

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

API 47 - 103 - 03253 County WETZEL District PROCTOR  
Quad WILEYVILLE, WV Pad Name SWN A PAD1 Field/Pool Name VICTORY FIELD WET  
Farm name SWN PRODUCTION COMPANY, LLC Well Number SWN A WTZ 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 4,392,599.07 Easting 530,907.42  
Landing Point of Curve Northing 4,392,990.60 Easting 531,268.33  
Bottom Hole Northing 4,396,640.73 Easting 527,232.04

Elevation (ft) 1,344' 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 12/17/2018 Date drilling commenced 6/10/2019 Date drilling ceased 7/6/2019  
Date completion activities began 12/19/2019 Date completion activities ceased 3/6/2020  
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 300' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1,341' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 1,245' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
DMH  
6-1-20

API 47- 103 - 03253 Farm name SWN PRODUCTION COMPANY, LLC Well number SWN A WTZ 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	409	NEW	J-55/54.50#		Y; 24 BBLS
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	2,793	NEW	J-55/36#		Y; 30 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	25,954	NEW	P-110/20#		Y; 63 BBLS
Tubing				NEW			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	419	15.60	1.19	498.61	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	903	16.00	1.12	1011.36	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	4,985	15.60	1.18	5882.3	SURFACE	24
Tubing							

Drillers TD (ft) 25,954'      Loggers TD (ft) 25,954'  
 Deepest formation penetrated MARCELLUS      Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,908'

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 \_\_\_\_\_





# SOUTHWESTERN ENERGY

Location: Wetzel County, WV Slot: Slot 405  
 Field: Wetzel Well: SWN A WTZ 405H  
 Facility: SWN A WTZ Pad Wellbore: SWN A WTZ 405H PWB

Plot reference wellpath is SWN A WTZ 405H PWP Rev-F.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)	North Reference: Grid north
SDC 46 (KB) to Mean Sea Level: 1368.3 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot 405): -1342.3 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: atenjen on 2019-07-09
	Database: WA_MPL_EASTERIUS_Defn

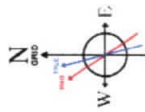


## Location Information

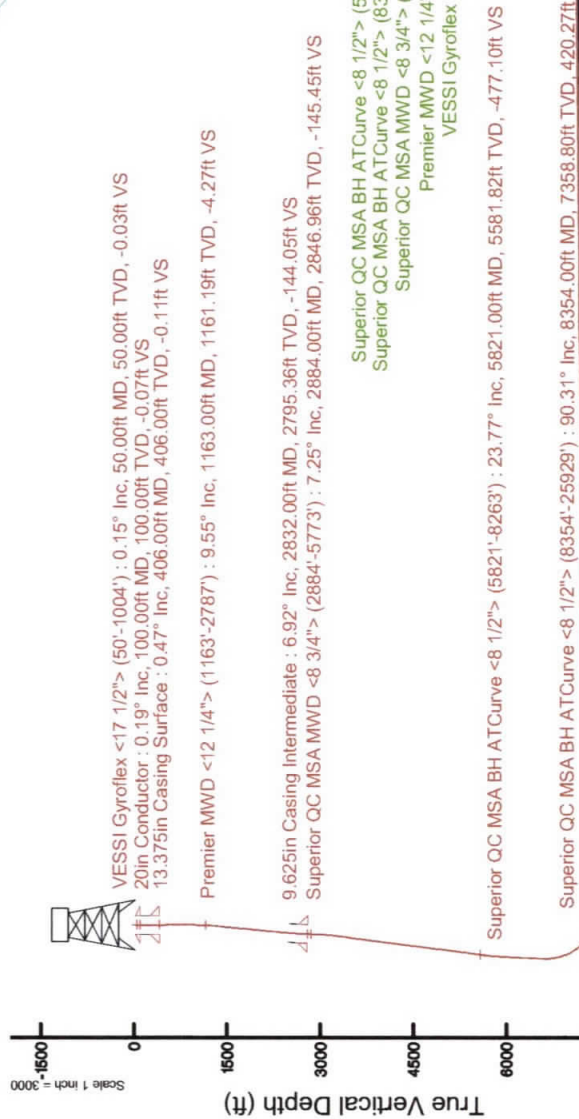
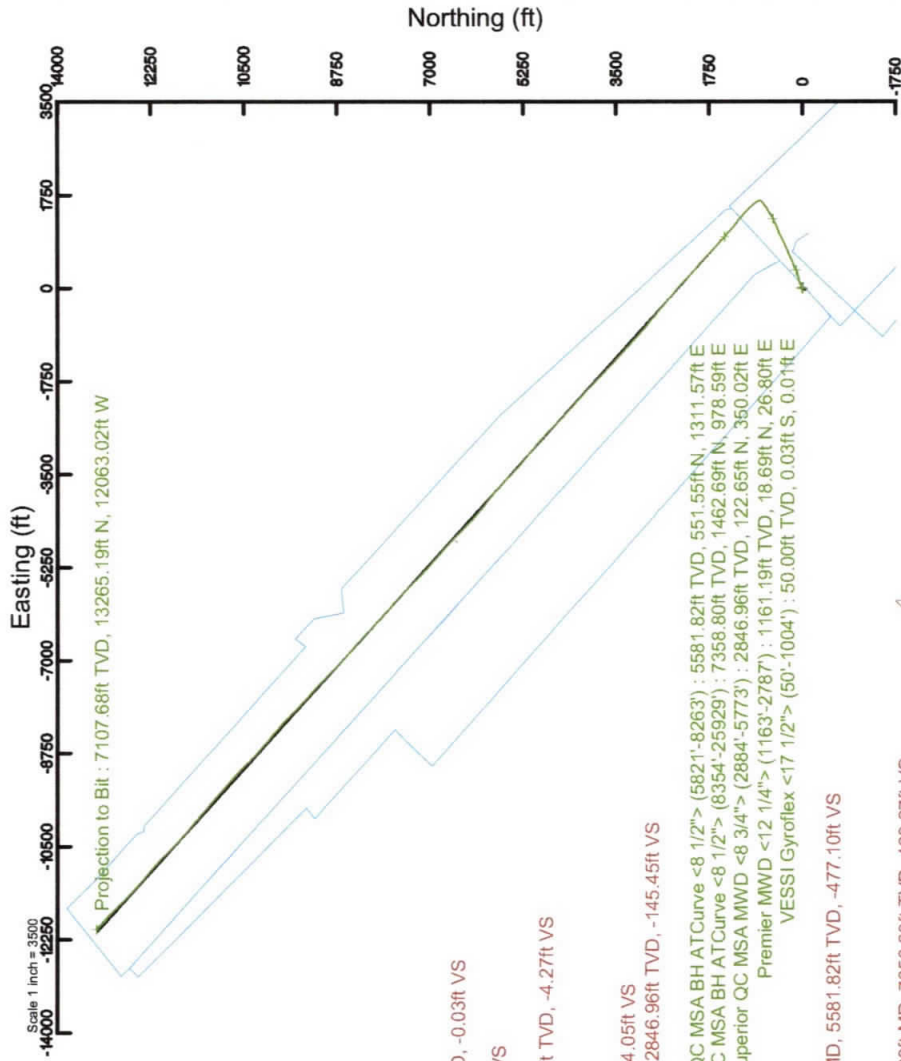
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SWN A WTZ Pad	1741684.774	14411391.536	39°40'57.656"N	80°38'24.198"W
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)	Grid East (US ft)
Slot 405	-6.10	134.02	1741818.744	14411391.536
SDC 46 (KB) to Ground level (At Slot: Slot 405)	26ft			
Mean Sea Level to Ground level (At Slot: Slot 405)	-1342.3ft			
SDC 46 (KB) to Mean Sea Level	1368.3ft			

