



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Friday, June 14, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for LINDA GREATHOUSE BRK 206H
47-009-00278-00-00

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: LINDA GREATHOUSE BRK 206H
Farm Name: LINDA REEVES GREATHOUSE
U.S. WELL NUMBER: 47-009-00278-00-00
Horizontal 6A New Drill
Date Issued: 6/14/2019

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

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 03-Buffalo 247-Bethany
Operator ID County District Quadrangle

2) Operator's Well Number: Linda Greathouse BRK 206H Well Pad Name: Linda Greathouse PAD

3) Farm Name/Surface Owner: Linda Reeves Greathouse & Vicki Lynn Hamilton Public Road Access: Hukill Run Road

4) Elevation, current ground: 1139' Elevation, proposed post-construction: 1139'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

6) Existing Pad: Yes or No Yes

[Handwritten Signature]
2-13-19

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip Well to the South, Target Top TVD- 6001', Target Base TVD- 6042', Anticipated Thickness- 41', Associated Pressure- 3927

8) Proposed Total Vertical Depth: 6029'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19,067

11) Proposed Horizontal Leg Length: 12602.71'

12) Approximate Fresh Water Strata Depths: 159'

13) Method to Determine Fresh Water Depths: Nearby Spring

14) Approximate Saltwater Depths: 454' Salinity Profile Analysis

15) Approximate Coal Seam Depths: 313'

16) Approximate Depth to Possible Void (coal mine, karst, other): Possible Void 313'

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: Windsor Mine
Depth: 496'
Seam: Pittsburgh Seam
Owner: Windsor Coal Company

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WW-6B
(04/15)

API NO. 47-⁰⁰⁹ 4700900278 **06/14/2019**
 OPERATOR WELL NO. Linda Greathouse BRK 206H
 Well Pad Name: Linda Greathouse PAD

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft) ✓	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100'	100' ✓	CTS
Fresh Water	13 3/8"	New	H-40	48#	400'	400' ✓	393 sx/CTS
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1667'	1667'	648 sx/CTS
Production	5 1/2"	New	HCP-110	20#	19067'	19067'	head 763sx Tail 13106sx inside Intermediate
Tubing							
Liners							

C-210 2-13-19

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	See	Surface	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
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 or run external casing packer/cementing stage tool above void interval and perform 2 stage cementing operation dependent upon depth of void. Run casing not less than 20' below void nor more than 75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts.)

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

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, horizontal separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 100 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 29.41

22) Area to be disturbed for well pad only, less access road (acres): 9.64

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 ***

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25) Proposed borehole conditioning procedures:

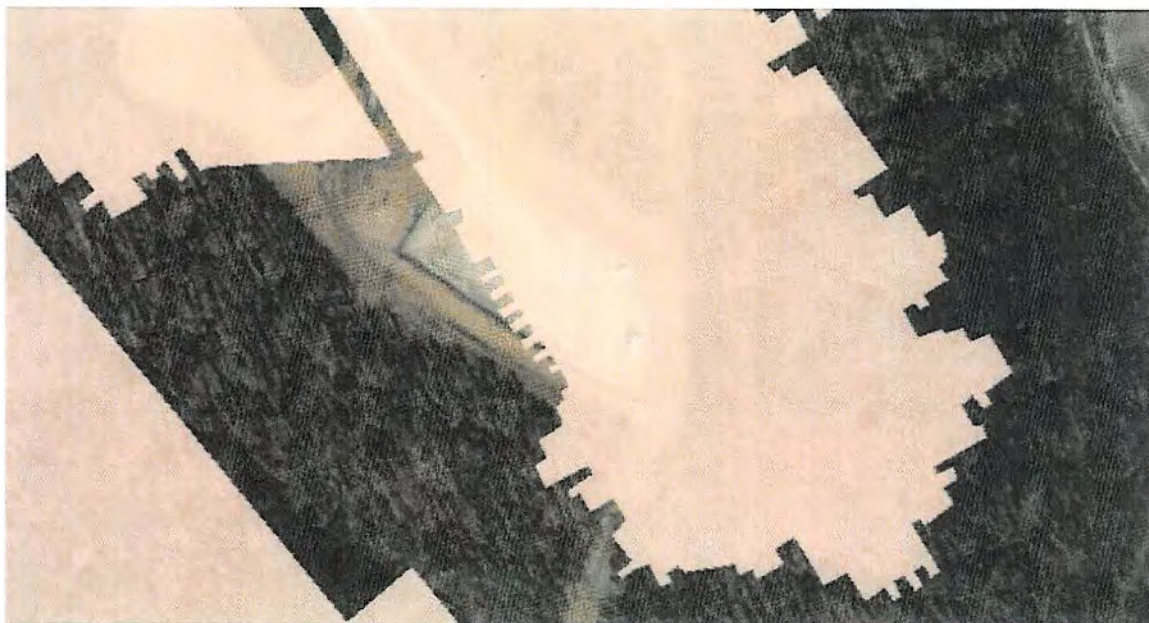
All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

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*Note: Attach additional sheets as needed.

LINDA GREATHOUSE BRK PAD1

COAL MAP



Void: YES

Active Mine: No

Mine Name: Windsor Mine

Company/Owner: Windsor Coal Company

Possible Void: 313'

Schlumberger Cement Additives

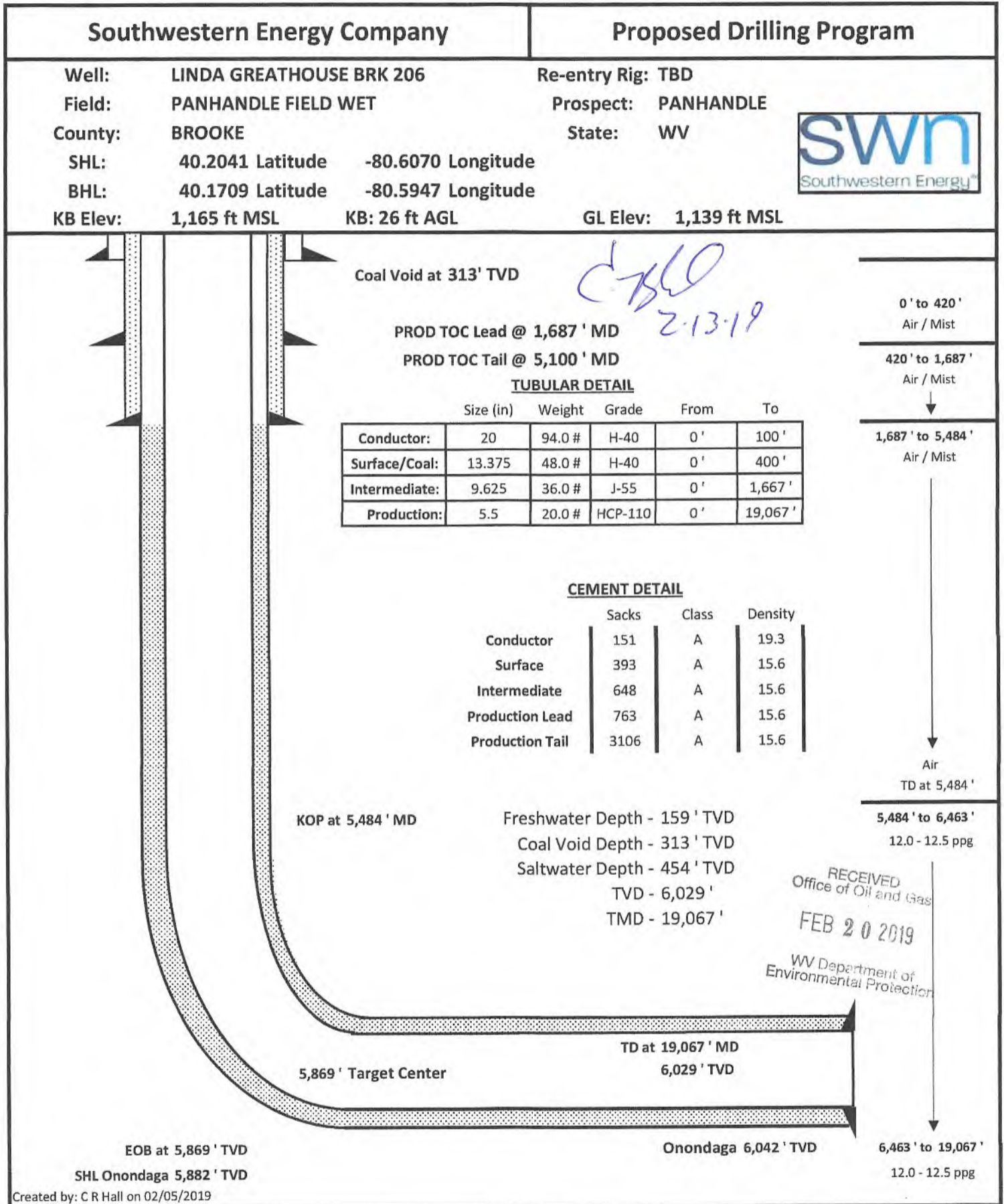
	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride up to 3%	10043-52-4
	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	proprietary
	D047	antifoam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

