

COMBINED OIL AND NATURAL GAS PRODUCTION TAX

Revenue Description

Montana taxes the gross value of oil and natural gas production. Tax rates depend on the type of production, with incentives for new production, horizontal wells, secondary and tertiary production, and stripper wells. Working interest owners, who share in a well's costs, pay lower rates than royalty recipients, who do not share in a well's costs. Revenues are distributed to a variety of state and local accounts. On average, about 43% of revenue from the oil and natural gas production tax is deposited in the general fund.

Historical and Projected Revenue

Table 1 shows actual general fund revenue from the oil and gas production tax for FY 1994 through FY 2004 and forecasts for FY 2005 through FY 2007.

Table 1				
Combined Oil and Natural Gas Production Tax - General Fund Collections				
(\$ millions)				
Fiscal Year	Total Collections	General Fund	Percent Change	
A 1994	\$40.871	\$12.289	-34.20%	
A 1995	\$34.704	\$12.964	5.49%	
A 1996	\$40.826	\$10.666	-17.73%	
A 1997	\$50.150	\$13.283	24.54%	
A 1998	\$35.709	\$9.120	-31.34%	
A 1999	\$30.447	\$7.506	-17.70%	
A 2000	\$43.773	\$11.363	51.39%	
A 2001	\$92.396	\$25.792	126.99%	
A 2002	\$50.304	\$12.902	-49.97%	
A 2003	\$73.389	\$29.086	125.43%	
A 2004	\$92.676	\$41.324	42.07%	
F 2005	\$135.244	\$58.296	41.07%	
F 2006	\$135.770	\$58.505	0.36%	
F 2007	\$137.347	\$59.182	1.16%	

General fund receipts from the oil and natural gas tax averaged \$12.9 million for FY 1994 through FY 2002. Receipts in FY 2001 were higher primarily because they included about \$6 million in back taxes from previous years.

General fund revenue in FY 2003 and FY 2004 was \$29.1 million and \$41.3 million respectively. There are two reasons for this higher general fund revenue. One is the change in the tax distribution due to HB 748 passed by the 2003 legislature. Before HB 748, the share of oil and natural gas tax the state returned to the counties was distributed in proportion to mill levies. Because the state levies 95 mills to support schools, part of the state's share of oil and natural gas tax was paid to the state as non-levy property tax revenue. Beginning with calendar year 2003, rather than send this revenue to the county for the county to return to the state when the mill levy distribution is made, the state's general fund share of the oil and natural gas tax is deposited directly in the general fund. This deposit is made under the oil and natural gas tax category rather than under the property tax revenue category, as was done previously when it was categorized as non-levy revenue. Second, HB 10 passed by the 2002 special session temporarily reallocated all but \$400,000 of the state's share of oil and natural gas tax that is normally allocated for resource indemnity to the general fund.

In FY 2005 through FY 2007, collections are projected to be higher than in FY 2004 due to higher prices and production.

Forecast Methodology and Projection Calculation

The five steps to estimate oil and natural gas production tax general fund revenue are:

- 1) Estimate average price by product and category of well;
- 2) Estimate production by product and category of well;
- 3) Estimate the taxable value of production by product, category of well, and type of ownership interest;
- 4) Estimate tax liability by product, category of well, and type of ownership interest; and
- 5) Allocate revenue between the general fund and other funds.

Prices

Oil and gas prices vary across the North American market depending on the chemical characteristics of the oil or natural gas and the cost of getting it to market. Prices in all parts of the continent move together, and *Montana prices generally follow national trends very closely*. Prices are forecast for each of the twenty categories of oil and gas production defined in the law. The actual average price for each category in FY 2003 was calculated from tax returns. The price for each category was then forecast by applying national price changes to these baseline prices.

Table 2 shows actual annual average prices for FY 2003 and FY 2004 along with forecasts through FY 2007.

The second column shows spot and futures prices for the standard New York Mercantile Exchange contract for West Texas Intermediate crude oil.

The third column shows average Montana wellhead oil prices. For FY 2003 and FY

2004, this is the actual average calculated from tax returns. For FY 2005 through FY 2007, this column shows the average of the forecasts of Montana wellhead prices for the fourteen oil production categories. The dollar values of regional differences in oil prices are relatively constant because they reflect differences in transportation costs and oil quality. Therefore, the forecast assumes that Montana oil prices will change by the same amount each year as the price of West Texas Intermediate. The change in the average Montana price is slightly different from the change in the price of West Texas Intermediate because prices vary across categories, and the mix of production among categories is changing over time.

The average price of West Texas Intermediate was \$9.02 higher in FY 2003 than the average over the previous ten fiscal years. The West Texas Intermediate price also averaged \$3.84 higher in FY 2004 than in FY 2003. Oil prices are expected to peak in FY 2005 and then decline slightly. Higher oil prices are due to growing world demand, particularly in developing countries, and a weaker dollar, which makes all imports more expensive.

