

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

API 47-069-00315 County OHIO District LIBERTY
Quad BETHANY Pad Name SHAWN COUCH-PAD-1 Field/Pool Name PANHANDLE FIELD WET
Farm name SHAWN W. COUCH (TRUST) Well Number SHAWN COUCH OHI 201H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,444,246.73 Easting 535,029.26
Landing Point of Curve Northing 4,444,150.48 Easting 534,482.77
Bottom Hole Northing 4,449,102.37 Easting 532,439.75


Elevation (ft) 1246.8' 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 10/28/2019 Date drilling commenced 3/13/2020 Date drilling ceased 3/26/2020
Date completion activities began 6/8/2020 Date completion activities ceased 7/21/2020
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 316' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 611' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 488' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:  11-2-20

API 47-069 - 00315 Farm name SHAWN W. COUCH (TRUST) Well number SHAWN COUCH OHI 201H

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	423	NEW	J-55/54.50#		Y; 25 BBLS
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	1,882	NEW	J-55/36#		Y; 35 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	24,570	NEW	HCP-110/20#		Y
Tubing		2.375	6,823	NEW	P-110/6.50#		N
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	399	15.60	1.20	478.8	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	696	15.60	1.20	835.2	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	370/4,291	14.00/15.60	1.52/1.19	562.4/5,106.29	SURFACE	24
Tubing							

Drillers TD (ft) 24,570' Loggers TD (ft) 24,570'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,640'

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING

INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING

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

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 069 - 00315 Farm name SHAWN W. COUCH (TRUST) Well number SHAWN COUCH OHI 201H

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		SEE	ATTACHMENT	2				

Please insert additional pages as applicable.

API 47- 069 - 00315 Farm name SHAWN W. COUCH (TRUST) Well number SHAWN COUCH OHI 201H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
		TVD	MD
<u>MARCELLUS</u>	<u>6,132'</u>		<u>6,659'</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1138 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 10,257 mcfpd Oil 1,243 bpd NGL _____ bpd Water 1,109 bpd GAS MEASURED BY Estimated Orifice Pilot

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

Please insert additional pages as applicable.

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

Logging Company BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

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

Stimulating Company HALLIBURTON ENERGY SERVICE
Address 14851 MILNER ROAD, GATE 5A City HOUSTON State TX Zip 77032

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-2873
Signature *Elizabeth Gee* Title Staff Regulatory Analyst Date 10/05/2020

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

**SHAWN COUCH OHI 201H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	6/3/2020	24,486	24,396	36
2	6/8/2020	24,360	24,183	36
3	6/8/2020	24,150	23,973	36
4	6/8/2020	23,940	23,762	36
5	6/9/2020	23,724	23,552	36
6	6/9/2020	23,519	23,342	36
7	6/10/2020	23,309	23,132	36
8	6/10/2020	23,099	22,919	36
9	6/10/2020	22,890	22,711	36
10	6/10/2020	22,678	22,501	36
11	6/11/2020	22,468	22,291	36
12	6/11/2020	22,258	22,084	36
13	6/11/2020	22,048	21,871	36
14	6/12/2020	21,837	21,660	36
15	6/12/2020	21,627	21,450	36
16	6/12/2020	21,417	21,240	36
17	6/13/2020	21,207	21,030	36
18	6/13/2020	20,997	20,819	36
19	6/13/2020	20,786	20,609	36
20	6/13/2020	20,576	20,399	36
21	6/14/2020	20,362	20,189	36
22	6/14/2020	20,156	19,979	36
23	6/14/2020	19,946	19,768	36
24	6/14/2020	19,735	19,563	36
25	6/15/2020	19,525	19,348	36
26	6/15/2020	19,312	19,138	36
27	6/15/2020	19,105	18,928	36
28	6/15/2020	18,895	18,719	36
29	6/16/2020	18,684	18,507	36
30	6/16/2020	18,474	18,297	36
31	6/16/2020	18,264	18,087	36
32	6/16/2020	18,054	17,875	36
33	6/18/2020	17,838	17,666	36
34	6/17/2020	17,633	17,456	36
35	6/17/2020	17,423	17,246	36
36	6/17/2020	17,213	17,036	36
37	6/17/2020	17,003	16,825	36
38	6/18/2020	16,792	16,615	36
39	6/18/2020	16,582	16,405	36
40	6/18/2020	16,372	16,195	36
41	6/19/2020	16,162	15,990	36
42	6/20/2020	15,952	15,774	36
43	6/20/2020	15,741	15,569	36
44	6/20/2020	15,532	15,354	36