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9-06278

06/14/2019



9-00278 06/14/2019

API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
47-009-00157	SWN PRODUCTION COMPANY, LLC	ACTIVE	40.204119	-80.607032		MARCELLUS	
47-009-00155	SWN PRODUCTION COMPANY, LLC	ACTIVE	40.204138	-80.606940		MARCELLUS	
47-009-00156	SWN PRODUCTION COMPANY, LLC	ACTIVE	40.204122	-80.606908		MARCELLUS	
47-009-00097	SWN PRODUCTION COMPANY, LLC	ACTIVE	40.204166	-80.606989		MARCELLUS	

Linda Greathouse BR# 2081

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 494512924

Watershed (HUC 10) Upper Ohio South 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: _____

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 34-155-22403, 34-059-24067, 34-119-28775, 34-167-23862, 34-155-23795, 34-121-23865, 34-155-21893)
- 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- See Attachment 3A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air 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? Attachment 3B

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? Meadowfill SWF- 1032, Short Creek SWF-1034, Carbon Limestone MSWL018781, Wetzel County 1021

Arden Landfill 10072, Apex Sanitary Landfill 06-08438, Brooke Co SWF-1013, Valley 100280

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 Brittany Woody

Company Official (Typed Name) Brittany Woody

Company Official Title Regulatory Analyst

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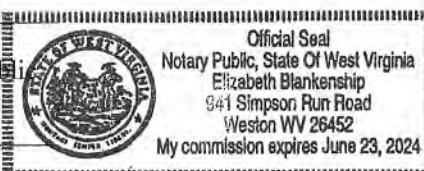
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Environmental Protection

Subscribed and sworn before me this 7 day of Feb, 2019

Elizabeth Blankenship

Notary Public

My commission expires 6/23/2024



SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 29.41 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 9.64

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

Attachment 3C

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

[Signature] 2-13-19

Comments: _____

Title: Oil and Gas Inspector

Date: 2-13-19

Field Reviewed? Yes No

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Attachment 3A

CLOSED LOOP SYSTEM

The closed loop system is designed to eliminate the use of reserve pits by providing a higher level of solids control processing and using steel pits for capture of drill cuttings. The cuttings are then processed to achieve landfill requirements before hauling to approved landfills. The liquids are processed to recycle into the active mud system or to transfer to onsite temporary storage as needed.

The closed loop system consists of several sets of a shale gas separator (often called a 'methana'), several banks of solids shakers, high speed centrifuges (1 or 2) used to process the fluid portion of the mud system to remove low gravity solids, low speed centrifuge used for barite recovery in high weight liquid drilling systems, a dewatering system (for air intervals and if freshwater mud systems are in use) used to further clean liquids by flocculation and additional mechanical separation, associated open top tanks for processing liquids and capturing solids for disposal, and transfer pumps to move fluids through the processes. There is an area adjacent to the cuttings tanks (Red Zone) where a track hole is utilized to recover the processed cuttings for loading into containers for hauloff. (See attached schematic of a generic closed loop system layout)

Below are discussions of the processes used when drilling the air interval or liquids interval.

AIR DRILLING INTERVALS

During air drilling operations, flow from the rig will pass down the flowline to the Shale Gas Separator (sometimes called a methane) where gas and liquids/solids are separated. Gas is sent to the flare scrubber tank and is flared at the flare stack. Solids and fluids pass across a shaker system to separate solids from liquids. Solids pass into the cuttings tanks where they are captured for drying and hauloff to an approved landfill site. Liquids fall into a shaker tank and are collected by a centrifugal pump to be processed by the high speed centrifuge to further separate liquids and solids. Solids are then dumped into the cuttings tank for drying and hauloff. Liquids are further processed to remove additional low gravity solids before being reused or transferred to onsite storage.

LIQUIDS DRILLING (FRESHWATER, BRINE, SOBM)

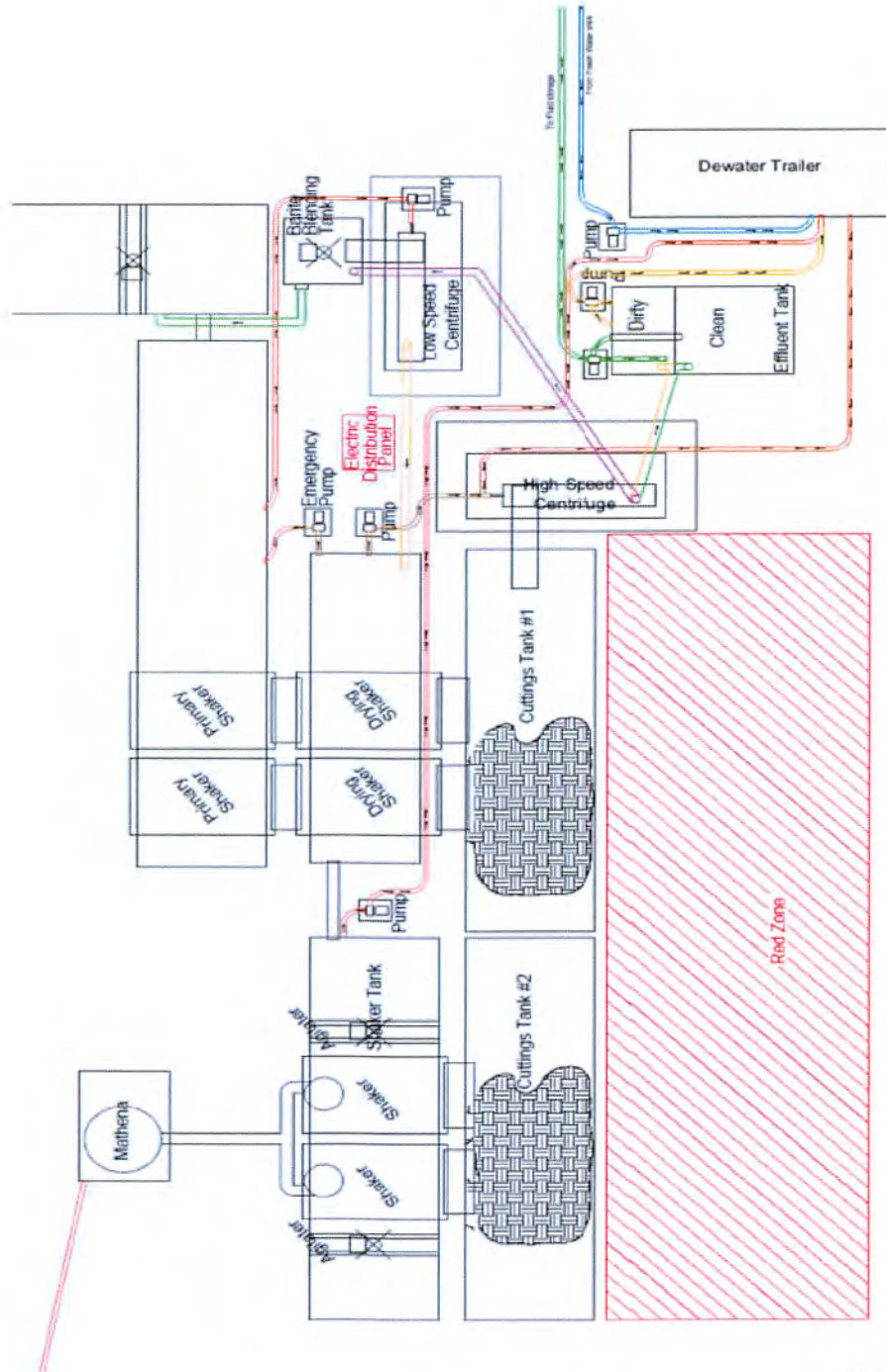
When drilling is converted to liquids drilling, the shale gas separator and associated shaker tank are bypassed, and the liquids system is processed over the primary and drying shaker systems. Cuttings drop into the cuttings tank for additional processing. Any recoverable associated liquids attached to the cutting are recovered out the tank and processed through the low gravity (high speed) and barite recovery centrifuges (low speed) to further remove low gravity solids and to recover barite for reuse in the mud systems.

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EXAMPLE SCHEMATIC FOR CLOSED LOOP SOLIDS CONTROL SYSTEM



Solids Control Layout



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Attachment 3B

Drilling Mediums

Surface/Coal(if present)/Freshwater Intervals:

Air

Freshwater (if needed based on conditions)

Intermediate/Coal (if present):

Air

Brine (In Gas Storage areas)

Organophilic Bentonite

Production Hole:

Air

Synthetic Oil (Base Fluid for mud system)

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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WVD Seeding Specification



To Order Seed contact Lyndsi Eddy Filippo 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

Pelleted 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 Pelleted 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

NO FERTILIZER OR LIME INSIDE WETLAND LIMITS

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 06/14/2019

MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



SWN Production Company, LLC
1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508

API NO. 47-XXX-XXXXX
WELL NAME: Linda Greathouse BRK 206H
Bethany QUAD
Buffalo DISTRICT
Brooke County WEST VIRGINIA

Submitted by:

Brittany Woody Brittany Woody Date: 2/4/2019

Title: Regulatory Analyst SWN Production Co., LLC

Approved by:

[Signature] Date: 2-13-19

Title: Oil & Gas Inspector

Approved by:

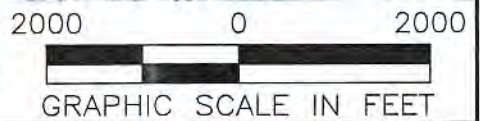
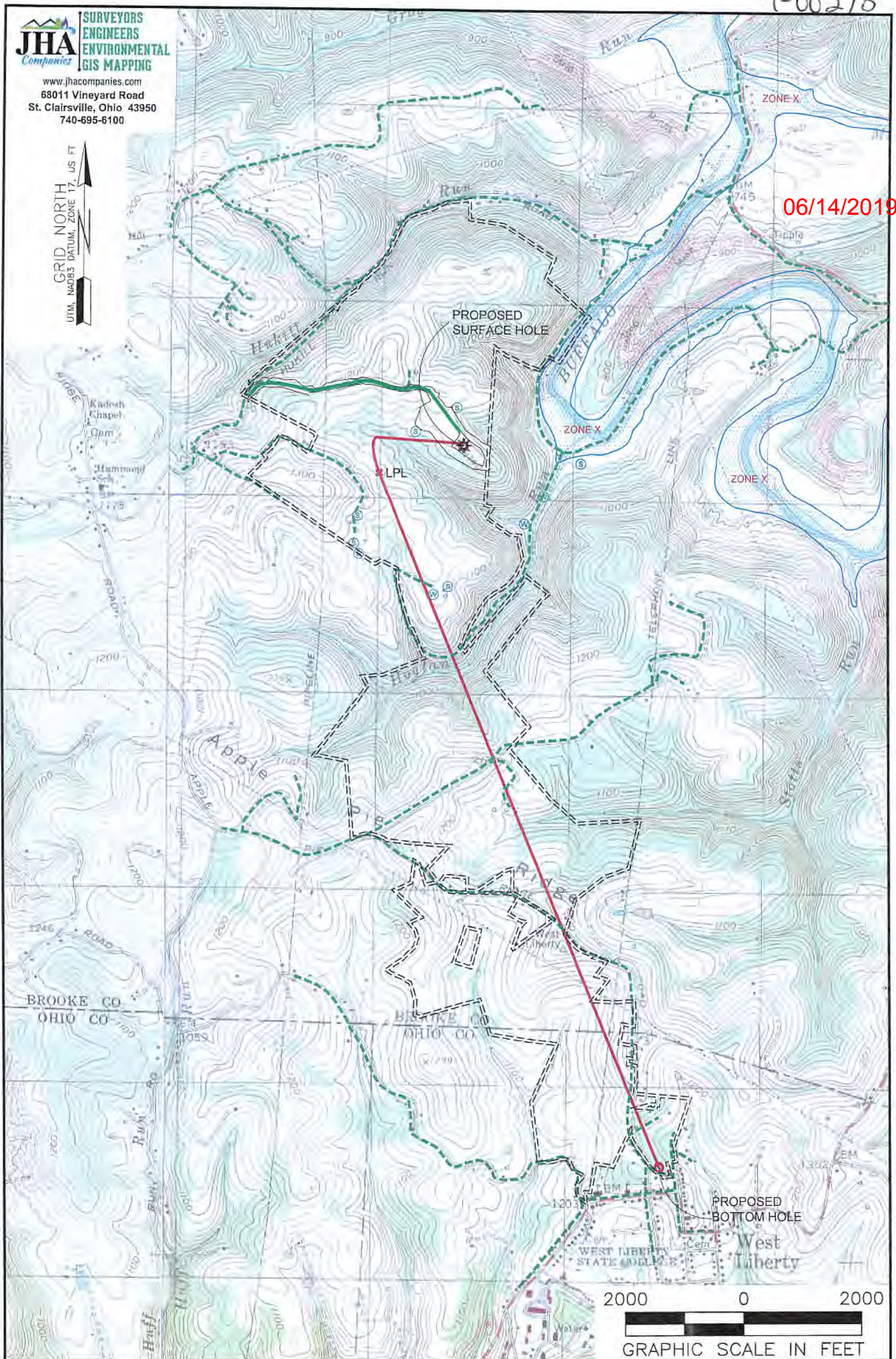
_____ Date: _____

Title: _____

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

06/14/2019



NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

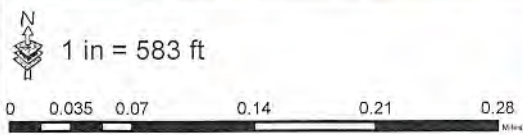
LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL* LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: LINDA GREATHOUSE BRK	WELL # 206H	SERIAL # XXXX
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN, WV 26508	COUNTY - CODE BROOKE - 009	DISTRICT: BUFFALO	API: 47-009-XXXX
SURFACE OWNER: LINDA REEVES GREATHOUSE & VICKI LYNN HAMILTON	USGS 7 1/2 QUADRANGLE MAP NAME: BETHANY, WV		

9-00278

06/14/2019



Coordinate System: NAD 1983 UTM Zone 17N
 Units: Meter

- S Spring
- W Water Well
- Pond
- 1500' Buffer

Coordinates: 40.203989, -80.606713

Water Purveyor Map
 Well Pad: Linda Greathouse
 County: BRK



Date: 3/5/2018 Author: willisb

Document Path: K:\EandP\WVD\Team Data\Regulatory\Bobby Willis\Maps\Water_Purveyor_Large_Landowner_LindaGreathousePad.mxd

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(2,000' SCALE) LATITUDE: 40°12'30" SURFACE HOLE

(2,000' SCALE) LATITUDE: 40°12'30" BOTTOM HOLE

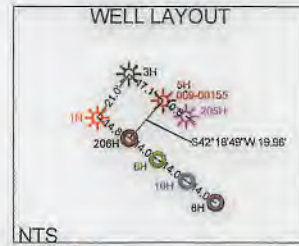
6664'

3246'



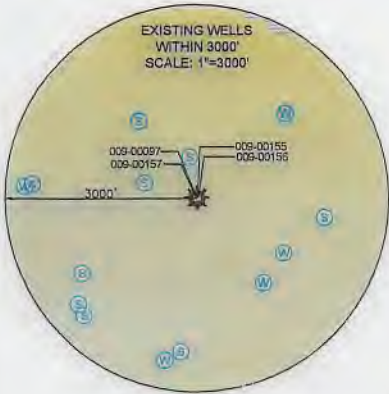
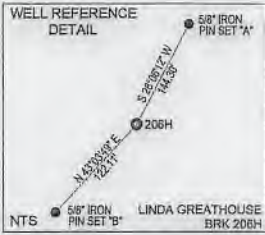
www.jhacompanies.com

68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-6100



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

06/14/2019



NOTES ON SURVEY

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

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4450484.49 EASTING: 533447.37
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4450342.24 EASTING: 533015.62
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4446803.67 EASTING: 534506.62

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. 2041





	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1/200	LINDA GREATHOUSE BRK
	WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: 206H
WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>		API WELL #: 47 009 00278 STATE COUNTY PERMIT	
WATERSHED: UPPER OHIO SOUTH		ELEVATION: 1,139.1'	
DISTRICT: BUFFALO COUNTY: BROOKE		QUADRANGLE: BETHANY, WV	
SURFACE OWNER: LINDA REEVES GREATHOUSE & VICKI LYNN HAMILTON		ACREAGE: ±322.84	
OIL & GAS ROYALTY OWNER: LINDA REEVES GREATHOUSE & VICKI LYNN HAMILTON		ACREAGE: ±322.84	
DRILL <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/>		ESTIMATED DEPTH: 6,029' TVD 19,066.6'TMD	
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY)		TARGET FORMATION: MARCELLUS	
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC		DESIGNATED AGENT: BRITTANY WOODY	
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201		ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201	
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508		CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	
LEGEND: <input checked="" type="checkbox"/> PROPOSED SURFACE HOLE / BOTTOM HOLE <input checked="" type="checkbox"/> EXISTING / PRODUCING WELLHEAD LPL <input checked="" type="checkbox"/> LANDING POINT LOCATION <input checked="" type="checkbox"/> EXISTING WATER WELL <input checked="" type="checkbox"/> EXISTING SPRING <input checked="" type="checkbox"/> SURVEYED BOUNDARY <input checked="" type="checkbox"/> DRILLING UNIT <input checked="" type="checkbox"/> LEASE BOUNDARY <input checked="" type="checkbox"/> PROPOSED PATH		REVISIONS: DATE: 02-07-2019 API #: 47-009-XXXX DRAWN BY: D. REED SCALE: 1" = 3000' DRAWING NO: 2018-204 WELL LOCATION PLAT	

