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

API	47 - 009	_ 00251	County BROOK	Œ	District BUFF	ALO DISTRIC	CT
			Pad Name SAND	RA PARR BRK PAD	Field/Pool Nar	ne PANHANDLE F	FIELD WET
Farm	name ANTHO	NY BRUCE P	ARR, ET AL		_ Well Number	SANDRA PA	RR BRK 201H
Opera	tor (as register	ed with the OOG	SWN PRODUCTION	ON COMPANY, LL	С		
Addre	ess PO BOX	12359	City SPI	RING	State TX	Zip	77391-2359
	Landing Po		Northing 4,447,793.843 Northing 4,447,799.073 Northing 4,450,531.035	ed plat, profile view, a Ea Ea Ea Ea	sting 540,731.095 sting 540,289.838 sting 539,499.798	3	■Final
Type Well	Type □ Brine	□ Convert □	Horizontal ■ Horizon Deepen ■ Drill □ M ■ Gas □ Oil □ Sec	□ Plug Back □ Red	rilling Rev	work ■ Stimu	late Other
Type	of Completion	■ Single □ M	ultiple Fluids Produ	iced □ Brine ■Gas	s □ NGL □	Oil 🗆 Other	
Drille	d with \square Cal	ble ■ Rotary					
Produ	Type(s) and A	Air ■ Mud	ir □ Mud ■Fresh Wa □ Fresh Water □ Brin		e hole ■ Air	□ Mud □ Fresł	n Water □ Brine
-		06/06/2019		02/11/20	10		02/18/2019
		06/06/2018	0010010040			05140100	
		tivities began /N) N	Date permission grante		Granted by	NI/	
	al plugging (Y		submit a plugging applic			y	
Fresh	water depth(s)) ft	336	Open mine(s) (Y/N	depths	N	
Salt v	water depth(s)	ft	759	Void(s) encountered	d (Y/N) depths		N
Coal	depth(s) ft		613	Cavern(s) encounte	red (Y/N) depths	S	N
Is coa	al being mined	in area (Y/N) _	N				
		Re	eview	9-9-10		Re	viewed by: 9-19

API 47- 009	00251	_ Farm name_Al	NTHONY BE	RUCE PA	ARR, ET AL W	/ell number_S	ANDRA PA	ARR BRK 201H
CASING STRINGS		asing Size De		ew or Ised	Grade wt/ft	Basket Depth(s)		nt circulate (Y/N) details below*
Conductor	24		·	NEW	J-55/94#			Υ
Surface	17.5	13.375 46	67	NEW	J-55/54.50#			Υ
Coal	SEE INTERMEDIATE				-			
Intermediate 1	12.25	9.625 20)56 N	NEW	J-55/36#			Υ
Intermediate 2								
Intermediate 3								
Production	8.75/8.50	5.5 16	414	NEW	P-110/20#			Y
Tubing		2.375 70	021 1	NEW	P-110/4.7#			N
Packer type and o	depth set							
Comment Details	5							
CEMENT	Class/Type	Number	Slurry	Yie	eld Volu	me Ce	ment	woc
DATA	of Cement	of Sacks	wt (ppg)	(ft ³ /	sks) (ft ²		(MD)	(hrs)
Conductor	CLASS A	GROUT TO SURFACE					RFACE	24
Surface	CLASS A	440	15.60	1.2	20 52	8 SUF	RFACE	8
Coal	SEE INTERMEDIATE			ļ <u> </u>		- 0.15		
Intermediate 1	CLASS A	789	15.60	1.1	19 938	.91 SUF	RFACE	8
Intermediate 2								
Intermediate 3				1				
Production	CLASS A	2,935	15.60	1.2	21 3551	1.35 SUF	RFACE	24
Tubing				1				
Drillers TD (1) Deepest form Plug back pro Kick off dept	nation penetrated Marc ocedure N/A	ellus		oggers TD ug back to	(ft) 16,440' O (ft) N/A			
Check all wir	reline logs run	-	•	■ deviated ■ gamma	d/directional ray	☐ induction ■ temperature	sonic	
Well cored	□ Yes 💄 No	Conventional	Sidewall		Were cutt	ings collected	□ Yes ■	No
DESCRIBE 7	THE CENTRALIZE	R PLACEMENT U	ISED FOR E	ACH CA	SING STRING			
SURFACE: 7 CENT	TRALIZERS - EVERY THIRD JC	DINT OF CASING						
	4 CENTRALIZERS - EVERY TI		- TO TOO OF OUR	UE TUEN EN	TOV JOINT HUTH TO			
PRODUCTION: 18	1 CENTRALIZERS - EVERY TH	HIRD JOINT FROM SURFAC	E TO TOP OF CUR	VE, THEN EVE	ERY JOINT UNTIL 1D			
WAS WELL	COMPLETED AS	SHOT HOLE	Yes A No	DE	TAILS			
WAS WELL	COMPLETED OPE	EN HOLE? 🗆 Ye	es 🖪 No	DETA	ILS			
WERE TRA	CERS USED 🗆 Ye	s 🖪 No TY	PE OF TRAC	CER(S) U	SED			

