

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

API 47 - 069 - 00294 County OHIO District LIBERTY  
Quad BETHANY, WV-PA Pad Name ROY RIGGLE-OHI-PAD1 Field/Pool Name PANHANDLE FIELD WET  
Farm name ROY & DEBRA R. RIGGLE Well Number ROY RIGGLE OHI 3H  
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC  
Address PO 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 4,444,688.485 Easting 540,551.118  
Landing Point of Curve Northing 4,444,869.192 Easting 540,476.679  
Bottom Hole Northing 4,447,866.537 Easting 539,293.919

Elevation (ft) 1,251.8' 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 02/05/19 Date drilling commenced 04/20/19 Date drilling ceased 05/01/19  
Date completion activities began 05/29/19 Date completion activities ceased 06/28/19  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 508' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 761' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 628' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**Reviewed**

*C. Hill* 12-17-19

Reviewed by:  
*SB* 12-17-19

API 47-069 - 00294 Farm name ROY & DEBRA R. RIGGLE Well number ROY RIGGLE OHI 3H

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	NEW	J-55/94#		Y
Surface	17.5	13.375	689	NEW	J-55/54.50#		Y; 24 BBLS
Coal	SURFACE						
Intermediate 1	12.25	9.625	2,085	NEW	J-55/36#		Y; 35 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	17,498	NEW	HCP-110/20#		Y; 33 BBLS
Tubing		2.875	6,831	NEW	P-110/6.50#		N
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	595	15.60	1.20	714	SURFACE	8
Coal	SURFACE						
Intermediate 1	CLASS A	810	15.60	1.19	963.90	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3,170	15.60	1.21	3,835.70	SURFACE	24
Tubing							

Drillers TD (ft) 17,498' Loggers TD (ft) 17,498'

Deepest formation penetrated MARCELLUS Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5,594'

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 \_\_\_\_\_

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING  
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING  
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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 \_\_\_\_\_

API 47- 069 - 00294 Farm name ROY & DEBRA R. RIGGLE Well number ROY RIGGLE OHI 3H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

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	ATTACHMENT	2				

Please insert additional pages as applicable.

API 47- 069 - 00294 Farm name ROY & DEBRA R. RIGGLE Well number ROY RIGGLE OHI 3H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>MARCELLUS</u>	<u>6,718'</u>	<u>TVD</u>	<u>6,442'</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 1289 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs  
 OPEN FLOW Gas 6,746 mcfpd Oil 770 bpd NGL \_\_\_\_\_ bpd Water 449 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY  
 Address PO BOX 12359 City SPRING State TX Zip 77391-2359  
 Logging Company BAKER HUGHES  
 Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380  
 Cementing Company C&J ENERGY SERVICES INC.  
 Address 3990 ROGERSDALE RD City HOUSTON State TX Zip 77042  
 Stimulating Company SWN WELL SERVICES  
 Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-796-6139  
 Signature *Denise Grantham* Title REGULATORY TECHNICIAN Date 9.18.19

# SOUTHWESTERN ENERGY

Location: Ohio County, WV  
 Field: Ohio  
 Facility: Roy Riggle OHI Pad Wellbore: Roy Riggle OHI 3H PWB

Plot reference wellpath is: Roy Riggle OHI 3H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet.
True vertical depths are referenced to SDC 42 (RKB)	North Reference: Grid north
Measured depths are referenced to SDC 42 (RKB)	Scale: True distance
SDC 42 (RKB) to Mean Sea Level: 1277.8 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot 3H): -1251.8 feet	Created by: ajeonjen on 2019-05-08
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn

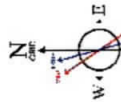


## Location Information

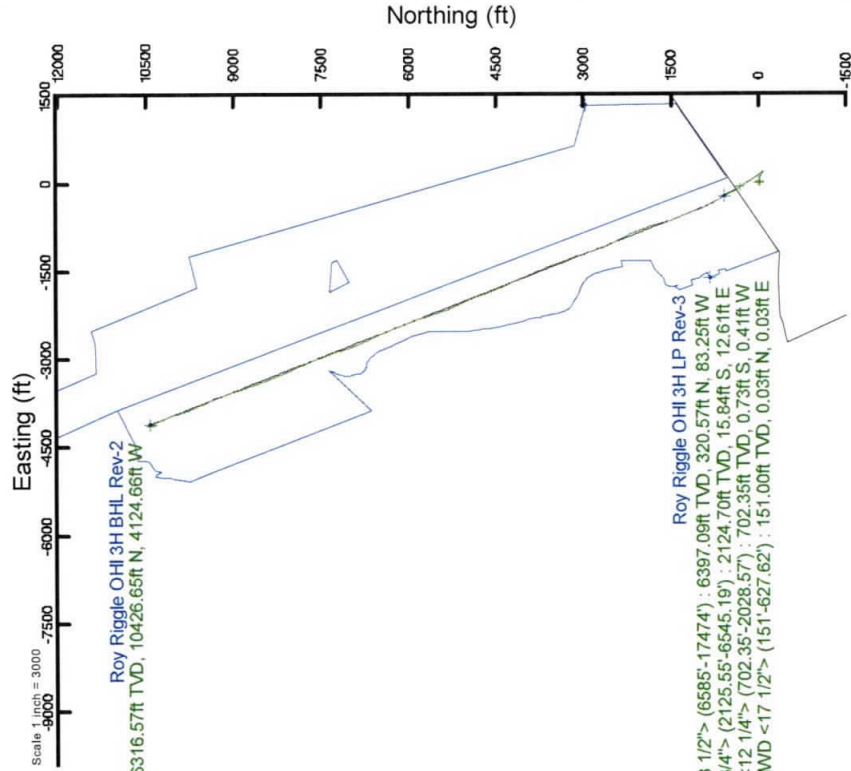
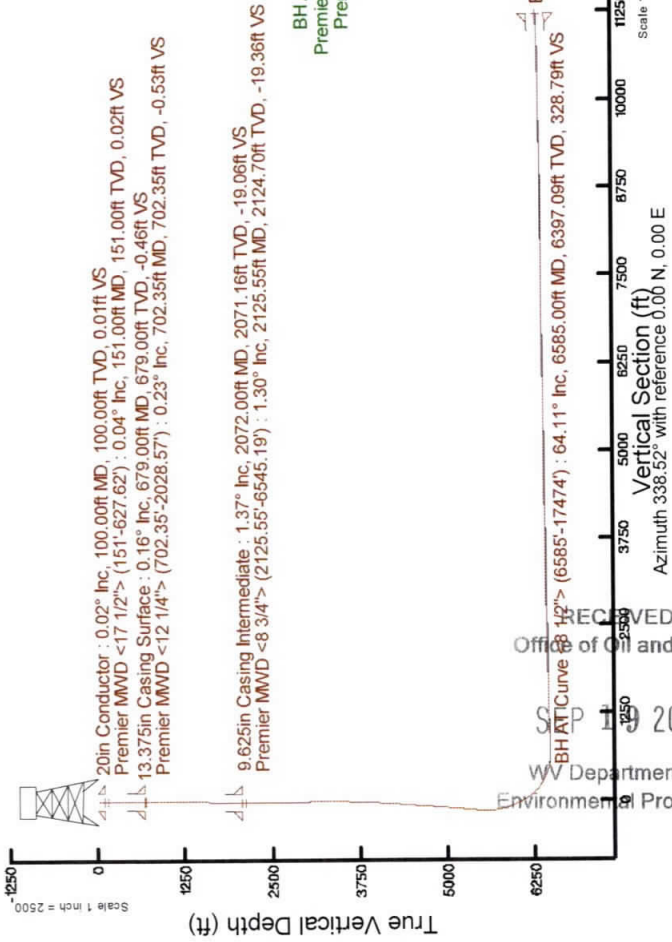
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Roy Riggle OHI Pad	1773447.520	14582274.947	40°09'05.569"N	80°31'26.123"W
Slot 3H	7.36	10.60	40°09'05.641"N	80°31'25.996"W
SDC 42 (RKB) to Ground level (At Slot: Slot 3H)			26ft	
Mean Sea Level to Ground level (At Slot: Slot 3H)			-1251.8ft	
SDC 42 (RKB) to Mean Sea Level			1277.8ft	

## Comments

APL 47-069-00294-0000  
 BH Job # 109700210  
 Rig. SDC 42  
 Duration: 04/26/2019 - 04/29/2019



Use specified Dip: 67.45° Field: 52651.0T  
 Magnetic North is 8.44 degrees West of True North (at 26Apr2019)  
 True North is 0.31 degrees East of True North  
 To correct azimuth from Magnetic to Grid subtract 8.75 degrees



# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/29/2019
Job End Date:	6/15/2019
State:	West Virginia
County:	Ohio
API Number:	47-069-00294-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Roy Riggle OHI 3
Latitude:	40.15156672
Longitude:	-80.52388495
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,396
Total Base Water Volume (gal):	15,218,810
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
BIOC11219A	Nalco	Biocide					
				Listed Below			
Base Water	Operator	Base Fluid					
				Listed Below			

