



STATE OF WEST VIRGINIA
Department of Revenue
State Tax Department

Earl Ray Tomblin
Governor

Mark W. Matkovich
State Tax Commissioner

June 30, 2015

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

FILED
2015 JUN 30 P 1:58
OFFICE WEST VIRGINIA
SECRETARY OF STATE

Dear Secretary Tennant:

Attached are tentative natural resource property valuation variables for the 2016 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.

The State Tax Department will accept written public comments on all variables until August 1, 2015. Final valuation variables will be filed on or before September 1, 2015.

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

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

Sincerely,


Mark W. Matkovich
State Tax Commissioner

MWM/ja/j

Attachment

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OFFICE WEST VIRGINIA
SECRETARY OF STATE

OIL AND GAS PROPERTIES ANALYSIS

Tax Year 2016

June 30, 2015
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

OIL AND GAS

TY 2016

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 2014 **0.033%**

Risk Rate (Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)

<u>Loan Rate*</u>		<u>Risk Rate</u>
2014	5.250%	5.217%

 *Prime plus 2%

Equity (Differential between Equity Rates and 3-Month Constant Maturity Interest Rates)

<u>Equity Rate**</u>		<u>Risk Rate</u>
2014	[11.5%/(1-.37)]-0.033%	18.221%

 ** Value Line Investment Survey Analysis

Composite Risk Rate Loan and Equity Rates weighted by industry estimated capital structure.

	<u>Equity Rate</u>	<u>Debt Rate</u>		<u>Composite Risk</u>	
2014	11.8436%	1.826%		14.389%	***

 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.

			<u>1yr T Bill</u>	<u>90 day T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2014	0.121%	0.033%	0.088%

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.

2014	60% of 2.19	1.314%
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Inflation Rate
 January December 2014 **0.760%**

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>2014</u>	<u>2013</u>	<u>2012</u>
Inflation Rate	-0.760%	-1.500%	-1.700%
Safe Rate	0.033%	0.058%	0.086%
Composite Risk Rate	14.389%	14.634%	14.605%
Non Liquidity Rate	0.088%	0.074%	0.089%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.326%
Total	15.564%	15.080%	14.906%
	50.000%	33.333%	16.667%
	7.782%	5.027%	2.484%
			15.293%

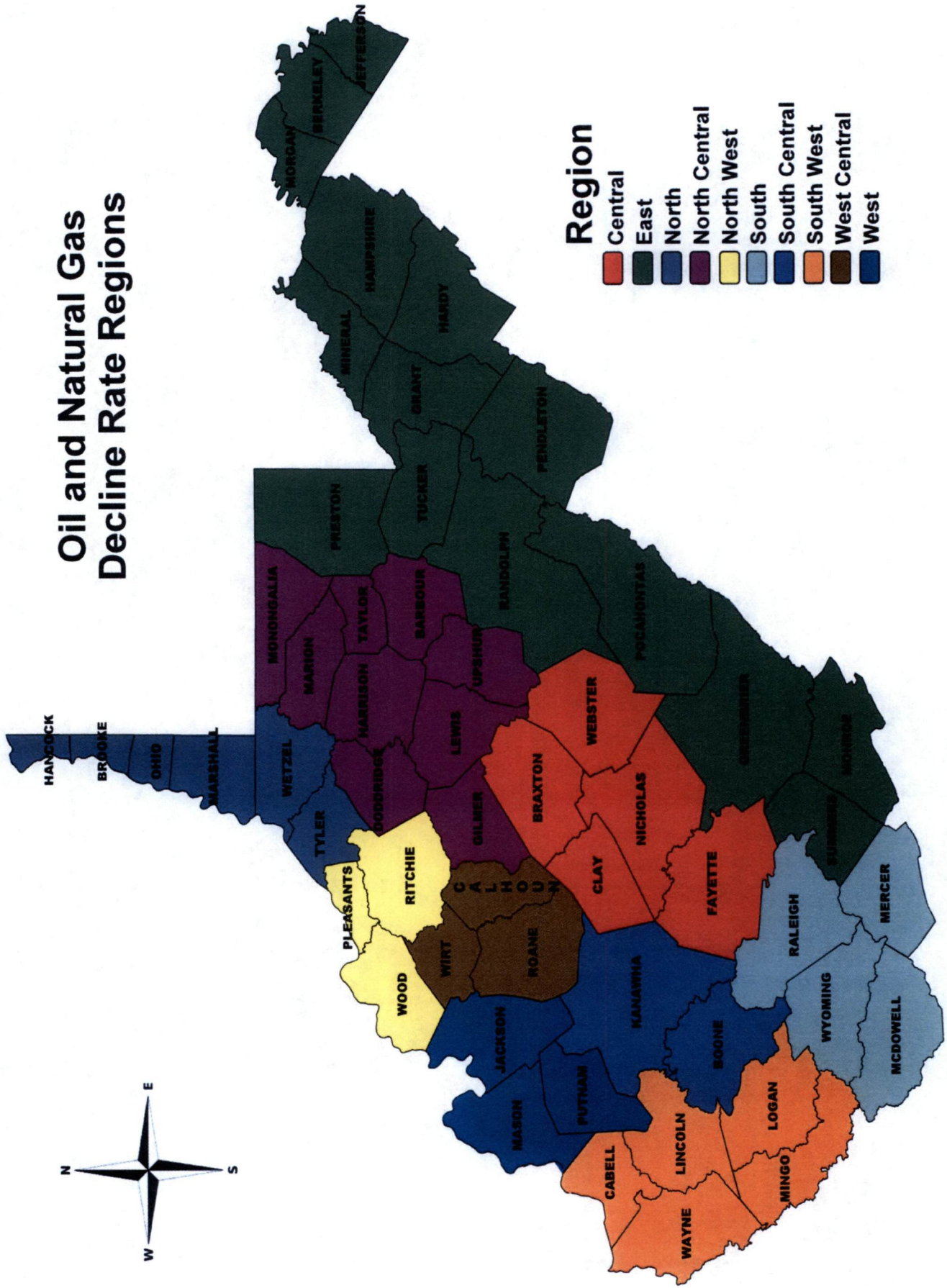
Capitalization Rate Rounded to:

15.30%

MULTIPLIERS FOR 15.3% MID-YEAR LIFE (ANNUALLY)

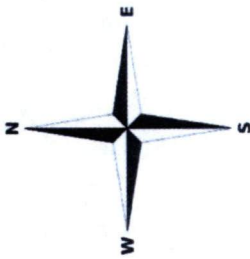
<u>YEAR</u>		<u>YEAR</u>	
1	0.931291	21	0.054013
2	0.807711	22	0.046846
3	0.700530	23	0.040629
4	0.607572	24	0.035238
5	0.526948	25	0.030562
6	0.457024	26	0.026507
7	0.396378	27	0.022989
8	0.343780	28	0.019939
9	0.298161	29	0.017293
10	0.258596	30	0.014998
11	0.224281	31	0.013008
12	0.194519	32	0.011282
13	0.168707	33	0.009785
14	0.146320	34	0.008486
15	0.126904	35	0.007360
16	0.110064	36	0.006384
17	0.095459	37	0.005536
18	0.082792	38	0.004802
19	0.071806	39	0.004165
20	0.062277	40	0.003612

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, Haverty	-0.36	-0.21	-0.15
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
110	Marcellus	-0.59	-0.22	-0.17
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 \$ 4.39/MCF
BBL usage X \$93.26/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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
CLAY	8	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
DODDRIDGE	9	1	\$60.00
		2	\$60.00
		3	\$60.00
		4	\$60.00
		5	\$60.00
		6	\$60.00
		7	\$60.00
		8	\$60.00
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$10.00
		4	\$1.00
		5	\$10.00
GREENBRIER	13	1	\$1.00
		2	\$1.00
		3	\$10.00
		4	\$10.00
		5	\$1.00
		6	\$10.00
		7	\$10.00
		8	\$10.00
		9	\$10.00
		10	\$1.00
		11	\$10.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$10.00
		17	\$1.00
		18	\$10.00
HAMPSHIRE	14	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$5.00
		6	\$1.00
		7	\$5.00
		8	\$1.00
		9	\$5.00
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
HARDY	16	1	\$1.00
		2	\$10.00
		3	\$10.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
HARRISON	17	1	\$60.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$60.00
		6	\$1.00
		7	\$60.00
		8	\$1.00
		9	\$60.00
		10	\$1.00
		11	\$60.00
		12	\$60.00
		13	\$1.00
		14	\$60.00
		15	\$60.00
		16	\$1.00
		17	\$1.00
		18	\$60.00
		19	\$1.00
		20	\$60.00
		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 2016					
COUNTY	CO #	DISTRICT #	TY2016 \$/AC		
KANAWHA	20	1	\$30.00		
		2	\$30.00		
		3	\$30.00		
				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	\$30.00
				16	\$30.00
				17	\$1.00
				18	\$1.00
				19	\$30.00
				20	\$1.00
				21	\$1.00
				22	\$1.00
				23	\$30.00
				24	\$30.00
				25	\$30.00
				26	\$1.00
				27	\$1.00
				28	\$30.00
				29	\$1.00
				30	\$1.00
				31	\$1.00
LEWIS	21	1	\$30.00		
		2	\$30.00		
		3	\$30.00		
		4	\$30.00		
		5	\$1.00		
		6	\$30.00		
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$55.00
		2	\$55.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$55.00
		10	\$1.00
		11	\$55.00
		12	\$55.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$55.00
		17	\$1.00
		18	\$55.00
		19	\$55.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
MARSHALL	25	1	\$50.00
		2	\$1.00
		3	\$50.00
		4	\$50.00
		5	\$50.00
		6	\$1.00
		7	\$50.00
		8	\$1.00
		9	\$50.00
		10	\$1.00
		11	\$1.00
		12	\$50.00
		13	\$50.00
		14	\$50.00
		15	\$50.00
		16	\$1.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
MASON	26	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$25.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$25.00
		15	\$25.00
		16	\$25.00
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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
MINERAL	29	1	\$10.00
		2	\$1.00
		3	\$1.00
		4	\$10.00
		5	\$1.00
		6	\$10.00
		7	\$1.00
		8	\$10.00
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
		7	\$10.00
		8	\$1.00
		9	\$10.00
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	\$15.00
		6	\$1.00
		7	\$15.00
		8	\$1.00
		9	\$15.00
OHIO	35	1	\$1.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$35.00
		7	\$1.00
		8	\$35.00
		9	\$35.00
		10	\$35.00
PENDLETON	36	1	\$1.00
		2	\$10.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$10.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$10.00
		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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/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	\$40.00
		2	\$1.00
		3	\$40.00
		4	\$1.00
		5	\$40.00
		6	\$1.00
		7	\$40.00
		8	\$1.00
		9	\$1.00
		10	\$40.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
ROANE	44	1	\$30.00
		2	\$30.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
		7	\$30.00
		8	\$1.00
		9	\$30.00
SUMMERS	45	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$10.00
		6	\$1.00
		7	\$1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
		3	\$55.00
		4	\$55.00
		5	\$55.00
		6	\$55.00
		7	\$55.00
TUCKER	47	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$1.00

OIL & GAS RESERVE RATES FOR TY 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
TYLER	48	1	\$55.00
		2	\$55.00
		3	\$1.00
		4	\$55.00
		5	\$55.00
		6	\$55.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$55.00
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	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
		11	\$1.00
		12	\$20.00
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 2016			
COUNTY	CO #	DISTRICT #	TY2016 \$/AC
WETZEL	52	1	\$55.00
		2	\$55.00
		3	\$55.00
		4	\$55.00
		5	\$55.00
		6	\$1.00
		7	\$1.00
		8	\$55.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$55.00
		13	\$1.00
WIRT	53	1	\$30.00
		2	\$30.00
		3	\$30.00
		4	\$1.00
		5	\$30.00
		6	\$30.00
		7	\$30.00
		8	\$30.00
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 2016

June 30, 2015
Mark W. Matkovich
State Tax Commissioner
Department of Revenue

MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2016

(based on market 2010-2014)

Rates Per Acre

Class II Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$200	\$140	\$50
Region 2	\$200	\$140	\$50
Region 3	\$280	\$185	\$50
Region 4	\$265	\$180	\$55
Region 5	\$210	\$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	\$165	\$75
Region 4	\$235	\$160	\$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
2014	1.6410	26.67%	0.4377
2013	1.1725	13.33%	0.1563
2012	0.7608	6.67%	0.0507
2011	1.5225	20.00%	0.3045
2010	1.9275	33.33%	0.6424

1.592 %

B. Nonliquidity Rate

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

Year	Rate	W/A %	W/A Rate
2014	0.0883	33.33%	0.0294
2013	0.0733	26.67%	0.0195
2012	0.1292	20.00%	0.0258
2011	0.1817	13.33%	0.0242
2010	0.3200	6.67%	0.0213

0.120 %

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

Year	Rate	W/A %	W/A Rate
2014	1.6992	33.33%	0.5663
2013	2.2758	26.67%	0.6070
2012	2.1600	20.00%	0.4320
2011	2.3883	13.33%	0.3184
2010	2.3233	6.67%	0.1550

2.079 %

D. Management Factor of 0.5%

0.500 %

E. Property Tax Component

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2014	0.714	33.33%	0.2380
2013	0.708	26.67%	0.1888
2012	0.714	20.00%	0.1428
2011	0.708	13.33%	0.0944
2010	0.708	6.67%	0.0472

0.711 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2014	0.760	33.33%	0.2533
2013	1.500	26.67%	0.4001
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001
2010	1.500	20.00%	0.3000

(1.380) %

TOTAL REQUIRED RATE OF RETURN (REAL)

3.622 %

LESS: PROPERTY TAX COMPONENT

(0.711)

TOTAL DISCOUNT COMPONENT

2.911 %

Stumpage Prices:

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.00%	1.86%

		1.0000	1.0000	1.0000	1.0000
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
	Region	35	45	55	80
	Region 1	174.30	174.30	174.30	174.30
	Region 2	169.80	169.80	169.80	169.80
	Region 3	248.26	248.26	248.26	248.26
	Region 4	231.30	231.30	231.30	231.30
	Region 5	195.10	195.10	195.10	195.10

		1.9060	2.2917	2.7555	4.3681
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
	Region	35	45	55	80
	Region 1	5.62	10.72	12.89	15.49
	Region 2	6.85	13.06	15.71	18.89
	Region 3	6.14	11.71	14.08	16.93
	Region 4	8.41	16.03	19.27	23.17
	Region 5	6.46	12.31	14.80	17.79

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	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
2014	1.6410	26.67%	0.4377
2013	1.1725	13.33%	0.1563
2012	0.7608	6.67%	0.0507
2011	1.5225	20.00%	0.3045
2010	1.9275	33.33%	0.6424

1.592 %

B. Nonliquidity Rate

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

Year	Rate	W/A %	W/A Rate
2014	0.0883	33.33%	0.0294
2013	0.0733	26.67%	0.0195
2012	0.1292	20.00%	0.0258
2011	0.1817	13.33%	0.0242
2010	0.3200	6.67%	0.0213

0.120 %

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

Year	Rate	W/A %	W/A Rate
2014	1.6992	33.33%	0.5663
2013	2.2758	26.67%	0.6070
2012	2.1600	20.00%	0.4320
2011	2.3883	13.33%	0.3184
2010	2.3233	6.67%	0.1550

2.079 %

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
2014	1.314	33.33%	0.4380
2013	1.314	26.67%	0.3504
2012	1.326	20.00%	0.2652
2011	1.326	13.33%	0.1768
2010	1.314	6.67%	0.0876

1.318 %

F. Inflation Rate:

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2014	0.760	33.33%	0.2533
2013	1.500	26.67%	0.4001
2012	1.700	13.33%	0.2266
2011	3.000	6.67%	0.2001
2010	1.500	20.00%	0.3000

(1.380) %

TOTAL REQUIRED RATE OF RETURN (REAL)

4.229 %

LESS: PROPERTY TAX COMPONENT

(1.318)

TOTAL DISCOUNT COMPONENT

2.911 %

Stumpage Prices:

		<u>Sawtimber</u>	<u>Pulpwood</u>		
Stumpage Price Adjustment Factor		0.00%	1.86%		
		1.0000	1.0000	1.0000	1.0000
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	174.30	174.30	174.30	174.30	174.30
Region 2	169.80	169.80	169.80	169.80	169.80
Region 3	248.26	248.26	248.26	248.26	248.26
Region 4	231.30	231.30	231.30	231.30	231.30
Region 5	195.10	195.10	195.10	195.10	195.10
		1.9060	2.2917	2.7555	4.3681
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	5.62	10.72	12.89	15.49	24.56
Region 2	6.85	13.06	15.71	18.89	29.94
Region 3	6.14	11.71	14.08	16.93	26.84
Region 4	8.41	16.03	19.27	23.17	36.73
Region 5	6.46	12.31	14.80	17.79	28.20

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	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		Yield - MBF	Yield - Cords
Productivity Grades	Site Index		
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
2014	12,162.06	176.34	33.33%	58.78
2013	19,017.77	177.45	26.67%	47.32
2012	12,628.15	186.56	20.00%	37.31
2011	11,195.24	144.89	13.33%	19.32
2010	15,157.58	173.52	6.67%	11.57
	70,160.80			174.30

REGION 1 - Pulpwood *

Year	Volume	\$/CORD	W/A%	\$/CORD
2014	464.40	5.40	33.33%	1.80
2013	6,102.20	2.96	26.67%	0.79
2012	45,387.00	6.42	20.00%	1.28
2011	48.10	9.67	13.33%	1.29
2010	1,859.30	6.90	6.67%	0.46
	53,861.00			5.62

REGION 2 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2014	22,001.80	182.47	33.33%	60.82
2013	25,896.85	177.79	26.67%	47.41
2012	25,640.98	149.01	20.00%	29.80
2011	12,639.41	156.26	13.33%	20.83
2010	56,575.40	163.96	6.67%	10.93
	142,754.44			169.80

REGION 2 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2014	2,168.10	5.04	33.33%	1.68
2013	119,279.40	12.83	26.67%	3.42
2012	22,647.40	2.86	20.00%	0.57
2011	5,235.20	6.78	13.33%	0.90
2010	23,291.90	4.15	6.67%	0.28
	172,622.00			6.85

REGION 3 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2014	91,467.44	280.52	33.33%	93.51
2013	161,397.70	275.63	26.67%	73.50
2012	111,920.60	201.57	20.00%	40.31
2011	102,218.30	201.45	13.33%	26.86
2010	145,592.20	211.21	6.67%	14.08
	612,596.24			248.26

REGION 3 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2014	170,736.30	3.57	33.33%	1.19
2013	153,197.40	7.78	26.67%	2.07
2012	183,132.60	6.39	20.00%	1.28
2011	159,040.70	7.34	13.33%	0.98
2010	123,858.50	9.34	6.67%	0.62
	789,965.50			6.14

REGION 4 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2014	5,020.90	303.89	33.33%	101.30
2013	12,820.20	211.47	26.67%	56.39
2012	4,808.73	193.47	20.00%	38.69
2011	15,517.51	178.40	13.33%	23.79
2010	24,125.85	167.02	6.67%	11.13
	62,293.19			231.30

REGION 4 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2014	7,765.20	8.16	33.33%	2.72
2013	15,488.60	8.32	26.67%	2.22
2012	7,382.20	9.61	20.00%	1.92
2011	21,074.10	8.64	13.33%	1.15
2010	26,223.70	5.93	6.67%	0.40
	77,933.80			8.41

REGION 5 - Sawtimber

Year	Volume	\$/MBF	W/A%	\$/MBF
2014	21,661.40	265.95	33.33%	88.65
2013	31,859.00	198.20	26.67%	52.85
2012	10,887.05	138.63	20.00%	27.73
2011	24,760.43	122.43	13.33%	16.32
2010	56,603.00	143.15	6.67%	9.54
	145,770.88			195.10

REGION 5 - Pulpwood

Year	Volume	\$/CORD	W/A%	\$/CORD
2014	10,191.40	6.19	33.33%	2.06
2013	18,292.60	7.13	26.67%	1.90
2012	8,296.30	6.93	20.00%	1.39
2011	6,432.30	6.26	13.33%	0.83
2010	19,223.30	4.06	6.67%	0.27
	62,435.90			6.46

COAL PROPERTIES ANALYSIS

Tax Year 2016

June 30, 2015
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 2014	0.033%
January	December 2013	0.058%
January	December 2012	0.086%

<u>Risk Rate</u>	Interest differential between Loan Rate and 90 day Treasury Bills		
	<u>Loan Rate*</u>	<u>Debt Risk Rate</u>	
	2014 5.25%	5.217%	
	2013 5.25%	5.192%	
	2012 5.25%	5.164%	
	*Prime plus 2%		

<u>Equity</u>	Differential between Equity Rates and 90 day Treasury Bills		
	<u>Equity Rate**</u>	<u>Equity Risk Rate</u>	
	2014 [14.00%/(1-.30)]-0.033	19.967%	
	2013 [13.25%/(1-.30)]-0.058	18.871%	
	2012 [13.25%/(1-.30)]-0.086	18.843%	
	** 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>
2014	10.982%	2.348%	13.330%
2013	11.322%	2.077%	13.399%
2012	11.306%	2.066%	13.372%
Note: Debt Equity Ratio		Debt 45%	Equity 55%

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.

			<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2014	0.121%	0.033%	0.088%
January	December	2013	0.132%	0.058%	0.074%
January	December	2012	0.175%	0.086%	0.089%

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

<u>Inflation Rate</u>			
January	December	2014	0.760%
January	December	2013	1.500%
January	December	2012	1.700%

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.

	<u>2014</u>	<u>2013</u>	<u>2012</u>
Inflation Rate	-0.760%	-1.500%	-1.700%
Safe Rate	0.033%	0.058%	0.086%
Composite Risk Rate	13.330%	13.399%	13.372%
Non Liquidity Rate	0.088%	0.074%	0.089%
Management Rate	0.500%	0.500%	0.500%
Total	13.191%	12.531%	12.347%

Three Yr Average: 12.690 Rounded to: **12.70%**

<u>CAPITALIZATION RATE - 12.7%</u>			
<u>MULTIPLIERS:</u>	<u>%</u>	<u>%</u>	<u>%</u>
1YR	0.942	9YR	5.509
2YR	1.778	10YR	5.830
3YR	2.519	11YR	6.115
4YR	3.177	12YR	6.368
5YR	3.761	13YR	6.592
6YR	4.280	14YR	6.792
7YR	4.739	15YR	6.968
8YR	5.147		

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 CY2014 FOR TY2016 APPLICATION

GRAND SUMMARY ALL SOURCES 2014	STEAM SPOT	STEAM TERM	MET
PSC	\$63.58	\$56.85	
FERC	\$58.77	\$62.58	
Coal Market Publication		\$57.61 (Platts-CAPP-CSX)	
Active Return Summary		\$58.36 52.7 MM tons	\$103.35 7.6 MM Tons

STATE STEAM PRICE (SPOT Market)	\$60.35 FERC & PSC, 3 YR AVE
STATE MET PRICE	\$124.01 Active Return, 3 YR

2014 WVPSA Tons reported in millions	Spot Sales	Term Sales	Total
	2,170,351	15,503,854	17,674,205

COAL TY2016 ROYALTY RATES	2014 1YR		2013 2YR		2012 3YR		2011 4YR		2010 5YR	
	%S	%D	%S	%D	%S	%D	%S	%D	%S	%D
TOTAL RECORDS	1,447	905	1,354	599	1,908	2,756	1,677	2,241	2,448	3,197
SUM of PERCENT	8,869.07	4,695.25	8,087.34	3,313.93	11,881.66	14,663.03	8,924.28	11,181.05	14,406.71	16,405.76
STRAIGHT AVERAGE	6.13	5.19	5.97	5.53	6.23	5.32	5.32	4.99	5.89	5.13
MEDIAN	6.00	5.00	5.00	5.00	6.00	5.13	5.00	5.00	5.22	5.00
WEIGHTED AVERAGE(by Mineac)	6.94	5.49	6.58	5.84	6.45	6.28	6.27	5.72	6.24	5.66
TENTATIVE RATE DEEP (%)	5.80									
TENTATIVE RATE SURFACE (%)	6.50									

ROYALTY RATE CALCULATIONS					
Steam Coal/ Deep Mine	\$60.35	per ton X	5.80%	=	\$3.50 per ton
Metallurgical Coal/ Deep Mine	\$103.35	per ton X	5.80%	=	\$5.99 per ton
Steam Coal/ Surface Mine	\$60.35	per ton X	6.50%	=	\$3.92 per ton
Metallurgical Coal/ Surface Mine	\$103.35	per ton X	6.50%	=	\$6.71 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 >= 20 Then TransFactor = 20

If Trans_Ct < 20 And Trans_Ct >= 10 Then TransFactor = 40

Else TransFactor = 80

Market Mineability Factor

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

Radius = 2.5 miles

Surface Mines: Smine

Deep Mines: 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 < 5 Then WellFactor = 0

WellDensity >= 5 And WellDensity < 10 Then WellFactor = 20

WellDensity >= 10 And WellDensity < 20 Then WellFactor = 40

WellDensity > 20 Then WellFactor = 80

Environmental Factor

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

Envrate <= 10 and Null Then EnvFactor = 0

Envrate > 10 and Envrate <= 30 Then EnvFactor = 20

Envrate > 30 and Envrate < 60 Then EnvFactor = 40

Envrate >= 60 Then EnvFactor = 80

**OTHER MINED MINERAL
PROPERTY ANALYSIS**

Tax Year 2016

June 30, 2015
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 2014	0.033%
January	December 2013	0.058%
January	December 2012	0.086%

Risk Rate	Interest differential between Loan Rate and 90 day Treasury Bills	Debt Risk Rate
	Loan Rate*	
2014	5.25%	5.217%
2013	5.25%	5.192%
2012	5.25%	5.164%

*Prime plus 2%

Equity	Differential between Equity Rates and 90 day Treasury Bills	Equity Risk Rate
	Equity Rate**	
2014	$[11.75\% / (1 - .30)] - 0.033$	16.753%
2013	$[11.75\% / (1 - .30)] - 0.058$	16.728%
2012	$[11.75\% / (1 - .30)] - 0.086$	16.700%

** Value Line Investment Survey Analysis

Composite Risk Rate	Loan and Equity Rates weighted by industry estimated capital structure.			
	Equity Rate	Debt Rate	Composite Risk	
2014	10.052%	2.087%	12.139%	
2013	10.037%	2.077%	12.114%	
2012	10.020%	2.066%	12.086%	
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 2014	0.121%	0.033%	0.088%
January	December 2013	0.132%	0.058%	0.074%
January	December 2012	0.175%	0.086%	0.089%

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

Inflation Rate			
January	December 2014	0.760%	
January	December 2013	1.500%	
January	December 2012	1.700%	

Property Tax Rate	Sixty percent (60%) of State average Class III property tax rate.		
January	December 2014	60% of 2.190 =	1.314%
January	December 2013	60% of 2.190 =	1.314%
January	December 2012	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.		
	2014	2013	2012
Inflation Rate	-0.760%	-1.500%	-1.700%
Safe Rate	0.033%	0.058%	0.086%
Composite Risk Rate	12.139%	12.114%	12.086%
Non Liquidity Rate	0.088%	0.074%	0.089%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.314%	1.326%
Total	13.314%	12.560%	12.387%

Three Yr Average: 12.754% Rounded to: **12.80%**

CAPITALIZATION RATE - 12.80%

MULTIPLIERS:	%	%
1YR	0.942	5.491
2YR	1.776	5.809
3YR	2.516	6.092
4YR	3.172	6.342
5YR	3.754	6.564
6YR	4.269	6.761
7YR	4.727	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	TY2016 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