

Dave Hardy Secretary of Revenue **Dale W. Steager** State Tax Commissioner

STATE TAX DEPARTMENT

June 28, 2019

The Honorable Mac Warner Secretary of State Building 1, Suite 157-K State Capitol Charleston, West Virginia 25305



Dear Secretary Warner:

Attached for filing in the State Register are tentative natural resource property valuation variables for the 2020 Tax Year that have been developed by the State Tax Department for use in determining the appraised value of coal, oil, natural gas, managed timberland and other natural resource properties for ad valorem tax purposes.

The State Tax Department will accept written public comments on all variables until August 1, 2019. Final valuation variables will be filed on or before September 1, 2019.

Public comments concerning the attached variables should be forwarded to the following address:

West Virginia State Tax Department Property Tax Division Attention: Jeff Amburgey P.O. Box 2389 Charleston, West Virginia 25328-2389

Sincerely,

Dale W. Steager State Tax Commissioner

DWS/ja/j

Attachment



2019 JUN 28 P 12: 13



OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2020

June 28. 2019 Dale W. Steager State Tax Commissioner Department of Revenue

OIL AND GAS TY 2020

Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for producing oil and gas properties. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1J

Safe Rate	(3-Month C	onstant Maturity I	nterest Rates)		_		
	January	December	2018		1.973%			
Risk Rate	(Interest dif	ferential between	Loan Rate and	d 3-Month Co	nstant Maturity	Interest Rates)		
	Loan Rate*		f	Risk Rate				
	2018	6.904%		4.931%				
		*Prime plus 2%	1					
Equity	(Differential	between Equity F	Rates and 3-M	onth Constan	t Maturity Inter	est Rates)		
	Equity Rate*	*			Risk Rate			
	2018	[13.00%/(126)]-1 973%		15 595%			
	** Value Line	Investment Surve	ey Analysis					
Composite I	Risk Rate	Loan and Eq	uity Rates wei	ghted by indu	stry estimated	capital structure		
		Equity Rate		Debt Rate		Composite Risk		
	2018	10 1368%		1 726%		12.487%		
	Note. Debt e	equity Ratio		Debt	35%	Equity	65%	
	*** Effective :	severance tax adj	ustment		0 95			
		I have a life				- A A		
Non Liquidit	<u>y Rate</u>	Interest differe	ntial between	3-month Con	stant Maturity I	nterest Rates and a	year Cor	istant
		Maturity Interes	t Rates which	reflects a rea	sonable time n	ecessary to sell activ	e property	Non Liquidity Data
		December	2019		<u>111 111</u>	1 073%	1	
	January	December	2010		2.33270	1.97376	2	0.559%
Managemen	t Rate	Charges for the	management	ofinvestmen	nortfolios			
	Fixed Rate (h	v Rule)	- Indiagenion	0.500%	portionee			
	, (L	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	L.					
Property Tax	Rate	Sixty percent (6	0%) of State a	verage Class	lil property tax	crate.		
(together the		e, p						
		2018	6	0% of 2.17	1	1.302%		
					14			
Inflation Rate	9							
	January	December	2018		1.910%			

Capitalization Rate

Since the valuation of oil and gas property is predicated on a three year production , the capitalization rate will be considered in a similar manner.

	2018	<u>2017</u>	2016	
Inflation Rate	-1.910%	-2.110%	-2.070%	
Safe Rate	1.973%	0.947%	0.319%	
Composite Risk Rate	12,487%	13.282%	14.998%	
Non Liquidity Rate	0.359%	0.254%	0.295%	
Management Rate	0.500%	0 500%	0.500%	
Property Tax Rate	1.302%	1 308%	1.308%	
Total	14.711%	14.181%	15.350%	
	50.000%	33.333%	16.667%	
	7.355%	4.727%	2.558%	14.641%

Capitalization Rate Rounded to:

14.60%

MULTIPLIERS FOR 14.6% MID-YEAR LIFE (ANNUALLY)

YEAR		YEAR	
1	0.934131	21	0 061195
2	0.815123	22	0 053399
3	0.711276	23	0.046596
4	0.620660	24	0.040659
5	0 541588	25	0.035479
6	0 472590	26	0 030959
7	0.412382	27	0.027015
8	0.359845	28	0 023573
9	0 314001	29	0 020570
10	0 273997	30	0 017950
11	0.239090	31	0 015663
12	0.208630	32	0.013667
13	0.182051	33	0 011926
14	0 158857	34	0.010407
15	0 138619	35	0 009081
16	0.120959	36	0 007924
17	0.105549	37	0_006915
18	0.092102	38	0.006034
19	0.080368	39	0.005265
20	0.070129	40	0 004594



Decline	Rates	for	Natural	Gas	and	Oil	Formations:	Central

Central:Braxton, Clay, Fayette, Nicholas, Webster

CONTRACTOR OF				Y
Code	Formation	Year 1	Year 2	Year 3 +
12	Alexander, Benson	-0.31	-0.20	-0.10
14	Benson	-0.48	-0.08	-0.08
16	Benson, Balltown+	-0.45	-0.16	-0.12
17	Gordon +	-0.30	-0.07	-0.07
18	Big Injun	-0.34	-0.13	-0.13
19	Big Injun, Big Lime	-0,36	-0.13	-0.13
22	Big Lime	-0.34	-0.34	-0.13
26	Ravencliff	-0.40	-0.40	-0.25
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0 26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.41	-0.22	-0.09
110	Marcellus *	-0.41	-0.22	-0.09
111	Utica*	-0.41	-0.22	-0.09
9	Exception (Median)	-0.41	-0.22	-0.09
10	Non-Filer	-0.30	-0.07	-0.07

	Decline Rates for Natural Gas and Oil Formations: East						
E N	East: Berkeley, Grant, Greenbrier, Hampshire, Hardy, Jefferson, Mineral, Monroe, Morgan, Pendleton, Pocahontas, Preston, Randolph, Summers,						
	Tucker						
Code	Formation	Year 1	Year 2	Year 3 +			
1	Oriskany	-0.30	-0.30	-0.19			
14	Benson	-0.31	-0.17	-0.12			
20	Benson +	-0.44	-0.20	-0.08			
21	Benson, Fifth	-0.29	-0 28	-0.09			
32	Brallier +	-0 48	-0.20	-0.05			
33	Elk, Benson	-0.39	-0.21	-0.08			
34	Elk, Benson, Riley	-0.53	-0.19	-0.05			
35	Elk, Benson, Riley +	-0 36	-0.19	-0.11			
36	Elk, Benson, Balltown	-0.34	-0.18	-0.11			
37	Elk, Alexander,Benson	-0.50	-0.07	-0.07			
38	Elk, Alexander, Benson +	-0.40	-016	-0.16			
39	Hunterville	-0.31	-0.31	-0.14			
40	Fox, Haverty	-0.36	-0.21	-0.15			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
110	Marcellus	-0.59	-0.22	-0.17			
111	Utica*	-0.59	-0.22	-0.17			
9	Exception (Median)	-0.41	-0.22	-0.10			
10	Non-Filer	-0.29	-0.07	-0.05			

*New Formation(s) involved in recent production. These will be valued with the Marcellus Rates until decline information is available.

	Decline Rates for Natural Gas and Oil Formations: North						
	North: Brooke, Hancock, Marshall, Ohio, Tyler, Wetzel						
Code	Formation	Year 1	Year 2	Year 3 +			
11	Gordon	-0.47	-0.31	-0.09			
13	Alexander, Benson, Riley	-0 26	-0.16	-0.15			
15	Benson, Riley	-0.18	-0.16	-0.06			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	<u>-0.</u> 08			
97	Coalbed Methane (Vertical)	-0 23	-0.08	-0.05			
110	Marcellus	-0.52	-0.23	-0.18			
111	Utica*	-0.52	-0.23	-0.18			
9	Exception (Median)	-0.39	-0 23	-0.08			
10	Non-Filer	-0.18	-0.16	-0.06			

No	Decline Rates for Natural Gas and Oil Formations: North Central North Central: Barbour, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Taylor, Upshur					
Code	Formation	Year 1	Year 2	Year 3 +		
11	Gordon	-0.41	-0.14	-0.12		
12	Alexander, Benson	-0.37	-0 19	-0 11		
13	Alexander, Benson Riley	-0.40	-0 28	-0.05		
14	Benson	-0.31	-0 17	-0.12		
15	Benson, Riley	-0.34	-0.17	-0.14		
18	Big Injun	-0.36	-0 16	-0.13		
21	Benson, Fifth	-0 31	-0.20	-0.14		
28	Weir	-0.34	-0.34	-0.07		
29	Weir +	-0.28	-0.28	-0.23		
33	Elk, Benson	-0.34	-0 16	-0.11		
34	Elk. Benson, Riley	-0.42	-0.27	-0.08		
37	Elk, Alexander, Benson	-0.49	-0 23	-0.08		
38	Elk, Alexander, Benson +	-0.38	-0.20	-0.12		
40	Fox, Haverty	-0 46	-016	-0.08		
50	Rhinestreet	-0 28	-0 03	-0.03		
57	Alexander, Benson, Balitown	-0 39	-0 26	-0.08		
58	Alexander	-0.35	-0.20	-0.10		
59	Alexander +	-0.39	-0.22	-0.10		
60	Alexander, Benson, Riley +	-0.39	-0.35	-0.12		
61	Balltown	-0.35	-0 20	-0.10		
62	Balltown, Speechley	-0 28	-0.22	-0.10		
63	Balltown, Speechley +	-0.30	-0.13	-0.10		
64	Benson, Balltown, Speechley	-0.28	-0.22	-0,09		
65	Benson, Bradford	-0.37	-0.20	-0.10		
66	Benson, Balltown	-0.29	-0.23	-0.11		
57 I	Benson, Riley +	-0.38	-0 14	-0.10		
68 1	Benson, Speechley	-0.30	-0.22	-0.14		
69	Brallier, Elk	-0.42	-0.20	-0.13		
70 £	Brallier	-0.40	-0.22	-0 15		
71 [Deeper/Onondaga or Oriskany/Helderberg	-0.24	-0.24	-0.03		
72 8	Elk Alexanoer	-0.42	-0.22	-0.09		
73 E	Elk, Benson +	-0.38	-0.20	-0.12		
74 E	Elk	-0.43	-0.12	-0.10		
75 E	Elk, Riley	-0.60	-0.35	-0.17		
76 F	OX +	-0.46	-0.18	-0.09		
77	laverty, Elk, Benson (No Alexander)	-0.35	-0.16	-0.16		
'8 i-	laverty	-0.45	-0.15	-0.15		
'9 F	Riley	-0.44	-0.22	-0.10		
80 8	Speechley	-0.30	-0.18	-0.09		
31 A	lexander, Benson, Speechley	-0.39	-0 24	-0.10		
2 +	laventy, Elk, Alexander	-0.47	-0 14	-0.14		
5 F	ifth, Oil	-0.45	-0.25	-0.22		
7 E	Bayard All	-0.30	-0.20	-0.05		
8 F	ifth	-0.29	-0.18	-0.12		
9 (F	ifth +	-0.25	-0.15	-0.13		
0 6	Gordon, Injun All	-0.41	-0.23	-0.23		
1 S	quaw	-0.37	-0 31	-0.06		
2 11	ijun +	-0.34	-0.22	-0.22		
3 4	th Sand	-0.42	-0.32	-0.08		
4 5	0 Foot	-0.34	-0.26	-0.07		
5 Ir	njun/Weir	-0.51	-0.26	-0.09		
6 N	iaxton	-0.70	-0.27	-0.08		
7 C	oalbed Methane (Vertical)	-0.23	-0.08	-0.05		
B C	oalbed Methane (Horizontal)	-0.05	-0.05	-0.32		
9 T	renton/Deeper *	-0.38	-0.21	-0.11		
0 M	arcellus	-0.59	-0.29	-0.23		
1 U	tica**	-0.59	-0.29	-0.23		
E	xception (Median)	-0.38	-0.21	-0.11		
ON	on-Filer	-0.23	-0.03	-0.03		

