

Legislative Fiscal Division

Revenue Estimate Profile

Oil and Natural Gas Production Tax

Revenue Description: The oil and natural gas production tax is imposed on the production of petroleum and natural gas in the state. Gross taxable value of oil and natural gas production is based on the type of well and type of production. A portion of the revenue from the tax may be returned to Indian tribes per agreements between the Department of Revenue and the tribes.

Statutory Reference:

Tax Rate (MCA) – 15-36-304. Privilege and license tax – 82-11-131, Administrative Rules 36.72.1242
 Tax Distribution (MCA) – 15-36-331(4), 15-36-332(2&3) (to taxing units)
 Date Due – within 60 days after the end of the calendar quarter (15-36-311(1))

Applicable Tax Rate(s): The oil and natural gas production tax has numerous tax rates depending on several factors. These factors include whether the oil or gas is produced from a stripper well, a stripper incentive well, from a well initially drilled before 1999 or after, from a well newly drilled within the last year or 18 months, and whether the interest being taxed is the working interest or the royalty interest. The Board of Oil and Gas Conservation imposes an additional privilege and license (P & L) tax on all oil and natural gas tax rates. The following table shows tax rate percentages for each type of pre-1999 oil and post-1999 oil, excluding the P & L tax and the local impact tax. The quarterly tax rates on stripper production and on incremental production are lower than that for regular production unless the price of West Texas Intermediate averages above \$30 for the quarter. Similarly, the quarterly tax rate for stripper well exemption production (1-3 barrels a day) is lower than that for regular production unless the price of West Texas Intermediate averages above \$38 for the quarter.

Oil Tax Rates 15-36-304(5), MCA	
<u>Working Interest</u>	
Primary recovery production	
First 12 months of qualifying production	0.5%
After 12 months:	
pre-1999 wells	12.5%
post-1999 wells	9.0%
Stripper oil production (>3 and < 15 barrels/day if oil <\$30)	
1 through 10 barrels a day production	5.5%
>10 through 14 barrels a day production	9.0%
Stripper oil production (>3 and < 15 barrels/day if oil >=\$30)	*
Stripper wells (3 barrels or less/day)	
Stripper well exemption production (if oil <\$38)	0.5%
Stripper well bonus production (if oil >=\$38)	6.0%
Horizontally completed well production	
First 18 months of qualifying production	0.5%
After 18 months	
pre-1999 wells	12.5%
post-1999 wells	9.0%
Incremental production (if oil <\$30/barrel)	
New or expanded secondary recovery production	8.5%
New or expanded tertiary production	5.8%
Incremental production (if oil >=\$30/barrel)	
Pre-1999 wells	12.5%
Post-1999 wells	9.0%
Horizontally recompleted well	
First 18 months	5.5%
After 18 months	
pre-1999 wells	12.5%
post-1999 wells	9.0%
<u>Nonworking Interest</u>	14.8%
* No stripper tax rate. Taxed at primary recovery rates. See 15-36-303(22a)	

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Natural Gas Tax Rates	
15-36-304(2), MCA	
<u>Working Interest</u>	
Qualified production	
First 12 months	0.5%
After 12 months	
pre-1999 wells	14.8%
post-1999 wells	9.0%
Stripper natural gas pre-1999 wells	11.0%
Horizontally completed well production	
First 18 months of qualifying production	0.5%
After 18 months	9.0%
<u>Nonworking Interest</u>	14.8%

