

# 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. In FY 2006, about 45% of revenue from the oil and natural gas production tax was 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 1996 through FY 2006 and forecast revenue for FY 2007 through FY 2009.

<b>Table 1</b> <b>Oil and Natural Gas Production Tax Collections</b> <b>(\$ millions)</b>		
Fiscal Year	General Fund	Percent Change
A 1996	\$10.666	-17.73%
A 1997	\$13.283	24.54%
A 1998	\$9.120	-31.34%
A 1999	\$7.506	-17.70%
A 2000	\$11.363	51.39%
A 2001	\$25.792	126.99%
A 2002	\$12.902	-49.97%
A 2003	\$29.086	125.43%
A 2004	\$41.324	42.07%
A 2005	\$62.626	51.55%
A 2006	\$92.563	47.80%
<b>F 2007</b>	<b>\$86.895</b>	<b>-6.12%</b>
<b>F 2008</b>	<b>\$94.080</b>	<b>8.27%</b>
<b>F 2009</b>	<b>\$92.471</b>	<b>-1.71%</b>

Fiscal Year	General Fund Revenue (\$ millions)
1996	10.666
1997	13.283
1998	9.120
1999	7.506
2000	11.363
2001	25.792
2002	12.902
2003	29.086
2004	41.324
2005	62.626
2006	92.563
2007	86.895
2008	94.080
2009	92.471

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 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 (2003 Session). 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 was made, the general fund share of the oil and natural gas tax was 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 (2002 Special Session) temporarily allocated all but \$400,000 of the state's share of oil and natural gas tax to the general fund. The remaining \$400,000 was allocated to the coal bed methane protection account.

In FY 2005 and FY 2006, general fund revenue increased 52% and 48% to \$92.563 million in FY 2006. This increase was due to higher prices and production. In FY 2007, revenue is projected to decrease primarily due to a decrease in natural gas prices. Gas prices are projected to increase in FY 2008 and FY 2009 bringing revenue above \$90 million.

### **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 category of well;
- 2) Estimate production by category of well;
- 3) Estimate the taxable value of production and tax liability by category of well and type of ownership interest;
- 4) Adjust model forecast to actual revenue; and
- 5) Allocate revenue between the general fund and other funds.

The state recognizes several categories of wells and two types of ownership for tax purposes. The well categories are defined by product, age, direction of bore, quantity of production, and whether primary, secondary or tertiary modes of extraction are used. Several of the oil well categories are treated differently when the average price of West Texas Intermediate (WTI) is less than a specific target price.

The two basic groups pay the oil and gas production tax: working owners and royalty owners. Working owners are operators and investors who participate in the cost of producing oil and gas. Owners of oil and gas that do not participate in the cost of production are royalty owners. The "interest" of an owner is the share of the gross value of production distributed to the owner. The tax on working interests varies by well category. The tax on royalty interests is the same for all well categories. The well categories, ownership types, and specific tax rates are summarized in Table 2.

**Table 2**  
**Oil and Natural Gas Tax Rates by Well Category and Interest**

Product	Well Category	Working Interest	Royalty Interest
Gas	New Vertical 0-12 Months -----	0.76%	15.06%
	New Horizontal 0-18 Months -----	0.76%	15.06%
	All Other Post-1999 -----	9.26%	15.06%
	Pre-1999 Regular -----	15.06%	15.06%
	Pre-1999 Stripper -----	11.26%	15.06%
Oil	New Vertical 0-12 Months -----	0.76%	15.06%
	New Horizontal 0-18 Months -----	0.76%	15.06%
	Horizontal Recompletion 0-18 Months -----	5.76%	15.06%
	Post-1999 Regular -----	9.26%	15.06%
	Pre-1999 Regular -----	12.76%	15.06%
	Stripper Exemption (WTI < \$38/bbl) -----	0.76%	15.06%
	Stripper Exemption (WTI > \$38/bbl) -----	6.26%	15.06%
	Stripper (1) -----	5.76%	15.06%
	Stripper (1) 10-15 Bbl/D -----	9.26%	15.06%
	Incremental Secondary (1,2) -----	8.76%	15.06%
	Incremental Tertiary (1,2) -----	6.06%	15.06%

(1) Applies only when average price of WTI < \$30/bbl

(2) Applies only to increment of increased production

The working interest is taxed at 0.76% for natural gas from new wells. The working interest is taxed at 9.26% for natural gas from all other “post-99” wells. Post-99 wells are wells that began production after 1999, or resumed production after 1999 following a five-year break in production. The working interest of the gross value of natural gas production from pre-99 wells is taxed at 11.26% for “strippers” (less than 60,000 cubic feet per day in the previous year) and 15.06% for all other wells.

