



STATE OF WEST VIRGINIA

Department of Revenue
State Tax Department

Earl Ray Tomblin
Governor

Craig A. Griffith
State Tax Commissioner

August 29, 2012

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

FILED
2012 AUG 29 PM 2:18
OFFICE WEST VIRGINIA
SECRETARY OF STATE

Dear Secretary Tennant:

Attached are final natural resource property valuation variables for the 2013 Tax Year that have been developed by the State Tax Department for use in appraising coal, oil, natural gas, managed timberland and other natural resource properties for ad valorem tax purposes.

In accordance with requirements of §§ 110 CSR 1-I, 1-J, and 1-K, tentative variables were made available for public comments on June 29, 2012. The Department received two comments on the tentative variables.

The first comment suggested that the operating expenses allowed on all oil and gas wells be increased. The Department surveyed producers with respect to Marcellus wells last year. Based on the results of that survey, the expense allowance for Marcellus wells was increased for Tax Year 2012. At this time, the Department is comfortable with the operating expenses allowed on oil and gas wells and no change will be made to the Tax Year 2013 variables for this issue.

The second comment suggested that the decline rate for Marcellus wells be increased. The Department plans to review production figures next year in order to determine if a change in the Marcellus decline rate is warranted. At this time the Department is comfortable with the decline rates utilized and no change will be made to the Tax Year 2013 variables for this issue.

The final valuation variables are being filed for inclusion in the State Register.

Sincerely,

Craig A. Griffith
State Tax Commissioner

CAG/ja/j
Attachment
cc: All County Assessors

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OFFICE WEST VIRGINIA
SECRETARY OF STATE

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2013

August 29, 2012
Craig A. Griffith
State Tax Commissioner
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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.

<u>Safe Rate</u>	(3-Month Constant Maturity Interest Rates)			
	January	December	2011	0.053%

<u>Risk Rate</u>	(Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)			
	<u>Loan Rate*</u>		<u>Risk Rate</u>	
	2011	5.250%	5.197%	
		*Prime plus 2%		

<u>Equity</u>	(Differential between Equity Rates and 3-Month Constant Maturity Interest Rates)			
	<u>Equity Rate**</u>		<u>Risk Rate</u>	
	2011	[12.0%/(1-.37)]-0.053%	18.995%	
	** Value Line Investment Survey Analysis			

<u>Composite Risk Rate</u>	Loan and Equity Rates weighted by industry estimated capital structure.				
		<u>Equity Rate</u>	<u>Debt Rate</u>	<u>Composite Risk</u>	
	2011	12.3465%	1.819%	14.911%	***
	Note: Debt equity Ratio		Debt	35%	Equity 65%
	*** Effective severance tax adjustment			0.95	

<u>Non Liquidity Rate</u>	Interest differential between 3-month Constant Maturity Interest Rates and a 1 year Constant Maturity Interest Rates which reflects a reasonable time necessary to sell active property.					
				<u>1yr T Bill</u>	<u>90 day T Bill</u>	<u>Non Liquidity Rate</u>
	January	December	2011	0.182%	0.053%	0.129%

<u>Management Rate</u>	Charges for the management of investment portfolios.	
	Fixed Rate (by Rule)	0.500%

<u>Property Tax Rate</u>	Sixty percent (60%) of State average Class III property tax rate.		
	2011	60% of 2.19	1.314%

<u>Inflation Rate</u>				
	January	December	2011	3.000%

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.

	- 2011	2010	2009
Inflation Rate	-3.000%	-1.500%	-2.700%
Safe Rate	0.053%	0.137%	0.150%
Composite Risk Rate	14.911%	15.094%	15.352%
Non Liquidity Rate	0.129%	0.181%	0.320%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.308%
Total	13.907%	15.726%	14.930%
	50.000%	33.333%	16.667%
	6.954%	5.242%	2.488%
			14.684%

Capitalization Rate Rounded to:

14.70%

MULTIPLIERS FOR 14.7% MID-YEAR LIFE (ANNUALLY)

<u>YEAR</u>		<u>YEAR</u>	
1	0.933724	21	0.060110
2	0.814057	22	0.052407
3	0.709727	23	0.045690
4	0.618768	24	0.039835
5	0.539467	25	0.034729
6	0.470328	26	0.030278
7	0.410051	27	0.026398
8	0.357499	28	0.023015
9	0.311681	29	0.020065
10	0.271736	30	0.017494
11	0.236910	31	0.015252
12	0.206548	32	0.013297
13	0.180077	33	0.011593
14	0.156998	34	0.010107
15	0.136877	35	0.008812
16	0.119335	36	0.007682
17	0.104041	37	0.006698
18	0.090707	38	0.005839
19	0.079082	39	0.005091
20	0.068947	40	0.004439

Decline Rates for Natural Gas and Oil Formations

Code		Central	Central	Central	
		Year 1	Year 2	Year 3+	
					Braxton
12	Alexander, Benson	-0.31	-0.20	-0.10	Clay
14	Benson	-0.48	-0.08	-0.08	Fayette
16	Benson, Balltown	-0.45	-0.16	-0.12	Nicholas
17	Gordon +	-0.30	-0.07	-0.07	Webster
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	Ravenclyff	-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	
9	Exception (median)	-0.41	-0.22	-0.09	
10	Non-Filer	-0.30	-0.07	-0.07	

