

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

API 47-051-02302 County MARSHALL District LIBERTY  
Quad CAMERON Pad Name CHARLES JAMISON MSH PAD Field/Pool Name NORTH VICTORY FIELD WET  
Farm name CHARLES AND JEAN JAMISON Well Number CHARLES JAMISON MSH 210H  
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 4,404,731.272 Easting 533,600.827  
Landing Point of Curve Northing 4,405,328.839 Easting 533,762.984  
Bottom Hole Northing 4,401,291.331 Easting 536,291.204

Elevation (ft) 1335' 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  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
SOBM

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Date permit issued 1/29/2020 Date drilling commenced 3/23/2020 Date drilling ceased 4/09/2020  
Date completion activities began 7/19/2020 Date completion activities ceased 9/17/2020  
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 322' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1195' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 1086' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
*Jim Nicholas*  
12/20/2020

API 47-051 - 02302 Farm name CHARLES AND JEAN JAMISON Well number CHARLES JAMISON MSH 210H

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	456'	NEW	J-55/54.50#		Y, 27 BBLS
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2,719'	NEW	J-55/36#		Y, 36 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	23,950'	NEW	HCP-110/20#		Y, 10 BBLS
Tubing		2.375		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	455	15.60	1.21	550.55	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	1,116	16.00	1.12	1,249.92	SURFACE	8
Intermediate 2	CLASS A						
Intermediate 3							
Production	CLASS A	4,395	15.60	1.18	5,186.1	SURFACE	24
Tubing							

Drillers TD (ft) 23,950'      Loggers TD (ft) 23,950'  
 Deepest formation penetrated MARCELLUS      Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,614'

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

Well cored     Yes     No      Conventional      Sidewall      Were cuttings collected     Yes     No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING

INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING

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

WAS WELL COMPLETED AS SHOT HOLE     Yes     No      DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?     Yes     No      DETAILS \_\_\_\_\_

WERE TRACERS USED     Yes     No      TYPE OF TRACER(S) USED \_\_\_\_\_

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API 47- 051 - 02302 Farm name CHARLES AND JEAN JAMISON Well number CHARLES JAMISON MSH 210H

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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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>7.115'</u> TVD	<u>8.081'</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2612 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 34.749 mcfpd Oil 29 bpd NGL \_\_\_\_\_ bpd Water 598 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 <sub>2</sub> 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 BJ SERVICES  
Address 11211 FM 2920 City TOMBALL State TX Zip 77377

Stimulating Company SWN DRILLING COMPANY  
Address PO BOX 12359 City SPRING State TX Zip 77391

Please insert additional pages as applicable.

Completed by BOBBY WILLIS Telephone 832-796-2884  
Signature [Signature] Title SENIOR REGULATORY ANALYST Date 11/19/2020

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

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CHARLES JAMISON MSH 210H

ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	7/12/2020	23,906	23,813	36
2	7/19/2020	23,779	23,601	36
3	7/20/2020	23,568	23,389	36
4	7/21/2020	23,360	23,178	36
5	7/22/2020	23,145	22,966	36
6	7/23/2020	22,933	22,757	36
7	7/23/2020	22,722	22,543	36
8	7/25/2020	22,510	22,332	36
9	7/25/2020	22,299	22,120	36
10	7/26/2020	22,087	21,909	36
11	7/27/2020	21,876	21,697	72
12	8/1/2020	21,664	21,485	36
13	8/1/2020	21,448	21,274	36
14	8/2/2020	21,241	21,063	36
15	8/3/2020	21,030	20,855	36
16	8/4/2020	20,818	20,640	36
17	8/5/2020	20,606	20,428	36
18	8/5/2020	20,395	20,217	36
19	8/6/2020	20,184	20,005	36
20	8/6/2020	19,967	19,794	36
21	8/7/2020	19,761	19,582	36
22	8/7/2020	19,549	19,371	36
23	8/8/2020	19,338	19,155	36
24	8/8/2020	19,126	18,948	36
25	8/9/2020	18,914	18,736	36
26	8/9/2020	18,703	18,525	36
27	8/10/2020	18,492	18,313	36
28	8/10/2020	18,280	18,102	36
29	8/11/2020	18,068	17,890	36
30	8/11/2020	17,857	17,680	36
31	8/12/2020	17,646	17,467	36
32	8/13/2020	17,434	17,256	36
33	8/13/2020	17,223	17,049	36
34	8/14/2020	17,013	16,833	36
35	8/15/2020	16,797	16,621	36
36	8/16/2020	16,588	16,409	36
37	8/17/2020	16,373	16,198	36
38	8/17/2020	16,165	15,990	36
39	8/18/2020	15,954	15,775	36
40	8/19/2020	15,742	15,564	36
41	8/20/2020	15,531	15,352	36
42	8/21/2020	15,323	15,141	36