## Comments

API: 47-103-03253-0000  
 BH Job #: 109824756  
 Rig: SDC 46  
 Duration: 06/23/2019 - 07/01/2019



Magnetic North is 66.75° Field: 52249 ft  
 Measured depths are referenced to SDC 46 (KB)  
 Grid North is 0.23 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.23 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.40 degrees



**SWN A WTZ 405H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	12/9/2019	25,905	25,812	36
2	12/19/2019	25,778	25,601	36
3	1/4/2020	25,568	25,391	36
4	1/5/2020	25,358	25,181	42
5	1/7/2020	25,148	24,971	42
6	1/7/2020	24,938	24,762	42
7	1/8/2020	24,729	24,552	42
8	1/8/2020	24,519	24,342	42
9	1/9/2020	24,314	24,132	42
10	1/9/2020	24,099	23,922	42
11	1/9/2020	23,889	23,712	42
12	1/10/2020	23,679	23,502	42
13	1/10/2020	23,469	23,292	42
14	1/10/2020	23,262	23,083	42
15	1/11/2020	23,050	22,878	42
16	1/11/2020	22,842	22,663	42
17	1/11/2020	22,626	22,453	42
18	1/11/2020	22,420	22,243	42
19	1/12/2020	22,210	22,033	42
20	1/12/2020	22,000	21,823	42
21	1/12/2020	21,790	21,613	42
22	1/13/2020	21,580	21,404	42
23	1/13/2020	21,371	21,194	42
24	1/13/2020	21,161	20,986	42
25	1/14/2020	20,951	20,772	42
26	1/14/2020	20,741	20,564	42
27	1/14/2020	20,529	20,354	42
28	1/15/2020	20,321	20,144	42
29	1/15/2020	20,111	19,934	42
30	1/16/2020	19,901	19,724	42
31	1/17/2020	19,691	19,515	42
32	1/17/2020	19,482	19,310	42
33	1/17/2020	19,272	19,095	42
34	1/18/2020	19,062	18,885	42
35	1/18/2020	18,850	18,675	42
36	1/18/2020	18,642	18,465	42
37	1/19/2020	18,432	18,255	42
38	1/19/2020	18,222	18,045	42
39	1/20/2020	18,012	17,836	42
40	1/20/2020	17,803	17,626	42
41	1/21/2020	17,593	17,416	42
42	1/21/2020	17,383	17,206	42

