



west virginia department of environmental protection

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

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

Thursday, February 09, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

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

SPRING, TX 773914954

Re: Permit approval for EDWARD DREMAK OHI 3H
47-069-00213-00-00

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: EDWARD DREMAK OHI 3H
Farm Name: DREMAK, EDWARD & JOANNE
U.S. WELL NUMBER: 47-069-00213-00-00
Horizontal 6A / New Drill
Date Issued: 2/9/2017

Promoting a healthy environment.

02/10/2017

PERMIT CONDITIONS 7 0 0 9 0 2 3

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

CONDITIONS

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

PERMIT CONDITIONS 4700900003

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.

4706900213



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

December 6, 2016

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

RE: Proposed New Well: Edward Dremak OHI 3H

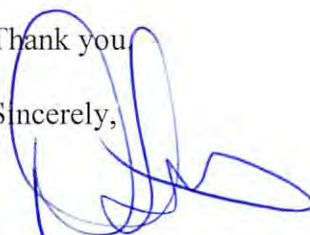
Dear Ms. Adkins

Enclosed please find the Well Work Permit Application for the above captioned well. This well is situated on the Dremak's property, in Richland District, Ohio County, West Virginia.

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

Thank you

Sincerely,



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

4706900215

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WV Department of
Environmental Protection

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

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 069-Ohio 4-Richlar 641-Tiltonsville
Operator ID County District Quadrangle

2) Operator's Well Number: Edward Dremak OHI 3H Well Pad Name: Edward Dremak OHI Pad

3) Farm Name/Surface Owner: Edward Dremak & Joanne Dremak Public Road Access: Waddells Run Road

4) Elevation, current ground: _____ Elevation, proposed post-construction: _____

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

6) Existing Pad: Yes or No No

E. Dremak 11.15.16

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Target Top TVD- 5788', Target Base TVD- 5821', Anticipated Thickness- 33', Associated Pressure- 3488.4

8) Proposed Total Vertical Depth: 5809'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13942'

11) Proposed Horizontal Leg Length: 7802'

4706900213

12) Approximate Fresh Water Strata Depths: 472'

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

14) Approximate Saltwater Depths: 1083'

15) Approximate Coal Seam Depths: 840'

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

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

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WW-6B
(04/15)

API NO. 47- 069
OPERATOR WELL NO. Edward Dremak OHI 3H
Well Pad Name: Edward Dremak OHI Pad

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	915'	915'	822 sx/CTS
Coal	9 5/8"	New	J-55	36#	1747'	1747'	622 sxCTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	13942'	13942'	lead 839 sx Tail 1874 sx/100' inside
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 5809'	Approx 5809'	
Liners							

C. T. B. 11-15-16

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing	2 3/8"	4.778"	0.190	Approx 8193'	Approx 8193'		
Liners							

PACKERS

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

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

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 33.7

22) Area to be disturbed for well pad only, less access road (acres): 8.0

23) Describe centralizer placement for each casing string:

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

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

See Attachment ***

25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.

November 3, 2016

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

4700900210

RE: Proposed New Well Edward Dremak OHI 3H

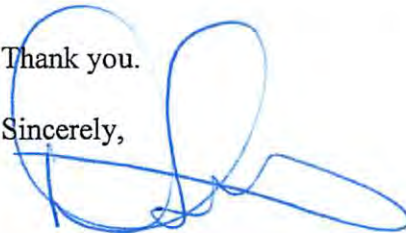
Dear Ms. Adkins

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

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

Thank you.

Sincerely,



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

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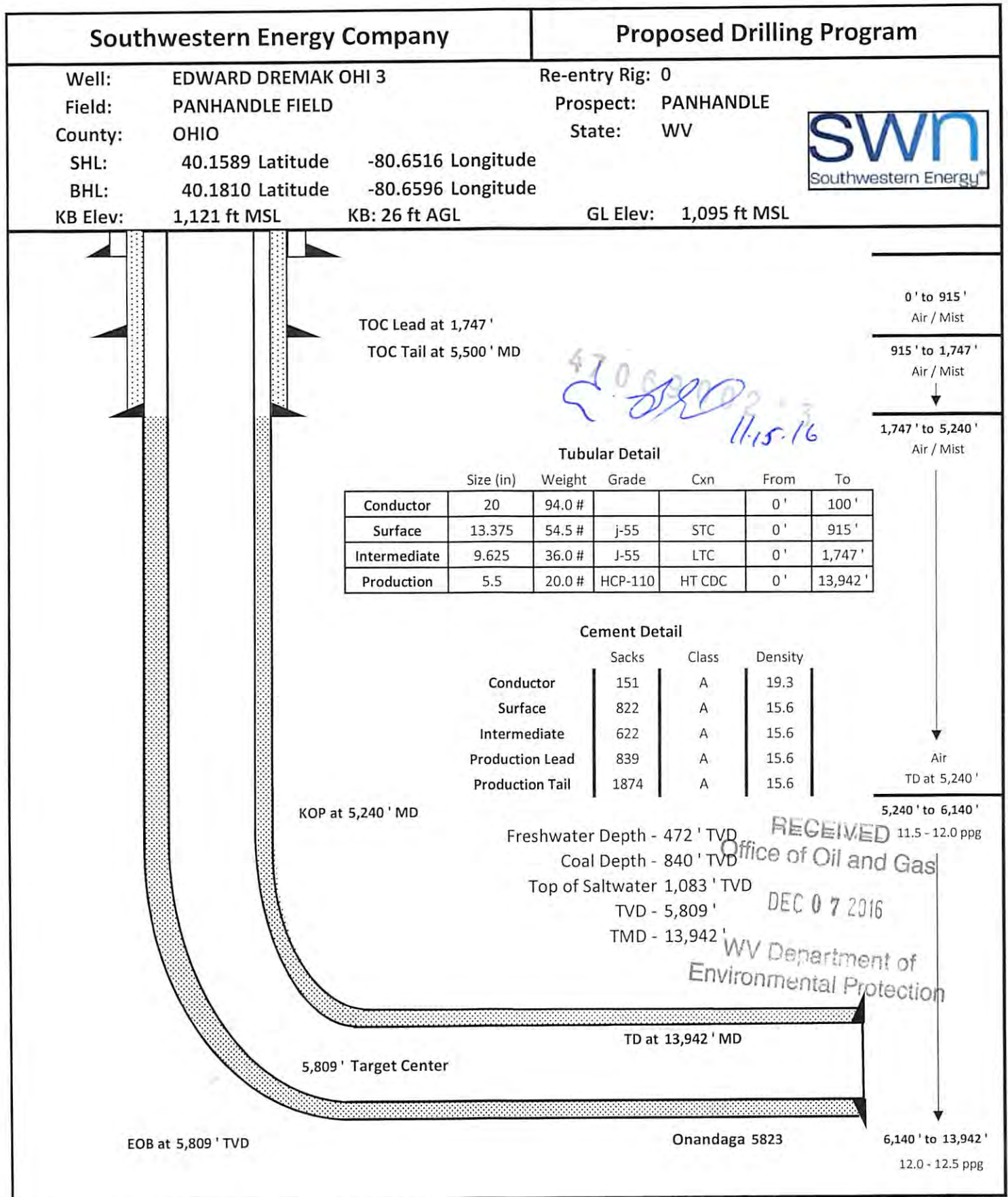
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Schlumberger Cement Additives

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

47069022.15



02/10/2017

WW-9
(4/16)

API Number 47 - 69 - _____
Operator's Well No. Edward Dremak OHI 3H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Company, LLC OP Code 494512924

Watershed (HUC 10) Upper Ohio Wheeling Quadrangle Tiltonsville

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: closed loop system in place at this time- cuttings will be taken to a permitted landfill

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. at drill to KOP, fluid drill with SOB from KOP to TD

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

Additives to be used in drilling medium? see attached sheets

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

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

-Landfill or offsite name/permit number? meadow SWF-1032, SS grading SWF-4902, Northwestern SWF-1025, Short Creek 1034/WW0105517/CID28726, Carbon Limestone 28726-CID28726

Arden Landfill 100/2, American U2-12954, Country Wide 38390/CID38390, Pine Grove 13688
Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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

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

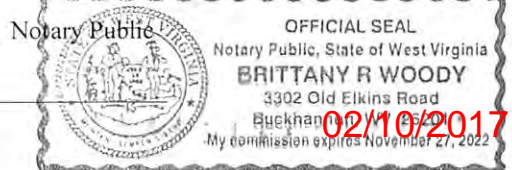
Company Official Signature _____

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Subscribed and sworn before me this 1st day of November, 20 16

Brittany R Woody
My commission expires 11/27/22



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Environmental Protection

SWN Production Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 23.7 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 8.0

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

****See Attachment**

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature] 11.15.16

Comments: _____

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Title: oil and gas inspector

Date: 11.11.16 WV Department of Environmental Protection

Field Reviewed? Yes No



WVD Seeding Specification



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

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

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

Seeding Calculation Information:

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

Synopsis:

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

Special Considerations:

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

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

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

MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



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

API NO. 47-XXX-XXXXX
WELL NAME: Edward Dremak OHI 3H
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

Submitted by:

Dee Southall

Date: 11/1/2016

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:



Date: 11.15.16 *ES*

Title: O. & G. Inspector

Approved by:

Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC

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WV Department of
Environmental Protection

02/10/2017

SHL Latitude: 40°10'00"

7,402'

BHL Latitude: 40°12'30"

10,025'



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

SURFACE HOLE LOCATION (SHL):

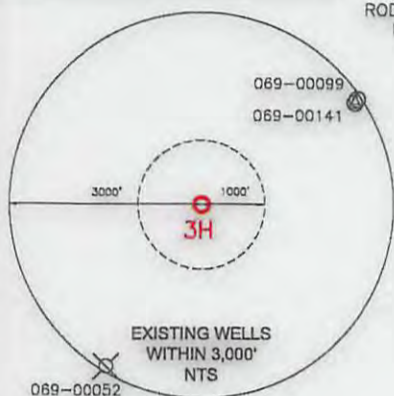
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,436.799
EASTING: 529,679.604

LANDING POINT LOCATION (LPL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,625.266
EASTING: 529,646.798

BOTTOM HOLE LOCATION (BHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,448,281.423
EASTING: 528,868.097



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

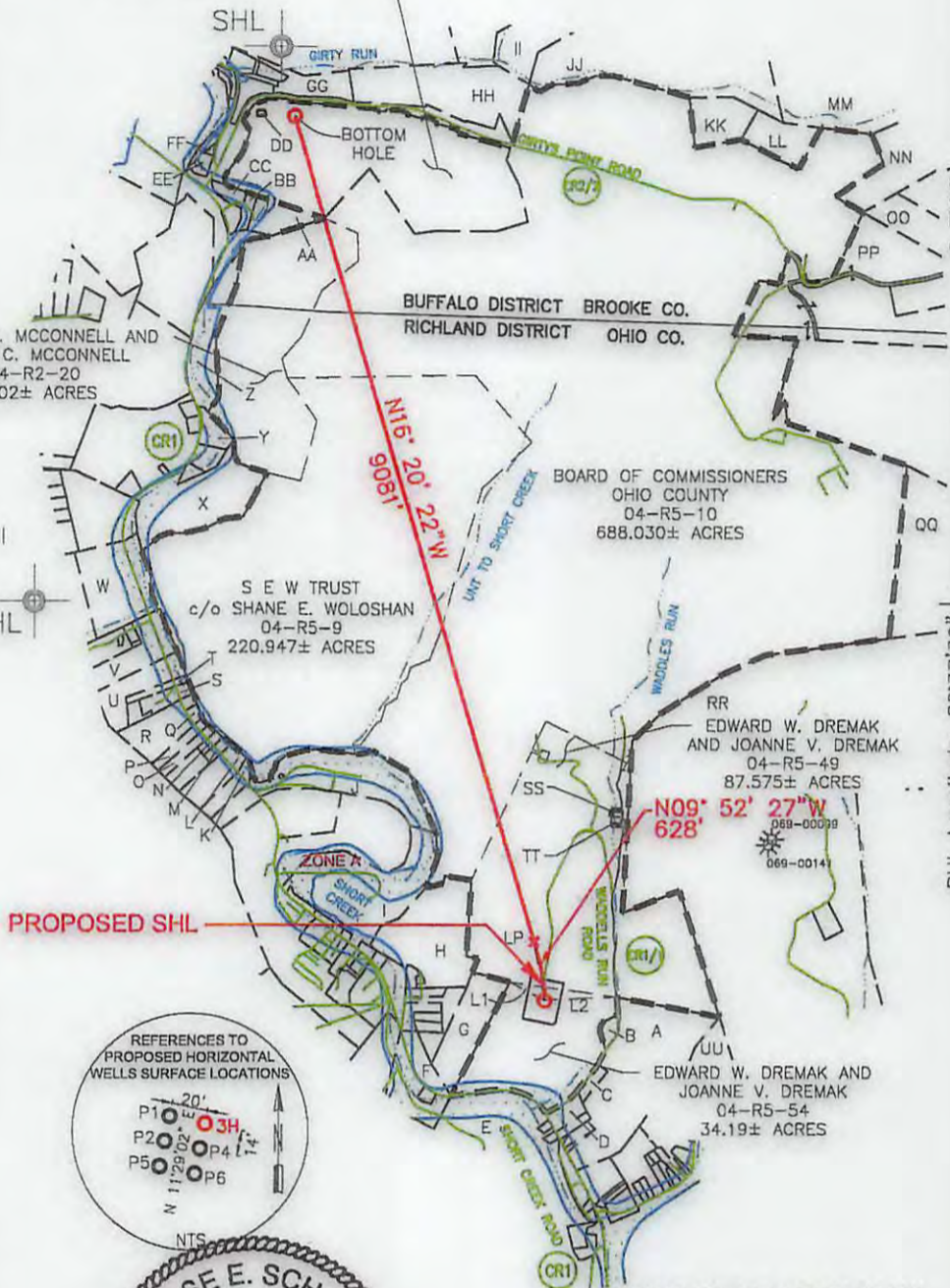
Table with columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains data for lines L1 and L2.

HENRY W. ZEIDLER AND JUDITH K. ZEIDLER
03-B46-15
66.01± ACRES

RODNEY K. MCCONNELL AND
NEDRA C. MCCONNELL
04-R2-20
58.02± ACRES

SHL

BHL



BUFFALO DISTRICT BROOKE CO.
RICHLAND DISTRICT OHIO CO.

BOARD OF COMMISSIONERS
OHIO COUNTY
04-R5-10
688.030± ACRES

EDWARD W. DREMAK AND
JOANNE V. DREMAK
04-R5-49
87.575± ACRES

EDWARD W. DREMAK AND
JOANNE V. DREMAK
04-R5-54
34.19± ACRES

ADJOINING OWNER INFORMATION
(SEE ADJOINING OWNER SHEET)

2000 0 2000

GRAPHIC SCALE IN FEET

NOTES ON SURVEY

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



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

P.S. 2313

COMPANY: SWN SWN
Production Company, LLC Production Company™

(+) 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)

EDWARD DREMAK OHI
OPERATOR'S WELL #: 3H
API WELL #: 47 69 0313 HGA
STATE COUNTY PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [] DEEP [] GAS [x] LIQUID INJECTION [] STORAGE [] SHALLOW [x]
WATERSHED: UPPER OHIO WHEELING ELEVATION: 1,087± PROPOSED
DISTRICT: RICHLAND COUNTY: OHIO QUADRANGLE: TILTONVILLE, OH-WV
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
DRILL [x] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [x] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [] (SPECIFY) 02/10/2017
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,809' TVD 15,230' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, ABANDONED WELL, PLUGGED & ABANDONED WELL, PERMITTED BUT NOT DRILLED, EXISTING SPRING, EXISTING WATER WELL, TIE LINE, LEASE BOUNDARY, MARCELLUS DHP, ABANDONED PATH, REVISIONS, DATE: 12-05-2016, DRAWN BY: W. McCLEAF, SCALE: 1" = 2000', DRAWING NO: 087569045, WELL LOCATION PLAT



