLOR	COURT HOUSE	SMITH A J HEIRS	C/O PERRY BARBARA	PB BOX 432 CHATHAM, VA 24531

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF INTENT TO DRILL**

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

**Notice Time Requirement:** Notice shall be provided at least TEN (10) days prior to filing a permit application.

**Date of Notice:** 5-7-19      **Date Permit Application Filed:** 5-8-19

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

HAND DELIVERY       CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

**Name:** Clinton Drainer  
**Address:** 307 Ross Road  
Flemington, WV 26347

**Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>575965.471</u>
County:	<u>Taylor</u>		Northing:	<u>4344308.648</u>
District:	<u>Flemington</u>	Public Road Access:	<u>CR 3/12</u>	
Quadrangle:	<u>Phillippi</u>	Generally used farm name:	<u>Drainer 2</u>	
Watershed:	<u>Simpson Creek</u>			

**This Notice Shall Include:**

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

**Notice is hereby given by:**

**Well Operator:** Arsenal Resources  
**Address:** 6031 Wallace Road Extension, Suite 300  
Wexford, PA 15090  
**Telephone:** 724-940-1218  
**Email:** kdavis@arsenalresources.com  
**Facsimile:** 304-848-9134

**Authorized Representative:** William Veigel  
**Address:** 65 Professional Place, Suite 200  
Bridgeport, WV 26330  
**Telephone:** 724-940-1218  
**Email:** kdavis@arsenalresources.com  
**Facsimile:** 304-848-9134

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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Office of Oil and Gas

MAY 10 2019

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 5-7-19 Date Permit Application Filed: 5-8-19

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED  HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)  
(at the address listed in the records of the sheriff at the time of notice):

Name: Clinton Drainer  
Address: 307 Ross Road  
Flemington, WV 26347

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

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 575965.471  
County: Taylor Northing: 4344308.648  
District: Flemington Public Road Access: CR 3/12  
Quadrangle: Phillippi Generally used farm name: Drainer 2  
Watershed: Simpson Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: Arsenal Resources  
Telephone: 724-940-1218  
Email: kdavis@arsenalresources.com

Address: 6031 Wallace Road Extension, Suite 300  
Wexford, PA 15090  
Facsimile: 304-848-9134

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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Office of Oil and Gas  
MAY 10 2019  
WV Department of  
Environmental Protection





## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

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

February 22, 2019

Jill M. Newman  
Deputy Commissioner

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

Subject: DOH Permit for the Drainer 2 TFP 24 Pad, Taylor County

Drainer 2 TFP 24 212 Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permits #04-2018-1102 for the subject site to ARSENAL Resources for access to the State Road for the well site located off of Taylor County 3/14 SLS.

The operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT for DOH District 4 and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton  
Regional Maintenance Engineer  
Central Office Oil & Gas Coordinator

Cc: Kelly Davis  
ARSENAL Resources  
CH, OM, D-4  
File

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MAY 10 2019

WV Department of  
Environmental Protection

**WellName # Drainer 2 TFP24 212****FRACTURING ADDITIVES**

	<b>PURPOSE</b>	<b>TRADE NAME</b>	<b>CAS #</b>
Additive #1:	Friction Reducer	WFRA-405	Proprietary
Additive #2:	Scale Inhibitor	SI-1000	7440-21-3
Additive #3:	Biocide	BIOCLEAR 2000	25314-61-8
Additive #4:	Gelling Agent	LGC-15	9000-30-0
Additive #5:	Corrosion Inhibitor	AI-300	111-76-2
Additive #6:	Gel Breaker	AP-One	7727-54-0
Additive #7:	Acid	HCl - 7.5%	7647-01-0

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Office of Oil and Gas

**MAY 10 2019**

WV Department of  
Environmental Protection

LOCATION COORDINATES				
SITE LOCATIONS	WYSAFENOKM (DMS E)		UTM83-17	
	LATITUDE	LONGITUDE	NORTHING	EASTING
DRAINER 2 TFP24 MAIN ACCESS ROAD ENTRANCE	39.245512	-80.124335	4384487.2344	5755664.9804
CENTROID OF DRAINER 2 TFP24 WELL PAD	39.245089	-80.119666	4384484.1372	5755664.8037