**SWN A WTZ 405H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
43	1/22/2020	17,173	16,996	42
44	1/22/2020	16,963	16,781	42
45	1/23/2020	16,753	16,581	42
46	1/24/2020	16,543	16,370	42
47	1/25/2020	16,333	16,154	42
48	1/25/2020	16,127	15,947	42
49	1/26/2020	15,909	15,737	42
50	1/27/2020	15,704	15,527	42
51	1/28/2020	15,494	15,317	42
52	1/28/2020	15,284	15,107	42
53	1/29/2020	15,074	14,894	42
54	1/30/2020	14,864	14,687	42
55	1/30/2020	14,659	14,477	42
56	1/31/2020	14,444	14,268	42
57	1/31/2020	14,235	14,058	42
58	2/1/2020	14,025	13,848	42
59	2/2/2020	13,815	13,641	42
60	2/2/2020	13,605	13,426	42
61	2/3/2020	13,395	13,218	42
62	2/3/2020	13,185	13,008	42
63	2/4/2020	12,972	12,798	42
64	2/4/2020	12,765	12,589	42
65	2/5/2020	12,556	12,379	42
66	2/6/2020	12,346	12,169	42
67	2/7/2020	12,136	11,959	42
68	2/7/2020	11,926	11,749	42
69	2/8/2020	11,716	11,539	42
70	2/9/2020	11,506	11,329	42
71	2/9/2020	11,296	11,119	42
72	2/10/2020	11,086	10,910	42
73	2/11/2020	10,877	10,700	42
74	2/12/2020	10,667	10,490	42
75	2/13/2020	10,457	10,280	42
76	2/15/2020	10,247	10,070	42
77	2/15/2020	10,037	9,860	42
78	2/16/2020	9,827	9,650	42
79	2/16/2020	9,617	9,440	42
80	2/17/2020	9,407	9,230	42
81	2/17/2020	9,197	9,021	42
82	2/18/2020	8,988	8,811	42
83	2/18/2020	8,778	8,601	42
84	2/19/2020	8,568	8,391	42

**SWN A WTZ 405H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
85	2/20/2020	8,358	8,181	42
86	2/20/2020	8,148	7,971	42



**SWN A WTZ405H  
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	12/19/2019	53	8,611	8,450	3,345	242,620	8,446	0
2	12/20/2019	65	8,398	6,394	0	404,340	11,393	0
3	1/4/2020	67	7,851	6,322	4,332	273,960	11,031	0
4	1/6/2020	69	7,434	6,057	4,221	314,870	11,767	0
5	1/7/2020	71	8,291	6,399	4,782	308,000	10,319	0
6	1/8/2020	71	7,884	5,851	4,782	310,170	10,231	0
7	1/8/2020	67	8,243	5,432	4,419	311,200	9,028	0
8	1/8/2020	65	8,208	5,872	4,162	310,720	8,877	0
9	1/9/2020	65	8,147	5,129	4,619	309,820	8,352	0
10	1/9/2020	68	8,283	5,582	4,768	308,190	8,671	0
11	1/9/2020	72	8,241	5,710	4,343	308,010	8,481	0
12	1/10/2020	65	8,367	4,991	4,290	305,580	8,371	0
13	1/10/2020	69	8,078	5,321	4,579	303,930	8,002	0
14	1/10/2020	75	8,224	5,309	4,412	308,690	9,566	0
15	1/11/2020	73	8,395	5,092	4,462	303,190	9,231	0
16	1/11/2020	76	8,224	5,409	4,629	304,140	7,968	0
17	1/11/2020	76	8,345	5,147	4,536	309,180	9,663	0
18	1/11/2020	75	8,417	5,805	4,691	307,990	8,336	0
19	1/12/2020	70	8,244	5,519	4,583	312,820	8,188	0
20	1/12/2020	70	8,388	5,953	4,459	312,090	8,481	0
21	1/12/2020	69	8,370	5,596	4,520	314,650	8,048	0
22	1/13/2020	72	8,214	5,992	4,815	307,250	7,990	0
23	1/13/2020	74	8,389	5,869	4,502	313,150	8,242	0
24	1/13/2020	75	8,439	5,568	4,670	316,300	8,057	0
25	1/14/2020	68	8,011	4,997	4,520	304,540	7,516	0
26	1/14/2020	69	8,267	5,315	4,701	301,990	7,229	0
27	1/14/2020	51	7,343	5,630	4,450	186,400	14,808	0
28	1/15/2020	68	8,196	5,758	4,466	308,190	7,456	0
29	1/15/2020	60	7,293	5,680	4,589	305,120	9,695	0
30	1/16/2020	68	8,207	6,002	4,465	314,050	7,532	0
31	1/17/2020	70	8,184	5,389	4,465	312,780	7,361	0
32	1/17/2020	70	8,151	5,861	4,474	306,240	7,408	0
33	1/17/2020	68	8,282	5,620	4,404	302,810	7,331	0
34	1/18/2020	69	8,078	5,474	4,418	311,770	7,548	0
35	1/18/2020	70	8,200	5,480	4,486	302,200	7,571	0
36	1/19/2020	69	8,110	5,854	4,486	303,290	7,696	0
37	1/19/2020	73	8,278	5,375	4,829	310,370	7,360	0
38	1/20/2020	75	8,317	5,920	4,428	311,100	7,371	0
39	1/20/2020	71	8,152	5,775	4,736	307,190	7,149	0
40	1/20/2020	67	7,951	5,934	4,736	312,770	8,526	0
41	1/21/2020	70	8,193	5,716	4,650	308,670	7,388	0
42	1/22/2020	74	8,252	5,625	4,367	311,460	7,661	0
43	1/22/2020	76	7,733	5,822	4,120	310,988	7,443	0
44	1/23/2020	75	8,032	5,319	4,101	310,820	8,089	0
45	1/24/2020	67	7,909	5,140	4,132	304,090	8,371	0
46	1/24/2020	81	8,139	4,912	4,256	306,470	7,978	0
47	1/25/2020	78	8,159	6,230	4,230	309,000	7,004	0
48	1/26/2020	78	8,428	6,572	4,638	312,070	6,744	0
49	1/27/2020	91	8,464	6,006	4,205	310,100	6,896	0
50	1/28/2020	89	8,648	6,120	4,532	312,930	6,970	0
51	1/28/2020	93	8,570	5,238	4,475	311,430	6,678	0
52	1/29/2020	91	8,492	6,087	4,492	309,600	7,381	0
53	1/29/2020	94	8,512	5,560	4,630	307,920	6,305	0