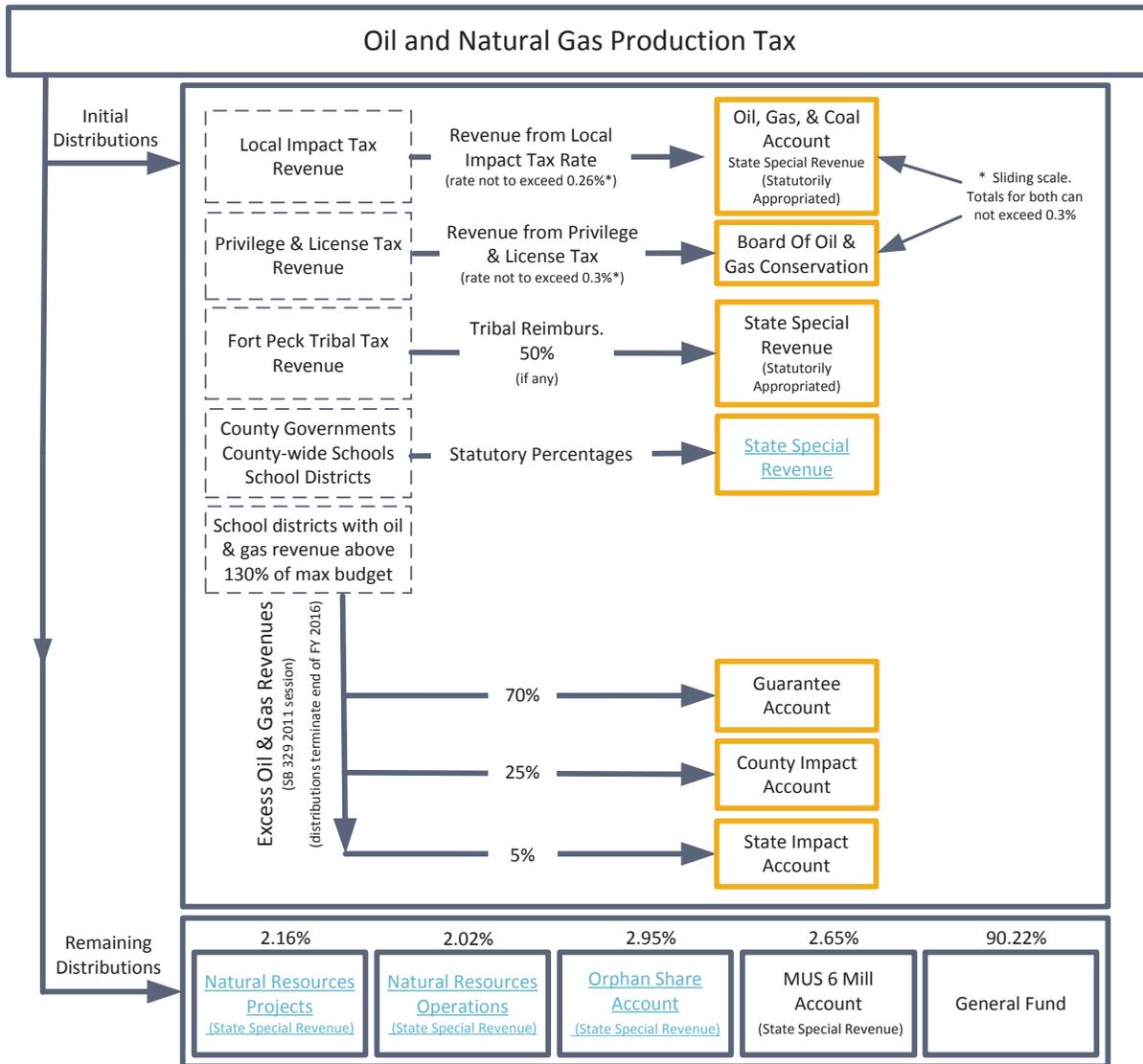
Distribution: Once the oil and natural gas production taxes have been collected, the revenue is first distributed based on the amounts collected from the P & L and Local Impact taxes. The amounts from the P & L tax are distributed to the Board of Oil and Gas Conservation. The amounts from the Local Impact tax are distributed to the oil and gas natural resource state special revenue account. The amounts received by the Board and the oil and gas natural resource account vary based on a sliding tax scale based on the P & L tax set by the Board. Counties producing oil and natural gas receive the next share of total revenue with each county having its own statutory distribution percentage of total revenue, including the revenue generated by the P & L and Local Impact taxes. A portion of the revenue may be returned to Indian tribes per agreements between the Department of Revenue and the tribes. The remainder of the revenue is distributed to other state accounts, shown in the distribution chart below. The distributions of county shares and the amount of oil and natural gas production tax revenue deposited in the oil and gas natural resource account are statutorily appropriated and are based on the statutorily set percentages for each county.

