

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

Austin Caperton, Cabinet Secretary www.dep.wv.gov

Thursday, April 26, 2018 WELL WORK PERMIT Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for JAMES SEABRIGHT BRK 205H 47-009-00246-00-00

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: JAMES SEABRIGHT BRK 2051 Farm Name: MARTHA MAY SEABRIGHT, I

U.S. WELL NUMBER: 47-009-00246-00-00

Horizontal 6A New Drill

Date Issued: 4/26/2018

API Number:	
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4700900246

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.

API Number:	

PERMIT CONDITIONS 4700900246

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-68 (10/14)

API NO. 47-69 -		
OPERATOR WELL	NO.	James Seabright RRK 205H
Well Pad Name:	James	Seabright BRK Pad

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

Well Operator: SWN Production Co., LLC 494512924 009-Brooke 1-Buffalo 247-Bethany
Operator ID County District Quadrangle
2) Operator's Well Number: James Seabright BRK 205H Well Pad Name: James Seabright BRK Pad
B) Farm Name/Surface Owner: AMERIA Endenge: Like Clause & AMERIA Endenge: A AMERIA Endenge: Public Road Access: Bealls Ridge Road
7 Famil Name/Surface Owner. Family Road Access. Boams range road
4) Elevation, current ground: 1131' Elevation, proposed post-construction: 1131'
5) Well Type (a) Gas X Oil Underground Storage
Other
(b)If Gas Shallow X Deep
Horizontal ×
6) Existing Pad: Yes or No yes
7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s).
Target Formation- Marcellus, Target Top TVD- 6038', Target Base TVD- 6078' Anticipated Thickness- 40', Associated Pressure- 363
3) Proposed Total Vertical Depth: 6071'
9) Formation at Total Vertical Depth: Marcellus
10) Proposed Total Measured Depth: 13,143'
11) Proposed Horizontal Leg Length: 6613.91
12) Approximate Fresh Water Strata Depths: 235'
13) Method to Determine Fresh Water Depths: from nearby water wells and analysis of logs on the pad
14) Approximate Saltwater Depths: 831'
15) Approximate Coal Seam Depths: 313'
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:

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WW-6B (10/14) API NO. 47 - 59 OPERATOR WELL NO. James Seabright BIRK Pad
Well Pad Name: James Seabright BRK 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	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	355'	355'	353 sx/CTS
Coal	9 5/8"	New	J-55	36#	1722'	1722'	669 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	13,143'	13,143'	Load 808 ov tal 1082 sul157 mode man
Tubing	2 3/8'	New	P-110	4.7#	Арргох. 6071'	Approx. 6071'	
Liners							

Litters					1		
					5.1	ll	12-11-17
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	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	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

PACKERS

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

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Office of Oil and Gas

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WW-6B (10/14) API NO. 47-69 OPERATOR WELL NO. James Scabright BRK 205H
Well Pad Name: James Scabright BRK Pad

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

Drill and stimulate any potential zones between and including the Benson to Marcellus. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface or run external casing packer/cementing stage tool above void interval and perform 2 stage cementing operation dependent upon depth of void. Run casing not less than 20' below void nor more than 75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts.)

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

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. 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 @ 100 barrels a minute.

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.7
- 22) Area to be disturbed for well pad only, less access road (acres): 4.8
- 23) Describe centralizer placement for each casing string:

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

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

See Attachment ***

25) Proposed borehole conditioning procedures:

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

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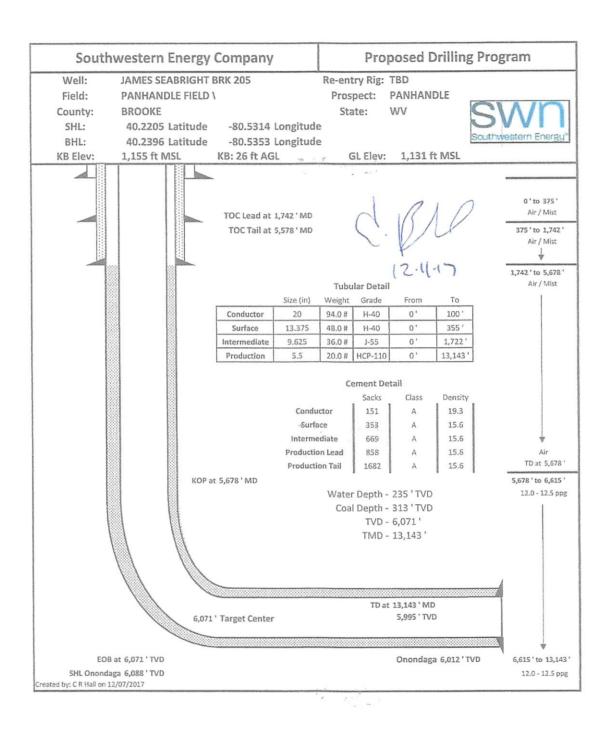
*Note: Attach additional sheets as needed.