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	LINDA REEVES GREATHOUSE & VICKI LYNN HAMILTON (S/R)	03-837-0087.0000
TRACT	SURFACE OWNER	TAX PARCEL
2	ROCCO BASIL	03-842-0019.0000
3	PHYLLIS P. MARKER	03-842-0052.0000
4	JAMES L. BONAR & ET AL	03-842-0054.0000
5	WINDSOR POWER HOUSE COAL COMPANY	03-842-0055.0000
6	RALPH O. & GINA L. SMITH	03-842-0064.0000
7	MIKE RYNIWEC	03-842-0033.0000
8	MIKE RYNIWEC	03-842-0034.0000
9	CAROL G. DWYER	03-847-0030.0000
10	TERRY D. HARWATT	03-847-0032.0001
11	JOHN WILSON, MARK WILSON, CAROL SHAIN & BETH HOOD	03-847-0025.0003
12	CAROL DWYER	03-847-0025.0000
13	SUSAN IRENE ROEDER, GLEN FRANCIS & ET AL	03-847-0034.0000
14	ROBERT W. & EDITH A. MILVET	03-847-0040.0000
15	RONALD G. & DONNA M. KELLER	03-847-0041.0000
16	DEREK J. & NICOLE L. ENNIS	03-847-0043.0000
17	DEREK J. & NICOLE L. ENNIS	09-L1-43
18	DEREK J. & NICOLE ENNIS	03-L1-4.2
19	JANICE L. SEYLER	09-WL1-9.3
20	DEBORAH J. & THOMAS W. BUKOVAC	09-WL1-9.1
21	DEBORAH J. & THOMAS W. BUKOVAC	09-WL1-9
22	BERNARD PETTIT	09-WL1-10
23	BERNARD R. PETTIT	09-WL1-11
24	BERNARD R. PETTIT	09-WL1-7
25	JEFFREY W. & JULIE L. RYAN	09-WL1-12
26	BENJAMIN T. BORDAS	09-WL1-12.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
BJ	NJS HOLDINGS, LLC	09-WL3-51
BK	CHARLES BONAR	03-L1-4
BL	MICHAEL A. & DIANA L. RICE	09-WL3-3
BM	FRANK, JR. & J.D. BLASKOVICH	09-WL3-2
BN	FRANK BLASKOVICH, JR. & JENNIFER D. BLASKOVICH	09-WL3-1
BO	CHARLES BONAR	03-L1-21.1
BP	MATTHEW P. BONAR	03-L1-21.3
BQ	CHARLES W. & CHARLOTTE R. BONAR	03-L1-2.6
BR	LAWRENCE & MARTHA SAYRE	03-847-0014.0000
BS	CAROL DWYER	03-847-0025.0002
BT	BETH ANN HOOD	03-847-0028.0001
BU	RONALD J. & BETH A. HOOD	03-847-0027.0000
BV	CAROL G. DWYER	03-847-0029.0000
BW	WAYNE A. ABERCROMBIE, JR.	03-847-0028.0000
BX	SCOTT T. WILHELM	03-847-0028.0001
BY	PHILIPS R. & CORISSA DWAYER	03-847-0025.0004
BZ	THURMAN O., JR. & KATHY I. SPEECE	03-847-0024.0000
CA	ROBERT E. & LAURA G. GREATHOUSE	03-847-0025.0001
CB	JOHN D. MILLER & JENNIFER LYN NEWMAN	03-847-0022.0000
CC	LAWRENCE G. & CATHIE SUE PAUGH	03-847-0021.0000
CD	LAWRENCE GRANT PAUGH	03-847-0020.0000
CE	STEISON E. & WENDY S. SUTER	03-847-0023.0000
CF	JOSEPH S. & JANE M. BUREK	03-847-0019.0000
CG	ELIZABETH ELLEN FLUHARTY	03-847-0018.0000
CH	APPALACHIA MIDSTREAM SERVICES, LLC	03-842-0029.0000
CI	HENRY HEINZROTH	03-842-0032.0000
CJ	HAROLD RICHARD & JOY LYNN KENNY	03-842-0020.0000
CK	BRUCE & DARLENE HENTHORN	03-842-0014.0000
CL	BRUCE & DARLENE HENTHORN	03-842-0019.0001
CM	EDWARD E. & NANCY J. CONLEY	03-842-0017.0000
CN	RICKEY & DEBRA CONLEY	03-842-0018.0000
CO	EDWARD E. & NANCY J. CONLEY	03-842-0016.0000
CP	EDWARD E. & NANCY J. CONLEY	03-842-0015.0000
CQ	DANIEL R. GORBY	03-842-0026.0000
CR	DANIEL R. GORBY	03-842-0003.0000
CS	ELLEN M. STANLEY	03-842-0001.0000
CT	VICTOR CHARLES SMITH	03-837-0130.0000
CU	CHRISTOPHER SCOTT MILLER	03-837-0094.0000
CV	KEVIN CHUMNEY	03-837-0093.0000

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	DEBRA F. CYPHERT, MATTHEW H. FAIR & ET AL	03-837-0091.0000
B	ROBERT BONE	03-837-0090.0000
C	ROBERT BONE	03-837-0089.0000
D	ROBERT BONE	03-837-0090.0001
E	DEBRA F. CYPHERT, MATTHEW H. FAIR & ET AL	03-837-0088.0000
F	CARL R. & SANDRA S. CLARK	03-837-0086.0000
G	BRIAN K. & GINA M. HANEY	03-837-0077.0000
H	LPS INVESTMENT PARTNERSHIP	03-837-0066.0000
I	EDGAR S. & CECELIA M. ERDMAN	03-842-0049.0000
J	ELLEN B. SANFORD	03-837-0076.0000
K	JAMES & JO ELLEN HAZLETT	03-842-0060.0002
L	AUSTIN WAYNE & JUSTINE ADAH WADE	03-842-0060.0001
M	AUSTIN WAYNE & JUSTINE ADAH WADE	03-842-0050.0000
N	TRUMAN A. & MARY SPEECE, DOROTHY SPEECE & THURMAN SPEECE, JR.	03-842-0058.0000
O	WINDSOR POWER HOUSE COAL COMPANY	03-842-0053.0000
P	WINDSOR POWER HOUSE COAL COMPANY	03-842-0051.0000
Q	WINDSOR POWER HOUSE COAL COMPANY	03-842-0056.0000
R	WINDSOR POWER HOUSE COAL COMPANY	03-842-0057.0000
S	JEFFREY S. & DAWNA J. WARD	03-842-0059.0004
T	RALPH O. & GINA L. SMITH	03-842-0070.0000
U	RALPH O. & GINA L. SMITH	03-842-0068.0000
V	RALPH O. & GINA L. SMITH	03-842-0066.0000
W	RALPH & GINA SMITH	03-842-0065.0000
X	MICHAEL DAVID & BETH ANN FINK	03-842-0038.0000
Y	DOUGLAS L. & BELINDA TURNER	03-842-0035.0000
Z	NOEL R. & JOYCE L. SCHWERTFEGER	03-842-0040.0000
AA	JOHN E. HARWATT, TERRY D. HARWATT & SHIRLEY MAE NEIL	03-847-0032.0000
AB	TERRY D. HARWATT	03-847-0031.0000
AC	TERRY D. HARWATT	03-847-0032.0004
AD	TERRY D. HARWATT	03-847-0032.0002
AE	SANDRA K. ROEDER, GLENN I. FRANCIS, JR. & ET AL	03-847-0035.0000
AF	BRIAN G. & DEBORA I. FEIST	03-847-0036.0000
AG	ERNEST, JR. & SUSAN ROEDER	03-847-0037.0000
AH	SUSAN ROEDER, GLENN IRWIN FRANCIS, JR. & ET AL	03-847-0038.0000
AI	SUSAN IRENE ROEDER, GLEN FRANCIS & ET AL	03-847-0039.0000
AJ	JOHN E. & EDITH R. HARWATT	03-847-0032.0003
AK	DEREK J. & NICOLE L. ENNIS	03-847-0033.0001
AL	OHIO COUNTY COMMISSION	09-WL1-1
AM	BONNIE J. CARR & DEAN S. CARR	09-WL1-2
AN	CHILDRENS FARM TRUST	09-WL1-14
AO	JANICE J. SEYLER	09-WL1-4
AP	BERNARD R. PETTIT	09-WL1-9.5
AQ	THOMAS W. & DEBROAH J. BUKOVAC	09-WL1-9.2
AR	DEBORAH J. & THOMAS W. BUKOVAC	09-WL1-9.7
AS	DEBORAH J. & THOMAS W. BUKOVAC	09-WL1-9.6
AT	MISTI D. PASSARELLO	03-L1-13
AU	GEORGE E. DENNIS	09-WL1-13
AV	JEREMIAH J. & CHELSIE C. BUKOVAC	09-WL3-22.1
AW	AMANDA J. & DOUGLAS G. NAYLOR	09-WL3-22
AX	META M. LASCH	09-WL3-133
AY	TIMOTHY L. & PATRICIA L. SCHERF	09-WL3-132
AZ	B. SEIDLER, R. TAYLOR, M. MAUCK & F. STANLEY (L/E)	09-WL3-17
BA	B. SEIDLER, R. TAYLOR, M. MAUCK & F. STANLEY (L/E)	09-WL3-16
BB	B. SEIDLER, R. TAYLOR, M. MAUCK & F. STANLEY (L/E)	03-WL3-15
BC	PAUL E. DAWSON	09-WL3-21
BD	R.L. CLARK, JR. & C.L. HLEBICZKI	09-WL3-131
BE	JERALDINE W. DAILEY	09-WL3-130
BF	JERALDINE W. DAILEY	09-WL3-129
BG	ROBERT S. & JANET L. WISE	09-WL3-127.1
BH	LIBERTY HIGH SCHOOL	09-WL3-7
BI	MASONIC LODGE 26 A.F.A.M.	09-WL3-6

47-009-00278

REVISIONS:	COMPANY:	 	
	OPERATOR'S	LINDA GREATHOUSE BRK	DATE: 02-07-2019
	WELL #:	206H	API #: 47-009-XXXX
	DISTRICT:	BUFFALO	DRAWN BY: D. REED
	COUNTY:	BROOKE	SCALE: N/A
	STATE:	WV	DRAWING NO: 2018-204
			WELL LOCATION PLAT

WW-6A1
(5/13)

Operator's Well No. Linda Greathouse BRK 206H

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

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

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

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

See Exhibit A

**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

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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.