# DRAINER 2 TFP24 WELL PAD ARSENAL RESOURCES CORPORATION FINAL DESIGN PLANS

FLEMINGTON DISTRICT, TAYLOR COUNTY, WEST VIRGINIA  
TRIBUTARY TO SIMPSON CREEK WATERSHED

SHEET INDEX		
1. COVER SHEET	11. PROFILES AND SECTIONS	21. DETAILS
2. GENERAL NOTES	12. PROFILES AND SECTIONS	22. DETAILS
3. MATERIAL QUANTITIES	13. PROFILES AND SECTIONS	23. DETAILS
4. MASTER LEGEND	14. PROFILES AND SECTIONS	24. RECLAMATION PLAN
5. EXISTING CONSTRUCTIONS	15. PROFILES AND SECTIONS	25. RECLAMATION PLAN
6. SITE PLAN	16. PROFILES AND SECTIONS	26. RECLAMATION PLAN
7. SITE PLAN	17. DETAILS	27. RECLAMATION PLAN
8. SITE PLAN	18. DETAILS	
9. SITE PLAN	19. DETAILS	
10. PROFILES AND SECTIONS	20. DETAILS	

LOCAL EMERGENCY SERVICES		
	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	UNITED HOSPITAL CENTER	(801) 342-1000
FIRE DEPARTMENT		911
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 324-1222

FLOOD PLAN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN AREA	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
IFIC HAS BEING COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER(S) FOR SITE	440000200
COEFFICIENT OF CONSTRUCTION IN FLOODPLAIN	0.10 AC

**PROJECT OWNER/APPLICANT:** WYOMON

**ARSENAL RESOURCES CORPORATION:** DISTRICT FOUR  
15 PROFESSIONAL P. ACE, SUITE 200  
BRIDGEPORT, WV 26330  
PH: (724) 840-1200  
CONTACT: BOB GARDNER

**CIVIL ENGINEER:** WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)  
PH: (800) 542-5874

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.:** NATIONAL RESPONSE CENTER  
600 MARKPLACE AVENUE, SUITE 200  
BRIDGEPORT, WV 26330  
PH: (204) 633-3150  
CONTACT: JOSEPH D. ROBINSON, P.E.



**LOCATION MAP**  
BROWNTON & PHILLIPS USGS 7.5' QUAD  
SCALE: IN FEET  
1 INCH = 100 FEET

WELL RESTRICTIONS CHECKLIST (HORIZONTAL SA WELL)	
AT LEAST 100 FEET FROM PAD AND LOD (INCLUDING ANY GAS CONTROL FEATURES) TO ANY PERMANENT STREAM LAKE, POND, RESERVOIR OR WETLAND	NO
AT LEAST 50 FEET FROM PAD AND LOD (INCLUDING ANY GAS CONTROL FEATURES) TO ANY PERMANENTLY FLOWING STREAM	YES
AT LEAST 1000 FEET FROM PAD AND LOD (INCLUDING ANY GAS CONTROL FEATURES) TO ANY GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY	YES
AT LEAST 250 FEET FROM AN EXISTING WATER WELL OR DEVELOPED SPRING TO WELL HEAD/BOILER	YES
AT LEAST 400 FEET FROM AN OCCUPIED DWELLING STRUCTURE TO CENTER OF PAD	YES
AT LEAST 400 FEET FROM AGRICULTURAL BUILDINGS LARGER THAN 800 SQUARE FEET TO THE CENTER OF THE PAD	YES

GRAVING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
DRAINER 2 TFP24 WELL PAD	32,378	18,003	14,375
SPOIL-1	0	8,600	-8,600
SPOIL-2	0	9,809	-9,809
<b>TOTAL</b>	<b>32,378</b>	<b>36,412</b>	<b>4,034</b>
<b>TOTAL EXCAVATION (5,728 C.Y.)</b>		<b>4,782 C.Y.</b>	<b>0</b>

