

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

API 47-009-00288 County BROOKE District BUFFALO
Quad BETHANY, WV & STEUBENVILLE EAST, OH Pad Name ROBERT BONE BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name ROBERT BONE Well Number ROBERT BONE BRK 205H
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 4,452,136.50 Easting 533,834.23
Landing Point of Curve Northing 4,452,359.23 Easting 534,435.49
Bottom Hole Northing 4,457,345.96 Easting 532,349.44

Elevation (ft) 1,147.6 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 7/1/2020 Date drilling commenced 8/7/2021 Date drilling ceased 8/22/2021
Date completion activities began 10/10/2021 Date completion activities ceased 12/11/2021
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 345 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 628 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 865 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by: JDK 3/4/2022
03/25/2022

API 47-009 - 00288

Farm name ROBERT BONE

Well number ROBERT BONE BRK 205H

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	426'	NEW	J-55/54.50#	217.6'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1,643'	NEW	J-55/36#		Y, 40 BBLS
Intermediate 2	12.25	9.625					
Intermediate 3							
Production	8.75	5.5	24,581'	NEW	P-110/20#		Y, 45 BBLS
Tubing		2.875	6,804'	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 ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	430	15.60	1.20	516	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	684	15.60	1.19	813.96	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	4,369	15.60	1.29	5,636.01	SURFACE	24
Tubing							

Drillers TD (ft) 24,581' Loggers TD (ft) 24,581'
 Deepest formation penetrated _____ Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,470'

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 _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/11/2021
Job End Date:	11/17/2021
State:	West Virginia
County:	Brooke
API Number:	47-009-00288-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	ROBERT BONE BRK 205
Latitude:	40.21896528
Longitude:	-80.602335503
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,761
Total Base Water Volume (gal):	28,848,076
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	88.61903	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.26053	

				Water	7732-18-5	85.00000	0.26053
				Water	7732-18-5	85.00000	0.26053
Plexaid 655	SWN Well Services	Scale Inhibitor			Listed Below		
HCL	SWN Well Services	Solvent			Listed Below		
FSTI-CI-02	SWN Well Services	Corrosion Inhibitor			Listed Below		
Ferriplex 80	SWN Well Services	Iron Control			Listed Below		
Sand	SWN Well Services	Proppant			Listed Below		
PLEXSLICK 930	SWN Well Services	Friction Reducer			Listed Below		
Tolicide 4Frac	SWN Well Services	Biocide			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	11.03887
				Hydrochloric Acid	7647-01-0	15.00000	0.03508

**ROBERT BONE BRK 205H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	10/1/2021	24,471	24,375	36
2	10/11/2021	24,341	24,162	36
3	10/12/2021	24,122	23,951	36
4	10/12/2021	23,917	23,739	36
5	10/13/2021	23,705	23,527	36
6	10/13/2021	23,493	23,315	36
7	10/14/2021	23,282	23,103	36
8	10/14/2021	23,070	22,891	36
9	10/15/2021	22,858	22,679	36
10	10/15/2021	22,646	22,467	36
11	10/16/2021	22,434	22,255	36
12	10/16/2021	22,222	22,043	36
13	10/16/2021	22,010	21,832	36
14	10/17/2021	21,798	21,620	36
15	10/17/2021	21,586	21,408	36
16	10/18/2021	21,374	21,196	36
17	10/18/2021	21,163	20,984	36
18	10/18/2021	20,951	20,772	36
19	10/19/2021	20,739	20,560	36
20	10/19/2021	20,527	20,348	36
21	10/20/2021	20,315	20,136	36
22	10/21/2021	20,103	19,925	36
23	10/21/2021	19,891	19,713	36
24	10/21/2021	19,681	19,501	36
25	10/22/2021	19,467	19,289	36
26	10/22/2021	19,256	19,077	36
27	10/23/2021	19,044	18,865	36
28	10/23/2021	18,832	18,653	36
29	10/23/2021	18,620	18,438	36
30	10/24/2021	18,408	18,229	36
31	10/24/2021	18,196	18,018	36
32	10/25/2021	17,984	17,806	36
33	10/25/2021	17,772	17,594	36
34	10/26/2021	17,560	17,382	36
35	10/26/2021	17,349	17,170	36
36	10/26/2021	17,137	16,958	36
37	10/27/2021	16,925	16,751	36
38	10/27/2021	16,713	16,534	36
39	10/27/2021	16,501	16,322	36
40	10/28/2021	16,289	16,110	36
41	10/28/2021	16,077	15,899	36
42	10/29/2021	15,865	15,687	36
43	10/29/2021	15,653	15,475	36

