

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

API 47 - 069 - 00249 County OHIO District TRIADELPHIA  
Quad VALLEY GROVE Pad Name MARK HICKMAN PAD Field/Pool Name PANHANDLE  
Farm name MARK HICKMAN Well Number MARK HICKMAN OHI 6H  
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 4,432,274.175 Easting 538,607.926  
Landing Point of Curve Northing 4,431,899.456 Easting 538,473.022  
Bottom Hole Northing 4,430,210.975 Easting 539,278.097

Elevation (ft) 1281.8 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 10/23/2017 Date drilling commenced 02/20/2018 Date drilling ceased 04/01/2018  
Date completion activities began 05/06/2018 Date completion activities ceased 05/29/2018  
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 564' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 919' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 714' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**Reviewed**  
*[Signature]* 8/30/18

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Reviewed by:

*[Signature]* 8/30/18  
**09/07/2018**

API 47-069 - 00249 Farm name MARK HICKMAN Well number MARK HICKMAN OHI 6H

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	819	NEW	J-55/54.50#	688.6'; 664.1'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2171	NEW	J-55/36#		Y, 37 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	13603	NEW	HCP-110/20#		Y
Tubing		2.375	7272	NEW	P-110/4.7#		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	767	15.60	1.20	920.40	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	841	15.60	1.19	1000.79	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2400	15.60	1.19	2856	SURFACE	24
Tubing							

Drillers TD (ft) 13603' Loggers TD (ft) 13603'  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5895'

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 \_\_\_\_\_

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API 47- 069 - 00249 Farm name MARK HICKMAN Well number MARK HICKMAN OHI 6H

PRODUCING FORMATION(S)	DEPTHS		
MARCELLUS	6670	TVD	7039 MD

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Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1310 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 4237 mcfpd Oil 135 bpd NGL \_\_\_\_\_ bpd Water 269 bpd  
GAS MEASURED BY  Estimated  Orifice  Pilot

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

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY  
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company PREMIER DIRECTIONAL DRILLING  
Address 363 NORTH SAM HOUSTON PKWY E, STE 300 City HOUSTON State TX Zip 77060

Cementing Company SCHLUMBERGER WELL SERVICES  
Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

Stimulating Company STINGRAY  
Address 66680 EXECUTIVE DRIVE City ST CLAIRSVILLE State OH Zip 43950

Please insert additional pages as applicable.

Completed by ELIZABETH GEE Telephone 832-796-7632  
Signature  Title STAFF REGULATORY ANALYST Date 08/15/2018

