2018 TENTATIVE OIL AND GAS UNIT OF PRODUCTION VALUES

NEW YORK STATE DEPARTMENT OF TAXATION AND FINANCE
OFFICE OF REAL PROPERTY TAX SERVICES
EQUALIZATION VALUATION & CENTRAL SERVICES

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Or on the ORPTS website:
http://www.tax.ny.gov/research/property/valuation/oilgas/index.htm

January 2018

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INTRODUCTION

The purpose of this report is to set forth the methodology and economic profiles used to calculate the tentative unit of production values. These unit values are intended for use with the assessment rolls completed and filed in 2018.

Oil and gas producing properties are real property for taxation purposes, as are wells, pipes, and oil and gas under the land which has not yet been extracted (General Construction Law, Section 39; Real Property Tax Law, Section 102(12)(a),(e)).

Title 5 of Article 5 of the Real Property Tax Law (RPTL) provides a uniform, statewide method of valuing oil and gas producing properties for real property tax purposes. It mandates that oil and gas producing properties in production be assessed separately from all other interests in the property (RPTL, Section 594(1)). Chapter 207 of the Laws of 1986 amended Title 5, Article 5 (Section 592) clarifies the procedures for determining unit of production values. It stipulates that the net cash flow resulting from compiling income and expenses for each economic profile be divided by the discount rate to yield the unit of production value for each economic profile. An average of the net cash flows for each of the five calendar years, preceding the year in which the values are to be certified, results in the appropriate unit of production value. For a more detailed discussion of the methodology, see Section III of this report entitled, "Methodology For Computing Net Cash Flow."

Oil and gas producing properties are to be assessed in terms of economic units. An economic unit is all real property, subject to taxation and assessed pursuant to Title 5, associated with the exercise of oil and gas rights, including the un-extracted oil and gas, oil and gas rights, and any and all wells, equipment, fixtures and pipeline, necessary to drill, mine, operate, develop, extract, produce, collect, deliver or sell the oil or gas to a point of sale, to a commercial purchaser, a pipeline or equipment of a user.

The provisions of Title 5 direct the Commissioner of Taxation and Finance to annually establish unit of production values and certify them to assessors for use in assessing oil and gas economic units. For oil, the unit of production value is a dollar amount per barrel (BBL) of oil produced. For gas, the unit of production value is a dollar amount per 1,000 cubic feet (MCF) of gas produced.

The rules for property tax administration (Title 20 NYCRR chapter XVI, Part 8196), which implement Title 5, require the Commissioner to annually establish tentative unit of production values, provide notice to producers and local assessment officials, and allow producers and assessors an opportunity to comment before final unit of production values are determined.

For gas, to determine which tentative unit of production value applies to a particular economic unit, it is necessary to know in which region the economic unit is drilled. Traditionally, there were six regions including four different Medina regions. Although most counties are wholly within one Medina Formation region, eleven counties (Cattaraugus, Cayuga, Chautauqua, Chenango, Erie, Livingston, Madison, Onondaga,

Ontario, Seneca and Yates) are divided between two Medina regions. An assessing unit may have gas economic units located in only the Medina region, but may also have gas economic units in the Onondaga Reef, Oriskany Sandstone, or other formations. The Trenton-Black River gas field is an underground geological formation stretching from Ontario through New York and Pennsylvania and into West Virginia.

There have been changes to the program this year to allow us to more accurately deliver the values. For both oil and gas, we will be computing one number which will represent all the regions (gas) or well types (oil). This allows us to have more data in our calculations, which gives more accurate results. We are also using historical data to analyze expense ratios. This also helps increase our accuracy in computing a number that is representative of the industry in NY. Due to the fact that we use a 5-year average in our figures, we will still be delivering separate values for oil regions and gas wells for the next few years, but will be moving towards one number for oil and one number for gas.

