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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

Jim Justice , Governor  
Austin Caperton , Cabinet Secretary  
www.dep.wv.gov

Tuesday, November 07, 2017  
WELL WORK PERMIT  
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC  
6031 WALLACE ROAD EXTENSION SUITE 300

WEXFORD, PA 15090

Re: Permit approval for STOUT BPP30 214  
47-001-03357-00-00

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: STOUT BPP30 214  
Farm Name: JUANITA STOUT  
U.S. WELL NUMBER: 47-001-03357-00-00  
Horizontal 6A / New Drill  
Date Issued: 11/7/2017

Promoting a healthy environment.

11/10/2017

# PERMIT CONDITIONS

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

## CONDITIONS

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1. 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.

## 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).

WW-6B  
(04/15)

API NO. 47-001  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

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

- 1) Well Operator: Arsenal Resources 494519412 Barbour Pleasant Phillippi  
Operator ID County District Quadrangle
- 2) Operator's Well Number: Stout BPP30 214 Well Pad Name: Stout BPP 30 Pad
- 3) Farm Name/Surface Owner: Thomas Stout & John William (III) Stout Public Road Access: County Rt. 10, Pleasant Creek Road
- 4) Elevation, current ground: 1334' Elevation, proposed post-construction: 1334'
- 5) Well Type (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas Shallow  Deep   
Horizontal
- 6) Existing Pad: Yes or No No
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale, Top - 7,727', Bottom - 7,814', 87', 0.5 psi/ft
- 8) Proposed Total Vertical Depth: 7800'
- 9) Formation at Total Vertical Depth: Marcellus Shale
- 10) Proposed Total Measured Depth: 15,625'
- 11) Proposed Horizontal Leg Length: 7,415.36'
- 12) Approximate Fresh Water Strata Depths: 700'
- 13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (001-00536, 001-00759, 001-02377, 001-02381, 001-02385)
- 14) Approximate Saltwater Depths: 1,850'
- 15) Approximate Coal Seam Depths: Elk Lick-78, Hinton-151, Sabalton-231, Brush Creek-231, Upper Prosper-429, Lower Prosper-474, Upper Kilmorock-539, Middle Kilmorock-594, Lower Kilmorock-619, Clinco-644
- 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: \_\_\_\_\_

WW-6B  
(04/15)

API NO. 47- 001  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	24"	New	H-40	94#	110'	110'	CTS
Fresh Water	13.375"	New	J-55	54.5#	750'	750'	CTS
Coal							
Intermediate	9.625"	New	J-55	40#	1,900'	1,900'	CTS
Production	5.5"	New	P-110	20#	15,625'	15,625'	TOC @1,750' MD
Tubing							
Liners							

*Lennard L. Reynolds 11-6-17*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	24"	36"			0	Type 1, 3% Cel	1.20
Fresh Water	13.375"	17.5"	0.38"	2,730	900	Class A 9% Cel	1.20
Coal					0		
Intermediate	9.625"	12.25"	0.395"	3,950 psi	1900	Class A 2% Cel	1.29
Production	5.5"	8.5-8.75	0.361"	12,640 psi	9,500	Type 1	1.64 / 1.32
Tubing					5,000		
Liners					N/A		

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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 24" casing and grout 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 a 8- 3/4" hole to a designed KOP and 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.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 23.8

22) Area to be disturbed for well pad only, less access road (acres): 11.3

23) Describe centralizer placement for each casing string:

24"- 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 2,000'; there will be no centralizers from 2,000' to surface.

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

24" will be grouted from 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 Type 1 cement, & no greater than 3% calcium chloride. The 5-1/2" production string will be cemented back to 1,750' (+/- 150' above the casing shoe for the 9-5/8") with Type 1 or Class A cement retarder (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 a 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.

25) Proposed borehole conditioning procedures:

Top holes will be drilled with fresh water to 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 to 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 stands and load the hole. The weight indicator on the rig will be monitored for any occurrences of drag and if any are notices, we will re-run the previous stand of pipe pulled across and circulate 2X bottoms up while watching the shakers for signs of cuttings. Once at the base of the 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.

\*Note: Attach additional sheets as needed.



## 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 Preston County, WV prior to hydraulic fracturing at the Stout BPP30 214 Pad.

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 4,500' 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.

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**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.

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Click or tap to enter a date.

**Alliance**

Address  
State

RE: Click or tap here to enter text.

Dear Sir/Madam,

Arsenal Resources has developed a Marcellus pad Stout BPP30 214 Pad, located in Barbour 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 Stout BPP30 214 Pad during the **Quarter of 2017**. 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 724-940-1224 with any questions or comments. You may also contact the WV Office of Oil and Gas at 304-926-0499.

Sincerely,

Carolinda Flanagan  
Permitting Specialist

Area of Review Report - **Stout BPP30** Pad, **214** Lateral, **Barbour** County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
O W & Nellie Lough 1	001-00536	Union Drilling, Inc.	Plugged - 7/7/1973	39.239283	-80.070769	4400	Riley, Benson	NA
Danny R Stone 1	091-00779	Petroleum Development Corp.	Plugged - 12/12/1991	39.246614	-80.072615	NA	NA	NA
Woodbridge Stout et ux.5	091-00767	Alliance Petroleum Corporation	Existing	39.254347	-80.074857	4405	Benson	NA



Arsenal Resources  
 Stout BPP30 214  
 Casing Design  
 Directional Plan # 1 QES

Other Names:	N/A
Surface Location:	TBD
Bottom Hole Location:	TBD
Total Depth:	15,625 MD (ft) 7,800 TVD (ft)

County:	Barbour
State:	West Virginia
AFE #:	XX
RKB:	27
Ground Level:	1,334

Logs	Significant Formations (TVD)	Depth (ft) MD	Depth (ft) TVD	Hole Size	Casing and Cement	Mud	Directional & Surveys Drlg /Csg Point								
None	Section 1		110	24" 94# H-40 STC	Vertical		Drive Pipe								
None	Section 2		750	17 1/2" (PDC)	Floc Water		Floc								
Possible CBL after cement job		750		Cement: Type 1 489 Sacks w/ 30% Excess TOC: Surface (top off if needed) All cement volumes are estimates											
None	Section 3		1,900	13 3/8" 64.5# J-55 STC	Vertical		Floc								
Possible CBL after cement job		1,900		Cement: Type 1 389 Sacks w/ 50% Excess TOC: Surface (top off if needed) All cement volumes are estimates											
	Section 4		1,900	9 5/8" 40# J-55 LTC	Vertical		Floc								
				Mud Data											
				<table border="1"> <tr> <td>From</td> <td>To</td> </tr> <tr> <td>Floc Water</td> <td>110 1900</td> </tr> <tr> <td>Floc Water</td> <td>1900 7,210</td> </tr> <tr> <td>11.5- 12.0 ppg SOB</td> <td>7,210 15,625</td> </tr> </table>			From	To	Floc Water	110 1900	Floc Water	1900 7,210	11.5- 12.0 ppg SOB	7,210 15,625	
From	To														
Floc Water	110 1900														
Floc Water	1900 7,210														
11.5- 12.0 ppg SOB	7,210 15,625														
				Bit Data											
				<table border="1"> <tr> <td>From</td> <td>To</td> </tr> <tr> <td>17-1/2" &amp; 12 1/4" PDC</td> <td>110 1,900</td> </tr> <tr> <td>8- 3/4" (PDC)</td> <td>1,900 8,210</td> </tr> <tr> <td>8- 1/2" (PDC)</td> <td>8,210 15,625</td> </tr> </table>			From	To	17-1/2" & 12 1/4" PDC	110 1,900	8- 3/4" (PDC)	1,900 8,210	8- 1/2" (PDC)	8,210 15,625	
From	To														
17-1/2" & 12 1/4" PDC	110 1,900														
8- 3/4" (PDC)	1,900 8,210														
8- 1/2" (PDC)	8,210 15,625														
				Directional Data See Directional Plan											
				OBM											
	Big Lime		1,364												
	1st Elk Siltstone		4,599												
	Tully Lime		7,429												
	Purcell (Limestone)		7,779												
	Lower Marcellus		7,785												
				Cement: Type 1 1.2 ft3/sack +10% Exs in OH = 2654 sacks TOC : 1,750 ft All cement volumes are estimates											
				5 1/2" 20# P-110 VAR											

Revision 1

Note: Not drawn to scale

Cement Outside Casing  
 Seal Assembly in Annulus

Date Last Revised: 30-Oct-17  
 Jarrett Toms

WW-9  
(4/16)

API Number 47 - 001 - \_\_\_\_\_

Operator's Well No. Stout BPP30 214

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) Tygart Valley - Sandy 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: Produced Water

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? 60 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, Soada 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? Advanced Disposal Services & Chestnut Valley 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 22<sup>ND</sup> day of AUGUST, 20 17

*Christopher J. [Signature]* Notary Public

My commission expires 9/15/2021

**Arsenal Resources**

Proposed Revegetation Treatment: Acres Disturbed 11.3 Prevegetation pH 6.0 - 7.5

Lime 2 Tons/acre or to correct to pH 6

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

**Seed Mixtures**

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	40	Fescue	30
Ryegrass	40	Ryegrass	20
Spring Oats	96	Clover	30

**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: *Ernest Reynolds*

Comments: Pre-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, if necessary.

