



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Friday, October 13, 2023
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for Betty Schafer MSH 5H
47-051-02506-00-00

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: Betty Schafer MSH 5H
Farm Name: Roy A Schafer Jr & Edward J Sr
U.S. WELL NUMBER: 47-051-02506-00-00
Horizontal 6A New Drill
Date Issued: 10/13/2023

Promoting a healthy environment.

10/13/2023

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. 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. Also, 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.
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 051-Marshall 6-Sand 486-Moundsville
Operator ID County District Quadrangle

2) Operator's Well Number: Betty Schafer MSH 5H Well Pad Name: Betty Schafer MSH

3) Farm Name/Surface Owner: Roy A. Schafer & Edward J. Schafer Public Road Access: Big Wheeling Creek

4) Elevation, current ground: 848.4' Elevation, proposed post-construction: 848.4'

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5973', Target Base TVD- 6024', Anticipated Thickness- 51', Associated Pressure- 3915

8) Proposed Total Vertical Depth: 6004'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 22030'

11) Proposed Horizontal Leg Length: 13178.17'

12) Approximate Fresh Water Strata Depths: 281'

13) Method to Determine Fresh Water Depths: Salinity calculations from Betty Schafer MSH 210H API 47-051-01777

14) Approximate Saltwater Depths: 803'

15) Approximate Coal Seam Depths: 352'

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

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




(a) If Yes, provide Mine Info: Name: Ohio County Mine
Depth: 352'
Seam: Pittsburgh
Owner: American Consolidated Natural Resources

John Brown
7/28/2023

4705102506

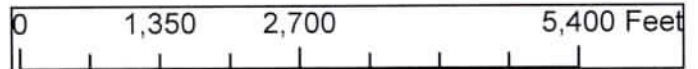


Legend

-  1000ft Radius
-  BettySchaferMSHPad1
-  Coal Mining



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WW-6B
(04/15)

4705102506
API NO. 47-051
OPERATOR WELL NO. Betty Schafer MSH 5H
Well Pad Name: Betty Schafer MSH

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	136'	136'	CTS
Fresh Water	13 3/8"	New	J-55	54.4#	385'	385'	437 sx/CTS
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1710'	1710'	690 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	22030'	22030'	Tail 4125sx/ 100' Inside Intermediate
Tubing							
Liners							

WJK-JK SG
10/13/23

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	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Surface	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				RECEIVED Office of Oil and Gas
Sizes:				OCT 13 2023
Depths Set:				WV Department of Environmental Protection

WW-6B
(10/14)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 5H
Well Pad Name: Betty Schafer MSH

4705102506

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. In some instances, additional toe prep may be performed by pumping additional water in the toe of the well prior to perforating and pumping Stage 1 to ensure that the toe guns/toe sleeves are fully open prior to pumping stage 1. The well is produced through surface facilities consisting of high pressure production units, horizontal separation units, water and oil storage tanks. Max press and anticipated max rate- 12,500 psi @ 100 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 7.82

22) Area to be disturbed for well pad only, less access road (acres): 2.99

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.

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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.

*Note: Attach additional sheets as needed.

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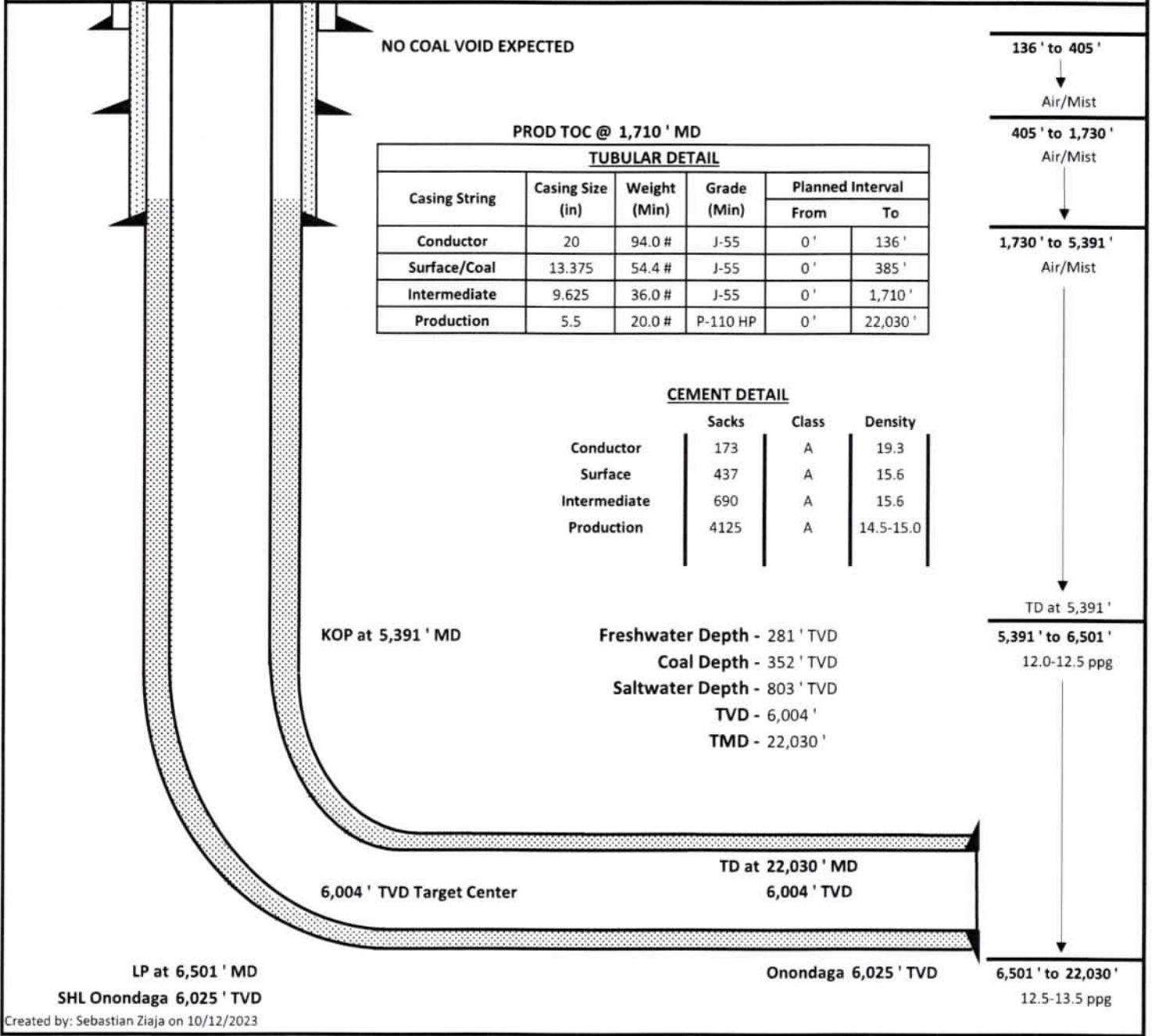
CEMENT ADDITIVES						
INTERVAL	SCHLUMBERGER PRODUCT NAME	BJ PRODUCT NAME	NEXTier PRODUCT NAME	PRODUCT USE	CHEMICAL NAME	CAS-Number
SURFACE (FRESHWATER)	XXXXXXXXXX	INTEGRA SEAL	CJ600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	S001	A-7P	0110	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
COAL PROTECTION	XXXXXXXXXX	INTEGRA SEAL	0600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	S001	A-7P	CJ10	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
INTERMEDIATE	D020	BENTONITE	CJ020	EXTENDER	BENTONITE	1302-78-9
	0047	FP 28L	XXXXXXXXXX	LIQUID ANTIFOAM AGENT	POLYPROPYLENE GLYCOL	25322-69-4
	XXXXXXXXXX	INTEGRA SEAL	CJ600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	CemNet	XXXXXXXXXX	XXXXXXXXXX	LOST CIRC MATERIAL	COATED FIBERGLASS FIBERS	PROPRIETARY
	SUGAR	SUGAR	CJ795	CMT RETARDER	SUCROSE	57-50-1
	S001	A-7P	CJ110	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
PRODUCTION	XXXXXXXXXX	XXXXXXXXXX	CJ11	ACCELERATOR	SODIUM CHLORIDE	7440-23-5
	XXXXXXXXXX	55-IIW	0880	SURFACTANT	NONIONIC SURFACTANT	6540-99-4
	D047	FP 28L	XXXXXXXXXX	LIQUID ANTIFOAM AGENT	POLYPROPYLENE GLYCOL	25322-69-4
	XXXXXXXXXX	XXXXXXXXXX	OX157011	SOLID ANTIFOAM AGENT	FULLERS EARTH(ATTAPULGITE)	8031-18-3
	XXXXXXXXXX	XXXXXXXXXX	CJ540	HP FLUID LOSS ADDITIVE	ALIPHATICAMIDE POLYMER	PROPRIETARY
	0255	XXXXXXXXXX	XXXXXXXXXX	MED TEMP FLUID LOSS ADDITIVE	POLYACRILIC POLYMER	PROPRIETARY
	XXXXXXXXXX	XXXXXXXXXX	CJ213	RETARDER	CHRYSTALLINE SILICA	14808-60-7
	XXXXXXXXXX	FL-66	0501	LOW TEMP FLUID LOSS ADD	POWDERED POLYSACCHARIDE	PROPRIETARY
	XXXXXXXXXX	BENTONITE	CJ020	EXTENDER	BENTONITE	1302-78-9
	D208	ASA-301	XXXXXXXXXX	VISCOFIER/ANTI-SETTLING AGENT	REFINED POLYMER/CHRYSTALLINE SILICA	PROPRIETARY
	D198	R-3	XXXXXXXXXX	CEMENT RETARDER	LIGNIN	8068-51-6
	SUGAR	SUGAR	CJ795	CEMENT RETARDER	SUCROSE	57-50-1
	D065	XXXXXXXXXX	XXXXXXXXXX	DISPERSANT	SODIUM POLYNAPHTHALENE SULFONATE	8068-51-6
D800	XXXXXXXXXX	XXXXXXXXXX	CEMENT RETARDER (Mid-Temperature)	SODIUM LIGNOSULFONATE	8061-51-6	

