



west virginia department of environmental protection

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

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

Wednesday, February 22, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC (A)
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for THURMAN SPEECE BRK 205H
47-009-00186-00-00

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: THURMAN SPEECE BRK 205H
Farm Name: THURMAN SPEECE, JR. & GOLDIE N. STANLEY
U.S. WELL NUMBER: 47-009-00186-00-00
Horizontal 6A / New Drill
Date Issued: 2/22/2017

Promoting a healthy environment.

02/25/2017

PERMIT CONDITIONS

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

4700900135

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS 4700900186

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.

02/25/2017

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

1) Well Operator: SWN Production Co., LLC 494512924 009- Brooke 3- Buffalo 247- Bethany
Operator ID County District Quadrangle

2) Operator's Well Number: Thurman Speece BRK 205H Well Pad Name: Thurman Speece PAD

3) Farm Name/Surface Owner: Thurman Speece, Jr. & Goldie N. Stanley Public Road Access: Hukill Run Road

4) Elevation, current ground: 1139.7' Elevation, proposed post-construction: 1139.51'

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

(b) If Gas Shallow Deep _____
Horizontal _____

6) Existing Pad: Yes or No No

C. 7800 11/15/16

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Target Top TVD- 5948', Target Base TVD- 5989', Anticipated Thickness- 41', Associated Pressure- 3569

8) Proposed Total Vertical Depth: 5972'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16522'

11) Proposed Horizontal Leg Length: 10,082.51'

12) Approximate Fresh Water Strata Depths: 250'

13) Method to Determine Fresh Water Depths: nearby water wells

14) Approximate Saltwater Depths: 450'

15) Approximate Coal Seam Depths: 310'

16) Approximate Depth to Possible Void (coal mine, karst, other): possible void 309.8'

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	J-55	94#	100'	100	CTS
Fresh Water	13 3/8"	New	H-40	48#	370'	370'	349 sx/CTS
Coal	9 5/8"	New	J-55	36#	1702'	1702'	653 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	16522'	16522'	<small>lead 598 sx/Tail 2301 inside intermediate</small>
Tubing	2 3/8"	New	HCP-110	4.7#	approx. 5972'	approx. 5972'	
Liners							

C. J. D. 11.15.16

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	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	1.20/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing	2 3/8"	4.778"	0.190	Approx 8193'	Approx 8193'		
Liners							

PACKERS

Kind:	10K Arrowset AS-1X			
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 units, 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): 15.40

22) Area to be disturbed for well pad only, less access road (acres): 8.60

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.

API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated	Field Review
4700990371	Operator Unknown	Not available	40.214367	-80.595417	Not available	Not available	Not available	Not Located
4700990372	Operator Unknown	Not available	40.21219	-80.594472	Not available	Not available	Not available	Not Located
4700990373	Operator Unknown	Not available	40.211029	-80.593527	Not available	Not available	Not available	Not Located
4700990374	Operator Unknown	Not available	40.208852	-80.593527	Not available	Not available	Not available	Not Located
4700990375	Operator Unknown	Not available	40.207679	-80.593527	Not available	Not available	Not available	Not Located

AOP

4700990371

4700900186

Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Intermediate 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
			polypropylene glycol	25322-69-4
	D046	antifoam	fullers earth (attapulgite)	8031-18-3
			chrySTALLine silica	14808-60-7
	D201	retarder	metal oxide	proprietary
			sulphonated synthetic polymer	proprietary
	D202	dispersant	formaldehyde (impurity)	proprietary
Production-Tail			polypropylene glycol	25322-69-4
	D046	antifoam	fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
			sodium polynaphthalene sulfonate	9008-63-3
	D065	dispersant	sodium sulfate	7757-82-6
			chrySTALLine silica	14808-60-7
	D201	retarder	metal oxide	proprietary
	D153	anti-settling	chrySTALLine silica	14808-60-7

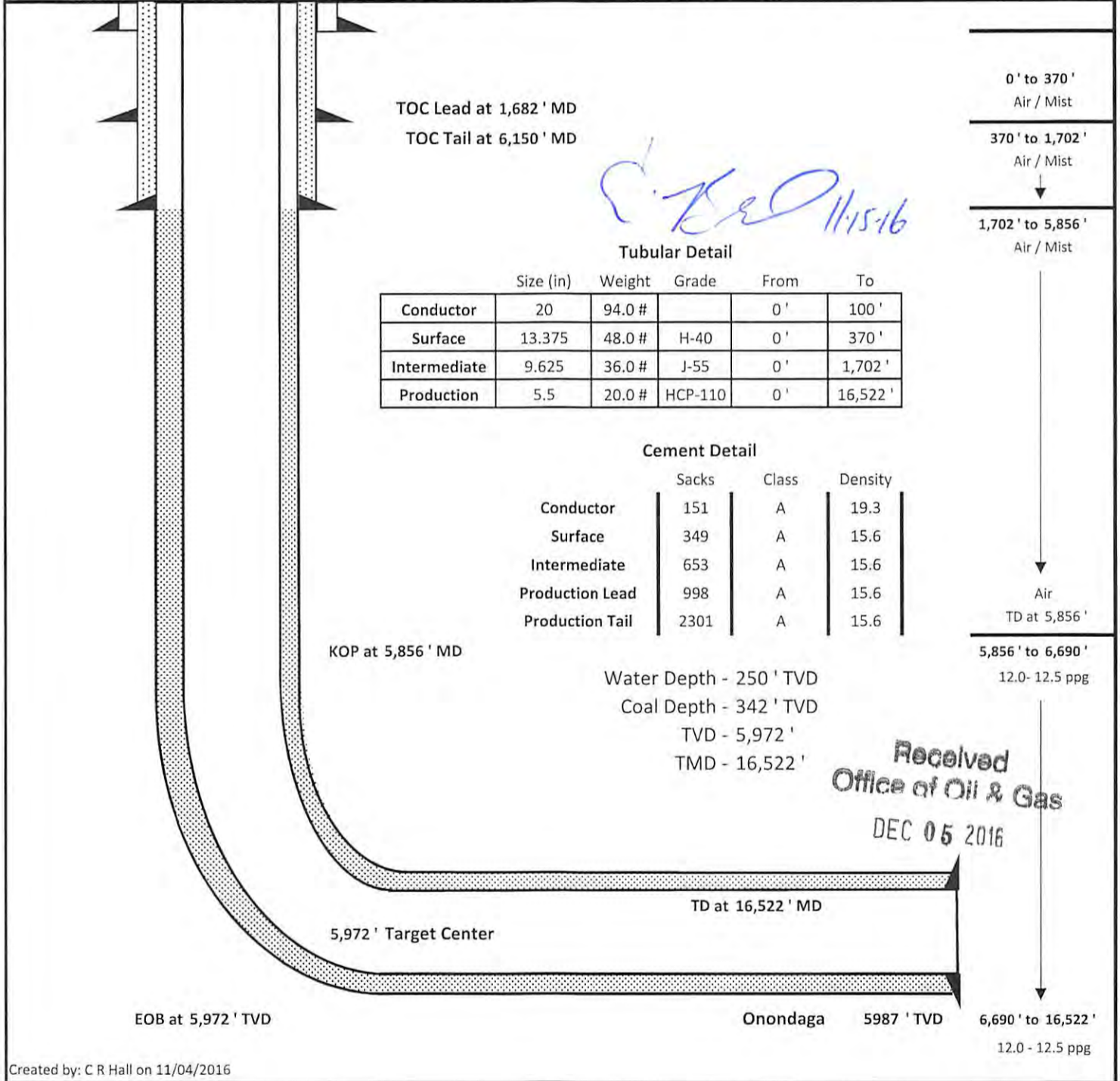
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4700900106

Southwestern Energy Company	Proposed Drilling Program
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Well: THURMAN SPEECE BRK 205 Field: PANHANDLE FIELD County: BROOKE SHL: 40.1896 Latitude -80.5901 Longitude BHL: 40.2192 Latitude -80.5990 Longitude KB Elev: 1,165 ft MSL	Re-entry Rig: TBD Prospect: PANHANDLE State: WV GL Elev: 1,139 ft MSL KB: 26 ft AGL
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Created by: C R Hall on 11/04/2016

02/25/2017

WW-9
(4/16)

API Number 47 - 009 -
Operator's Well No. Thurman Speece BRK 205H

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) Buffalo Creek 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. 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/CID26726, 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