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Title: OIL & GAS INSPECTION Date: 8-22-17

Field Reviewed?  Yes  No



# SITE SAFETY PLAN

## Stout BPP30 #214 WELL PAD

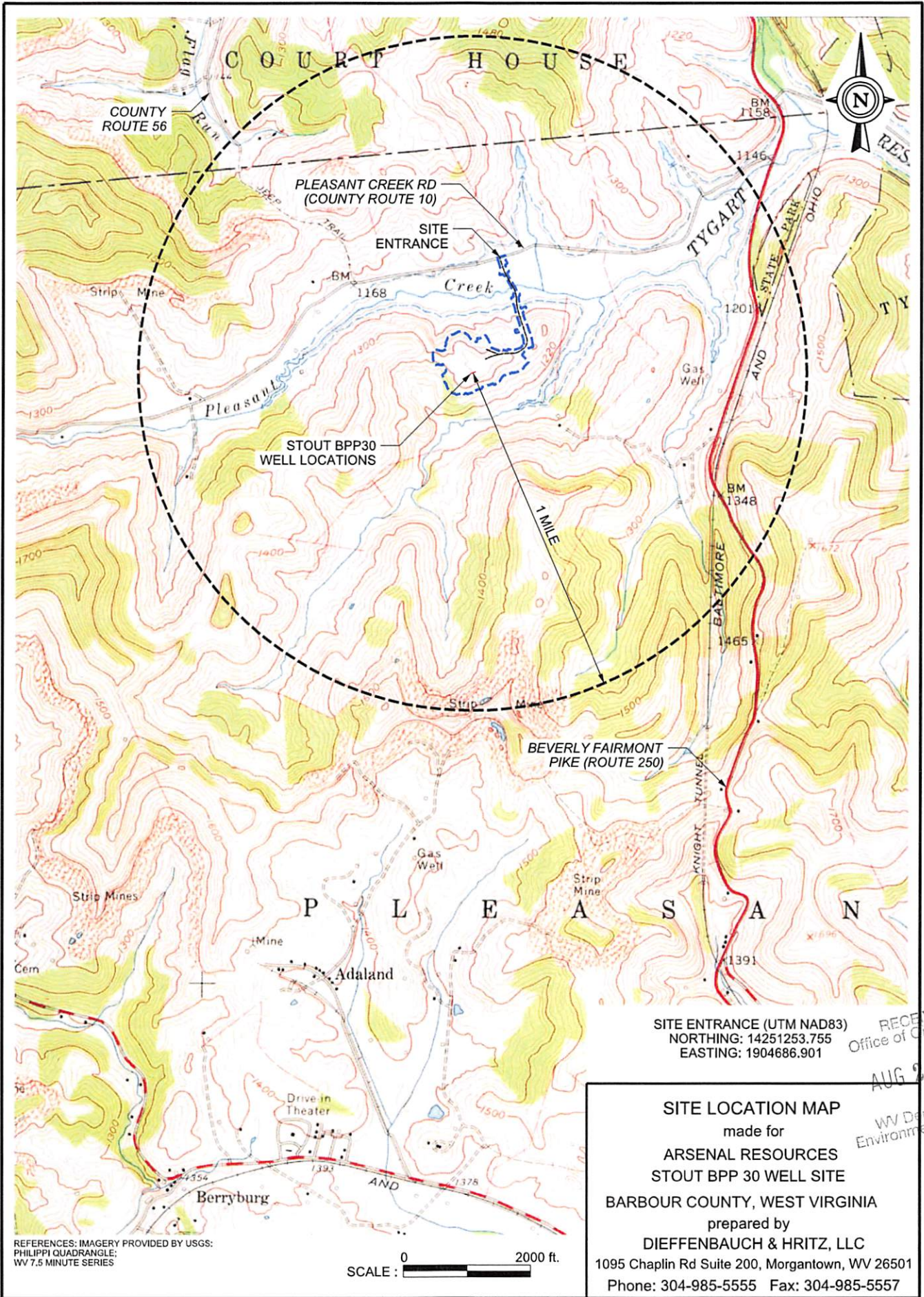
911 Address:

935 Upper Pleasant Creek Road  
Philippi, WV 26416

*Ernest Reynolds*  
8-22-17

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1:2000 7/18/2017 9:08:38 AM K:\Mountaineer-Keystone\2017\17078-001 - PUMA30\Common\SITE LOCATION MAP.dgn



SITE ENTRANCE (UTM NAD83)  
 NORTHING: 14251253.755  
 EASTING: 1904686.901

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 AUG 24 2017

**SITE LOCATION MAP**  
 made for  
**ARSENAL RESOURCES**  
**STOUT BPP 30 WELL SITE**  
**BARBOUR COUNTY, WEST VIRGINIA**  
 prepared by  
**DIEFFENBAUCH & HRITZ, LLC**  
 1095 Chaplin Rd Suite 200, Morgantown, WV 26501  
 Phone: 304-985-5555 Fax: 304-985-5557

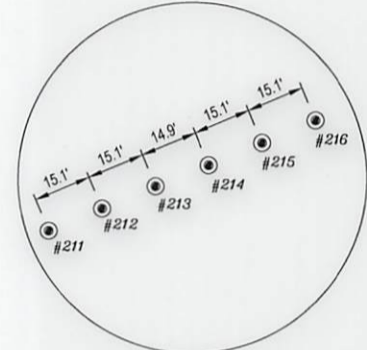
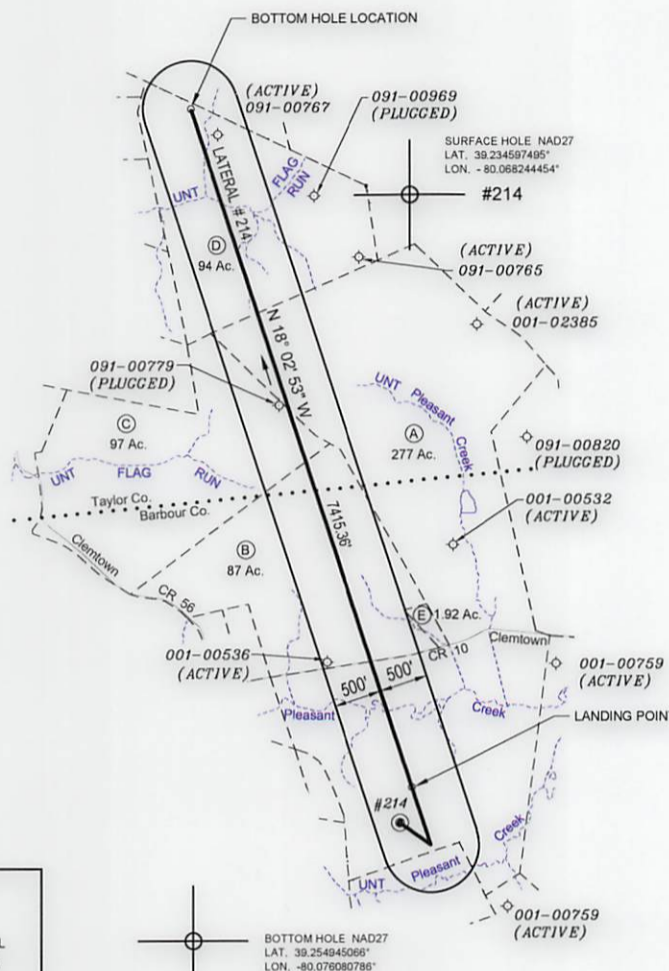
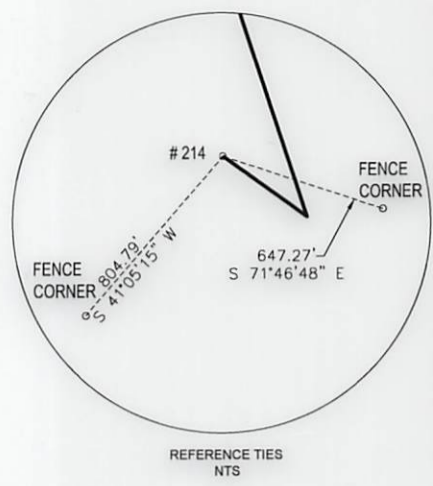
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11/10/2017