45	6/21/2020	15,321	15,144	36
46	6/21/2020	15,111	14,934	36
47	6/22/2020	14,901	14,723	36
48	6/22/2020	14,690	14,513	36
49	6/22/2020	14,480	14,303	36
50	6/23/2020	14,270	14,093	36
51	6/23/2020	14,060	13,883	36
52	6/24/2020	13,850	13,672	36
53	6/24/2020	13,639	13,465	36
54	6/25/2020	13,429	13,252	36
55	6/25/2020	13,219	13,042	36
56	6/25/2020	13,006	12,831	36
57	6/26/2020	12,798	12,621	36
58	6/26/2020	12,588	12,411	36
59	6/26/2020	12,378	12,201	36
60	6/27/2020	12,168	11,991	36
61	6/27/2020	11,958	11,780	36
62	6/28/2020	11,747	11,570	36
63	6/28/2020	11,537	11,360	36
64	6/28/2020	11,327	11,150	36
65	6/28/2020	11,117	10,940	36
66	6/29/2020	10,907	10,729	36
67	6/29/2020	10,696	10,519	36
68	6/29/2020	10,486	10,309	30
69	6/30/2020	10,276	10,099	30
70	6/30/2020	10,066	9,889	30
71	7/1/2020	9,856	9,678	30
72	7/1/2020	9,645	9,468	30
73	7/2/2020	9,435	9,258	30
74	7/2/2020	9,225	9,048	30
75	7/2/2020	9,015	8,837	27
76	7/3/2020	8,804	8,627	27
77	7/3/2020	8,594	8,417	27
78	7/3/2020	8,384	8,202	27
79	7/4/2020	8,174	7,997	30
80	7/4/2020	7,960	7,786	30
81	7/5/2020	7,750	7,576	30
82	7/5/2020	7,543	7,366	30
83	7/5/2020	7,328	7,156	30
84	7/6/2020	7,123	6,946	30
85	7/6/2020	6,918	6,735	30

