

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

API 47-069-00303 County OHIO District RICHLAND  
Quad TILTONSVILLE Pad Name FRANZ THOMAN OHI PAD Field/Pool Name PANDHANDLE  
Farm name FRANZ THOMAN Well Number FRANZ THOMAN OHI 1H  
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 4442988.49 Easting 528972.74  
Landing Point of Curve Northing 4443091.51 Easting 528623.40  
Bottom Hole Northing 4447483.64 Easting 527342.92

Elevation (ft) 1,137.3' 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

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Date permit issued 05/15/2019 Date drilling commenced 12/30/2019 Date drilling ceased 01/12/2020  
Date completion activities began 09/14/2020 Date completion activities ceased 10/26/2020  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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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:  
*Barry Stelkops*  
8-09-2021

API 47-069 - 00303 Farm name FRANZ THOMAN Well number FRANZ THOMAN OHI 1H

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	437'	NEW	J-55/54.50#	307.4'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1,757'	NEW	J-55/36#		Y
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	21,629'	NEW	HCP-110/20#		Y
Tubing		2.375	6,519'	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	683	15.60	1.19	812.77	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	674	15.60	1.19	802.06	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	4,087	15.60	1.18	4,822.66	SURFACE	24
Tubing							

Drillers TD (ft) 21,629' Loggers TD (ft) 21,629'

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

Plug back procedure N/A

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Kick off depth (ft) 4,975'

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

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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 - 00303 Farm name FRANZ THOMAN Well number FRANZ THOMAN OHI 1H

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				

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Please insert additional pages as applicable.

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**FRANZ THOMAN OHI 1H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	8/2/2020	21,580	21,487	36
2	9/15/2020	21,453	21,275	36
3	9/16/2020	21,242	21,062	36
4	9/16/2020	21,031	20,852	36
5	9/17/2020	20,816	20,641	36
6	9/17/2020	20,608	20,430	36
7	9/18/2020	20,393	20,219	36
8	9/18/2020	20,182	20,008	36
9	9/18/2020	19,975	19,797	36
10	9/19/2020	19,761	19,585	36
11	9/19/2020	19,552	19,374	36
12	9/19/2020	19,341	19,163	36
13	9/20/2020	19,130	18,952	36
14	9/21/2020	18,919	18,741	36
15	9/21/2020	18,707	18,529	36
16	9/22/2020	18,496	18,318	36
17	9/23/2020	18,285	18,107	36
18	9/23/2020	18,074	17,896	36
19	9/23/2020	17,863	17,685	36
20	9/24/2020	17,651	17,473	36
21	9/24/2020	17,440	17,265	36
22	9/24/2020	17,229	17,051	36
23	9/25/2020	17,018	16,840	36
24	9/25/2020	16,807	16,629	36
25	9/26/2020	16,595	16,417	36
26	9/26/2020	16,384	16,206	36
27	9/26/2020	16,173	15,995	36
28	9/26/2020	15,962	15,784	36
29	9/27/2020	15,751	15,573	36
30	9/27/2020	15,539	15,364	36
31	9/28/2020	15,328	15,155	36
32	9/28/2020	15,117	14,939	36
33	9/28/2020	14,908	14,728	36
34	9/29/2020	14,695	14,517	36
35	9/29/2020	14,483	14,305	36
36	9/29/2020	14,272	14,094	36
37	9/29/2020	14,061	13,883	36
38	9/30/2020	13,850	13,672	36
39	9/30/2020	13,639	13,461	36
40	9/30/2020	13,427	13,249	36
41	10/1/2020	13,216	13,038	36
42	10/1/2020	13,005	12,827	36
43	10/2/2020	12,794	12,616	36

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**FRANZ THOMAN OHI 1H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
44	10/2/2020	12,583	12,405	36
45	10/2/2020	12,368	12,193	36
46	10/3/2020	12,160	11,982	36
47	10/3/2020	11,949	11,771	36
48	10/3/2020	11,738	11,560	36
49	10/4/2020	11,527	11,349	36
50	10/4/2020	11,315	11,137	36
51	10/5/2020	11,104	10,926	36
52	10/5/2020	10,893	10,715	36
53	10/6/2020	10,682	10,504	36
54	10/7/2020	10,471	10,293	36
55	10/7/2020	10,259	10,081	36
56	10/7/2020	10,048	9,870	36
57	10/7/2020	9,837	9,659	36
58	10/8/2020	9,626	9,448	36
59	10/8/2020	9,415	9,237	36
60	10/8/2020	9,203	9,025	36
61	10/9/2020	8,992	8,814	36
62	10/9/2020	8,781	8,603	36
63	10/9/2020	8,570	8,392	36
64	10/10/2020	8,354	8,181	36
65	10/10/2020	8,147	7,969	36
66	10/10/2020	7,936	7,758	36
67	10/11/2020	7,725	7,547	36
68	10/11/2020	7,514	7,336	36
69	10/11/2020	7,303	7,125	36
70	10/12/2020	7,091	6,918	36
71	10/12/2020	6,880	6,702	36
72	10/12/2020	6,669	6,491	36
73	10/12/2020	6,458	6,280	36