The working interest on oil from new wells is taxed similar to natural gas. The working interest on oil from horizontal recompletion wells is taxed at 5.76% for 18 months. After this period, the rate reverts to the regular rate of 9.26% if the well is post-99, or 12.76% if the well is pre-99. A horizontal recompletion is a well that has been re-drilled with a horizontal bore.

Stripper exemption or “super stripper” oil is oil from wells on leases that averaged less than three barrels of oil per well per day in the preceding calendar year. The working interest of this production is taxed at 0.76% if the average price of WTI in the current quarter is less than \$38 per barrel. If the average price of WTI is greater than or equal to \$38 per barrel, the working interest of this production is taxed at 6.26%.

Stripper oil is oil from wells on leases that averaged between three and fifteen barrels of oil per well per day in the preceding calendar year. If the average price of WTI in the current quarter is less than \$38 per barrel, the working interest on the first 10 barrels per day is

taxed at 5.76%, and the working interest on greater than ten barrels per day of average production is taxed at 9.26%. If the average price of WTI is greater than or equal to \$30 per barrel, the working interest on all stripper production is taxed at regular pre-99 or post-99 rates, depending on the age of the well.

Incremental secondary and incremental tertiary oil is the increment of oil produced by secondary and tertiary recovery techniques beyond what would be produced using primary extraction methods. Primary methods include the natural pressure of the oil reservoir and artificial lift (pumps). Secondary recovery methods include injection of water or re-injection of natural gas from the well to increase reservoir pressure and enhance production. Tertiary recovery methods include water flooding, carbon dioxide or other miscible fluid displacement, steam injection, in-situ combustion (fire flooding), and other enhanced recovery techniques. If the average price of WTI is less than \$30 per barrel in the current quarter, the working interest on secondary increment is taxed at 8.76%, and the working interest on tertiary increment is taxed at 6.06%. Otherwise, secondary and tertiary increments are taxed as regular pre- or post-99 production.

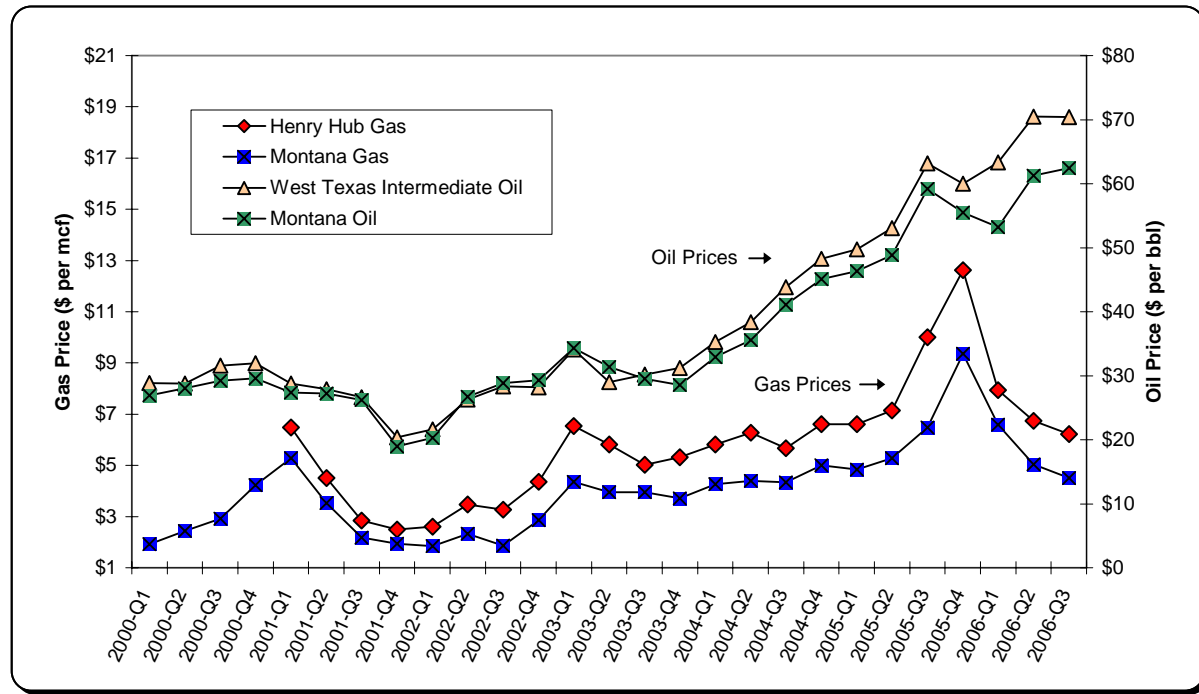
The price of WTI is not projected to drop below \$38 per barrel through FY 2009. In this case, the oil stripper exemption rate on working interest will be 6.26%, and the working interest rates on oil production from stripper wells, secondary increment, and tertiary increment will not apply. To simplify projection of the tax on the working interest, this analysis assumes production will fall into one of nine classes:

- New natural gas
- Other post-99 natural gas (post-99 regular gas)
- Regular pre-99 natural gas
- Stripper pre-99 natural gas
- New oil
- Horizontal recompletion oil
- Regular post-99 oil (includes post-99 stripper and enhanced increment oil)
- Regular pre-99 oil (includes pre-99 stripper and enhanced increment oil)
- Stripper exemption oil

## Prices

Oil and gas prices vary across the North American market depending on the chemical characteristics of the oil or natural gas and the transportation costs. Prices in all parts of the continent move together, and Montana prices generally follow national trends closely. Chart 1 illustrates the relationship between Montana prices and national prices for natural gas and oil in calendar years and quarters.

**Chart 1: National Market and Montana Natural Gas and Oil Prices**



The Montana natural gas and oil prices in Chart 1 are averaged over production categories and weighted by production. Natural gas prices are in dollars per thousand cubic feet (\$/mcf), while oil prices are in dollars per barrel (\$/bbl). The Henry Hub natural gas price is the price of natural gas delivered to Henry Hub, and it is the pricing point for New York Mercantile Exchange (NYMEX) natural gas futures contracts. Prices for West Texas Intermediate oil (WTI) are quoted at Cushing, Oklahoma, a major crude oil shipment point that has extensive pipeline connections to oil producing areas and refining centers in the Southwest and along the Gulf Coast.

Prices are forecast for each of the nine taxation categories of oil and gas production listed previously. The future prices were projected with a statistical model that uses the relationship between Montana prices and the national prices over time. Global Insight's forecast of the Henry Hub price was used to forecast natural gas prices, and the oil prices were projected with Global Insight's WTI price forecast.

Table 3 shows the average annual Henry Hub natural gas price and average annual prices for the natural gas production categories. The Henry Hub price is converted from dollars per million British thermal units (\$/mmBtu) to \$/mcf. Table 3 also shows the average annual price of WTI, along with prices for the five categories of oil production. Actual and projected prices are shown for FY 2003 through FY 2009.

**Table 3  
Oil and Natural Gas Prices**

-----Gas Prices (\$ per mcf)-----							
Production Category	FY 2003 (Actual)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Projected)	FY 2008 (Projected)	FY 2009 (Projected)
<b>Henry Hub Price</b>	<b>\$5.00</b>	<b>\$5.61</b>	<b>\$6.51</b>	<b>\$9.33</b>	<b>\$7.65</b>	<b>\$10.08</b>	<b>\$9.88</b>
New Production	\$3.10	\$4.09	\$4.96	\$7.71	<b>\$5.92</b>	<b>\$8.12</b>	<b>\$7.94</b>
Post-99 Regular	\$3.15	\$3.97	\$4.83	\$6.70	<b>\$5.44</b>	<b>\$7.18</b>	<b>\$7.03</b>
Pre-99 Regular	\$2.94	\$3.97	\$4.71	\$6.36	<b>\$5.29</b>	<b>\$7.02</b>	<b>\$6.89</b>
Pre-99 Stripper	\$3.66	\$4.35	\$4.96	\$6.59	<b>\$5.50</b>	<b>\$7.00</b>	<b>\$6.87</b>
Weighted Avg MT Gas Price	<u>\$3.26</u>	<u>\$4.09</u>	<u>\$4.88</u>	<u>\$6.90</u>	<u><b>\$5.56</b></u>	<u><b>\$7.37</b></u>	<u><b>\$7.22</b></u>
Percentage Change		25.40%	19.41%	41.41%	<b>-19.32%</b>	<b>32.49%</b>	<b>-2.05%</b>
-----Oil Prices (\$ per bbl)-----							
Production Category	FY 2003 (Actual)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Projected)	FY 2008 (Projected)	FY 2009 (Projected)
<b>WTI Price</b>	<b>\$29.91</b>	<b>\$33.75</b>	<b>\$48.74</b>	<b>\$64.26</b>	<b>\$66.19</b>	<b>\$65.62</b>	<b>\$64.16</b>
New Production	\$28.21	\$32.06	\$47.01	\$59.28	<b>\$60.34</b>	<b>\$59.63</b>	<b>\$58.03</b>
Horizontal Recompletion	\$26.81	\$31.10	\$44.28	\$54.09	<b>\$55.92</b>	<b>\$55.28</b>	<b>\$53.85</b>
Post-99 Regular	\$27.46	\$31.56	\$45.92	\$56.90	<b>\$57.52</b>	<b>\$57.08</b>	<b>\$55.55</b>
Pre-99 Regular	\$27.17	\$30.17	\$43.88	\$54.68	<b>\$55.48</b>	<b>\$54.89</b>	<b>\$53.44</b>
Stripper Exemption	\$24.83	\$27.52	\$40.52	\$55.55	<b>\$56.26</b>	<b>\$55.52</b>	<b>\$53.90</b>
Weighted Avg MT Oil Price	<u>\$27.27</u>	<u>\$30.82</u>	<u>\$45.58</u>	<u>\$57.28</u>	<u><b>\$58.29</b></u>	<u><b>\$57.77</b></u>	<u><b>\$56.30</b></u>
Percentage Change		13.02%	47.87%	25.68%	<b>1.76%</b>	<b>-0.89%</b>	<b>-2.54%</b>