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

ADJOINING OWNERS

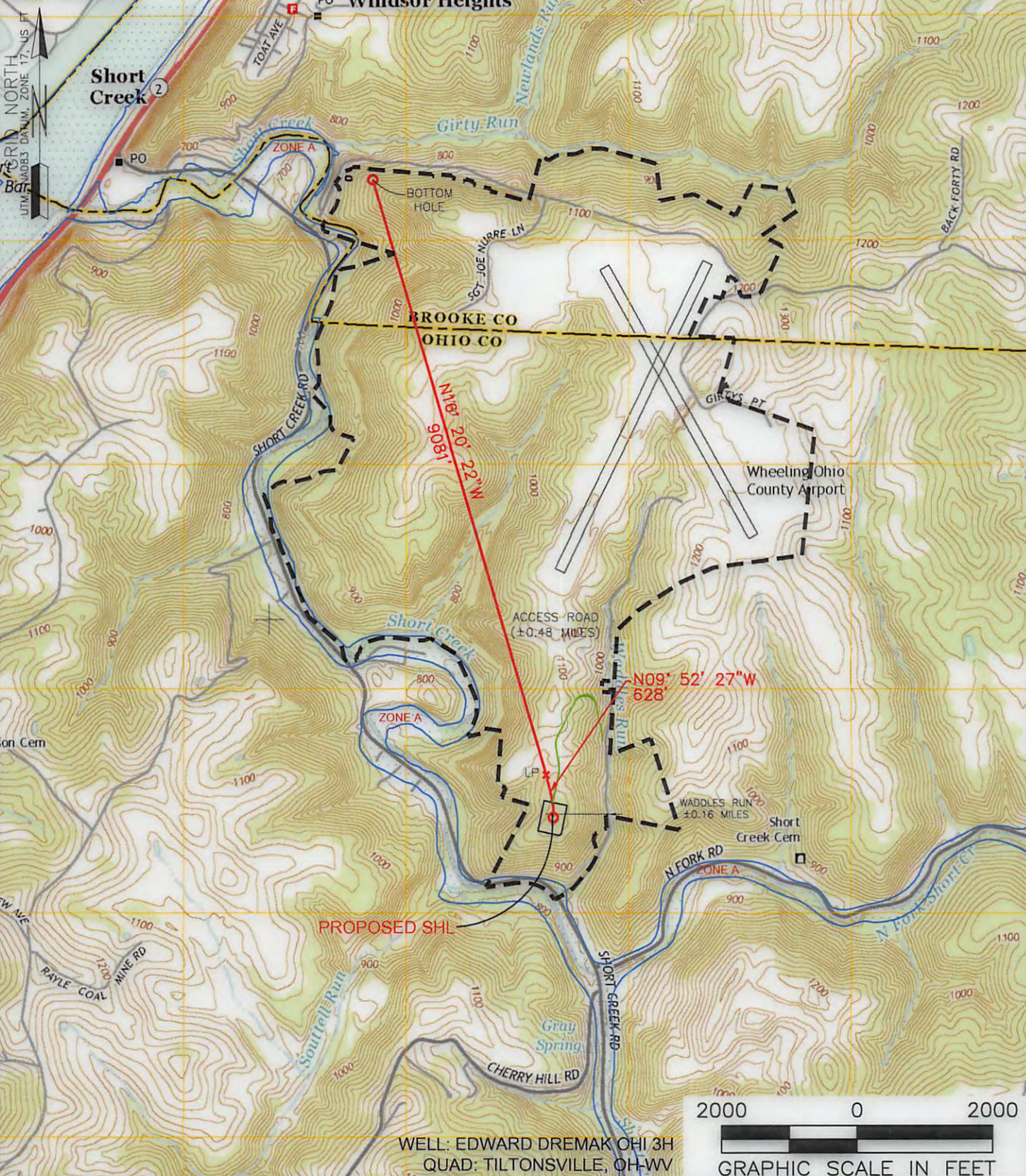
TRACT	SURFACE OWNERS	TAX PARCEL	ACRES
A	WINDSOR POWER COAL COMPANY	04-R8-8-1	59.13±
B	EDWARD W. & JOANN V. DREMAK	04-R5-54-1	0.69±
C	CHRISTOPHER A. WADDELL	04-R8-8-18	0.93±
D	EDWARD N. & SUSAN L. CAIN	04-R8-8-3	1.95±
E	ALLIANCE RESOURCE GP LLC	04-R8-6	169.98±
F	ALLIANCE RESOURCE GP LLC	04-R5-52	6.32±
G	ALLIANCE RESOURCE GP LLC	04-R5-53	14.25±
H	WINDSOR COAL COMPANY	04-R5-50	19.447±
I	JOHN W. METZ	04-R5-46	22.63±
J	BURNT MILLS ACRES LLC	04-R5-13	20.332±
K	JULIE A. KOEHLER	04-R5-45-4	2.838±
L	JULIE A. KOEHLER	04-R5-45-13	3.662±
M	HELEN TAYLOR	04-R5-12	0.68±
N	HELEN TAYLOR	04-R5-14	0.56±
O	HUMPHREY D. JR. & T. M. FLICK	04-R5-15	1.64±
P	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-16	1.63±
Q	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-17-1	0.438±
R	ROBERT N. & C. L. CONNER	04-R5-17	7.16±
S	PATRICIA ROUSH	04-R5-18	1.8707±
T	ERVAN D. TRUBIANO AND NANCY G. TRUBIANA	04-R5-19	1.01±
U	BRIAN W. SOWIZRAL AND MELINDA K. SOWIZRAL	04-R5-20-1	5.683±
V	DENNIS J. HOSKINS AND SHEINA L. HOSKINS	04-R5-20-4	4.84±
W	HAROLD COAST AND LINDA COAST	04-R5-2-9	10.94±
X	ROBERT KUBOVICZ	04-R5-8	13.91±
Y	JOHN E HARWATT AND E R HARWATT	04-R5-8-2	1.90±
Z	SHORT CREEK ROAD	04-R2-9999-9999	
AA	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	03-B46-14	2.75±
BB	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	04-R2-18-2	0.946±
CC	SYLVIA A. HAWRANICK	04-R2-18-1	2.04±
DD	HAMMOND PUBLIC SERVICE DISTRICT	03-B46-16	5.04±
EE	HENRY W. ZEIDLER AND JUDITH K. ZEIDLER	03-B46-13	0.85±
FF	KENNETH D. COVER AND BARBARA J. COVER	03-B46-12	0.69±
GG	JOAN GARRETT	03-B46-17	5.23±
HH	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-18	20.52±
II	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-32	57.28±
JJ	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-83	83.41±
KK	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-19	7.14±
LL	STACY ANN GREATHOUSE AND PATRICIA ANN GREATHOUSE	03-B46-41	5.00±
MM	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-82	229.00±
NN	DANNY GENE BRITT AND VIRGINIA BRITT	03-B46-27	106.53±
OO	TRACY GILBERT	03-B46-22	10.00±
PP	BRUCE D. BONAR (3/4) WILLIAM BONAR (1/4)	03-B46-20	113.00±
QQ	MARC SEAMON	04-R6-2	93.627±
RR	BOARD OF COMMISSIONERS OF OHIO COUNTY	04-R5-55	239.50±
SS	RICHARD L. BLACK AND DEBORAH K. BLACK	04-R5-58-1	0.175±
TT	RAY W. ARCHER	04-R5-0058-0000-0000	0.19±
UU	ALLIED WASTE INC.	04-R5-0056-0000-0000	7.22±

02/10/2017

REVISIONS:	COMPANY:	SWN Production Company, LLC	SWN ^{Rt} / _A ^{V+} / ₊ Production Company™
	OPERATOR'S	EDWARD DREMAK OHI	DATE: 12-05-2016
	WELL #:	3H	DRAWN BY: W. McCLEAF
	LOCATION:	RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA	SCALE: N/A
			DRAWING NO:087569045
			ADJOINING OWNERS

RETTEW

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



WELL: EDWARD DREMAK OHI 3H
QUAD: TILTONSVILLE, OH-WV



NAME AND DISTANCE TO THE NEAREST STREAM: WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.	STREAM CROSSING COORDINATES (NAD 83): NO STREAM CROSSINGS
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COMPANY: SWN Production Company, LLC	SWN Production Company™
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WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET

OPERATOR'S	EDWARD DREMAK OHI
WELL #:	3H
LOCATION:	RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA

FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006
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SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.158763° LONGITUDE: -80.651491°	02/10/2017
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LEGEND: ● PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL ⊗ PERMITTED BUT NOT DRILLED	 — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD
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BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.184419° LONGITUDE: -80.660893°	
REVISIONS:	DATE: 12-05-2016
	DRAWN BY: W. McCLEAF
	SCALE: 1" = 2000'
	DRAWING NO: 087569045
	TOPOGRAPHIC MAP

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

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

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

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

470080

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

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

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

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WV Department of
Environmental Protection

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: [Signature]
Its: Senior Staff Landman

LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
729403-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16.75%	810/722 884/121
729328-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16.75%	810/673 884/109
16-01048	Ronald J Grant and Christine Grant	SWN Production Company, LLC	14%	911/617
16-01053	Rose Mary Hermann Watson and Donald C Watson	SWN Production Company, LLC	14%	911/660
16-01062	Nancy Hart	SWN Production Company, LLC	14%	911/647
16-01217	Thomas Craig Herrmann	SWN Production Company, LLC	14%	911/665
16-01088	Mary Catherine Grimes and John Grimes, Jr	SWN Production Company, LLC	14%	911/592
16-01207	Carole L Freeland; Shari Lynn Freeland; Teresa Renee Freeland Kuhens	SWN Production Company, LLC	16%	911/552
16-01091	Michel Joseph Walton	SWN Production Company, LLC	14%	911/597
16-01071	Grace Jean Griffin King	SWN Production Company, LLC	16%	911/464
16-01093	Dorothy Humphrey	SWN Production Company, LLC	14%	911/670
16-01095	Robert T Davidson	SWN Production Company, LLC	14%	911/540
16-01094	Beth L Christopher and Jefferey Christopher	SWN Production Company, LLC	14%	911/612
16-01087	Thomas R Sharp and Sue Ellen Sharp	SWN Production Company, LLC	16%	911/602
16-01047	Lindsey Ryan Frohnapfel	SWN Production Company, LLC	14%	911/675
16-01278	Sandra F Rodolf, Trustee of the Patricia M Frohnapfel Revocable Living Trust dtd 01/14/2015	SWN Production Company, LLC	14%	911/655
16-01916	Sandra F Rodolf, Trustee of the Patricia M Frohnapfel Revocable Living Trust dated 01/14/2015, as the sole beneficiary of the S L Frohnapfel Testamentary Living Trust	SWN Production Company, LLC	14%	911/637
16-01056	Makinly Baird	SWN Production Company, LLC	14%	911/642
16-01069	Michael Sean Frohnapfel and Jennifer Susan Legg Frohnapfel	SWN Production Company, LLC	14%	911/575
16-01049	William P Brogan	SWN Production Company, LLC	16%	911/534
16-01165	Audrey Mae Predmore	SWN Production Company, LLC	14%	911/564
16-01050	Jayne E Brogan and Joseph P Davis	SWN Production Company, LLC	16%	911/528
16-01928	Anna Mae Moore and Gerald Thomas Moore	SWN Production Company, LLC	14%	911/632
16-01927	Arlene F Barrett and Joseph Charles Barrett	SWN Production Company, LLC	14%	911/459
16-01926	John Arley Freeland	SWN Production Company, LLC	14%	911/476
16-01587	Betty Jane Claypoole, by Anna Moore, her attorney in Fact	SWN Production Company, LLC	14%	911/607
16-01103	Dale E Wisard and Janet Wisard	SWN Production Company, LLC	16%	911/481
16-01101	Harold E Wisard and Eldine Wisard	SWN Production Company, LLC	16%	911/470
16-01092	Wilda P Freeland, by Anna Moore her Attorney in Fact	SWN Production Company, LLC	14%	911/492
16-01100	Eleanor Freeland Tesarek and Thomas Tesarek	SWN Production Company, LLC	18%	911/516

LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
16-01102	Robert E Peters, Sr	SWN Production Company, LLC	16%	911/558
16-02051	Robert Wisard	SWN Production Company, LLC	14%	911/487
16-01448	Julia A Freeland Price	SWN Production Company, LLC	18%	911/546
16-01449	Linda Freeland Wheeler and James Wheeler Jr	SWN Production Company, LLC	18%	911/504
16-01450	William Charles Freeland and Laura Anne Freeland; Jessica Erin Freeland	SWN Production Company, LLC	18%	911/569
16-01948	Tracy Casey and Drew Casey	SWN Production Company, LLC	14%	911/622
16-01513	Janice L Steinbrenner	SWN Production Company, LLC	18%	911/580
16-01890	Thomas A Weldon	SWN Production Company, LLC	18%	911/586
16-01889	James Miller	SWN Production Company, LLC	18%	911/510
16-01097	John Paul Freeland	SWN Production Company, LLC	18%	911/498
16-01098	Joseph Robert Freeland and Patricia Freeland	SWN Production Company, LLC	18%	911/522
16-01182	Heather Ann Knight	SWN Production Company, LLC	14%	911/627
16-01061	Ollie E Herrmann	SWN Production Company, LLC	14%	912/1
16-01180	Mark Anthony Herrmann & Olga Lidia Herrmann	SWN Production Company, LLC	14%	911/792
16-02053	Steven S Wisard and Julie Wisard	SWN Production Company, LLC	14%	911/787
16-01096	Elizabeth Ellen Fluharty, by Douglas Fluharty, her Attorney In Fact	SWN Production Company, LLC	16%	912/18
16-01925	Cheryl L Hunter	SWN Production Company, LLC	18%	912/13
16-01044	Betty E Herrmann	SWN Production Company, LLC	14%	912/6
16-01588	Elizabeth Ann Beck and Charles Allen Beck	SWN Production Company, LLC	14%	911/782
1-301763-001	The Board of Ohio County Commissioners	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	802/742 893/13
738070-000	Benjamin C Barlow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	14%	844/456 885/53
738070-003	Marie B Ridgeway Lorentz, by her Attorney in Fact Nancy Marie Keely (deceased)	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	844/452 885/53
738070-002	Martha Lorentz aka Marcie Lorentz/Family Tree Corporation	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	14%	844/460 885/53
738295-002	Jack L Herrmann and Nancy V Herrmann	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	845/427 885/65
738295-001	Jo Ann F Wade	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	845/431 885/65
1-325515-000	S E W Trust, Shane E Woloshan, Trustee	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	812/384 898/212

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02/10/2017

LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
729440-000	Rodney K McConnell and Nedra C McConnell	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	819/737 884/133
729490-003	Henry W Zeidler	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	13/339 30/480
729490-002	Judith K Zeidler	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	14/72 30/480
729490-001	Margaret Zeidler Burggraf	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	14/510 30/480

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Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

November 3, 2016

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

RE: Proposed New Well Edward Dremak OHI 3H

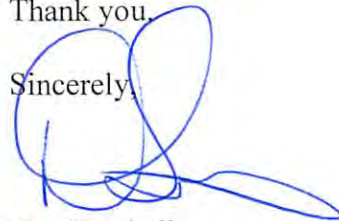
Dear Ms. Adkins

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

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

Thank you,

Sincerely,



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

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Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

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02/10/2017

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

Date of Notice Certification: 12/10/16

API No. 47- 069 -
Operator's Well No. Edward Dremak OHI 3H
Well Pad Name: Edward Dremak OHI Pad

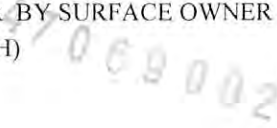
Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>529674.184</u>
County: <u>069-Ohio</u>		Northing: <u>4445451.246</u>
District: <u>Richland</u>	Public Road Access: <u>Waddells Run Road</u>	
Quadrangle: <u>Tiltonsville</u>	Generally used farm name: <u>Edward Dremak</u>	
Watershed: <u>Upper Ohio Wheeling</u>		

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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 Office of Oil and Gas
 DEC 07 2016

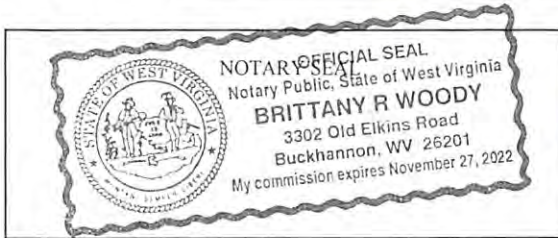
Required Attachments:

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

Well Operator:	<u>SWN Production Co., LLC</u>	Address:	<u>P.O. Box 12359</u>
By:	<u>Dee Southall</u>		<u>Spring, TX 77391-4954</u>
Its:	<u>Regulatory Supervisor</u>	Facsimile:	<u>92816182780@fax.com</u>
Telephone:	<u>304-884-1614</u>	Email:	<u>Dee_Southall@swn.com</u>



Subscribed and sworn before me this 15th day of November 2016
Brittany R Woody Notary Public
 My Commission Expires 11/27/22

Oil and Gas Privacy Notice:

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

47069002:5
 RECEIVED
 Office of Oil and Gas
 DEC 07 2016
 WV Department of
 Environmental Protection

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

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

Date of Notice: 12/10/16 **Date Permit Application Filed:** 12/10/16

Notice of:

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

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

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

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

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

SURFACE OWNER(s)
 Name: Edward Dremak & Joanne Dremak
 Address: 503 Waddells Run Road
Wheeling, WV 26003
 Name: _____
 Address: _____

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

COAL OPERATOR
 Name: _____
 Address: _____

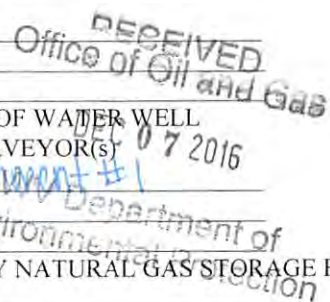
SURFACE OWNER(s) (Road and/or Other Disturbance)
 Name: _____
 Address: _____
 Name: _____
 Address: _____

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

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

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

*Please attach additional forms if necessary



Edward Dremak Water Purveyors - 1500 ft

LANDOWNER	SOURCE	WELL DEPTH	Address
David & Patricia Wolen	Well	112 ft	1826 Short Creek Rd., Wheeling WV 26003
David & Patricia Wolen	Well	78 ft	1826 Short Creek Rd., Wheeling WV 26003
Christopher Waddell	Spring		116 Wadeells Run Rd., Wheeling WV 26003
Edward Dremak	Spring		503 Waddells Run Rd., Wheeling WV 26003

4706900213

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Office of Oil and Gas
DEC 07 2016
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.

