



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, October 18, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC
6031 WALLACE ROAD EXTENSION SUITE 300

WEXFORD, PA 15090

Re: Permit approval for SHEME 205
47-091-01337-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: SHEME 205
Farm Name: BURTON, DAVID & LUELLA
U.S. WELL NUMBER: 47-091-01337-00-00
Horizontal 6A / New Drill
Date Issued: 10/18/2017

Promoting a healthy environment.

10/20/2017

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

WW-6B
(04/15)

API NO. 47-091 -
OPERATOR WELL NO. 205
Well Pad Name: Sheme

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

1) Well Operator: Arsenal Resources 494519412 Taylor Courthouse Grafton
Operator ID County District Quadrangle

2) Operator's Well Number: 205 Well Pad Name: Sheme

3) Farm Name/Surface Owner: David & Luella Burton Public Road Access: US 119/250, CR 119/27, & CR 13/6

4) Elevation, current ground: 1385 Elevation, proposed post-construction: 1388.5

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale, 7813.5ft (Top) - 7895.5ft (Bottom), 82 ft, 0.5 psi/ft

8) Proposed Total Vertical Depth: 7888 ft

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 19982 ft

11) Proposed Horizontal Leg Length: 11501 ft

12) Approximate Fresh Water Strata Depths: 410ft

13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (091-00128, 091-00130, 091-00137, 091-00612, 091-00826)

14) Approximate Saltwater Depths: None Reported

15) Approximate Coal Seam Depths: Elk Lick-200.5, Harlem-350.5, Bakerstown-433.5, Bush Creek-535.5, Upper Freeport-624.5, Lower Freeport-680.5, Upper Kittanning-726.5, Middle Kittanning-786.5, Lower Kittanning-816.5, Clarion-850.5

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

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No

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

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WV Department of
Environmental Protection

WW-6B
(04/15)API NO. 47- 091 - _____
OPERATOR WELL NO. 205 _____
Well Pad Name: Sheme _____

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	24"	New	H-40	94#	80'	80'	CTS
Fresh Water	13.375"	New	J-55	54.5#	500'	500'	CTS
Coal							
Intermediate	9.625"	New	J-55	40#	2600'	2600'	CTS
Production	5.5"	New	P-110	20#	19,982'	19,982'	TOC @ 2,450'
Tubing							
Liners							

Samuel L. Reynolds 5-16-17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	24"	36"			0	Type 1.3% Calcium	1.20
Fresh Water	13.375"	17.5"	0.38"	2730	900 xx	Class A, 3% CaCl ₂	1.20
Coal					0		
Intermediate	9.625"	12.25"	0.395"	3950psi	1500 xx	Class A, 2% CaCl ₂	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		

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Kind:					WV Department of Environmental Protection
Sizes:					
Depths Set:					

WW-6B
(10/14)

API NO. 47-091 - _____
OPERATOR WELL NO. 205 _____
Well Pad Name: Shema

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

The well will be started with a conductor rig drilling a 36" hole to Conductor programmed depth then running 24" casing and grout cement back to surface. The conductor rig will move out and the drilling rig will move in and rig up. The drilling rig will then spud a 17 1/2" hole and drill to fresh water casing (Surface) to the programmed depth, Run 13- 3/8" casing and cement to surface. The rig will continue drilling a 12- 1/4" intermediate hole to the programmed depth, run 9- 5/8" casing and cement to surface. The rig with then continue to drill an 8- 3/4" hole to a designed KOP. We will then start drilling the curve and lateral section to the programmed total measured depth, run 5 1/2" casing and cement according to the program.

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 25.1

22) Area to be disturbed for well pad only, less access road (acres): 6.8

23) Describe centralizer placement for each casing string:

24"- No centralizers 13 3/8" – one bow spring centralizer on every other joint 9 5/8" – one bow spring centralizer every third joint from TD to surface 5 1/2" – one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 2,700'; there will be no centralizers from 2,700 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 2,450' (+/- 150' above the casing shoe for the 9-5/8") with Type 1 or Class A cement retarder (to extend pumpability) cellophane flaked for fluid loss, Bentonite gel as an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to insure the cement is of proper weight to placement and possibly a gypsum gas blocking additive to aid in blocking/gas migration (in combination with other additive mentioned here, helps cement achieve a "right-angle" set) during the plastic phase of the cement set-up.

25) Proposed borehole conditioning procedures:

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

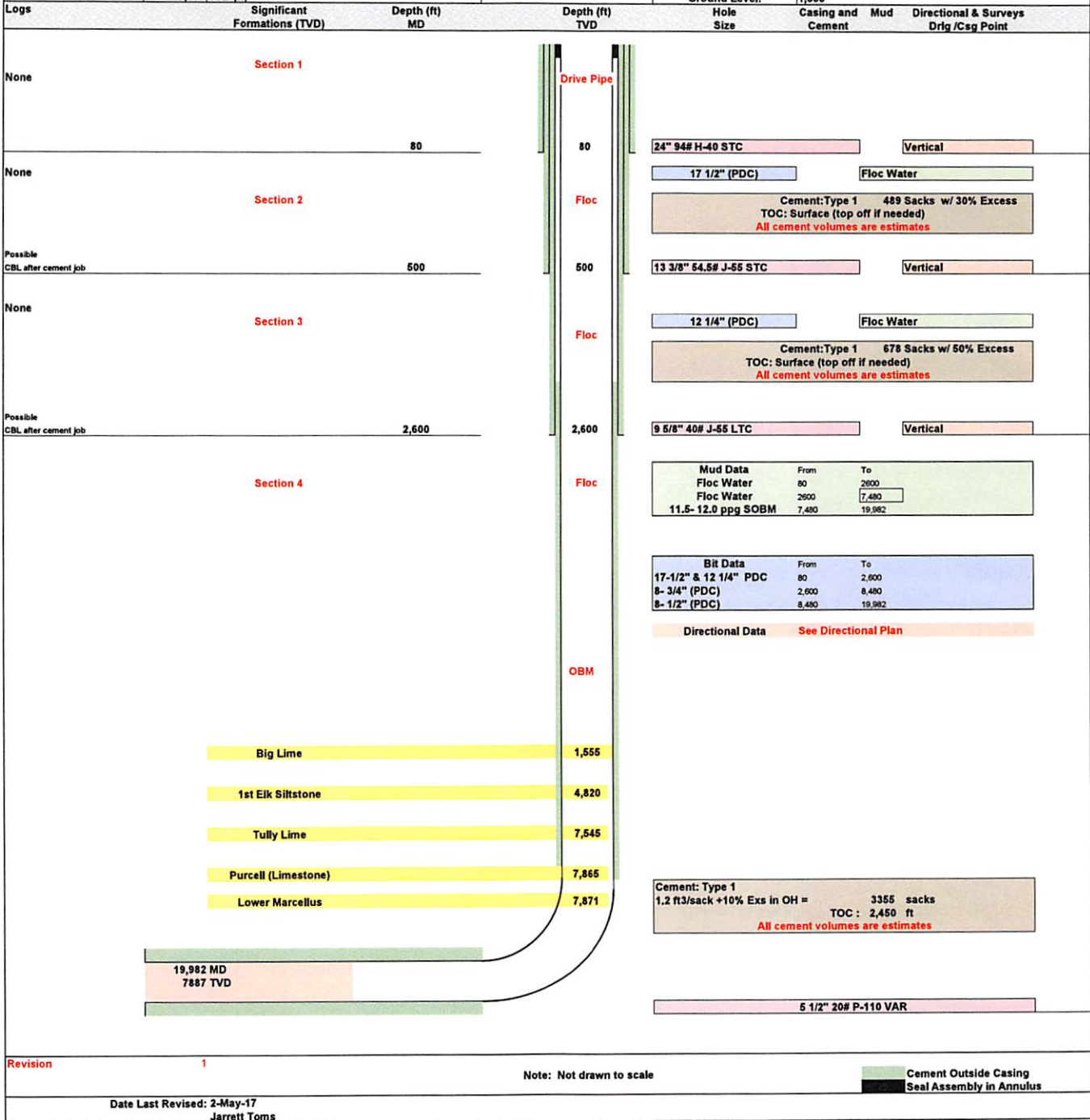
*Note: Attach additional sheets as needed.