The Henry Hub natural gas price is projected to decrease in FY 2007 and then increase in FY 2008. The average Montana price is projected to follow the Henry Hub trend and decrease 20% in FY 2007 and then increase 33% to \$7.37/mcf in FY 2008. Montana natural gas prices are then forecast to decrease slightly in FY 2009 to \$7.22/mcf.

The average Montana price of oil is projected to increase slightly to \$58.29 as the WTI price increases in FY 2007. Prices are forecast to decrease slightly after FY 2007 to \$57.77 in FY 2008 and to \$56.30 in FY 2009.

### Production

Natural gas production increased significantly from FY 1997 through FY 2005. Production increased slightly between FY 2005 and FY 2006. Natural gas production is expected to level off, so production from new wells and post-99 wells are forecast to remain at FY 2006 levels through FY 2009. Production from pre-99 wells has been slowly declining over time and is projected to continue falling through FY 2009. Pre-99 stripper wells have been producing around 20 million mcfs since FY 2000. Production is projected to be the average yearly production since FY 2000 from FY 2007 to FY 2009.

Total natural gas production is projected to remain close to FY 2006 levels while decreasing slightly each year. This is primarily due to the leveling off of new production and the decrease in pre-99 production. As shown in Table 4, total natural gas production is projected to be 103 million mcf in FY 2007, 102 million mcf in FY 2008, and 101 million mcf in FY 2009.

<b>Table 4</b>							
<b>Oil and Natural Gas Production</b>							
-----Gas Production (mcf)-----							
Production Category	FY 2003 (Actual)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007 (Projected)	FY 2008 (Projected)	FY 2009 (Projected)
New Production	12,109,003	20,126,939	24,812,234	26,017,526	<b>26,017,526</b>	<b>26,017,526</b>	<b>26,017,526</b>
Post-99 Regular	28,417,953	30,905,214	37,821,877	48,562,487	<b>48,562,487</b>	<b>48,562,487</b>	<b>48,562,487</b>
Pre-99 Regular	14,402,051	14,690,805	11,859,678	9,931,713	<b>7,591,500</b>	<b>6,791,500</b>	<b>5,991,500</b>
Pre-99 Stripper	23,839,593	19,476,471	21,245,145	20,112,149	<b>20,360,808</b>	<b>20,360,808</b>	<b>20,360,808</b>
Total Production	<u>78,768,600</u>	<u>85,199,429</u>	<u>95,738,933</u>	<u>104,623,876</u>	<u><b>102,532,321</b></u>	<u><b>101,732,321</b></u>	<u><b>100,932,321</b></u>
-----Oil Production (bbl)-----							
Production Category	FY 2003 (Actual)	FY 2004 (Actual)*	FY 2005 (Actual)*	FY 2006 (Projected)	FY 2007 (Projected)	FY 2008 (Projected)	FY 2009 (Projected)
New Production	2,783,643	6,205,691	12,124,920	15,255,905	<b>16,922,437</b>	<b>18,055,612</b>	<b>18,958,456</b>
Horizontal Recompletion	429,273	453,934	349,872	260,601	<b>207,458</b>	<b>141,074</b>	<b>74,690</b>
Post-99 Regular	1,631,154	2,931,114	4,864,690	9,096,785	<b>9,449,511</b>	<b>10,563,111</b>	<b>11,515,605</b>
Pre-99 Regular	12,150,698	11,385,972	10,434,121	9,652,456	<b>9,205,828</b>	<b>8,582,701</b>	<b>7,959,574</b>
Stripper Exemption	626,925	603,920	626,087	649,493	<b>604,883</b>	<b>549,065</b>	<b>487,507</b>
Total Production	<u>17,621,693</u>	<u>21,580,631</u>	<u>28,399,690</u>	<u>34,915,240</u>	<u><b>36,390,117</b></u>	<u><b>37,891,563</b></u>	<u><b>38,995,832</b></u>

Total oil production increased 94.58% from FY 2003 to FY 2005. Production increased slightly in FY 2006 to 35 million bbls. Future oil production was forecast separately for each production type.