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

Well Location Restrictions

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

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

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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Environmental Protection

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(8-13)

API NO. 47- _____ -
OPERATOR WELL NO. Edward Dremak OHI 3H
Well Pad Name: Edward Dremak OHI Pad

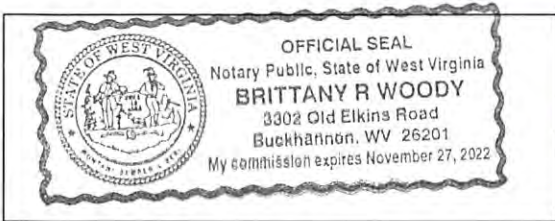
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 1st day of November 2016
Brittany R Woody Notary Public
My Commission Expires 11/27/16

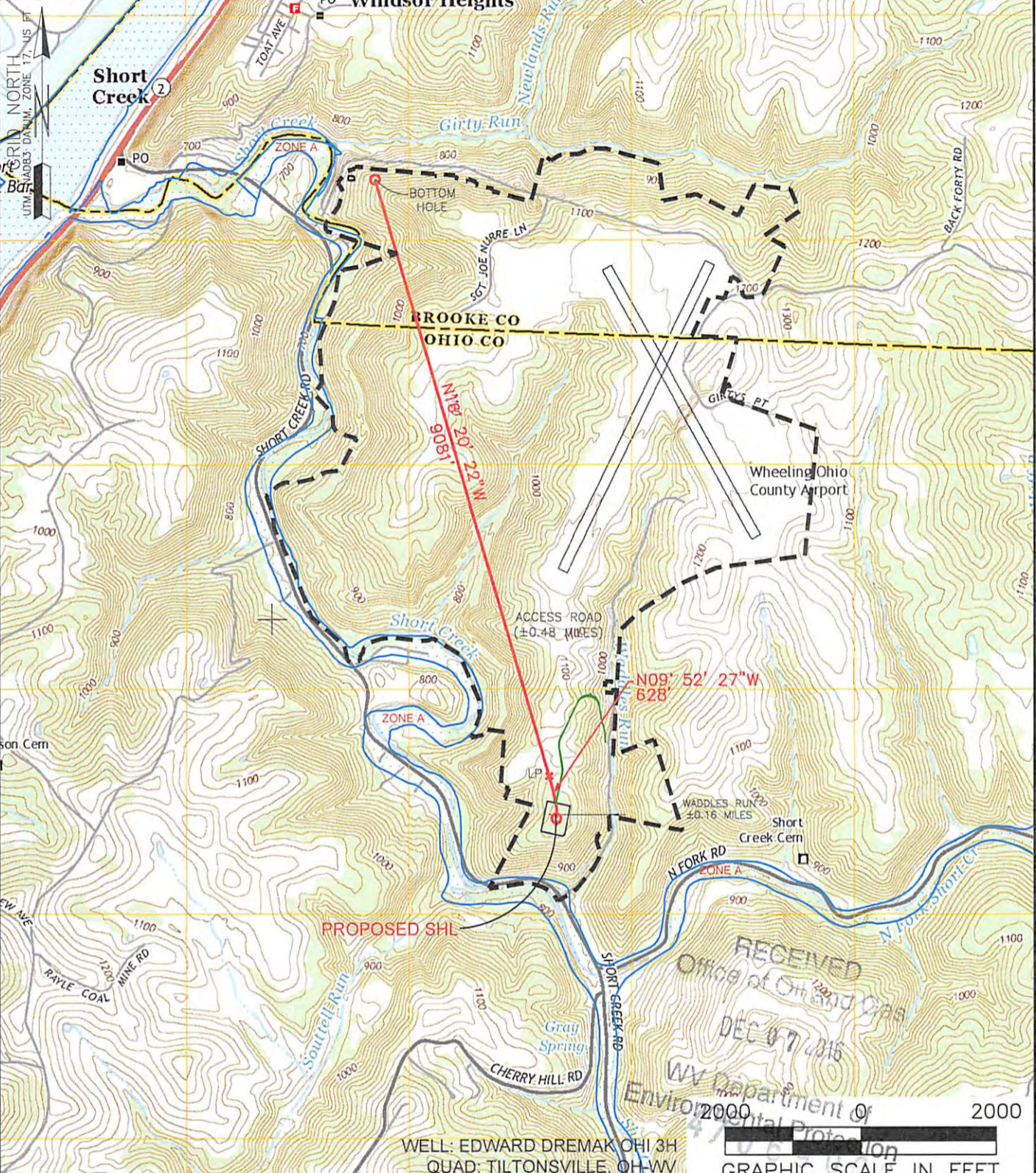
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Environmental Protection

02/10/2017

RETTEW

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



NAME AND DISTANCE TO THE NEAREST STREAM: WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO STREAM CROSSINGS		COMPANY: SWN Production Company, LLC		SWN Production Company™	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET				OPERATOR'S EDWARD DREMAK OHI		WELL #: 3H	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006				LOCATION: RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.158763' LONGITUDE: -80.651491'	
LEGEND: <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL ⊗ PERMITTED BUT NOT DRILLED — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD 				BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.184419' LONGITUDE: -80.660893'		DATE: 12-05-2016	
REVISIONS:				DRAWN BY: W. McCLEAF		SCALE: 1" = 2000'	
				DRAWING NO: 087569045		TOPOGRAPHIC MAP	

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: 11/8/2016 **Date of Planned Entry:** 11/18/2016

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: EDWARD DREMAK & JOANNE DREMAK ✓
 Address: 503 WADDELLS RUN ROAD
WHEELING, WV 26003
 Name: _____
 Address: _____
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: _____
 Address: _____

MINERAL OWNER(s)
 Name: EDWARD DREMAK & JOANNE DREMAK ✓
 Address: 503 WADDELLS RUN ROAD
WHEELING, WV 26003
 *please attach additional forms if necessary

Notice is hereby given:

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

State: <u>WEST VIRGINIA</u>	Approx. Latitude & Longitude: <u>40°09'31.546"N, 80°39'05.369"W</u>
County: <u>OHIO</u>	Public Road Access: <u>WADDELLS RUN ROAD</u>
District: <u>RICHLAND</u>	Watershed: <u>UPPER OHIO SOUTH</u>
Quadrangle: <u>TILTONSVILLE</u>	Generally used farm name: <u>DREMAK</u>

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

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY LLC
 Telephone: 304-517-6603
 Email: MICHAEL_YATES@SWN.COM

Address: 179 INNOVATION DRIVE
JANE LEW, WV 26378
 Facsimile: 304-471-2497

Oil and Gas Privacy Notice:

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

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 Office of Oil and Gas
 JANE LEW, WV 26378
 DEC 07 2016
 WV Department of
 Environmental Protection

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

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

Date of Notice: 11/8/2016 **Date of Planned Entry:** 11/18/2016

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

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

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Notice is hereby provided to:

SURFACE OWNER(s)
Name: _____
Address: _____

Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: C/O Leatherwood, Inc.
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)
Name: _____
Address: _____

*please attach additional forms if necessary

Notice is hereby given:

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

State: <u>WEST VIRGINIA</u>	Approx. Latitude & Longitude: <u>40°09'31.546"N ,80°39'05.369"W</u>
County: <u>OHIO</u>	Public Road Access: <u>WADDELS RUN ROAD</u>
District: <u>RICHLAND</u>	Watershed: <u>UPPER OHIO SOUTH</u>
Quadrangle: <u>TILTONSVILLE</u>	Generally used farm name: <u>DREMAK</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>179 INNOVATION DRIVE</u>
Telephone: <u>304-517-6603</u>	<u>JANE LEW, WV 26378</u>
Email: <u>MICHAEL_YATES@SWN.COM</u>	Facsimile: <u>304-471-2497</u>

Oil and Gas Privacy Notice:

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

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

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

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

Date of Notice: 11/08/2016 **Date Permit Application Filed:** 11/10/16

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

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: Edward & Joanne Dremak Name: _____
Address: 503 Waddells Run Road Address: _____
Wheeling, WV 26003 _____

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>529,679.6</u>
County:	<u>Ohio</u>		Northing:	<u>4,445,430.9</u>
District:	<u>Richland</u>	Public Road Access:	<u>Waddells Run</u>	
Quadrangle:	<u>Tiltonsville, OH-WV</u>	Generally used farm name:	<u>Edward Dremak</u>	
Watershed:	<u>Upper Ohio Wheeling</u>			

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator:	<u>SWN Production Company, LLC</u>	Authorized Representative:	<u>Mike Yates</u>
Address:	<u>PO Box 1300, 179 Innovation Drive</u>	Address:	<u>PO Box 1300, 179 Innovation Drive</u>
	<u>Jane Lew, WV 26378</u>		<u>Jane Lew, WV 26378</u>
Telephone:	<u>304-517-6603</u>	Telephone:	<u>304-517-6603</u>
Email:	<u>Michael_Yates@swn.com</u>	Email:	<u>Michael_Yates@swn.com</u>
Facsimile:	<u>304-471-2497</u>	Facsimile:	<u>304-471-2497</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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

RECEIVED
Office of Oil and Gas
DEP
WV Department of
Environmental Protection

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

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

Date of Notice: 11/08/2016 **Date Permit Application Filed:** 11/16/16

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

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

Name: <u>Edward & Joanne Dremak</u>	Name: _____
Address: <u>503 Waddells Run Road</u>	Address: _____
<u>Wheeling, WV 26003</u>	