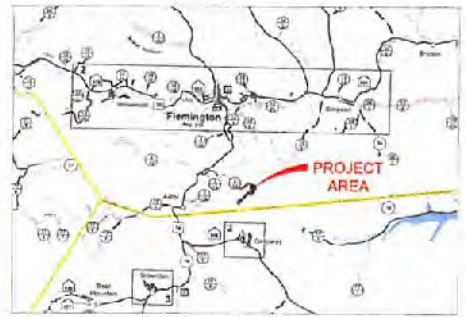
LIMITS OF DISTURBANCE PARCEL BREAK UPS - DRAINER 2 TFP24 WELL PAD					
TAYLOR COUNTY, WEST VIRGINIA					
OWNER	TM-PARCEL	DEEP-PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACRAGE
DRAINER, CLINTON	10-3	257-349	308.00	DRAINER TFP24 MAIN ACCESS ROAD	8.17
				TOPSOIL/STRIPPING PILE 1	2.60
				<b>PARCEL TOTAL</b>	<b>5.99</b>
DRAINER, CLINTON	10-1	237-349	325.44	DRAINER TFP24 MAIN ACCESS ROAD	7.10
				DRAINER 2 TFP24 WELL PAD	7.10
				SPOIL PILE 1	0.65
				SPOIL PILE 2	1.04
				<b>PARCEL TOTAL</b>	<b>18.44</b>
				<b>TOTAL</b>	<b>18.41</b>

WETLAND IMPACTS (SF/AC)			
WETLAND IMPACT AND CAUSE	AREA (SF/AC)	CONSTRUCTION DISTURBANCE DESCRIPTION	ACRES
WETLAND G	2026	0.047	DRAINER TFP24 MAIN ACCESS ROAD
WETLAND O	622	0.014	DRAINER 2 TFP24 WELL PAD
WETLAND H	1379	0.032	SPOIL PILE 1
			SPOIL PILE 2
			TOPSOIL/STRIPPING PILE 1
<b>TOTAL:</b>	<b>4026</b>	<b>0.093</b>	<b>28.41</b>

IMPACTS HAVE BEEN PERMITTED WITH THE DRAINER TFP24 WELL PAD SITE PLAN

STREAM IMPACT (LINEAR FEET)					
STREAM AND IMPACT CAUSE	TYPE OF STREAM	CULVERT	INLET/OUTLET STRUCTURES (LF)	CONSTRUCTION DISTURBANCE TO LOD (LF)	TOTAL IMPACT (FT)
UNT-11	INTERMITTENT	YES	0	75	79
<b>TOTAL</b>					<b>79</b>

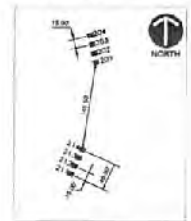
IMPACTS HAVE BEEN PERMITTED WITH THE DRAINER TFP24 WELL PAD SITE PLAN



**VICINITY MAP**  
TAYLOR COUNTY ROAD MAP  
SCALE: IN FEET  
1 INCH = 1 MILE

**PLAN REPRODUCTION WARNING**  
THE PLANS HAVE BEEN CREATED ON A 24" X 36" SHEET. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.  
THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SETS OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR (SMALL) NOT BE CONSIDERED AS ACCURATE FOR CONSTRUCTION PURPOSES.  
REPRODUCTION INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

**WEST VIRGINIA STATE LAW**  
CALL BEFORE YOU DIG!  
WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW!



**WELL HEAD LAYOUT**  
NOT TO SCALE



ARSENAL RESOURCES CORPORATION  
 CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
 600 MARKPLACE AVE - SUITE 200 - BRIDGEPORT, WV 26330  
 PH: 304.923.3119 - FAX: 304.923.3337  
 www.arsenalresources.com

ARSENAL RESOURCES CORPORATION  
 DRAINER 2 TFP24 WELL PAD  
 FLEMINGTON DISTRICT  
 TAYLOR COUNTY, WEST VIRGINIA

COVER SHEET  
 DATE: MAY 10 2019  
 DRAWN BY: JDR  
 CHECKED BY: JDR  
 PROJECT NO: C000  
 SHEET NO: 1 OF 27

RECEIVED  
 Office of Oil and Gas  
 MAY 10 2019  
 WV Department of Environmental Protection

LOCATION COORDINATES				
SITE LOCATIONS	WY84-N (NORTH ZONE)		UTM84-EZ	
	LATITUDE	LONGITUDE	NORTHING	EASTING
DRAINER 2 TFP24 MAIN ACCESS ROAD ENTRANCE	39.245532	-80.124135	4344387.2848	575564.9494
CENTROID OF DRAINER 2 TFP24 WELL PAD	39.245089	-80.119666	4344344.1379	575936.6077