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PERF REPORT

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
43	8/22/2020	15,108	14,929	36
44	8/23/2020	14,896	14,718	36
45	8/24/2020	14,682	14,506	36
46	8/25/2020	14,473	14,295	36
47	8/25/2020	14,262	14,083	36
48	8/26/2020	14,053	13,872	36
49	8/27/2020	13,839	13,662	36
50	8/28/2020	13,627	13,449	36
51	8/29/2020	13,416	13,237	36
52	8/29/2020	13,200	13,026	36
53	8/30/2020	12,993	12,819	36
54	8/30/2020	12,782	12,603	36
55	8/31/2020	12,570	12,391	36
56	8/31/2020	12,358	12,180	36
57	9/1/2020	12,147	11,972	36
58	9/1/2020	11,935	11,757	36
59	9/3/2020	11,723	11,545	36
60	9/4/2020	11,512	11,330	36
61	9/4/2020	11,301	11,122	36
62	9/4/2020	11,089	10,911	36
63	9/5/2020	10,878	10,699	36
64	9/5/2020	10,666	10,488	36
65	9/5/2020	10,455	10,276	36
66	9/6/2020	10,243	10,065	36
67	9/6/2020	10,032	9,853	36
68	9/6/2020	9,820	9,642	36
69	9/7/2020	9,609	9,432	36
70	9/7/2020	9,397	9,219	36
71	9/7/2020	9,186	9,007	36
72	9/8/2020	8,974	8,796	36
73	9/8/2020	8,763	8,584	36
74	9/9/2020	8,551	8,373	36
75	9/9/2020	8,340	8,161	36

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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	7/19/2020	61	9,269	6,832	3,829	171,960	7,738	0
2	7/20/2020	62.6	9,034	7,033	3,923	307,000	8,141	0
3	7/20/2020	62	9,093	6,521	4,853	303,480	8,371	0
4	7/22/2020	77.8	8,838	6,040	4,788	302,130	8,715	0
5	7/22/2020	82.8	9,254	6,547	4,647	304,990	8,759	0
6	7/23/2020	86.1	9,586	5,736	4,872	310,690	8,669	0
7	7/23/2020	84.3	9,661	6,852	4,952	270,530	8,104	0
8	7/25/2020	80.1	9,371	6,476	4,462	308,560	8,731	0
9	7/26/2020	80.4	9,693	6,727	4,755	307,320	8,528	0
10	7/26/2020	78.5	9,156	6,455	4,713	306,000	8,459	0
11	7/31/2020	56	10,042	5,867	7,126	10,000	12,253	0
12	8/1/2020	79.4	9,168	6,801	4,848	297,880	8,241	0
13	8/2/2020	74.8	8,676	6,541	4,988	207,560	6,883	0
14	8/3/2020	82.1	8,915	6,772	5,717	311,780	8,640	0
15	8/3/2020	80.4	8,783	6,292	5,445	287,750	8,457	0
16	8/4/2020	84.4	8,919	5,874	5,799	288,000	8,428	0
17	8/5/2020	90.7	9,378	6,062	5,169	305,540	8,788	0
18	8/5/2020	84.1	8,835	5,896	5,102	312,840	8,289	0
19	8/6/2020	90.8	9,258	6,101	5,500	307,560	8,786	0
20	8/7/2020	90	9,300	6,232	5,491	306,380	8,738	0
21	8/7/2020	85.1	9,249	6,782	4,782	306,610	8,293	0
22	8/8/2020	90	9,048	6,735	5,232	306,650	8,482	0
23	8/8/2020	89.9	9,310	6,502	5,082	307,780	8,576	0
24	8/9/2020	91.5	9,282	6,325	4,623	304,790	8,713	0
25	8/9/2020	97.5	9,080	6,641	5,269	304,620	8,461	0
26	8/10/2020	95.5	9,159	6,915	5,232	313,730	8,841	0
27	8/10/2020	98.6	9,178	6,650	5,404	310,100	8,638	0
28	8/11/2020	97.3	9,353	6,998	6,681	308,560	8,578	0
29	8/11/2020	98.6	9,095	6,287	5,117	310,100	8,745	0
30	8/12/2020	93.3	9,207	6,632	5,561	305,760	8,336	0
31	8/12/2020	89	9,102	6,240	4,982	305,260	7,432	0
32	8/13/2020	89.1	8,622	6,310	4,881	306,170	9,312	0
33	8/14/2020	92.6	8,716	6,455	5,455	302,790	7,432	0
34	8/15/2020	100.3	9,093	6,250	5,555	308,570	7,790	0
35	8/16/2020	94.5	9,176	6,433	5,124	303,580	7,581	0
36	8/16/2020	91.6	8,996	6,516	5,026	310,150	7,432	0
37	8/17/2020	86.7	8,784	6,310	4,995	309,448	9,516	0
38	8/18/2020	97.9	8,970	6,711	5,646	308,170	7,533	0
39	8/19/2020	90.9	8,857	6,520	5,276	308,940	7,464	0
40	8/20/2020	87	8,763	6,604	5,154	310,280	7,214	0
41	8/21/2020	88.1	8,824	5,845	5,577	303,770	7,404	0
42	8/22/2020	83	8,844	6,003	5,308	303,990	7,322	0
43	8/23/2020	88.3	8,738	6,310	5,009	306,920	7,417	0
44	8/24/2020	89	8,480	6,340	5,345	305,690	7,200	0
45	8/24/2020	89.8	8,561	6,787	5,484	309,870	7,336	0
46	8/25/2020	87.9	8,396	6,248	5,247	308,490	7,238	0
47	8/26/2020	95.3	8,537	6,125	5,054	305,010	7,355	0
48	8/27/2020	95.3	8,677	6,951	5,120	308,830	7,299	0
49	8/28/2020	87.5	8,362	6,640	4,628	302,050	7,252	0
50	8/29/2020	94.4	8,710	6,972	5,142	306,050	7,488	0
51	8/29/2020	80.3	8,209	7,011	5,035	307,240	8,070	0
52	8/30/2020	93.3	8,506	6,740	5,061	277,620	6,839	0
53	8/30/2020	98.6	8,693	6,869	5,125	305,450	7,168	0