SURFACE HOLE DEC. LONG. = - 80.068244454°  
 SURVEYED LONG. = -80° 04' 05.68"

Latitude: 39° 15' 00" (NAD27)

(NAD83-WV) US SURVEY FT.	(NAD83 LAT/LONG) Decimal	(UTM, NAD83) METER
<b>TOP HOLE</b>	<b>TOP HOLE</b>	<b>TOP HOLE</b>
N) 268103.900	N) 39.234692354	N) 4343234.937
E) 1807598.400	E) -80.068048252	E) 580432.780
<b>LANDING POINT</b>	<b>LANDING POINT</b>	<b>LANDING POINT</b>
N) 268478.200	N) 39.235722168	N) 4343349.610
E) 1807723.600	E) -80.067614605	E) 580469.030
<b>BOTTOM HOLE</b>	<b>BOTTOM HOLE</b>	<b>BOTTOM HOLE</b>
N) 275528.700	N) 39.255039169	N) 4345486.070
E) 1805426.200	E) -80.075884823	E) 579733.384



**REFERENCE NOTES**

- Property lines as shown taken from deeds, tax maps, and field locations. A full boundary survey is not expressed or implied. All bearings are based on grid North. Ownership taken from public records Barbour & Taylor County, West Virginia Date 2017
- State Plane Coordinates & NAD83 Lat/Long by differential submeter mapping grade GPS.
- There are no railroads, dwellings, or agricultural buildings within 625 feet of center of pad.
- No water wells found within 250' of the center of well pad.

**LEGEND**

- PROPOSED WELL LATERAL
- - - PROPOSED WELL TIE LINE
- STREAM
- EXISTING ROAD
- - - BUFFER
- - - PROPERTY LINE
- #H PROPOSE WELL HEAD
- EXISTING WELL HEAD
- LANDING POINT/BOTTOM HOLE
- SURFACE OWNER

BOTTOM HOLE NAD27 GRAFTON GEOGRAPHIC QUADRANGLE  
 13314' SOUTH OF LAT. 39° 17' 30"  
 9826' WEST OF LONG. 80° 02' 30"

TAX MAP ID NUMBER	OWNER NAME	PARCEL NUMBER
A TM 7 / 7	Stout Thomas & Stout William (Bill)	01-09-0007-0007-0000
B TM 7 / 8	Stone Danny R & Pamela J HWS	01-09-0007-0008-0000
C TM 19 / 6	Coffman Cleo E	46-05-0019-0006-0000
D TM 15 / 53	Stout Woodbridge	46-05-0015-0053-0000
E TM 7 / 8.1	Stone Jeffrey D & Candice L.	01-09-0007-0008-0001

FILE#: 17078-001  
 SHEET#: 1 of 1  
 SCALE: 1" = 2000'  
 TICK SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: WV-RTN CORS STATION

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 THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: Gary W. Kuroski 10-26-17  
 P.S. #2069: Gary W. Kuroski, P.S.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: OCT. 26, 2017  
 STOUT BPP30  
 OPERATOR'S WELL #: # 214  
 API WELL #: 47 01 **03357**  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow  
 WATERSHED: TYGART VALLEY - SANDY CREEK  
 COUNTY / DISTRICT: BARBOUR & TAYLOR / PLEASANT & COURTHOUSE  
 SURFACE OWNER: THOMAS STOUT and JOHN WILLIAM (BILL) STOUT  
 OIL & GAS ROYALTY OWNER: THOMAS STOUT and JOHN WILLIAM (BILL) STOUT

ELEVATION: 1334'  
 QUADRANGLE: PHILIPPI, WV  
 ACREAGE: 277  
 ACREAGE: 557 ±

- DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE
- PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON
- CLEAN OUT & REPLUG  OTHER CHANGE SPECIFY: \_\_\_\_\_

TARGET FORMATION: MARCELLUS  
 WELL OPERATOR: ARSENAL RESOURCES  
 ADDRESS: 6031 WALLACE ROAD EXTENSION # 300  
 CITY: WEXFORD STATE: PA ZIP: 15090

ESTIMATED DEPTH: TVD: 7800' TMD: 15625'  
 DESIGNATED AGENT: WILLIAM VEIGEL  
 ADDRESS: 65 PROFESSIONAL PLACE SUITE 200  
 CITY: BRIDGEPORT STATE: WV ZIP: 26330

Longitude: 80° 02' 30" (NAD27)  
 SURFACE HOLE DEC. LAT. = 39° 23' 45.97495"  
 SURVEYED LAT. = 39° 14' 04.55"



WW-6A1  
(5/13)

Operator's Well No. Stout BPP30 214

**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
-------------------------	-----------------------	-----------------------	---------	-----------

See Attached

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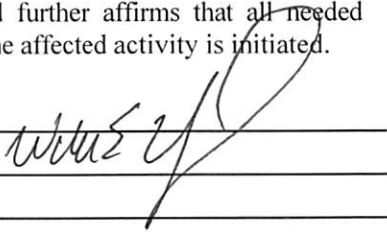
WV Department of  
Environmental Protection

**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.

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

## Attachment to WW-6A1, Scoup BPP 30 - 214

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
A (00004197)	C.W. Paugh and Sallie Paugh, his wife Union Drilling, Inc.	Union Drilling, Inc.	12.50%	LB 96-206 (Barbour Co.) DB 325-219 (Barbour Co.)	125
	Equitable Resources Corporation, Inc.	Equitable Resources Energy Company		DB 328-171 (Barbour Co.)	
	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.		LB 116-81 (Barbour Co.)	
	Fuel Resources Production and Development, Inc.	The Houston Exploration Company		LB 136-162 (Barbour Co.) DB 383-187 (Barbour Co.)	
	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.		LB 139-48 (Barbour Co.)	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC		DB 447-129 (Barbour Co.)	
A (00005908)	C.W. Paugh and Sallie Paugh, his wife, Pauline Cleaverger, single, Paul Norman L. Botkin	Norman L. Botkin Cumberland and Allegheny Gas Company	12.50%	LB 36-229 (Barbour Co.) LB 36-249 (Barbour Co.)	155
	Cumberland and Allegheny Gas Company	Union Drilling, Inc. and Allerton Miller		LB 46-347 (Barbour Co.)	
	Allerton Miller	Union Drilling, Inc.		LB 98-11 (Barbour Co.)	
	Union Drilling, Inc.	Equitable Resources Exploration, Inc.		DB 325-219 (Barbour Co.)	
	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company		DB 328-171 (Barbour Co.)	
	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.		LB 116-81 (Barbour Co.)	
	Fuel Resources Production and Development, Inc.	The Houston Exploration Company		LB 136-162 (Barbour Co.) DB 383-187 (Barbour Co.)	

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	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.		LB 139-48 (Barbour Co.)	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC		DB 447-129 (Barbour Co.)	
B (00005001)	Danny R. Stone and Pamela J. Stone	PDC Mountaineer, LLC	14.50%	LB 155-602 (Barbour Co.)	196
	PDC Mountaineer, LLC	River Ridge Energy, LLC		LB 177-58 (Barbour Co.)	
C (00005000)	Cleo E. Coffman	PDC Mountaineer, LLC	14.50%	LB 68-429 (Taylor Co.) LB 155-605 (Barbour Co.)	98 (as amended by LB 68-399)
	PDC Mountaineer, LLC	River Ridge Energy, LLC		LB 177-57 (Barbour Co.)	
D (00007249)	Woodbridge Stout	Mar Key, LLC	15.00%	LB 68-195 (Taylor Co.)	256,378
E (00005001)	Danny R. Stone and Pamela J. Stone	PDC Mountaineer, LLC	14.50%	LB 155-602 (Barbour Co.) LB 177-58 (Barbour Co.)	196
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

## West Virginia Secretary of State — Online Data Services

### Business and Licensing

Online Data Services Help

### Business Organization Detail

*NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.*

#### MAR KEY LLC

Organization Information								
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			

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>	99Q1F		
<b>Charter State</b>	WV	<b>Excess Acres</b>			
<b>At Will Term</b>	A	<b>Member Managed</b>	MBR	RECEIVED Office of Oil and Gas AUG 24 2017	
<b>At Will Term Years</b>		<b>Par Value</b>	WV Department of Environmental Protection		

11/10/2017

<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>	MOUNTAINEER KEYSTONE 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>

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Environmental Protection

<b>Annual Reports</b>	
<b>Date filed</b>	

11/10/2017

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.