Arsenal Resources
Scheme 205
Casing Design
Directional Plan # 2 QES

Other Names:	N/A
Surface Location:	TBD
Bottom Hole Location:	TBD
Total Depth:	19,982 MD (ft) 7,887 TVD (ft)

County:	Taylor
State:	West Virginia
AFE #:	XX
RKB:	27
Ground Level:	1,388



Revision 1

Note: Not drawn to scale

Cement Outside Casing
Seal Assembly in Annulus

Date Last Revised: 2-May-17
Jarrett Toms

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10/20/2017



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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 Barbour County, WV prior to hydraulic fracturing at the following ARSENAL RESOURCES wells on the SHEME 205 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:

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



2. Reporting

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

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Area of Review Report - **SHEME** Pad, **205HM** Lateral, **Taylor** County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
Haymond Nuzum 2	091-00130	Alliance Petroleum Corporation	Vertical/Existing	39.268042	-80.064515	4570	Big Lime, Big Injun, Gantz, Benson	NA
Avanelle Young 6	091-00818	Alliance Petroleum Corporation	Non-Existing	39.251302	-80.058442	NA	NA	NA
TH Bailey 1	091-00135	Alliance Petroleum Corporation	Plugged	39.255602	-80.058567	NA	Benson	NA
Don Kines/D Kines 2	091-01009	Petroleum Development Corp.	No Sufficient Information	39.262033	-80.060496	NA	NA	NA

Area of Review Report - **SHEME** Pad, **205HM** Lateral, **Barbour** County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
Avanelle Young 5	001-02604	Alliance Petroleum Corporation	Vertical/Existing	39.245494	-80.055126	4324	Perforated Balltown, Benson	NA



Click or tap to enter a date.

Alliance
Address
State

RE: Click or tap here to enter text.

Dear Sir/Madam,

Arsenal Resources has developed a Marcellus pad Sheme 205HM, located in Taylor County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,900' TVD) and existing conventional natural gas wells included in the attached well list for which you are believed to be the operator.

Arsenal anticipates conducting hydraulic fracturing at the Sheme 205HM Pad during the Quarter of 2016. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our newly planned wells. Plats for each well on this pad are attached.

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

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

Please feel free to contact me at 724-940-1202 with any questions or comments. You may also contact the WV Office of Oil and Gas at 304-926-0440.

Sincerely,

Kelly Eddy
Regulatory Compliance Specialist

WW-9
(4/16)

MAY 26 2017

WV Department of
Environmental Protection

API Number 47 - 091 - _____
Operator's Well No. Sheme 205

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Arsenal Resources OP Code 494519412

Watershed (HUC 10) Long Run & Right Fork of Simpson Creek Quadrangle Grafton

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- _____ Land Application
- _____ Underground Injection (UIC Permit Number _____)
- _____ Reuse (at API Number _____)
- _____ Off Site Disposal (Supply form WW-9 for disposal location)
- _____ Other (Explain _____)

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Vertical: Freshwater, Horizontal: Synthetic oil based mud

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

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

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

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

-Landfill or offsite name/permit number? Advanced Disposal Services & Chestnut Valley Landfill

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

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

Company Official Signature *William Veigel*

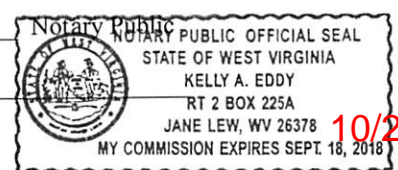
Company Official (Typed Name) William Veigel

Company Official Title Designated Agent

Subscribed and sworn before me this 16th day of May, 2017

Kelly A. Eddy

My commission expires September 18, 2018



10/20/2017

Arsenal Resources

Proposed Revegetation Treatment: Acres Disturbed 25.1 Prevegetation pH 6.8 average

Lime 4 Tons/acre or to correct to pH 6.0-7.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2 Tons/acre

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Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Swisher Meadow Mix	100
Field Bromegrass	40		
Winter Rye	168		
Winter Wheat	180		

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Thomas L. Reynolds*

Comments: Pre-seed / mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade E&S where needed per WV DEP E&S manual, if necessary.

Title: OIL & GAS INSPECTOR

Date: 5-16-17

Field Reviewed? Yes No

4709101337



SITE SAFETY PLAN

Samuel D. Szabolcs
5-16-17

Sheme 205 WELL PAD

911 Address:

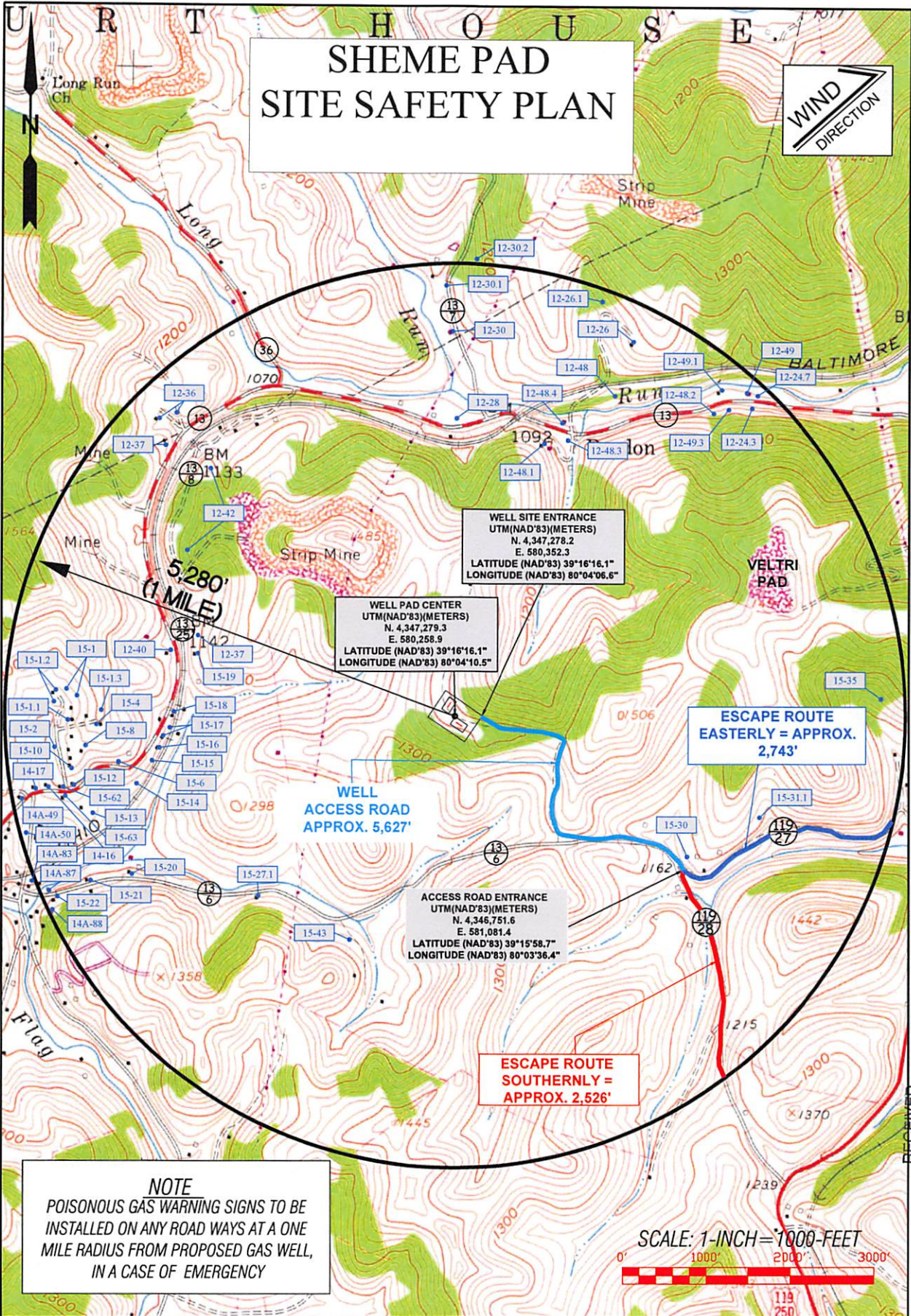
760 Nuzum Road

Grafton, WV 26354

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NOTE
 POISONOUS GAS WARNING SIGNS TO BE
 INSTALLED ON ANY ROADWAYS AT A ONE
 MILE RADIUS FROM PROPOSED GAS WELL,
 IN A CASE OF EMERGENCY

Land & Energy Development
 Building the future, one project at a time.