*New Formation(s) involved in recent productor - These will be valued with the Exception Rales until decline information is available

**New Formationis) involved in recent production. These will be valued with the Marcellus Rates until decine information is available

	North West: Pleasants, Ritc	hie, Wood		
Code	Formation	Year 1	Year 2	Year 3
2	Huron, Rhinestreet	-0.41	-0.26	-0.07
4	Huron	-0.42	-0.24	-• 14
5	Huron, Shales above Huron	-0 39	-0.25	-0 14
8	Berea	-0.31	-0 15	-0.15
11	Gordon	-0.38	-0 10	-0.10
12	Alexander, Benson (No Riley)	-0.34	-0.23	-0.10
13	Alexander, Benson, Riley	-0.32	-0 20	-0.10
14	Benson	-0 19	-0 19	-0.10
44	Rhinestreet, Huron, Shallow Shale	-0 43	-0 28	-0_11
47	Alexander, Riley, (No Benson)	-0 41	-0 05	-0 05
48	Rhinestreet, Alexander, Benson, Riley	-0.31	-0.24	-0 10
49	Weir, Squaw. Big Injun	-0.27	-0.17	-0 07
50	Rhinestreet	-0 40	-0 27	-0 27
51	Rhinestreet +	-0.36	-0 21	-0 10
52	All Upper Devonian (Undiv)	-0.48	-0 33	-0.19
53	Huron, Chemung	-0.35	-0 11	-0.09
54	Huron, Hampshire. Pocono	-0.12	-0.12	-0.11
55	Upper Devonian (Above Huron)	-0.46	-0.33	-0 23
56	Chemung Sands= Riley, Bradford, Balitown, Speechley, Warren (No Benson or Alexander)	-0.28	-0.18	-0.10
83	Huron Oil	-0.74	-0.44	-0.40
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	njun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
09	Trenton/Deeper *	-0.39	-0 23	-0.13
10	Marcellus	-0.46	-0.29	-0.23
11 1	Utica"	-0.46	-0.29	-0.23
9 8	Exception (Median)	-0 39	-0.23	-0 13
0	Non-Filer	-0.12	-0.05	-0.05

"New Formation(s) involved in recent production. These will be valued with the Exception Rates until decline information is available

"New Formation(s) involved in recent production. These will be valued with the Marcellus Rates until decline information is available

	Decline Rates for Natural Gas and Oil Formations: South						
	South: McDowell, Mercer, Raleigh, Wyoming						
Code	Formation	Year 1	Year 2	Year 3 +			
8	Berea	-0.34	-0.15	-0.15			
22	Big Lime	-0.31	-0.19	-0.07			
23	Big Lime, Maxton	-0 31	-0.19	-0.07			
24	Big Lime, Ravencliff	-0.29	-0.29	-0.17			
25	Berea +	-0.37	-0.12	-0.08			
26	Ravencliff	-0.40	-0.08	-0.07			
28	Weir	-0.44	-0.20	-0.10			
29	Weir +	-0.28	-0.21	-0.08			
30	Weir, Big Lime	-0.37	-0.19	-0.13			
42	Maxton, Ravencliff	-0.40	-0.08	-0.07			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.27	-0.13	-0.09			
97	Coalbed Methane (Vertical)	0.03	0.10	-0.05			
98	Coalbed Methane (Horizontal)	-0.05	-0.05	-0.32			
110	Marcellus *	-0.36	-0.19	-0.09			
111	Utica*	-0.36	-0.19	-0.09			
9	Exception (Median)	-0.36	-0.19	-0.09			
10	Non-Filer	-0.23	-0.08	-0.05			

	Decline Rates for Natural Gas and Oil Formations: South Central						
	South Central: Boone, Kanawha						
Code	Formation	Year 1	Year 2	Year 3 +			
3	Devonian Shale	-0.23	-0.08	-0.05			
4	Huron	-0.31	-0.15	-0.04			
8	Berea	-0.23	-0.14	-0.09			
18	Big Injun	-0.29	-0.25	-0.12			
27	Huron, Shales above Huron	-0.21	-0.08	-0.05			
28	Weir	-0.30	-0.21	-0 14			
29	Weir +	-0_31	-0.25	-0.09			
31	Devonian Shales +	-0.27	-0.07	-0.05			
86	Big Injun-Oil	-0.19	-0.18	-0.10			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0 26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
109	Trenton/Deeper *	-0.33	-0.19	-0.08			
110	Marcellus *	-0.33	-0.19	-0.08			
111	Utica*	-0.33	-0.19	-0.08			
9	Exception (Median)	-0.33	-0.19	-0.08			
10	Non-Filer	-0.19	-0.07	-0.04			

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1	Decline Rates for Natural Gas and Oil Formations: South West						
	South West: Cabell, Lincoln, Logan, Mingo, Wayne						
Code	Formation	Year 1	Year 2	Year 3 +			
3	Devonian Shale	-0.31	-0.15	-0.04			
8	Вегеа	-0.36	-0,11	-0.11			
18	Big Injun	-0.38	-0.22	-0.04			
22	Big Lime	-0.19	-0.19	-0.19			
43	Berea, Big Lime	-0.18	-0 18	-0_18			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
109	Trenton/Deeper *	-0.38	-0.22	-0.10			
110	Marcellus *	-0.38	-0.22	-0.10			
111	Utica*	-0.38	-0.22	-0.10			
9	Exception (Median)	-0.38	-0.22	-0.10			
10	Non-Filer	-0.18	-0.11	-0.04			

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	Decline Rates for Natural Gas and Oil Formations: West Central								
	West Central: Calhoun, Roane, Wirt								
Code	Formation	Year 1	Year 2	Year 3 +					
2	Huron, Rhinestreet	-0.49	-0.11	-0.06					
4	Huron	-0.33	-0_22	-0.14					
27	Huron, Shales above Huron	-0.42	-0.23	-0.12					
44	Rhinestreet, Huron. Shallow Shale	-0.51	-0.14	-0.11					
45	Devonian Shale, Pocono	-0.25	-0.17	-0.12					
46	Pocono	-0.29	-0 25	-0.12					
84	Big Injun, Oil	-0.41	-0.41	-0.11					
93	4th Sand	-0.42	-0.32	-0.08					
94	50 Foot	-0.34	-0.26	-0.07					
95	Injun/Weir	-0.51	-0.26	-0.09					
96	Maxton	-0.70	-0.27	-0.08					
109	Trenton/Deeper *	-0.42	-0.24	-0.10					
110	Marcellus *	-0.42	-0.24	-0.10					
111	Utica'	-0. 42	-0.24	-0.10					
9	Exception (Median)	-0.42	-0.24	-0.10					
10	Non-Filer	-0.25	-0.11	-0.06					

West: Jackson, Mason, Putnam								
Code	e Formation	Year 1	Year 2	Year 3 +				
1	Oriskany	-0.40	-0.40	-0.29				
2	Huron, Rhinestreet	-0.13	-0.12	-0.03				
3	Devonian Shale	-0.31	-0.15	-0.04				
4	Huron	-0.29	-0.14	-0.05				
5	Huron, Shales above Huron	-0.38	-0.15	-0.06				
6	Huron, Berea	-0.29	-0.08	-0.08				
7	Berea, Devonian Shale	-0.08	-0.08	-0.08				
8	Berea	-0 36	-0.16	-0.16				
93	4th Sand	-0.42	-0.32	-0.08				
94	50 Foot	-0.34	-0.26	-0.07				
95	Injun/Weir	-0.51	-0.26	-0.09				
96	Maxton	-0.70	-0.27	-0.08				
109	Trenton/Deeper *	-0.35	-0.20	-0.09				
110	Marcellus *	-0.35	-0.20	-0.09				
111	Utica*	-0.35	-0.20	-0.09				
9	Exception (Median)	-0.35	-0.20	-0.09				
10	Non-Filer	-0.08	-0.08	-0.03				

Decline Rates for Natural Gas and Oil Formations: West

Average Industry Operating Expense Results

CONVENTIONAL GAS

 Average Operating Expenses Coal Bed Methane, Vertical Wells 	=	\$5,000
Expenses	=	\$9,000
OIL		
Average Operating ExpensesAverage Enhanced Operating	Ξ	\$5,750
Expenses		\$9,000
MARCELLUS/UTICA		
- Vertical Producing Well		¢15,000
- Average Operating Expenses		513,000
- Horizontal Producing Well		
- Average Operating Expenses	=	\$100,000

HORIZONTAL WELLS (OTHER THAN MARCELLUS/UTICA AND COAL BED METHANE)

-	Horizontal Producing Well		
-	Average Operating Expenses	=	\$20,000

Minimum Working Interest Appraisal = \$500 per well

Flat Rate Royalty Multiplier = 5.75

Home Use Only Wells: Appraised at \$500 per well

Industrial Use Only Wells:*	MCF usage X \$ 3.15/MC
	BBL usage X \$65.23/BBI

*(Also includes Department of Environmental Protection reported wells.)

