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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, November 13, 2020  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359

SPRING, TX 773914954

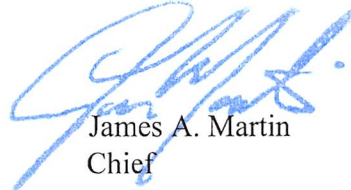
Re: Permit Modification Approval for JOHN GOOD JR BRK 1H  
47-009-00320-00-00

Cement Yield

SWN PRODUCTION COMPANY, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, written in a cursive style.

James A. Martin  
Chief

Operator's Well Number: JOHN GOOD JR BRK 1H  
Farm Name: JOHN PRATHER GOOD JR IRREVOCABLE TRUST  
U.S. WELL NUMBER: 47-009-00320-00-00  
Horizontal 6A New Drill  
Date Modification Issued: November 13, 2020

Promoting a healthy environment.

WW-6B  
(04/15)

4700900320 mod

API NO. 47-009  
OPERATOR WELL NO. John Good Jr. BRK 1H  
Well Pad Name: John Good Jr. BRK

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 009- Brooke 3- Buffalo 247- Bethany 620  
Operator ID County District Quadrangle

2) Operator's Well Number: John Good Jr. BRK 1H Well Pad Name: John Good Jr. BRK

3) Farm Name/Surface Owner: John Prather Good Jr. Irrevocable Trust Public Road Access: McAdoo Ridge Road

4) Elevation, current ground: 1154' Elevation, proposed post-construction: 1154'

5) Well Type (a) Gas x Oil Underground Storage  
Other

(b) If Gas Shallow x Deep  
Horizontal x

6) Existing Pad: Yes or No Yes

*[Handwritten signature]*  
10.15.20

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 5866', Target Base TVD- 5917', Anticipated Thickness- 51', Associated Pressure- 3846

8) Proposed Total Vertical Depth: 5901'

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Office of Oil and Gas

9) Formation at Total Vertical Depth: Marcellus

NOV 04 2020

10) Proposed Total Measured Depth: 17154'

WV Department of  
Environmental Protection

11) Proposed Horizontal Leg Length: 10809.80'

12) Approximate Fresh Water Strata Depths: 326'

13) Method to Determine Fresh Water Depths: Salinity Profile Analysis; Logs on pad

14) Approximate Saltwater Depths: 448' Salinity Profile

15) Approximate Coal Seam Depths: 308'

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 x

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

WW-6B  
(04/15)

4700900320 mod  
 API NO. 47- 009 -  
 OPERATOR WELL NO. John Good Jr. BRK 1H  
 Well Pad Name: John Good Jr. BRK

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	125'	125'	CTS
Fresh Water	13 3/8"	New	H-40	48#	380'	380'	431 sx/CTS must
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1660'	1660'	656 sx/CTS must
Production	5 1/2"	New	P-110 HP	20#	17,154'	17,154'	Tail 354tx/ 100' Inside Intermediate
Tubing							
Liners							

*C-TSL 10.15.20*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Surface	Casing				
Intermediate	9 5/8"	12 1/4"	0.352	3520	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

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 WV Department of Environmental Protection

PACKERS

Kind:				
Sizes:				
Depths Set:				



Check #1053370  
10/27/2020  
\$5,000.00

9-00320 MOD  
SWN Production Company, LLC  
1300 Fort Pierpont Dr, Ste 201  
Morgantown, WV 26508  
Tel: 304 884 1610  
Fax: 304 471 2497  
www.swn.com

November 2, 2020

4700900320 MOD

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

RE: Proposed Expedited Modification: John Good Jr. BRK 1H

Dear Ms. Adkins

Enclosed please find a modification for the above captioned well. We made changes to the cement yield on page two of the 6B per the DEP inspector's request. This well is situated on the Good's property, in Buffalo District, Brooke County, West Virginia. Enclosed documents:

-Updated 6B

If you have any questions or desire additional information, please me at 304-884-1613

Thank you.

Sincerely,

Brittany Woody  
Senior Regulatory Analyst  
Southwestern Energy Production Company, LLC

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