



west virginia department of environmental protection

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

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

Tuesday, September 12, 2017  
WELL WORK PERMIT  
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for KATHY MAYHEW BRK 201H  
47-009-00208-00-00

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: KATHY MAYHEW BRK 201H  
Farm Name: MAYHEW, KATHY LYNN & MICHAEL, ETAL  
U.S. WELL NUMBER: 47-009-00208-00-00  
Horizontal 6A / New Drill  
Date Issued: 9/12/2017

Promoting a healthy environment.

09/15/2017

# PERMIT CONDITIONS

047-009-00208

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

## CONDITIONS

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

09/15/2017

# PERMIT CONDITIONS

047-009-00208

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

WW-6B  
(10/14)

API NO. 47- 51 -  
OPERATOR WELL NO. Kathy Mayhew BRK 201H  
Well Pad Name: Kathy Mayhew PAD

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

1) Well Operator: SWN Production Co., LLC 49447757 Brooke 1- Buffalo 247-Bethany/641  
Operator ID County District Quadrangle

2) Operator's Well Number: Kathy Mayhew BRK 201H Well Pad Name: Kathy Mayhew PAD

3) Farm Name/Surface Owner: Kathy Lynn & Michael, ETAL Public Road Access: Apple Pie Ridge Road

4) Elevation, current ground: 1281' Elevation, proposed post-construction: 1281'

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

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No yes

*C- BRO 5-9-17*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target Formation- Marcellus, Target Top TVD- 5997', Target Base TVD- 6038', Anticipated Thickness- 41', Associated Pressure- 3615

8) Proposed Total Vertical Depth: 6038'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13704'

11) Proposed Horizontal Leg Length: 7042.36'

12) Approximate Fresh Water Strata Depths: 371'

13) Method to Determine Fresh Water Depths: from nearby water wells and petrophysical analysis

14) Approximate Saltwater Depths: 623'

15) Approximate Coal Seam Depths: 454'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

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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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	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	471' .501'	471'	454 sx/CTS
Coal	9 5/8"	New	J-55	36#	1797'	1797'	688 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	13704'	13704'	Lead 846x tall 1802sx/100' inside int
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 6038'	Approx. 6038'	
Liners							

*D. BLO 5-9-17*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:				

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

Drill and stimulate any potential zones between and including the Benson to Marcellus. \*\*If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface. Run casing not less than 20' below void nor more than 50' below void. (\*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts.)

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

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, vertical separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 80 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 8.20

22) Area to be disturbed for well pad only, less access road (acres): 5.96

23) Describe centralizer placement for each casing string:

All casing strings will be ran with a centralizer at a minimum of 1 per every 3 joints of casing.

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

See Attachment \*\*\*

25) Proposed borehole conditioning procedures:

All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

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\*Note: Attach additional sheets as needed.

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## Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	proprietary
	D047	antifoam	polypropylene glycol	25322-69-4
Production-Lead	D167	fluid loss	aliphatic amide polymer	proprietary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	proprietary
	D202	dispersant	sulphonated synthetic polymer	proprietary
formaldehyde (impurity)			proprietary	
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
			sodium sulfate	7757-82-6
	D201	retarder	chrystalline silica	14808-60-7
metal oxide			proprietary	
D153	anti-settling	chrystalline silica	14808-60-7	

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09/15/2017

May 16, 2017

Ms. Laura Adkins  
Office of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

**RE:** Proposed New Well Kathy Mayhew BRK 201H

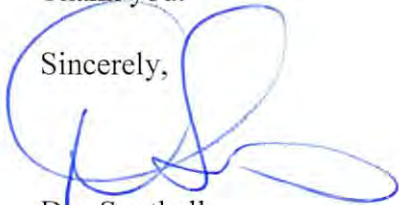
Dear Ms. Adkins

SWN has reviewed the area of the above mentioned well and discovered no shallow wells within 500' of the lateral. This well is situated on the Mayhew's property, in Buffalo District, Brooke County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,



Dee Southall  
Regulatory Supervisor  
Southwestern Energy Production Company, LLC  
PO Box 1300  
Jane Lew, WV 26378

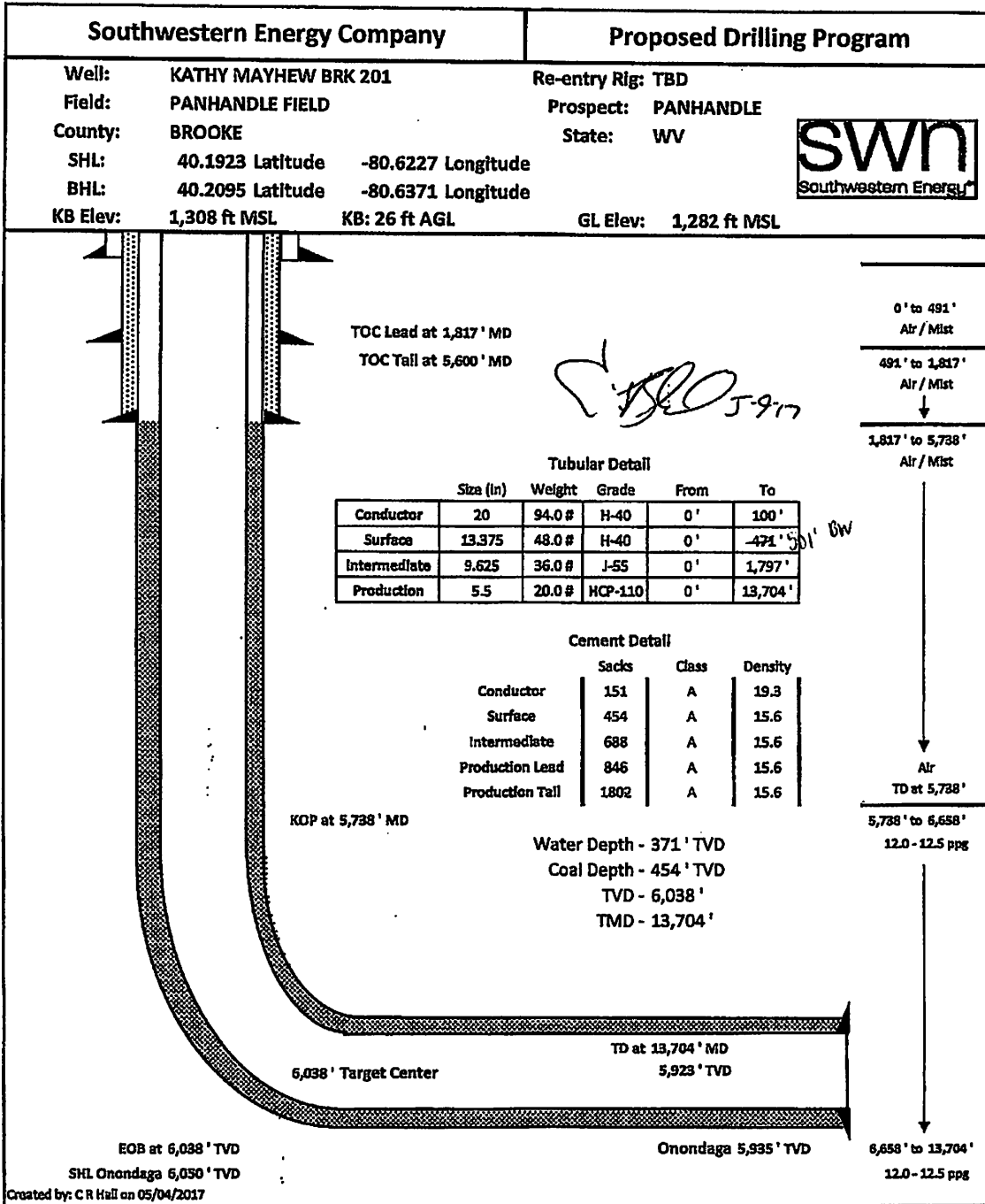
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$\frac{R^2}{A} \rightarrow V^+$





WW-9  
(4/16)

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API Number 47 - 09 - 047-009-00208  
Operator's Well No. Kathy Mayhew BRK 201H

WV Department of  
Environmental Protection

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Company, LLC OP Code 494512924

Watershed (HUC 10) Upper Ohio Wheeling Quadrangle Bethany

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: closed loop system in place at this time- cuttings will be taken to a permitted landfill

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 at next anticipated well, API # will be included with the WR-34/DDMR &/or permit addendum )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility )

Will closed loop system be used? If so, describe: yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. <sup>AIR</sup> at drill to KOP, fluid drill with SOBM from KOP to TD

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

Additives to be used in drilling medium? see attached sheets

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)

-Landfill or offsite name/permit number? meadow SWF-1032, SS grading SWF-4902, Northwestern SWF-1025, Short Creek 1034/WV0109517/CID28726, Carbon Limestone 28726-CID28726

Arden Landfill 10072, American 02-12954, Country Wide 38390/CID38390, Pine Grove 13688

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 [Signature]

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 4th day of May, 2017

Brittany R Woody  
My commission expires 11/21/18



## Drilling Mediums

Synthetic Oil

Brine

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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**SWN Production Company, LLC**

Proposed Revegetation Treatment: Acres Disturbed 8.20 Prevegetation pH \_\_\_\_\_

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 5.96

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type lbs/acre

Seed Type lbs/acre

**\*\*See Attachment**

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: \_\_\_\_\_

*[Handwritten signature]* 5-9-17

Comments: \_\_\_\_\_

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Title: oil and gas inspector

Date: 5-9-17

Field Reviewed?

Yes

No





# WVD Seeding Specification

*R<sup>2</sup> → V<sup>+</sup>*  
A

To Order Seed contact Lyndsi Eddy Flippo office 570-996-4271 cell 501-269-5451 lyndsi\_eddy@swn.com (please allow 7 to 10 days for delivery)

NON-ORGANIC PROPERTIES	
Seed Mixture: ROW Mix	SWN Supplied
Orchardgrass	40%
Timothy	15%
Annual Ryegrass	15%
Brown Top Millet	5%
Red Top	5%
Medium Red Clover	5%
White Clover	5%
Birdsfoot Trefoil	5%
Rough Bluegrass	5%
All legumes are inoculated at 5x normal rate	
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 100lbs per acre April 16th- Oct. 14th</p> </div> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat</p> </div> </div>	

SOIL AMENDMENTS	
10-20-20 Fertilizer	*Apply @ 500lbs per Acre
Pelletized Lime	Apply @ 2 Tons per Acre
*unless otherwise dictated by soil test results	

**Seeding Calculation Information:**

1452' of 30' ROW/LOD is One Acre  
 871' of 50' ROW/LOD is One Acre  
 622' of 70' ROW/LOD is One Acre

**Synopsis:**

Every 622 linear feet in a 70' ROW/LOD, you should be using (2) 50lb bags of seed, (4) 50lb bags of fertilizer and (80) 50lb bags of Lime (2x seed in winter months + 50lb Winter Wheat/ac).