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

Decline Rates for Natural Gas and Oil Formations

Code			East	East	East	
			Year 1	Year 2	Year 3	
						Berkeley
1	Oriskany		-0.30	-0.30	-0.19	Grant
14	Benson		-0.31	-0.17	-0.12	Greenbrier
20	Benson +		-0.44	-0.20	-0.08	Hampshire
21	Benson, Fifth		-0.29	-0.28	-0.09	Hardy
32	Brallier +		-0.48	-0.20	-0.05	Jefferson
33	Elk, Benson		-0.39	-0.21	-0.08	Mineral
34	Elk, Benson, Riley		-0.53	-0.19	-0.05	Monroe
35	Elk, Benson, Riley +		-0.36	-0.19	-0.11	Morgan
36	Elk, Benson, Balltown		-0.34	-0.18	-0.11	Pendleton
37	Elk, Alexander, Benson		-0.50	-0.07	-0.07	Pocahontas
38	Elk, Alexander, Benson +		-0.40	-0.16	-0.16	Preston
39	Hunterville		-0.31	-0.31	-0.14	Randolph
40	Fox, Haverly		-0.36	-0.21	-0.15	Summers
93	4th Sand		-0.42	-0.32	-0.08	Tucker
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*		-0.41	-0.22	-0.10	
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 Exception rates until decline information is available.

Decline Rates for Natural Gas and Oil Formations

Code			North	North	North	
			Year 1	Year 2	Year 3+	Brooke
11	Gordon		-0.47	-0.31	-0.09	Hancock
13	Alexander, Benson, Riley		-0.26	-0.16	-0.15	Marshall
15	Benson, Riley		-0.18	-0.16	-0.06	Ohio
93	4th Sand		-0.42	-0.32	-0.08	Tyler
94	50 Foot		-0.34	-0.26	-0.07	Wetzel
95	Injun/Weir		-0.51	-0.26	-0.09	
96	Maxton		-0.70	-0.27	-0.08	
97	Coalbed Methane (vertical)		-0.23	-0.08	-0.05	
110	Marcellus*		-0.39	-0.23	-0.08	
9	Exception (median)		-0.39	-0.23	-0.08	
10	Non-Filer		-0.18	-0.16	-0.06	

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

Decline Rates for Natural Gas and Oil Formations

Code		North	North	North	
		Central	Central	Central	
		Year 1	Year 1	Year 1	
11	Gordon	-0.41	-0.14	-0.12	Barbours
12	Alexander, Benson	-0.37	-0.19	-0.11	Doddridge
13	Alexander, Benson, Riley	-0.40	-0.28	-0.05	Gilmer
14	Benson	-0.31	-0.17	-0.12	Harrison
15	Benson, Riley	-0.34	-0.17	-0.14	Lewis
18	Big Injun	-0.36	-0.16	-0.13	Madison
21	Benson, Fifth	-0.31	-0.20	-0.14	Montgomery
28	Weir	-0.34	-0.34	-0.07	Ryan
29	Weir +	-0.28	-0.28	-0.23	Upshur
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, Haverly	-0.46	-0.16	-0.08	
50	Rhinesstreet	-0.28	-0.03	-0.03	
57	Alexander, Benson, Balltown	-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	
67	Benson, Riley +	-0.38	-0.14	-0.10	
68	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/Onondago or Oriskany/Heiderberg	-0.24	-0.24	-0.03	
72	Elk, Alexander	-0.42	-0.22	-0.09	
73	Elk, Benson +	-0.38	-0.20	-0.12	
74	Elk	-0.43	-0.12	-0.10	
75	Elk, Riley	-0.60	-0.35	-0.17	
76	Fox +	-0.46	-0.18	-0.09	
77	Haverly, Elk, Benson (no Alexander)	-0.35	-0.16	-0.16	
78	Haverly	-0.45	-0.15	-0.15	
79	Riley	-0.44	-0.22	-0.10	
80	Speechley	-0.30	-0.18	-0.09	
81	Alexander, Benson, Speechley	-0.39	-0.24	-0.10	
82	Haverly, Elk, Alexander	-0.47	-0.14	-0.14	
85	Fifth Oil	-0.45	-0.25	-0.22	
87	Bayard All	-0.30	-0.20	-0.05	
88	Fifth	-0.29	-0.18	-0.12	
89	Fifth +	-0.25	-0.15	-0.13	
90	Gordon/Injun All	-0.41	-0.23	-0.23	
91	Squaw	-0.37	-0.31	-0.06	
92	Injun +	-0.34	-0.22	-0.22	
93	4th Sand	-0.42	-0.32	-0.08	
94	5D Fool	-0.34	-0.26	-0.07	
95	Injun/Weir	-0.51	-0.26	-0.09	
96	Maxton	-0.70	-0.27	-0.08	
97	Coalbed Methane (vertical)	-0.23	-0.08	-0.05	
98	Coalbed Methane (horizontal)	-0.05	-0.05	-0.32	
109	Trenton/Deeper*	-0.38	-0.21	-0.11	
110	Marcellus Shale*	-0.38	-0.21	-0.11	
9	Exception-(median)	-0.38	-0.21	-0.11	
10	Non-Filer	-0.23	-0.03	-0.03	