# DRAINER 2 TFP24 WELL PAD ARSENAL RESOURCES CORPORATION FINAL DESIGN PLANS

FLEMINGTON DISTRICT, TAYLOR COUNTY, WEST VIRGINIA  
TRIBUTARY TO SIMPSON CREEK WATERSHED

LOCAL EMERGENCY SERVICES		
	NAME	TELEPHONE NO.
AMBULANCE	911	
HOSPITAL / EMERGENCY ROOM	UNITED HOSPITAL CENTER	8011 343-1600
FIRE DEPARTMENT	911	
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	9083 224-1222

FLOOD PLAN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT ISSUED FROM COUNTY FLOODPLAIN COORDINATOR	NO
REGULATIONS STRICTLY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER(S) FOR SITE	EA091E-0222D
ACRES OF CONSTRUCTION IN FLOODPLAIN	0.00 AC

**PROJECT OWNER/APPlicant**  
**ARSENAL RESOURCES CORPORATION**  
 65 PROFFERS PLACE SUITE 200  
 BRIDGEPORT, WV 26302  
 PH: (724) 860-1004  
 CONTACT: EDIE GARDNER

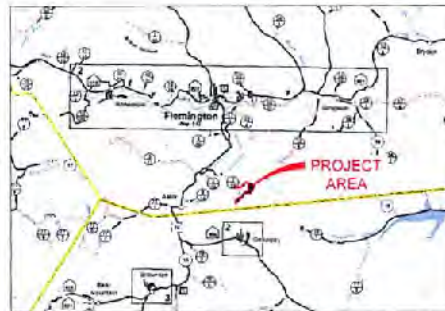
**DESIGNER**  
**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
 308 MARKET PLACE AVENUE SUITE 200  
 BRIDGEPORT, WV 26302  
 PH: (724) 833-3114  
 CONTACT: JOSEPH D. ROBINSON, P.E.

**WVDEP**  
 DISTRICT FOUR  
 PH: (606) 840-1500  
 CONTACT: DISTRICT ENGINEER  
 CONRAD L. WILLIAMS, P.E.

**STATE HOTLINE**  
 WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)  
 PH: (800) 642-3004  
 NATIONAL RESPONSE CENTER  
 PH: (800) 424-8902



**LOCATION MAP**  
 BROWNTON & PHELIPTON 7.5' DUAD  
 SCALE: 1" = 1000 FEET



**VICINITY MAP**  
 TAYLOR COUNTY ROAD MAP  
 SCALE: 1" = 1 MILE

**APPROVED**  
**WVDEP OOG**  
 8/17/2019



**PLAN REPRODUCTION WARNING**  
 THE PLANS HAVE BEEN CREATED ON ANSI G 207 X 343 SHEETS. FOR REPRODUCTIONS, REFER TO GRAPHIC SCALE.  
 THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OFF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED NEGLIGENT FOR CONSTRUCTION PURPOSES.  
 PHOTOGRAPHIC INFORMATION MAY BE LOST IN COPYING AND/OR COPY SCALE PLOTTING.

**WEST VIRGINIA**  
 BEARS BEFORE YOU DIG!  
 WEST VIRGINIA STATE LAW REQUIRES THAT YOU CALL TWO BUSINESS DAYS BEFORE YOU DIG IN THE STATE OF WEST VIRGINIA. IT'S THE LAW.

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9. SITE PLAN	19. DETAILS	
10. PROFILES AND SECTIONS	20. DETAILS	

WELL TIE CONDITIONS CHECKLIST (EXCLUDING TFP24 WELLS)	
AT LEAST 100 FEET FROM PROJECT (DO NOT INCLUDE ANY EAS CONTROL FEATURES TO ANY PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND)	YES
AT LEAST 50 FEET FROM PAD AND LOD (EXCLUDING ANY EAS CONTROL FEATURES TO ANY NATURALLY OCCURRING TROPICAL STREAM)	YES
AT LEAST 100 FEET FROM FACILITY (DO NOT INCLUDE ANY EAS CONTROL FEATURES TO ANY GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY)	YES
AT LEAST 50 FEET FROM AN EXISTING WATER WELL OR DEVELOPED HOPING TO WELL BEING DRILLED	YES
AT LEAST 100 FEET FROM AN OCCUPIED DWELLING STRUCTURE TO CENTER OF PAD	YES
AT LEAST 100 FEET FROM AN AGRICULTURAL BUILDING LARGER THAN 2000 SQUARE FEET TO THE CENTER OF THE PAD	YES