SHAWN COUCH OHI 201H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/other
1	6/8/2020	83.2	8,252	7,849	3,959	239,740	8,141	0
2	6/8/2020	82.3	8,012	5,012	4,353	319,920	10,065	0
3	6/8/2020	82.9	8,374	5,851	4,096	309,515	9,514	0
4	6/9/2020	83.3	8,200	8,150	4,014	279,260	9,440	0
5	6/9/2020	81.2	8,061	5,491	4,076	319,760	10,012	0
6	6/9/2020	81.9	8,159	4,253	3,784	320,520	9,385	0
7	6/10/2020	83.1	8,034	4,927	4,583	319,760	9,549	0
8	6/10/2020	77.3	8,121	5,086	3,511	319,760	9,255	0
9	6/10/2020	78.7	8,075	5,349	4,163	279,660	8,576	0
10	6/11/2020	79.5	8,037	5,788	3,724	319,860	9,346	0
11	6/11/2020	78.3	8,013	5,150	3,720	319,200	9,470	0
12	6/11/2020	80.9	8,144	5,271	4,237	319,840	9,454	0
13	6/12/2020	74.4	8,094	5,529	3,827	280,080	8,642	0
14	6/12/2020	78.1	7,928	5,494	6,067	319,980	9,769	0
15	6/12/2020	81.3	8,152	4,978	4,013	280,080	9,310	0
16	6/12/2020	79.6	8,019	5,243	3,885	319,680	9,110	0
17	6/13/2020	82.9	8,128	5,068	3,983	258,200	8,804	0
18	6/13/2020	79.5	8,011	5,015	3,927	299,600	8,841	0
19	6/13/2020	77.1	8,037	4,901	3,798	319,760	9,088	0
20	6/14/2020	80.7	8,016	5,580	4,226	319,740	8,980	0
21	6/14/2020	81.9	7,994	6,405	4,261	320,320	9,418	0
22	6/14/2020	84.8	8,119	5,835	4,280	300,400	9,228	0
23	6/14/2020	78.1	7,946	5,503	3,954	320,250	9,743	0
24	6/15/2020	79.4	8,003	5,281	4,080	320,020	8,945	0
25	6/15/2020	82.1	8,015	5,136	4,163	289,950	8,934	0
26	6/15/2020	79.3	7,931	5,345	4,294	320,820	9,014	0
27	6/15/2020	80.9	7,881	5,699	4,128	320,640	9,193	0
28	6/16/2020	83.6	8,024	5,260	4,277	319,020	8,713	0
29	6/16/2020	89.3	8,110	5,223	4,542	310,770	8,711	0
30	6/16/2020	82.9	8,098	5,380	4,164	320,700	8,823	0
31	6/16/2020	87.3	8,277	5,413	4,194	318,940	8,625	0
32	6/16/2020	83.5	7,980	5,256	4,252	269,460	8,050	0
33	6/17/2020	84.2	7,898	5,283	4,214	319,460	9,023	0
34	6/17/2020	89.3	7,913	5,399	4,120	319,360	8,875	0
35	6/17/2020	98.5	8,039	5,012	4,279	319,260	8,868	0
36	6/17/2020	92.3	8,012	5,586	4,323	319,600	9,033	0
37	6/17/2020	93.9	7,954	5,054	4,438	319,860	9,244	0
38	6/18/2020	91.5	7,937	5,088	4,376	319,020	9,274	0
39	6/18/2020	95.3	8,027	5,210	4,422	319,460	9,124	0
40	6/19/2020	96.2	8,148	5,525	4,433	319,480	8,949	0
41	6/19/2020	96.3	8,056	5,176	4,208	320,720	8,430	0
42	6/20/2020	96.1	8,030	5,875	4,109	319,100	9,166	0
