

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

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Office of Oil and Gas

JAN 29 2021

WV Department of  
Environmental Protection

API 47 - 069 - 00322 County OHIO District RICHLAND  
Quad TILTONSVILLE, OH-WV Pad Name FRANZ THOMAN-OHI-PAD1 Field/Pool Name PANHANDLE FIELD WET  
Farm name FRANZ THOMAN Well Number FRANZ THOMAN OHI 405H  
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 4,442,979.77 Easting 528,976.49  
Landing Point of Curve Northing 4,443,596.57 Easting 529,477.66  
Bottom Hole Northing 4,448,695.01 Easting 527,948.02

Elevation (ft) 1137.3' 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 2/19/2020 Date drilling commenced 02/28/2020 Date drilling ceased 03/15/2020  
Date completion activities began 9/14/2020 Date completion activities ceased 11/05/2020  
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 326' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 473' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 344' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

B.S.  
09/10/2021

WR-35  
Rev. 8/23/13

API 47-069 - 00322

Farm name **FRANZ THOMAN**

Well number **FRANZ THOMAN OHI 405H**

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	418	NEW	J-55/54.50#		Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1,747	NEW	J-55/36#		Y; 31 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	24,383	NEW	P-110/20#		Y
Tubing		2.875	6,791	NEW	P-110/6.5#		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	562	15.60	1.19	668.78	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	675	15.60	1.19	803.25	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	4,825	15.60	1.19	5,741.75	SURFACE	24
Tubing							

Drillers TD (ft) 24,383'

Loggers TD (ft) 24,383'

Deepest formation penetrated MARCELLUS

Plug back to (ft) N/A

Plug back procedure N/A

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Kick off depth (ft) 5,720'

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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 \_\_\_\_\_

09/10/2021





FRANZ THOMAN OHI 405H  
ATTACHMENT 1  
PERF REPORT

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STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	8/2/2020	24,337	24,243	36
2	9/15/2020	24,209	24,031	36
3	9/16/2020	23,998	23,820	36
4	9/16/2020	23,786	23,608	36
5	9/17/2020	23,575	23,397	36
6	9/17/2020	23,364	23,186	36
7	9/18/2020	23,153	22,975	36
8	9/18/2020	22,941	22,763	36
9	9/19/2020	22,730	22,552	36
10	9/19/2020	22,519	22,341	36
11	9/20/2020	22,308	22,130	36
12	9/20/2020	22,096	21,918	36
13	9/22/2020	21,885	21,707	36
14	9/22/2020	21,674	21,496	36
15	9/23/2020	21,463	21,285	36
16	9/23/2020	21,251	21,077	36
17	9/24/2020	21,040	20,862	36
18	9/24/2020	20,817	20,651	36
19	9/25/2020	20,618	20,440	36
20	9/25/2020	20,406	20,228	36
21	9/25/2020	20,195	20,017	36
22	9/26/2020	19,984	19,806	36
23	9/26/2020	19,773	19,594	36
24	9/26/2020	19,561	19,383	36
25	9/27/2020	19,350	19,172	36
26	9/28/2020	19,139	18,961	36
27	9/28/2020	18,925	18,749	36
28	9/28/2020	18,716	18,538	36
29	9/29/2020	18,505	18,327	36
30	9/29/2020	18,294	18,116	36
31	9/29/2020	18,082	17,904	36
32	9/30/2020	17,871	17,693	36
33	9/30/2020	17,660	17,482	36
34	9/30/2020	17,447	17,271	36
35	9/30/2020	17,237	17,059	36
36	10/1/2020	17,026	16,848	36
37	10/1/2020	16,815	16,637	36
38	10/1/2020	16,600	16,430	36
39	10/2/2020	16,392	16,214	36
40	10/2/2020	16,181	16,003	36
41	10/2/2020	15,970	15,795	36
42	10/2/2020	15,759	15,581	36
43	10/3/2020	15,544	15,369	36

Environment  
Department of Protection



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STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STAGE	WV Department of Environmental Protection
44	10/3/2020	15,336	15,158	36	
45	10/4/2020	15,125	14,950	36	
46	10/4/2020	14,914	14,733	36	
47	10/4/2020	14,704	14,524	36	
48	10/5/2020	14,491	14,313	36	
49	10/5/2020	14,279	14,102	36	
50	10/6/2020	14,069	13,890	36	
51	10/6/2020	13,857	13,675	36	
52	10/7/2020	13,648	13,468	36	
53	10/7/2020	13,435	13,257	36	
54	10/7/2020	13,223	13,045	36	
55	10/8/2020	13,012	12,834	36	
56	10/8/2020	12,801	12,623	36	
57	10/8/2020	12,590	12,412	36	
58	10/9/2020	12,378	12,200	36	
59	10/9/2020	12,167	11,987	36	
60	10/10/2020	11,958	11,778	36	
61	10/10/2020	11,745	11,567	36	
62	10/10/2020	11,533	11,355	36	
63	10/11/2020	11,322	11,144	60	
64	10/11/2020	11,111	10,933	36	
65	10/12/2020	10,900	10,720	36	
66	10/12/2020	10,688	10,510	36	
67	10/12/2020	10,477	10,299	36	
68	10/13/2020	10,266	10,088	36	
69	10/13/2020	10,055	9,877	36	
70	10/14/2020	9,843	9,665	36	
71	10/14/2020	9,632	9,454	36	
72	10/15/2020	9,421	9,243	36	
73	10/15/2020	9,210	9,031	36	
74	10/15/2020	8,998	8,823	36	
75	10/16/2020	8,787	8,609	36	
76	10/16/2020	8,576	8,398	36	
77	10/17/2020	8,365	8,190	36	
78	10/17/2020	8,153	7,975	36	
79	10/17/2020	7,942	7,764	36	
80	10/18/2020	7,731	7,553	36	
81	10/18/2020	7,519	7,341	36	
82	10/18/2020	7,308	7,130	36	
83	10/19/2020	7,097	6,919	36	
84	10/19/2020	6,886	6,708	36	