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ATTACHMENT 2  
STIM REPORT

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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/other
1	9/15/2020	88.7	8,225	6,780	4,151	219,200	6,846	0
2	9/15/2020	87.1	7,555	6,892	3,888	363,240	9,728	0
3	9/16/2020	89.1	7,837	5,174	4,811	351,960	8,084	0
4	9/17/2020	89.4	7,995	3,487	4,114	351,980	7,892	0
5	9/17/2020	91.6	7,675	4,749	4,394	358,440	8,279	0
6	9/17/2020	88.1	7,855	5,565	4,270	354,560	7,949	0
7	9/18/2020	82.7	7,949	5,511	4,115	355,000	8,136	0
8	9/18/2020	93.7	7,789	5,420	4,388	360,790	8,337	0
9	9/19/2020	91.7	8,115	4,165	4,008	355,358	7,675	0
10	9/19/2020	89.9	7,901	5,749	4,009	352,440	8,084	0
11	9/19/2020	92.9	7,936	5,875	4,337	350,680	7,826	0
12	9/20/2020	88.9	7,960	5,684	4,014	356,920	8,039	0
13	9/20/2020	90.9	8,156	5,323	3,667	359,100	7,800	0
14	9/21/2020	98.9	8,211	5,742	4,300	353,980	7,697	0
15	9/22/2020	92.7	7,922	5,560	4,125	359,400	9,152	0
16	9/22/2020	92.4	8,066	5,587	4,179	357,120	7,787	0
17	9/23/2020	93	7,807	5,339	4,331	362,500	8,132	0
18	9/23/2020	92.5	8,094	5,724	3,946	350,220	7,545	0
19	9/24/2020	88.3	8,062	5,939	4,066	355,340	7,621	0
20	9/24/2020	94	7,849	5,812	4,170	358,860	8,075	0
21	9/24/2020	98.1	7,904	5,842	4,426	358,260	7,601	0
22	9/25/2020	93.3	7,991	5,396	4,388	358,760	7,622	0
23	9/25/2020	93.6	7,813	5,621	4,857	358,820	7,796	0
24	9/25/2020	93.4	7,962	5,712	4,253	352,600	7,656	0
25	9/26/2020	94.5	7,568	5,506	4,795	355,220	7,568	0
26	9/26/2020	93.2	7,868	5,874	4,588	359,040	7,977	0
27	9/26/2020	94	8,006	5,792	4,350	352,060	7,699	0
28	9/27/2020	95	7,760	5,732	4,315	355,520	8,029	0
29	9/27/2020	94.1	7,622	5,601	4,695	357,640	7,542	0
30	9/28/2020	95.6	7,593	5,620	4,324	357,470	7,754	0
31	9/28/2020	94.5	7,517	5,607	4,663	362,780	7,897	0
32	9/28/2020	93.5	7,545	5,710	4,715	358,960	7,847	0
33	9/28/2020	94.4	7,898	5,620	4,256	355,820	7,622	0
34	9/29/2020	95.2	7,741	5,828	4,562	363,930	7,756	0
35	9/29/2020	95	7,644	5,652	4,531	355,760	7,592	0
36	9/29/2020	94	7,847	4,430	4,251	359,020	7,763	0
37	9/30/2020	80.5	7,738	5,072	4,455	355,360	8,574	0
38	9/30/2020	96.8	7,534	5,037	4,225	365,000	7,548	0
39	9/30/2020	95.1	7,348	4,816	4,308	361,800	7,545	0
40	10/1/2020	99.8	7,281	5,868	4,625	356,660	7,872	0
41	10/1/2020	100	7,445	4,602	4,345	359,680	7,893	0
42	10/1/2020	91.6	7,048	5,778	4,200	355,340	7,414	0
43	10/2/2020	100	7,257	5,827	4,654	353,400	7,885	0
44	10/2/2020	98.8	7,369	6,027	4,678	353,950	8,102	0
45	10/3/2020	99.5	7,545	5,464	4,288	347,500	7,646	0
46	10/3/2020	100.6	7,465	5,860	4,411	381,500	8,012	0
47	10/3/2020	100.3	7,407	5,726	4,776	379,980	7,844	0
48	10/3/2020	100	7,142	5,955	4,014	375,820	8,332	0
49	10/4/2020	99.8	7,473	5,691	4,463	379,480	7,563	0
50	10/5/2020	99.4	7,222	6,260	4,499	379,480	7,949	0
51	10/5/2020	100.1	7,179	5,617	4,474	370,080	7,992	0
52	10/5/2020	96.6	7,235	6,013	4,101	377,480	8,830	0
53	10/6/2020	99.4	7,178	5,900	4,212	373,410	7,795	0

