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

API 47 - 009 _ 00250 County BROOKE	E District BUFFALO DISTRICT
	RA PARR BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name ANTHONY BRUCE PARR, ET AL	Well Number SANDRA PARR BRK 1H
Operator (as registered with the OOG) SWN PRODUCTIO	ON COMPANY, LLC
Address PO BOX 12359 City SPR	
As Drilled location NAD 83/UTM Attach an as-drilled Top hole Northing 4,447,794.236 Landing Point of Curve Northing 4,447,858.689 Bottom Hole Northing 4,450,602.965 Elevation (ft) 1276.1 GL Type of Well	Easting 540,735.347 Easting 540,487.458 Easting 539,736.445
Elevation (ft) 1270.1 GL Type of Well	
Permit Type □ Deviated □ Horizontal ■ Horizontal	tal 6A □ Vertical Depth Type □ Deep ■ Shallow
Type of Operation □ Convert □ Deepen ■ Drill □	Plug Back □ Redrilling □ Rework ■ Stimulate
Well Type □ Brine Disposal □ CBM ■ Gas □ Oil □ Seco	ondary Recovery □ Solution Mining □ Storage □ Other
Type of Completion ■ Single □ Multiple Fluids Produc	ced □ Brine ■Gas □ NGL □ Oil □ Other
Drilled with □ Cable ■ Rotary	
Production hole ■ Air ■ Mud □ Fresh Water □ Brine Mud Type(s) and Additive(s) SOBM	
Date permit issued 06/06/2018 Date drilling comm	nenced 12/29/2018 Date drilling ceased 01/09/2019
Date completion activities began 03/30/2019	Date completion activities ceased 05/17/2019
Verbal plugging (Y/N) N Date permission granted	NI/A
Please note: Operator is required to submit a plugging applica	RECEIVED
Freshwater depth(s) ft336	Open mine(s) (Y/N) depthsN AUG 07 2019
Salt water depth(s) ft759	Void(s) encountered (Y/N) depths N WV Department of Environmental Protection
Coal depth(s) ft613	Gilvionnental Protection
Is seed being mined in area (V/N)	Cavern(s) encountered (Y/N) depthsN

API 47- 009	00250	_ Farm name_A	NTHONY E	BRUCE F	PARR, E	ET AL We	ll number_SAI	NDRA PARR B	RK 1H
CASING STRINGS		asing Size D	l epth	New or Used	Grade wt/ft		Basket Depth(s)	Did cement circulate * Provide details b	` '
Conductor	24		26	NEW	J-5	55/94#		Y	
Surface	17.5	13.375 4	36	NEW	J-55	5/54.50#		Y	
Coal	SEE INTERMEDIATE								
Intermediate 1	12.25	9.625 20	058	NEW	J-ŧ	55/36#		Y	
Intermediate 2									
Intermediate 3								†	
Production	8.75/8.50	5.5 16	392	NEW	P-1	110/20#		Y	
Tubing		2.375 74	417	NEW	P-1	10/4.7#		N	
Packer type and d	lepth set			•				<u></u>	
CEMENT		Number	Slurry		ield	Volume	e Ceme	nt W	~
DATA	Class/Type of Cement	of Sacks	wt (ppg)		ieia ³/sks)	volume (<u>ft ³</u>)	Top (M		
Conductor	CLASS A	GROUT TO SURFACE					SURFA		24
Surface	CLASS A	390	15.60	1	.20	468	SURFA	ACE	8
Coal	SEE INTERMEDIATE								
Intermediate 1	CLASS A	794	15.60	1	.19	944.86	SURFA	ACE	8
Intermediate 2									
Intermediate 3									
Production	CLASS A	3,131	15.60	1	.19	3725.8	9 SURFA	ACE	24
Tubing									
Drillers TD (f Deepest forma Plug back pro ————— Kick off depth	ation penetrated Marco ocedure N/A	ellus		oggers T					
Check all wire	eline logs run	-	ensity esistivity	deviate			induction temperature	□sonic	
Well cored	□ Yes ■ No	Conventional	Sidewal	i	V	Vere cutting	gs collected 🗆	Yes ■ No	
DESCRIBE T	THE CENTRALIZER	R PLACEMENT U	JSED FOR I	EACH CA	ASING S	STRING _			
SURFACE: 7 CENT	RALIZERS - EVERY THIRD JO	INT OF CASING							
INTERMEDIATE: 24	CENTRALIZERS - EVERY TH	IRD JOINT OF CASING							
PRODUCTION: 181	CENTRALIZERS - EVERY TH	IRD JOINT FROM SURFAC	E TO TOP OF CUI	RVE, THEN E	ERY JOINT	UNTIL TD			
WAS WELL	COMPLETED AS S	HOT HOLE -	Yes 🖪 No	o DI	ETAILS			REC Office of	EIVED Oil and Ga
WAS WELL	COMPLETED OPE	N HOLE? □ Ye	es 🖪 No	DET	AILS _			AUG (07 2019
WERE TRAC	CERS USED □ Yes	s No TY	PE OF TRA	.CER(S)	JSED _			WV Dep Environmer	artment of Ital Protect