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

Decline Rates for Natural Gas and Oil Formations

Code		North	North	North	Pleasant
		West	West	West	
		Year 1	Year 2	Year 3	
2	Huron, Rhinestreet	-0.41	-0.26	-0.07	Ritchie
4	Huron	-0.42	-0.24	-0.14	Wood
5	Huron, Shale, 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, Balltown, 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	Injun/Weir	-0.51	-0.26	-0.09	
96	Maxton	-0.70	-0.27	-0.08	
109	Trenton/Deeper*	-0.39	-0.23	-0.13	
110	Marcellus*	-0.39	-0.23	-0.13	
9	Exception (median)	-0.39	-0.23	-0.13	
10	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.

Annual Production Rate Changes for Natural Gas and Oil Formations

Code		South	South	South	
		Year 1	Year 2	Year 3	
					McDowell
8	Berea	-0.34	-0.15	-0.15	Mercer
22	Big Lime	-0.31	-0.19	-0.07	Raleigh
23	Big Lime, Maxton	-0.31	-0.19	-0.07	Wyoming
24	Big Lime, Ravencloff	-0.29	-0.29	-0.17	
25	Berea +	-0.37	-0.12	-0.08	
26	Ravencloff	-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, Ravencloff	-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	
10	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

Code			South	South	South	
			Central	Central	Central	
			Year 1	Year 2	Year 3	Boone
3	Devonian Shale		-0.23	-0.08	-0.05	Kanawha
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	
9	Exception (median)		-0.33	-0.19	-0.08	
10	Non-Filer		-0.19	-0.07	-0.04	

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

Decline Rates for Natural Gas and Oil Formations

Code			South	South	South	Cabel
			West	West	West	
			Year 1	Year 2	Year 3	
3	Devonian Shale		-0.31	-0.15	-0.04	Lincoln
8	Berea		-0.36	-0.11	-0.11	Logan
18	Big Injun		-0.38	-0.22	-0.04	Mingo
22	Big Lime		-0.19	-0.19	-0.19	Wayne
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	
9	Exception (median)		-0.38	-0.22	-0.10	
10	Non-Filer		-0.18	-0.11	-0.04	

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

Decline Rates for Natural Gas and Oil Formations

Code		West	West	West	
		Central	Central	Central	
		Year 1	Year 2	Year 3+	Galhoun
2	Huron, Rhinestreet	-0.49	-0.11	-0.06	Roane
4	Huron	-0.33	-0.22	-0.14	Wirt
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	
9	Exception (median)	-0.42	-0.24	-0.10	
10	Non-Filer	-0.25	-0.11	-0.06	

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

Decline Rates for Natural Gas and Oil Formations

Code		West	West	West	
		Year 1	Year 2	Year 3+	
					Jackson
1	Oriskany	-0.40	-0.40	-0.29	Mason
2	Huron, Rhinestreet	-0.13	-0.12	-0.03	Putnam
3	Devonian Shale	-0.31	-0.15	-0.04	
4	Huron	-0.29	-0.14	-0.05	
5	Huron, Shale, Above Huron	-0.38	-0.15	-0.06	
6	Huron, Berea	-0.29	-0.08	-0.08	
7	Berea, Devonian Shales	-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	
9	Exception (median)	-0.35	-0.20	-0.09	
10	Non-Filer	-0.08	-0.08	-0.03	

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

Industry Operating Expense Survey and Results

This component was determined through a review of responses to a survey distributed by the State Tax Department to producers of all oil and natural gas wells producing in West Virginia and through use of other market data. The survey requested working costs for the 2007 calendar year producing wells.

GAS

- % Working Interest Expenses for Typical Producing Well	=	30%
- Maximum Operating Expenses	=	\$5,000
- Coal Bed Methane, Vertical Wells Expenses	=	\$9,000
- Marcellus Wells Expenses	=	\$30,000

OIL

- % Working Interest Expenses for Typical Producing Well	=	35%
- Maximum Operating Expenses	=	\$5,750
- Maximum Enhanced Operating Expenses	=	\$9,000

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 \$ 3.95/MCF
BBL usage X \$94.88/BBL

*(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. The two 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.

