



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

Friday, July 21, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for EDWARD DREMAK UP OHI 2H
47-069-00225-00-00

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 UP OHI 2H
Farm Name: DREMAK
U.S. WELL NUMBER: 47-069-00225-00-00
Horizontal 6A / New Drill
Date Issued: 7/21/2017

Promoting a healthy environment.

07/21/2017

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street, SE Charleston, WV 25304
(304)926-0499, Ext 1656

Jim Justice, Governor
Barry K. Lay, Chairman
dep.wv.org

June 15, 2017

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-69-00225

COMPANY: SWN Production Company, LLC

FARM: Dremak, Edward W. & Joanne V. – 2H

COUNTY: Ohio DISTRICT: Richland QUAD: Tiltonsville

The deep well review of the application for the above company is Approved to drill to Trenton for Point Pleasant completion.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners; Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells, well name, and the name and address of the operator; None
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Cindy Raines
Administrator

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

2) Operator's Well Number: Edward Dremak UP OHI 2H 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: 1087'; Elevation, proposed post-construction: 1087'

5) Well Type (a) Gas Oil Underground Storage
Other
(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Point Pleasant
Target Formation- Point Pleasant, Target Top TVD- 10384', Target Base TVD- 10520', Anticipated Thickness- 136', Associated Pressure- 8843
BW

8) Proposed Total Vertical Depth: 10670'

9) Formation at Total Vertical Depth: Point Pleasant Trenton BW

10) Proposed Total Measured Depth: 19,421'

11) Proposed Horizontal Leg Length: 8664'

12) Approximate Fresh Water Strata Depths: 464'

13) Method to Determine Fresh Water Depths: Offset wells; WR-35

14) Approximate Saltwater Depths: 1075'

15) Approximate Coal Seam Depths: 832'

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

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

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

Handwritten: 3-30-17

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	30"	New	H-40	98.9#	100'	100'	CTS
Fresh Water	20"	New	J-55	94#	882'	882'	1716 sx/CTS
Coal	13 3/8"	New	J-55	68#	1680'	1680'	1488 sx/CTS
Intermediate	9 5/8"	New	P110	53.5#	9600'	9600'	3594 sx/CTS
Production	5 1/2"	New	HCP-110	20#	19,421'	19,421'	Least 1542x 101 2230 cu/102' 1000' 1000'
Tubing							
Liners							

E. J. 3-30-17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	30"	0.75	2780	81	Class A	1.19/50% Excess
Fresh Water	20"	24"	0.438	2110	633	Class A	1.19/50% Excess
Coal	13 3/8"	17.5"	0.33	2730	1768	Class A	1.19/50% Excess
Intermediate	9 5/8"	12 1/4"	0.395	5750	3898	Class A	1.68/1.25
Production	5 1/2"	8 3/4"	0.415	14520	9918	Class A	1.68/1.25
Tubing							
Liners							

PACKERS

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

OFFICE OF OIL AND GAS JUL 14 2017

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

Drill approximately 100 ft into the Trenton formation and then set cement plug from KOP to 600' below KOP and then drill horizontally into the Point Pleasant. **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'-75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50'-75' 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, proppant (sand and/or ceramic) 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 within the target formation has been stimulated. All stage plugs are then prepared for production by being drilled out or using large internal bore plugs and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production units, vertical separation units, water and oil storage tanks as needed. The maximum anticipated pressure and rate is 15,000 psi @ 100 barrels per minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 25.3

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.

*Note: Attach additional sheets as needed.

DEEP 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 UP OHIAH
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

Submitted by:

Dee Southall

Date: 3/2/17

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:

Oil & Gas Inspector

Date: 3/30/17

Approved by:

Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC

Schlumberger Cement Additives

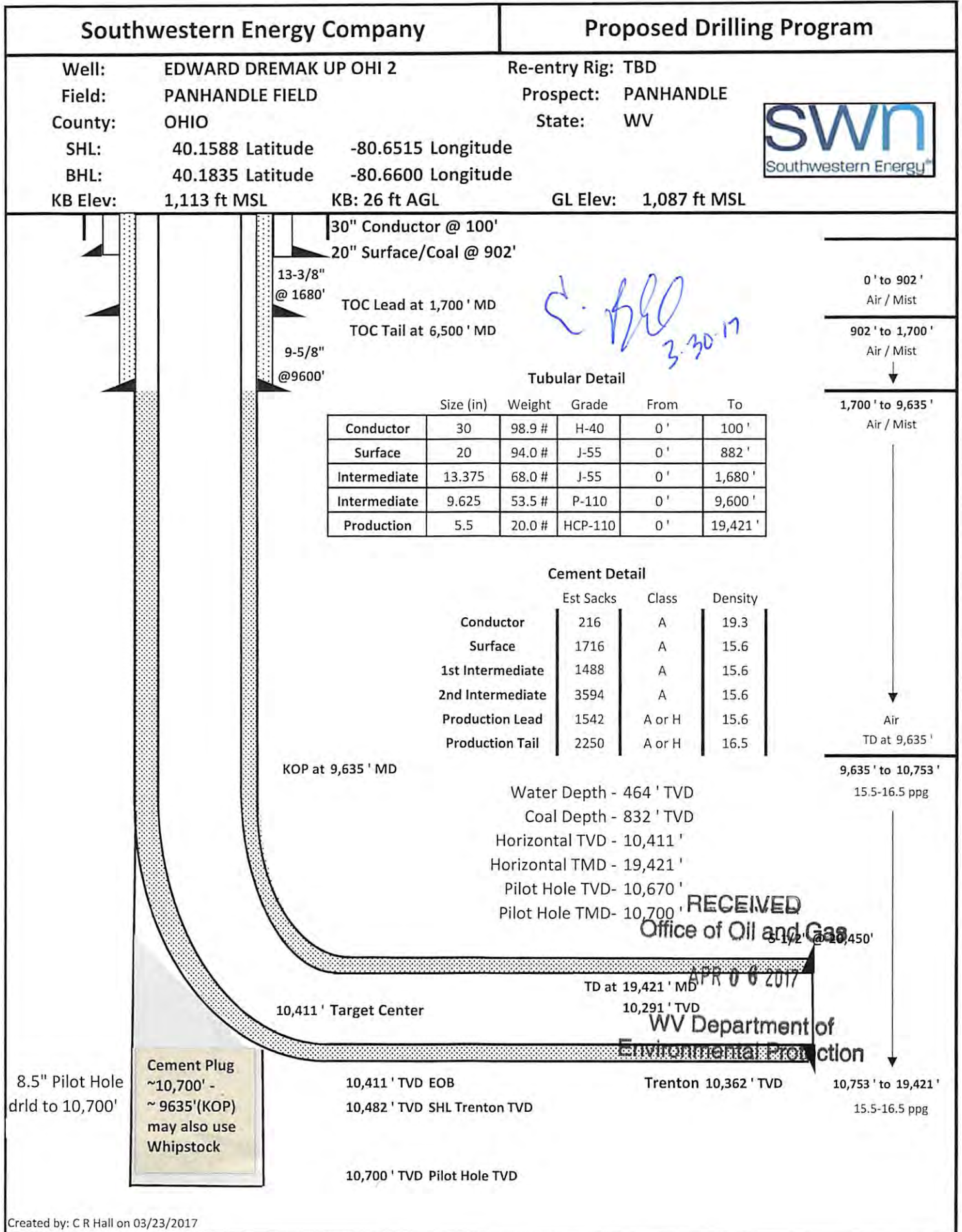
	Product Name	Product Use	Chemical Name	CAS Number
Surface	D901	cement	class A	65997-15-1
	S001	accelerator	calcium chloride	10043-52-4
Intermediate 1	D901	cement	class A	65997-15-1
	S001	accelerator	calcium chloride	10043-52-4
Intermediate 2 - Lead	D049	cement	portland cement	65997-15-1
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D801	retarder	aromatic polymer derivative	proprietary
	D238	fluid loss	polyglucoside derivative	proprietary
	D044	salt	sodium chloride	7447-40-7
	D198		crystalline silica	14808-60-7
dispersant			proprietary	
D202		formaldehyde (impurity)	proprietary	
		dispersant	proprietary	
Intermediate 2 - Tail	D901	cement	class A	65997-15-1
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D801	retarder	aromatic polymer derivative	proprietary
	D044	salt	sodium chloride	7447-40-7
	D198	retarder	crystalline silica	14808-60-7
			dispersant	proprietary
D202		formaldehyde (impurity)	proprietary	
		dispersant	proprietary	
Production - 16.5ppg	D909	cement	class H	65997-15-1
	D198	retarder	crystalline silica	14808-60-7
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D207	fluid loss	polyglucoside derivative	proprietary
			aliphatic amide polymer	proprietary
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
D153	antisettling	quartz, crystalline silica	14808-60-7	
Production - 17.5ppg	D909	cement	class H	65997-15-1
	D198	retarder	crystalline silica	14808-60-7
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
	D076	weighting agent	hematite (diiron trioxide)	1309-57-1
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
D153	antisettling	quartz, crystalline silica	14808-60-7	

