

#### 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

Tuesday, July 25, 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 OHI 205H

47-069-00227-00-00

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.

Operator's Well Number: EDWARD DREMAK OHI 205H Farm Name: DREMAK, EDWARD W. & JOANNE V.

James A, Martin Chief

U.S. WELL NUMBER: 47-069-00227-00-00

Horizontal 6A / New Drill

Date Issued: 7/25/2017

Promoting a healthy environment.

API Number:

69-00227 097-069-00227

### **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. <u>Failure to adhere to the specified permit conditions may result in enforcement action.</u>

#### CONDITIONS

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

API Number:	047-069-00227

## **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.

		047-069-00227
NDI NO 47-069	- 13	

OPERATOR WELL NO. Edward Dremak OHI 205H
Well Pad Name: Edward Dremak OHI Pad

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

1) Well Operator: SWN Produ	iction Co., LLC	494512924	069-Ohio	4-Richlar 641-Tiltonsville
W. C. Carlot Sept. Co. C. C.		Operator ID	County	District Quadrangle
2) Operator's Well Number: Ed	ward Dremak O	HI 205H Well P	ad Name: Edw	ard Dremak OHI Pad
3) Farm Name/Surface Owner:	Edward Dremak & Joanne	Public Ro	oad Access: W	addells Run Road
4) Elevation, current ground:	1087' E	levation, propose	d post-construc	tion:1080'
5) Well Type (a) Gas X	Oil _		derground Stor	
Other				
	llow X	Deep		
	izontal X		4.	LIDIA
6) Existing Pad: Yes or No No		avi med man	_ ~ ~ ~	826 1.5.11
7) Proposed Target Formation(s)				Pressure(s): ness- 33', Associated Pressure- 3485.4
		get base 1VB-3737	Anticipated Tricki	1033- 00 , A33001a100 1 1033010- 0400.4
8) Proposed Total Vertical Dept				
9) Formation at Total Vertical D	epth: Marcellus	5		
10) Proposed Total Measured De	epth: 14,683'			
11) Proposed Horizontal Leg Le	ngth: <u>'827</u> °	9		
12) Approximate Fresh Water S	trata Depths:	464'		
13) Method to Determine Fresh	Water Depths:	Offset Wells		
14) Approximate Saltwater Dept	ths: 1075'			
15) Approximate Coal Seam De	pths: 832'			
16) Approximate Depth to Possi	ble Void (coal m	ine, karst, other):	None that we	e are aware of.
17) Does Proposed well location directly overlying or adjacent to		ms Yes	N	o X
(a) If Yes, provide Mine Info:	Name:			
	Depth:			
	Seam:			
	Owner:			

API NO. 47-069

OPERATOR WELL NO. Edward Dremak OHI 205H
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	4-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	915'	915'	822 sx/CTS
Coal	9 5/8"	New	J-55	36#	1747'	1747'	622 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	14,683'	14,683'	lead 905 tx Tail 1972 tx inside intermed
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 5809'	Approx. 5809'	
Liners							

$\sim$	0	
( '.	15%	1.5.17

ТҮРЕ	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:		

W	W-	6B
(1	0/1	L4)

API NO. 47- 069

OPERATOR WELL NO. Edward Dremak OHI 205H

Well Pad Name: Edward Dremak OHI Pad

9	) Describe	proposed	well work.	including	the drilling	and plu	igging ba	ick of any	nilot hole:
,	, 20001100	propodea	************	,		o wire pro	********	ion or any	pilot more.

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): 23.7
- 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 operator and continuing until operator is satisfied with borehole conditions.

Office of Oil and the conditions.

APR 1 8 2017

WV Department of Environmental Protection

\*Note: Attach additional sheets as needed.

Page 3 of 3 07/28/2017

**Schlumberger Cement Additives** 

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

RECEIVED
Office of Oil and Gas

APR 1 8 2017



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

November 3, 2016

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

RE: Proposed New Well Edward Dremak OHI 205H

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

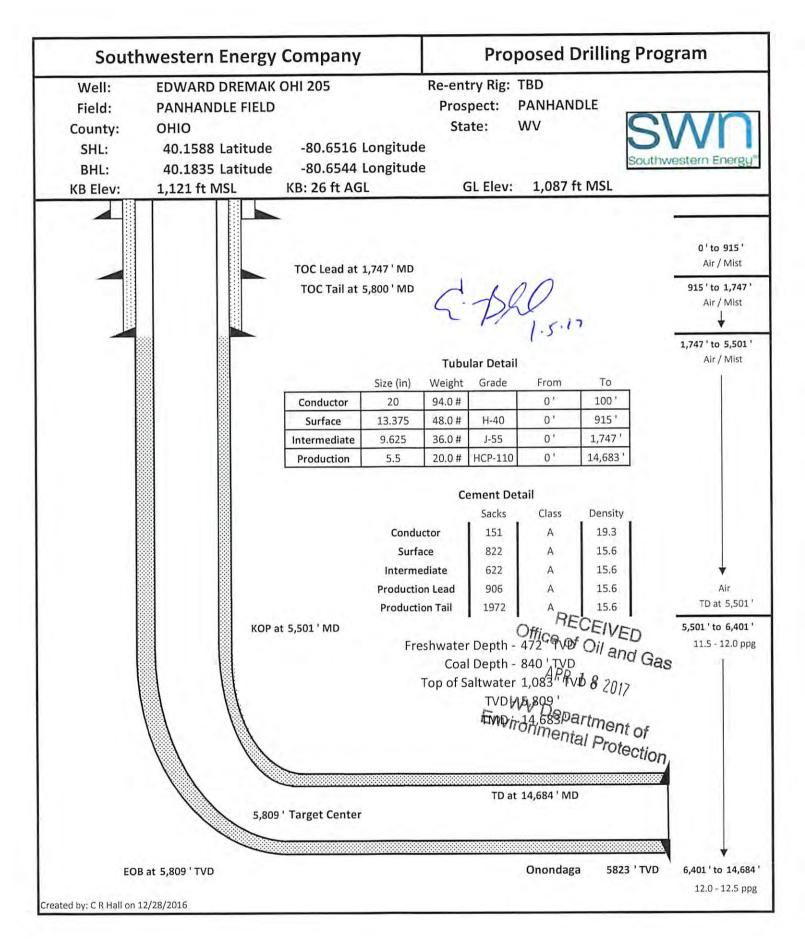
Thank you.

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 1 8 2017



WW-9 (4/16)

API Number 47 -	69	-
Operator's	Well No	Edward Dremak OHI 205H

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

#### FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Company, LLC	OP Code 494512924
Watershed (HUC 10) Upper Ohio Wheeling	Quadrangle Tiltonsville
Do you anticipate using more than 5,000 bbls of water to co Will a pit be used? Yes No	
If so, please describe anticipated pit waste:close	d 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 Pe	
	icipated well, API # will be included with the WR-34/DDMR &/or permit addendum
Off Site Disposal (Supply form Other (Explain flow back fluids w	WW-9 for disposal location) vill be put in steel tanks and reused or taken to a permitted disposal facility
Will closed loop system be used? If so, describe: yes	410-
Drilling medium anticipated for this well (vertical and horiz	zontal)? Air, freshwater, oil based, etc. If drill to KOP, fluid drill with SOBM from KOP to TO
-If oil based, what type? Synthetic, petroleum, etc.	
Additives to be used in drilling medium? see attached sheet	s
Drill cuttings disposal method? Leave in pit, landfill, remove	ved 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-4502, Northwestern SWF-1025, Short Creek 1034/WV0109517/CID28726, Carbon Limeston 28726-CID28726
	Country Wide 38390/CID38390, Pine Grove 13688
	nd Gas of any load of drill cuttings or associated waste rejected at any ded within 24 hours of rejection and the permittee shall also disclose
on August 1, 2005, by the Office of Oil and Gas of the Wes provisions of the permit are enforceable by law. Violation law or regulation can lead to enforcement action.  I certify under penalty of law that I have person application form and all attachments thereto and that, b	
Company Official (Typed Name) Dee Southall	RECEIVED Gas
Company Official Title Regulatory Supervisor	100 Of O.
	Office of Oil and Gas  APR 18 2017
Subscribed and sworn before me this day of	f AMIMUL 2018 APR 1 ment of
Buttany R Washington day o	f JMUMU , 20 16 APR 2  Notary PWHY Department of Protection Environmental Protection
My commission expires 11 17 20	EUAIIO