DRAWN BY C.P.M.	FILE NO. 8606	DATE 04-03-17	CADD FILE: MORGESAFETYPLAN
--------------------	------------------	------------------	-------------------------------

TOPO SECTION OF: GRAFTON WV 7.5' QUADRANGLE	
COUNTY TAYLOR	DISTRICT COURTHOUSE

OPERATOR:
 ARSENAL RESOURCES
 65 Professional Place, Suite 200
 Bridgeport, WV 26330

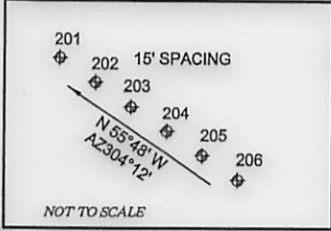
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SHEME 205 WELL TIES

LINE	BEARING	DISTANCE
L1	N 09°15' E	1036.56'
L2	S 53°53' E	1634.30'
L3	N 45°20' E	1218.54'
L4	S 18°03' E	636.59'

SHEME WELL LAYOUT



LEGEND

LEASE LINE	---
SURFACE LINE	----
WELL LATERAL	-----
OFFSET LINE	-----
TIE LINE	-----
CREEK	~~~~~
ROAD	=====
FENCE LINE	-x-x-x-
COUNTY ROUTE	○
STATE ROUTE	□
PROPOSED WELL	⊕
EXISTING WELL	⊙
PERMITTED WELL	⊙

TRACT #	SURFACE OWNER	SURFACE ACREAGE	OIL & GAS LEASE #
15-29	DAVID & LUELLA BURTON	30±	00003947
12-45	MAR KEY, LLC	49.64±	00003514
12-46	THOMAS R. SHEME, JR.	18.36±	00003514
15-28	MAR KEY, LLC	26.39±	00003514
15-30	THOMAS R. SHEME, JR.	148.37±	00003514
15-42	JOHN & KAREN HYDE	198±	00004551-00004555
15-56	JACK & BEATRICE MARI	250.2±	00003835
7-12	W.V. BUREAU OF COMMERCE DNR, PLC	280.94±	00003583
		151.99±	00004268

TRACT #	SURFACE OWNER	SURFACE ACREAGE
7-12.1	STATE OF W.V.	1.87±
218-L	UNITED STATES OF AMERICA	RES. OF 40.73±
T	CONSERVATION COMMISSION OF WEST VIRGINIA	15.95±
15-54	RONNIE HELMONDOLLAR ET AL	201.50±

NAD'83 GRID NORTH

**ARSENAL RESOURCES
SHEME 205**

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 281,273.9	E. 1,807,312.7
NAD'83 GEO.	LAT-(N) 39.270846	LONG-(W) 80.069351
NAD'83 UTM (M)	N. 4,347,246.0	E. 580,279.1
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 281,525.2	E. 1,808,376.7
NAD'83 GEO.	LAT-(N) 39.271554	LONG-(W) 80.065599
NAD'83 UTM (M)	N. 4,347,328.0	E. 580,602.0
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 270,590.0	E. 1,811,941.1
NAD'83 GEO.	LAT-(N) 39.241592	LONG-(W) 80.052771
NAD'83 UTM (M)	N. 4,344,014.4	E. 581,743.3



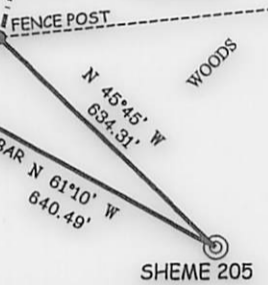
Land & Energy Development
 Solutions from the ground up.
 P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634
 www.slsurveys.com

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.

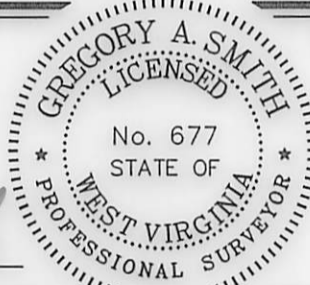
REFERENCES

1" = 400' THOMAS R. SHEME JR. ET AL 49.64 ACRES±



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

P.S. 677 *Gregory A. Smith*



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

DATE MAY 22, 20 17

REVISED _____, 20 _____

OPERATORS WELL NO. SHEME 205

API WELL NO. 47 - 091 - 01337
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8606P205R2.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



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

LOCATION: ELEVATION 1384.60' (EXISTING) 1388.53' (PROPOSED) WATERSHED LONG RUN & RIGHT FORK OF SIMPSON CREEK
 DISTRICT COURTHOUSE COUNTY TAYLOR QUADRANGLE GRAFTON 7.5'

SURFACE OWNER DAVID & LUELLA BURTON ACREAGE 30±
 ROYALTY OWNER DAVID & LUELLA BURTON ET AL ACREAGE 30±
 PROPOSED WORK: LEASE NO. 00003947

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH 19,982' TMD / 7,888' TVD

WELL OPERATOR ARSENAL RESOURCES
 ADDRESS 6031 WALLACE RD. EXT. SUITE 300 WEXFORD, PA 15090

DESIGNATED AGENT WILLIAM VEIGEL
 ADDRESS 65 PROFESSIONAL PLACE BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

10/20/2017

WW-6A1
(5/13)

Operator's Well No. Sheme 205

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

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

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

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

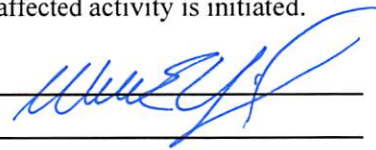
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**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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: Aresenal Resources
 By: William Veigel 
 Its: Designated Agent

Attachment to WW-6A1, Sheme - 205HM

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
00003947	Adolphus T. Leach and Leona C. Leach, husband and wife	Petroleum Development Corporation	0.125	33/527	30
	Petroleum Development Corporation	PDC Mountaineer, LLC		30/698	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003514	Haymond J. Nuzum, single; Zona V. Nuzum, widow; Gloria D. Short, divorced	Consolidated Gas Supply Corporation	0.125	33/274	505.88
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation		5/555	
	Consolidated Gas Transmission Corporation	CNG Development Company		6/443	
	CNG Development Company	CNG Producing			
	CNG Producing	Dominion Exploration and Production, Inc.			
	Dominion Exploration and Production, Inc.	Consol Gas Company		8/368	
	Consol Gas Company	CNX Gas Company LLC		8/368	
	CNX Gas Company LLC	Noble Energy, Inc.		32/54	
	CNX Gas Company LLC and Noble Energy, Inc.	PDC Mountaineer, LLC		33/198	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00004551	John F. Hyde and Karen M. Hyde, husband and wife	PDC Mountaineer, LLC	0.14	59/300 67/449	198
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00004552	Regina Rager, single	PDC Mountaineer, LLC	0.145	59/414 67/448	198
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00004553	Gary Dennis Burner, married, dealing in his sole and separate property	PDC Mountaineer, LLC	0.14	59/297 68/393	198
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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047-091-01337