Non-Filer Valuations

Working Interest	=	150% of previous year's appraisal
Royalty Interest	=	90% of previous year's appraisal

Valuation

The previously discussed variables are used to establish a future income stream converted to present worth through application of a capitalization rate. The sum of the discounted future net income per year represents a reasonable estimate of market value.

Lease Rate/Term Survey and Results

The non-producing property value for each county is determined by multiplying the average delay rental by a factor, which represents the average lease term under present economic conditions.

As a result of higher lease terms being inversely proportional to the value of oil and gas (thus counties with little leasing or production activities reflect inflated values) and with the volatile nature of county activity, necessary adjustments in the review have been made.

A compilation of lease terms produced a statewide average of 5 years. This term (5 years) was applied to all county lease rates and compared to the appraisal rates derived from calculations using individual county data as well as regional data. The resulting calculations were reviewed and considered in the assignment of an appraisal rate per acre.

The appraisal rate/acre amounts shown on the next page are preliminary figures, which may change if additional lease data is received. These rates have been applied to all county magisterial districts with either producing wells, lease activity within the past 5 years or both. Tax districts void of activity within the past 5 years have been assigned the minimum value per acre.

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
BARBOUR	1	1	\$55.00
		2	\$1.00
		3	\$55.00
		4	\$55.00
		5	\$55.00
		6	\$1.00
		7	\$55.00
		8	\$55.00
		9	\$55.00
		10	\$55.00
		11	\$55.00
BERKELEY	2	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
	1 1	8	\$1.00
			\$1.00
BOONE	2	1	\$20.00
	3	2	\$20.00
		2	
		3	\$1.00
		4	\$20.00
		5	\$20.00
and the second		6	\$20.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
			and the second
BRAXTON	- 4 -	1	\$20.00
		2	\$1.00
		3	\$1.00
	1	4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
	_		
BROOKE	5	1	\$1.00
		2	\$1.00
		3	\$105.00
		4	\$105.00
		5	\$1.00
		6	\$1.00
	_	7	\$1.00
		8	\$1.00

CABELL 6 1 \$28.00 2 \$1.00 3 \$28.00 4 \$25.00 5 \$1.00 6 \$1.00 7 \$1.00 8 \$25.00 9 \$1.00 8 \$25.00 9 \$1.00 8 \$25.00 9 \$1.00 10 \$25.00 9 \$1.00 2 \$1.00 3 \$20.00 4 \$30.00 4 \$20.00 5 \$30.00 4 \$20.00 2 \$1.00 3 \$20.00 2 \$1.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 4	COUNTY	CO #	DISTRICT #	TY2020 \$/AC
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3 \$25.00 4 \$25.00 5 \$1.00 7 \$1.00 8 \$25.00 9 \$1.00 10 \$25.00 10 \$25.00 10 \$25.00 2 \$100 2 \$100 3 \$30.00 2 \$100 3 \$30.00 4 \$30.00 5 \$30.00 6 \$30.00 5 \$30.00 6 \$30.00 2 \$100 3 \$20.00 2 \$100 3 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 3 \$100.00 5 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 5 \$100.00	100 million (100 m		2	\$1.00
4 \$25.00 5 \$1.00 7 \$1.00 8 \$25.00 9 \$1.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$25.00 2 \$1.00 3 \$30.00 4 \$30.00 5 \$30.00 5 \$30.00 5 \$30.00 6 \$30.00 5 \$30.00 6 \$30.00 2 \$1.00 3 \$20.00 2 \$1.00 3 \$20.00 4 \$20.00 6 \$20.00 6 \$20.00 3 \$100.00 5 \$100.00 5 \$100.00 6 \$20.00 3 \$100.00 6 \$100.00 6 \$100.00 6 \$100.00		4 4	3	\$25.00
5 \$1.00 6 \$1.00 7 \$1.00 9 \$1.00 9 \$1.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$25.00 10 \$30.00 4 \$30.00 5 \$330.00 6 \$330.00 6 \$30.00 6 \$30.00 2 \$1.00 2 \$1.00 2 \$1.00 2 \$1.00 3 \$20.00 6 \$20.00 3 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 8 \$100.00 9 \$1.00 10 \$1			4	\$25.00
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7 \$1.00 8 \$25.00 9 \$1.00 10 \$25.00 3 \$1.00 10 \$25.00 2 \$1.00 3 \$30.00 4 \$30.00 5 \$30.00 6 \$30.00 6 \$30.00 5 \$30.00 6 \$30.00 6 \$30.00 2 \$1.00 3 \$20.00 4 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 6 \$100.00 7 \$100.00 7 \$100.00 7 \$100.00 7 \$100.00 7 \$100.00 7 \$100.00			6	\$1.00
8 \$25,00 9 \$1,00 10 \$25,00 10 \$25,00 10 \$25,00 10 \$25,00 10 \$25,00 10 \$25,00 2 \$1,00 3 \$30,00 4 \$30,00 5 \$30,00 5 \$30,00 6 \$30,00 2 \$1,00 2 \$1,00 2 \$1,00 2 \$1,00 3 \$22,00 4 \$20,00 5 \$20,00 6 \$20,00 3 \$100,00 3 \$100,00 6 \$100,00 7 \$100,00 7 \$100,00 6 \$100,00 7 \$100,00 7 \$100,00 6 \$100,00 7 \$100,00 7 \$100,00 <td></td> <td></td> <td>7</td> <td>\$1.00</td>			7	\$1.00
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CALHOUN 7 1 \$30.00 2 \$1.00 3 \$30.00 3 \$30.00 4 \$30.00 4 \$30.00 5 \$30.00 5 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 3 \$20.00 4 \$20.00 5 \$20.00 6 \$20.00 5 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 7 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 7 \$100.00 9			10	\$25.00
CALHOUN 7 · 1 S30.00 2 \$1.00 3 \$530.00 4 \$30.00 5 \$30.00 6 \$30.00 2 \$1.00 5 \$30.00 6 \$30.00 2 \$1.00 3 \$20.00 4 \$20.00 4 \$20.00 5 \$20.00 6 \$20.00 6 \$20.00 5 \$20.00 6 \$20.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 6 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 10 \$2 2				
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3 \$30.00 4 \$30.00 5 \$30.00 6 \$30.00 6 \$30.00 6 \$30.00 2 \$1.00 3 \$20.00 4 \$20.00 4 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 7 \$100.00 8 \$100.00 9 \$1.00 10 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00		-	2	\$1.00
4 \$30.00 5 \$30.00 6 \$30.00 6 \$30.00 2 \$1.00 3 \$20.00 4 \$20.00 4 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 5 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 8 \$100.00 9 \$1.00 10 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 10 \$1.00 10 \$1.00 11 \$20.00 12 \$20.00 13 \$20.00 10 \$1.00		-	3	\$30.00
CLAY 8 1 \$20.00 CLAY 8 1 \$20.00 2 \$1.00 3 \$20.00 4 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 7 \$100.00 3 \$20.00 8 \$1.00 1 \$20.00 9 \$1.00 3 \$20.00 3 \$20.00 3 \$20.00 6 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 7 \$			4	\$30.00
CLAY 8 1 \$20.00 2 \$1.00 3 \$20.00 3 \$20.00 5 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 6 \$20.00 0 6 \$20.00 6 \$20.00 0 6 \$20.00 6 \$20.00 0 6 \$20.00 6 \$20.00 0 2 \$100.00 3 \$100.00 3 \$100.00 5 \$100.00 4 \$100.00 7 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 7 \$100.00 9 \$1.00 1 \$20.00 3 \$20.00 3 \$20.00 4 \$100.00 5 \$1.00 5 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 </td <td></td> <td>-</td> <td>5</td> <td>\$30.00</td>		-	5	\$30.00
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2 \$1.00 3 \$20.00 4 \$20.00 5 \$20.00 6 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 3 \$100.00 4 \$100.00 5 \$100.00 6 \$100.00 5 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 10 \$1.00.00 11 \$20.00 10 \$1.00 11 \$20.00 12 \$20.00 13 \$20.00 14 \$1.00 5 \$1.00 6 \$1.00 10 \$1.00 10 \$1.00 11 \$1.00	CLAY	8	1	\$20.00
3 \$20.00 4 \$20.00 5 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 3 \$100.00 6 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 10 \$1.00 11 \$20.00 10 \$1.00 10 \$1.00 9 \$1.00 10 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			2	\$1.00
4 \$20.00 5 \$20.00 6 \$20.00 7 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 3 \$100.00 4 \$100.00 5 \$100.00 6 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 10 \$1.00 10 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00		-	3	\$20.00
5 \$20.00 6 \$20.00 DODDRIDGE 9 1 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 4 \$100.00 4 \$100.00 4 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 1 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 5 \$1.00 6 \$1.00 5 \$1.00 6 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00			4	\$20.00
6 \$20.00 DODDRIDGE 9 1 \$100.00 2 \$100.00 3 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 5 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.0			5	\$20.00
DODDRIDGE 9 1 \$100.00 2 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 4 \$100.00 5 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 1 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 4 \$1.00 4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 9 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00			6	\$20.00
DODDRIDGE 3 1 \$100.00 2 \$100.00 3 \$100.00 3 \$100.00 4 \$100.00 4 \$100.00 5 \$100.00 5 \$100.00 5 \$100.00 6 \$100.00 6 \$100.00 6 \$100.00 6 \$100.00 7 \$100.00 8 \$100.00 8 \$100.00 8 \$100.00 9 \$1.00 8 \$100.00 9 \$1.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 5 \$1.00 4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 9 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00 11	DODDDIDGE	-		8400.00
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3 \$100.00 4 \$100.00 5 \$100.00 6 \$100.00 7 \$100.00 7 \$100.00 8 \$100.00 9 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 9 \$1.00 10 1 \$20.00 3 3 \$20.00 4 \$1.00 5 \$1.00 6 \$1.00 10 \$1.00 9 \$1.00 10 \$1.00 10 \$1.00 11 \$1.00		a	2	\$100.00
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FAYETE 10 1 \$20.00 FAYETE 10 1 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 5 \$1.00 5 \$1.00 5 \$1.00 6 \$1.00 5 \$1.00 7 \$1.00 \$1.00 \$1.00 6 \$1.00 \$1.00 \$1.00 9 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00		1 1	5	\$100.00
7 \$100.00 8 \$100.00 9 \$1.00 9 \$1.00 10 1 \$20.00 2 \$20.00 3 \$20.00 4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 10 \$1.00 10 \$1.00 10 \$1.00 11 \$1.00			6	\$100.00
8 \$100.00 9 \$1.00 FAYETTE 10 1 \$20.00 2 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 4 \$1.00 5 \$1.00 5 \$1.00 6 \$1.00 6 \$1.00 7 \$1.00 9 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00 11 \$1.00 \$1.00 \$1.00			1	\$100.00
FAYETTE 10 1 \$20.00 2 \$20.00 3 \$20.00 4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 10 \$1.00 11 \$1.00	and the second	-	8	\$100.00
FAYETTE 10 1 \$20.00 2 \$20.00 3 \$20.00 3 \$20.00 4 \$1.00 4 \$1.00 5 \$1.00 5 \$1.00 6 \$1.00 6 \$1.00 7 \$1.00 9 \$1.00 \$1.00 \$1.00 10 \$1.00 \$1.00 \$1.00 11 \$1.00 \$1.00 \$1.00			9	\$1.00
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3 \$20.00 4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			2	\$20.00
4 \$1.00 5 \$1.00 6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			3	\$20.00
5 \$1.00 6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			4	\$1.00
6 \$1.00 7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			5	\$1.00
7 \$1.00 8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			6	\$1.00
8 \$1.00 9 \$1.00 10 \$1.00 11 \$1.00			7	\$1.00
9 \$1.00 10 \$1.00 11 \$1.00			8	\$1.00
10 \$1.00 11 \$1.00			9	\$1.00
11 \$1.00			10	\$1.00
			11	\$1.00
12 \$1.00			12	\$1.00
13 \$1.00			13	\$1.00