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Environmental Protection

07/21/2017





69-00225

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

March 14, 2017

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

RE: Proposed New Well Edward Dremak UP OHI 2H

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

APR 06 2017

SW+
WV Department of
Environmental Protection

WW-9
(4/16)

API Number 47 - 69 - 00225
Operator's Well No. Edward Dremak UP OHI 2H

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 SOBAM 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 1034WV0109517/CID28726, Carbon Limestone 28726-CID28726

Arden Landfill 10072, American 02-12954, Country Wide 38390/CID38390, Pine Grove 13688
Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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

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

Company Official Signature _____

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

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Office of Oil and Gas

APR 06 2017

Subscribed and sworn before me this 2nd day of March

Brittany R Woody
My commission expires 11/27/2017

WV Department of
Environmental Protection



69-00225

Form WW-9

Operator's Well No. Edward Dremak UP OHI 2H

SWN Production Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 25.3 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] 3.30.17

Comments:

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Title: oil and gas inspector

Date: 3.30.17

APR 06 2017

Field Reviewed?

(checked) Yes

() No

WV Department of Environmental Protection

07/21/2017

69 00225



WVD Seeding Specification

R²
A → V⁺

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%
<p style="color: red;">All legumes are innoculated at 5x normal rate</p>	
<p style="color: red;">Apply @ 100lbs per acre April 16th- Oct. 14th</p> <p style="color: red;">Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat</p>	

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 36" ROW/LOD is One Acre
 871' of 54" ROW/LOD is One Acre
 622' of 72" 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 (2) 50lb bags of Lime (2x seed in winter months + 50lb Winter Wheat/acre)

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%
<p style="color: red;">Apply @ 100lbs per acre April 16th- Oct. 14th</p> <p style="color: red;">Apply @ 200lbs per acre Oct. 15th- April 15th</p>	
Organic Fertilizer @ 200lbs per Acre	Pelletized Lime @ 2 Tons per Acre

WETLANDS (delineated as jurisdictional wetlands)

Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%

Apply @ 25lbs per acre
April 16th- Oct. 14th

Apply @ 50lbs per acre
Oct. 15th- April 15th

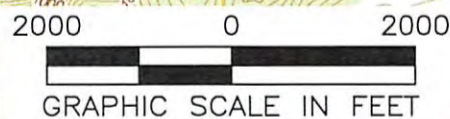
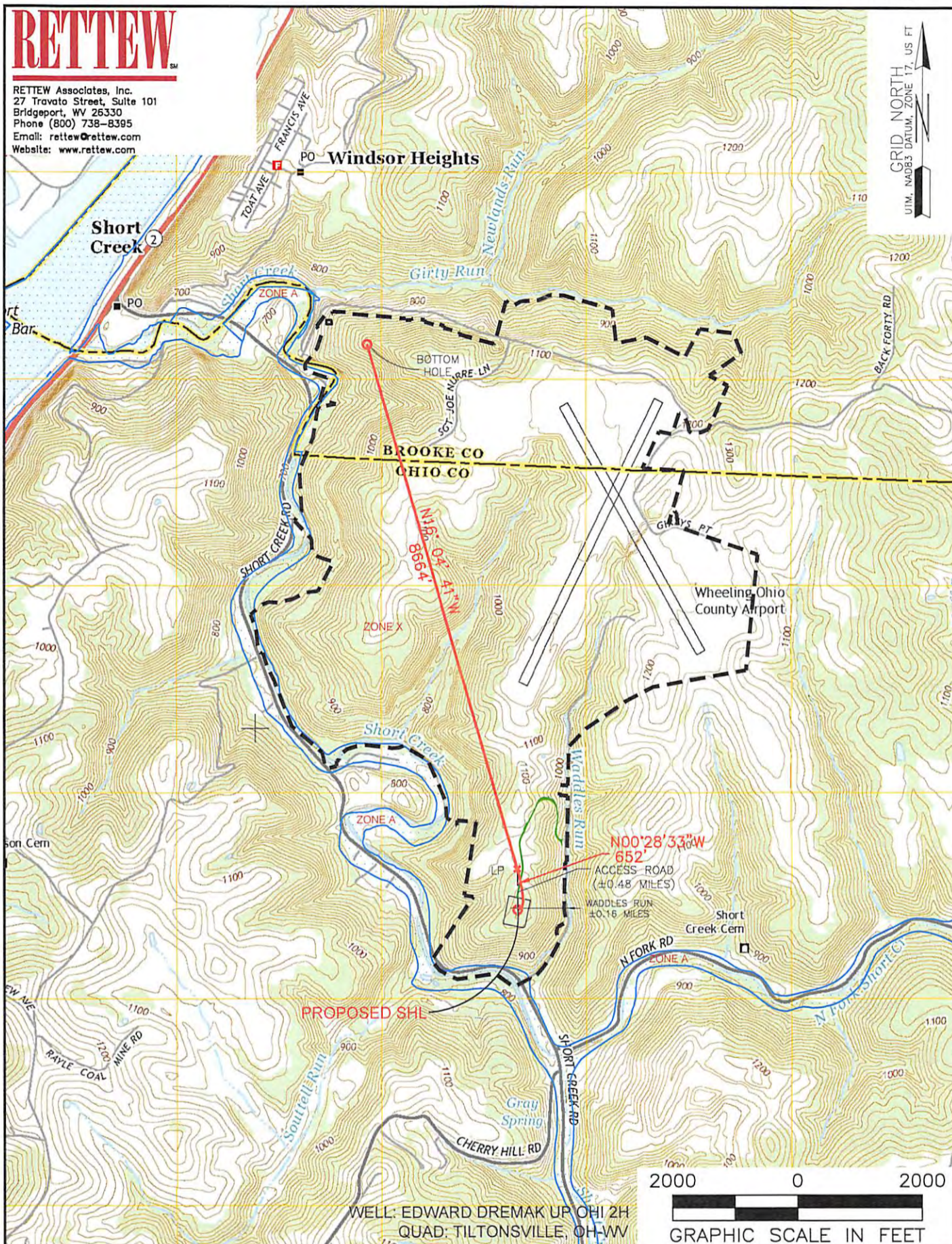
NO FERTILIZER OR LIME INSIDE WETLAND LIMITS

69-00225

RETTEW

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

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



WELL: EDWARD DREMAK UP OHI 2H
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		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 UP OHI		WELL #: 2H	
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 FLOOD ZONES A AND X ARE SITUATED WITHIN THE UNIT.				LOCATION: RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.158836° LONGITUDE: -80.651473°	
LEGEND: ● PROPOSED SURFACE HOLE / BOTTOM HOLE ⊗ EXISTING / PRODUCING WELLHEAD ⊗ ABANDONED WELL ⊗ PLUGGED & ABANDONED WELL ⊗ PERMITTED BUT NOT DRILLED				BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.183514° LONGITUDE: -80.659957°		REVISIONS: ▲ 04-11-2017 DEP COMMENTS	
<ul style="list-style-type: none"> — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD 				DATE: 04-03-2017		DRAWN BY: W. McCLEAF	
						SCALE: 1" = 2000'	
						DRAWING NO: 087569045	
						TOPOGRAPHIC MAP	

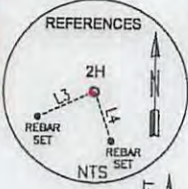
07/21/2017

SHL Latitude: 40°10'00" 7,396'

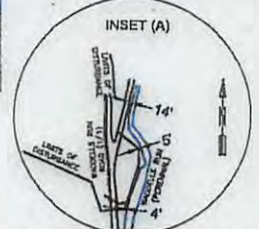
BHL Latitude: 40°12'30" 9,763'

RETTEW

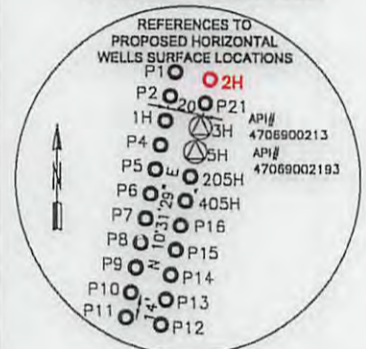
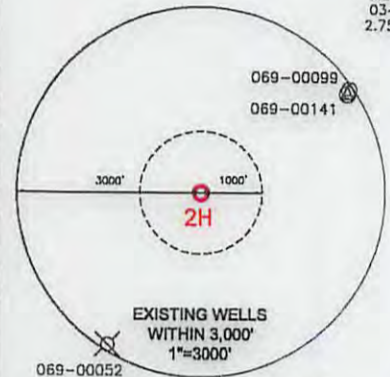
RETTEW Associates, Inc.
27 Travata Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com



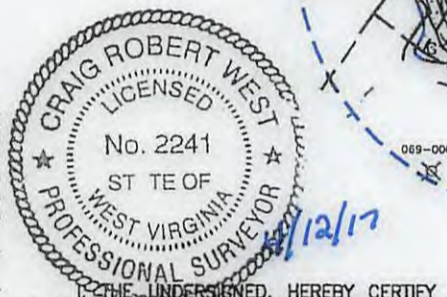
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 66°50'22" W	362.06'	SHL TO LANDMARK	
L2	S 89°48'01" E	742.40'	SHL TO LANDMARK	
L3	S 64°38'03" W	559.04'	SHL TO REF. PNT.	REBAR W/CAP
L4	S 13°22'33" E	374.77'	SHL TO REF. PNT.	REBAR W/CAP