**ROBERT BONE BRK 205H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
44	10/29/2021	15,441	15,263	36
45	10/30/2021	15,230	15,051	36
46	10/30/2021	15,018	14,839	36
47	10/31/2021	14,806	14,627	36
48	11/1/2021	14,594	14,415	36
49	11/1/2021	14,382	14,203	36
50	11/2/2021	14,170	13,992	36
51	11/2/2021	13,958	13,780	36
52	11/3/2021	13,746	13,568	36
53	11/3/2021	13,534	13,356	36
54	11/4/2021	13,323	13,144	36
55	11/4/2021	13,111	12,932	36
56	11/5/2021	12,899	12,720	36
57	11/5/2021	12,687	12,508	36
58	11/6/2021	12,475	12,292	36
59	11/6/2021	12,263	12,084	36
60	11/6/2021	12,047	11,873	36
61	11/7/2021	11,839	11,661	36
62	11/7/2021	11,627	11,449	36
63	11/8/2021	11,416	11,237	36
64	11/8/2021	11,208	11,025	36
65	11/9/2021	10,992	10,813	36
66	11/9/2021	10,780	10,601	36
67	11/10/2021	10,568	10,389	36
68	11/10/2021	10,356	10,177	36
69	11/10/2021	10,144	9,966	36
70	11/11/2021	9,932	9,754	36
71	11/11/2021	9,720	9,542	36
72	11/12/2021	9,508	9,330	36
73	11/12/2021	9,297	9,118	36
74	11/13/2021	9,085	8,906	36
75	11/13/2021	8,873	8,694	36
76	11/14/2021	8,661	8,482	36
77	11/14/2021	8,449	8,270	36
78	11/14/2021	8,237	8,059	36
79	11/15/2021	8,025	7,847	36
80	11/15/2021	7,813	7,635	36
81	11/16/2021	7,601	7,423	36
82	11/16/2021	7,390	7,211	36
83	11/16/2021	7,178	6,999	36
84	11/17/2021	6,966	6,787	36