Thursday, February 23, 2017 — 9:08 AM

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11/10/2017

047-001-03357

## West Virginia Secretary of State — Online Data Services

### Business and Licensing

Online Data Services Help

### Business Organization Detail

*NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.*

### SENECA-UPSHUR PETROLEUM, 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	2/12/1973		2/12/1973	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> 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>		

11/10/2017

11/6/2017

<b>Authorized Shares</b>	047-001-03357

<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

11/10/2017

11/6/2017



047-001-03357

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
<b>DBA Name</b>	<b>Description</b>	<b>Effective Date</b>	<b>Termination Date</b>

<b>Name Changes</b>	
<b>Date</b>	<b>Old Name</b>
3/28/2011	SENECA-UPSHUR PETROLEUM, INC.
<b>Date</b>	<b>Old Name</b>

<b>Date</b>	<b>Amendment</b>
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.
<b>Date</b>	<b>Amendment</b>

<b>Annual Reports</b>	
<b>Date filed</b>	
3/30/2017	
6/20/2016	
6/30/2015	
5/27/2014	
6/21/2013	
6/21/2012	
5/12/2010	

11/10/2017

11/6/2017

047-001-03357

7/21/2009
7/7/2008
10/31/2007
4/13/2007
12/13/2005
5/2/2005
8/9/2004
3/6/2003
12/19/2001
9/27/2000
6/26/2000
<b>Date filed</b>

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

Monday, November 6, 2017 — 9:40 AM

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SENeca STONE GEDMIN & GEDMIN LLP  
 300 SUMMERS ST STE 1500  
 CHARLESTON, WV 25301-1630

BOOK 447 PAGE 129

**CONFIRMATORY DEED AND ASSIGNMENT OF LEASES**

THIS CONFIRMATORY DEED AND ASSIGNMENT OF LEASES, made the 10<sup>th</sup> day of April, 2011, but effective for all purposes as of March 28, 2011, is by and between SENECA-UPSHUR PETROLEUM, INC., a West Virginia corporation, and SENECA-UPSHUR PETROLEUM, LLC, a West Virginia limited liability company.

**WITNESSETH:**

By the Plan of Conversion, effective as of March 28, 2011, by Seneca-Upshur Petroleum, Inc. (the "Conversion"), Seneca-Upshur Petroleum, Inc., was converted into Seneca-Upshur Petroleum, LLC, as evidence by a certificate of conversion filed and recorded in the Office of the West Virginia Secretary of State, a copy of which is attached hereto as Exhibit B.

Pursuant to the terms of the Conversion, all rights and interests of Seneca-Upshur Petroleum, Inc., in and to every type of property, real, personal, or otherwise, is vested in Seneca-Upshur Petroleum, LLC, by virtue of the conversion.

The parties desire that this Confirmatory Deed and Assignment of Leases be made to evidence, of record, the true ownership of all Seneca-Upshur Petroleum, Inc.'s property, including, but not limited to, all property listed on the attached Exhibit A.

For and in consideration of the conversion of Seneca-Upshur Petroleum, Inc., to Seneca-Upshur Petroleum, LLC, and for good and valuable consideration not otherwise mentioned, the receipt and sufficiency of which are acknowledged by Seneca-Upshur Petroleum, Inc., Seneca-Upshur Petroleum, Inc., hereby confirms that all of its property, real, personal, and mixed, including but not limited to all lots, tracts, or parcels of land, wells and leasehold estates situate in the counties listed on the attached Schedule 1, is now vested in Seneca-Upshur Petroleum, LLC.

SEN 447 REG 130

The parties declare that the interests referenced in this assignment are exempt from State and County taxes on the privilege of transferring real property as set forth in West Virginia Code § 11-22-1(4), because this transfer is a confirmatory deed and assignment of leases incident to conversion.

This Confirmatory Deed and Assignment of Leases may be executed in a number of identical counterparts, and each counterpart is deemed to be an original instrument.

WITNESS the following signatures and seals:

SENECA-UPSHUR PETROLEUM, INC.

By: Brian T. McCabe

Its: SVP

SENECA-UPSHUR PETROLEUM, LLC

By: Brian T. McCabe

Its: SVP

STATE OF New York

COUNTY OF Suffolk, To-Wit:

I, Reshmi Das, a Notary Public in and for Suffolk County, New York, do hereby certify that Brian T. McCabe, as Sr. V. P. of Seneca-Upshur Petroleum, Inc., has on this 18<sup>th</sup> day of April, 2011, signed the foregoing on behalf of Seneca-Upshur Petroleum, Inc.

Reshmi Das  
Notary Public

My commission expires on \_\_\_\_\_  
RESHMI DAS  
NOTARY PUBLIC - STATE OF NEW YORK  
NO. 62348106489  
QUALIFIED IN SUFFOLK COUNTY  
COMMISSION EXPIRES NOVEMBER 17, 2011



~~447~~ ~~131~~

STATE OF NEW YORK

COUNTY OF SUFFOLK, To-Wit:

I, Reshmi Das, a Notary Public in and for Suffolk County, New York, do hereby certify that Brian T. McCabe, as Senior Vice President of SENECA-UPSHUR PETROLEUM, LLC, has on this 18th day of April, 2011, signed the foregoing on behalf of SENECA-UPSHUR PETROLEUM, LLC.

*Reshmi Das*

Notary Public

My commission expires on RESHMI DAS  
NOTARY PUBLIC - STATE OF NEW YORK  
NO. 2: 248186488  
QUALIFIED IN: SUFFOLK COUNTY  
COMMISSION EXPIRES NOVEMBER 17, 2012

**PREPARED BY:**

Deanna R. Stone (W. Va. Bar No. 11083)  
Goodwin & Goodwin, LLP  
300 Summers Street, East, Suite 1500 (25301)  
Post Office Box 2107  
Charleston, West Virginia 25328-2107  
(304) 346-7000  
(304) 344-9692 (Facsimile)

SCHEDULE I  
SENECA-UPSHUR PETROLEUM, LLC

COUNTY	STATE
Chautauque	New York
Armstrong	Pennsylvania
Crawford	Pennsylvania
Erie	Pennsylvania
Fayette	Pennsylvania
Greene	Pennsylvania
Indiana	Pennsylvania
Barbour	West Virginia
Boone	West Virginia
Bradon	West Virginia
Clay	West Virginia
Doddridge	West Virginia
Glen	West Virginia
Harrison	West Virginia
Lewis	West Virginia
Mason	West Virginia
McDowell	West Virginia
Mingo	West Virginia
Monongalia	West Virginia
Nicholas	West Virginia
Preston	West Virginia
Raleigh	West Virginia
Randolph	West Virginia
Richie	West Virginia
Taylor	West Virginia
Tucker	West Virginia
Tyler	West Virginia
Upshur	West Virginia
Webster	West Virginia

447 187

STATE OF WEST VIRGINIA, County of Barbour, To-Wit:  
 I, Macel L. Auxil, Clerk of the County Commission of said  
 County, do hereby certify that the foregoing writing, with Certificate  
 thereto annexed, was this day produced to me in my office and duly  
 admitted to record.  
 Witness my hand, *Macel L. Auxil, Clerk*

Macel L. Auxil  
 Barbour County 01:28:17 PM  
 Instrument No 94119  
 Date Recorded 04/22/2011  
 Record Type PDD  
 Pages Recorded 59  
 Fee \$99 487.129  
 Recording Fee \$65.00  
 Additional \$10.00

**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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WV Department of  
Environmental Protection

11/10/2017

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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Office of Oil and Gas

AUG 24 2017

WV Department of  
Environmental Protection

11/10/2017



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

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Mountaineer Keystone LLC, a West Virginia limited liability company ("Mountaineer Keystone"), PDC Mountaineer, LLC, a Delaware limited liability company ("PDC"), and PDC Mountaineer Holdings, LLC, a Delaware limited liability company ("PDC Holdings"), is effective as of October 15, 2014. (the "Effective Date") and sets forth the terms pursuant to which Mountaineer Keystone will drill, complete and operate the Wells (as defined below) on behalf of PDC and PDC Holdings. Mountaineer Keystone, PDC, and PDC 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 Mountaineer Keystone on the one hand or PDC and PDC Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** PDC and PDC Holdings authorize Mountaineer Keystone to undertake and perform, on PDC and PDC 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 PDC or PDC Holdings. PDC, PDC Holdings and Mountaineer Keystone are affiliates with a common parent. Mountaineer Keystone was formed to operate oil and gas leasehold acreage held by PDC, PDC Holdings and certain other affiliates. Mountaineer Keystone 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 PDC or PDC Holdings from time to time as directed by PDC or PDC 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]

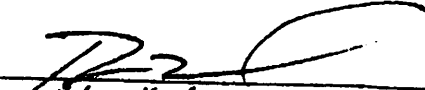
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Office of Oil and Gas

AUG 24 2017


WV Department of  
Environmental Protection

IN WITNESS WHEREOF, Mountaineer Keystone, PDC, and PDC Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.