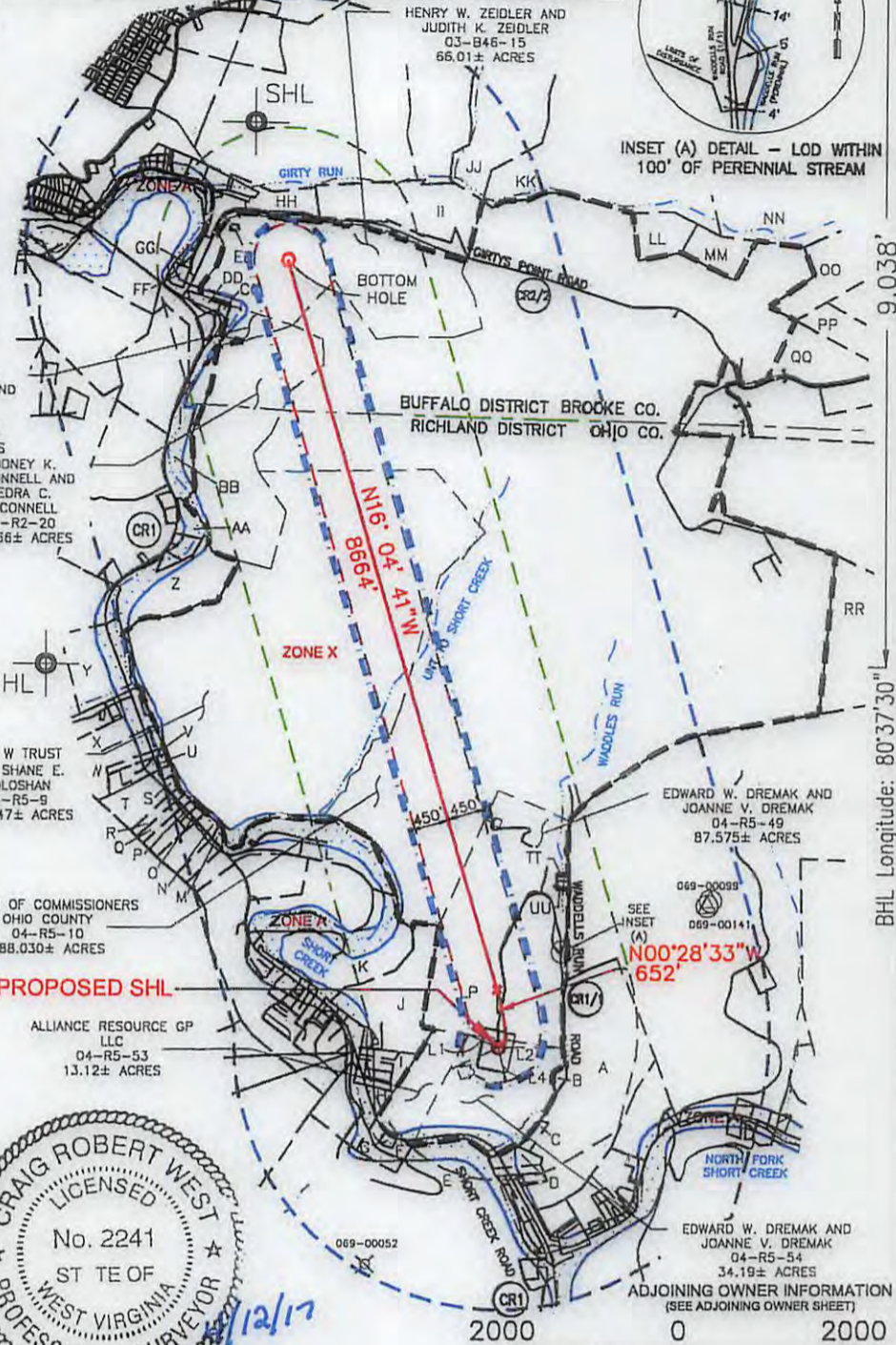
SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,445,645.181	
EASTING: 529,681.164	
LANDING POINT LOCATION (LPL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,445,643.783	
EASTING: 529,679.515	
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,448,181.190	
EASTING: 528,948.186	



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



THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, P.S. 2241



GRAPHIC SCALE IN FEET

COMPANY: **SWN** Production Company, LLC

EDWARD DREMAK UP OHI		
OPERATOR'S WELL #:	2H	
API WELL #:	47	69
	STATE	COUNTY PERMIT
		H6A 00225

WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input checked="" type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input type="checkbox"/>
WATERSHED: UPPER OHIO WHEELING
DISTRICT: RICHLAND COUNTY: OHIO
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V.
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V.
DRILL <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION PERFORATE NEW FORMATION <input type="checkbox"/>
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE (SPECIFY)
TARGET FORMATION: UPPER POINT PLEASANT UTICA ESTIMATED DEPTH: 10,404' TVD 19,421' TMD

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



DESIGNATED AGENT: DEE SOUTHALL	DATE: 04-03-2017
ADDRESS: P.O. BOX 1300	DRAWN BY: W. McCLEAF
CITY: JANE LEW STATE: WV ZIP CODE: 26378	SCALE: 1" = 2000'
	DRAWING NO: 087569045
	WELL LOCATION PLAT

COMPLETION ID 2501169011
PAD ID 3001165800

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	WHEELING ELECTRIC COMPANY	04-R5-52-1	0.39±
H	ALLIANCE RESOURCE GP LLC	04-R5-51-1	1.18±
I	WINDSOR COAL COMPANY	04-R5-50-3	2.19±
J	WINDSOR COAL COMPANY	04-R5-50	19.447±
K	JOHN W. METZ	04-R5-46	22.63±
L	BURNT MILLS ACRES LLC	04-R5-13	20.332±
M	JULIE A. KOEHLER	04-R5-45-4	2.838±
N	JULIE A. KOEHLER	04-R5-45-13	3.662±
O	HELEN TAYLOR	04-R5-12	0.68±
P	HELEN TAYLOR	04-R5-14	0.56±
Q	HUMPHREY D. JR. & T. M. FLICK	04-R5-15	1.64±
R	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-16	1.63±
S	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-17-1	0.438±
T	ROBERT N. & C. L. CONNER	04-R5-17	7.16±
U	PATRICIA ROUSH	04-R5-18	1.8707±
V	ERVAN D. TRUBIANO AND NANCY G. TRUBIANA	04-R5-19	1.01±
W	BRIAN W. SOWIZRAL AND MELINDA K. SOWIZRAL	04-R5-20-1	5.683±
X	DENNIS J. HOSKINS AND SHEINA L. HOSKINS	04-R5-20-4	4.84±
Y	HAROLD COAST AND LINDA COAST	04-R5-2-9	10.94±
Z	ROBERT KUBOVICZ	04-R5-8	13.91±
AA	JOHN E HARWATT AND E R HARWATT	04-R5-8-2	1.90±
BB	SHORT CREEK ROAD	04-R2-9999-9999	
CC	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	04-R2-18-2	0.946±
DD	SYLVIA A. HAWRANICK	04-R2-18-1	2.04±
EE	HAMMOND PUBLIC SERVICE DISTRICT	03-B46-16	0.120±
FF	HENRY W. ZEIDLER AND JUDITH K. ZEIDLER	03-B46-13	1.120±
GG	KENNETH D. COVER AND BARBARA J. COVER	03-B46-12	0.69±
HH	JOAN GARRETT	03-B46-17	5.040±
II	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-18	20.52±
JJ	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-32	57.28±
KK	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-83	83.41±
LL	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-19	7.14±
MM	STACY ANN GREATHOUSE AND PATRICIA ANN GREATHOUSE	03-B46-41	5.00±
NN	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-82	229.00±
OO	DANNY GENE BRITT AND VIRGINIA BRITT	03-B46-27	106.53±
PP	TRACY GILBERT	03-B46-22	10.00±
QQ	BRUCE D. BONAR (3/4) WILLIAM BONAR (1/4)	03-B46-20	113.00±
RR	MARC SEAMON	04-R6-2	93.627±
SS	BOARD OF COMMISSIONERS OF OHIO COUNTY	04-R5-55	239.50±
TT	RICHARD L. BLACK AND DEBORAH K. BLACK	04-R5-58-1	0.175±
UU	RAY W. ARCHER	04-R5-0058-0000-0000	0.19±