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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	8/31/2020	91	8,563	5,403	5,114	309,350	7,376	0
55	8/31/2020	99.3	8,605	5,305	5,262	307,940	7,326	0
56	9/1/2020	93.4	8,294	6,689	4,948	307,280	7,468	0
57	9/1/2020	99.3	8,610	5,480	4,952	310,230	7,342	0
58	9/2/2020	52	8,607	6,859	5,325	9,929	3,896	0
59	9/3/2020	95.7	8,566	6,246	4,785	310,420	7,238	0
60	9/4/2020	95.1	8,611	6,656	4,492	308,460	7,421	0
61	9/4/2020	97.4	8,344	6,406	5,094	311,200	7,501	0
62	9/5/2020	97.3	8,552	6,740	5,007	311,840	6,924	0
63	9/5/2020	97.3	8,240	6,436	4,789	313,780	7,195	0
64	9/5/2020	98	8,114	5,962	4,833	305,620	7,361	0
65	9/6/2020	98.9	8,275	6,501	4,523	204,970	5,827	0
66	9/6/2020	98	7,970	6,659	5,236	308,840	7,224	0
67	9/6/2020	100	8,074	6,663	4,937	312,300	7,145	0
68	9/7/2020	99.3	7,934	7,441	4,943	307,610	7,277	0
69	9/7/2020	98.6	7,919	6,472	5,023	312,710	7,165	0
70	9/7/2020	100	7,884	6,201	4,955	305,840	7,066	0
71	9/8/2020	98.6	8,144	6,351	5,494	306,130	6,969	0
72	9/8/2020	100	8,077	6,548	5,472	309,720	7,233	0
73	9/9/2020	101	7,740	6,125	5,916	302,640	7,255	0
74	9/9/2020	100	7,662	5,297	5,056	302,340	6,877	0
75	9/9/2020	101	7,819	6,985	6,012	305,780	7,244	0

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Well Name: Charles Jamison MSH 210H

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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	322.00	322.00	
Top of Salt Water	1195.00	1195.00	NA	NA	
Pittsburgh Coal	1086.00	1086.00	1192.00	1192.00	
Pottsville (ss)	1192.00	1192.00	1541.00	1541.00	
Raven Cliff (ss)	1541.00	1541.00	2002.00	1987.00	
Maxton (ss)	2002.00	1987.00	2242.00	2218.00	
Big Injun (ss)	2242.00	2218.00	2887.00	2835.00	
Berea (siltstone)	2887.00	2835.00	7124.00	6459.00	
Rhinestreet (shale)	7124.00	6459.00	7591.00	6873.00	
Middlesex (shale)	7591.00	6873.00	7719.00	6963.00	
Burket (shale)	7719.00	6963.00	7756.00	6987.00	
Tully (ls)	7756.00	6987.00	7795.00	7009.00	
Mahantango (shale)	7795.00	7009.00	8081.00	7115.00	
Marcellus (shale)	8081.00	7115.00	NA	NA	GAS

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/19/2020
Job End Date:	9/9/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-02302-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	CHARLES JAMISON MSH 210
Latitude:	39.79187345
Longitude:	-80.60755137
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,207
Total Base Water Volume (gal):	24,488,250
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
Tolicide PS 50A	SWN Well Services	Biocide					
				Listed Below			
Plexaid 655WG	SWN Well Services	Scale Inhibitor					
				Listed Below			