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**FRANZ THOMAN OHI 1H  
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	100	6,984	5,958	4,421	357,000	7,873	0
55	10/7/2020	100	7,010	5,765	4,664	354,860	7,667	0
56	10/7/2020	96.6	7,175	5,959	4,011	358,920	7,781	0
57	10/8/2020	97.6	7,274	6,021	4,414	359,660	7,797	0
58	10/8/2020	94.8	7,259	6,301	4,506	359,980	8,185	0
59	10/8/2020	99.1	7,144	5,908	4,106	361,100	8,135	0
60	10/9/2020	97.9	7,106	6,176	3,980	358,860	7,906	0
61	10/9/2020	84.6	7,332	6,225	5,354	361,580	8,527	0
62	10/9/2020	99.8	6,977	6,205	4,078	357,360	7,882	0
63	10/10/2020	98.2	7,180	6,026	3,956	359,740	8,017	0
64	10/10/2020	100	6,711	6,187	4,685	359,720	7,821	0
65	10/10/2020	99.4	7,046	5,991	4,148	353,180	7,574	0
66	10/11/2020	101.1	7,054	5,989	4,125	374,000	7,982	0
67	10/11/2020	100.1	6,787	5,904	4,458	359,080	7,605	0
68	10/11/2020	99.7	6,732	6,020	3,930	360,120	7,844	0
69	10/11/2020	98.6	7,242	5,731	3,902	360,140	7,914	0
70	10/12/2020	100	6,545	5,840	4,631	354,320	7,721	0
71	10/12/2020	100.4	6,681	5,672	4,254	354,790	7,794	0
72	10/12/2020	99.3	6,859	5,671	4,222	359,480	7,755	0
73	10/12/2020	80.6	7,920	6,225	3,895	359,280	7,942	0

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Well Name: Franz Thoman OHI 1H 47069003030000

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	5442.00	5339.00	
Rhinstreet (shale)	5442.00	5339.00	5714.00	5577.00	
Cashaqua (shale)	5714.00	5577.00	5775.00	5624.00	
Middlesex (shale)	5775.00	5624.00	5877.00	5694.00	
Burket (shale)	5877.00	5694.00	5903.00	5709.00	
Tully (ls)	5903.00	5709.00	5994.00	5759.00	
Mahantango (shale)	5994.00	5759.00	6189.00	5836.00	
Marcellus (shale)	6189.00	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:	10/13/2020
State:	West Virginia
County:	Ohio
API Number:	47-069-00303-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	FRANZ THOMAN OHI 1
Latitude:	40.13672970
Longitude:	-80.65990161
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,804
Total Base Water Volume (gal):	24,184,366
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	88.27486	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.22818	

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Sand	SWN Well Services	Proppant								
					Listed Below					
Plexaid 655WG	SWN Well Services	Scale Inhibitor								
HCL	SWN Well Services	Solvent			Listed Below					
Tolicide PS 50A	SWN Well Services	Biocide			Listed Below					
Ecopol-FEAC	SWN Well Services	Iron Control			Listed Below					
SWN FRW-11LC	SWN Well Services	Friction Reducer								
Econo-CI200	SWN Well Services	Corrosion Inhibitor			Listed Below					
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.										
		Crystalline Silica, quartz		14808-60-7	100.00000	11.42387				
		Hydrochloric Acid		7647-01-0	15.00000	0.02718				
		Petroleum Distillates, Hydrotreated		64742-47-8	25.00000	0.02092				
		Tetrakis		55566-30-8	55.00000	0.01544				
		Glycerin		56-81-5	50.00000	0.00352				

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			Ammonium Chloride	12125-02-9	2.00000	0.00167
			Alcohols, C12-1, ethoxylated	68551-12-2	1.50000	0.00126
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00126
			Diethylenetriamine penta	15827-60-8	10.00000	0.00070
			Acetic Acid	64-19-7	37.50000	0.00036
			Acrylic acid terpolymer	397256-50-7	1.00000	0.00028
			Methanol	67-56-1	80.00000	0.00022
			Citric Acid	77-92-9	22.50000	0.00022
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00003
			Fatty acids	61790-12-3	5.02700	0.00001
			Modified thiourea polymer	68527-49-1	4.74600	0.00001
			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)

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

9754'

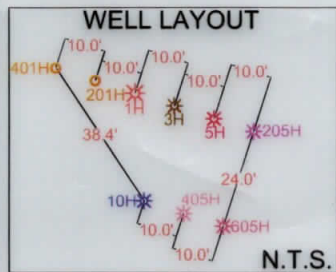
LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)

3450'

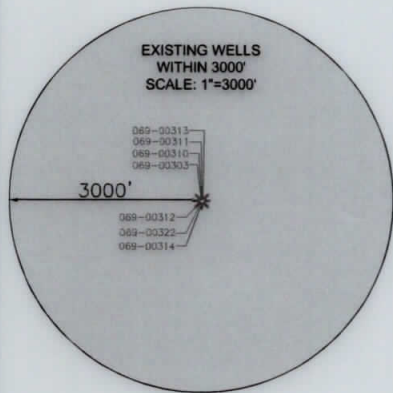


www.jhacompanies.com

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



N.T.S.



