



STATE OF WEST VIRGINIA

Department of Revenue
State Tax Department

Earl Ray Tomblin
Governor

Mark W. Matkovich
State Tax Commissioner

August 29, 2014

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

FILED
2014 AUG 29 P 3:22
OFFICE WEST VIRGINIA
SECRETARY OF STATE

Dear Secretary Tennant:

Attached are final natural resource property valuation variables for the 2015 Tax Year that have been developed by the State Tax Department for use in appraising oil and gas, managed timberland, coal 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 30, 2014. The Department received six comments on the tentative variables. Four comments related to the valuation of coal and two comments related to the valuation of producing oil and gas wells. None of the comments required a revision to the tentative variables.

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

Sincerely,

Mark W. Matkovich
State Tax Commissioner

MWM/jaj

Attachment

cc: All County Assessors

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2014 AUG 29 P 3: 22

OFFICE WEST VIRGINIA
SECRETARY OF STATE

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2015

August 29, 2014
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

OIL AND GAS

TY 2015

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 Constant Maturity Interest Rates)
 January December 2013 **0.058%**

Risk Rate (Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)
Loan Rate* **Risk Rate**
 2013 5.250% 5.192%
 *Prime plus 2%

Equity (Differential between Equity Rates and 3-Month Constant Maturity Interest Rates)
Equity Rate** **Risk Rate**
 2013 [11.75%/(1-.37)]-0.053% 18.593%
 ** Value Line Investment Survey Analysis

Composite Risk Rate Loan and Equity Rates weighted by industry estimated capital structure.
 Equity Rate Debt Rate Composite Risk
 2013 12.0853% 1.817% **14.634%** ***
 Note: Debt equity Ratio Debt 35% Equity 65%
 *** Effective severance tax adjustment 0.95

Non Liquidity Rate 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.
 January December 2013 1yr T Bill 90 day T Bill Non Liquidity Rate
 0.132% 0.058% **0.074%**

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

Property Tax Rate Sixty percent (60%) of State average Class III property tax rate.
 2013 60% of 2.19 **1.314%**

Inflation Rate
 January December 2013 **1.500%**

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.

	<u>2013</u>	<u>2012</u>	<u>2011</u>	
Inflation Rate	-1.500%	-1.700%	-3.000%	
Safe Rate	0.058%	0.086%	0.053%	
Composite Risk Rate	14.634%	14.605%	14.911%	
Non Liquidity Rate	0.074%	0.089%	0.129%	
Management Rate	0.500%	0.500%	0.500%	
Property Tax Rate	1.314%	1.326%	1.326%	
Total	15.080%	14.906%	13.919%	
	50.000%	33.333%	16.667%	
	7.540%	4.969%	2.320%	14.829%