FRANZ THOMAN OHI 405H

ATTACHMENT 2

JAN 29 2021

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lb)	Amount of Water (bbl)	Amount of Nitrogen/other
1	9/15/2020	78	8,280	4,182	4,621	218,300	64,443	0
2	9/16/2020	81.6	8,263	5,307	4,755	380,480	12,728	0
3	9/16/2020	84.7	7,825	4,789	4,255	348,300	8,472	0
4	9/17/2020	88.5	7,861	4,501	4,654	357,720	9,779	0
5	9/17/2020	86.6	7,796	4,757	4,115	354,940	8,722	0
6	9/18/2020	89.9	8,195	5,491	4,433	356,040	8,875	0
7	9/18/2020	88.6	8,097	4,985	4,122	350,520	8,603	0
8	9/18/2020	93.1	8,398	5,480	4,385	344,280	8,448	0
9	9/19/2020	90.7	8,243	5,581	4,215	353,600	8,244	0
10	9/19/2020	93.9	8,319	5,812	4,416	353,720	8,986	0
11	9/20/2020	87.5	8,090	5,511	4,021	360,660	8,527	0
12	9/22/2020	90.9	8,067	5,852	4,120	361,180	8,424	0
13	9/22/2020	88.1	8,487	5,468	4,138	361,800	10,330	0
14	9/23/2020	84.9	8,209	4,678	4,184	351,880	11,415	0
15	9/23/2020	89.7	7,842	5,268	4,136	360,080	8,650	0
16	9/23/2020	86.2	8,074	5,121	4,241	355,560	8,607	0
17	9/24/2020	88.7	8,107	5,669	4,243	356,980	8,686	0
18	9/24/2020	90	7,844	5,702	4,183	360,320	8,665	0
19	9/25/2020	96.3	8,330	4,414	4,361	360,560	8,479	0
20	9/25/2020	90.2	8,051	5,721	4,211	358,860	8,370	0
21	9/25/2020	94	8,051	4,915	4,533	355,840	8,642	0
22	9/26/2020	96.3	8,009	5,450	4,839	355,780	8,390	0
23	9/26/2020	90.3	8,038	5,708	4,102	224,240	7,230	0
24	9/26/2020	89.4	7,698	5,721	4,285	355,180	12,169	0
25	9/27/2020	86.1	8,096	5,774	4,690	358,020	8,426	0
26	9/28/2020	90	7,974	5,622	4,126	354,890	8,136	0
27	9/28/2020	91.7	7,995	5,477	4,313	349,620	7,925	0
28	9/28/2020	92.5	8,009	5,650	4,590	357,000	8,298	0
29	9/29/2020	92.7	7,940	5,409	4,218	357,760	8,148	0
30	9/29/2020	89.6	7,745	5,522	4,202	358,100	8,119	0
31	9/29/2020	90.3	7,927	5,152	4,785	357,780	8,384	0
32	9/30/2020	95.9	8,115	5,854	4,832	357,520	8,249	0
33	9/30/2020	98.1	7,952	5,455	4,432	358,060	8,122	0
34	9/30/2020	91.6	8,264	5,726	4,416	358,400	8,241	0
35	10/1/2020	97.5	8,272	5,502	4,448	358,880	8,048	0
36	10/1/2020	96.2	8,107	5,565	4,857	355,520	8,026	0
37	10/1/2020	96.4	7,875	5,538	4,844	349,440	7,817	0
38	10/1/2020	97.3	8,242	5,680	4,489	359,420	7,993	0
39	10/2/2020	92	7,603	5,651	4,581	353,280	7,880	0
40	10/2/2020	99.8	7,778	4,952	5,326	362,200	7,886	0
41	10/2/2020	93	7,562	5,666	4,226	351,960	8,298	0
42	10/3/2020	100	7,574	5,556	4,565	354,240	7,944	0
43	10/3/2020	98	7,788	5,856	4,765	356,740	7,977	0
44	10/3/2020	92.2	8,004	5,738	4,508	357,580	7,896	0
45	10/4/2020	98.5	8,217	5,578	4,279	349,740	7,844	0
46	10/4/2020	99.4	7,590	5,681	4,857	359,200	7,823	0
47	10/5/2020	100	8,103	4,667	4,511	353,520	7,813	0
48	10/5/2020	99	7,464	5,675	4,983	353,500	7,641	0
49	10/5/2020	92.6	7,441	5,607	4,456	355,740	7,689	0
50	10/6/2020	87.6	7,970	4,826	4,317	351,000	8,666	0
51	10/7/2020	91.8	7,743	5,259	4,637	352,480	7,870	0
52	10/7/2020	93.6	7,271	5,596	4,668	354,550	7,714	0
53	10/7/2020	99.2	7,516	5,738	4,470	359,900	7,911	0