43	6/20/2020	97.8	8,001	6,322	4,093	319,900	9,059	0
44	6/21/2020	97.7	8,204	5,698	4,110	318,640	8,938	0
45	6/21/2020	96.7	8,058	6,169	4,230	319,280	9,056	0
46	6/21/2020	91.9	7,915	5,487	4,618	320,220	10,200	0
47	6/22/2020	98.2	7,873	5,550	4,260	319,300	8,867	0
48	6/22/2020	96.9	8,071	5,411	4,203	319,360	8,645	0
49	6/23/2020	93.9	7,963	5,415	4,095	319,720	8,426	0
50	6/23/2020	97.2	7,824	6,143	4,205	320,200	8,979	0
51	6/23/2020	97.5	7,742	5,304	4,103	319,960	8,688	0
52	6/24/2020	97.9	7,976	5,961	3,932	320,820	9,023	0
53	6/24/2020	98.5	7,898	5,315	3,987	320,520	8,624	0
54	6/25/2020	97.8	7,612	5,817	4,016	319,860	8,731	0
55	6/25/2020	99.2	7,625	5,499	4,288	321,280	8,411	0
56	6/26/2020	99.7	7,613	5,213	4,029	319,160	8,523	0

57	6/26/2020	98.7	7,693	5,667	4,046	319,460	8,639	0
58	6/26/2020	99.2	7,612	5,105	3,960	320,180	8,461	0
59	6/27/2020	99.2	7,747	5,564	3,953	319,220	8,617	0
60	6/27/2020	99.3	7,689	5,976	4,159	319,880	8,639	0
61	6/27/2020	100.2	7,593	5,567	3,980	320,080	8,424	0
62	6/28/2020	100.6	7,453	5,521	4,187	320,080	8,295	0
63	6/28/2020	98.3	7,541	5,511	4,171	320,280	8,671	0
64	6/28/2020	98.9	7,479	5,786	4,173	320,020	8,574	0
65	6/28/2020	98.9	7,427	5,604	4,038	320,460	8,444	0
66	6/29/2020	99.3	7,542	5,629	4,173	319,880	8,525	0
67	6/29/2020	98.9	7,437	5,379	4,140	320,580	8,492	0
68	6/30/2020	99	7,784	5,265	3,982	319,380	8,650	0
69	6/30/2020	97.6	7,753	5,531	3,988	319,720	8,213	0
70	7/1/2020	94.6	7,422	5,831	4,109	319,160	9,584	0
71	7/1/2020	95.5	7,668	5,759	4,111	319,760	8,333	0
72	7/1/2020	98.2	7,779	5,999	4,179	319,880	8,531	0
73	7/2/2020	90.5	7,018	5,228	4,052	319,080	8,665	0
74	7/2/2020	99.7	7,591	6,473	4,137	320,340	8,410	0
75	7/3/2020	96	7,795	4,419	4,090	320,080	8,700	0
76	7/3/2020	91.7	7,145	5,806	4,026	319,820	8,489	0
77	7/3/2020	98.8	7,542	5,374	4,105	320,000	8,601	0
78	7/4/2020	82.7	7,029	5,490	4,559	320,060	11,040	0
79	7/4/2020	96.2	7,162	5,137	4,091	320,120	8,483	0
80	7/5/2020	98.5	7,475	5,567	4,033	319,000	8,231	0
81	7/5/2020	90.2	6,817	5,463	4,059	320,120	8,487	0
82	7/5/2020	99.4	7,171	4,946	4,240	320,160	8,235	0
83	7/6/2020	92.9	6,830	5,672	4,445	319,180	8,795	0
84	7/6/2020	91	6,775	5,675	4,159	319,480	8,392	0
85	7/6/2020	99	7,437	5,947	4,121	320,220	8,456	0