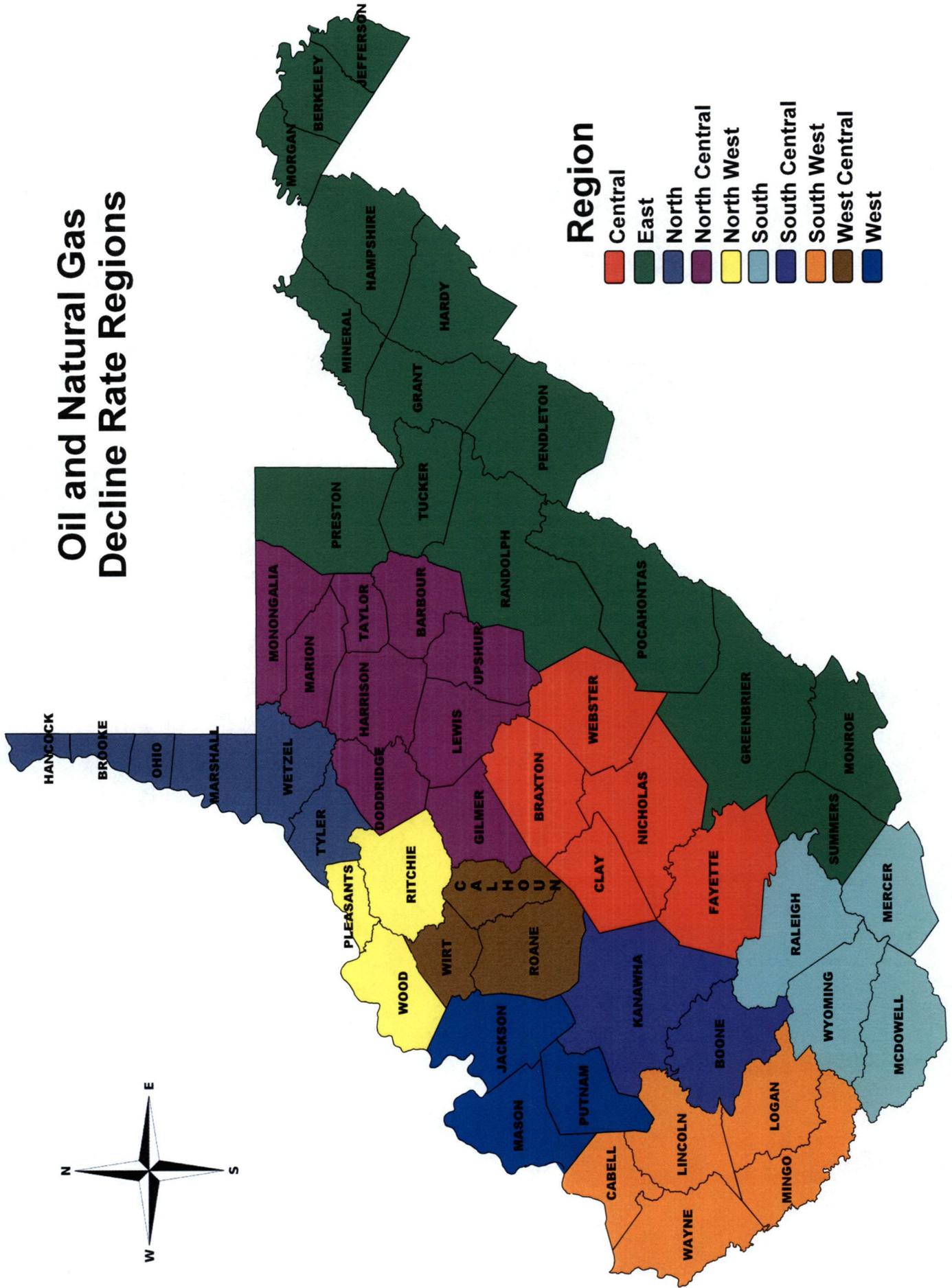
Capitalization Rate Rounded to:

14.80%

MULTIPLIERS FOR 14.8% MID-YEAR LIFE (ANNUALLY)

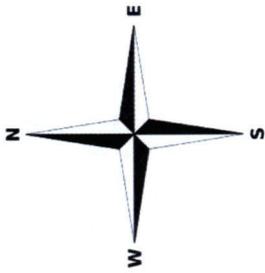
<u>YEAR</u>		<u>YEAR</u>	
1	0.933317	21	0.059046
2	0.812994	22	0.051434
3	0.708183	23	0.044803
4	0.616884	24	0.039027
5	0.537355	25	0.033996
6	0.468079	26	0.029613
7	0.407735	27	0.025795
8	0.355170	28	0.022470
9	0.309381	29	0.019573
10	0.269496	30	0.017050
11	0.234752	31	0.014852
12	0.204488	32	0.012937
13	0.178126	33	0.011269
14	0.155162	34	0.009816
15	0.135158	35	0.008551
16	0.117734	36	0.007448
17	0.102555	37	0.006488
18	0.089334	38	0.005652
19	0.077817	39	0.004923
20	0.067785	40	0.004288

Oil and Natural Gas Decline Rate Regions



Region

- Central
- East
- North
- North Central
- North West
- South
- South Central
- South West
- West Central
- West



Decline Rates for Natural Gas and Oil Formations: Central

Central: Braxton, Clay, Fayette, Nicholas, Webster

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	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: East

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	-0.16	-0.16
39	Huntermville	-0.31	-0.31	-0.14
40	Fox, Haverly	-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
9	Exception (Median)	-0.41	-0.22	-0.10
10	Non-Filer	-0.29	-0.07	-0.05

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	-0.08
97	Coalbed Methane (Vertical)	-0.23	-0.08	-0.05
110	Marcellus	-0.52	-0.23	-0.18
9	Exception (Median)	-0.39	-0.23	-0.08
10	Non-Filer	-0.18	-0.16	-0.06

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	-0.16	-0.08
50	Rhinestreet	-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/Onondaga or Oriskany/Helderberg	-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	Haverty, Elk, Benson (No Alexander)	-0.35	-0.16	-0.16
78	Haverty	-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	Haverty, 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	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
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	-0.59	-0.29	-0.23
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: North West

North West: Pleasants, Ritchie, Wood

Code	Formation	Year 1	Year 2	Year 3 +
2	Huron, Rhinestreet	-0.41	-0.26	-0.07
4	Huron	-0.42	-0.24	-0.14
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, 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

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, 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
9	Exception (Median)	-0.36	-0.19	-0.09
10	Non-Filer	-0.23	-0.08	-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: 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
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: 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	Berea	-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
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: 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
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: West

West: Jackson, Mason, Putnam

Code	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
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.