**FRANZ THOMAN OHI 405H  
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
54	10/7/2020	97.7	7,723	5,380	4,469	353,700	7,804	0
55	10/8/2020	99	7,840	5,623	4,238	357,480	7,818	0
56	10/8/2020	89	7,103	5,702	4,408	360,060	7,937	0
57	10/9/2020	95.7	7,366	5,785	4,846	353,740	7,385	0
58	10/9/2020	98.2	7,563	5,588	4,323	357,340	7,699	0
59	10/9/2020	94.6	7,055	5,553	4,610	356,420	7,617	0
60	10/10/2020	89.8	6,804	5,763	4,727	353,640	7,477	0
61	10/10/2020	93.1	7,736	5,423	4,575	360,900	7,440	0
62	10/11/2020	94.7	7,644	5,598	4,651	359,320	7,539	0
63	10/11/2020	72	7,465	5,565	4,389	355,020	11,665	0
64	10/11/2020	94.2	7,017	5,362	4,442	360,060	7,739	0
65	10/12/2020	98	7,431	5,633	4,623	357,040	7,606	0
66	10/12/2020	93.1	7,369	5,626	4,356	359,120	7,660	0
67	10/13/2020	93.3	7,503	5,694	4,542	354,580	8,058	0
68	10/13/2020	92.6	7,095	5,581	4,505	353,280	7,690	0
69	10/14/2020	99.2	7,122	5,721	4,481	357,420	7,879	0
70	10/14/2020	95.4	7,153	5,874	4,461	354,740	7,814	0
71	10/14/2020	94	7,145	5,820	4,362	356,760	7,801	0
72	10/15/2020	97.5	7,224	6,121	4,485	353,700	7,752	0
73	10/15/2020	96.4	6,945	5,945	4,320	358,460	8,142	0
74	10/16/2020	78.5	8,092	5,616	4,172	351,740	8,859	0
75	10/16/2020	96.4	7,197	5,285	4,886	355,000	7,969	0
76	10/16/2020	97.5	6,897	5,820	4,288	353,100	7,710	0
77	10/17/2020	98.3	6,661	5,172	4,657	351,240	7,824	0
78	10/17/2020	98.3	6,733	5,702	4,600	365,430	7,957	0
79	10/17/2020	97.8	6,698	5,321	4,176	354,600	7,922	0
80	10/18/2020	98.8	6,847	5,515	4,806	355,620	7,740	0
81	10/18/2020	99.2	6,423	5,452	4,451	357,870	7,905	0
82	10/19/2020	97.9	6,701	5,830	4,350	346,660	7,825	0
83	10/19/2020	98.8	6,624	6,051	4,866	362,600	7,838	0
84	10/19/2020	93.8	6,475	6,300	4,500	360,220	8,010	0

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Well Name: Franz Thoman OHI 405H 47069003220000

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	326.00	326.00	
Top of Salt Water	473.00	473.00	NA	NA	
Pittsburgh Coal	344.00	344.00	349.00	349.00	
Pottsville (ss)	463.00	463.00	824.00	824.00	
Raven Cliff (ss)	824.00	824.00	1111.00	1111.00	
Maxton (ss)	1111.00	1111.00	1430.00	1419.00	
Big Injun (ss)	1430.00	1419.00	5873.00	5318.00	
Rhinestreet (shale)	5873.00	5318.00	6177.00	5572.00	
Cashaqua (shale)	6177.00	5572.00	6241.00	5622.00	
Middlesex (shale)	6241.00	5622.00	6330.00	5685.00	
Burket (shale)	6330.00	5685.00	6356.00	5703.00	
Tully (ls)	6356.00	5703.00	6443.00	5757.00	
Mahantango (shale)	6443.00	5757.00	6624.00	5836.00	
Marcellus (shale)	6624.00	5836.00	NA	NA	GAS

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# Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	9/15/2020
Job End Date:	10/19/2020
State:	West Virginia
County:	Ohio
API Number:	47-069-00322-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	FRANZ THOMAN OHI 405
Latitude:	40.13665065
Longitude:	-80.65985828
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,785
Total Base Water Volume (gal):	31,574,708
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
Base Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.66314	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.18015	







LATITUDE: 40°10'00" SURFACE HOLE (2000' SCALE)

9742'

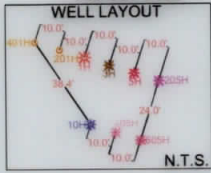
LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)

1451'