For oil, there are two classifications that relate to method of extraction. Enhanced recovery wells are all oil wells using secondary recovery methods, including the fluid injection process. Stripper / Other wells are all oil wells utilizing only pumping equipment to recover the oil. The annual production of these fields is typically less than 3,650 barrels per year.

To assess an oil or gas economic unit, the assessor is required to multiply the appropriate final unit of production value by the number of barrels of oil or 1,000 cubic feet (MCF) of gas produced in the production year multiplied by the latest State equalization rate or special equalization rate, except where such rate exceeds or would exceed one hundred. In these cases, a special equalization rate of one hundred will be established for the purpose of determining the valuation of oil and gas economic units. It is necessary to apply an equalization rate because unit of production values are at full or market value.

Chapter 869 of the Laws of 1985 amended Title 5 to provide for the assessment of gas economic units where annual production may be non-existent due to non-connection, non-completion, shut-in or other circumstances which prevent production of oil or gas.

Upon the exercise of gas rights, each gas economic unit is subject to a minimum assessment of two one-year periods based on a minimum annual production equivalent to 2,400,000 cubic feet. Such minimums shall be applied, during the life of the well, in consecutive or non-consecutive years, whenever such well has an annual production of less than 2,400,000 cubic feet. Upon completion of the second year minimum assessment, a gas economic unit shall be assessed on actual measured annual production of gas. No minimum assessment shall be applied to any gas economic unit existing on or before January 1, 1986, and such economic units may be assessed only on actual measured annual production.

Oil economic units are assessed only on the basis of actual measured annual production.

Please contact Valuation Services Bureau at (518) 530-4900 for additional information.

THE TENTATIVE UNIT OF PRODUCTION VALUES

On February 1, 2018, six tentative unit of production values were established for use in computing the assessment of oil and gas economic units. Following a hearing and a review of comments, the Commissioner will establish final unit of production values and certify them to assessors. To assess an economic unit, the assessor is required to multiply the appropriate certified unit of production value by the annual amount of production from the economic unit, and by the latest State equalization rate or special equalization rate, except where such rate exceeds or would exceed one hundred, a special equalization rate of one hundred will be established for purposes of determining the valuation of oil and gas economic units.

The 2018 tentative gas unit of production values and the 2017 final gas unit of production values are as follows:

Gas Economic Profile	2018 Tentative Gas Unit of Production Value *	2017 Final Gas Unit of Production Value	2016 Final Gas Unit of Production Value
All Medina	$1.77	$1.22	$1.82
Upper Devonian **	$2.76	$0.00	NA
Trenton Black River	$1.65	$0.95	$1.37
All Other Formations	$2.76	$3.85	$5.54

***** These 2018 roll tentative unit of production values are based on calendar year 2012 - 2016 income and expense data.

** Upper Devonian contains the following formations: Glade, Bradford first, second, and third, Chipmunk, Harrisburg Run, Scio, Penny, Richburg, Humphrey, Clarksville, Waugh & Porter, Fulmer Valley, and Nunda.

The changing values are attributable to several factors including variations in sale price, expenses, overriding royalty, discount rate, new methodology, and the five-year average which is used to compute the final unit of production value.

The 2018 tentative oil unit of production values and the 2017 final oil unit of production values are as follows:

Oil Economic Profile	2018 Tentative Oil Unit of Production Value**	2017 Final Oil Unit of Production Value	2016 Final Oil Unit of Production Value
Stripper/Other	$91.21	$104.55	$124.73
Enhanced Recovery	$24.66	$13.56	$30.01

**These 2018 roll tentative unit of production values are based on calendar year 2012 - 2016 income and expense data.

METHODOLOGY FOR COMPUTING NET CASH FLOW

Net cash flow is an income capitalization method of valuation. The statutorily mandated procedure for determining net cash flow is to deduct from gross income the operating expenses, landowner royalty payments, and other costs, if any, such as overriding royalty interests not retained by the owner of the working interest, dry hole costs, additional capital investment required, depletion and depreciation. In determining the unit of production values, the minimum discount rate is derived from the average of the sum of the discount rates established by the United States Federal Reserve Board on the first business day of each month for the preceding five calendar years. In addition, a factor of seventeen and one-half percent is added to the Federal Reserve Discount Rate to develop the interest rate to apply to the net cash flow to account for risk, non-liquidity, management, intangible drilling cost, real property and income taxes.