API 47- 009 - 00250 Farm name ANTHONY BRUCE PARR, ET AL Well number SANDRA PARR BRK 1H

PERFORATION RECORD

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				
						_		
-					_	-		
						1		
			-					RECEIVED
								RECEIVED Office of Oil and Gas
	***							ALIC OF CO.
-								AUG 0.7 2019
					•			MAY Dans 1
								WV Department of Environmental Protection

Please insert additional pages as applicable.

API 47- 009	_ 00250	Farm	name_ANTHON	NY BRUC	CE PARR, ET	AL Well r	number	SAND	RA PA	ARR BRK 1H
PRODUCING	FORMATION	(S)	DEPTHS							
MARCELLUS	2014/11/12011	(5)	6385	TVD	6741	MD				
				_ 1 \ D		NID				
				_	-					
Please insert ac	lditional pages	as applicable.								
GAS TEST	□ Build up	□ Drawdown	□ Open Flow		OIL TEST	Flow	Pump			
SHUT-IN PRE	SSURE Sur	face 1435	psi Botto	m Hole_	psi	DURAT	TON C	F TES	Γ	hrs
OPEN FLOW	Gas 5,542 mc	Oil fpd 523	NGL bpd		Water 645 bpd	GAS M				Pilot
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTO DEPTH IN MD	N FT DESCRIB	E ROCK TYI FLUID (FRE				TTYAND GAS, H_2S , ETC)
	0		0							
	SEE	ATTACHMENT	3							
Please insert ac	dditional pages	as applicable.								
Drilling Contra	actor SWN DRI	LLING COMPAI	NY							
Address PO BC	X 12359		City	SPRING		State	TX	Zip	77391-2	2359
		ICHES	·							
Address 9110 C	any BAKER HU BROGANS MILL F	ROAD	City	THE WO	ODLANDS	State	TX	Zin	77380	
			City			State				
Cementing Con Address 11211	mpany BJ SER	VICES	C:1-	TOMBAL	- I	Ctata	TX	7:-	77377	DECENTED
			City	, JINDAL	-	State		z.ip	2 2 Ed h	RECEIVED Office of Oil and Gas
Stimulating Co	ompany HALL	IBURTON ENE	RGY SERVICES	IANELE	10/		1007		26270	
	JACKSON MILL R		City	JANE LE	VV	State	WV	Zip	26378	AUG 0 7 2019
	dditional pages									WV Department of
Completed by	BOBBY WILL	S			Telephor	ne 832-796	-2884			Environmental Protection
Signature /	Jaly "H	1	Title S	ENIOR RE	GULATORY ANA	LYST	Date _8	/6/2019		_
Submittal of A	ydraulic Fractu	ring Chemical	Disclosure Info	rmation	Attach copy	of FRACI	FOCUS	Regist	ry	

Hydraulic Fracturing Fluid Product Component Information Disclosurg

106,635	Total Base Non Water Volume:
13,286,520	Total Base Water Volume (gal):
6,339	True Vertical Depth:
NO	Indian Well:
NO	Federal Well:
NAD83	Datum:
-80.52152559	Longitude:
40.17953800	Latitude:
Sandra Parr BRK 1H	Well Name and Number:
Southwestern Energy	Operator Name:
47-009-00250-00-00	API Number:
Brooke	County:
West Virginia	State:
5/2/2019	Job End Date:
4/1/2019	Job Start Date:
4/1/2019	b Start Date:







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Hydraulic Fract	Hydraulic Fracturing Fluid Composition:	nposition:					
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	85.03956	85.03956 Density = 8.34
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.46665	

Sand-Premium White-40/70		BE-9		FSTI-IC-001		SCAL16486A		Excelerate LX-1		HYDROCHLORI C ACID		LCA-1		BE-9W		FSTI-CI-01
Halliburton	×	Halliburton		FSTI		Nalco (Champion)		Halliburton		Halliburton		Halliburton		Halliburton		FSTI
Proppant		Biocide		Iron Control Agent		Scale Inhibitor		Friction Reducer		Solvent		Solvent		Biocide		Acid Corrosion Inhibitor
	Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below		Listed Below	
															REC	EIVED
															AUG	Oil and G 0 7 201