Sand	SWN Well Services	Proppant							
					Listed Below				
Econo-C/200	SWN Well Services	Corrosion Inhibitor							
					Listed Below				
HCL	SWN Well Services	Solvent							
					Listed Below				
Ecopol-FEAC	SWN Well Services	Iron Control							
					Listed Below				
SCAL16486A	Nalco	Scale Inhibitor							
					Listed Below				
SWN FRW-13LA	SWN Well Services	Friction Reducer							
					Listed Below				
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.									
			Water		7732-18-5	100.00000	88.64773	Density = 8.345	
			Crystalline Silica, quartz		14808-60-7	100.00000	10.99994		
			Water		7732-18-5	85.00000	0.25916		
			Hydrochloric Acid		7647-01-0	15.00000	0.03249		
			Petroleum Distillates, Hydrotreated		64742-47-8	25.00000	0.02571		
			Methanol		67-56-1	60.00000	0.01494		
			Benzyl-(C12-C16 Alky)-Dimethyl-Ammonium		68424-85-1	30.00000	0.00747		
			Chloride Glutaraldehyde		111-30-8	10.00000	0.00249		

			Ammonium Chloride	12125-02-9	2.00000	0.00206
			Amine Triphosphate	Proprietary	30.00000	0.00196
			Ethylene glycol	107-21-1	30.00000	0.00196
			Alcohols, C12-1, ethoxylated	68551-12-2	1.50000	0.00154
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00154
			Acetic Acid	64-19-7	37.50000	0.00043
			Methanol	67-56-1	80.00000	0.00027
			Citric Acid	77-92-9	22.50000	0.00026
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00003
			Fatty acids	61790-12-3	5.02700	0.00002
			Modified thiourea polymer	68527-49-1	4.74600	0.00002
			Potassium acetate	127-08-2	0.02200	0.00000
			Formaldehyde	50-00-0	0.00400	0.00000

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



**ROY RIGGLE OHI 3H**

**ATTACHMENT 1**

**PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	5/18/2019	17,410	17,316	36
2	5/29/2019	17,285	17,108	42
3	5/30/2019	17,073	16,898	42
4	5/30/2019	16,865	16,688	36
5	5/31/2019	16,655	16,478	36
6	5/31/2019	16,445	16,268	36
7	6/1/2019	16,235	16,062	36
8	6/1/2019	16,025	15,848	36
9	6/6/2019	15,815	15,638	36
10	6/7/2019	15,605	15,428	36
11	6/7/2019	15,395	15,222	36
12	6/7/2019	15,185	15,008	36
13	6/7/2019	14,975	14,798	36
14	6/7/2019	14,765	14,588	36
15	6/7/2019	14,555	14,383	36
16	6/8/2019	14,345	14,168	36
17	6/8/2019	14,138	13,958	36
18	6/8/2019	13,925	13,748	36
19	6/8/2019	13,715	13,538	36
20	6/9/2019	13,505	13,328	36
21	6/9/2019	13,298	13,118	36
22	6/9/2019	13,085	12,908	36
23	6/9/2019	12,875	12,698	36
24	6/9/2019	12,665	12,488	36
25	6/10/2019	12,455	12,278	36
26	6/10/2019	12,245	12,068	36
27	6/10/2019	12,035	11,863	36
28	6/10/2019	11,822	11,648	36
29	6/11/2019	11,615	11,438	37
30	6/11/2019	11,405	11,228	36
31	6/11/2019	11,195	11,018	36
32	6/11/2019	10,985	10,808	36
33	6/12/2019	10,775	10,598	36
34	6/12/2019	10,565	10,388	36
35	6/12/2019	10,355	10,183	36
36	6/12/2019	10,145	9,968	36
37	6/12/2019	9,935	9,758	36
38	6/13/2019	9,725	9,553	36
39	6/13/2019	9,515	9,338	36
40	6/13/2019	9,305	9,128	36
41	6/13/2019	9,095	8,918	36
42	6/13/2019	8,885	8,708	36
43	6/14/2019	8,680	8,498	36
44	6/14/2019	8,465	8,288	36
45	6/14/2019	8,255	8,078	36
46	6/14/2019	8,045	7,868	36
47	6/14/2019	7,835	7,658	36
48	6/14/2019	7,625	7,448	36
49	6/15/2019	7,415	7,238	36
50	6/15/2019	7,205	7,028	36
51	6/15/2019	6,995	6,818	36