Well Name: **Shawn Couch OHI 201H** **47069003150000**

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	316.00	316.00	
Top of Salt Water	611.00	611.00	NA	NA	
Pittsburgh Coal	488.00	488.00	493.00	493.00	
Pottsville (ss)	602.00	602.00	1041.00	1041.00	
Raven Cliff (ss)	1041.00	1041.00	1708.00	1708.00	
Big Injun (ss)	1708.00	1708.00	2172.00	2171.00	
Berea (siltstone)	2172.00	2171.00	5903.00	5594.00	
Rhinstreet (shale)	5903.00	5594.00	6193.00	5845.00	
Cashaqua (shale)	6193.00	5845.00	6260.00	5899.00	
Middlesex (shale)	6260.00	5899.00	6353.00	5969.00	
Burket (shale)	6353.00	5969.00	6376.00	5985.00	
Tully (ls)	6376.00	5985.00	6448.00	6032.00	
Mahantango (shale)	6448.00	6032.00	6659.00	6132.00	
Marcellus (shale)	6659.00	6132.00	NA	NA	GAS

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/8/2020
Job End Date:	7/6/2020
State:	West Virginia
County:	Ohio
API Number:	47-069-00315-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Shawn Couch OHI 201H
Latitude:	40.14783500
Longitude:	-80.58874000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,168
Total Base Water Volume (gal):	31,596,379
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
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	81.93578	Density = 8.34
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	8.30131	Density = 8.50

Ingredients	Listed Above	Listed Above	Listed Above						
				Water		7732-18-5	100.00000	0.45574	
FE-2A	Halliburton	Additive				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor				Listed Below			
LD-2950	MultiChem	Friction Reducer							
						Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant							
						Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent							
						Listed Below			
LEGEND(TM) LD-7750W	MultiChem	Scale Control							
						Listed Below			
MC MX 8-4743	MultiChem	Additive							
						Listed Below			
Sand-Premium White-40/70	Halliburton	Proppant							
						Listed Below			

					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	9.14244
					Complex Amine Compound	Proprietary	60.00000	0.05302
					Hydrochloric acid	7647-01-0	30.00000	0.04704
					Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02651
					Sodium nitrate	7631-99-4	60.00000	0.02128
					Methanol	67-56-1	100.00000	0.00534
					Ethoxylated alcohols	Proprietary	5.00000	0.00442
					Citric acid	77-92-9	60.00000	0.00235
					Sodium molybdate	10102-40-6	5.00000	0.00177
					Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched	69011-36-5	1.00000	0.00088
					Adipic acid	124-04-9	1.00000	0.00088
					Sodium chloride	7647-14-5	5.00000	0.00046
					Phosphoric Acid Salt	Proprietary	5.00000	0.00042
					Modified thiourea polymer	Proprietary	30.00000	0.00008
					Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00008
					Sodium acetate	127-09-3	0.10000	0.00004
					Monopotassium phosphate	7778-77-0	0.10000	0.00004
					Sodium lactate	72-17-3	0.10000	0.00004
					Yeast extract	8013-01-2	0.10000	0.00004
					Ethoxylated alcohols	Proprietary	5.00000	0.00001
					Propargyl alcohol	107-19-7	5.00000	0.00001
					Formaldehyde	50-00-0	0.10000	0.00001
					Hexadecene	629-73-2	5.00000	0.00001

* 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)

SWN PRODUCTION COMPANY, LLC

Location: Ohio County, WV

Field: Ohio

Facility: Shawn Couch OHI Pad 1

Slot: Slot #201

Well: Shawn Couch OHI 201H

Wellbore: Shawn Couch OHI 201H PWB

Plan reference depth is Shawn Couch OHI 201H PWB Rev-A-0

North Reference: Grid North

Scale: True distance

Coordinates are in feet referenced to Slot

Depth is in feet

Checked by: mntm on 2020-03-22, Database: WVA_MPL_F5C57PMA5E_PWB

API: 47-069-00315-0000

BH Job #: 110326194A

Rig: SDC 42

Duration: 03/19/2020 - 03/22/2020

Grid North (US ft)