**Special Considerations:**

Landowner Special Considerations including CREP program participants require additional guidance that is not given here. Discuss these requirements with SWN supervision at the beginning of the project to allow time for special seed delivery.

ORGANIC PROPERTIES	
Seed Mixture: SWN Production Organic Mix	SWN Supplied
Organic Timothy	50%
Organic Red or White Clover	50%
OR	
Organic Perennial Ryegrass	50%
Organic Red or White Clover	50%
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 100lbs per acre April 16th- Oct. 14th</p> </div> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 200lbs per acre Oct. 15th- April 15th</p> </div> </div>	
Organic Fertilizer @ 200lbs per Acre	Pelletized Lime @ 2 Tons per Acre

WETLANDS (delineated as jurisdictional wetlands)	
Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 25lbs per acre April 16th- Oct. 14th</p> </div> <div style="width: 45%;"> <p style="color: red; text-align: center;">Apply @ 50lbs per acre Oct. 15th- April 15th</p> </div> </div>	
NO FERTILIZER OR LIME INSIDE WETLAND LIMITS	

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047-009-00208

# MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



SWN Production Company, LLC  
179 Innovation Drive  
Jane Lew, West Virginia 26378

**API NO. 47-XXX-XXXXX**  
**WELL NAME: Kathy Mayhew BRK 201H**  
**Bethany QUAD**  
**Buffalo DISTRICT**  
**Brooke COUNTY, WEST VIRGINIA**

Submitted by:

  
Dee Southall

Date: 5/1/2017

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:

  
Title: Oil & Gas Inspector

Date: 5-9-17

Approved by:

Date: \_\_\_\_\_

Title: \_\_\_\_\_

SWN PRODUCTION COMPANY, LLC

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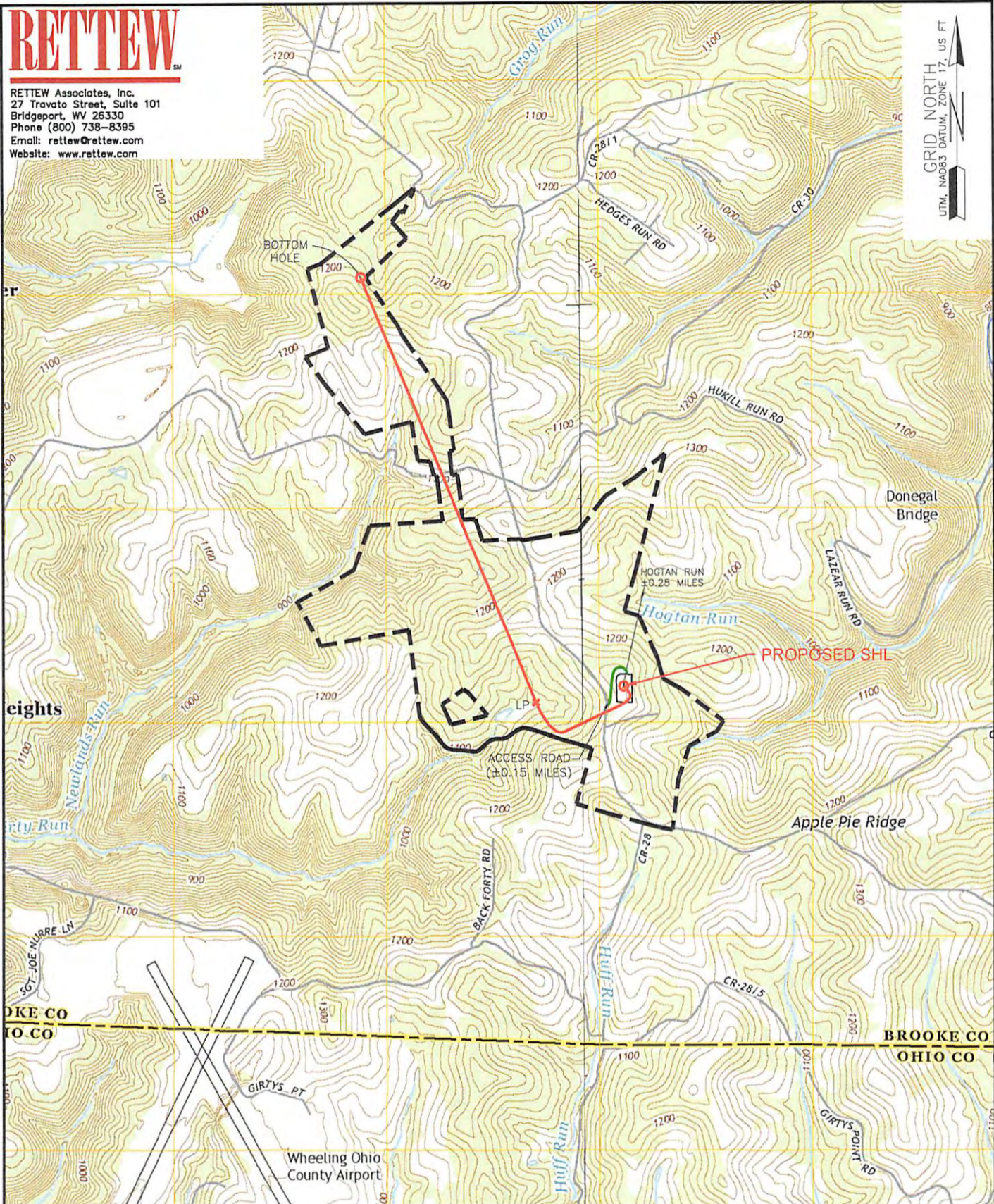
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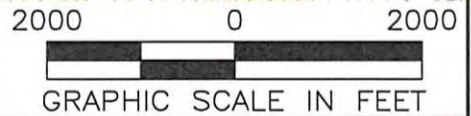
# RETTEW

RETTEW Associates, Inc.  
 27 Travato Street, Suite 101  
 Bridgeport, WV 26330  
 Phone (800) 738-8395  
 Email: rette@rettew.com  
 Website: www.rettew.com

GRID NORTH  
 UTM, NAD83 DATUM, ZONE 17, US FT



WELL: KATHY MAYHEW BRK 201H  
 QUAD: BETHANY, WV-PA &  
 TILTONSVILLE, OH-WV



NAME AND DISTANCE TO THE NEAREST STREAM: HOGTAN RUN IS LOCATED ±0.25 MILES NE OF THE CENTER OF THE DRILL PAD.  
 STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.

COMPANY: **SWN** Production Company, LLC

WELL RESTRICTIONS:  
 WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET  
 WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET  
 WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET  
 WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET  
 CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET  
 CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET

OPERATOR'S: KATHY MAYHEW BRK  
 WELL #: 201H  
 LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA

FEMA FLOOD INFORMATION:  
 BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0130D & 54009C0140D; EFFECTIVE DATE: APRIL 19, 2010.  
 NO FLOOD ZONES ARE SITUATED WITHIN THE UNIT.

SURFACE HOLE LOCATION:  
 GEOGRAPHIC (NAD83):  
 LATITUDE: 40.192297°  
 LONGITUDE: -80.622688°  
 BOTTOM HOLE LOCATION:  
 GEOGRAPHIC (NAD83):  
 LATITUDE: 40.209539°  
 LONGITUDE: -80.637051°

09/15/2017

LEGEND:  
 PROPOSED SURFACE HOLE / BOTTOM HOLE  
 EXISTING / PRODUCING WELLHEAD  
 ABANDONED WELL  
 PLUGGED & ABANDONED WELL  
 CUT CONDUCTOR  
 EXISTING SPRING  
 EXISTING WATER WELL  
 ACCESS ROAD  
 ACCESS ROAD TO PREV. SITE  
 HIGHWAY/INTERSTATE  
 COUNTY ROAD

REVISIONS:  
 DATE: 05-12-2017  
 DRAWN BY: W. MCCLEAF  
 SCALE: 1" = 2000'  
 DRAWING NO: 087569047  
 TOPOGRAPHIC MAP



SHL Latitude: 40°12'30"

10,991'

BHL Latitude: 40°15'00"

3,365'

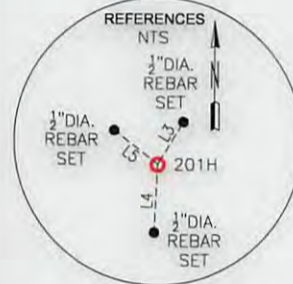
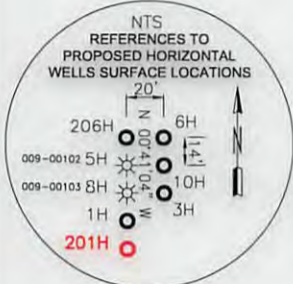
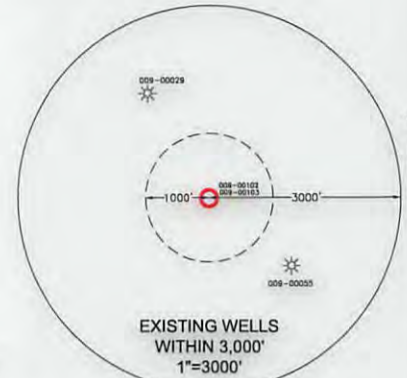
# RETTEW

RETTEW Associates, Inc.  
27 Travata Street, Suite 101  
Bridgeport, WV 26330  
Phone (800) 738-8395  
Email: retteaw@retteaw.com  
Website: www.retteaw.com

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,168.933 EASTING: 532,116.747
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,092.815 EASTING: 531,703.955
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,077.521 EASTING: 530,886.358

GRID NORTH  
UTM, NAD83 DATUM, ZONE 17, US FT

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 00°31'54" E	1,140.08'	SHL TO LANDMARK	
L2	N 51°03'27" E	673.22'	SHL TO LANDMARK	
L3	N 28°00'33" E	211.24'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L4	S 01°00'58" E	251.76'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L5	N 36°59'11" W	220.65'	SHL TO REF. PNT.	1/2"Ø REBAR SET
L6	S 16°17'29" W	506.67'	SHL TO HOME	CORNER HOME
L7	N 79°33'08" W	1377.13'	SHL TO LP	
LB	N 22°23'21" W	7,042.36'	LP TO BHL	

