WW-6B (04/15)

API NO. 47-051	
OPERATOR WELL NO.	Breckenridge S-19HU
Well Pad Name: Brecke	enridge

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS WELL WORK PERMIT APPLICATION

1) Well Operato	r: Tug Hil	II Operating	, LLC	494510851	Marshall	Cameron	Glen Easton 7.5'
_	<u></u>			Operator ID	County	District	Quadrangle
2) Operator's W	ell Number	r: Breckenri	dge S-19	HU Well Pad	Name: Breck	enridge	
3) Farm Name/S	Surface Ow	ner: CNX L	and, LLC	Public Road	d Access: CR	62	
4) Elevation, cu	rrent groun	d: <u>1380'</u>	E1	evation, proposed p	oost-construction	n: <u>1370.1</u>	0'
5) Well Type	(a) Gas	X	_ Oil	Unde	rground Storag	e	
	Other						
	(b)If Gas	Shallow		Deep	X		
		Horizontal	X				
6) Existing Pad	Yes or No	No					
				ipated Thickness at 51' - 11,983', thickness			e of approx. 7,500 psi.
8) Proposed Tot	al Vertical	Depth: 12,	133'				
9) Formation at			Trenton				
10) Proposed To	otal Measur	red Depth:	23,780'				
11) Proposed H	orizontal L	eg Length:	11,202.0)1'			
12) Approximat	e Fresh Wa	ater Strata De	epths:	70; 1,048'			
13) Method to I	Determine F	Fresh Water	Depths:	Offset well reports or no	ticeable flow at the	flowline or w	hen need to start soaping
14) Approxima	e Saltwater	Depths: 1	,515'				
15) Approxima	e Coal Sea	m Depths:	Sewickley	Coal - 952' and F	Pittsburgh Coa	I - 1042'	
16) Approxima	te Depth to	Possible Vo	id (coal m	ine, karst, other): _	None anticipat	ed	Office of Oil and Gas
17) Does Propo directly overlyi				ms Yes X	No		MON 1 2 505/ NON 1 2 505/ Office of oil sure of sold of the collection
(a) If Yes, pro	vide Mine	Info: Name	e: Mars	shall County Mine			Environmental .
		Deptl	h: Pitts	burgh coal - 1042	and subsea l	evel - 328'	
		Seam	n: Pitts	burgh			
		Own	er: Murr	ay Energy Corpor	ation		

12,106 ft TVD



20" Csg @ 1,150' MD / 1,150' TVD 13 3/8" Csg @ 3,002' MD / 3,000' TVD

9 5/8" Csg @ 10,957' MD /

Pilot Hole

PH TD @

12,133

10,744' TVD

11,043' ft MD

PH TVD = 150' below Trenton Top

WELL NAME:	Breckenridge	S-19HU		
STATE:	wv	COUNTY:	Marshall	
DISTRICT:	Cameron			
DF Elev:	1,370'	GL Elev:	1,370'	
TD:	23,780			
TH Latitude:	39.830269			
TH Longitude:	-80.626651			
BH Latitude:	39.802159			
BH Longitude:	-80.610644			

FORMATION TOPS					
Formation	Depth TVC				
Deepest Fresh Water	1,048'				
Sewickley Coal	952'				
Pittsburgh Coal	1,042				
Big Lime	2,245'				
Berea	2,863				
Tully	6,862° 6,982° 7,034° 7,773°				
Marcellus					
Onondaga					
Salina					
Lockport	8,744				
Utica	11,620				
Point Pleasant	11,861				
Landing Depth	11,911'				
Trenton	11,983				
Pilot Hole TD	12,133				

CASING SUMMARY							
Туре	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cemen
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	1,150*	1,150'	106.5	155	Surface
Intermediate 1	17 1/2	13 3/8	3,002"	3,000*	54.5	155	Surface
Intermediate 2	12 1/4	9 5/8	10,957	10,744	47	HPP110	Surface
Production	8 1/2	5 1/2	23,780	12,106	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS		
	Sacks	Class	Density	Fluid Type	Centralizer Notes	
Conductor	338	A	15.6	Air	None	
Surface	1,984	A	15.6	Air	3 Centralizers at equal distance	
Intermediate 1	2,292	A	15	Air	1 Centralizer every other jt	
Intermediate 2	2,962	A	14.5	Air	1 Centralizer every other jt	
Production	4,985	A	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc	

Landing Point @ 12,580' MD / 11,911' TVD RECEIVED Office of Oil and Gas

NOV 1 5 2021

WV Department of Environmental Protection