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SWN FRW-11LC	SWN Well Services	Friction Reducer					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Base Water	Operator	Base Fluid					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	89.68499	Density = 8.345
			Crystalline Silica, quartz	14808-60-7	100.00000	9.66212	
			Water	7732-18-5	85.00000	0.51501	
			Hydrochloric Acid	7647-01-0	15.00000	0.06793	
			Petroleum Distillates, Hydrotreated	64742-47-8	25.00000	0.04107	
			Tetrakis	55566-30-8	55.00000	0.01468	
			Ammonium Chloride	12125-02-9	2.00000	0.00329	
			Glycerin	56-81-5	50.00000	0.00299	

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			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00246	
			Alcohols, C12-1, ethoxylated	68551-12-2	1.50000	0.00246	
			Acetic Acid	64-19-7	37.50000	0.00090	
			Diethylenetriamine penta	15827-60-8	10.00000	0.00060	
			Methanol	67-56-1	80.00000	0.00056	
			Citric Acid	77-92-9	22.50000	0.00054	
			Acrylic acid terpolymer	397256-50-7	1.00000	0.00027	
			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)

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# SWN PRODUCTION COMPANY, LLC

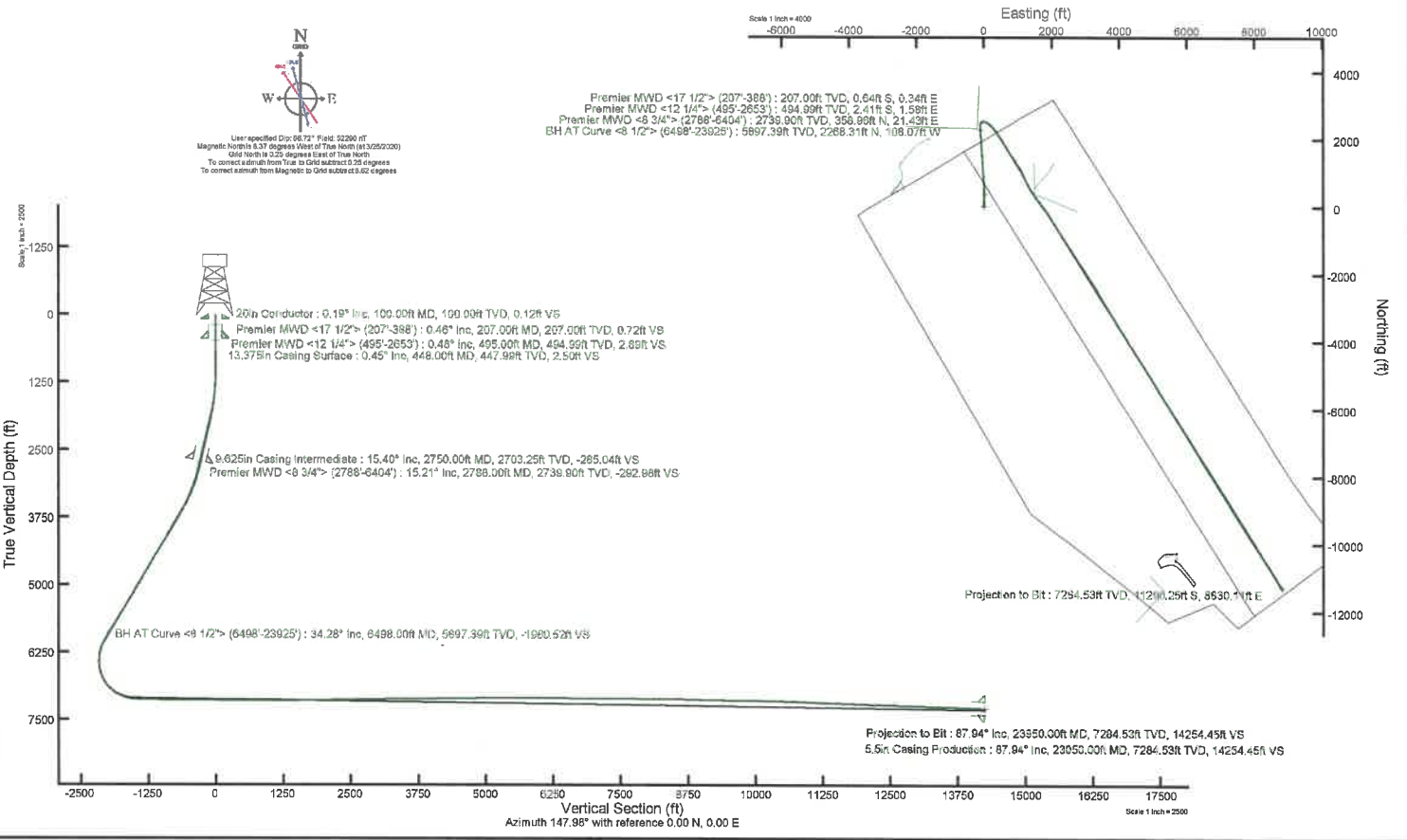
Location: Marshall County, WV  
 Field: Marshall  
 Facility: Charles Jamison MSH Pad  
 Slot: Slot 210H  
 Well: Charles Jamison MSH 210H  
 Wellbore: Charles Jamison MSH 210H PWB