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Subscribed and sworn before me this 4th day of November, 2016

Brittany R Woody
My commission expires 11/27/2017



SWN Production Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 13.7 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 7.2

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:  11-15-16

Comments: _____

4700900186

Title: oil and gas inspector

Date: 11-15-16

Field Reviewed? () Yes () No

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WVD Seeding Specification



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	
Apply @ 100lbs per acre April 16th- Oct. 14th	Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat

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%
Apply @ 100lbs per acre April 16th- Oct. 14th	Apply @ 200lbs per acre Oct. 15th- April 15th
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%
Apply @ 25lbs per acre April 16th- Oct. 14th	Apply @ 50lbs per acre Oct. 15th- April 15th

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NO FERTILIZER OR LIME INSIDE WETLAND LIMITS

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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: Thurman Speece BRK 205H
Bethany QUAD
Buffalo DISTRICT
Brooke COUNTY, WEST VIRGINIA

Submitted by:


Dee Southall

Date: 11/4/2016

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:



Date: 11-15-16

Title: Oil & Gas Inspector

Approved by:

Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC

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Area of Review 205H

API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
4700990371	Operator Unknown	Not available	40.214367	-80.595417	Not available	Not available	Not available
4700990372	Operator Unknown	Not available	40.21219	-80.594472	Not available	Not available	Not available
4700990373	Operator Unknown	Not available	40.211029	-80.593527	Not available	Not available	Not available
4700990374	Operator Unknown	Not available	40.208852	-80.593527	Not available	Not available	Not available
4700990375	Operator Unknown	Not available	40.207679	-80.593527	Not available	Not available	Not available

Field
review



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4700990375

THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

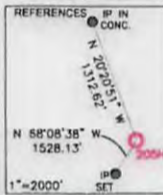
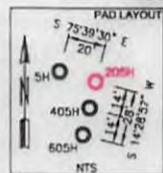
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
1	THURMAN O. SPEECE JR, GOLDIE M. STANLEY	3-B42-43	15.57
2	THURMAN O. SPEECE JR, GOLDIE M. STANLEY	3-B42-45	14.20
3	WILLIAM A. SPERRINGER III & JENNA L. SPERRINGER	3-B37-78	2.36
4	BENJAMIN M. MOSA & CHRISTINE L. HEISE	3-B37-74	24.41
5	BENJAMIN M. MOSA & CHRISTINE L. HEISE	3-B37-75	1.29

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.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF 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.

ID	ADJOINER	TAX PARCEL
A	CARLY SILVER, CAYMAN MCDONALD, JENNIFER FERGUSON	3-B37-71
B	WILLIAM E. JOHNSTON AND HAZEL E. JOHNSTON	3-B37-73
C	THEODORE W. BUNNELL	3-B37-68
D	LOTHE KEITH	3-B37-67
E	JOHN B. GAUGHERTY	3-B37-65
F	WINOSOR POWER HOUSE COAL CO	3-B42-48
G	THURMAN O. SPEECE, JR. AND GOLDIE M. STANLEY	3-B42-47

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



SWN PRODUCTION COMPANY, LLC SURFACE HOLES

1. THURMAN SPEECE BRK 5H
2. THURMAN SPEECE BRK 205H
3. THURMAN SPEECE BRK 405H
4. THURMAN SPEECE BRK 605H

SURFACE HOLE LOCATION (SHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,448,885.599
EASTING: 534,895.273

LANDING POINT LOCATION (LPL):

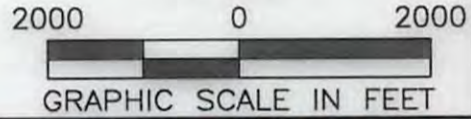
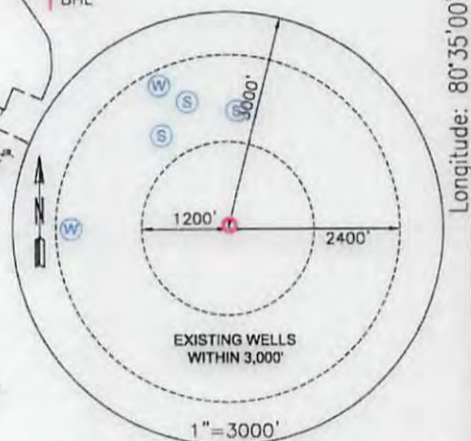
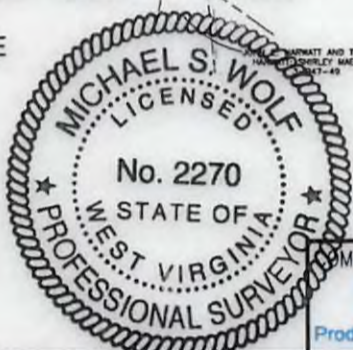
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,449,403.020
EASTING: 535,282.619

BOTTOM HOLE LOCATION (BHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,452,164.217
EASTING: 534,121.088

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. 2270



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

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

MINIMUM DEGREE OF ACCURACY: 1/200

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

THURMAN SPEECE
OPERATOR'S WELL #: BRK 205H

API WELL #: 47 STATE COUNTY PERMIT

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

WATERSHED: BUFFALO CREEK ELEVATION: 1139.5'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY

SURFACE OWNER: THURMAN O. SPEECE JR & GOLDIE M. STANLEY ACREAGE: 119.33

OIL & GAS ROYALTY OWNER: THURMAN O. SPEECE JR & GOLDIE M. STANLEY ACREAGE: 119.33

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

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,972' TVD 16,522' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

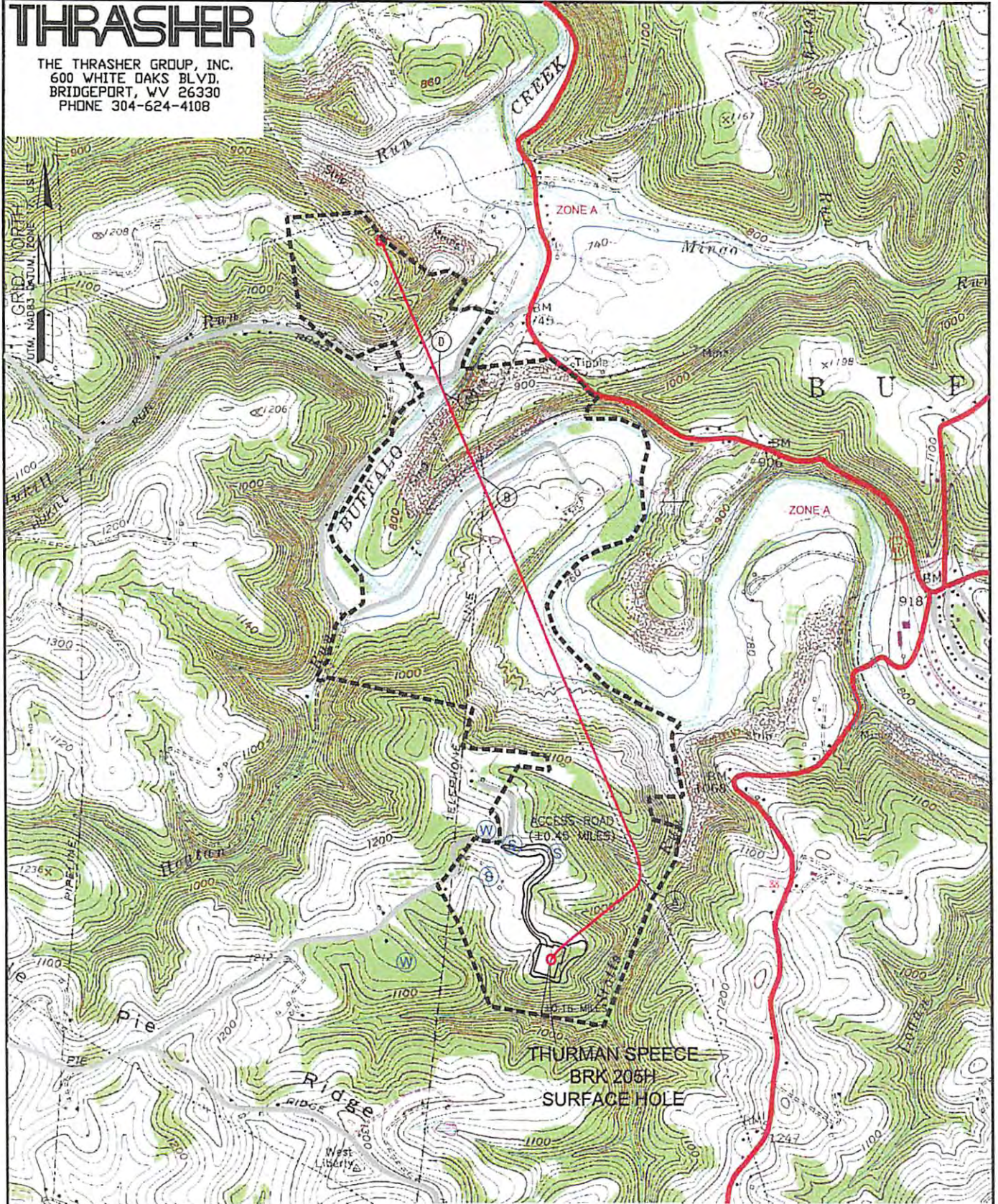
ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:	REVISIONS:	DATE:
○ PROPOSED SURFACE HOLE / BOTTOM HOLE		02-17-2017
⊙ EXISTING / PRODUCING WELLHEAD	----- LEASE BOUNDARY	
⊗ ABANDONED WELL	----- 400' DHP BUFFER	
⊕ PLUGGED & ABANDONED WELL	----- MARCELLUS DHP	
△ CUT CONDUCTOR	----- ABANDONED PATH	
		DRAWN BY: E.LYTL
		SCALE: 1" = 2000'
		DRAWING NO: 030-2888
		WELL LOCATION PLAT

THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108



BROOKE CO
OHIO CO

WELL: THURMAN SPEECE BRK 205H
QUAD: BETHANY, WV

GRAPHIC SCALE IN FEET

<p>NAME AND DISTANCE TO THE NEAREST STREAM: UNNAMED TRIBUTARY TO STOTTS RUN IS LOCATED ±0.16 MILES SOUTH OF THE CENTER OF THE DRILL PAD.</p>	<p>STREAM CROSSING COORDINATES (NAD 83): A. LAT: 40.192990° / LONG: -80.535171° B. LAT: 40.209534° / LONG: -80.53744° C. LAT: 40.213083° / LONG: -80.535670° D. LAT: 40.213277° / LONG: -80.535771°</p>	<p>COMPANY: SWN Production Company, LLC</p> <p>SWN Production Company™</p>
<p>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</p>	<p>OPERATOR'S THURMAN SPEECE WELL #: BRK 205H LOCATION: BUFFALO, BROOKE COUNTY, WEST VIRGINIA</p>	<p>Received Office of Oil & Gas</p>
<p>FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54009C0130D; EFFECTIVE DATE: 04/19/2010 & MAP NUMBER 54009C0140D; EFFECTIVE DATE: 04/19/2010.</p>	<p>SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.189634° LONGITUDE: -80.590062°</p>	<p>02/25/2017</p>
<p>LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR</p> <p>⊙ EXISTING SPRING ⊙ EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD</p>	<p>BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.219203° LONGITUDE: -80.598982°</p> <p>REVISIONS:</p> <p>DATE: 12-01-2016</p> <p>DRAWN BY: E.LYTLÉ SCALE: 1" = 2000' DRAWING NO: 030-2888 TOPOGRAPHIC MAP</p>	<p>PROPERTY NUMBER 2501164518 PAD ID 3001164503</p>

WW-6A1
(5/13)

Operator's Well No. Thurman Speece BRK
205H

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
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See Exhibit A

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

Received
Office of Oil & Gas
DEC 05 2016

EXHIBIT "A"

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 Thurman Speece BRK 205H
 Brooke County, West Virginia

#	TMP	SURFACE OWNER	DEEDED ACREAGE	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
1)	03-0B42-0042-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	115.23	730492-001	Thomas O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	13/471
						SWN Production Company, LLC		30/480
				730492-002	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/203
						SWN Production Company, LLC		30/480
2)	03-0B42-0043-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	15.57	730543-001	Thomas O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	14/197
						SWN Production Company, LLC		30/480
				730543-002	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/204
						SWN Production Company, LLC		30/480
3)	03-0B42-p/o 0046-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	73.29	730574-002	Thomas O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	14/205
						SWN Production Company, LLC		30/480
				730574-001	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/208
						SWN Production Company, LLC		30/480
				745520-002	Catherine Esther Schmitz a/k/a Tina Schmitz	SWN Production Company, LLC	15.0%	32/85
745520-001	Deborah Niblock	SWN Production Company, LLC	15.0%	32/79				
4)	03-0B42-0045-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	14.20	731272-002	Thomas O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	14/200
						SWN Production Company, LLC		30/480
				731272-001	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/198
						SWN Production Company, LLC		30/480
				745520-002	Catherine Esther Schmitz a/k/a Tina Schmitz	SWN Production Company, LLC	15.0%	32/85
745520-001	Deborah Niblock	SWN Production Company, LLC	15.0%	32/79				
5)	03-0B42-0060-0000-0000	Labelle Farms INC.	349.88	745009-000	CHK-MAC, LLC	Chesapeake Appalachia, LLC SWN Production Company, LLC	15%	28/641 31/288

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6)	03-0B37-0076-0000-0000	Ellen B. Sanford	66.00	732970-001	Jo Ellen Sanford Haizlett and James Alan Haizlett	Chesapeake Appalachia, LLC SWN Production Company, LLC	18%	23/577 30/480
				732970-002	Ann Sanford Paull and Stephen B. Paull Ellen B. Sanford, widow	Chesapeake Appalachia, LLC SWN Production Company, LLC	18%	23/579 30/480
				732970-003	Harry Estil Sanford, single	Chesapeake Appalachia, LLC SWN Production Company, LLC	18%	23/581 30/480
				732970-004	Evelyn Hill Sanford Chehi and Robert D. Chehi	Chesapeake Appalachia, LLC SWN Production Company, LLC	18%	23/583 30/480
				732970-005		Chesapeake Appalachia, LLC SWN Production Company, LLC	18%	23/521 30/480
7)	03-0B37-0066-0000-0000	LPS Investment Partnership	65.00	pending	LPS Investment Partnership	SWN Production Company, LLC	16%	32/737
8)	03-0B37-0078-0000-0000	William A. Sperringer III & Jenna L. Sperringer	2.36	730073-001	Mary Jane Sanford, widow	Great Lakes Energy Partners, LLC	14%	10/82
						Chesapeake Appalachia, LLC		10/552
						SWN Production Company, LLC		30/480
				730073-002	David Morris, widower	Great Lakes Energy Partners, LLC	14%	10/79
						Chesapeake Appalachia, LLC		10/552
				745451-003	Edward Dryden	SWN Production Company, LLC	15%	32/166
						SWN Production Company, LLC		30/480
				745451-005	Charity M. Harshman & David A Harshman	SWN Production Company, LLC	15%	31/641
				745451-006	Paula L. Berry	SWN Production Company, LLC	17%	32/365
				745451-007	William C. Groom	SWN Production Company, LLC	15%	31/662
				745451-011	Catherine Jane Ballentine	SWN Production Company, LLC	15%	31/655
				745451-010	Jeffery E. Groom	SWN Production Company, LLC	15%	31/669
				745451-013	Priscilla Ann Campbell	SWN Production Company, LLC	16%	32/513
745451-012	Debra Kay Campbell	SWN Production Company, LLC	16%	32/503				
745451-014	Dorothy Jean Spring	SWN Production Company, LLC	16%	32/508				
745451-004	Sarah J Graham	SWN Production Company, LLC	17%	32/218				

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 Brooke County, West Virginia