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
BARBOUR	1	1	\$40.00
		2	\$40.00
		3	\$40.00
		4	\$40.00
		5	\$40.00
		6	\$1.00
		7	\$40.00
		8	\$40.00
		9	\$40.00
		10	\$40.00
		11	\$40.00
BERKELEY	2	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
BOONE	3	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$20.00
		9	\$1.00
BRAXTON	4	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
BROOKE	5	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
CABELL	6	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$20.00
CALHOUN	7	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
CLAY	8	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
DODDRIDGE	9	1	\$40.00
		2	\$40.00
		3	\$40.00
		4	\$40.00
		5	\$40.00
		6	\$40.00
		7	\$40.00
		8	\$40.00
		9	\$1.00
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
		11	\$1.00
		12	\$1.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
GILMER	11	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$1.00
		5	\$1.00
		6	\$20.00
GRANT	12	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$1.00
		5	\$15.00
GREENBRIER	13	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$15.00
		17	\$1.00
		18	\$15.00
HAMPSHIRE	14	1	\$10.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$10.00
		6	\$1.00
		7	\$10.00
		8	\$1.00
		9	\$10.00
		10	\$10.00
HANCOCK	15	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
HARDY	16	1	\$1.00
		2	\$10.00
		3	\$10.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
HARRISON	17	1	\$40.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$40.00
		6	\$1.00
		7	\$40.00
		8	\$1.00
		9	\$40.00
		10	\$1.00
		11	\$40.00
		12	\$40.00
		13	\$1.00
		14	\$40.00
		15	\$40.00
		16	\$1.00
		17	\$1.00
		18	\$40.00
		19	\$1.00
		20	\$40.00
		21	\$1.00
JACKSON	18	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
JEFFERSON	19	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

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
KANAWHA	20	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
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$20.00
		16	\$20.00
		17	\$1.00
		18	\$1.00
		19	\$20.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
		23	\$20.00
		24	\$20.00
		25	\$20.00
		26	\$1.00
		27	\$1.00
		28	\$20.00
		29	\$1.00
		30	\$1.00
		31	\$1.00
LEWIS	21	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
LINCOLN	22	1	\$15.00
		2	\$15.00
		3	\$1.00
		4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
		10	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
LOGAN	23	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$1.00
MARION	24	1	\$35.00
		2	\$35.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$35.00
		10	\$1.00
		11	\$35.00
		12	\$35.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$35.00
		17	\$1.00
		18	\$35.00
		19	\$35.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
MARSHALL	25	1	\$1.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$1.00
		9	\$25.00
		10	\$1.00
		11	\$1.00
		12	\$25.00
		13	\$25.00
		14	\$25.00
		15	\$25.00
		16	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
MASON	26	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$20.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$20.00
		15	\$20.00
		16	\$20.00
MC DOWELL	27	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
MERCER	28	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
MINERAL	29	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
MINGO	30	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
MONONGALIA	31	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$25.00
		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	\$25.00
		19	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$1.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
MORGAN	33	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
NICHOLAS	34	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$15.00
		8	\$1.00
		9	\$15.00
OHIO	35	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
PENDLETON	36	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$15.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
PLEASANTS	37	1	\$1.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$1.00
		7	\$30.00
		8	\$30.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
PRESTON	39	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$35.00
		7	\$1.00
		8	\$35.00
		9	\$1.00
		10	\$35.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
		17	\$1.00
		18	\$1.00
		19	\$1.00
		20	\$1.00
PUTNAM	40	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$20.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/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
RANDOLPH	42	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$20.00
		16	\$20.00
		17	\$20.00
		18	\$1.00
RITCHIE	43	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$1.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$1.00
		9	\$1.00
		10	\$25.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
ROANE	44	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
SUMMERS	45	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
		3	\$40.00
		4	\$40.00
		5	\$40.00
		6	\$40.00
		7	\$40.00
TUCKER	47	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
TYLER	48	1	\$40.00
		2	\$40.00
		3	\$1.00
		4	\$40.00
		5	\$40.00
		6	\$40.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$40.00
UPSHUR	49	1	\$30.00
		2	\$30.00
		3	\$1.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
		7	\$30.00
WAYNE	50	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$15.00
		9	\$15.00
		10	\$15.00
		11	\$1.00
		12	\$15.00
WEBSTER	51	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$1.00

OIL & GAS RESERVE RATES FOR TY 2013			
COUNTY	CO #	DISTRICT #	TY2013 \$/AC
WETZEL	52	1	\$30.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$1.00
		7	\$1.00
		8	\$30.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$30.00
		13	\$1.00
WIRT	53	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
WOOD	54	1	\$30.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$1.00
		6	\$30.00
		7	\$30.00
		8	\$30.00
		9	\$30.00
		10	\$1.00
		11	\$30.00
		12	\$30.00
		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	\$20.00
		10	\$20.00

**MANAGED TIMBER
PROPERTY ANALYSIS**

Tax Year 2013

August 29, 2012
Craig A. Griffith
State Tax Commissioner
Department of Revenue

MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2013

(based on market 2007-2011)

Rates Per Acre

Class II Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$265	\$175	\$50
Region 2	\$230	\$150	\$50
Region 3	\$310	\$205	\$60
Region 4	\$255	\$170	\$50
Region 5	\$200	\$140	\$50

Class III/IV Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$235	\$155	\$75
Region 2	\$225	\$150	\$75
Region 3	\$275	\$185	\$75
Region 4	\$230	\$150	\$75
Region 5	\$225	\$150	\$75