The fourth column shows spot and futures prices for the standard New York Mercantile Exchange contract for natural gas of standard heat content delivered at the Henry Hub in Louisiana. The fifth column shows average Montana wellhead natural gas prices. For FY 2003 and FY 2004, this is the actual average calculated from tax returns. For FY 2005 through FY 2007, it shows the average of the forecasts of Montana prices for the six natural gas production categories. Regional differences in natural gas prices generally are relatively constant in percentage terms. This is because they reflect differences in transportation costs that are partly paid in kind. Montana prices for each production category are forecast to change by the same percentage as the Henry Hub price.

Natural gas prices are projected to increase in FY 2005 and then decline slightly. Oil and natural gas prices tend to move together. Many large energy users can burn either fuel, so that growth in energy demand translates into growth in demand for both natural gas and oil.

Table 2 Oil and Natural Gas Prices				
<u>Fiscal Year</u>	<u>West Texas Intermediate, \$/bbl</u>	<u>Montana Average Oil Price, \$/bbl</u>	<u>Henry Hub Gas Price, \$/mcf</u>	<u>Montana Average Gas Price, \$/mcf</u>
A 2003	\$29.91	\$27.27	\$4.78	\$3.26
A 2004	\$33.75	\$29.76	\$5.47	\$4.05
F 2005	\$46.52	\$42.78	\$7.09	\$5.23
F 2006	\$41.48	\$36.93	\$6.82	\$5.01
F 2007	\$39.03	\$34.39	\$6.18	\$4.52

Production

Oil production in Montana peaked in 1968 and is now approximately one-fourth its peak level. Oil production decreased every fiscal year from 1987 through 2000 but has increased slightly since then in response to higher prices.

Natural gas production showed no consistent trend from 1970 through about 1997. Natural gas production in 1998 was slightly higher than previous peaks in 1973 and 1981, and new production records were set in FY 2000, FY 2001, FY 2002, and FY 2004. Production in FY 2003 was slightly lower than in FY 2002.

For tax purposes, oil and natural gas production in Montana is divided into 20 categories depending on the product, year of initial production, the well's average daily output, and the drilling and production technologies used. Production is forecast separately for each category. Actual production numbers were obtained from tax returns. These numbers were used as a baseline; with future production projected using estimated prices and recent production trends.

Table 3 shows actual oil and natural gas production through FY 2004 and forecast production through FY 2007. In any year, new wells begin producing and production from old wells declines.

Over the forecast period, total production is predicted to grow because new production is expected to be greater than the decline in production from old wells.

Table 3		
Oil and Natural Gas Production		
Fiscal Year	Oil Production (bbl)	Gas Production (mcf)
A 2001	15,735,738	71,504,569
A 2002	16,602,797	79,606,968
A 2003	17,619,494	78,768,600
A 2004	20,981,872	84,631,718
F 2005	24,898,259	95,104,127
F 2006	28,456,238	104,056,224
F 2007	31,478,351	111,708,332

New Production

New production is forecast based on projected prices and recent drilling activity. Drilling in Montana in 2003 and 2004 has been higher than in any of the previous ten years. The number of drilling rigs operating in Montana increased by 75% from 2002 to 2003; and, through September, has increased 50% in 2004. With both oil and natural gas prices high and expected to remain high for the next several years, the current pace of drilling is likely to continue.

The forecast assumes that new natural gas and oil production will increase by 20% in FY 2005, and remain constant in FY 2006 and FY 2007.

Old Production

There are four reasons why production in the old production categories changes from year to year. First, for most old production categories, wells move into the category from one or more other categories every year. For example, last year's new production wells move into an old production category.

Second, the output of individual wells changes from year to year. In normal operation, output from an individual well declines over time as the stock of recoverable hydrocarbons in the reservoir is extracted and as removal of fluids through the well causes underground pressure to decrease. In addition, well operators generally have some flexibility to adjust production in response to price movements. They can slow or even temporarily stop production when prices are low and expected to rise. In some cases, they can increase production to take advantage of high prices.

Third, some wells move from one old production category to another every year. As an individual oil well's output declines over time, it will move into new categories as its daily production falls below thresholds of 15 and three barrels per day.

Finally, some wells cease production each year. As production from a well declines over time, its cost per unit of production rises, and eventually it becomes unprofitable. Some wells reach this point every year. In a year when prices are low and expected to remain low, more wells will be taken out of production than usual.

Annual production for each of the old production categories is estimated as a percentage of the previous year's production, which reflects declining production from individual wells already in the category and movement of wells *to* other categories; plus a percentage of the previous year's production in one or more other categories, which reflects wells moving *into* the category *from* other categories.