Location Information					
Facility Name		Grid East (US Ft)	Grid North (US Ft)	Latitude	Longitude
Charles Jamison MSH Pad		1760638.500	14451211.824	39°47'30.9700"N	80°36'27.4000"W
Slot	Local N (ft)	Local E (ft)	Grid East (US Ft)	Grid North (US Ft)	Latitude
Slot 210H	-22.75	16.89	1760638.500	14451189.180	39°47'30.7444"N
SDC 46 (KB) to Mud line (At Slot: Slot 210H)				26ft	
Mean Sea Level to Mud line (At Slot: Slot 210H)				-1337.2ft	
SDC 46 (KB) to Mean Sea Level				1363.2ft	

API: 47-051-02302-0000  
 BH Job #: 110351035A  
 Rig: SDC 46  
 Duration: 03/30/2020 - 04/03/2020

Plot reference wellpath is Charles Jamison MSH 210H PWB RevA.D	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)	North Reference: Grid north
Reference wellpath measured depths are referenced to SDC 46 (KB)	Scale: True distance
SDC 46 (KB) to Mean Sea Level: 1363.2 feet	Coordinates are in feet referenced to Aba
Mean Sea Level to Mud line (At Slot: Slot 210H): -1337.2 feet	Depths are in feet
Other wellpath MDs are referenced to each well's default MD datum	Created by: amjerson 2020-04-10 Database: WA_MPL_EASTERNUS_Dein



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Latitude: 39°50'00" (SHL)

SURFACE HOLE 6806'

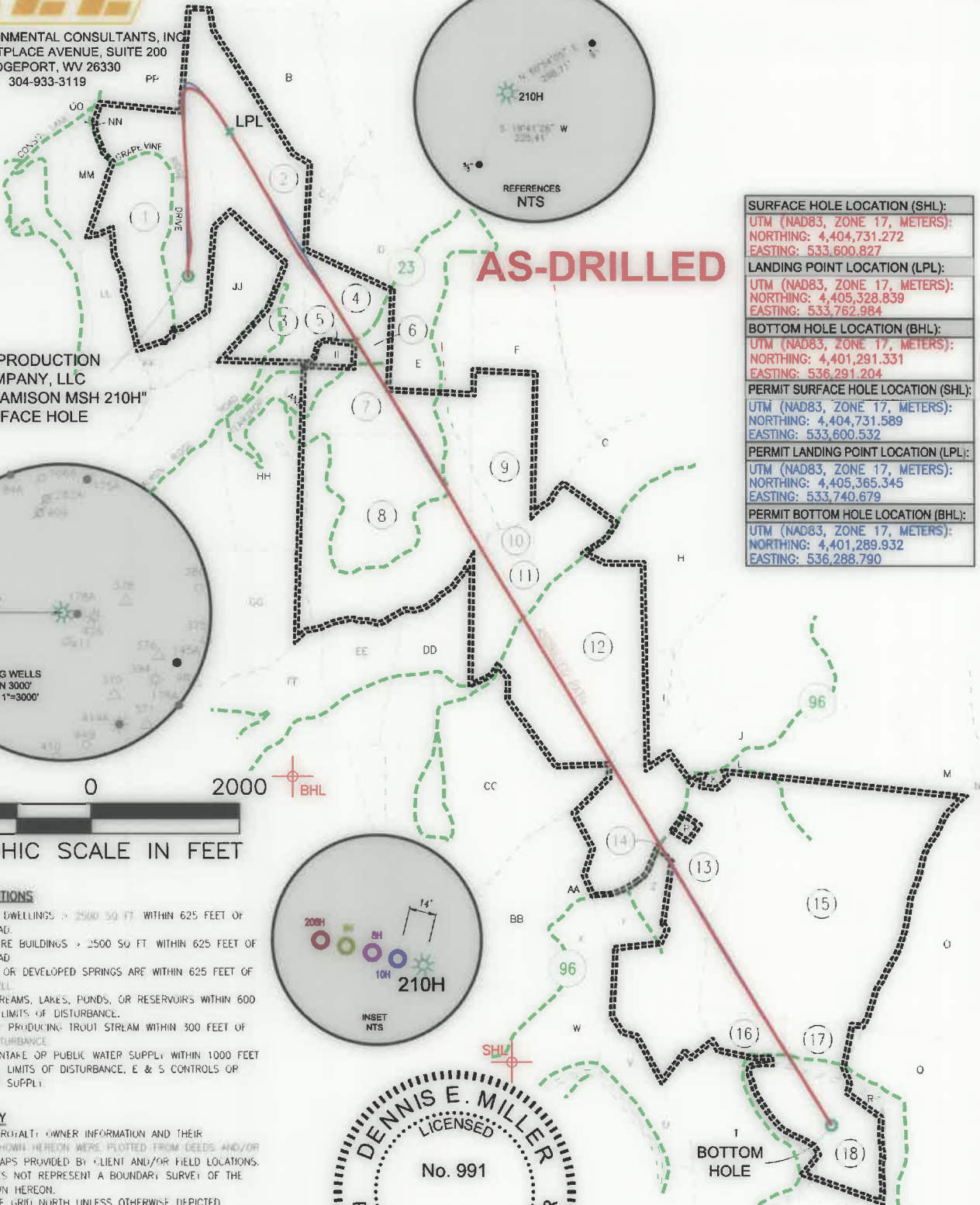
BOTTOM HOLE 9742'