- Region 1 = Brooke, Cabell, Hancock, Jackson, Marshall, Mason, Ohio, Pleasants, Putnam, Tyler, Wetzel, and Wood Counties
- Region 2 = Braxton, Calhoun, Clay, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Ritchie, Roane, Taylor, and Wirt Counties
- Region 3 = Barbour, Greenbrier, Monroe, Nicholas, Pendleton, Pocahontas, Preston, Randolph, Tucker, Upshur, and Webster Counties
- Region 4 = Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral and Morgan Counties
- Region 5 = Boone, Fayette, Kanawha, Lincoln, Logan, McDowell, Mercer, Mingo, Raleigh, Summers, Wayne, and Wyoming Counties

Harvest Volumes per Acre

Harvest Interval Grades

	<u>35 yrs.</u>	<u>45 yrs.</u>	<u>55 yrs.</u>	<u>80 yrs.</u>	<u>Total</u>
1 - Site Index 75 or more	4.6 cords	--	2.6 cords	3.3 cords	10.5 cords
	1.5 Mbf	--	4.4 Mbf	8.6 Mbf	14.5 Mbf
2 - Site Index 65 - 75	3.3 cords	--	7.0 cords	4.6 cords	14.9 cords
	1.0 Mbf	--	3.2 Mbf	5.5 Mbf	9.7 Mbf
3 - Site Index less than 65	--	3.1 cords	--	15.4 cords	18.5 cords
	--	0.8 Mbf	--	3.7 Mbf	4.5 Mbf

Managed Timberland Statistics

Estimation of Required Rate of Return: Class II Rates

A. Safe Rate of Return (5 Year T-Bill Rate)

Year	Rate	W/A %	W/A Rate		
2011	1.5225	33.33%	0.5075		
2010	1.9275	26.67%	0.5140		
2009	2.1908	20.00%	0.4382		
2008	2.7983	13.33%	0.3731		
2007	4.4300	6.67%	0.2953	2.128	%

B. Nonliquidity Rate

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate		
2011	0.1292	33.33%	0.0431		
2010	0.1817	26.67%	0.0485		
2009	0.3200	20.00%	0.0640		
2008	0.4308	13.33%	0.0574		
2007	0.0500	6.67%	0.0033	0.216	%

C. Risk Rate (30 yr T-bills vs 5 yr T-bills)

Year	Rate	W/A %	W/A Rate		
2011	2.3883	33.33%	0.7960		
2010	2.3233	26.67%	0.6196		
2009	1.8783	20.00%	0.3757		
2008	1.4808	13.33%	0.1974		
2007	0.4092	6.67%	0.0273	2.016	%

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate		
2011	0.708	33.33%	0.2360		
2010	0.708	26.67%	0.1888		
2009	0.702	20.00%	0.1404		
2008	0.696	13.33%	0.0928		
2007	0.702	6.67%	0.0468	0.705	%

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate		
2011	3.000	13.33%	0.3999		
2010	1.500	33.33%	0.5000		
2009	2.700	26.67%	0.7201		
2008	0.100	20.00%	0.0200		
2007	4.100	6.67%	0.2735	(1.913)	%

TOTAL REQUIRED RATE OF RETURN (REAL)

3.652 %

LESS: PROPERTY TAX COMPONENT

(0.705)

TOTAL DISCOUNT COMPONENT

2.947 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.43%	1.67%

		1.1620	1.2130	1.2662	1.4095	
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age	
	Region	\$/MBF	35	45	55	80
	Region 1	184.39	214.27	223.66	233.47	259.90
	Region 2	168.27	195.54	204.11	213.06	237.18
	Region 3	212.06	246.43	257.23	268.51	298.91
	Region 4	178.95	207.95	217.07	226.58	252.24
	Region 5	136.03	158.07	165.00	172.24	191.74

		1.7855	2.1071	2.4866	3.7621	
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age	
	Region	\$/Cord	35	45	55	80
	Region 1	7.20	12.85	15.16	17.89	27.07
	Region 2	5.66	10.11	11.93	14.07	21.29
	Region 3	7.41	13.23	15.61	18.43	27.88
	Region 4	7.87	14.06	16.59	19.57	29.61
	Region 5	5.91	10.56	12.46	14.70	22.24

Management Costs:

Region	<u>\$/acre (1)</u>
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

Tax Rates:

Effective Federal Income Tax Rate	32.50%
Effective WV State Income Tax Rate (6.5% * (1-.325))	4.39%
Effective WV Severance Tax Rate (4.0% * (1-.325))	2.70%

Yield (Volumes) (80 year rotation)

Timberland			
Productivity Grades	Site Index	Yield - MBF	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

Managed Timberland Statistics

Estimation of Required Rate of Return: Class III & IV Blended Rates

A. Safe Rate of Return (5 Year T-Bill Rate)

Year	Rate	W/A %	W/A Rate
2011	1.5225	33.33%	0.5075
2010	1.9275	26.67%	0.5140
2009	2.1908	20.00%	0.4382
2008	2.7983	13.33%	0.3731
2007	4.4300	6.67%	0.2953