EXISTING WELLS WITHIN 3000'  
SCALE: 1"=3000'

3000'

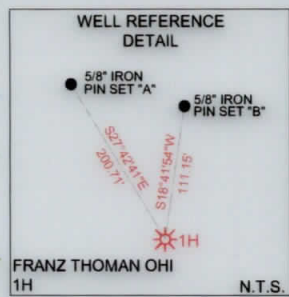
<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4442988.49 EASTING: 528972.74
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4443091.51 EASTING: 528623.40
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4447483.64 EASTING: 527342.92
<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4442988.49 EASTING: 528972.74
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4443033.96 EASTING: 528648.54
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4447482.41 EASTING: 527344.73

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



GRAPHIC SCALE IN FEET



FRANZ THOMAN OHI 1H N.T.S.

**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.

LINE	BEARING	DISTANCE
L1	S57°29'40"E	1109.72'
L2	S81°09'07"E	1376.94'

LONGITUDE: 80°40'00" BOTTOM HOLE (2000' SCALE)

11332'  
10933'  
LONGITUDE: 80°37'30" SURFACE HOLE (2000' SCALE)

<p>WVDEP OFFICE OF OIL &amp; GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY GRADE GPS ELEVATION: (NAVD 88, US FT)</p>	<p>COMPANY: SWN Production Company, LLC</p> <p>FRANZ THOMAN OHI</p> <p>OPERATOR'S WELL #: 1H</p> <p>API WELL #: 47 069 00303</p> <p>STATE COUNTY PERMIT</p>
	<p>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"/></p> <p>WATERSHED: UPPER OHIO SOUTH</p> <p>DISTRICT: RICHLAND COUNTY: OHIO</p> <p>SURFACE OWNER: FRANZ THOMAN</p> <p>OIL &amp; GAS ROYALTY OWNER: FRANZ THOMAN</p> <p>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"/></p> <p>CONVERT <input type="checkbox"/> PLUG &amp; ABANDON <input type="checkbox"/> CLEAN OUT &amp; REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED</p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,881' TVD 21,629' TMD</p>	<p>ELEVATION: 1,137.3'</p> <p>QUADRANGLE: TILTONSVILLE, OH-WV</p> <p>ACREAGE: ±69.418</p> <p>ACREAGE: ±69.418</p>
<p>WELL OPERATOR: SWN PRODUCTION COMPANY, LLC</p> <p>ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201</p> <p>CITY: MORGANTOWN STATE: WV ZIP CODE: 26508</p>	<p>DESIGNATED AGENT: BRITTANY WOODY</p> <p>ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201</p> <p>CITY: MORGANTOWN STATE: WV ZIP CODE: 26508</p>	<p>REVISIONS:</p> <p>DATE: 04-29-2020</p> <p>API NO: 47-069-00303</p> <p>DRAWN BY: R. GRIMES</p> <p>SCALE: 1" = 3000'</p> <p>DRAWING NO: 2018-781</p> <p>WELL LOCATION PLAT</p>

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	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R8-62.5
3	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R8-62.4
4	MAJEWSKI, KASIMIR MAJEWSKI, EDWARD A	04-R8-62.8
5	MAJEWSKI, KASIMIR MAJEWSKI, EDWARD A	04-R8-62.2
6	WILSON, RAY B. & ANN M.	04-R8-62.7
7	RICHARDSON, ERIC DURELL & CHERYL LYNN	04-R8-62.6
8	HERCULES, ROBERT D. & PATSY G.	04-R8K-103.0
9	HERCULES, ROBERT D. & PATSY G.	04-R8K-113.0
10	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R8-05.0
11	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R8-03.1
12	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R5-40.7
13	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-40.0
14	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R8-71.0
15	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R5-40.4
16	RICHIE, DONALD L. & SANDRA L.	04-R5-40.2
17	RICHIE, DONALD L. & SANDRA L.	04-R5-42.2
18	PAPER, BETTY F (LIFE) AND JAMES	04-R5-41
19	WV DOT, DIVISION OF HIGHWAYS	CLEARVIEW AVE
20	RALPH J. & BEVERLY KRASEVEC	04-R5-21.10
21	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-21.2
22	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-22.1
23	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-22.2
24	PLUMBY SARAH; KLEIN JULIE PATTI JUDITH	04-R5-22.0
25	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-02.2
26	BOYD, ALLAN A.	04-R5-63.1
27	ROHRIG, NATHAN R. & MELISSA L.	04-R5-63.0
28	NEIDERT, LAWRENCE P. & BARBARA J.	04-R5-67.0
29	FRAGALE, JAMES M. JR. & TINA M.	04-R5-02.0
30	ANGALICH, GEORGE S. & LISA M.	04-R5-02.34
31	OLIVER, HOWARD J. II & JO. LYNN	04-R5-02.12
32	RUSSELL, CINDY L. & JAMES F.	04-R5-02.13
33	MIDCAP, LEE ANN	04-R5-02.3
34	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R5-69.0
35	SIEGWART, JEFFREY W. & CYNTHIA A.	04-R2-02.1
36	SIEGWART, JEFFREY W. & CYNTHIA A.	04-R2-02.0