Schlumberger Cement Additives

			ger Cement Additives	
	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
Intermediate Surface	5001	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
and	D046	antifoam	fullers earth (attapulgite)	8031-18-3
Production-Lead	·	1	chrystalline silica	14808-60-7
윒	D201	retarder	metal oxide	propriatary
πpc			sulphonated synthetic polymer	propriatary
Pro	D202	dispersant	formaldehyde (impurity)	propriatary
	Ì		polypropylene glycol	25322-69-4
	D046	antifoam	fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	propriatary
ᇹ			sodium polynaphthalene sulfonate	9008-63-3
- <u>-</u> -	D065	dispersant	sodium sulfate	7757-82-6
Production-Tail		1	chrystalline silica	14808-60-7
ngo	D201	retarder	metal oxide	propriatary
ă.	D153	anti-settling	chrystalline silica	14808-60-7

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			4700900177	4700900176	4700900175	API	
			4700900177 SWN PRODUCTION COMPANY,LLC	4700900176 SWN PRODUCTION COMPANY,LLC	4700900175 SWN PRODUCTION COMPANY,LLC	Operator	
			PERMITTED	PERMITTED	PERMITTED	Status	
			40.22045	40.220413	40.220478	Latitude	
			-80.531371	-80.531424	-80.531405	Longitude	Area of Review
			6062	6053	6064	Vertical TD	
Office of Oil and Gas JAN 11 2018 WV Department of Environmental Protes	ction		MARCELLUS SHALE	MARCELLUS SHALE	MARCELLUS SHALE	Producing Formation	

JAMES SEABRIGHT BRK 205H

WW-9 (4/16)

API	Number	47 -	•	069	

Operator's Well No. James Seabright BRK 205H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 494512924	
Watershed (HUC 10) Sugarcamp Run, Buffalo Run Quadrangle Bethany	
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 V	
If so, please describe anticipated pit waste:	
Will a synthetic liner be used in the pit? Yes No If so, what ml.?	
Proposed Disposal Method For Treated Pit Wastes:	
Land Application Underground Injection (UIC Permit Number 34-155-22403, 34-059-24067, 34-119-28776, 34-167-23862, 34-155-23795, 34-1 Reuse (at API Number at next anticipated well, API# will be included with the WR-34/DDMR &/or permit ac 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 d	isposal facility
Will closed loop system be used? If so, describe: Yes	
Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air 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? Attachment 3A	
Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etclandfill	
-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)	
-Landfill or offsite name/permit number? Meadowfill SWF- 1032, Short Creek SWF-1034, Carbon Limestone MSWL018781, Valley Argen Langfill 10072, Apex Sanitary Langfill Ub-08438, Brooke Co SWF-1013, Valley	/ 100280
Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated wast West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shawhere it was properly disposed.	
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTI on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. It provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and 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 application form and all attachments thereto and that, based on my inquiry of those individuals immediate obtaining the information, I believe that the information is true, accurate, and complete. I am aware that the penalties for submitting false information, including the possibility of fine or imprisonment. Company Official Signature	I understand that the d/or other applicable on submitted on this tely responsible for there are significant RECEIVED Office of Oil and Gas
Company Official (Typed Name) Dee Southall	JAN 11 2018
Company Official Title Senior Regulatory Analyst	WV Department of Environmental Protection
Subscribed and sworn before me this day of MIMLY, 2011 Notary Public My commission expires	OFFICIAL SEAL lotary Public. State of West Virginia BRITTANY R WOODY 3302 Old Elkins Road Buckhannon, WV 26201 commission expires November 27, 2022

Form WW-9				James Seabright BF	RK 205H
SWN Production Co	., LLC		Operator's W	James Seabright BF ell No	
Proposed Revegetation Treatm Lime	Tons/acre or to co		Prevegetation pl	I	-
Mulch Hay/Stra	w 2.5	Tons/acre			
		Seed Mixtures			
Tem	porary		Permai	ient	
Seed Type Attachment 3B	lbs/acre		Seed Type	lbs/acre	
Attach: Drawing(s) of road, location, p provided) Photocopied section of involve Plan Approved by:		eet.			
Comments:	y ce	12.4.17	THE STATE OF THE S		
			Photography		
			· · · · · · · · · · · · · · · · · · ·		
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011 1 0 1					1 1 1 2018
Title: Oil and Gas Ins	pector	Date:	12.4.17	WV I Environ	Department of mental Protection
Field Reviewed?	Yes	() No			

Attachment 3A <u>Drilling Mediums</u>

Synthetic Oil Brine

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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WVD Seeding Specification

To Order Seed contact Lyndsi Eddy 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	
White Clover		5%	innoculated at 5x normal	
Birdsfoot Trefoil		5%	rate	
Rough Bluegrass		5%		
Apply @ 100lbs per acre April 16th- Oct. 14th			Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat	

SOIL AMENDMENTS	
10-20-20 Fertilizer	

*Apply @ 500lbs per Acre 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

Pelletized Lime

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

Special Considerations:

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

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

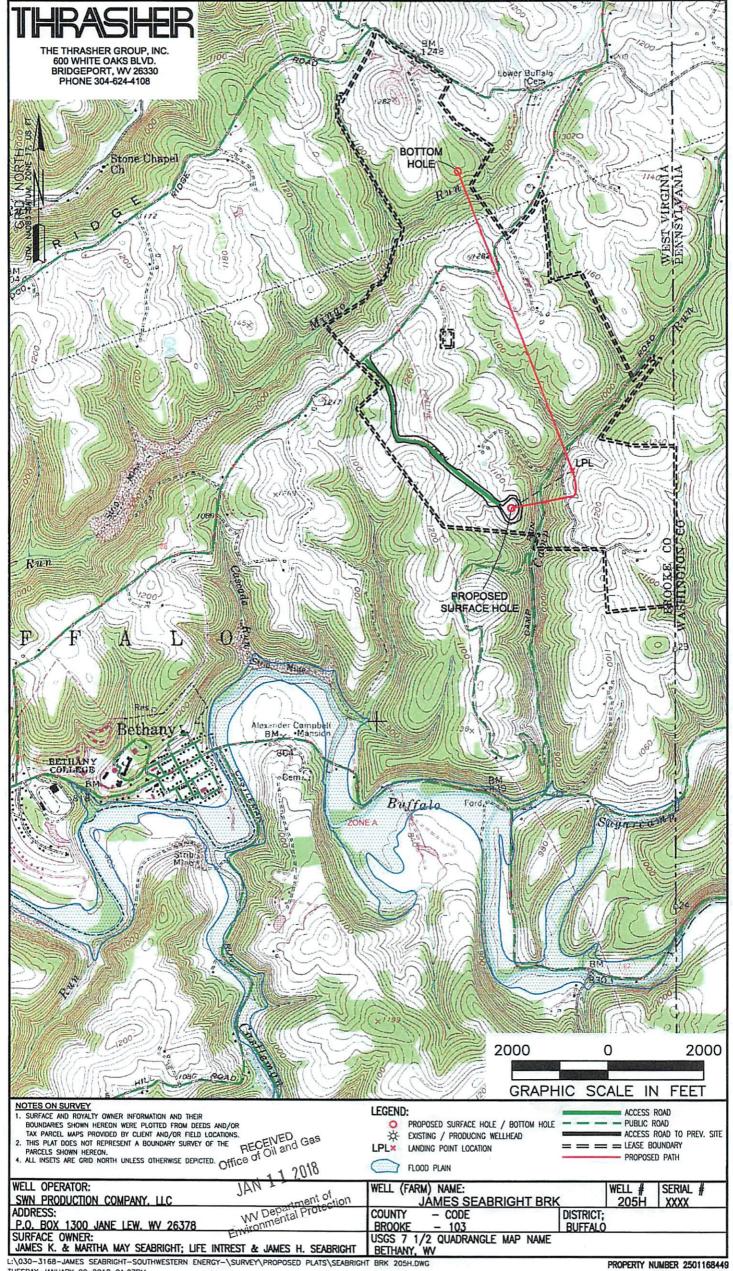
API NO. 47-XXX-XXXXX
WELL NAME: James Seabright BRK 205H
Bethany QUAD
Buffalo DISTRICT
Brooke COUNTY, WEST VIRGINIA

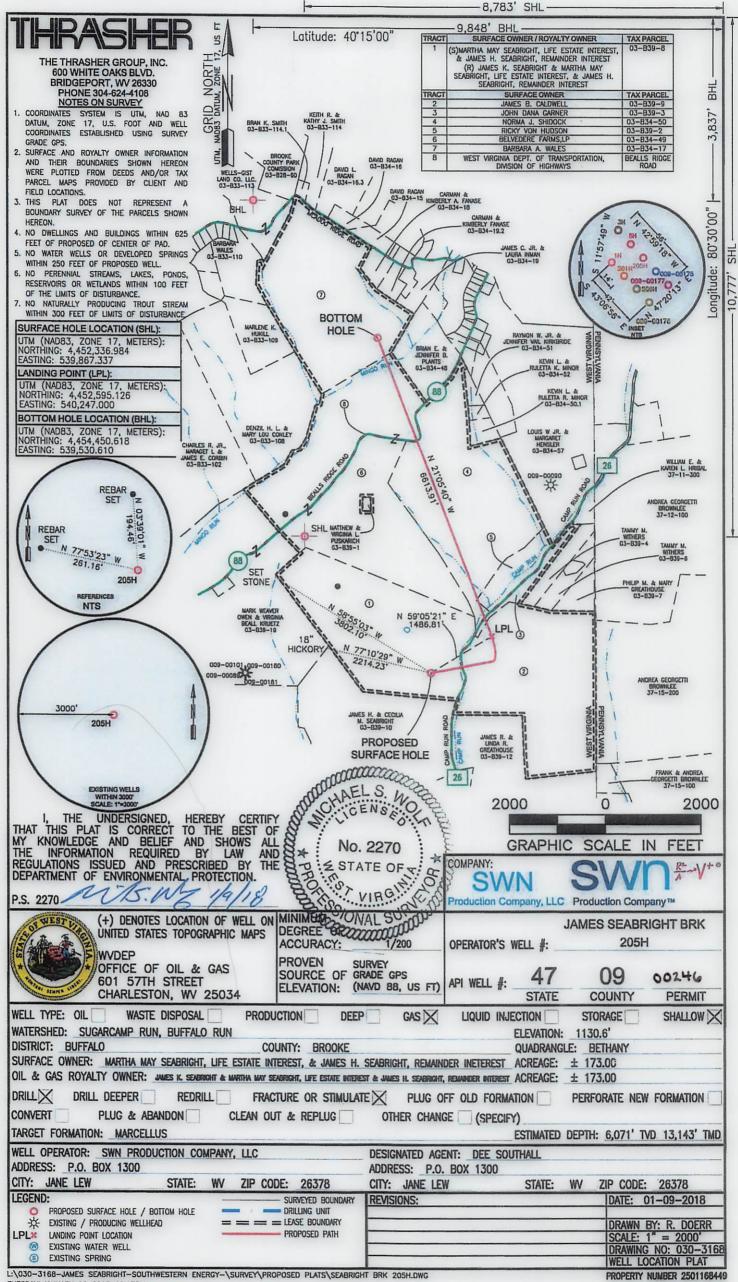
Submitted by:		
Dee Southal Senior Regulatory	Date:	11/21/2017
Title: Analyst	SWN Pr	oduction Co., LLC
Title: Out 45 2-12-2	Date:	12-4-17
Approved by:		
	Date:	
Title:		

