

west virginia department of environmental protection

Office of Oil and Gas 601 57th Street, S.E. Charleston, WV 25304 (304) 926-0450 fax: (304) 926-0452

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

Wednesday, November 15, 2017 WELL WORK PERMIT Horizontal 6A / New Drill

ARSENAL RESOURCES LLC 6031 WALLACE ROAD EXTENSION SUITE 300

WEXFORD, PA 15090

Re:

Permit approval for PRITT SOUTH 202

47-033-05901-00-00

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 Chief

Operator's Well Number: PRITT SOUTH 202

Farm Name: IRA & LAURA PRITT U.S. WELL NUMBER: 47-033-05901-00-00

Horizontal 6A / New Drill

Date Issued: 11/15/2017

Promoting a healthy environment.

API Number: 33-0590

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: <u>33-0590</u>]

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.

WW-6B (04/15)

API NO. 47-033 -		
OPERATOR WELL	NO.	Pritt South 202
Well Pad Name:	Pritt Sc	outh

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

1) Well Operator	: Arsenal R	esources	494519412	Harrison	Simpson	Brownton
•			Operator ID	County	District	Quadrangle
2) Operator's We	ell Number: P	ritt South 202	Well P	ad Name: Pritt	South	
3) Farm Name/S	urface Owner:	Ira and Laura	Pritt Public Ro	oad Access: Co	ounty Route	17
4) Elevation, cur	rent ground:	1,343.50'	Elevation, propose	d post-construc	tion: 1,345.	90'
	a) Gas Other	X Oil	Un	derground Stor	age	
(b)If Gas Sh	allow	x Deep			
	Ho	orizontal	x			
6) Existing Pad:	Yes or No _	No				
7) Proposed Targ	et Formation(s), Depth(s), An	ticipated Thickness	and Expected	Pressure(s):	
Marcellus Shale, 7	790.0ft (TVD Heel)	- 7790.0ft (TVD Toe), 100ft, 0.5 psi/ft Base o	f Marcellus Shale, 7	890.0ft (TVD He	al) - 7890.0ft (TVD Toe)
8) Proposed Tota	Vertical Den	th: 7,874 ft				
9) Formation at T			us shale			-
10) Proposed Tot			ft			
11) Proposed Hor	rizontal Leg L	ength: 5,382.8				
	Fresh Water S	Strata Depths:	400 ft			
12) Approximate						
	termine Fresh	Water Depths:	Offsetting wells reported water	depths (033-00660, 033-	00950, 033-00960, 03	33-00976, 033-00980, 033-03262
13) Method to De			Offsetting wells reported water	depths (033-00660, 033-	00950, 033-00960, 03	33-00976, 033-00980, 033-03262
13) Method to De 14) Approximate	Saltwater Dep	oths: 1400'				
13) Method to De 14) Approximate 15) Approximate	Saltwater Der Coal Seam De	oths: 1400' epths: Bakerstown 483'.		3', Lower Freeport 703', Uppr		
13) Method to De 14) Approximate 15) Approximate	Saltwater Dep Coal Seam De Depth to Poss d well location	oths: 1400' epths: Bekerstown 483'. sible Void (coal in contain coal se	Brush Creek 582', Upper Freeport 64 mine, karst, other):	3', Lower Freeport 703', Uppr	or Kittanning 778', Middle	
13) Method to De 14) Approximate 15) Approximate 16) Approximate 17) Does Propose	Saltwater Dep Coal Seam De Depth to Poss d well location or adjacent to	oths: 1400' epths: Bakerstown 483'. sible Void (coal in contain coal see o an active mine)	Brush Creek 582', Upper Freeport 64 mine, karst, other):	3', Lower Freeport 703', Uppe None	or Kittanning 778', Middle	
13) Method to De 14) Approximate 15) Approximate 16) Approximate 17) Does Propose directly overlying	Saltwater Dep Coal Seam De Depth to Poss d well location or adjacent to	oths: 1400' epths: Bakerstown 483'. sible Void (coal in contain coal see o an active mine)	Brush Creek 582', Upper Freeport 64 mine, karst, other):	3', Lower Freeport 703', Uppe None	or Kittanning 778', Middle	
13) Method to De 14) Approximate 15) Approximate 16) Approximate 17) Does Propose directly overlying	Saltwater Dep Coal Seam De Depth to Poss d well location or adjacent to	oths: 1400' epths: Bakerstown 483'. sible Void (coal in contain coal see o an active mine) Name:	Brush Creek 582', Upper Freeport 64 mine, karst, other):	3', Lower Freeport 703', Uppe None	or Kittanning 778', Middle	33-00976, 033-00980, 033-03262,

WW-6B (04/15)

API NO. 47- 033 -

OPERATOR WELL NO. Pritt South 202

Well Pad Name: Pritt South

18)

CASING AND TUBING PROGRAM

ТҮРЕ	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#	80'	80'	CTS
Fresh Water	13.375"	New	J-55	54.5#	450'	450'	CTS
Coal							
Intermediate	9.625"	New	J-55	40#	1500'	1500'	CTS
Production	5.5"	New	P-110	20#	13,746'	13,746'	TOC @ 1,350'MD
Tubing							
Liners							

SDEW 8/24/2017

ТҮРЕ	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% Galcium	1.20
Fresh Water	13.375"	17.5"	0.38"	2730	900	Class A, 3% CaCl2	1.20
Coal					0		
Intermediate	9.625"	12.25"	0.395"	3950psi	15 00	Class A, 2% CaCl2	1.29
Production	5.5"	8.5-8.75	0.361"	12,640psi	9500	Type 1	1.64/1.32
Tubing					5000		
Liners					N/A		

PACKERS

Kind:	
Sizes:	RECEIVED Gas
Depths Set:	RECEIVED Gas Office of Oil and Gas AUG 2 8 2017
	WV Department of Environmental Protection

WW-6B
(10/14)

API NO. 47- 033	
OPERATOR WELL NO.	Pritt South 202
Well Pad Name: Pritt S	outh

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 ½" 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- ¼" intermediate hole to the programmed depth, run 9-5/8" casing and cement to surface. The rig with then continue to drill a 8- ¾" hole to a designed Pilot Hole Depth, log the well, and then set a cement kick-off plug from Pilot hole TD to designed kick-off point. Once the plug has cured, the plan is to then start drilling the curve and lateral section to the programmed total measured depth, run 5 ½" casing and cement according to the program.

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

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

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 29.78
- 22) Area to be disturbed for well pad only, less access road (acres): 9.15
- 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 $5 \frac{1}{2}$ " – 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 1,400'; there will be no centralizers from 1,400' to surface.

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

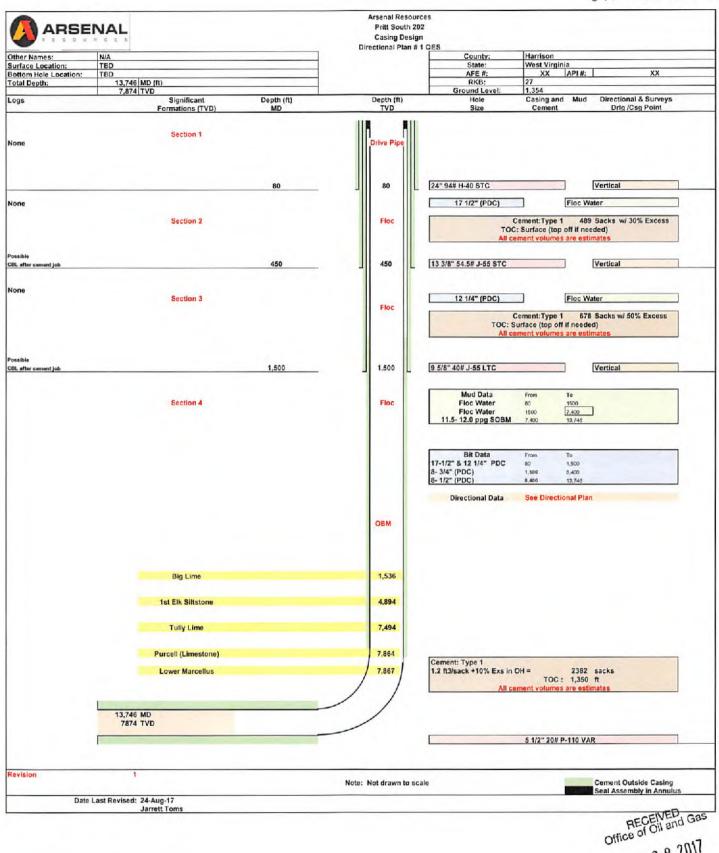
24" will be grouted from surface. The 13-3/8" casing will be cemented to surface with Class A cement and no greater than 3% CaCl (calcium chloride). The 9-5/8" casing will be cemented to surface with Type 1 cement, & no greater than 3% calcium chloride. The 5-1/2" production string will be cemented back to 1,150' (+/- 200' 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 RECENT and occurrences of drag and if any are notices, we will re-run the previous stand of pipe pulled across and circulate 2X drittems 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.

