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

API 47 103 02923	County Wetze	el	District Green	
Quad Porters Falls	Pad Name Ma		Field/Pool Name Ma	ary
Farm name Martin, Charles and			Well Number 5191	78 #3H
Operator (as registered with the OO		Company		
Address 625 Liberty Avenue, S	uite 1700 City P	Pittsburgh	State PA	Zip_15222
As Drilled location NAD 83/UTN Top hole	Attach an as-dr Northing 4,384,805.6	illed plat, profile view, 79	and deviation survey Easting 520,081.144	
Landing Point of Curve	Northing 4,384,899.50	)2 E	Easting 519,734.289	
Bottom Hole	Northing 4,386,122.23	31 E	Easting 518,920.826	
Elevation (ft) 906 GL	Type of Wel	I □New ■ Existing	Type of Report	□Interim ■Final
Permit Type   Deviated	Horizontal A Horiz	zontal 6A 🛮 🗆 Vertica	l Depth Type	□ Deep ■ Shallow
Type of Operation   Convert	Deepen 🗆 Drill	□ Plug Back □ Re	edrilling   Rework	■ Stimulate
Well Type Brine Disposal CI	BM A Gas 🗆 Oil 🗆 S	Secondary Recovery	Solution Mining    Sto	orage   Other
Type of Completion ■ Single □ M Drilled with □ Cable ■ Rotary	Aultiple Fluids Pro	oduced 🗆 Brine 🛮 🛢 G	as ■ NGL □ Oil	Other
Drilling Media Surface hole  Production hole Air Mud  Mud Type(s) and Additive(s)  Saturated salt mud which inclu	□ Fresh Water □ Bi	rine		■ Fresh Water □ Brine  Kan-Plex D. X-Cide 102.
Soda Ash, and Sodium Chlori	2204 2000000000000000000000000000000000			77 TO TO THE TOTAL THE TOTAL TO THE TOTAL TOTAL TO THE TO
Date permit issued9/30/2013  Date completion activities began  Verbal plugging (Y/N)N	Date drilling co 10/10/2018 Date permission gran	Date completion a	Date drining c	eeased 9/18/2014 0/22/2018
Please note: Operator is required to	submit a plugging app	lication within 5 days of	of verbal permission to p	lug
Freshwater depth(s) fi	120	Open mine(s) (Y/N	V) depths	N RECEIVED
Salt water depth(s) ft	1,546	Void(s) encountered		Office of Oil and G
	and 746	Cavern(s) encount	- N. P. A.	N JAN 18 2019
Is coal being mined in area (Y/N)	N		ewed	WV Department o Environmental Protect Reviewed by:

WR-35

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API 47- 103	- 02923		_ Farm name_[	Martin, Charle	es and Gwend	loWell n	<sub>umber_</sub> 51917	78 #3H
CASING STRINGS	Hole Size		asing ize		w or Grade sed wt/ft			rid cement circulate (Y/ N) Provide details below*
Conductor	24"		20°	90' 1	lew LS -	94.1 ppf		N - GTS
Surface	17.5"	1	13.375"	894' 1	New J55 -	54.5 ppf 1	16' & 197'	Y - CTS
Coal	17.5"	1	13.375"	894' 1	New J55 -	54.5 ppf 1	16' & 197'	Y - CTS
Intermediate I	12.25"	•	9.625" 2	,269' N	lew J55	- 36 ppf		Y-CTS
Intermediate 2								
Intermediate 3								
Production	8.75"		5.5" 1:	2,097' 1	New P110	- 20 ppf	N	- TOC @ 1,313' Calculated
Tubing								
Packer type and de	pth set	TAM	CAP Inflatable Pac	ker on 9.625" C	asing String @ 76	6'		
Comment Details surface on the 5.5"			nt to surface on 13.375		ated 33 bbis cement to	surface on the 9.6	25" casing string. Di	d not circulate any cement to
CEMENT DATA	Class/Type of Cement		Number of Sacks	Slurry wt (ppg)	Yield ( ft ³/sks)	Volume (ft <sup>1</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Type 1		34	15.6	1.18	40	Surface	24.0
Surface	HalCem Class	"A"	670	15.6	1.22	817	Surface	8.0
Coal	HalCem Class	"A"	670	15.6	1.22	817	Surface	8.0
Intermediate I	liate I Lead-10% Salt Tail -HalCem Lead-4		Lead-400 Tail-400	Lead-15.6 Tail-15.6	Lead-1.24 Tail-1.21	Lead-496 Tail-484	Surface	12.0
Intermediate 2								
Intermediate 3								
Production	Lead-TunedSpacer3 Tail-	VariCem	Lead-178 Tail-2,270	Lead-14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,724	1,313' Calcula	ated 7.0
Tubing								
Drillers TD (ft Deepest forma Plug back pro	tion penetrated		ilus Shale		ggers TD (ft) NA g back to (ft) NA			
Kick off depth	(ft) 5,611 MD / 5,5	97 TVD						
Check all wire	line logs run		-	-	deviated/directi	onal 🗆 ind	uction	
			□ neutron □	resistivity 🛔	gamma ray	<b>≜</b> tem	iperature c	osonic
Well cored C		IZED	Conventional	Sidewall		ere cuttings co		es No
			. PLACEIVIEN I tralizers placed on joints 4, 8, 1		CH CASING S	I KUNO Sunac	e easily lidu now St	oring centralizers placed on

Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 12 to joint 232. Ran a total of 55 rigid spiral centralizers. Ran bow spring centralizers from joint 240 to joint 259

on every eighth joint. A total of 6 bow spring centralizers were nun.

WAS WELL COMPLETED AS SHOT HOLE □ Yes ■ No DETAILS \_ RECEIVED
Office of Oil and Gas

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

JAN 1 8 2019 WV Department of Environmental Protection WERE TRACERS USED □ Yes ■ No TYPE OF TRACER(S) USED \_\_\_\_

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API -	47- 103 - 02923	Farm name_Martin, Charles and Gwendo	_Well number_519178 #3H
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## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					Please See Attached

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)
								Please
								See
								Attached
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								JAN 18-2019

Please insert additional pages as applicable.

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PRODUCING I	FORMATION	( <u>2)</u>	<u>DEPTHS</u>		0.000						
MARCELLUS		<del></del>	6,591'	_TVD	6,966'	MD					
				_		_					
				_		<del></del>					
Please insert ad	ditional pages	as applicable.		_							
GAS TEST	□ Build up	⊐ Drawdown	■ Open Flow		OIL TEST B	low 🗆	Pump				
SHUT-IN PRE	SSURE Sur	face 1,300	psi Botto	m Hole	N/A psi	DURAT	TION OF	TEST	186.0	hrs	
OPEN FLOW	Gas 11,759 mc	Oil fpd <u>N/A</u>	NGL bpd <u>15.7</u>	bpd	Water 961.9 bpd		MEASURI nated ■			Pilot	
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOI DEPTH IN MD	_				-		·C)
	0		0								
See Attached Sheet			<u> </u>								
		†	<u> </u>								
	<u> </u>										
			_		-		_				
Please insert ad	  ditional pages	as applicable.					*				
		• •	ixon Drilling (horiz	zontal)							
Address 900 Vir					n / The Woodlands	State	W/TX	Zip 2	25301 /	77381	
Logging Comp	any Scientific D	Drilling and Schi	lumberger								
Address 124 Vis	sta Drive / 1178 U	S HWY 33 East	City	Charleroi	/ Weston	_ State	PA/W	Zip _	15022 /	26452 B	ECEIVED
Cementing Cor	npany Hallibur	ton									
Address 121 Ch	ampion Way, Sui	te 110	City	Cannonst	ourg	_ State	PA	Zip_	15317	JAN	1 8 2
Stimulating Co				_ <u>:</u>	_			_		Environn	
Address <u>777 Ea</u> Please insert ad			City	Fort Wort	n	_ State	TX	Zip _	76102	REC Office of	CEIVED Oil and (
						/440\ <del>"</del>	.de . 27	ne n		JA	
Completed by Signature	Damer Deeper	ениег	Title D	irector - Dril	Telephone	(412) 2	Date 01/1	17/2019	9		
Signature	m	~~ (	inte				Date		-	Environ.	