00004554	Gerald Anthony Baughman, married, dealing in his sole and separate property	PDC Mountaineer, LLC	0.14	59/573 68/394	198
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00004555	Dolores J. McDaniel, single	PDC Mountaineer, LLC	0.14	60/164 67/648	198
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003835	Jack B. Marsh and Beatrice L. Marsh, his wife	Petroleum Development Corporation	0.125	44/647 61/49	273
	Petroleum Development Corporation	PDC Mountaineer, LLC		30/698	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			
00003583	Avanelle M. Young, widow	Consolidated Gas Supply Corporation	0.125	74/516	256
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation		99/481	
	Consolidated Gas Transmission Corporation	CNG Development Company		103/71	
	CNG Development Company	CNG Producing			
	CNG Producing	Dominion Exploration and Production, Inc.			
	Dominion Exploration and Production, Inc.	Consol Gas Company		16/567 447/571	
	Consol Gas Company	CNX Gas Company LLC		447/571	
	CNX Gas Company LLC	Noble Energy, Inc.			
	CNX Gas Company LLC and Noble Energy, Inc.	PDC Mountaineer, LLC		168/538	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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00004268	E. L. Young and Daisy Young, his wife, U. G. Young and Lillie P. Young, his wife; Harriet A. Hall, widow	Hope Natural Gas Company	0.125	5/429 6/509	200
	Hope Natural Gas Company	Consolidated Gas Supply Corporation		53/261	
	Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation		99/481	
	Consolidated Gas Transmission Corporation	CNG Transmission Corporation		17/198	
	CNG Transmission Corporation	Dominion Transmission, Inc.			
	Dominion Transmission, Inc.	Consol Energy Holdings LLC XVI		151/423	
	Consol Energy Holdings LLC XVI	Consol Gas Company		16/577 447/571	
	Consol Gas Company	CNX Gas Company LLC		447/571	
	CNX Gas Company LLC	Noble Energy, Inc.		155/406	
	CNX Gas Company LLC and Noble Energy, Inc.	PDC Mountaineer, LLC		168/538	
	PDC Mountaineer, LLC	River Ridge Energy, LLC			

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047-091-01337

West Virginia Secretary of State — Online Data Services

Business and Licensing

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047-091-01337

Business Organization Detail

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

CONSOL GAS COMPANY

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C Corporation	3/26/1973		3/26/1973	Foreign	Profit		1/5/2011	Merger

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock 0.0000
Charter County			Control Number 0
Charter State	DE	Excess Acres 0	
At Will Term	Member Managed		
At Will Term Years			Par Value 0.000000
Authorized Shares	0		

Addresses	
Type	Address
Local Office Address	ONE DOMINION DRIVE JANE LEW, WV, 26378
Mailing Address	1000 CONSOL ENERGY DR. CANONSBURG, PA, 15317 USA
Notice of Process Address	CT CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV, 25313 USA
Principal Office Address	ONE DOMINION DRIVE JANE LEW, WV, 26378 USA
Type	Address

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Officers	
Type	Name/Address
Director	N. J. DEIULIIS 1000 CONSOL ENERGY DRIVE CANONSBURG, PA, 15317 USA
President	J. BRETT HARVEY 1000 CONSOL ENERGY DRIVE CANONSBURG, PA, 15317 USA
Secretary	P. J. RICHEY 1000 CONSOL ENERGY DRIVE CANONSBURG, PA, 15317
Treasurer	J. M. REILLY 1000 CONSOL ENERGY DRIVE CANONSBURG, PA, 15317 USA
Vice-President	N. J. DEIULIIS 1000 CONSOL ENERGY DRIVE CANONSBURG, PA, 15317
Type	Name/Address

Name Changes	
Date	Old Name
5/21/2010	DOMINION EXPLORATION & PRODUCTION, INC.
5/10/2000	CNG PRODUCING COMPANY
Date	Old Name

Mergers				
Merger Date	Merged	Merged State	Survived	Survived State
7/7/2010	CONSOL GAS RESERVES INC.	VA	CONSOL GAS COMPANY	DE
7/7/2010	CONSOL GAS COALBED METHANE, INC.	DE	CONSOL GAS COMPANY	DE
11/19/2010	CONSOL ENERGY HOLDINGS LLC XVI	DE	CONSOL GAS COMPANY	DE
Merger Date	Merged	Merged State	Survived	Survived State

Subsidiaries	
Name	Address
	CNG PIPELINE CO 1450 POYDRAS STREET NEW ORLEANS, LA, 70112 USA
	CONSOLIDATED NATURAL GAS COMPANY 625 LIBERTY AVE. PITTSBURGH, PA, 15222 USA
	DOMINION COALBED METHANE, INC ONE DOMINION DR JANE LEW, WV, 26378 USA

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10/20/2017

Name	Address
-------------	----------------

Date	Amendment
1/5/2011	MERGER: MERGING CONSOL GAS COMPANY, A QUALIFIED DE CORPORATION WITH AND INTO CNX GAS COMPANY LLC, A QUALIFIED VA LIMITED LIABILITY COMPANY, THE SURVIVOR
11/19/2010	MERGER: MERGING CONSOL ENERGY HOLDINGS LLC XVI, A NON-QUALIFIED DE ORGANIZATION WITH AND INTO CONSOL GAS COMPANY, A QUALIFIED DE CORPORATION, THE SURVIVOR
7/7/2010	MERGER: MERGING CONSOL GAS RESERVES INC., A QUALIFIED VA CORPORATION WITH AND INTO CONSOL GAS COMPANY, A QUALIFIED DE CORPORATION, THE SURVIVOR
7/7/2010	MERGER: MERGING CONSOL GAS COALBED METHANE, INC., A QUALIFIED DE CORPORATION WITH AND INTO CONSOL GAS COMPANY, A QUALIFIED DE CORPORATION, THE SURVIVOR
5/21/2010	NAME CHANGE: FROM DOMINION EXPLORATION & PRODUCTION, INC.
5/10/2000	NAME CHANGE: FROM CNG PRODUCING COMPANY
1/18/1985	AMENDMENT: FILED
7/23/1982	ARTICLES OF INCORPORATION
7/30/1980	CERTIFICATE OF INCORPORATION
6/23/1980	MERGER: HIDALGO-WILLACY OIL COMPANY, A TEXAS CORP. NOT QUAL. IN WV, WITH AND INTO CNG PRODUCING COMPANY, THE SURVIVOR
1/31/1975	CERTIFICATE OF INCORPORATION ROLL 91
7/16/1974	CERTIFICATE OF INCORPORATION ROLL 85
Date	Amendment

Annual Reports	
Date filed	
6/22/2010	
6/26/2009	
8/15/2008	
11/30/2007	
4/11/2007	
10/31/2005	RECEIVED Office of Oil and Gas
5/2/2005	
3/22/2004	MAY 26 2017
5/21/2003	WV Department of Environmental Protection
12/19/2001	
4/26/2001	
Date filed	

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

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

DOMINION TRANSMISSION, INC.