API 47- 009 _ 00251 Farm name ANTHONY BRUCE PARR, ET AL Well number SANDRA PARR BRK 201H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMEN	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	ATTACHMEN	2				
						-		
						 		
						 		
						 	<u> </u>	
						ļ		
	-							
	-		-					
							1	-
	 -						 	
							<u> </u>	<u> </u>

Please insert additional pages as applicable.

API 47- 009	00251	Farm n	ame ANTHON	IY BRUCE	PARR, ET A	L_Well n	umber_	SANDRA PARR BRI	K 201F
PRODUCING F	FORMATION(S		<u>DEPTHS</u> 5383	TVD 6	6779	MD			
Please insert ad	ditional pages a	s applicable.							
GAS TEST	□ Build up □	Drawdown	□ Open Flow	(OIL TEST 🗆	Flow 🗆	Pump		
SHUT-IN PRES	SSURE Surfa	ace 1228	_psi Botto	m Hole	psi	DURAT	ION O	F TESThrs	;
OPEN FLOW	Gas 7,544 mcf			bpd <u>5</u>				RED BY	
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN F MD				RECORD QUANTITYAND ER, BRINE, OIL, GAS, H ₂ S	
	0 SEE	ATTACHMENT	3						
	SEE	ATTACHIVIENT	3						
Please insert ad	lditional pages a	s applicable.							
Drilling Contra	ctor SWN DRIL	LING COMPAN	ΙΥ						
Address PO BO	X 12359		City	SPRING		State	TX	Zip <u>77391-2359</u>	
Logging Comp Address 9110 G	any BAKER HU	GHES OAD	City	THE WOOL	DLANDS	State	TX	Zip 77380	
	npany BJ SERV		City	TOMBALL		State	TX	Zip_77377	
Address 11211						State	-		
	ACKSON MILL RE)	RGY SERVICES City	JANE LEW	-	State	WV	Zip <u>26378</u>	
Please insert ac	lditional pages a	as applicable.							
Completed by Signature	BOBBY WILLIS		Title S	ENIOR REGU	Telephon JLATORY ANAL	e 832-796 YST	5-2884 Date _8	8/6/2019	
Submittal of H	ydraulic Fractu	ring Chemical	Disclosure Info	rmation	Attach copy	of FRAC	TOCUS	Registry	

Hydraulic Fracturing Fluid Product Component Information Disclosure

196,987	Total Base Non Water Volume:
12,671,458	Total Base Water Volume (gal):
0	True Vertical Depth:
NO	Indian Well:
NO	Federal Well:
NAD83	Datum:
-80.52150000	Longitude:
40.17950000	Latitude:
Sandra Parr BRK 201H	Well Name and Number:
Southwestern Energy	Operator Name:
47-009-00251-00-00	API Number:
Brooke	County:
West Virginia	State:
4/26/2019	Job End Date:
4/10/2019	Job Start Date:







Hydraulic Fracturing Fluid Composition:

72	0.70572	100.00000	7732-18-5	Water			
					Listed Above	Listed Above	Ingredients
00 Dens	84.26500 Density = 8.34	100.00000	7732-18-5	Water			
					Base Fluid	Halliburton	Fresh Water
	Maximum Ingredient Concentration in HF Fluid (% by mass)*	Maximum Maximum Ingredient Concentration in Additive (% by mass)**	Chemical Abstract Service Number (CAS #)	Ingredients	Purpose	Supplier	Trade Name

Items above are Tra		SCAL16486A		Sand-Common White-100 Mesh, SSA-2		BE-9W		FSTI-CI-01		IC-001		HYDROCHLORI C ACID		Excelerate LX-1		Sand-Premium White-40/70
ade Names with the		Nalco (Champion)		Halliburton		Halliburton		FSTI		FSTI		Halliburton		Halliburton		Halliburton
exception of Base Wa		Scale Inhibitor		Proppant		Biocide		Acid Corrosion Inhibitor		Iron Control Agent		Solvent		Friction Reducer		Proppant
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients. Crystalline silica, quartz 14808-60-7																
14808-60-7	Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below	
100.00000																
14.65091																

Hydrochloric acid 7647-01-0 15.00000 0.09709
Citric Acid 77-92-9 40.00000 0.13411

^{*}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)



Sandra Parr BRK 201H

47009002510000

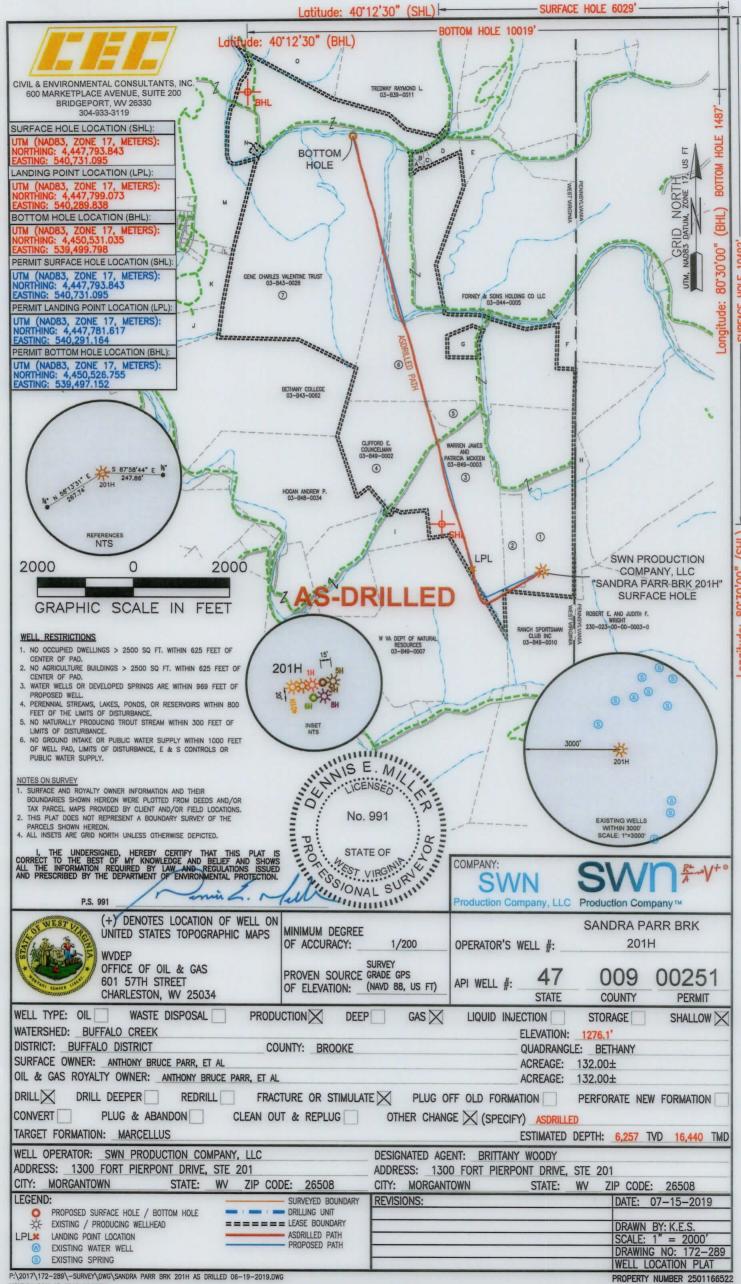
LITHOLOGY/FORMATION	TOP DEPTH, MD (FT) TOP DEPTH, TVD (FT)		BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	TTOM DEPTH, TVD (FT) QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	336.00	336.00	
Top of Salt Water	759.00	759.00	NA	NA	
Pittsburgh Coal	613.00	613.00	621.00	621.00	
Pottsville (ss)	751.00	751.00	828.00	828.00	
Raven Cliff (ss)	1187.00	1187.00	1774.00	1774.00	
Big Injun (ss)	1774.00	1774.00	5895.00	5808.00	
Rhinestreet (shale)	6003.00	5800.00	6374.00	6131.00	
Middlesex (shale)	6374.00	6131.00	6475.00	6208.00	
Burket (shale)	6475.00	6208.00	6499.00	6225.00	
Tully (Is)	6499.00	6225.00	6564.00	6270.00	
Mahantango (shale)	6564.00	6270.00	6779.00	6383.00	
Marcellus (shale)	6779.00	6383.00	NA	NA	GAS

