

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 051 - 01776 County 51- Marshall District 6- Sand Hill
Quad 486- Moundsville Pad Name Betty Schafer MSH Pad1 Field/Pool Name Panhandle
Farm name Betty Jane Schafer Well Number 201
Operator (as registered with the OOG) SWN Production CO., LLC
Address P.O. BOX 12359 City Spring State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4426803.45 Easting 531107.051
Landing Point of Curve Northing 4426663.98 Easting 530562.89
Bottom Hole Northing 4429309.27 Easting 529365.501

Elevation (ft) 848.8 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

Date permit issued 05/12/2015 Date drilling commenced 06/23/2015 Date drilling ceased 07/30/2015
Date completion activities began 08/31/2015 Date completion activities ceased 10/08/2015
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug SEP 16 2016

Freshwater depth(s) ft 710 Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 2000 Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 670 Cavern(s) encountered (Y/N) depths N

Is coal being mined in area (Y/N) Y

APPROVED

NAME: Jackie Shanta
DATE: 9/22/14

Reviewed by: _____

10/28/2016

Office of Oil and Gas

WV DEPARTMENT OF
Environmental Protection

API 47-051 - 01776 Farm name Betty Jane Schafer Well number 201

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24	20	126	N	94/F-25		Y, GTS
Surface	17.5	13.375	304	N	54.50/J-55		Y
Coal							Y
Intermediate 1	12.250	9.625	1628	N	40/J-55		Y
Intermediate 2							
Intermediate 3							
Production	8.5/8.75	5.5	16058	N	20/HCP-110		N
Tubing	4.78	2.375	6662	N	4.7/P-110		
Packer type and depth set							

Comment Details 10K ARROW HEAD AS1-X 5.5'

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	120	120	1.19	143	SURFACE	TOP JOB, GTS
Surface	CLASS A	290	15.7	1.2	348	SURFACE	8
Coal							
Intermediate 1	CLASS A	635	15.6	1.18		SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	1173/2187	15.5/15.6	1.24/1.19	1455/5064		24
Tubing							

Drillers TD (ft) 16058 Loggers TD (ft) 16058

Deepest formation penetrated MARCELLUS Plug back to (ft)

Plug back procedure

Kick off depth (ft) 5700

Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

1 in the middle and top of the shoe joint, then 1 on the top of the 3rd joint, and then 1 at the top of every 3rd joint to surface.
1 solid body centralizer locked in against the float collar, one solid body centralizer on each joint from the float collar to 30 degrees.

SEP 16 2016

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		SEE ATTACHE			

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
			SEE ATTACHE					

RECEIVED
 Ontario Oil and Gas
 SEP 16 2016
 The Department of
 Environmental Protection

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>MARCELLUS</u>	<u>5975.18</u>	<u>TVD</u>	<u>6619.93</u> <u>MD</u>

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1430 psi Bottom Hole psi DURATION OF TEST NA hrs

OPEN FLOW Gas 1593 mcfpd Oil 120 bpd NGL bpd Water 32 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		
		<u>SEE ATTACHED</u>			

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING CO.
Address 10000 Energy Drive City Spring State TX Zip 77389

Logging Company WEATHERFORD US LP
Address 121 HILLPOINTE DR., SUITE 300 City Canonsburg State TX Zip 15317

Cementing Company SCHLUMBERGER OIL FIELD SERVICES and ALLIED OIL AND GAS
Address 1325 S. DAIRY ASHFORD DRIVE City Houston State TX Zip 77077

Stimulating Company BAKER HUGHES
Address 17021 ALDINE WESTFIELD ROAD City Houston State TX Zip 77073

Please insert additional pages as applicable.

Completed by SHELLY BOWEN Telephone 832-796-6237
Signature *Shelley Bowen* Title SR. REGULATORY ANALYST Date 9/15/16