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C Corporation	1/17/1984		1/17/1984	Foreign	Profit			

Organization Information			
Business Purpose	4862 - Transportation and Warehousing - Pipeline Transportation - Pipeline Transportation of Natural Gas	Capital Stock	0.0000
Charter County		Control Number	0
Charter State	DE	Excess Acres	0
At Will Term		Member Managed	
At Will Term Years		Par Value	0.000000
Authorized Shares	0		

Addresses	
Type	Address
Local Office Address	5400 D BIG TYLER ROAD CHARLESTON, WV, 25313
Mailing Address	445 WEST MAIN STREET CLARKSBURG, WV, 26301 USA
Notice of Process Address	CT CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV, 25313
Principal Office Address	445 WEST MAIN STREET CLARKSBURG, WV, 26301 USA
Type	Address

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Environmental Protection

10/20/2017

Officers	
Type	Name/Address
Director	DAVID A. CHRISTIAN 120 TREDEGAR STREET RICHMOND, VA, 23219
President	DIANE LEOPOLD 120 TREDEGAR STREET RICHMOND, VA, 23219
Secretary	CARTER M REID 100 TREDEGAR STREET 2ND FL. RICHMOND, VA, 23219
Treasurer	JAMES R. CHAPMAN 120 TREDEGAR ST RICHMOND, VA, 23219
Vice-President	ARNOLD J. JORDAN, JR. 100 TREDEGAR STREET RICHMOND, VA, 23219
Type	Name/Address

Name Changes	
Date	Old Name
5/10/2000	CNG TRANSMISSION CORPORATION
Date	Old Name

Mergers				
Merger Date	Merged	Merged State	Survived	Survived State
1/16/2002	CNG POWER COMPANY	DE	DOMINION TRANSMISSION, INC.	DE
Merger Date	Merged	Merged State	Survived	Survived State

Date	Amendment
1/16/2002	MERGER: MERGING CNG POWER COMPANY, A QUALIFIED DE CORPORATION WITH AND INTO DOMINION TRANSMISSION, INC., A QUALIFIED DE CORPORATION, THE SURVIVOR
5/10/2000	NAME CHANGE: FROM CNG TRANSMISSION CORPORATION
12/2/1994	CHANGE TO AMEND STOCK IN ARTICLES OF CERTIFICATE OF AUTHORITY.
3/22/1993	CHANGE TO AMEND STOCK DESIGNATION IN ARTICLES OF CERTIFICATE OF AUTHORITY.
8/27/1991	AMENDMENT TO CERTIFICATE OF AUTHORITY.
12/19/1990	AMENDMENT TO CERTIFICATE OF AUTHORITY.
1/13/1988	CHANGE OF NAME FROM: CONSOLIDATED GAS TRANSMISSION CORPORATION.
Date	Amendment

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Annual Reports	MAY 26 2017
Date filed	WV Department of Environmental Protection

10/20/2017

Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Mountaineer Keystone LLC, a West Virginia limited liability company ("Mountaineer Keystone"), PDC Mountaineer, LLC, a Delaware limited liability company ("PDC"), and PDC Mountaineer Holdings, LLC, a Delaware limited liability company ("PDC Holdings"), is effective as of October 15, 2014. (the "Effective Date") and sets forth the terms pursuant to which Mountaineer Keystone will drill, complete and operate the Wells (as defined below) on behalf of PDC and PDC Holdings. Mountaineer Keystone, PDC, and PDC Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

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

[Signature Page Follows]

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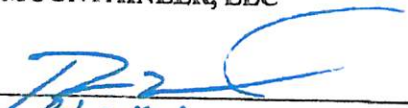
WV Department of
Environmental Protection

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

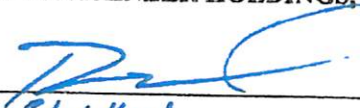
MOUNTAINEER KEYSTONE LLC

By: 
Name: Robert Kozel
Title: CEO

PDC MOUNTAINEER, LLC

By: 
Name: Robert Kozel
Title: CEO

PDC MOUNTAINEER HOLDINGS, LLC

By: 
Name: Robert Kozel
Title: CEO

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Agreement to Drill, Complete and Operate Oil & Gas Wells

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

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

[Signature Page Follows]

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Environmental Protection

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

ARSENAL RESOURCES LLC

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

RIVER RIDGE ENERGY, LLC

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

RIVER RIDGE HOLDINGS, LLC

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

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People Powered. Asset Strong.

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; SHEME South Pad – 205HM

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,

A handwritten signature in blue ink that reads 'Coty Brandon'.

Coty Brandon
Senior Title Attorney

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

Date of Notice Certification: 05/24/2017

API No. 47- 091 - _____

Operator's Well No. Sheme 205

Well Pad Name: Sheme

Notice has been given:

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

<p>State: <u>West Virginia</u></p> <p>County: <u>Taylor</u></p> <p>District: <u>Courthouse</u></p> <p>Quadrangle: <u>Grafton</u></p> <p>Watershed: <u>Long Run & Right Fork of Simpson Creek</u></p>	<p>UTM NAD 83</p> <p>Public Road Access: <u>US 119/250, CR 119/27, & CR 13/6</u></p> <p>Generally used farm name: <u>Burton</u></p>	<p>Easting: <u>580,279.1</u></p> <p>Northing: <u>4,347,246.0</u></p>
---	--	--

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

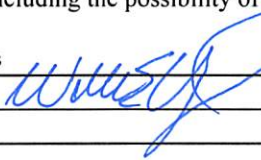
<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
<p>RECEIVED Office of Oil and Gas</p> <p>MAY 26 2017</p> <p>WV Department of Environmental Protection</p>	

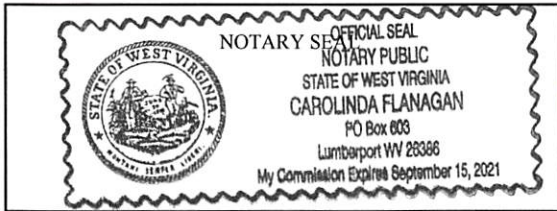
Required Attachments:

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

Certification of Notice is hereby given:

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

Well Operator:	<u>Aresenal Resources</u>	Address:	<u>65 Professional Place, Suite 200</u>
By:	<u>William Veigel</u> 		<u>Bridgeport, WV 26330</u>
Its:	<u>Designated Agent</u>	Facsimile:	<u>304-848-9134</u>
Telephone:	<u>724-940-1204</u>	Email:	<u>ecarder@arsenalresources.com</u>



Subscribed and sworn before me this 18th day of May 2017.

 Notary Public

My Commission Expires 9/15/2021

Oil and Gas Privacy Notice:

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

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WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- 091 - _____
OPERATOR WELL NO. Sheme 205
Well Pad Name: Sheme

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

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

Date of Notice: 05/24/2017 **Date Permit Application Filed:** 05/24/2017

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: David & Luella Burton

Address: 2657 Simpson Road

Flemington, WV 26347

Name: _____

Address: _____

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

Name: Anthony J. Veltri

Address: RR 2 Box 416

Grafton, WV 26354

Name: Thomas R. Sheme, Jr.

Address: 722 Nuzum Road

Grafton, WV 26354

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____

Address: _____

COAL OWNER OR LESSEE

Name: David & Luella Burton

Address: 2657 Simpson Road

Flemington, WV 26347

COAL OPERATOR

Name: _____

Address: _____

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

Name: See Attached

Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____

Address: _____

*Please attach additional forms if necessary

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MAY 26 2017

10/20/2017

WV Department of
Environmental Protection

WW-6A
(8-13)

MAY 26 2017

API NO. 47-091 -
OPERATOR WELL NO. Sheme 205
Well Pad Name: ShemeWV 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) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

10/20/2017

WW-6A
(8-13)

API NO. 47-091 - _____
OPERATOR WELL NO. Shema 205
Well Pad Name: Shema

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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MAY 26 2017

WV Department of
Environmental Protection

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.**

10/20/2017

WW-6A
(8-13)

API NO. 47- 091 - _____
 OPERATOR WELL NO. Sheme 205
 Well Pad Name: Sheme

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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Environmental Protection

10/20/2017

WW-6A
(8-13)

API NO. 47- 091 - _____
OPERATOR WELL NO. Sheme 205
Well Pad Name: Sheme

Notice is hereby given by:

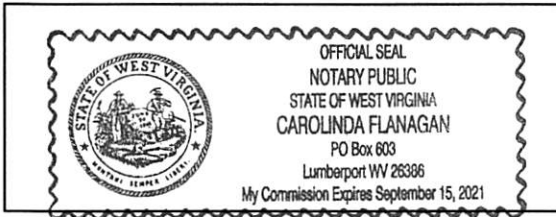
Well Operator: Arsenal Resources
Telephone: 724-940-1204
Email: ecarder@arsenalresources.com



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.



Subscribed and sworn before me this 18th day of May, 2017.