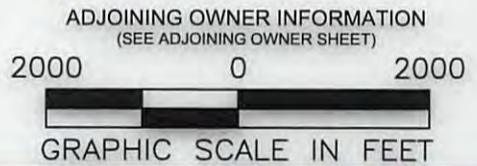


### NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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

P.S. 2241



<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL &amp; GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)</p>	<p>KATHY MAYHEW BRK</p> <p>OPERATOR'S WELL #: 201H</p> <p>API WELL #: 47 09 00208 STATE COUNTY PERMIT</p>								
	<p>WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: UPPER OHIO WHEELING ELEVATION: 1281.1± (AS-BUILT)</p> <p>DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY, WV-PA &amp; TILTONSVILLE, OH-WV</p> <p>SURFACE OWNER: MAYHEW, KATHY LYNN &amp; MICHAEL, ETAL ACREAGE: ±84.74</p> <p>OIL &amp; GAS ROYALTY OWNER: MAYHEW, KATHY LYNN &amp; MICHAEL, ETAL ACREAGE: ±84.74</p> <p>DRILL <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/></p> <p>CONVERT <input type="checkbox"/> PLUG &amp; ABANDON <input type="checkbox"/> CLEAN OUT &amp; REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY) 09/15/2017</p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,038' TVD 13,704' TMD</p>	<p>WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL</p> <p>ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300</p> <p>CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378</p>								
<p><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>● PROPOSED SURFACE HOLE / BOTTOM HOLE</li> <li>★ EXISTING / PRODUCING WELLHEAD</li> <li>✕ ABANDONED WELL</li> <li>✕ PLUGGED &amp; ABANDONED WELL</li> <li>△ CUT CONDUCTOR</li> <li>----- TIE LINE</li> <li>----- LEASE BOUNDARY</li> <li>----- MARCELLUS DHP</li> <li>----- ABANDONED PATH</li> </ul>	<p><b>REVISIONS:</b></p> <table border="1"> <tr><td> </td><td>DATE: 05-12-2017</td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>		DATE: 05-12-2017							<p><b>DRAWN BY: W. MCCLEAF</b></p> <p>SCALE: 1" = 2000'</p> <p>DRAWING NO: 087569047</p> <p>WELL LOCATION PLAT</p>
	DATE: 05-12-2017									





## ADJOINING OWNERS

RETTEW Associates, Inc.  
 27 Travato Street, Suite 101  
 Bridgeport, WV 26330  
 Phone (800) 738-8395  
 Email: rettew@rettew.com  
 Website: www.rettew.com

TRACT	ADJOINING PROPERTY OWNERS	TAX PARCEL	ACRES
A	JAMES LAMONT	5-3-B47-1	2.1900±
B	BETSY D. TUSTIN	5-3-B47-2.1	54.0370±
C	DALE T. & MARY R. WOOD	5-3-B46-46	7.5130±
D	DALE T. & MARY R. WOOD	5-3-B41-84	47.8000±
E	BARRY L. & PATRICIA A. GREATHOUSE	5-3-B41-82	229.0000±
F	ROBERT J. JR. & LINDA MILLER	5-3-B41-47	209.0000±
G	WILLIAM & DAWNA MILLER	5-3-B41-61	94.7860±
H	SANDRA W. BUTLER	5-3-B41-68	1.24
I	ROBERT LEE HUFFMAN & DELMA LOU HUFFMAN	5-3-B41-67	1.23±
J	CARL & JUDITH SPENCER	5-3-B41-65	3.487±
K	EMILY J. HUFFNER	5-3-B41-65.1	5.63±
L	ERNEST F. & JOANN P. CAPP	5-3-B41-63	9.1410±
M	ERNEST F. & JOANN P. CAPP	5-3-B41-53	10.6500±
N	ERNEST F. & JOANN P. CAPP	5-3-B41-52	20.3600±
O	WINDSOR POWER HOUSE COAL CO.	5-3-B36-104	87.2800±
P	TREVOR SEAN RICHMAN	5-3-B36-106	1.0000±
Q	MARK A. & MELODY J. ADAMS	5-3-B36-142	6.2100±
R	FREDERICK B. & JULIE M. DAVIS	5-3-B36-108	1.5180±
S	DAVID MCCLURE	5-3-B36-110	2.0000±
T	CAROL L. DUFFY	5-3-B36-113	40.8330±
U	LORETTA JOAN BASIL	5-3-B41-99	55.0000±
V	ERNEST F. & JOANN P. CAPP	5-3-B41-98	1.0000±
W	ELIZABETH ELLEN FLUHARTY	5-3-B41-95	11.2420±
X	CHARLES J. SUTER & D. LA VAUGHN	5-3-B41-94	1.8651±
Y	FRANK & KELLEY AINSCOUGH	5-3-B41-61.7	0.8230±
Z	FRANK & KELLEY AINSCOUGH	5-3-B41-89	0.5000±
AA	SANDRA W. BUTLER	5-3-B41-72	6.2140±
BB	SANDRA W. BUTLER	5-3-B41-78	2.8100±
CC	JAY G. COLLINS	5-3-B41-79	5.5000±
DD	SHAWN M. SINES	5-3-B41-85	5.6120±
EE	HENRY MIKELS SR. & BONNIE J. BURKETT	5-3-B41-86.1	7.7160±
FF	JASON D. & MARY E. WHITE	5-3-B41-86	2.3170±
GG	ROBERT D. HILDEBRAND II & LESLIE C. HILDEBRAND	5-3-B42-63	14.0690±
HH	FRANK & KELLEY AINSCOUGH	5-3-B42-71	12.5540±
II	HENRY HEINZEROTH	5-3-B42-32	140.5200±
JJ	LUTHER GRIZZEL	5-3-B42-30	10.4800±
KK	LUTHER GRIZZEL	5-3-B42-31	18.8700±
LL	LUTHER GRIZZEL	5-3-B42-29	79.1300±
MM	ELIZABETH ELLEN FLUHARTY	5-3-B47-18	52.0000±
NN	JOSEPH S. & JANE M. BUREK	5-3-B47-19	118.6800±
OO	MARK & TRINA PROVENZANO	5-3-B41-80.1	5.0000±

09/15/2017

REVISIONS:	COMPANY:		
	OPERATOR'S	KATHY MAYHEW BRK	DATE: 05-12-2017
	WELL #:	201H	DRAWN BY: W. MCCLEAF
	LOCATION:	BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA	SCALE: N/A
			DRAWING NO: 087569047
			ADJOINING OWNERS



WW-6A1  
(5/13)

Operator's Well No. KATHY MAYHEW BRK 201H

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 Exhibit A

RECEIVED  
Office of Oil and Gas

MAY 30 2017

WV Department of  
Environmental Protection

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

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

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

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

Well Operator: SWN Production Co., LLC  
 By: Macey Wallace  
 Its: Staff Landman

EXHIBIT "A"  
 Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator  
 Kathy Mayhew BRK 201H  
 Brooke County, West Virginia

#	TMP	SURFACE OWNER	DEEDED ACREAGE	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG		
1)	03-0B42-0027-0000-0000	Kathy Lynn Mayhew & Michael et al (Surv)	84.740	724888-001	Kathy Lynn Johnson fka Kathy Lynn Mayhew and James Mayhew, husband and wife	Chesapeake Appalachia, LLC	12.50%	10/439		
						SWN Production Company, LLC		30/480		
				724888-002	Andrew George Romanyak and Sara E. Romanyak, husband and wife	Chesapeake Appalachia, LLC	12.50%	10/441		
						SWN Production Company, LLC		30/480		
2)	03-0B41-0080-0000-0000	Jay Glen Collins	291.950	730130-001	Jay G. Collins & Barbara J Collins, husband and wife	Fortuna Energy, Inc.	12.50%	9/864		
								Range Resources-Appalachia, LLC		10/159
								Chesapeake Appalachia, LLC		10/552
3)	03-0B41-0080-0002-0000	Joseph P. Scrip, Sr and Robin M. Scrip	5.041	730130-001	Jay G. Collins & Barbara J Collins, husband and wife	SWN Production Company, LLC		30/480		
								Fortuna Energy, Inc.	12.50%	9/864
								Range Resources-Appalachia, LLC		10/159
								Chesapeake Appalachia, LLC		10/552
4)	03-0B41-0071-0000-0000	Sandra W. Butler	3.000	731937-000	Sandra W Butler, a widow	SWN Production Company, LLC		30/480		
								Chesapeake Appalachia, LLC	18.00%	17/523
								SWN Production Company, LLC		30/480
5)	03-0B41-0070-0000-0000	Ronald C. Butler, Christina M. Butler and James R. Butler	1.000	731937-000	Sandra W Butler, a widow	Chesapeake Appalachia, LLC	18.00%	17/523		
								SWN Production Company, LLC		30/480
								Chesapeake Appalachia, LLC		17/523
6)	03-0B41-0069-0000-0000	Sandra W. Butler	1.000	731937-000	Sandra W Butler, a widow	SWN Production Company, LLC		30/480		
								Chesapeake Appalachia, LLC	18.00%	17/523
								SWN Production Company, LLC		30/480
7)	03-0B41-0061-0009-0000	Sandra W. Butler	1.232	pending	Daniel R. Gorby, single	SWN Production Company, LLC	18.00%	34/13		
8)	03-0B41-0061-0006-0000	Daniel R. Gorby	6.010	pending	Daniel R. Gorby, single	SWN Production Company, LLC	18.00%	34/13		
9)	03-0B41-0061-0005-0000	Corey Conley	3.763	pending	Corey Conley	SWN Production Company, LLC	16.00%	pending		
10)	03-0B41-0064-0000-0000	Ernest F Capp and Joann P. Capp	49.270	730149-000	Ernest F Capp & Joann P Capp	Great Lakes Energy Partners, LLC	12.50%	10/103		
								Range Resources-Appalachia, LLC		20/733
								Chesapeake Appalachia, LLC		10/552
								SWN Production Company, LLC		30/480
								SWN Production Company, LLC		30/480
11)	03-0B36-0107-0000-0000	Donna L. Schell, George William Grimm, Mark Phillips, Gail Phillips Atkinson	40.100	731998-001	Donna L Schell and Alfred E Schell, her husband	Chesapeake Appalachia, LLC	18.00%	18/329		
						SWN Production Company, LLC		30/480		
				731998-002	George William Grimm and Priscilla Grimm, his wife	Chesapeake Appalachia, LLC	18.00%	19/174		
						SWN Production Company, LLC		30/480		
				731998-003	Mark Phillips, a single man	Chesapeake Appalachia, LLC	18.00%	19/180		
		SWN Production Company, LLC		30/480						
				731998-004	Gail Phillips Atkinson, a married woman dealing in her sole and separate property	Chesapeake Appalachia, LLC	18.00%	19/186		
						SWN Production Company, LLC		30/480		

34/631

RECEIVED  
 Office of Oil and Gas  
 MAY 30 2017  
 WV Department of  
 Environmental Protection

047-009-00208



047-009-00208

Brooke County  
Sylvia J Benzo, Clerk  
Instrument 69006  
06/02/2017 @ 12:57:00 PM  
OIL & GAS LEASE  
Book 34 @ Page 631  
Pages Recorded 5  
Recording Cost \$ 11.00

PAID-UP  
OIL & GAS LEASE

Lease No. \_\_\_\_\_

1/15 - WV

This Lease, made this 7th day of March, 2017, by and between Corey Conley, a/k/a Corey S. Conley, a single male, of 3237 Windyhill Rd., Wellsburg, WV 26070, hereinafter collectively called "Lessor," and SWN Production Company, L.L.C., a Texas limited liability company, 10000 Energy Drive, Spring, Texas 77389, hereinafter called "Lessee."