**MOUNTAINEER KEYSTONE LLC**

By:   
Name: *Robert Koel*  
Title: *CEO*

**PDC MOUNTAINEER, LLC**

By:   
Name: *Robert Koel*  
Title: *CEO*

**PDC MOUNTAINEER HOLDINGS, LLC**

By:   
Name: *Robert Koel*  
Title: *CEO*

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VA Department of  
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People Powered. Asset Strong.

August 14, 2017

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

RE: Ownership of Roadways; Stout BPP 30 Unit – Well 214

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. The findings of the title examination show that the roadways crossed by the proposed well is a right of way, with the oil and gas being owned and 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 'William T. Fahey III'.

William T. Fahey III  
*Senior Title Attorney*

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WV Department of  
Environmental Protection

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

11/10/2017

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

Date of Notice Certification: 8-23-17

API No. 47- 001 - \_\_\_\_\_  
Operator's Well No. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

**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>580,432.780</u>
County: <u>Barbour</u>	UTM NAD 83 Northing: <u>4,343,234.937</u>
District: <u>Pleasant</u>	Public Road Access: <u>County Rt. 10, Pleasant Creek Road</u>
Quadrangle: <u>Philippi</u>	Generally used farm name: <u>Stout</u>
Watershed: <u>Tygart Valley - Sandy 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 type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input 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 checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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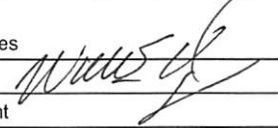
**Required Attachments:**

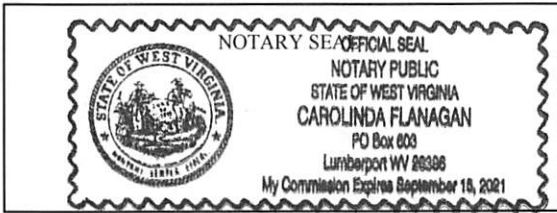
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

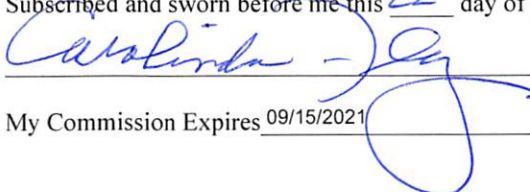
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WW Department of Environmental Protection  
11/10/2017

**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:	<u>Arsenal Resources</u>	Address:	<u>6031 Wallache Road Extension, Suite 300</u>
By:	<u>William Veigel</u> 		<u>Wexford, PA 15090</u>
Its:	<u>Designated Agent</u>	Facsimile:	<u>304-848-9134</u>
Telephone:	<u>724-940-1224</u>	Email:	<u>cflanagan@arsenalresources.com</u>



Subscribed and sworn before me this 22<sup>ND</sup> day of AUG. 2017.  
  
 \_\_\_\_\_ Notary Public  
 My Commission Expires 09/15/2021

**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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 Environmental Protection  
 11/10/2017

WW-6A  
(9-13)API NO. 47- 001 -  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

**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:** 8-23-17 **Date Permit Application Filed:** 8-23-17

**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: Thomas Stout  
Address: 1390 Braewick Drive  
Morgantown, WV 26505

Name: John William (Bill) Stout  
Address: P.O. Box 79048  
Charlotte, NC 28271

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

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

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

SURFACE OWNER(s) (Impoundments or Pits)

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

COAL OWNER OR LESSEE  
Name: CoalQuest Development LLC  
Address: 100 Tygart Drive  
Grafton, WV 26354

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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047-001-03357

AUG 24 2017

API NO. 47-001

OPERATOR WELL NO. Stout BPP30 214

Well Pad Name: Stout BPP 30 Pad

WV Department of  
Environmental Protection

**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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API NO. 47- 001 - \_\_\_\_\_  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

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

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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.**

11/10/2017



**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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11/10/2017

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(8-13)

047-001-03357

API NO. 47- 001 -  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

**Notice is hereby given by:**

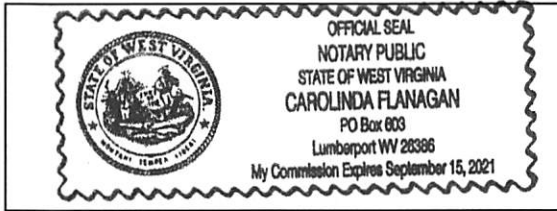
Well Operator: Arsenal Resources  
Telephone: 724-940-1224  
Email: cflanagan@arsenalresources.com



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).



Subscribed and sworn before me this 22<sup>nd</sup> day of AUG, 2017.

Carolinda Flanagan Notary Public

My Commission Expires 09/15/2021

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Environmental Protection

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**Stout BPP 30**

**Surface Owner(s), Surface Owner(s) (Road and/or Other Disturbance), Surface Owner(s) (Impoundment or Pit) and Mineral Owner(s):**

Thomas Stout /  
1390 Braewick Drive  
Morgantown, WV 26505

John William (Bill) Stout /  
P.O. Box 79048  
Charlotte, NC 28271

**Coal Owner or Lessee:** /  
CoalQuest Development LLC  
100 Tygart Drive  
Grafton, WV 26354  
Attn: Chuck Duckworth

**Water Purveyors:** /  
James L. Clements /  
P.O. Box 1752  
Ridgeland, SC 29936

Alma Lee Kennedy /  
21673 Barbour Co Hwy  
Philippi, WV 26416

Karen & John Hyde /  
1404 Upper Pleasant Creek Road  
Philippi, WV 26416

Danny Ray Stone  
RR 3 Box 166  
Philippi, WV 26416

State of WV Bureau of Commerce DNR /  
324 Fourth Avenue, Building 74  
South Charleston, WV 25303

Juanita Stout c/o Thomas Stout /  
1390 Braewick Drive  
Morgantown, WV 26505

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WV Department of  
Environmental Protection

## Report: Potential Water Purveyor's

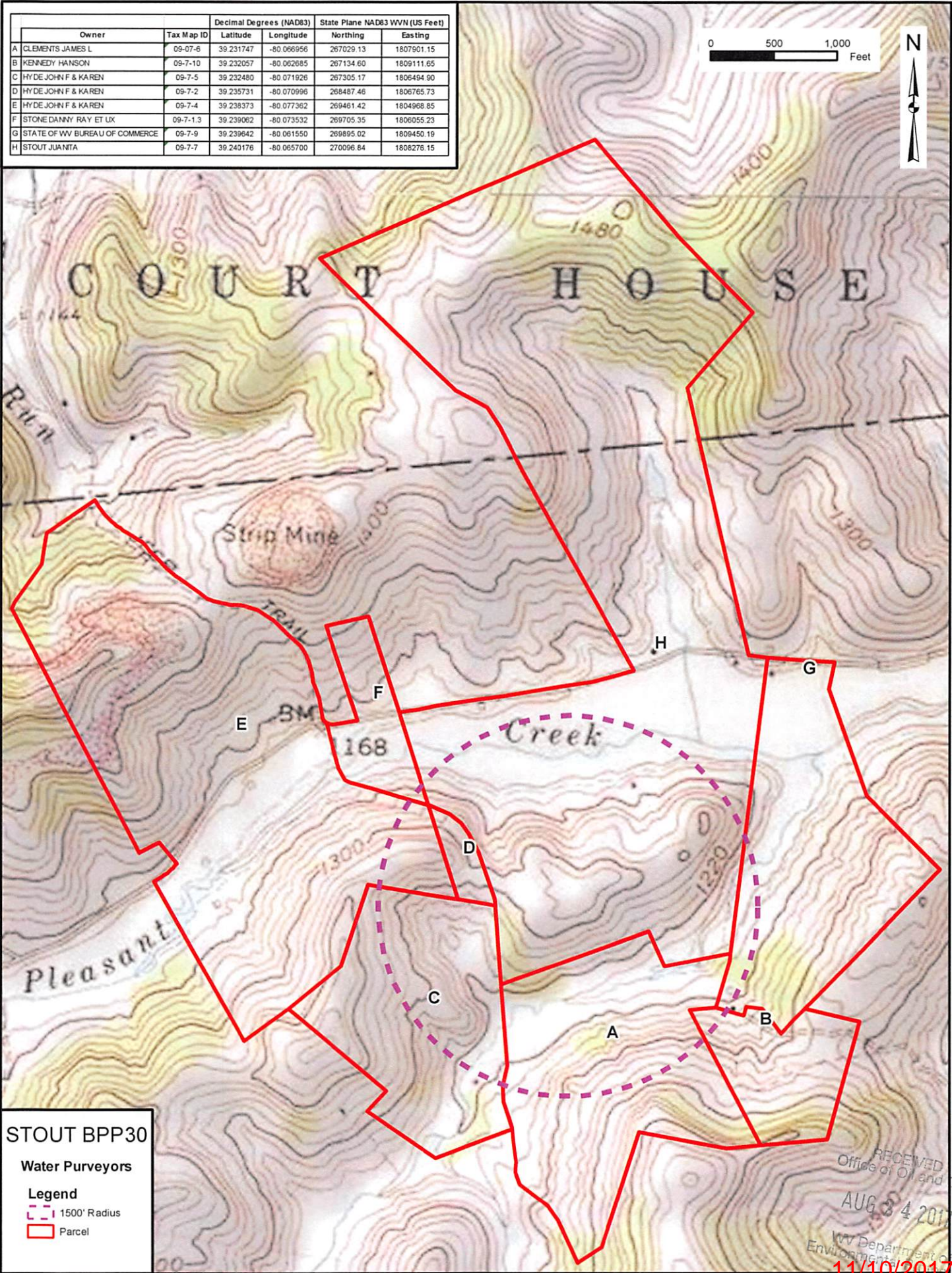
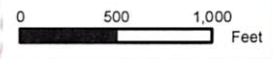
**Project:** Stout BPP30  
**County:** Barbour  
**State:** West Virginia