2.128 %

B. Nonliquidity Rate

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate
2011	0.1292	33.33%	0.0431
2010	0.1817	26.67%	0.0485
2009	0.3200	20.00%	0.0640
2008	0.4308	13.33%	0.0574
2007	0.0500	6.67%	0.0033

0.216 %

C. Risk Rate (30 yr T-bills vs 5 yr T-bills)

Year	Rate	W/A %	W/A Rate
2011	2.3883	33.33%	0.7960
2010	2.3233	26.67%	0.6196
2009	1.8783	20.00%	0.3757
2008	1.4808	13.33%	0.1974
2007	0.4092	6.67%	0.0273

2.016 %

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Blended III&IV Rates)

Year	Rate	W/A %	W/A Rate
2011	1.314	33.33%	0.4380
2010	1.314	26.67%	0.3504
2009	1.308	20.00%	0.2616
2008	1.296	13.33%	0.1728
2007	1.302	6.67%	0.0868

1.310 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2011	3.000	13.33%	0.3999
2010	1.500	33.33%	0.5000
2009	2.700	26.67%	0.7201
2008	0.100	20.00%	0.0200
2007	4.100	6.67%	0.2735

(1.913) %

TOTAL REQUIRED RATE OF RETURN (REAL)

4.257 %

LESS: PROPERTY TAX COMPONENT

(1.310)

TOTAL DISCOUNT COMPONENT

2.947 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.43%	1.67%

SAWTIMBER	Current	1.1620	1.2130	1.2662	1.4095
		\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	184.39	214.27	223.66	233.47	259.90
Region 2	168.27	195.54	204.11	213.06	237.18
Region 3	212.06	246.43	257.23	268.51	298.91
Region 4	178.95	207.95	217.07	226.58	252.24
Region 5	136.03	158.07	165.00	172.24	191.74

PULPWOOD:	Current	1.7855	2.1071	2.4866	3.7621
		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	7.20	12.85	15.16	17.89	27.07
Region 2	5.66	10.11	11.93	14.07	21.29
Region 3	7.41	13.23	15.61	18.43	27.88
Region 4	7.87	14.06	16.59	19.57	29.61
Region 5	5.91	10.56	12.46	14.70	22.24

Management Costs:

Region	\$/acre (1)
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

Tax Rates:

Effective Federal Income Tax Rate	32.50%
Effective WV State Income Tax Rate (6.5% * (1-.325))	4.39%
Effective WV Severance Tax Rate (4.0% * (1-.325))	2.70%

Yield (Volumes) (80 year rotation)

Timberland Productivity Grades	Site Index	Yield - MBF	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

West Virginia Wgt/Avg Managed Timberland Stumpage Prices

REGION 1 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2011	11,195.00	144.89	33.33%	48.30
2010	15,157.58	173.52	26.67%	46.27
2009	13,311.70	208.09	20.00%	41.62
2008	18,483.95	236.57	13.33%	31.54
2007	29,593.93	249.91	6.67%	16.66
	87,742.16			184.39

REGION 1 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2011	48.10	9.67	33.33%	3.22
2010	1,859.30	6.90	26.67%	1.84
2009	3,351.10	8.35	20.00%	1.67
2008	1,929.30	2.07	13.33%	0.28
2007	745.60	2.81	6.67%	0.19
	7,933.40			7.20

REGION 2 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2011	12,639.41	156.26	33.33%	52.09
2010	56,575.40	163.96	26.67%	43.72
2009	43,105.11	165.92	20.00%	33.18
2008	62,741.47	187.95	13.33%	25.06
2007	118,327.50	213.26	6.67%	14.22
	293,388.89			168.27

REGION 2 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2011	5,235.20	6.78	33.33%	2.26
2010	23,291.90	4.15	26.67%	1.11
2009	6,342.60	5.94	20.00%	1.19
2008	12,213.00	5.57	13.33%	0.74
2007	8,626.70	5.44	6.67%	0.36
	55,709.40			5.66

REGION 3 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2011	102,218.30	201.45	33.33%	67.15
2010	145,592.20	211.21	26.67%	56.32
2009	136,208.60	187.01	20.00%	37.40
2008	223,321.70	239.45	13.33%	31.93
2007	270,925.20	288.93	6.67%	19.26
	878,266.00			212.06

REGION 3 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2011	159,040.70	7.34	33.33%	2.45
2010	123,858.50	9.34	26.67%	2.49
2009	206,464.40	6.14	20.00%	1.23
2008	280,717.80	5.76	13.33%	0.77
2007	187,872.20	7.16	6.67%	0.48
	957,953.60			7.41

REGION 4 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2011	15,517.51	178.40	33.33%	59.47
2010	24,125.85	167.02	26.67%	44.54
2009	15,403.79	168.15	20.00%	33.63
2008	31,170.06	218.70	13.33%	29.16
2007	14,777.39	182.36	6.67%	12.16
	<u>100,994.60</u>			<u>178.95</u>

REGION 4 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2011	21,074.10	8.64	33.33%	2.88
2010	26,223.70	5.93	26.67%	1.58
2009	9,678.90	11.49	20.00%	2.30
2008	49,931.50	4.02	13.33%	0.54
2007	5,620.70	8.65	6.67%	0.58
	<u>112,528.90</u>			<u>7.87</u>