07/21/2017

REVISIONS:	COMPANY:	 
Δ 04-11-2017 DEP COMMENTS		
	OPERATOR'S	EDWARD DREMAK UP OHI
	WELL #:	2H
	LOCATION:	RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA
		DATE: 04-03-2017
		DRAWN BY: W. McCLEAF
		SCALE: N/A
		DRAWING NO: 087569045
		ADJOINING OWNERS

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

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

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

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


SEE EXHIBIT "A"

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

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

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

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: 
 Its: Tanner Quiring, Staff Landman

OFFICE OF OIL AND GAS JUL 14 2017

OFFICE OF OIL AND GAS JUL 14 2017

EXHIBIT "A"
 Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC, Operator
 Edward Dremak UP OHJ 2H
 Ohio Brooke County, West Virginia

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG	SURFACE OWNER	Book/Page Must describe The Parcel	DEEDED ACREAGE	LEASED ACREAGE
1)	4-R5-54	729403-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16.75%	810/722 884/121	Edward W Dremak and Joann V Dremak	749/468	34.190	34.190
2)	4-R5-49	729328-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16.75%	810/673 884/109	Edward W Dremak and Joann V Dremak	388/349	87.575	87.575
3)	4-R5-10	16-01207	Carole L Freeland; Sharl Lynn Freeland; Teresa Renee	SWN Production Company, LLC	16%	911/552	Board of Commissioners Ohio County	440/220	688.030	688.0300
		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 Jeffrey Christopher	SWN Production Company, LLC	14%	911/612				
		16-01165	Audrey Mae Predmore	SWN Production Company, LLC	14%	911/564				
		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	Wilida P Freeland, by Eric Freeland 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				
		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;	SWN Production Company, LLC	18%	911/569				
			Jessica Erin Freeland							
		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				
		16-02053	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				
		16-01199	Cheryl L Hunter	SWN Production Company, LLC	18%	912/13				
		16-01589	Elizabeth Ann Beck and Charles Allen Beck	SWN Production Company, LLC	14%	911/782				
		16-02249	Rebecca Carlow, a single woman	SWN Production Company, LLC	18%	915/792				
		16-076191	The Board of Ohio County Commissioners	Chesapeake Appalachia, L.L.C.	18%	802/742				

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 Office of Oil and Gas
 APR 06 2017
 WV Department of
 Environmental Protection

L9-00225

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC, Operator
Edward Dremak UP DHI 2H
Ohio Brooke County, West Virginia

	738070-000	Benjamin C Barlow		SWN Production Company, LLC	893/13					
			14%	Chesapeake Appalachia, L.L.C.	844/456					
	738070-003	Marle B Ridgeway Lorentz, by her Attorney In Fact Nancy Marle Keely (deceased)		SWN Production Company, LLC	885/53					
			18%	Chesapeake Appalachia, L.L.C.	844/452					
				SWN Production Company, LLC	885/53					
4)	4-R5-9	1-325515-000	S E W Trust, Shane E Woloshan, Trustee	Chesapeake Appalachia, L.L.C.	18%	812/384	S E W Trust	807/556	220.947	220.9470
				SWN Production Company, LLC		898/212	c/o Shane E Woloshan			
5)	4-R2-20	729440-000	Rodney K McConnell and Nedra C McConnell	Chesapeake Appalachia, L.L.C.	18%	819/737	Rodney K McConnell and Nedra C McConnell	670/809	58.020	58.9660
				SWN Production Company, LLC		884/133				
6)	3-846-15	729490-003	Henry W Zeidler	Chesapeake Appalachia, L.L.C.	18%	13/339	Henry W Zeidler and Judith K Zeidler	WB 38/1	66.010	
		729490-002	Judith K Zeidler	SWN Production Company, LLC		30/480				
				Chesapeake Appalachia, L.L.C.	18%	14/72				
		729490-001	Margaret Zeidler Burggraf	SWN Production Company, LLC		30/480				
				Chesapeake Appalachia, L.L.C.	18%	14/510				
				SWN Production Company, LLC		30/480	(Brooke County, WV)			

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 Office of Oil and Gas
 APR 0 8 2017
 WV Department of
 Environmental Protection

69-00225

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

Date of Notice Certification: 4/5/17

API No. 47- 69 - 00225
Operator's Well No. Edward Dremak UP OHI 2H
Well Pad Name: Edward Dremak UP 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>WV</u>	UTM NAD 83 Easting: <u>529681.164</u>
County: <u>069-Ohio</u>	Northring: <u>445445.181</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 checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Required Attachments:

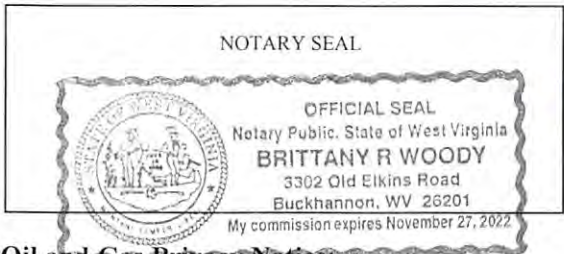
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

RECEIVED
Office of Oil and Gas
APR 06 2017
WV Department of
Environmental Protection 07/21/2017

Certification of Notice is hereby given:

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

Well Operator:	<u>SWN Production Co., LLC</u>	Address:	<u>P.O. Box 1300</u>
By:	<u>Dee Southall</u>		<u>Jane Lew, WV 26378</u>
Its:	<u>Regulatory Supervisor</u>	Facsimile:	<u>304-471-2479</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Dee_Southall@swn.com</u>



Subscribed and sworn before me this 2nd day of March 2017
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 deprivacyofficer@wv.gov.