ROBERT BONE BRK 205H

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	10/11/2021	73.2	8,217	8,128	3,300	178,380	6,493	0
2	10/12/2021	72.4	8,359	4,852	4,142	357,900	9,291	0
3	10/12/2021	73	8,403	3,591	4,369	360,720	11,503	0
4	10/13/2021	78.6	8,488	4,685	4,282	356,060	9,316	0
5	10/13/2021	78.2	8,835	3,114	3,785	358,460	9,243	0
6	10/14/2021	96.3	8,122	4,075	4,532	364,740	9,333	0
7	10/14/2021	94.2	8,489	5,283	4,412	354,040	8,404	0
8	10/14/2021	97.7	8,316	5,729	4,056	353,220	8,992	0
9	10/15/2021	92.3	8,567	5,476	4,393	364,440	8,731	0
10	10/15/2021	90.1	8,031	5,271	4,100	361,600	9,984	0
11	10/16/2021	93.6	8,463	5,328	3,859	361,940	8,411	0
12	10/16/2021	91.7	8,724	5,501	4,162	361,360	9,169	0
13	10/17/2021	90.3	8,766	5,511	4,112	353,860	8,426	0
14	10/17/2021	93.9	8,341	5,310	4,436	355,720	8,342	0
15	10/17/2021	92.4	8,355	5,655	4,028	361,120	8,553	0
16	10/18/2021	93.6	8,527	5,521	4,317	362,720	8,473	0
17	10/18/2021	93.8	8,368	5,517	4,330	365,880	8,497	0
18	10/19/2021	98.7	8,284	5,360	4,036	365,920	8,578	0
19	10/19/2021	93.3	8,384	5,513	3,722	359,480	8,175	0
20	10/20/2021	98.8	7,925	5,037	4,053	359,620	8,548	0
21	10/20/2021	95.7	8,120	4,081	3,965	362,560	8,517	0
22	10/21/2021	98.5	8,268	5,286	4,209	364,140	8,436	0
23	10/21/2021	93.4	8,017	5,387	4,082	359,700	8,359	0
24	10/22/2021	97.8	7,722	4,422	4,102	368,800	8,602	0
25	10/22/2021	97.5	8,645	5,306	4,108	360,120	8,190	0
26	10/23/2021	98.2	7,878	5,483	4,102	364,000	8,327	0
27	10/23/2021	99.6	7,856	4,471	4,498	366,480	8,344	0
28	10/23/2021	98.9	7,893	4,426	4,430	360,340	8,169	0
29	10/23/2021	93.6	7,780	5,477	4,575	363,740	8,342	0
30	10/24/2021	98.5	7,958	5,302	4,075	366,020	8,125	0
31	10/25/2021	98.5	7,285	4,192	4,236	359,060	8,237	0
32	10/25/2021	96.8	7,767	5,377	4,191	363,360	8,707	0
33	10/25/2021	94.5	7,516	5,722	4,301	362,080	8,445	0
34	10/26/2021	98.6	7,856	5,286	4,397	356,880	7,789	0
35	10/26/2021	98.5	7,851	4,307	4,376	360,800	8,090	0
36	10/26/2021	94.1	7,470	5,208	4,122	361,060	8,147	0
37	10/27/2021	98.5	7,250	5,223	4,184	362,780	8,472	0
38	10/27/2021	92.7	7,339	5,123	3,773	354,380	8,539	0
39	10/28/2021	93.2	7,287	4,936	4,144	356,820	8,463	0
40	10/28/2021	99.5	7,282	6,432	4,378	365,220	8,385	0
41	10/29/2021	93.1	7,474	5,500	4,675	357,720	7,629	0
42	10/29/2021	99.5	7,211	5,446	4,528	360,480	8,345	0
43	10/29/2021	94.7	7,602	5,801	4,079	354,400	7,869	0
44	10/30/2021	95.7	7,298	5,385	4,105	356,760	8,023	0
45	10/30/2021	95	6,970	4,762	4,650	364,840	8,169	0
46	10/30/2021	91.2	6,482	4,581	4,156	356,780	10,014	0
47	11/1/2021	94.9	7,192	5,296	4,157	357,590	7,861	0
48	11/1/2021	94.3	6,945	4,416	4,784	362,660	7,964	0
49	11/2/2021	94.7	7,306	5,001	4,147	354,600	7,358	0
50	11/2/2021	94.5	7,099	4,303	4,309	360,640	7,956	0
51	11/3/2021	95.5	7,315	5,519	4,303	355,620	7,620	0
52	11/3/2021	94.5	7,083	4,387	4,575	362,420	7,874	0
53	11/3/2021	95.5	7,006	4,887	3,908	355,020	7,508	0

ROBERT BONE BRK 205H

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	11/4/2021	95	7,086	5,459	4,672	358,740	7,796	0
55	11/4/2021	95.1	7,192	5,508	4,112	361,520	8,129	0
56	11/5/2021	99.9	6,773	4,905	4,578	365,980	7,966	0
57	11/5/2021	94.8	6,873	5,412	4,014	356,660	7,613	0
58	11/6/2021	95.5	6,759	5,225	4,601	363,200	7,840	0
59	11/6/2021	92	6,698	5,491	4,102	356,540	7,512	0
60	11/7/2021	95	6,711	5,314	4,762	360,200	7,692	0
61	11/7/2021	95.6	6,649	5,468	4,006	352,840	7,521	0
62	11/8/2021	94.3	6,491	5,532	4,682	352,840	7,782	0
63	11/8/2021	95	6,588	5,641	4,178	358,740	7,557	0
64	11/9/2021	94	6,326	5,362	4,635	356,820	7,645	0
65	11/9/2021	95.1	6,691	4,720	4,203	360,080	7,617	0
66	11/10/2021	95	6,657	5,148	4,128	354,100	7,773	0
67	11/10/2021	99.9	6,489	5,462	4,236	360,020	7,698	0
68	11/10/2021	98.7	7,510	5,202	4,167	356,760	8,025	0
69	11/11/2021	96.9	6,359	5,247	4,165	354,960	8,701	0
70	11/11/2021	99.9	6,336	5,431	4,068	354,700	8,049	0
71	11/12/2021	98	6,168	5,488	4,215	353,940	7,590	0
72	11/12/2021	99	6,263	5,216	4,036	357,520	7,726	0
73	11/13/2021	99	6,279	5,152	4,078	362,650	7,672	0
74	11/13/2021	94.9	5,827	5,296	4,056	356,800	8,185	0
75	11/14/2021	99.8	6,553	5,526	4,121	355,040	8,331	0
76	11/14/2021	98.3	6,201	5,395	4,123	356,800	7,532	0
77	11/14/2021	99	6,187	5,216	4,098	360,320	7,762	0
78	11/15/2021	99.7	6,063	5,593	4,256	357,120	7,650	0
79	11/15/2021	99.2	6,195	5,861	4,213	352,010	7,465	0
80	11/15/2021	99	6,278	5,678	4,031	352,240	7,932	0
81	11/16/2021	99.4	5,970	5,968	4,213	352,600	6,973	0
82	11/16/2021	99.5	5,772	5,701	4,187	355,120	8,557	0
83	11/17/2021	99.4	5,735	5,618	4,128	354,040	7,444	0
84	11/17/2021	98.7	5,762	5,768	4,213	361,580	7,481	0