				745633-001	Rebecca Welton	SWN Production Company, LLC	16%	32/547
				745633-002	Constance Sue Etzkin	SWN Production Company, LLC	16%	32/552
				745451-009	Jeffrey Wayne Smith	SWN Production Company, LLC	15%	31/11
				745633-003	Jennifer Dreher	SWN Production Company, LLC	15%	32/537
				745451-002	Josh Dryden	SWN Production Company, LLC	15%	32/156
				745451-001	Nichole Johnson	SWN Production Company, LLC	15%	32/161
				745451-008	Jennifer Lynn Host	SWN Production Company, LLC	15%	31/648
9)	03-0837-0075-0000-0000	Benjamin M. Mosa & Christine L. Heise	1.29	730073-001	Mary Jane Sanford, widow	Great Lakes Energy Partners, LLC	14%	10/82
						Chesapeake Appalachia, LLC		10/552
						SWN Production Company, LLC		30/480
				730073-002	David Morris, widower	Great Lakes Energy Partners, LLC	14%	10/79
						Chesapeake Appalachia, LLC		10/552
						SWN Production Company, LLC		30/480
				745451-003	Edward Dryden	SWN Production Company, LLC	15%	32/166
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				745451-011	Catherine Jane Ballentine	SWN Production Company, LLC	15%	31/655
				745451-010	Jeffery E. Groom	SWN Production Company, LLC	15%	31/669
				745451-013	Priscilla Ann Campbell	SWN Production Company, LLC	16%	32/513
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	745451-004	Sarah J Graham		SWN Production Company, LLC	17%	32/218	
	745633-001	Rebecca Welton		SWN Production Company, LLC	16%	32/547	
	745633-002	Constance Sue Etzkin		SWN Production Company, LLC	16%	32/552	
	745451-009	Jeffrey Wayne Smith		SWN Production Company, LLC	15%	31/11	
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	745451-002	Josh Dryden		SWN Production Company, LLC	15%	32/156	
	745451-001	Nichole Johnson		SWN Production Company, LLC	15%	32/161	
	745451-008	Jennifer Lynn Host		SWN Production Company, LLC	15%	31/648	
10) 03-0B37-0074-0000-0000	Benjamin M. Mosa & Christine L. Heise	24.41	730073-001	Mary Jane Sanford, widow	Great Lakes Energy Partners, LLC	14%	10/82
					Chesapeake Appalachia, LLC		10/552
					SWN Production Company, LLC		30/480
			730073-002	David Morris, widower	Great Lakes Energy Partners, LLC	14%	10/79
					Chesapeake Appalachia, LLC		10/552
					SWN Production Company, LLC		30/480
			745451-003	Edward Dryden	SWN Production Company, LLC	15%	32/166
			745451-005	Charity M. Harshman & David A Harshman	SWN Production Company, LLC	15%	31/641
			745451-006	Paula L. Berry	SWN Production Company, LLC	17%	32/365
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			745451-010	Jeffery E. Groom	SWN Production Company, LLC	15%	31/669
			745451-013	Priscilla Ann Campbell	SWN Production Company, LLC	16%	32/513
			745451-012	Debra Kay Campbell	SWN Production Company, LLC	16%	32/503

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	745451-002	Josh Dryden		SWN Production Company, LLC	15%	32/156		
	745451-001	Nichole Johnson		SWN Production Company, LLC	15%	32/161		
	745451-008	Jennifer Lynn Host		SWN Production Company, LLC	15%	31/648		
11)	03-0837-0081-0000-0000	Robert O. Bone	81.99	1-264326-000	Robert O. Bone, married	Chesapeake Appalachia, LLC SWN Production Company, LLC	14%	10/424 30/480

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				730492-002	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/203		
						SWN Production Company, LLC		30/480		
2)	03-0B42-0043-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	15.57	730543-001	Thurman O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	14/197		
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						SWN Production Company, LLC		30/480		
				745520-002	Catherine Esther Schmitz a/k/a Tina Schmitz	SWN Production Company, LLC	15.0%	32/85		
				745520-001	Deborah Niblock	SWN Production Company, LLC	15.0%	32/79		
4)	03-0B42-0045-0000-0000	Thurman O. Speece Jr. & Goldie M. Stanley	14.20	731272-002	Thurman O. Speece, Jr., married	Chesapeake Appalachia, LLC	18.0%	14/200		
						SWN Production Company, LLC		30/480		
				731272-001	Goldie Stanley, married	Chesapeake Appalachia, LLC	18.0%	14/198		
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5)	03-0B42-0060-0000-0000	Labelle Farms INC.	349.88	745009-000	CHK-MAC, LLC	Chesapeake Appalachia, LLC SWN Production Company, LLC	15%	28/641 31/288		

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					Ellen B. Sanford, widow	Chesapeake Appalachia, LLC	18%	23/579
				732970-003		SWN Production Company, LLC		30/480
					Harry Estil Sanford, single	Chesapeake Appalachia, LLC	18%	23/581
				732970-004		SWN Production Company, LLC		30/480
	Evelyn Hill Sanford Chehi and Robert D. Chehi	Chesapeake Appalachia, LLC	18%	23/583				
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						Chesapeake Appalachia, LLC		10/552
						SWN Production Company, LLC		30/480
				730073-002	David Morris, widower	Great Lakes Enegrty Partners, LLC	14%	10/79
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				745451-012	Debra Kay Campbell	SWN Production Company, LLC	16%	32/503
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					Chesapeake Appalachia, LLC		10/552	
					SWN Production Company, LLC		30/480	
			730073-002	David Morris, widower	Great Lakes Energy Partners, LLC	14%	10/79	
					Chesapeake Appalachia, LLC		10/552	
					SWN Production Company, LLC		30/480	
			745451-003	Edward Dryden	SWN Production Company, LLC	15%	32/166	
			745451-005	Charity M. Harshman & David A Harshman	SWN Production Company, LLC	15%	31/641	
			745451-006	Paula L. Berry	SWN Production Company, LLC	17%	32/365	
			745451-007	William C. Groom	SWN Production Company, LLC	15%	31/662	
			745451-011	Catherine Jane Ballentine	SWN Production Company, LLC	15%	31/655	
			745451-010	Jeffery E. Groom	SWN Production Company, LLC	15%	31/669	
			745451-013	Priscilla Ann Campbell	SWN Production Company, LLC	16%	32/513	
			745451-012	Debra Kay Campbell	SWN Production Company, LLC	16%	32/503	

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
 Thurman Speece BRK 205H
 Brooke County, West Virginia

	745451-014	Dorothy Jean Spring		SWN Production Company, LLC	16%	32/508		
	745451-004	Sarah J Graham		SWN Production Company, LLC	17%	32/218		
	745633-001	Rebecca Welton		SWN Production Company, LLC	16%	32/547		
	745633-002	Constance Sue Etzkin		SWN Production Company, LLC	16%	32/552		
	745451-009	Jeffrey Wayne Smith		SWN Production Company, LLC	15%	31/11		
	745633-003	Jennifer Dreher		SWN Production Company, LLC	15%	32/537		
	745451-002	Josh Dryden		SWN Production Company, LLC	15%	32/156		
	745451-001	Nichole Johnson		SWN Production Company, LLC	15%	32/161		
	745451-008	Jennifer Lynn Host		SWN Production Company, LLC	15%	31/648		
11)	03-0B37-0081-0000-0000	Robert O. Bone	81.99	1-264326-000	Robert O. Bone, married	Chesapeake Appalachia, LLC SWN Production Company, LLC	14%	10/424 30/480

SWN

Southwestern Energy®

PO Box 1300
Jane Lew, WV 26378
PHONE: (832) 796-1610

November 4, 2016

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

RE: SWN's proposed well Thurman Speece BRK 5H & Thurman Speece BRK 205H in Brooke County, West Virginia, Drilling under Hukill Run Road and Lazear Run 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 and Lazear Run 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,



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

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The Right People doing the Right Things,
wisely Investing the cash flow from
our underlying Assets, will create Value+

02/25/2017

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

Date of Notice Certification: 12/1/14

API No. 47- 009 -
Operator's Well No. Thurman Speece BRK 205H
Well Pad Name: Thurman Speece PAD

Notice has been given:

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

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>534895.273</u>
County:	<u>009- Brooke</u>	Northing:	<u>4448885.599</u>
District:	<u>Buffalo</u>	Public Road Access:	<u>Hukill Run Road</u>
Quadrangle:	<u>Bethany</u>	Generally used farm name:	<u>Thurman Speece</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.