### **Drilling Mediums**

Synthetic Oil

Brine

**Barite** 

Calcium Chloride

Lime

Organophilic Bentonite

**Primary and Secondary Emulsifiers** 

Gilsonite

Calcium Carbonate

**Friction Reducers** 

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APR 1 8 2017

Operator's Well No. Edward Dremak OHI 205H

Proposed Revegetation Treatment: Acres Dist			DH
Lime as determined by pH test min. 2 Tons/acre of	r to correct to pH		
Fertilizer type 10-20-20			
Fertilizer amount 600	lbs/acre		
Mulch Hay/Straw 2.5	Tons/acre		
	Seed Mixtures		
Temporary		Perm	anent
Seed Type Ibs/acre **See Attachment		Seed Type	lbs/acre
Local Control			
Maps(s) of road, location, pit and proposed are rovided). If water from the pit will be land appropriate creage, of the land application area. Photocopied section of involved 7.5' topograph Plan Approved by:	oplied, include dimensions (L	x W x D) of the pit, ar	nd dimensions (L x W), and are
Maps(s) of road, location, pit and proposed are rovided). If water from the pit will be land appropriate of the land application area. Photocopied section of involved 7.5' topograph lan Approved by:	pplied, include dimensions (L	x W x D) of the pit, ar	nd dimensions (L x W), and ar
Attach: Maps(s) of road, location, pit and proposed are provided). If water from the pit will be land application area.  Photocopied section of involved 7.5' topographer and the proposed are comments:  Comments:	pplied, include dimensions (L	x W x D) of the pit, ar	nd dimensions (L x W), and are
Maps(s) of road, location, pit and proposed are provided). If water from the pit will be land application area.  Photocopied section of involved 7.5' topographer and the provided by:	pplied, include dimensions (L	x W x D) of the pit, ar	nd dimensions (L x W), and are



### **WVD Seeding Specification**

To Order Seed contact Lyndsi Eddy Flippo office \$70-995-4271 cell \$01-269-5451 lyndsi\_eddy@swn.com

50lbs per acre of Winter Wheat

(please allow 7 to 10 days for delivery

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

#### 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		100	RO	De
Seed Mixture: SWN Production Organ	nic Mix	SWN Supplied	A	ZO
Organic Timothy	50%	ي:	2	2 3
Organic Red or White Clover	50%	7	5	П
OR				
Organic Perennial Ryegrass	50%			
Organic Red or White Clover	50%			
Apply @ 100lbs per acre		Apply @ 200	lbs per ac	cre
April 16th- Oct. 14th		Oct. 15th-	April 15th	1
Organic Fertilizer @ 200lbs per Acre		Pelletized Lime @	2 Tons p	er Acre

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	Apply @ 50lbs per acre
April 16th- Oct. 14th	Oct. 15th- April 15th

# 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 205H
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

12/12/12 12:12:1			20, 700 1
Submitted by:			
Dee Southall	Date:	12/28/2016	
Title: Regulatory Supervisor	SWN P	roduction Co., LLC	
Approved by:			
1.73	Date:	1.5.17	
Title: On & Go Inpe.	for		
Approved by:			
	Date:		
Title:	-		Office of Oil and Gas
			Office of Oll allo
SWN PRODUCTION COMPANY	, LLC		APR 18 2011
			WV Department of Environmental Protection

WW-6A1 (5/13)

Operator's Well No. Edward Dremak OHI 205H

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

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

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

Lease Name or Number

Grantor, Lessor, etc.

Grantee, Lessee, etc.

Royalty

Book/Page

#### 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 affect of the affect of the acquired from the appropriate authority before the affect of the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the affect of the acquired from the appropriate authority before the acquired from the acquired from

Well Operator:

Office of Oil and Gas

By: Its:

John Startz, Senior Staff Landman

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator Edward Dremak OHI 205H

Ohio County, West Virginia

TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
4-R5-54	729403-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C.	16.75%	810/722
			SWN Production Company, LLC		884/121
4-R5-49	729328-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C.	16.75%	810/673
			SWN Production Company, LLC		884/109
4-R8-8-1	Pending	Noble Energy, Inc, a Delaware Corporation	SWN Production Company, LLC	18%	920/01
4-R5-55	727321-000	Board of Commissioners of the County of Ohio	Chesapeake Appalachia, L.L.C.	18%	802/742
			SWN Production Company, LLC		893/13
4-R5-10	745907-012	Ronald J Grant and Christine Grant, his wife	SWN Production Company, LLC	14%	911/617
	745907-046	Betty E Herrmann	SWN Production Company, LLC	14%	912/006
	745907-004	Grace Jean Griffin King, a widow	SWN Production Company, LLC	16%	911/464
	745907-003	Jayne E. Brogan & Joseph P. Davis, her husband	SWN Production Company, LLC	16%	911/528
	745907-020	Lindsey Ryan Frohnapfel, a single woman	SWN Production Company, LLC	14%	911/675
	745907-001	Makinly Baird, a single person	SWN Production Company, LLC	14%	911/642
	745907-017	Mary Catherine Grimes and John Grimes, Jr., her husband	SWN Production Company, LLC	14%	911/592
	745907-018	Michael Joseph Walton, a single person	SWN Production Company, LLC	14%	911/597
	745907-006	Michael Sean Frohnapfel and Jennifer Susan Legg-Frohnapfel, his wife	SWN Production Company, LLC	14%	911/575
	745907-019	Rose Mary Hermann Watson and Donald C. Watson, her husband	SWN Production Company, LLC	14%	911/660
	745907-010	Sandra F. Rodolf, Trustee of the Patricia M. Frohnapfel Revocable Living Trust dated 01/14/2015	SWN Production Company, LLC	14%	911/637

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator Edward Dremak OHI 205H

Ohio County, West Virginia

Pending	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%	911/655
745907-016	Thomas R. Sharp and Sue Ellen Sharp, his wife	SWN Production Company, LLC	16%	911/602
745907-013	William P. Brogan, a single man	SWN Production Company, LLC	16%	911/534
745907-047	Boland Brogan 1997 Trust	SWN Production Company, LLC	16%	915/473
745907-043	Jerome Bernard Herrmann, a single person	SWN Production Company, LLC	14%	915/458
745907-059	Thomas Neenan and Robin Guyett-Neenan, his wife	SWN Production Company, LLC	14%	915/427
745907-044	David Lee Heinzman Jr, a single man	SWN Production Company, LLC	14%	915/409
745907-054	James C Murphy III, a single person	SWN Production Company, LLC	14%	915/415
745907-060	Stephen Wenz, a single man	SWN Production Company, LLC	14%	915/421
745907-053	Paul G Seelman and Ana Seelman, his wife	SWN Production Company, LLC	14%	915/397
745907-069	Catherine Seelman Goetz & Andrew Joseph Goetz, her husband	SWN Production Company, LLC	14%	915/403
745907-065	Rita Kathryn Griffin, a single person	SWN Production Company, LLC	14%	916/375
745907-012	Ronald J. Grant and Christine Grant, his wife	SWN Production Company, LLC	14%	911/617
727321-001	The Board of Commissioners of Ohio County a/k/a The County Comission of Ohio County	Chesapeake Appalachia, L.L.C.	18%	802/742
745907-067	Robert & Kathryn Leach Revocable Trust dated September 12, 2014 by John Leach, Trustee	SWN Production Company, LLC	14%	916/370
745907-040	Robert C. Seelman, III, a single man	SWN Production Company, LLC	14%	916/7
Pending	Pauline Baird, a widow	SWN Production Company, LLC	18%	916/422
745907-064	Edward Downey as Trustee of the Doris Downey Trust	SWN Production Company, LLC	16%	916/410
745907-063	The Jack A Herrmann & Jean Herrmann Revocable Trust Agreement dated December 6, 1999 as amended by Darryl W. Millet, Trustee	SWN Production Company, LLC	16%	916/386

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator Edward Dremak OHI 205H

Ohio County, West Virginia

745907-051	Leada Seelman, a married woman dealing in her sole and	SWN Production Company, LLC	14%	916/416
	separate property			
745907-042	Beverly A Baird, a widow	SWN Production Company, LLC	18%	915/231
745907-066	Jo Ann Herrmann Rogowski, a widow	SWN Production Company, LLC	18%	916/429
745907-056	Larry C Baird, a single man	SWN Production Company, LLC	14%	916/380
745907-052	Gail Seelman Falasco and Ronald Falasco, her husband	SWN Production Company, LLC	14%	916/404
745907-049	Joanne Grace Baird, a widow	SWN Production Company, LLC	14%	916/398
745907-062	Mary Anne Marano, a married woman dealing in her sole and separate property	SWN Production Company, LLC	14%	916/365
Pending	Ted W Freeman by Rita Johnson, his attorney-in-fact	SWN Production Company, LLC	14%	916/392
745907-048	The Tom Frohnapfel Revocable Living Trust dated 01/20/2015 by Ann Dee Callison, Trustee	SWN Production Company, LLC	14%	916/01
Pending	Gene Charles Valentine, Trustee of the Gene Charles Valentine Trust	SWN Production Company, LLC	16%	915/463
745907-055	Taylor Cofield & Joshua Cofield, her husband	SWN Production Company, LLC	14%	916/360
745907-061	Thomas Patrick Griffin, a married man dealing in his sole and separate property	SWN Production Company, LLC	14%	916/355
745907-050	Gale Pennington, a married woman dealing in her own and separate property	SWN Production Company, LLC	18%	917/465
745907-068	James S. Rogers Jr., a married man dealing in his own and separate property	SWN Production Company, LLC	18%	917/455
745907-058	Karen R. Goree, a married woman dealing in her own and separate property	SWN Production Company, LLC	18%	917/470
745907-057	Lynn Stroud, a married woman dealing in her own and separate property	SWN Production Company, LLC	18%	917/460
738070-002	Martha Lorentz a/k/a Marcie Lorentz, a single woman	Chesapeake Appalachia, L.L.C.	14%	844/460
738295-002	Jack Herrmann and Nancy V. Herrmann, husband and wife	Chesapeake Appalachia, L.L.C.	18%	845/427
	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •		, ,