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Southwestern Energy Company		Proposed Drilling Program	
Well:	BETTY SCHAFFER MSH 5	Re-entry Rig:	SDC 40
Field:	PANHANDLE FIELD WET	Prospect:	Marcellus Shale
County:	MARSHALL	State:	WV
SHL (NAD83):	39.990893 Latitude	-80.635562 Longitude	
BHL (NAD83):	40.030805 Latitude	-80.655693 Longitude	
KB Elev:	875 ft MSL	KB: 26 ft AGL	GL Elev: 849 ft MSL



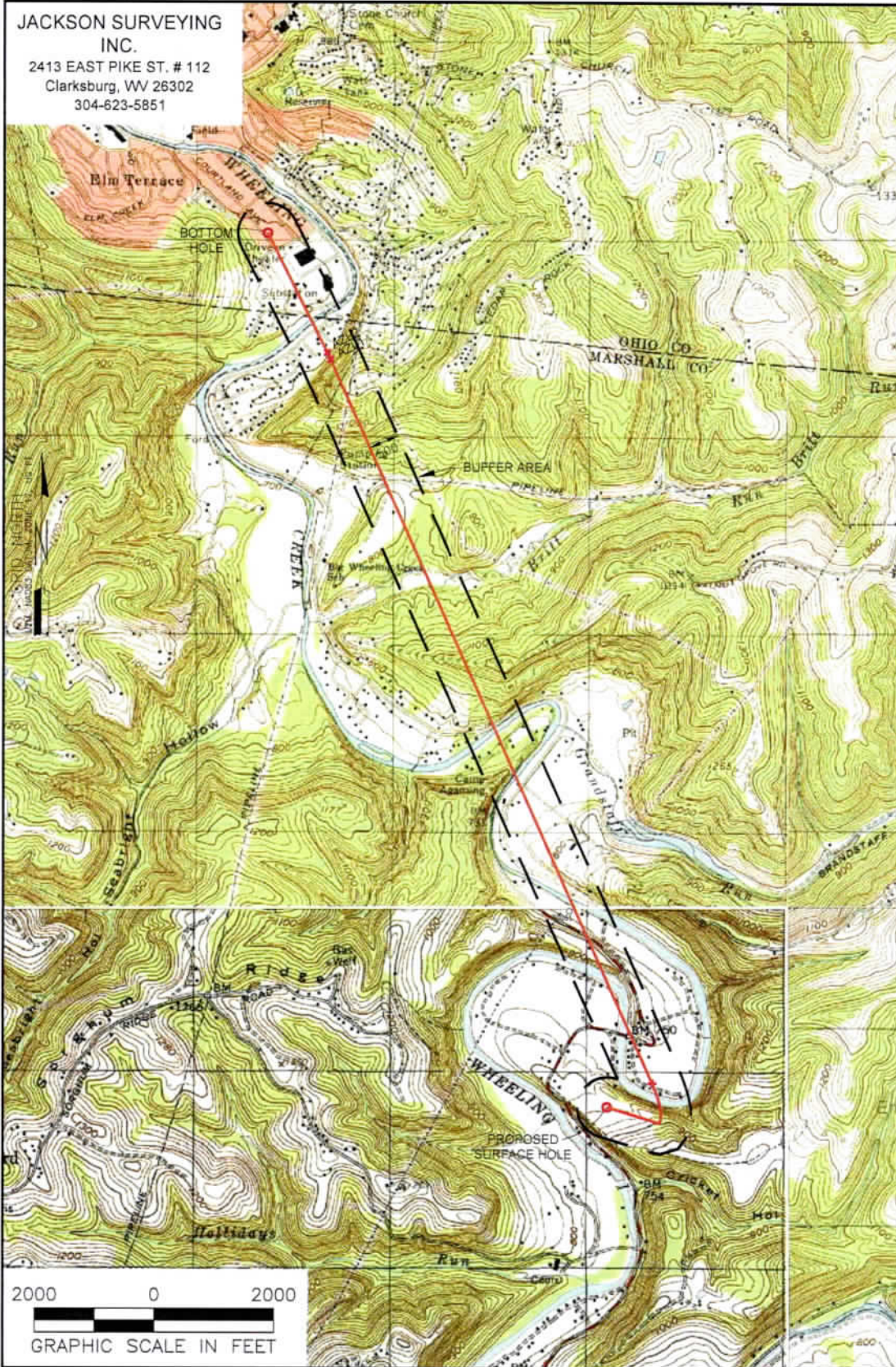
Created by: Sebastian Ziaja on 10/12/2023

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**JACKSON SURVEYING
INC.**
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851



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<p>NOTES ON SURVEY</p> <p>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.</p> <p>2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.</p> <p>4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.</p>			
<p>LEGEND:</p> <ul style="list-style-type: none"> ● 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 			
<p>WELL OPERATOR: SWN PRODUCTION COMPANY, LLC</p> <p>ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508</p> <p>SURFACE OWNER: ROY A. SCHAFER JR. & EDWARD J. SCHAFER</p>		<p>WELL (FARM) NAME: BETTY SCHAFER MSH</p> <p>COUNTY - CODE: MARSHALL - 051</p> <p>USGS 7 1/2 QUADRANGLE MAP NAME: MOUNDSVILLE, WV</p>	
<p>WELL # 5H</p> <p>SERIAL #</p>		<p>DISTRICT: SAND HILL</p> <p>API # 47-051-</p>	
<p>2\2023 BACKUPS\1-02-23 21\SWN\BETTY SCHAFER\BETTY SCHAFER.WELL PLAT\SH\FINAL\B SCHAFER MSH SH 8-29-23\B. SCHAFER MSH SH WELL PLAT PROPERTY NUMBER 2501171 THURSDAY JUNE 29 2023 01:11PM</p>			

10/13/2023

Betty Schafer MSH 5H AOR

API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
051-70061	Unknown	Unknown	***	***	904'	2nd Cow Run	***

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WW-9
(4/16)

API Number 47 - 051 -
Operator's Well No. Betty Schafer MSH 5H

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) Wheeling Creek Quadrangle Moundsville

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 Various Approved Facilities
- Reuse (at API Number At the next anticipated well
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain recovery and solidification on site

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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 SOBMs 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
Apex Sanitary Landfill 06-08438, Brooke Co SWF-1013, FMS 353100

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 Staff Regulatory Specialist

Subscribed and sworn before me this 22 day of June, 20 23

Elizabeth Blankenship Notary Public
My commission expires 6/23/2024



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Form WW-9

Operator's Well No. Betty Schafer MSH 5H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 7.82 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 2.99

Fertilizer type 10-20-20

Fertilizer amount 600/500 lbs/acre

Mulch Hay/Straw Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

Attachment 3C

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
<u>Attachment 3C</u>			

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

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Title: Oil & Gas Inspector

Date: 7/20/2023

Field Reviewed? Yes No

10/13/2023

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 a Shale Gas Separator, 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 highly weighted 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 haul off to an approved landfill site. (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 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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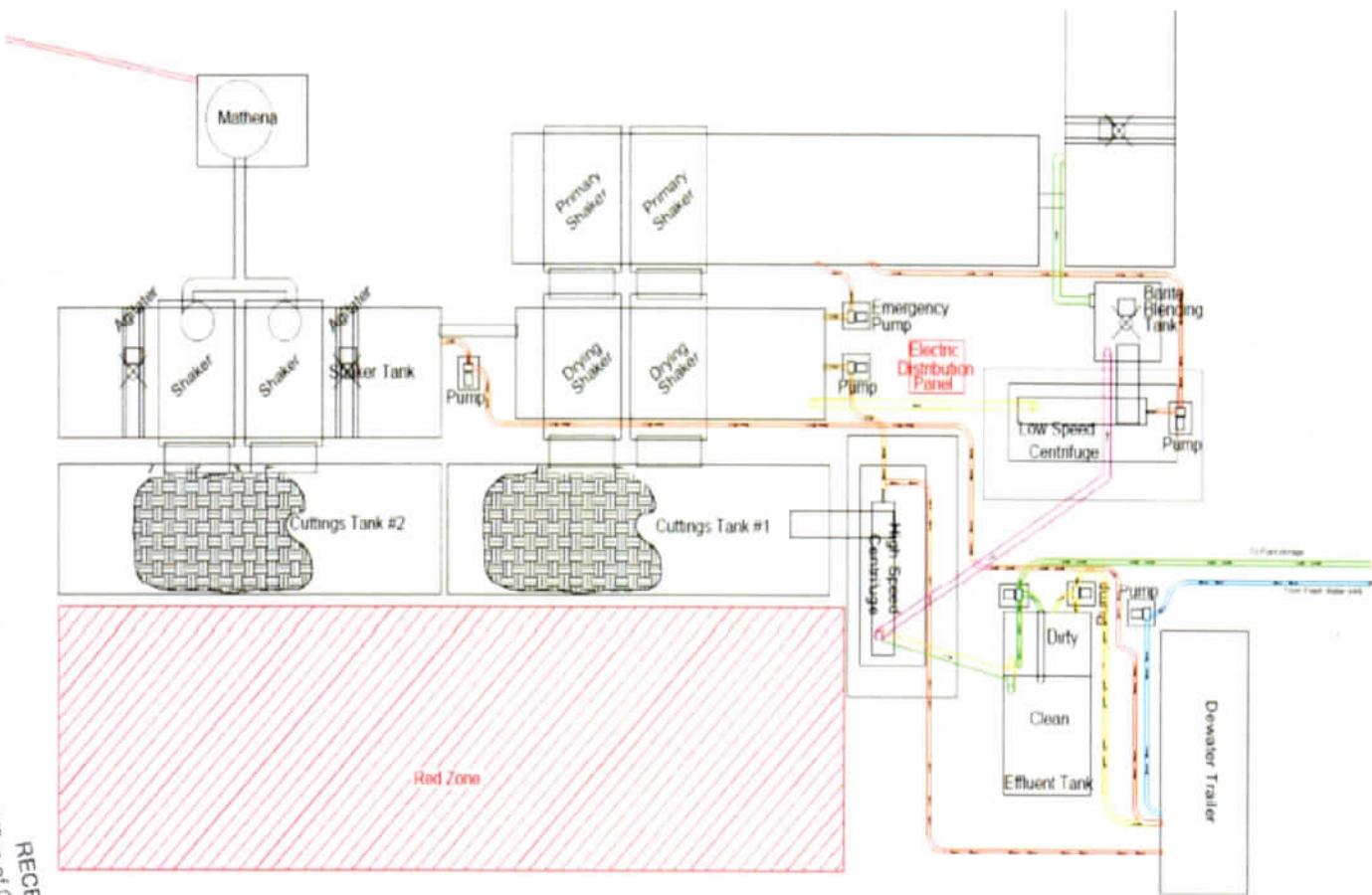
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Solids Control Layout