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

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

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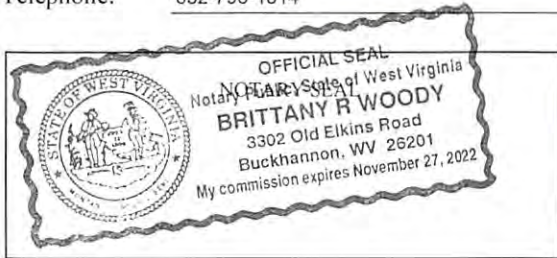
02/25/2017

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: SWN Production Co., LLC
By: Dee Southall
Its: Regulatory Supervisor
Telephone: 832-796-1614

Address: P.O. Box 12359
Spring, TX 77391-4954
Facsimile: 92816182780@fax.com
Email: Dee_Southall@swn.com



Subscribed and sworn before me this 4th day of November 2016
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.

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02/25/2017

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: 12/1/16 Date Permit Application Filed: 12/1/16

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: Goldie N. Stanley
Address: 1260 Lazears Run Road
Wheeling, WV 26003

Name: _____
Address: _____

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

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

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

COAL OPERATOR
Name: _____
Address: _____

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

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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02/25/2017

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: 02/11/14 **Date Permit Application Filed:** 12/1/14

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: Thurma O. Speece, Jr.
Address: 1523 Applie Pie Ridge Road
Wheeling, WV 26003

Name: _____
Address: _____

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

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Thurman O. Speece, Jr.
Address: 1523 Applie Pie Ridge Road
Wheeling, WV 26003

COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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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: 12/1/14 **Date Permit Application Filed:** 12/1/14

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: _____
Address: _____
Name: _____
Address: _____

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

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Goldie N. Stanley
Address: 1260 Lazears Run Road
Wheeling, WV 26003

COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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Attachment #1

LANDOWNER	SOURCE	LATITUDE	LONGITUDE	WELL DEPTH	Address
Thurman Speece/ Goldie Stanley	Spring x2	40.191031	-80.58879		1523 Apple Pie Ridge Road/ 1260 Lazears Run Road

✓

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Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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DEC 05 2016

02/25/2017

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.

47009-00705

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WW-6A
(8-13)

API NO. 47- 009 -
OPERATOR WELL NO. Thurman Speece BRK 205H
Well Pad Name: Thurman Speece PAD

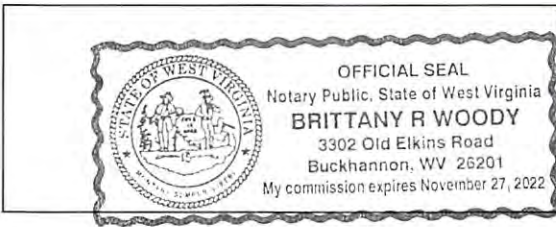
Notice is hereby given by:

Well Operator: SWN Production Co., LLC
Telephone: 832-796-1000
Email: Dee_Southall@swn.com

Address: P.O. Box 12359
Spring, TX 77391-4954
Facsimile: 92816182780@fax.com

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 4th day of November 2014
Brittany R Woody Notary Public
My Commission Expires 11/27/22

470090

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02/25/2017

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

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

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

Date of Notice: 11/04/2016 **Date Permit Application Filed:** 12/11/16

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: Thurman O. Speece, Jr.
Address: 1523 Apple Pie Ridge Road
Wheeling, WV 26003

Name: _____
Address: _____

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 534,895.273
County: Brooke Northing: 4,448,885.599
District: Buffalo Public Road Access: _____
Quadrangle: Bethany Generally used farm name: Thurman Speece
Watershed: Buffalo Creek

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: SWN Production Company, LLC
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Authorized Representative: Mike Yates
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Oil and Gas Privacy Notice:

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

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Office of Oil & Gas
DEC 05 2016
02/25/2017

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
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Notice is hereby provided to the SURFACE OWNER(s):

Name: Goldie N. Stanley
Address: 1260 Lazears Run Rd.
Wheeling, WV 26003

Name: _____
Address: _____

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 534,895.273
County: Brooke Northing: 4,448,885.599
District: Buffalo Public Road Access: _____
Quadrangle: Bethany Generally used farm name: Thurman Speece
Watershed: Buffalo Creek

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

9700900186

Notice is hereby given by:

Well Operator: SWN Production Company, LLC
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Authorized Representative: Mike Yates
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Oil and Gas Privacy Notice:

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

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DEC 05 2016

02/25/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Jim Justice
Governor

Gregory L. Bailey, P. E.
Acting Commissioner of Highways

January 25, 2017

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

Subject: DOH Permit for the Thurman Speece Pad, Brooke County

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2016-0532 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Brooke County Route 28/4 SLS.

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

Very Truly Yours,

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

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

Cc: Brittany Woody
Southwestern Energy
CH, OM, D-4
File

Product Name	Product Use	Chemical Name	CAS Number
EC6734A (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-C12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-16-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
J218 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
EB-Clean* J475 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
Water Gelling Agent J580 (Schlumberger)	Gel	Carbohydrate Polymer	Proprietary
Friction Reducer J609W (Schlumberger)	Friction Reducer	Ammonium Sulfate	7783-20-2
		Urea	57-13-6
Crosslinker J610 (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
EC6486A (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	7775-27-4

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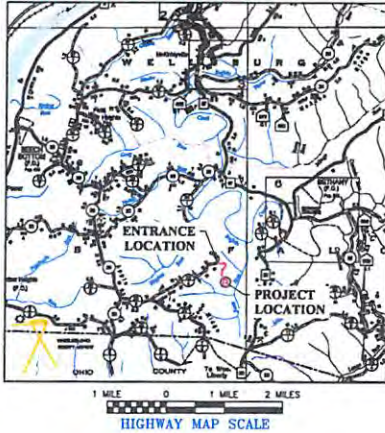
Product Name	Product Use	Chemical Name	CAS Number
HAI-150E (Halliburton)	Corrosion Inhibitor	Methanol	NA
		Aliphatic Acids	
		Prop-2-yn-1-ol	
		Aliphatic Alcohols, Ethoxylated #1	
Diesel Fuel (Halliburton)		Diesel Fuel	68476-34-6
Hydrochloric Acid 10-30% (Halliburton)		Hydrochloric Acid	7647-01-0
WG-36 Gelling Agent (Halliburton)	Gel	Polysaccharide	9000-30-0
BC-140C (Halliburton)	Crosslinker		NA

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02/25/2017

BROOKE COUNTY, WV HIGHWAY MAP



HETHANY, WV QUAD MAP



ONE CALL UTILITY SYSTEM CONTACT INFO



CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEM OF THE INTENDED EXCAVATION OR DEMOLITION NOT LESS THAN FORTY-EIGHT (48) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.

APPROVED WVDEP OOG

12/16/2017

EROSION AND SEDIMENTATION CONTROL PLAN

FOR THURMAN SPEECE WELL PAD AND ACCESS ROAD

BUFFALO DISTRICT, BROOKE COUNTY, WV

DECEMBER 2016

TOPOHE COORDINATES

Well Number	WV83-N Latitude	WV83-N Longitude	UTM 83-17 Northing	UTM 83-17 Easting
SH	N 40.180647°	W 80.580131°	14599057.130 N	1754883.840 E
2054	N 40.180634°	W 80.580052°	14599053.120 N	1754892.240 E
4054	N 40.180581°	W 80.580024°	14599038.600 N	1754898.740 E
6054	N 40.180550°	W 80.580007°	14599024.080 N	1754892.240 E
SH01	N 40.180610°	W 80.580144°	14599043.580 N	1754879.344 E
SH02	N 40.180572°	W 80.580127°	14599030.020 N	1754875.848 E
SH03	N 40.180534°	W 80.580109°	14599016.460 N	1754882.352 E
SH04	N 40.180497°	W 80.580182°	14599002.900 N	1754898.856 E
SH05	N 40.180460°	W 80.580165°	14598989.340 N	1754865.352 E
SH06	N 40.180424°	W 80.580205°	14598975.780 N	1754851.856 E
SH07	N 40.180387°	W 80.580288°	14598962.220 N	1754868.360 E
SH08	N 40.180350°	W 80.580331°	14598948.660 N	1754854.864 E
SH09	N 40.180313°	W 80.580311°	14598935.100 N	1754888.368 E
SH10	N 40.180276°	W 80.580324°	14598921.540 N	1754894.872 E
SH11	N 40.180239°	W 80.580381°	14598907.980 N	1754881.376 E
SH12	N 40.180202°	W 80.580351°	14598894.420 N	1754877.880 E

DRIVING DIRECTIONS FROM WEST LIBERTY, WV

1. FROM W. LIBERTY HARVEY RD/CR-55 IN WEST LIBERTY, TURN LEFT ONTO WV-88 (0.2mi).
2. BEAR RIGHT ONTO APPLE PIE RIDGE RD CR-75 & CR-267 (1.8 mi).
3. TURN RIGHT ONTO LAZEAR RUN RD CR-284 (1.3 mi).
4. ARRIVE AT THURMAN SPEECE WELL PAD.