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	SANDCREST FOUNDATION, INC	04-R11-15.0
B	MOLNER, KRISTINE N.	04-R11-13.1
C	MOLNER, KRISTINE N.	04-R11-13.4
D	KURT ROBERT NEUMANN	04-R11-13.0
E	KURT ROBERT NEUMANN	04-R11-13.0
F	KURT ROBERT NEUMANN	04-R11-13.0
G	WEST, WINSTON W. JR.	04-RBP-07.0
H	WEST, WINSTON W. JR.	04-RBP-06.0
I	STOLLAR, HEATHER D.	04-RBP-05.0
J	IVERSON, DERRICK H. & BARBARA A.	04-RBP-04.0
K	COTTRELL, CLARA M.	04-RBP-03.0
L	TUNNEL RIDGE LLC	04-RBP-01.0
M	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-RBP-15.0
N	ALLIANCE RESOURCE GP LLC	04-R8-51.0
O	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-RBP-14.0
P	WEAVER, SHIRLEY M.	04-RBP-02.0
Q	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-RBP-16.0
R	MCGEE, JOHN M.	04-RBP-17.0
S	GAYDA, DONALD P.	04-RBP-18.0
T	BOND, CHARLES R.	04-RBK-110.0
U	SCHWERTFEGER, TYLER S.	04-RBK-111.0
V	SCHWERTFEGER, TYLER S.	04-RBK-112.0
W	REED, ELMER K.	04-RBK-106.0
X	REED, ELMER K.	04-RBK-105.0
Y	BOZENKE, B.H. & BOZENSKA, KIMBERLY J.	04-RBK-104.0
Z	ALLIANCE RESOURCE GP LLC C/O PROPERTY TAX	04-R8-04.13
AA	BAKER, PAUL	04-R8-04.18
AB	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R8-03.2
AC	SHELL, RICHARD A. & SHELL, NANCY	04-R8-01.1
AD	WEIGAND, PAUL & REBECCA FAMILY TRUST	04-R5-40.1
AE	KLEMM, RICHARD A. & KLEMM, JOAN E.	04-R5-36.1
AF	ANTLEY, MARK R. & ANTLEY, ELLIE	04-R5-36.2
AG	MONTEMURRO, JOSEPH L.	04-R5-37.0
AH	BRANCH, ANTHONY J. JR. BRANCH TEXANNA	04-R5-38.0
AI	BAKER, TIMOTHY R.	04-R5-39.0
AJ	HOWELL, CLARENCE F. & DIANA M.	04-R5-40.3
AK	MEANS, CHRISTOPHER & JENNIFER	04-R5-30.7
AL	KUCERA, CARL J.	04-R5-30.3
AM	BOWMAN, BETTY JO	04-R5-29.0
AN	SCHENERLEIN, MARGARET ANN & WILDS, KIM M.	04-R5-28.0
AO	SCHENERLEIN, MARGARET A; FASSIG SUNDAE L.	04-R5-27.0
AP	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R5-40.5
AQ	RICHIE, RONALD L. & RICHIE, SANDRA L.	04-R5-40.6
AR	KRAVASEC, RALPH J. & KRAVASEC, BEVERLY A.	04-R5-21.5
AS	ESTEP, JOHN L.	04-R5-22.4
AT	BUCK, THOMAS E. & TERRI D.	04-R5-23.0
AU	HEART 2 HEART VOLUNTEERS INC.	04-R4-05.0
AV	WV DOT, DIVISION OF HIGHWAYS	STATE ROUTE 2
AW	DUNAWAY, DONALD R. & DONALD W.	04-R4-02.5
AX	DUNAWAY, DONALD W.	04-R5E-06.0
AY	KREISER, DWIGHT & KATHY	04-R5E-06.1
AZ	HAUGHT, MARGARET L. RASNAK JEFF	04-R5-22.5
BA	STAUVER, HAROLD L. II	04-R5-02.4
BB	BREIDING, RYAN L; SISARCIK TRACY	04-R5-02.5
BC	HOLDERMAN, ALBERT J. & HOLDERMAN, NANCY JO	04-R5E-01.0
BD	CLARK, RICHARD W. & CLARK, DEBRA JEAN	04-R5-64.0
BE	NEIDERT, LAWRENCE P. & BARBARA J.	04-R5-67.1
BF	KONKLE, WILLIAM E. II	04-R5-66.0
BG	NEIDERT, LARRY P. & NEIDERT, BARBARA J.	04-R5-02.1
BH	STENGER, THOMAS & MARG A.	04-R5-05.0
BI	RUDOL, JAMES A. & RUDOL, GEORGIA A.	04-R5-02.8
BJ	CANTRELL, DAVID L. & REBECCA L.	04-R5-04.0
BK	STIGLICH, JOSEPH M. & JOHANNA	04-R5-02.11
BL	COMISKEY, ERNEST D.	04-R5-03.0
BM	HUMPHREY, BRIAN & BRENDA	04-R5-02.48
BN	MCELMURY, CHRISTOPHER	04-R5-02.29
BO	LEVELLE, KIRT D. & PAMELA J.	04-R5-02.28
BP	LANOS, JOHN S.	04-R5-02.32
BQ	LANOS, JOHN S.	04-R5-02.33
BR	ALLIANCE RESOURCE GP LLC C/O PROPERTY TAX	04-R4-04.0
BS	BAKER, DENNIS H. & BAKER, KELLY YOUNG	04-R2-02.5
BT	BAKER, DENNIS H. & BAKER, KELLY YOUNG	04-R2-02.4
BU	POKAS, JUDY L.	04-R2-06.3
BV	FEDORKE, KEVIN & BETH A.	04-R2-06.2
BW	WEAR, KEITH A. & WEAR, DRUSILLA D.	04-R2-06.4
BX	RICHARD, ROBERT & AMY	04-R2-06.12
BY	ROBINSON, JOHN G.	04-R2-06.14
BZ	STILLWELL, RONALD R. & STILLWELL, JANICE M.	04-R5-70.0
CA	CROUCH, DELLA JEAN	04-R5-68.0
CB	KENDZERSKI, DAVID A. & KENDZERSKI, DONNA KAYE HANEY	04-R5-02.7
CC	KENDZERSKI, DAVID A. & KENDZERSKI, DONNA KAYE HANEY	04-R5-02.14
CD	FAULSTICK, THOMAS & DEBRA	04-R5-02.36
CE	HUNLEY, DAVID S. & DIANE J.	04-R5-02.37
CF	FRAGALE, JAMES JR. & TINA M.	04-R5-02.27
CG	FAULSTICK, THOMAS & DEBRA	04-R5-02.35

