



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 DANIEL DURIG WTZ 105H
47-103-03186-00-00

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: DANIEL DURIG WTZ 105H
Farm Name: DANIEL DURIG (REMAINERMAN), ARTHUR & SHIRLEY AND
U.S. WELL NUMBER: 47-103-03186-00-00
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 4710303186

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.

WW-6B
(04/15)

API NO. 47- _____ - _____
 OPERATOR WELL NO. Daniel Durig WTZ 105H
 Well Pad Name: Daniel Durig WTZ Pad

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 103- Wetzel 12-Proctor 681-Wileyville
 Operator ID County District Quadrangle

2) Operator's Well Number: Daniel Durig WTZ 105H Well Pad Name: Daniel Durig WTZ Pad

3) Farm Name/Surface Owner: Daniel Durig Public Road Access: Macedonia Ridge Road

4) Elevation, current ground: 1400.9' Elevation, proposed post-construction: 1400.9'

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

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

6) Existing Pad: Yes or No yes

DWH
3-1-17

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):

Target Formation- Marcellus, Target Top TVD- 7216', Target Base TVD-7253', Anticipated Thickness- 37', Associated Pressure- 4715

8) Proposed Total Vertical Depth: 7228' at the heel

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12386'

11) Proposed Horizontal Leg Length: 4736.62'

12) Approximate Fresh Water Strata Depths: 427'

13) Method to Determine Fresh Water Depths: Salinity Profile

14) Approximate Saltwater Depths: 1664'

15) Approximate Coal Seam Depths: 1155'

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: _____

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	527'	527'	502 sx/CTS
Coal	9 5/8"	New	J-55	36#	2611'	2611'	1004 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	12386'	12386'	Load 865sx tall 1312sx/100' inside interval
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 7228'	Approx. 7228'	
Liners							

*DMJ
3-1-17*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	0.020	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	0.020	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	0.020	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	0.020	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	0.020	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

47-0705-06

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

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

*DmH
3-1-17*

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): 8.1

22) Area to be disturbed for well pad only, less access road (acres): 3.9

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.

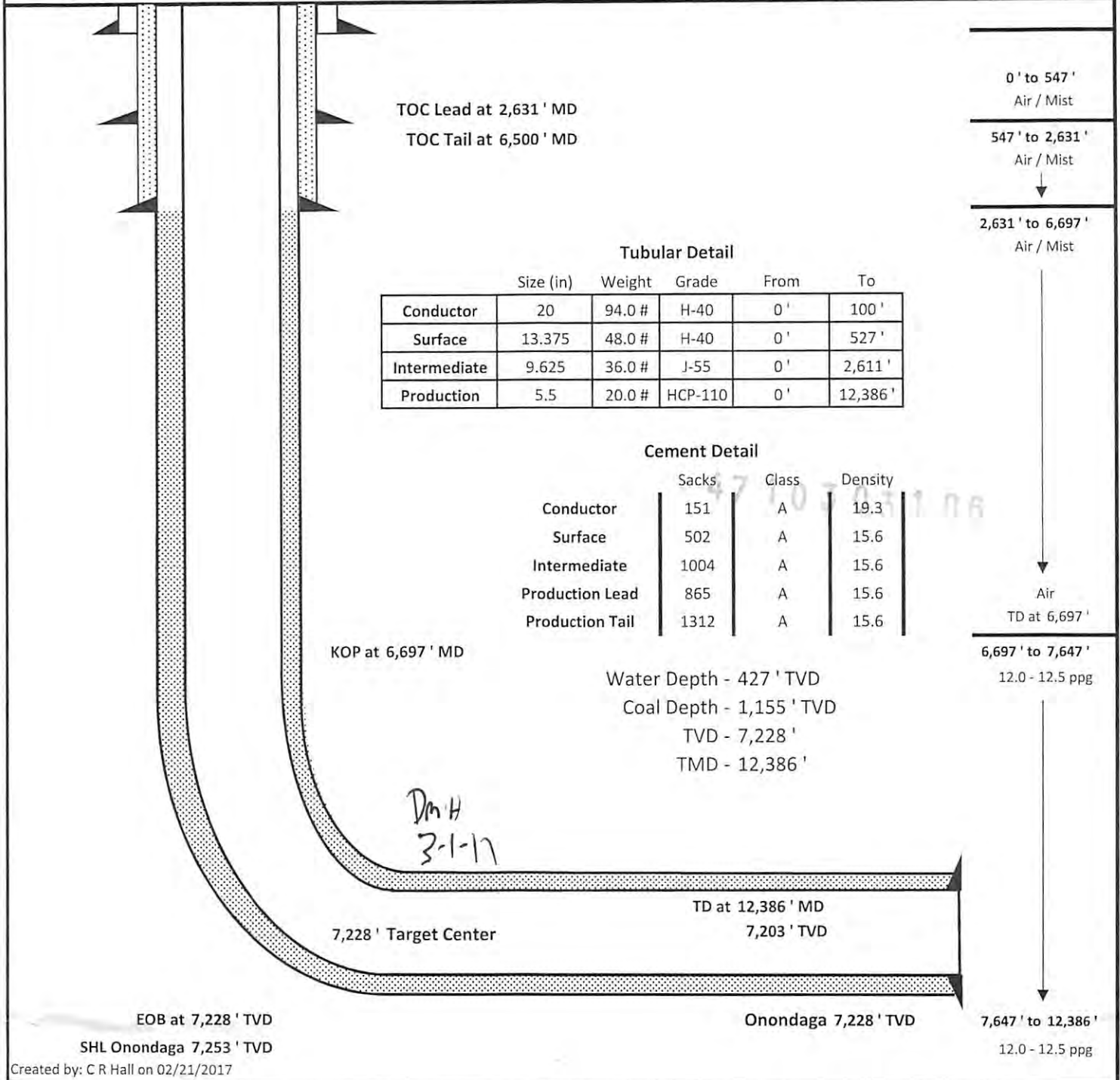
*Note: Attach additional sheets as needed.