SHEET INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS
3	OVERALL SITE & ESC PLAN
4-9	ACCESS ROAD PLAN AND PROFILE
10-13	ACCESS ROAD SECTIONS
14	WELL PAD PLAN
15	WELL PAD PROFILE
16	WELL PAD SECTIONS
17	GEOMETRIC LAYOUT
18	RECLAMATION PLAN
19-20	GENERAL NOTES
21-27	DETAILS

SITE COORDINATES

Coordinate Label	Well Pad Corner	Access Road Right-of-Way
WV83-N Latitude	N 40.180531°	N 40.180251°
WV83-N Longitude	W 80.580153°	W 80.582381°
WV83-N Northing	61740.407 N	618971.747 N
WV83-N Easting	16639.813 E	166377.849 E
UTM 83-17 Northing	14599111.051 N	14597730.871 N
UTM 83-17 Easting	1754877.613 E	17545187.811 E
UTM 83-17 Northing	4448877.025 m	4445987.121 m
UTM 83-17 Easting	534887.583 m	534677.517 m

DISTURBANCE SUMMARY

Property Owner (Tax Map / Parcel)	Access Road Disturbance	Well Pad Disturbance	Total Disturbance
<i>Forested</i>			
DORTH L. SPEECE, THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM 842 PAR 42	0.07	2.85	3.02
THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM 842 PAR 46	0.71	0.00	0.71
Total Forested Disturbance	0.78	2.85	3.73
<i>Non-Forested</i>			
DORTH L. SPEECE, THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM 842 PAR 42	3.83	3.65	8.30
THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM 842 PAR 46	2.17	0.00	2.17
Total Non-Forested Disturbance	6.01	3.65	12.67
Total Disturbance	6.80	6.60	15.40



SWN
Production Company™

OPERATOR
SWN PRODUCTION COMPANY, LLC
179 Innovation Drive
Jane Lew, WV 26378
(304) 884-1610

THRASHER
THE THRASHER GROUP, INC.
600 WHITE OAKS BOULEVARD - BRIDGEPORT, WV 26330
PHONE (304) 624-4108 • FAX (304) 624-7831

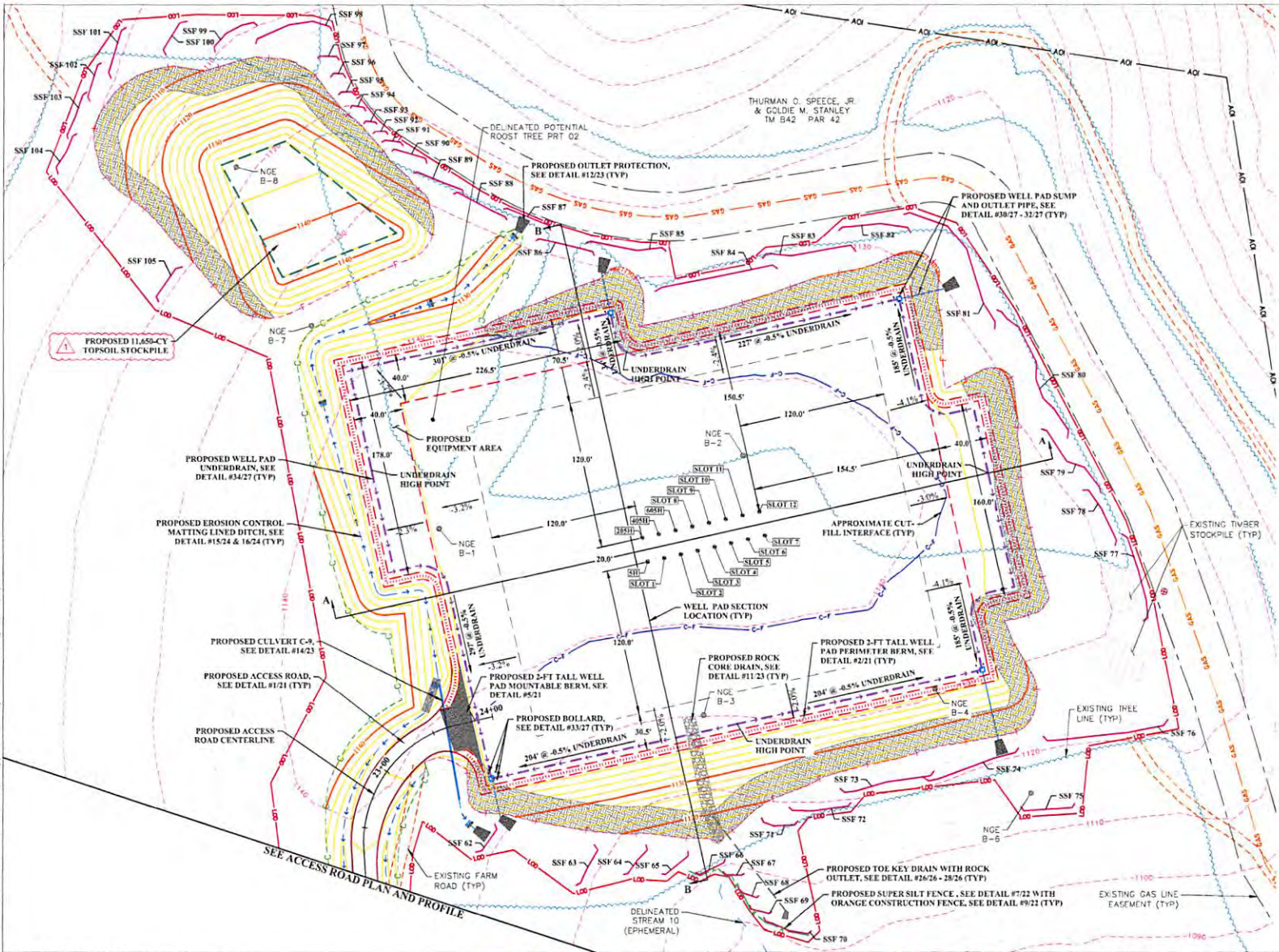
ENGINEER'S ESTIMATE OF QUANTITIES		
WELL PAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNIT
WELL PAD CUT (EXCLUDES TOPSOIL)	16,690	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	15,180	CY
TOE KEY EXCAVATION	6,185	CY
TOE KEY STONE	592	TN
WELL PAD TOPSOIL STRIPPING	5,730	CY
GEOTEXTILE	17,390	SY
BASE ROCK: R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	11,020	TN
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	3,670	TN
24" BERMS	1,724	LF
ACCESS ROAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNIT
ACCESS ROAD CUT (EXCLUDES TOPSOIL)	4,300	CY
ACCESS ROAD FILL (EXCLUDES TOPSOIL)	5,850	CY
TOE KEY EXCAVATION	6,370	CY
TOE KEY STONE	605	TN
ACCESS ROAD TOPSOIL STRIPPING	3,115	CY
GEOTEXTILE	5,415	SY
BASE ROCK: R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	3,430	TN
FINISHED GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	1,145	TN
4.5-IN HMA BASE COURSE, TYPE II	45	TN
1.5-IN HMA WEARING COURSE, TYPE I	15	TN
15-IN DIAMETER HOPE CULVERT	220	LF
18-IN DIAMETER HOPE CULVERT	230	LF
OUTLET PROTECTION/ROCK APRON SLUMP	16	EA
OUTLET PROTECTION/ROCK APRON SLUMP ROCK: R-5	112	TN
OUTLET PROTECTION/ROCK APRON SLUMP GEOTEXTILE	176	SY
EROSION & SEDIMENT CONTROL ITEMS		
SUPER SILT FENCE, 36-IN	4,832	LF
COMPOST FILTER SOCK, 12-IN	800	LF
COMPOST FILTER SOCK, 18-IN	1,579	LF
COMPOST FILTER SOCK, 24-IN	2,453	LF
EROSION CONTROL MATTING LINED DITCH	2,536	LF
ROCK LINED DITCH	163	LF
ROCK CHECK DAM	26	EA
ADDITIONAL ITEMS		
STABILIZED CONSTRUCTION ENTRANCE	1	EA
TEMPORARY CONSTRUCTION FENCE	281	LF
MOBILIZATION/DEMOLITIONIZATION	1	LS
TRENCH SAFETY PLAN & PROTECTION	1	LS
ROCK CORE DRAIN	400	TN
FARM GATE (15-FT)	15	EA
TEMPORARY FARM FENCE	3,350	LF
PERMANENT FARM FENCE	2,940	LF
SEEDING/MULCHING ITEMS		
SEEDING, LIME, & FERTILIZER	10.1	AC
UNDERDRAIN ITEMS		
UNDERDRAIN TRENCH	1,600	LF
UNDERDRAIN TRENCH STONE: AASHTO #57 OR R-3	275	TN
SOLID SCHEDULE 40 PLASTIC PIPE	245	LF
4" STEEL GATE VALVE WITH INDICATOR POST	4	EA
2" X 2" RUBBER ANTI-SLEEP COLLAR	8	EA
CLEARING AND GRUBBING ITEMS		
TOTAL FORESTED CLEARING AND GRUBBING	4.0	AC
TOTAL NON-FORESTED CLEARING AND GRUBBING	11.4	AC
EXISTING TIMBER STOCKPILE RELOCATION	1	LS