EXAMPLE SCHEMATIC FOR CLOSED LOOP SOLIDS CONTROL SYSTEM



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8.30.2022

Attachment 3B
Drilling Mediums

Surface/Coal(if present)/Freshwater Intervals:

Air

Freshwater (if needed based on conditions)

Intermediate/Coal (if present):

Air

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 Flipppo office 570-996-4271 cell 501-269-5451 lyndsi_eddy@swn.com (please allow 7 to 10 days for delivery)

NON-ORGANIC PROPERTIES	
Seed Mixture: ROW Mix	SWN Supplied
Orchardgrass	40%
Timothy	15%
Annual Ryegrass	15%
Brown Top Millet	5%
Red Top	5%
Medium Red Clover	5%
White Clover	5%
Birdsfoot Trefoil	5%
Rough Bluegrass	5%
All legumes are inoculated at 5x normal rate	
Apply @ 100lbs per acre April 16th- Oct. 14th	
Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat	

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

Seeding Calculation Information:

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

Synopsis:

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

Special Considerations:

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

ORGANIC PROPERTIES	
Seed Mixture: SWN Production Organic Mix	SWN Supplied
Organic Timothy	50%
Organic Red or White Clover	50%
OR	
Organic Perennial Ryegrass	50%
Organic Red or White Clover	50%
Apply @ 100lbs per acre April 16th- Oct. 14th	
Apply @ 200lbs per acre Oct. 15th- April 15th	
Organic Fertilizer @ 200lbs per Acre	Pelletized Lime @ 2 Tons per Acre

WETLANDS (delineated as jurisdictional wetlands)	
Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%
Apply @ 25lbs per acre April 16th- Oct. 14th	
Apply @ 50lbs per acre Oct. 15th- April 15th	
NO FERTILIZER OR LIME INSIDE WETLAND LIMITS	

RECEIVED
 Office of Oil and Gas
 SEP 08 2023
 WV Department of
 Environmental Protection

4705102506

MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN

4705102506



SWN Production Company, LLC
1300 Fort Pierpont Drive, Suite 201
Morgantown, West Virginia 26508

API NO. 47-XXX-XXXXX
WELL NAME: Betty Schafer MSH 5H
Moundsville QUAD
Sand Hill DISTRICT
MARSHALL COUNTY, WEST VIRGINIA

Submitted by:

Name: Brittany Woody

Date: 6/15/2023

Brittany Woody

Title: Staff Regulatory Specialist

SWN Production Co., LLC

Approved by:

Name: *Steve Gano*

Date: 7/20/2023

Title: *Oil + Gas Inspector*

Approved by:

Name: _____

Date: _____

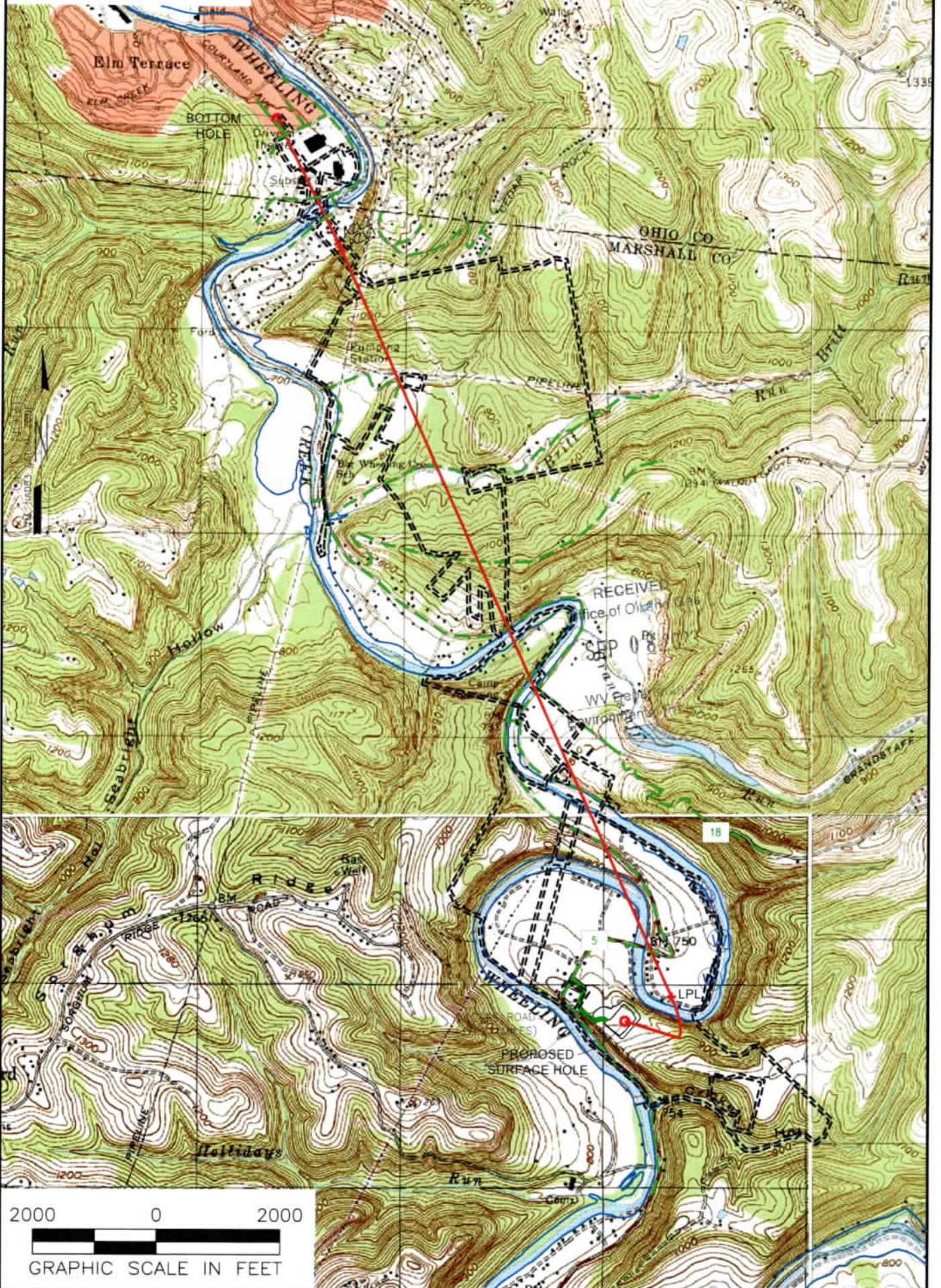
Title: _____

RECEIVED
Office of Oil and Gas
SEP 08 2023
WV Department of
Environmental Protection

SWN PRODUCTION COMPANY, LLC – CONFIDENTIAL

10/13/2023

**JACKSON SURVEYING
INC.**
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851



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.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

	PROPOSED SURFACE HOLE / BOTTOM HOLE		ACCESS ROAD
	EXISTING / PRODUCING WELLHEAD		ACCESS ROAD AT FRESH SITE
	LANDING POINT LOCATION		LEASE BOUNDARY
	FLOOD PLAIN		PROPOSED PATH

10/13/2023

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: BETTY SCHAFER MSH	WELL # 5H	SERIAL #
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508	COUNTY - CODE MARSHALL - 051	DISTRICT; SAND HILL	
SURFACE OWNER: ROY A. SCHAFER JR. & EDWARD J. SCHAFER	USGS 7 1/2 QUADRANGLE MAP NAME MOUNDSVILLE, WV	API # 47-051-	

Latitude: 40°00'00" SURFACE HOLE 2959'

**JACKSON SURVEYING
INC.**
2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

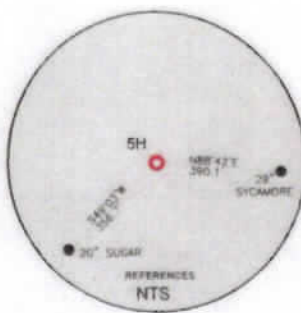
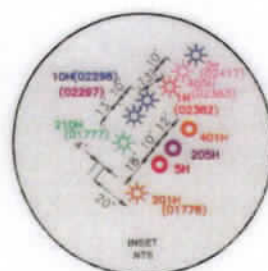
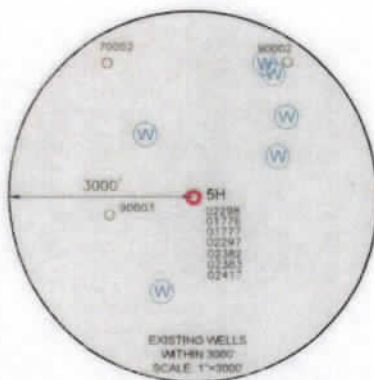
Latitude: 40°02'30"

BOTTOM HOLE 8594'

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS) NORTHING: 4,426,810.010 EASTING: 531,112.508
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS) NORTHING: 4,426,930.476 EASTING: 531,343.126
AZIMUTH POINT LOCATION-1 (AZL1):
UTM (NAD83, ZONE 17, METERS) NORTHING: 4,430,694.743 EASTING: 529,697.786
AZIMUTH POINT LOCATION-2 (AZL2):
UTM (NAD83, ZONE 17, METERS) NORTHING: 4,430,630.374 EASTING: 529,680.808
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS) NORTHING: 4,431,233.026 EASTING: 529,376.751