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

09/07/2018



**MARK HICKMAN OHI 6H  
ATTACHMENT 2  
STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	5/6/2018	97.2	7,788	5,225	3,856	280,440	6,460	0
2	5/7/2018	99.7	7,975	5,969	4,011	282,980	5,150	0
3	5/7/2018	92.5	7,877	7,555	4,192	284,000	4,992	0
4	5/7/2018	96.8	8,272	6,730	4,310	280,740	4,780	0
5	5/8/2018	97.8	7,988	6,019	4,247	281,740	4,729	0
6	5/8/2018	94.9	8,122	7,514	4,288	279,840	4,666	0
7	5/8/2018	93.7	7,919	7,359	4,256	279,360	4,421	0
8	5/8/2018	98.5	7,944	4,975	4,104	278,760	4,700	0
9	5/9/2018	98.7	7,768	4,910	4,301	280,420	4,676	0
10	5/9/2018	93	7,990	7,354	4,349	274,680	4,348	0
11	5/9/2018	97	7,832	5,986	4,482	280,140	4,685	0
12	5/9/2018	99	8,015	6,330	4,438	279,800	4,962	0
13	5/10/2018	96.2	7,873	6,463	4,281	280,400	4,488	0
14	5/10/2018	95.2	8,205	6,110	4,667	280,660	4,466	0
15	5/10/2018	97.3	8,132	6,267	4,865	280,240	5,465	0
16	5/10/2018	97.3	7,996	5,627	4,937	279,640	6,073	0
17	5/11/2018	94	7,753	5,885	4,474	280,680	4,714	0
18	5/11/2018	96.7	7,809	6,007	4,408	271,340	4,454	0
19	5/11/2018	94.8	7,979	2,952	4,272	280,000	4,459	0
20	5/11/2018	99.2	7,556	4,716	4,275	282,950	4,465	0
21	5/11/2018	95.8	7,555	5,191	4,237	279,800	4,410	0
22	5/13/2018	78	7,869	5,339	4,186	279,040	5,113	0
23	5/13/2018	97.2	7,870	5,134	4,119	276,000	4,379	0
24	5/13/2018	95.2	7,661	5,616	4,215	267,680	4,285	0
25	5/14/2018	97.9	7,532	6,578	4,350	272,820	4,422	0
26	5/14/2018	98.1	7,488	6,827	4,196	276,570	4,398	0
27	5/14/2018	96.1	7,618	5,422	4,372	280,340	4,309	0
28	5/14/2018	98.8	7,529	6,842	4,340	277,200	4,264	0
29	5/15/2018	99.9	7,697	5,747	4,400	281,720	4,330	0
30	5/15/2018	98.2	7,571	5,262	4,500	287,340	4,424	0
31	5/15/2018	98	7,295	5,489	4,261	275,900	4,260	0
32	5/15/2018	96.4	7,903	5,358	4,612	272,240	4,170	0
33	5/15/2018	98.5	7,675	5,970	4,170	272,740	4,093	0
34	5/15/2018	99.5	7,593	5,793	4,300	281,540	4,244	0
35	5/16/2018	100.6	7,743	5,972	4,342	281,150	4,262	0
36	5/16/2018	97.2	7,156	6,311	4,370	278,020	4,281	0
37	5/16/2018	97.8	7,785	4,966	4,389	269,820	4,175	0
38	5/16/2018	99.1	7,410	5,686	4,330	280,940	4,117	0
39	5/17/2018	99.5	7,664	5,252	4,340	281,140	3,966	0
40	5/17/2018	100.2	7,157	6,009	4,398	281,480	4,148	0
41	5/17/2018	90.5	7,637	5,673	4,392	280,800	4,625	0
42	5/17/2018	99.3	7,018	5,422	4,210	279,520	4,057	0
43	5/17/2018	99.3	7,366	5,425	4,245	280,100	3,950	0
44	5/18/2018	98.4	7,294	5,945	4,420	280,080	4,154	0
45	5/18/2018	99	6,832	3,444	4,487	279,880	4,174	0
46	5/18/2018	99.1	7,035	5,772	4,330	280,720	4,101	0

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**MARK HICKMAN OHI 6H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	4/27/2018	13,513	13,414	36
2	5/7/2018	13,380	13,273	42
3	5/7/2018	13,234	13,133	42
4	5/7/2018	13,100	12,993	42
5	5/8/2018	12,960	12,860	42
6	5/8/2018	12,820	12,713	42
7	5/8/2018	12,680	12,573	42
8	5/8/2018	12,540	12,433	42
9	5/9/2018	12,400	12,298	42
10	5/9/2018	12,260	12,153	42
11	5/9/2018	12,118	12,013	42
12	5/9/2018	11,980	11,873	42
13	5/10/2018	11,840	11,738	42
14	5/10/2018	11,700	11,593	42
15	5/10/2018	11,558	11,453	42
16	5/10/2018	11,420	11,313	42
17	5/11/2018	11,280	11,179	42
18	5/11/2018	11,140	11,033	42
19	5/11/2018	10,996	10,893	42
20	5/11/2018	10,860	10,753	42
21	5/11/2018	10,720	10,609	42
22	5/12/2018	10,580	10,473	42
23	5/13/2018	10,438	10,338	42
24	5/13/2018	10,300	10,193	42
25	5/13/2018	10,157	10,053	42
26	5/14/2018	10,020	9,913	42
27	5/14/2018	9,880	9,777	42
28	5/14/2018	9,740	9,633	42
29	5/14/2018	9,603	9,493	42
30	5/15/2018	9,460	9,353	42
31	5/15/2018	9,320	9,213	42
32	5/15/2018	9,180	9,073	42
33	5/15/2018	9,040	8,933	42
34	5/15/2018	8,894	8,793	42
35	5/16/2018	8,760	8,653	42
36	5/16/2018	8,620	8,519	42
37	5/16/2018	8,480	8,373	42
38	5/16/2018	8,335	8,233	42
39	5/17/2018	8,200	8,093	42
40	5/17/2018	8,060	7,956	42
41	5/17/2018	7,920	7,811	42
42	5/17/2018	7,780	7,673	42