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: 4/5/17 Date Permit Application Filed: 4/5/17

Notice of:

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

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

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

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

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

SURFACE OWNER(s) COAL OWNER OR LESSEE

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

Name: _____
Address: _____

Name: Consolidated 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: _____

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SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

WV Department of
Environmental Protection

*Please attach additional forms if necessary

Attachment #1

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 ✓

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GA-00225

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 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 subject to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, that the current well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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.**

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07/21/2017

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47-69 - 00225
OPERATOR WELL NO. Edward Dremak UP OHI 2H
Well Pad Name: Edward Dremak UP OHI Pad

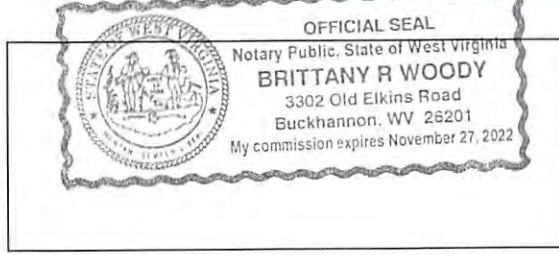
Notice is hereby given by:

Well Operator: SWN Production Co., LLC
Telephone: 832-796-1610
Email: Dee_Southall@swn.com

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile: 304-471-2479

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 2nd day of March 2017
Brittany R Woody Notary Public
My Commission Expires 11/27/2022

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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: 03/10/2017 **Date Permit Application Filed:** 4/15/17

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
Address: 503 Waddells Run Road
Wheeling, WV 26003

Name: _____
Address: _____

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>529,681.164</u>
County:	<u>Ohio</u>	Northing:	<u>4,445,445.181</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: SWN Production Company, LLC
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

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

Oil and Gas Privacy Notice:

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



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Jim Justice
Governor

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

March 2, 2017

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

Subject: DOH Permit for the Edward Dremak Pad OHI 2H Well Site, Ohio County

Dear Mr. Martin,

47-069-00225

The West Virginia Division of Highways has issued permit 06-2017-0100 to Southwestern Energy for access to the State Road for the well site located off of Ohio County Route 1/1 SLS.

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

Very Truly Yours,

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

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

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Product Name	Product Use	Chemical Name	CAS Number
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	Proprietary
		Hydrotreated light petroleum distillate	64742-47-8
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1

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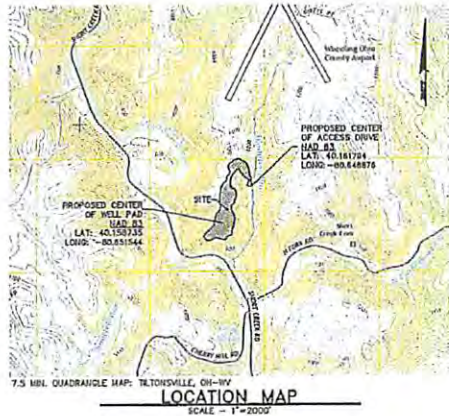
APPROVED
WVDEP OOG
Modification
3/2/2017

EROSION & SEDIMENT CONTROL PLAN FOR

EDWARD DREMAK WELL PAD RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA

GENERAL NOTES

- THE BOUNDARY AND TOPOGRAPHIC SURVEY FOR THE PROJECT AREA WERE PERFORMED BY RETTEW ASSOCIATES IN JANUARY 2014 AND SEPTEMBER 2014.
- PROPERTY BOUNDARIES, LANDOWNER INFORMATION AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY OR DATA.
- EXISTING STRUCTURES, TRENCH LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE COARSE 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 (NAD 83) WHICH CORRELATES 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 COMMERCE WORK UNDER THIS BID AND SHALL BE THE PROPOSED WELL. IF THE WORK PROVIDED FOR UNDER THIS BID IS NOT THINLY 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 BIDDING 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 UTILITIES 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.
- DARRICACING 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 REGULATORY GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS AND 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 DAMAGE. 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; HOWEVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- THE MAXIMUM ALLOWABLE SLOPE FOR EXPOSED AREAS IS 3:1 HORIZONTAL-TO-VERTICAL, UNLESS SPECIFIED OTHERWISE IN A SITE-SPECIFIC GEOTECHNICAL REPORT.
- BEFORE FILL PLACEMENT, EXISTING SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6" AND 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 THAN 35 PERCENT AND A PLASTICITY INDEX (PI) OF BETWEEN 6 AND 15. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" (8) INCHES IN LIQUID THICKNESS.
- FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698). IN CONNECTION WITH THE COMPACTING OPERATION, FILL MATERIAL SHALL BE BLENDED TO OPTIMUM MOISTURE CONTENT.
- STORM DRAINAGE PIPING SHALL BE CONSTRUCTED OF A MINIMUM OF CLASS II REINFORCED CONCRETE PIPE (RCP). EXPOSED INTER-SEGMENT JOINTS SHALL BE PROTECTED WITH RCP OR HOPE PIPE. MINIMUM COVER SHALL BE MAINTAINED WHEN USING CIP OR HOPE PIPE. MINIMUM COVER THICKNESS SHALL BE 60#4 OR 18 GAUGE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION SITE CLEAR OF ALL TRASH AND DEBRIS.
- BEFORE ANY 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 SOODED 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-SOODED, 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 RUM INTO THE R-3 ROCK.



OPERATOR

swn
Southwestern Energy

SWN PRODUCTION CO., LLC
PO BOX 1300
JANE LEW, WV 26378
(832) 798-1610

LIMITS OF DISTURBANCE

PAD	8.0 ACRES
ROAD	15.7 ACRES
TOTAL	23.7 ACRES
FOR LAND OWNER	
DREMAK, EDWARD R. & JOHANNE V.	23.7

STAKING FLAG LEGEND

- TOP OF CUTS (YELLOW)
- GRADE AT TOP OF PAD/ROAD/PIT CENTER (YELLOW & ORANGE)
- TOP OF FILL (ORANGE)
- TOP HOLE LOCATION (PINK)
- VERTICAL CUT AREA AT PAD/ROAD/PIT CENTER (PINK & BLACK STRIPE)
- LIMITS OF DISTURBANCE (PINK & BLACK STRIPE)
- EROSION CONTROL (PINK & BLACK STRIPE)
- TOPSOIL STORAGE (PINK & BLACK STRIPE)
- LOCAL ROAD CROSSING (PINK & BLACK STRIPE)
- TOPSOIL STORAGE (PINK & BLACK STRIPE)
- LOCAL ROAD CROSSING (PINK & BLACK STRIPE)
- TOPSOIL STORAGE (PINK & BLACK STRIPE)
- LOCAL ROAD CROSSING (PINK & BLACK STRIPE)