Notice is hereby given:

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

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>529,679.6</u>
County: <u>Ohio</u>	Northing: <u>4,445,430.9</u>
District: <u>Richland</u>	Public Road Access: <u>Waddells Run</u>
Quadrangle: <u>Tiltonsville, OH-WV</u>	Generally used farm name: <u>Edward Dremak</u>
Watershed: <u>Upper Ohio Wheeling</u>	

This Notice Shall Include:

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

Well Operator: <u>SWN Production Company, LLC</u>	Address: <u>PO Box 1300, 179 Innovation Drive</u>
Telephone: <u>304-517-6603</u>	<u>Jane Lew, WV 26378</u>
Email: <u>Michael_Yates@swn.com</u>	Facsimile: <u>304-471-2497</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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

DEC 07 2016

REC-116
WV Department of
Environmental Protection

02/10/2017

Product Name	Product Use	Chemical Name	CAS Number
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
A264 (Schlumberger)	Corrosion Inhibitor	Methanol	67-56-1
		Aliphatic Acids	Proprietary
		Prop-2-yn-1-ol	107-19-7
		Aliphatic Alcohols, Ethoxylated #1	Proprietary
Myacide GA 25 (Schlumberger)	Biocide	Water	7732-18-5
		Glutaral	111-30-8
Scale Inhibitor B317 (Schlumberger)	Scale Inhibitor	Trisodium Ortho Phosphate	7601-54-9
		Ethane-1,2-diol	107-21-1
H215 (Schlumberger)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0
J218 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
EB-Clean* J475 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
Water Gelling Agent J580 (Schlumberger)	Gel	Carbohydrate Polymer	Proprietary
Friction Reducer J609W (Schlumberger)	Friction Reducer	Ammonium Sulfate	7783-20-2
		Urea	57-13-6
Crosslinker J610 (Schlumberger)	Crosslinker	Potassium Hydroxide	1310-58-3
		Aliphatic Polyol	Proprietary
Iron Stabilizer L58 (Schlumberger)	Iron Stabilizer	Sodium Erythorbate	6381-77-7
40/70-Mesh Sand S012 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
Sand S100 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
SSA-2 (Halliburton)	Sand	Crystalline Silica	14808-60-7
FR-76 (Halliburton)	Friction Reducer	Inorganic salt	74742-47-8
		Hydrotreated light petroleum distillate	Proprietary
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1

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

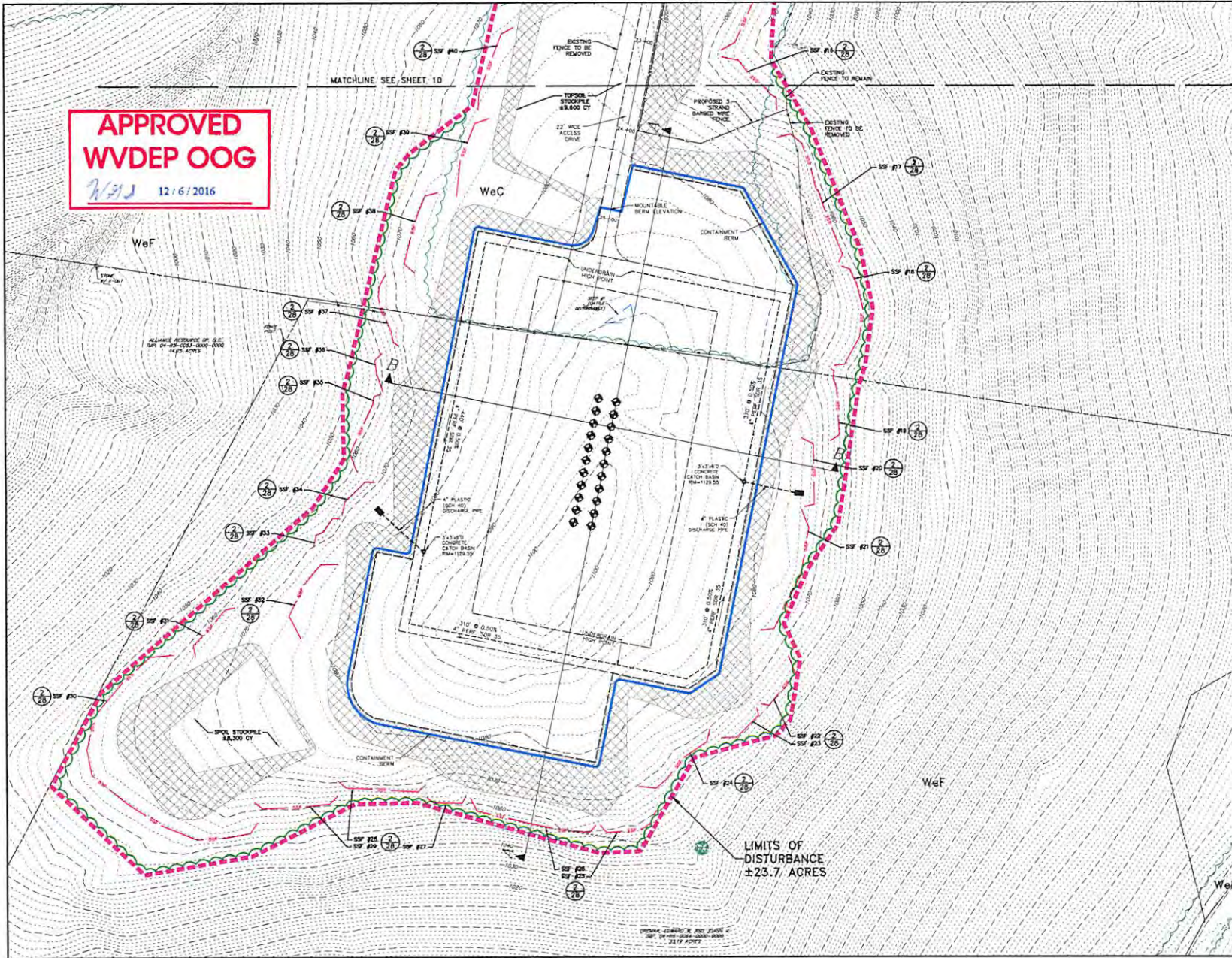
RECEIVED
Office of Oil and Gas

DEC 07 2016

WV Department of
Environmental Protection

02/10/2017

APPROVED WVDEP OOG
WJW 12/6/2016



LEGEND

EXISTING PROPERTY LINE	---
EXISTING FENCE LINE	---
PROPOSED DRIVE	---
EXISTING FENCE	---
PROPOSED FENCE	---
EXISTING FENCE	---
EXISTING CONTOUR LINE	---
EXISTING CONTOUR LINE	---
LIMITS OF DISTURBANCE	---
PROPOSED CONTOUR BERM	---
RISK CONSTRUCTION ENTRANCE	---
SLOPE LIVING	---
PROPOSED CHECK DAM	---
CHANNEL DRAIN	---
SEE THE BOUNDARY LINE	---
SEE THE DESIGNATION	---
PROPOSED WELL HEAD	---
EXISTING WETLAND	---
EXISTING STREAM	---
EXISTING DITCH/POLE	---
EXISTING OVERHEAD ELECTRIC LINE	---
EXISTING GAS LINE	---
EXISTING WATER MAIN/SEWER	---
PROPOSED CONSTRUCTION FENCE	---
PROPOSED FENCE	---
TO BE INDICATED BY SYMBOLS	---
PROPOSED FINISH GRADE ELEVATION	---
PROPOSED SURFACE GRADE ELEVATION	---
PROPOSED PAVEMENT	---

FOR RETTEW ASSOCIATES, P.C.