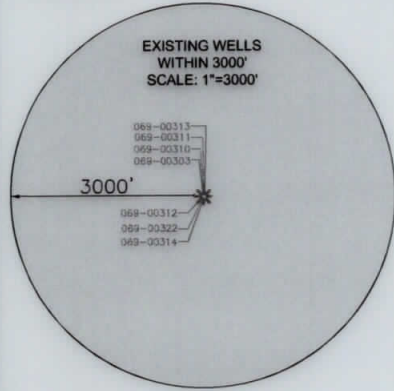
www.jhacompanies.com

68011 Vineyard Road  
St. Clairsville, Ohio 43950  
740-695-6100

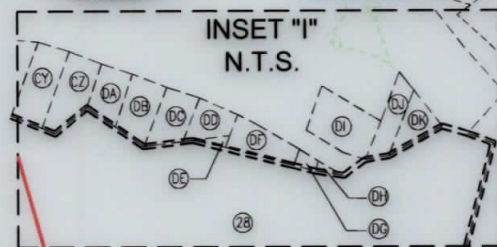


**NOTES ON SURVEY**

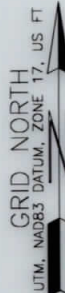
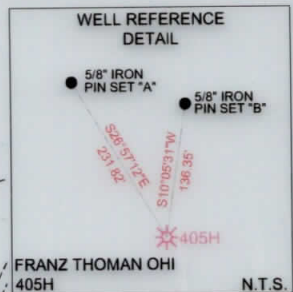
1. COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
3. THIS PLAT DOES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



<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4442979.77 EASTING: 528976.49
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4443596.57 EASTING: 529477.66
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4448695.01 EASTING: 527948.02
<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4442979.73 EASTING: 528976.47
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4443592.62 EASTING: 529466.95
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4448695.46 EASTING: 527949.41



LINE	BEARING	DISTANCE
L1	S56°34'50"E	1135.33'
L2	S80°03'00"E	1393.25'



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. 2041

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

MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE OF SURVEY GRADE GPS ELEVATION: (NAVD 88, US FT)

COMPANY: **SWN** Production Company, LLC **SWN** Production Company™

FRANZ THOMAN OHI  
OPERATOR'S WELL #: 405H  
API WELL #: 47 STATE 069 COUNTY 00322 PERMIT



WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25034

WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW   
 WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,137.3'  
 DISTRICT: RICHLAND COUNTY: OHIO QUADRANGLE: TILTONSVILLE, OH-WV  
 SURFACE OWNER: FRANZ THOMAN ACREAGE: ±69.418  
 OIL & GAS ROYALTY OWNER: FRANZ THOMAN ACREAGE: ±69.418  
 DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORMED BY: 09/10/2021  
 CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) AS-DRILLED  
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,875' TVD 24,383' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508  
 DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

<b>LEGEND:</b>	<b>REVISIONS:</b>	DATE: 06-03-2020
● EXISTING BOTTOM HOLE	— ACCESS ROAD	API NO: 47-069-00322
⊙ EXISTING / PRODUCING WELLHEAD	— PUBLIC ROAD	DRAWN BY: R. GRIMES
LPL EXISTING LANDING POINT LOCATION	— FLOOD PLAN	SCALE: 1" = 3000'
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— LEASE BOUNDARY	DRAWING NO: 2018-781
LPL* PROPOSED LANDING POINT LOCATION	— ASDRILLED PATH	WELL LOCATION PLAT
	— PROPOSED PATH	





WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	FRANZ THOMAN (S)/(R)	04-R8-62.0
TRACT	SURFACE OWNER	TAX PARCEL
2	DALE E. & B.J. KURNER	04-R8Q-12.0
3	STEVEN M. GORBY	04-R8Q-31.0
4	KAREN M. WHEELER	04-R8Q-37.0
5/FM	BRYAN H. & MARTHA A. KRUPINSKI	04-R8Q-50.1
6	DANIEL & SUSAN M. MORGAN	04-R8Q-52.0
7/FI	ROBERT L. RICE, SR. (LIFE ESTATE) & ET AL	04-R8Q-53.1
8/FG	BRENDA M. SELLER	04-R8L-47.0
9	DOROTHY T. LEOS	04-R8L-40.0
10	TUNNEL RIDGE, LLC	04-R8-27.7
11	THOMAS D. KASUNIC	04-R8-28.2
12	DONALD R. & MINNIE JEAN TAYLOR (L/E); KIMBERLY J. KOCHY & TAMI L. TYSK (REMAINDERMEN)	04-R8-28.0
13	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT, III FOUNDATION	04-R8-06.0
14	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT, III FOUNDATION	04-R5-43.0
15	JOHN W. METZ	04-R5-45.11
16	ROBERTA M. & GEORGE B. KORNER	04-R5-45.12
17	JULIE A. KOEHLER	04-R5-45.4
18	JULIE A. KOEHLER	04-R5-45.13
19	S.E.W. TRUST (SHANE E. WOLOSAN, TRUSTEE)	04-R5-09.0
20	ROBERT KUBOVICZ (C/O: UNITED ELECTRIC)	04-R5-08.0
21	CHARLES H. FRYE & ETAL (C/O: DORIS ALTMEYER)	04-R5-06.0
22	GUY D. & LORI R. DONZELLA	04-R2-19.0
23	THOMAS H. & MARGARET A. STENGER	04-R2-06.0
24	WILLIAM S. & LAURA J. DONOHEW	04-R2-6.8
25	PAMELA CHILES & RYAN CHILES	04-R2-16.0
26	PAMELA SUE & RYAN CHILES	04-R2-17.2
27	STATE OF WEST VIRGINIA, DIVISION OF NATURAL RESOURCES	SHORT CREEK
28	DANIEL & JUDITH A. ROEDER	03-B45D-21.0
29	HARRY GALLOWAY, DENZIL SKIDMORE, KATHRYN SKIDMORE, & JANICE LOUGH	03-B45D-29.0
30	BERNARD J. LOMBARD III	03-B45D-30.0
31	BRENDA J. BERRY (L/C BARBARA LONG)	03-B45D-37.0
32	LAMBROS TSUHLARES	03-B40S-16.0