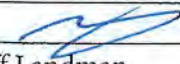
Well Operator: SWN Production Co., LLC
 By:  Gary Nuckolls
 Its: Staff Landman

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator

Linda Greathouse BRK 206H

Brooke County, West Virginia

#	TMP	SURFACE OWNER	LESSOR	LESSEE	ROYALTY	BK/PG
1)	03-0837-0087-0000-0000	Linda Reeves Greathouse and Vicki Lynn Hamilton	Linda Reeves Greathouse, a married woman dealing in her sole and separate property and Lynn Greathouse Hamilton, a married woman dealing in her sole and separate property	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	11/162 30/480
2)	03-0842-0019-0000-0000	Rocco A. Basil, Jr.	Robyn Nicholson	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/679
			Rocco A. Basil, Jr.	SWN Production Company, LLC	18.00%	34/53
			Alice Faye Newton	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/474 30/480
			Sherry Morris Clary	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/673 30/480
			Lori Morris	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/351 30/480
			Gary Morris	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/186 30/480
			Kimberly L. Basil	SWN Production Company, LLC	18.00%	33/701
			Craig Lee Bowers	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	30/100 30/480
			Shirley Buckhannan	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/302 30/480
			Debra A. Conley	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/462 30/480
			E. Jean Cross	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	28/37 30/480
			Daniel Gorby	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/486 30/480
			Jenny Miller	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/702 30/480
			Deborah Moreira	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	17/339 30/480
			Sharon M. Smith	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/708 30/480
			Nancy Lee Vargo	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	16/468 30/480
			Genelda Hardman	Chesapeake Appalachia, LLC SWN Production Company, LLC	18.00%	28/37 30/480
			James Keith Wilkin	Chesapeake Appalachia, LLC	18.00%	17/345

WV Department of
Environmental Protection

FEB 20 2019

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EXHIBIT "A"

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 Linda Greathouse BRK 206H
 Brooke County, West Virginia

		SWN Production Company, LLC	30/480
3) 03-0842-0052-0000-0000	Phyllis P. Marker	Mark Thomas Wilkin	18.00% 17/685
			SWN Production Company, LLC 30/480
		Shirley Buckhannon	18.00% 17/302
			SWN Production Company, LLC 30/480
		Craig Lee Bowers and Patricia E Bowers	18.00% 30/100
			SWN Production Company, LLC 31/288
		Carol Sue Cirola and James Vincent Ciroll	18.00% 26/441
			SWN Production Company, LLC 30/480
		Sherry Morris Clary and Clinton Clary	18.00% 17/673
			SWN Production Company, LLC 30/480
		Debra A. Conley and Rickey Conley	18.00% 16/462
			SWN Production Company, LLC 30/480
		E. Jean Cross	18.00% 16/480
			SWN Production Company, LLC 30/480
		Genelda Hardman	18.00% 28/37
			SWN Production Company, LLC 30/480
		Daniel Gorby	18.00% 16/486
			SWN Production Company, LLC 30/480
		William F. Harr, Jr and Dorothy Harr	18.00% 25/754
			SWN Production Company, LLC 30/480
Shirley A. Kokiko and Charles Kokiko	18.00% 25/759		
	SWN Production Company, LLC 30/480		
Jenny M. Miller	18.00% 16/702		
	SWN Production Company, LLC 30/480		
Deborah Moreira	18.00% 17/339		
	SWN Production Company, LLC 30/480		
Gary Morris and Jackie Morris	18.00% 17/186		
	SWN Production Company, LLC 30/480		
Lori Ann Morris	18.00% 17/351		
	SWN Production Company, LLC 30/480		
Robyn Nicholson	18.00% 17/679		
	SWN Production Company, LLC 30/480		
Phive Starr Properties, LP	18.00% 48/442		
AOYS Investments LLC	18.00% 48/448		
Alice Faye Newton	18.00% 16/474		
	SWN Production Company, LLC 30/480		
Sharon M Smith	18.00% 16/708		

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 WV Department of
 Environmental Protection

9-06278

EXHIBIT "A"

4700900278

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
Linda Greathouse BRK 206H
Brooke County, West Virginia

			SWN Production Company, LLC		30/480	
		William Sterling and Gloria Jean Sterling	Chesapeake Appalachia, LLC	18.00%	25/764	
			SWN Production Company, LLC		30/480	
		Nancy Lee Vargo and Andrew John Vargo, Jr	Chesapeake Appalachia, LLC	18.00%	16/468	
			SWN Production Company, LLC		30/480	
		James Keith Wilkin	Chesapeake Appalachia, LLC	18.00%	17/345	
			SWN Production Company, LLC		30/480	
		Mark Thomas Wilkin	Chesapeake Appalachia, LLC	18.00%	17/685	
			SWN Production Company, LLC		30/480	
4)	03-0B42-0054-0000-0000	Carl Thomas Bonar	Carl Thomas Bonar	Chesapeake Appalachia, LLC	18.00%	19/43
		James L. Bonar		SWN Production Company, LLC		30/480
		Bonnie Mae Cottrill	James L. Bonar	Chesapeake Appalachia, LLC	18.00%	18/620
		Edgar A. Ray, Jr.		SWN Production Company, LLC		30/480
		Kathryn Elizabeth Wilkinson	Bonnie Mae Cottrill	Chesapeake Appalachia, LLC	18.00%	19/48
				SWN Production Company, LLC		30/480
			Edgar A. Ray, Jr.	Chesapeake Appalachia, LLC	18.00%	20/507
				SWN Production Company, LLC		30/480
			Kathryn Elizabeth Wilkinson	Chesapeake Appalachia, LLC	18.00%	18/702
				SWN Production Company, LLC		30/480
5)	03-0B42-0055-0000-0000	Windsor Power House Coal Company	Beth Ann Hood	Chesapeake Appalachia, LLC	18.00%	18/707
				SWN Production Company, LLC		30/480
			Mark William Wilson	Chesapeake Appalachia, LLC	18.00%	18/712
				SWN Production Company, LLC		30/480
			Carol Shain f/k/a/ Carol Sue Fluharty	Chesapeake Appalachia, LLC	18.00%	18/717
				SWN Production Company, LLC		30/480
			John R. Wilson	Chesapeake Appalachia, LLC	18.00%	21/101
				SWN Production Company, LLC		30/480
6)	03-0B42-0064-0000-0000	Ralph O. Smith and Gina L. Smith	Ralph O. Smith and Gina L. Smith	Great Lakes Energy Partners, L.L.C.	12.50%	10/76
				SWN Production Company, LLC		30/480
			Ralph O. Smith and Gina L. Smith	Chesapeake Appalachia, L.L.C.	18.00%	18/524
				SWN Production Company, LLC		30/480
			Patricia Cumberledge and George Cumberledge, wife and husband	Chesapeake Appalachia, L.L.C.	18.00%	27/390
				SWN Production Company, LLC		30/480
			Patricia Cumberledge and George Cumberledge, wife and husband	Chesapeake Appalachia, L.L.C.	18.00%	27/395
				SWN Production Company, LLC		30/480
			Walter E. Masters, Jr. and Madge Masters	Chesapeake Appalachia, L.L.C.	18.00%	28/44
				SWN Production Company, LLC		30/480

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
Linda Greathouse BRK 206H
Brooke County, West Virginia

		Carol J. Silaghi	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	27/737 30/480
		Eileen L. McMahon	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	27/585 30/480
		Bruce W. Jackson and Ruth L. Jackson	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	27/725 30/480
		Family Tree Corporation	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	27/731 30/480
		Kenneth Noble and Marjory J. Noble	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/363 30/480
		Barbara E. Miller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/369 30/480
		Franklin D. Dollarhide and Marilyn Stewart Dollarhide	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/447 30/480
		Douglas E. Stewart and Mary Stewart	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/342 30/480
		Kenneth L. Miller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/321 30/480
		Kathryn L. Miller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/326 30/480
		Richard E. Miller and Tambre Miller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	28/459 30/480
		Joseph E. Masters	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	29/435 30/480
		Craig A. Yoho and Donna K. Yoho	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	29/442 30/480
		Jeffery Paul Stewart	SWN Production Company, LLC	18.00%	35/685
		Melanie Diane Stewart	SWN Production Company, LLC	18.00%	38/53
		Thomas Maurice Stewart	SWN Production Company, LLC	18.00%	35/679
		Walter Keith Stewart	SWN Production Company, LLC	18.00%	43/154
		William Harry Stewart III	SWN Production Company, LLC	18.00%	46/146
7)	03-0842-0033-0000-0000	Mike Ryniawec	Mike Ryniawec Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	17/757 30/480
8)	03-0842-0034-0000-0000	Mike Ryniawec	Mike Ryniawec Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	17/757 30/480
9)	03-0847-0030-0000-0000	Carol G. Dwyer	Carol G. Dwyer Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	10/100 20/733 10/552 30/480
10)	03-0847-0032-0001-0000	Terry D. Harwatt	Sheila M. Harwatt Chesapeake Appalachia, L.L.C.	18.00%	13/371

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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
Linda Greathouse BRK 206H
Brooke County, West Virginia