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

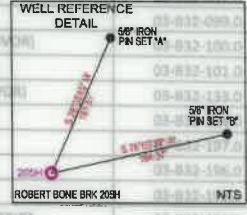
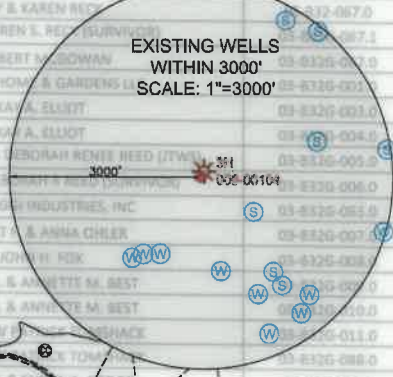
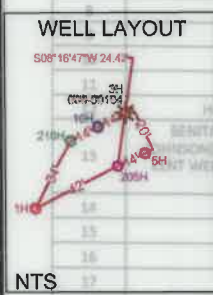
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

(2,000' SCALE) LATITUDE: 40°17'30" BOTTOM HOLE

9724'

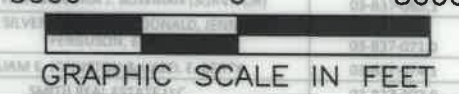
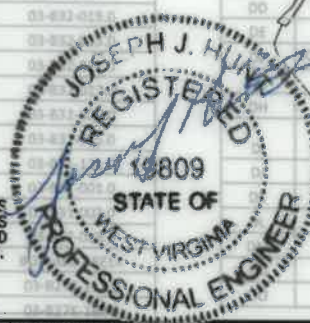
NOTES ON SURVEY

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 WELL.
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.



SURFACE HOLE LOCATION (SHL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4452136.50		
EASTING: 533834.23		
LANDING POINT (LPL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4452359.23		
EASTING: 534435.49		
BOTTOM HOLE LOCATION (BHL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4457345.96		
EASTING: 532349.44		
SURFACE HOLE LOCATION (SHL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4452136.49		
EASTING: 533834.31		
LANDING POINT (LPL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4452340.98		
EASTING: 534439.31		
TURNING POINT LOCATION (TPL1)		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4453907.90		
EASTING: 533879.81		
TURNING POINT LOCATION (TPL 2)		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4454604.06		
EASTING: 533512.81		
BOTTOM HOLE LOCATION (BHL):		
UTM (NAD83, ZONE 17, METERS):		
NORTHING: 4457345.47		
EASTING: 532347.98		

LINE	BEARING	DISTANCE
L1	S 53°08'48" W	857.01'
L2	N 77°49'15" W	2083.00'



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.



(+) 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
ROBERT BONE
OPERATOR'S WELL #: BRK 205H
API WELL #: 47 009 00288

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1147.6'

DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY, WV & EAST STEUBENVILLE, OH

SURFACE OWNER: ROBERT O. BONE ACREAGE: ±80.99

OIL & GAS ROYALTY OWNER: ROBERT O. BONE ACREAGE: ±80.99

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: 5,870' TMD 24,581' TMD

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

LEGEND:	EXISTING WATER WELL	REVISIONS:	DATE: 02-18-2022
EXISTING BOTTOM HOLE	EXISTING SPRING	ROBERT BONE	DATE: 02-18-2022
EXISTING / PRODUCING WELLHEAD	SURVEYED BOUNDARY	BRK 205H	DRAWN BY: R. GRIMES
LPL: EXISTING LANDING POINT LOCATION	LEASE BOUNDARY	COUNTY: BROOKE	SCALE: 1" = 3000'
PROPOSED SURFACE HOLE / BOTTOM HOLE	ASDRILLED PATH	STATE: WV	DRAWING NO: 2017-219
LPL: PROPOSED LANDING POINT LOCATION	PROPOSED PATH		WELL LOCATION PLAT