WITNESSETH, that for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and of the mutual covenants and agreements hereinafter set forth, the Lessor and Lessee agree as follows:

**LEASING CLAUSE.** Lessor hereby leases exclusively to Lessee all the oil and gas (including, but not limited to coal seam gas, coalbed methane gas, coalbed gas, methane gas, gob gas, occluded methane/natural gas and all associated natural gas and other hydrocarbons and non-hydrocarbons contained in, associated with, emitting from, or produced/originating within any formation, gob area, mined-out area, coal seam, and all communicating zones), and their liquid gaseous constituents, whether hydrocarbon or non-hydrocarbon, underlying the land herein leased, together with such exclusive rights as may be necessary or convenient for Lessee, at its election, to explore for, develop, produce, measure, and market production from the Leasehold, or from other lands, using methods and techniques which are not restricted to current technology, including, without limitation, the right to conduct geophysical and other exploratory tests; to drill, maintain, operate, cease to operate, plug, abandon, and remove wells; to use or install roads over and across the Leasehold for use in development of the Leasehold or other lands, electric power and telephone facilities, water impoundments, and to construct pipelines with appurtenant facilities, including data acquisition, compression and collection facilities for use in the production and transportation of products from the Leasehold or from other lands across the Leasehold, to use oil, gas, and non-domestic water sources, free of cost, to store gas of any kind underground, regardless of the source thereof, including the injecting of gas therein and removing the same therefrom; to protect stored gas; to operate, maintain, repair, and remove material and equipment; to use and occupy the subsurface of the Leasehold for the drilling of a wellbore(s) for use in development of the Leasehold or other lands.

**DESCRIPTION.** The Leasehold is located in the District of Buffalo, in the County of Brooke, in the State of West Virginia, and described as follows:

Property Tax Parcel Identification Number: Tax Parcel I.D. 03-B41-0061-0005

and is bounded formerly or currently as follows:

On the North by lands of: 03-B41-0064-0000;

On the East by lands of 03-B41-0061-0006;

On the South by lands of 03-B41-0067-0000, road;

On the West by lands of 03-B41-0061-0000;

including lands acquired from James L. Milliken, et ux by virtue of Deed dated June 26, 2000 and recorded in Book 288, at Page 48, and described for the purposes of this agreement as containing a total of 3.763 Leasehold acres, whether actually more or less, and including contiguous lands owned by Lessor. This Lease also covers and includes, in addition to that above described, all land, if any, contiguous or adjacent to or adjoining the land above described and (a) owned or claimed by Lessor, by limitation, prescription, possession, reversion or unrecorded instrument or (b) as to which Lessor has a preference right of acquisition. Lessor agrees to execute any supplemental instrument requested by Lessee for a more complete or accurate description of said land.

**LEASE TERM.** This Lease shall remain in force for a primary term of Five (5) years from 12:00 A.M. March 7, 2017 (effective date) to 11:59 P.M. March 6, 2022 (last day of primary term) and shall continue beyond the primary term as to the entirety of the Leasehold if any of the following is satisfied: (i) operations are conducted on the Leasehold or lands pooled/unitized therewith in search of oil, gas, or their constituents, or (ii) a well deemed by Lessee to be capable of production is located on the Leasehold or lands pooled/unitized therewith, or (iii) oil or gas, or their constituents, are produced from the Leasehold or lands pooled/unitized therewith, or (iv) if the Leasehold or lands pooled/unitized therewith is used for the underground storage of gas, or for the protection of stored gas, or (v) if prescribed payments are made, or (vi) if Lessee's operations are delayed, postponed or interrupted as a result of any coal, stone or other mining or mining related operation under any existing and effective lease, permit or authorization covering such operations on the leased premises or on other lands affecting the leased premises, such delay will automatically extend the primary or secondary term of this oil and gas lease without additional compensation or performance by Lessee for a period of time equal to any such delay, postponement or interruption.

If there is any dispute concerning the extension of this Lease beyond the primary term by reason of any of the alternative mechanisms specified herein, the payment to the Lessor of the prescribed payments provided below shall be conclusive evidence that the Lease has been extended beyond the primary term.

**EXTENSION OF PRIMARY TERM.** Lessee has the option to extend the primary term of this Lease as to all or any part of the acreage then covered hereby, for one additional term of Five (5) years from the expiration of the primary term of this Lease; said extension to be under the same terms and conditions as contained in this Lease. Lessee may exercise this option to extend this Lease if on or before the expiration date of the primary term of this Lease, Lessee pays or tenders to the Lessor or to the Lessor's credit an amount equal to the sum of the initial consideration given for the execution hereof, which shall be paid in proportion to the number of net acres actually extended. Exercise of this option is at Lessee's sole discretion and may be invoked by Lessee where no other alternative of the Lease Term clause extends this Lease beyond the primary term. If this option is exercised by Lessee the lease as extended will thereafter be treated as if the original primary term was Ten (10) years.

**NO AUTOMATIC TERMINATION OR FORFEITURE.**

(A) **CONSTRUCTION OF LEASE:** The language of this Lease (including, but not limited to, the Lease Term and Extension of Term clauses) shall never be read as language of special limitation. This Lease shall be construed against termination, forfeiture, cancellation or expiration and in favor of giving effect to the continuation of this Lease where the circumstances exist to maintain this Lease in effect under any of the alternative mechanisms set forth above. In connection therewith, (i) a well shall be deemed to be capable of production if it has the capacity to produce a profit over operating costs, without regard to any capital costs to drill or equip the well, or to deliver the oil or gas to market, and (ii) the Lessee shall be deemed to be conducting operations in search of oil or gas, or their constituents, if the Lessee is engaged in geophysical and other exploratory work including, but not limited to, activities to drill an initial well, to drill a new well, or to rework, stimulate, deepen, sidetrack, frac, plug back in the same or different formation or repair a well or equipment on the Leasehold or any lands pooled/unitized therewith (such activities shall include, but not be limited to, performing any preliminary or preparatory work necessary for drilling, conducting internal technical analysis to initiate and/or further develop a well, obtaining permits and approvals associated therewith and may include reasonable gaps in activities provided that there is a continuum of activities showing a good faith effort to develop a well or that the cessation or interruption of activities was beyond the control of Lessee, including interruptions caused by the acts of third parties over whom Lessee has no control or regulatory delays associated with any approval process required for conducting such activities).

JASDIN

09/15/2017



(B) **LIMITATION OF FORFEITURE:** This Lease shall never be subject to a civil action or proceeding to enforce a claim of termination, cancellation, expiration or forfeiture due to any action or inaction by the Lessee, including, but not limited to making any prescribed payments authorized under the terms of this Lease, unless the Lessee has received written notice of Lessor's demand and thereafter fails or refuses to satisfy or provide justification responding to Lessor's demand within 60 days from the receipt of such notice. If Lessee timely responds to Lessor's demand, but in good faith disagrees with Lessor's position and sets forth the reasons therefore, such a response shall be deemed to satisfy this provision, this Lease shall continue in full force and effect and no further damages (or other claims for relief) will accrue in Lessor's favor during the pendency of the dispute, other than claims for payments that may be due under the terms of this Lease.

**PAYMENTS TO LESSOR.** In addition to the bonus paid by Lessee for the execution hereof, Lessee covenants to pay Lessor, proportionate to Lessor's percentage of ownership, as follows:

(A) **DELAY RENTAL:** To pay Lessor as Delay Rental, after the first year, at the rate of five dollars (\$5.00) per net acre per year payable in advance. The parties hereto agree that this is a Paid-Up Lease with no further Delay Rental and/or Delay in Marketing payments due to Lessor during the primary term or, if so exercised, the extended primary term hereof.

(B) **ROYALTY:** To pay Lessor as Royalty, less all taxes, assessments, and adjustments on production from the Leasehold, as follows:

1. **OIL:** To deliver to the credit of Lessor a Royalty equal to one-eighth (1/8) of the net revenue realized by Lessee for all oil and any constituents thereof produced and marketed from the Leasehold, less the cost to transport, handle, separate, meter, treat, process and market the oil.

2. **GAS:** To pay Lessor on actual volumes of gas and any constituents thereof sold from said land, one-eighth of the net amount realized by Lessee, computed at the wellhead. As used in this lease, the term "net amount realized by Lessee, computed at the wellhead" shall mean the gross proceeds received by Lessee from the sale of oil and gas minus post-production costs incurred by Lessee between the wellhead and the point of sale. As used in this Lease, the term "post-production costs" shall mean all costs and expenses of (a) treating and processing oil and/or gas, and (b) separating liquid hydrocarbons from gas, other than condensate separated at the well, and (c) transporting oil and/or gas, including but not limited to transportation between the wellhead and any production or treating facilities, and transportation to the point of sale, and (d) compressing gas for transportation and delivery purposes, and (e) metering oil and/or gas to determine the amount sold and/or the amount used by Lessee, and (f) sales charges, commissions and fees paid to third parties (whether or not affiliated) in connection with the sale of the gas, and (g) any and all other costs and expenses of any kind or nature incurred in regard to the gas, or the handling thereof, between the wellhead and the point of sale. Lessee may use its own pipelines and equipment to provide such treating, processing, separating, transportation, compression and metering services, or it may engage others to provide such services; and if Lessee uses its own pipelines and/or equipment, post-production costs shall include without limitation reasonable depreciation and amortization expenses relating to such facilities, together with Lessee's cost of capital and a reasonable return on its investment in such facilities. Prior to payment of royalty, Lessor may be required to execute a Division Order certifying Lessor's interest in production. Lessee may pay all taxes and fees levied upon the oil and gas as produced, including, without limitation, severance taxes and privilege and surveillance fees, and deduct a proportionate share of the amount so paid from any monies payable to Lessor hereunder. Lessee may withhold Royalty payment until such time as the total withheld exceeds one hundred dollars (\$100.00).

(C) **DELAY IN MARKETING:** In the event that Lessee drills a well on the Leasehold or lands pooled/unitized therewith that is awaiting completion (including, without limitation, hydraulic fracture stimulation), or that Lessee deems to be capable of production, but does not market producible gas, oil, or their constituents, therefrom, and there is no other basis for extending this Lease, Lessee shall pay after the primary term and until such time as marketing is established (or Lessee surrenders the Lease) a Delay in Marketing payment equal in amount and frequency to the annual Delay Rental payment, and this Lease shall remain in full force and effect to the same extent as payment of Royalty.