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MARK HICKMAN OHI 6H  
ATTACHMENT 1  
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	5/17/2018	7,640	7,533	42
44	5/18/2018	7,496	7,393	42
45	5/18/2018	7,360	7,253	42
46	5/18/2018	7,220	7,113	42

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ATTACHMENT 3

Well Name: Mark Hickman OHI 6H

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	564.00	564.00	
Top of Salt Water	919.00	919.00	NA	NA	
Pittsburgh Coal	714.00	714.00	727.00	727.00	
Pottsville (ss)	NA	NA	NA	NA	
Mauch Chunk (shale)	NA	NA	NA	NA	
Raven Cliff (ss)	NA	NA	NA	NA	
Maxton (ss)	NA	NA	NA	NA	
Greenbriar (ls)	NA	NA	NA	NA	
Big Injun (ss)	1951.00	1951.00	2496.00	2467.00	
Berea (siltstone)	2496.00	2467.00	2545.00	2515.00	
Rhinestreet (shale)	6088.00	6005.00	6411.00	6300.00	
Cashaqua (shale)	6431.00	6317.00	6525.00	6394.00	
Middlesex (shale)	6525.00	6394.00	6644.00	6481.00	
Burket (shale)	6644.00	6481.00	6677.00	6503.00	
Tully (ls)	6677.00	6503.00	6726.00	6533.00	
Mahantango (shale)	6726.00	6533.00	7039.00	6670.00	
Marcellus (shale)	7039.00	6670.00	NA	NA	GAS

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/6/2018
Job End Date:	5/18/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00249-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mark Hickman OHI 6H
Latitude:	40.03981300
Longitude:	-80.54744100
Datum:	NAD27
Federal Well:	YES
Indian Well:	NO
True Vertical Depth:	6,736
Total Base Water Volume (gal):	8,637,512
Total Base Non Water Volume:	0

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## 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
Water	Southwestern Energy	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.28479	None
Sand (40/70 Proppant)	US Silica	Proppant	Silica Substrate	14808-60-7	100.00000	8.76924	None
Sand (100 Mesh Proppant)	US Silica	Proppant	Silica Substrate	14808-60-7	100.00000	6.23713	None
Hydrochloric Acid (28%)	Solvay	Acidizing	Water	7732-18-5	64.00000	0.38360	None
Plexslick 957	Solvay	Friction Reducer	Hydrochloric Acid (Hydrogen Chloride)	7732-18-5	36.00000	0.21578	None
			Water	7732-18-5	75.00000	0.06150	None
			Petroleum Distillate	64742-47-8	20.00000	0.01640	None
			Ammonium Chloride ((NH4)Cl)	12125-02-9	2.00000	0.00164	None
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00123	None
			Alcohols, C14-15, ethoxylated	68551-12-2	1.50000	0.00123	None
BIOC11219A	Nalco	Biocide					

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NEFE-180	Solvay	Corrosion Inhibitor/Iron Control	Methanol	57-56-1	60.00000	0.01119	None
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium	58424-85-1	30.00000	0.00560	None
			Glutaraldehyde	111-30-8	10.00000	0.00187	None
			Acetic acid	64-19-7	89.00000	0.00331	None
			Methanol	67-56-1	40.00000	0.00149	None
			2-Ethylhexanol	104-76-7	10.00000	0.00037	None
			Coconut oil acid diethanolamine	58603-42-9	5.00000	0.00019	None
			Fatty acids, tall oil	51790-12-3	5.00000	0.00019	None
			2-Propyn-1-ol	107-19-7	5.00000	0.00019	None
			Alcohols, C14-15, ethoxylated	58951-67-7	5.00000	0.00019	None
SCAL16486A	Naico	Scale Inhibitor	Amine Triphosphate	Proprietary	30.00000	0.00153	None
			Ethylene Glycol	107-21-1	30.00000	0.00153	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	64.00000	0.38360	
			Water	7732-18-5	75.00000	0.06150	
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium	58424-85-1	30.00000	0.00560	
			Glutaraldehyde	111-30-8	10.00000	0.00187	
			Ammonium Chloride ((NH4)Cl)	12125-02-9	2.00000	0.00164	
			Ethylene Glycol	107-21-1	30.00000	0.00153	
			Methanol	67-56-1	40.00000	0.00149	
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00123	
			Alcohols, C14-15, ethoxylated	58551-12-2	1.50000	0.00123	
			2-Ethylhexanol	104-76-7	10.00000	0.00037	
			Fatty acids, tall oil	51790-12-3	5.00000	0.00019	
			2-Propyn-1-ol	107-19-7	5.00000	0.00019	
			Alcohols, C14-15, ethoxylated	58951-67-7	5.00000	0.00019	
			Coconut oil acid diethanolamine	58603-42-9	5.00000	0.00019	