Grid East (US ft)

Local N (ft)

Local E (ft)

Slot #201

Slot #201

Mean Sea Level to Ground level (At Slot: Slot #201)

SDC 42 (KB) to Ground level (At Slot: Slot #201)

Mean Sea Level to Mean Sea Level

SDC 42 (KB) to Mean Sea Level

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Shawn Couch OHI Pad 1	1755367.233	14580844.855	40°09'52.3250"N	80°35'19.1380"W
Local N (ft)	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
Local E (ft)	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
Slot #201	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
Slot #201	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
Mean Sea Level to Ground level (At Slot: Slot #201)	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
Mean Sea Level to Mean Sea Level	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W
SDC 42 (KB) to Mean Sea Level	-25.41	1755341.828	40°09'52.2060"N	80°35'19.4640"W

Grid East (US ft)

Grid North (US ft)

Local N (ft)

Local E (ft)

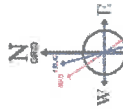
Slot #201

Slot #201

Mean Sea Level to Ground level (At Slot: Slot #201)

Mean Sea Level to Mean Sea Level

SDC 42 (KB) to Mean Sea Level

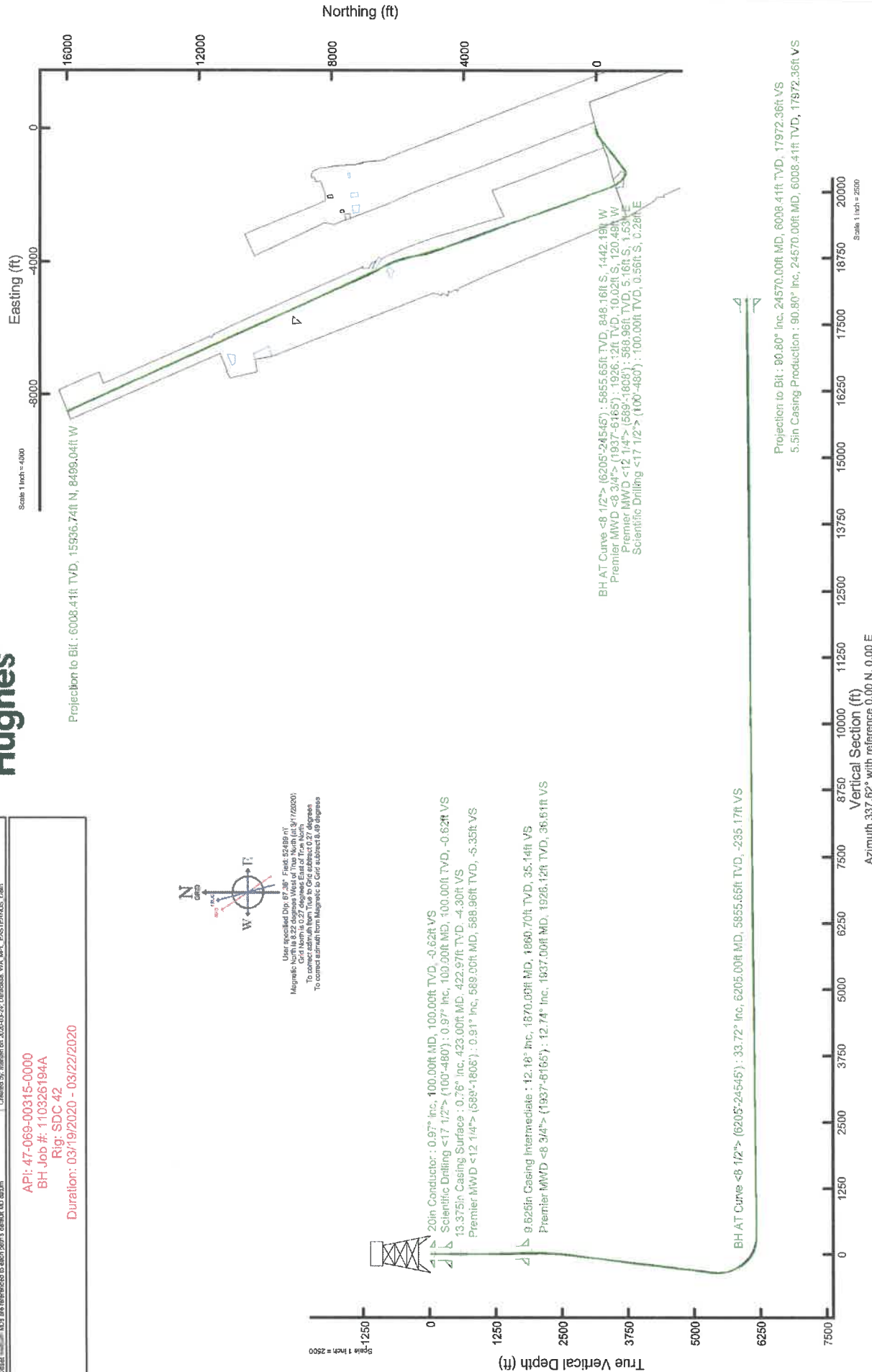


User specified Dip: 87.38° Field: 52489 mT
 Magnetic North is 8.22 degrees West of True North (at 31°/2020):
 To correct azimuth from True to Grid subtract 8.22 degrees
 To correct azimuth from Magnetic to Grid subtract 8.49 degrees

20in Conductor : 0.97° Inc, 100.00ft MD, 100.00ft TVD, -0.62R VS
 Scientific Drilling <17 1/2"> : 0.97° Inc, 100.00ft MD, 100.00ft TVD, -0.62R VS
 13.375in Casing Surface : 0.76° Inc, 423.00ft MD, 422.97ft TVD, -4.30R VS
 Premier MWD <12 1/4"> : 0.91° Inc, 589.00ft MD, 588.96ft TVD, -5.35R VS
 9.625in Casing Intermediate : 12.18° Inc, 1870.00ft MD, 1869.70ft TVD, 35.14ft VS
 Premier MWD <8 3/4"> : 12.74° Inc, 1837.00ft MD, 1828.12ft TVD, 36.61ft VS

BH AT Curve <8 1/2"> : 6205-24545 : 33.72° Inc, 6205.00ft MD, 5855.65ft TVD, -235.17ft VS

BH AT Curve <8 1/2"> : 6205-24545 : 5855.65ft TVD, 848.16ft S, 1442.19ft W
 Premier MWD <8 3/4"> : 1937-6165 : 1926.12ft TVD, 10.02ft S, 120.49ft W
 Premier MWD <12 1/4"> : 589-1808 : 588.96ft TVD, 5.16ft S, 1.53ft E
 Scientific Drilling <17 1/2"> : 100.00ft TVD, 0.56ft S, 0.28ft E



Projection to Bit : 6008.4ft TVD, 15586.74ft N, 8498.04ft W
 Projection to Bit : 6008.4ft TVD, 15586.74ft N, 8498.04ft W
 5.5in Casing Production : 90.80° Inc, 24570.00ft MD, 6008.4ft TVD, 17972.36ft VS