GAS

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

OIL

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

MARCELLUS

- % Working Interest Expenses for Vertical Producing Well	=	30%
- Maximum Operating Expenses	=	\$30,000
- % Working Interest Expenses for Horizontal Producing Well	=	20%
- Maximum Operating Expenses	=	\$150,000

HORIZONTAL WELLS (OTHER THAN MARCELLUS)

- % Working Interest Expenses for Horizontal Producing Well	=	30%
- Maximum 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 \$ 3.73/MCF
BBL usage X \$97.98/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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
BARBOUR	1	1	\$50.00
		2	\$1.00
		3	\$50.00
		4	\$50.00
		5	\$50.00
		6	\$1.00
		7	\$50.00
		8	\$50.00
		9	\$50.00
		10	\$50.00
		11	\$50.00
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	\$1.00
		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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/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	\$50.00
		2	\$50.00
		3	\$50.00
		4	\$50.00
		5	\$50.00
		6	\$50.00
		7	\$50.00
		8	\$50.00
		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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
GILMER	11	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$1.00
		6	\$25.00
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	\$1.00
		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	\$1.00
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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
HARDY	16	1	\$1.00
		2	\$10.00
		3	\$10.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
HARRISON	17	1	\$50.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$50.00
		6	\$1.00
		7	\$50.00
		8	\$1.00
		9	\$50.00
		10	\$1.00
		11	\$50.00
		12	\$50.00
		13	\$1.00
		14	\$50.00
		15	\$50.00
		16	\$1.00
		17	\$1.00
		18	\$50.00
		19	\$1.00
		20	\$50.00
		21	\$1.00
JACKSON	18	1	\$35.00
		2	\$35.00
		3	\$1.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$35.00
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 2015					
COUNTY	CO #	DISTRICT #	TY2015 \$/AC		
KANAWHA	20	1	\$25.00		
		2	\$25.00		
		3	\$25.00		
				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	\$25.00
				16	\$25.00
				17	\$1.00
				18	\$1.00
				19	\$25.00
				20	\$1.00
				21	\$1.00
				22	\$1.00
				23	\$25.00
				24	\$25.00
				25	\$25.00
				26	\$1.00
				27	\$1.00
				28	\$25.00
				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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/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	\$40.00
		2	\$40.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$40.00
		10	\$1.00
		11	\$40.00
		12	\$40.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$40.00
		17	\$1.00
		18	\$40.00
		19	\$40.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
MARSHALL	25	1	\$1.00
		2	\$1.00
		3	\$45.00
		4	\$45.00
		5	\$45.00
		6	\$1.00
		7	\$45.00
		8	\$1.00
		9	\$45.00
		10	\$1.00
		11	\$1.00
		12	\$45.00
		13	\$45.00
		14	\$45.00
		15	\$45.00
		16	\$1.00

OIL & GAS RESERVE RATES FOR TY 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
MINERAL	29	1	\$15.00
		2	\$1.00
		3	\$1.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$15.00
		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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/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	\$1.00
		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	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
		7	\$1.00
		8	\$30.00
		9	\$30.00
		10	\$30.00
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 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
PLEASANTS	37	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$1.00
		7	\$35.00
		8	\$35.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$1.00
PRESTON	39	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$35.00
		7	\$35.00
		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	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$20.00
		11	\$20.00
		12	\$20.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/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	\$1.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$20.00
		17	\$1.00
		18	\$1.00
RITCHIE	43	1	\$35.00
		2	\$1.00
		3	\$35.00
		4	\$1.00
		5	\$35.00
		6	\$1.00
		7	\$35.00
		8	\$1.00
		9	\$1.00
		10	\$35.00

OIL & GAS RESERVE RATES FOR TY 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
ROANE	44	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$1.00
		9	\$25.00
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	\$50.00
		4	\$50.00
		5	\$50.00
		6	\$50.00
		7	\$50.00
TUCKER	47	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$1.00