SWN PRODUCTION COMPANY, LLC - CONFIDENTIAL

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WW-6A1 (5/13) Operator's Well No. James Seabright BRK 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
5	See Attached Exhibit "A"	Started, Desset, etc.	Royalty	Dooler age

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, L.L.C.
By:	111111
Its:	Staff Landman

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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, LLC., Operator James Seabright BRK 205H

Brooke County, West Virginia

4700900246

#	TMP	SURFACE OWNER	LESSOR	LESSEE	ROYALTY	BK/PG
1)	03-0B39-0008-0000-0000	Martha May Seabright, Life Estate interest, and James H. Seabright, Remainder interest	James K. Seabright and Martha May Seabright, Life Estate interest, and James H. Seabright, Remainder interest	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	21/30 31/499
2)	03-0B39-0009-0000-0000	James B. Caldwell	James B. Caldwell and Susanna C. Caldwell, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	13/55 30/480
3)	03-0B39-0003-0000-0000	John Dana Garner	John Dana Garner, a single man Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.		18.00%	16/56 30/480
4)	03-0834-0050-0000-0000	Norma J. Shidock	Norma J. Shidock, widow Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.		18.00%	12/159 30/480
5)	03-0B39-0002-0000-0000	Ricky Von Hudson	Ricky Von Hudson, a married man dealing with his separate property	SWN Production Company, L.L.C.	18.00%	Attached
6)	03-0B34-0049-0000-0000	Belvedere Farms, LP	Belvedere Farms, LP	SWN Production Company, L.L.C.	18.00%	34/570
7)	3-0B34-0017-0000-0000 Barbara A. Wales		John C. Wales, Sr. and Barbara A. Wales	TriEnergy Holdins, L.L.C. NPAR, LLC Chevron U.S.A. Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	10/601 16/547 20/448 28/664 30/480
8)	Bealls Ridge Road	West Virginia Department of Transportation, Division of Highways	West Virginia Department of Transportation, Division of Highways	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	15.00%	18/723 30/480

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WV Department of environmental Protection

MEMORANDUM OF OIL AND GAS LEASE

This Memorandum of Oil and Gas Lease made this 30th day of November, 2017, by and between Ricky Von Hudson. a married man, dealing herein with his separate property, of 1941 Camp Run Rd., Bethany WV 26032, hereinafter collectively called "Lessor," and SWN Production Company, L.L.C., a Texas limited liability company, 10000 Energy Drive, Spring, Texas 77389, hereinafter called "Lessee."

WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) cash in hand paid, and other good and valuable consideration, Lessor did make and execute in favor of Lessee an Oil and Gas lease dated November 30, 2017, and made effective November 30, 2017, which provides for a Five (5) year primary term covering Lessor's interest in the following described lands in Buffalo District(s), Brooke County, West Virginia:

Property Tax Parcel Identification Number: Tax Parcel I.D. 03-B39-0002-0000 and is bounded formerly or currently as follows:

On the North by lands of: 03-B34-0050-0000, 03-B34-0057-0000;

On the East by lands of 03-B34-0057-0000, 03-B39-0003-0000;

On the South by lands of 03-B34-0050-0000;

On the West by lands of 03-B34-0050-0000:

And including lands acquired from John Edward Shidock, et ux by virtue of Deed dated April 20, 1991 and recorded in Book 255, at Page 712, and described for the purposes of this agreement as containing a total of 22.50 Leasehold acres, the primary term by certain activities including, without limitation, conducting operations, producing oil or gas, or making prescribed payments. This lease also grants to Lessee a Right of First Refusal to match any offer to top lease the leased premises, which right may be exercised by Lessee within fifteen (15) days after receipt of proper notice from Lessor.