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Distribution Chart:



Oil & Natural Gas Production Tax Allocation		
Based on FY 2012 Amounts		
General fund	\$97,560,324	46.3%
Local	83,611,488	39.7%
Guarantee fund	12,335,596	5.9%
Local Impact	3,754,061	1.8%
Orphan	3,190,013	1.5%
University	2,865,605	1.4%
Nat. Res. Proj.	2,335,738	1.1%
Nat. Res. Ops.	2,184,348	1.0%
Bd. Of Oil & Gas	1,987,666	0.9%
County Impact fund	682,935	0.3%
State Impact fund	136,587	0.1%
Coal Bed Meth.	-	0.0%

Because the exact distribution of oil & natural gas tax revenue varies depending on various factors, the table only reflects last complete fiscal year actual distributions. Please see the distribution graph for exact distribution percentages.

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Summary of Legislative Action:

House Bill 39 – The legislation changes the distribution of school district unreserved fund balances to the state and counties. Monies that are allocated to the State School Oil and Gas Impact Account and the County School Oil and Gas Impact Fund under current law will be allocated to the School Facility and Technology Account under HB 39. There is no impact on the state general fund.

Senate Bill 175 – This legislation revises K-12 funding and the funding formula. This bill redirects a portion of the oil and natural gas production tax revenue to a newly created state special fund, but has no effect on general fund revenue.

The bill contains a one-time transfer of \$22.95 million from the general fund to a newly created state special revenue account prior to the end of FY 2013. Half of these funds, \$11.5 million, is then to be transferred after the beginning of each of the next fiscal years to the Guarantee Account to fund the ongoing costs of restructuring the K-12 funding formula basic entitlement. These costs will then fall to the general fund in the 2017 biennium as proceeds from the one-time transfer will have been depleted.

From July 1, 2013, through June 30, 2016, SB 175 redirects oil and natural gas production tax revenue from school districts from the Guarantee Account to the newly created state special revenue State Oil and Natural Gas Distribution Account to fund distributions as follows:

- 1) To school districts in the same unified school system as the district that would have initially received the Oil and Natural Gas Production Taxes revenue, up to 130% of the receiving school district’s maximum general fund budget;
- 2) To school districts that are immediately contiguous to the district that would have initially received the production tax revenue, up to 130% of the receiving school district’s maximum general fund budget;
- 3) To school districts that are in the same county as the district that would have initially received the production tax revenue, up to 130% of the receiving school district’s maximum general fund budget; and
- 4) To school districts located in counties contiguous to the district that would have initially received the production tax revenue and have had a horizontally completed well drilled in the prior three years, up to 130% of the receiving school district’s maximum general fund budget.

Oil & Natural Gas Production Tax – Legislation Passed by 63rd Legislature			
General Fund Impact (\$ Millions)			
Bill Number and Short Title	FY 2013	FY 2014	FY 2015
HB0039 Revise school finance laws to correct implementation problems	\$0.000	\$0.000	\$0.000
SB0175 Generally revise public education funding	0.000	0.000	0.000
Total General Fund Impact	\$0.000	\$0.000	\$0.000

Collection Frequency: Quarterly; the oil and natural gas production tax is due 60 days after the end of the production quarter

% of Total General Fund Revenue:

FY 2004 – 2.99%	FY 2007 – 5.25%	FY 2010 – 5.87%
FY 2005 – 4.09%	FY 2008 – 7.64%	FY 2011 – 5.60%
FY 2006 – 5.42%	FY 2009 – 5.56%	FY 2012 – 5.21%

Revenue Estimate Methodology:

The estimate for oil and natural gas revenue is produced from estimating the price and specific production subject to varying tax rates from which value can be obtained. Specific statutory tax rates are used for the types of oil and natural gas that are taxed differently.

Data

Data from the Board of Oil and Gas Conservation are used extensively to isolate monthly historical production of oil and natural gas by field and by individual well. IHS provides future estimates of West Texas Intermediate oil and national well head natural gas prices. Production, price, value, and revenue collections, by oil type, are provided on a quarterly basis by DOR.