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

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)

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THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

NOTES ON SURVEY

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

Latitude: 40°02'30"

BHL 11,127'

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

**SURFACE HOLE LOCATION (SHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,432,274.175  
EASTING: 538,607.926

**LANDING POINT (LPL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,431,899.456  
EASTING: 538,473.022

**BOTTOM HOLE LOCATION (BHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,430,210.975  
EASTING: 539,278.097

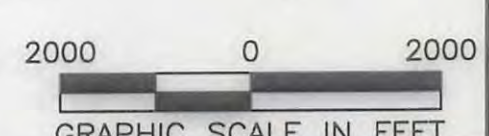
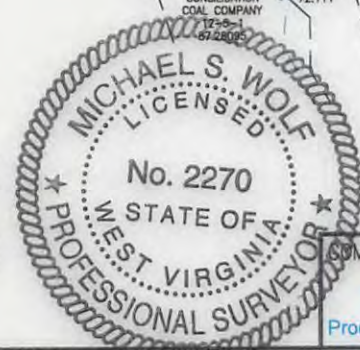
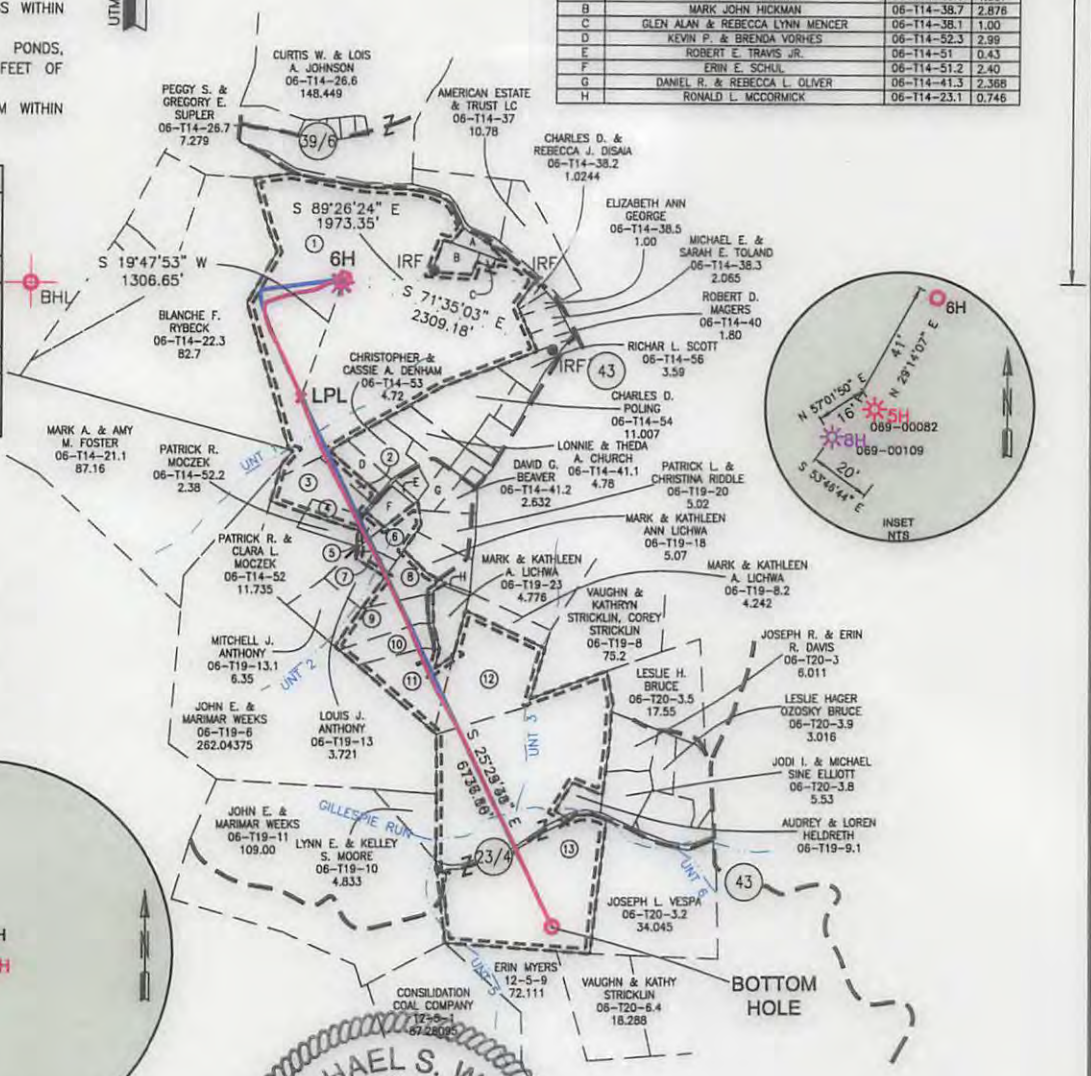
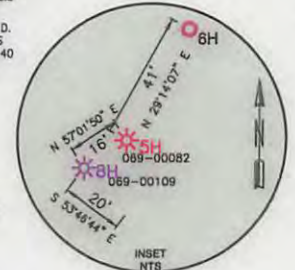
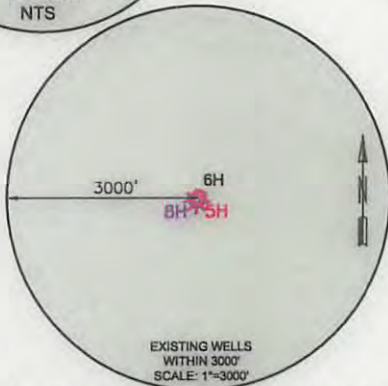
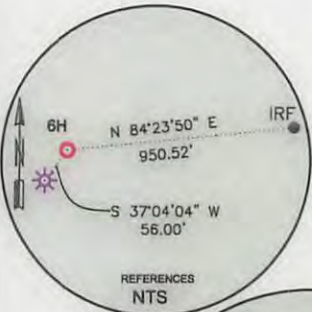