11) 03-0B47-0025-0003-0000	Beth A. Hood	Ronald and Beth A. Hood	SWN Production Company, LLC Chesapeake Appalachia, L.L.C.	18.00%	30/480 14/13
	Carol S. Shain	Harry Allen and Carol S. Shain	SWN Production Company, LLC Chesapeake Appalachia, L.L.C.	18.00%	30/480 14/56
	John R. Wilson	John R. and Irene J Wilson	SWN Production Company, LLC Chesapeake Appalachia, L.L.C.	18.00%	30/480 15/302
	Mark W. Wilson	Mark W. and Dawn L. Wilson	SWN Production Company, LLC Chesapeake Appalachia, L.L.C.	18.00%	30/480 14/66
			SWN Production Company, LLC		30/480
12) 03-0B47-0025-0000-0000	Carol Dwyer	Ronald and Beth A. Hood	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	14/13 30/480
		Harry Allen and Carol S. Shain	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	14/56 30/480
		John R. and Irene J Wilson	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	15/302 30/480
		Mark W. and Dawn L. Wilson	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	14/66 30/480
			SWN Production Company, LLC		30/480
13) 03-0B47-0034-0000-0000	Debora Ilene Feist	Debora Ilene Feist	SWN Production Company, LLC	14.00%	35/592
	Susan Catherine Theiss Francis	Susan Catherine Theiss Francis	SWN Production Company, LLC	14.00%	34/154
	Glenn Irwin Francis, Jr.	Glenn Irwin Francis, Jr.	SWN Production Company, LLC	14.00%	42/262
	Susan Irene Roeder	Susan Irene Roeder	SWN Production Company, LLC	14.00%	34/205
	Sarabeth Dilla	Sarabeth Dilla	SWN Production Company, LLC	14.00%	35/577
	Gabriel Feist	Gabriel Feist	SWN Production Company, LLC	14.00%	35/582
	Jonathan Feist	Jonathan Feist	SWN Production Company, LLC	14.00%	35/597
	Danielle Francis	Danielle Francis	SWN Production Company, LLC	14.00%	34/190
	David Francis, Jr.	David Francis, Jr.	SWN Production Company, LLC	14.00%	34/180
	Nicole Francis	Nicole Francis Miller	SWN Production Company, LLC	14.00%	34/185
	Jennifer Lippoli	Jennifer Lippoli	SWN Production Company, LLC	14.00%	34/210
	Jill Murray	Jill Murray	SWN Production Company, LLC	14.00%	34/200
	Amber Snider	Amber Snider	SWN Production Company, LLC	14.00%	34/195
14) 03-0B47-0040-0000-0000	Robert W. Milvet and Edith A. Milvet	Robert W. Milvet and Edith A. Milvet	Chesapeake Appalachia, L.L.C.	18.00%	13/524

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
Linda Greathouse BRK 206H
Brooke County, West Virginia

			SWN Production Company, LLC	30/480
15)	03-0B47-0041-0000-0000	Ronald G. Keller and Donna M. Keller	Ronald G. Keller and Donna M. Keller	18.00% 20/537
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	30/480
16)	03-0B47-0043-0000-0000	Derek J. Ennis and Nicole L. Ennis	Derek and Nicole Ennis	18.00% 12/264
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	30/480
17)	09-L1-0043-0000-0000	Derek J. Ennis and Nicole L. Ennis	Ronald and Beth A. Hood	18.00% 851/591
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	883/599
			Carol S. Shain	18.00% 829/42
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	883/599
			John R. Wilson and Irene J Wilson	18.00% 829/566
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	883/599
			Mark W. Wilson and Dawn Wilson	18.00% 829/37
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	883/599
18)	03-L1-0004-0002-0000	Derek J. Ennis and Nicole L. Ennis	Derek J. Ennis and Nicole L. Ennis	18.00% 869/466
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	883/766
19)	09-WL1-0009-0003-0000	Janice L. Seyler	Renee M. Liedl	18.00% 828/377
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	884/229
20)	09-WL1-0009-0001-0000	Thomas W. Bukovac and Deborah J. Bukovac	Thomas W. Bukovac and Deborah J. Bukovac	18.00% 827/24
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	885/632
21)	09-WL1-0009-0000-0000	Thomas W. Bukovac and Deborah J. Bukovac	Thomas W. Bukovac and Deborah J. Bukovac	18.00% 827/24
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	885/632
22)	09-WL1-0010-0000-0000	Bernard R. Pettit	Bernard R. Pettit	18.00% 813/214
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	887/587
23)	09-WL1-0011-0000-0000	Bernard R. Pettit	Bernard R. Pettit	18.00% 813/238
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	885/176
24)	09-WL1-0007-0000-0000	Bernard R. Pettit	Bernard R. Pettit	18.00% 813/358
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	885/176
25)	09-WL1-0012-0000-0000	Jeffrey W. Ryan and Julie L. Ryan	Jeffrey W. Ryan and Julie L. Ryan	18.00% 951/597
			SWN Production Company, LLC	
26)	09-WL1-0012-0001-0000	Benjamin T. Bordas	Carl D. Hoard	14.00% 804/744
			Chesapeake Appalachia, L.L.C.	
			SWN Production Company, LLC	804/744

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

Date of Notice Certification: 2/19/19

API No. 47- 069 -
Operator's Well No. Linda Greathouse BRK 206H
Well Pad Name: Linda Greathouse PAD

Notice has been given:

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>533,447.37</u>
County: <u>009-Brooke</u>		Northing: <u>4,450,484.49</u>
District: <u>Buffalo</u>	Public Road Access: <u>Hukill Run Road</u>	
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>	
Watershed: <u>Upper Ohio South</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 checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p style="text-align: center;">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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Certification of Notice is hereby given:

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

Well Operator:	<u>SWN Production Co., LLC</u>	Address:	<u>1300 Fort Pierpont Drive, Suite 201</u>
By:	<u>Brittany Woody</u>		<u>Morgantown, WV 26508</u>
Its:	<u>Regulatory Analyst</u>	Facsimile:	<u>304-884-1690</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Brittany_Woody@swn.com</u>



Subscribed and sworn before me this 4th day of February, 2019
Jessica L. VanGilder Notary Public
 My Commission Expires 7-20-20

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.

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WW-6A
(9-13)

API NO. 47- 069 - **4700900278**
OPERATOR WELL NO. **06/14/2019**
Well Pad Name: Linda Greathouse PAD

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

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

Date of Notice: 2/19/19 **Date Permit Application Filed:** 2/19/19

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: Linda Greathouse & Vicki Hamilton
Address: 750 Mountainview Drive
Bethany, Wv 26032
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Consol F/K/A Windsor Coal Company
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
 COAL OPERATOR
Name: _____
Address: _____

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

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: See Attachment #13
Address: _____

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

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

*Please attach additional forms if necessary

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PARCEL_ID	OWNER	ADDRESS	CITY	STATE	ZIP	WATERRESOURCES
03 B370087000000000	GREATHOUSE LINDA REEVES HAMILTON VICKI LYNN	750 MOUNTAINVIEW DR	BETHANY	WV	26032	2
03 B420060000000000	LABELLE FARMS INC	1064 LABELLE FARM LN	WELLSBURG	WV	26070	1

4700900278
06/14/2019

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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.

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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

WV Department of Environmental Protection

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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.**

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47-069 - **06/14/2019**
OPERATOR WELL NO. Linda Greathouse BRK 206H
Well Pad Name: Linda Greathouse PAD

Notice is hereby given by:

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

Brittany Woody

Address: 1300 Fort Pierpont Drive, Suite 201
Morgantown, WV 26508
Facsimile: 304-884-1690

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 4th day of Feb 2019.
Jessica L. Vangilder Notary Public
My Commission Expires 7-20-20

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WV Department of
Environmental Protection

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/19/2018

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)
Name: Vicki Hamilton
Address: 279 Mountainview Drive
Bethany, WV 26032
Name: _____
Address: _____
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Vicki Hamilton
Address: 279 Mountainview Drive
Bethany, WV 26032

MINERAL OWNER(s)
Name: Vicki Hamilton
Address: 279 Mountainview Drive
Bethany, WV 26032
*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>403203952, -80.606638</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Run Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
Telephone: 304-884-1610
Email: dee_southall@swn.com or brittany_woody@swn.com

Address: PO BOX 1300
JANE LEW, WV 26378
Facsimile: 304-884-1690

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Office of Oil and Gas
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WV Department of
Environmental Protection

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.