The following surface owners may have water supplies within 1,500 feet of the Stout BPP30 well pad location:

<u>Name</u>	<u>Tax Map ID</u>	<u>Mailing Address</u>
A. James L. Clements	09-07-6	PO Box 1752, Ridgeland SC 29936
B. Alma Lee Kennedy	09-7-10	21673 Barbour Co Hwy, Philippi WV 26416
C. Karen and John Hyde	09-7-5	1404 Upper Pleasant Creek Road, Philippi WV 26416
D. Karen and John Hyde	09-7-2	1404 Upper Pleasant Creek Road, Philippi WV 26416
E. Karen and John Hyde	09-7-4	1404 Upper Pleasant Creek Road, Philippi WV 26416
F. Danny Ray Stone	09-7-1.3	RR3 Box 166, Philippi WV 26416
G. State of WV Bureau Of Commerce DNR	09-7-9	324 Fourth Ave, Building 74, South Charleston, WV 25303
H. Juanita Stout	09-7-7	1390Braewick Dr., Morgantown WV 26505

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	Owner	Tax Map ID	Decimal Degrees (NAD83)		State Plane NAD83 WVN (US Feet)	
			Latitude	Longitude	Northing	Eastng
A	CLEMENTS JAMES L	09-07-6	39 231747	-80 066956	267029.13	1807901.15
B	KENNEDY HANSON	09-7-10	39 232057	-80 062685	267134.60	1809111.65
C	HYDE JOHN F & KAREN	09-7-5	39 232480	-80 071926	267305.17	1806494.90
D	HYDE JOHN F & KAREN	09-7-2	39 235731	-80 070996	268487.46	1806765.73
E	HYDE JOHN F & KAREN	09-7-4	39 238373	-80 077362	269461.42	1804968.85
F	STONE DANNY RAY ET UX	09-7-1.3	39 239062	-80 073532	269705.35	1806055.23
G	STATE OF WV BUREAU OF COMMERCE	09-7-9	39 239642	-80 061550	269895.02	1809450.19
H	STOUT JUANITA	09-7-7	39 240176	-80 065700	270096.84	1808276.15



STOUT BPP30

Water Purveyors

Legend

- 1500' Radius
- Parcel

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047-001-03357

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

**Date of Notice:** 02/15/2017      **Date of Planned Entry:** 02/22/2017

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(S)

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

COAL OWNER OR LESSEE

Name: CoalQuest Development, LLC  
 Address: 100 Tygart Drive  
Grafton, WV 26354

MINERAL OWNER(S)

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

\*please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.235240, -80.068300</u>
County: <u>Barbour</u>	Public Road Access: <u>County Rt. 10, Pleasant Creek Road</u>
District: <u>Pleasant</u>	Watershed: <u>Tygart Valley - Sandy Creek</u>
Quadrangle: <u>Philippi</u>	Generally used farm name: <u>Stout</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary 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  
 Telephone: 724-940-1224  
 Email: cflanagan@arsenalresources.com

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

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**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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**Stout BPP30 214**  
**WW-6A3 Attachment to Notice of Plat Survey**

**Surface Owner(s), Surface Owner(s) (Road and/or Other Disturbance), Surface Owner(s) (Impoundment or Pit) and Mineral Owner(s):**

Thomas Stout ✓  
1390 Braewick Drive  
Morgantown, WV 26505

John William (Bill) Stout ✓  
P.O. Box 79048  
Charlotte, NC 28271

**Coal Owner or Lessee:**

CoalQuest Development LLC ✓  
100 Tygart Drive  
Grafton, WV 26354  
Attn: Chuck Duckworth

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WW-6A4  
(1/12)Operator Well No. Stout BPP30 214

**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:** 8-23-17      **Date Permit Application Filed:** 8-23-17

**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: Thomas Stout  
Address: 1390 Braewick Drive  
Morgantown, WV 26505

Name: John William (Bill) Stout  
Address: P.O. Box 79048  
Charlotte, NC 28271

**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>580,432.780</u>
County:	<u>Barbour</u>		Northing:	<u>4,343,234.937</u>
District:	<u>Pleasant</u>	Public Road Access:	<u>County Rt. 10, Pleasant Creek Road</u>	
Quadrangle:	<u>Philippi</u>	Generally used farm name:	<u>Stout</u>	
Watershed:	<u>Tygart Valley - Sandy 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 Wallache Road Extension, Suite 300  
Wexford, PA 15090  
Telephone: 724-940-1224  
Email: cflanagan@arsenalresources.com  
Facsimile: 304-848-9134

Authorized Representative: William Veigel  
Address: 65 Professional Place, Suite 200  
Bridgeport, WV 26330  
Telephone: 724-940-1224  
Email: cflanagan@arsenalresources.com  
Facsimile: 304-848-9134

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**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 PLANNED OPERATION**

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

**Date of Notice:** 8-23-17      **Date Permit Application Filed:** 8-23-17

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

CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      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: Thomas Stout  
Address: 1390 Braewick Drive  
Morgantown, WV 26505

Name: John William (Bill) Stout  
Address: P.O. Box 79048  
Charlotte, NC 28271

**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:	<u>West Virginia</u>	UTM NAD 83    Easting:	<u>580,432.780</u>
County:	<u>Barbour</u>	Northing:	<u>4,343,234.937</u>
District:	<u>Pleasant</u>	Public Road Access:	<u>County Rt. 10, Pleasant Creek Road</u>
Quadrangle:	<u>Philippi</u>	Generally used farm name:	<u>Stout</u>
Watershed:	<u>Tygart Valley - Sandy Creek</u>		

**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).

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Email: cflanagan@arsenalresources.com

Address: 6031 Wallache Road Extension, Suite 300  
Wexsford, PA 15090  
Facsimile: 304-848-9134

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WW-6AW  
(1-12)

API NO. 47- 001  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**VOLUNTARY STATEMENT OF NO OBJECTION**

**Instructions to Persons Named on Page WW-6A**

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

**Comment and Waiver Provisions**

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

**VOLUNTARY STATEMENT OF NO OBJECTION**

I, Danny Ray Stone, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through \_\_\_\_\_, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>580,432.780</u>
County:	<u>Barbour</u>	UTM NAD 83 Northing:	<u>4,343,234.937</u>
District:	<u>Pleasant</u>	Public Road Access:	<u>County Rt. 10, Pleasant Creek Road</u>
Quadrangle:	<u>Phillipi</u>	Generally used farm name:	<u>Stout</u>
Watershed:	<u>Tygart Valley - Sandy Creek</u>		

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p><b>*Please check the box that applies</b></p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input checked="" type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p><b>FOR EXECUTION BY A NATURAL PERSON</b></p> <p>Signature: <u>Danny Stone</u></p> <p>Print Name: <u>DANNY STONE</u></p> <p>Date: <u>9-4-17</u></p> <p><b>FOR EXECUTION BY A CORPORATION, ETC.</b></p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: <u>Danny Stone</u></p> <p>Date: <u>9-4-17</u></p>
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**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).

11/10/2017

WW-6AW  
(1-12)API NO. 47- 001 -  
OPERATOR WELL NO. Stout BPP30 214  
Well Pad Name: Stout BPP 30 Pad

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**VOLUNTARY STATEMENT OF NO OBJECTION**

**Instructions to Persons Named on Page WW-6A**

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

**Comment and Waiver Provisions**

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

**VOLUNTARY STATEMENT OF NO OBJECTION**

I, James L. Clements, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through \_\_\_\_\_, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>580,432.780</u>
County:	<u>Barbour</u>		Northing:	<u>4,343,234.937</u>
District:	<u>Pleasant</u>	Public Road Access:	<u>County Rt. 10, Pleasant Creek Road</u>	
Quadrangle:	<u>Phillipi</u>	Generally used farm name:	<u>Stout</u>	
Watershed:	<u>Tygart Valley - Sandy Creek</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input checked="" type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p><b>FOR EXECUTION BY A NATURAL PERSON</b></p> <p>Signature: <u>James L. Clements</u></p> <p>Print Name: <u>James L. Clements</u></p> <p>Date: <u>8/28/17</u></p> <p><b>FOR EXECUTION BY A CORPORATION, ETC.</b></p> <p>Company: _____</p> <p>By: _____ RECEIVED Office of Oil and Gas</p> <p>Its: _____</p> <p style="text-align: right;">SEP 18 2017</p> <p>Signature: _____</p> <p>Date: _____ WV Department of Environmental Protection</p>
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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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

11/10/2017



## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

Jim Justice  
Governor

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

August 30, 2017

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 Stout BPP 30 Pad, Barbour County  
Stout BPP 30 214 Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #07-2017-0194 to Arsenal Resources for access to the well site located off of Barbour County route 10 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT 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 O&G Coordinator

Cc: Kelly Eddy  
Arsenal Resources  
CH, OM, D-7

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E.E.O. AFFIRMATIVE ACTION EMPLOYER

WV Department of  
Environmental Protection 11/10/2017

<b>Stout BPP30 214</b>			
<b>FRACTURING ADDITIVES</b>			
	<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

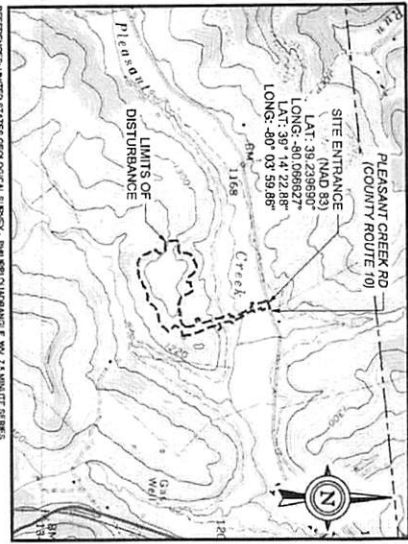
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Environmental Protection



# EROSION & SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN

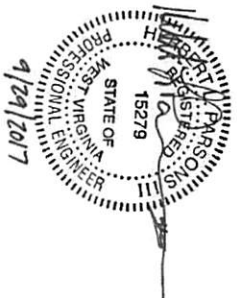
## STOUT BPP 30 WELL SITE BARBOUR COUNTY, WEST VIRGINIA

### FOR



DIEFFENBAUCH & HRITZ, LLC

**APPROVED**  
**WVDEP OOG**  
10/13/2017



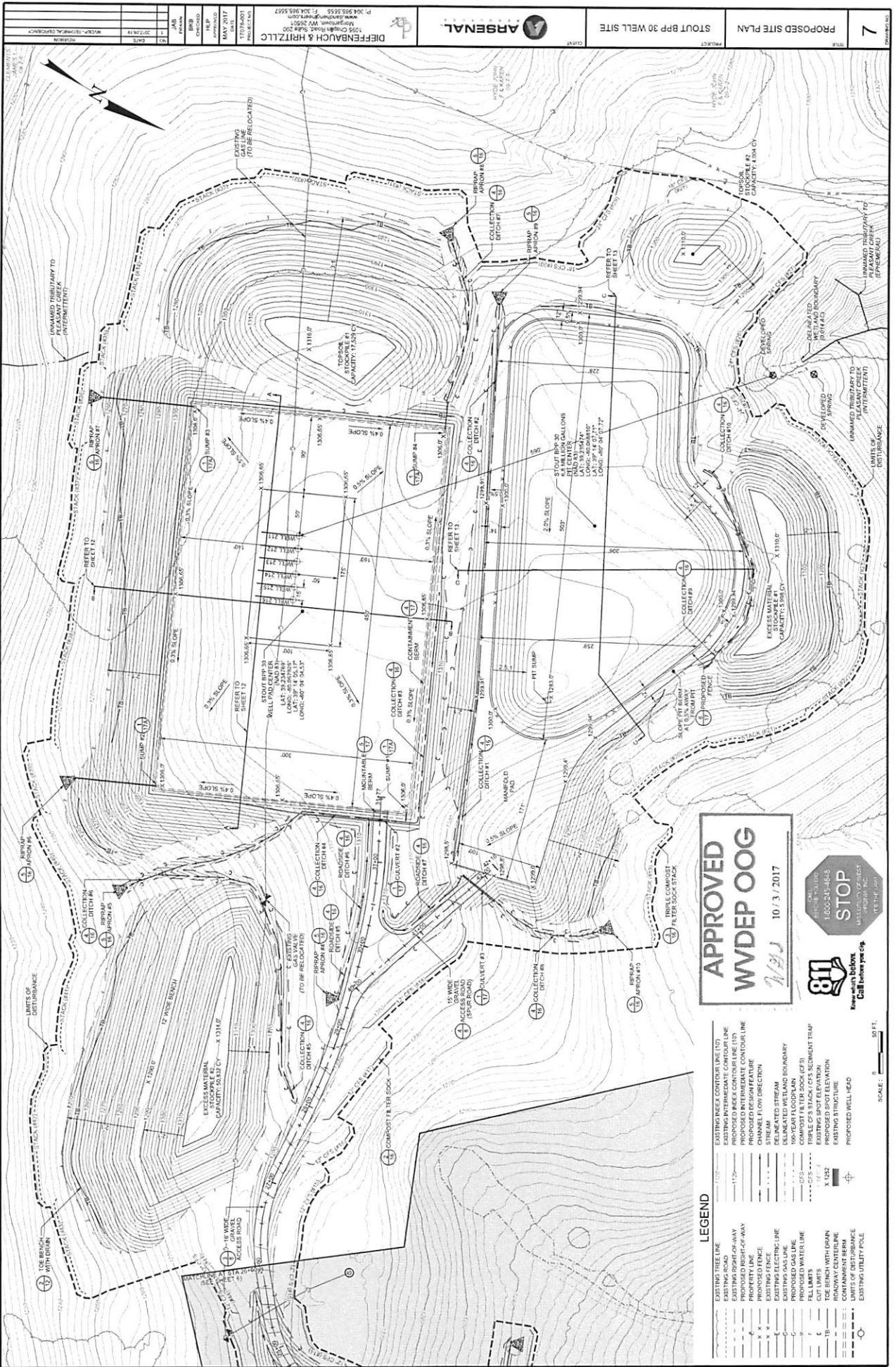
INDEX	
DRAWING NO.	TITLE
1	TITLE SHEET
2	GENERAL NOTES
3	EXISTING SITE PLAN
4	SOILS PLAN
6-7	PROPOSED SITE PLAN
8-11	ACROSS-BRIDGE CHANNEL DESIGN
12	WELL AND DRAIN SECTIONS
13	PTC LAYOUT SECTIONS
14	SPT STAGE STORAGE CHART
15	EAS UTILITIES
16, 17A	SITE RESTORATION PLAN
18	SEED & MULCH PLAN
20	QUANTITY SUMMARY

1	TITLE SHEET	STOUT BPP 30 WELL SITE	ARSENAL	DIEFFENBAUCH & HRITZ, LLC 1051 Chapel Road, Suite 200 Morgantown, WV 26501 www.dieffenbauch.com P: 304.985.5555 F: 304.985.6567	<table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>REVISION</th> </tr> <tr> <td>1</td> <td>2017.08.19</td> <td>WVDEP - PEZINING</td> </tr> </table>	NO.	DATE	REVISION	1	2017.08.19	WVDEP - PEZINING
NO.	DATE	REVISION									
1	2017.08.19	WVDEP - PEZINING									
DATE	MAY 2017	PROJECT NO.	17078-001	SCALE	AS SHOWN						
BY	HR	CHECKED	HR	APPROVED	HR						

047-001-03357

11/10/2017

047-001-03357



**APPROVED**  
**WVDEP OOG**  
*MSJ* 10 / 3 / 2017



**LEGEND**

---	EXISTING INDEX CONTOUR LINE (10')
---	EXISTING INDEX CONTOUR LINE (5')
---	PROPOSED INDEX CONTOUR LINE (10')
---	PROPOSED INDEX CONTOUR LINE (5')
---	PROPOSED INTERMITTENT CONTOUR LINE
---	PROPERTY LINE
---	EXISTING FENCE
---	EXISTING FLOW DIRECTION
---	DELIMITED STREAM
---	DELIMITED WETLAND BOUNDARY
---	EXISTING GAS LINE
---	EXISTING ELECTRIC LINE
---	EXISTING WATER LINE
---	FELL LIMITS
---	CUT LIMITS
---	EXISTING SPOT ELEVATION
---	PROPOSED SPOT ELEVATION
---	ROADWAY CENTER LINE
---	CONTAINMENT BERM
---	LIMITS OF DISTURBANCE
---	EXISTING UTILITY POLE
---	EXISTING TRIPLE STACK
---	EXISTING APRON #1
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7  
 PROPOSED SITE PLAN  
 STOUT BPP 30 WELL SITE  
 ARSENAL  
 DIFFENBAUGH & HRTZ LLC  
 1055 MARKET STREET, SUITE 200  
 HARRISBURG, PA 17102  
 P: 717.633.5555 F: 717.633.5557  
 MAY 2017  
 PROJECT NO. 170724001  
 SHEET NO. 03357  
 DATE 10/3/17  
 WCAE-170724001-03357

11/10/2017



Office of Oil and Gas

West Virginia Department of  
Environmental Protection  
Office of Oil & Gas  
601 57th Street SE  
Charleston, WV 25304-2345

047-001-03357

DEP Office Use only	
Date Received by Oil & Gas:	8-24-17
Assigned Impoundment ID #:	073-WPA-00007

## Permit Associated Impoundment / Pit Registration

**Instruction:** This form is to be used to register impoundments or waste pits, greater than 5,000 bbls, that are associated with a WVDEP, Office of Oil and Gas, well drilling permit. An **associated impoundment or pit** means it has been designed and included in the well drilling permit application, will follow the reclamation time frame of well work permit, and will be approved in conjunction with the well work permit. An impoundment ID number will be assigned by WVDEP, Office of Oil and Gas, to all impoundments and pits. This impoundment ID number will be sent to the applicant following receipt of this form by WVDEP. Please reference this impoundment ID number with all future correspondence and reference to this impoundment. Conditions as described in W.Va. State Rule §35-4-21 will be followed as it relates to impoundments and pits.

### Section 1 – Operator Information

Operator Name:	Arsenal Resources		
Operator ID:	494501227		
Address: Street	65 Professional Place Suite 200		
City:	Bridgeport	State:	WV Zip: 26330
Contact Name:	Eddie Carder	Contact Title:	Permitting Manager
Contact Phone:	724-940-1204	Contact Email:	ecarder@arsenalresources.com

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### Section 2 – Engineering / Design Contractor Information

Design will be contracted	<input checked="" type="checkbox"/>	Designed in-house	<input type="checkbox"/>
Company Name:	Dieffenbauch & Hritz, LLC		
Address: Street	1095 Chaplin Road Suite 200		
City:	Morgantown	State:	WV Zip: 26505
Contact Name:	Herbert L. Parsons III, PE	Contact Title:	Operations Leader
Contact Phone:	304-985-5555	Contact Email:	hparsons@dandhengineers.com
Certifying Professional Engineer:	Herbert L. Parsons III, PE		
Professional Engineer Registration Number:	15279		

WV Department of  
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**Section 3 - Impoundment / Pit Information**Type of Structure. Check one of two choices below: Freshwater Impoundment Waste PitNote: Any waste in a pit will make it a waste pit.Name of Structure (Company Name :) STOUT BPP30 Associated PitCounty: Barbour District: PleasantUSGS 7.5' Quad Map Name: Philippi, WVFarm Name: StoutPad Name: STOUT BPP30Surface Owner Name: Juanita StoutPhysical Description of Location: Woods & Meadow, Farm land

(Note: Give general location, example: 2 miles south of Smalltown, WV on Rt. 22, left on Buffalo Creek)

Watershed (nearest perennial): Pleasant CreekDistance (Drainage Distance) to nearest perennial stream: 683'

Location Coordinates (NAD83, Decimal Degrees (xx.xxxx, -xx.xxxx))

Latitude: 39.2354 Longitude (Use negative sign): -80.0688UTM Coordinates : 1904087.698 580367.09 E 14249685.423 4343312.80 N

Access Road Coordinates (junction of state highway access)

Latitude: 39.2396 Longitude (Use negative sign): -80.0666UTM Coordinates : 1904694.884 E 14251221.064 N

Approximate Dimensions

Length: 503' Width: 228' Height: 16'

Note: If irregularly shaped, give approximate dimensions of long axis.

Total Capacity – Provide all units of measure below:

Barrels: 197,872 Gallons: 8,310,580 Acre-Feet: 25.5

Capacity with 2' Freeboard – Provide all units of measure below:

Barrels: 161,725 Gallons: 6,792,416 Acre-Feet: 20.8

Incised volume:

Barrels: 197,872 Gallons: 8,310,580 Acre-Feet: 25.5

Net impounded volume: (Total volume less incised volume.)

Barrels: 0 Gallons: 0 Acre-Feet: 0Anticipated Construction Start Date (estimation, non-binding): October 2017Note: No construction may begin on **Associated** impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction."RECEIVED  
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**Section 4 - Associated Well Numbers and API Numbers.** List associated well numbers and API number. API numbers may not be assigned at time of registering this impoundment, if so list as pending.

Well Number(s):	API Number(s) – If issued:
WELL 211	PENDING
WELL 212	PENDING
WELL 213	PENDING
WELL 214	PENDING
WELL 215	PENDING
WELL 216	PENDING

**Section 5 - Required Information Checklist To Register Permit Associated Impoundments or Pits.** Include the following information and plans with application.

- Engineered Construction Plans, certified by WV Registered P.E.
- Erosion and Sediment Control Plan, certified by WV Registered P.E.
- Reclamation Plan, certified by WV Registered P.E.

**Section 6 – Dam Standard Qualifying Evaluation**

- The design of this structure has been evaluated by the applicant to determine it does NOT qualify to be defined as a dam, under W.Va Rule §47-34. If the design of this structure qualifies it to be defined as a dam, all permits regulating dams will be required prior to registering the structure with the Office of Oil and Gas. The dam standard, from the WVDEP, Div. Of Water and Waste, is available for review at: <http://www.dep.wv.gov/WWE/ee/ds/Pages/default.aspx>

**Section 7 –Comments – Provide any additional comments concerning this project**

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**Section 8 - Application Certification**

I hereby certify that the information listed above is true and accurate. I understand that this pit/impoundment is to be constructed only in a location appropriate for the storage of water, including wastewater, and will be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer. I further recognize that all required plans have been submitted to the Office of Oil and Gas. I understand that after construction, and prior to any fluid being placed in the pit/impoundment, it shall be inspected by a West Virginia registered professional engineer to ensure compliance with the certified design and construction plan, and that the professional engineer shall certify that this structure was constructed in accordance with design and construction plans. I understand that such certification shall be in writing to the Chief and that no fluids may be placed in the pit/impoundment until the certification has been filed with the chief. I agree that this pit/impoundment shall be constructed, maintained, operated and closed in accordance with all applicable laws and rules, including the requirements of W. Va. Code R § 35-4-2 .

Name: William Veigel

Title: Designated Agent

Signature: \_\_\_\_\_

Taken, subscribed and sworn to before me this, 22nd Day of August 20 17

Notary Public: \_\_\_\_\_

My commission expires: 9/15/2021

Notary Seal:



**Section 9. Submittal Instructions**

Submit original paper copy of application to:  
West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Impoundment Registration  
601 57<sup>th</sup> Street, SE  
Charleston WV 25304

Email PDF file format of this application and all related engineering Plans to :  
[Depimpoundments@wv.gov](mailto:Depimpoundments@wv.gov)

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