This Memorandum of Oil and Gas Lease is being made and filed for the purposes of giving third parties notice of the existence of the Lease described above. The execution, delivery and recordation of this Memorandum of Oil and Gas Lease shall have no effect upon, and is not intended as an amendment of the terms and conditions of the Lease. It is the intent of the Lessor to lease all of Lessor's interest in and to the properties described herein, whether or not the tracts recited herein are properly described, and further it is understood this lease includes all rights owned by the Lessor in the properties described herein.

IN WITNESS WHEREOF this memorandum of Oil and Gas Lease is executed as of the date first above written.

WITNESS

WITNESS:

CM/N Duodunting Comment & C

SWN Production Company, L.L.C.

A Texas limited liability company

Brett Massad Land Director

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Office of Oil and Gas

JAN 1 1 2018

ACKNOWLEDGMENT

, . . ·

STATE OF WEST VIRGINIA
COUNTY OF BROOKE
On this the day Sold of 2017, before me, the undersigned officer, personally appeared Ricky Von Hudson known to me (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged that he/she/they executed the same for the purposes therein contained.
IN WITNESS WHEREOF, I hereunto set my hand and official seal.
My Commission Expires: Mark 22 2021
Signature/Notary Public: Liebel Pallpas Commissioner for West Virginia
Name/Notary Public (print): Michael Paul Yates West Monroe, LA My Commission Expires March 22,2021
STATE OF TEXAS COUNTY OF
On this, the
My Commission Expires:
Signature/Notary Public:
Name/Notary Public (print):

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JAN 11 2018



SWN Production Company, LLC 179 Innovation Drive Jane Lew, WV 26378 Tel: 304 884 1610 Fex: 304 471 2497 www.swn.com

December 19, 2017

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

RE: SWN's proposed New Well: James Seabright BRK 205H in Brooke County, West Virginia, Drilling under Rt. 88 and Rt. 26

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 Rt. 88 and Rt. 26. 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

Michael H. Wilder Staff Landman

SWN Production Company, LLC

PO Box 12359

Spring, TX 77391-2359

R2 solt

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

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JAN 11 2018

WW-6AC (1/12)

Date of Notice Certification: 18

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

API No. 47- 69

Operator's Well No. James Seabright BRK 205H Well Pad Name: James Seabright BRK Pad

Notice has h	oeen given:				
Pursuant to th	e provisions in West Virginia Code §	22-6A, the Operator has provided the requir	red parties w	ith the Notice Forms listed	
	tract of land as follows:				
State:	WV	IITM NAD 83	539867		
County:	009-Brooke	Northing: 44	452337		
District:	1-Buffalo	The state of the s			
Quadrangle:	247-Bethany	Generally used farm name: Ja	ames Seabright		
Watershed:	Sugarcamp Run, Buffalo Creek				
prescribed by it has provide information re of giving the requirements Virginia Code	the secretary, shall be verified and shed the owners of the surface describe equired by subsections (b) and (c), securification (b), section sixteen of of subsection (b), section sixteen of	every permit application filed under this shall contain the following information: (14) and in subdivisions (1), (2) and (4), subsection sixteen of this article; (ii) that the requirevey pursuant to subsection (a), section tender this article were waived in writing by the ender proof of and certify to the secretary that the	A certification (b), securement was of this article surface ow	on from the operator that (i) tion ten of this article, the deemed satisfied as a result cle six-a; or (iii) the notice ther; and Pursuant to West	
that the Ope	rator has properly served the required	erator has attached proof to this Notice Certification and parties with the following:	ification	OOG OFFICE USE	
*PLEASE CHE	CCK ALL THAT APPLY			ONLY	
☐ 1. NOT	CICE OF SEISMIC ACTIVITY or	■ NOTICE NOT REQUIRED BECAUSE SEISMIC ACTIVITY WAS CONDUCTED		☐ RECEIVED/ NOT REQUIRED	
☐ 2. NO	TICE OF ENTRY FOR PLAT SURV	EY or 🔳 NO PLAT SURVEY WAS CON	DUCTED	☐ RECEIVED	
■ 3. NO	TICE OF INTENT TO DRILL or	☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or		RECEIVED/ NOT REQUIRED	
		☐ WRITTEN WAIVER BY SURFACE (PLEASE ATTACH)	OWNER		
■ 4. NOT	TICE OF PLANNED OPERATION			RECEIVED	
■ 5. PUB	SLIC NOTICE		ECEIVED of Oil and G		
■ 6. NOT	TICE OF APPLICATION		1 1 1 201	- RECEIVED	
			Department mental Prote	ot ection	

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

WW-6AC (1/12)

Certification of Notice is hereby given:

, have read and understand the notice requirements within West Virginia Code § 22-THEREFORE, I. 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:

Senior Regulatory Analyst

NOTARY SEAL

Telephone:

304-884-1610

Notary Public. State of West Virginia

BRITTANY R WOODY

Buckhannon, WV 26201 My commission expires November 27, 2021 Address:

P.O. Box 1300

Facsimile:

Subscribed and sworn before me this

304-884-1690

Email:

Dee Southall@swn.com

Jane Lew, WV 26378

Notary Public

My Commission Expires

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

JAN 11 2018

4700800246
API NO. 47-69 - OPERATOR WELL NO. James Seabright BRK 205H

Well Pad Name: James Seabright BRK 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 Permit Application Filed: Notice of: ✓ PERMIT FOR ANY ☐ CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT WELL WORK Delivery method pursuant to West Virginia Code § 22-6A-10(b) ✓ REGISTERED ☐ METHOD OF DELIVERY THAT REQUIRES A ☐ PERSONAL **SERVICE** MAIL RECEIPT OR SIGNATURE CONFIRMATION Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule. ☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to: ☑ SURFACE OWNER(s) COAL OWNER OR LESSEE Name: James K. & Martha May Seabright, Life Estate & James H. Seabright Name: Starvaggi Industries, INC. Address: 1467 Camp Run Address: 401 Pennsylvania Ave Bethany, WV 26032 Weirton, WV 26062 ☐ COAL OPERATOR Name: RECEIVED Office of Oil and Gas Address: Name: Address: ☐ SURFACE OWNER(s) (Road and/or Other Disturbance) JAN 11 2018 Name: M SURFACE OWNER OF WATER WELL WV Department of Address: AND/OR WATER PURVEYOR(s) Environmental Protection Name: See Attachment 1 Name: Address: Address: ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD ☐ SURFACE OWNER(s) (Impoundments or Pits) Name: Name: Address: Address: *Please attach additional forms if necessary

4700900246

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

API NO. 47- 69 OPERATOR WELL NO. James Seabright BRK 205H
Well Pad Name: James Seabright BRK Pad

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

Date Notic	of Notice: Date Permit Application Filed:	9/18
V	PERMIT FOR ANY WELL WORK CONSTRUCTION OF A	ROVAL FOR THE AN IMPOUNDMENT OR PIT
Deliv	very method pursuant to West Virginia Code § 22-6A-10	(b)
		OD OF DELIVERY THAT REQUIRES A PT OR SIGNATURE CONFIRMATION
certification regist sediments the surplements of t	icate of approval for the construction of an impoundment or pinered mail or by any method of delivery that requires a receipt of the tract on which the well is or is proposed to be located gas leasehold being developed by the proposed well work, if libed in the erosion and sediment control plan submitted pursual tor or lessee, in the event the tract of land on which the well procoal seams; (4) The owners of record of the surface tract or traction work, if the surface tract is to be used for the placement, construction on the surface tract is to be used for the placement, construction of the surface tract is to be used for the placement, construction of the surface tract is to be used for the placement, construction of the surface tract is to be used for the placement, construction of the surface tract is to be used for the placement, construction of this article; (5) As a water well, spring or water supply source located within one of the water for consumption by humans or domestic animals; and used well work activity is to take place. (c)(1) If more than three ction (b) of this section hold interests in the lands, the applicant dis of the sheriff required to be maintained pursuant to section ession of this article to the contrary, notice to a lien holder is not	of the application, the applicant for a permit for any well work or for a tas required by this article shall deliver, by personal service or by or signature confirmation, copies of the application, the erosion and the well plat to each of the following persons: (1) The owners of record of the ted; (2) The owners of record of the surface tract or tracts overlying the other than to subsection (c), section seven of this article; (3) The coal owner, oposed to be drilled is located [sic] is known to be underlain by one or cts overlying the oil and gas leasehold being developed by the proposed auction, enlargement, alteration, repair, removal or abandonment of any any surface owner or water purveyor who is known to the applicant to thousand five hundred feet of the center of the well pad which is used to (6) The operator of any natural gas storage field within which the extenants in common or other co-owners of interests described in the may serve the documents required upon the person described in the eight, article one, chapter eleven-a of this code. (2) Notwithstanding any notice to a landowner, unless the lien holder is the landowner. W. Va. rovide the Well Site Safety Plan ("WSSP") to the surface owner and any as provided in section 15 of this rule.
☑ A _I	oplication Notice 🛮 WSSP Notice 🖾 E&S Plan Notice	☑ Well Plat Notice is hereby provided to:
	RFACE OWNER(s)	☐ COAL OWNER OR LESSEE
Name	DE	Name: TriEnergy, Inc.
Addre	ess:	Address: 412 Beaver St., 2nd Floor, Sewickley, PA 15143
Name	2:	COAL OPERATOR
	ess:	Name:
		Address:
	RFACE OWNER(s) (Road and/or Other Disturbance)	
Name	o:	☐ SURFACE OWNER OF WATER WELL
Addre	ess:	AND/OR WATER PURVEYOR(s)
		Name: RECEIVED Office of Oil and Gas
Addra);	Address:
riuur	ess:	□ JAN 1 1 2018 □ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
SU	RFACE OWNER(s) (Impoundments or Pits)	
Name	::	Name: WV Department of Address: Environmental Protection
Addre	ess:	11441000.
		*Please attach additional forms if necessary