**ROY RIGGLE OHI 3H  
ATTACHMENT 2  
STIM REPORT**

STAGE NUM	Stim 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
1	5/29/2019	68	7,400	7,808	3,782	181,046	6,540	0
2	5/30/2019	85	8,009	5,828	4,650	323,780	6,999	0
3	5/30/2019	83	8,194	4,850	4,536	317,335	7,681	0
4	5/30/2019	85	8,115	5,175	4,283	314,365	7,272	0
5	5/31/2019	84	8,180	6,258	4,320	317,295	7,213	0
6	5/31/2019	82	7,924	6,535	4,506	315,321	7,459	0
7	6/1/2019	84	8,148	5,460	4,586	309,588	7,030	0
8	6/1/2019	87	8,155	5,896	4,465	318,521	7,564	0
9	6/6/2019	92	8,182	5,742	4,455	316,318	7,344	0
10	6/7/2019	81	8,028	6,224	4,425	313,644	7,362	0
11	6/7/2019	92	7,964	5,926	5,119	312,981	7,133	0
12	6/7/2019	88	8,154	6,389	4,684	286,603	6,853	0
13	6/7/2019	90	8,058	6,128	4,567	318,661	7,134	0
14	6/7/2019	83	8,026	6,382	4,677	318,394	7,271	0
15	6/8/2019	87	7,930	5,570	5,050	309,529	7,500	0
16	6/8/2019	92	7,947	5,982	4,962	315,330	6,995	0
17	6/8/2019	93	8,193	6,115	4,526	313,653	7,266	0
18	6/8/2019	85	7,983	5,943	4,763	315,360	7,468	0
19	6/9/2019	87	7,927	5,478	4,510	317,574	7,261	0
20	6/9/2019	87	7,944	5,809	4,667	311,738	7,083	0
21	6/9/2019	91	8,150	5,418	4,750	270,508	6,786	0
22	6/9/2019	92	7,901	5,507	5,119	315,694	7,395	0
23	6/9/2019	87	7,767	5,363	4,793	312,017	7,640	0
24	6/9/2019	86	7,886	5,492	4,496	318,270	7,400	0
25	6/10/2019	86	7,818	5,349	4,460	315,622	7,553	0
26	6/10/2019	87	7,872	5,486	4,515	301,764	7,022	0
27	6/10/2019	92	7,779	5,212	4,878	313,744	7,013	0
28	6/11/2019	87	7,960	5,438	4,579	314,948	7,356	0
29	6/11/2019	94	7,144	5,437	4,719	308,694	7,244	0
30	6/11/2019	95	7,853	5,216	4,016	310,178	6,888	0
31	6/11/2019	82	7,990	5,689	4,460	316,919	7,435	0
32	6/11/2019	85	7,676	5,562	4,431	307,746	7,121	0
33	6/12/2019	85	7,758	5,462	4,350	305,200	6,847	0
34	6/12/2019	80	7,918	5,730	4,315	318,150	6,580	0
35	6/12/2019	82	6,971	5,219	4,256	310,892	7,357	0
36	6/12/2019	80	7,814	5,760	4,575	310,876	7,274	0
37	6/13/2019	83	8,135	5,560	4,412	316,286	6,950	0
38	6/13/2019	81	7,303	5,146	4,636	307,772	7,644	0
39	6/13/2019	80	7,222	5,352	4,393	315,923	7,226	0
40	6/13/2019	80	7,237	5,236	3,998	290,724	6,547	0
41	6/13/2019	80	7,493	5,045	4,100	315,315	7,013	0
42	6/14/2019	87	7,619	5,580	4,348	308,402	6,883	0
43	6/14/2019	79	7,585	5,363	4,213	309,410	6,846	0
44	6/14/2019	68	7,714	5,567	4,378	313,174	6,928	0
45	6/14/2019	82	6,786	5,211	4,162	310,825	6,869	0
46	6/14/2019	77	7,434	5,672	4,463	310,825	6,967	0
47	6/14/2019	85	7,082	5,342	4,401	307,183	6,978	0
48	6/15/2019	80	7,493	5,250	4,295	308,952	7,088	0
49	6/15/2019	88	7,534	6,255	4,222	312,674	7,070	0
50	6/15/2019	87	7,030	5,118	4,595	316,562	6,332	0
51	6/15/2019	99	6,984	5,881	4,261	316,755	6,500	0



