



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

October 19, 2017
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for MASON COTTRELL OHI 10H
47-069-00240-00-00

Modifying Operation for Covering Mine Void

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.

James A. Martin
Chief

Operator's Well Number: MASON COTTRELL OHI 10H
Farm Name: LOUIS COTTRELL, JR. AS TRUSTEE FOR MASON LOUIS COTTRELL
U.S. WELL NUMBER: 47-069-00240-00-00
Horizontal 6A / New Drill
Date Issued: October 19, 2017

Promoting a healthy environment.

10/20/2017

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WW-6B
(04/15)

API NO. 47-069 - 00340 1009
OPERATOR WELL NO. Mason Cottrell OHI 10H
Well Pad Name: Mason Cottrell 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 069-Ohio 6- Triad Valley Grove
Operator ID County District Quadangle
- 2) Operator's Well Number: Mason Cottrell OHI 10H Well Pad Name: Mason Cottrell PAD
- 3) Farm Name/Surface Owner: Melvin W. & Carol M. Kahle Public Road Access: Gashell Run Road
- 4) Elevation, current ground: 1296' Elevation, proposed post-construction: 1296'
- 5) Well Type (a) Gas Oil Underground Storage
Other _____
(b) If Gas Shallow Deep _____
Horizontal
- 6) Existing Pad: Yes or No No *C. J. Hill 10-4-17 ✓*
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Target Top TVD- 6472', Target Base TVD- 6510', Anticipated Thickness- 38', Associated Pressure- 4214
- 8) Proposed Total Vertical Depth: 6484'
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 20,060'
- 11) Proposed Horizontal Leg Length: 4485.15'
- 12) Approximate Fresh Water Strata Depths: 387'
- 13) Method to Determine Fresh Water Depths: From salinity profile and nearby water wells
- 14) Approximate Saltwater Depths: 752'
- 15) Approximate Coal Seam Depths: 610'
- 16) Approximate Depth to Possible Void (coal mine, karst, other): 610' Possible Void
- 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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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#	660'	660'	618 sx/CTS
Coal	9 5/8"	New	J-55	36#	2022'	2022'	760 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	20060'	20060'	See 811 for T&I 2102x 1300x 1300
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 6359'	Approx. 6359'	
Liners							

CSL 10-7-17

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	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing	2 3/8"	4.778"	0.190	Approx 8193'	Approx 8193'		
Liners							