OIL & GAS RESERVE RATES FOR TY 2015

COUNTY	CO #	DISTRICT #	TY2015 \$/AC
TYLER	48	1	\$50.00
		2	\$50.00
		3	\$1.00
		4	\$50.00
		5	\$50.00
		6	\$50.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$50.00
UPSHUR	49	1	\$50.00
		2	\$50.00
		3	\$1.00
		4	\$50.00
		5	\$50.00
		6	\$50.00
		7	\$50.00
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	\$1.00
		4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$1.00

OIL & GAS RESERVE RATES FOR TY 2015			
COUNTY	CO #	DISTRICT #	TY2015 \$/AC
WETZEL	52	1	\$50.00
		2	\$50.00
		3	\$50.00
		4	\$50.00
		5	\$50.00
		6	\$1.00
		7	\$1.00
		8	\$50.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$50.00
		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	\$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
		10	\$20.00

**MANAGED TIMBER
PROPERTY ANALYSIS**

Tax Year 2015

August 29, 2014
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2015

(based on market 2009-2013)

Rates Per Acre

Class II Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$205	\$140	\$50
Region 2	\$200	\$140	\$50
Region 3	\$280	\$185	\$50
Region 4	\$235	\$155	\$50
Region 5	\$200	\$140	\$50

Class III/IV Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$225	\$150	\$75
Region 2	\$225	\$150	\$75
Region 3	\$250	\$170	\$75
Region 4	\$225	\$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 1.5 Mbf	-- --	2.6 cords 4.4 Mbf	3.3 cords 8.6 Mbf	10.5 cords 14.5 Mbf
2 - Site Index 65 - 75	3.3 cords 1.0 Mbf	-- --	7.0 cords 3.2 Mbf	4.6 cords 5.5 Mbf	14.9 cords 9.7 Mbf
3 - Site Index less than 65	-- --	3.1 cords 0.8 Mbf	-- --	15.4 cords 3.7 Mbf	18.5 cords 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
2013	1.1725	6.67%	0.0782
2012	0.7608	13.33%	0.1014
2011	1.5225	20.00%	0.3045
2010	1.9275	26.67%	0.5141
2009	2.1908	33.33%	0.7302

1.728 %

B. Nonliquidity Rate

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

Year	Rate	W/A %	W/A Rate
2013	0.0733	33.33%	0.0244
2012	0.1292	26.67%	0.0345
2011	0.1817	20.00%	0.0363
2010	0.3200	13.33%	0.0427
2009	0.4308	6.67%	0.0287

0.167 %

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

Year	Rate	W/A %	W/A Rate
2013	2.2758	33.33%	0.7585
2012	2.1600	26.67%	0.5761
2011	2.3883	20.00%	0.4777
2010	2.3233	13.33%	0.3097
2009	1.8783	6.67%	0.1253

2.247 %

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2013	0.708	33.33%	0.2360
2012	0.714	26.67%	0.1904
2011	0.708	20.00%	0.1416
2010	0.708	13.33%	0.0944
2009	0.702	6.67%	0.0468

0.709 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2013	1.500	33.33%	0.5000
2012	1.700	20.00%	0.3400
2011	3.000	6.67%	0.2001
2010	1.500	26.67%	0.4001
2009	2.700	13.33%	0.3599

(1.800) %

TOTAL REQUIRED RATE OF RETURN (REAL)

3.551 %

LESS: PROPERTY TAX COMPONENT

(0.709)

TOTAL DISCOUNT COMPONENT

2.842 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.09%	1.60%

		1.0320	1.0413	1.0507	1.0746
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
		35	45	55	80
Region	\$/MBF				
Region 1	174.89	180.49	182.12	183.76	187.94
Region 2	163.17	168.39	169.92	171.45	175.35
Region 3	226.55	233.79	235.91	238.04	243.45
Region 4	191.24	197.36	199.14	200.94	205.51
Region 5	154.33	159.27	160.70	162.16	165.84

		1.7429	2.0428	2.3942	3.5604
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
		35	45	55	80
Region	\$/Cord				
Region 1	6.11	10.65	12.48	14.63	21.75
Region 2	7.34	12.80	15.00	17.58	26.15
Region 3	7.42	12.93	15.16	17.76	26.42
Region 4	8.62	15.03	17.61	20.64	30.69
Region 5	6.50	11.33	13.28	15.56	23.14