New oil production has increased over time and is driven by the price of oil, so production from new oil wells was forecast using the projected Montana oil price in addition to a time trend. Though the price of oil is projected to decrease slightly, new oil production is forecast to increase slightly due to the time trend.

A time trend was also used to forecast production from horizontal recompletion wells and pre-99 regular wells, which tend to decrease over time. Production from both types of wells is projected to decrease through FY 2009.

Post-99 regular oil production was forecast using both a time trend and a forecast of lagged new oil production as predictors. Lagged new oil production is the value of new oil production in the previous quarter. Some portion of new oil production in the previous quarter becomes post-99 regular oil production in the current quarter. Post-99 regular oil production also tends to increase with time, as more wells enter the category. Post-99 regular oil production is forecast to increase from FY 2007 through FY 2009.

Finally, the stripper exemption oil production was forecast using the projected Montana oil price in addition to a time trend, because production has typically been sensitive to the

product price. Stripper exemption production tends to increase with product price, but decrease with time. As the projected price of oil decreases slightly through FY 2009, the stripper exemption production is also forecast to decrease.

Total oil production is forecast to increase yearly from FY 2007 to FY 2009. Production is forecast to be 36 million bbls in FY 2007, 38 million bbls in FY 2008, and 39 million bbls in FY 2009.

Taxable Value and Tax Liability

The gross value of production for each well category is calculated by multiplying production by the average price. Table 5 shows this calculation for the combined categories of production for natural gas and oil.

<b>Table 5</b> <b>Gross Value of Oil and Natural Gas Production</b>							
Fiscal Year	Product	Production		Average Price	=	Gross Value	Percent Change
A 2003	Gas	78,768,600	X	\$3.26	=	\$256,604,119	-----
A 2004	Gas	85,199,429	X	\$4.09	=	\$348,041,580	36%
A 2005	Gas	95,738,933	X	\$4.88	=	\$466,999,654	34%
A 2006	Gas	104,623,876	X	\$6.90	=	\$721,646,482	55%
<b>F 2007</b>	<b>Gas</b>	<b>102,532,321</b>	X	<b>\$5.56</b>	=	<b>\$570,573,987</b>	<b>(21%)</b>
<b>F 2008</b>	<b>Gas</b>	<b>101,732,321</b>	X	<b>\$7.37</b>	=	<b>\$750,034,265</b>	<b>61%</b>
<b>F 2009</b>	<b>Gas</b>	<b>100,932,321</b>	X	<b>\$7.22</b>	=	<b>\$728,914,141</b>	<b>(3%)</b>
*****							
A 2003	Oil	17,621,693	X	\$27.27	=	\$480,553,257	-----
A 2004	Oil	21,580,631	X	\$30.82	=	\$665,160,065	38%
A 2005	Oil	28,399,690	X	\$45.58	=	\$1,294,334,007	95%
A 2006	Oil	34,915,240	X	\$57.28	=	\$1,999,934,579	55%
<b>F 2007</b>	<b>Oil</b>	<b>36,390,117</b>	X	<b>\$58.29</b>	=	<b>\$2,121,140,123</b>	<b>6%</b>
<b>F 2008</b>	<b>Oil</b>	<b>37,891,563</b>	X	<b>\$57.77</b>	=	<b>\$2,189,076,512</b>	<b>3%</b>
<b>F 2009</b>	<b>Oil</b>	<b>38,995,832</b>	X	<b>\$56.30</b>	=	<b>\$2,195,558,103</b>	<b>0%</b>

The gross value of natural gas production increased 55% in FY 2006 due to high prices and increased production. Prices and production are projected to decrease in FY 2007 causing a projected 21% drop in the gross value of natural gas. Gross value is projected to increase 61% in FY 2008 and stay near this level in FY 2009 due to projected increases in price.

The gross value of oil production also increased dramatically in FY 2006 to \$2 billion, a 55% increase from FY 2005. Oil production is projected to increase slightly while oil prices are forecast to decrease slightly, causing the gross values of oil to remain close to FY 2006 levels through FY 2009.



The gross value of production is shared between working interest owners and royalty owners, so the tax liability is projected for both working interest owners and royalty owners.

For each category, the percentage of the gross value of production paid to working interest and royalty interest owners was calculated for the period from FY 2001 through FY 2006 from tax returns. These historical ratios were used to forecast interest percentages for each production type. A weighted average of the projected interest percentages is multiplied by the gross value to forecast working or royalty interest. The projected interests are multiplied by the average tax rate to get the taxable value. The projected working interest percentages and working interest taxable values are shown in Table 6.