SANDRA PARR BRK 201H ATTACHMENT 1 PERF REPORT

		PERF REF		
STAGE NUM	Perf Date	Perf Top MD		# SHOTS PER STG
1	3/24/2019	16,369	16,278	6
2	4/10/2019	16,245	16,068	36
3	4/10/2019	16,035	15,858	24
4	4/11/2019	15,825	15,648	24
5	4/11/2019	15,615	15,438	27
6	4/12/2019	15,405	15,228	18
7	4/13/2019	15,190	15,012	30
8	4/16/2019	14,984	14,808	18
9	4/16/2019	14,775	14,602	18
10	4/17/2019	14,565	14,388	18
11	4/17/2019	14,354	14,178	18
12	4/17/2019	14,145	13,968	18
13	4/18/2019	13,935	13,758	18
14	4/18/2019	13,724	13,548	18
15	4/18/2019	13,515	13,338	18
16	4/19/2019	13,304	13,128	18
17	4/19/2019	13,094	12,918	18
18	4/19/2019	12,885	12,708	18
19	4/20/2019	12,674	12,498	18
20	4/20/2019	12,464	12,288	18
21	4/21/2019	12,254	12,078	18
22	4/21/2019	12,045	11,868	18
23	4/21/2019		11,658	18
24	4/22/2019	11,625	11,448	70,000
25	4/22/2019	11,414	11,238	
26	4/22/2019		11,028	
27	4/22/2019		10,818	200
28	4/22/2019		10,608	
29	4/23/2019			
30	4/23/2019			
31	4/23/2019		9,978	
	4/23/2019		9,768	7200
32	4/23/2019			
33				
34	4/24/2019			
35	4/24/2019			8.00
36	4/24/2019			
37	4/25/2019			
38				
39			3.9.0	
40				
41				
42	(8//) (8)			
43				
44			7-17/2017	
45	4/26/2019	7,214	7,038	18