**EXHIBIT "A"**Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator Edward Dremak OHI 205H
Ohio County, West Virginia

	738295-001	Jo Ann Wade f/k/a Jo Ann Herrmann, a married woman dealing in her sole and separate property	Chesapeake Appalachia, L.L.C.	18%	845/431
3-B46-15	729490-003	Henry W Zeidler	Chesapeake Appalachia, L.L.C.	18%	13/339
			SWN Production Company, LLC		30/480
	729490-002	Judith K Zeidler	Chesapeake Appalachia, L.L.C.	18%	14/72
			SWN Production Company, LLC		30/480
	729490-001	Margaret Zeidler Burggraf	Chesapeake Appalachia, L.L.C.	18%	14/510
		•	SWN Production Company, LLC		30/480

#### MEMORANDUM OF OIL AND GAS LEASE

#### KNOW ALL MEN BY THESE PRESENTS:

THAT, the undersigned NOBLE ENERGY, INC., a Delaware corporation, with an address at 1001 Noble Energy Way, Houston, TX 77070 ("NBL" or "Lessor"), and SWN Production Company, L.L.C., a Texas Limited Liability Company, with an address at 10000 Energy Drive, Spring, TX 77389 ("SWN" or "Lessee");

For and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Lessor does grant unto Lessee an Oil and Gas Lease dated April 2nd, 2017 (the "Lease") covering that/those certain tract(s) of land situated in: Richland District, Ohio County, and further identified as Tax Parcel No. 04-00R8-0008-0001, and bounded substantially by lands now or formerly owned as follows:

NORTH BY LANDS OF: 04-00R5-0055-0000

EAST BY LANDS OF: 04-00R5-0010-0000

SOUTH BY LANDS OF: 04-00R8-0013-0000

WEST BY LANDS OF: 04-00R5-0049-0000

Containing <u>58.26</u> acres, more or less, and being the same property described in book volume <u>912</u>, page <u>612</u> of the Ohio County Clerk's Office.

Lease Term: The Lease shall remain in force for a primary term of three (3) years from 12:00 A.M., April 2<sup>nd</sup>, 2017, and as long thereafter as is consistent with the terms and conditions of the Lease.

This Memorandum of Oil and Gas Lease is placed of record to serve as notice of execution and existence of said Lease, and is in no way to supersede, abrogate, change or modify any of the terms, conditions, rights or obligations of any parties, all of which are set forth in detail in said Lease. The terms and conditions of said Lease are made a part hereof by reference for all purposes, to be the same effect as though written in extensor herein.

IN WITNESS WHEREOF, this instrument executed this O day of APIZI

2017.

Witness:

Lessor:
NOBLE ENERGY, INC.

By: Charles M. Countryman

Title: Attorney-in-Fact

Witness:

Lessee: SWN PRODUCTION COMPANY, L.I

Name:

Jim R. Dewbre

Title:

By:

Sr. Vice President of Land

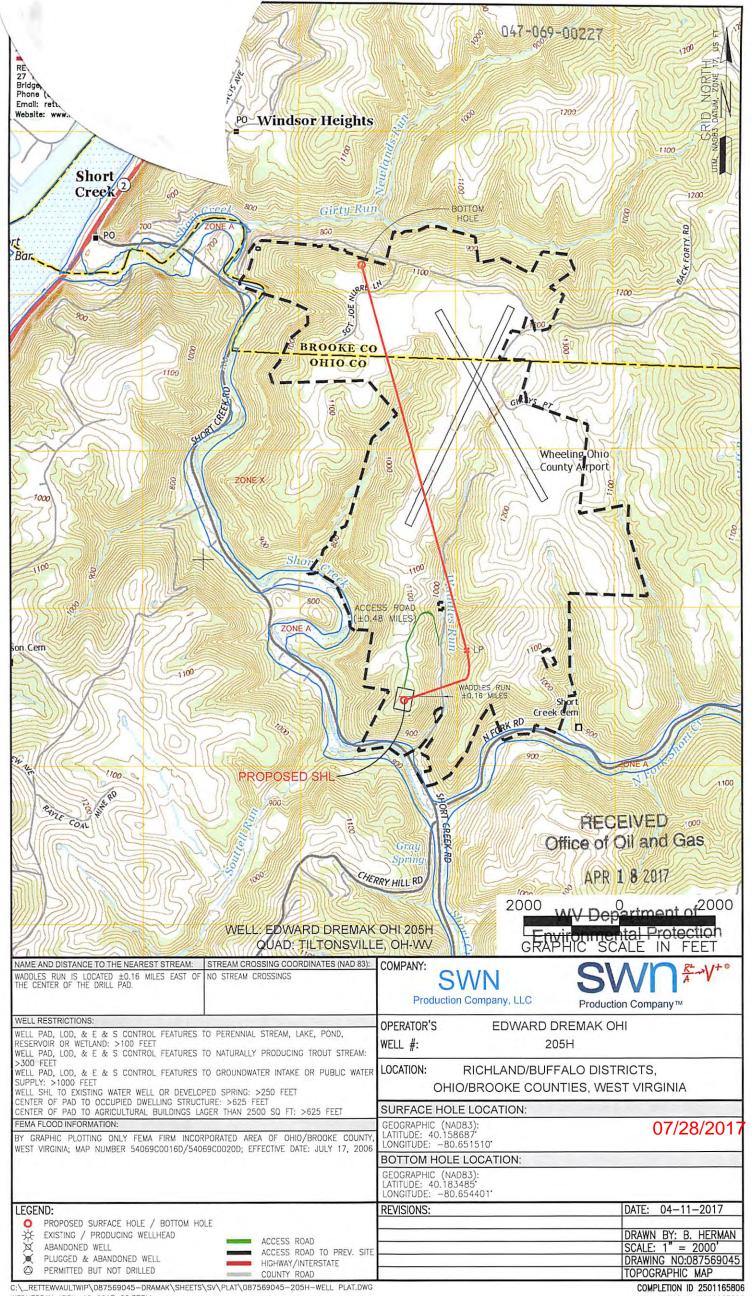
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Office of Oil and Gas