(D) **SHUT-IN:** In the event that production of oil, gas, or their constituents, is interrupted and not marketed for a period of twelve (12) months, and there is no producing well on the Leasehold or lands pooled/unitized therewith. Lessee shall, after the primary term, as Royalty for constructive production, pay a Shut-in Royalty equal in amount and frequency to the annual Delay Rental payment until such time as production is re-established (or Lessee surrenders the Lease) and this Lease shall remain in full force and effect. During Shut-in, Lessee shall have the right to rework, stimulate, or deepen any well on the Leasehold or to drill a new well on the Leasehold in an effort to re-establish production, whether from an original producing formation or from a different formation. In the event that the production from the only producing well on the Leasehold is interrupted for a period of less than twelve (12) months, this Lease shall remain in full force and effect without payment of Royalty or Shut-in Royalty.

(E) **DAMAGES:** Lessee will remove unnecessary equipment and materials and reclaim all disturbed lands at the completion of all activities on the Leasehold, and Lessee agrees to repair any damaged improvements to the land and pay for the loss of growing crops or marketable timber.

(F) **MANNER OF PAYMENT:** Lessee shall make or tender all payments due hereunder by check, payable to Lessor, at Lessor's last known address, and Lessee may withhold any payment pending notification by Lessor of a change in address. Payment may be tendered by mail or any comparable method (e.g., Federal Express), and payment is deemed complete upon mailing or dispatch. Where the due date for any payment specified herein falls on a holiday, Saturday or Sunday, payment tendered (mailed or dispatched) on the next business day is timely.

(G) **CHANGE IN LAND OWNERSHIP:** Lessee shall not be bound by any change in the ownership of the Leasehold until furnished by Lessor with such documentation as Lessee may reasonably require. Pending the receipt of documentation, Lessee may elect either to continue to make or withhold payments as if such a change had not occurred.

(H) **TITLE:** If Lessee receives evidence that Lessor does not have title to all or any part of the rights herein leased, Lessee may immediately withhold payments that would be otherwise due and payable hereunder to Lessor until the adverse claim is fully resolved. Lessor represents and warrants that there is no existing oil and gas lease which is presently in effect covering the Leasehold.

(I) **LIENS:** Lessee may, at its option, pay and discharge any past due taxes, mortgages, judgments, or other liens and encumbrances on or against any land or interest included in the Leasehold; and Lessee shall be entitled to recover from the debtor, with legal interest and costs, by deduction from any future payments to Lessor or by any other lawful means. In the event the leased lands are encumbered by a prior mortgage, then, notwithstanding anything contained herein to the contrary, Lessee shall have the right to suspend the payment of any royalties due hereunder, without liability for interest, until such time as Lessor obtains at its own expense a subordination of the mortgage in a form acceptable to Lessee.

(J) **CHARACTERIZATION OF PAYMENTS:** Payments set forth herein are covenants, not special limitations, regardless of the manner in which these payments may be invoked. Any failure on the part of the Lessee to timely or otherwise properly tender payment can never result in an automatic termination, expiration, cancellation, or forfeiture of this Lease. Lessor recognizes and acknowledges that oil and gas lease payments, in the form of rental, bonus and royalty, can vary depending on multiple factors and that this Lease is the product of good faith negotiations. Lessor hereby agrees that the payment terms, as set forth herein, and any bonus payments paid to Lessor constitute full consideration for the Leasehold. Lessor further agrees that such payment terms and bonus payments are final and that Lessor



will not seek to amend or modify the lease payments, or seek additional consideration based upon any differing terms which Lessee has or will negotiate with any other lessor/oil and gas owner.

(K) PAYMENT REDUCTIONS. If Lessor owns a lesser interest in the oil or gas than the entire undivided fee simple estate, then the rentals (except for Delay Rental payments as set forth above), royalties and shut-in royalties hereunder shall be paid to Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

UNITIZATION AND POOLING. Lessor grants Lessee the right to pool, unitize, or combine all or parts of the Leasehold with other lands, whether contiguous or not contiguous, leased or unleased, whether owned by Lessee or by others, at a time before or after drilling to create drilling or production units either by contract right or pursuant to governmental authorization. Pooling or unitizing in one or more instances shall not exhaust Lessee's pooling and unitizing rights hereunder, and Lessee is granted the right to change the size, shape, and conditions of operation or payment of any unit created. Lessor agrees to accept and receive out of the production or the revenue realized from the production of such unit, such proportional share of the Royalty from each unit well as the number of Leasehold acres included in the unit bears to the total number of acres in the unit. Otherwise, as to any part of the unit, drilling, operations in preparation for drilling, production, or shut-in production from the unit, or payment of Royalty, Shut-in Royalty, Delay in Marketing payment or Delay Rental attributable to any part of the unit (including non-Leasehold land) shall have the same effect upon the terms of this Lease as if a well were located on, or the subject activity attributable to, the Leasehold. In the event of conflict or inconsistency between the Leasehold acres ascribed to the Lease, and the local property tax assessment calculation of the lands covered by the Lease, or the deeded acreage amount, Lessee may, at its option, rely on the latter as being determinative for the purposes of this paragraph.

FACILITIES. Lessee shall not drill a well on the Leasehold within 200 feet of any structure located on the Leasehold without Lessor's written consent. Lessor shall not erect any building or structure, or plant any trees within 200 feet of a well or within 25 feet of a pipeline without Lessee's written consent. Lessor shall not improve, modify, degrade, or restrict roads and facilities built by Lessee without Lessee's written consent.

CONVERSION TO STORAGE. Lessee is hereby granted the right to convert the Leasehold or lands pooled/unitized therewith to gas storage. At the time of conversion, Lessee shall pay Lessor's proportionate part for the estimated recoverable gas remaining in any well drilled pursuant to this Lease using methods of calculating gas reserves as are generally accepted by the natural gas industry and, in the event that all wells on the Leasehold and/or lands pooled/unitized therewith have permanently ceased production, Lessor shall be paid a Conversion to Storage payment in an amount equal to Delay Rental for as long thereafter as the Leasehold or lands pooled/unitized therewith is/are used for gas storage or for protection of gas storage; such Conversion to Storage payment shall first become due upon the next ensuing Delay Rental anniversary date. The use of any part of the Leasehold or lands pooled or unitized therewith for the underground storage of gas, or for the protection of stored gas will extend this Lease beyond the primary term as to all rights granted by this Lease, including but not limited to production rights, regardless of whether the production and storage rights are owned together or separately.

DISPOSAL AND INJECTION WELLS. Lessor hereby grants to Lessee the right to drill wells and/or re-enter existing wells, including necessary location, roadway and pipeline easements and rights of way, on any part of the Leasehold or lands pooled or unitized therewith for the disposal and/or injection into any subsurface strata, other than a potable water strata, of air, gas, brine, completion and production fluids, waste water and any hydrocarbon related substances from any source, including, but not limited to wells on the Leasehold or lands pooled or unitized therewith or from properties and lands outside the Leasehold or lands pooled or unitized therewith, and to conduct all operations as may be required, for so long as necessary and required by Lessee for purposes as herein provided. If, at the expiration of the primary term, Lessee is disposing and/or injecting into any subsurface strata underlying the Leasehold or lands pooled or unitized therewith or conducting operations for such disposal and/or injection and this lease is not being maintained by any other provision contained herein and no other payments are being made to Lessor as prescribed hereunder, Lessee shall pay to Lessor the sum of one thousand dollars (\$1,000.00) per year, proportionately reduced to Lessor's ownership in the Leasehold and surface as it bears to the full and undivided estate, beginning on the next anniversary date of this Lease and said payment and term of this Lease, insofar as to terms and provisions contained herein applicable to disposal and injection wells, shall continue annually thereafter for so long as necessary and required by Lessee for purposes as herein provided and until all disposal and/or injection wells located on the Leasehold or on lands pooled or unitized therewith are plugged and abandoned. Lessor agrees that if required by Lessee, regulatory agency or governmental authority having jurisdiction, Lessor shall enter a separate Disposal and Injection Agreement with Lessee for the purposes as herein provided.

TITLE AND INTERESTS. Lessor hereby warrants generally and agrees to defend title to the Leasehold and covenants that Lessee shall have quiet enjoyment hereunder and shall have benefit of the doctrine of after acquired title. Should any person having title to the Leasehold fail to execute this Lease, the Lease shall nevertheless be binding upon all persons who do execute it as Lessor.

LEASE DEVELOPMENT. There is no implied covenant to drill, prevent drainage, further develop or market production within the primary term or any extension of term of this Lease. There shall be no Leasehold forfeiture, termination, expiration or cancellation for failure to comply with said implied covenants. Provisions herein, including, but not limited to the prescribed payments, constitute full compensation for the privileges herein granted.

COVENANTS. This Lease and its expressed or implied covenants shall not be subject to termination, forfeiture of rights, or damages due to failure to comply with obligations if compliance is effectively prevented by federal, state, or local law, regulation, or decree, or the acts of God and/or third parties over whom Lessee has no control.

RIGHT OF FIRST REFUSAL. If at any time within the primary term of this lease or any continuation or extension thereof, Lessor receives any bona fide offer, acceptable to Lessor, to grant an additional lease which will take effect upon expiration of this Lease ("Top Lease") covering all or part of the Leasehold, Lessee shall have the continuing option by meeting any such offer to acquire a Top Lease on equivalent terms and conditions. Any offer must be in writing and must set forth the proposed Lessee's name, bonus consideration and royalty consideration to be paid for such Top Lease, and include a copy of the lease form to be utilized reflecting all pertinent and relevant terms and conditions of the Top Lease. Lessee shall have fifteen (15) days after receipt from Lessor of a complete copy of any such offer to advise Lessor in writing of its election to enter into an oil and gas lease with Lessor on equivalent terms and conditions. If Lessee fails to notify Lessor within the aforesaid fifteen (15) day period of its election to meet any such bona fide offer, Lessor shall have the right to accept said offer. Any Top Lease granted by Lessor in violation of this provision shall be null and void.

ARBITRATION. ~~In the event of a disagreement between Lessor and Lessee concerning this Lease or the associated Order of Payment, performance thereunder, or damages caused by Lessee's operations, the resolution of all such disputes shall be determined by arbitration in accordance with the rules of the American Arbitration Association. Arbitration shall be the exclusive remedy and cover all disputes, including but not limited to, the formation, execution, validity and performance of the Lease and Order of Payment. All fees and costs associated with the arbitration shall be borne equally by Lessor and Lessee.~~

ENTIRE CONTRACT. The entire agreement between Lessor and Lessee is embodied herein and in the associated Order of Payment (if any). No oral warranties, representations, or promises have been made or relied upon by either party as an inducement to or modification of this Lease.