SANDRA PARR BRK 201H ATTACHMENT 2 STIM REPORT

		Aug Duman	Aug	Max		Amount of	Amount of	Amount of
CTA CE NUMA	Ctim Data	Ave Pump	Ave Treatment		ISIP (PSI)	Proppant (lbs)		nitrogen/othe
STAGE NUM	Stim Date	The second secon			3,883	278,466		0
1	E THE PERSON AND ASSESSED.		8,122 8,297		4,029	418,150	300 5000	0
3			8,333		4,446		1000 -0-000	0
4			8,655		4,379	421,310	Design Hospitales	0
5			8,288					0
6			8,416			TOTAL PROPERTY.	The property of the party of th	0
7			8,622			25,282		0
8			8,710		4,409	418,973		0
9			12-7 -127.0V S	PHILIP DATE				0
10			8,475					0
11								0
12								0
13								0
14								0
15								
16								100
17						Principle Control of		
18					8 2 313		The second of th	0
19						200.0000 00.0000		0
20								
2:	400 400 000							
22	The state of the s							
23	1-200-200							
24	7 m m v m m m m m m m m m m m m m m m m							
25								
26								
2								
28						PRODUCE STORAGE	A CONTRACTOR	
29								0
30			8,470			a Company and allow	6,136	0
3:				WW Names V			A CONTRACTOR OF THE PARTY OF TH	0
3:					United States			0
3:			1100 Contract			421,241	5,875	0
34					4,446	420,606	6,420	0
3:			8,194	5,859	4,414	418,800	5,995	0
3					4,410	422,390	6,017	0
3							6,035	O
3				5,876	4,324	420,599	6,001	
3:						420,968	5,995	0
4					4,239	420,490	5,466	0
4				5,412	4,566	419,310	5,530	C
4					4,336	420,765	5,887	C
4			and the second	5,371	4,260	420,660	5,995	C
4	4 4/26/2019	95.6	8,085	5,618	4,597	421,588	5,792	. 0
4	5 4/26/2019	9 95	8,135	5,373	4,295	420,730	5,300	0





	WELL BORE TABLE FOR SURFACE OWNE	RS	
TRACT	SURFACE OWNER	TAX PARCEL	
1	ANTHONY BRUCE PARR, SANDRA L. PARR, RAYMOND LEE, NANCY J. PARR, MICHAEL MAHAN AND PAULA MAHAN	03-B49-0005	
2	ANTHONY PARR, SANDRA PARR, RAYMOND PARR, NANCY PARR, LEONARD BOYCE AND KAREN BOYCE	03-B49-0004	
3	WARREN JAMES AND PATRICIA MCKEEN	03-B49-0003	
4	CLIFFORD E. COUNSELMAN	03-B49-0002	
5	CLIFFORD E. COUNSELMAN	03-B44-0013	
6	STATE OF WEST VIRGINIA DEPARTMENT OF COMMERCE, DIVISION OF NATURAL RESOURCES, WILDLIFE RESOURCES SECTION	03-B44-0014	
7	GENE CHARLES VALENTINE TRUST	03-B43-0028	

ADJOINING OWNERS TABLE					
TRACT	SURFACE OWNER	TAX PARCEL 03-B44-0010			
A	PHILLIS A. SWAIN				
В	PHILLIS A. SWAIN	03-B44-0009			
С	PHILLIS A. SWAIN	03-B44-0008			
D	NEEL CURTIS LEE & LOUANN L.	03-B44-0007			
E	MAIN MILDRED	03-B44-0006			
F	CHARLES TOWARD JR. AND JAYME L. DEVOS	03-B44-0012			
G	LELAND MACKEY	03-B44-0014.1			
Н	ANTHONY BRUCE PARR, SANDRA L. PARR, RAYMOND LEE, NANCY J. PARR, MICHAEL MAHAN AND PAULA MAHAN	024-00-00-0007			
1	WEST VIRGINIA BUREAU OF COMMERCE, DIVISION OF NATURAL RESOURCES, PUBLIC LAND CORPORATION	03-B49-0001			
J	DONNI SAMUEL J. & MELANE	03-B43-0057			
K	GENE CHARLES VALENTINE TRUST	03-B43-0049.3			
L	MARY E. COLLINS	03-B43-0049			
М	BETHANY COLLEGE	03-B38-0031			
N	UNKNOWN HEIRS OR ASSIGNS OF CLYDE B. ROBERTS	03-B43-29			
0	OWEN MARK W. (½) AND KRUETZ VIRGINIA BEALL (½)	03-B38-0024			

API WELL #:	47 STATE	009 county	00251 PERMIT			
REVISIONS:			COMPANY:	SWN Production Company, LLC	SV Production Co	ompany TM
			OPERATOR'S WELL #:	SANDRA PARR BRK 201H		DATE: 07-15-2019 DRAWN BY: K.E.S.
			DISTRICT: BUFFALO DISTRIC	T COUNTY: BROOKE	STATE: WV	SCALE: N/A DRAWING NO: 172-289 WELL LOCATION PLAT 2