Net cash flow methodology is applied to the average of typical income, expense and operating data for the five calendar years by the three steps outlined as follows:

Step I **Net Cash Flow:**

Gross Income
- Royalty
- Overriding royalty interests
= Producer's Gross Income
- Operating Expenses
- dry hole costs
- depreciation
- depletion
= NET CASH FLOW

Step II **Discount Rate:** Five years' average rate for U.S. Federal Reserve
\+ .1750 Representing risk, non-liquidity, management, intangible drilling cost, real property and income taxes
= TOTAL DISCOUNT RATE

Step III **Process:** Net cash flow divided by the yearly average discount rate equals the one-year unit of production value. The average of this years' and the preceding four years' cash flows results in the unit of production value. A separate unit of production value is calculated for the six gas and oil formations in this report.

Samples of the procedure to calculate an assessment of oil and gas well economic unit are as follows:

Selected Unit of Production Value (x) Annual Production (x) the Equalization Rate (=) the Assessed Value

An assessed value of a gas economic unit located in Medina Region is calculated as follows:

The gas unit of production value for Medina Region, at $1.77 per MCF of gas, (x) the annual production of 6,000 MCF for a gas economic unit, (x) the equalization rate of .80, (=) the assessed value $8,496.

An assessed value of an oil economic unit for an Enhanced Recovery Well is calculated as follows:

The oil unit of production value for enhanced recovery wells at $24.68 per barrel of oil, (x) the annual production of 500 barrels of oil for an oil economic unit, (x) the equalization rate of .80, (=) the assessed value of $9,872.

ECONOMIC PROFILES-GAS

There are four economic profiles used for establishing unit of production values for gas. The following is a brief discussion of the significant characteristics of each economic profile.

Medina Regions

The State has been divided into four (4) Medina regions and an economic profile has been developed to represent all regions. A significant portion of the gas wells in New York State are drilled in and produce gas from the Medina rock formation, including the sub formations of Grimsby, Whirlpool and Queenston.

The Medina formation is present at different elevations with well depths ranging from 1,000 feet deep at the northwestern section of western New York to 4,000 feet or more at the southern boundary of the State.

Upper Devonian

The upper Devonian region contains the formations of Glade, Bradford first, second, and third, Chipmunk, Harrisburg Run, Scio, Penny, Richburg, Humphrey, Clarksville, Waugh & Porter, Fulmer Valley, and Nunda.

Trenton Black River

Wells drilled in the Trenton Black River Formation are referred to as deep wells. They are wells drilled 5,280 feet deep or more. They generally produce large amounts of gas initially and are expected to be very productive for a number of years. The average productive life of the wells has yet to be determined. These wells are located mainly in Cortland, Chemung, Schuyler, Steuben, and Tompkins Counties.

All Other Formations

A tentative unit of production value has been established for wells in gas producing formations other than those described above. The unit of production values for these wells is calculated with this economic profile regardless of where they occur in the State.

ECONOMIC PROFILES-OIL

There are two unit of production values for oil wells. These economic profiles are a reflection of production type and amount rather than location.

The two oil production types result in varying operating expenses that yield oil economic profiles by two production methods. A brief discussion of the production types is as follows:

1. ***Enhanced Recovery Wells*** represent all oil wells using secondary recovery methods, including the fluid injection process.

2. ***Stripper Wells*** represent oil wells utilizing only pumping equipment to recover the oil. The annual production of this field is typically less than 3,650 barrels per year.

COMPANY REPORTS

The oil and gas companies were requested to file reports containing information for various operating and geological conditions as related to field, formation and economic unit. See Table 1 for a copy of the company economic profile form, RP-7019.

Gas and Oil Company Reports

The yearly number of gas and oil economic profile reports received from companies, with yearly production and the number of wells are as follows:

Summary of Economic Profile Reports

Gas	**2012**	**2013**	**2014**	**2015**	**2016**
Companies Reporting No. of Reports Submitted No. of Wells Submitted	26 157 5,320	26 85 5,623	26 59 5,766	25 52 4,764	19 63 5,189
Production Reported (MMCF)[1] Percent of NYS Production[2]	19,159 72.5%	21,714 92%	17,520 86%	15,414 86%	11,747 87%
Production of Mandated Reporters (MMCF) Reporting Percentage of Mandated[3]	25,536 72.5%	20,891 96%	17,020 100%	15,543 89.37%	9,629 97%

Oil	**2012**	**2013**	**2014**	**2015**	**2016**
Companies Reporting No. of Reports No. of Wells	28 37 1,573	26 40 1,670	25 28 1,614	31 47 2,219	21 37 1,655
Production Reported (BBL)[1] Percent of NYS Production[2]	210,447 53.33%	279,336 74%	210,837 59%	208,152 73%	115,425 52%
Production of Mandated Reporters Reporting Percentage of Mandated[3]	334,080 54.11%	339,691 82.2%	330,652 64%	267,752 74.40%	220,901 53%

[1] The total annual production from all company reports received as of December 31, 2016. The 2016 reports were not received from 9 mandated oil companies and from 0 mandated gas companies.
[2] Total NYS production per NY DEC was 13,446 MMCF of gas and 220,901 BBL of oil. This does not include tax-exempt oil and gas wells.
[3] Reported production from mandated companies received, expressed as a percent of the estimated production of all mandated companies.

ELEMENTS OF THE GAS ECONOMIC PROFILES

Operating Gross Income

The gross income is the revenue generated from the sale of the gas by the producer to the purchaser, either under contract or on the open market.

The Sales Price is computed using the Gross Income divided by production.

The operating gross income is the revenue generated from the sale of the gas minus royalty payments.

From all of the reported sale prices, the representative average sale price for each of the five-year period was determined as follows:

	2012	**2013**	**2014**	**2015**	**2016**
Average Sale Price -All Wells	$3.21	$3.32	$3.77	$2.09	$1.66

It should be noted that a typical gas lease includes a one-eighth royalty payment to the owner of the land; this yields a seven-eighths remaining working interest. Therefore, each of the sales prices for the five year periods are adjusted for a one-eighth royalty to represent the 87.5 percent working interest of the producers.

An overriding royalty is defined as a fractional interest in the gross production of oil and gas under a lease, in addition to the usual royalties paid to the lessor, free of any

expense for exploration, drilling, development, operating, marketing and other costs incidental to the production and sale of oil and gas produced from the lease. It is an interest carved out of the lessee's share of the oil and gas, ordinarily called the working interest, as distinguished from the owner's reserved royalty interest. While usage varies, any royalty created out of the working interest in a lease is overriding royalty and many people also refer to any royalty reserved by the lessor in addition to the usual one-eighth royalty as overriding royalty.

The following sales prices for each of the five-year periods have been adjusted for the one-eighth royalty, as well as the overriding royalty interest:

	2012	**2013**	**2014**	**2015**	**2016**
Adjusted sales price after royalties - Medina	$2.70	$2.84	$3.20	$1.82	$1.45
Adjusted sales price after royalties - TBR	$2.78	$2.87	$3.26	$1.82	$1.45
Adjusted sales price after royalties – Upper Devonian	$2.71	$2.85	$3.26	$1.82	$1.45
Adjusted sales price after royalties – Other	$2.71	$2.85	$3.26	$1.82	$1.45

Total Operating Expenses and Other Costs

Total Operating Expenses and Other Costs include operating expenses, dry hole costs, abandonment and well plugging costs, depreciation, tangible capital investment, and depletion. Total Operating Expenses and Other Costs for each of the five-year periods are listed below, followed by a brief explanation of each component.

	2012	**2013**	**2014**	**2015**	**2016**
Medina	$2.59	$2.60	$2.59	$1.45	$1.16
Trenton	$2.77	$2.74	$2.55	$1.45	$1.16
Upper Devonian	$1.97	$2.25	$2.73	$1.45	$1.16
Other	$1.97	$2.25	$2.73	$1.45	$1.16

Operating expenses are the costs for labor, fuel, repairs, hauling, supplies, etc., necessary to maintain and operate producing wells plus related facilities on the property used in the production of oil or gas. It does not include depreciation, capital expenditures, or the cost of developing new wells.

Other costs are the costs of operating a well or field which are significant and are normally encountered in the operation of a well or field. These include items such as dry hole costs, abandonment and well plugging costs, depreciation, additional capital investment required, depletion and overriding royalty interests not retained by the owner of the working interest.

Dry hole cost is the cost of drilling dry holes encountered in developing a productive field or an economic unit, and does not allow for the cost of drilling dry holes during

exploration. Another cost, depreciation, is an allowance for the recapture of tangible assets having a useful life of one year or more. Capital investments are a third cost associated with the operation of a well or field. They include tangible and intangible drilling costs having a useful life of more than one year and are necessary to maintain production. The drilling and completion costs of a well are comprised of approximately 20 to 30 percent tangible cost and 70 to 80 percent intangible costs. Finally, depletion is an allowance against income which accounts for the reduction in the value of the oil and gas property as the resource is removed or extracted.

ELEMENTS OF OIL ECONOMIC PROFILES

Operating Gross Income

The gross income is the revenue generated from the sale of the gas by the producer to the purchaser, either under contract or on the open market.

The Sales Price is computed using the Gross Income divided by production.

The operating gross income is the revenue generated from the sale of the gas minus royalty payments.

The average sale prices per barrel of oil are as follows:

2012	2013	2014	2015	2016
$89.42	$94.90	$89.17	$46.88	$40.38

It should be noted that a typical oil lease includes a one-eighth royalty payment (based on the yearly average of reported per barrel sale prices of oil) to the owner of the land. This yields a seven-eighths remaining interest. Overriding royalty interests are also calculated into the operating gross income. Therefore, the price per barrel is adjusted to represent the seven-eighths working interest of the producers, in addition to any overriding royalty as follows:

Production Type	2012	2013	2014	2015	2016
Enhanced Recovery	$78.24	$83.04	$78.02	$41.02	$34.98
Stripper/Other Wells	$77.16	$82.34	$77.06	$41.02	$34.98

Total Operating Expenses and Other Costs

Total Operating Expenses and Other Costs include operating expenses, dry hole costs, abandonment and well plugging costs, depreciation, and depletion. Total Operating Expenses and Other Costs for each of the five-year periods are listed below, followed by a brief explanation of each component.

Production Type	2012	2013	2014	2015	2016
Enhanced Recovery	$76.10	$76.44	$77.90	$35.22	$27.11
Stripper/Other Wells	$48.08	$51.88	$66.70	$35.22	$27.11

Operating expenses are the cost of maintaining the production of oil and do not include depreciation, capital investments or the cost of developing new wells.

Other costs include the cost of operating a well or field which is significant and is normally encountered in the operation of a well or field or an economic unit, and does not allow for the cost of drilling dry holes during exploration. A large majority of companies that reported indicated no costs for dry holes over a series of years.

Depreciation is the capitalized costs incurred for the drilling of the well and related equipment allocated over the estimated life of the well. These costs are classified as long-term investments, and are not charged to current operations. Some examples are casings, wellhead fittings, pumping units, tanks, meters, pipelines and installation, drilling, logging and fracking. Costs that are capitalized should not be duplicated again in operating expenses.

In the case of secondary recovery methods, many of the fields reported were mature and established, and therefore, displayed a small amount of capital investment to maintain the present productions. Depletion is an allowance against income, which accounts for the reduction in the value of the oil or gas property as the resource is removed or extracted.

SUMMARY

Pursuant to Title 5, the Office of Real Property Tax Services established the tentative unit of production values for use in computing the assessment of oil and gas economic units in production for assessment rolls completed in 2018.
For gas, to determine which tentative unit of production value applies to a particular economic unit, it is necessary to know in which region the economic unit is drilled. An assessing unit may have a gas economic unit located in only one Medina region, but may also have gas economic units in the Onondaga Reef, Oriskany Sandstone or other formations.

For oil, it is necessary to determine which oil production type is being used in a particular oil economic unit to determine which tentative oil unit of production value applies to it.

Real Property Tax Laws, Article 5 (section 592), provide that the Commissioner will annually establish tentative unit of production values, provide notice to producers and local assessment officials and allow producers and assessors an opportunity to comment.

Following a hearing and a review of comments, the Commissioner will establish final unit of production values and certify them to assessors for use in the assessment of oil and gas economic units of production.

The methodology to be applied in using certified final unit of production values to determine the assessment of oil and gas economic units of production, is set forth in Article 5, Title 5, as follows:

(1) "No less than 45 days before the applicable date provided by law for the filing of the tentative assessment roll each year, each producer shall submit, to the appropriate assessor, a true and accurate copy of the production report for the production year required to be filed with the Department of Environmental Conservation for each appropriate economic unit."

(2) "Upon receipt of the appropriate final unit of production value certified by the Commissioner, each assessor shall compute and determine the assessing value of oil and gas economic units located in that assessment unit. Except as otherwise provided, economic units shall be assessed as follows:

   (a) multiply the appropriate unit of production value, by
   (b) the amount of production from that economic unit in the production year, by
   (c) the latest State equalization rate or special equalization rate, except where such rate exceeds or would exceed one hundred, a special equalization rate of one hundred will be established for purposes of determining the valuation of oil and gas economic units."

New York State Department of Taxation and Finance
Office of Real Property Tax Services

RP-7019
(4/14)

Oil and Gas Economic Profile Form For the Year Ending December 31, 20____

Producers of more than 1,000 barrels of oil or 200,000 MCFs of gas are required by law to submit this form.

Fill out all information accurately and completely. Attach additional information if necessary.

Section 1: Producer information

Producer name: _____
Address: _____
Representative: _____
Phone number: _____
Email address: _____

Formation*: _____
Average well age: _____
Average well depth: _____
County: _____
Town/City: _____

Section 2: Well type and royalty information

Well type *(mark a box)*:
☐ Oil ☐ Gas ☐ Both**

Production type (for oil wells) *(mark a box)*:
☐ Stripper Wells ☐ Enhanced recovery wells ☐ Both

Gas well royalties:
Land owner royalties: $_____ _____%
Overriding royalties: $_____ _____%
Total royalties: $_____ _____%

Oil well royalties:
Land owner royalties: $_____ _____%
Overriding royalties: $_____ _____%
Total royalties: $_____ _____%

Section 3: Production and income information

Gas wells:
Total number of wells reported on this form: _____
Total production of wells (MCFs): _____
Total gross income: $_____

Oil wells:
Total number of wells reported on this form: _____
Total production of wells (barrels): _____
Total gross income: $_____

Section 4: Expense information

Gas wells:
Total operating expenses (IOEs): $_____
Depreciation: $_____
Depletion: $_____
Dry hole costs: $_____
Reserve for abandonment: $_____

Oil wells:
Total operating expenses (IOEs): $_____
Depreciation: $_____
Depletion: $_____
Dry hole costs: $_____
Reserve for abandonment: $_____

* If drilling in Medina, please indicate which Medina region. For a breakdown, go to *www.tax.ny.gov/research/property/valuation/oilgas/index.htm*, or call the number below.
** If your wells are producing both gas and oil, separate the expenses, income and royalties.

Certification

I _____ (Name), _____ (Title) of _____ (Company name)

certify that the above information for the calendar year of 20____ is true to the best of my knowledge and belief.

_____ (Signature) _____ (Date)

Mail to: NYS TAX DEPARTMENT
ORPTS OIL AND GAS UNIT
W A HARRIMAN CAMPUS
ALBANY NY 12227

If you have any questions regarding this form or the program, call (518) 530-4049.

Computation of the Discount Rate
For the Valuation of Gas and Oil Wells
In New York State

Average Yearly Discount Rates as established by the U.S. Federal Reserve

Month	2012	2013	2014	2015	2016
January	.75	.75	.75	.75	1
February	.75	.75	.75	.75	1
March	.75	.75	.75	.75	1
April	.75	.75	.75	.75	1
May	.75	.75	.75	.75	1
June	.75	.75	.75	.75	1
July	.75	.75	.75	.75	1
August	.75	.75	.75	.75	1
September	.75	.75	.75	.75	1
October	.75	.75	.75	.75	1
November	.75	.75	.75	.75	1
December	.75	.75	.75	.87	1.14
Annual	***.75***	***.75***	***.75***	***.76***	***1.012***

Statute Factor

Representing risk, non-liquidity, management, intangible drilling cost, real property and income taxes of 17.5% (RPTL Title 5, Section 592).

Total Overall Discount Rates by Year

The discount rate is derived from a sum of the average of the discount rates established by the U. S. Federal Reserve Board on the first business day of each month for each of the five calendar years upon which the economic profiles are based and that preceding the year in which the unit of production values are to be certified plus a factor of seventeen and one-half percent.

	2012	2013	2014	2015	2016
Annual Averages	.0075	.0075	.0075	.0076	.0101
Statute Factor	+.1750	+.1750	+.1750	+.1750	+.1750
Total Overall Discount Rates	.1825	.1825	.1825	.1826	.1851

The final discount rate of .1830 is computed by taking the average of the total overall discount rates for the period of 2012-2016.

2018 UNIT OF PRODUCTION VALUE MEDINA

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$3.21	$3.32	$3.77	$2.09	$1.66
Royalty (12.5%)	-	$0.40	$0.42	$0.47	$0.26	$0.21
Overriding Royalty	-	$0.11	$0.06	$0.10	$0.00	$0.00
Operating Gross Income	=	$2.70	$2.84	$3.20	$1.82	$1.45
Operating Expenses	-	$2.18	$2.13	$1.93	$1.18	$0.94
Non-Operating Expenses (15% of OGI)	-	$0.41	$0.47	$0.66	$0.27	$0.22
Total Expenses	=	$2.59	$2.60	$2.59	$1.45	$1.16
Net Cash Flow		$0.11	$0.24	$0.61	$0.37	$0.29
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$0.59	$1.32	$3.34	$2.03	$1.58
Medina Unit of Production Value ((Columns E+F+G+H+I) / 5) =						$1.77

2018 UNIT OF PRODUCTION VALUE TRENTON BLACK RIVER

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$3.21	$3.32	$3.77	$2.09	$1.66
Royalty (12.5%)	-	$0.40	$0.42	$0.47	$0.26	$0.21
Overriding Royalty	-	$0.03	$0.03	$0.04	$0.00	$0.00
Operating Gross Income	=	$2.78	$2.87	$3.26	$1.82	$1.45
Operating Expenses	-	$2.35	$2.31	$2.06	$1.18	$0.94
Non-Operating Expenses (15% of OGI)	-	$0.42	$0.43	$0.49	$0.27	$0.22
Total Expenses	=	$2.77	$2.74	$2.55	$1.45	$1.16
Net Cash Flow		$0.01	$0.13	$0.71	$0.37	$0.29
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$0.05	$0.71	$3.89	$2.03	$1.58

Trenton Black River Unit of Production Value ((Columns E+F+G+H+I) / 5) = $1.65

2018 UNIT OF PRODUCTION VALUE UPPER DEVONIAN

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$3.21	$3.32	$3.77	$2.09	$1.66
Royalty (12.5%)	-	$0.40	$0.42	$0.47	$0.26	$0.21
Overriding Royalty	-	$0.10	$0.05	$0.04	$0.00	$0.00
Operating Gross Income	=	$2.71	$2.85	$3.26	$1.82	$1.45
Operating Expenses	-	$1.56	$1.51	$1.97	$1.18	$0.94
Non-Operating Expenses (15% of OGI)	-	$0.41	$0.74	$0.76	$0.27	$0.22
Total Expenses	=	$1.97	$2.25	$2.73	$1.45	$1.16
Net Cash Flow		$0.74	$0.60	$0.53	$0.37	$0.29
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$4.00	$3.30	$2.91	$2.03	$1.58
Upper Devonian of Production Value ((Columns E+F+G+H+I) / 5) =						$2.76

2018 UNIT OF PRODUCTION VALUE OTHER GAS

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$3.21	$3.32	$3.77	$2.09	$1.66
Royalty (12.5%)	-	$0.40	$0.42	$0.47	$0.26	$0.21
Overriding Royalty	-	$0.10	$0.05	$0.04	$0.00	$0.00
Operating Gross Income	=	$2.71	$2.85	$3.26	$1.82	$1.45
Operating Expenses	-	$1.56	$1.51	$1.97	$1.18	$0.94
Non-Operating Expenses (15% of OGI)	-	$0.41	$0.74	$0.76	$0.27	$0.22
Total Expenses	=	$1.97	$2.25	$2.73	$1.45	$1.16
Net Cash Flow		$0.74	$0.60	$0.53	$0.37	$0.29
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$4.00	$3.30	$2.91	$2.03	$1.58

OTHER Unit of Production Value ((Columns E+F+G+H+I) / 5) = $2.76

2018 UNIT OF PRODUCTION VALUE STRIPPER / OTHER

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$89.42	$94.90	$89.17	$46.88	$40.38
Royalty (12.5%)	-	$11.18	$11.86	$11.15	$5.86	$5.05
Overriding Royalty	-	$1.08	$0.70	$0.96	$0.00	$0.35
Operating Gross Income	=	$77.16	$82.34	$77.06	$41.02	$34.98
Operating Expenses	-	$36.51	$39.53	$55.14	$29.07	$21.86
Non-Operating Expenses (15% of OGI)	-	$11.57	$12.35	$11.56	$6.15	$5.25
Total Expenses	=	$48.08	$51.88	$66.70	$35.22	$27.11
Net Cash Flow		$29.08	$30.46	$10.36	$5.80	$7.87
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$157.02	$167.45	$56.80	$31.78	$43.00

Stripper / Other of Production Value ((Columns E+F+G+H+I) / 5) = $91.21

2018 UNIT OF PRODUCTION VALUE ENHANCED RECOVERY

Reporting Year:		2012	2013	2014	2015	2016
Gross Income		$89.42	$94.90	$89.17	$46.88	$40.38
Royalty (12.5%)	-	$11.18	$11.86	$11.15	$5.86	$5.05
Overriding Royalty	-	$0.00	$0.00	$0.00	$0.00	$0.35
Operating Gross Income	=	$78.24	$83.04	$78.02	$41.02	$34.98
Operating Expenses	-	$64.36	$63.98	$66.20	$29.07	$21.86
Non-Operating Expenses (15% of OGI)	-	$11.74	$12.46	$11.70	$6.15	$5.25
Total Expenses	=	$76.10	$76.44	$77.90	$35.22	$27.11
Net Cash Flow		$2.14	$6.60	$0.12	$5.80	$7.87
Final Capitalization Rate		0.1852	0.1819	0.1824	0.18252	0.1830
Unit Of Production Value	=	$11.56	$36.28	$0.66	$31.78	$43.00

Enhanced Recovery Unit of Production Value ((Columns E+F+G+H+I) / 5) = $24.66