<b>Table 6</b>								
<b>Working Interest Taxable Value and Tax Liability</b>								
Natural Gas Working Interest								
Fiscal Year	Gross Value		Working Interest Percentage of Gross Value		Average Working Interest Tax Rate		Working Interest Tax Liability	Percent Change
A 2003	\$256,604,119	X	84.69%	X	9.65%	=	\$20,982,036	-----
A 2004	\$348,041,580	X	84.93%	X	8.72%	=	\$25,780,150	23%
A 2005	\$466,999,654	X	84.64%	X	8.17%	=	\$32,310,448	25%
A 2006	\$721,646,482	X	84.82%	X	7.74%	=	\$47,405,937	47%
<b>F 2007</b>	<b>\$570,573,987</b>	X	<b>84.72%</b>	X	<b>7.76%</b>	=	<b>\$37,523,351</b>	<b>(21%)</b>
<b>F 2008</b>	<b>\$750,034,265</b>	X	<b>84.72%</b>	X	<b>7.61%</b>	=	<b>\$48,360,675</b>	<b>29%</b>
<b>F 2009</b>	<b>\$728,914,141</b>	X	<b>84.71%</b>	X	<b>7.56%</b>	=	<b>\$46,684,411</b>	<b>(3%)</b>
Oil Working Interest								
Fiscal Year	Gross Value		Working Interest Percentage of Gross Value		Average Working Interest Tax Rate		Working Interest Tax Liability	Percent Change
A 2003	\$480,553,257	X	85.29%	X	8.97%	=	\$36,773,939	-----
A 2004	\$665,160,065	X	84.96%	X	8.23%	=	\$46,515,065	26%
A 2005	\$1,294,334,007	X	84.50%	X	6.82%	=	\$74,568,108	60%
A 2006	\$1,999,934,579	X	84.48%	X	6.29%	=	\$106,287,181	43%
<b>F 2007</b>	<b>\$2,121,140,123</b>	X	<b>84.47%</b>	X	<b>5.61%</b>	=	<b>\$100,586,772</b>	<b>(5%)</b>
<b>F 2008</b>	<b>\$2,189,076,512</b>	X	<b>84.37%</b>	X	<b>5.44%</b>	=	<b>\$100,396,752</b>	<b>(0%)</b>
<b>F 2009</b>	<b>\$2,195,558,103</b>	X	<b>84.26%</b>	X	<b>5.28%</b>	=	<b>\$97,712,575</b>	<b>(3%)</b>

The average working interest tax rates decrease each year after FY 2007 for natural gas because of the increased proportion of new production with lower tax rates. The working interest tax liability for natural gas production is forecast to decrease 21% in FY 2007 due to a large decrease in projected gross value. Tax collections are then expected to increase to \$48 million in FY 2008 primarily due to increased prices. Tax liability is projected to decrease 3% in FY 2009.

The working interest tax liability for oil production is forecast to decrease slightly in FY 2007. This is due to decreasing in average tax rates as new wells with lower tax rates increase the proportion of production. Working interest tax liability is forecast to remain near this level though FY 2009.

Table 7 shows the projected gross value of natural gas and oil multiplied by the royalty interest percentage which equals taxable value. This is multiplied by the royalty tax rate of 15.06% to get royalty interest tax liability.

<b>Table 7</b>							
<b>Royalty Interests Taxable Value and Tax Liability</b>							
<b>Natural Gas Royalty Interest</b>							
Fiscal Year	Gross Value		Royalty Interest Percentage of Gross Value		Royalty Tax Rate	Royalty Interest Tax Liability	Percent Change
A 2003	\$256,604,119	X	10.68%	X	15.06% =	\$4,128,504	-----
A 2004	\$348,041,580	X	10.42%	X	15.06% =	\$5,462,839	32%
A 2005	\$466,999,654	X	10.53%	X	15.06% =	\$7,402,613	36%
A 2006	\$721,646,482	X	10.45%	X	15.06% =	\$11,362,384	53%
<b>F 2007</b>	<b>\$570,573,987</b>	X	<b>10.52%</b>	X	<b>15.06% =</b>	<b>\$9,039,849</b>	<b>(20%)</b>
<b>F 2008</b>	<b>\$750,034,265</b>	X	<b>10.53%</b>	X	<b>15.06% =</b>	<b>\$11,893,157</b>	<b>32%</b>
<b>F 2009</b>	<b>\$728,914,141</b>	X	<b>10.53%</b>	X	<b>15.06% =</b>	<b>\$11,558,784</b>	<b>(3%)</b>
<b>Oil Royalty Interest</b>							
Fiscal Year	Gross Value		Royalty Interest Percentage of Gross Value		Royalty Tax Rate	Royalty Interest Tax Liability	Percent Change
A 2003	\$480,553,257	X	11.15%	X	15.06% =	\$8,068,806	-----
A 2004	\$665,160,065	X	11.84%	X	15.06% =	\$11,864,016	47%
A 2005	\$1,294,334,007	X	12.89%	X	15.06% =	\$25,130,522	112%
A 2006	\$1,999,934,579	X	13.09%	X	15.06% =	\$39,434,995	57%
<b>F 2007</b>	<b>\$2,121,140,123</b>	X	<b>13.28%</b>	X	<b>15.06% =</b>	<b>\$42,407,047</b>	<b>8%</b>
<b>F 2008</b>	<b>\$2,189,076,512</b>	X	<b>13.62%</b>	X	<b>15.06% =</b>	<b>\$44,916,422</b>	<b>6%</b>
<b>F 2009</b>	<b>\$2,195,558,103</b>	X	<b>13.99%</b>	X	<b>15.06% =</b>	<b>\$46,252,087</b>	<b>3%</b>