CLIENT: SWM PRODUCTION CO., LLC
 JANE L.W. WV 26378
 (832) 796-1610

MANAGER: PATRICK G. DONNARD, P.E.
DESIGNER: CHAD RYAN, P.E.
DRAWN BY: JACOB RYAN
CHECKED BY: JACOB RYAN
DATE: 11/16/2016

SCALE: 1"=400'

DATE: 11/16/2016
SHEET NO.: 11 OF 31
DWG. NO.: 087568045

WV DEP E&S PLAN FOR EDWARD DREMAK WELL PAD

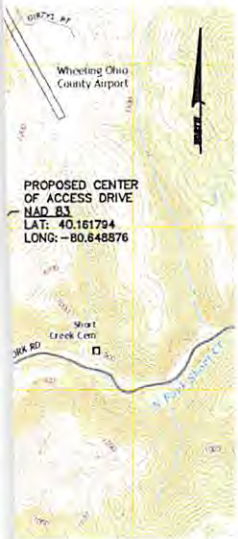
OHIO COUNTY, WV

RICHLAND TAX DISTRICT

NOT FOR CONSTRUCTION/NOT FOR BIDDING

T CONTROL PLAN

AK WELL PAD COUNTY, WEST VIRGINIA



SOILS CLASSIFICATION

GuB:	GUERNSEY SILT LOAM, 3 TO 8% SLOPES
GuC:	GUERNSEY SILT LOAM, 8 TO 15% SLOPES
GuD:	GUERNSEY SILT LOAM, 15 TO 25% SLOPES
WeC:	WESTMORELAND SILT LOAM, 3 TO 8% SLOPES
WeD:	WESTMORELAND SILT LOAM, 15 TO 25 SLOPES
WeE:	WESTMORELAND SILT LOAM, 25 TO 35% SLOPES
WeF:	WESTMORELAND SILT LOAM, 35 TO 60% SLOPES

CUT & FILL

	WELL PAD	ACCESS DRIVE	SITE
CUT (SOIL)	+ 21,590 CY	+50,904 CY	+72,494 CY
10% COMP. (SOIL)	- 2,159 CY	- 5,090 CY	- 7,249 CY
CUT (ROCK)	+ 36 CY	+42,600 CY	+42,636 CY
10% ROCK SWELL	+ N/A	+ 875 CY	+ 875 CY
20% ROCK SWELL	+ 7 CY	+ 5,848 CY	+ 5,855 CY
30% ROCK SWELL	+ N/A	+ 1,381 CY	+ 1,381 CY
FILL	- 31,953 CY	-78,792 CY	-110,745 CY
NET	- 12,479 CY	+17,726 CY	= 5,247 CY
STONE	+ 10,078 CY	+ 2,063 CY	= 12,141 CY
TOPSOIL	+ 4,710 CY	+ 5,560 CY	= 10,270 CY

- NOTES:
1. THE TOPSOIL DEPTH FOR THE ACCESS DRIVE IS 5.3". THE TOPSOIL DEPTH FOR THE PAD IS 5.6".
 2. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES AND VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.

LIST OF DRAWINGS

- 1 OF 31. COVER SHEET & GENERAL NOTES
- 2 OF 31. OVERALL SITE PLAN
- 3 OF 31. ENLARGED LAYOUT PLAN
- 4 OF 31. ENLARGED LAYOUT PLAN
- 5 OF 31. ENLARGED LAYOUT PLAN
- 6 OF 31. EROSION & SEDIMENT CONTROL PLAN
- 7 OF 31. EROSION & SEDIMENT CONTROL PLAN
- 8 OF 31. EROSION & SEDIMENT CONTROL PLAN
- 9 OF 31. WV DEP E&S PLAN
- 10 OF 31. WV DEP E&S PLAN
- 11 OF 31. WV DEP E&S PLAN
- 12 OF 31. ACCESS DRIVE PROFILE
- 13 OF 31. ACCESS DRIVE PROFILE
- 14 OF 31. WELL PAD CROSS SECTIONS
- 15 OF 31. CROSS SECTIONS PLAN VIEW
- 16 OF 31. CROSS SECTIONS - ACCESS DRIVE
- 17 OF 31. CROSS SECTIONS - ACCESS DRIVE
- 18 OF 31. CROSS SECTIONS - ACCESS DRIVE
- 19 OF 31. CROSS SECTIONS - ACCESS DRIVE
- 20 OF 31. CROSS SECTIONS - ACCESS DRIVE
- 21 OF 31. CROSS SECTIONS - ACCESS DRIVE & PAD
- 22 OF 31. CROSS SECTIONS - PAD
- 23 OF 31. RECLAMATION PLAN
- 24 OF 31. RECLAMATION PLAN
- 25 OF 31. RECLAMATION PLAN
- 26 OF 31. EVACUATION ROUTE PLAN
- 27 OF 31. EVACUATION ROUTE PLAN - USGS
- 28 OF 31. NOTES & DETAILS
- 29 OF 31. DETAILS
- 30 OF 31. DETAILS
- 31 OF 31. GEOTECHNICAL NOTES & DETAILS

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.

DATE: 10/26/2016 TICKET #: 1630029503

ENGINEER'S ESTIMATE OF QUANTITIES		
WELL SITE PAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNITS
WELL PAD CUT (EXCLUDES TOPSOIL)	21,590	CY
TOE KEY EXCAVATION	6,225	CY
TOE KEY - SUITABLE FILL	6,225	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	31,953	CY
WELL PAD TOPSOIL STRIPPING	4,710	CY
WELL PAD FINISH GRADING	22,734	SY
PLACEMENT TOPSOIL	830	CY
GEOTEXTILE	22,734	SY
BASE ROCK: R3S 12" (ROCK PROVIDED BY QUARRY)	6,987	TON
PLACEMENT COST		
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	3,882	TON
24" BERMS	2,008	LF
ACCESS ROAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNITS
ACCESS ROAD CUT (EXCLUDES TOPSOIL)	83,504	CY
ACCESS ROAD FILL (EXCLUDES TOPSOIL)	78,792	CY
TOE KEY EXCAVATION	5,000	CY
TOE KEY - SUITABLE FILL	5,000	CY
ACCESS ROAD TOPSOIL STRIPPING	5,580	CY
ACCESS ROAD FINISH GRADING	3,303	SY
PLACEMENT OF TOPSOIL	2,736	CY
GEOTEXTILE	6,147	SY
BASE ROCK: R3S 12" (ROCK PROVIDED BY QUARRY)	2,459	TON
PLACEMENT COST		
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	1,366	TON
BASE ROCK AASHTO #67 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST - ALTERNATE	3,149	TON
FINISH GRADE CRUSHER RUN 1.5" (ROCK PROVIDED BY QUARRY) PLACEMENT COST - ALTERNATE	1,868	TON
BASE ROCK: R-3'S 8" (ROCK PROVIDED BY QUARRY)	2,459	TON
PLACEMENT COST - ALTERNATE		
SUPERPAVE 1.5" WEARING COURSE - PAVED AREA ONLY	128	TON
SUPERPAVE 4.5" BASE COURSE - PAVED AREA ONLY	385	TON
8" THICK AGGREGATE - PAVED AREA ONLY	341	TON
12" DIAMETER CROSS PIPE	120	LF
18" DIAMETER CROSS PIPE	70	LF
24" DIAMETER CROSS PIPE	35	LF
ROADSIDE UNDERDRAIN	0	LF
CULVERT OUTLET/ROCK APRON SUMP	6	EA
CULVERT OUTLET/ROCK APRON SUMP ROCK: R-5S	61	TON
CULVERT OUTLET/ROCK APRON SUMP ROCK GEOTEXTILE	76	SY
ROADSIDE CHANNEL	1,691	LF
ROADSIDE CHANNEL ROCK: R-5S	0	TON
EROSION & SEDIMENT CONTROL ITEMS		
36" SUPER SILT FENCE	3,978	LF
FILTER SOCK (12")	1244	LF
FILTER SOCK (18")	1322	LF
FILTER SOCK (24")	817	LF
FILTER SOCK (32")	595	LF
CHANNEL MATTING (NAG S75)	706	SY
CHANNEL MATTING (NAG SC150)	1,188	SY
CHANNEL MATTING (NAG C125)	357	SY
CHANNEL MATTING (NAG SC250)	867	SY
ROCK FILTER DAM	6	EA
LEVEL SPREADER	2	EA
ADDITIONAL ITEMS		
TRAFFIC CONTROL	1	LS
CONSTRUCTION ENTRANCE	1	LS
CONSTRUCTION FENCE	0	LF
MOBILIZATION	1	LS
TRENCH SAFETY PLAN & PROTECTION	1	LS
SEEDING/MULCHING ITEMS		
SEEDING, LIME, & FERTILIZER	76,593	SY
FLEXTERRA (ONLY 2:1 SLOPE, NO MATTING)	37,037	SY
UNDERDRAIN ITEMS		
PERFORATED PLASTIC PIPE	1,430	LF
STANDARD CATCH BASIN	2	EA
AASHTO#57 STONE (ALTERNATE USE AASHTO #4 STONE)	180	TONS
2" CATCH BASIN RISER	2	EA
SOLID SCHEDULE 40 PLASTIC PIPE	130	LF
STEEL GATE	2	EA
4" STEEL GATE VALVE	2	EA
2X2" RUBBER ANTI-SEEP COLLAR	4	EA
CLEARING AND GRUBBING ITEMS		
CLEARING AND GRUBBING	23.7	AC
TIMBER REMOVAL	11.8	AC

FOR REVIEW ASSOCIATES BY:

MANAGER: PATRICK G. DENARDO, P.E.
DESIGN BY: DAW
DRAWN BY: DAW
SURV. CHIEF: [Signature]



CLIENT: SWN PRODUCTION CO., LLC
PO BOX 1300
JANE LEW, WV 26378
(832) 796-1610

RETTEW
RETTEW Associates, Inc.
One Robinson Plaza, 6600 Strabane Pike, Suite 200
Pittsburg, PA 15206
Phone (412) 446-1728 • Fax (412) 446-1733
Email: rettel@rettel.com
Website: www.rettetw.com