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	SANDSCREST FOUNDATION, INC	04-R11-15.0
B	TUNNEL RIDGE, LLC	04-R8-62.5
C	TUNNEL RIDGE, LLC	04-R8-62.4
D	TUNNEL RIDGE, LLC	04-R8P-14.0
E	SHIRLEY M. WEAVER	04-R8P-02.0
F	TUNNEL RIDGE, LLC	04-R8P-16.0
G	TUNNEL RIDGE, LLC	04-R8P-16.0
H	JOHN M. MCGEE	04-R8P-17.0
I	DONALD P. GAYDA	04-R8P-18.0
J	CHARLES R. BOND	04-R8K-110.0
K	TYLER S. SCHWERTFEGER	04-R8K-111.0
L	TYLER S. SCHWERTFEGER	04-R8K-112.0
M	ELMER K. REED	04-R8K-106.0
N	ELMER K. REED	04-R8K-105.0
O	B.H. BOZENSKE & K.J. O'KELLEY	04-R8K-104.0
P	RAY B. & ANN M. WILSON	04-R8-62.7
Q	ERIC DURELL & CHERYL LYNN RICHARDSON	04-R8-62.6
R	DAVID R. & K. MULDREW	04-R8K-101.0
S	DELORA L. TAYLOR	04-R8K-100.0
T	SUSAN J. SOBOTA	04-R8-62.3
U	JOHN T. WRIGHT	04-R8P-11
V	JACQUELINE MICHELLE SUTTON	04-R8Q-10
W	DAGUE AMY D.	04-R8Q-11.0
X	BETTY ZANE COMMUNITY ASSOCIATION	04-R8Q-34.0
Y/6	ELAINE DANEHART	04-R8Q-36.0
Z/7	JENNIFER FRANCIS	04-R8Q-52.1
AA/B	JOYCE E. DECREASE	04-R8Q-52.2
AB	AUDREY E. IAROSI	04-R8L-44.0
AC/11	HELEN A. MILLER	04-R8L-45.0
AD	CARRIE L. FORRESTER	04-R8L-46.0
AE	ALBERT D. & B.J. ROBRECHT	04-R8L-21.0
AF	ALBERT D. & B.J. ROBRECHT	04-R8L-22.0
AG	MICHAEL L. & P.M. ALLEN	04-R8L-23.0
AH	SILCO, LLC (C/O: ROBINSON RICHARD)	04-R8L-13.0
AI	BONACCI RENTALS, LLC	04-R8L-25.0
AJ	CHAD D. & MELISSA E. LIZON	04-R8L-26.0
AK	WILLIAM S. CALVERT	04-R8L-27.0
AL	WILLIAM S. CALVERT	04-R8L-28.0
AM	THOMAS A. & TRICIA L. GILSON	04-R8L-08.1
AN	ADAM B. & STACEY L. CAMPBELL	04-R8F-03.0
AO	CAROL S. STANTON	04-R8-28.9
AP	CAROL S. RHODES	04-R8-28.8
AQ	GARY E. & V.L. BURKY	04-R8-28.7
AR	JAMES TODD WOLFE & MARY JEANNE WOLFE	04-R8-28.1
AS	JAMES TODD WOLFE & MARY JEANNE WOLFE	04-R8-28.3
AT	KIMBERLY J. & J.P. KOCHY	04-R8-28.10

09/10/2021


REVISIONS:	COMPANY: <b>SWN</b> Production Company, LLC		DATE: 06-03-2020	
	OPERATOR'S: FRANZ THOMAN OHI		API NO: 47-069-00322	
	WELL #: 405H		DRAWN BY: R. GRIMES	
	DISTRICT: RICHLAND	COUNTY: OHIO	STATE: WV	SCALE: N/A
				DRAWING NO: 2018-781
				WELL LOCATION PLAT



ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
AU	JAMES G. & TAMI L. TYSK	04-R8-28.5
AV	BARRY L. & PENNY S. MCCONNELL	04-R8-28.12
AW	BARRY L. & PENNY S. MCCONNELL	04-R8-28.4
AX	BARRY L. & P.S. MCCONNELL	04-R8-29.1
AY	RICHARD, JR. & L.L. CARROLL	04-R8-06.1
AZ	RICHARD, JR. & L.L. CARROLL	04-R8-33.0
BA	JOHN P. & P.J. BARBALEY	04-R8-33.2
BB	WILLIAM F. WENDEL	04-R8-33.1
BC	ALLIANCE RESOURCE GROUP, LLC	04-R8-05.0
BD	ALLIANCE RESOURCE GROUP, LLC	04-R8-03.1
BE	ALLIANCE RESOURCE GROUP, LLC	04-R8-71.0
BF	TUNNEL RIDGE, LLC	04-R5-40.7
BG	ALLIANCE RESOURCE GROUP, LLC	04-R5-42.1
BH	HELEN TAYLOR	04-R5-12.1
BI	HELEN TAYLOR	04-R5-12.0
BJ	HELEN TAYLOR	04-R5-14.0
BK	HUMPHREY D., JR. & T.M. FLICK	04-R5-15.0
BL	DALE A. & JENNIFER VILLANI	04-R5-16.0
BM	DALE A. & JENNIFER A. VILLANI	04-R5-17.1
BN	ROBERT N. & C.L. CONNER	04-R5-17.0
BO	PATRICIA ROUSH	04-R5-18.0
BP	ERVAN D. & NANCY G. TRUBIANO	04-R5-19.0
BQ	BRIAN W. & MELINDA K. SOWIZRAL	04-R5-20.1
BR	DENNIS J. & SHEINA HOSKINS	04-R5-20.4
BS	HAROLD & LINDA COAST	04-R5-02.9
BT	JAMES M. & NANCY L. FRYE	04-R5-02.10
BU	JAMES M. & NANCY L. FRYE	04-R5-06.2
BV	TAMMY & SAM HLEBICZKI	04-R5-06.4
BW	THOMAS H. & MARGARET A. STENGER	04-R5-62.0
BX	THOMAS H. & MARGARET A. STENGER	04-R2-06.1
BY	BARBARA & ROBERT RUSH	04-R2-06.20
BZ	SCOTT & CHRISTINA DENTZ	04-R2-06.21
CA	MATTHEW T. BURKE	04-R2-06.13
CB	MARY E. MIDCAP	04-R2-14.0
CC	TODD PARKER	04-R2-14.2
CD	LEE M. & ASHLEY N. NEIDLER	04-R2-15.0
CE	UNITED STATES OF AMERICA	04-R2-15.1
CF	MANUEL MARKOS, PAUL MARKOS, DEBORAH MCDANIEL, ETAL	03-B45D-31.0
CG	LAMBERT & MARY E. TSUHLARES	03-B45D-36.0
CH	LAMBROS TSUHLARES	03-B45D-35.0
CI	STELLA M. SFAMENOS	03-B45D-34.0
CJ	STELLA SFAMENOS, GOLDIE BASIL, ETAL	03-B45D-33.0
CK	CONNIE & FRANK BIEGA	03-B45D-32.0
CL	STATE OF WEST VIRGINIA, DEPARTMENT OF HIGHWAYS	STATE ROUTE 2
CM	WINDSOR POWERHOUSE COAL COMPANY	03-0B41-21.0
CN	WINDSOR HEIGHTS IMPROVEMENT COMPANY	08-W41J-01.0
CO	WINDSOR HEIGHTS IMPROVEMENT COMPANY	08-W41N-85.0
CP	MANUEL MARKOS, PAUL MARKOS, DEBORAH MCDANIEL	03-B45D-62.0
CQ	CHESTER S. & DIANA M. THOMPSON	03-B45D-59.0
CR	CHESTER S. & DIANA M. THOMPSON	03-B45-58.0
CS	RUSSELL W. MELCHING, ETAL	03-B45D-57.0
CT	KAREN K. TOBER	03-B45D-56.0
CU	KAREN K. TOBER	03-B45D-55.0
CV	KAREN K. TOBER	03-B45D-54.0
CW	JOHN A. BURKHART	03-B45D-53.0
CX	JOHN R. & MARY A. (SELLER) LONG (L/C BARBARA J. LONG)	03-B45D-38.0
CY	HAROLD L. MCCLURE	03-B45D-28.0
CZ	THE BROOKE COUNTY COMMISSION	03-B45D-27.0
DA	ROBERT FORRESTER	03-B45D-26.0
DB	ROBERT FORRESTER	03-B45D-25.0
DC	SHORT CREEK VOLUNTEER FIRE DEPARTMENT, INC	03-B45D-24.0
DD	SHORT CREEK VOLUNTEER FIRE DEPARTMENT, INC	03-B45D-23.0
DE	SHORT CREEK VOLUNTEER FIRE DEPARTMENT, INC	03-B45D-66.0
DF	SHORT CREEK VOLUNTEER FIRE DEPARTMENT, INC	03-B45D-64.0
DG	SAMMY FRAGALE	03-B45D-22.0
DH	SHORT CREEK VOLUNTEER FIRE DEPARTMENT	03-B45D-65.0
DI	BRENDA L. MONTGOMERY F/K/A BRENDA L. MILLER	03-B45D-46.0
DJ	STEPHANIE CARBASHO	03-B45D-47.0
DK	STEPHANIE CARBASHO	03-B45D-48.0
DL	HENRY W. ZEIDLER	04-R2-17.0
DM	SYLVIA A. HAWRANICK	04-R2-18.0
DN	RODNEY & NEDRA C. MCCONNELL	04-R2-9999-9999
DO	GUY D. & LORI R. DONZELLA	04-R5-07.0
DP	GUY D. & LORI R. DONZELLA	04-R5-06.1
DQ	RUSSELL W. MELCHING	04-R5-08.1
DR	MELISSA M. HARWATT	04-R5-08.4
DS	JOHN E. & E.R. HARWATT	04-R5-08.2
DT	RODNEY K. & NANCY MCCONNELL	04-R2-20.0
DU	OHIO COUNTY BOARD OF COMMISSIONERS, AIRPORT AUTHORITY	04-R5-10.0
DV	BURNT MILL ACRES, LLC (C/O: MARK FOSTER)	04-R5-13.0
DW	HOWARD & LESLEY PRINCE	04-R5-48.0
DX	KEVIN T. WOODFORD	04-R5-47.0