GRID: NORTH
LTM, NAD83 DATUM, ZONE 17, US FT

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 73°28'17" W	818.52'	SHL TO LANDMARK	FD, 5/8" REBAR
L2	S 58°27'51" E	1692.78'	SHL TO LANDMARK	FD, 5/8" REBAR
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
3	N 62°25'09" E	853.63'	1996.00'	SHL TO LPL
4	N 25°26'50" W	129.50'	129.50'	AZL1 TO AZL2



WELL RESTRICTIONS

- NO REQUIRED DISTANCES > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD
- NO AGRICULTURE BUILDINGS > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD
- NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL
- NO PERIPHERAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE
- NO NATURALLY PRODUCING TIGHT STRIAM WITHIN 100 FEET OF LIMITS OF DISTURBANCE
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, 1 & 2 CONTROLS OR PUBLIC WATER SUPPLY

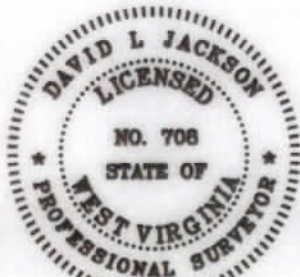
NOTES ON SURVEY

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

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. 708

David L Jackson



COMPANY: **SWN** Production Company, LLC

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)

BETTY SCHAFER MSH
OPERATOR'S WELL #: 5H
API WELL #: 47 STATE 051 COUNTY D2506 PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW
WATERSHED: WHEELING CREEK (HUC-10) ELEVATION: 848.6'
DISTRICT: SAND HILL COUNTY: MARSHALL QUADRANGLE: MOUNDSVILLE, WV
SURFACE OWNER: ROY A. SCHAFER JR. & EDWARD J. SCHAFER ACREAGE: ±205.06
OIL & GAS ROYALTY OWNER: ROY A. SCHAFER JR. & EDWARD J. SCHAFER ACREAGE: ±205.06
DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,000 FT

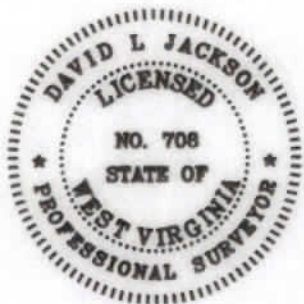
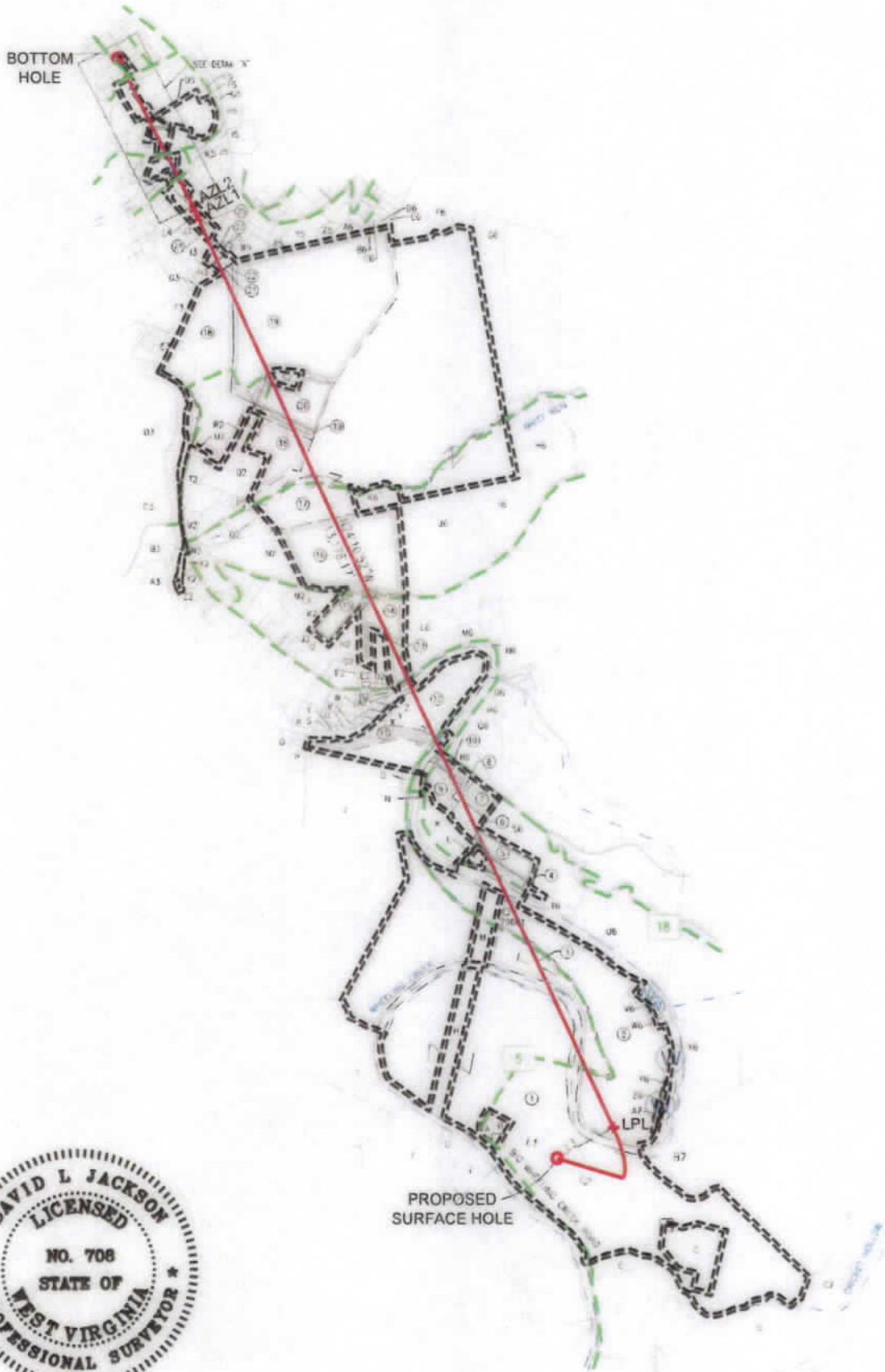
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	— SURVEYED BOUNDARY	— DRILLED UNIT
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— EXISTING / PROPOSED WELLHEAD	— LEASE BOUNDARY
★ LPL: LANDING POINT LOCATION	— PROPOSED PATH	
⊙ EXISTING WATER WELL		
⊙ EXISTING SPRING		

REVISIONS:	DATE: 06-29-2023
	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	WELL LOCATION PLAT

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

4705102506



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. 708

David L. Jackson

2000 0 2000



GRAPHIC SCALE IN FEET

REVISIONS:

COMPANY:

SWN
 Production Company LLC

SWN
 Production Company™

10/13/2023

OPERATOR'S BETTY SCHAFER MSH

API #

DATE: 06-29-2023

WELL #: 5H

47-051-

DRAWN BY: N. MANO

DISTRICT: SAND HILL

COUNTY: MARSHALL

STATE: WV

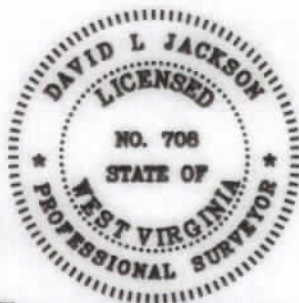
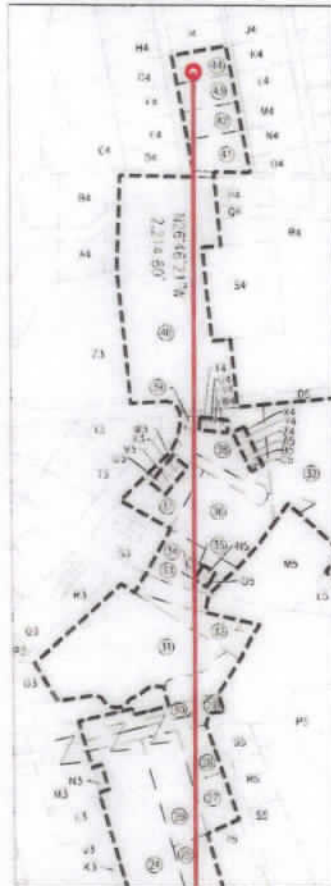
SCALE: 1" = 2000'

DRAWING NO:
 WELL LOCATION PLAT 2

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

4705102506



DETAIL "A"



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. 708 *David L Jackson*



10/13/2023

REVISIONS:	COMPANY:	 		
	OPERATOR'S	BETTY SCHAFER MSH	API #	DATE: 06-29-2023
	WELL #:	5H	47-051-	DRAWN BY: N. MANO
	DISTRICT:	SAND HILL	COUNTY:	SCALE: N/A
			MARSHALL	DRAWING NO:
			STATE:	WELL LOCATION PLAT 3
			WV	