																	Items above are Trade		Sand-Common Ha White-100 Mesh, SSA-2	
																	Names with the		Halliburton	
																	exception of Base Wa		Proppant	
Fatty acids	Methanol	Hydrotreated distillate	Tributyl tetradecyl phosphonium chloride	Citric acid	Acetic acid	Ethylene glycol	Amine Triphosphate	Propylene glycol	Sodium chloride	Ammonium chloride	Fatty acid ester	Ethoxylated fatty acid	Hydrotreated light petroleum distillate	Polyacrylate	Hydrochloric acid	Crystalline silica, quartz	Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients			
Trade Secret	67-56-1	Proprietary	81741-28-8	77-92-9	64-19-7	107-21-1	Proprietary	57-55-6	7647-14-5	12125-02-9	Proprietary	Proprietary	64742-47-8	Proprietary	7647-01-0	14808-60-7	vidual ingredients.	Listed Below		Listed Below
10.00000	80.00000	100.00000	10.00000	40.00000	60.00000	30.00000	30.00000	60.00000	5.00000	5.00000	5.00000	5.00000	30.00000	30.00000	15.00000	100.00000				
0.00006	0.00046	0.00056	0.00071	0.00083	0.00124	0.00180	0.00180	0.00314	0.00400	0.00400	0.00400	0.00400	0.02397	0.02397	0.06173	14.45261		Office	ECEIVE of Oil an	0 d Gas 2019
																		WV Enviro	Departm mental F	ent of rotection

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)

^{*} 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

SANDRA PARR BRK 1H ATTACHMENT 1 PERF REPORT

		PERF REF	PORT	
STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1 3/24/2019	16,347	16,251	36
2	4/2/2019	16,218	16,041	36
3	3 4/2/2019	16,008	15,831	36
4	4 4/2/2019	15,798	15,621	36
1	5 4/3/2019	15,588	15,411	36
(6 4/3/2019	15,378	15,201	36
ī	7 4/4/2019	15,168	14,991	36
8	3 4/4/2019	14,958	14,781	36
9	9 4/4/2019	14,748	14,571	36
10	0 4/4/2019	14,538	14,361	36
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13				36
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	6 4/27/2019			
	7 4/27/2019			
	8 4/28/2019			
	9 4/28/2019			
	0 5/1/2019			
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	5/2/2019			
	5/2/2019		and the second s	
4	5 5/2/2019	9 7,188	7,013	1 3

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SANDRA PARR BRK 1H ATTACHMENT 2 STIM REPORT

		Ave Pump	Ave	Max REPORT		Amount of	Amount of	Amount of
STAGE NUM	Stim Date	Rate (BPM)	Treatment	Breakdown	ISIP (PSI)	Proppant (lbs)		nitrogen/othe
TAGE NOW	The State of the S	And the second second second second		6,464	4,006			0
				4,576	4,406			0
					4,347			0
				5,735	4,404			0
								0
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4.	5 5/2/2019	99.3	6,575	5,522	4,337	484,000	RECEIVE 293	

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Well Name:

Base of Fresh Water

LITHOLOGY/FORMATION TOP DEPTH, MD (FT)

TOP DEPTH, TVD (FT)

BOTTOM DEPTH, MD (FT)

BOTTOM DEPTH, TVD (FT)

QUANTITY AND TYPE OF FLUID

Big Injun (ss)

Mahantango (shale)
Marcellus (shale)

Rhinestreet (shale)
Middlesex (shale)
Burket (shale)
Tully (Is)

6263.00 6366.00 1187.00 1774.00 5895.00

5808.00 6140.00

6390.00 6460.00

6233.00 6277.00

6140.00 6217.00 5808.00

621.00 828.00 1774.00

621.00 828.00 1774.00 5895.00 6263.00 6366.00

1187.00 1774.00

6390.00

6217.00 6233.00 6277.00

Z

NA

GAS

Top of Salt Water
Pittsburgh Coal
Pottsville (ss)

613.00 751.00

613.00 751.00

0.00 759.00

NA

NA

336.00

336.00

0.00

Raven Cliff (ss)