- APPROVED FOR PERMITS DATE: 12/12/16 BY: RBM
- APPROVED FOR BIDS DATE: BY:
- APPROVED FOR CONSTRUCTION DATE: BY:

REVISION NUMBER	REVISED SHEETS	BY	DATE	DESCRIPTION

DATE PLOTTED: 12/12/2016 8:58 AM
 USER: davis, j.
 PLOT DATE/TIME: 12/12/2016 8:58 AM
 CADD FILE: \\s:\030-1888-Thomas_Speece_Mat_Plan_S01\EROSION_CONTROL\030-1888-030-1888.dwg

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PLAN LEGEND

---	PROPERTY LINE
- - - -	ENVIRONMENTAL DELINEATION AREA OF INTEREST
---	DELINEATED STREAM - INTERMITTENT
---	DELINEATED STREAM - EPHEMERAL
---	DELINEATED WELL PAD
●	NCE B-1
●	NCE B-2
●	NCE B-3
●	NCE B-4
●	NCE B-5
●	NCE B-6
●	NCE B-7
---	LIMIT OF DISTURBANCE
---	PROPOSED SUPER SILT FENCE
---	PROPOSED TEMPORARY CONSTRUCTION FENCE
---	PROPOSED CONTOUR
---	PROPOSED TOE KEY
---	PROPOSED CUT LIMIT
---	PROPOSED FILL LIMIT
---	PROPOSED EROSION CONTROL MATTING LINED DITCH
---	PROPOSED ROCK LINED DITCH
---	PROPOSED WELL PAD UNDERDRAIN
---	PROPOSED SUPER SILT FENCE
---	PROPOSED ROCK CORE DRAIN
---	PROPOSED ROCK CHECK DAM
---	PROPOSED OUTLET PROTECTION
---	PROPOSED APPROXIMATE CUT-FILL INTERFACE - ZERO CLT LINE
---	PROPOSED EDGE OF WELL PAD
---	PROPOSED EDGE OF WELL PAD LEVEL AREA
---	PROPOSED TOP EDGE OF TOPSOIL STOCKPILE
---	PROPOSED EDGE OF ACCESS ROAD
---	PROPOSED TEMPORARY FARM FENCE
---	PROPOSED PERMANENT FARM FENCE
---	PROPOSED TIMBER STOCKPILE AREA

- NOTES**
1. TOE KEY IS SHOWN FOR REFERENCE ONLY. TOE KEY SHALL BE LOCATED AND CONSTRUCTED IN ACCORDANCE WITH THE NOTES AND DETAILS WITHIN THESE PLANS.
 2. ALL CUTS AND ENGINEERED FILL SLOPES SHALL BE 3H:1V.
 3. HOT MIX ASPHALT PAVED ENTRANCE SHALL BE INSTALLED IN THE SAME LOCATION AS THE STABILIZED CONSTRUCTION ENTRANCE. ENTRANCE SHALL BE PAVED WITH HOT MIX ASPHALT AS SOON AS PRACTICABLE. SEE DETAIL #36/21 WITHIN THESE PLANS FOR PAVEMENT SECTION.
 4. WELL PAD SHALL BE CONSTRUCTED WITH MINIMUM 2-FT TALL EARTHEN BERM AROUND ENTIRE WELL PAD PERIMETER. BERM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE EARTHWORK AND COMPACTION NOTES WITHIN THESE PLANS.
 5. ROCK CORE DRAIN SHALL BE INSTALLED AS SHOWN BASED ON FIELD CONDITIONS WITH PRIOR APPROVAL BY ENGINEER AND SWN PRODUCTION COMPANY, LLC REPRESENTATIVE.
 6. SEE GEOMETRIC LAYOUT FOR COORDINATES AND ELEVATIONS OF WELL PAD CORNERS, WELL PAD LEVEL AREA, AND WELL PAD UNDERDRAIN.
 7. FARM FENCE FROM STATION 0+00 TO 16+00 SHALL BE 3-STRAND ELECTRICAL FENCE. FENCE SHALL BE LEFT IN-PLACE FOR LANDOWNER USE ONCE CONSTRUCTION IS COMPLETE.

**APPROVED
WVDEP OOG**

2/2/17 1/6/2017



DRAWN BY: J. W. THURMAN
 CHECKED BY: J. W. THURMAN
 DATE: 11/09/2016
 PROJECT: THURMAN SPEECE WELL PAD

NO.	BY	DATE	DESCRIPTION
1	JW	11/09/2016	LABELED VOLUME OF MATERIAL IN TOPSOIL STOCKPILE



APPROVED FOR PERMITS
 BY: **RW** DATE: 11/09/2016
 APPROVED FOR BID
 BY: DATE:
 APPROVED FOR CONSTRUCTION
 BY: DATE:
 PROJECT NO: 101-030-2888



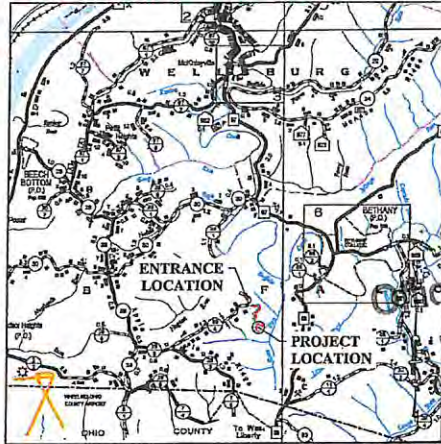
PROJECT OWNER	SWN PRODUCTION COMPANY, LLC
PROJECT NAME	THURMAN SPEECE WELL PAD
PROJECT LOCATION	BROOKE COUNTY, WV

SHEET TITLE: **WELL PAD PLAN** SHEET No: **14**

EROSION AND SEDIMENTATION CONTROL PLAN FOR THURMAN SPEECE WELL PAD AND ACCESS ROAD

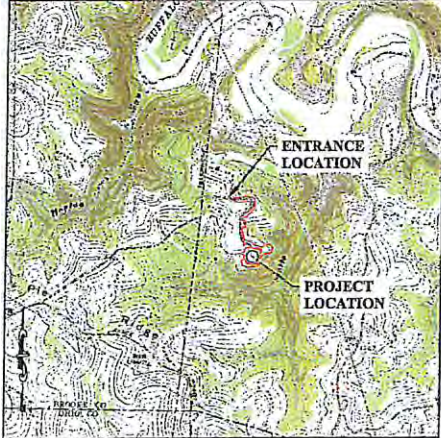
**BUFFALO DISTRICT, BROOKE COUNTY, WV
NOVEMBER 2016**

BROOKE COUNTY, WV HIGHWAY MAP



1 MILE 0 1 MILE 2 MILES
HIGHWAY MAP SCALE

BETHANY, WV QUAD MAP



2000' 0 2000' 4000'
VICINITY MAP SCALE

ONE CALL UTILITY SYSTEM CONTACT INFO



CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEM OF THE INTENDED EXCAVATION OR DEMOLITION NOT LESS THAN FORTY-EIGHT (48) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.