Latitude: 39°47'30" (BHL)

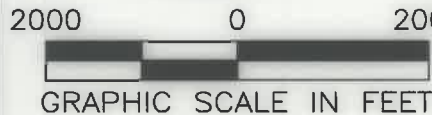
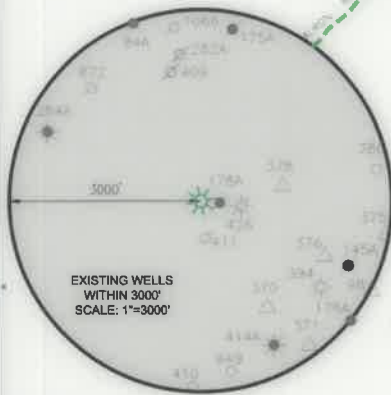


CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
600 MARKETPLACE AVENUE, SUITE 200  
BRIDGEPORT, WV 26330  
304-933-3119

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



SWN PRODUCTION COMPANY, LLC  
"CHARLES JAMISON MSH 210H"  
SURFACE HOLE



WELL RESTRICTIONS

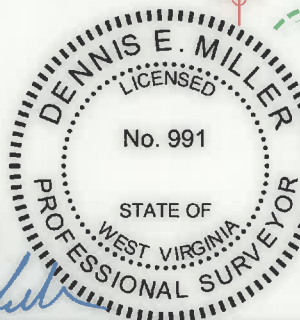
1. NO OCCUPIED DWELLINGS > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 625 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 600 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

1. SURFACE AND ROYALT: 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.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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. 991



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

COMPANY: SWN Production Company, LLC

CHARLES JAMISON MSH

OPERATOR'S WELL #: 210H  
API WELL #: 47 STATE, 051 COUNTY, 02302 PERMIT

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

WATERSHED: MAGGOTY RUN  
DISTRICT: LIBERTY DISTRICT COUNTY: MARSHALL ELEVATION: 1335.0'  
SURFACE OWNER: CHARLES AND JEAN JAMISON QUADRANGLE: CAMERON  
OIL & GAS ROYALTY OWNER: CHARLES AND JEAN JAMISON ACREAGE: 97.2±  
ACREAGE: 97.2±

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

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE (SPECIFY) **ASDRILLED**

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,284.53 TVD 23,950 TMD

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

LEGEND: 	REVISIONS:	DATE: 11-16-2020
		DRAWN BY: K.E.S. SCALE: 1" = 2000' DRAWING NO: 170-426 WELL LOCATION PLAT





CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
 600 MARKETPLACE AVENUE, SUITE 200  
 BRIDGEPORT, WV 26330  
 304-933-3119

**WELL BORE TABLE FOR SURFACE OWNERS**



TRACT	SURFACE OWNER	TAX PARCEL
1	CHARLES AND JEAN JAMISON	07-007-0006
2	KENNETH WAYNE STEELE TRUST	07-007-0011
3	GAIL ZWICK - LIFE	07-007-0014
4	GAIL ZWICK - LIFE	07-006-0012.1
5	STEPHEN L. AND PAMELA SCOTT	07-006-0011
6	CO. RT. 23 ROW (CAMERON RIDGE ROAD)	
7	JACK R. BUZZARD, ET UX	07-010-0020
8	GARY R. DOBBS, ET UX	07-010-0021
9	JACK R. BUZZARD, ET UX	07-011-0001
10	CONSOL MINING COMPANY LLC	07-011-0002
11	CONSOL MINING COMPANY LLC	07-011-0003
12	SCOTT D. SHALAWAY, ET UX	07-011-0004
13	DONALD REX QUIGLEY, ET UX	07-016-0036
14	CO. RT. 96 ROW	
15	HINKLE FAMILY TRUST	07-015-0001
16	JAMES W. DEVER	07-020-0022
17	HINKLE FAMILY TRUST	07-015-0019
18	CLAUDE R. STEPHENS EST, ET AL	07-020-0023