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	CECIL L., LAWRENCE G., JOHN M. & CAROL S. HICKMAN	06-T14-38	143.53
2	KEVIN P. & BRENDA VORHES	06-T14-52.4	2.00
3	ERIN E. SCHUL	06-T14-52.5	7.256
4	PRESTON R. MOCZEK	06-T14-52.1	2.051
5	ERIN E. SCHUL	06-T14-51.1	1.03
6	CHRISTOPHER D. STRAIT	06-T19-13.3	4.176
7	JEREMY L. DVORCEK	06-T19-13.2	6.06
8	DAVID E. YAHN	06-T19-21	5.05
9	MARK F. & KATHLEEN A. LICHWA	06-T19-19	5.00
10	MARK F. LICHWA	06-T19-22	5.00
11	KATHLEEN A. LICHWA	06-T19-24	10.00
12	MARK & KATHY LICHWA	06-T19-8.1	19.65
13	HERBERT & ALICE SHARP	06-T19-9	101.555

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	MARK JOHN HICKMAN	06-T14-38.6	1.597
B	MARK JOHN HICKMAN	06-T14-38.7	2.878
C	GLEN ALAN & REBECCA LYNN MENCER	06-T14-38.1	1.00
D	KEVIN P. & BRENDA VORHES	06-T14-52.3	2.99
E	ROBERT E. TRAVIS JR.	06-T14-51	0.43
F	ERIN E. SCHUL	06-T14-51.2	2.40
G	DANIEL R. & REBECCA L. OLIVER	06-T14-41.3	2.368
H	RONALD L. MCDORMICK	06-T14-23.1	0.746