**SWN A WTZ405H  
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	1/30/2020	89	8,418	6,022	4,652	311,540	7,220	0
55	1/30/2020	93	8,409	5,635	5,062	310,670	6,379	0
56	1/31/2020	93	8,486	5,092	4,812	309,130	6,388	0
57	2/1/2020	72	8,529	5,260	4,256	307,270	7,831	0
58	2/1/2020	85	8,428	5,587	5,003	314,450	6,895	0
59	2/2/2020	97	8,211	5,949	4,153	311,490	6,989	0
60	2/2/2020	93	8,366	5,627	4,931	308,810	6,224	0
61	2/3/2020	100	8,267	6,166	4,425	314,040	7,159	0
62	2/4/2020	91	8,029	5,393	4,793	310,460	7,107	0
63	2/4/2020	92	8,032	6,090	4,903	311,720	7,618	0
64	2/5/2020	91	8,582	6,425	4,393	228,840	10,059	0
65	2/6/2020	81	8,262	6,607	5,211	315,110	7,805	0
66	2/7/2020	85	8,001	6,203	4,815	320,160	7,535	0
67	2/7/2020	94	8,118	5,948	4,824	320,430	7,550	0
68	2/8/2020	89	8,199	6,499	4,850	232,130	6,594	0
69	2/9/2020	91	8,266	6,329	4,511	316,630	7,340	0
70	2/9/2020	96	8,125	6,364	4,827	316,450	7,585	0
71	2/10/2020	84	7,791	6,380	4,551	320,640	9,430	0
72	2/10/2020	87	8,064	5,586	4,985	313,170	7,474	0
73	2/12/2020	96	8,011	5,920	4,904	316,570	7,525	0
74	2/12/2020	88	8,070	5,852	4,804	314,240	8,610	0
75	2/15/2020	89	7,987	5,768	4,896	319,500	6,847	0
76	2/15/2020	83	7,966	5,611	4,832	313,130	8,175	0
77	2/15/2020	90	7,734	5,536	4,611	311,680	7,092	0
78	2/16/2020	89	7,703	6,335	4,718	319,540	7,229	0
79	2/16/2020	91	7,973	5,432	4,959	318,030	6,980	0
80	2/17/2020	97	7,885	6,811	4,637	314,460	6,916	0
81	2/17/2020	77	8,019	6,052	5,706	255,690	7,233	0
82	2/18/2020	89	7,760	5,984	4,961	320,670	7,112	0
83	2/19/2020	100	7,958	6,698	5,122	317,080	8,095	0
84	2/19/2020	89	7,442	6,322	4,872	319,650	7,826	0
85	2/20/2020	95	8,369	6,551	5,717	233,330	5,851	0
86	2/21/2020	90	7,709	6,057	4,050	318,230	7,098	0

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/19/2019
Job End Date:	2/21/2020
State:	West Virginia
County:	Wetzel
API Number:	47-103-03253-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	SWN A WTZ 405
Latitude:	39.68266400
Longitude:	-80.63957893
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,195
Total Base Water Volume (gal):	28,635,750
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
HCL	SWN Well Services	Solvent					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			



					68551-12-2	1.50000	0.00163
				Alcohols, C12-1, ethoxylated			
				Oleic Acid	93-83-4	1.50000	0.00163
				Diethanolamide			
				Acetic Acid	64-19-7	37.50000	0.00089
				Diethylenetriamine penta	15827-60-8	10.00000	0.00066
				Methanol	67-56-1	80.00000	0.00055
				Citric Acid	77-92-9	22.50000	0.00053
				Acrylic acid terpolymer	397256-50-7	1.00000	0.00026
				Oxyalkylated fatty acid	68951-67-7	9.67400	0.00007
				Fatty acids	61790-12-3	5.02700	0.00003
				Modified thiourea polymer	68527-49-1	4.74600	0.00003
				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