09/10/2021

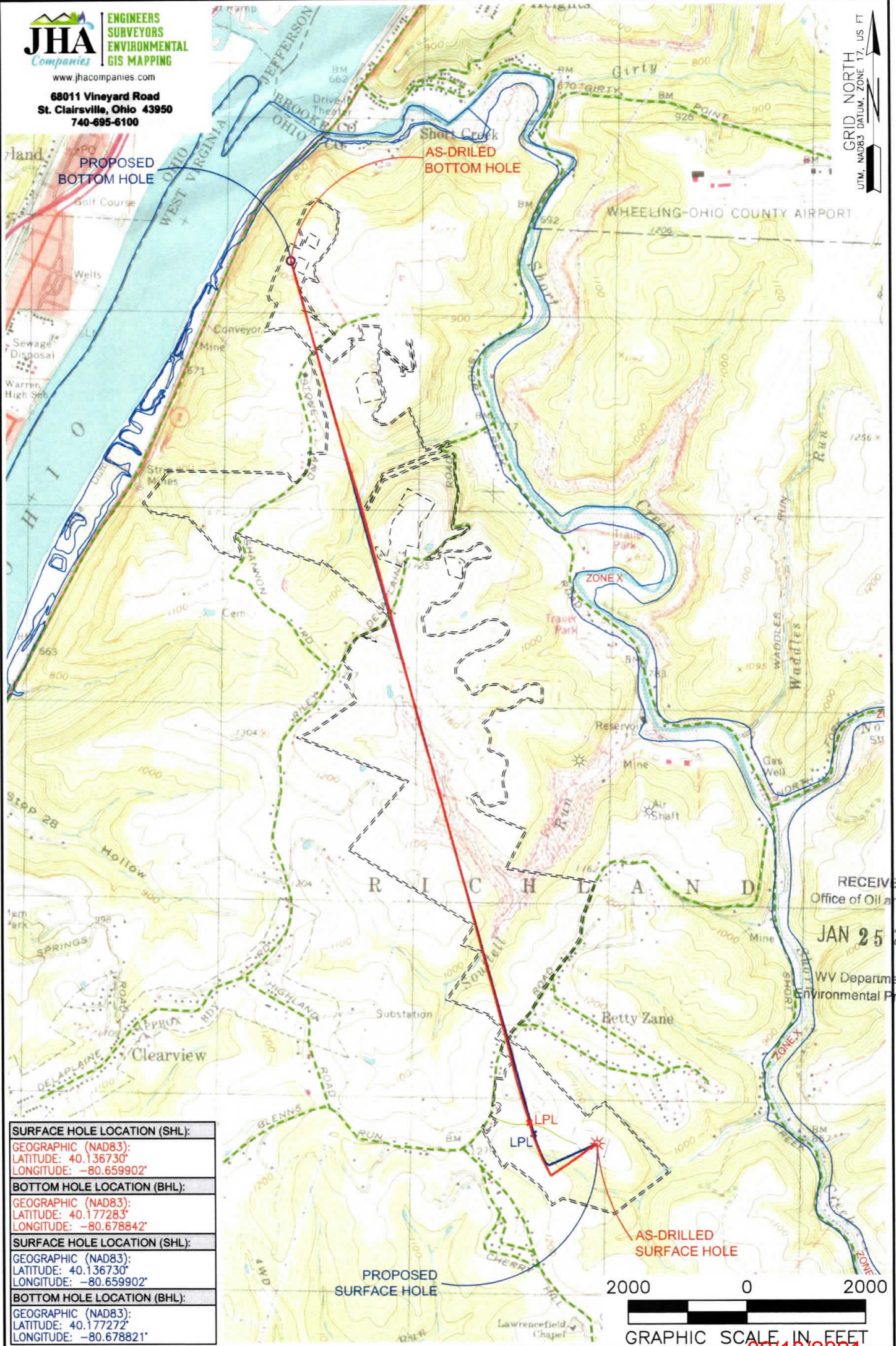
REVISIONS:


COMPANY:		 	
OPERATOR'S		FRANZ THOMAN OHI	
WELL #:		1H	
DISTRICT:	COUNTY:	STATE:	DATE:
RICHLAND	OHIO	WV	04-29-2020
		API NO: 47-069-00303	
		DRAWN BY: R. GRIMES	
		SCALE: N/A	
		DRAWING NO: 2018-781	
		WELL LOCATION PLAT	

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
CH	JACK, REBECCA A.	04-R5-01.1
CI	STENGER, THOMAS H. & M.A.	04-R2-06.1
CJ	STENGER, THOMAS H. & M.A.	04-R5-62.0
CK	SECRIST, CURT M. & TAMMI L.	04-R5-02.50
CL	KING, STEPHEN A. JR. & LINDSEY D.	04-R5-02.53
CM	MAYLE, BRADLEY G. & CHEYENNE M.	04-R5-02.59
CN	MUNDY, ROBBIE J. & REBECCA J.	04-R5-02.46
CO	JAMISON, DANIEL D. & KAREN L.	04-R5-02.52
CP	MCGEE, PAUL R. & OLIVE L.	04-R5-02.44
CQ	SMITH, VICKIE L.	04-R5-02.45
CR	SARRAS, STEVE M. & RHONDA L.	04-R5-02.49
CS	MARCHESE, PAUL J. & RENEE A.	04-R5-02.40
CT	BARKER, KEYSTONE TR. AGREEMENT	04-R5-02.42
CU	BLAKE, RYAN O. & BLAKE, MARLA M.	04-R5-02.55
CV	MIDCAP, DOUGLAS W. & KRISTINE L.	04-R5-02.58
CW	ROMAN, GEORGE M.	04-R5-02.43
CX	BAUER, TODD A. & VICKIE W.	04-R5-02.41
CY	COAST, HAROLD & LINDA	04-R5-02.26
CZ	TAGGART, KIMBERLY	04-R5-20.3
DA	TAGGART, VELMA L. C/O HEWITT, VELMA L.	04-R5-20.0
DB	ROTH, JOSEPH	04-R5-72.0
DC	TUNNEL RIDGE LLC C/O PROPERTY TAX	04-R5-21.13
DD	HOSKINS, DENNIS J. & SHEINA L.	04-R5-20.6
DE	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-42.1
DF	THE KATHLEEN S. CRAFT FOUNDATION & THE JOSEPH W. CRAFT III FOUNDATION	04-R5-43.0
DG	ALLIANCE RESOURCE GP LLC	04-R8-06.0
DH	WENDEL, WILLIAM F.	04-R8-33.1
DI	COLEMAN, MARGUERITE A.	04-R8-30.1
DJ	HARGLEROAD, JOHN A. & HARGLEROAD PATRICIA A.	04-R8-31.0
DK	JOHNSON, CARRIE M. & JOHNSON, RICHARD M.	04-R8-32.0
DL	CAMPBELL, ADAM B. & STACEY L.	04-R8F-03.0
DM	MAYLES, HARRY J.	04-R8F-02.0
DN	MAYLES, HARRY J.	04-R8F-01.0
DO	HENDERSON, DAVID A.	04-R8K-01.0
DP	RAYMOND, FRANCES M.	04-R8K-02.0
DQ	VENSKOSKE, WILLIAM A. JR.	04-R8K-03.0
DR	CRISP, STEVEN A. & REGINA A.	04-R8K-04.1
DS	CRISP, STEVEN A. & REGINA A.	04-R8K-05.0
DT	PAUL, CARL E. JR. & PAUL, SHARON D.	04-R8K-06.0
DU	AGUIRRE, ALFREDO	04-R8K-18.0
DV	WEILER, RICHARD J.	04-R8K-54.0
DW	WEILER, RICHARD J.	04-R8K-55.0
DX	HEATH, TIMOTHY G.	04-R8K-59.0
DY	HEATH, TIMOTHY G.	04-R8K-60.0
DZ	DENARD, SHAWN C.	04-R8K-62.0
EA	MULDREW, DAVID R. & MULDREW, KAREN	04-R8K-86.0
EB	MULDREW, DAVID R. & MULDREW, KAREN	04-R8K-101.0
EC	TAYLOR, DELORA L.	04-R8K-100.0
ED	SOBOTA, SUSAN J.	04-R8-62.3
EE	WRIGHT, JOHN T.	04-R8P-11.0
EF	SUTTON, JACQUELINE M.	04-R8Q-10.0