**SURFACE HOLE LOCATION (SHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,432,274.182  
EASTING: 538,607.918

**LANDING POINT (LPL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,432,073.477  
EASTING: 538,393.030

**BOTTOM HOLE LOCATION (BHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,430,208.021  
EASTING: 539,280.015



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. 2270 *M.S. Wolf 7/27/18*

COMPANY: **SWN** Production Company, LLC

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SURVEY GRADE GPS SOURCE OF ELEVATION: (NAVD 88, US FT)

OPERATOR'S WELL #: 6H

API WELL #: 47 69 00249

STATE COUNTY PERMIT

WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW

WATERSHED: WHEELING CREEK ELEVATION: 1281.8'

DISTRICT: TRIADDELPHIA COUNTY: OHIO QUADRANGLE: VALLEY GROVE

SURFACE OWNER: LAWRENCE G., JOHN M. & CAROL S. HICKMAN ACREAGE: ± 143.53

OIL & GAS ROYALTY OWNER: CECIL LEE HICKMAN, JOHN MARK HICKMAN, LAWRENCE GRANT HICKMAN, CAROL SUE (CRISWELL) HICKMAN ACREAGE: ± 312.358

DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,770' TO 13,569'

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITANNY WOODY

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL\* LANDING POINT LOCATION
- EXISTING WATER WELL
- EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- PROPOSED PATH
- AS-DRILLED PATH

REVISIONS:

DATE: 07-25-2018

DRAWN BY: K. POTH

SCALE: 1" = 2000'

DRAWING NO: 050-5494

WELL LOCATION PLAT



# ELK LAKE SERVICES, LLC



280 Indian Springs Road,  
Suite 123 Indiana, PA 15701  
Phone: (724) 463-7303

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	LOUIS COTTRELL, JR. AS TRUSTEE FOR MASON LOUIS COTTRELL TRUST (S/R)	6-T3-1.1	37.475
TRACT	SURFACE OWNER (S)	TAX PARCEL	ACRES
2	ELWOOD FRED., JR. & CHRISTINE ANN RICHTER	6-T3-4.1	26.61
3	JAMES C. GOMBERS	6-T3-4.2	47.81
4	GARY E. & DEBORAH A. MARSHALL	6-T8-2.1	88.00
5	MILDRED ELAINE BOREMAN	6-T3-4	6.575
6	GARY E. & DEBORAH A. MARSHALL	6-T8-3.15	54.104
7	LD REALTY, INC.	6-T8-3.6	4.394
8	CB PROPERTIES, LLC	6-T8-3.8	2.195
9	LD REALTY, INC.	6-T8-3	8.658
10	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	SR 40	UNK
11	PHK, LLC	6-T8-3.11	0.506
12	PHK, LLC	6-T8-55	0.8
13	PHK, LLC	6-T8-57	0.332
14	THE OHIO COUNTY COMMISSION	6-T8-40	105.37
15	THE OHIO COUNTY DEVELOPMENT AUTHORITY	6-T8-40.11	248.888
16	THE OHIO COUNTY COMMISSION	6-T8-40.61	14.44
17	WALMART REAL ESTATE	6-T8-40.30	21.61
18	THE OHIO COUNTY COMMISSION	6-T8-40.54	3.97
19	THE OHIO COUNTY COMMISSION	6-T8-40.67	2.6
20	THE OHIO COUNTY COMMISSION	6-T8-40.55	1.34
21	FCPT RESTAURANT PROPERTIES, LLC	6-T8-40.46	1.68
22	THE OHIO COUNTY COMMISSION	6-T8-40.41	7.45
23	THE OHIO COUNTY COMMISSION	6-T8-40.40	26.34
24	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	I-70	UNK
25	GREGORY R. & MARY REBECCA GANTZER	6-T13-7	66.03
26	GEORGE E., III & PATRICIA J. GANTZER	6-T13-27	16.288
27	GREGORY R. & MARY REBECCA GANTZER	6-T13-7.3	2.8
28	RUSSELL F. GANTZER	6-T13-7.4	2.8
29	GEORGE E. GANTZER, III & GREGORY R. GANTZER	6-T13-8	27.66
30	GEORGE E., III & PATRICIA J. GANTZER	6-T13-9	77.625
31	JOHN M & ROBYN R REIHNER & STEPHEN REIHNER	6-T13-15	96.955
32	FRANK J. RODAK	6-T13-14	102.28