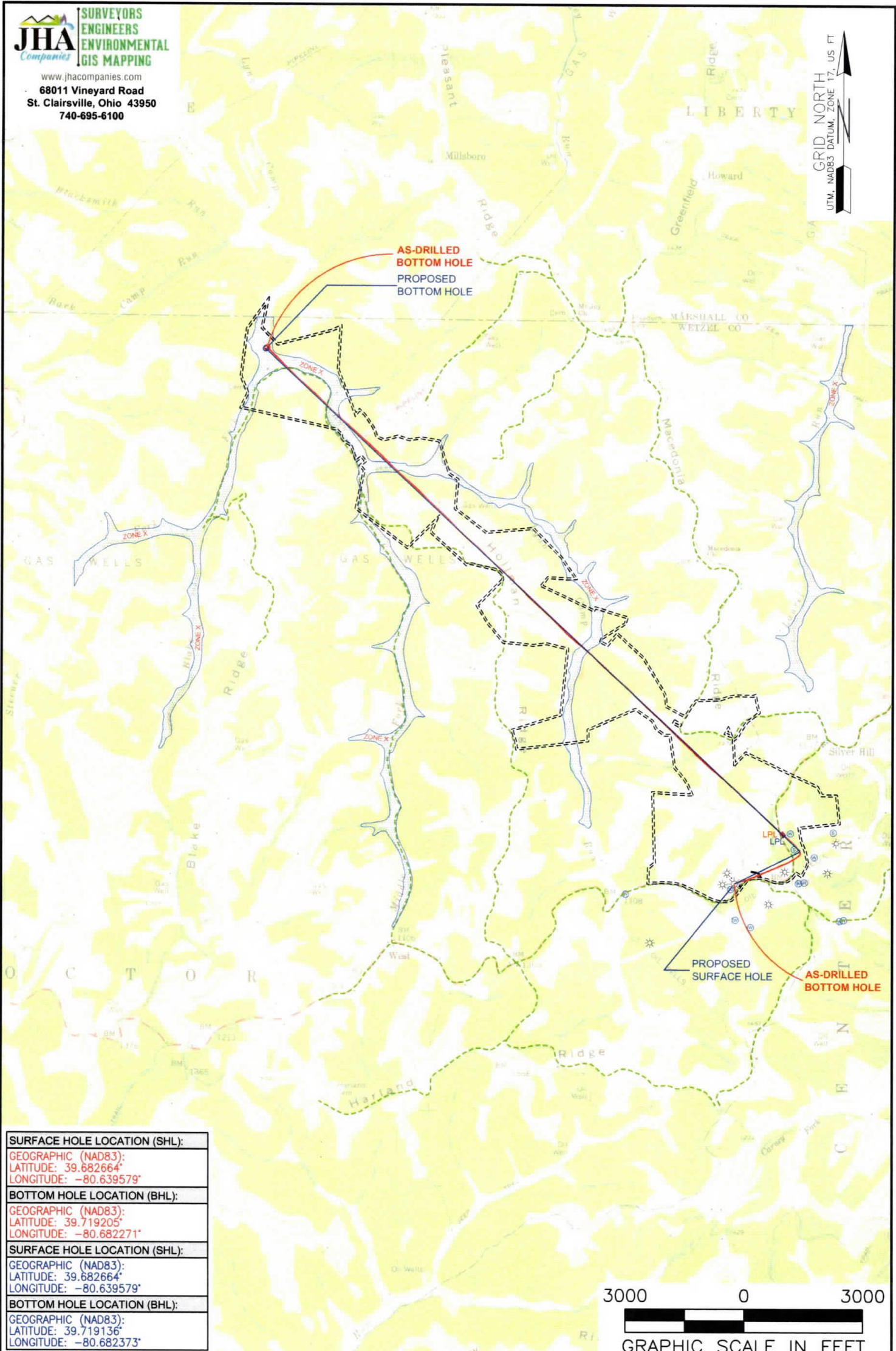
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



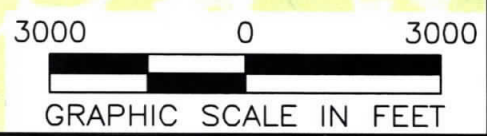
**Well Name:** SWN A WTZ 405H

**47103032530000**

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	300.00	300.00	
Top of Salt Water	1341.00	1341.00	NA	NA	
Pittsburgh Coal	1245.00	1245.00	1317.00	1317.00	
Pottsville (ss)	1317.00	1317.00	1781.00	1781.00	
Raven Cliff (ss)	1781.00	1781.00	1870.00	1870.00	
Maxton (ss)	1870.00	1870.00	2437.00	2437.00	
Big Injun (ss)	2437.00	2437.00	3039.00	3039.00	
Berea (siltstone)	3039.00	3039.00	6997.00	6689.00	
Rhinstreet (shale)	6997.00	6689.00	7324.00	6999.00	
Cashaqua (shale)	7324.00	6999.00	7468.00	7122.00	
Middlesex (shale)	7468.00	7122.00	7599.00	7215.00	
Burket (shale)	7599.00	7215.00	7641.00	7241.00	
Tully (ls)	7641.00	7241.00	7688.00	7266.00	
Mahantango (shale)	7688.00	7266.00	7898.00	7346.00	
Marcellus (shale)	7898.00	7346.00	NA	NA	GAS



<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 39.682664° LONGITUDE: -80.639579°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 39.719205° LONGITUDE: -80.682271°
<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 39.682664° LONGITUDE: -80.639579°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83): LATITUDE: 39.719136° LONGITUDE: -80.682373°



**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
- ASDRILLED PATH
- PROPOSED PATH

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> SWN A WTZ	<b>WELL #</b> 405H	<b>SERIAL #</b> XXXX
<b>ADDRESS:</b> 1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN WV, 26508	<b>COUNTY - CODE</b> WETZEL - 103	<b>DISTRICT;</b> PROCTOR	<b>API #</b> 47-103-03253
<b>SURFACE OWNER:</b> SWN PRODUCTION COMPANY, LLC	<b>USGS 7 1/2 QUADRANGLE MAP NAME</b> WILEYVILLE, WV		