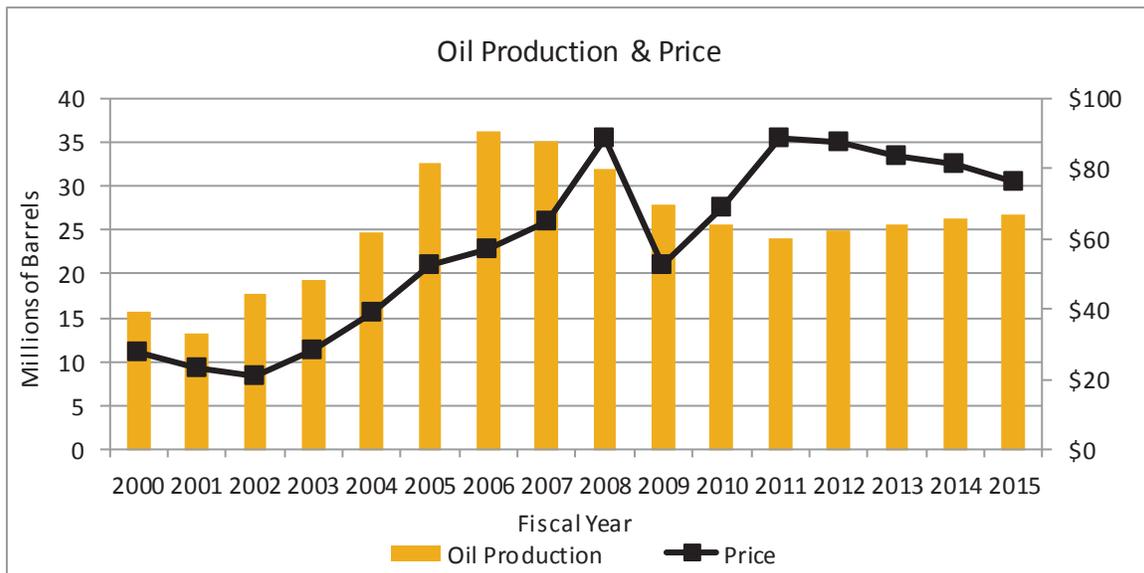
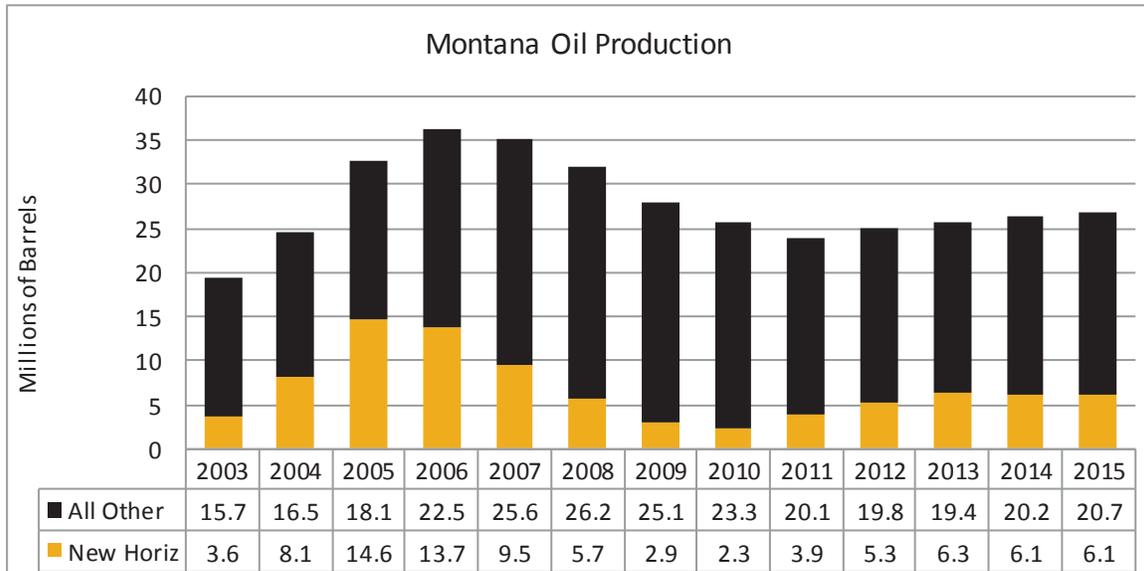
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Oil Analysis

- Production—The estimate is developed on a quarterly basis with production from horizontal wells separate from all other production. The majority of the increased production is from horizontal wells, as illustrated in the figure below.



Existing horizontal wells will follow a production decline curve unique to the characteristics of these wells. Future production from completed wells can be estimated by developing a normalized production decline curve from the producing wells. In doing so, the difficulty of having different starting time for each well can be eliminated by averaging each well's production from a common time point. The result is a curve that represents the average production of horizontal wells by month of production. Production from future wells can be estimated by applying the production curve coefficients to an estimate of future spudded wells. Knowing monthly production from each well and the date it was placed into production is essential for estimating oil tax revenue because tax rates vary based on the length of time a well has been in production. The dynamics in the timing of when wells enter and fall out of the various tax rates and the changes in production at the various stages is complex, but needs to be modeled to ensure accurate estimates.