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 Department of Environmental Protection
 APR 09 2017

SOILS CLASSIFICATION

QwE	QUINSEY SILT LOAM, 3 TO 8% SLOPES
QwG	QUINSEY SILT LOAM, 8 TO 10% SLOPES
QwD	QUINSEY SILT LOAM, 10 TO 20% SLOPES
WcC	WESTMORELAND SILT LOAM, 3 TO 8% SLOPES
WwC	WESTMORELAND SILT LOAM, 8 TO 10% SLOPES
WwE	WESTMORELAND SILT LOAM, 25 TO 35% SLOPES
WwD	WESTMORELAND SILT LOAM, 35 TO 60% SLOPES

CUT & FILL

	WELL PAD	ACCESS DRIVE	SEE
CUT (SOIL)	+ 75,004 CY	+ 2,454 CY	+ 72,550 CY
10% COMP. (SOIL)	- 2,158 CY	- 5,090 CY	- 7,248 CY
CUT (ROCK)	+ 36 CY	+ 42,800 CY	+ 42,836 CY
10% ROCK SHEL	N/A	+ 875 CY	+ 875 CY
20% ROCK SHEL	+ 7 CY	+ 5,940 CY	+ 5,947 CY
30% ROCK SHEL	N/A	+ 1,381 CY	+ 1,381 CY
FILL	- 31,983 CY	- 78,792 CY	- 110,775 CY
NET	- 12,479 CY	+ 17,225 CY	= 5,247 CY
STONE	+ 10,078 CY	+ 2,003 CY	= 12,141 CY
TOPSOIL	+ 4,710 CY	+ 5,500 CY	= 10,270 CY

- NOTES:**
- THE TOPSOIL DEPTH FOR THE ACCESS DRIVE IS 5.3'. THE TOPSOIL DEPTH FOR THE PAD IS 0.6'.
 - THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S 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 EAS PLAN
- 10 OF 31 WV DEP EAS PLAN
- 11 OF 31 WV DEP EAS 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 RELOCATION PLAN
- 24 OF 31 RELOCATION PLAN
- 25 OF 31 CHANNEL MATING (BAG CTES)
- 26 OF 31 CHANNEL MATING (BAG CTES)
- 27 OF 31 EVAPORATION BUCKET PLAN - USCS
- 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 #: 1630022202

ENGINEER'S ESTIMATE OF QUANTITIES

WELL SITE PAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNITS
WELL PAD CUT (EXCLUDES TOPSOIL)	21,506	CY
10% KEY EXCAVATION	6,229	CY
10% KEY - SUITABLE FILL	6,229	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	31,983	CY
WELL PAD TOPSOIL STRIPPING	4,710	CY
WELL PAD FRESH GRASSING	22,734	SY
PLACEMENT TOPSOIL	870	CY
PLACEMENT TOPSOIL	22,734	SY
GEOTECHNICAL		
BASE ROCK R13 12" (ROCK PROVIDED BY QUARRY)	5,537	TON
PLACEMENT COST	3,682	TON
FRESH GRADE CRUSHER RUM 4" (ROCK PROVIDED BY QUARRY)	2,454	TON
PLACEMENT COST	3,208	LF
24" BARRIS		
ACCESS ROAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNITS
ACCESS ROAD CUT (EXCLUDES TOPSOIL)	82,584	CY
ACCESS ROAD FILL (EXCLUDES TOPSOIL)	78,792	CY
10% KEY EXCAVATION	5,609	CY
10% KEY - SUITABLE FILL	5,609	CY
ACCESS ROAD TOPSOIL STRIPPING	5,500	CY
ACCESS ROAD FRESH GRASSING	3,500	SY
PLACEMENT OF TOPSOIL	2,736	CY
PLACEMENT OF TOPSOIL	6,141	SY
GEOTECHNICAL		
BASE ROCK R13 12" (ROCK PROVIDED BY QUARRY)	2,458	TON
PLACEMENT COST	1,586	TON
FRESH GRADE CRUSHER RUM 4" (ROCK PROVIDED BY QUARRY)	2,448	TON
PLACEMENT COST - ALTERNATE	1,968	TON
FRESH GRADE CRUSHER RUM 18" (ROCK PROVIDED BY QUARRY)	2,448	TON
PLACEMENT COST - ALTERNATE	2,468	TON
BASE ROCK R13.5 8" (ROCK PROVIDED BY QUARRY)	2,468	TON
PLACEMENT COST - ALTERNATE	128	TON
SUPERPAVE 1.5" WEARING COURSE - PAVED AREA ONLY	335	TON
SUPERPAVE 4.5" BASE COURSE - PAVED AREA ONLY	381	TON
4" THICK AGGREGATE - PAVED AREA ONLY	100	LF
12" DIAMETER CROSSL PPE	12	LF
18" DIAMETER CROSSL PPE	35	LF
24" DIAMETER CROSSL PPE	0	LF
ROADSIDE UNDERDRAIN	8	EA
CULVERT GUTTER/ROCK APRON SUMP	51	TON
CULVERT GUTTER/ROCK APRON SUMP ROCK R.55	76	8Y
CULVERT GUTTER/ROCK APRON SUMP ROCK GEOTECHNICAL	1,651	LF
ROADSIDE CHANNEL	0	TON
ROADSIDE CHANNEL ROCK R.55	3,976	LF
18" SUPER SILT FENCE	1,144	LF
18" FILTER SOCK (17)	1,122	LF
18" FILTER SOCK (17)	817	LF
18" FILTER SOCK (17)	895	LF
18" FILTER SOCK (17)	1,198	8Y
CHANNEL MATING (BAG CTES)	1,182	5Y
CHANNEL MATING (BAG CTES)	537	5Y
CHANNEL MATING (BAG CTES)	687	5Y
ROCK FILTER DAM	5	EA
LEVEL SPREADER	2	EA
ADDITIONAL ITEMS		
TRAFFIC CONTROL	1	LS
CONSTRUCTION ENTRANCE	1	LS
CONSTRUCTION FENCE	0	LS
ISOLATION	1	LS
TRENCH SAFETY PLAN & PROTECTION	1	LS
SEEDING/MULCHING ITEMS		
SEEDING - LIME & FERTILIZER	79,593	SY
FLORITERRA GENT 2.1 (SLOPE, NO MATING)	37,037	8Y
UNDERDRAIN ITEMS		
PERFORATED PLASTIC PIPE	1,430	LF
STANDARD CATCH BASIN	2	EA
ASBESTOS REMOVAL (ALTERNATE USE ASBESTOS #2 STONE)	100	TONS
2" CATCH BASIN RISER	2	EA
SOLID SCHED 40# PLASTIC PIPE	135	LF
STEEL GATE	2	EA
12" STEEL GATE VALVE	4	EA
12" RUBBER ANTI-SUCK COLLAR	4	EA
CLEARING AND GRUBBING ITEMS		
CLEARING AND GRUBBING	33.7	AC
TIMBER REMOVAL	11.8	AC