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	MELVIN W. KAHLE JR.	6-T2-35	15.22
B	MELVIN W. KAHLE JR.	6-T2-36	28.47
C	CHARLES R., III & MELISSA R. OCH	6-T8-1	26.34
D	MELVIN W., JR. & CAROL M. KAHLE	6-T7-170	84.99
E	CHAS M. SLEDD COMPANY	6-TW7-1.1	2.96
F	FRANCIS A. & DAISY M. RIGGS	4-T8E-3	4.35
G	FRANCIS A. & DAISY M. RIGGS	4-T8E-2	2.46
H	H3 LLC	6-T8E-1	1.79
I	RANDY ROBERTS	6-T8E-15	0.93
J	HAROLD A. GAMES	6-T8E-24	0.26
K	JO ANN T. DANHART	6-T8-3.1	0.32
L	JAMES EDWARD MINTER, ET AL	6-T8-3.10	0.27
M	BARNETT E. & LAURIE L. BECK	6-T8-3.7	0.64
N	MPX INCORPORATED	6-T8-3.5	0.48
O	OHIO VALLEY BAPTIST CHURCH	6-T8-3.4	0.28
P	CONTRACT DEVELOPMENT INC	6-T8-51	0.69
Q	CONTRACT DEVELOPMENT INC	6-T8-57.1	0.74
R	BETTY WOODS NUTTING	6-T8-40.10	10.08
S	MICHAEL E. & LEROY RICHARDS	6-T8-41.2	12.44
T	MARCIA KIRKLAND	6-T8-41.1	12.89
U	CHRISTOPHER & ALYCE F. PAGANO	6-T8-62	4.95
V	THOMAS J. HOWARD	6-T8-42	11.34
W	OHIO COUNTY DEVELOPMENT	6-T8-40.5	117.74
X	OHIO COUNTY DEVELOPMENT	6-T8-40.45	59.94
Y	OHIO COUNTY COMMISSION	7-TW10-1	106.51
Z	L'SHEM SHOMAYIM CONGREGATION	7-TW12-13	13.19
AA	DAVID A. OBRIEN	6-T13-3.1	21.47
BB	WEST VIRGINIA ECONOMIC	6-T8-40.57	32.84
CC	MENARD INC.	6-T8-40.69	15.57
DD	OHIO COUNTY DEVELOPMENT AUTHORITY	6-T8-40.70	0.92
EE	GEORGE E. GANTZER III	6-T13-6.2	80.42
FF	GEORGE E., III & PATRICIA J. GANTZER & GEORGE E. GANTZER IV	6-T13-6	77.51
GG	DAVID D. & RICH H. FITZSIMMONS	6-T13-5.3	74.9
II	LAWRENCE JOSEPH & JOAN MARIE GRIBBEN	6-T13-10.2	8.99
JJ	WILLIAM J. & DARLENE E. Verno	6-T13-10.14	0.49
KK	CHRISTOPHER WEST	6-T13-10.9	7.45
LL	MICHAEL A. GIBSON	6-T13-10	62.31
MM	KRISTOPHER & KRISTI TARRANT	06-T13-17	15.4
NN	DRIANNA DAWN RODAK	6-T13-14.2	8.37
OO	WILLIAM & MARY J. LANGMYER	6-T13-14.1	3.69
PP	WILLIAM & MARY J. LANGMYER	6-T13-17.2	20.89
QQ	DEBORAH ANN & SETH COLLIN CRAIG	6-T13-16	91.88
RR	THOMAS D. REIHNER	6-T13-15.1	2.08
SS	JONATHAN P. DUGGAN & JAMES P. DUGGAN	6-T8-46	71.63
TT	GEORGE E. GANTZER III	6-T8-49	21.41
UU	OHIO COUNTY DEVELOPMENT	6-T8-40.13	5.14
VV	TARGET CORPORATION	6-T8-40.32	12.47
WW	OHIO COUNTY DEVELOPMENT	6-T8-40.18	2.92
XX	NICHOLAS & PATRINOS PROP LLC	6-T8-40.49	1.38