Production from all other wells is also estimated on an annual basis and by the different taxation types. For each year, the estimate is derived by multiplying the previous year by the ratio of the results of a regression analysis for the current and the previous year. The results for each tax type are then summed by year.

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- Price—The price for each quarter is estimated by adjusting the IHS West Texas Intermediate oil price for that quarter by the ratio of the previous three year average Montana price to the three year average of the IHS price.

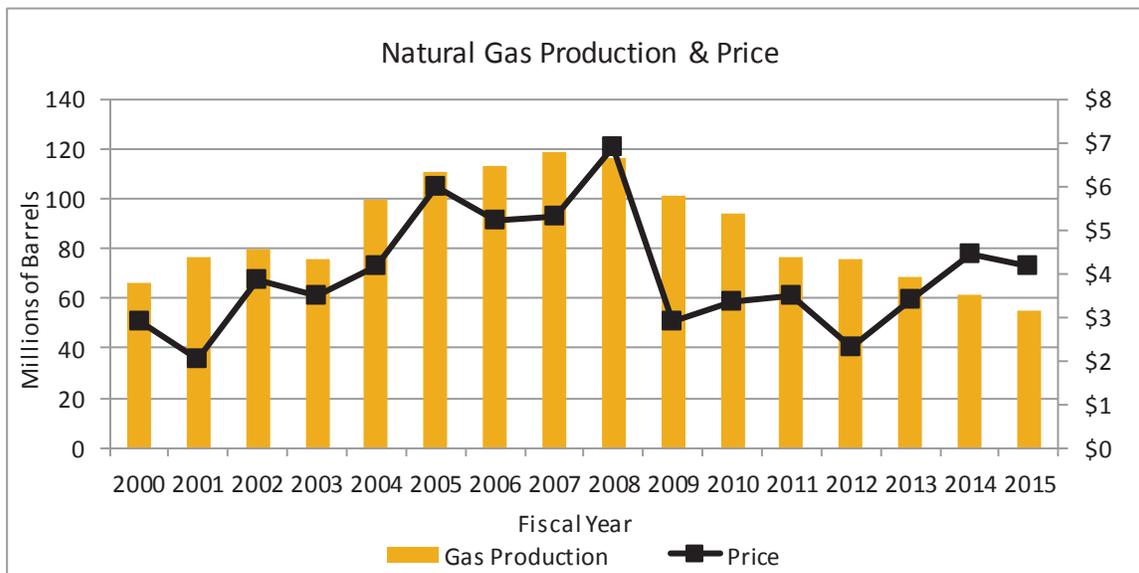
Once production and prices have been estimated, the value can be calculated by the product of the two. The quarterly value of each tax type is then multiplied by the applicable tax rate to obtain the estimate. The sum of the revenue from all tax types for each fiscal year determines the oil production revenue estimate.

Natural Gas Analysis

- Production—The estimate is developed on quarterly basis with data from the Board of Oil and Gas Conservation. Existing wells will follow a production decline curve unique to the characteristics of these wells. Future production from completed wells can be estimated by developing a normalized production decline curve from the producing wells. In doing so, the difficulty of having different starting time for each well can be eliminated by averaging each well’s production from a common time point. The result is a curve that represents the average production of wells by month of production. Production from future wells can be estimated by applying the production curve coefficients to an estimate of future spudded wells. Knowing monthly production from each well and the date it was placed into production is essential for estimating gas tax revenue because tax rates vary based on the length of time a well has been in production. The dynamics in the timing of when wells enter and fall out of the various tax rates and the changes in production at the various stages is complex, but needs to be modeled to ensure accurate estimates.

Production from all wells is estimated on an annual basis and by the different taxation types. For each year, the estimate is derived by multiplying the previous year by the ratio of the results of a regression analysis for the current and the previous year. The results for each tax type are then summed by year.

- Price—The price for each quarter is estimated by adjusting the IHS West Texas national well head price for that quarter by the ratio of the previous three year average Montana price to the three year average of the IHS price.