Carolinda Flanagan Notary Public

My Commission Expires 9/15/2021

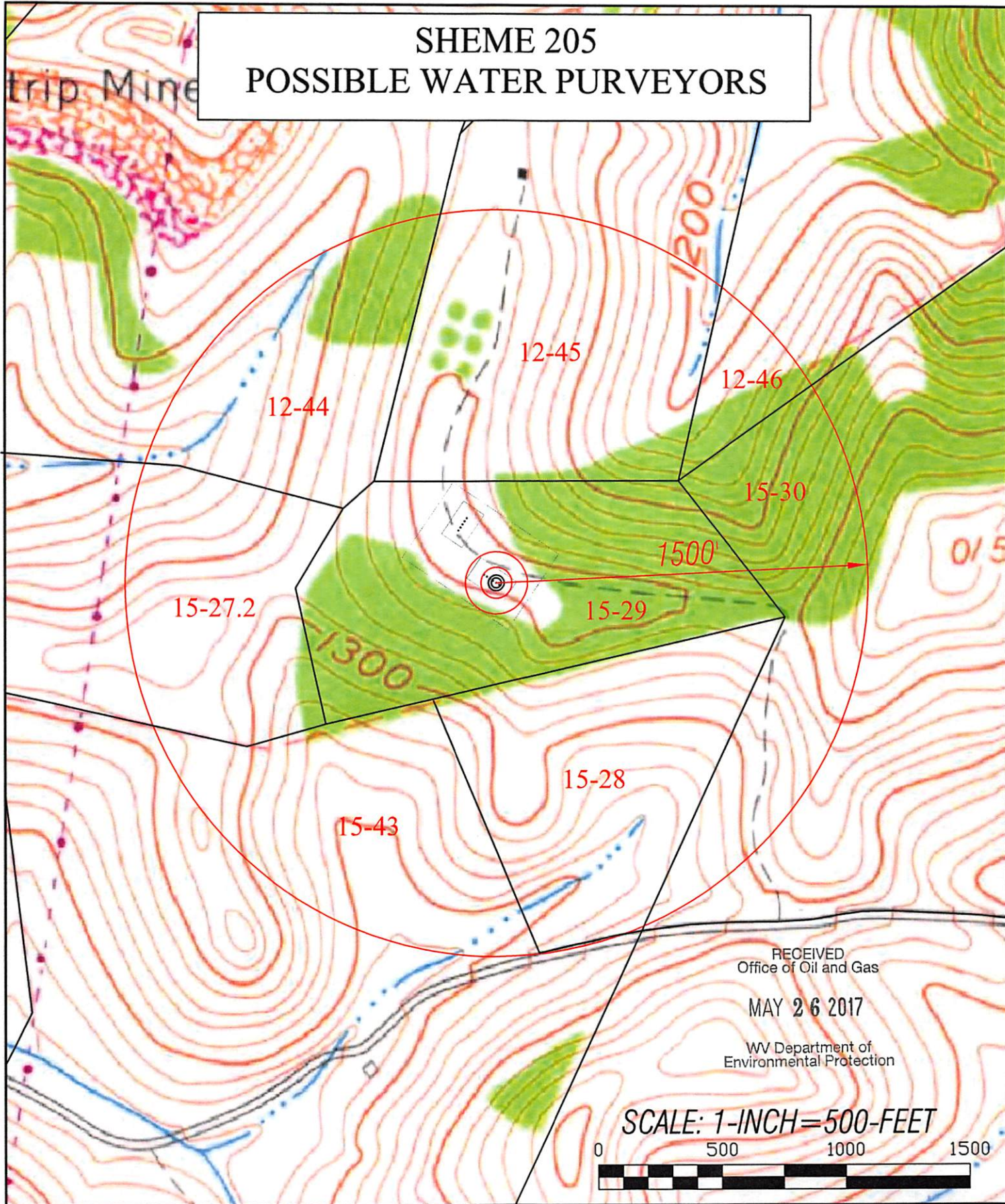
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10/20/2017

**SCHEME 205
POSSIBLE WATER PURVEYORS**




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Office of Oil and Gas

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WV Department of
Environmental Protection

SCALE: 1-INCH=500-FEET
0 500 1000 1500

				TOPO SECTIONS OF: GRAFTON WV 7.5' QUAD		OPERATOR: ARSENAL RESOURCES 65 Professional Place, Suite 200 Bridgeport, WV 26330 10/20/2017	
				COUNTY	DISTRICT		
DRAWN BY: K.G.M.	FILE NO. 8606	DATE 05-17-17	CADD FILE: 200WATERPURVEYOR.DWG	TAYLOR	COURTHOUSE		



Possible Water Purveyors within 1,500 feet of Sheme Pad

DISTRICT	MAP	PARCEL	OWNER	ADDRESS
COURTHOUSE	12	44	GARDNER SHELLY S	280 AMBERWOOD LN , WINCHESTER , VA 22602
COURTHOUSE	12	45	SHEME THOMAS R JR & JAYPRADHA WHITE	195 BOYLEN AVE , GRAFTON , WV 26354
COURTHOUSE	12	46	SHEME THOMAS R JR & JAYPRADHA WHITE	722 NUZUM RD , GRAFTON , WV 26354
COURTHOUSE	15	27.2	HAYS DALE E & MELISSA M & SURV	473 LOW LEVEL BRIDGE RD , GRAFTON , WV 26354
COURTHOUSE	15	28	SHEME THOMAS R JR & JAYPRADHA WHITE	195 BOYLEN AVE , GRAFTON , WV 26354
COURTHOUSE	15	29	BURTON DAVID & LUELLA & SURV	2657 SIMPSON RD , FLEMINGTON , WV 26347
COURTHOUSE	15	30	SHEME THOMAS R JR JAYPRADHA WHITE	722 NUZUM RD , GRAFTON , WV 26354
COURTHOUSE	15	43	LAMBERT WILLIAM & STANA & SURV	686 POST HILL RD , FLEMINGTON , WV 26347

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Environmental Protection

10/20/2017

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

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

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

Date of Notice: 05/24/2017 **Date Permit Application Filed:** 05/24/2017

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

- HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: David & Luella Burton Name: _____
 Address: 2657 Simpson Road Address: _____
Flemington, WV 26347 _____

Notice is hereby given:

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

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>580,279.1</u>
County: <u>Taylor</u>	Northing: <u>4,347,246.0</u>
District: <u>Courthouse</u>	Public Road Access: <u>US 119/250, CR 119/27, & CR 13/6</u>
Quadrangle: <u>Grafton</u>	Generally used farm name: <u>Burton</u>
Watershed: <u>Long Run & Right Fork of Simpson Creek</u>	

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: <u>Aresenal Resources</u>	Authorized Representative: <u>William Veigel</u>
Address: <u>6031 Wallace Road Extension, Suite 300</u>	Address: <u>65 Professional Place, Suite 200</u>
<u>Wexford, PA 15090</u>	<u>Bridgeport, WV 26330</u>
Telephone: <u>724-940-1204</u>	Telephone: <u>724-940-1117</u>
Email: <u>ecarder@arsenalresources.com</u>	Email: <u>wveigel@arsenalresources.com</u>
Facsimile: <u>304-848-9134</u>	Facsimile: <u>304-848-9134</u>

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.

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Office of Oil and Gas

MAY 26 2017

10/20/2017

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

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

Date of Notice: 05/24/2017 **Date Permit Application Filed:** 05/24/2017

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: Luella & David Burton
Address: 2657 Simpson Rd.
Flemington, WV 26347

Name: _____
Address: _____

Notice is hereby given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>580,279.1</u>
County: <u>Taylor</u>		Northing: <u>4,347,246.0</u>
District: <u>Courthouse</u>	Public Road Access: <u>US 119/250, CR 119/27, & CR 13/6</u>	
Quadrangle: <u>Grafton</u>	Generally used farm name: <u>Burton</u>	
Watershed: <u>Long Run & Right Fork of Simpson Creek</u>		

This Notice Shall Include:

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

Well Operator: Aresenal Resources
Telephone: 724-940-1204
Email: ecarder@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.