COUNTY	CO#	DISTRICT #	TY2020 \$/AC
GILMER	11	1	\$25.00
		2	\$25.00
	1	3	\$25.00
		4	\$1.00
		5	\$1.00
		6	\$25.00
		0	\$25.00
GRANT	12	1	\$1.00
		2	\$1.00
		3	\$1.00
	1	4	\$1.00
	0.1	5	\$1.00
GREENBRIER	13	1	\$1.00
	1	2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
the second s		11	\$1.00
	+	12	\$1.00
and the second		12	\$1.00
		14	\$1.00
		45	\$1.00
· · · · · · · · · · · · · · · · · · ·	<u> </u>	15	\$1.00
	_	10	\$1.00
······································		17	\$1.00
	_	18	\$1.00
HAMPSHIRE	14	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
HANCOCK	15	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$1.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
HARDY	16	1	\$1.00
		2	\$1.00
	-	3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
HARRISON	17	1	\$90.00
		2	\$1.00
	1	3	\$1.00
		4	\$1.00
		5	\$90.00
		6	\$1.00
		7	\$90.00
		8	\$1.00
		9	\$90.00
		10	\$1.00
		11	\$90.00
		12	\$90.00
		13	\$1.00
		14	\$90.00
		15	\$90.00
		16	\$1.00
	1	17	\$1.00
		18	\$90.00
		19	\$1.00
		20	\$90.00
		21	\$1.00
JACKSON	18	1	\$40.00
		2	\$40.00
		3	\$1.00
		4	\$40.00
		5	\$1.00
		6	\$40.00
	1	7	\$40.00
JEFFERSON	19	1	\$1.00
		2	\$1.00
		3	\$1.00
	1	4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
KANAWHA	20	1	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
and the second s		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$30.00
		16	\$30.00
		17	\$1.00
		18	\$1.00
		19	\$30.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
		23	\$30.00
		24	\$30.00
		25	\$30.00
		26	\$1.00
		27	\$1.00
		28	\$30.00
		29	\$1.00
		30	\$1.00
		31	\$1.00
LEWIS	21	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
LINCOLN	22	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
		0	\$25.00
		3	

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
LOGAN	23	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$15.00
		9	\$1.00
MARION	24	1	\$1.00
		2	\$90.00
	1	3	\$1.00
		4	\$1.00
		-	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
	-	0	\$7.00
		9	\$90.00
		10	\$1.00
	1	11	\$90.00
	1	12	\$90.00
	++	13	\$1.00
		14	\$1.00
	++	15	\$1.00
		16	\$90.00
	-	17	\$1.00
		18	\$90.00
		19	\$90.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
MARSHALL	25	1	\$1.00
		2	\$1.00
		3	\$105.00
		4	\$105.00
		5	\$105.00
		6	\$1.00
		7	\$105.00
		8	\$1.00
		9	\$105.00
		10	\$1.00
		11	\$1.00
		12	\$105.00
		13	\$105.00
		14	\$105.00
		15	\$105.00
		16	\$1.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
MASON	26	1	\$1.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$25.00
		11	\$1.00
		12	\$1.00
	1-1	13	\$1.00
		14	\$25.00
	1	15	\$25.00
	1	16	\$25.00 \$25.00
		10	\$23.00
MC DOWELL	27	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
	1	7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$20.00
	1	12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$1.00
	1	16	\$1.00
MERCER	28	1	\$1.00
	+ +	2	\$15.00
		3	\$1.00
	1	4	\$1.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
MINERAL	29	1	\$1.00
		2	\$1.00
	_	3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
MINGO	30	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
	1	5	\$20.00
	1	6	\$20.00
	1	7	\$20.00
	1	8	\$1.00
		9	\$20.00
	1	10	\$20.00
		14	\$20.00
		12	\$20.00
· · · · · · · · · · · · · · · · · · ·	+	12	\$1.00
	+ +		
MONONGALIA	31	1	\$35.00
MONONGALIA	51	2	\$33.00
	1	2	\$35.00
		A	\$35.00
	1	5	\$35.00
	1	6	\$35.00
		7	\$1.00 635.00
		1	\$35.00
		8	\$35.00
	+ +	9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
	_	16	\$1.00
		17	\$1.00
		18	\$35.00
		19	\$1.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
MORGAN	33	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00 ¢1.00
		P	\$1.00
	1+		\$1.00
NICHOLAS	34	1	\$1.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
	+	<u> </u>	\$1.00
		7	\$15.00
		R	\$10.00
	-	0	\$1.00
			\$1.00
OHIO	35	1	\$1.00
or no		2	\$1.00
		3	\$105.00
		4	\$105.00
		5	\$100.00
		6	\$1.00 \$405.00
		7	\$105.00 \$1.00
		8	\$1.00 \$1.00
		0	\$1.00 \$4.00
		10	\$1.00
		10	<u>\$1.00</u>
	36	1	\$1.00
	50	2	\$10.00
		3	\$10.00
		3	\$1.00 64.00
	i anterit	6	\$1.00
		5	\$1.00
			\$1.00
	-	1	\$10.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
PLEASANTS	37	1	\$40.00
		2	\$40.00
		3	\$40.00
		4	\$40.00
		5	\$40.00
		6	\$1.00
		7	\$40.00
		8	\$40.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		9	\$1.00
		0	& <u>1</u> .00
DESTON	30	1	\$20.00
FREGION	39	2	\$30.00 \$20.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		b	\$30.00
			\$1.00
		8	\$30.00
		9	\$1.00
		10	\$30.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
	h b	16	\$1.00
		17	\$1.00
		18	\$1.00
		19	\$1.00
		20	\$1.00
PUTNAM	40	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$25.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$25.00
and the second		9	\$1.00
		10	\$25.00
		11	\$25.00
		12	\$25.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
RALEIGH	41	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$20.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$20.00
			* **
	42		\$20.00
		2	\$20.00
	+	3	\$1.00
		4	\$20.00
		5	\$1.00
		6	<u>\$1.00</u>
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$20.00
		11	\$20.00
	-	12	\$1.00
		13	\$1.00
	-		\$1.00
	-	15	\$1.00
		16	\$20.00
		17	\$1.00
		18	\$1.00
RITCHIE	43	1	\$80.00
		2	\$1.00
		3	\$80.00
		4	\$1.00
		5	\$80.00
		6	\$1.00
		7	\$80.00
		8	\$1.00
		9	\$1.00
		10	\$80.00

COUNTY	0.0 #	DISTRICT #	1 ¥ 2020 \$/AC
ROANE	44	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
	-	5	\$1.00
	1	6	\$35.00
		7	\$35.00
		8	\$1.00
		9	\$35.00
SUMMERS	45	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$5.00
		6	\$1.00
		7	\$1.00
			¢1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
	1	3	\$90.00
		4	\$ <u>9</u> 0.00
		5	\$90.00
		6	\$90.00
		7	\$90.00
TUCKER	47	1	\$15.00
	1	2	\$15.00
		3	\$1.00
	1	4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$1.00