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

4705102506

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	SCHAFER ROY A JR & SCHAFER EDWARD J (S/R)	12-9-22
TRACT		
2	GRAY JOHN ALVIN (S)	13-3-14
3	GRAY JARED (S)	13-3-14.7
4	LANGMYER RAYMOND (S)	12-9-4
5	MANNERS NATALIE M (S)	12-9-5.6
6	MANNERS-THIELE NADENE R & CHARLES L THIELE (S)	12-9-5.4
7	TEACOACH JAY M ET UX (S)	12-9-5.3
8	THIELE CHARLES L & NADENE R MANNERS-THIELE (S)	12-9-2.2
9	STRONG GREGORY S & LOUISE M (S)	12-9-2
10	THIELE CHARLES L & NADENE R MANNERS-THIELE (S)	12-9-2.3
11	MAAS BRIAN J & AMY C - TRUST (S)	13-3-8
12	MAAS BRIAN J & AMY C - TRUST (S)	13-3-10
13	WHARTON PETER R ET AL (S)	12-1-34
14	ESTEP DOUGLAS J & LINDA R - TOD (S)	12-1-33.1
15	SLIGAR JOHN WALTER (S)	12-1-39
16	MERCER DARICK B & RENEE A (S)	12-1-32
17	COFFIELD MICHAEL L & TYLENE R (S)	12-1-10
18	SLIGAR KAREN SCHENK (S)	12-1-5
19	HAMILTON MARY SCHENK & GARY P (S)	12-1-5.1
20	HAMILTON MARY SCHENK & GARY P (S)	12-1-5.4
21	ENGINEERED FOUNDATION SOLUTIONS, PLLS	12-1A-94
22	ROMAGNOLI JUDY E (S)	12-1A-23
23	ROMAGNOLI JUDY E (S)	12-1A-25
24	MILLER ROBERT A JR (S)	16-1-28
25	WESTFALL JAMES E JR (S)	16-1-29.1
26	O'HARA MARY R & EDWARD J (S)	16-1-29
27	KANDIS ADRIANNA & SHANE (S)	16-1-32
28	KANDIS ADRIANNA & SHANE (S)	16-1-30
29	WV DEPT OF TRANSPORTATION DIV OF HIGHWAYS (S)	16-1-35.1
30	WV DEPT OF TRANSPORTATION DIV OF HIGHWAYS (S)	16-1-29.2
31	TJG PROPERTIES LLC (S)	13-2-16
32	BOARD OF EDUCATION (S)	10-W96-40.2
33	TJG PROPERTIES LLC (S)	10-W99-4
34	TJG PROPERTIES LLC (S)	10-W99-4.1
35	TJG PROPERTIES LLC (S)	10-W99-4.2
36	TJG PROPERTIES LLC (S)	10-W99-3
37	TJG PROPERTIES LLC & SOLACE PROPERTIES LLC (S)	10-W99-6
38	STEVICK DENISE A (S)	10-W99-7
39	DEPTO MARY V (S)	10-W99-7.1
40	CARDINAL HEALTH 110 LLC (S)	10-W96-39.1
41	KEY ANTHONY JR & BARBARA A (S)	10-W96-32
42	GALARDI RICHARD A (S)	10-W96-27
43	STAN MICHAEL T & DEE (S)	10-W96-22
44	HICKMAN WILLIAM J & THERESA M (S)	10-W96-18

REVISIONS:	COMPANY:	 		DATE: 06-29-2023
	OPERATOR'S	BETTY SCHAFER MSH	API #	DRAWN BY: N. MAND
	WELL #:	5H	47-051-	SCALE: N/A
	DISTRICT:	SAND HILL	COUNTY:	DRAWING NO:
			MARSHALL	WV
				WELL LOCATION PLAT 4

**JACKSON SURVEYING
INC.**

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

4705102506

ADJOINING OWNERS TABLE			ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL	TRACT	SURFACE OWNER	TAX PARCEL
A	SCHAFFER ROY A JR & SCHAFFER EDWARD J	12-9-23	A4	WOJCIK STEPHEN E III & CRISTI	10-W96-41
B	SCHAFFER ROY A JR & SCHAFFER EDWARD J	12-9-22.1	B4	PEKINSKY CAROLINE B	10-W96-42
C	OHIO COUNTY COAL RESOURCES INC	12-9-22.2	C4	DEI TODD D & STACIE L	10-W95-209
D	FISH PATRICIA A & FREDERICK W	12-10-1.2	D4	MUSSER R M & P (SELLER) MUSSER N M & A L (BUYER)	10-W96-31
E	ROMAN JEWELL L	12-10-1	E4	HUNTER MARILYN DARLENE	10-W96-26
F	HOGG THOMAS G & DONN W ET AL	13-8-3	F4	WHORTON ROBERT D & PAMELA J	10-W95-305
G	HOGG THOMAS G & DONN W ET AL	13-8-4	G4	HICKMAN TAMMY L	10-W95-304
H	SCHAFFER ROY A JR & EDWARD J	12-9-24	H4	BECKER DAVID A & MARY R	10-W95-103
I	HART JOHN J & RENEE A	13-8-2.1	I4	NORMAN JAMES S & SONDRAL K	10-W96-14
J	HART JOHN J & RENEE A	13-8-11	J4	WISE KIMBERLY J & JEFFREY C	10-W96-15
K	LANGMYER SCOTT R & MELANEY F	12-9-3	K4	CRAWFORD FAMILY TRUST	10-W96-19
L	LANGMYER RAYMOND J	12-9-3.1	L4	MARTIN GARY B & E A	10-W96-23
M	GRAY JOHN ALVIN	13-3-13	M4	CHARLEY SHANE & ELIZABETH	10-W96-28
N	LANGMYER SCOTT R & MELANEY F	12-9-2.1	N4	SLEIME THOMAS A & D C	10-W96-33
O	MAAS BRIAN J & AMY C - TRUST	13-3-9	O4	HETZEL LYNN E	10-W96-36
P	MAAS BRIAN J & AMY C - TRUST	13-3-10	P4	DANAHEY MARY MARGARET (LE) DANAHEY U L LEECH D	10-W96-39.3
Q	BONACCI BRIAN F	13-3-5.1	Q4	CARDINAL HEALTH 130 LLC	10-W96-39.4
R	MCADAMS ROBERT E & JODY L	12-18-27.1	R4	CARDINAL HEALTH 130 LLC	10-W96-39
S	MATTUCCI MARK A	12-18-28	S4	CARDINAL HEALTH 130 LLC	10-W96-39.6
T	MATTUCCI MARK A	12-18-28.2	T4	REDDY ELEANOR JEAN - TOD	10-W96-7.2
U	MATTUCCI MARK A	12-18-28.1	U4	RAUSCHER KENNETH L	10-W96-7.3
V	MATTUCCI MARK A	12-18-29	V4	FOSTER MARGARET	10-W96-7.4
W	MALARSKI PETE E ET UX	12-18-34	W4	GRIFFIN BETTY LOU	10-W96-7.5
X	MALARSKI PETE E ET UX	12-18-35	X4	PRINCE AARON MARK	10-W96-7.6
Y	MALARSKI PETE E ET UX	12-18-36	Y4	MCGRAIL EILEEN E	10-W96-7.7
Z	STEGMAN CATHERINE A - TOD	12-18-37	Z4	DEPTO MARY V	10-W96-7.8
A2	STEGMAN CATHERINE A - TOD	12-18-37.1	A5	GARRITANO ADRIANO & DANIELLE R	10-W96-7.9
B2	STEGMAN CATHERINE A - TOD	12-18-38	B5	MURRAY MARION E	10-W96-7.10
C2	WHARTON PETER R ET AL	12-1-34.1	C5	SYMONS JOHN H	10-W96-7.11
D2	WHARTON PETER R ET AL	12-1-35	D5	CARDINAL HEALTH 130 LLC	10-W96-39.5
E2	PATEL SHYAMSUNDAR K	12-1-33	E5	ROBRECHT RICHARD M & SUSAN L	10-W96-43
F2	PATEL SHYAMSUNDAR K	12-1-36	F5	SILO INC C/O ROBINSON RICHARD	6-T178-324
G2	GRIFFITH THOMAS A	12-1-37	G5	SILO INC C/O ROBINSON RICHARD	6-T17-7
H2	ESTEP DOUGLAS J & LINDA R - TOD	12-1-38	H5	MAXWELL SHIRLEY L	6-T178-17
I2	SLIGER NOEL W & CHRISTA M	12-1-39.2	I5	MAXWELL SHIRLEY L & C L JR	6-T178-18
J2	MCCULLLEY JOSEPH DANIEL ET UX	12-1-39.1	J5	FLATLEY R KEVIN	16-1-38
K2	ROMAN EUGENE H	12-1-40.1	K5	FLATLEY R KEVIN	16-1-37
L2	EARNEST ALLEN DOUGLAS	12-1-40	L5	WHEELING POWER CO WHEELING ELECTRIC CO	10-W99-2
M2	HENRY LORI MYLES	12-1-41	M5	WHEELING POWER COMPANY WHEELING ELECTRIC CO	10-W99-1
N2	MARPLE JEFFREY J & BARBARA J	12-1-32.1	N5	TJG PROPERTIES LLC	10-W96-4.3
O2	HIGGINS CONSTANCE L - LIFE	12-1-7.3	O5	TJG PROPERTIES LLC	10-W96-4.4
P2	RUNKLE SHERRY L	12-1-7.2	P5	ATLAS REAL ESTATE	16-1-35.2
Q2	SLIGER KAREN SCHENK & TERRY B	12-1-5.2	Q5	KUNTZ CLESTA - TOD	16-1-31
R2	REARDON SHELLEY S	12-1-5.6	R5	HAYES MARK K & RHONDA J	16-1-33
S2	WETMORE BROOKE L & BRIAN B	12-1-5.5	S5	BURKE JAMES & ANDREA	16-1-67
T2	SLIGER KAREN SCHENK & TERRY B	12-1-6	T5	WESTFALL JAMES E JR & VICKIE	16-1-66
U2	SLIGER KAREN SCHENK & TERRY B	12-1-5.3	U5	ROMAGNOLI JUDY E - TOD	12-1A-27
V2	SIMMS JOYCE A GEER ET AL	12-1-7.4	V5	ROMAGNOLI JUDY E	12-1A-26
W2	SCHAFFER EDWARD J & BRENDA M	12-1-7.1	W5	ROMAGNOLI JUDY E	12-1A-22
X2	HAND WILLIAM L & CARNEY-HAND CHARMINE J	12-18-1	X5	FRANK WILLIAM EMMETT ET UX	12-1A-19.1
Y2	SCHAFFER EDWARD J ET UX	12-18-3	Y5	WARNICK RONALD & ESTHER	12-1A-19
Z2	MOSA BRADLEY J & LEDBETER BEVERLY	12-18-4.1	Z5	BLUST HAROLD F	12-1A-18.2
A3	HUGHES HEIDI SCHENK	13-3-5.2	A6	BLUST HAROLD F	12-1A-67
B3	WHITE HORSE FARM LLC	13-3-6	B6	SNYDER JOHN J ET UX	12-1A-85
C3	WHITE HORSE FARM LLC	13-3-2	C6	SNYDER JOHN J ET UX	12-1A-84
D3	COVENANT COMMUNITY CHURCH TRS	13-2-22	D6	ZDONCZYK ROBIN G	12-1A-83.1
E3	MCCORMICK MARY RITA	16-2-7	E6	SNYDER LONNIE A	12-1A-83
F3	STACEY VILLAGE LTD PARTNERSHIP	16-2-1.1	F6	HARTMAN WALTER L ET UX	12-1-30.1
G3	FARHATT MARY JAYNE	16-1-63	G6	COFFIELD MICHAEL & TYLENE	12-1-47
H3	UNKNOWN	12-1A-24	H6	BARTOLDVICH STEPHEN M	12-1-11
I3	WHEELING MAR-WIN CHURCH OF NAZARENE TRUSTEES	16-1-26	I6	LEASURE ANNA	12-1-30
J3	MERRITT DOUGLAS W & REBECCA A	16-1-65	J6	KUNTZ JOHN H	12-1-31
K3	MILLER ROBERT A JR	16-1-65.1	K6	CONSOLIDATION COAL COMPANY/ MURRAY ENERGY C/O LAND DEPT	12-1-30.2
L3	MERRITT DOUGLAS W REBECCA A	16-1-27.1	L6	ADASE GEORGE & LAURIE	12-1-29
M3	MERRITT REBECCA A & ROBERT A MILLER JR	16-1-27	M6	SAVAGE CHARLES JACKSON	12-1-29.1
N3	MERRITT REBECCA A & ROBERT A MILLER JR	16-1-28.1	N6	ADASE GEORGE & LAURIE	12-1-28
O3	PERONI CONSTRUCTION INC	13-2-17	O6	HADSELL SANDRA L	12-1-20
P3	TJG PROPERTIES LLC	16-2CC-4	P6	MERINAR JUSTIN K	12-1-21
Q3	STILLION CHRISTOPHER E & HEATHER W	16-2CC-3	Q6	DYE ALBERT M - LIFE	12-9-6
R3	GLEN HOLLIN CONDOMINIUM ASSOC INC	16-2CC-18	R6	DYE WILLIAM R	12-9-1
S3	TJG PROPERTIES LLC	10-W99-5	S6	MANNERS DANIEL J ET UX	12-9-5
T3	GUMP DENNIS JAMES	10-W99-12	T6	ANDERSON MICHAEL	12-9-5.5
U3	TJG PROPERTIES LLC	10-W99-6.1	U6	STEADMAN FRANKLIN L ET UX	12-9-5.1
V3	SOLACE PROPERTIES LLC	10-W96-6.4	V6	PROVANCE FRANK J & ELIZABETH & BARRY F	13-3-14.5
W3	TJG PROPERTIES LLC	10-W96-6.2	W6	SHEPHERD TIMOTHY & DEBORAH L	13-3-14.4
X3	TJG PROPERTIES LLC	10-W96-6.3	X6	GRAY JOHN ALVIN	12-9-21
Y3	TJG PROPERTIES LLC	10-W99-8	Y6	JESTERS COURT 13 INC	13-3-14.3
Z3	PERONI CONSTRUCTION INC	10-W96-39.2	Z6	JESTERS COURT 13 INC	13-3-14.2
			A7	JESTERS COURT 13 INC	13-3-14.1
			B7	FISHER CHARLES B & CARLA S	12-9-20
			C7	MERINAR CALVIN C - LIFE	12-9-19