RECEIVED
Office of Oil and Gas

MAY 26 2017

WV Department of Environmental Protection
6/20/2017

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

Instructions to Persons Named on Page WW-6A

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

Comment and Waiver Provisions

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

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

VOLUNTARY STATEMENT OF NO OBJECTION

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>580,279.1</u>
County:	<u>Taylor</u>		Northing:	<u>4,347,246.0</u>
District:	<u>Courthouse</u>	Public Road Access:	<u>US 119/250, CR 119/27, & CR 13/6</u>	
Quadrangle:	<u>Grafton</u>	Generally used farm name:	<u>Burton</u>	
Watershed:	<u>Long Run & Right Fork of Simpson Creek</u>			

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

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p style="text-align: center;">FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: <u>[Signature]</u></p> <p>Print Name: <u>Thomas R. Sheme, Jr.</u></p> <p>Date: <u>8-18-17</u></p> <p style="text-align: center;">FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: _____</p> <p>Date: _____</p>
--	--

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.

10/20/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

**Jim Justice
Governor**

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

October 3, 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 Sheme Pad, Taylor County
Sheme 205 Well Site**

Dear Mr. Martin,

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

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

Very Truly Yours,

A handwritten signature in black ink that reads "Gary K. Clayton".

**Gary K. Clayton
Regional Maintenance Engineer
Central Office O&G Coordinator**

**Cc: Kelly Davis
Arsenal Resources
CH, OM, D-4**

10/20/2017

Well Name # Sheme 205			
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	AI-300	111-76-2
Additive #6:	Gel Breaker	AP-One	7727-54-0
Additive #7:	Acid	HCl - 7.5%	7647-01-0

RECEIVED
Office of Oil and Gas

MAY 26 2017

WV Department of
Environmental Protection

047-091-01337

SCHEME FINAL SITE PLAN ARSENAL RESOURCES

PROPOSED WELL NO. 201, 202, 203, 204, 205, 206, 211, 212, 213, 214, & 215

SITUATE ON THE WATERS OF TRIBUTARIES OF SIMPSON CREEK AND LONG RUN
IN COURT HOUSE DISTRICT, TAYLOR COUNTY, WEST VIRGINIA.



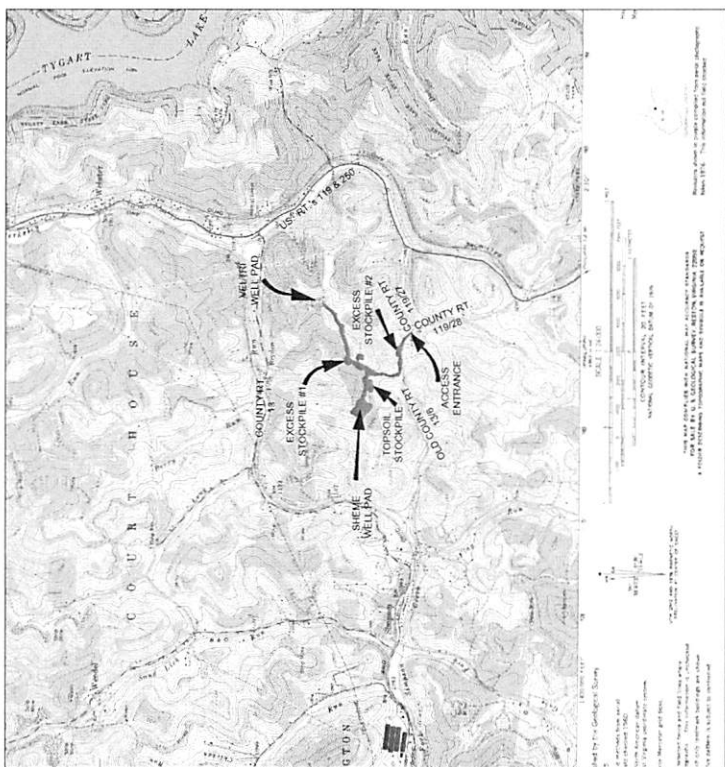
COVER SHEET
SCHEME
FINAL SITE PLAN
COURT HOUSE DISTRICT
TAYLOR COUNTY, WV

DATE: 02-28-2017
SCALE: 1" = 2000'
DESIGNED BY: R3H
FILE NO.: 8608
SHEET: 1 OF 24
REV: 07-12-2017

LIST OF DRAWINGS

- 1 - COVER SHEET
- 2 - NOTES
- 3 - OVERALL SHEET INDEX & VOLUMES
- 4 - ACCESS ROAD & STOCKPILE
- 5 - ACCESS ROADS, & TOPSOIL STOCKPILE
- 6 - WELL PAD
- 7 - ACCESS ROAD & EXCESS STOCKPILE
- 8 - ACCESS ROAD
- 9 - WELL PAD PROFILE
- 10 - MAIN ACCESS PROFILE
- 11 - MAIN ACCESS PROFILE
- 12 - MAIN ACCESS PROFILE
- 13 - WELL PAD ACCESS PROFILE
- 14 - MAIN ACCESS CROSS SECTIONS
- 15 - MAIN ACCESS CROSS SECTIONS
- 16 - MAIN ACCESS CROSS SECTIONS
- 17 - MAIN ACCESS CROSS SECTIONS
- 18 - MAIN ACCESS CROSS SECTIONS
- 19 - WELL PAD ACCESS CROSS SECTIONS
- 20 - STOCKPILE AND TURNOUT SECTIONS
- 21 - RECLAMATION PLAN
- 22 - CONSTRUCTION DETAILS
- 23 - CONSTRUCTION DETAILS
- 24 - CONSTRUCTION DETAILS

EXISTING	PROPOSED
INDEX CONTOUR	INDEX CONTOUR
INTERMEDIATE CONTOUR	INTERMEDIATE CONTOUR
BOUNDARY LINE	BOUNDARY LINE
ROAD EDGE OF PAVEMENT	ENVIRONMENTAL AREA OF INTEREST
STOCKPILE	WELL PAD DISTURBANCE
TOPSOIL	WELL PAD
CONTOUR	WELL HEAD
ENTRANCE	CONTAMINANT BEAM
POWER POLE	OVERHEAD UTILITY R/W
TELEPHONE LINE	ACCESS GATE WITH PERMETER SAFETY FENCE
GASLINE	WATERLINE
WATERLINE	WATERLINE
WELL	WELL
WATERLINE	WATERLINE
DELIMITED STREAM	DELIMITED STREAM
DELIMITED WETLAND	DELIMITED WETLAND
BUILDING	BUILDING
BRIDGE	BRIDGE
DEVELOPMENT BUFFER	DEVELOPMENT BUFFER
DEVELOPMENT BUFFER	DEVELOPMENT BUFFER
GRID IRREGULAR	GRID IRREGULAR
GRID IRREGULAR	GRID IRREGULAR



GRAFTON QUAD

MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section X(b)(3)(c))
Requires that you call two
business days before you dig in
the state of West Virginia.
IT'S THE LAW!!