The royalty interest tax liability from natural gas production is projected to decrease 20% in FY 2007 due to the decrease in gross value. As gross value increases in FY 2008, the royalty tax liability also increases and then decreases slightly in FY 2009. The royalty tax for oil production is forecast to increase slightly through FY 2009 due to increases in gross value.

Table 8 shows the projected revenue from the oil and gas production tax by interest type and total tax revenue. Total revenue from the oil and gas production tax is projected to decrease to \$189.557 million in FY 2007. As projected gas prices increase in FY 2008 the total oil and gas revenue is forecast to increase to \$205.567 million. Revenue is projected to decrease slightly to \$202.208 in FY 2009.

<b>Table 8</b> <b>Projected Oil and Gas Production Taxes</b> <b>(\$ millions)</b>							
Product and Interest Category	Actual Revenue				Projected Revenue		
	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Natural Gas Working Interest	\$20.982	\$25.780	\$32.310	\$47.406	<b>\$37.523</b>	<b>\$48.361</b>	<b>\$46.684</b>
Natural Gas Royalty Interest	\$4.129	\$5.463	\$7.403	\$11.362	<b>\$9.040</b>	<b>\$11.893</b>	<b>\$11.559</b>
Oil Working Interest	\$36.774	\$46.515	\$74.568	\$106.287	<b>\$100.587</b>	<b>\$100.397</b>	<b>\$97.713</b>
Oil Royalty Interest	\$8.069	\$11.864	\$25.131	\$39.435	<b>\$42.407</b>	<b>\$44.916</b>	<b>\$46.252</b>
<b>Total Tax Revenue</b>	<b>\$69.953</b>	<b>\$89.622</b>	<b>\$139.412</b>	<b>\$204.490</b>	<b>\$189.557</b>	<b>\$205.567</b>	<b>\$202.208</b>

### Revenue Adjustment

The model used to forecast natural gas and oil revenue used data from tax returns. Additional revenue is generated from audits, penalties, and late payments.

The additional revenue varies across years and does not follow a particular pattern. Table 9 shows the difference in actual revenue and the model revenue from the tax returns. The difference is additional revenue and it ranges from \$5 million in FY 2004 to \$1 million in FY 2005, averaging \$2.691 million.

<b>Table 9</b> <b>Adjusting Model to Actual Revenue</b> <b>(\$ millions)</b>				
Fiscal Year	Actual Revenue		Model Revenue	Difference
A 2003	\$71.679	-	\$69.953	= \$1.726
A 2004	\$94.631	-	\$89.622	= \$5.009
A 2005	\$140.818	-	\$139.412	= \$1.407
A 2006	\$207.113	-	\$204.490	= \$2.623
<b>Average</b>				<b>= \$2.691</b>

The average additional revenue is used to adjust the model projections for audits, penalties, and late payments. Table 10 shows the addition of \$2.691 million to the model forecast to get adjusted revenue. Total oil and gas revenue is projected to be \$192.248 million in FY 2007, \$208.258 million in FY 2008, and \$204.899 million in FY 2009.