TITLE CURATIVE. Lessor agrees to execute consents, affidavits, ratifications, amendments, permits and other instruments as Lessee may request to carry out the purpose of this lease, including without limitation, applications necessary to obtain driveway entrance permits, and approvals of drilling or production units which Lessee may seek to form pursuant to governmental authorization.







**Exhibit "A"**

Addendum to Oil and Gas Lease dated March 7th, 2017, from Corey Conley, a/k/a Corey S. Conley, a single male, of 3237 Windyhill Rd., Wellsburg, WV 26070, Lessor to SWN Production Company, LLC, as Lessee, covering 3.763 acres, more or less, situated in Buffalo District, Brooke County, West Virginia:

In the event of a conflict or inconsistency between the printed terms of this Lease and these added terms of this Lease, the added terms shall control and be deemed to supersede the printed terms of the lease.

**ROYALTY**-All references made in Paragraph (B)1 and 2 of the section entitled "PAYMENT TO LESSOR" as to one-eighth (1/8) royalty shall be amended to sixteen percent (16%)

**SURFACE USE** - The parties hereto agree that without a separate written agreement or order Lessee shall not have the right to drill wells, construct pipelines, construct access roads and/or install any other facilities on the surface of the herein described Leasehold.

**WARRANTY OF TITLE** - It is understood that Lessor warrants title to said property only with respect that the title is good to the best of Lessor's knowledge and Lessee agrees that no claims will be made against Lessor pertaining to warranty of title.

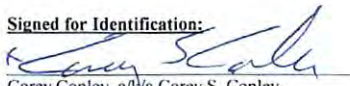
**SHUT IN LIMIT** - Notwithstanding anything to the contrary herein, it is understood and agreed that this Lease may not be maintained in force for any continuous period of time longer than two (2) consecutive years, or any cumulative period of time longer than five (5) years, after the expiration of the primary term hereof solely by the provision of the shut-in royalty clause.

**MARKET ENHANCEMENT** - Royalties shall be paid on all Oil and Gas Substances produced and sold without deductions for the costs of producing, gathering, storing, separating, treating, dehydrating, and compressing, transporting, or otherwise making the oil and/or gas produced from the leased premises ready for sale or use. All oil and/or gas royalty shall be delivered free of cost into the tank or pipeline (for oil) and into the pipeline (for gas), with the exception of Lessor's prorated share of taxes, measured by volume, on the oil and/or gas royalty. However, any such costs which result in enhancing the value of the marketable oil, gas or other products to receive a better price may be deducted from the Lessor's share of production so long as such costs are based on Lessee's actual cost of enhancement. However, in no event shall Lessor receive royalty on a price that is less than, or more than, the price received by Lessee.

**NO STORAGE RIGHTS** - Notwithstanding anything herein contained to the contrary, Lessee agrees the herein described Leasehold shall not be used for the purpose of gas storage as defined by the Federal Energy Regulatory Commission. Any reference to gas storage contained in this Lease is hereby deleted. If Lessor wishes to enter into an agreement regarding gas storage using the Leasehold with a third party, Lessor shall first give Lessee written notice of the identity of the third party, the price or the consideration for which the third party is prepared to offer, the effective date and closing date of the transaction and any other information respecting the transaction which Lessee believes would be material to the exercise of the offering. Lessor does hereby grant Lessee the first option and right to purchase the gas storage rights by matching and tendering to the Lessor any third party's offering within 30 days of receipt of notice from Lessor.

**DISPOSAL WELLS** - Unless injection is for enhanced recovery, secondary recovery, or tertiary recovery, Lessee is not granted any right whatsoever to use the Leasehold, or any portion thereof, for construction and/or operation of any disposal well, injection well, or the construction and/or operation of water disposal facilities

**Signed for Identification:**

  
Corey Conley, a/k/a Corey S. Conley

047-009-00208



SWN Production Company, LLC  
P O Box 12359  
Spring, Texas 77391-2359  
www.swn.com

May 4, 2017

Ms. Laura Adkins  
WV DEP Office of Oil & Gas  
601 57<sup>th</sup> St., SE  
Charleston, WV 25304

**RE:** SWN's proposed New Well: Kathy Mayhew BRK 201H, Kathy Mayhew BRK 1H & Kathy Mayhew BRK 3H in Brooke County, West Virginia, Drilling under Hukill Run Road & Apple Pie Ridge Road.

Dear Ms. Adkins:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Hukill Run Road & Apple Pie Ridge Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Macey Wallace".

Macey Wallace  
Staff Landman  
SWN Production Company, LLC  
PO Box 1300  
Jane Lew, WV 26378

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Environmental Protection

A handwritten mathematical formula consisting of the fraction  $\frac{R}{A}$  followed by an arrow pointing to  $V^+$ .



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

Date of Notice Certification: 5/25/17

API No. 47- 51 -  
Operator's Well No. Kathy Mayhew BRK 201H  
Well Pad Name: Kathy Mayhew PAD

**Notice has been given:**

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>532116.747</u>
County: <u>Brooke</u>		Northing: <u>4449168.933</u>
District: <u>1-Buffalo &amp; 641-Tiltonsville</u>	Public Road Access: <u>Apple Pie Ridge Road</u>	
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Kathy Mayhew</u>	
Watershed: <u>Buffalo Creek</u>		

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

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: *PLEASE CHECK ALL THAT APPLY		<b>OOG OFFICE USE ONLY</b>  <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED  <input type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED   <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED
<input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY	or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY	or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED	
<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	
	<input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION		
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE		
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		

**Required Attachments:**

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

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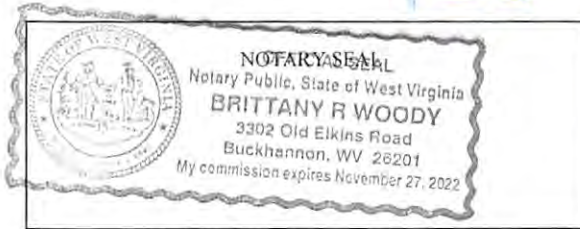
WV Department of  
Environmental Protection

09/15/2017

**Certification of Notice is hereby given:**

THEREFORE, I \_\_\_\_\_, 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>SWN Production Co., LLC</u>	Address:	<u>P.O. Box 1300</u>
By:	<u>Dee Southall</u>		<u>Jane Lew, WV 26378</u>
Its:	<u>Regulatory Supervisor</u>	Facsimile:	_____
Telephone:	<u>304-834-1610</u>	Email:	<u>Dee_Southall@swn.com</u>



Subscribed and sworn before me this 4th day of May.

Brittany R Woody Notary Public

My Commission Expires 11/27/22

**Oil and Gas Privacy Notice:**

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

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

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

Date of Notice: 5/25/17 Date Permit Application Filed: 5/25/17

Notice of:

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

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

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

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

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

SURFACE OWNER(s)  
Name: Kathy Lynn & Michael Mayhew, ETAL  
Address: PO Box 243  
Beech Bottom, WV 26030  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: Windsor Coal Company  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: See Attachment #1  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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Environmental Protection



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MAY 30 2017

API NO. 47- 51 - 047-009-00208  
OPERATOR WELL NO. Kathy Mayhew BRK 201H  
Well Pad Name: Kathy Mayhew PADWV Department of  
Environmental Protection**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

09/15/2017



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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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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.**

09/15/2017

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

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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Environmental Protection

09/15/2017



WW-6A  
(8-13)

047-009-00208

API NO. 47- 51 -  
OPERATOR WELL NO. Kathy Mayhew BRK 201H  
Well Pad Name: Kathy Mayhew PAD

**Notice is hereby given by:**

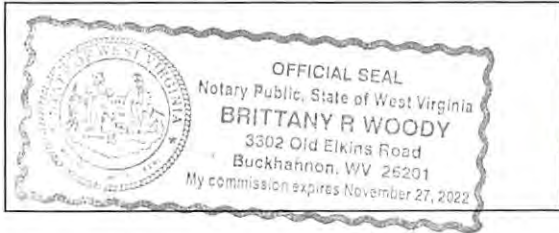
Well Operator: SWN Production Co., LLC  
Telephone: 304-884-1610  
Email: Dee\_Southall@swn.com



Address: P.O. Box 1300  
Jane Lew, WV 26378  
Facsimile: \_\_\_\_\_

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 4th day of May 2017.  
Brittany R Woody Notary Public  
My Commission Expires 11/27/2022

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WV Department of  
Environmental Protection  
09/15/2017