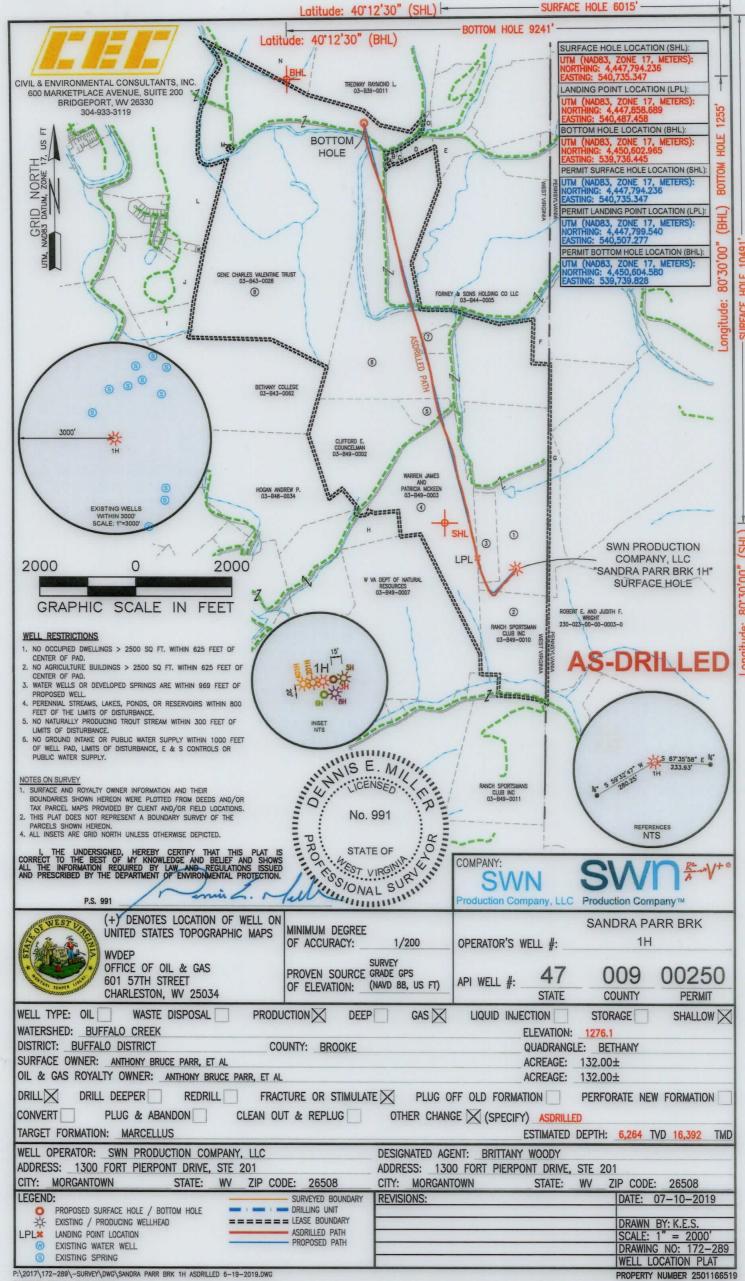
Sandra Parr BRK 1H

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	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	RANCH SPORTSMAN CLUB INC.	03-B49-0010
3	ANTHONY PARR, SANDRA PARR, RAYMOND PARR, NANCY PARR, LEONARD BOYCE AND KAREN BOYCE	03-B49-0004
4	WARREN JAMES AND PATRICIA MCKEEN	03-B49-0003
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	LELAND MACKEY	03-B44-0014.1
8	GENE CHARLES VALENTINE TRUST	03-B43-0028

	ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL	
A	PHILLIS A. SWAIN	03-B44-0010	
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	ANTHONY BRUCE PARR, SANDRA L. PARR, RAYMOND LEE, NANCY J. PARR, MICHAEL MAHAN AND PAULA MAHAN	024-00-00-0007	
Н	WEST VIRGINIA BUREAU OF COMMERCE, DIVISION OF NATURAL RESOURCES, PUBLIC LAND CORPORATION	03-B49-0001	
1	DONNI SAMUEL J. & MELANE	03-B43-0057	
J	GENE CHARLES VALENTINE TRUST	03-B43-0049.3	
K	MARY E. COLLINS	03-B43-0049	
L	BETHANY COLLEGE	03-B38-0031	
М	UNKNOWN HEIRS OR ASSIGNS OF CLYDE B. ROBERTS	03-B43-0029	
N	OWEN MARK W. (1) AND KRUETZ VIRGINIA BEALL (1)	03-B38-0024	
0	DONNA M. CONLEY	03-B44-0002	

API WELL #:	STATE	COUNTY	PERMIT			
REVISIONS:			COMPANY:	SWN Production Company, LLC	SV Production Co	Marie V ⁺ ° ompany™
		OPERATOR'S SANDRA PARR BR		BRK		
			WELL #: DISTRICT: BUFFALO DISTR	COUNTY:	STATE: WV	DRAWN BY: K.E.S. SCALE: N/A DRAWING NO: 172-289 WELL LOCATION PLAT 2