**ADJOINING OWNERS TABLE**

TRACT	SURFACE OWNER	TAX PARCEL
A	JEAN JAMISON	07-007-0009.1
B	ANTHONY M. SKRYPEK	07-007-0010
C	GAIL L. ZWICK - LIFE	07-006-0008
D	CONSOL MINING COMPANY LLC	07-006-0010
E	CONSOL MINING COMPANY LLC	07-006-0012
F	MARVIN AND SHIRLEY BYARD	07-006-0014
G	CONSOL MINING COMPANY LLC	07-011-0008
H	DOUGLAS AND DEANA MCCOMBS	07-011-0007
I	DONALD REX QUIGLEY, ET UX	07-011-0005
J	DONALD QUIGLEY, ET UX	07-011-0017
K	ANDREW MCCURDY, ET UX	07-016-0036.2
L	ANDREW DAVID MCCURDY	07-011-0017.1
M	DONALD MACK QUIGLEY, ET UX	07-011-0018
N	DOUGLAS R. AND REBECCA J. MCCOMBS	07-011-0019
O	EVE GORDON - LIFE	07-015-0001.1
P	DONALD REX AND ELLEN QUIGLEY	07-016-0036.1
Q	THOMAS P. AND TAMARA R. WOOD	07-015-0017
R	HAROLD LEROY DOTY JR	07-015-0018
S	AMMON A. BURLEY	07-020-0024
T	LILLIAN A. KERBY	07-020-0021
U	JOHN E. RIGGS JR, ET UX	07-016-0044
V	LOUIS S. MCCLELLAND EST	07-016-0037
W	JOHN MATTHEW BUTLER	07-016-0039
X	DAVID L. ELSON, ET UX	07-016-0034
Y	TERRY A. AND DONNA L. BONAR	07-016-0035
Z	STEPHANIE L. WHITE	07-016-0036.3
AA	DAVID L. ELSON, ET UX	07-016-0032
BB	DONALD QUIGLEY, ET UX	07-016-0033
CC	RUSSELL ALLEN DOTSON JR, ET UX	07-016-0031
DD	NAOMI WILLIAMS STARKEY	07-010-0025
EE	HOWARD E WILLIAMS	07-010-0025.1
FF	DEBRSE A. HORNER - LIFE	07-016-0023
GG	GARY RAY DOBBS, ET AL	07-010-0022
HH	CONSOLIDATED COAL COMPANY	07-010-0019
II	DONALD W. AND MARTHA J. KENNEDY	07-006-0011.1
JJ	GAIL ZWICK - LIFE	07-007-0012
KK	TIMOTHY R. CAIN	07-007-0006.1
LL	TIMOTHY R. CAIN	07-007-0006.2
MM	CONSOLIDATED COAL COMPANY	07-007-0006.3
NN	CONSOLIDATED COAL COMPANY	07-007-0007.1
OO	CONSOLIDATED COAL COMPANY	07-007-0007
PP	KENNETH WAYNE STEELE TRUST	07-007-0008.1