Well Name: Roy Riggle OHI 3H

47069002940000

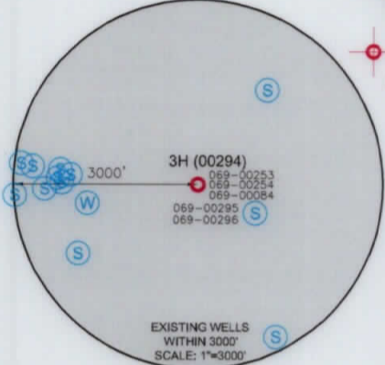
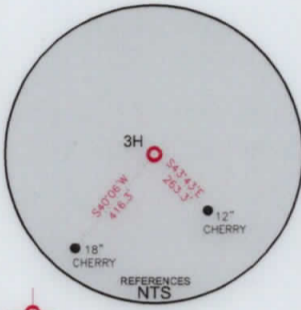
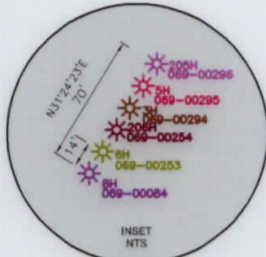
LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	508.00	508.00	
Top of Salt Water	761.00	761.00	NA	NA	
Pittsburgh Coal	628.00	628.00	633.00	633.00	
Pottsville (ss)	751.00	751.00	860.00	860.00	
Raven Cliff (ss)	1257.00	1257.00	1377.00	1377.00	
Maxton (ss)	1469.00	1469.00	1810.00	1810.00	
Big Injun (ss)	1810.00	1810.00	1959.00	1959.00	
Berea (siltstone)	2256.00	2255.00	2379.00	2378.00	
Rhinstreet (shale)	5842.00	5829.00	6154.00	6114.00	
Cashaqua (shale)	6154.00	6114.00	6228.00	6175.00	
Middlesex (shale)	6228.00	6175.00	6332.00	6253.00	
Burket (shale)	6332.00	6253.00	6358.00	6272.00	
Tully (ls)	6358.00	6272.00	6417.00	6310.00	
Mahantango (shale)	6417.00	6310.00	6718.00	6442.00	
Marcellus (shale)	6718.00	6442.00	NA	NA	GAS

**JACKSON SURVEYING INC.**  
 2413 EAST PIKE ST. # 112  
 Clarksburg, WV 26301  
 304-623-5851

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,688.537 EASTING: 540,551.025
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,852.362 EASTING: 540,467.314
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,867.815 EASTING: 539,299.769

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

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 43°43'12" E	1915.30'	SHL TO LANDMARK	FENCE CORNER
L2	S 79°37'08" W	1044.91'	SHL TO LANDMARK	CORNER POST
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	N 22°23'17" W	641.20'	1044.03'	SHL TO LP



<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,688.485 EASTING: 540,551.118
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,869.192 EASTING: 540,476.679
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,866.537 EASTING: 539,293.919

**WELL RESTRICTIONS**

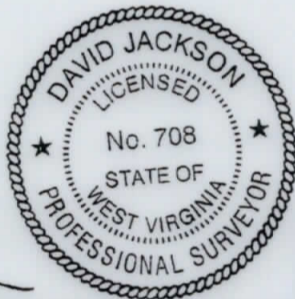
- NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- 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**

- 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.
  - THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
  - 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.

P.S. 708

*David L Jackson*



<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP          OFFICE OF OIL &amp; GAS          601 57TH STREET          CHARLESTON, WV 25034</p>	MINIMUM DEGREE OF ACCURACY: 1/200  PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	COMPANY: <b>SWN</b> Production Company, LLC OPERATOR'S WELL #: ROY RIGGLE OHI 3H API WELL #: <b>47</b> STATE <b>069</b> COUNTY <b>00294</b> PERMIT
	WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	WATERSHED: CASTLEMAN RUN OF BUFFALO CREEK (HUC-10) DISTRICT: LIBERTY COUNTY: OHIO SURFACE OWNER: ROY & DEBRA R. RIGGLE OIL & GAS ROYALTY OWNER: ROY & DEBRA R. RIGGLE
DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) ASDRILLED TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,467' TVD 17,498' TMD	WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: 1300 FORT PIERPONT RD. SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT RD. SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508
LEGEND: ● PROPOSED SURFACE HOLE / BOTTOM HOLE ✱ EXISTING / PRODUCING WELLHEAD LPL ✱ LANDING POINT LOCATION Ⓜ EXISTING WATER WELL Ⓢ EXISTING SPRING	— SURVEYED BOUNDARY — DRILLING UNIT = LEASE BOUNDARY — ASDRILLED PATH — PROPOSED PATH	REVISIONS: DATE: 09-18-2019 DRAWN BY: N. MANO SCALE: 1" = 2000' DRAWING NO: WELL LOCATION PLAT