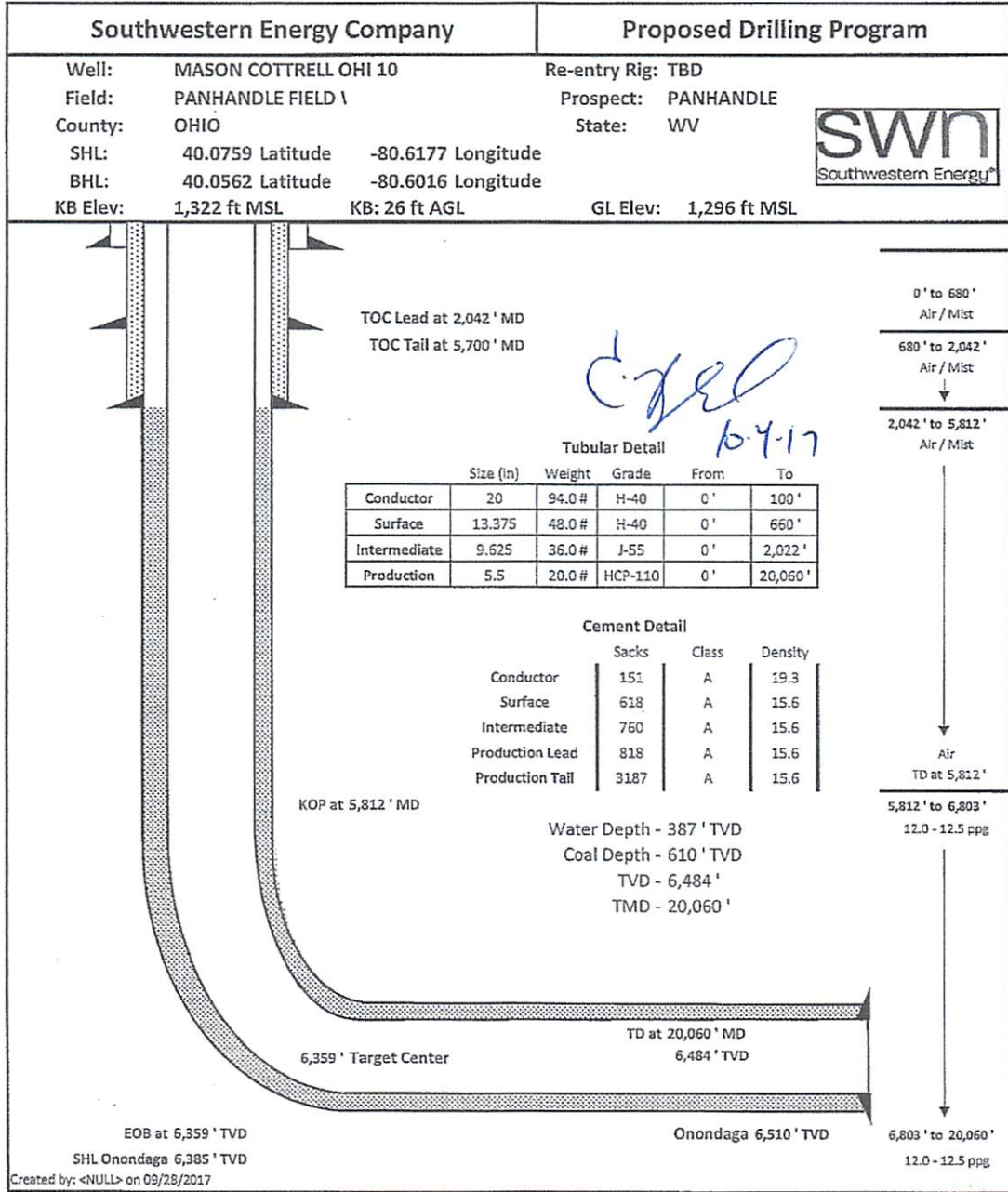
PACKERS

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

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69-00240 MOD

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10/20/2017

WW-6AW
(1-12)

API NO. 47-68 - 00240 MOD
OPERATOR WELL NO. Mason Cottrill OHI 10H
Well Pad Name: Mason Cottrill PAD

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Evan Milder, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>532604.49</u>
County: <u>069-Ohio</u>	Northing: <u>4436247.30</u>
District: <u>Triadelphia</u>	Public Road Access: <u>Gashell Run Road</u>
Quadrangle: <u>Valley Grove</u>	Generally used farm name: <u>Mason Cottrill</u>
Watershed: <u>Upper Ohio South</u>	

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input checked="" type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input checked="" type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p>
	<p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: <u>Tunnel Ridge LLC</u></p> <p>By: <u>Evan Milder</u></p> <p>Its: <u>Land Manager</u></p> <p>Signature: _____</p> <p>Date: <u>07/29/2017</u></p>

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.

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October 5, 2017

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

RE: Proposed New Well: Mason Cottrell OHI 10H API 47-069-00240

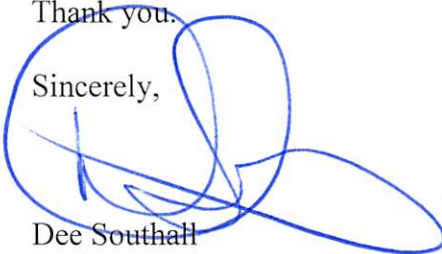
Dear Ms. Adkins

Enclosed please find a revised 6B, WBD and signed coal waiver for the above captioned well. We would like to modify the 13 3/8" casing in order to be consisted with the Approved 6H permit. This well is situated on the Cottrell's property, in Ohio County, West Virginia.

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

Thank you.

Sincerely,



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

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