Vertical Section (ft)
 Azimuth 337.62° with reference 0.00 N, 0.00 E

Scale 1 inch = 2500

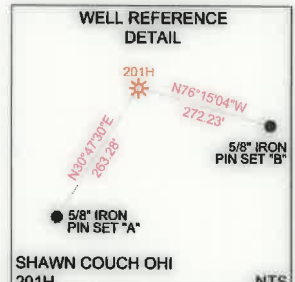
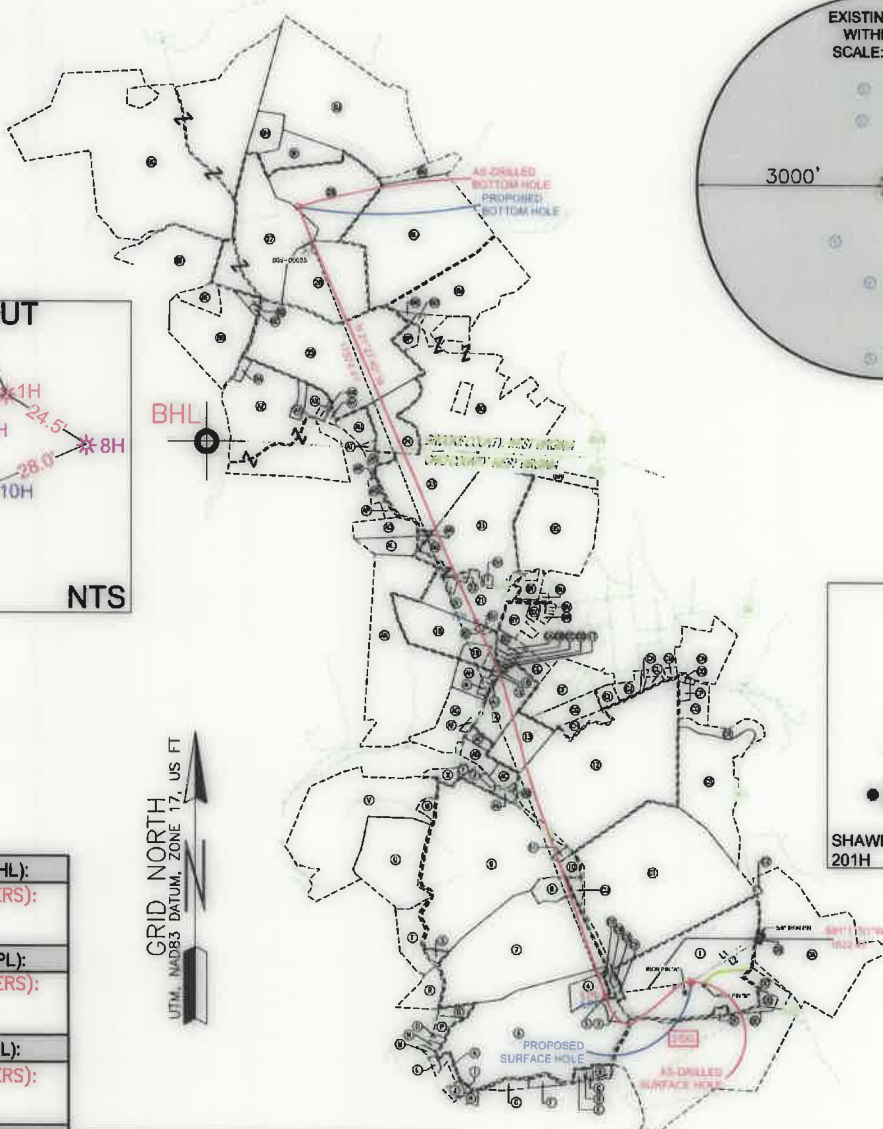
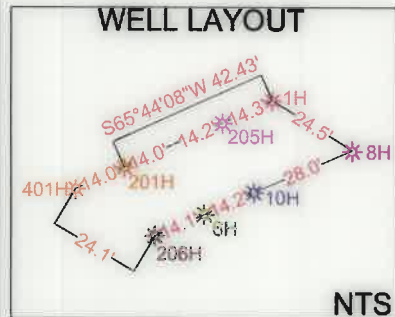
LATITUDE: 40°10'00" SURFACE HOLE (2000' SCALE) ← 1573'

9993'
LATITUDE: 40°12'30" BOTTOM HOLE (2000' SCALE)



www.jhacompanies.com

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

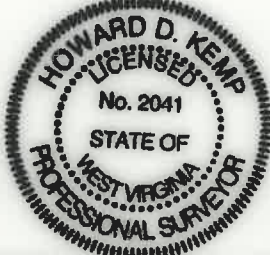


SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4444246.73 EASTING: 535029.26
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4444150.48 EASTING: 534482.77
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4449102.37 EASTING: 532439.75
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4444246.73 EASTING: 535029.26
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4444129.40 EASTING: 534490.46
TURNING POINT LOCATION (TPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4446504.98 EASTING: 533620.02
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4449101.81 EASTING: 532443.18

LINE	BEARING	DISTANCE
L1	S53°09'55\"/>	
L2	S57°33'33\"/>	

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.



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 *[Signature]* 6/3/20

COMPANY: **SWN** Production Company, LLC

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)	SHAWN COUCH OHI OPERATOR'S WELL #: 201H API WELL #: 47 069 00315 STATE COUNTY PERMIT
---	--	---

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1,246.8'