(2,000' SCALE) LATITUDE: 39°45'00" BOTTOM HOLE  
 (2,000' SCALE) LATITUDE: 39°42'30" SURFACE HOLE

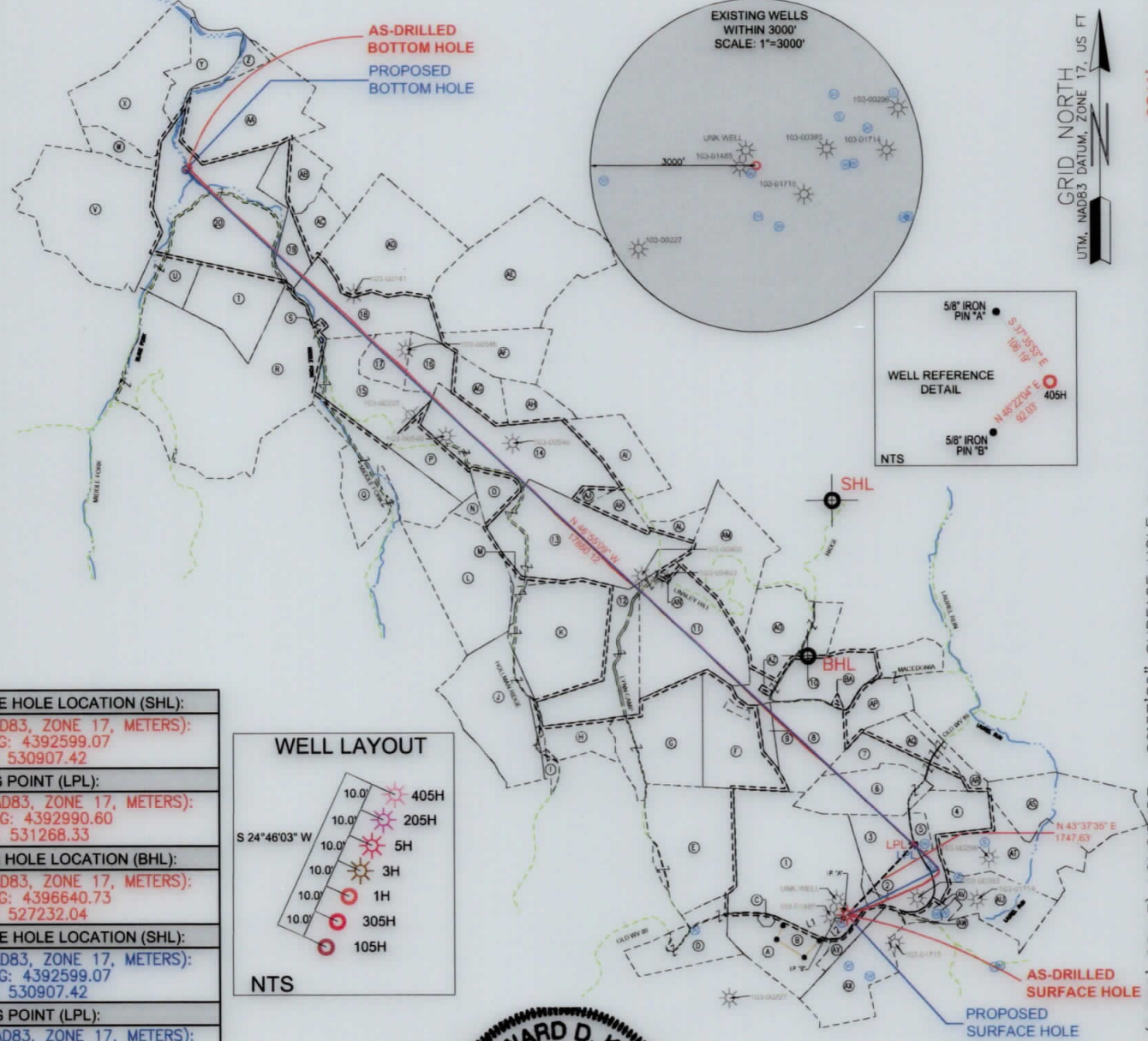
4397'  
 4097'

**JHA** COMPANIES  
**SURVEYORS ENGINEERS ENVIRONMENTAL GIS MAPPING**  
 www.jhacompanies.com  
 88011 Vineyard Road  
 St. Clairsville, Ohio 43950  
 740-695-6100

LINE	BEARING	DISTANCE
L1	N 71°08'48" E	1350.71'
L2	N 47°52'27" E	681.49'

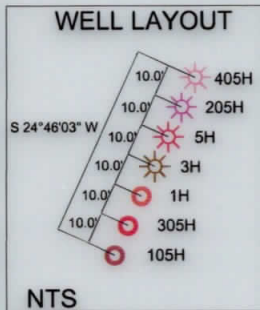
**NOTES ON SURVEY**

- COORDINATE 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/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- 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 THE LIMITS OF DISTURBANCE.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.



GRID NORTH  
 UTM, NAD83 DATUM, ZONE 17, US FT  
 9341'

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4392599.07 EASTING: 530907.42
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4392990.60 EASTING: 531268.33
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4396640.73 EASTING: 527232.04
<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4392599.07 EASTING: 530907.42
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4392982.86 EASTING: 531277.06
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4396632.99 EASTING: 527223.30



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

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

COMPANY:	<b>SWN</b> <sup>R<sup>+</sup></sup> <sup>V<sup>+</sup></sup> <sup>A</sup>		
OPERATOR'S WELL #:	SWN A WTZ 405H		
API WELL #:	47	103	03253
	STATE	COUNTY	PERMIT

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,344'