FOR REVIEW ASSIGNED BY: RETTEW ASSOCIATES, INC.
DATE: 11/16/2016

MANAGED BY: EDWARD R. DREMAK, P.E.
DESIGN BY: JANE LEW, P.E.
DRAWN BY: JANE LEW, P.E.
CHECKED BY: JANE LEW, P.E.
DATE: 11/16/2016

OHIO COUNTY, WV
RICHLAND TAX DISTRICT

CLIENT: SWN PRODUCTION CO., LLC
PO BOX 1300
JANE LEW, WV 26378
(832) 798-1610

SCALE: 1" = 200'

RETTEW
RETTEW ASSOCIATES, INC.
One Skyway Plaza, Suite 200
P.O. Box 1412
Martinsburg, WV 26156
Phone: (304) 442-1723 • Fax: (304) 442-1723
www.rettetw.com

COVER SHEET & GENERAL NOTES
FOR
EDWARD DREMAK WELL PAD

OHIO COUNTY, WV
RICHLAND TAX DISTRICT

DATE: 11/16/2016
SHEET NO. 1 OF 31
DWG. NO. 087569045

087569045
 RETTEW ASSOCIATES, INC.
 OHIO COUNTY, WV
 RICHLAND TAX DISTRICT

**EROSION & SEDIMENT CONTROL PLAN
FOR
EDWARD DREMAK WELL PAD
RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA**

GENERAL NOTES

1. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
2. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
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SOILS CLASSIFICATION

- 1. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
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- 10. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

CUT & FILL

TYPE	PERCENT	VOLUME	AREA
CUT	100%	1,000 CY	10,000 SQ FT
FILL	100%	1,000 CY	10,000 SQ FT

1. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

LIST OF DRAWINGS

NO.	DESCRIPTION	DATE
1	GENERAL NOTES	3/14/17
2	LOCATION MAP	3/14/17
3	SOILS CLASSIFICATION	3/14/17
4	CUT & FILL	3/14/17
5	STANDARD PLAN LEGEND	3/14/17
6	OPERATOR	3/14/17
7	LIMITS OF DISTURBANCE	3/14/17
8	WEST VIRGINIA 81	3/14/17

STANDARD PLAN LEGEND

OPERATOR

LIMITS OF DISTURBANCE

SWN

ENGINEERING SUMMARY OF DISTURBANCE

NO.	DESCRIPTION	DATE
1	GENERAL NOTES	3/14/17
2	LOCATION MAP	3/14/17
3	SOILS CLASSIFICATION	3/14/17
4	CUT & FILL	3/14/17
5	STANDARD PLAN LEGEND	3/14/17
6	OPERATOR	3/14/17
7	LIMITS OF DISTURBANCE	3/14/17
8	WEST VIRGINIA 81	3/14/17

WEST VIRGINIA 81

EDWARD DREMAK WELL PAD

RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA

DATE: 3/14/17

SCALE: 1" = 100'

NOT FOR CONSTRUCTION/NOT FOR BIDDING

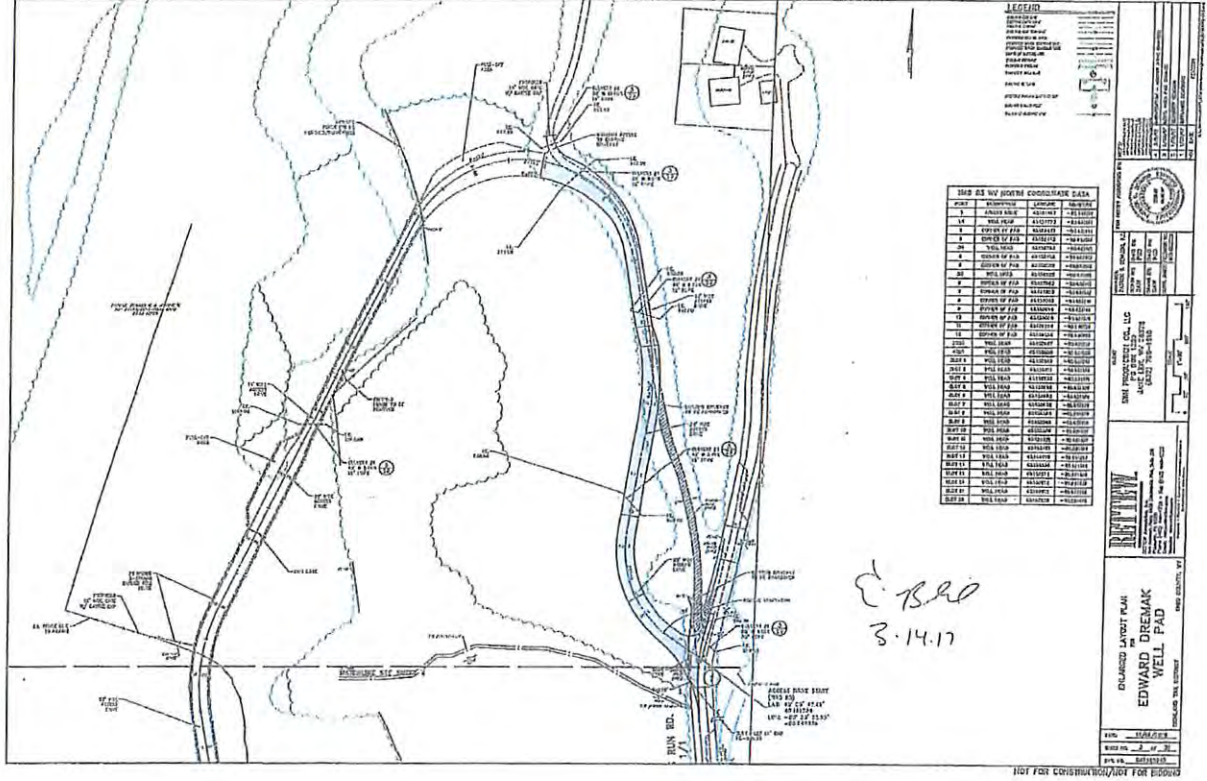
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