For example, in the category of stripper wells producing between three and 15 barrels per day, wells already in that category are producing less oil due to depletion, and some wells are moving out of this category into the category of wells producing less than three barrels per day. In addition, wells that previously had been producing more than 15 barrels per day are moving into this category.

Taxable Value

The gross value of production for each well category is calculated by multiplying production by the average price. The gross value is shared between working interest owners and royalty recipients. Working interest owners are partners in a production unit's operations. They pay a share of the costs and keep a share of the revenues. Royalty owners receive royalty payments based on production but do not share in operating costs. Royalty payments to the federal government and Indian tribes are not taxed.

Taxable value is then calculated for working interest owners and royalty owners. For each well category, the percentage of the gross value of production paid to working

interest owners, taxable royalty recipients, and tax-exempt royalty recipients was calculated for the period 2001 through 2003 from tax returns. Working interest owners received 85.3% of the gross value from oil wells. Taxable royalties were 11.1% of gross value, and exempt royalties were 3.6%. For natural gas wells, 84.5% of gross value went to working interest owners, 10.9% was paid in taxable royalties, and 4.6% was paid in exempt royalties. For each succeeding year, gross revenues were allocated to the three groups of recipients in the same proportions.

Table 4					
Gross and Taxable Value of Oil and Natural Gas Production					
(\$ millions)					
Fiscal Year	Product	-----Taxable Value-----			
		Gross Value	Working Interest	Taxable Royalty	Exempt Royalty
A 2003	Oil	\$480.496	\$409.848	\$53.578	\$17.078
A 2004	Oil	\$624.483	\$532.812	\$73.533	\$20.708
F 2005	Oil	\$1,065.169	\$907.416	\$121.773	\$35.981
F 2006	Oil	\$1,053.781	\$897.539	\$121.347	\$34.895
F 2007	Oil	\$1,088.393	\$927.002	\$125.580	\$35.812

A 2003	Gas	\$256.604	\$217.416	\$27.414	\$11.870
A 2004	Gas	\$342.904	\$291.338	\$35.591	\$16.244
F 2005	Gas	\$496.941	\$418.918	\$55.937	\$22.086
F 2006	Gas	\$521.025	\$438.834	\$59.338	\$22.853
F 2007	Gas	\$505.294	\$425.312	\$58.033	\$21.948

Table 4 shows the allocation of gross value to working interests and royalty recipients. The projected gross value of oil production to increase in FY 2005, decrease slightly in FY 2006, and increase in FY 2007. The gross value of gas production is projected to increase in FY 2005 and FY 2006, and then decline slightly in FY 2007.

Tax Liability

Table 5 shows tax rates for oil and gas production. For tax purposes, there are 14 categories of oil production and six categories of natural gas production. Oil and gas tax rates are in two parts, a base rate and an additional rate to fund the Board of Oil and Gas Conservation. The Board reduced its rate from 0.3% to 0.26% on July 1, 2001.

Table 5			
Oil and Natural Gas Tax Rates			
Product	Well Category	Working Interest	Royalties
Oil	New Vertical 0-12 Months	0.76%	15.06%
	Post 99 Regular	9.26%	15.06%
	Pre 99 Regular	12.76%	15.06%
	Stripper	5.76%	15.06%
	Stripper 10-15 Bbl/D	9.26%	15.06%
	Stripper Exemption	0.76%	15.06%
	Horizontal 0-18 Months	0.76%	15.06%
	Pre 99 Horizontal	12.76%	15.06%
	Post 99 Horizontal	9.26%	15.06%
	Horizontal Recomp 0-18 Months	5.76%	15.06%
	Pre 99 Horizontal Recompleted	12.76%	15.06%
	Post 99 Horizontal Recompleted	9.26%	15.06%
	Incremental Secondary	8.76%	15.06%
	Incremental Tertiary	6.06%	15.06%
Gas	New Vertical 0-12 Months	0.76%	15.06%
	Post 99 Regular	9.26%	15.06%
	Pre 99 Regular	15.06%	15.06%
	Pre 99 Stripper	11.26%	15.06%
	Horizontal 0-18 Months	0.76%	15.06%
	Horizontal Regular	9.26%	15.06%

Royalties are taxed at a rate of 15.06% regardless of the type of well. Working interest rates depend on the type of well and its age. Wells with higher costs or where production is more sensitive to cost are taxed at rates lower than regular production. New production is taxed at the lowest rates.

In any quarter when the average price of West Texas Intermediate is greater than \$30, the two incremental oil production categories and oil production from stripper wells producing more than three barrels per day are taxed as regular production. If the average price of West Texas Intermediate is greater than \$38 for a quarter, oil from stripper wells producing three barrels per day or less (stripper exemption) is taxed as regular production. The price of West Texas Intermediate is expected to be above \$38 through FY 2007.