Received
Office of Oil & Gas
DEC 05 2016

TOPHOLE COORDINATES

Well Number	WV83-N Latitude	WV83-N Longitude	UTM 83-17 Northing	UTM 83-17 Easting
5H	N 40.189647°	W 80.590131°	1459607.130 R	1754882.840 E
205H	N 40.189534°	W 80.590287°	1459602.170 R	1754892.240 E
405H	N 40.189595°	W 80.590274°	1459608.600 R	1754898.740 E
605H	N 40.189599°	W 80.590087°	14596025.030 R	1754899.230 E
Slot 01	N 40.189610°	W 80.590144°	14596043.580 R	1754879.344 E
Slot 02	N 40.189573°	W 80.590157°	14596030.020 R	1754875.848 E
Slot 03	N 40.189536°	W 80.590169°	14596016.470 R	1754872.351 E
Slot 04	N 40.189499°	W 80.590182°	14596002.920 R	1754868.854 E
Slot 05	N 40.189462°	W 80.590195°	14595989.370 R	1754865.357 E
Slot 06	N 40.189424°	W 80.590208°	14595975.820 R	1754861.860 E
Slot 07	N 40.189387°	W 80.590220°	14595962.270 R	1754858.363 E
Slot 08	N 40.189350°	W 80.590233°	14595948.720 R	1754854.866 E
Slot 09	N 40.189485°	W 80.590113°	14595997.910 R	1754888.220 E
Slot 10	N 40.189448°	W 80.590126°	14595984.360 R	1754884.724 E
Slot 11	N 40.189410°	W 80.590139°	14595970.800 R	1754881.227 E
Slot 12	N 40.189373°	W 80.590151°	14595957.240 R	1754877.730 E

SITE COORDINATES

Coordinate Label	Well Pad Center	Access Road Beginning
WV83-N Latitude	N 40.189521°	N 40.194215°
WV83-N Longitude	W 80.592153°	W 80.592592°
WV83-N Northing	617240.407 R	618971.742 E
WV83-N Easting	1663936.392 E	1663275.849 E
UTM 83-17 Northing	14596011.003 R	14597730.387 E
UTM 83-17 Easting	1754877.013 E	1754187.821 E
UTM 83-17 Northing	4448873.051 m	4449397.121 m
UTM 83-17 Easting	534887.583 m	534677.517 m

DISTURBANCE SUMMARY

Property Owner (See Map / Parcel)	Access Road Disturbance	Well Pad Disturbance	Total Disturbance
<i>Forested</i>			
DORTHY L. SPEECE, THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM B42 PAR 42	0.07	2.95	3.02
THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM B42 PAR 46	0.71	0.00	0.71
Total Forested Disturbance	0.78	2.95	3.73
<i>Non-Forested</i>			
DORTHY L. SPEECE, THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM B42 PAR 42	3.85	5.65	9.50
THURMAN O. SPEECE, JR. & GOLDIE M. STANLEY TM B42 PAR 46	2.17	0.00	2.17
Total Non-Forested Disturbance	6.02	5.65	11.67
Total Disturbance	6.80	8.60	15.40

DRIVING DIRECTIONS FROM WEST LIBERTY, WV

- FROM W. LIBERTY HARVEY RD/CR-55 IN WEST LIBERTY, TURN LEFT ONTO WV-88 (0.2mi).
- BEAR RIGHT ONTO APPLE PIE RIDGE RD CR-7/5 & CR-28/3 (1.8 mi).
- TURN RIGHT ONTO LAZEAR RUN RD CR-28/4 (1.3 mi).
- ARRIVE AT THURMAN SPEECE WELL PAD.



SHEET INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS
3	OVERALL SITE & ESC PLAN
4-9	ACCESS ROAD PLAN AND PROFILE
10-13	ACCESS ROAD SECTIONS
14	WELL PAD PLAN
15	WELL PAD PROFILE
16	WELL PAD SECTIONS
17	GEOMETRIC LAYOUT
18	RECLAMATION PLAN
19-20	GENERAL NOTES
21-27	DETAILS



ENGINEER'S ESTIMATE OF QUANTITIES

WELL PAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNIT
WELL PAD CLIT (EXCLUDES TOPSOIL)	16,660	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	15,180	CY
TOE KEY EXCAVATION	6,185	CY
TOE KEY STONE	590	TN
WELL PAD TOPSOIL STRIPPING	3,730	CY
GEOTEXTILE	17,380	SY
BASE ROCK: R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	11,010	TN
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	3,670	TN
PLACEMENT COST	1,724	LF
24" BERMS		
ACCESS ROAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNIT
ACCESS ROAD CUT (EXCLUDES TOPSOIL)	4,350	CY
ACCESS ROAD FILL (EXCLUDES TOPSOIL)	5,890	CY
TOE KEY EXCAVATION	6,370	CY
TOE KEY STONE	625	TN
ACCESS ROAD TOPSOIL STRIPPING	3,115	CY
GEOTEXTILE	5,415	SY
BASE ROCK: R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	3,430	TN
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	1,145	TN
QUARRY PLACEMENT COST TYPE II	45	TN
4.5-IN NMA WEARING COURSE, TYPE I	15	TN
15-IN DIAMETER HDPE CULVERT	220	LF
18-IN DIAMETER HDPE CULVERT	230	LF
OUTLET PROTECTION/ROCK APRON SLUMP	16	EA
OUTLET PROTECTION/ROCK APRON SLUMP ROCK: R-5	112	TN
OUTLET PROTECTION/ROCK APRON SLUMP GEOTEXTILE	176	SY
EROSION & SEDIMENT CONTROL ITEMS		
SUPER SILT FENCE, 36-IN	4,832	LF
COMPOST FILTER SOCK, 12-IN	900	LF
COMPOST FILTER SOCK, 18-IN	1,579	LF
COMPOST FILTER SOCK, 24-IN	2,453	LF
EROSION CONTROL MATTING LINED DITCH	2,536	LF
ROCK LINED DITCH	163	LF
ROCK CHECK DAM	26	EA
ADDITIONAL ITEMS		
STABILIZED CONSTRUCTION ENTRANCE	1	EA
TEMPORARY CONSTRUCTION FENCE	281	LF
MOBILIZATION/DEMOLITION	1	LS
TRENCH SAFETY PLAN & PROTECTION	1	LS
ROCK CORE DRAIN	400	TN
FARM GATE (15 FT)	15	EA
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PERMANENT FARM FENCE	2,940	LF
SEEDING/MULCHING ITEMS		
SEEDING, LIME, & FERTILIZER	10.1	AC
UNDERDRAIN ITEMS		
UNDERDRAIN TRENCH	1,690	LF
UNDERDRAIN TRENCH STONE: AASHTO #57 OR R-3	275	TN
SOLID SCHEDULE 40 PLASTIC PIPE	145	LF
4" STEEL GATE VALVE WITH INDICATOR POST	4	EA
2' X 2' RUBBER ANTI-SEEP COLLAR	8	EA
CLEARING AND GRUBBING ITEMS		
TOTAL FORESTED CLEARING AND GRUBBING	4.0	AC
TOTAL NON-FORESTED CLEARING AND GRUBBING	11.4	AC
EXISTING TIMBER STOCK/PILE RELOCATION	1	LS

APPROVED FOR PERMITS DATE: 11/16/16 BY: RBM
 APPROVED FOR BIDS DATE: _____ BY: _____
 APPROVED FOR CONSTRUCTION DATE: _____ BY: _____

REVISION NUMBER	REVISED SHEETS	BY	DATE	DESCRIPTION

SWM OPERATOR
 SWN PRODUCTION COMPANY, LLC
 179 Innovation Drive
 Jane Lew, WV 26378
 (304) 884-1610

THRASHER
 THE THRASHER GROUP, INC.
 600 WHITE OAKS BOULEVARD - BRIDGEPORT, WV 26330
 PHONE (304) 624-4108 • FAX (304) 624-7831

DRAWN BY: J. W. WILSON; CHECKED BY: J. W. WILSON; DATE: 11/16/2016 8:28 AM; USER: jwilson; PLOT DATE/TIME: 11/16/2016 8:28 AM; CAD FILE: R:\304-2638-10000-10000-Sheets\10000-10000-Sheets\10000-10000-Sheets.dwg

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