Southwestern Energy Company

Proposed Drilling Program

Well: DANIEL DURIG WTZ 105
 Field: VICTORY FIELD
 County: WETZEL
 SHL: 39.7169 Latitude -80.6391 Longitude
 BHL: 39.7279 Latitude -80.6497 Longitude
 KB Elev: 1,427 ft MSL KB: 26 ft AGL GL Elev: 1,401 ft MSL

Re-entry Rig: TBD
 Prospect: VICTORY
 State: WV



07/21/2017

4710303186



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 Daniel Durig WTZ 105H.

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 Durig's property, in Proctor District, Wetzel County, West Virginia.

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

Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to be "Dee Southall", written over the word "Sincerely,".

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

4710303186

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Schlumberger Cement Additives

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

Dm4
3-1-17

47 908 07 17

WW-9
(4/16)

API Number 47 - 103 - _____
Operator's Well No. Daniel Durig Wtz 105H

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) Laurel Run Quadrangle Wileyville

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)

Dm4
3-1-17

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 SOBM 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 4710303108

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

-Landfill or offsite name/permit number? meadow SWF-1032, SS grading SWF-4902, Northwestern SWF-1025, Short Creek 1034/WV0109517/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.

RECEIVED
Office of Oil and Gas

Company Official Signature 

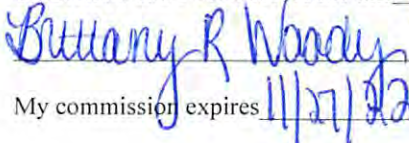
APR 28 2017

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

WV Department of
Environmental Protection

Subscribed and sworn before me this 14th day of February, 2017


My commission expires 11/27/22



SWN Production Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 8.1 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 3.9

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]

Comments: _____

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APR 28 2017

Title: oil and gas inspector

Date: 3-1-17

WV Department of
Environmental Protection

Field Reviewed? Yes No



WVD Seeding Specification

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

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%	All legumes are inoculated at 5x normal rate
White Clover	5%	
Birdsfoot Trefoil	5%	
Rough Bluegrass	5%	
<p>Apply @ 100lbs per acre April 16th- Oct. 14th</p>		<p>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 30' ROW/LOD is One Acre
 871' of 50' ROW/LOD is One Acre
 622' of 70' ROW/LOD is One Acre

Synopsis:

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

Special Considerations:

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

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

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%
<p>Apply @ 25lbs per acre April 16th- Oct. 14th</p>	
<p>Apply @ 50lbs per acre Oct. 15th- April 15th</p>	
<p>NO FERTILIZER OR LIME INSIDE WETLAND LIMITS</p>	

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 Environmental Protection
 APR 28 2017
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10303106

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: Daniel Durig WTZ 105H
Wileyville QUAD
Proctor DISTRICT
Wetzel COUNTY, WEST VIRGINIA

Submitted by:

Dee Southall

Date: 2/14/2017

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:

[Signature]

Date: 3-1-17

Title: Oil & Gas Inspector

Approved by:

Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC

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APR 28 2017
WV Department of
Environmental Protection
1

07/21/2017

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, L.L.C., Operator
Daniel Durig WIZ 105H
Marshall Wetzel Counties, West Virginia

4710303105

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG	SURFACE OWNER	Book/Page Must describe The Parcel	DEEDED ACREAGE	LEASED ACREAGE
1	12-5-6	724419-000	O. C. Yoho and Mary Yoho, his wife Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C.	Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	45A/235 263/164 84A/129 402/446 157A/540	Daniel Durig	442/701	151.580000	151.580000
2	7-29-15	724816-000	George N. Yoho, widower, Tracy Yoho, widower, T. J. Yoho and Etheel Yoho, his wife, Tracy Yoho, widow, Agatha Barbuto and Joseph Barbuto, her husband, Maxine Horton, as Attorney in Fact for William Horton (Black Gold Group, LTD.; Nancy Nonemaker; Tammy Kay Beohm; Lisa Lee Ann Bowen; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Onward E. Burge Trust Dated June 21, 2010; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Sarah L. Burge Trust Dated June 21, 2010; John Noel Gallagher, a/k/a John Noll Gallagher; Jack R. Hammers; Paul F. Hammers; Janet Hinerman; Sharon Hinerman-Hall; Carol Derrrow; Dalvin D. Horton; Teresa Lynn Lemley; Erica Mason; Kimela Ann Matthews; Dennis McFadden; Nancy McFadden Metheny; Susan D. Moore; Virginia Carol Riffle; Deborah Yoho Showalter; Brent Alan Snider; Bryan Snider; Julie Dawn Snider; Scott Eric Snider; Shirley Terek; Toni Jo Mason Living Trust; Berneda Ward; Joseph L. Watkins; WesBanco Trust & Investment Services, Trustee under the Stoy K. Whipkey and Twila O. Whipkey Trust Agreement dated August 25, 1999; Charlene Dee Wildman; Chalmer C. Yocum; James E. Yocum; Lindsay Noel Yocum; Paul F. Yocum; Quentin A. Yocum, Sr.; Thomas Leon Yocum; Bradley Scott Yoho; Clayton Garth Yoho; Darren Lee Yoho; Donna Yoho; Jeffery Jay Yoho; Kevin Mark Yoho)	Manufacturers Light and Heat Company	12.50%	45A/325	Mason Dixon Farms, L.L.C.	646/103	57.700000	57.700000
			Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C.	Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC		263/164 84A/129 402/446 157A/540				

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Environmental Protection

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Environmental Protection

EXHIBIT "A"
Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WV-6A1, by SWN Production Company, L.L.C., Operator
Daniel Durig, WIZ-105H
Marshall Wetzel Counties, West Virginia