Management Costs:

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

Tax Rates:

Effective Federal Income Tax Rate	35.00%
Effective WV State Income Tax Rate (6.5% * (1-.35))	4.23%
Effective WV Severance Tax Rate (2.78% * (1-.35))	1.81%

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
2013	1.1725	6.67%	0.0782
2012	0.7608	13.33%	0.1014
2011	1.5225	20.00%	0.3045
2010	1.9275	26.67%	0.5141
2009	2.1908	33.33%	0.7302

1.728 %

B. Nonliquidity Rate

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

Year	Rate	W/A %	W/A Rate
2013	0.0733	33.33%	0.0244
2012	0.1292	26.67%	0.0345
2011	0.1817	20.00%	0.0363
2010	0.3200	13.33%	0.0427
2009	0.4308	6.67%	0.0287

0.167 %

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

Year	Rate	W/A %	W/A Rate
2013	2.2758	33.33%	0.7585
2012	2.1600	26.67%	0.5761
2011	2.3883	20.00%	0.4777
2010	2.3233	13.33%	0.3097
2009	1.8783	6.67%	0.1253

2.247 %

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
2013	1.314	33.33%	0.4380
2012	1.326	26.67%	0.3536
2011	1.326	20.00%	0.2652
2010	1.314	13.33%	0.1752
2009	1.308	6.67%	0.0872

1.319 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2013	1.500	33.33%	0.5000
2012	1.700	20.00%	0.3400
2011	3.000	6.67%	0.2001
2010	1.500	26.67%	0.4001
2009	2.700	13.33%	0.3599

(1.800) %

TOTAL REQUIRED RATE OF RETURN (REAL)

4.161 %

LESS: PROPERTY TAX COMPONENT

(1.319)

TOTAL DISCOUNT COMPONENT

2.842 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.09%	1.60%

SAWTIMBER

		1.0320	1.0413	1.0507	1.0746
	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	174.89	180.49	182.12	183.76	187.94
Region 2	163.17	168.39	169.92	171.45	175.35
Region 3	226.55	233.79	235.91	238.04	243.45
Region 4	191.24	197.36	199.14	200.94	205.51
Region 5	154.33	159.27	160.70	162.16	165.84

PULPWOOD:

		1.7429	2.0428	2.3942	3.5604
		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	6.11	10.65	12.48	14.63	21.75
Region 2	7.34	12.80	15.00	17.58	26.15
Region 3	7.42	12.93	15.16	17.76	26.42
Region 4	8.62	15.03	17.61	20.64	30.69
Region 5	6.50	11.33	13.28	15.56	23.14

Management Costs:

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

Tax Rates:

Effective Federal Income Tax Rate	35.00%
Effective WV State Income Tax Rate (6.5% * (1-.35))	4.23%
Effective WV Severance Tax Rate (2.78% * (1-.35))	1.81%

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
2013	19,017.77	177.45	33.33%	59.15
2012	12,628.15	186.56	26.67%	49.75
2011	11,195.24	144.89	20.00%	28.98
2010	15,157.58	173.52	13.33%	23.14
2009	13,311.70	208.09	6.67%	13.88
	71,310.44			174.89

REGION 1 - Pulpwood *

Year	Volume	\$/CORD	W/A%	\$/CORD
2013	6,102.20	2.96	33.33%	0.99
2012	45,387.00	6.42	26.67%	1.71
2011	48.10	9.67	20.00%	1.93
2010	1,859.30	6.90	13.33%	0.92
2009	3,351.10	8.35	6.67%	0.56
	56,747.70			6.11

REGION 2 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2013	25,896.85	177.79	33.33%	59.26
2012	25,640.98	149.01	26.67%	39.74
2011	12,639.41	156.26	20.00%	31.25
2010	56,575.40	163.96	13.33%	21.86
2009	43,105.11	165.92	6.67%	11.06
	163,857.75			163.17

REGION 2 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2013	119,279.40	12.83	33.33%	4.28
2012	22,647.40	2.86	26.67%	0.76
2011	5,235.20	6.78	20.00%	1.36
2010	23,291.90	4.15	13.33%	0.55
2009	6,342.60	5.94	6.67%	0.40
	176,796.50			7.34

REGION 3 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2013	161,397.70	275.63	33.33%	91.88
2012	111,920.60	201.57	26.67%	53.75
2011	102,218.30	201.45	20.00%	40.29
2010	145,592.20	211.21	13.33%	28.16
2009	136,208.60	187.01	6.67%	12.47
	657,337.40			226.55