COVER SHEET & GENERAL NOTES
FOR
**EDWARD DREMAK
WELL PAD**

EROSION & SEDIMENT CONTROL PLAN FOR EDWARD DREMAK RICHLAND TAX DISTRICT, OHIO

GENERAL NOTES

- THE BOUNDARY AND TOPOGRAPHIC SURVEY FOR THE PROJECT AREA WERE PERFORMED BY RETTEW ASSOCIATES IN JANUARY 2016 AND SEPTEMBER 2016.
- PROPERTY BOUNDARIES, LANDOWNER INFORMATION AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS DATA.
- EXISTING STRUCTURES, TREE LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ONLINE AERIAL PHOTOGRAPHY.
- THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83), NORTH ZONE.
- THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) WHICH ORIGINATES FROM FIELD RUN TOPOGRAPHIC SURVEY.
- A WETLANDS SURVEY WAS PERFORMED BY RETTEW ASSOCIATES IN DECEMBER 2015 AND SEPTEMBER 2016.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING PRIOR TO CONSTRUCTION ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING ALL SAFETY REQUIREMENTS.
- SWN PRODUCTION CO., LLC RESERVES THE RIGHT TO ACCEPT OR REJECT ANY AND ALL BIDS AT ITS DISCRETION. ALL WORK WILL BE PERFORMED UPON AND SUBJECT TO THE TERMS AND CONDITIONS OF SWN PRODUCTION CO., LLC'S MASTER SERVICE AGREEMENT EXECUTED BETWEEN THE COMPANIES. THIS IS A LUMP SUM BID. SHOULD CONTRACTOR UNDERESTIMATE, CONTRACTOR SHALL PROVIDE ADDITIONAL LABOR AND MATERIALS TO COMPLETE THE WORK AT NO COST TO SWN PRODUCTION CO., LLC. ALL MEASUREMENTS ARE ESTIMATES GIVEN FOR PLANNING PURPOSES. CONTRACTOR IS RESPONSIBLE TO BID ON THE BASIS OF THE SITE PLAN DRAWINGS PROVIDED.
- THE CONSTRUCTION START DEADLINE IS BEING PROVIDED AS THE DATE SWN PRODUCTION CO., LLC MAY LOSE ITS RIGHTS TO COMMENCE WORK UNDER THIS BID AND DRILL THE PROPOSED WELL. IF THE WORK PROVIDED FOR UNDER THIS BID IS NOT TIMELY COMMENCED, BY SUBMITTING THIS BID, CONTRACTOR IS AGREEING TO COMMENCE THE WORK PRIOR TO THE DEADLINE PROVIDED HEREIN. FAILURE TO COMMENCE THE WORK DETAILED IN THIS PACKAGE IN A TIMELY MANNER MAY CAUSE DAMAGES TO SWN PRODUCTION CO., LLC FOR WHICH CONTRACTOR SHALL BE HELD RESPONSIBLE.
- THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL PROJECT BONDING REQUIREMENTS WHEN CONSTRUCTING PUBLIC INFRASTRUCTURE. ALL PRIVATE CONSTRUCTION FOR SWN PRODUCTION CO., LLC SHALL INCLUDE A MINIMUM 1-YEAR WARRANTY OF PERFORMANCE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PREVENT ANY DAMAGE TO PRIVATE PROPERTY, PROVIDE ACCESS TO ALL DRIVES DURING CONSTRUCTION, NOTIFY UTILITY COMPANIES AND VERIFY LOCATION OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION, AND PROTECT ALL UTILITIES TO REMAIN IN SERVICE.
- BARRICADING AND TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). TRAFFIC FLOW AND ACCESS SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC SAFETY MEASURES FOR WORK ON THE PROJECT.
- THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS GOVERNING EXCAVATION WHEN APPLICABLE TO THE PROJECT. THESE PLANS SHALL BE SEALED BY AN ENGINEER EXPERIENCED IN THE DESIGN OF TRENCH SAFETY SYSTEMS AND LICENSED BY THE STATE IN WHICH THE WORK IS OCCURRING. CONTRACTOR SHALL SUBMIT THE PLAN TO SWN PRODUCTION CO., LLC PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS FOR WORK RELATED TO EXCAVATION.
- ANY DAMAGES THAT MAY OCCUR TO PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE PROPERTY OR IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES. IN THE EVENT OF SUCH DAMAGE, CONTRACTOR SHALL NOTIFY SWN PRODUCTION CO., LLC IMMEDIATELY PRIOR TO THE RESTORATION. THIS RESTORATION SHALL BE SUBJECT TO THE OWNER'S APPROVAL; MOREOVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- THE MAXIMUM ALLOWABLE SLOPE FOR EARTHEN AREAS IS 3-TO-1 HORIZONTAL-TO-VERTICAL, UNLESS SPECIFIED OTHERWISE IN A SITE-SPECIFIC GEOTECHNICAL REPORT.
- PRIOR TO FILL PLACEMENT, EXISTING SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6". MOISTURE ADJUSTED TO OPTIMUM, AND RE-COMPACTED TO THE SAME DENSITY AND MOISTURE CONTENT AS THE PROPOSED FILL.
- IMPORTED SELECT FILL IS DEFINED AS UNIFORMLY BLENDED SANDY CLAY TO CLAYEY SAND WITH A LIQUID LIMIT (LL) OF LESS THEN 35 PERCENT AND A PLASTICITY INDEX (PI) OF BETWEEN 6 AND 15. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE THICKNESS.
- FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698), IN CONJUNCTION WITH THE COMPACTING OPERATION, FILL MATERIAL SHALL BE BROUGHT TO OPTIMUM MOISTURE CONTENT.
- STORM DRAINAGE PIPING SHALL BE CONSTRUCTED OF A MINIMUM OF CLASS III REINFORCED CONCRETE PIPE (RCP), CORRUGATED METAL PIPE (CMP), OR HIGH-DENSITY POLYETHYLENE (HDPE) PIPE. A MINIMUM OF 1.0' OR 1/20 OF COVER SHALL BE MAINTAINED WHEN USING CMP OR HDPE PIPE. MINIMUM CMP WALL THICKNESS SHALL BE 0.064" OR 16 GAUGE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION SITE CLEAR OF ALL TRASH AND DEBRIS.
- PRIOR TO ANY EARTHWORK EXCAVATION OR TOPSOIL REMOVAL, ALL EROSION CONTROL MEASURES DETAILED ON THESE DRAWINGS SHALL BE PROPERLY INSTALLED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY SWN PRODUCTION COMPANY, LLC AT ANY TIME.
- THE CONTRACTOR SHALL INSPECT STABILIZATION AND EROSION CONTROL MEASURES AT A MINIMUM OF ONCE EVERY 7 DAYS OR WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES DURING CONSTRUCTION.
- SILT FENCE AND SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL RE-VEGETATION HAS BEEN COMPLETELY ESTABLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS UNTIL PROJECT COMPLETION.
- DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED UNTIL THE CONTRACTOR IS RELEASED FROM THE JOB SITE. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEEDED OR RE-SODDED, IF NECESSARY.
- FOR DESIGN PURPOSES, THE PAD CROSS SECTION AND ROAD SECTION WAS ASSUMED TO BE 14". THIS IS DUE TO SETTLEMENT OF THE CRUSHER RUN INTO THE R-3 ROCK.



7.5 MIN. QUADRANGLE MAP: TILTONSVILLE, OH-WV
LOCATION MAP
SCALE - 1"=200'

STAKING FLAG LEGEND

TOP OF CUTS (YELLOW)	
GRADE AT TOP OF PAD/POND/PIT (YELLOW & ORANGE)	
TOES OF FILL (ORANGE)	
TOP HOLE LOCATION (PINK)	
VERTICAL CUT & FILL AT PAD/POND/PIT CORNER OR EDGE (PINK & BLACK STRIPE)	
LIMITS OF DISTURBANCE (WHITE)	
EROSION & SEDIMENT CONTROL STRUCTURES (PINK & WHITE STRIPE)	
TOPSOIL STOCKPILE LOCATIONS (ORANGE & WHITE STRIPE)	
CENTERLINE OF DITCH & BOTTOM OF SEDIMENT TRAPS (BLUE)	
EROSION & SEDIMENT WETLANDS (PINK & WHITE)	
CENTERLINE LEASE ROAD (LIME GREEN & ORANGE)	
CULVERT CROSSING (GREEN)	

SWN
Southwestern Energy

LIMITS OF DISTURBANCE

PAD	8.0 ACRES
ROAD	15.7 ACRES
TOTAL	23.7 ACRES

PER LAND OWNER
DREMAK, EDWARD W. & JOANNE

Handwritten signature and date:
11-17-17

02/10/2017