COUNTY	CO #	DISTRICT #	TY2020 \$/AC
TYLER	48	1	\$100.00
		2	\$100.00
		3	\$1.00
		4	\$100.00
		5	\$100.00
		6	\$100.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$100.00
UPSHUR	49	1	\$70.00
		2	\$70.00
		3	\$1.00
		4	\$70.00
		5	\$70.00
		6	\$70.00
		7	\$70.00
WAYNE	50	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
	T	6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
	1	41	\$1.00
	1 1	12	\$20.00
			\$20.00
WERSTER	51	4	\$1.00
	51	2	\$1.00
	1	3	\$1.00
		4	\$1.00
	1	5	\$15.UU \$45.00
	+	5	\$15.00 \$15.00
		7	a15.00
	1	/	\$1.00
	-		
and the second se			

COUNTY	CO#	DISTRICT #	TY2020 \$/AC
WETZEL	52	1	\$100.00
		2	\$100.00
		3	\$100.00
		4	\$100.00
		5	\$100.00
		6	\$1.00
		7	\$1.00
		8	\$100.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
	+	12	\$100.00
		13	\$1.00
	-		•1.00
WIRT	53	1	\$35.00
YTH XI	00	2	\$35.00
		2	\$35.00
		4	\$1.00
		5	\$1.00
		5	\$35.00
	1 1	7	\$35.00
		0	\$35.00
		0	\$35.00
WOOD	54	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$35.00
		8	\$35.00
		9	\$35.00
		10	\$1.00
		11	\$35.00
		12	\$35.00
		13	\$1.00
		14	\$1.00
WYOMING	55	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$1.00
		9	\$1.00
			<u>91.00</u>

MANAGED TIMBER PROPERTY ANALYSIS

Tax Year 2020

June 28, 2019 Dale W. Steager State Tax Commissioner Department of Revenue

			EAR 20	2018		169	
(based on market 2014-2016) Rates Per Acre							
Naca II Parada		Nate					
	Grade	1	<u>Grade 2</u>		Grade 3		
Region 1	\$250		\$155		\$50		
Region 2	\$250		\$150		\$50		
Region 3	\$280	\$280 \$175 \$50					
Region 4	\$295		\$190	•	\$50 \$50		
Region 5	\$205		\$140		\$ 2 0		
lass III/IV Parce	els	1	Grada 2		Grade 3		
	Grade	4	Graue Z		Sidue 3		
Region 1	\$225		\$150		\$75		
Region 2	\$225		\$150		\$75		
Region 3	\$245		\$155		\$75		
Region 4	\$260		\$170		\$/5 \$75		
Region 5	φΖΖΟ		\$150		410		
•							
	Putnam, Tyler, Wet	zel, and Woo	d Counties	3			
Region 2 =	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay	zel, and Woo Clay, Doddridg Ior, and Wirt	d Counties ge, Gilmer, H Counties	Harrison, Le	wis, Marion	, Monongalia,	
Region 2 = Region 3 =	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, t	zel, and Woo Clay, Doddridg Ior, and Wirt , Monroe, Nic Jpshur, and V	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou	Harrison, Le Hatrison, Poca Ileton, Poca	wis, Marion hontas, Pre	, Monongalia, eston,	
Region 2 = Region 3 = Region 4 =	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, t Berkeley, Grant, Ha	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har	d Counties ge, Gilmer, H Counties cholas, Penc Vebster Cou dy, Jefferson	Harrison, Le Ileton, Poca Inties n, Mineral ai	wis, Marion hontas, Pre nd Morgan (, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 =	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbrie Randolph, Tucker, I Berkeley, Grant, Ha Boone, Fayette, Kar Raleigh, Summers,	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har nawha, Lincol Wayne, and V	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Wyoming Co	lleton, Poca Inties n, Mineral an cDowell, Me punties	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 =	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, t Berkeley, Grant, Ha Boone, Fayette, Kar Raleigh, Summers,	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har nawha, Lincol Wayne, and V Harvest Vo	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Wyoming Co Iumes per 2	Harrison, Le Heton, Poca Inties n, Mineral an cDowell, Me punties	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, U Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers,	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har mawha, Lincol Wayne, and V Harvest Vo	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Myoming Co lumes per d	Harrison, Le Ileton, Poca Inties n, Mineral an cDowell, Me bunties	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u>	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, t Berkeley, Grant, Ha Boone, Fayette, Kar Raleigh, Summers,	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har mawha, Lincol Wayne, and V Harvest Vo	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Wyoming Co lumes per A	Harrison, Le Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u>	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, I Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers,	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har nawha, Lincol Wayne, and V Harvest Vo	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Myoming Co lumes per A	Harrison, Le Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, U Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers, <u>35 yrs</u> 4.6 cord 1.5 Mbd	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har nawha, Lincol Wayne, and V Harvest Vo	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Wyoming Co Iumes per 55 yrs. 2.6 cords	Harrison, Le Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre <u>80 yrs.</u> 3.3 cords 8.6 Mbf	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties D	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, U Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers, <u>35 yrs</u> 4.6 cord <u>1.5 Mbt</u>	Zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har hawha, Lincol Wayne, and V Harvest Vo 	d Counties ge, Gilmer, H Counties cholas, Penc Vebster Cou dy, Jefferson dy, Jefferson n, Logan, M Wyoming Co 1umes per 55 yrs. 2.6 cords 4.4 Mbf	Harrison, Le Heton, Poca Inties n, Mineral an cDowell, Me bunties Acre <u>80 yrs.</u> 3.3 cords 8.6 Mbf	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties D <u>Total</u> 10.5 cords 14.5 Mbf	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, I Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers, <u>35 yrs</u> 4.6 cord 1.5 Mbt 3.3 cord	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har hawha, Lincol Wayne, and V Harvest Vo 	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Myoming Co lumes per A <u>55 yrs.</u> 2.6 cords 4.4 Mbf 7.0 cords	Harrison, Let Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre 3.3 cords 8.6 Mbf 4.6 cords	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties D <u>Total</u> 10.5 cords 14.5 Mbf 14.9 cords	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, U Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers, <u>35 yrs</u> 4.6 cord 1.5 Mbt 3.3 cord 1.0 Mbt	zel, and Woo Clay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har hawha, Lincol Wayne, and V Harvest Vo 	d Counties ge, Gilmer, H Counties cholas, Penc Vebster Cou dy, Jefferson n, Logan, M Wyoming Co 1umes per 55 yrs. 2.6 cords 4.4 Mbf 7.0 cords 3.2 Mbf	Harrison, Let Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre <u>80 yrs.</u> 3.3 cords 8.6 Mbf 4.6 cords 5.5 Mbf	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties D <u>Total</u> 10.5 cords 14.5 Mbf 14.9 cords 9.7 Mbf	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, U Berkeley, Grant, Ha Boone, Fayette, Kar Raleigh, Summers, more 4.6 cord 1.5 Mbt 3.3 cord 1.0 Mbt	zel, and Woo Zlay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har- nawha, Lincol Wayne, and V Harvest Vo - 45 yrs. s s	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Wyoming Co 10 55 yrs. 2.6 cords 4.4 Mbf 7.0 cords 3.2 Mbf	Harrison, Let Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre 3.3 cords 8.6 Mbf 4.6 cords 5.5 Mbf	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties 0 <u>Total</u> 10.5 cords 14.5 Mbf 14.9 cords 9.7 Mbf	
Region 2 = Region 3 = Region 4 = Region 5 = Harvest Interval <u>Grades</u> - Site Index 75 or r - Site Index 65 - 75	Putnam, Tyler, Wet Braxton, Calhoun, C Ritchie, Roane, Tay Barbour, Greenbries Randolph, Tucker, R Berkeley, Grant, Ha Boone, Fayette, Kar Rafeigh, Summers, More 4.6 cord 1.5 Mbf 3.3 cord 1.0 Mbf an 65	zel, and Woo Zlay, Doddridg lor, and Wirt , Monroe, Nic Jpshur, and V mpshire, Har hawha, Lincol Wayne, and V Harvest Vo <u>45 yrs.</u> s s 3.1 cords	d Counties ge, Gilmer, H Counties cholas, Pend Vebster Cou dy, Jefferson n, Logan, M Myoming Co lumes per A <u>55 yrs.</u> 2.6 cords 4.4 Mbf 7.0 cords 3.2 Mbf	Harrison, Let Ileton, Poca Inties n, Mineral an cDowell, Me bunties Acre 3.3 cords 8.6 Mbf 4.6 cords 5.5 Mbf 15.4 cords	wis, Marion hontas, Pre nd Morgan (ercer, Mingo	, Monongalia, eston, Counties D <u>Total</u> 10.5 cords 14.5 Mbf 14.9 cords 9.7 Mbf 18.5 cords	