*Highlighted Parcels may be impacted during drilling.

REVISIONS:	COMPANY:	 		DATE: 06-29-2023
	OPERATOR'S	BETTY SCHAFFER MSH	API #	47-051-
	WELL #:	5H	STATE:	WV
	DISTRICT:	SAND HILL	COUNTY:	MARSHALL
			SCALE:	N/A
			DRAWING NO:	WELL LOCATION PLAT 5

**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"				

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*Horizontal well unit utilization - Subject to unitization filing with the West Virginia Oil and Gas Conservation Commission.

*Potentially Impacted Parcels - Parcels that may be impacted during drilling.

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

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

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

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

Well Operator: SWN Production Company, LLC
 By: *Archie M. Smith*
 Its: Rotational Landman

EXHIBIT "A"

Betty Schafer MSH 5H

Marshall County and Ohio County, West Virginia

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

Tract #	Tax Parcel	Lease Number	Lessor	Lessee	Royalty	Book/Page	% Interest Not Leased by SWN
1	12-9-22	733731/000	Betty Jane Schafer, a widow (Life Estate Interest); Roy Alvin Schafer (Remainderman); and Edward J. Schafer (Remainderman)	TriEnergy Holdings, LLC	18.00%	722/505	0.00%
			TriEnergy Holdings, LLC	NPAR, LLC		24/199	
			NPAR, LLC	Chevron U.S.A. Inc.		756/332	
			Chevron U.S.A. Inc.	Statoil USA Onshore Properties Inc.		30/494	
			Chevron U.S.A. Inc.	Chesapeake Appalachia, L.L.C.		30/532	
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		33/110	
			Statoil USA Onshore Properties Inc.	SWN Production Company, LLC		33/424	
			Roy Alvin Schafer, Jr., a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1077/97	0.00%
			Edward John Schafer, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1077/102	0.00%
2	13-3-14	744736/000	John Alvin Gray and Judy C. Gray, his wife	Chesapeake Appalachia, L.L.C.	18.00%	840/631	0.00%
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		35/32	
3	13-3-14.7	744736/000	John Alvin Gray and Judy C. Gray, his wife	Chesapeake Appalachia, L.L.C.	18.00%	840/631	0.00%
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		35/32	
4	12-9-4	747150/000	Raymond J. Langmyer and Deborah Anne Langmyer, husband and wife	SWN Production Company, LLC	18.00%	950/233	0.00%
5	12-9-5.6	728934/000	Daniel J. Manners and Gina M. Manners, husband and wife	Chesapeake Appalachia, L.L.C.	18.00%	721/250	0.00%
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		33/110	
6	12-9-5.4	728933/000	Daniel J. Manners and Gina M. Manners, husband and wife	Chesapeake Appalachia, L.L.C.	18.00%	721/246	0.00%
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		33/110	

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Marshall County and Ohio County, West Virginia

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15	12-1-39	728823/000	John W. Sligar and Barbara C. Sligar, his wife Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00% 18.00%	717/370 33/110	0.00% 0.00%
16	12-1-32	735449/001	John H. Kuntz, a/k/a John Howard Kuntz, a single man	SWN Production Company, LLC	18.00%	1078/364	0.00%
		735449/011	Sally Mildred Alig, a widow and not remarried	SWN Production Company, LLC	18.00%	1078/310	0.00%
		735449/007	Sue Ann Marple, a widow and not remarried	SWN Production Company, LLC	18.00%	1078/346	0.00%
		735449/008	Joseph Lawrence Kuntz, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1078/340	0.00%
		735449/014	Mary Darlene Bryniarski, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	1083/37	0.00%
		735449/009	Terrence Lee Kuntz, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1078/322	0.00%
		735449/013	Mark David Kuntz, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1078/352	0.00%
		735449/010	Stephen Carl Kuntz, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1083/31	0.00%
		735449/004	Philip B. Kuntz, a/k/a Philip Kuntz, a divorced man and not remarried	SWN Production Company, LLC	18.00%	1083/281	0.00%
		735449/002	Danial Kuntz, also known as Daniel Kuntz, a single man	SWN Production Company, LLC	18.00%	1078/334	0.00%
		735449/012	Mary Nichole Kuntz, also known as Mary Nicole Kuntz, a single woman	SWN Production Company, LLC	18.00%	1078/358	0.00%
		735449/003	Eleanor Virginia Bruney, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	1078/316	0.00%
		735449/005	Timothy James Kuntz, a single man	SWN Production Company, LLC	18.00%	1083/25	0.00%
		735449/006	David Patrick Kuntz, a single man	SWN Production Company, LLC	18.00%	1078/328	0.00%
17	12-1-10	745543/006	Michael L. Coffield and Tylene R. Coffield, husband and wife TH Exploration, LLC	TH Exploration, LLC SWN Production Company, LLC	18.00% 18.00%	896/367 36/488	0.00% 0.00%

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EXHIBIT "A"

Betty Schafer MSH 5H

Marshall County and Ohio County, West Virginia

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

18	12-1-5	733017/000	Karen Schenk Sligar and Terry B. Sligar, wife and husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.75% 33/110	768/232	0.00%
		751236/000	Karen Schenk Sligar and Terry B. Sligar, wife and husband	SWN Production Company, LLC	18.75%	1076/172	0.00%
19	12-1-5.1	733002/000	Mary Schenk Hamilton and Gary P. Hamilton, wife and husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.75% 33/110	767/512	0.00%
		751018/000	Mary Schenk Hamilton and Gary P. Hamilton, wife and husband, as joint tenants with right of survivorship	SWN Production Company, LLC	18.75%	1078/375	0.00%
20	12-1-5.4	733002/000	Mary Schenk Hamilton and Gary P. Hamilton, wife and husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.75% 33/110	767/512	0.00%
		751018/000	Mary Schenk Hamilton and Gary P. Hamilton, wife and husband, as joint tenants with right of survivorship	SWN Production Company, LLC	18.75%	1078/375	0.00%
21	12-1A-94	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
22	12-1A-23	761639/000	Judy E. Romagnoli, a widow and not remarried	SWN Production Company, LLC	17.00%	1114/191	0.00%
23	12-1A-25	761639/000	Judy E. Romagnoli, a widow and not remarried	SWN Production Company, LLC	17.00%	1114/191	0.00%
24	16-1-28	760853/001	Robert A. Miller, Jr., a single man	SWN Production Company, LLC	18.00%	1098/195	0.00%
25	16-1-29.1	749981/000	James E. Westfall, Jr. and Vickie Westfall, his wife American Petroleum Partners Operating, LLC	American Petroleum Partners Operating, LLC SWN Production Company, LLC	18.00% 45/381	940/28	0.00%
26	16-1-29	751213/000	Mary R. O'Hara and Edward J. O'Hara, III, wife and husband	SWN Production Company, LLC	18.00%	1096/154	0.00%
27	16-1-32	761051/000	Shirley Ann Seamon, a/k/a Shirley A. Seamon, a/k/a Shirley Seamon, single	SWN Production Company, LLC	18.00%	1103/266	0.00%
28	16-1-30	761051/000	Shirley Ann Seamon, a/k/a Shirley A. Seamon, a/k/a Shirley Seamon, single	SWN Production Company, LLC	18.00%	1103/266	0.00%
29	16-1-35.1	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
30	16-1-29.2	783405/000	Mary R. O'Hara and Edward J. O'Hara, III, wife and husband	SWN Production Company, LLC	18.00%	1138/283	0.00%