Tax liability for working interest owners and royalty owners is estimated for each production category by multiplying the projected taxable value by the tax rate. Table 6 shows the average tax rates for oil and natural gas and taxes for each fiscal year from FY 2003 through FY 2007.

Table 6							
Average Tax Rates and Taxes							
FY 2003 through FY 2007							
Fiscal Year	Product	-----Working Interest-----			-----Royalties-----		
		Taxable Value (\$ millions)	Average Tax Rate	Tax (\$ millions)	Taxable Value (\$ millions)	Average Tax Rate	Tax (\$ millions)
A 2003	Oil	\$409.848	8.12%	\$33.270	\$53.578	15.06%	\$8.069
A 2004	Oil	\$532.812	6.93%	\$36.925	\$73.533	14.71%	\$10.817
F 2005	Oil	\$907.416	8.14%	\$73.863	\$121.773	15.06%	\$18.339
F 2006	Oil	\$897.539	8.10%	\$72.666	\$121.347	15.06%	\$18.275
F 2007	Oil	\$927.002	8.11%	\$75.161	\$125.580	15.06%	\$18.912

A 2003	Gas	\$217.416	9.65%	\$20.983	\$27.414	15.06%	\$4.129
A 2004	Gas	\$291.338	8.79%	\$25.609	\$35.591	15.06%	\$5.360
F 2005	Gas	\$418.918	8.26%	\$34.618	\$55.937	15.06%	\$8.424
F 2006	Gas	\$438.834	8.18%	\$35.892	\$59.338	15.06%	\$8.936
F 2007	Gas	\$425.312	8.12%	\$34.533	\$58.033	15.06%	\$8.740

The average tax rates for working interests varies slightly from year to year as the proportion of production from each category of well changes. Taxes on oil are projected to increase over 90% in FY 2005, but remain steady in FY 2006 and FY 2007. Taxes on natural gas are projected to increase almost 40% in FY 2005 and then stabilize.

Allocation of Tax to General Fund

HB 748 passed by the 2003 legislature simplified the distribution of oil and gas tax. The Board of Oil and Gas Conservation receives the revenue raised by the 0.26% tax. The remaining revenue is divided in fixed proportions between the state and the county where the oil or natural gas was produced. The county percentage differs across counties and is based on the actual distribution under the old formula. The county share is allocated among the county, school districts, and countywide school funds in fixed proportions.

Fixed percentages of the state share are allocated to the coal bed methane protection account, the reclamation and development grants account, the orphan share account, and the university system. The remainder is deposited in the general fund.

Table 7 shows allocation percentages of the state's share of the oil and natural gas tax. HB 10 passed by the 2002 special session temporarily reallocated all but \$400,000 of oil and natural gas tax going for resource indemnity to the general fund. This reallocation was for FY 2003 only, and the percentages shown in Table 7 apply beginning in FY 2004.

Table 7	
Allocation of Oil and Natural Gas Revenues	
<u>Entity</u>	<u>Share of Tax</u>
Board of Oil and Gas Conservation	amount collected from 0.26% tax
Counties for County Government and Schools	fixed percentage for each county, average 49.8%
Coal Bed Methane Protection Account	1.23% of remainder after county allocation
Reclamation and Development Grants Account	2.95% of remainder after county allocation
Orphan Share Account	2.95% of remainder after county allocation
University System	2.65% of remainder after county allocation
General Fund	remainder (42.9% on average)

Table 8 shows total tax collections and the allocation of revenue for FY 2004 through FY 2007.

Table 8				
Projected Oil and Natural Gas Tax Revenue by Fund				
(\$ millions)				
<u>Entity</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Board of Oil and Gas Conservation	\$1.906	\$3.911	\$3.944	\$3.993
Counties for County Government and Schools	\$44.964	\$66.719	\$66.978	\$67.756
Coal Bed Methane Protection Account	\$0.563	\$0.795	\$0.798	\$0.807
Reclamation and Development Grants Account	\$1.352	\$1.906	\$1.913	\$1.935
Orphan Share Account	\$1.352	\$1.906	\$1.913	\$1.935
University System	\$1.214	\$1.712	\$1.718	\$1.738
General Fund	\$41.324	\$58.296	\$58.505	\$59.182
Total	<u>\$92.676</u>	<u>\$135.244</u>	<u>\$135.770</u>	<u>\$137.347</u>

Oil and natural gas revenue allocated to these entities is projected to increase substantially in FY 2005. This increase is due primarily to the projected increase in oil and gas prices and secondarily to projected increases in production. Allocations are projected to increase slightly through FY 2007 for all accounts.