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/16/2018

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Linda Greathouse
Address: 750 Mountainview Drive
Bethany, WV 26032

Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Linda Greathouse
Address: 750 Mountainview Drive
Bethany, WV 26032

MINERAL OWNER(s)

Name: Linda Greathouse
Address: 750 Mountainview Drive
Bethany, WV 26032

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>403203952, -80.606638</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Run Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
Telephone: 304-884-1610
Email: dee_southall@swn.com or brittany_woody@swn.com

Address: PO BOX 1300
JANE LEW, WV 26378
Facsimile: 304-884-1690

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Office of Oil and Gas
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Oil and Gas Privacy Notice:

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

WV Department of Environmental Protection

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/19/2018

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

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

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

Notice is hereby provided to:

SURFACE OWNER(S)
 Name: _____
 Address: _____

 Name: _____
 Address: _____

 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: The Bethesda Christian Church
 Address: 4708 Hunt Avenue
Chevy Chase, MD 20185

MINERAL OWNER(S)
 Name: The Bethesda Christian Church
 Address: 4708 Hunt Avenue
Chevy Chase, MD 20815
 *please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>403203952, -80.608638</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Run Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
 Telephone: 304-884-1610
 Email: dee_southall@swn.com or brittany_woody@swn.com

Address: PO BOX 1300
JANE LEW, WV 26378
 Facsimile: 304-884-1690

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Oil and Gas Privacy Notice:

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WV Department of Environmental Protection

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/19/2018

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

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

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

Notice is hereby provided to:

SURFACE OWNER(S)
 Name: _____
 Address: _____

 Name: _____
 Address: _____

 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: The National Benevolent Association of the Christian Church
 Address: 1602 Landreth Building ✓
St. Louis, MO 63108

MINERAL OWNER(S)
 Name: The National Benevolent Association of the Christian Church
 Address: 1602 Landreth Building ✓
St. Louis, MO 63108
 *please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>403203952, -80.606638</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Run Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
 Telephone: 304-884-1610
 Email: dee_southall@swn.com or brittany_woody@swn.com

Address: PO BOX 1300
JANE LEW, WV 26378
 Facsimile: 304-884-1690

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WV Department of
Environmental Protection

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/19/2018

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)

Name: _____
Address: _____

Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Kentucky Christian University, INC.
Address: 100 Academic Parkway
Grayson, KY 41143

MINERAL OWNER(s)

Name: Kentucky Christian University, INC.
Address: 100 Academic Parkway
Grayson, KY 41143

*please attach additional forms if necessary

Notice is hereby given:

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

State: West Virginia
County: Brooke
District: Buffalo
Quadrangle: Bethany

Approx. Latitude & Longitude: 403203952, -80.606638
Public Road Access: Hukill Run Road
Watershed: Middle Buffalo Creek
Generally used farm name: Linda Greathouse

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
Telephone: 304-884-1610
Email: dee_southall@swn.com or brittany_woody@swn.com

Address: PO BOX 1300
JANE LEW, WV 26378
Facsimile: 304-884-1690

RECEIVED
Office of Oil and Gas
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WV Department of
Environmental Protection

WW-6A3
(1/12)

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

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

Date of Notice: 2/12/2018 **Date of Planned Entry:** 2/19/2018

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

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

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Notice is hereby provided to:

SURFACE OWNER(s)
Name: _____
Address: _____

Name: _____
Address: _____

Name: _____
Address: _____

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

MINERAL OWNER(s)
Name: _____
Address: _____

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>403203952, -80.606638</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Run Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: <u>SWN PRODUCTION COMPANY, LLC</u>	Address: <u>PO BOX 1300</u>
Telephone: <u>304-884-1610</u>	<u>JANE LEW, WV 26378</u>
Email: <u>dee_southall@swn.com or brittany_woody@swn.com</u>	Facsimile: <u>304-884-1690</u>

Oil and Gas Privacy Notice:

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

**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: 02/04/2019 **Date Permit Application Filed:** 2/19/19

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: Linda Reeves Greathouse & Vicki Lynn Hamilton
Address: 750 Mountainview Dr.
Bethany, WV 26032

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:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>533,447.37</u>
County:	<u>Brooke</u>		Northing:	<u>4,450,484.49</u>
District:	<u>Buffalo</u>	Public Road Access:		<u>Hukill Run Rd</u>
Quadrangle:	<u>Bethany</u>	Generally used farm name:		<u>Linda Greathouse BRK</u>
Watershed:	<u>Upper Ohio South</u>			

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: SWN Production Company, LLC
Address: 1300 Fort Pierpont Drive
Morgantown, WV 26508
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Authorized Representative: Mike Yates
Address: 1300 Fort Pierpont Drive
Morgantown, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

RECEIVED
Office of Oil and Gas
FEB 20 2019

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.

WV Department of
Environmental Protection

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

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

Date of Notice: 02/04/2019 **Date Permit Application Filed:** 2/19/19

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

- CERTIFIED MAIL HAND
- RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Linda Reeves Greathouse & Vicki Lynn Hamilton
Address: 750 Mountainview Dr.
Bethany, WV 26032

Name: _____
Address: _____

Notice is hereby given:

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

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>533,447.37</u>
County: <u>Brooke</u>	Northing: <u>4,450,484.49</u>
District: <u>Buffalo</u>	Public Road Access: <u>Hukill Run Rd</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Linda Greathouse BRK</u>
Watershed: <u>Upper Ohio South</u>	

This Notice Shall Include:

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

Well Operator: SWN Production Company, LLC
Telephone: 304-517-6603
Email: Michael_Yates@swn.com

Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
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 and Gas
FEB 20 2019
WV Department of
Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

February 7, 2019

Jill M. Newman
Deputy Commissioner

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 Linda Greathouse Pad, Brooke County
Linda Greathouse BRK 206H

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2011-0232 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Brooke County Route 30 SLS.

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

Very Truly Yours,

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

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

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Office of Oil and Gas

FEB 20 2019

WV Department of
Environmental Protection

		Frac Additives		Rev 6/21/2018
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	06/14/2019	
		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	
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary	
		Ethylene Glycol	107-21-1	
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8	
		Propenoic acid, polymer with propenamide	9003-06 9	
AI-303 (U.S. Well Services)	Mixture	Ethylene glycol	107-21 1	
		Cinnamaldehyde	104-55 2	
		Butyl cellosolve	111-76 2	
		Formic acid	64-18 6	
		Polyether	Proprietary	
		Acetophenone, thiourea, formaldehyde polymer	68527-49 1	
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0	
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8	
Econo-CI200 (SWN Well Services)	Corrosion Inhibitor	Methanol	67-56-1	
		Oxyalkylated fatty acid	68951-67-7	
		Fatty acids	61790-12-3	
		Modified thiourea polymer	68527-49-1	
		Water	7732-18-5	
		Hydrochloric acid	7647-01-0	
		Potassium acetate	127-08-2	
		Formaldehyde	50-00-0	
Ecopol-FEAC (SWN Well Services)	Iron Control	Acetic Acid	64-19-7	
		Citric Acid	77-92-9	
		Water	7732-18-5	
HCL (SWN Well Services)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0	
		Water	7732-18-5	
FLOJET DRP 1130X (SWN Well Services)	Friction Reducer	Proprietary	Proprietary	
FLOJET DR900 LPP (SWN Well Services)	Friction Reducer	Distillates (petroleum) hydrotreated light	64674-47-8	
		Ethylene Glycol	107-21-1	
		Alcohols, C12-16, Exoxylated propoxylated	68213-24-1	
		Fatty Alcohols ethoxylated	Proprietary	
		Water	7732-18-5	
FR-76 (Halliburton)	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	
		Inorganic Salt	Proprietary	
HAI-150E (Halliburton)	Corrosion Inhibitor	No hazardous substance	N/A	
FDP-S1176-15 (Halliburton)	Friction Reducer	Polyacrylate	Proprietary	
		Hydrotreated light petroleum distillate	64742-47-8	
LP-65 MC (Halliburton)	Scale Inhibitor	Organic phosphonate	Proprietary	
		Ammonium Chloride	12125-02-9	
CarboNRT	Tracer	Ceramic Proppant	66402-68-4	

RECEIVED
Office of Oil and Gas

FEB 20 2019

WV Department of
Environmental Protection



**WVDEP OOG
ACCEPTED AS-BUILT**
3/5/2019



LINDA GREATHOUSE PAD CONSTRUCTION AS-BUILT BUFFALO DISTRICT, BROOKE COUNTY, WV MARCH 2018

COORDINATES:
SITE ENTRANCE
(NAD 83)
LAT: 40.206381
LONG: -80.619968

AT GREATHOUSE PAD
(NAD 83)
LAT: 40.204706
LONG: -80.607170

CENTER OF PAD
(NAD 83)
LAT: 40.203927
LONG: -80.606581

GATHERING AREA
(NAD 83)
LAT: 40.206449
LONG: -80.619870

EXISTING WELLS:
GREATHOUSE 1H
(NAD 83)
LAT: 40.204117
LONG: -80.607028

GREATHOUSE 3H
(NAD 83)
LAT: 40.204164
LONG: -80.606985

GREATHOUSE 5H
(NAD 83)
LAT: 40.204138
LONG: -80.606940

GREATHOUSE 205H
(NAD 83)
LAT: 40.204119
LONG: -80.606904

PROPOSED WELLS:
GREATHOUSE 6H
(NAD 83)
LAT: 40.204075
LONG: -80.606947

GREATHOUSE 8H
(NAD 83)
LAT: 40.204030
LONG: -80.606866

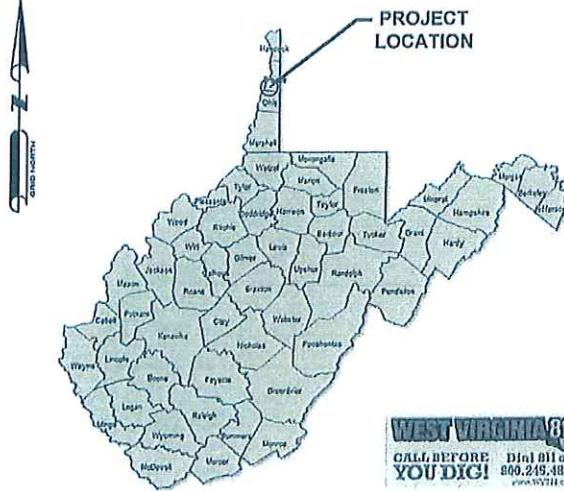
GREATHOUSE 10H
(NAD 83)
LAT: 40.204052
LONG: -80.606907