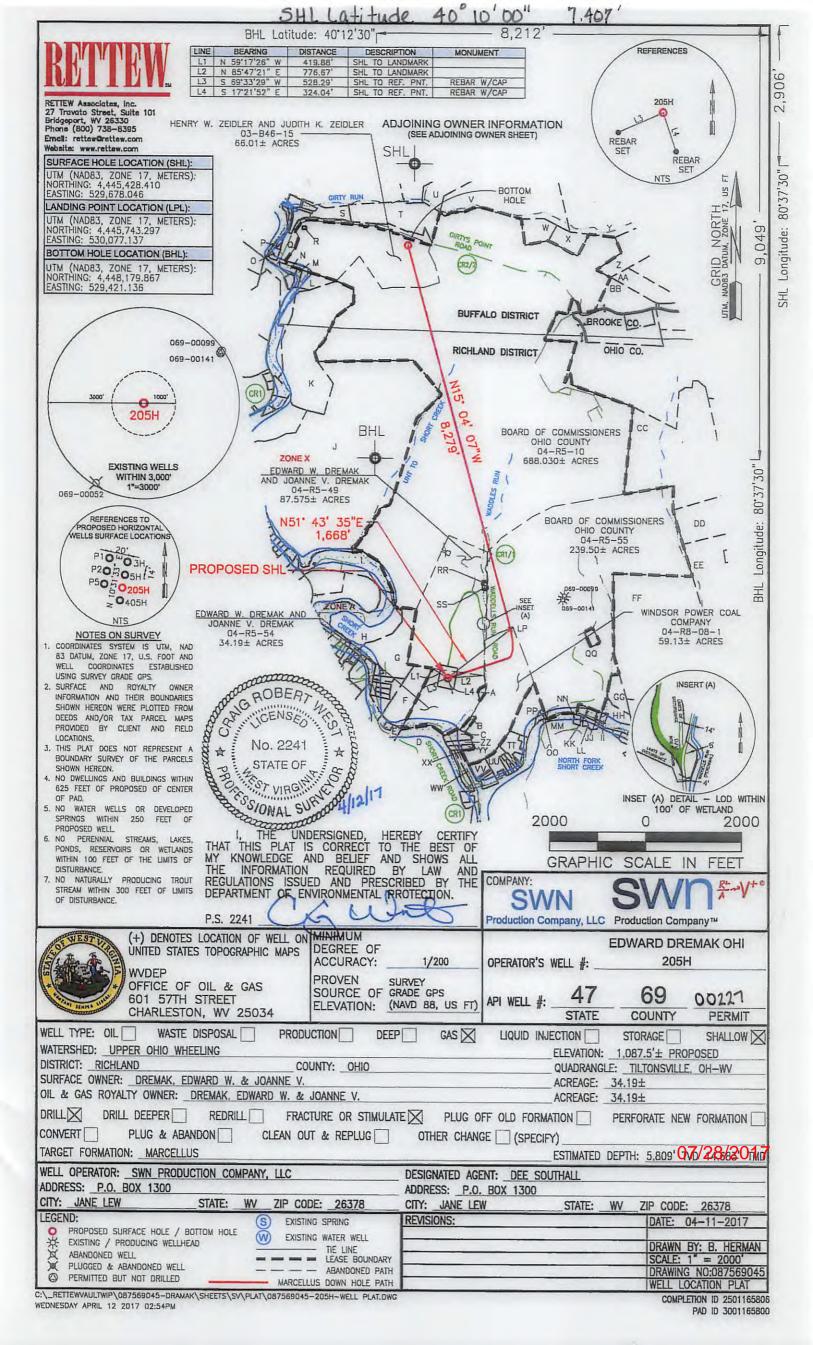
APR 1 8 2017

COR	RPORATE ACKNOW	VLEDGMENT	
STATE OF TEXAS	)		
	) SS:		
COUNTY OF HOITING	)		
On this the Oday of Arappeared CHARLES M. COUNTRYMAN ENERGY, INC., and that he as such instrument for the purposes therein Attorney-in-Fact.	N, who acknowledged Attorney-in-Fact, be	himself to be the	do so, executed the foregoing
IN WITNESS WHEREOF, I	hereunto set my hand	and official seal	
		und official seal.	
My Columission Expires: 8/2	0/2010	3	annin.
Notary Public			FELICIA BARSH MY COMMISSION EXP
V			August 28, 2018
STATE OF TEXAS  COUNTY OF HAYY'S  On this the O'day of AP appeared TAM A DENGLE / who a Production Company, L.L.C, and texecuted the foregoing instrument for to by himself as Vice President - Land.  IN WITNESS WHEREOF, 11	eknowledged himsel that he as such <u>Vice</u> the purposes therein c	fore me, the unde f to be the <u>Vice</u> <u>President - Land</u> ontained by signin	heing authorized to do so,
	C. Marie C. C. Salvaria C. Stranger	and official scal.	
My Commission Expires:	2020		
Jaryn Arredon Notary Public	do		TARYN ARREDONDO My Notary ID # 128850714 Expires January 16, 2020

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Office of Oil and Gas

APR 1 8 2017







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

FRACT	SURFACE OWNERS	TAX PARCEL	ACRES
Α	EDWARD W. & JOANN V. DREMAK	04-R5-54-1	0.69±
В	CHRISTOPHER A. WADDELL	04-R8-8-18	0.93±
C	EDWARD N. & SUSAN L. CAIN	04-R8-8-3	1.95±
D	ALLIANCE RESOURCE GP LLC	04-R8-6	169.98±
E	ALLIANCE RESOURCE GP LLC	04-R5-52	6.32±
F	ALLIANCE RESOURCE GP LLC	04-R5-53	14.25±
G	WINDSOR COAL COMPANY	04-R5-50	19.447±
Н	JOHN W. METZ	04-R5-46	22.63±
1	BURNT MILLS ACRES LLC	04-R5-13	20.332±
J	S E W TRUST, c/o SHANE W. WOLOSHAN	04-R5-9	220.947
K	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	04-R2-20	58.02±
L	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	03-B46-14	2.75±
М	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	04-R2-18-2	0.946±
N	SYLVIA A. HAWRANICK	04-R2-18-1	2.04士
0	HENRY W. ZEIDLER AND JUDITH K. ZEIDLER	03-B46-13	0.85±
P	KENNETH D. COVER AND BARBARA J. COVER	03-B46-12	0.69±
Q	SHORT CREEK ROAD	04-R2-9999	
R	HAMMOND PUBLIC SERVICE DISTRICT	03-B46-16	N/A
S	JOAN GARRETT		5.04±
T	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-17	5.23±
Ü		03-B46-18	20.52±
V	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-32	57.28±
-	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-83	83.41±
W	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-19	7.14±
X	STACY ANN GREATHOUSE AND PATRICIA ANN GREATHOUSE	03-B46-41	5.00±
Y	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-82	229.00±
Z	DANNY GENE BRITT AND VIRGINIA BRITT	03-B46-27	106.53±
AA.	TRACY GILBERT	03-B46-22	10.00±
BB	BRUCE D. BONAR (3/4) WILLIAM BONAR (1/4)	03-B46-20	113.00±
CC	MARC SEAMON	04-R6-2	93.627±
DD	ROBERT L. NOVAK AND GWENDOLYN NOVAK	04-R5-59	0.486±
EE	SHORT CREEK COAL CO. C/O RAYLE COAL CO.	04-R6-17	60.19±
FF	MARC SEAMON	04-R6-37	110.20±
GG	SHORT CREEK CEMETERY ASSOCIATION TRUSTEES	04-R5-57	1.61±
HH	SHORT CREEK METHODIST CHURCH	04-R5-60	6.50±
11	TUNNEL RIDGE LLC	04-R5-69	5.14±
JJ	ERIC W. & AND LISA N. GADD	04-R5-55-1	0.97±
KK	ERIC W. & AND LISA N. GADD	04-R5-55-3	0.98±
LL	DELBERT E. AND CAROL L. HUFFMAN	04-R8-16-2	1.31±
MM	AMERICAN DISPOSAL SERVICES OF WEST VIRGINIA INC.	04-R8-15	334.52±
NN	LUTHER R. II AND D. F. SMITH	04-R8-16-1	0.72±
00	ALLIED WASTE INC.	04-R5-56.1	1.25±
PP	ALLIED WASTE INC.	04-R5-56	7.22±
QQ	BRYAN K. & LAURA L. PETTIT	04-R5-55-4	1.56±
RR	RICHARD L. AND DEBORAH K. BLACK	04-R5-58-1	0.175±
SS	RAY W. ARCHER	04-R5-58	0.175±
TT	RODNEY & A J SNYDER	04-R8-13	4.96±
UU	ARTHUR ENNIS AND PEGGY CLARK	04-R8-9	
VV	GORDON E. & DEBORAH P. DREMAK	04-R8-8-15	4.63±
WW	THE STATE ROAD COMMISSION OF WEST VIRGINIA (SHORT CREEK ROAD)		2.90±
XX		N/A	N/A
YY	TUNNEL RIDGE	04-R8-8-17	0.16±
ZZ	TUNNEL RIDGE	04-R8-8-14	0.69±
44	TUNNEL RIDGE	04-R8-8-2	1.11±

REVISIONS:	COMPANY:	SWN Production Company, LLC	SVI Production Company	07/28/201
	OPERATOR'S WELL #:	EDWARD DREMAK OH 205H		DATE: 04-11-2017  DRAWN BY: B. HERMAN
	LOCATION:	RICHLAND/BUFFALO DISTR	The state of the s	SCALE: N/A DRAWING NO:087569045 ADJOINING OWNERS



Corporate Office

P.O. Box 12359 Spring, Texas 77391-2359 www.swn.com

April 11, 2017

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

RE: Drilling under Waddells Run Road and Girty's Point Road.

SWN's proposed New Well - Edward Dremak OHI 205H

Ohio County, West Virginia

Dear Ms. Adkins,

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Waddells Run Road and Girty's Point Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,

John D. Startz, CPL Senior Staff Landman

West Virginia Division

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Office of Oil and Gas

APR 1 8 2017

WV Department of Enviraginal Protection

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

Date of Notic	ce Certification:		API No. 4	7- 069 -	
	-till-				ard Dremak OHI 205H
			Well Pad	Name: Edward	Dremak OHI Pad
Notice has l					TALLIAN ST. STEEL ST.
Pursuant to th	ne provisions in West Virginia Code	22-6A, the Operator has pro	ovided the re-	quired parties v	with the Notice Forms listed
	tract of land as follows:		F		
State:	West Virginia 069-Ohio	UTM NAD 83	Easting:	529678.046	
County: District:	Richland	Public Road Ac	Northing:	4445428.410 Waddells Run Ro	
Quadrangle:	Tiltonsville	Generally used		Edward Dremak	oad .
Watershed:	Upper Ohio Wheeling	Generally used	iaini name.	Edward Dreillak	
Durguent to 1	West Virginia Code S 22 64 7(b)	avery permit application fil	ad under th	is section shall	l ba on a form as may b
	West Virginia Code § 22-6A-7(b), the secretary, shall be verified and s				
	ed the owners of the surface describ				
	equired by subsections (b) and (c), se				
	surface owner notice of entry to su				
	of subsection (b), section sixteen o				
	e § 22-6A-11(b), the applicant shall t				
	have been completed by the applican		the secretary	that the hoties	requirements of section to
Pursuant to	West Virginia Code § 22-6A, the Op	erator has attached proof to	this Notice (	Certification	
that the Ope	rator has properly served the require	d parties with the following:			A CANADA SA
					OOG OFFICE USE
*PLEASE CHI	ECK ALL THAT APPLY				ONLY
□ 1. NO	TICE OF SEISMIC ACTIVITY or	☐ NOTICE NOT REOU	RED BECA	USE NO	☐ RECEIVED/
		SEISMIC ACTIVITY WA			NOT REQUIRED
		SEISMIC ACTIVITY WA	o combee	TLD	NOT REQUIRED
■ 2. NO	TICE OF ENTRY FOR PLAT SURV	EY or NO PLAT SURV	VEY WAS C	ONDUCTED	RECEIVED
-					_/
3. NO	TICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUI	IRED BECA	USE	RECEIVED/
		NOTICE OF ENTRY FOR	PLAT SUR	VEY	NOT REQUIRED
		WAS CONDUCTED or			
			DAY CLIDE A	GE OUDJED	
		☐ WRITTEN WAIVER		CE OWNER	
		(PLEASE ATTACH	1)		100
■ 4. NO	TICE OF PLANNED OPERATION				RECEIVED
5. PUI	BLIC NOTICE				RECEIVED
					/
₩ 6. NO	TICE OF APPLICATION				RECEIVED
					HEBEIVER