DISTRICT: PROCTOR COUNTY: WETZEL QUADRANGLE: WILEYVILLE, WV

SURFACE OWNER: SWN PRODUCTION COMPANY, LLC ACREAGE: ±128.24

OIL & GAS ROYALTY OWNER: RODNEY CALVERT, ET AL ACREAGE: ±128.24

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: 7,359' TVD 25,954' 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>	<ul style="list-style-type: none"> <li>EXISTING BOTTOM HOLE</li> <li>EXISTING / PRODUCING WELLHEAD</li> <li>LPL* EXISTING LANDING POINT LOCATION</li> <li>PROPOSED SURFACE HOLE / BOTTOM HOLE</li> <li>LPL* PROPOSED LANDING POINT LOCATION</li> <li>ACCESS ROAD</li> <li>PUBLIC ROAD</li> <li>FLOOD PLAIN</li> <li>LEASE BOUNDARY</li> <li>ASDRILLED PATH</li> <li>PROPOSED PATH</li> </ul>	<b>REVISIONS:</b> DATE: 05-04-2020 DRAWN BY: R. GRIMES SCALE: 1" = 3000' DRAWING NO: 2016-519 WELL LOCATION PLAT
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WELL LOCATION PLAT	DRAWING NO: 2016-218
SCALE: 1" = 3000'	DRAWN BY: R. GRIMES
REVISIONS:	DATE: 02-04-2020

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

TARGET FORMATION: MARCELLUS  
 CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) AS-DRILED  
 DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

OIL & GAS ROYALTY OWNER: RODNEY CALVERT, ET AL  
 SURFACE OWNER: SWN PRODUCTION COMPANY, LLC  
 DISTRICT: PROCTOR COUNTY: WETZEL  
 WATERSHED: UPPER OHIO SOUTH  
 WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW

CHARLESTON, WV 25034  
 601 27TH STREET  
 OFFICE OF OIL & GAS  
 WDEP  
 UNITED STATES TOPOGRAPHIC MAPS  
 (+) DENOTES LOCATION OF WELL ON  
 ELEVATION: (NAD 88, US FT)  
 SOURCE OF GRADE GPS  
 PROVEN SURVEY  
 ACCURACY: 1/200  
 MINIMUM DEGREE OF

PERMIT COUNTY STATE API WELL # OPERATOR'S WELL #  
 03253 103 47 WTS 405H SWN A  
 COMPANY: SWN Production Company, LLC  
 SWN Production Company, LLC

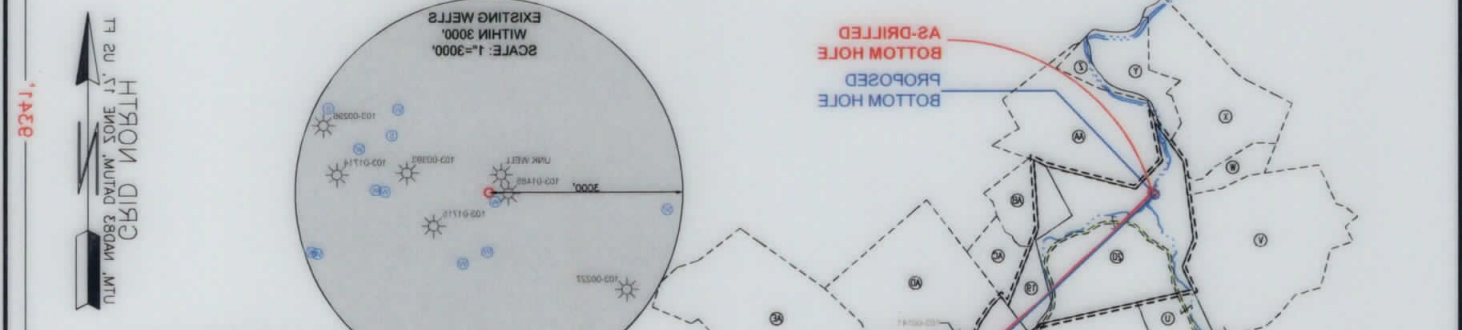
GRAPHIC SCALE IN FEET  
 0 3000  
 3000

WELL LAYOUT  
 NTS  
 10.0' 10.0' 10.0' 10.0' 10.0'  
 105H 305H 1H 3H 5H 505H 405H  
 2 34' 46.03' W

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432590.07 EASTING: 520907.42	BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432590.60 EASTING: 521288.33	LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432590.07 EASTING: 520907.42	SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432592.99 EASTING: 521232.30	BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432582.86 EASTING: 521277.08	LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 432590.07 EASTING: 520907.42
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THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF HIS KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
 P.2. 2041

PROFESSIONAL SURVEYOR  
 WEST VIRGINIA  
 STATE OF  
 LICENSED  
 No. 2041  
 HOWARD D. KEMP



LINE	BEARING	DISTANCE
L1	N 71.08'48" E	1250.71'
L2	N 47.25'27" E	681.48'

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.



WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	SWN PRODUCTION COMPANY, LLC (S) RODNEY CALVERT, ET AL (R)	12-10-29
TRACT	SURFACE OWNER	TAX PARCEL
2	JACOB & ANNA BICKERSTAFF	12-10-29.2
3	NORMA F. YOCUM	01-7-40
4	SUSAN ANNETT SMITH	01-7-3
5	SUSAN ANNETT SMITH	01-7-3.1
6	CORY & DAVID DURIG	01-7-2
7	CORY & DAVID DURIG	01-7-1
8	DEBORAH D. SHOWALTER	12-10-18
9	DEBORAH D. SHOWALTER	12-10-17
10	BRADLEY SCOTT YOHO	12-10-19
11	SWN PRODUCTION COMPANY, LLC	12-10-11
12	SWN PRODUCTION COMPANY, LLC	12-10-10
13	MILLTREE PROPERTIES, LLC	12-10-3
14	MILLTREE PROPERTIES, LLC	12-5-21
15	CLAUDIA JONAS-MECKEL & ET AL	12-4-27
16	HERBERT O. NICHOLSON	12-4-29
17	CLAUDIA JONAS-MECKEL & ET AL	12-4-28
18	JOHN STULGA	12-4-19
19	NANCY RABER & ET AL	12-4-7
20	NANCY RABER & ET AL	12-4-6