DISTRICT: LIBERTY COUNTY: OHIO QUADRANGLE: BETHANY, WV

SURFACE OWNER: SHAWN W. COUCH (TRUST) ACREAGE: ±144.29

OIL & GAS ROYALTY OWNER: LL&B HEADWATER II, LP & RESOURCE MINERALS HEADWATER I, LP ACREAGE: ±144.29

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

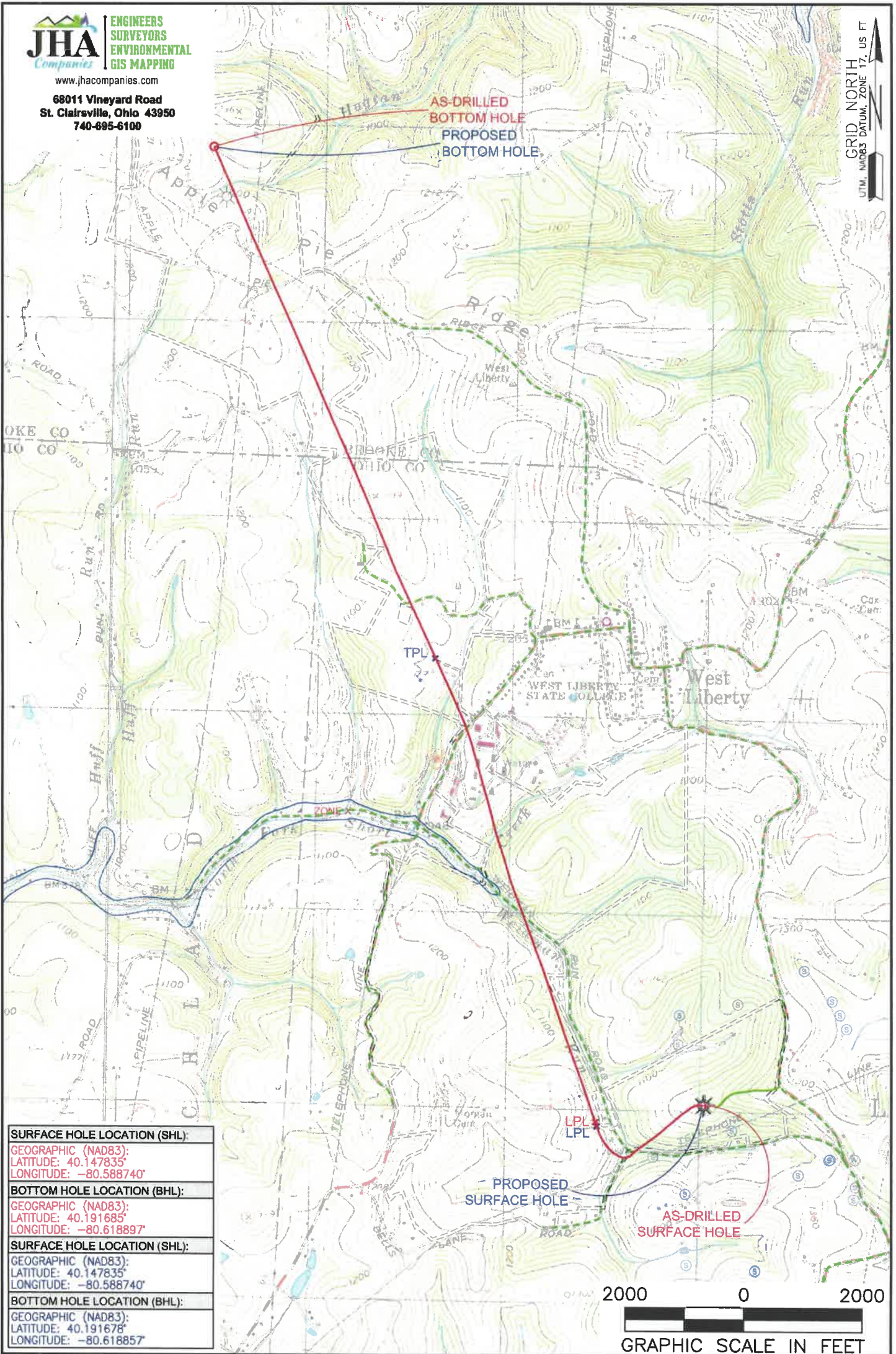
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,169' TVD 24,570' TMD

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

ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201

CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

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 PLAN — LEASE BOUNDARY — ASDRILLED PATH — PROPOSED PATH	REVISIONS: DATE: 05-12-2020 API NO: 47-069-00315 DRAWN BY: R. GRIMES SCALE: 1" = 4000' DRAWING NO: 2019-0523 WELL LOCATION PLAT
---	--



SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.147835° LONGITUDE: -80.588740°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.191685° LONGITUDE: -80.618897°
SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.147835° LONGITUDE: -80.588740°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.191678° LONGITUDE: -80.618857°

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 PLAN
- LEASE BOUNDARY
- AS DRILLED PATH
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: SHAWN COUCH OHI	WELL # 201H	SERIAL # XXXX
ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN, WV 26508	COUNTY: OHIO	CODE: 069	DISTRICT: LIBERTY
SURFACE OWNER: SHAWN W. COUCH (TRUST)	USGS 7 1/2 QUADRANGLE MAP NAME: BETHANY, WV		
		API # 47-069-00315	