<b>Table 10</b> <b>Adjusting Model Forecast</b> <b>(\$ millions)</b>				
Fiscal Year	Model Revenue		Adjustment	Adjusted Revenue
<b>A 2007</b>	<b>\$2.691</b>	<b>+</b>	<b>\$2.691</b>	<b>= \$5.382</b>
<b>A 2008</b>	<b>\$2.691</b>	<b>+</b>	<b>\$2.691</b>	<b>= \$5.382</b>
<b>A 2009</b>	<b>\$2.691</b>	<b>+</b>	<b>\$2.691</b>	<b>= \$5.382</b>

## Allocation of Oil and Gas Production Taxes

The allocation of oil and gas production taxes is as follows:

- 1) In FY 2006, 0.18% of *gross taxable revenue* was distributed to the Board of Oil and Gas Conservation (BOGC) to cover administrative costs. On October 1, 2006, the BOGC lowered the rate to 0.09%.
- 2) In FY 2006, 0.08% of gross taxable revenue was distributed to the coal, oil and natural gas resource account for producing counties. From October, 1 2006 onward, the account is allocated 0.17% of gross taxable revenue.
- 3) Counties that produce oil and gas production tax revenue receive a percentage of the tax revenue collected in that county. The percentages vary by county (15-36-331, MCA), and the revenue is further allocated among the county, school districts, and countywide school funds (15-36-332, MCA).
- 4) Of the remaining revenue, 1.23% is distributed to the coal bed methane protection account, 2.95% is distributed to a reclamation and development grants special revenue account, 2.95% is distributed to the orphan share account, and 2.65% is distributed to the Montana university system.
- 5) In FY 2006, \$50,000 was allocated to the Legislative Services Division to study split estates of property between mineral and surface owners. (HB 790, 2005 Session)
- 6) All remaining proceeds are distributed to the general fund.

Table 9 shows the actual distribution of oil and gas production taxes in FY 2006 and projected allocations for FY 2007 through FY 2009.

<b>Table 11</b>								
<b>Oil and Gas Production Tax Revenue by Fund</b>								
<b>(\$ millions)</b>								
Entity	Actual		Forecast					
	FY 2006*		FY 2007		FY 2008		FY 2009	
	Allocation	Percent of Total	Allocation	Percent of Total	Allocation	Percent of Total	Allocation	Percent of Total
Board of Oil and Gas Conservation	\$4.811	2.32%	<b>\$2.986</b>	<b>1.55%</b>	<b>\$2.607</b>	1.25%	<b>\$2.600</b>	1.27%
Oil, Gas, and Coal Natural Resource Account	\$2.138	1.03%	<b>\$3.914</b>	<b>2.04%</b>	<b>\$4.925</b>	2.36%	<b>\$4.912</b>	2.40%
Counties, Countywides, and Schools	\$95.918	46.31%	<b>\$89.033</b>	<b>46.31%</b>	<b>\$96.448</b>	46.31%	<b>\$94.892</b>	46.31%
Coal Bed Methane Protection Account	\$1.282	0.62%	<b>\$1.185</b>	<b>0.62%</b>	<b>\$1.283</b>	0.62%	<b>\$1.261</b>	0.62%
Reclamation and Development Grants Account	\$3.074	1.48%	<b>\$2.841</b>	<b>1.48%</b>	<b>\$3.076</b>	1.48%	<b>\$3.024</b>	1.48%
Orphan Share Account	\$3.074	1.48%	<b>\$2.841</b>	<b>1.48%</b>	<b>\$3.076</b>	1.48%	<b>\$3.024</b>	1.48%
University System	\$2.761	1.33%	<b>\$2.552</b>	<b>1.33%</b>	<b>\$2.763</b>	1.33%	<b>\$2.716</b>	1.33%
HB 790 Split Estates	\$0.051	0.02%	NA	NA	NA	NA	NA	NA
General Fund	\$94.005	45.39%	<b>\$86.895</b>	<b>45.20%</b>	<b>\$94.080</b>	45.17%	<b>\$92.471</b>	45.13%
Total	<u>\$ 207.113</u>	<u>100.00%</u>	<u><b>\$ 192.248</b></u>	<u><b>100.00%</b></u>	<u><b>\$208.258</b></u>	<u><b>100.00%</b></u>	<u><b>\$ 204.899</b></u>	<u><b>100.00%</b></u>

\* Total allocation does not match Table 1 or Table 8 because of accruals, late payments, audits, and penalties

In FY 2007 through FY 2009 the county allocation for schools and counties was assumed to be 46.31% of total tax revenue, which was the proportion of total collections distributed to the counties in FY 2006. The general fund is projected to be allocated around 45% of total oil and gas production tax revenue between FY 2007 and FY 2009. General fund revenue is projected to be \$86.895 million in FY 2007, \$94.080 in FY 2008, and \$92.471 million in FY 2009.

### **Data Sources**

Data histories of oil and natural gas production, prices, taxable royalties, working interests, and tax payments are from Board of Oil and Gas Conservation records and summaries of tax returns for FY 2000 through FY 2006. WTI price histories are from the Energy Information Administration (EIA) of the U.S. Department of Energy. Conversion factors for mmBtu per thousand cubic feet of natural gas are also from the EIA. Price projections for Henry Hub and WTI prices are from the October 2006 Global Insight forecast.