		10 1 1			
Estimatio	n of Require	d Rate of I	Return: Class I	I Rates	_
Sate Rate of R	eturn (5 Year I-Bi	li Rate)			
Year	Rate	W/A %	W/A Rate		
2018	2.7480	33.33%	0.9159		
2017	1.9100	26.67%	0.5094		
2016	1.3383	20.00%	0.2677		
2015	1.5292	13.33%	0.2038		
2014	1 6410	6.67%	0.1095	2.006	9
Nonliquidity I	Rate				
(12 Month T-Bills	vs. 3 Month T-Bills)	1844 84			
Year	Rate	W/A %	W/A Rate		
2018	0.3583	33.33%	0.1194		
2017	0.2342	20.07%	0.0078		
2015	0.2683	13 33%	0.0358		
2014	0.0883	6.67%	0.0059	0.288	%
Risk Rate (30	vr T-bille ve 5 v	r T-hills)			
Year	Rate	W/A %	W/A Rate	1	
2018	0.3642	6.67%	0.0243	- 19 - C	
2017	0.9850	13 33%	0.1313		
2016	1 2592	20.00%	0.2518		
2015	1 3117	26 67%	0.3408		
2015	1.0117	20 07 70	0.5490	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2014	1 0992	33.33%	0.5663	1.324	%
Management	Factor of 0.5%	33.33%	0.5663	0.500	%
Management	Factor of 0.5%	33.33%	0.5663	0.500	%
Management	Factor of 0.5%	33.33%	0.5663	0.500	%
Management Prop <u>erty Tax (</u> 60% of Class II F Year	Factor of 0.5% Component Rate) Rate	33.33% W/A %	0.5663 W/A Rate	0.500	%
Management Property Tax (60% of Class II F Year 2018	Factor of 0.5% Component Rate) Rate 0.708	33.33% W/A % 33.33%	0.5663 W/A Rate 0.2360	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017	Factor of 0.5% <u>Component</u> Rate) <u>Rate</u> 0.708 0.714	33.33% W/A % 33.33% 26.67%	0.5663 W/A Rate 0.2360 0.1904	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016	Factor of 0.5% <u>Component</u> Rate) <u>Rate</u> 0.708 0.714 0.708	33.33% W/A % 33.33% 26.67% 20.00%	0.5663 W/A Rate 0.2360 0.1904 0.1416	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015	Factor of 0.5% <u>Component</u> Rate) <u>Rate</u> 0.708 0.714 0.708 0.714	33.33% W/A % 33.33% 26.67% 20.00% 13.23%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0052	0.500	%
Vanagement	Factor of 0.5% Component Rate) Rate 0.708 0.714 0.708 0.714 0.708 0.714 0.708	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 5.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0475	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 nflation Rate:	Factor of 0.5% Component Rate) Rate 0.708 0.714 0.708 0.714 0.714	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2015 2014 Inflation Rate: Bureau of Labor	Factor of 0.5% Component Rate) Rate 0.708 0.714 0.708 0.714 0.714 0.714 0.714	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476	0.500	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2015 2014 Inflation Rate: Bureau of Labor S Year	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate	 W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate	1.324 0.500 0.711	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 Inflation Rate: Bureau of Labor S Year 2018	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1.910	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820	1.324 0.500 0.711	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 Inflation Rate: Bureau of Labor S Year 2018 2014	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1.910 2.110	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407	1.324 0.500 0.711	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor S Year 2018 2017 2016	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1.910 2.110 2.070	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 13.33%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759	1.324 0.500 0.711	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor S Year 2018 2017 2016 2015 2014	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1 910 2.110 2.070 0.730	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 13.33% 33.33%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759 0.2433	1.324 0.500 0.711	%
Management Property Tax (60% of Class II F Year 2018 2017 2018 2017 2016 2015 2014 mflation Rate: Bureau of Labor S Year 2018 2017 2018 2017 2018 2017 2018 2017 2018 2017 2014	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1.910 2.110 2.070 0.730 0.760	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% 20.00% 6.67% 13.33% 33.33% 26.67%	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	1.324 0.500 0.711 (1.245)	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 mflation Rate: Bureau of Labor S Year 2018 2017 2016 2015 2014 Management	Factor of 0.5% Component Rate) Rate 0.708 0.714 0.714 0.714 0.714 Statistics) Rate 1.910 2.110 2.070 0.730 0.760 RED RATE OF P	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 33.33% 26.67% Same and the second s	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	0.500	%%%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 mflation Rate: Bureau of Labor S Year 2018 2017 2016 2015 2014 Difference 2018 2017 2016 2015 2014 OTAL REQUI	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1.910 2.110 2.070 0.730 0.760 RED RATE OF R	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 13.33% 33.33% 26.67% ETURN (REAL	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	1.324 0.500 0.711 (1.245) 3.584	%
Management Property Tax (60% of Class II F Year 2018 2017 2016 2015 2014 mflation Rate: Bureau of Labor S Year 2018 2017 2016 2015 2014 Total REQUI ESS: PROPE	Factor of 0.5% Component Rate 0.708 0.714 0.708 0.714 0.714 0.714 Statistics) Rate 1 910 2.110 2.070 0.730 0.760 RED RATE OF R RTY TAX COMP	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% 13.33% 20.00% 6.67% 13.33% 33.33% 26.67% ETURN (REAL ONENT	0.5663 W/A Rate 0.2360 0.1904 0.1416 0.0952 0.0476 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	1.324 0.500 0.711 (1.245) 3.584 (0.711)	%

Stumpage Prices:

	Sawtimber	Pulpwood
Stumpage Price Adjustment Factor	0.00%	0.55%

		1.0000	1.0000	1.0000	1.0000
SAWTIMBER	Current	\$/MBF at age	S/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	198.33	198.33	198.33	198.33	198.33
Region 2	198.66	198.66	198.66	198.66	198.66
Region 3	219.12	219.12	219.12	219.12	219.12
Region 4	220.51	220.51	220.51	220.51	220.51
Region 5	170.43	170.43	170.43	170.43	170.43
		1.2116	1.2800	1.3521	1.5508
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	6.39	7 74	8.18	8.64	9.91
Region 2	5.20	6.30	6.66	7.03	8.06
Region 3	5.24	6.35	6.71	7.09	8.13
Region 4	10.90	13.20	13.95	14.73	16.90
Region 5	6.01	7.29	7.70	8.13	9.32

Management Costs:

Region	\$/acre (1)
1	3.25
2	3.25
3	3.25
4	3.25
5	3.25
State	

Tax Rates:

Effective Federal Income Tax Rate	21.00%
Effective WV State Income Tax Rate (6.5% * (121))	<u>5.14%</u>
Effective WV Severance Tax Rate (1.5% * (121)	1.19%

Yield (Volumes) (80 year rotation)

Productivity Grades	Productivity Grades Site Index		Yield - Cords		
Grade I	75 or more		14.5	10.5	
Grade II	65-74		9.7	14.9	
Grade III	less than 65		4.5	18.5	

Safe Rate of Retu	urn (5 Year T-Bi	ll Rate)		
Voar	Pato	W/A %	W/A Pate	
2018	2 7480	33 33%	0.9159	1 1
2017	1.9100	26.67%	0.5094	
2016	1.3383	20.00%	0.2677	1 1
2015	1.5292	13.33%	0.2038	
2014	1.6410	6 67%	0.1095	2.006 %
Nonliquidity Ra	te			
(12 Month T-Bills vs	. 3 Month T-Bills)			
Year	Rate	W/A %	W/A Rate	
2018	0.3583	33.33%	0.1194	1 1
2017	0.2542	26.67%	0.0678	
2016	0.2950	20.00%	0.0590	
2015	0.2683	13.33%	0.0358	
2014	0.0883	6.67%	0.0059	0.288 %
Risk Rate (30 y	r T-bills vs 5 yr Rate	r T-bills) W/A %	W/A Rate	
2018	0.2642	6.67%	0.0242	
2018	0.3042	12 220/	0.0243	
2017	0.9650	13.33%	0.1313	1 1
2016	1.2592	20.00%	0.2518	1 1
2015	1.3117	26.67%	0.3498	1 1
2013	1.6992	33.33%	0.5663	1.324 %
2014	1.6992	33.33%	0.5663	1.324 %
2014 Management Fa	1.6992	33.33%	0.5663	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co	1.6992 ctor of 0.5%	33.33%	0.5663	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co (60% of Blended III& Year	1.6992 ctor of 0.5% mponent IV Rates) Rate	33.33% W/A %	0.5663 W/A Rate	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018	1.6992 ctor of 0.5% <u>mponent</u> IV Rates) <u>Rate</u> 1.302	33.33% W/A % 33.33%	0.5663 W/A Rate 0.4340	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308	33.33% W/A % 33.33% 26.67%	0.5663 W/A Rate 0.4340 0.3488	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308	W/A % 33.33% 26.67% 20.00%	0.5663 W/A Rate 0.4340 0.3488 0.2616	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.214	33.33% W/A % 33.33% 26.67% 20.00% 13.23%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1252	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314	33.33% W/A % 33.33% 26.67% 20.00% 13.33%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752	1.324 % 0.500 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Burgau of Labor Sta	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 1.314	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Pate	W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.010	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A %	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year 2018 2017	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.910 2.440	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year 2018 2017	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.910 2.110 2.110	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year 2018 2017 2018 2017 2018	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.910 2.110 2.070	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 13.33%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407 0.2759	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year 2018 2017 2018 2017 2018 2017 2016 2017	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.910 2.110 2.070 0.730	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 13.33% 33.33% 33.33%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407 0.2759 0.2433	1.324 % 0.500 % 1.307 %
2013 2014 Management Fa Property Tax Co 60% of Blended III& 2018 2017 2016 2015 2014 mflation Rate: Bureau of Labor Sta Year 2018 2017 2018 2017 2016 2017 2016 2015 2014	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.308 1.314 1.314 tistics) Rate 1.910 2.110 2.070 0.730 0.760	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 33.33% 26.67% 20.00% 3.33% 26.67%	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	1.324 % 0.500 % 1.307 % (1.245) %
2013 2014 Management Fa Property Tax Co 60% of Blended III& Year 2018 2017 2016 2015 2014 nflation Rate: Bureau of Labor Sta Year 2018 2017 2016 2015 2014 Total REQUIRE	1.6992 ctor of 0.5% mponent IV Rates) Rate 1.302 1.308 1.314 1.314 tistics) Rate 1.910 2.110 2.070 0.730 0.760 ED RATE OF R	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 20.00% 6.67% 33.33% 26.67% 20.00% 6.67% 33.33% 26.67% ETURN (REAL	0.5663 W/A Rate 0.4340 0.3488 0.2616 0.1752 0.0876 W/A Rate 0.3820 0.1407 0.2759 0.2433 0.2027	1.324 % 0.500 % 1.307 % (1.245) % 4.180 %

Stumpage Prices:

Stumpage	Price Adjustment F	actor	<u>Sawtimber</u> 0.00%	<u>Pulpwood</u> 0 55%		
<u>SAWTIM</u>	BER Region	Current \$/MBF	1.0000 \$/MBF at age 35	1.0000 \$/MBF at age 45	1.0000 \$/MBF at age 55	1.0000 \$/MBF at age 80
1.00	Region 1	198.33	198.33	198.33	198.33	198,33
	Region 2	198.66	198.66	198.66	198.66	198.66
	Region 3	219.12	219.12	219.12	219.12	219.12
	Region 4	220.51	220.51	220.51	220.51	220.51
	Region 5	170.4 3	170.43	170.43	170.43	170.43
			1.2116	1.2800	1.3521	1.5508
FULFWC	DD.		S/cd at age	\$/cd at age	\$/cd at age	s/cd at age
	Region	\$/Cord	35	45	55	80
	Region 1	6.39	1.74	8.18	8.64	9.91
	Region 2	5.20	6.30	6.66	7.03	8.06
	Region 3	5.24	6.35	6.71	7.09	8.13
	Region 4	10.90	13.20	13.95	14.73	16.90
	Region 5	6.01	7.29	7.70	8.13	9.32