2	7-29-14	724485-000	T. J. Yoho and Ethel Yoho, his wife; Tracy Yoho, widower; George N. Yoho, widower; Agatha Barbuto and Joseph Barbuto, her husband; Maxine Horton and Maxine Horton as Attorney-in-Fact for William Horton, Gerald Yocum and Eula Yocum, his wife (Black Gold Group, LTD.; Nancy Nonemaker; Tammy Kay Boehm; Lisa Lee Ann Bowen; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Onward E. Burge Trust Dated June 21, 2010; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Sarah L. Burge Trust Dated June 21, 2010; Carol Derrow; Jack R. Hammers; Paul F. Hammers; Janet Hinerman; Sharon Hinerman-Hall; Dakin D. Horton; H3 LLC; Teresa Lynn Lemley; Erica Mason; Kimela Ann Matthews; Dennis McFadden; Nancy McFadden Metheny; Susan D. Moore; Virginia Carol Riffle; Deborah Yoho Showalter; Brent Alan Snider; Bryan Snider; Julie Dawn Snider; Scott Eric Snider; Shirley Terek; Toni Jo Mason Living Trust; Berneda Ward; Joseph L. Watkins; WesBanco Trust & Investment Services, Trustee under the Stoy K. Whippley and Twila O. Whippley Trust Agreement; Charlene Dee Wildman; Chalmer C. Yocum; James E. Yocum; Lindsay Noel Yocum; Paul F. Yocum; Quentin A. Yocum, Sr.; Thomas Leon Yoho; Bradley Scott Yoho; Clayton Garth Yoho; Darren Lee Yoho; Donna Yoho; Jeffery Jay Yoho; Kevin Mark Yoho)	Manufacturers Light and Heat Company	12.50%	353/145	Mason Dixon Farms, L.L.C.	646/103	179-400000	30.000000
			Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC							
			Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C.							
			Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC							

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Office of Oil and Gas

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EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, L.L.C., Operator
Daniel Durig WTZ 105H
Marshall Wetzel Counties, West Virginia

3	7-29-14	724477-000	T. J. Yoho and Etheeef Yoho, his wife, Treacy Yoho, widower, George N. Yoho, widower, Agatha Barbuto and Joseph Barbuto, her husband, Maxine Horton and Maxine Horton as Attorney-in-Fact for William Horton, Sherald Yocum and Eula Yocum, his wife (Black Gold Group, LTD.; Nancy Nonemaker; Tammy Kay Boehm; Lisa Lee Ann Bowen; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Onward E. Burge Trust Dated June 21, 2010; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Sarah L. Burge Trust Dated June 21, 2010; Carol Derrrow; Jack R. Hammers; Paul F. Hammers; Janet Hinerman; Sharon Hinerman-Hall; Dalvin D. Horton; H3 LLC; Manager Enterprises LLC; Teresa Lynn Lemley; Erica Mason; Kimela Ann Matthews; Dennis McFadden; Nancy McFadden Metheny; Susan D. Moore; Virginia Carol Riffle; Deborah Yoho Showalter; Brent Alan Snider; Bryan Snider; Julie Dawn Snider; Scott Eric Snider; Shirley Terek; Toni Jo Mason Living Trust; Berneda Ward; Joseph L. Watkins; WesBanco Trust & Investment Services, Trustee under the Stoy K. Whipkey and Twila O. Whipkey Trust Agreement dated August 25, 1999; Charlene Dee Wildman; Chalmer C. Yocum; James E. Yocum; Lindsay Noel Yocum; Paul F. Yocum; Quentin A. Yocum, Sr.; Thomas Leon Yocum; Bradley Scott Yoho; Clayton Garth Yoho; Darren Lee Yoho; Donna Yoho; Jeffery Jay Yoho; Kevin Mark Yoho)	Manufacturers Light and Heat Company	12.50%	353/141	Mason Dixon Farms, L.L.C.	646/103	129.400000	100.000000
			Manufacturers Light and Heat Company			Columbia Gas Transmission Corporation			263/164	
			Columbia Gas Transmission Corporation			Columbia Natural Resources, LLC			84A/129	
			Columbia Natural Resources, LLC			Chesapeake Appalachia, L.L.C.			402/446	
			Chesapeake Appalachia, L.L.C.			SWN Production Company, LLC			157A/540	
4	7-29-5	724558-000	George N. Yoho, widower (Jack R. Hammers; Paul F. Hammers; Erica M. Mason; Toni Jo Mason Living Trust; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Onward E. Burge Trust Dated June 21, 2010; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Sarah L. Burge Trust Dated June 21, 2010; WesBanco Trust & Investment Services, Trustee under the Stoy K. Whipkey and Twila O. Whipkey Trust Agreement dated August 25, 1999)	Manufacturers Light and Heat Company	12.50%	299/65	Mason Dixon Farms, L.L.C.	646/103	118.000000	118.000000
			Manufacturers Light and Heat Company			Columbia Gas Transmission Corporation			263/164	
			Columbia Gas Transmission Corporation			Columbia Natural Resources, LLC			84A/129	
			Columbia Natural Resources, LLC			Chesapeake Appalachia, L.L.C.			402/446	
			Chesapeake Appalachia, L.L.C.			SWN Production Company, LLC			157A/540	

47103031

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Office of Oil and Gas

APR 28 2017

WV Department of
Environmental Protection

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, L.L.C., Operator
Daniel Durig WIZ 105H
Marshall Wetzel Counties, West Virginia

5	7-29-8.1	723780-000	George N. Yoho, widower (Jack R. Hammers; Paul F. Hammers; Erica M. Mason; Toni Jo Mason Living Trust; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Onward E. Burge Trust Dated June 21, 2010; Onward E. Burge, Sarah Burge, and Stephen W. Burge, Trustees of the Sarah L. Burge Trust Dated June 21, 2010; WesBanco Trust & Investment Services, Trustee under the Stoy K. Whipkey and Twila O. Whipkey Trust Agreement dated August 25, 1999)	Manufacturers Light and Heat Company	12.50%	363/387	Alton W. Stern, Life Estate; Alan W. Stern, Diane E. Stern, Deborah E. Perris, and Beverly J. Davenport, Remaindermen	700/118	109.000000	109.000000
			Manufacturers Light and Heat Company	Columbia Gas Transmission Corporation		263/164				
			Columbia Gas Transmission Corporation	Columbia Natural Resources, LLC		84A/129				
			Columbia Natural Resources, LLC	Chesapeake Appalachia, L.L.C.		402/446				
			Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540				

47103031



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

February 22, 2017

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

RE: SWN's proposed New Well: Daniel Durig WTZ 105H and Daniel Durig WTZ 101H in Wetzel County, West Virginia, Drilling under Greenfield Ridge Road.