Once production and prices have been estimated, the value can be calculated by the product of the two. The quarterly value of each tax type is then multiplied by the applicable tax rate to obtain the revenue. The sum of the revenue from all tax types for each fiscal year determines the natural gas revenue estimate.

Adjustments and Distribution

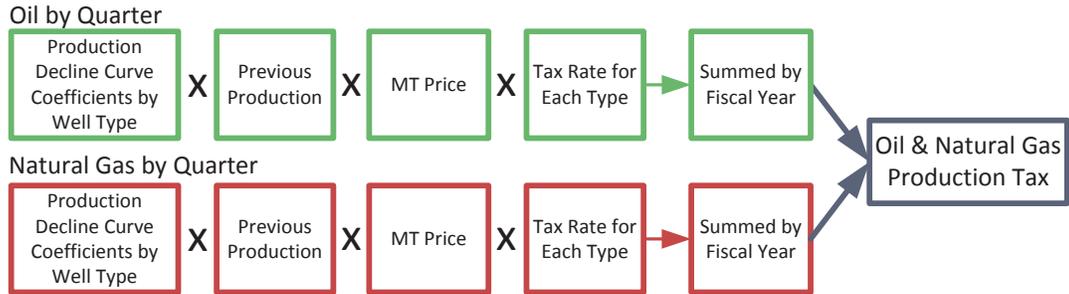
Once the oil and natural gas estimates have been summed, the distribution formula is applied with the amounts to the Board of Oil and Gas and to local governments distributed first and the remainder subject to statutory percentages.

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Forecast Methodology:



Revenue Estimate Assumptions:

This section contains the assumptions used to generate the revenue estimates contained in Senate Joint Resolution 2. It does not reflect changes, if any, enacted by the 2013 Legislature that may affect future estimates of this revenue source.

	<u>t</u>	<u>Total Tax</u>	<u>GF Tax</u>	<u>GF Allocation</u>	<u>Audits</u>	<u>Total Tax</u>	<u>Total Tax</u>
	<u>Fiscal</u>	<u>Millions</u>	<u>Millions</u>	<u>Percent</u>	<u>Millions</u>	<u>Oil</u>	<u>Gas</u>
						<u>Millions</u>	<u>Millions</u>
Actual	2002	50.304	12.902	25.6%			
Actual	2003	73.389	29.086	39.6%	2.436		
Actual	2004	92.676	41.324	44.6%	1.688		
Actual	2005	137.754	62.626	45.5%	1.127		
Actual	2006	203.681	92.563	45.4%	1.429	140.641	51.586
Actual	2007	209.946	96.335	45.9%	1.242	174.193	98.418
Actual	2008	324.311	149.994	46.3%	3.168	227.099	172.201
Actual	2009	218.425	100.491	46.0%	5.221	203.277	138.836
Actual	2010	206.286	95.491	46.3%	1.395	160.377	86.005
Actual	2011	215.130	99.764	46.4%	1.254	188.114	82.479
Actual	2012	210.644	97.560	46.3%	0.737	199.433	45.953
Forecast	2013	216.873	98.750	45.5%	0.737	196.063	20.073
Forecast	2014	218.165	99.336	45.5%	0.737	193.365	24.063
Forecast	2015	213.955	97.427	45.5%	0.737	189.955	23.264

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<u>Oil</u>	<u>t</u>	<u>Barrels</u>	<u>Price</u>	<u>Gross Value</u>	<u>Effective</u>	<u>Tax</u>	<u>Non-Tax</u>
	<u>Fiscal</u>	<u>Millions</u>	<u>Per Barrel</u>	<u>Millions</u>	<u>Tax Rate</u>	<u>Millions</u>	<u>Value</u>
							<u>Millions</u>
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005						
Actual	2006	34.438	55.06	1896.214	7.6%	140.641	48.525
Actual	2007	35.654	60.89	2170.999	8.2%	174.193	54.924
Actual	2008	33.501	76.22	2553.434	9.1%	227.099	65.224
Actual	2009	29.929	71.92	2152.399	9.7%	203.277	56.681
Actual	2010	26.790	60.47	1620.102	10.2%	160.377	43.691
Actual	2011	24.781	78.58	1947.329	9.9%	188.114	51.144
Actual	2012	24.481	88.34	2162.770	9.5%	199.433	55.781
Forecast	2013	25.333	85.79	2173.380	9.3%	196.063	56.405
Forecast	2014	25.998	82.11	2134.594	9.3%	193.365	55.399
Forecast	2015	26.575	78.35	2082.194	9.4%	189.955	54.039