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice than half being road 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 attacked 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. the return receipt card or other postal receipt for certified mailing. Environmental Protection

#### Certification of Notice is hereby given:

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

Well Operator: SWN Production Co., By:

Dee Southall

Its: Regulatory Supervisor

Telephone: 304-884-1614 Address: P.O. Box 12359

Spring, TX 77391-4954

Facsimile: 92816182780@fax.com

Email: Dee Southall@swn.com

NOTARY SEAL OFFICIAL SEAL Notary Public, State of West Virginia BRITTANY R WOODY 3302 Old Elkins Road Euckhannon, WV 26201

Subscribed and sworn before me this

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.

> RECEIVED Office of Oil and Gas

> > APR 1 8 2017

WW-6A (9-13)

API NO. 47- 069

OPERATOR WELL NO. Edward Dremak OHI 205H

Well Pad Name: Edward Dremak OHI Pad

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

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

Date of Notice: UMD Date Permit Application Filed Notice of:	$\Gamma \frac{1}{4} $
	APPROVAL FOR THE OF AN IMPOUNDMENT OR PIT
Delivery method pursuant to West Virginia Code § 22-6	A-10(b)
	ETHOD OF DELIVERY THAT REQUIRES A ECEIPT OR SIGNATURE CONFIRMATION
registered mail or by any method of delivery that requires a rec- sediment control plan required by section seven of this article, the surface of the tract on which the well is or is proposed to be oil and gas leasehold being developed by the proposed well we described in the erosion and sediment control plan submitted properator or lessee, in the event the tract of land on which the well work if the surface tract is to be used for the placement, of impoundment or pit as described in section nine of this articles have a water well, spring or water supply source located within provide water for consumption by humans or domestic animal proposed well work activity is to take place. (c)(1) If more that subsection (b) of this section hold interests in the lands, the ap- records of the sheriff required to be maintained pursuant to sec- provision of this article to the contrary, notice to a lien holder Code R. § 35-8-5.7.a requires, in part, that the operator shall a water purveyor or surface owner subject to notice and water te	
☑ Application Notice ☑ WSSP Notice ☑ E&S Plan N ☑ SURFACE OWNER(s) Name: Edward Dremak & Joanne Dremak	COAL OWNER OR LESSEE Name: Consolidation Coal Company %Leatherwood
Address: 503 Waddells Run Road	Address: 1000 Consol Energy Drive
Wheeling, WV 26003	Canonsburg, PA 15317
Name:	COAL OPERATOR
Address:	Name:
	Address:
SURFACE OWNER(s) (Road and/or Other Disturbance)	
Name:	☑ SURFACE OWNER OF WATER WELL
Address:	AND/OR WATER PURVEYOR(s)
	Name: See Attached
Name:	Address:
Address:	
	OPERATOR OF ANY NATURAL GAS STORAGENTEEDD
SURFACE OWNER(s) (Impoundments or Pits)	Name: Office of Oil and Gas
Name:	Address:
Address:	*Please attach additional forms if necessary APR-1 8 2017

WW-6A (8-13)

API NO. 47-069

OPERATOR WELL NO. Edward Dromak OHI 205H

Well Pad Name: Edward Dremak OHI Pad

#### 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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting <a href="https://www.dep.wv.gov/oil-and-gas/pages/default.aspx">www.dep.wv.gov/oil-and-gas/pages/default.aspx</a>.

#### 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, figurated, 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 reflectionsed 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 1.200 arthrepthof 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

WW-6A (8-13)

API NO. 47-069

OPERATOR WELL NO. Edward Dremak OHI 205H

Well Pad Name: Edward Dremak OHI Pad

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 57<sup>th</sup> St. SE
Charleston, WV 25304
(304) 926-0450

REGEIVED
Office of Oil and Gas

APR 1 8 2017

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.

WV Department of

Environmental Protection

WW-6A (8-13)

API NO. 47-069 -

OPERATOR WELL NO. Edward Dremak OHI 205H Well Pad Name: Edward Dremak OHI Pad

#### 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 <a href="http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx">http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx</a> 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.

REGEIVED
Office of Oil and Gas

APR 1 8 2017

WW-6A (8-13)

API NO. 47-069 - 00227

OPERATOR WELL NO. Edward Dremak OHI 205H 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.

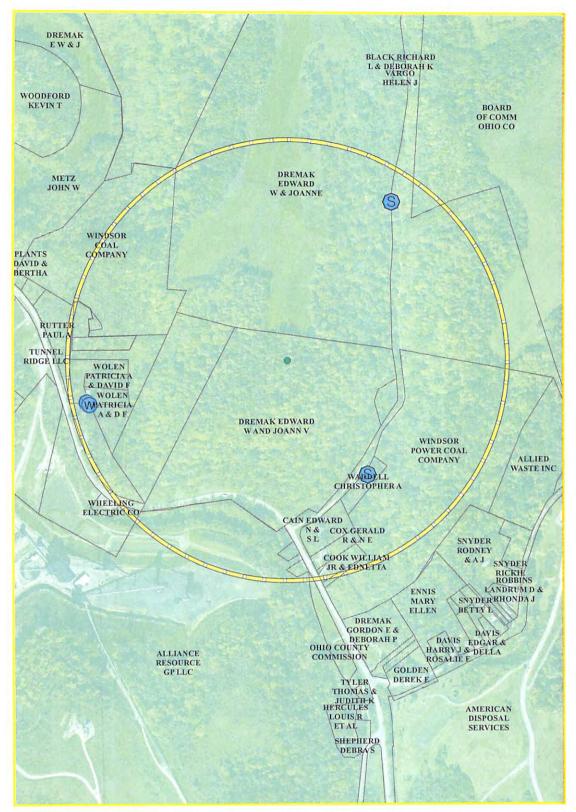
OFFICIAL SEAL
Notary Public. State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon. WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this

lay of 4000

Notary Public

My Commission Expires



The intent of this map is for general reference only. Information on this map was created using the best available data at the time but is not guaranteed accurate.

Water Purveyor	(V) 1/10 as (S) 5/10 as	Well Pad: Edward Dremal	k OHI Pad	County:		
Map by: speart NAD 1983 BLM Zone 17N ftUS	CIAID		Edward Dremak OHI Coordinates 40.158649, -80.651519		ates: www.s	
0 2	50 500	1,000	1,500	2,000 Feet	(	7/28/2017

### Edward Dremak Water Purveyors - 1500 ft

LANDOWNER	SOURCE	WELL DEPTH	Address
David & Patrcia Wolen	Well	112 ft	1826 Short Creek Rd., Wheeling WV 26003
David & Patrcia 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 —

RECEIVED
Office of Oil and Gas

## 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 Date of Notic		pe provided at least TEN (10) days prior to filing a  Date Permit Application Filed:	permit application.
Delivery met	hod pursuant to West Virgi	nia Code § 22-6A-16(b)	
☐ HAND	■ CERTIFIED	MAIL	
DELIVE	RY RETURN RI	ECEIPT REQUESTED	
receipt request drilling a hore of this subsect subsection ma	ted or hand delivery, give the zontal well: <i>Provided</i> , That tion as of the date the notice by be waived in writing by the	t least ten days prior to filing a permit application, e surface owner notice of its intent to enter upon th notice given pursuant to subsection (a), section ter was provided to the surface owner: <i>Provided, how</i> e surface owner. The notice, if required, shall inclustronic mail address of the operator and the operator	e surface owner's land for the purpose of n of this article satisfies the requirements ever, That the notice requirements of this ade the name, address, telephone number,
	reby provided to the SUR		
Name: Edward		Name:	
Address: 503 Wheeling, WV 26	Vaddells Run Road	Address:	
		Public Road Access:	
Watershed:	Upper Ohio Wheeling	Generally used farm flame.	Edward Diemak
Pursuant to V facsimile nur related to hor	nber and electronic mail add izontal drilling may be obtai	A-16(b), this notice shall include the name, address of the operator and the operator's authorize ined from the Secretary, at the WV Department of WV 25304 (304-926-0450) or by visiting www.de	d representative. Additional information Environmental Protection meadquarters,
Pursuant to V facsimile nur related to hor located at 601 Notice is he	Vest Virginia Code § 22-6A nber and electronic mail add izontal drilling may be obtain 57th Street, SE, Charleston, Vereby given by:	dress of the operator and the operator's authorize and from the Secretary, at the WV Department of WV 25304 (304-926-0450) or by visiting <a href="https://www.department.org/www.depart&lt;/td&gt;&lt;td&gt;d representative. Additional information&lt;br&gt;Environmental Protection freadquarters,&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Pursuant to V&lt;br&gt;facsimile nur&lt;br&gt;related to hor&lt;br&gt;located at 601&lt;br&gt;Notice is he&lt;/td&gt;&lt;td&gt;Vest Virginia Code § 22-6A&lt;br&gt;nber and electronic mail add&lt;br&gt;izontal drilling may be obtai&lt;br&gt;57&lt;sup&gt;th&lt;/sup&gt; Street, SE, Charleston, V&lt;/td&gt;&lt;td&gt;dress of the operator and the operator's authorize and from the Secretary, at the WV Department of WV 25304 (304-926-0450) or by visiting &lt;a href=" https:="" td="" www.depart<="" www.department.com=""><td>d representative. Additional information Environmental Protection freadquarters, p.wv.gov/oil-willospate@ifands.cas</td></a>	d representative. Additional information Environmental Protection freadquarters, p.wv.gov/oil-willospate@ifands.cas
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#### Oil and Gas Privacy Notice:

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

WW-6A5 (1/12)

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

CERTIFI RETURN	od pursuant to West Virginia Cod	
RETURN		e § 22-6A-16(c)
RETURN	IED MAIL	☐ HAND
	N RECEIPT REQUESTED	DELIVERY
return receipt rethe planned op required to be parelling of a hodamages to the (d) The notices of notice.  Notice is hereto (at the address: Name: Edward & J. Address: 503 Wa. Wheeling, WV 2600: Notice is hereto Pursuant to We	requested or hand delivery, give the speration. The notice required by the provided by subsection (b), section to prizontal well; and (3) A proposed surface affected by oil and gas open a required by this section shall be given by provided to the SURFACE OW listed in the records of the sheriff at Joanne Dremak addells Run Road  by given: est Virginia Code § 22-6A-16(c), not	
-	West Virginia	UTM NAD 83 Easting: 529,678.046
	Ohio Richland	Northing: 4,445,428,410 Public Road Access: Waddells Run
	Tiltonsville, OH-WV	Generally used farm name: Edward Dremak
	Upper Ohio Wheeling	Constanty about farm manie.
This Notice Sh Pursuant to We to be provided horizontal well surface affected information rel	est Virginia Code § 22-6A-16(c), the by W. Va. Code § 22-6A-10(b) to be and (3) A proposed surface use and by oil and gas operations to the collected to horizontal drilling may be located at 601 57th Street, SE,	s notice shall include: (1)A copy of this code section; (2) The information required a surface owner whose land will be used in conjunction with the drilling of a d compensation agreement containing an offer of compensation for damages to the extent the damages are compensable under article six-b of this chapter. Additional obtained from the Secretary, at the WV Department of Environmental Protection charleston, WV 25304 (304-926-0450) or by visiting <a href="https://www.dep.wv.gov/oil-and-damages-notice-not&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;This Notice Sh&lt;br&gt;Pursuant to We&lt;br&gt;to be provided&lt;br&gt;horizontal well&lt;br&gt;surface affected&lt;br&gt;information rel&lt;br&gt;headquarters, I&lt;br&gt;gas/pages/defau&lt;/td&gt;&lt;td&gt;est Virginia Code § 22-6A-16(c), the by W. Va. Code § 22-6A-10(b) to be and (3) A proposed surface use and by oil and gas operations to the collected to horizontal drilling may be located at 601 57th Street, SE, Coult.aspx.&lt;/td&gt;&lt;td&gt;of a surface owner whose land will be used in conjunction with the drilling of a discompensation agreement containing an offer of compensation for damages to the extent the damages are compensable under article six-b of this chapter. Additional obtained from the Secretary, at the WV Department of Environmental Protection Charleston, WV 25304 (304-926-0450) or by visiting &lt;a href=" oil-and-damages-age-number-10"="" www.dep.wv.gov="">www.dep.wv.gov/oil-and-damages-number-10"&gt;www.dep.wv.gov/oil-and-damages-number-10"</a>
This Notice Sh Pursuant to We to be provided horizontal well surface affected information rel headquarters, 1	est Virginia Code § 22-6A-16(c), the by W. Va. Code § 22-6A-10(b) to be and (3) A proposed surface use and by oil and gas operations to the collected to horizontal drilling may be located at 601 57th Street, SE, Coult.aspx.	of a surface owner whose land will be used in conjunction with the drilling of a discompensation agreement containing an offer of compensation for damages to the extent the damages are compensable under article six-b of this chapter. Additional obtained from the Secretary, at the WV Department of Environmental Protection

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 MicGequestil and the 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.

APR 1 8 2017



#### WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

## Division of Highways 1900 Kanawha Boulevard East • Building Five • Room 110

Jim Justice Charleston, West Virginia 25305-0430 • (304) 558-3505
Governor

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

February 15, 2017

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

Subject: DOH Permit for the Edward Dremak Pad OHI 205H Well Site, Ohio County

Dear Mr. Martin,

47-064-00227

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 Gold Mario

Office of Oil and Gas

APR 1 8 2017

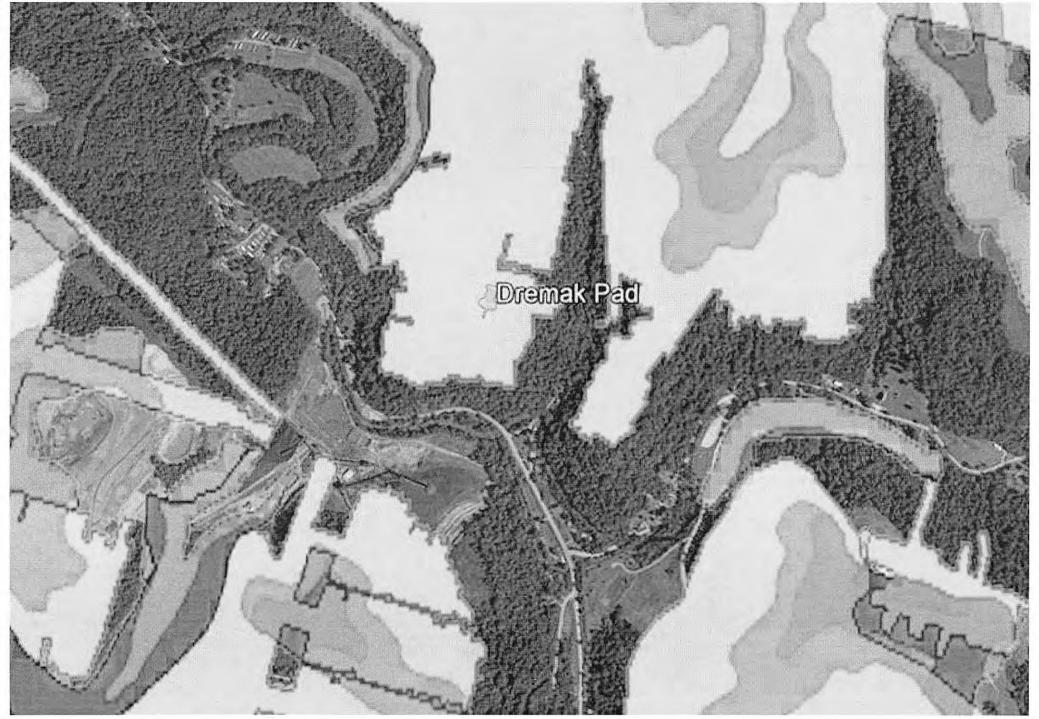
WV Department of Environmental Protection

Cc:

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

Product Name	Product Use	Chemical Name	CAS Number
		Hydrogen Peroxide	7722-84-1
EC6734A (Champion Technologies)	Biocide	Acetic Acid	64-19-7
, , ,		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion		Methanol	67-56-1
Technologies)	Scale Inhibitor	Nonylphenol Ethoxylate	Proprietary
		Glutaraldehyde	111-30-8
Bactron K-139 (Champion		Quaternary Ammonium Compounds, Benzyl-C12-	
Technologies)	Biocide	16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion	Biocide	Methanol	67-56-1
Technologies)	Biocide	Quaternary Ammonium Compounds, Benzyl-C12- 16-Alkyldimethyl, Chlorides	68424-85-1
		Methanol	67-56-1
A264 (Sahlumharran)	Corrosion	Aliphatic Acids	Proprietary
A264 (Schlumberger)	Inhibitor	Prop-2-yn-1-ol	107-19-7
		Aliphatic Alcohols, Ethoxylated #1	Proprietary
Maraida OA OF taxas	Disside	Water	7732-18-5
Myacide GA 25 (Schlumberger)	Biocide	Glutaral	111-30-8
		Trisodium Ortho Phosphate	7601-54-9
Scale Inhibitor B317 (Schlumberger)	Scale Inhibitor	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	Friction	Ammonium Sulfate	7783-20-2
(Schlumberger)	Reducer	Urea	57-13-6
Creedinker 1610 (2-1)	Crosslinker	Potassium Hydroxide	1310-58-3
Crosslinker J610 (Schlumberger)	Ciossilikei	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	Inorganic salt	64742-47-8
LCA-1 (Halliburton)	Reducer	Hydrotreated light petroleum distillate	Dropriotor
SP BREAKER (Halliburton)	Brooker	Hydrotreated light petroleum distillate	Proprietary
OF DILAKEN (nambunon)	Breaker	Sodium Persulfate  Methanol	7775-27-1
HAI-150E (Halliburton)	Corrosion Inhibitor	Aliphatic Acids Prop-2-yn-1-ol Aliphatic Alcohols, Ethoxylated #1	NA
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

Mine map 205H





## **EROSION & SEDIMENT CONTROL PLAN** FOR

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

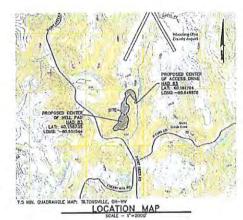
- THE BOUNDARY AND TOPOGRAPHIC DURNEY FOR THE PROJECT AREA WERE PERFORMED BY RETTER ASSOCIATES IN JUNIARY 2016 AND SEPTEMBER 2018
  PERFORMED REPARKINGS, LANDONNERS PROFESSION AND ROAD HETFORDS SHOWN ON THES PLAN AND REAST ON ANALOSE COUNTY OF DATA.

  AND RESERVE OF ANALOSE COUNTY OF DATA.

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- CONTINUAL 23. DEAT ARE SEEDED ON SOCIED SHALL BE CHECKED PERSONCALLY TO SEE THAT GRASS COVERAGE IS PROVINCY MAINTAINED WHEN DEL CONTINUED IS RELEASED HIGH HER ADD. SET. DESTAURED, AREAS SHALE BE WRITTED, ENTELLIZE, AND RESELECT OF 26. FIOR DESCRIP PERFORMS. THE PAO CROSS SECTION AND ROAD SECTION WAS ASSUMED TO BE 14. THIS IS DUE TO SETELLOWER OF THE CHARGE REAL HOTO HER -2.8 GOOG.



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STAKING FLAG LEGEND

TOP HOLE LOCATION

LMITS OF DISTURBANCE

ENOSIGN & SEDMENT CONTROL STRUCTURES (PINK & WINTE STRIPE)

TOPSOE STOCKPILE LOCATIONS (ORANGE & WHITE STRIPE)

CENTERLINE OF DITCH & BOTTOM OF SEDMENT TRAPS

CENTERLINE LEASE ROAD (LIME CREEN & DRANGE)

DREMAK, EDWARD W. & JOANNE V.

#### **OPERATOR** SWM PRODUCTION CO., LLC PO BOX 1300 JANE LEW, WY 26378 (632) 725-1610

#### LIMITS OF DISTURBANCE

#### SOILS CLASSIFICATION

WAT: WESTMORELAND SET LOAM, 35 TO BOX SLOPES

aux frant	HELL PAD + 21,590 CY	ACCESS DRIVE	91E +72,494 CY
TOT COMP. (SOIL)	- 2,159 CY	- 5,090 CY	- 7,219 CY
CUT (RDCK) 10% ROCK SWELL 20% ROCK SWELL 30% ROCK SWELL	+ 35 CY + N/A + 7 CY	+42,500 CY + 875 CY + 5,848 CY + 1,381 CY	+42,635 CY + 875 CY + 5,855 CY + 1,381 CY
TILL	- 31.953 CY - 12,479 CY	-76.792 CY +17,725 CY	-110.745 CY - 5,247 CY
STONE	+ 10,075 CY	+ 2,063 CY	- 12.141 CY
TOPSOIL	+ 4,710 CY	+ 5,550 CY	- 10,270 CY

NOTES:
1. THE TOPSOL DEPTH FOR THE ACCESS DRIVE IS 5.3", THE TOPSOL DEPTH
FOR THE FAO IS 5.5",
2. THE COL'S PLANSAMY CALCULATIONS PRESENTED ON THE FALM ARE
REPORTEDATED VEHICLE OF THE STANDAMY CALCULATIONS PRESENTED ON THE FALM ARE
REPORTEDATED VEHICLE OF THE STANDAMY CALCULATIONS
VOLUMES, METHODS AND PROFESSIONAL FOR THE OFFICIAL PROPERTY AND THE OFFICI

-101	<u> </u>	
1 07 31.		CONTR SHEET & GENERAL NOTES
2 07 31.		CVERALL SITE PLAN
3 06 31.		EDILARGED LAYOUT PLAN
4 of 31.		DILARGED LAYOUT FLAN
S OF 31.	10000	. DRIARGED LAYOUT FLAN
6 OF 31,		. EROSION & SEEMENT CONTROL PLAN
7 OF 31.		CROSION & SEDDIENT CONTROL FLAN
# OF 31.		. EROSDON & SERGIENT CONTROL PLAN
9 OF 31.		. WY DEP EAS PLUI
10 OF 31.		. WY DEP EAS PLAN
11 OF 31.		. WY DEP CAS PLAII
12 OF 31.		. ACCESS DRIVE PROFILE
13 OF 31.		. ACCESS DRIVE PROFILE
14 DF 31.		WELL PAD CROSS SECTIONS
15 OF 31.		CROSS SECTIONS PLAN VEW
14 07 31	00000	CROSS SECTIONS - ACCESS DRIVE
17 DF 31.		CROSS SECTIONS - ACCESS DRIVE
18 OF 31.		CROSS SECTIONS - ACCESS DRIVE
16 OF 31.	UV244	CROSS SECTIONS - ACCESS DAINE
55 PF 31		CROSS SECTIONS - ACCESS DRIVE
21 PE 31.	00216	. CROSS SECTIONS - ACCESS DRIVE & PAD
22 OF 31.		CHOIS SECTIONS - PAD
23 OF 31.		. RECLAHATION FLAN
24 OF 31.		. RECLAMATION PLAN
25 CF 31.		. RECLAMATION PLAN
46 P.C 31.		. EVACUATION ROUTE FLAN
27 OF 31.		EYACUATION POUTE PLAN - USCS
25 OF 31.		NOTES & DETAILS
25 OF 31.		. DETAILS
30 OF 31.		DETAILS
31 of 31.		CENTED BECAL HOTES & DETAILS

#### CALL BEFORE YOU DIG!

Dial 811 or 800.245.4848

DATE: 10/26/2015 TICKET # 1530029203

GuB;	CHEMNSEA	SILT	LOAM	3	TO	BX	SLOPES	
GuQ:	CUERNSEY	SILT	LOAM,	8	70	15%	SLOPES	
-			1110		TO	257	cinoce	

WATER WEST MORELAND SET LOAM, 15 TO 25 SLOPES

	24" BERIAS				
	ACCESS ROAD DAT				
	DESCRIPTION				
	ACCESS ROAD CUT (EXCLUDES TOPSOR)				
	ACCESS ROAD FILL (EXCLUDES TOPSOL)				
	TOE KEY EXCAVATION				
	TOE KEY - SUITABLE FR.L				
	ACCESS ROAD TOPSOL STREPPING				
	ACCESS ROAD FINISH GRADING				
	PLACEMENT OF TOPSOIL				

#### LIST OF DRAWINGS

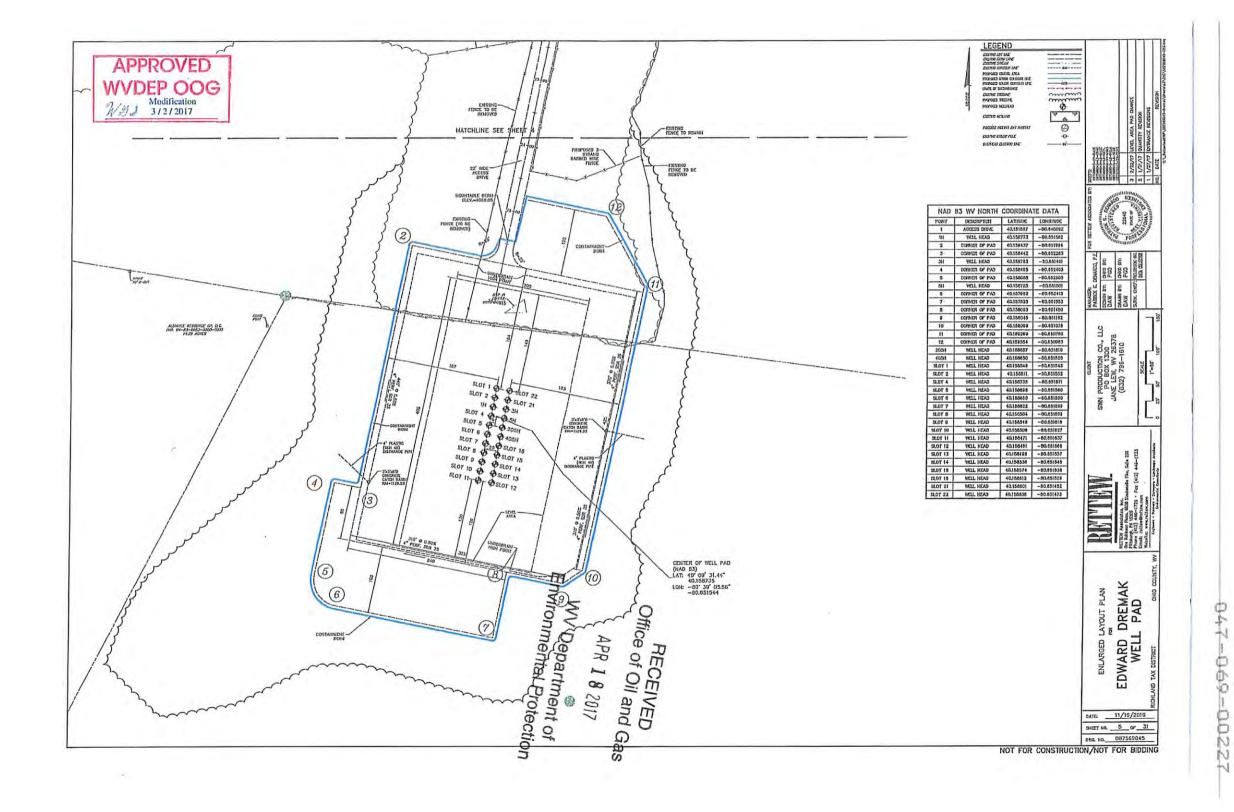
	**	. COVER SHIELT & GENERAL NOTES
200	31	COURALL SITE PLAN
: 00	31	. DILARGED LAYOUT PLUI
3 0		. DILARGED LAYOUT FLAN
3 22	31	. DILARGED LAYOUT PLAN
2 04	31	. EROSION & SEEMENT CONTROL PLAN
8 00	31	. DROSION & SEDDIDIT CONTROL PLAN
7.07	31	. EROSDON & SERSITINT CONTROL PLAN
# CF	31	. WY DEP EAS PLUI
	31	. WY DEP EAS PLAN
10 04	31	W DEP CAS PLAII
11 04	31	. ACCESS DRIVE PROFILE
12 0	31	. ACCESS DRIVE PROFILE
13 CY	31	. WELL PAD CROSS SECTIONS
10 00	31	CROSS SECTIONS PLAN VIEW
15 CF	31	. CROSS SECTIONS - ACCESS DRIVE
16 07	31	CROSS SECTIONS - ACCESS DAIVE
17 14	36	. CROSS SECTIONS - ACCESS DIEVE
18 0	21	CROSS SECTIONS - ACCESS DAVE
10 04	20	. CROSS SECTIONS - ACCESS DRIVE
20 DF	21	. CROSS SECTIONS - ACCESS DRIVE & PAD
23 04	21	. CHOIS SECTIONS - PAD
22 CV	die	. RECLAHATION FLAN
23 07	20	. RECLAMATION PLAN
24 CF	30	BELLAHATION PLAN
23 Ur	21	. EVACUATION HOUTE PLAN
26 00	20	. EVACUATION POUTE PLAN - USCS
27 00	20	. NOTES & DETALS
20 CF	31	. NUILS & UCIACA
28 OF	31	ACTUAL D
30 OF	31	. CECTECHECAL HOTES & DETAILS
31 OF	Mirrer.	Controverse mairs at prives

ENGINEER'S ESTIMATE OF	QUANTITIES	
WELL SITE PAD DA		
DESCRIPTION	ESTINATED QUANTITY	UNITE
SELL PAD CUT SEXCLUDES TOP SOIL)	21,500	CA
OE KEY EXCAVATION	6,225	CY
DE KEY - SUITABLE FILL	6,225	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	31,953	CY
VELL PAD TOPSOIL STREPPING	4,710	CY
VELL PAO FINISH GRADING	22,734	SY
LACEMENT TOPSOIL	870 22,734	ty.
REGTEXTLE ASE ROCK: R35 12" (ROCK PROVIDED BY QUARRY) LACEMENT COST	6,917	101
DRIEN GRADE CRUSHER RUN 4" (ROCK PROVIDED BY MARRY) PLACEMENT COST	2,682	TOM
4" BERIAS	2,001	LF
ACCESS ROAD DA	TA	
DESCRIPTION	ESTIMATED QUANTITY	UNIT
CCESS ROAD CUT (EXCLUDES TOPSOR)	93,304	CY
CCESS ROAD FILL (EXCLUDES TOPSOL)	78,392	CA
DE KEY EXCAVATION	5,003	CT
OE KET - SUITABLE FR.L	5,000	CA
CCESS ROAD TOPSOL STRIPPING	5,560	CY
CCESS ROAD FIRESH GRADING	3,503	24
LACEMENT OF TOPSOIL	2,735	CY
EOTEXTILE	6,147	SY
ASE ROCK: ROS 12" (ROCK PROVIDED BY QUATRY) LACEMENT COST	2,459	104
BRISH GRADE CRUSHER HUN 4" (ROCK FROVIDED BY DUARRY) PLACEMENT COST	1.586	TON
MASE ROCK AASHTO #67 4" (NOCK PROVIDED BY DUARRY/PLACEMENT COST - ALTERNATE	3,149	101
RESH GRADE CRUSHER RUN 1.5" (ROCK PROVINED BY DUARRY) PLACEMENT COST - ALTERNATE	1,960	YOU
BASE ROCK: R-75 8" (ROCK PROVIDED BY QUARRY) PLACEMENT COST - ALTERNATE	2,450	101
SUPERPAVE LS' WEARING COURSE - PAVED AREA ORLY	125	101
SUPERPAVE 45' BASE COURSE - PAVED AREA ONLY	285	1016
I' THICK AGGREGATE - PAVED AREA CHEY IZ' DIAMETER CROSS PIPE	341	TOR
	70	U
IS* CIAMETER CROSS PIPE	35	U
DADSIDE UNDERDRAIN	0	U
CULVERT OUTLET/ROCK APRON EUMP		EA
CULVERT OUTLET/ROCK APRON SUMPROCK A-SS	61	TON
CLEVERT OUTLETAROCK APRON SUMPROCK GEOTEXTILE	26	67
	10	UF
ROADSIDE CHANNEL	1,691	TON
DADEIDE CHANNEL ROCK; R-55	0	100
EROSION & SEDIMENT COM	TROLITEMS	
M' SUPER SILT FENCE	3,978	u
ATER SOCK(12)	1244	U
ELTER SOCK (187)	1522	U
ATERISOCK (24°)	817	u
ATERSOCK (32)	535	u
CHANGE HATTING PIAG \$75)	704	67
HANNEL MATTING PLAG SCISO)	1,110	57
CHARLEL MATTING (HAG C121)	257	54
CHANGE MATTING PIAG SCHO)	847	47
OCK FILTER DAM		EA
EVEL SPREADER	2	EA
ADDITIONAL ITES		
TRAFFIC CONTROL	1	LI
CONSTRUCTION ENTRANCE	1	1.5
CONSTRUCTION FENCE	0	U
MODIFILIZATION	1	LS
RENCH SAFETY PLAN & PROTECTION	1	1.5
SEEDINGMULCHING	ITEMS	
EEDDIG, LIME, & FERTRIZEA LEXTEARA (ONLY 2-1 SLOPE, NO MATTINO)	76,503 37,037	24
UNDERDRAIN ITE	MS	
ERFORATED PLASTIC PIPE	1,430	L
TALIDADD CATCH DATE!	. 2	EA
MASTHORS STONE (ALTERNATE USE MASKTO AL STONE)	180	TOW
CATCH BASIN RISER	2	EA
SOLID SCHEDULE 48 PLASTIC PIPE	135	LF
STEEL GATE	2	EA
"STEEL GATE VALVE	2	EA
TAT RUBBER ANTI-SEEP COLLAR	4	EA
CLEARING AND GRUBBI	NG ITEMS	
LEARING AND GRUSSING	23.7	AS AS

SWN PRODUCTIVA 00, LLC PO BOX 1300 JANE LEW, WY 28378 (332) 796-1610	PATRICK C. DEMATRO, P.E.	AW PCD ST.	MY BY DOOD BY	JRV. CHEFT. PELBECOK NO.
RETTEW ASSESSMENT OF THE SERVICE ASSESSMENT		80	(832) 796-1610 DA	ans ans
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DWG. NO. 087569045

NOT FOR CONSTRUCTION/NOT FOR BIDDING



### **EROSION & SEDIMENT CONTROL PLAN** EDWARD DREMAK WELL PAD RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA THE STATE OF THE S SOILS CLASSIFICATION 1.2 MONOT MI MALE I MALE SHAT 1.2 MONOT MI MALE I MELEMIT 2.2 MONOT MI MALE I ME SEHERAL NOTES CHT & FILL or from head | Share | Share | Share | or from head | Share | Share | Share | or from head | Share | Share | Share | or from head | or from he SWIT DEFRATOR STANIO FI AO LEGINO. TOLICO SERVICIO S BHITS OF DISTURBANCE The proof of the section of the tensor and there are an extensive and the section of the section WET WITHING I The many of the property of th County orders County orders Line a Bridge County orders County EDWARD D