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EXHIBIT "A"

Betty Schafer MSH 5H

Marshall County and Ohio County, West Virginia

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31	13-2-16	777149/001	Glenn D. Gardner, a/k/a Glenn Gardner, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1106/375	0.00%
		777149/002	Robin G. Anderson, a widow and not remarried	SWN Production Company, LLC	18.00%	1106/377	0.00%
		777149/003	Holly Gardner-Tatomer, a/k/a Holly G. Tatomer, a divorced woman and not remarried	SWN Production Company, LLC	18.00%	1106/373	0.00%
32	10-W96-40.2	784608/000	The Board of Education of the County of Ohio, West Virginia, a corporation, by Kimberly S. Miller, Superintendent	SWN Production Company, LLC	18.00%	1030/422	0.00%
33	10-W99-4	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
34	10-W99-4.1	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
35	10-W99-4.2	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
36	10-W99-3	777309/002	Glenn D. Gardner, a/k/a Glenn Gardner, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	1123/529 (Marshall) 1011/582 (Ohio)	0.00%
		777309/001	Robin G. Anderson, a widow and not remarried	SWN Production Company, LLC	18.00%	1123/533 (Marshall) 1011/578 (Ohio)	0.00%
		777309/003	Holly Gardner-Tatomer, a/k/a Holly G. Tatomer, a divorced woman and not remarried	SWN Production Company, LLC	18.00%	1123/537 (Marshall) 1011/586 (Ohio)	0.00%
37	10-W99-6	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
38	10-W99-7	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
39	10-W99-7.1	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
40	10-W96-39.1	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
41	10-W96-32	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
42	10-W96-27	Pending	Richard Galardi, a single man	SWN Production Company, LLC	18.00%	1046/688	0.00%
43	10-W96-22	Pending	Michael Stan and Dee Stan, husband and wife	SWN Production Company, LLC	18.00%	1046/583	0.00%
44	10-W96-18	N/A	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%

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EXHIBIT "A"

Betty Schafer MSH 5H

Marshall County and Ohio County, West Virginia

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L	12-9-3.1	Raymond J. Langmyer and Deborah Anne Langmyer, husband and wife	SWN Production Company, LLC	18.00%	737/597	0.00%
S2	12-1-5.5	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
J3	16-1-65	Rebecca A. Merritt and Douglas W. Merritt, wife and husband, as joint tenants with right of survivorship	SWN Production Company, LLC	18.00%	1098/201	0.00%
V3	10-W99-6.4	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
W3	10-W99-6.2	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
X3	10-W99-6.3	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
D4	10-W96-31	Nathan M. Musser and Amber L. Musser, husband and wife	SWN Production Company, LLC	18.00%	995/229	0.00%
E4	10-W96-26	Marilyn Darlene Hunter, a widow and not remarried	SWN Production Company, LLC	18.00%	1009/323	0.00%
I4	10-W96-14	James S. Norman and Sondra K. Norman, husband and wife	SWN Production Company, LLC	18.00%	1041/561	0.00%
S4	10-W96-39.6	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
T4	10-W99-7.2	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
U4	10-W99-7.3	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
N5	10-W99-4.3	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
O5	10-W99-4.4	Royalty Owner (subject to unitization filing dated August 24, 2023)	N/A	N/A	N/A	100.00%
T5	16-1-66	James E. Westfall, Jr. and Vicki Westfall, husband and wife	American Petroleum Partners Operating, LLC	18.00%	940/28	0.00%
		American Petroleum Partners Operating, LLC	SWN Production Company, LLC		45/381	
R6	12-9-1	William R. Dye, a married man dealing in his sole and separate property	SWN Production Company, LLC	15.00%	1073/217	0.00%

Potentially Impacted Parcels - Parcels that may be impacted during drilling.

Horizontal well unit utilization - Subject to unitization filing with the West Virginia Oil and Gas Conservation Commission.

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August 24, 2023

Mr. Charles Brewer
WV DEP Office of Oil & Gas
601 57th St., SE
Charleston, WV 25304

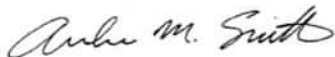
RE: SWN's proposed New Well: Betty Schafer MSH 5H in Marshall County, West Virginia, Drilling under Big Wheeling Creek Road, Schafer Drive, Miller Hill Road, Walnut Grove Road, Agaming Lane, Tylene Drive, Cabin Lake Drive, Marwin Drive, Glen Hollin Drive, Nicholas Way, Lane A, Don Lee Drive, and Courtland Avenue.

Dear Mr. Brewer:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Big Wheeling Creek Road, Schafer Drive, Miller Hill Road, Walnut Grove Road, Agaming Lane, Tylene Drive, Cabin Lake Drive, Marwin Drive, Glen Hollin Drive, Nicholas Way, Lane A, Don Lee Drive, and Courtland Avenue. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,



Andrew M. Smith, RL
Rotational Landman
SWN Production Company, LLC

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

10/13/2023

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

Date of Notice Certification: 9/7

API No. 47- 051 -
Operator's Well No. Betty Schafer MSH 5H
Well Pad Name: Betty Schafer MSH

Notice has been given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>531,112.508</u>
County:	<u>051-Marshall</u>		Northing:	<u>4,426,810.010</u>
District:	<u>Sand Hill</u>	Public Road Access:	<u>Big Wheeling Creek</u>	
Quadrangle:	<u>Moundsville</u>	Generally used farm name:	<u>Betty Scharfer MSH</u>	
Watershed:	<u>Wheeling Creek</u>			

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

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

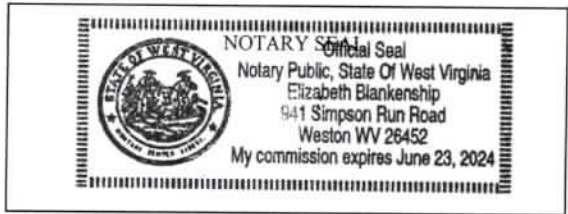
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

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 Dr., Suite 201</u>
By:	<u>Brittany Woody</u>		<u>Morgantown, WV 26508</u>
Its:	<u>Staff Regulatory Specialist</u>	Facsimile:	<u>304-884-1690</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Brittany_Woody@swn.com</u>

Brittany Woody



Subscribed and sworn before me this 22 day of June 2023.
Elizabeth Blankenship Notary Public
 My Commission Expires 10/23/2024

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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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: 9/7 **Date Permit Application Filed:** 9/7

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: Appalachia Midstream Services, LLC
 Address: One Williams Center
Tulsa, OK 74101

Name: Alvin Schafer Jr.
 Address: 3609 Big Wheeling Creek Road
Wheeling, WV 26003

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

Name: _____
 Address: _____

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

COAL OWNER OR LESSEE
 Name: American Consolidated Natural Resources Attn: Mason Smith
 Address: 46226 National Road
St. Clairsville, OH 43950

COAL OPERATOR
 Name: _____
 Address: _____

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

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

*Please attach additional forms if necessary

RECEIVED
 Office of Oil and Gas
 SEP 08 2023
 WV Department of Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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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.

SEP 18 2023
WV Department of
Environmental Protection

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

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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WV Department of
Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WV Department of
Environmental Protection

10/13/2023

WW-6A
(8-13)

API NO. 47- 051 -
OPERATOR WELL NO. Betty Schafer MSH 5H
Well Pad Name: Betty Schafer MSH

Notice is hereby given by:

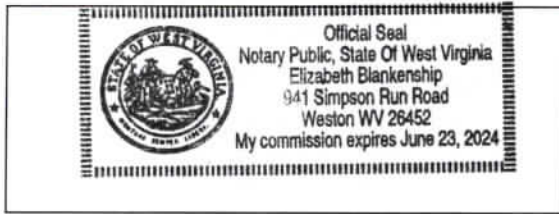
Well Operator: SWN Production Co., LLC
Telephone: 304-884-1610
Email: Brittany_Woody@swn.com



Address: 1300 Fort Pierpont Dr., 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 22 day of June 2023
Elizabeth Blankenship Notary Public
My Commission Expires 6/23/2024

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WV Department of
Environmental Protection

10/13/2023

Owner	Full Address	Municipality	Zip
JESTERS COURT 13 INC	322 JESTER COURT LN	Wheeling	26003
SCHAFFER JOHN ALVIN	3609 BIG WHEELING CRK	Wheeling	26003

4705102506

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: 6/15/2023 **Date of Planned Entry:** 6/22/2023

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: Appalachia Midstream Services, LLC

Address: One Williams Center
Tulsa, OK 74101

Name: Alvin Schafer Jr.

Address: 3609 Big Wheeling Creek Road
Wheeling, WV 26003

Name: _____

Address: _____

COAL OWNER OR LESSEE

Name: American Consolidated Natural Resources Attn: Mason Smith

Address: 46226 National Road
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: Edward J. Schafer & Brenda Schafer

Address: 148 Valley Blvd.
Wheeling, WV 26003

*please attach additional forms if necessary

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Office of Oil and Gas
SEP 08 2023
WV Department of
Environmental Protection

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>39.990980, -80.635696</u>
County: <u>Marshall</u>	Public Road Access: <u>Big Wheeling Creek Road</u>
District: <u>Sand Hill</u>	Watershed: <u>Grandstaff Run-Wheeling Creek</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>Betty Schafer MSH</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>1300 Fort Pierpont Dr., Suite 201</u>
Telephone: <u>304-884-1610</u>	<u>Morgantown, WV 26508</u>
Email: <u>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.