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
DY	JOHN W. METZ	04-R5-46.0
DZ	OHIO COUNTY PUBLIC SERVICE DISTRICT	04-R5-45.17
EA	JOHN W. METZ	04-R5-45.2
EB	JOHN W. METZ	04-R5-45.3
EC	JOHN STANLEY & JOHN SHANE WALTERS	04-R5-45.5
ED	MARION S. PAVLIC	04-R5-45.0
EE	EDWARD A. SMITH	04-R5-45.7
EF	TUNNEL RIDGE, LLC	04-R5-45.8
EG	ALLIANCE RESOURCE GROUP, LLC	04-R5-45.6
EH	ALLIANCE RESOURCE GROUP, LLC	04-R5-52.0
EI	ALLIANCE RESOURCE GROUP, LLC	04-R5-53.0
EJ	ANDREW JOHN EVICK	04-R5-54.0
EK	SUSAN L. CAIN	04-R8-08.3
EL	TUNNEL RIDGE, LLC	04-R8-08.2
EM	TUNNEL RIDGE, LLC	04-R8-08.9
EN	OHIO COUNTY COMMISSION	04-R8-08.16
EO	THOMAS & JUDITH K. TYLER	04-R8-08.8
EP	AMERICAN DISPOSAL SERVICES OF WEST VIRGINIA, INC	04-R8-15.0
EQ	LOUIS R. HERCULES & ET AL	04-R8-07.0
ER	DEBRA S. SHEPHERD	04-R8-15.2
ES	STATE OF WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	04-R8-0
ET	CHARLES M. & M.M. MILLER	04-R8-15.3
EU	SUZANNE V. STANLEY	04-R8-23.0
EV	TUNNEL RIDGE, LLC	04-R8-76.0
EW	TUNNEL RIDGE, LLC	04-R8-26.0
EX	TUNNEL RIDGE, LLC	04-R8-15.4
EY	TUNNEL RIDGE, LLC	04-R8-27.6
EZ	TUNNEL RIDGE, LLC	04-R8-21.2
FA	STATE OF WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	04-R8-9999-9999
FB	SUSAN KOGUT & BRADLEY MCGRATH	04-R8-27.5
FC	MARILYN R. BLAKE	04-R8-27.0
FD	JAMES KEVIN CRUPE, SR.	04-R8L-49.0
FE	WAYNE D. & MARY R. THOMAS	04-R8L-41.0
FF	JACOB A. VDOVJAK, III	04-R8Q-68.0
FG	MARY T. BERTELLI & ROGER D. BERTELLI	04-R8Q-65.0
FH	BRIAN N. BARBE	04-R8Q-66.0
FI	BRENDA M. SHELLER	04-R8L-50.0
FJ	ROBERT L. RICE SR (L/E) ETAL	04-R8Q-54.0
FK	PATRICIA CATLETT	04-R8Q-55.0
FL	DESSIE M. HENDRICK, SANDRA HENDRICK & SONYA OLAKO	04-R8Q-47.0
FM	HAROLD & ETHEL MOZENA (L/E) SUZANNE MOZENA	04-R8Q-40.0
FN	HAROLD & ETHEL MOZENA (L/E) SUZANNE MOZENA	04-R8Q-39.0
FO	DONALD W. & AMY K. ELLIOTT	04-R8Q-38.0
FP	ROGER L. MOORE	04-R8Q-30.1
FQ	JOLLY W. WHEELER, JR. & KAREN M. WHEELER	04-R8Q-29.0
FR	JOLLY W. WHEELER, JR. & KAREN M. WHEELER	04-R8Q-14.0
FS	FRANK J. & S.R. TAROVISKY	04-R8Q-28.0
FT	PAULA J. & EDWARD C. TOMASIK	04-R8Q-03.0
FU	RUSSELL E. TERAMANA & ROSEANN TERAMANA	04-R8Q-02.0
FV	RALPH J. & K.L. HUFFMAN	04-R8Q-60.0
FW	CHAD MARTIN	04-R2-06.16
FX	WILLIAM SCOTT & LAURA J. DONOHEW	04-R2-06.11
FY	TODD & PATRICIA STENGER	04-R2-06.23
FZ	PATRICK E. LEPLY	04-R5-08.3
GA	KASMIR MAJEWSKI & EDWARD A. MAJEWSKI	04-R8-62.2
GB	KASMIR MAJEWSKI & EDWARD A. MAJEWSKI	04-R8-62.8