James Seabright BRK Pad - Water Purveyors w/in 1500'

Sources

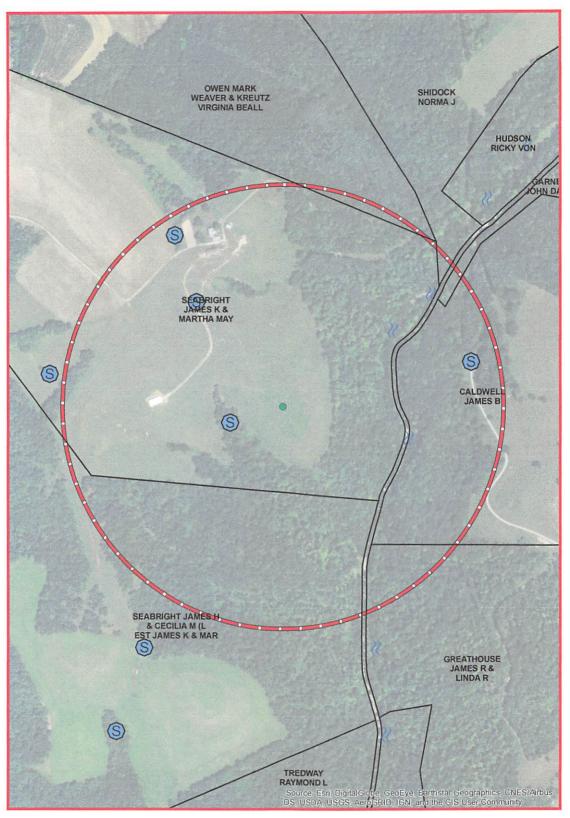
Landowner

James & Martha May Seabright James B Caldwell Address

1467 Camp Run Road, Bethany WV 26032 3 springs 1576 Camp Run Road, Bethany WV 26032 1 spring/

> RECEIVED Office of Oil and Gas

> > JAN 11 2018



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.

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Office of Oil and Gas

Water Purvey	or l	Мар	→ → → → → → → → → → → → → → → → → → →	Well Pad: James Sea	bright BRK Pad	County: BROOKE	JAN 11 2018
Map by: speart NAD 1983 BLM Zone 17N ftUS		Date: 7/21/2017	(S) 94900,703 Fig. (2) 1607	James Sea 40.220675,	bright BRK Coor -80.531880	dinates:	WV Department of nvironmental Protection
0	250	500	1,000	1,500	2,000 Feet		

API NO. 47-69 OPERATOR WELL NO. James Seabright BRK 205H Well Pad Name: James Seabright BRK Pad

Notice is hereby given:

ied for a pro-Office of Oil and Gas 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:

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 copies of the application; (2) the erosion and sediment copies of the application; (2) the erosion and sediment copies of the application; (2) the erosion and sediment copies of the application; (2) the erosion and sediment copies of the application; (3) the erosion and sediment copies of the application; (4) the erosion and sediment copies of the application; (5) the erosion and sediment copies of the application; (6) the erosion and sediment copies of the application; (6) the erosion and sediment copies of the application; (7) the erosion and sediment copies of the application; (8) the erosion and sediment copies of the application; (9) the erosion and sediment copies of the application; (1) the erosion and sediment copies of the application; (1) the erosion and sediment copies of the application; (1) the erosion and sediment copies of the application; (1) the erosion and sediment copies of the application; (1) the erosion and sediment copies of the application and sediment copi

plan required by section seven of this article; and (3) the well plat.

Environment of Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments the limits for filing written commen 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/oiland-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

API NO. 47-68 7 0 0 9 0 0 2 4 6
OPERATOR WELL NO. James Scabright BRX 205H

Well Pad Name: James Seabright BRK 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 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.

API NO. 47-6947. 00900246

OPERATOR WELL NO. James Seabright BRK 205H
Well Pad Name: James Seabright BRK 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 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.

RECEIVED
Office of Oil and Gas

JAN 1 1 2018

API NO. 47- 69 - OPERATOR WELL NO. James Seabright BRK 205H

Well Pad Name: James Seabright BRK Pad

Notice is hereby given by

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

Address: P.O. Box 1300

Jane Lew, WV 26378

Facsimile: 304-471-2497

Oil and Gas Privacy Notice:

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Subscribed and sworn before me this <u>a5t</u> day of <u>July a017</u>
Notary Public

My Commission Expires

Office of Oil and Gas

JAN 11 2018

WV Department of Environmental Protection

WW-6A4 (1/12)