<u>Gas</u>	<u>t</u>	<u>MCF's</u>	<u>Price</u>	<u>Gross Value</u>	<u>Effective</u>	<u>Tax</u>	<u>Non-Tax</u>
	<u>Fiscal</u>	<u>Millions</u>	<u>Per MCF</u>	<u>Millions</u>	<u>Tax Rate</u>	<u>Millions</u>	<u>Value</u>
							<u>Millions</u>
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005						
Actual	2006	111.998	5.60	627.347	8.6%	51.586	29.763
Actual	2007	234.732	5.28	1238.692	8.3%	98.418	55.536
Actual	2008	352.190	6.09	2145.639	8.4%	172.201	93.519
Actual	2009	326.653	5.03	1643.268	8.8%	138.836	73.265
Actual	2010	293.915	3.12	917.906	9.8%	86.005	42.807
Actual	2011	256.336	3.42	875.937	9.9%	82.479	39.789
Actual	2012	152.638	3.20	488.856	9.9%	45.953	22.489
Forecast	2013	71.991	2.91	209.756	10.0%	20.073	9.636
Forecast	2014	64.930	3.85	250.101	10.1%	24.063	11.489
Forecast	2015	58.273	4.19	244.174	10.0%	23.264	11.217

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<u>Oil</u>	<u>t</u>	<u>Barrels</u>	<u>Price</u>	<u>Gross Value</u>	<u>Effective</u>	<u>Total Tax</u>	<u>Non-Tax</u>
	<u>Cal</u>	<u>Millions</u>	<u>Per Barrel</u>	<u>Millions</u>	<u>Tax Rate</u>	<u>Millions</u>	<u>Value</u>
							<u>Millions</u>
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005	32.679	52.76	1,724.104	7.5%	125.296	43.861
Actual	2006	36.196	57.14	2,068.324	7.7%	155.985	53.189
Actual	2007	35.112	64.75	2,273.674	8.7%	192.402	56.659
Actual	2008	31.890	88.84	2,833.194	9.5%	261.795	73.789
Actual	2009	27.967	52.62	1,471.605	10.1%	144.759	39.573
Actual	2010	25.613	69.05	1,768.599	10.2%	175.995	47.808
Actual	2011	23.949	88.78	2,126.059	9.7%	200.233	54.480
Actual	2012	25.014	87.93	2,199.481	9.3%	198.633	57.083
Forecast	2013	25.652	83.71	2,147.279	9.3%	193.492	55.728
Forecast	2014	26.344	80.55	2,121.909	9.3%	193.238	55.069
Forecast	2015	26.806	76.19	2,042.479	9.4%	186.672	53.008

<u>Gas</u>	<u>t</u>	<u>MCF's</u>	<u>Price</u>	<u>Gross Value</u>	<u>Effective</u>	<u>Total Tax</u>	<u>Non-Tax</u>
	<u>Cal</u>	<u>Millions</u>	<u>Per MCF</u>	<u>Millions</u>	<u>Tax Rate</u>	<u>Millions</u>	<u>Value</u>
							<u>Millions</u>
Actual	2002						
Actual	2003						
Actual	2004						
Actual	2005	110.440	6.00	662.994	8.7%	55.016	31.675
Actual	2006	113.555	5.21	591.700	8.5%	48.156	27.851
Actual	2007	355.908	5.30	1885.685	8.2%	148.680	83.221
Actual	2008	348.471	6.90	2405.593	8.5%	195.721	103.817
Actual	2009	304.834	2.89	880.944	9.8%	81.950	42.713
Actual	2010	282.996	3.37	954.868	9.9%	90.060	42.901
Actual	2011	229.676	3.47	797.005	9.9%	74.899	36.677
Actual	2012	75.601	2.39	180.707	9.9%	17.007	8.301
Forecast	2013	68.381	3.49	238.805	10.2%	23.140	10.970
Forecast	2014	61.478	4.25	261.397	10.0%	24.986	12.008
Forecast	2015	55.068	4.12	226.951	9.9%	21.541	10.426

Total Tax = Barrels × Price × Tax Rate + MCF's × Price × Tax Rate + Audits

GF Rev = Total Tax × GF Allocation + Audits

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Revenue Projection:

