



How Texas Returns “Unconventional” Oil Revenue to Local Governments

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Introduction

This brief shows how Texas’s local governments receive production tax revenue from unconventional oil extraction. Fiscal policy is important for local communities for several reasons. Mitigating the acute impacts associated with drilling activity and related population growth requires that revenue is available in the amount, time, and location necessary to build and maintain infrastructure and to provide services. In addition, managing volatility over time requires different fiscal strategies, including setting aside a portion of oil revenue in permanent funds.¹

The focus on unconventional oil is important because horizontal drilling and hydraulic fracturing technologies have led a resurgence in oil production in the U.S. Unconventional oil plays require more wells to be drilled on a continuous basis to maintain production than comparable conventional oil fields. This expands potential employment, income, and tax benefits, but also heightens and extends public costs.

This brief is part of a larger project by Headwaters Economics that includes detailed fiscal profiles of major oil-producing states—Colorado, Montana, New Mexico, North Dakota, Oklahoma, Texas, and Wyoming—along with a summary report describing differences between these states. These profiles will be updated regularly. The various approaches to taxing oil make comparisons between states difficult, although not impossible. We apply each state’s fiscal policy, including production taxes and revenue distributions, to a typical unconventional oil well. This allows for a comparison of how states tax oil extracted using unconventional technologies, and how this revenue is distributed to communities. Detailed state profiles and the larger report are available at <http://headwaterseconomics.org/energy/state-energy-policies>.

Texas Summary

- Oil production in Texas is taxed at the state level through a single production tax, and at the local level where local governments levy property taxes on the value of oil reserves. Texas does not offer any specific incentives for unconventional oil production. The state’s low base tax rates result in a relatively low effective tax rate of 6.7 percent, ranking sixth of seven oil-producing states we compare.
- The state severance tax is collected monthly, minimizing the lag between production and revenue collections. Local governments reliant on annually assessed property taxes must wait longer to realize revenue. Reliance on property taxes also can create a mismatch between where revenue accrues and where impacts must be mitigated, often in adjacent cities and counties that do not host drilling and production activity, and so cannot collect revenue directly from production.
- The state does not have permanent savings or impact grants programs funded with oil production revenue to help manage timing and distribution issues at the local level.

Figure 1: Comparison of Production Tax Revenue Collected from a Typical Unconventional Oil Well

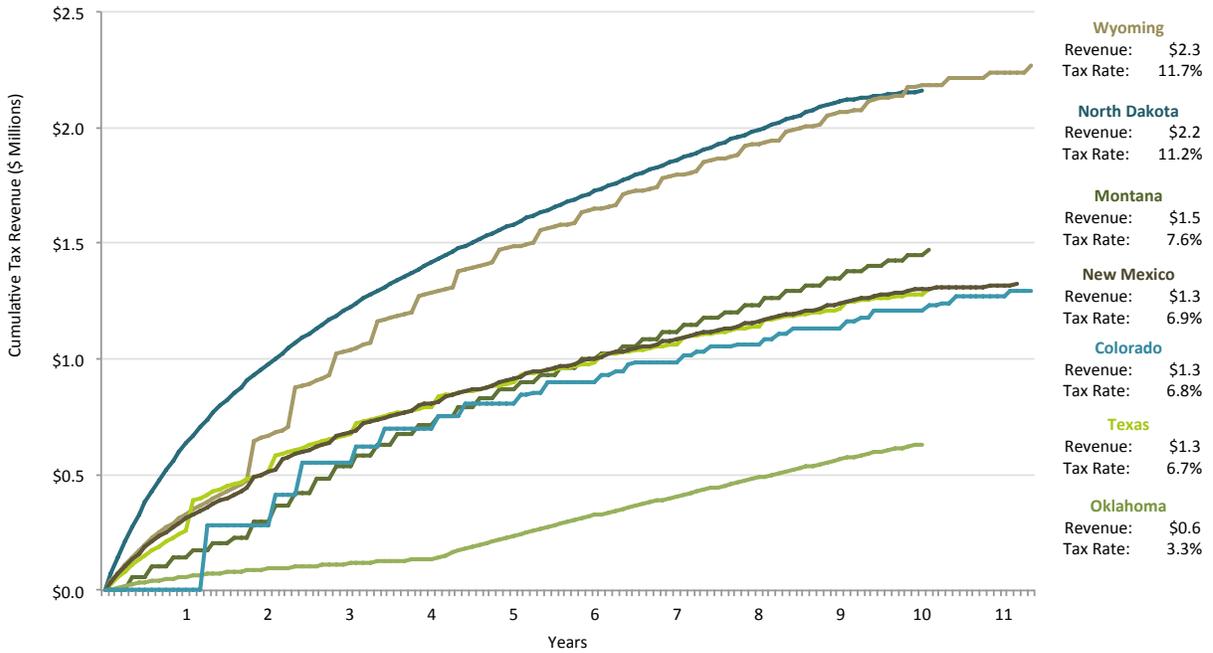
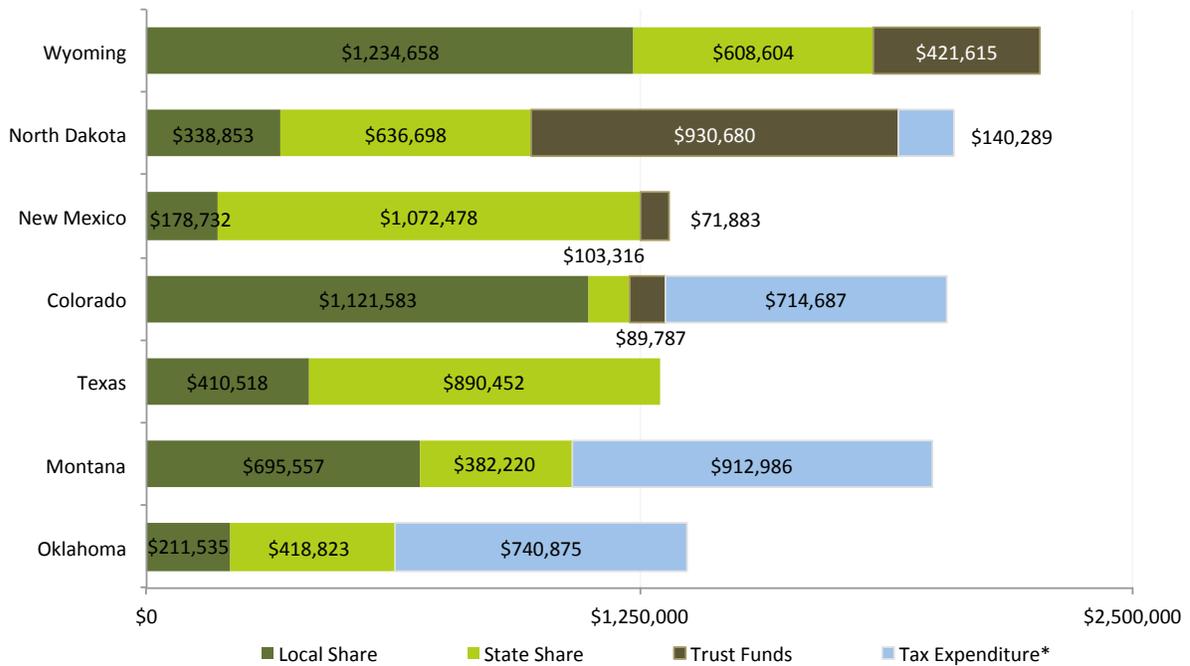


Figure 2: Comparison of Distribution of Production Tax Revenue from a Typical Unconventional Oil Well



*Tax Expenditure refers to the value of production tax incentives and tax relief funded with production tax revenue.

Unconventional Oil Well Performance

Unconventional oil is produced using horizontal drilling and hydraulic fracturing technologies. While no two wells are identical, unconventional wells all share a typical production profile, characterized by relatively high rates of initial production followed by steep production declines.² This makes it possible to construct a typical well profile—in this case using data from Montana’s Elm Coulee field in the Bakken formation. We use this well profile to determine how a state’s taxation and distribution policies combine to deliver revenue to local governments over ten years in terms of amount, timing, location, and predictability.³

There were 789 horizontal oil wells drilled in the Elm Coulee between 2000 and 2012.⁴ Average oil production peaked at 246 barrels per day in the first month, declining to 122 barrels per day after one year—a 51 percent decline in the first year. Cumulatively, the average Elm Coulee well produces 227,374 barrels of oil over ten years (Figure 3). At a fixed price of \$85 per barrel, the typical well generates \$19.3 million in cumulative production value over ten years (Figure 4).

Figure 3: Production Profile from a Typical Unconventional Oil Well

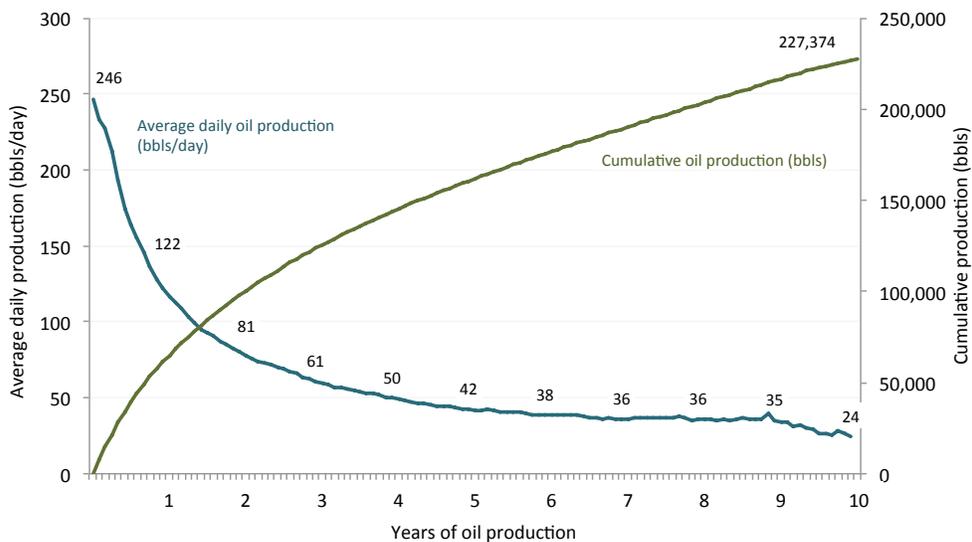
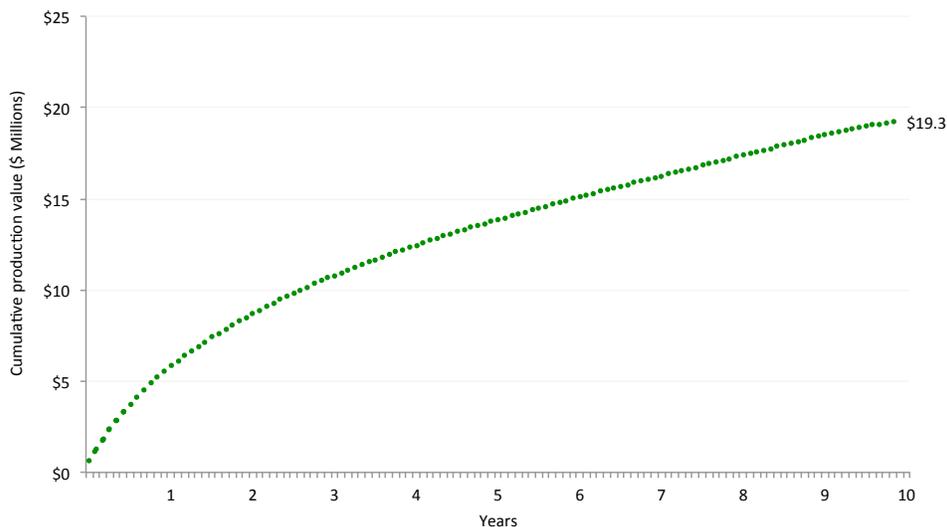


Figure 4: Cumulative Production Value from a Typical Unconventional Oil Well



Profile of Texas Production Taxes

Texas has two main taxes, a severance tax at the state level and local property taxes levied on the value of oil reserves estimated by production performance. Like other states, local governments in Texas face fiscal challenges inherent to a tax system reliant on property taxes to raise revenue from oil production. Property taxes are only collected annually, extending the time lag between when drilling impacts occur, and when revenue is received from production. The lag can make it difficult for communities to manage rapidly increasing impacts related to drilling activity and related population growth. Property taxes also result in uneven distribution of revenue between local governments. Jurisdictions can only tax production if it occurs within their borders, making it difficult for adjacent cities, school districts, and counties that don't have production to raise revenue to deal with impacts they experience from growth and industrial impacts.

Below we offer a detailed look at how the two taxes apply to unconventional oil production using the typical well profile in the previous section. The results are displayed in Figure 5 and Table 1.

Severance Tax

Base Rate: Texas levies a gross production tax on oil with a rate of 4.6 percent of market value including royalty and other interests, or 4.6 cents for each barrel of oil produced, whichever is greater.⁵

Stripper Wells: Low-producing wells are defined as those that produce less than 15 barrels of oil per day, or where oil is less than five percent of produced water per barrel averaged over a 90-day period. The stripper well exemption is only available when the price of oil falls below threshold prices: the exemption is applied to 25 percent of total production when the price is between \$25 and \$30 per barrel, to 50 percent when the price is between \$22 and \$25 per barrel, and to 100 percent when the price is below \$22 per barrel (prices are adjusted to 2005 dollars). No stripper well credits apply to the typical well profiled here.

Production Incentives: The state offers an incentive rate of 2.3 percent for a host of secondary production, enhanced recovery, and efficiency projects, but no incentives specifically targeted to horizontally completed and hydraulically fractured oil wells. The state does have a significant incentive for high cost natural gas wells, including newly completed unconventional wells targeting natural gas, but the incentive does not apply to oil produced from unconventional wells.