10/13/2023

4705102506

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: 07/05/2023 **Date Permit Application Filed:** _____

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: Alvin Schafer Jr.
Address: 3609 Big Wheeling Creek Road
Wheeling, WV 26003

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Office of Oil and Gas
SEP 08 2023

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>431,112.508</u>
County: <u>Marshall</u>	Northing: <u>4,426,810.010</u>
District: <u>Sand Hill</u>	Public Road Access: <u>Big Wheeling Creek Road</u>
Quadrangle: <u>Moundsville, WV</u>	Generally used farm name: <u>Betty Schafer</u>
Watershed: <u>Wheeling Creek (HUC-10)</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 Dr., Suite 201
Morgantown, WV 26508
Telephone: 304-884-1675
Email: Justin_Booth@swn.com
Facsimile: _____

Authorized Representative: Justin Booth
Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
Telephone: 304-884-1675
Email: Justin_Booth@swn.com
Facsimile: _____

Oil and Gas Privacy Notice:

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

10/13/2023

4705102506

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: 07/05/2023 **Date Permit Application Filed:** 9/7

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: Appalachia Midstream Services LLC
Address: One Williams Center
Tulsa, OK 74101

RECEIVED
Office of Oil and Gas
Address: _____
SEP 08 2023

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 431,112.508
County: Marshall Northing: 4,426,810.010
District: Sand Hill Public Road Access: Big Wheeling Creek Road
Quadrangle: Moundsville, WV Generally used farm name: Betty Schafer
Watershed: Wheeling Creek (HUC-10)

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 Dr., Suite 201
Morgantown, WV 26508
Telephone: 304-884-1675
Email: Justin_Booth@swn.com
Facsimile: _____

Authorized Representative: Justin Booth
Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
Telephone: 304-884-1675
Email: Justin_Booth@swn.com
Facsimile: _____

Oil and Gas Privacy Notice:

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

10/13/2023



4705102506

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Gregory L. Bailey, P.E.
Interim
State Highway Engineer

Jimmy Wriston, P. E.
Secretary of Transportation
Commissioner of Highways

July 31, 2023

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 Betty Schafer Pad, Marshall County
Betty Schafer MSH 5H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2014-0640 which has been issued to Southwestern Energy for access to the State Road for a well site located off Marshall County Route 5 SLS MP 3.82.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE 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 March 6, 2023. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Operations Engineer
Central Office O&G Coordinator

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

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Office of Oil and Gas

SEP 08 2023

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4705102506

Attachment VI Frac Additives

Product Name	Product Use	Chemical Name	CAS Number
HCL	Solvent	Hydrochloric Acid	7647-01-0
		Water	7732-18-5
FSTI-CI-02	Corrosion Inhibitor	2-Butoxyethanol	111-76-2
		Ethylene glycol	107-21-1
		N,N-Dimethylformamide	68-12-2
		benzyl chloridequaternized	72480-70-7
		Cinnamaldehyde	104-55-2
		Isopropyl alcohol	67-63-0
		Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)- .omega.-hydroxy-	9016-45-9
		1-Decanol	112-30-1
Ferriplex 80	Iron Control	1-Octanol	111-87-5
		Triethyl phosphate	78-40-0
Tollicide 4Frac	Biocide	Sodium Erythorbate	6381-77-7
		Tetrakis(Hydroxymethyl) Phosphonium Sulfate	55566-30-8
		Quaternary ammonium compounds	68424-85-1
Plexslick 930	Friction Reducer	Ethanol	64-17-5
		Water	7732-18-5
		Hydrotreated Petroleum Distillate	64742-47-8
		Water	7732-18-5
		copolymer of 2-propenamide	69418-26-4
		Oleic Acid Diethanolamide	93-83-4
Plexaid 655NM	Scale Inhibitor	Alcohol Ethoxylate Surfactants	68551-12-2
		Ammonium Chloride	12125-02-9
		Sodium Chloride	7647-14-5
		ORGANIC PHOSPHONIC ACIDS SALTS	15827-60-8
		Water	7732-18-5
		Plexslick V996	Friction Reducer
Plexaid 655WG	Scale Inhibitor	Water	7732-18-5
		Glycerin	67-56-1
		Glutaraldehyde	111-30-8
		Didecylidimethylammonium Chloride	7173-51-5
		Quaternary Ammonium compounds, Benzyl-C12-C16-alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
StimSTREAM SC 398 CW	Scale Inhibitor	Water	7732-18-5
		Ethylene glycol	107-21-1
		CHEMSTREAM-Polymer-10001	CHEMSTREAM-Polymer-10001
		CHEMSTREAM-Polymer-10002	CHEMSTREAM-Polymer-10002
StimSTREAM FR 9800	Friction Reducer	Water	7732-18-5
		Chemstream-Alkane-00001	Chemstream-Alkane-00001
		Chemstream-Polymer-00001	Chemstream-Polymer-00001
		Ethoxylated alcohols (C12-16)	68551-12-2
StimSTREAM FR 2800	Friction Reducer	Water	7732-18-5
		Distillates (petroleum), hydrotreated light	64742-47-8
		Alcohols, C11-14-iso, C13-rich, ethoxylated	78330-21-9
		Water	7732-18-5
StimSTREAM FR 9725	Friction Reducer	Water	7732-18-5
		Distillates (petroleum), hydrotreated light	64742-47-8
		Ammonium Chloride	12125-02-9
		Water	7732-18-5
StimSTREAM SC 398 C	Scale Inhibitor	CHEMSTREAM-Polymer-10001	CHEMSTREAM-Polymer-10001
		CHEMSTREAM-Polymer-10002	CHEMSTREAM-Polymer-10002
		Water	7732-18-5

As of 7/5/2023

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Environmental Protection

10/13/2023

OPERATOR: SWN Production Co., LLC WELL NO: Betty Schafer MSH 5H

PAD NAME: Betty Schafer MSH

REVIEWED BY: _____

SIGNATURE: Brittany Noddy

WELL RESTRICTIONS CHECKLIST

HORIZONTAL 6A WELL

**Pad Built 5/1/15*

Well Restrictions

At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR

DEP Waiver and Permit Conditions

At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR

DEP Waiver and Permit Conditions

At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR

DEP Waiver and Permit Conditions

At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR

Surface Owner Waiver and Recorded with County Clerk, OR

DEP Variance and Permit Conditions

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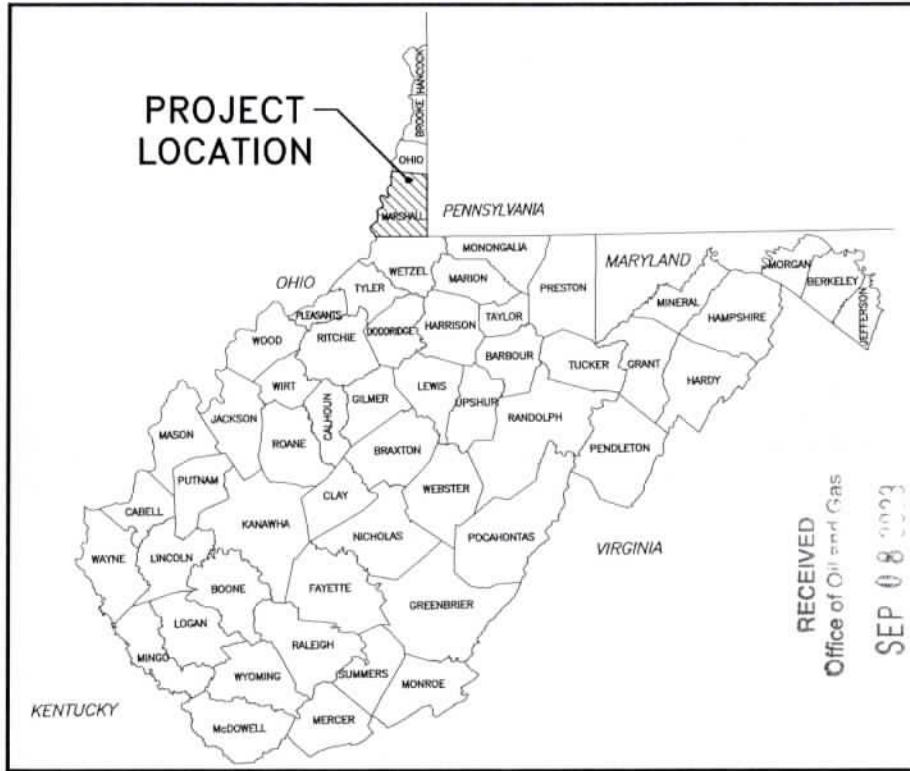
WV Department of
Environmental Protection

4705102506

AS-BUILT SITE PLAN FOR BETTY SCHAFER MSH PAD SAND HILL DISTRICT, MARSHALL COUNTY, WV



DRAWN BY: JAR
DATE: 10/21/2015
SCALE: AS SHOWN
DWG. NO. 087569000



COUNTY MAP
N.T.S.



LOCATION MAP
SCALE - 1"=1000'

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

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

SWN
Southwestern Energy®

OPERATOR
SWN PRODUCTION CO., LLC
ATTN: DEE SOUTHALL
P.O. BOX 1300
JANE LEW, WV 26378
(832) 796-1614

John Cooney
7/20/2023

WV Department of Environmental Protection

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SEP 08 2013

SITE DATA

TOTAL DISTURBED AREA: 7.82 ACRES
ROAD DISTURBED AREA: 0.73 ACRES
PAD DISTURBED ACRES: 2.99 ACRES
ACCESS ROAD LENGTH: 1,118'
ACCESS ROAD AVERAGE WIDTH: 28'
WELL PAD ELEVATION: 849.1'

WELL API NUMBERS

201H	API 051-01776
210H	API 051-01777

LIST OF DRAWINGS

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

TS1.1

RETTEW

RETTEW Associates, Inc.
5143 Stoneham Rd, Ste 100, North Canton, OH 44720
Phone (330) 818-9770 Fax (717) 697-6953
Engineers • Planners • Surveyors • Landscape Architects
Environmental Consultants

COVER SHEET FOR

BETTY SCHAFER MSH PAD

SAND HILL DISTRICT MARSHALL COUNTY, WV