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
YY	OHIO COUNTY DEVELOPMENT	6-T8-40.48	2.0
ZZ	LOGANS ROADHOUSE INC	6-T8-40.65	1.06
AB	WENDY'S EASTERN MGT GROUP INC	6-T8-40.37	1.06
AC	McDONALDS USA LLC	6-T8-40.36	1.2
AD	BOB EVANS FARMS	6-T8-40.33	1.6
AE	GREER LAND CO-CHEDDAR'S	6-T8-40.39	2.29
AF	CENTURY HOSPITALITY	6-T8-40.68	0.46
AG	OHIO COUNTY DEVELOPMENT	6-T8-40.20	6.45
AH	GAIL W. KAHLE	6-T8-38	20.49
AI	PHK LLC	6-T8-58	3.27
AJ	L D REALTY INC	6-T8-58.1	1.06
AK	PHK LLC	6-T8-59	0.58
AL	PHK LLC	6-T8-3.13	0.43
AM	L D REALTY INC	6-T8-3.12	0.62
AN	PHK LLC	6-T8-3.14	0.44
AO	RAYMOND E. CROW	6-T8-7	111.19
AP	JAMES H. & NORMA L. LUCAS	6-T8-6.3	0.49
AQ	L D REALTY INC	6-T8-3.9	1.83
AR	CHARLES E. & THERESA NORMAN	6-T8-6.2	0.44
AS	CHARLES R. & ML CUNNINGHAM	6-T8-3.2	0.99
AT	JASON A. AND NICOLE D. MARSHALL	6-T8-6.5	36.29
AU	THOMAS O. & M.E. BOREMAN	6-T8-6	6.49
AV	LOIS J. SHORES	6-T8-5	4.21
AW	RAYMOND E. CROW	6-T8-7	143.00
AX	PAUL R. & JOYCE A. SCOTT	6-T3-3	107.17
AY	MATTHEW B. & AMBER L. HINES	6-T3-2	6.91
AZ	RAYMOND J. RAINES	6-T3-2.1	0.83
BA	RAYMOND J. RAINES	6-T3-2.2	1.0
BC	WALTER R. PAUL JR & WALTER R. PAUL SR	6-T3-29	0.29
BD	WALTER R. PAUL JR & WALTER R. PAUL SR	6-T3-30	0.61
BE	C. & RACHEL D. GROVER	6-T2-32	18.13
BF	RSV WHEELING LLC	6-T8-40.58	2.96
BG	KOHL'S	6-T8-40.42	6.3
BH	MARQUEE CINEMA-WV INC	6-T8-40.53	4.99
BI	TOWN CENTER	6-T8-40.52	13.0
BJ	WEST LIBERTY UNIVERSITY	6-T8-40.60	1.91
BK	CENTURY TCS LLC	6-T8-40.71	2.00
BL	ALCADAN LLC	6-T8-40.47	1.97
BM	OHIO COUNTY DEVELOPMENT	6-T8-40.26	3.01
BN	OHIO COUNTY DEVELOPMENT	6-T8-40.27	4.01
BO	OHIO COUNTY DEVELOPMENT	6-T8-40.28	7.02
BP	RUSSELL GANTZER	6-T13-7.2	2.22
BQ	WILLIAM A. ISALY JR.	6-T13-7.1	3.02
BR	LOUIS COTTRELL, JR.	6-T3-1.2	2.5
BS	MARY A. DICKEY	6-T7-171	99.95
BT	BETTY WOODS NUTTING	6-T8-40.62	4.925
BU	OHIO COUNTY DEVELOPMENT AUTHORITY	6-T8-40.75	0.53
BV	OHIO COUNTY DEVELOPMENT AUTHORITY	6-T8-40.44	0.46
BW	KERRY A. & LARAW J. MARSHALL	6-T8-2.3	1.21
BX	KERRY A. & LARAW J. MARSHALL	6-T8-2.4	0.30
BY	JOSHUA A. & JENNIFER A. MARSHALL	6-T8-2.2	1.91

09/07/2018

REVISIONS:	COMPANY:	 	
	OPERATOR'S	MASON COTTRELL OHI	
	WELL #:	10H	
	DISTRICT:	COUNTY:	STATE:
	TRIADELPHIA	OHIO COUNTY	WV
			DATE: 7/26/2018
			FILE NO: 16-53
			DRAWN BY: JMB
			SCALE: N/A
			DRAWING NO: 1
			WELL LOCATION PLAT 1