PROJECT INFORMATION

PROJECT NAME: SCHEME
SURFACE OWNERS:
DAVID A. LUTELA BURTON
COURT HOUSE DISTRICT
TOTAL PROPERTY AREA: 30.00 ACRES
THOMAS SCHEME ET AL.
COURT HOUSE DISTRICT
TOTAL PROPERTY AREA: 14.87 ACRES
THOMAS SCHEME ET AL.
COURT HOUSE DISTRICT
TOTAL PROPERTY AREA: 28.39 ACRES
ANTHONY VETLI
79 1/2 PAD 20 SURVEY
TAYLOR COUNTY, WVA 194.64 ACRES

SITE LOCATION

THE SCHEME WELL PAD IS LOCATED ON THE SOUTHWEST CORNER OF CO. ROUTE 13 AND U.S. ROUTE 191 & 200 IN COURTHOUSE DISTRICT, TAYLOR COUNTY, WEST VIRGINIA.
PROPERTY DISTURBANCE COMPUTATIONS
TOTAL SITE DISTURBANCE = 0.31 ± ACRES
TOTAL SITE DISTURBANCE = 0.31 ± ACRES

LOCATION COORDINATES

PAD SITE ENTRANCE (NAD 83)
CENTRE OF WELL PAD (NAD 83)
LATITUDE: 38.271147° LONGITUDE: -80.640111 (NAD 83)
LATITUDE: 38.271147° LONGITUDE: -80.640111 (NAD 83)

SITE DISTURBANCE COMPUTATIONS

WELL PAD AREA = 0.64 ± ACRES
WELL PAD ACCESS ROAD AREA = 0.17 ± ACRES
EXCESS STOCKPILE #1 AREA = 0.14 ± ACRES
EXCESS STOCKPILE #2 AREA = 0.14 ± ACRES
EXCESS STOCKPILE #3 AREA = 0.14 ± ACRES
TOTAL SITE DISTURBANCE = 0.31 ± ACRES

ENTRANCE PERMIT

THE SCHEME WELL PAD IS LOCATED WITHIN AN ENVIRONMENTAL PERMIT ZONE FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

FLOODPLAIN NOTE

A FLOODPLAIN INVESTIGATION HAS NOT BEEN PERFORMED FOR THIS SITE AS OF 02-28-2017. THE ENGINEER AND SURVEYOR HAS CONDUCTED VISUAL INSPECTIONS AND DETERMINED THAT THERE ARE NO FLOODPLAIN REGULATIONS IN EFFECT FOR THIS SITE.
ADDITIONAL CONSTRUCTION MATTERS SHOULD BE REVIEWED THROUGH STANDARD PRACTICES SHOWN ON THIS PLAN AS A RESULT OF ANY OTHER ENVIRONMENTAL COMPLIANCE REQUIREMENTS CONCERNING FLOODING.

ENVIRONMENTAL NOTE

A WETLAND STREAM DELINEATION WAS PERFORMED ON 10-28-16 AND 02-09-17 BY ELS TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY JURISDICTION OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP).

GENERAL DESCRIPTION

THE SCHEME PAD IS BEING CONSTRUCTED TO ADD TO THE DEVELOPMENT OF INTERMEDIATE SCALE GRID WELLS.

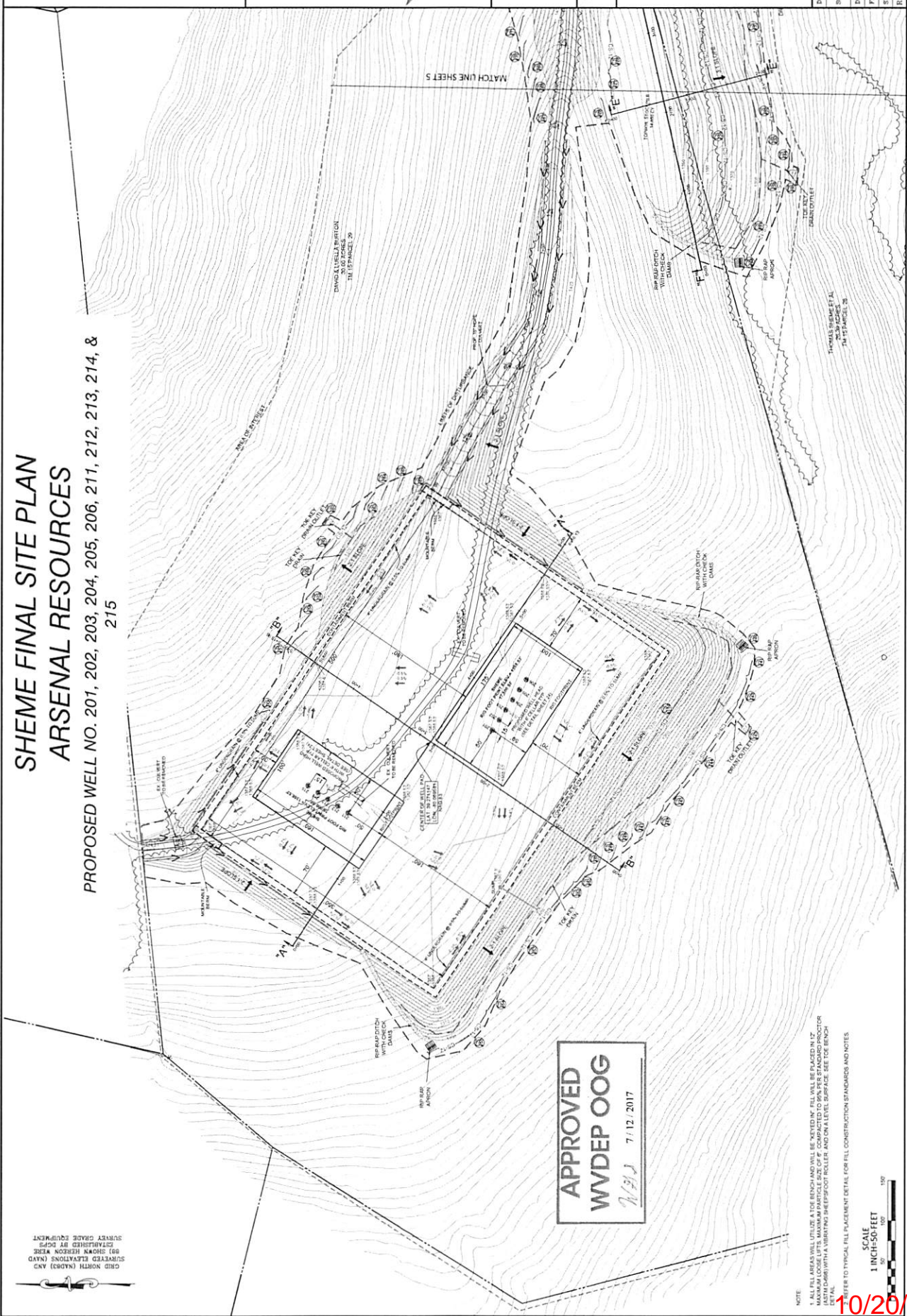
RESTRICTIONS NOTES:

- THERE ARE NO DELIMITED WETLANDS WITHIN 100 FEET OF THE WELL PAD LINES.
- THERE ARE NO DELIMITED WETLANDS WITHIN 300 FEET OF THE WELL PAD LINES.
- THERE ARE NO DELIMITED WETLANDS WITHIN 500 FEET OF THE WELL PAD LINES.
- THERE ARE NO DELIMITED WETLANDS WITHIN 100 FEET OF THE WELL PAD LINES.
- THERE ARE NO DELIMITED WETLANDS WITHIN 300 FEET OF THE WELL PAD LINES.
- THERE ARE NO DELIMITED WETLANDS WITHIN 500 FEET OF THE WELL PAD LINES.

10/20/2017

**SCHEME FINAL SITE PLAN
ARSENAL RESOURCES**

PROPOSED WELL NO. 201, 202, 203, 204, 205, 206, 211, 212, 213, 214, &
215



APPROVED
WVDEP OOG
KJH 7/12/2017

NOTE:
1. ALL FILL AREAS WILL UTILIZE A TOE BENCH AND WILL BE "NEEDLE" FILL WILL BE PLACED IN 12" MAXIMUM COARSE LITS, MAXIMUM PARTICLE SIZE OF 4" COMPACTED TO 95% PER STANDARD PROCTOR METHOD WITH A VIBRATING SHEEPSFOOT ROLLER AND ON A LEVEL SURFACE. SEE TOE BENCH DETAIL FOR TYPICAL FILL PLACEMENT DETAIL FOR FILL CONSTRUCTION STANDARDS AND NOTES.

SCALE
1 INCH=50 FEET

10/20/2017