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	RODNEY A. CALVERT	12-10-29.3
B	RODNEY A. CALVERT	12-10-29.4
C	RODNEY CALVERT & ET AL	12-10-29.1
D	HAESSLY LAND & TIMBER, LLC	12-10-33
E	SWN PRODUCTION COMPANY, LLC	12-10-28
F	KEVIN M. YOHO	12-10-16
G	SWN PRODUCTION COMPANY, LLC	12-10-15
H	SWN PRODUCTION COMPANY, LLC	12-10-14
I	COURTNEY E. & RHEA K. RICHMOND	12-10-21
J	COURTNEY E. & RHEA K. RICHMOND	12-10-13
K	MILLTREE PROPERTIES, LLC	12-10-9
L	ANDREW D. & ANDREA M. SHULUGA REVOCABLE TRUST	12-10-1
M	MILLTREE PROPERTIES, LLC	12-10-2
N	RICHARD W. MASTNEY & MARK MASSARI	12-5-29
O	RICHARD W. MASTNEY & MARK MASSARI	12-5-20
P	JAMES L. RITCHEA & HAZEL JORETTA RITCHEA	12-4-39
Q	MARK MASSARI	12-4-38
R	CHRISTOPHER P. BITHELL	12-4-26
S	SCHOOL	12-4-18
T	CHRISTOPHER P. BITHELL	12-4-17
U	NANCY RABER & ET AL	12-4-16
V	KEVIN L. BLATT (TRUSTEE): BLATT FAMILY IRREVOCABLE TRUST	12-4-5
W	ZACHARY M. BLAIR	09-21-20
X	ZACHARY M. BLAIR	09-21-19
Y	XXXXX	09-21-15
Z	ZACHARY M. BLAIR	09-21-13
AA	MASON DIXON FARMS, LLC	09-21-12
AB	SARAH V. RICHMOND	12-4-8
AC	NANCY RABER & ET AL	12-4-10
AD	CRAIG & CAROL NORDBERG	12-4-11
AE	MASON DIXON FARMS, LLC	12-5-7
AF	MASON DIXON FARMS, LLC	12-5-12
AG	MILLTREE PROPERTIES, LLC	12-5-14
AH	AUGUSTUS R. MCMAHON, III	12-5-15
AI	DANIEL F. & RHONDA K. DURIG	12-5-22
AJ	MILLTREE PROPERTIES, LLC	12-5-25
AK	MILLTREE PROPERTIES, LLC	12-5-26
AL	SWN PRODUCTION COMPANY, LLC	12-10-5
AM	SWN PRODUCTION COMPANY, LLC	12-10-6
AN	ZONA L. TAYLOR	12-10-4
AO	BRADLEY SCOTT YOHO	12-10-12
AP	C.L. YOHO	01-4-37
AQ	CORY & DAVID DURIG	01-4-38
AR	CORY & DAVID DURIG	01-4-39
AS	COASTAL FOREST RESOURCES COMPANY	01-7-5
AT	ERIC L. & AMANDA J. YEATER	01-7-10
AU	ERIC L. & AMANDA J. YEATER	01-7-9
AV	TERRY W. & DORIS YEATER	01-7-9.2
AW	ERIC L. & AMANDA J. YEATER	12-10-34
AX	CRIS B. YOCUM (L/E: GARY & LAVERNE YOCUM)	12-15-9
AY	RODNEY A. CALVERT	12-10-29.5
AZ	DEBORAH D. SHOWALTER	12-10-19.1
BA	RYAN ALLEN YOHO	12-10-19.2

REVISIONS:

COMPANY:

**SWN**  
Production Company, LLC

**swn** <sup>R<sup>+</sup></sup> <sup>A</sup> <sup>V<sup>+</sup></sup>  
Production Company™

OPERATOR'S

SWN A

DATE: 05-04-2020

WELL #:

WTZ 405H

DRAWN BY: R. GRIMES

DISTRICT:  
PROCTOR

COUNTY:  
WEITZEL

STATE:  
WV

SCALE: N/A  
DRAWING NO: 2016-519  
WELL LOCATION PLAT

TRACT	SURFACE OWNER (S) \ ROYALTY OWNER (R)	TAX PARCEL
1	SWN PRODUCTION COMPANY, LLC (S) RODNEY CALVERT, ET AL (R)	12-10-29
2	JACOB & ANNA BICKERSTAFF	12-10-29.2
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R	CHRISTOPHER P. BITHELL	12-4-26
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T	CHRISTOPHER P. BITHELL	12-4-17
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Z	ZACHARY M. BLAIR	09-21-13
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AV	TERRY W. & DORIS YEATER	01-7-9.2
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AY	RODNEY A. CALVERT	12-10-29.5
AZ	DEBORAH D. SHOWALTER	12-10-19.1
BA	RYAN ALLEN YOHO	12-10-19.2

				COMPANY:		REVISIONS:
DATE: 02-04-2020		OPERATOR'S SWM A		WELL #: WTS 405H		
DRAWN BY: R. GRIMES		STATE: WY		DISTRICT:		
SCALE: N/A		COUNTY: WETZEL		PROCTOR:		
DRAWING NO: 2018-219		WELL LOCATION PLAT				