EG	DAGUE, AMY D.	04-R8Q-11.0
EH	KURNER, DALE E. & BEVERLY J.	04-R8Q-12.0
EI	WHEELER, JOLLY W. JR. & WHEELER, KAREN M.	04-R8Q-14.0
EJ	TAROVISKY, FRANK JOSEPH & TAROVISKY, SARA RENEE	04-R8Q-28.0
EK	TOMASIK, PAULA J. & EDWARD C.	04-R8Q-03.0
EL	TERAMANA, RUSSELL E. & ROSEANN L.	04-R8Q-02.0
EM	HUFFMAN, RALPH J. & KENDRA LEE	04-R8Q-60.0
EN	GUMP, ERICA LYNN	04-R2-02.6
EO	SIEGWART, JEFFREY W. & CYNTHIA A.	04-R2-02.3
EP	MEALY, SCOTT A. & MELISSA A.	04-R5-02.63
EQ	MEALY, SCOTT A. & MELISSA A.	04-R5-02.61
ER	DAVIS, PAUL R. & DAVIS, CHRISTINA E.	04-R5-02.62
ES	TRACY, TIMOTHY	04-R5-21.4
ET	TRACY, TIMOTHY S. & TAMMY R.	04-R5-21.8
EU	KRAVESEC, RALPH J. & KRAVESEC, BEVERLY A.	04-R5-21.9
EV	TRACY, TIMOTHY S.	04-R5-21.6
EW	TRACY, TIMOTHY S.	04-R5-21.7
EX	CHILES PAMELA CHILES RYAN	04-R2-16.0
EY	KRAVESEC, RALPH J.	04-R5-21.12
EZ	KRAVESEC, RALPH J. & BEVERLY A.	04-R5-21.1
FA	KRAVESEC, RALPH J.	04-R5-21.11
FB	KRAVESEC, RALPH J.	04-R5-42.0

09/10/2021

REVISIONS:	COMPANY: <b>SWN</b> Production Company, LLC		<b>SWN</b> <sup>R<sup>+</sup></sup> / <sub>A</sub> <sup>V<sup>+</sup></sup>	
	OPERATOR'S: <b>FRANZ THOMAN OHI</b>		DATE: 04-29-2020	
	WELL #: <b>1H</b>		API NO: 47-069-00303	
	DISTRICT: <b>RICHLAND</b>	COUNTY: <b>OHIO</b>	STATE: <b>WV</b>	DRAWN BY: R. GRIMES
				SCALE: N/A
				DRAWING NO: 2018-781
				WELL LOCATION PLAT



RECEIVED  
 Office of Oil and Gas  
**JAN 25 2021**  
 WV Department of  
 Environmental Protection

<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.136730° LONGITUDE: -80.659902°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.177283° LONGITUDE: -80.678842°
<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.136730° LONGITUDE: -80.659902°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 40.177272° LONGITUDE: -80.678821°

**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.

**LEGEND:**

- EXISTING BOTTOM HOLE
- ⊙ EXISTING / PRODUCING WELLHEAD
- LPL ✖ EXISTING LANDING POINT LOCATION
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- LPL ✖ PROPOSED LANDING POINT LOCATION
- ACCESS ROAD
- PUBLIC ROAD
- FLOOD PLAIN
- LEASE BOUNDARY
- AS DRILLED PATH
- PROPOSED PATH

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> FRANZ THOMAN OHI		<b>WELL #</b> 1H	<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>API #</b> 47-069-XXXX
<b>SURFACE OWNER:</b> FRANZ THOMAN	<b>USGS 7 1/2 QUADRANGLE MAP NAME:</b> TILTONVILLE, OH-WV			

09/10/2021