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 Greenfield Ridge 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,

Caleb Weaver
Landman
SWN Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

42710309794

RECEIVED
Office of Oil and Gas
APR 28 2017
WV Department of
Environmental Protection

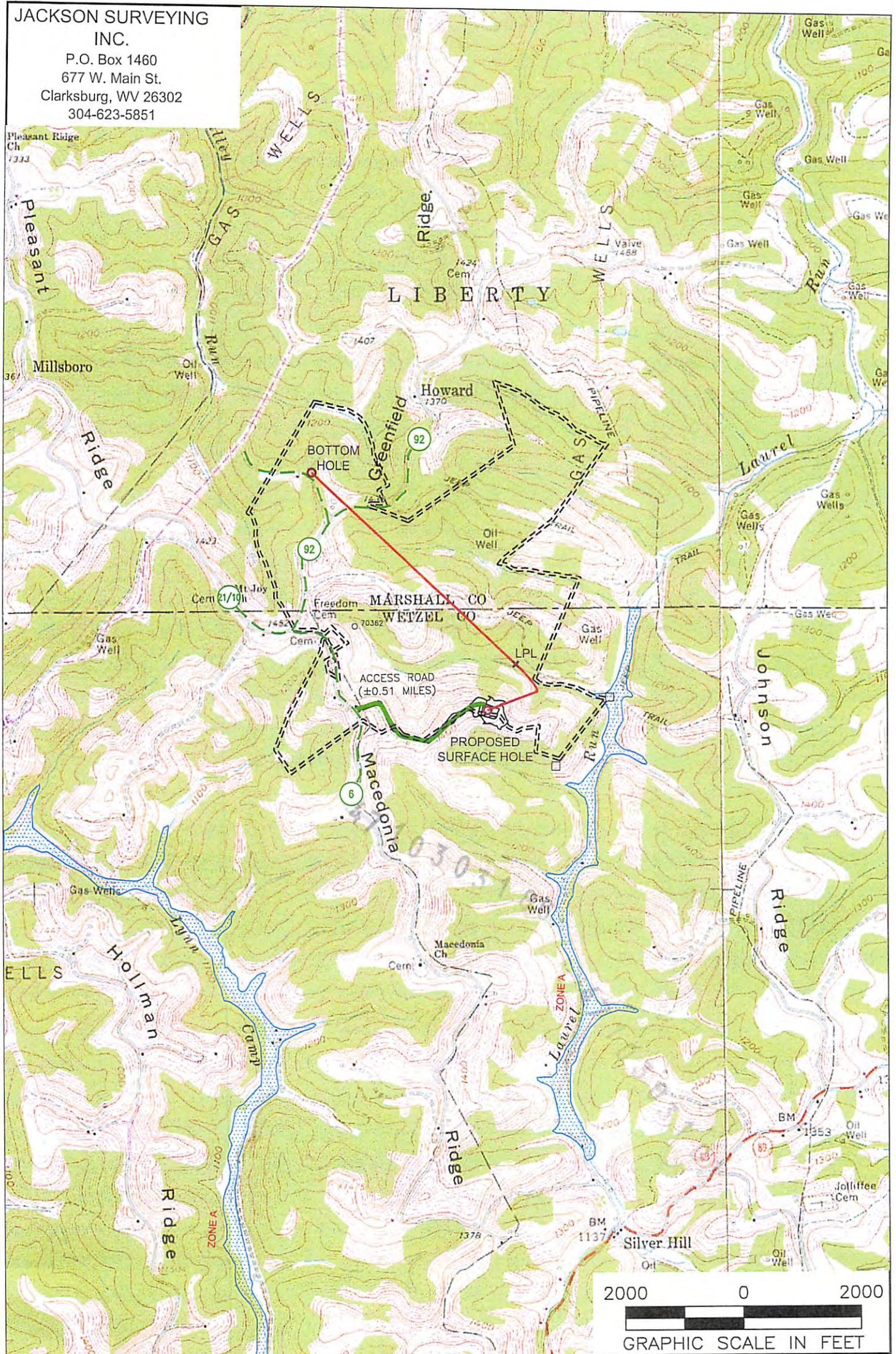
$\frac{R^2}{A} \rightarrow V^+$

07/21/2017

JACKSON SURVEYING

INC.

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851



NOTES ON SURVEY

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

LEGEND:

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

07/21/2017

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: DANIEL DURIG WTZ	WELL # 105H	SERIAL #
ADDRESS: P.O. BOX 1300 JANE LEW, WV 26378	COUNTY - CODE WETZEL - 103	DISTRICT; PROCTOR	
SURFACE OWNER: DANIEL DURIG	USGS 7 1/2 QUADRANGLE MAP NAME WILEYVILLE, WV		

Latitude: 39°45'00"

SURFACE HOLE 3979'

BOTTOM HOLE 6955'

JACKSON SURVEYING INC.