09/10/2021

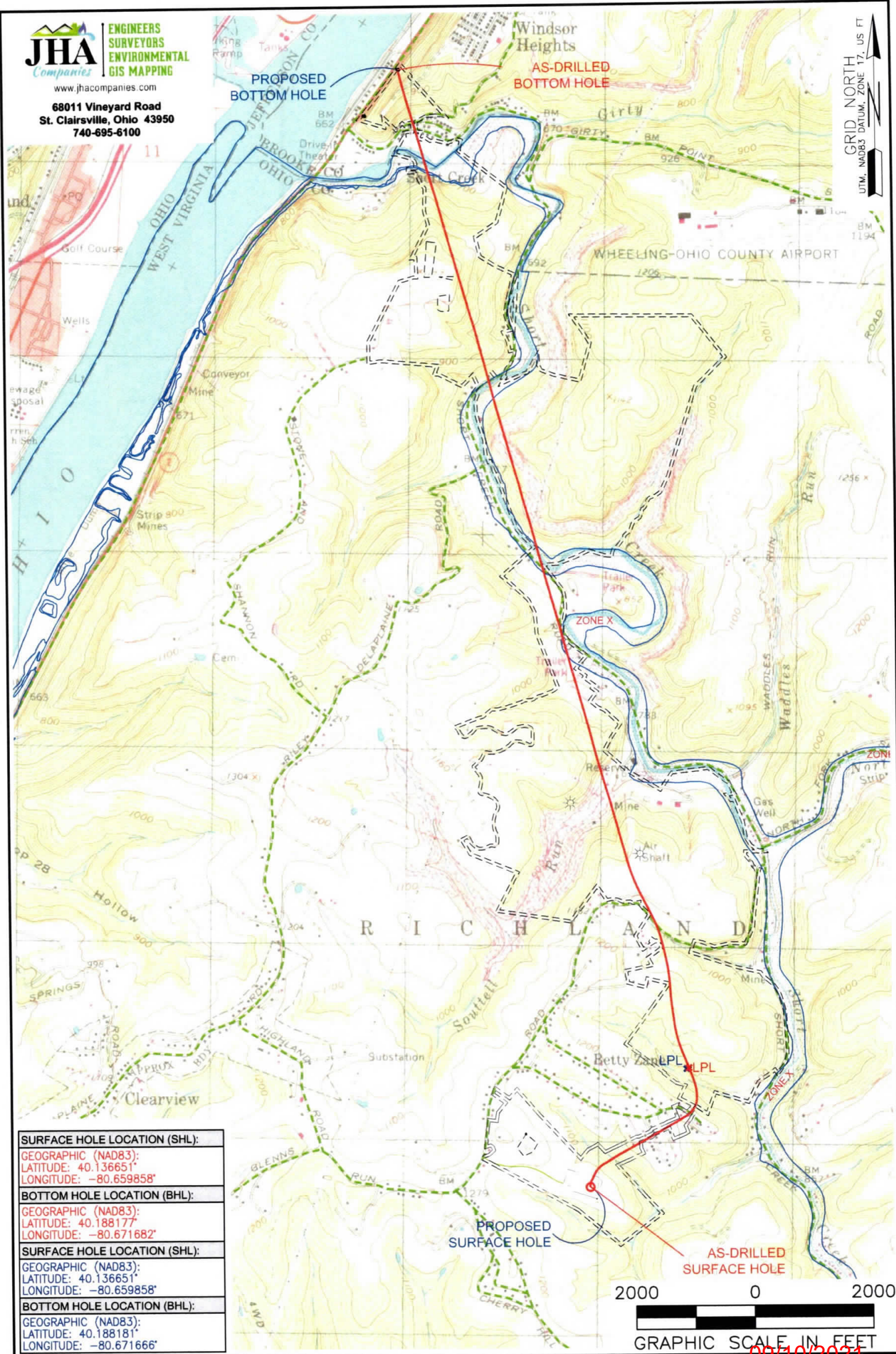
REVISIONS:	COMPANY: 		DATE: 06-03-2020	
	OPERATOR'S: FRANZ THOMAN OHI		API NO: 47-069-00322	
	WELL #: 405H		DRAWN BY: R. GRIMES	
	DISTRICT: RICHLAND	COUNTY: OHIO	STATE: WV	SCALE: N/A
	DRAWING NO: 2018-781			
	WELL LOCATION PLAT			

COMPLETION ID 2501173128  
PAD ID 3001170565





www.jhacompanies.com  
 68011 Vineyard Road  
 St. Clairsville, Ohio 43950  
 740-695-6100



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

<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.136651° LONGITUDE: -80.659858°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.188177° LONGITUDE: -80.671682°
<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.136651° LONGITUDE: -80.659858°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.188181° LONGITUDE: -80.671666°

**NOTES ON SURVEY**  
 1. 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.  
 2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.  
 3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

RECEIVED  
 Office of Oil and Gas  
 JAN 29 2021  
 WV Department of Environmental Protection

**LEGEND:**

○	EXISTING BOTTOM HOLE	—	ACCESS ROAD
⊙	EXISTING / PRODUCING WELLHEAD	—	PUBLIC ROAD
LPL*	EXISTING LANDING POINT LOCATION	—	FLOOD PLAN
○	PROPOSED SURFACE HOLE / BOTTOM HOLE	---	LEASE BOUNDARY
LPL*	PROPOSED LANDING POINT LOCATION	---	ASDRILLED PATH
		---	PROPOSED PATH

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> FRANZ THOMAN OHI	<b>WELL #</b> 405H	<b>SERIAL #</b> XXXX
<b>ADDRESS:</b> 1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN, WV 26508	<b>COUNTY:</b> OHIO	<b>CODE:</b> 069	<b>DISTRICT:</b> RICHLAND
<b>SURFACE OWNER:</b> FRANZ THOMAN	<b>USGS 7 1/2 QUADRANGLE MAP NAME:</b> TILTONVILLE, OH-WV		