Management Costs:

Region	\$/acre (1)
1	3.25
2	3.25
3	3.25
4	3.25
5	3.25

State

Tax Rates:	
Effective Federal Income Tax Rate	21.00%
Effective WV State Income Tax Rate (6.5% * (121))	<u>5.14%</u>
Effective WV Severance Tax Rate (1.5% * (121)	1.19%

Yield (Volumes) (80 year rotation)

Productivity Grades	Site Index	Yield - MBF	Y	'ield - Cords
Grade I	75 or more		14.5	10.5
Grade II	65-74		9.7	14.9
Grade III	less than 65		4.5	18.5

	We	st Virginia Wgt/Avg	Managed Timbe	erland Stumpage	Prices
REGION 1.S	awtimber				
REGION 1.5	Year	Volume	\$/MBF	W/A%	\$/MBF
	2018	9.307.85	208.95	33.33%	69.65
	2017	21,212,89	213.81	26.67%	57.02
	2016	11,080.07	170.93	20.00%	34.19
	2015	12.561.80	192.85	13.33%	25.71
	2014	12,162.06	176.34	6.67%	11.76
		66,324.67			198.33
	upwood *				
	Year	Volume	\$/CORD	W/A%	\$/CORD
	2018		a sector in the sector of the	0.00%	
	2017	3 802 40	5.81	60.00%	3 4 9
	2016	240.00	2.70	20.00%	0.54
	2015	7 218 90	15.03	13.33%	2 00
	2014	464 40	5 40	6.67%	0.36
		11,725.70	0.10	0.0770	6.39
EGION 2 - Sa	wtimber				
	Year	Volume	\$/MBF	W/A%	\$/MBF
	2018	37,951.25	214.78	33.33%	71.59
	2017	57,210.90	203.96	26.67%	54.39
	2016	41,475.00	185.68	20.00%	37.14
	2015	26,487.65	175.25	13.33%	23.37
	2014	22,001.80	182.47	6.67%	12.17
		185,126.60			198.66
ECION 2 Bu	lowood				
	Year	Volume	\$/CORD	W/A%	\$/CORD
	2018	5,952.60	4.23	33.33%	1.41
	2017	5,606.50	6.84	26.67%	1.82
	2016	25,517.30	4.17	20.00%	0.83
	2015	42,863.30	5.97	13.33%	0.80
	2014	2,168.10	5.04	6.67%	0.34
		82,107.80	in the second		5.20
GION 3 - Sa	wtimber				
	Year	Volume	\$/MBF	W/A%	\$/MBF
	2018	107,266.20	233.19	33.33%	77.73
	2017	112,269.80	212.95	26.67%	56.79
	2016	136,304.30	191.34	20.00%	38.27
	2015	135,967.80	207.12	13.33%	27.62
	2014	91,467.44	280.52	6.67%	18.71
		583,275.54			219.12
GION 3 - Pul	nwood				
	Year	Volume	\$/CORD	W/A%	\$/CORD
	2018	25,448.30	6.04	33.33%	2.01
	2017	143,565.20	7.86	26.67%	2.10
		169 606 30	1.92	20.00%	0.38
	2016	1001000.00			0.00
	2016 2015	184,907.30	3.85	13.33%	0.51
	2016 2015 2014	184,907.30	3.85 3.57	13.33% 6.67%	0.51 0.24

	Voar	Volume	CIMBE	10// 0.0/	
	2019	25 592 56	3/mbr	22.229/	3/MBF
	2018	25,502.50	210.45	33.33 %	12.03
	2017	15,073.14	230.37	20.07%	03.37
	2016	9,925.10	170.20	20.00%	34.05
	2015	6,644.42	223.42	13.33%	29.79
	2014	5,020,90	303.89	6.6/%	20.27
		62,246.18			220.51
GION 4 - Pulp	wood				
	Year	Volume	\$/CORD	W/A%	\$/CORD
	2018	4,428.90	12.56	33.33%	4.19
	2017	3,813.30	11.16	26.67%	2.98
	2016	4,538.50	11.14	20.00%	2.23
	2015	6,137.40	7.22	13.33%	0.96
	2014	7,765.20	8.16	6.67%	0.54
		26,683.30	. جخياتينيو		10.90
GION 5 - Sawti	imber				
	Year	Volume	\$/MBF	W/A%	\$/MBF
	2018	10,243.05	173.82	33.33%	57.94
	2017	45,373.14	162.33	26.67%	43.29
	2016	23,026.02	150.53	20.00%	30.11
	2015	37,714.40	160.15	13.33%	21.35
	2014	21 661.40	265.95	6.67%	17.74
		138.018.01			170,43
GION 5 - Pulpw	<u>Year</u>	Volume	\$/CORD	W/A%	\$/CORD
2	2018	1 568 50	5.73	33 33%	1 01
	2010	0.644.70	7 32	26.67%	1.91
	2017	9,044.70	7.3Z	20.07 %	1.95
	2016	2,794.40	5.99	20.00%	1.20
	2015	2,889.50	4.05	13.33%	0.54
	2014	10,191.40	6.19	6.67%	0.41
		27.088.50			6.01

COAL PROPERTIES ANALYSIS

Tax Year 2020

June 28, 2019 Dale W. Steager State Tax Commissioner Department of Revenue

COAL CAPITALIZATION RATE

Capitalization Rate Analysis and Results

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate As a matter of practicality, the Bands-of -investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 11.

		_						
Sate Rate	<u>e</u> 90 day 1	reasury Bills	;		Sate Rate		•	
	January	December	2018		1.973%			
	January	December	2017		0.947%			
	January	December	2016		0.319%			
Risk Rate	e Interest	differential be	etween Loa	n Rate an	d 90 day Trea	asury Bills		
	Loan Rate	- *		Debt Ris	k Rate	,		
	2018			1 927%	(TRAILO			
	2010	6 10%		E 1630/				
	2017	C C 4 0/		5 1010/				
	2070	1.01 /0	20/	5.15170				
		Prime plus	5 2 70					
1400000	5.0					.		
Equity	Different	ial between t	quity Rate	is and 90 c	ay Treasury	Bills		
	Equity Ra	te			Equity Risk	Rate		
	2018	[15.0%/{1-	26)]-1.973		18.297%			
	2017	[15.25%/(1	- 275)]-0.94	47	20,087%			
	2016	[14.75%/(1	- 30)]-0.319	9	20752%			
	** Value L	ine Investme	ent Survey	Analysis				
Composit	e Risk Rat	e	Loan and	Equity Rate	es weighted b	y industry	estimated ca	apital structu
	Equity Rate	•	Debt Rate		Composite Ri	sk		
2018	11.893%		1 724%		13.617%			
2017	13 057%		1 804%		14.861%			
2016	13 489%		1817%		15 306%			
Note: Det	t Equity Ra	itio	Deht	35%	Equity	85%		
			Debt		equity	0070		
NonLiqui	dity Rate	Interest diff	erential bet	ween a 90	day Treasur	Bill and a	a 1 vear Trea	SULV
		Bill which re	flects a rea	sonable t	me necessor	y to sell a	tive property	,
						y 10 301 11	sive property	
					the T Bill		Monto	uidity Pato
		December	2010		2 22 200	50 G T DI		
	January	December	2010		2,332%	19/3%		0 359%
	January	December	2017		1 201%	0 94/%		0.254%
	January	December	2016		0.614%	0319%		0.295%
		Channel (
Managem	ent Rate	Charges to	the manag	gement of	investment p	ortrolios		
	Fixed Rate	e (by Rule)		0 500%	ó			
	- 4 -							
Inflation R	ate							
	January	December	2018		1 910%			
	January	December	2017		2 110%			
	January	December	2016		2.070%			
Capitalizat	tion Rate	:	Since the v	aluation of	f active coal p	roperty is	predicated o	n a three ye
			production	average, t	he capitalizati	on rate is	considered in	n a sımilar
		i	manner.					
			2018		2017		2016	
	Inflation Ra	ate	-1.910%		-2.110%		-2 070%	
	Safe Rate		1.973%		0.947%		0.319%	
	Composite	Risk Rate	13.617%		14.861%		15 306%	
	Non Liquid	ity Rate	0.359%		0 254%		0 295%	
	Manageme	ant Rate	0.500%		0.500%		0.500%	
	Managenie		0 000 /0		0.000 /0		0.00070	
	Total		14 539%		14 452%		14 350%	
			14 33376		14.45270		14 000 /0	
	Three Yr A	verage.	14 447		Rounded to		14 40%	
	.mee II A		17.77/		Rounded (D		14.40 %	
	4	CADITAL		TE 14 40/				
		MULTIOUT		0/	2	2		
		NULTPLE	10:	70	0.15	76		
			TTR	0.935	ALK	5 214		
			ZYR	1.752	IUYR	5,493		
			3YR	2.467	11YR	5.737		
			4YR	3.091	12YR	5.949		
			5YR	3.637	13YR	6 135		

6YR

7YR

8YR

4.114

4.531

4.896

14YR

15YR

6 298

6 4 4 0

COAL

Price and Royalty Rate Analysis

The development of royalty rates for the various categories of mines and markets involves information collection and review from a variety of sources. Coal lease rates have been derived from transaction information provided by county producers, assessors, tax auditors, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal, as per 110-CSR-11, have been calculated from information provided by the WV Public Service Commission and U.S. Energy information Administration concerning power plant fuel purchases. Prices provided by producers as part of tax filing and from data obtained from market summaries are included for comparison. Because a large portion of the data used in this analysis is by law, considered confidential only a summary of the results are published.