DRAINING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
DRAINER 2 TFP24 WELL PAD	32,976	18,023	14,953
SPOIL PILE 1	0	4,860	-4,860
SPOIL PILE 2	0	9,493	-9,493
<b>TOTAL</b>	<b>32,976</b>	<b>32,376</b>	<b>0</b>
<b>TOTALS/STRIPPING (5,738 C.Y.)</b>	<b>4,782 C.Y.</b>		
<b>TOTAL EXCAVATION</b>	<b>37,168</b>	<b>37,163</b>	<b>0</b>

LIMITS OF DISTURBANCE PARCEL BREAK UPS - DRAINER 2 TFP24 WELL PAD					
TAYLOR COUNTY, WEST VIRGINIA					
OWNER	TIM/PARCEL	DEED PAGE	TOTAL ACRES	TYPE OF DISTURBANCE	ACERAGE
DRAINER, CLAYTON	10-3	237-149	300.00	DRAINER 2 TFP24 MAIN ACCESS ROAD	8.47
				TOPSOIL/STRIPPING PILE 1	2.92
				<b>PARCEL TOTAL</b>	<b>5.92</b>
DRAINER, CLAYTON	10-1	237-149	129.44	DRAINER 2 TFP24 MAIN ACCESS ROAD	6.65
				DRAINER 2 TFP24 WELL PAD	7.10
				SPOIL PILE 1	0.55
				SPOIL PILE 2	1.38
				<b>PARCEL TOTAL</b>	<b>22.68</b>
				<b>TOTAL</b>	<b>28.42</b>

WETLAND IMPACTS (99/AC)			
WETLAND IMPACT AND CAUSE	AREA (SQ/AC)	CONSTRUCTION DISTURBANCE DESCRIPTION	
WETLAND G	2026	0.047	DRAINER 2 TFP24 WELL PAD
WETLAND C	622	0.018	ACCESS ROAD
WETLAND H	1370	0.052	ACCESS ROAD
<b>TOTAL</b>	<b>4018</b>	<b>0.093</b>	

IMPACTS HAVE BEEN FORMATTED WITH THE DRAINER 2 TFP24 WELL PAD SITE PLAN

LOD AREAS	
DESCRIPTION	ACRES
DRAINER 2 TFP24 MAIN ACCESS ROAD	8.02
DRAINER 2 TFP24 WELL PAD	7.10
SPOIL PILE 1	0.55
SPOIL PILE 2	1.04
TOPSOIL/STRIPPING PILE 1	7.90
<b>TOTAL</b>	<b>29.61</b>
WOODED	8.29

STREAM IMPACT (LINEAR FEET)					
STREAM AND IMPACT CAUSE	TYPE OF STREAM	CULVERT	LINE FOOT/LET'S STRUCTURES (LF)	CONSTRUCTION DISTURBANCE TO LOD (LF)	TOTAL IMPACT (FT)
UNT-11	INTERMITTENT	YES	0	29	79
<b>TOTAL</b>					<b>79</b>

IMPACTS HAVE BEEN FORMATTED WITH THE DRAINER 2 TFP24 WELL PAD SITE PLAN



**REVISION RECORD**

NO.	DATE	DESCRIPTION
1		ISSUED FOR PERMITS
2		REVISIONS FOR COMMENTS

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
 308 Market Place Ave. - Suite 200 - Bridgeport, WV 26302  
 PH: 304.923.3119 - 855.486.8059 - Fax: 304.923.3327  
 www.civilandenv.com

**ARSENAL RESOURCES CORPORATION**  
 DRAINER 2 TFP24 WELL PAD  
 FLEMINGTON DISTRICT  
 TAYLOR COUNTY, WEST VIRGINIA

**COVER SHEET**

DATE: APRIL 2019  
 DRAWN BY: ASL  
 CHECKED BY: JDR  
 PROJECT NO: 19-001  
 SHEET NO: 001 OF 01

DESIGNED BY: **C000**

SHEET 1 OF 27