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851

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

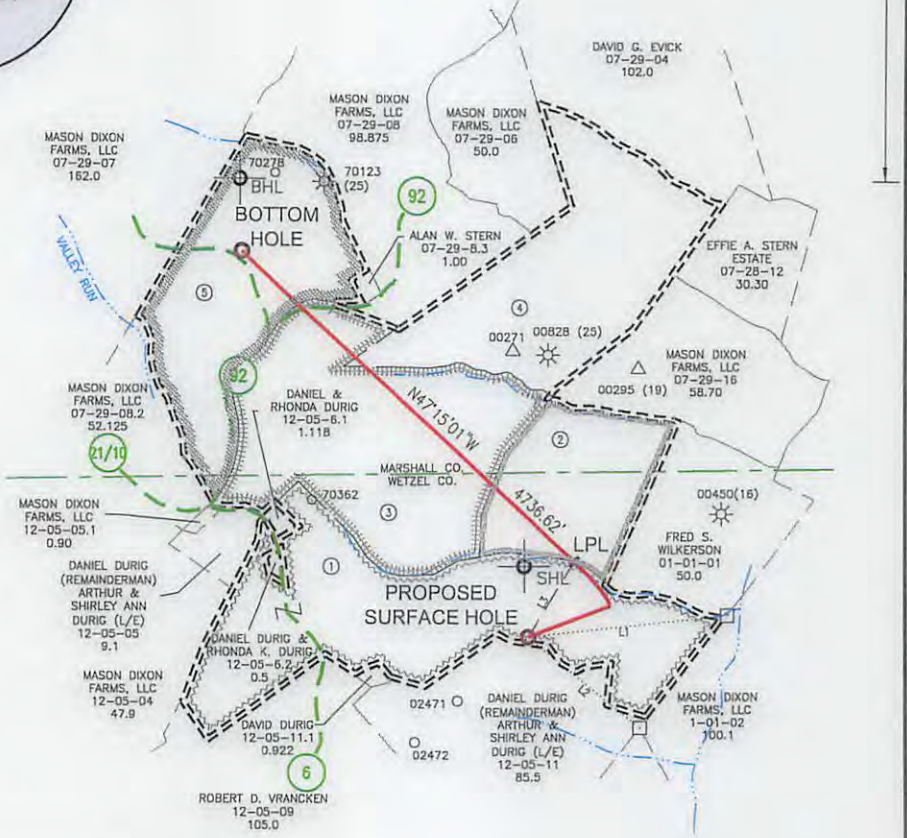
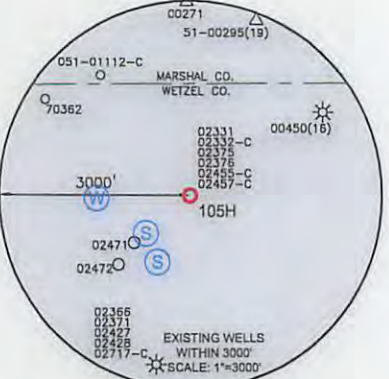
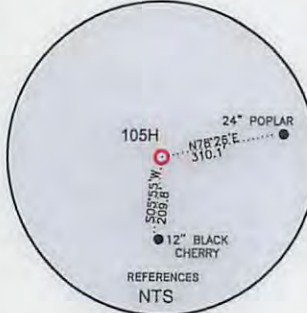
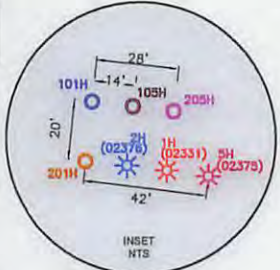
WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS
Table with columns: TRACT, SURFACE OWNER (S) / ROYALTY OWNER (R), TAX PARCEL, ACRES

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,395.840
EASTING: 530,928.969

LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,633.183
EASTING: 531,077.163

BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,397,613.178
EASTING: 530,016.997

LINE BEARING DISTANCE DESCRIPTION MONUMENT
Table with 5 columns

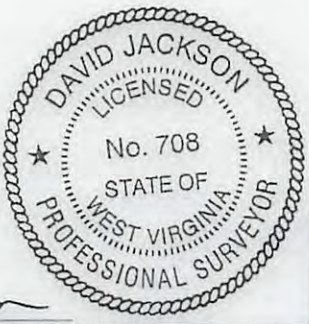


WELL RESTRICTIONS

- 1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

- 1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



COMPANY: SWN Production Company, LLC

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

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

DANIEL DURIG WTZ
OPERATOR'S WELL #: 105H
API WELL #: 47 STATE 103 COUNTY PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [x] DEEP [] GAS [x] LIQUID INJECTION [] STORAGE [] SHALLOW [x]
WATERSHED: LAUREL RUN ELEVATION: 1400.9'
DISTRICT: PROCTOR COUNTY: WETZEL QUADRANGLE: WILEYVILLE, WV
SURFACE OWNER: DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) ACREAGE: ±151.58
OIL & GAS ROYALTY OWNER: O.C. YOHO AND MARY YOHO (ARTHUR T. DURIG AND SHIRLEY ANN DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN) ACREAGE: ±151.58
DRILL [x] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [x] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION [x]
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [] (SPECIFY)
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,228 TO 12,366 FMD

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

LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, LPL, EXISTING WATER WELL, EXISTING SPRING, SURVEYED BOUNDARY, DRILLING UNIT, LEASE BOUNDARY, ASDRILLED PATH, PROPOSED PATH
REVISIONS: DATE: 04-25-2017
DRAWN BY: N. MANO
SCALE: 1" = 2000'
DRAWING NO:
WELL LOCATION PLAT

**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

47 103 031 08

**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.

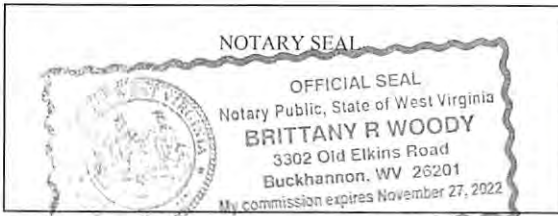
Well Operator: SWN Production Company, LLC.
 By: 
 Its: Caleb Weaver - Landman

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., LLC
By: Dee Southall
Its: Regulatory Supervisor
Telephone: 304-884-1614

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile: _____
Email: Dee_Southall@swn.com



Subscribed and sworn before me this 14th day of February 2017
Brittany R Woody Notary Public
My Commission Expires 11/27/2022

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.

471030310

RECEIVED
Office of Oil and Gas
APR 28 2017
WV Department of
Environmental Protection

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

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

Date of Notice: 4/24/17 Date Permit Application Filed: 4/24/17

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)
Name: Daniel Durig & Arthur and Shirley Durig L/E
Address: 3116 Macedonia Ridge Road
New Martinsville, WV 26155
Name: _____
Address: _____

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

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

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

COAL OPERATOR
Name: _____
Address: _____

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

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

*Please attach additional forms if necessary

Attachment #1

Daniel Durig WTZ Pad - Water Purveyors w/in 1500'

Sources

Landowner
Daniel Durig

Address
3116 Macedonia Ridge Road Cameron WV 26033 2 springs



4710303106

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: 4/20/17 Date Permit Application Filed: 4/20/17

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)
Name: _____
Address: _____

Name: _____
Address: _____

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

Name: _____
Address: _____

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

COAL OWNER OR LESSEE
Name: Daniel Durig
Address: 3116 Macedonia Ridge Road
New Martinsville, WV 26155

COAL OPERATOR
Name: _____
Address: _____

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

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

*Please attach additional forms if necessary

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section 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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. Daniel Durig Wtz 105H
Well Pad Name: Daniel Durig Wtz Pad

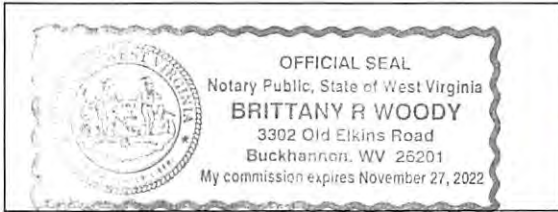
Notice is hereby given by:

Well Operator: SWN Production Co., LLC
Telephone: 304-884-1614
Email: Dee_Southall@swn.com

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile: _____

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 14th day of February 2017
Brittany R. Woody Notary Public
My Commission Expires 11/27/2022

421030310-

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

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

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

Date of Notice: 02/15/2017 **Date Permit Application Filed:** 4/26/17

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: Daniel Durig
Address: 3116 Macedonia Ridge Rd.
New Martinsville, WV 26155

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>530,928.969</u>
County:	<u>Wetzel</u>		Northing:	<u>4,396,395.840</u>
District:	<u>Proctor</u>	Public Road Access:	<u>Macedonia Ridge Rd.</u>	
Quadrangle:	<u>Wileyville, WV</u>	Generally used farm name:	<u>Daniel Durig WTZ</u>	
Watershed:	<u>Laurel Run</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: 832-540-1136
Email: Steve_Teel@SWN.com
Facsimile: 304-471-2497

Authorized Representative: Steve Teel
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 832-540-1136
Email: Steve_Teel@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

February 16, 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 Daniel Durig Pad WTZ 105H Well Site, Wetzel County

Dear Mr. Martin,

47-103-03186

The West Virginia Division of Highways has transferred Permit # 06-2008-0012 to Southwestern Energy for the existing well pad. Access to the well site is off of Wetzel County Route 6 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

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	4710303100 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	64742-47-8
		Hydrotreated light petroleum distillate	
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1

07/21/2017

Product Name	Product Use	Chemical Name	CAS Number
HAI-150E (Halliburton)	Corrosion Inhibitor	Methanol	NA
		Aliphatic Acids	
		Prop-2-yn-1-ol	
		Aliphatic Alcohols, Ethoxylated #1	
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

4710305100

SWN PRODUCTION COMPANY DURIG WELL PAD ENLARGEMENT

EROSION AND SEDIMENTATION CONTROL PLAN
CENTER DISTRICT, WETZEL COUNTY, WV

DECEMBER 2016



SITE LOCATION MAP

SCALE: 1" = 2000'
SCALE IN FEET
0 2000' 4000'

NOTES:

- CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
- WV ONECALL WEB TICKET SERIAL NUMBER 16302336390, DATED 11-18-2016.

Engineer's Estimate of Quantities		
Erosion and Sediment Control Items		
Description	Estimated Quantity	Unit
18" Silt Fence	140	LF
30" Silt Fence	110	LF
Super Silt Fence	150	LF
12" Compost Filter Sock	320	LF
18" Compost Filter Sock	360	LF
24" Compost Filter Sock	1,000	LF
32" Compost Filter Sock	120	LF
Compost Filter Sock Sediment Trap	5	EA
Slope Stabilization	7,350	SY
Rock Construction Entrance	1	EA
Riprap Aprons	5	EA
Riprap Apron R-3 Aggregate	1.6	TH
Class 4 Geotextile (Apron Underlayment)	32	SY
Additional Items		
Description	Estimated Quantity	Unit
Site Restoration Area	0.43	Acres
Inlet Protection	4	EA
Storm Manholes	2	EA
Concrete Pipe Anchors	3	EA
Type DW Endwalls	4	EA
Pad Inlet	1	EA
Grass silt Filter Bag	285	LF
W/SDM Guide Rail	1	EA
Concrete Washout Facility	1	EA
HAG-575SH Channel Lining	607	SY
Proposed Subsurface Drain	516	LF
Proposed Subsurface Drain Outlet	55	LF
Well Pad Palmeter Berm	2	EA
Well Pad Palmeter Berm	697	LF
10 Foot (16in) Wide Bench	491	LF
5-Foot (16in) Wide Bench	547	LF
Fill Foundation Key	111	LF
Existing Items to be Removed		
Description	Estimated Quantity	Unit
Existing Unpaved Pad/Access Road	650	SY
Existing Drainage Ditch	240	LF
Existing Storm Sewer	110	LF
Existing Riprap	35	SY
Existing Silt Fence	125	LF
Existing Gas Utility Items	1	LS



SITE MAP

SCALE: 1" = 900'
SCALE IN FEET
0 500 1000'

DEVELOPER / OWNER

SWN PRODUCTION COMPANY, LLC
10000 ENERGY DRIVE
SPRING, TX 77389-4954
PHONE: 832-796-6372
CONTACT: CARLA SUSZKOWSKI

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, I
333 BALDWIN ROAD
PITTSBURGH, PA 15205
PH: (412) 429-2324
FX: (412) 429-2114
CONTACT: ROBERT C. BASSETT, P.E.

REFERENCE

- USGS TOPOGRAPHIC MAP / AERIAL MAP SERVICE: [HTTP://OTDL.HQ.USACE.ARMY.MIL/USA_TOPO_MAPS](http://otdl.hq.usace.army.mil/usa_topo_maps), ACCESSED 11/14/2016; WHEELING, WV ROAD AND LITTLETON, WV ROAD.
- AERIAL IMAGERY FROM Bing (2016 MICROSOFT CORPORATION); ACCESSED NOVEMBER 2016.

07/21/2017

COMPANY, LLC MENT PROJECT

CONTROL PLANS
WEST VIRGINIA

4710303185

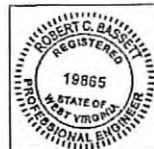


SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
C000	COVER SHEET
C100	EXISTING CONDITIONS PLAN
C200	GEOTECHNICAL SLOPE REPAIR PLAN
C600	GEOTECHNICAL DETAILS AND CROSS-SECTIONS
CV00	EROSION AND SEDIMENTATION CONTROL PLAN
CV01	EROSION AND SEDIMENTATION CONTROL DETAILS
CV02	EROSION AND SEDIMENTATION CONTROL DETAILS
CV03	EROSION AND SEDIMENTATION CONTROL DETAILS
CV04	EROSION AND SEDIMENTATION CONTROL DETAILS
CV05	EROSION AND SEDIMENTATION CONTROL DETAILS

GEOTECHNICAL ENGINEER

*D.H.
3-1-11*

C. CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PA 15205
PH: (412) 779-5728
FX: (412) 429-2114
CONTACT: MIKE SCHUMAKER, P.E.



NO.	DATE	DESCRIPTION
1	11/25/10	REVISED FOR DAVIS REQUEST
2	11/25/10	REVISED FOR DAVIS REQUEST
3	11/25/10	REVISED FOR DAVIS REQUEST
4	1/25/11	REVISED FOR DAVIS REQUEST

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205
412-429-2324 • 800-365-2324
www.civil.com

SWN PRODUCTION COMPANY, LLC
DURIG WELL PAD ENLARGEMENT PROJECT
CENTER DISTRICT
WETZEL COUNTY, WEST VIRGINIA

COVER SHEET

DATE: DECEMBER 2016
DRAWN BY: RCB
CHECKED BY: ASJ
PROJECT NO: 103-027
APPROVED BY: ZJC

DRAWING NO: **C000**

SWN PRODUCTION COMPANY, LLC DURIG WELL PAD ENLARGEMENT PROJECT

EROSION AND SEDIMENTATION CONTROL PLANS
CENTER DISTRICT, WETZEL COUNTY, WEST VIRGINIA

MAY 2017



SITE LOCATION MAP

SCALE: 1" = 2000'
SCALE IN FEET
0 2000' 4000'

**WVDEP OOG
ACCEPTED AS-BUILT**
WV 5/30/2017

- NOTES:**
- CONTRACTOR SHALL REFER TO OTHER PLANS WITHIN THIS CONSTRUCTION SET FOR OTHER PERTINENT INFORMATION. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THE PROJECT.
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Regrasp Apron	5	EA
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Geotextile Filter Bag	1	EA
WVDOH Guide Post	205	LF
Concrete Washout Facility	1	EA
NAG-5728N Channel Lining	607	SF
Proposed Subsurface Drain	316	LF
Proposed Subsurface Drain Outlet	55	LF
Well Pad Perimeter Berm	2	EA
Well Pad Perimeter Berm	687	LF
12' (or Min.) Wide Bench	493	LF
1-foot (Min.) Wide Bench	547	LF
Fill Foundation Key	111	LF
Existing Items to be Removed		
Description	Estimated Quantity	Unit
Existing Unpaved Pad/Access Road	450	SF
Existing Drainage Ditch	240	LF
Existing Storm Sewer	110	LF
Existing Piping	16	SF
Existing Silt Fence	125	LF
Existing Gas Utility Items	1	LS



SITE MAP

SCALE: 1" = 500'
SCALE IN FEET
0 500 1000'

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
C000	COVER SHEET
C002	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN
C001	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN
C002	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN
C003	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN
C004	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN
C005	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION DETAILS
C006	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION DETAILS
C007	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION DETAILS
C008	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION DETAILS
C009	EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION DETAILS

EXISTING WELL: DURIG WTZ 1H 47-103-02331H

LAT: 39.716814
LON: 80.639108

EXISTING WELL: DURIG WTZ 2H 47-103-02376H

LAT: 39.716818
LON: 80.639157

EXISTING WELL: DURIG WTZ 5H 47-103-02375H

LAT: 39.716808
LON: 80.639058

DEVELOPER / OWNER

SWN PRODUCTION COMPANY, LLC
10000 ENERGY DRIVE
SPRING, TX 77389-4954
PHONE: 832-796-6372
CONTACT: CARLA SUSZKOWSKI

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PA 15205
PH: (412) 429-2324
FX: (412) 429-2114
CONTACT: ROBERT C. BASSETT, P.E.

- REFERENCE**
- USGS TOPOGRAPHIC MAP // ARCIS MAP SERVICE
HTTP://GDT1.ARCISONLINE.COM/MAF/USA/TOPO_MAPS, ACCESSED 11/14/2016; WILEYVILLE, WV QUAD AND LITTLETON, WV QUAD.
 - AERIAL IMAGERY FROM BING (2016 MICROSOFT CORPORATION), ACCESSED NOVEMBER 2016.

NO.	DATE	REVISION RECORD	DESCRIPTION
1	11/20/17	ISSUED FOR BIDDING	COMPLETION

Civil & Environmental Consultants, Inc.
333 Baldwin Road
Pittsburgh, PA 15205
412-429-2324
www.civilenv.com

**SWN PRODUCTION COMPANY, LLC
DURIG WELL PAD ENLARGEMENT PROJECT
CENTER DISTRICT
WETZEL COUNTY, WEST VIRGINIA**

COVER SHEET

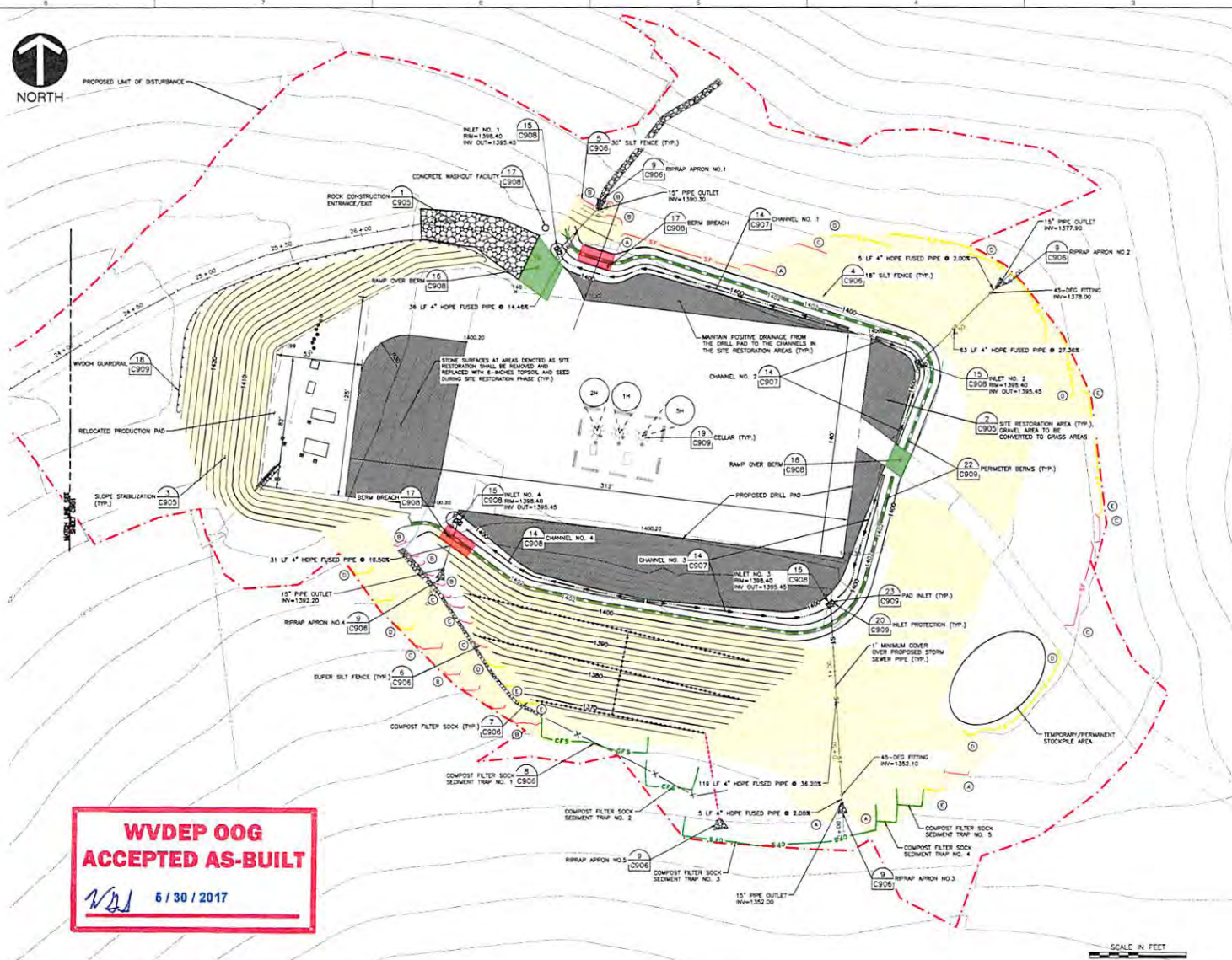
DATE: MAY 2017
DRAWN BY: AS BROWN
CHECKED BY: R. BASSETT
PROJECT NO: 1601000001
ISSUED BY: R. BASSETT

DRAWING NO: **C000**





PROPOSED LIMIT OF DISTURBANCE



SITE LOCATION MAP
SCALE IN FEET
0 2000 4000

- LEGEND**
- EXISTING INDEX CONTOUR
 - EXISTING INTERMEDIATE CONTOUR
 - EXISTING UNPAVED PAD/ACCESS ROAD
 - EXISTING GAS LINE
 - EXISTING FENCE
 - EXISTING RIPRAP
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERMEDIATE CONTOUR
 - PROPOSED DRILL PAD LIMITS
 - PROPOSED GUARDRAIL
 - PROPOSED SUBSURFACE DRAIN
 - PROPOSED DRAIN OUTLET
 - PROPOSED CHANNEL
 - PROPOSED BERM
 - PROPOSED STORM SEWER
 - PROPOSED INLET
 - PROPOSED MANHOLE
 - PROPOSED RIPRAP APRON
 - PROPOSED LIMIT OF DISTURBANCE
 - PROPOSED SILT FENCE
 - PROPOSED COMPOST FILTER SOCK
 - PROPOSED COMPOST FILTER SOCK TRAP
 - PROPOSED SLOPE STABILIZATION
 - PROPOSED ROCK CONSTRUCTION ENTRANCE
 - PROPOSED INLET FILTER BAG
 - PROPOSED SITE RESTORATION AREA
 - PROPOSED FILTER FENCE BARRIER
 - DETAIL NUMBER
 - SHEET NUMBER
 - BERM BREACH LOCATION
 - MOUNTABLE RAMP OVER BERM

SEDIMENT BARRIER TABLE

BARREX ID	SIZE	NOTES
1	18" FILTER FENCE	THE FOLLOWING SEDIMENT BARRIERS CAN BE SUBSTITUTED WITH APPROVAL FROM SWN PRODUCTION COMPANY, LLC: - 18" SILT FENCE FOR 12" COMPOST FILTER SOCK - 30" SILT FENCE FOR 18" COMPOST FILTER SOCK - SUPER SILT FENCE FOR 24" COMPOST FILTER SOCK
2	30" FILTER FENCE	
3	SUPER SILT FENCE	
4	24" COMPOST FILTER SOCK	
5	33" COMPOST FILTER SOCK	



REVISION RECORD

NO.	DATE	DESCRIPTION
1		ISSUED FOR PERMITTING
2		ISSUED FOR CONSTRUCTION

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205
412-439-2324 - 800-365-2324
www.civilcei.com

SWN PRODUCTION COMPANY, LLC
DURIG WELL PAD ENLARGEMENT PROJECT
CENTER DISTRICT
WETZEL COUNTY, WEST VIRGINIA

EROSION AND SEDIMENTATION CONTROL AND SITE RESTORATION PLAN

DATE: MAY 2017 (REVISED BY: PJB)
DRAWN BY: PJB
CHECKED BY: PJB
PROJECT NO: 17-207
APPROVED BY: PJB

DRAWING NO: **C900**

WVDEP OOG
ACCEPTED AS-BUILT
5/30/2017

- REFERENCE**
- USGS TOPOGRAPHIC MAP / ARCDS MAP SERVICE
HTTP://WWW.ARCSDS.ARC.COM/AMPS/FORMS/MAPI/MAPI11/14/2016: WILEYVILLE, WV QUAD AND LITTLETON, WV QUAD
 - EXISTING CONDITIONS AND CONTOURS ARE DERIVED FROM A COMBINATION OF AS-BUILT TOPOGRAPHY FILE "DURIG DURIG.WE1301168171 CD-A008 CD-18-2018 CMC" AND PROVIDED BY SWN PRODUCTION COMPANY, LLC AUGUST 24, 2016 AND 3-METER SWM DEM DATA, DATED 2003.
 - WETLAND AND STREAM DELINEATION PREPARED BY OTHERS.