**AS-DRILLED**

API WELL #: **47** **051** **02302**  
 STATE COUNTY PERMIT

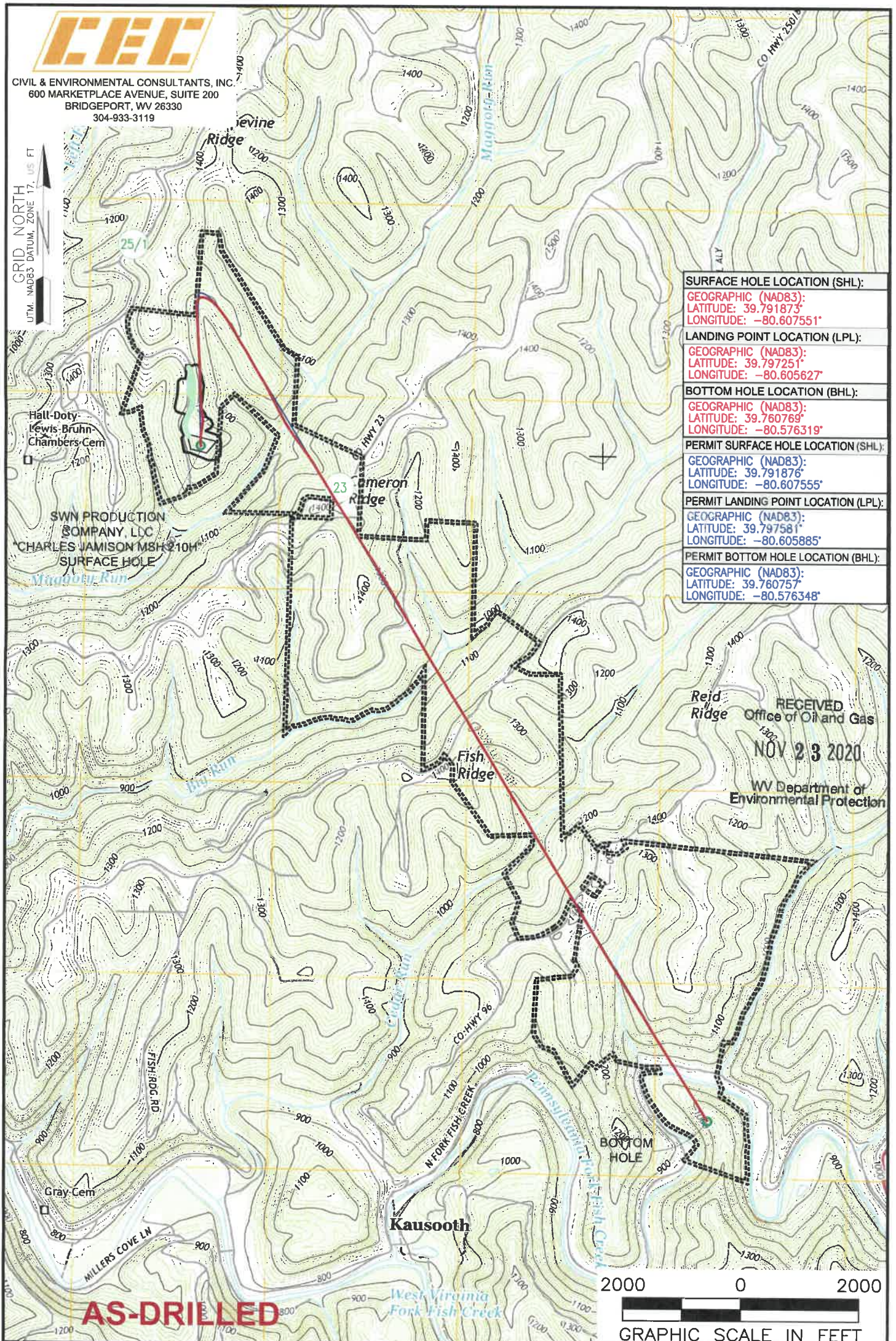
REVISIONS:	COMPANY:			 	
	OPERATOR'S			DATE: 11-16-2020	
	WELL #:			DRAWN BY: K.E.S.	
	DISTRICT:			SCALE: N/A	
	LIBERTY DISTRICT			DRAWING NO: 170-426	
	COUNTY:			WELL LOCATION PLAT 2	
	MARSHALL				
	STATE:				
	WV				





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600 MARKETPLACE AVENUE, SUITE 200  
BRIDGEPORT, WV 26330  
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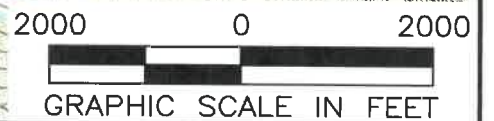
GRID NORTH  
UTM, NAD83 DATUM, ZONE 17



<b>SURFACE HOLE LOCATION (SHL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.791873°</b>
<b>LONGITUDE: -80.607551°</b>
<b>LANDING POINT LOCATION (LPL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.797251°</b>
<b>LONGITUDE: -80.605627°</b>
<b>BOTTOM HOLE LOCATION (BHL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.760769°</b>
<b>LONGITUDE: -80.576319°</b>
<b>PERMIT SURFACE HOLE LOCATION (SHL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.791876°</b>
<b>LONGITUDE: -80.607555°</b>
<b>PERMIT LANDING POINT LOCATION (LPL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.797581°</b>
<b>LONGITUDE: -80.605885°</b>
<b>PERMIT BOTTOM HOLE LOCATION (BHL):</b>
<b>GEOGRAPHIC (NAD83):</b>
<b>LATITUDE: 39.760757°</b>
<b>LONGITUDE: -80.576348°</b>

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**NOTES ON SURVEY**

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**LEGEND:**

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LPL\* LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- - - PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- ===== LEASE BOUNDARY
- PROPOSED PATH
- ASDRILLED PATH

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> CHARLES JAMISON MSH	<b>WELL #</b> 210H	<b>SERIAL #</b> XXXX
<b>ADDRESS:</b> 1300 FORT PIERPONT DRIVE, STE 201, MORGANTOWN, WV 26508	<b>COUNTY - CODE</b> MARSHALL - 051	<b>DISTRICT;</b> LIBERTY DISTRICT	
<b>SURFACE OWNER:</b> CHARLES AND JEAN JAMISON	<b>USGS 7 1/2 QUADRANGLE MAP NAME</b> CAMERON, WV		