REGION 5 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2011	24,760.42	122.43	33.33%	40.81
2010	56,603.00	143.15	26.67%	38.17
2009	49,494.92	115.82	20.00%	23.16
2008	53,526.41	167.56	13.33%	22.34
2007	81,098.00	173.12	6.67%	11.54
	<u>265,482.75</u>			<u>136.03</u>

REGION 5 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2011	6,432.30	6.26	33.33%	2.09
2010	19,223.30	4.06	26.67%	1.08
2009	281,600.40	7.23	20.00%	1.45
2008	34,275.00	5.55	13.33%	0.74
2007	9,118.90	8.36	6.67%	0.56
	<u>350,649.90</u>			<u>5.91</u>

COAL PROPERTIES ANALYSIS

Tax Year 2013

August 29, 2012
Craig A. Griffith
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.

Safe Rate	90 day Treasury Bills	Safe Rate
January	December 2011	0.053%
January	December 2010	0.137%
January	December 2009	0.150%

Risk Rate	Interest differential between Loan Rate and 90 day Treasury Bills		
	Loan Rate*		Debt Risk Rate
	2011	5.25%	5.197%
	2010	5.25%	5.113%
	2009	5.25%	5.100%
	*Prime plus 2%		

Equity	Differential between Equity Rates and 90 day Treasury Bills		
	Equity Rate**		Equity Risk Rate
	2011	[13.25%/(1-.30)]-0.053	18.876%
	2010	[13.5%/(1-.30)]-0.137	19.149%
	2009	[13.75%/(1-.30)]-0.15	19.493%
	** Value Line Investment Survey Analysis		

Composite Risk Rate	Loan and Equity Rates weighted by industry estimated capital structure		
	Equity Rate	Debt Rate	Composite Risk
2011	11.325%	2.079%	13.404%
2010	11.489%	2.045%	13.534%
2009	11.696%	2.040%	13.736%
Note: Debt equity Ratio	Debt	40%	Equity 60%

Non Liquidity Rate	Interest differential between a 90 day Treasury Bill and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.				
			1yr T Bill	90 d T Bill	Non Liquidity Rate
January	December	2011	0.182%	0.053%	0.129%
January	December	2010	0.318%	0.137%	0.181%
January	December	2009	0.470%	0.150%	0.320%

Management Rate	Charges for the management of investment portfolios.	
Fixed Rate (by Rule)		0.500%

Inflation Rate			
January	December	2011	3.000%
January	December	2010	1.500%
January	December	2009	2.700%

Capitalization Rate Since the valuation of active coal property is predicated on a three year production average, the capitalization rate is considered in a similar manner.

		2011	2010	2009
Inflation Rate		-3.000%	-1.500%	-2.700%
Safe Rate		0.053%	0.137%	0.150%
Composite Risk Rate	13.404%		13.534%	13.736%
Non Liquidity Rate	0.129%		0.181%	0.320%
Management Rate	0.500%		0.500%	0.500%

Total	11.086%	12.852%	12.006%
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Three Yr Average:	11.981	Rounded to:	12.00%
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CAPITALIZATION RATE - 12.0%			
MULTIPLIERS:	%	%	
1YR	0.945	9YR	5.639
2YR	1.789	10YR	5.980
3YR	2.542	11YR	6.284
4YR	3.214	12YR	6.556
5YR	3.815	13YR	6.798
6YR	4.351	14YR	7.015
7YR	4.830	15YR	7.208
8YR	5.257		

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. Research data for coal lease rates have been derived from recorded lease transactions provided by county assessors, tax auditors, producers, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal have been calculated from data published in Platt's "COAL Outlook", from pricing information provided by producers as part of the most recent tax filing, and from data obtained from the WV Public Service Commission and U.S. Energy Information Administration concerning power plant fuel purchases. 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 CY2011 FOR TY2013 APPLICATION
GRAND SUMMARY ALL SOURCES**

	STEAM SPOT	STEAM TERM	MET
PSC *	\$57.37	\$60.29	
Coal Week Publication	\$75.09	\$73.61	(delivered) merged w coal outlook in 2003
FERC Data	\$60.78	\$61.15	
Active Return Summary	\$58.32 <--S+T		\$101.20 43.3 MM tons

STATE STEAM PRICE	\$61.86	EIA & PSC, 3 YR AVE
STATE MET PRICE	\$101.20	
STATE STEAM SPOT PRICE	\$59.72	EIA & PSC, 3 YR AVE

	Spot Sales	Term Sales	Total
2011 PSC Tons reported in millions	10.1	3.6	13.7

COAL TY2013 ROYALTY RATES

	5YR		6YR		7YR		8YR	
	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	1,677	2,241	2,448	3,197	2,528	2,823	2,530	2,851
SUM of PERCENT	8924.28	11,181.05	14406.71	16405.76	14922.03	14006.00	14564.83	14753.30
STRAIGHT AVERAGE	5.32	4.99	5.89	5.13	4.74	5.08	4.56	5.08
MEDIAN	5.00	5.00	5.22	5.00	4.39	5.06	4.39	5.06
WEIGHTED AVERAGE	6.27	5.72	6.24	5.66	5.31	5.21	5.18	5.43
TENTATIVE RATE SURFACE	5.75							
TENTATIVE RATE DEEP	5.51							
ROYALTY RATE CALCULATIONS								
Steam Coal/ Deep Mine	\$59.72	per ton X	5.51%	=	\$3.29	per ton		
Metallurgical Coal/ Deep Mine	\$101.20	per ton X	5.51%	=	\$5.58	per ton		
Steam Coal/ Surface Mine	\$59.72	per ton X	5.75%	=	\$3.43	per ton		
Metallurgical Coal/ Surface Mine	\$101.20	per ton X	5.75%	=	\$5.82	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 November 15 of each year. Please refer to the State Register, Legislative Rules, Title 110, Series 1I for details of the process.

Title 110, Series 11
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 biannual (every two years) 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 coal BTU values, coal Sulfur values, coal Ash values, coal Volatility values, the Market Interest Factor, the Market Mineability Factor, the Use Confected Factor and the Environmental Factor have been revised for Tax Year 2013. Additionally, 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 >= 12 Then TransFactor = 20

If Trans_Ct < 12 And Trans_Ct >= 4 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 = 5 miles

Surface Mines: Smine

Deep Mines: Dmine

Boom Mines: Bmine

Historic Mines: Omine

Current Mines: Cmine

To assign MineFactor:

If Cmine > 0 Then MineFactor = 20

If Cmine = 0 And (Omine > 0 Or Bmine > 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.

WellDensity < 7 Then WellFactor = 0

WellDensity >= 7 And WellDensity < 19 Then WellFactor = 20

WellDensity >= 19 And WellDensity < 29 Then WellFactor = 40

WellDensity > 29 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 = <=30 and Null Then EnvFactor = 0

Envrate >30 and Envrate <= 60 Then EnvFactor = 20

Envrate > 60 and Envrate < 100 Then EnvFactor = 40

Envrate >= 100 Then EnvFactor = 80

**OTHER MINED MINERAL
PROPERTY ANALYSIS**

Tax Year 2013

August 29, 2012
Craig A. Griffith
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.

<u>Safe Rate</u>			<u>Safe Rate</u>		
90 day Treasury Bills					
January	December	2011			0.053%
January	December	2010			0.137%
January	December	2009			0.150%

<u>Risk Rate</u> Interest differential between Loan Rate and 90 day Treasury Bills					
<u>Loan Rate*</u>			<u>Debt Risk Rate</u>		
2011	5.25%				5.197%
2010	5.25%				5.113%
2009	5.25%				5.100%
*Prime plus 2%					

<u>Equity</u> Differential between Equity Rates and 90 day Treasury Bills					
<u>Equity Rate**</u>			<u>Equity Risk Rate</u>		
2011	[12.0%/(1-.30)]-0.053				17.090%
2010	[12.5%/(1-.30)]-0.137				17.720%
2009	[13.0%/(1-.32)]-0.15				18.968%
** Value Line Investment Survey Analysis					

<u>Composite Risk Rate</u> Loan and Equity Rates weighted by industry estimated capital structure.					
	Equity Rate		Debt Rate		Composite Risk
2011	10.254%		2.079%		12.333%
2010	10.632%		2.045%		12.677%
2009	12.329%		1.785%		14.114%
Note:	Debt Equity Ratio		Debt	40%	Equity 60%

Non Liquidity Rate Interest differential between 90 day Treasury Bills and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.

			<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2011	0.182%	0.053%	0.129%
January	December	2010	0.318%	0.137%	0.181%
January	December	2009	0.470%	0.150%	0.320%

Management Rate Charges for the management of investment portfolios.
Fixed Rate (by Rule) 0.500%

<u>Inflation Rate</u>					
January	December	2011			3.000%
January	December	2010			1.500%
January	December	2009			2.700%

<u>Property Tax Rate</u> Sixty percent (60%) of State average Class III property tax rate.					
January	December	2011	60% of 2.190 =		1.314%
January	December	2010	60% of 2.190 =		1.314%
January	December	2009	60% of 2.180 =		1.308%

Capitalization Rate Since the valuation of other mined mineral property is predicated on a three year production average, the capitalization rate is considered in a similar manner.

	<u>2011</u>	<u>2010</u>	<u>2009</u>
Inflation Rate	-3.000%	-1.500%	-2.700%
Safe Rate	0.053%	0.137%	0.150%
Composite Risk Rate	12.333%	12.677%	14.114%
Non Liquidity Rate	0.129%	0.181%	0.320%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.308%
Total	11.329%	13.309%	13.692%

Three Yr Average: 12.777% Rounded to: 12.80%

CAPITALIZATION RATE - 12.80%

MULTIPLIERS:			
	%		%
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	3.754	13YR	6.564
6YR	4.269	14YR	6.761
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 review 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.

RESOURCE	DATA SOURCES	AVERAGE ROYALTY	MEDIAN ROYALTY	TY2013 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