REGION 3 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2013	153,197.40	7.78	33.33%	2.59
2012	183,132.60	6.39	26.67%	1.70
2011	159,040.70	7.34	20.00%	1.47
2010	123,858.50	9.34	13.33%	1.25
2009	206,464.40	6.14	6.67%	0.41
	825,693.60			7.42

REGION 4 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2013	12,820.20	211.47	33.33%	70.49
2012	4,808.73	193.47	26.67%	51.59
2011	15,517.51	178.40	20.00%	35.68
2010	24,125.85	167.02	13.33%	22.27
2009	15,403.79	168.15	6.67%	11.21
	72,676.08			191.24

REGION 4 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2013	15,488.60	8.32	33.33%	2.77
2012	7,382.20	9.61	26.67%	2.56
2011	21,074.10	8.64	20.00%	1.73
2010	26,223.70	5.93	13.33%	0.79
2009	9,678.90	11.49	6.67%	0.77
	79,847.50			8.62

REGION 5 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2013	31,859.00	198.20	33.33%	66.07
2012	10,887.05	138.63	26.67%	36.97
2011	24,760.43	122.43	20.00%	24.49
2010	56,603.00	143.15	13.33%	19.09
2009	49,494.92	115.82	6.67%	7.72
	173,604.40			154.33

REGION 5 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2013	18,292.60	7.13	33.33%	2.38
2012	8,296.30	6.93	26.67%	1.85
2011	6,432.30	6.26	20.00%	1.25
2010	19,223.30	4.06	13.33%	0.54
2009	281,600.40	7.23	6.67%	0.48
	333,844.90			6.50

COAL PROPERTIES ANALYSIS

Tax Year 2015

August 29, 2014
Mark W. Matkovich
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.

<u>Safe Rate</u> 90 day Treasury Bills			<u>Safe Rate</u>
January	December	2013	0.058%
January	December	2012	0.086%
January	December	2011	0.053%

<u>Risk Rate</u> Interest differential between Loan Rate and 90 day Treasury Bills			
<u>Loan Rate*</u>		<u>Debt Risk Rate</u>	
2013	5.25%	5.192%	
2012	5.25%	5.164%	
2011	5.25%	5.197%	
*Prime plus 2%			

<u>Equity</u> Differential between Equity Rates and 90 day Treasury Bills			
<u>Equity Rate**</u>		<u>Equity Risk Rate</u>	
2013	[13.25%/(1-.30)]-0.058	18.871%	
2012	[13.25%/(1-.30)]-0.086	18.843%	
2011	[13.25%/(1-.30)]-0.053	18.876%	
** 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>
2013	11.322%	2.077%	13.399%
2012	11.306%	2.066%	13.372%
2011	11.325%	2.079%	13.404%
Note: Debt Equity Ratio Debt 40% Equity 60%			

<u>Non Liquidity Rate</u> Interest differential between a 90 day Treasury Bill 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	2013		0.132%	0.058%	0.074%
January	December	2012		0.175%	0.086%	0.089%
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>Inflation Rate</u>			
January	December	2013	1.500%
January	December	2012	1.700%
January	December	2011	3.000%

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.

	<u>2013</u>	<u>2012</u>	<u>2011</u>
Inflation Rate	-1.500%	-1.700%	-3.000%
Safe Rate	0.058%	0.086%	0.053%
Composite Risk Rate	13.399%	13.372%	13.404%
Non Liquidity Rate	0.074%	0.089%	0.129%
Management Rate	0.500%	0.500%	0.500%
Total	12.531%	12.347%	11.086%

Three Yr Average: 11.988 Rounded to: **12.00%**

<u>CAPITALIZATION RATE - 12.0%</u>			
<u>MULTIPLIERS:</u>	<u>%</u>	<u>%</u>	<u>%</u>
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. Coal lease rates have been derived from transaction information provided by county assessors, tax auditors, producers, 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 CY2013 FOR TY2015 APPLICATION

GRAND SUMMARY ALL SOURCES	STEAM SPOT	STEAM TERM	MET
PSC	\$65.77	\$56.99	
FERC Data	\$55.06	\$65.76	
Coal Market Publication		\$65.86	(SNL ENERGY OTC-CAPP Market Index)
Active Return Summary	\$70.07	10.8 MM tons (S+T)	\$124.24 10.5 MM Tons

STATE STEAM PRICE (SPOT Market)	\$59.64 FERC & PSC, 3 YR AVE
STATE MET PRICE	\$123.29 Active Return, 3 YR AVE

	Spot Sales	Term Sales	Total
2013 PSC Tons reported in millions	6.90	7.60	14.50

COAL TY2015 ROYALTY RATES	2013		2012		2011		2010		2009	
	1YR		2YR		3YR		4YR		5YR	
	%S	%D	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	1,354	599	1,908	2,756	1,677	2,241	2,448	3,197	2,528	2,823
SUM of PERCENT	8,087.34	3,313.93	11,881.66	14,663.03	8,924.28	11,181.05	14,406.71	16,405.76	14,922.03	14,006.00
STRAIGHT AVERAGE	5.97	5.53	6.23	5.32	5.32	4.99	5.89	5.13	5.90	4.96
MEDIAN	5.00	5.00	6.00	5.13	5.00	5.00	5.22	5.00	4.39	5.06
WEIGHTED AVERAGE	6.58	5.84	6.45	6.28	6.27	5.72	6.24	5.66	5.31	5.21
TENTATIVE RATE DEEP (%)	5.74									
TENTATIVE RATE SURFACE (%)	6.17									

ROYALTY RATE CALCULATIONS	
Steam Coal/ Deep Mine	\$59.64 per ton X 5.74% = \$3.42 per ton
Metallurgical Coal/ Deep Mine	\$123.29 per ton X 5.74% = \$7.08 per ton
Steam Coal/ Surface Mine	\$59.64 per ton X 6.17% = \$3.68 per ton
Metallurgical Coal/ Surface Mine	\$123.29 per ton X 6.17% = \$7.61 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 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 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 have been revised for Tax Year 2015. 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 2015

August 29, 2014
Mark W. Matkovich
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 Rate	90 day Treasury Bills	Safe Rate
January	December 2013	0.058%
January	December 2012	0.086%
January	December 2011	0.053%

Risk Rate	Interest differential between Loan Rate and 90 day Treasury Bills		
Loan Rate*		Debt Risk Rate	
2013	5.25%	5.192%	
2012	5.25%	5.164%	
2011	5.25%	5.197%	
	*Prime plus 2%		

Equity	Differential between Equity Rates and 90 day Treasury Bills		
Equity Rate**		Equity Risk Rate	
2013	$[11.75\%/(1-.30)]-0.086$	16.728%	
2012	$[11.75\%/(1-.30)]-0.086$	16.700%	
2011	$[12.0\%/(1-.30)]-0.053$	17.090%	
	** Value Line Investment Survey Analysis		

Composite Risk Rate	Loan and Equity Rates weighted by industry estimated capital structure.			
	Equity Rate	Debt Rate	Composite Risk	
2013	10.037%	2.077%	12.114%	
2012	10.020%	2.066%	12.086%	
2011	10.254%	2.079%	12.333%	
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.

			1yr T Bill	90 d T Bill	Non Liquidity Rate
January	December	2013	0.132%	0.058%	0.074%
January	December	2012	0.175%	0.086%	0.089%
January	December	2011	0.182%	0.053%	0.129%

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

Inflation Rate			
January	December	2013	1.500%
January	December	2012	1.700%
January	December	2011	3.000%

Property Tax Rate Sixty percent (60%) of State average Class III property tax rate.

January	December	2013	60% of 2.190 =	1.314%
January	December	2012	60% of 2.210 =	1.326%
January	December	2011	60% of 2.210 =	1.326%

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.

	2013	2012	2011
Inflation Rate	-1.500%	-1.700%	-3.000%
Safe Rate	0.058%	0.086%	0.053%
Composite Risk Rate	12.114%	12.086%	12.333%
Non Liquidity Rate	0.074%	0.089%	0.129%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.326%	1.326%
Total	12.560%	12.387%	11.341%

Three Yr Average: 12.096% Rounded to: **12.10%**

CAPITALIZATION RATE - 12.10%

MULTIPLIERS:	%	%
1YR	0.944	9YR 5.620
2YR	1.787	10YR 5.958
3YR	2.539	11YR 6.259
4YR	3.209	12YR 6.528
5YR	3.807	13YR 6.768
6YR	4.341	14YR 6.982
7YR	4.817	15YR 7.173
8YR	5.241	

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	TY2015 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