GREATHOUSE 206H
(NAD 83)
LAT: 40.204097
LONG: -80.606988

SHEET INDEX

C-001	COVER SHEET
C-101	EVACUATION ROUTE / PREVAILING WINDS
C-102	EVACUATION ROUTE / PREVAILING WINDS
C-201	AS-BUILT / CONSTRUCTION OVERVIEW
C-301	AS-BUILT / CONSTRUCTION PLAN
C-302	AS-BUILT / CONSTRUCTION PLAN
C-303	AS-BUILT / CONSTRUCTION PLAN
C-304	AS-BUILT / CONSTRUCTION PLAN
C-305	AS-BUILT / CONSTRUCTION PLAN
C-306	AS-BUILT / CONSTRUCTION PLAN
C-401	CONSTRUCTION AS-BUILT ACCESS ROAD PROFILE
R-501	RECLAMATION PLAN OVERVIEW
R-601	RECLAMATION PLAN
R-602	RECLAMATION PLAN
R-603	RECLAMATION PLAN
R-604	RECLAMATION PLAN
R-605	RECLAMATION PLAN
R-606	RECLAMATION PLAN
R-607	RECLAMATION DETAILS
R-608	RECLAMATION DETAILS
R-609	RECLAMATION DETAILS

REVISION	DATE
1 FOR SUBMISSION	2018-03-08

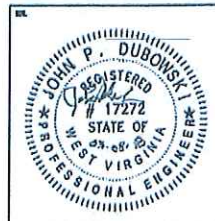


EAD
3.15.18

EXISTING API NUMBERS
47-009-00097
47-009-00155
47-009-00156
47-009-00157

LOD	
DESCRIPTION	ACRES
ROAD DISTURBED AREA	19.77
PAD DISTURBED AREA	9.64
TOTAL	29.41

QUANTITIES TABLE			
PREDRILLING	QTY./SIZE	RECLAMATION	QTY./SIZE
ROAD OVER BERM	23CY of #57 STONE	DISCHARGE AREAS RIPRAP	AASHTO #3 = 18 CY RIPRAP D50 6" = 70 CY
CATCH BASINS	N/A	BREACH AREAS	3 EA.
4" PVC DRAIN PIPES	N/A	WELL CELLARS - 60" CMP	4 EA.
4" STEEL GATE VALVE	N/A		
ANTI-SEEP COLLARS	N/A		
OUTLET PROTECTION	AASHTO #3 = 1.25 CY RIPRAP D50 6" = 3.75 CY		



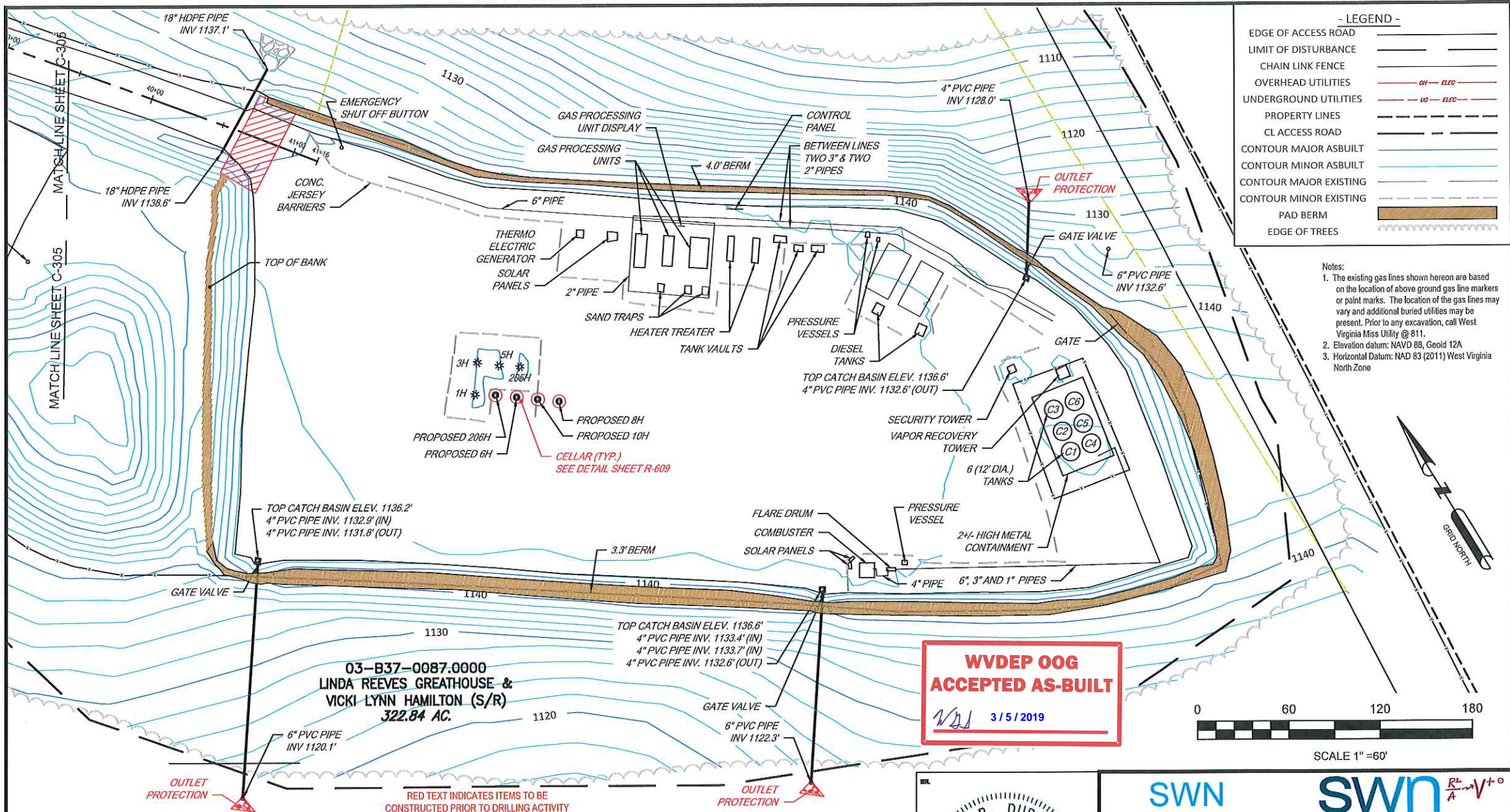
SWN
Production Company, LLC

SWN
Production Company™

**LINDA GREATHOUSE
COVER SHEET C-001
BUFFALO DISTRICT, BROOKE COUNTY, WV.**

DATE	03-05-18	DESIGNED	JPD	DATE	03-05-18	APPROVED	JPD
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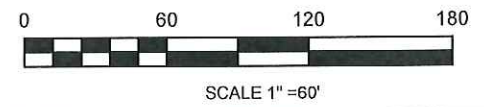
2018-204 Linda Greathouse As-Built Plans.dwg



- LEGEND -

EDGE OF ACCESS ROAD	---
LIMIT OF DISTURBANCE	---
CHAIN LINK FENCE	---
OVERHEAD UTILITIES	--- ON --- ELEC ---
UNDERGROUND UTILITIES	--- US --- ELEC ---
PROPERTY LINES	---
CL ACCESS ROAD	---
CONTOUR MAJOR ASBUILT	---
CONTOUR MINOR ASBUILT	---
CONTOUR MAJOR EXISTING	---
CONTOUR MINOR EXISTING	---
PAD BERM	---
EDGE OF TREES	---

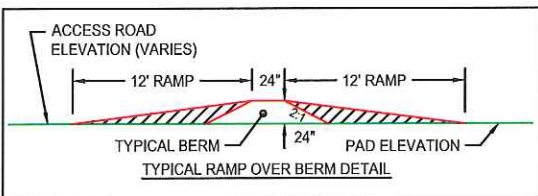
- Notes:
1. The existing gas lines shown hereon are based on the location of above ground gas line markers or paint marks. The location of the gas lines may vary and additional buried utilities may be present. Prior to any excavation, call West Virginia Miss Utility @ 811.
 2. Elevation datum: NAVD 88, Geoid 12A
 3. Horizontal Datum: NAD 83 (2011) West Virginia North Zone



03-B37-0087.0000
LINDA REEVES GREATHOUSE &
VICKI LYNN HAMILTON (S/R)
322.84 AC.

**WVDEP OOG
ACCEPTED AS-BUILT**
WJD 3/5/2019

RED TEXT INDICATES ITEMS TO BE
CONSTRUCTED PRIOR TO DRILLING ACTIVITY



PRODUCTION TANKS (UTM METERS)		
C1	N:4,450,416.666	E:533,540.987
C2	N:4,450,420.950	E:533,541.632
C3	N:4,450,425.617	E:533,542.334
C4	N:4,450,416.017	E:533,545.367
C5	N:4,450,420.290	E:533,546.013
C6	N:4,450,424.964	E:533,546.720



SWN
Production Company, LLC

SWN ^{R²} ^{V⁺} ⁰
Production Company™

**LINDA GREATHOUSE
AS-BUILT / CONSTRUCTION PLAN C-306
BUFFALO DISTRICT, BROOKE COUNTY, WV.**

DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
JDK	03-08-18	JPD	03-08-18	JPD	03-08-18

DRAWING: 2018-204 Linda Greathouse As-Built Plans.dwg