Latitude: 40°10'00" SURFACE HOLE 6,676'  
 Latitude: 40°12'30" BOTTOM HOLE 10,740'

SURFACE HOLE 5,501'

BOTTOM HOLE 10,228'

Longitude: 80°30'00"

JACKSON SURVEYING  
 INC.  
 2413 EAST PIKE ST. # 112  
 Clarksburg, WV  
 26301304-623-5851

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	ROY RIGGLE & DEBRA R. RIGGLE (S/R)	03-L6-14
TRACT	SURFACE OWNER	TAX PARCEL
2	TIMOTHY ALAN RYAN (S)	03-L6-4
3	DANIEL P. TUSTIN SR. & VICKI L. TUSTIN (S)	03-L3-3
4	DANIEL P. TUSTIN SR. & VICKI S. TUSTIN (S)	03-L3-3.1
5	DANIEL P. TUSTIN SR. & VICKI S. TUSTIN (S)	03-L3-2.3
6	EDWARD JOHN COVEY & ROSEMARY ANN COVEY (S)	03-B54-8
7	CHRISTOPHER J. COVEY & LELA G. COVEY (S)	03-L3-4
8	ROBERT E. JONES LIVING TRUST DATED 11/12/10 (S)	03-B49-12
9	PERRY JEFFERSON JONES, JR. & BRANDY SUE JONES (S)	03-B49-8
10	WV DEPT. OF NATURAL RESOURCES (S)	03-B49-7
11	WV BUREAU OF COMMERCE DIV. OF NATURAL RESOURCES (S)	03-B49-1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MICHAEL WILHELM & JULIA E. WILHELM	03-L6-20
B	JASON MICHAEL WILHELM & CRYSTAL LOUISE WILHELM	03-L6-20.6
C	WILLIAM RODGER, L/E	03-L6-16
D	JOYCE ANN STRAUSS	03-L6-08
E	FEDERAL NATIONAL MORTGAGE ASSOCIATION	03-L6-05
F	DOROTHY TUSTIN (LIFE ESTATE)	03-L3-3.2
G	EDGAR D. WOOD	03-L6-02
H	JOHN S. FREEMAN & N. FREEMAN	03-L3-2.2
I	RICHARD P. FORSHEY	03-B54-13
J	RICHARD P. FORSHEY	03-B54-12
K	ROSEMARY ANN COVEY	03-B54-11
L	ROSEMARY ANN COVEY	03-B54-10
M	ROSEMARY ANN COVEY	03-B54-09
N	JACQUELINE D. CONNARD	03-B54-04
O	JACQUELINE D. CONNARD	03-B54-05
P	VEMURI HOME & GARDEN, LLC	03-B54-06
Q	VEMURI HOME & GARDEN, LLC	03-B54-07
R	EVERETT L. CARMICHAEL	03-B54-03
S	JAMES UNDERWOOD	03-B54-02
T	STATE ROAD OF WEST VIRGINIA	03-B54-01
U	STATE ROAD OF WEST VIRGINIA	03-B49-13
V	DANIEL E. WALDEN	03-B49-06
W	ANDREW P. HOGAN	03-B48-34
X	CLIFFORD E. COUNSELMAN	03-B49-02
Y	PERRY J. JONES, JR.	03-B49-8.1
Z	PERRY JEFFERSON JONES	03-B49-09
AA	PERRY JEFFERSON JONES	03-B49-09
BB	MARK S. GRACY & CAROL B. GRACY	230-023-00-00-0010-06
CC	RITA V. QTIP JONES, TR.	230-016-00-00-0001-00
DD	ROY RIGGLE & DEBRA R. RIGGLE	230-016-00-00-0003-00
EE	KEENER PRIMARY RES. PROTECTOR TRUST	230-015-00-00-0005-00

REVISIONS:	COMPANY:	 	
	OPERATOR'S	ROY RIGGLE OHI	DATE: 09-18-2019
	WELL #:	3H	DRAWN BY: N. MANO
	DISTRICT:	LIBERTY	SCALE: N/A
	COUNTY:	OHIO	DRAWING NO:
	STATE:	WV	WELL LOCATION PLAT 2