COAL SALE PRICES FOR TY20 APPLICATION

GRAND SUMMARY ALL SOURCES	STEAM	STEAM		MET						
PSC (2018)	\$54.58	547.48	· · · · · · · · · · · · · · · · · · ·							
FERC (2018)	\$50.40	\$52.37								
Active Return Summary (2018)	in progress	in progress		in progress						
Coal Market Publication	\$48.11	PGH (13/3) Rail		\$145.81 Lo	w Vol HCC					
(3 year average - Platts)	\$53.59	CAPP (12/1.67) Bar	rge	\$151 90 Hi \$124.04 Hi	gh Vol A gh Vol B					
	\$49.66	FERC & PSC 3 Yr.	Ave SPOT	2018 4 chuo E	aburat are o	hessea				
STATE MET FRICE	\$124.04	Flatts high voi bles	dimated write a	LUID ACTIVE P	ciums are p	OCESSED				
2010 MAIRSO Departed Tapa	Spot Sales	Term Sales	Total							
2016 WVPSC Reported Tons	4,050.229	12 793 409	10 043 030							
COAL TY20 ROYALTY RATES	2018 - A	ctive Return	2017		2016		20	15	20	14
	-	IYR	2YR		3YR		4Y	R	5Y	R
	%S	%D	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	in progress	in progress	1,644	1,061	691	776	447	452	1,447	599
SUM of PERCENT			9,633 84	5 379.27	4.445.82	4 020 76	2 904 85	2.327.95	8.869.07	3,313 93
STRAIGHT AVERAGE			5.86	5 07	6.43	5 18	6.50	5.15	6.13	5.53
MEDIAN			6.00	5.00	6.00	5.50	6.00	5.00	6.00	5.00
WEIGHTED AVERAGE(by Active Acres)			6 74	5 76	6 62	5 45	6.80	5 10	6.94	5.84
ROYALTY RATE DEEP (%)	5 54									
ROYALTY RATE SURFACE (%)	6.78									
ROYALTY RATE CALCULATIONS										
Steam Coal/ Deep Mine	\$49.66	per ton X	5 54%	=	\$2.75	per ton				
Metallurgical Coal/ Deep Mine	\$124.04	per ton X	5 54%	-	\$6.87	per ton				
Steam Coal/ Surface Mine	\$49.66	per ton X	6 78%	-	\$3.36	per ton				
Metallurgical Coal/ Surface Mine	\$124 04	per ton X	6 78%	P	SB.40	per ton				

Explanation of Reserve Coal Valuation

The RCVM consists of a computer model, which utilizes a database consisting of coal beds and characteristics, property locations, mine locations, sales, transportation, etc., for the entire state. An extensive algorithm calculates in-place tonnage, expected time of mining and present value for all the mineable coal on every property.

There are, therefore, no set "rates" available on reserve coal under the Rule. The RCVM values on each property will not be available until all data has been entered, after October 15 of each year. Please refer to the State Register, Legislative Rules, Title 110, Series 11 for details of the process.

Title 110, Series 1

Valuation of Active and Reserve Coal Property for Ad Valorem Property Tax Purposes

The above Legislative Rule was modified during the 2005 Legislative Session requiring biennial (every other year) updating of the geostatistical basis for several valuation factors used in the Reserve Coal Valuation Model. To satisfy that requirement, maps and data files concerning the Market Interest Factor, the Market Mineability Factor, the Use Conflict Factor and the Environmental Factor were revised for Tax Year 2019 (next update in TY2021). Preliminary research has been conducted to determine the effects of the factors on coal valuation. The results are as follows:

Market Interest Factor

This is the relationship between transactions (sales, leases, prospects, permit applications, etc.) and mining as it relates to properties and locations. Trans_Ct is the number of transactions counted within the radius. Radius = 5 miles

If Trans_Ct >= 30 Then TransFactor = 20

If Trans_Ct < 30 And Trans_Ct >= 20 Then TransFactor - 40

Else TransFactor = 80

Market Mineability Factor

This is the relationship between property location and mining, through time. Determining feature is count of mines within the radius. Radius = 2.5 miles

Surface Mines Smine

Deep Mines Drime

Boom Mines Binine

Historic Mines Omne

Current Mines Cimine

To assign MineFactor

If Crime + 0 Then MineFactor - 20

If Crime = 0 And (Omine 1.0 Or Britine 1.0) Then MineFactor= 40

Else MineFactor = 80

Use Conflict Factor

This is the relationship between oil & gas well drilling and mining as it relates to property location. Well density is in wells per square mile.

 $\label{eq:WellDensity} \sim 5 \mbox{ Then WellFactor } = 0$ WellDensity $\sim -5 \mbox{ And WellDensity } < 10 \mbox{ Then WellFactor } = 20$ WellDensity $\sim -10 \mbox{ And WellDensity } < -15 \mbox{ Then WellFactor } = 40$ WellDensity $\geq -15 \mbox{ Then WellFactor } = 80$

Environmental Factor

This is the relationship of known environmental hazards and impediments to the likelihood of mining occurring at this location. The rates are compiled from maps and represent densities of problems mapped.

> Envrate <= 10 or Null Then EnvFactor = 0 Envrate > 10 and Envrate <= 20 Then EnvFactor = 20 Envrate > 20 and Envrate <= 60 Then EnvFactor = 40

Envrate > 60 Then EnvFactor = 80

OTHER MINED MINERAL PROPERTY ANALYSIS

Tax Year 2020

June 28, 2019 Dale W. Steager State Tax Commissioner Department of Revenue

OTHER MINED MINERALS CAPITALIZATION RATE

Capitalization Rate Analysis and Results.

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate... As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1k.

Safe Rat	e 90 day 1	Freasury Bills			Safe Rate	2			
	January	December	2018		1.973%				
	January	December	2017		0.947%				
	January	December	2016		0.319%				
Risk Rate Interest differential between Loan Rate and 90 day Treasury Bills									
Loan Rate <u>Debt Risk Rate</u>									
	2018	6.10%	<i>.</i> 2.	5 153%					
	2016	5.51%		5.191%					
		*Prime plus	2%						
-					_				
Equity	Different	ial between E	quity Rate	s and 90 day	y Treasury	Bills			
	2018	[12 00%//1	2611 1 07	3	14 243%	<u>K Rale</u>			
	2010	[12 00%/(1-	275)]-0.9	47	15 605%	,			
	2016	11.75%/(1-	30)]-0.31	9	16 467%	- , D			
	** Vaiue L	ine Investme	nt Survey	Analysis					
Company	o Diak Dat		Loop and	Equity Boto	weighted	builductor	octimated a	noital structure	
Composi	ie risk kai	Equity Rate	LUali aliu	Debt Rate	s weighteu	omnosite E		apital structure	
	2018	9.258%		1 724%		10.982%	lisk		
	2017	10.143%		1.804%		11 947%			
	2016	9.880%		2 076%		11.956%			
	Note: De	bt Equity Rati	0	Debt	35%	Equity	65%		
NonLinu	iditu Bato		Interest	differential by	00 0000	day Treasu	N Bills and a		
NONLIQU	iony Rate		Bill which	refiects a rea	asonable ti	me necessa	ary to sell act	ive property	
			Dir Willer					ine property	
					<u>1yr</u> T Bill	90 d T Bill	Non Lig	uidity Rate	
	January	December	2018		2 332%	1.973%		0.359%	
	January	December	2017		1 201%	0.947%		0.254%	
	January	December	2016		0.014%	0.319%		0.295%	
<u>Managem</u>	ent Rate Fixed Rate	Charges for e (by Rule)	the manag	gement of in 0 500%	vestment p	ortfolios			
Inflation I	Rate								
	January	December	2018		1 910%				
	January	December	2017		2 110%				
	January	December	2016		2 070%				
Property	Tax Rate	Sixty percen	t (60%) of	State avera	oe Class II	i property la	ax rate		
Toparty	January	December	2018	60% of 2 1	70 =	1.302%			
	January	December	2017	60% of 2.1	= 08	1 308%			
	January	December	2016	60% of 2 18	80 =	1.308%			
Canitaliza	tion Pate		Since the	valuation of r	other minor	d mineral o	monerty is pro	edicated on a three	
Capitaliza	ITOIT Rate		vear produ	action average	bline miner	italization ra	le is conside	ered in a similar	
			manner.		,-,				
			<u>2018</u>		2017		2016		
	Inflation Ra	ate	-1 910%		-2.110%		-2 070%		
	Safe Rate	Diek Data	1.973%		0.947%		0.319%		
	Non Liquid	RISK Rate	10.982%		11.947%		11 955%		
	Manageme	ent Rate	0.500%		0.234%		0.293%		
	Property T	ax Rate	1.302%		1 308%		1 308%		
	Total		13.206%		12.846%		12.308%		
								3	
	Thus Mark		10 70 70/				40.000/		
	Inree Yr A	Average:	12 /8/%		Rounded to	0	12.80%		
CAPITALIZATION RATE - 12.80%									
		MULTIPLIEF	RS:	%		%			
			1YR	0 942	9YR	5.491			
			2YR	1 776	10YR	5 809			
			3YR	2.516	11YR	6.092			
			4YR	3.172	12YR	6 342			
			5YR	3 /54	1JYR 1AVP	6,264			
	j.		7YR	4.727	15YR	6.935			

8YR

5.132

OTHER MINED MINERALS

ROYALTY RATE SURVEY

The determination of royalty rates for other mined minerals within the state of West Virginia is dependent upon the availability of leasehold information. Since this information is limited, the Department has chosen to <u>review</u> data for the most recent thirty year period. A summary only of this review is shown below in order to protect the confidentiality of parties involved.

	ĎATA	AVERAGE	MEDIAN	TY2020
RESOURCE	SOURCES	ROYALTY	ROYALTY	RATE
LIMESTONE	15	\$0.22	\$0.20	\$0.22
SANDSTONE	8	\$0,31	\$0.25	\$0.30
CLAY/SHALE	34	\$0.12	\$0.10	\$0.11
SAND/GRAVEL	10	\$0.35	\$0.40	\$0.40
SALT BRINE	1	N/A	N/A	\$0.10

RESERVE VALUES

	number of sales	\$/AC
LIMESTONE	5	\$3,000.00
SANDSTONE	8	\$2,300.00
CLAY/SHALE	16	\$850.00
SAND/GRAVEL	6	\$4,000.00
SALT	2	\$1,140.00