Operator Well No. James Seabright BRK 205H

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 R Date of Notice	equirement: Notice shall be provided at least Ori/20/2017 Date Permit A	TEN (10) days prior to filing a pplication Filed:	permit application.
Delivery metho	od pursuant to West Virginia Code § 22-6A	-16(b)	
□ HAND DELIVER	CERTIFIED MAIL RETURN RECEIPT REQUES	TED	
receipt requeste drilling a horize of this subsection subsection may	Va. Code § 22-6A-16(b), at least ten days prior of or hand delivery, give the surface owner not ontal well: <i>Provided</i> , That notice given pursuon as of the date the notice was provided to the be waived in writing by the surface owner. To, facsimile number and electronic mail address	tice of its intent to enter upon the ant to subsection (a), section tents as surface owner: <i>Provided, how</i> the notice, if required, shall included.	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,
		R(s): Name: Address:	
the surface own State: \(\frac{1}{2} \) County: \(\frac{1}{2} \) District: \(\frac{1}{2} \)	eby given: st Virginia Code § 22-6A-16(b), notice is here er's land for the purpose of drilling a horizont West Virginia Brooke Buffalo Bethany	al well on the tract of land as fol UTM NAD 83 Easting: Northing: Public Road Access:	
This Notice S Pursuant to We facsimile numb related to horiz	hall Include: est Virginia Code § 22-6A-16(b), this notice er and electronic mail address of the operational drilling may be obtained from the Secretary 7th Street, SE, Charleston, WV 25304 (304-92)	or and the operator's authorize etary, at the WV Department of	d representative. Additional information Environmental Protection headquarters,
Notice is here Well Operator: Address:	Bby given by: SWN Production Company, LLC PO Box 1300, 179 Innovation Drive Jane Lew, WV 26378	Authorized Representative: Address:	Mike Yates PO Box 1300, 179 Innovation Drive Jane Lew, WV 26378
Telephone: Email: Facsimile:	304-517-6603 Michael_Yates@swn.com 304-884-1691	Telephone: Email: Facsimile:	304-517-6603 Michael_Yates@swn.com 304-884-1691

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JAN 11 2018

WW-6A5 (1/12)

47 0 0 9 0 0 2 4 6 Operator Well No. James Seabright BRK 205H

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

Date of Notice:	Orizo/2017 Date Permit App		gate of permit	аррисацоп.				
Delivery metho	Delivery method pursuant to West Virginia Code § 22-6A-16(c)							
CERTIFII RETURN		HAND DELIVERY						
Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.								
Notice is hereby provided to the SURFACE OWNER(s) (at the address listed in the records of the sheriff at the time of notice): Name: James K. & Martha May Seabright, Life Estate & James H. Seabright Address: 1467 Camp Run Rd. Bethany, WV 26032 Address:								
Notice is hereby given: Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows: State: West Virginia Easting: 539,867.337								
County: B	Irooke	UTM NAD 8	Northing:	4,452,336.984				
	duffalo	Public Road		Bealls Ridge Road				
` -	lethany ugarcamp Run, Buffalo Creek	_ Generally use	ed farm name:	James Seabright BRK				
This Notice Shall Include: Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1)A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57 th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx .								
Well Operator:	SWN Production Company, LLC	Address:	PO Box 1300, 179 li	nnovation Drive				
Telephone:	304-517-6603		Jane Lew, WV 2637	8				
Email:	Michael_Yates@swn.com	Facsimile:	304-884-1691					

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

July 28, 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 James Seabright Pad, Brooke County

James Seabright BRK 205H

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #06-2015-0659 for the subject site to Southwestern Energy for access to the State Road for the well site located off of WV 88 in Brooke County.

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

JAN 11 2018

WV Department of Environmental Protection

Very Truly Yours,

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

Lay K. Clayton

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

	FRAC	ADDITIVES	
Product Name	Product Use	Chemical Name	CAS Number
	Biocide	Hydrogen Peroxide	7722-84-1
EC6734A (Champion Technologies)		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion	Coole Inhihit	Methanol	67-56-1
Technologies)	Scale Inhibitor	Nonylphenol Ethoxylate	Proprietary
	Biocide	Glutaraldehyde	111-30-8
Bactron K-139 (Champion Technologies)		Quaternary Ammonium Compounds, Benzyl-C12- 16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion	Biocide	Methanol	67-56-1
Technologies)		Quaternary Ammonium Compounds, Benzyl-C12- 16-Alkyldimethyl, Chlorides	68424-85-1
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
ECO4OOA (Naico Champion)	Scale IIIIIDILOI	Ethylene Glycol	107-21-1
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8
TVI TO V 2000 (0.5. Well services)	Amonic Friction Reducer	Propenoic acid, polymer with propenamide	9003-06 9
	Mixture	Ethylene glycol	107-21 1
		Cinnamaldehyde	104-55 2
AI-303 (U.S. Well Services)		Butyl cellosolve	111-76 2
7.1. 303 (0.3. Well services)		Formic acid	64-18 6
		Polyether	Proprietary
		Acetophenone, thiourea, formaldehyde polymer	68527-49 1
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8

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JAN 11 2018