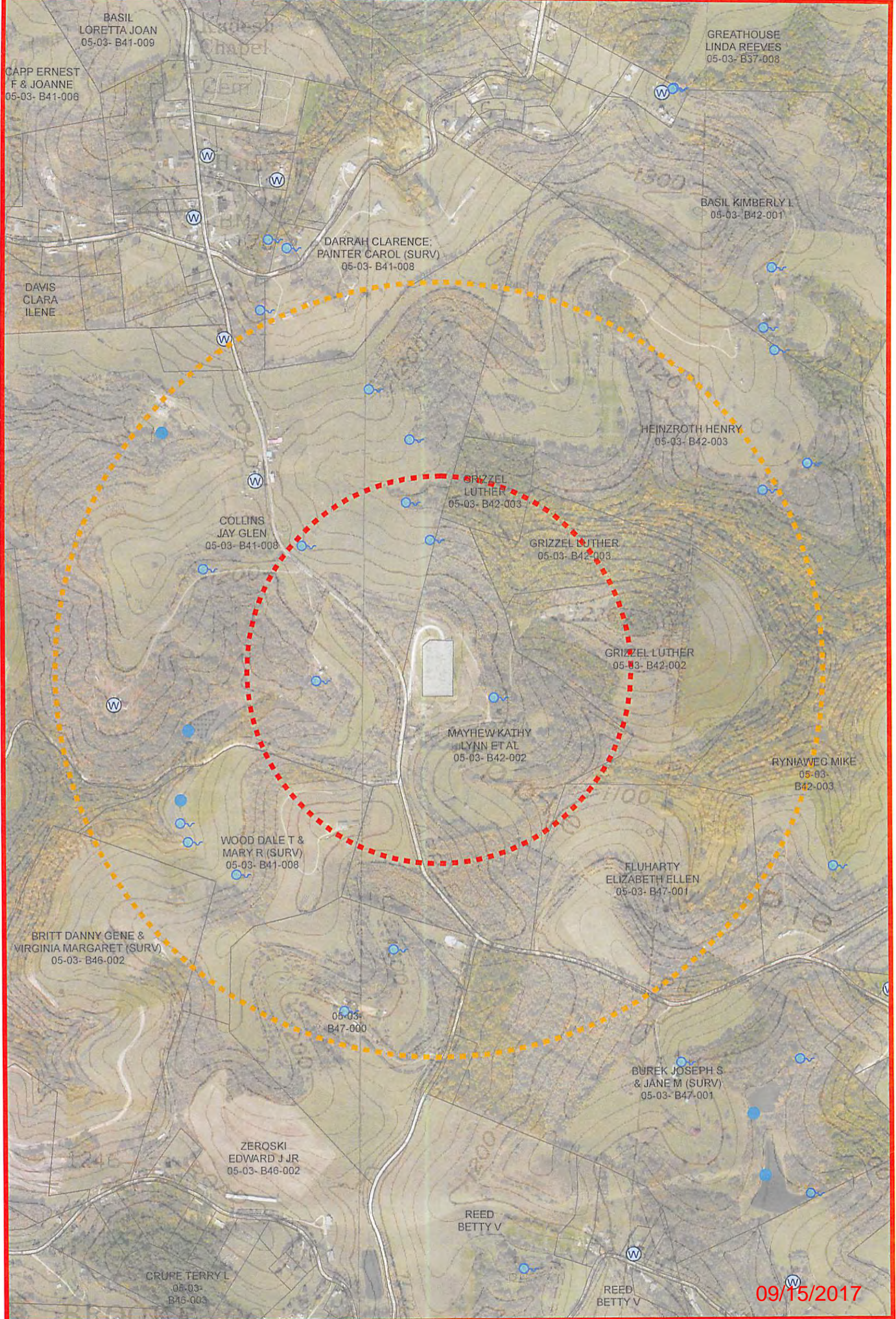
Attachment #1

LANDOWNER	SOURCE	LATITUDE	LONGITUDE	WELL DEPTH	Address
Kathy Mayhew	Spring	40.19161639	-80.62097966		P.O. Box 243, Beech Bottom, WV 26030 ↵
Jay Collins x3	Spring	40.194952	-80.622805		RR2 Box 63, Wellsburg, WV 26070 ↵

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047-009-00208





09/15/2017

The intent of this map is for general reference only. Information on this map was created using the best available data at the time but is not guaranteed accurate.

<b>Water Purveyor Map</b>		Well Pad: Kathy Mayhew	047-009-00208	County: Brooke
Map by: youngst	Date: 1/5/2016			
Nad 83 UTM Z one 17		<p>1 inch = 853 feet</p>		
<p>Document Path: K:\EandPW\Team Data\GIS\Shapefile_Young\Regulatory\Water_Purveyor_Maps\MD\Water_Purveyor_Map.mxd</p>				











047-009-00208

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

May 5, 2017

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

Subject: DOH Permit for the Kathy Mayhew Pad, Brooke County

Kathy Mayhew BRK 201H

47-009-00208

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2011-0238 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Brooke County Route 28 SLS.

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

Very Truly Yours,

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

Cc: Brittany Woody  
Southwestern Energy  
CH, OM, D-6  
File

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Product Name	Product Use	Chemical Name	CAS Number
EC 6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C 12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C 12-16-Alkyldimethyl, Chlorides	68424-85-1
A264 (Schlumberger)	Corrosion Inhibitor	Methanol	67-56-1
		Aliphatic Acids	Proprietary
		Prop-2-yn-1-ol	107-19-7
		Aliphatic Alcohols, Ethoxylated #1	Proprietary
Myacide GA 25 (Schlumberger)	Biocide	Water	7732-18-5
		Glutaral	111-30-8
Scale Inhibitor B317 (Schlumberger)	Scale Inhibitor	Trisodium Ortho Phosphate	7601-54-9
		Ethane-1,2-diol	107-21-1
H215 (Schlumberger)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0
J 218 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
EB-Clean* J 475 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
Water Gelling Agent J 580 (Schlumberger)	Gel	Carbohydrate Polymer	Proprietary
Friction Reducer J 609W (Schlumberger)	Friction Reducer	Ammonium Sulfate	7783-20-2
		Urea	57-13-6
Cross linker J 610 (Schlumberger)	Crosslinker	Potassium Hydroxide	1310-58-3
		Aliphatic Polyol	Proprietary
Iron Stabilizer L58 (Schlumberger)	Iron Stabilizer	Sodium Erythorbate	6381-77-7
40/70-Mesh Sand S012 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
Sand S100 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
EC 6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
SSA-2 (Halliburton)	Sand	Crystalline Silica	14808-60-7
FR-76 (Halliburton)	Friction Reducer	Inorganic salt	64742-47-8
		Hydrotreated light petroleum distillate	
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1
HAI-150E (Halliburton)	Corrosion Inhibitor	Methanol	NA
		Aliphatic Acids	
		Prop-2-yn-1-ol	
		Aliphatic Alcohols, Ethoxylated #1	
Hydrochloric Acid 10-30% (Halliburton)		Hydrochloric Acid	7647-01-0
WG-36 Gelling Agent (Halliburton)	Gel	Polysaccharide	9000-30-0
BC-140C (Halliburton)	Crosslinker		NA

**WEST VIRGINIA 811**

**CALL BEFORE YOU DIG!** Dial 811 or 800.245.4848  
Miss Utility of West Virginia

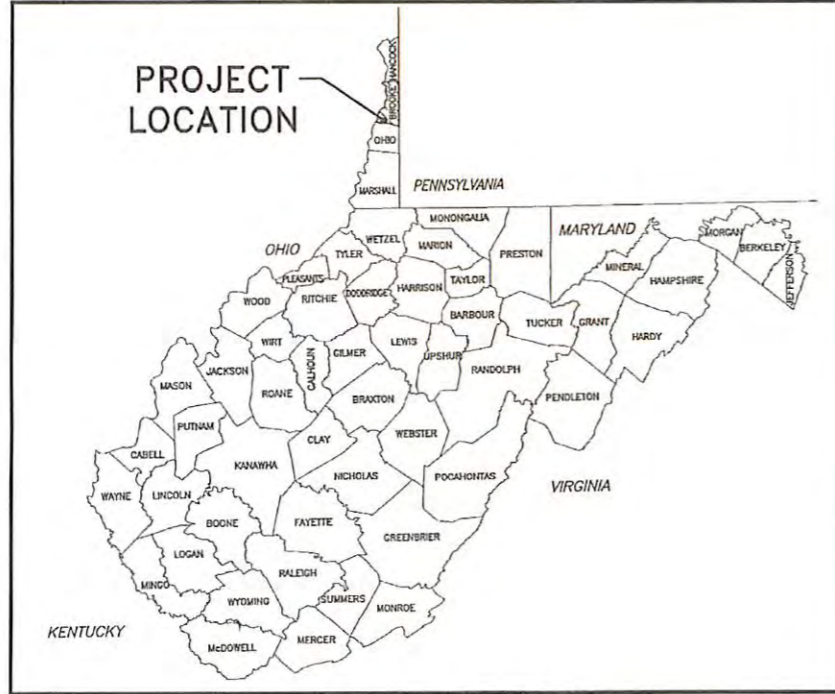
AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

# AS-BUILT SITE PLAN FOR

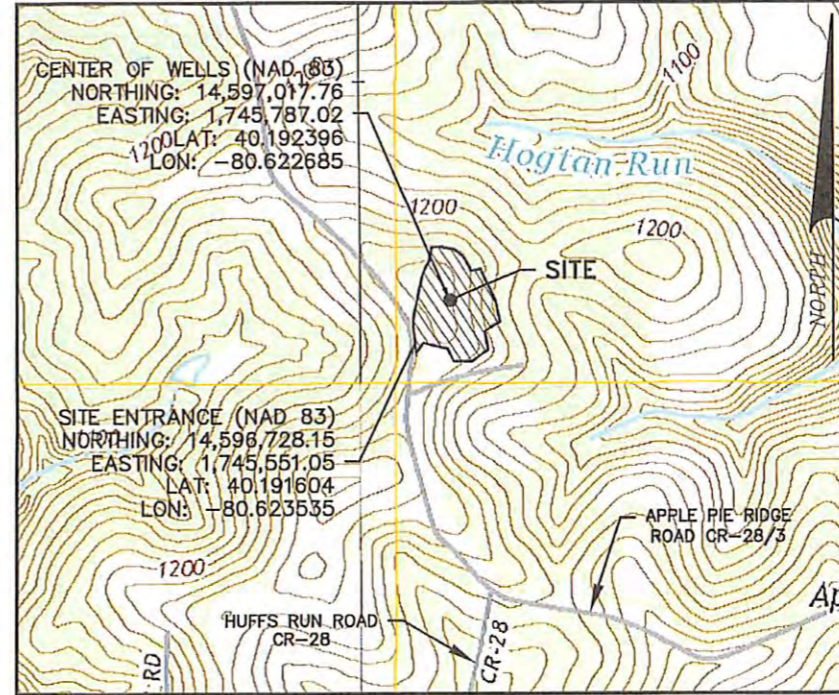
# KATHY MAYHEW BRK PAD "A" BUFFALO DISTRICT, BROOKE COUNTY, WV



DRAWN BY: DAW  
DATE: 01/14/2016  
SCALE: AS SHOWN  
DWG. NO.: 087559047



COUNTY MAP  
N.T.S.



LOCATION MAP  
SCALE - 1"=100'

### LIST OF DRAWINGS

- TS1.1 . . . . . COVER SHEET
- EP2.1 . . . . . EVACUATION ROUTE/PREVAILING WINDS
- EP2.2 . . . . . EVACUATION ROUTE/PREVAILING WINDS
- AS3.1 . . . . . AS-BUILT SITE PLAN
- CRA4.1 . . . . . ACCESS ROAD PROFILE
- CRA4.2 . . . . . PAD CROSS SECTIONS
- MRP5.1 . . . . . RECLAMATION PLAN
- MRD6.1 . . . . . DETAILS
- MRD6.2 . . . . . DETAILS
- MRD6.3 . . . . . DETAILS

### SITE DATA

TOTAL DISTURBED AREA: 8.20 ACRES  
ROAD DISTURBED AREA: 2.24 ACRES  
PAD DISTURBED ACRES: 5.96 ACRES  
ACCESS ROAD LENGTH: 774'  
ACCESS ROAD AVERAGE WIDTH: 22'  
WELL PAD ELEVATION: 1281.10

### WELL API NUMBERS

WELL NUMBER	API NUMBER	CELLAR DIAMETER	CELLAR DEPTH	CELLAR MATERIAL
5H	API 009-00102	8 FT	8 FT	CMP
8H	API 009-00103	8 FT	8 FT	CMP

TS1.1



#### OPERATOR

SWN PRODUCTION CO., LLC  
P.O. BOX 1300  
JANE LEW, WV 26378  
(832) 796-1610

THIS ENGINEER'S CERTIFICATION COVERS UPDATING THE KATHY MAYHEW BRK PAD "A" TO CURRENT WEST VIRGINIA STANDARDS AND COVERS ONLY THE ADDITION OF THE CONTAINMENT BERM, MOUNTABLE BERM AT THE PAD ENTRANCE AND THE RECLAMATION PLAN.