WV Department of Environmental Protection



W Department of Environmental Protection

AUG 28 2017



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 Harrison County, WV prior to hydraulic fracturing at the following Arsenal Resources wells on the Pritt South 202 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 7,900'TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Benson formation (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:

- Inspect their surface equipment prior to fracturing to establish integrity and establish prefrac 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.
- Notify the OOG and Arsenal Resources if any changes in water, gas production, pressified oil and Gas other anomalies are identified.
 AUG 2 8 2017

WV Department of Environmental Protection



2. Reporting

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

RECEIVED Office of Oil and Gas

AUG 2 8 2017

WV Department of Environmental Protection



Click or tap to enter a date.

Alliance Petroleum Corporation Address State

RE: Click or tap here to enter text.

Dear Sir/Madam,

Arsenal Resources has developed a Marcellus pad Pritt South 201 Pad, located in Harrison 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 7,900' 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 Pritt South 201 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.
- Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
- Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
- Notify the OOG and ARSENAL RESOURCES if any changes in water, gas production, pressure
 or other anomalies are identified.

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

Sincerely,

Kelly Davis Permitting Specialist WY Department of Environmental Protection

7102 8 2 9UA

Office of Oil and Gas

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Danth	Darforetad Engartonics	
							The second of the second of	Producting Comes that Periodeten
Opal Webb 1	033-00580	Alliance Petroleum Corporation	Vertical/Existing	39.240948	-80.187717	2600	Foliab	
ra Pritt 1	033-00500-P	Petroleum Development Corp.	Plugged/06/06/2002	39 244727	-50 100531	345	Dia laine Fifth	
Stalla Crim 7	03000 550	A Pitana Daniel III and A Pita					og mjen, ratn	NA.
Scie Cillia	00000000	Autance retroteum Corporation	Vertical/Existing	39.242981	-80.185295	4602	Gantz, Benson	AN
Dramer & Stewart 1	033-00465	Petroleum Development Corp.	Vertical/Existing	39.236885	-80.182313	4408	Benson	NA.
JW Thompson 1	033-00492	Alliance Petroleum Corporation	Vertical/Existing	39.230534	-80.183297	4458	Banson	NA.

11/17/2017

API Number 47 - 03	33 -	
Operator's V	Vell No	Pritt South 202

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMA	ATION PLAN
Operator Name_ Arsenal Resources (OP Code 494519412
Watershed (HUC 10) Beards Run & Pigtail Run Quadrangle Br	Brownton
Do you anticipate using more than 5,000 bbls of water to complete the proposed well Will a pit be used? Yes No	ell work? Yes V No No
If so, please describe anticipated pit waste: Produced Water	
Will a synthetic liner be used in the pit? Yes V No If so,	o, what ml.? 60 ml
Proposed Disposal Method For Treated Pit Wastes:	SPW
Land Application	Spw 8/24/2017
Underground Injection (UIC Permit Number)
Reuse (at API Number_Various)
Off Site Disposal (Supply form WW-9 for disposal location Other (Explain	tion)
Will closed loop system be used? If so, describe:Yes. The closed loop system will contain all of the drilling.	ling medium and drill cultings 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 Horbsontal Synthetic oil based mud.
-If oil based, what type? Synthetic, petroleum, etc. Synthetic	
Additives to be used in drilling medium? Bentonite, Soap and Polymer sticks, Soda Ash, Sodium B	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,	e sawdust) N/A
-Landfill or offsite name/permit number? Advanced Disposal Services, Chestnu	ut valley Landilli
Permittee shall provide written notice to the Office of Oil and Gas of any load of drill West Virginia solid waste facility. The notice shall be provided within 24 hours of rewhere it was properly disposed.	
I certify that I understand and agree to the terms and conditions of the GEN on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of provisions of the permit are enforceable by law. Violations of any term or conditional law or regulation can lead to enforcement action. I certify under penalty of law that I have personally examined and am fapplication form and all attachments thereto and that, based on my inquiry of obtaining the information, I believe that the information is true, accurate, and copenalties for submitting false information, including the possibility of fine or impriso	f Environmental Protection. I understand that the ion of the general permit and/or other applicable familiar with the information submitted on this those individuals immediately responsible for omplete. I am aware that there are significant onment.
Company Official Signature MMS	RECEIVED Gas
Company Official (Typed Name) William Veigel	Office of 2 8 2017
Company Official Title Designated Agent	AUG 2 8 2
	WV Department of
Subscribed and sworn before me this 25 ^{TU} day of AUGUST	WV Department of Way Department of Environmental Protes
(seefing) On	
My commission expires 9/15/202/	Notary Public NOTARY PUBLIC STATE OF WEST VIRGINIA CAROLINDA FLANAGAN

Form WW-9					No. Pritt South 202
Arsenal Resources					
Proposed Revegetation Treatm	ent: Acres Disturbed	29.78	Prevegetation pl	1 <u>6</u> .	8 average
Lime 4	Tons/acre or to cor	rect to pH	6.0-7.5		
Fertilizer type 10-20)-20				
Fertilizer amount 50	0	lbs	/acre		
Mulch 2		Tons/ac	re		
		Seed	Mixtures		
Tem	porary		Perma	nent	
Seed Type	lbs/acre		Seed Type		lbs/acre
Annual Rye	40		Swisher Meadow M	lix	100
Field Bromegrass	40				
Winter Rye	168				
Winter Wheat	180				
	will be land applied, in area.	nclude dim	ion (unless engineered plans includensions (L \times W \times D) of the pit, and		
Plan Approved by:					
Comments: Pre-seed /	mulch all distu	urbed a	reas as soon as reas	ona	ably possible
per regulation. Upg	grade E&S who	ere ne	eded per WV DEP E&	Sn	nanual, if
necessary.					

	AUG 2 8 Zon
·	W Department of W Department of Environmental Protection
Title: OOG Inspector	Date: 8/24/2017
Field Reviewed? () Yes () No

Office of Oil and Gas



SITE SAFETY PLAN

Pritt South #202 WELL PAD

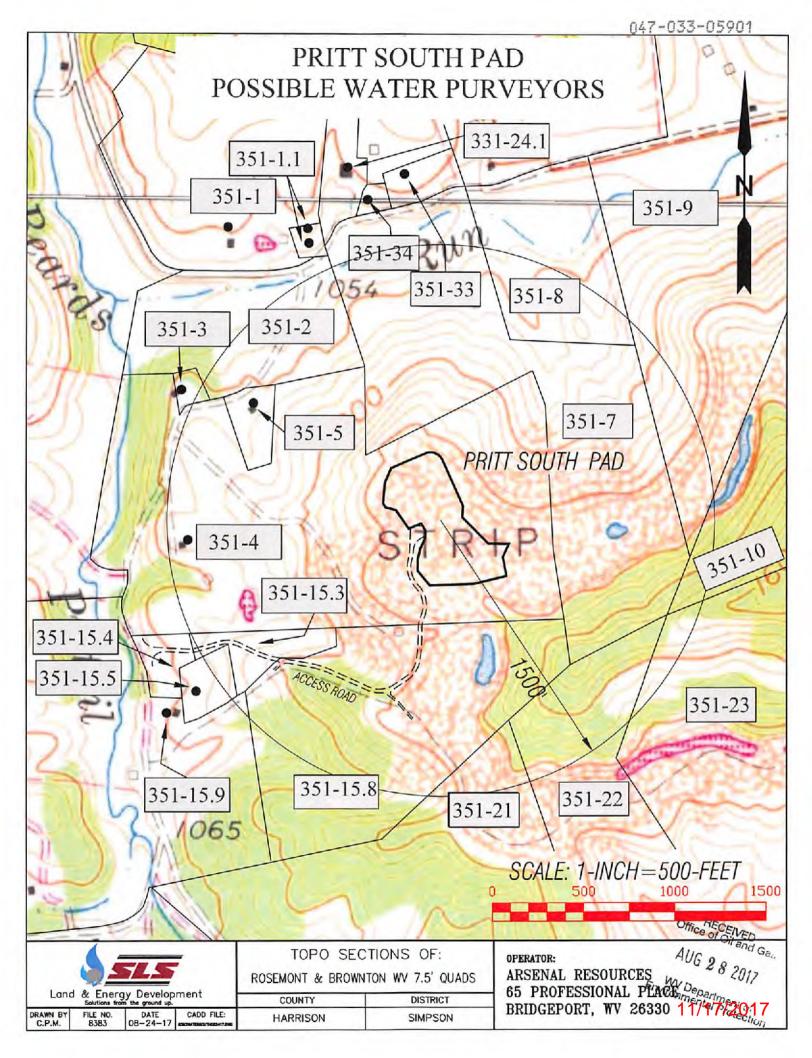
911 Address:

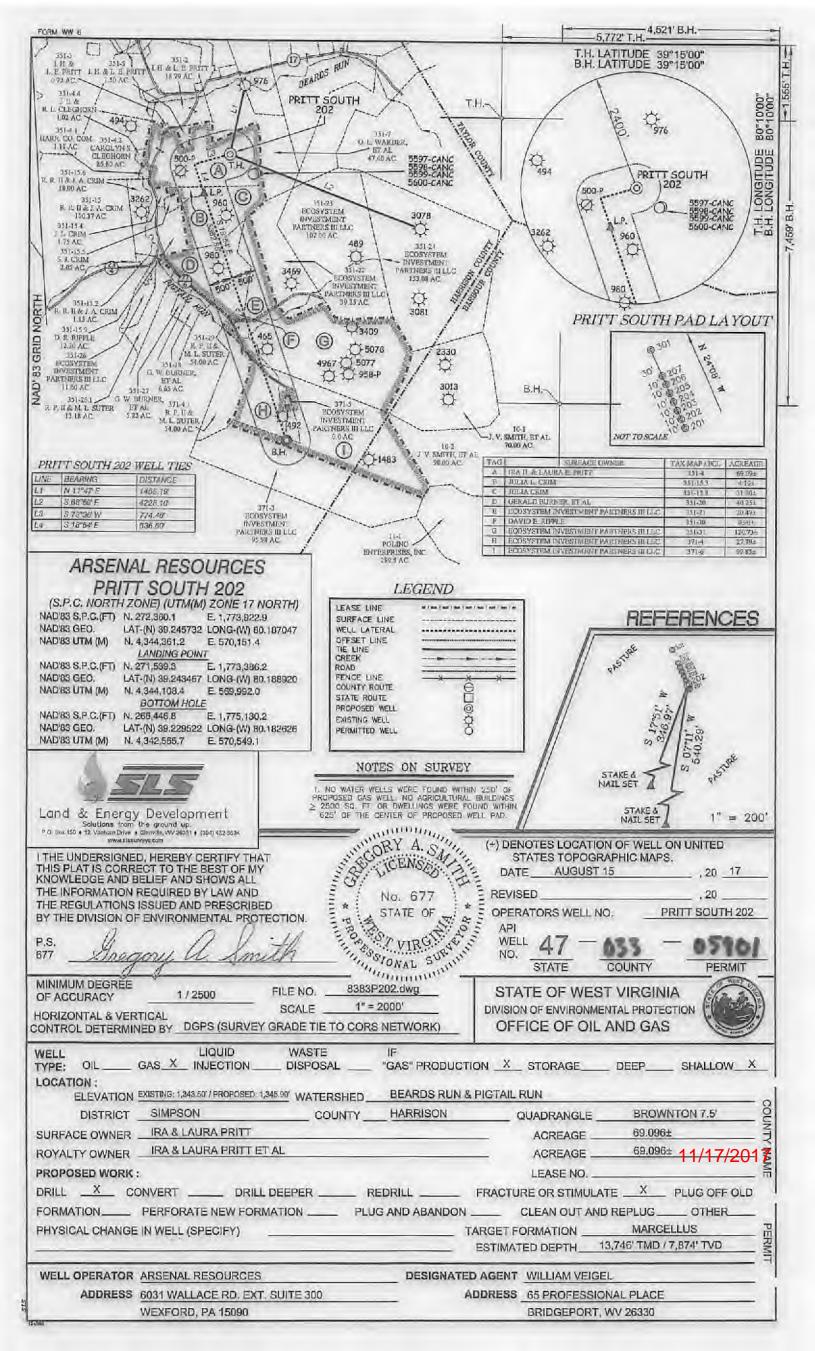
3460 Green Valley Road

Bridgeport, WV 26330 Sみw

8/24/2017

Office of Oil and Gas
Office of Oil and Gas
AUG 2 8 2017
WV Department of Environmental Protection





WW-6A1 (5/13)

Operator's Well No.	Pritt South 202	
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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

Office of Oil and Gas

AUG 2 8 2017

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

Page 1 of 10

	Att	Attachment to WW-6A1, Pritt South 202			
Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
A (Lease 00006622 (WVL03143.000))	Ira Pritt and Laura E. Pritt, Husband and Wife	Carrizo (Marcellus) LLC	15.00%	1448 / 804 1579/26	92.06
	Carrizo (Marcellus) LLC	ACP II Marcellus LLC and Carrizo (Marcellus) LLC		1460/1083	
	Carrizo (Marcellus) LLC and ACP II Marcellus LLC	PDC Mountaineer, LLC		1518/395	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
B, C (Lease 00003826 (WVL00289.001))	Stella P. Crim, widow	Union Carbide Corporation	12.50%	823/83	151
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		925/629	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 977/168	
	Petroleum Corporation of America	Petroleum Development Corporation		977/153	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
	Reherra S Tennant leffery A				
۵	Morrison, Freddie F. Morrison, Russell L. Crouse. Roy A. Crouse.				
[Lease 00005198 (WVL01058.000)]	Ronald R. Crouse, Robert D. Crouse,	PDC Mountaineer, LLC	14.50%	1522/592	40.25
	Kathryn Caldwell, Margaret Crouse Smith				
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
E [Lease 00005011 (WVL00928.001)]	James D. Barr	PDC Mountaineer, LLC	12.50%	1481/548 1582/1128	20.474
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
E [Lease 00005012 (WVL00928.002)]	Jeffery S. Barr	PDC Mountaineer, LLC	12.50%	1481/551 1582/1129	20.474
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
F [Lease 00005163 (WVL01024.000)]	The Board of Education of the County of Harrison	PDC Mountaineer, LLC	17.50%	1491/1246 1579/619	0.90
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

Office of Oil and Gas

AUG 2 8 2017

WV Department of Environmental Protection

853/91 380	897/286	925/629	967/575 977/168	977/153	1440/364	59/1263	1101/790 (Harrison) 71/432 (Barbour)	98/11 (Barbour) 1107/1040 (Harrison) 88/259 (Barbour)	1189/1209 (Harrison) 325/171 (Barbour)	328/171 (Barbour)	116/81 (Barbour)	136/162 (Barbour) 383/187 (Barbour)	1289/821	1351/1260 (Harrison)	1367/1084 (Harrison) 404/381 (Barbour) 139/48 (Barbour)	1467/119 (Harrison) 59/1032 (Harrison) 447/129 (Barbour) 16/637 (Barbour)	949/548 51	977/168	977/153	1440/364	59/1263		
12.50%							12.50%	011	118	119	11	13		135	136 40 13	146 59, 44	12.5						
Union Carbide Corporation	Creslenn Oil Company	Delta Producing Corporation	Petroleum Corporation of America	Petroleum Development Corporation	PDC Mountaineer, LLC	River Ridge Energy, LLC	Union Drilling, Inc. and Allerton Miller	Union Drilling, Inc.	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.	The Houston Exploration Company	Keyspan Natural Fuel, LLC.	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC	Delta Producing Corporation	Petroleum Corporation of America	Petroleum Development Corporation	PDC Mountaineer, LLC	S River Ridge Energy, LLC		•
Lydia Drainer, widow	Union Carbide Corporation	Creslenn Oil Company	Delta Producing Corporation	Petroleum Corporation of America P	Petroleum Development Corporation	PDC Mountaineer, LLC	John Stewart, Blanche Stewart, Hollie Stewart	Allerton Miller	Union Drilling, Inc.	<u>1</u>	Equitable Resources Energy Company	Fuel Resources Production and Development Company, Inc.	The Houston Exploration Company	Keyspan Natural Fuel, LLC.	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.	James W. Thompson and Betty L. Thompson, his wife	Delta Producing Corporation	Petroleum Corporation of America	Petroleum Developme இCorporation	PDC Mountainge FLC >	RECO ffice of (UG 2 { Departmental I	3
G [Lease 00003555 (WVL00103.000)]							H [Lease 00005712 (WVL002221.000)]										 Lease 00003777 (WVL00260.000)			-			

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 Holdings"), 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").
- 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]



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

Name: Joel E. Symonds

Title: Vice President - Land

RIVER RIDGE ENERGY, LLC

Name: Joel E. Symonds

Title: Vice President - Land

RIVER RIDGE HOLDINGS, LLC

Name: Joel E. Symonds

Title: Vice President - Land

Office of Oil and Gas

AUG 28 2017

WV Department of Environmental Protection

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]

Office of Oil and Gas

AUG 28 2017

WV Department of Environmental Protection



I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

an original or certified copy of an original of the Articles of Amendment to the Articles of Organization of

SENECA-UPSHUR PETROLEUM, LLC

is filed in my office, signed and verified, as required by the provisions of West Virginia Code §31B-2-204 and conforms to law.

Therefore, I issue this

CERTIFICATE OF AMENDMENT TO THE ARTICLES OF ORGANIZATION



Given under my hand and the Great Seal of the State of West Virginia on this day of June 15, 2016

Secretary of State

FILED 3

Natalie E. Tennant Secretary of State 1900 Kanawha Blvd E Bldg 1, Suite 157-K Charleston, WV 25305



JUN 15 2016 Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
SECRETARY OF STATE Fax: (304)558-8381

Website: www.wvsos.com E-mail: business@wvsos.com

FILE ONE ORIGINAL (Two if you want a filed stamped copy returned to you) FEE: \$25.00

WEST VIRGINIA ARTICLES OF AMENDMENT TO ARTICLES OF ORGANIZATION

Office Hrs: Monday - Friday 8:30 a.m. - 5:00 p.m. ET

1.	The name of the organization is:	Seneca-Upshur Petroleum, LLC							
2.	Date of filing original Articles of Organization with the WV Secretary of State:	2/12/1973							
	Change of Name Information or Text	of Amendment:							
	Change of Name From:								
	То:								
	Other amendment(s) (attach additional Paragraph 9 of the Articles of Organization sh								
	Paragraph 9 of the Articles of Organization shall be amended to indicate the Company is "member-managed". The sole managing member is PDC Mountaineer, LLC, 6031 Wallace Road Extension, Suite 300,								
	The sole managing member is PDC Mountain	eer, LLC, 6031 Wallace Road Extension, Suite 300							
	The sole managing member is PDC Mountaine Wexford, PA 15090.	eer, LLC, 6031 Wallace Road Extension, Suite 300,							
1	Wexford, PA 15090. Contact name and number of person to	reach in case of a problem with GU							
1	Wexford, PA 15090. Contact name and number of person to isting one may help to avoid a return or re	reach in case of a problem with filing: (Optional, however ejection of filing if there is a problem with the document.) Phone: (724) 940-1130							
i i	Wexford, PA 15090. Contact name and number of person to isting one may help to avoid a return or revision. Name: Annmarie O'Connor	reach in case of a problem with filing: (Optional, however, ejection of filing if there is a problem with the document.) Phone: (724) 940-1130 mkeystone.com							
i i i	Wexford, PA 15090. Contact name and number of person to isting one may help to avoid a return or revame: Annmarie O'Connor Business e-mail address, if any: acconnor@	reach in case of a problem with filing: (Optional, however, ejection of filing if there is a problem with the document.) Phone: (724) 940-1130 mkeystone.com							

*Important Legal Notice Regarding Signature: Per West Virginia Code §31B-2-209. Liability for false statement in filed record. If a record authorized or required to be filed under this chapter contains a false statement, one who suffers loss by reliance on the statement may recover damages for the loss from a person who signed the record or caused another to sign it on the person's behalf and knew the statement to be false at the time the record was signed.

Important Note: This form is a public document. Please do NOT provide any personal identifiable information on this form such as social security number, bank account numbers, credit card numbers, tax identification or driver's license numbers.



I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that

the attached true and exact copy of the Articles of Amendment to the Articles of Organization of

PDC MOUNTAINEER, LLC

are filed in my office, signed and verified, as required by the provisions of West Virginia Code §31B-2-204 and conform to law. Therefore, I issue this

CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the limited liability company to

RIVER RIDGE ENERGY, LLC



Given under my hand and the Great Seal of the State of West Virginia on this day of January 12, 2017

Vateril Eyennen

Secretary of State

(H)

FILED

AN 12 2017

Natalic E. Tennant
Secretary of State
1900 Kanawha Blvd EIN THE OFFICE OF
1900 Kanawha Blvd EIN THE OFFICE OF
Bldg 1, Suite 157-KSECRETARY OF STATE
Charleston, WV 25305

FILE ONE ORIGINAL (Two if you want a filed stamped copy returned to you) FEE: \$25.00

WV APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY OF A LIMITED LIABILITY COMPANY Penney Barker, Manager Corporations Division Tel: (304)558-8000 Fax: (304)558-8381 Website: www.wvsos.com E-nmil: business@wvsos.com

Office Hrs: Monday - Friday 8:30 a.m. - 5:00 p.m. ET

**** In accordance with the provisions of the WV Code, the undersigned limited liability company **** hereby applies for an Amended Certificate of Authority and submits the following statement: 1. Name under which the limited liability company was authorized to transact business in WV: PDC Mountaineer, LLC 2. Date Certificate of Authority was issued in West Virginia: 11/03/2009 3. Change of Name Information to Text of Amendment: (tif changing business name, you must attach one Certified Conv of the Name Change as filed in the home State of original organization.) Change of Name From: PDC Mountaineer, LLC To: River Ridge Energy, LLC Name the organization elects to use in WV: River Ridge Energy, LLC (Due to home State name not being available) Other amendment (Attach additional pages if necessary.): 4. Contact information. (This is optional, however, if there is a problem with the filling, listing a contact person and phone number may avoid having to return or reject the document.) Om Pandya (713) 546-7519 Contact Name Phone Number om.pandya@lw.com Business e-mail address: 5. Signature information (See below * Important Legal Notice Regarding Signature): Print Name of Signer: Nathan P. Murphy Title/Capacity: Sr. VP & General Counsel Signature: Date: 1-10-2011 *Important Legal Notice Regarding Signature: Per West Virginia Code \$31B-2-209. Liability for false statement in filed record. If a record authorized or required to be filed under this chapter contains a false statement, one who suffers loss by reliance on the statement may recover damages for the loss from a person who signed the record or caused mother to sign it on the person's behalf and knew the statement to be false at the time the record was signed. Important Note: This form is a public document, Please DO NOT provide any personal identifiable information on this form such as social security number, bank account numbers, credit oard numbers, tax identification or driver's license numbers. Form LLI'-4 lastical by the Office of the Secretary of State Revised 11/14

WV033 - 12/02/2014 Wolter, Klawer Cinline

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JAN 1 2 2017

11/17/2017

<u>Delaware</u>

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF

DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT

COPY OF THE CERTIFICATE OF AMENDMENT OF "PDC MOUNTAINEER, LLC",

CHANGING ITS NAME FROM "PDC MOUNTAINEER, LLC" TO "RIVER RIDGE

ENERGY, LLC", FILED IN THIS OFFICE ON THE FIRST DAY OF

DECEMBER, A.D. 2016, AT 1:35 O'CLOCK F.M.

4746099 8100 SR# 20166862234

You may verify this certificate online at corp.delaware.gov/authver.shtml



Authentication: 203430497

Date: 12-01-16

State of Delaware
Secretary of State
Division of Corporations
Delivered 01:35 PM 12/01/2016
FILED 01:35 PM 12/01/2016
SR 20166862234 - FEe Number 4745099

CERTIFICATE OF AMENDMENT TO CERTIFICATE OF FORMATION OF

PDC MOUNTAINEER, LLC

THIS Certificate of Amendment to Certificate of Formation of PDC Mountaineer, LLC, a Delaware limited liability company (the "Company"), dated as of November 30, 2016, has been duly executed and is being filed by the undersigned, as an authorized person of the Company, in accordance with the provisions of 6 Del. C. §§ 18-202 and 18-204, to amend the original Certificate of Formation of the Company, which was filed in the office of the Secretary of State of the State of Delaware on October 26, 2009 (the "Certificate").

FIRST. The name of the limited liability company is PDC Mountaineer, LLC.

SECOND. Article 1 of the Certificate is hereby deleted in its entirety and amended to read in full as follows:

"1. The name of the limited liability company is River Ridge Energy, LLC."

IN WITNESS WHEREOF, the undersigned has duly executed this Certificate of Amendment to Certificate of Formation as of the date first-above written.

Name: David M, Wood

Title: Chief Executive Officer

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

MOUNTAINEER KEYSTONE LLC

Name: 2.4-1 Km/

Title: CEO

PDC MOUNTAINEER, LLC

Name: RL+ K+1

Title: CEO

PDC MOUNTAINEER HOLDINGS, LLC

Name: RL+K-/

Title: CEO

Office of Oil and Gas
AUG 2 8 2017

W Department of Environmental Protection



People Powered. Asset Strong.

May 18, 2017

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

RE: Ownership of Roadways; Pritt South Pad

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 wells. The findings of the title examinations show that the roadways crossed by the proposed wells are right of ways, with the oil and gas being owned and covered by the leaseholds identified on the plat for the proposed wells.

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

Sincerely.

Coty Brandon

Senior Title Attorney

Office of Oil and Gas

AUG 2 8 2017

Environmental Protection

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

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

Date of Notice	ce Certification: 8/25/17	API No. 4	17- 033 -	
		Operator	's Well No. Pritt	South 202
		Well Pad	Name: Pritt Soi	uth
Notice has l				
Pursuant to th	ne provisions in West Virginia Code	§ 22-6A, the Operator has provided the re	equired parties v	vith the Notice Forms listed
	tract of land as follows:			
State:	West Virginia	UTM NAD 83 Easting:	570,151.35	
County:	Harrison	Northing:		
District:	Simpson	Public Road Access:	County Route 17	
Quadrangle:	Brownton	Generally used farm name:		
Watershed:	Beards Run & Pigtail Run			
requirements Virginia Cod of this article Pursuant to	of subsection (b), section sixteen of e § 22-6A-11(b), the applicant shall have been completed by the applicant	perator has attached proof to this Notice	the surface ov y that the notice	vner; and Pursuant to West
*PLEASE CHI	ECK ALL THAT APPLY			ONLY
☐ 1. NO	TICE OF SEISMIC ACTIVITY or	■ NOTICE NOT REQUIRED BECA SEISMIC ACTIVITY WAS CONDUC		RECEIVED/ NOT REQUIRED
☐ 2. NO	TICE OF ENTRY FOR PLAT SUR	VEY or NO PLAT SURVEY WAS O	CONDUCTED	☐ RECEIVED
■ 3. NO	TICE OF INTENT TO DRILL or	NOTICE NOT REQUIRED BECANOTICE OF ENTRY FOR PLAT SUF WAS CONDUCTED or		RECEIVED/ NOT REQUIRED
■ 4 NO	TICE OF PLANNED OPERATION	WRITTEN WAIVER BY SURFA (PLEASE ATTACH) RECEIM Office of Oil a		RECEIVED
4. NO	TICE OF FEATINED OF ERATION		0047	
■ 5. PUI	BLIC NOTICE	AUG 28	2017	□ RECEIVED

Required Attachments:

6. NOTICE OF APPLICATION

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.

WV Department of Environmental Protection

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By:

Certification of Notice is hereby given:

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

Well Operator: Arsenal Resources

William Veigel

Its: Designated Agent

Telephone: 724-940-1218

Address:

6031 Wallace Road Extension, Suite 300

Wexford, PA 15090

Facsimile: 304-848-9134

Email: keddy@arsenalresources.com

NOTARY SE OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
CAROLINDA FLANAGAN
PO Box 803
Lumberport WV 26386

My Commission Expires September

Subscribed and sworn before me this 25

Notary Public

day of AUG - 2017

My Commission Expires

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 deepprivacyofficer@wv.gov.

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Office of Oil and Gas

AUG 2 8 2017

WV Department of Environmental Protection WW-6A (9-13)

47 0 3 3 0 5 9 0 1

API NO. 47-033 Pritt South 202

Well Pad Name: Pritt South

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

Not	ice Time Requireme	ent: notice shall be provi	ded no later tha	n the filing date of permit application.	
Dat Not	e of Notice: <mark>8/25//</mark> ice of:	7 Date Permit Applica	tion Filed: <mark>9/</mark> 2	25/17	
V	PERMIT FOR ANY WELL WORK			ROVAL FOR THE AN IMPOUNDMENT OR PIT	
Deli	ivery method pursu:	ant to West Virginia Co	ode § 22-6A-10	(b)	
	PERSONAL	REGISTERED	☑ METH	OD OF DELIVERY THAT REQUIRES A	
	SERVICE	MAIL		PT OR SIGNATURE CONFIRMATION	
the soil addescent addesce	surface of the tract on and gas leasehold being ribed in the crosion are rator or lessee, in the election control of the surface to work, if the surface to be a water well, spring or ide water for consumposed well work activities to the sheriff requision of this article to e. R. § 35-8-5.7.a requision of the sheriff requision of the saction of the surface to e. R. § 35-8-5.7.a requision of the sheriff requision of the saction of the sact	which the well is or is proged developed by the proposed sediment control plans awent the tract of land on wowners of record of the surfact is to be used for the process of the program of the surfact is to be used for the process of the process o	sposed to be local sed well work, if submitted pursual which the well pro- order tract or tra- lacement, constru- this article; (5) A stated within one is stic animals; and if more than three ands, the applicant suant to section e- tion holder is not rator shall also pro-	the well plat to each of the following persons: (1) The ted; (2) The owners of record of the surface tract or the surface tract is to be used for roads or other land in to subsection (c), section seven of this article; (3) oposed to be drilled is located [sic] is known to be used overlying the oil and gas leasehold being develouation, enlargement, alteration, repair, removal or along surface owner or water purveyor who is known to thousand five hundred feet of the center of the well (6) The operator of any natural gas storage field with the tenants in common or other co-owners of interests at may serve the documents required upon the person eight, article one, chapter eleven-a of this code. (2) In motice to a landowner, unless the lien holder is the large the Well Site Safety Plan ("WSSP") to the subset provided in section 15 of this rule.	tracts overlying the disturbance as The coal owner, underlain by one or ped by the proposed bandonment of any to the applicant to pad which is used to thin which the described in a described in the Notwithstanding any landowner. W. Va.
Ø A	Application Notice	☑ WSSP Notice ☑ E&	S Plan Notice	☑ Well Plat Notice is hereby provided to:	
	URFACE OWNER(s			COAL OWNER OR LESSEE	
	ne: Ira H. Pritt & Laura E. P		-	Name: See Attached List Address:	-
	ress: 3444 Green Valley F eport, WV 26330	Vodu	-	Address.	
Nan			-	☐ COAL OPERATOR	Office of Oil -
				Name:	Office of Oil and Gas
1177				Address:	AUG 2 8 2017
☑ SI	URFACE OWNER(s) (Road and/or Other Dis	sturbance)		- 40 2011
		Cocosco de Company		☑ SURFACE OWNER OF WATER WELL	WV Department of
Add	lress:			AND/OR WATER PURVEYOR(s)	Environmental Protection
-			_	Name: See Attached List	
				Address:	_
Add	iress:		-	OPERATOR OF ANY NATURAL GAS STO	RAGE FIELD
[2] S1	URFACE OWNER'S	(Impoundments or Pits)	Name:	
	ne: Oran Lee Warder	/ (Zimpountamente di Tita	,	Address:	
	ress: 2381 Silverado Drive	e		Part of the second seco	
	herford, TX 76087		3.	*Please attach additional forms if necessary	-
-					

WW-6A (8-13) RECEIVED Office of Oil and Gas

AUG 2 8 2017

0717U

API NO. 47- 033 =
OPERATOR WELL NO. Pritt South 202
Well Pad Name: Pritt South

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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) Norwithstanding 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

WW-6A (8-13)

API NO. 47-033 -

OPERATOR WELL NO. Pritt South 202

Well Pad Name: Pritt South

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 of the applicant's proposed well work to the Secretary at:

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

WV Department of Environmental Protection

AUG 28 2017

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.

WW-6A (8-13)

API NO. 47- 033

OPERATOR WELL NO. Pritt South 202

Well Pad Name: Pritt South

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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WV Department of Environmental Protection

WW-6A (8-13)

API NO. 47-033

OPERATOR WELL NO. Pritt South 202

Well Pad Name: Pritt South

Notice is hereby given by:

Well Operator: Arsenal Resources

Telephone: 724-940-1218

Email: keddy@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.

OFFICIAL SEAL **NOTARY PUBLIC** STATE OF WEST VIRGINIA CAROLINDA FLANAGAN PO Box 803 Lumberport WV 26386 My Commission Expires September 15, 202

Subscribed and sworn before me this 25 Th

Notary Public

My Commission Expires

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Arsenal Resources Pritt South Well Pad WW-6A Notice of Application (Attachment)

Surface Owner(s) by (Road and/or Other Disturbance):

Ira H. Pritt & Laura E. Pritt (Drill Site & Access Road) 3444 Green Valley Road Bridgeport, WV 26330

Della R. Riffle (Access Road) 11 Crim Lane Bridgeport, WV 26330

Julia Crim (Access Road) 75 Crim Lane Bridgeport, WV 26330

Sandy Crim (Access Road) 75 Crim Lane Bridgeport, WV 26330

Coal Owner, Operator or Lessee:

Heirs of Virginia A. Tetrick Estate d/b/a, Tetrick Mineral Properties, J.A. 92 16th Street Wheeling, WV 26003

I.L. Morris P.O. Box 397 Glenville, WV 26351

Edith Gans Burns 264 South Lake Road Columbia, SC 29223 RECEIVED
Office of Oil and Gass

AUG 2 8 2017

Coal Owner, Operator or Lessee, continued:

Rebecca Turner, William & Robert Snyder

Title Building, Suite 400

110 Saint Paul Street

Baltimore, MD 21202

Mike Ross, Inc. P.O. Box 219
Coalton, WV 26257

Spartan Exploration Company/ P.O. Box 316 Mt. Pleasant, MI 48858

Ryan C. Radtka 205 Mystic Drive Morgantown, WV 26508

P.O. Box 8179
Nutter Fort, WV 26301

CoalQuest Development, LLC 100 Tygart Drive
Grafton, WV 26354

Water Purveyors:

Kevin McNemar 1048 Indiana Ave. Stonewood, WV 26301

Lucas Johnson etal C/O Thomas Johnson RR 4 Box 560
Bridgeport, WV 26330

Ira & Laura Pritt

3444 Green Valley Road
Bridgeport, WV 26330

Office of Oil and Gas
AUG 2 8 2017

Water Purveyors, continued:

Oran Warder etal 2381 Silverado Drive Weatherford, TX 76087

Renee Johnson 511 Beards Run Road Bridgeport, WV 26330

Ronald & Jody Crim 2825 Green Valley Road Bridgeport, WV 26330

Julia Crim 75 Crim Lane Bridgeport, WV 26330

Sandy Crim
75 Crim Lane
Bridgeport, WV 26330

Della R. Riffle 11 Crim Lane Bridgeport, WV 26330

Ecosystem Investment
Partners III, LLC
2002 Clipper Park Road, Suite 201
Baltimore, MD 21211

John & Cynthia Snider 95 Beards Run Road Bridgeport, WV 26330

Joyce Bailey etal PO Box 4 Rosemont, WV 26424

Joshua Thompson 143 Beards Run Road Bridgeport, WV 26330 RECEIVED
Office of Oil and Gas

AUG 28 2017

WW-6A4 (1/12)

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.

	Requirement: Notice shall be provided at leace: 8/25/17 Date Permit	ast TEN (10) days prior to filing a t Application Filed: 8/25		
Delivery me	thod pursuant to West Virginia Code § 22-6	6A-16(b)		
☐ HAND	■ CERTIFIED MAIL			
DELIVI	ERY RETURN RECEIPT REQUE	ESTED		
receipt reque drilling a hor of this subsec subsection m and if availab	W. Va. Code § 22-6A-16(b), at least ten days p sted or hand delivery, give the surface owner of rizontal well: <i>Provided</i> , That notice given pur- ction as of the date the notice was provided to ay be waived in writing by the surface owner. ole, facsimile number and electronic mail addresses.	notice of its intent to enter upon the resuant to subsection (a), section to the surface owner: <i>Provided, how</i> The notice, if required, shall includes of the operator and the operator	ne surface owner's land for the n of this article satisfies the never, That the notice require ude the name, address, teleph	ne purpose of requirements ments of this none number,
	ereby provided to the SURFACE OWN			
-	ritt & Laura E, Pritt 4 Green Valley Road	Name:		
Bridgeport, WV		Address.		
the surface of State: County: District:	wner's land for the purpose of drilling a horizo West Virginia Harrison	UTM NAD 83 Easting: Northing: Public Road Access:	570,151.35 4,344,361.17 County Route 17	
Quadrangle:	Simpson Brownton		Ira Pritt	
Watershed:	Beards Run & Pigtail Run	deficially used faill flame.	na riid	
Pursuant to facsimile nur related to ho	e Shall Include: West Virginia Code § 22-6A-16(b), this not mber and electronic mail address of the operizontal drilling may be obtained from the Se 1 57th Street, SE, Charleston, WV 25304 (304)	rator and the operator's authorize ceretary, at the WV Department of	ed representative. Additional f Environmental Protection	l information headquarters,
	ereby given by:			
Well Operator	Dr: Arsenal Resources	Authorized Representative:	William Veigel	
			OF Destaurated Diama Code 200	
Address: Wexford, PA 150	6031 Wallace Road Extension, Suite 300	Address: Bridgeport, WV 26330	65 Professional Place, Suite 200	RECEIVED Office of Oil and Gas
Address:				Office of Oil and Gas
Address: Wexford, PA 150	090	Bridgeport, WV 26330		
Address: Wexford, PA 150 Telephone:	724-940-1218	Bridgeport, WV 26330 Telephone:	724-940-1218 keddy@arsenalresources.com 304-848-9134	Office of Oil and Gas

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 deeprivacyofficer@wv.gov.

WW-6A5 (1/12) Operator Well No. Pritt South 202

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

	Requirement: notice shall be provide ice: 8/25/17 Date Perm	ed no later than the filing it Application Filed:8		application.
Delivery me	ethod pursuant to West Virginia Cod	le § 22-6A-16(c)		
■ CERT	IFIED MAIL	☐ HAND		
	RN RECEIPT REQUESTED	DELIVERY		
return receip the planned required to be drilling of a damages to t (d) The notice	trequested or hand delivery, give the soperation. The notice required by the provided by subsection (b), section to horizontal well; and (3) A proposed the surface affected by oil and gas opered sees required by this section shall be given.	surface owner whose land is subsection shall inclu- en of this article to a surf- surface use and compen- tations to the extent the day owner to the surface owner a	I will be used for de: (1) A copy ace owner whost sation agreement amages are com	cation, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the at containing an offer of compensation for pensable under article six-b of this chapter, sted in the records of the sheriff at the time
	reby provided to the SURFACE OW ss listed in the records of the sheriff at			
	ritt & Laura E. Pritt	/ Name:		
Address: 344	4 Green Valley Road	Addres	S:	
Bridgeport, WV	26330			
operation or State: County: District:	the surface owner's land for the purpo West Virginia Harrison Simpson	UTM NAD 8	Easting: Northing:	cct of land as follows: 570,151.35 4,344,361.17 County Route 17
Quadrangle:		0.7071107227177	ed farm name:	Ira Pritt
Watershed:	Beards Run & Pigtail Run			100 1200
Pursuant to 'to be provid horizontal w surface affect information	led by W. Va. Code § 22-6A-10(b) to tell; and (3) A proposed surface use an eted by oil and gas operations to the erelated to horizontal drilling may be to located at 601 57th Street, SE,	o a surface owner whose d compensation agreeme extent the damages are cobtained from the Secre	e land will be un nt containing ar ompensable und tary, at the WV	code section; (2) The information required used in conjunction with the drilling of a noffer of compensation for damages to the ler article six-b of this chapter. Additional Department of Environmental Protection or by visiting www.dep.wv.gov/oil-and-department
Well Operate	Of: Arsenal Resources	Address:	6031 Wallace Road	Extension, Suite 300
Telephone:	724-940-1218	11000 033.	Wexford, PA 15090	
Email:	keddy@arsenalresources.com	Facsimile:	CHAPTER OF THE STATE	
	and the second s		-211.	
The Office of				telephone number, as part of our regulatory ies 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.

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WW-6AW (1-12)

API NO. 47-077 - 05	5901
OPERATOR WELL NO.	See Attached
Well Pad Name: Pritt South	

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 crosion 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

WW-6A and	ted above, and that I have received copies of a attachments consisting of pages one (1) thro the well plat, all for proposed well work on the West Virginia	ugh tract of land a	including follows:	the erosion and sediment control plan, if
County:	Harrison	UTM NAD	Northing:	See Attached
District:	Simpson	Public Road	•	County Route 17
Quadrangle:	Brownton	Generally us	ed farm name:	ira Pritt
Watershed:	Beards Run & Pigtell Run	-		
issued on thos	that I have no objection to the planned work de- te materials. the box that applies			
· Picase Clicus	the box that applies	1,	FUR EXECUT	ON BY A NATURAL PERSON
☐ SURFAC	CE OWNER	1	Signature:	oezer Bailer
□ SURFAC	E OWNER (Road and/or Other Disturbanc	en r	Print Name:	Loyco Bailey
□ SURFAC	E OWNER (Impoundments/Pits)	1	77-7	ON BY A CORPOR ASSOCIATION PERC
□ COAL O	WNER OR LESSEE		Company:	ON BY A CORPORATION, ETC.
COAL O	PERATOR		3y: its:	S. BEOD.
■ WATER	PURVEYOR		Signature: O	Bally Grand Gas
□ OPERAT	OR OF ANY NATURAL GAS STORAGE	1 1	Date: 9/5/	17 JEP 18 2017
	Privacy Notice: Oil and Gas processes your personal informatio	n. such as nam	ne, address and to	Environmental Protess

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



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

October 31, 2017

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

Subject: DOH Permit for the Ira Pritt Well Pad, Harrison County Pritt South 202

Dear Mr. Martin,

Jim Justice

Governor

This well site will be accessed from a Permit #04-2015-0617 transferred to Arsenal Resources for access to the State Road for a well site located off of Harrison County Route 77/6 SLS.

The operator has signed a DISTRICT WIDE 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,

Day K. Clayton

Gary K. Clayton, P.E.

Regional Maintenance Engineer

Cc: Kelly Davis

ARSENAL Resources

CH, OM, D-4

File

Pritt South 202								
FRACTURING ADDITIVES								
	PURPOSE TRADE NAME CAS #							
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	Al-300	111-76-2					
Additive #6:	Gel Breaker	AP-One	7727-54-0					
Additive #7:	Acid	HCI - 7.5%	7647-01-0					

Office of Oil and Gas

AUG 28 2017

WV Department of Environmental Protection

PRITT SOUTH SITE PLAN ARSENAL RESOURCES

206. (PROPOSED WELLS NO. 201, 202, 203, 204, 205, 301, 211, 212, 213, 214, 215, 216, & 311)

SITUATE ON THE WATERS OF BEARDS RUN AND PIGTALL RUN IN SIMPSON DISTRICT, HARRISON COUNTY, WEST VIRGINIA



SAUE / REVISIONS

(NAD 83) (NAD 83)

-80.183541

LONGITUDE:

39.245265

50 Professional Place Scidegore, Wy 26330 Scidegore, Wy 26330 Scidegore, Wy 26330

Professional Place

By Chic Com Bus Com Bus

(NAD 83)

-80.186800

-80.185139

LONGITUDE:

39.244714

ABOVEGROUND STORAGE

CENTER OF

-80.192380 (NAD 83)

LONGITUDE:

CENTER OF PRITT SOUTH WELL PAD

39.245319

LATITUDE: LANTUDE:

Jirson Design Grou



2502 CRANBERRY SQUARE

4.19 AC 2.77 AC

TM 351 PAR 15.3 TOTAL PROPERTY AREA: TOTAL DISTURBED AREA:

JULIA CRIM

LARSON DESIGN GROUP

ENGINEER

PHONE: (304) 842-3597

JULIA CRIM TM 351 PAR 15.8 TOTAL PROPERTY AREA: 31 AC TOTAL DISTURBED AREA: 6.90 AC

65 PROFESSIONAL PLACE BRIDGEPORT, WV 25330

SUITE 200

47.40 AC

TM 351 PAR 7
TOTAL PROPERTY AREA: 10TAL DISTURBED AREA.

ORAN WARDER

ARSENAL RESOURCES

OPERATOR

69.06 AC

IRA PRITT
IN 351 PAR 4
TOTAL PROPERTY AREA: 65
TOTAL DISTURBED AREA: 14

15, 15.3, 15.5

MAP 351 PARCELS 4, 7,

SURFACE OWNER:

SIMPSON DISTRICT

TAX PARCEL:

PROJECT INFORMATION PROJECT NAME: PRITT SOUTH MORGANTOWN, WV 26508 PHONE (304) 777-2940 SCALE 1" - 2000

SMITH LAND SURVEYING, INC.

SURVEYOR

SANDY CRIM
TM 351 PAR 15.5
TOTAL PROPERTY AREA: 2.05 AC
TOTAL DISTURBED AREA: 0.05 AC

PHONE: (304) 462-5634

GLENMLLE, WV 26351 12 VANHORN DRIVE

COVER SHEET
PRITT SOUTH SITE PLAN
HAPPIBON COUNT WEST VINONIA

MISS Utility of West Virginia
1-800-254-46-8
West Virginia State Law
(Saction XIV: Onopter 24-C)
Requires that you call two
Dusiness days before you dig
the state of West Virginia

ENVIRONMENTAL NOTES.
WELLAND DELINEATIONS WERE PERFORMED ON MARCH 17, 2015, MARCH 11, 2015, APPRIL 8, 2015, MAY 8, 2015, AND MARCH 17, 2017 BY ALLSTAR 2015, APPRIL 8, 2015, MAY 8, 2015, AND MARCH 17, 2017 BY ALLSTAR ECOLOGY TO REWIN THE SITE FOR WAITERS AND WELLANDS THAT ARE MOST LIKELY WITHIN THE REGILATORY PURVEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE SOUTH) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENGINEERS (USACE SOUTH) AND/OR THE WEST VIRGINIA DEPARTMENT OF THE AFOREVERT OF CANNEY THE AFOREVERT OF AND AND STATE REGULATORY OF THE PERINATURE STATE REGULATORY AGENCIES PRIGHT TO ANY PROPOSED MAPACTS TO WAITERS OF HE U.S., INCLUDING WELLSAND FILLS AND STATE REGULATORY AGENCIES PRIGHT TO ANY PROPOSED MAPACTS TO WAITERS OF HE U.S., INCLUDING WELLSAND FILLS AND STREAM GROSSINGS.



GEOTECHNICAL NOTE

RESTRICTIONS MOTES:

1. THER ARE NO WELLANDS WITHIN 100 FEET OF THE WELL PAD LCD

2. THERE ARE NO WELLANDS WITHIN 100 FEET OF THE WELL PAD LDD.

3. THERE ARE NO RATIONALLY PRODUCED FRIEADS THE ANS WITHIN 300 FEET OF THE WELL PAD JAD LDD.

4. THERE ARE NO RATIONALLY PRODUCED WATER SUBPLY FACULTES WITHIN 1000 FEET OF THE WELL PAD AND LDD.

5. THERE ARE NO GROUNDAMER INTAKE OR PUBLIC WATER SUBPLY FACULTES WITHIN 1000 FEET OF THE WELL PAD AND LDD.

5. THERE ARE NO CACUMED DWELLING STRUCTURES WITHIN 625 FEET OF THE WELL PAD.

7. THERE ARE NO ARRANGED WELLING STRUCTURES THAN 5.500 SQUARE FEET WITHIN 625 FEET OF THE CRITER OF THE WELL PAD.

7. THERE ARE NO ARRANGED WELLING STRUCTURES THAN 5.500 SQUARE FEET WITHIN 625 FEET OF THE CRITER OF THE WELL PAD.

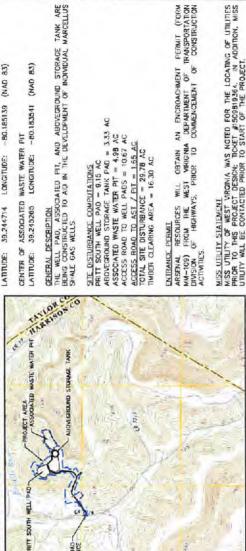
10793-005 1 OF 37

HOLET NO.

& Energy Development

A GOUEDHINGA INVESTIGATION OF THE PROPOSED SITE WAS CONDUCTED BY CA. COVEY ENGINEERING ON JULY 17 THROUGH JULY 20, 2012. THE REPORT PREPARED BY CA. COVEY ENGINEERING, DATED JULY 2012 REFLECTS THE SILESTONE INVESTIGATION. THE INVESTIGATION AND RECOMMENDIATIONS. CONTINUED IN THIS REPORT WAS USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSTIGATED WAS THESE PLANS. PLEASE REFER TO THE SUBSTIGATION.

ACCESS ROAD ENTRANCE DICATION COORDINATES ATTUDE: 39.241841



BROWNTON QUADRANGLE WEST VIRGINIA

THE PROPOSED LIMITS OF DISTURBANCE FOR THIS PROJECT IS NOT LOCATED WITHIN THE EXISTING FEMA 1000-PEMA I, GOODPLAIN. NO FEMA MAP EXISTS FOR THIS LOCATION IN HARRISON COUNTY.

FLOODPLAIN NOTE



WASTE WATER PIT CROSS SECTIONS ACCESS ROAD GROSS SECTIONS

RECLAMATION PLAN

DETAILS

WELL PAD CROSS SECTIONS

15-18 19-20 21-24

10-14

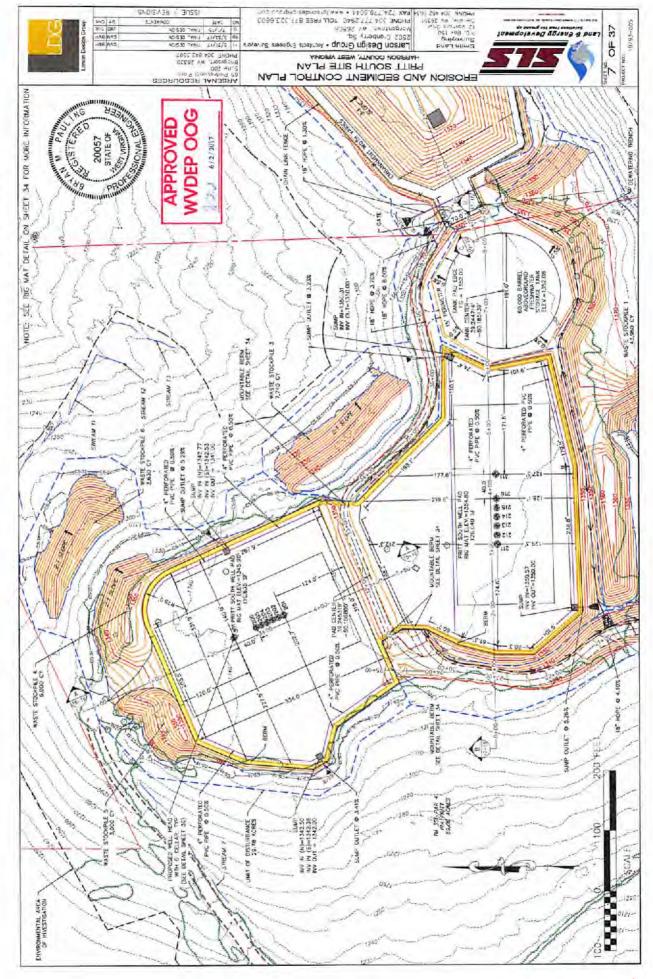
ACCESS ROAD PROFILE

SITE LAYOUT

OVERALL PLAN SHEET INDEX

GENERAL NOTES COVER SHEET

SHEET INDEX







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

DEP Office	e Use only	
Date Received by Oil & Gas:	8-28-1	
Assigned Impoundment ID #:	D33 WPA	00094

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:	494519412		
Address: Street	65 Professional Place Suite 200		
City:	Bridgeport	State: WV	Zip: 26330
Contact Name: Contact Phone:	Larry "Eddie" Carder	Contact Title:	Regulatory Affairs Manager
	304-629-6309	Contact Email:	ecarder@arsenalresources.com

Section 2 - Engineering / Design Contractor Information

Company Name:	Smith Land Surveying	g, Inc. & Larson Design	Group	р			
Address: Street	12 Vanhorn Dr.						
City:	Glenville	State:	WV	Zip:	26351		
Contact Name:	Chris Moyers	Contact	Title:	Sr. Design Co	oordinator		
Contact Phone:	304-462-5634	Contact E	mail:	cmoyers@sls	surveys.com	RECEIV Office of Oil	VED
Certifying Professional I	Engineer: Bryan Pauli	ing				Office of Off	and
Professional Engineer F	Registration Number:	20057				AUG 2 8	8 20





Office of Oil and Gas

Section 3 - Impoundment / Pit Information

T (0)			
Type of Structure. Check one of two			
☐ Freshwater Impoundment		aste Pit	
Note: Any waste in a pit will make it a wa	aste pit.		
Name of Structure (Company Name	:) Pritt South Associated Pi	t	
County: Harrison	District:	Simpson	
USGS 7.5' Quad Map Name: Brov	wnton		
Farm Name: Pritt			
Pad Name: Pritt South Pad			
Surface Owner Name: Oran Warder			
			son County Route 77/6 near the ridge
With the access road entrance being 0.	 _		//b & 23/4.
(Note: Give general location, example: 2 mile:		еп оп випаю Сгеек)	
	eards Run rest perennial stream: 1400	N+/_	
Distance (Drainage Distance) to nea	rest perenniai stream: 1400	· · · ·	<u> </u>
Location Coordinates (NAD83, Decir	mal Degrees (yv vvvv -vv vvv	×/)	
Latitude: 39.245265	Longitude (Use negative sign		
UTM Coordinates : 570454	• • •	14312	N
Access Road Coordinates (junction of		.	 · ·
Latitude: 39.243282	Longitude (Use negative sig	an): -80.192459	
UTM Coordinates : 569687		14085	N
Approximate Dimensions			
	dth: 200' +/-	_ Height:32.9	
Note: If irregularly shaped, give approximate of			
Total Capacity – Provide all units of I		40.0	26
Barrels: <u>387,574</u> Ga	llons: 16,278,095	_ Acre-Feet: _49.9	
Consoity with 2' Eroshood - Deside	all units of massure below		
Capacity with 2' Freeboad – Provide Barrels: 340,964 Ga	illons: 14,320,480	Acre-Feet: 43.9	95
Daileis.	mond.	_ /10/0-/ CCL	
Incised volume:			RECEI Office of Ci
	illons: 1,662,011	Acre-Feet: 5.10	Office of Oi
			AUG 2 8
Net impounded volume: (Total volum	ne less incised volume.)		WV Depar
•	illons: 14,616,084	_ Acre-Feet: 44.8	66 Environmenta
Anticipated Construction Start Date (une 2017	
Note: No construction may begin on			
calendar days prior to confirmed con			



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:
See Attached	

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		
	REC Office of (IVED il and Gas
	AUG 2	8 2017
	WV Depa Environmen	rtment of al Protection



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.

a Paline	
Dieropa	
swarn to before me this. 10th Day of May 20	17
uster a. Campbell	
4/18/21	
NOTARIAL SEAL (risten Ann Campbell, Notary Public	
- K	sworn to before me this, Sworn to before me

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 57th Street, SE

Charleston WW 25304

Email PDF file format of this application and all related engineering Plans to : Depimpoundments@wv.gov

Office of Oil and Gas

AUG 2 8 2017

IMP 1A – Section 4 – Associated Well Numbers and API Numbers Well Numbers Pritt 201 Pritt 202 Pritt 203 Pritt 204 Pritt 205 Pritt 206 Pritt 207 Pritt 301 Pritt 211 Pritt 212 Pritt 213

RECEIVED
Office of Oil and Gas

AUG 2 8 2017

WV Department of Environmental Protection

API Numbers

Pritt 214

Pritt 215

Pritt 216

Pritt 217

Pritt 311

Not Yet Assigned by the WV DEP