PRINTED NAME: BRIAN D. SPRAY, PE

SIGN NAME: *[Signature]*



RETTEW Associates, Inc.  
One Robinson Plaza, 6600 Steubenville Pike, Suite 200,  
Pittsburgh, PA 15205  
Phone (412) 446-1728 • Fax (412) 446-1733  
Engineers • Planners • Surveyors • Landscapers • Architects  
Environmental Consultants

COVER SHEET FOR  
**KATHY MAYHEW BRK PAD "A"**  
BUFFALO DISTRICT BROOKE COUNTY, WV

WV Department of Environmental Protection

MAY 30 2017

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Office of Oil and Gas

047-009-00208



**WEST VIRGINIA 811**

**CALL BEFORE YOU DIG!** Dial 811 or 800.245.4848  
Miss Utility of West Virginia

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

047-009-0020

# AS-BUILT SITE PLAN

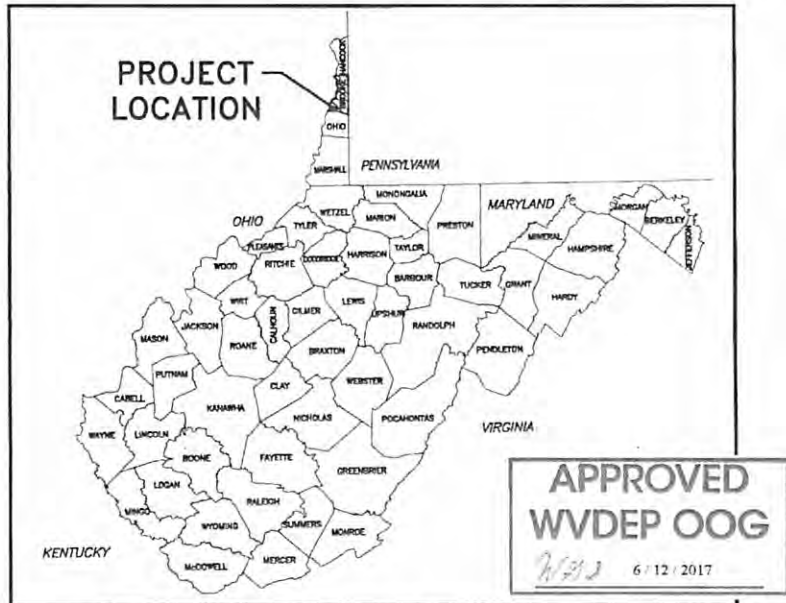
FOR

# KATHY MAYHEW BRK PAD "A"

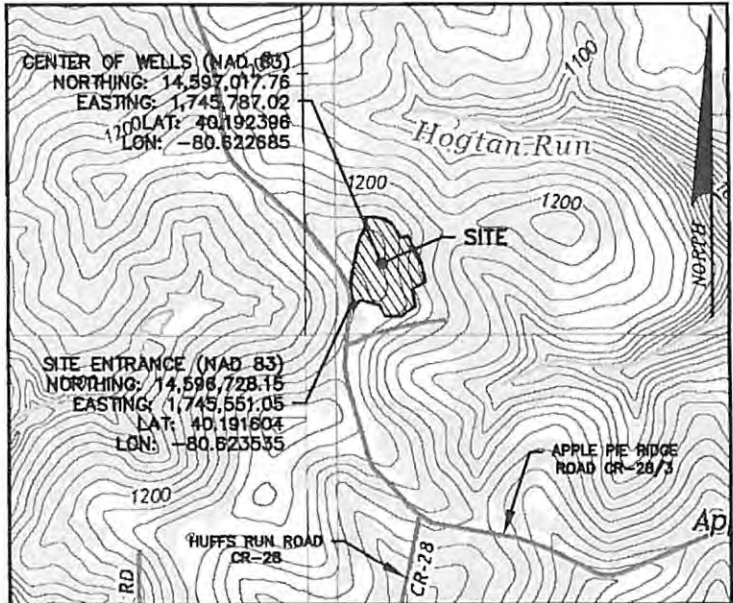
## BUFFALO DISTRICT, BROOKE COUNTY, WV



DRAWN BY: DAW  
DATE: 01/14/16 REV. 06/08/17  
SCALE: AS SHOWN  
DWG. NO. 087569047



**COUNTY MAP**  
N.T.S.



**LOCATION MAP**  
SCALE - 1"=1000'

**LIST OF DRAWINGS**

- TS1.1 . . . . . COVER SHEET
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8H	API 009-00103	8 FT	8 FT	CMP
1H	API 009-00203	8 FT	8 FT	CMP
3H	API 009-00216	8 FT	8 FT	CMP
201H	API 009-00208	8 FT	8 FT	CMP

TS1.1



**OPERATOR**

SWN PRODUCTION CO., LLC  
P.O. BOX 1300  
JANE LEW, WV 26378  
(832) 795-1610

THIS ENGINEER'S CERTIFICATION COVERS UPDATING THE KATHY MAYHEW BRK PAD "A" TO CURRENT WEST VIRGINIA STANDARDS AND COVERS ONLY THE ADDITION OF THE CONTAINMENT BERM, MOUNTABLE BERM AT THE PAD ENTRANCE AND THE RECLAMATION PLAN.

PRINTED NAME: PATRICK G. DeNARDO, PE

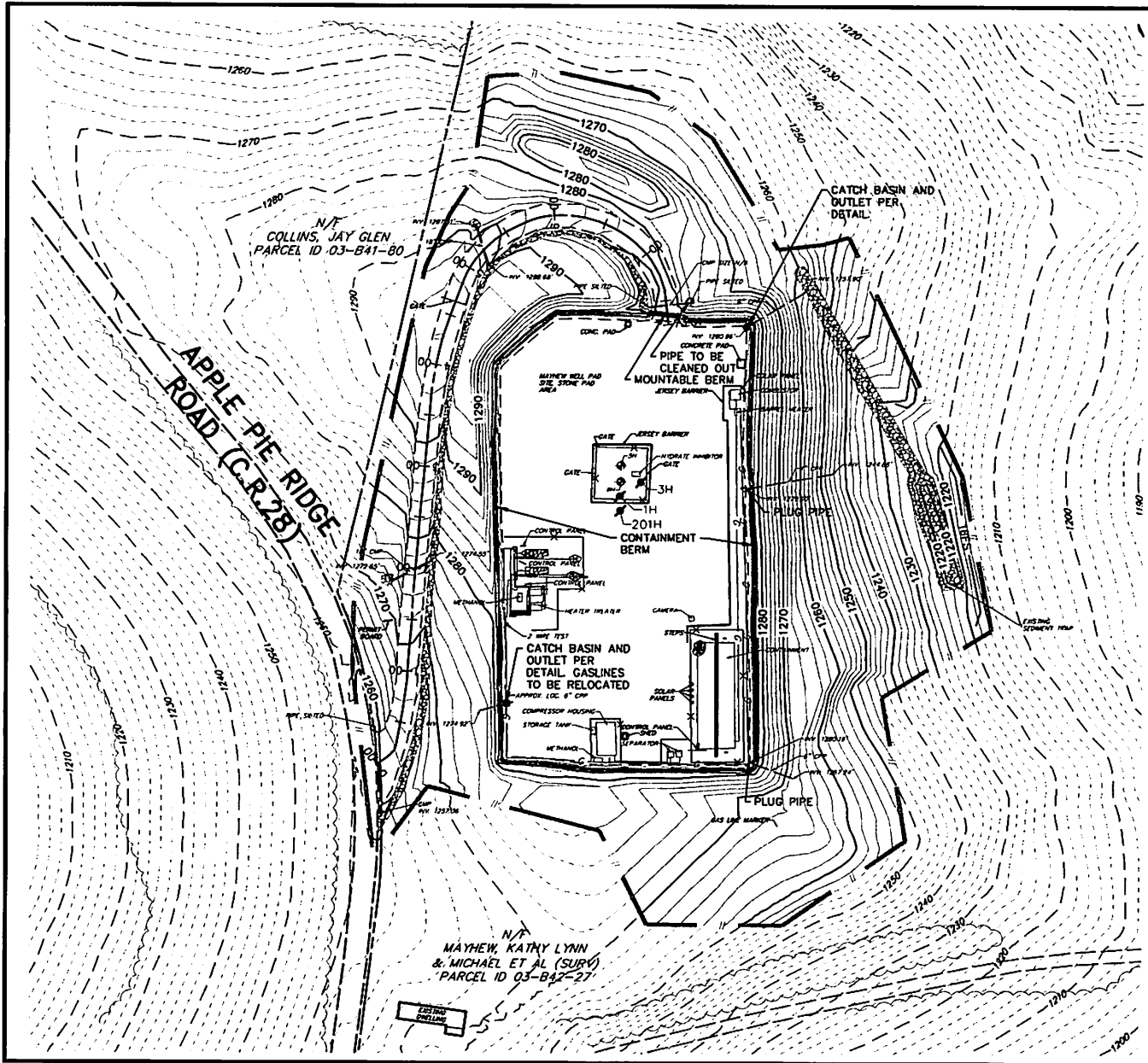
SIGN NAME: *Patrick G. DeNardo*

**REVIEW**

REVIEW Associates, Inc.  
One Robinson Plaza, 8000 Steubenville Pike, Suite 200,  
Pittsburgh, PA 15206  
Phone (412) 446-1728 • Fax (412) 446-1733  
Engineers • Planners • Environmental Scientists

COVER SHEET FOR

**KATHY MAYHEW BRK PAD "A"**  
BUFFALO DISTRICT  
BROOKE COUNTY, WV

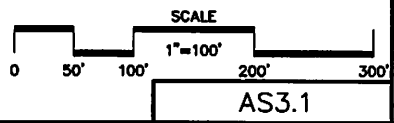


DRAWN BY: DAW  
 DATE: 01/14/16 REV. 06/09/17  
 SCALE: 1"=100'  
 DWG. NO. 087569047

**LEGEND**

- LIMITS OF DISTURBANCE
- EXISTING CHAIN-LINK FENCE
- EXISTING CONTOUR LINE
- AS-BUILT MAJOR CONTOUR LINE
- AS-BUILT MINOR CONTOUR LINE
- EXISTING WELL HEAD
- EXISTING TREE LINE
- EXISTING RIPRAP

**APPROVED WVDEP OOG**  
 6/12/2017



**RETTEW**

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AS-BUILT SITE PLAN  
 FOR  
**KATHY MAYHEW BRK PAD "A"**  
 BUFFALO DISTRICT BROOKE COUNTY, WV