Timing of Collections: The severance tax is collected monthly.

$$\text{Severance Tax Revenue} = \text{Gross production value} * \text{tax rate (4.6\%)}$$

Texas Oilfield Cleanup Regulatory Fee

Base Rate: The state has a small oilfield cleanup regulatory fee of \$0.00625 per barrel that is imposed when the Texas Oil Field Cleanup Fund balance falls below \$10 million, and until the balance exceeds \$20 million.⁶

Stripper Wells: The regulatory fee does not include any exemptions for stripper wells.

Production Incentives: No incentives are offered from the regulatory fee.

Timing of Collections: The fee is collected monthly.

Local government property (ad valorem) tax

Base Rate: The property tax in Texas is imposed on both equipment and on mineral reserves. The tax on mineral reserves, including oil, becomes payable only after a well is completed and is producing based on a discounted cash flow appraisal. In this report, we do not attempt to calculate the assessed value for the typical unconventional oil well, if it were to be drilled in Texas. Instead, we estimate property taxes paid based on expected effective property tax rate of 2.12 percent of gross production value for all property statewide, calculated by comparing total taxed levied on oil to total production value for the most recent year.⁷

Stripper Wells: There is no stripper well exemption from local property tax liability.

Production Incentives: No incentives from local tax levies are offered.

Timing of Collections: Annually.

Figure 5: Texas Tax Policy Applied to a Typical Unconventional Oil Well

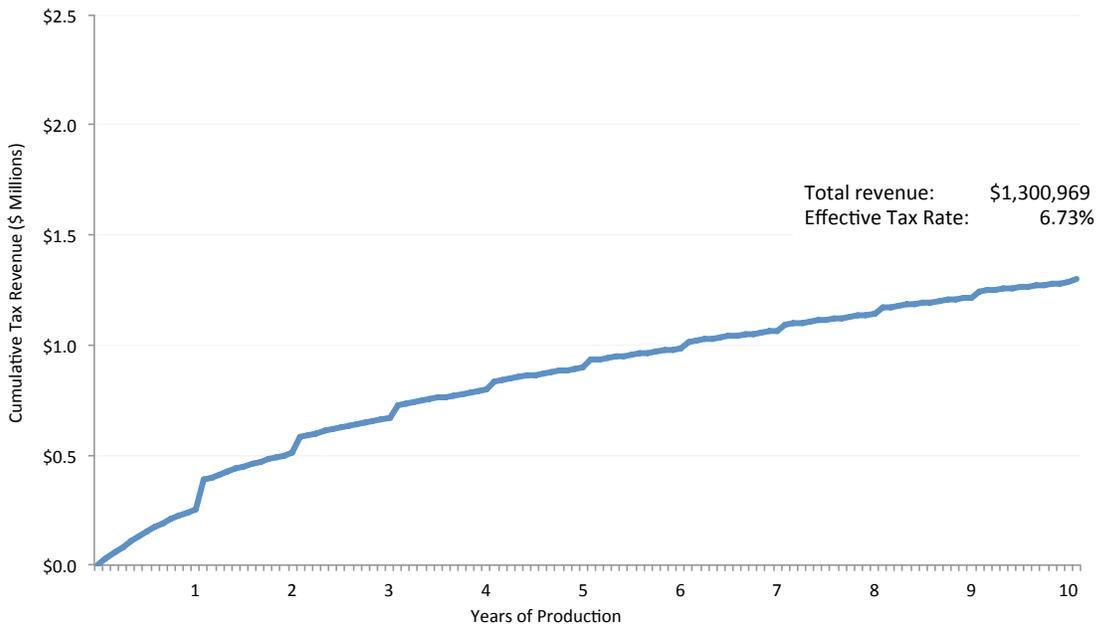


Table 1: Texas Tax Policy Applied to a Typical Unconventional Oil Well

Production Year	Gross Production Value of Oil Production	Texas Production Tax	Texas Property Tax	Texas Oilfield Cleanup Regulatory Fee and Regulatory Tax	Total Tax Revenue	Effective Tax Rate
1	\$5,530,321	\$254,395	\$0	\$407	\$254,801	6.7%
2	\$2,984,622	\$137,293	\$117,469	\$219	\$254,981	6.7%
3	\$2,146,014	\$98,717	\$63,396	\$158	\$162,271	6.7%
4	\$1,686,964	\$77,600	\$45,583	\$124	\$123,308	6.7%
5	\$1,412,756	\$64,987	\$35,833	\$104	\$100,923	6.7%
6	\$1,250,365	\$57,517	\$30,008	\$92	\$87,617	6.7%
7	\$1,160,428	\$53,380	\$26,559	\$85	\$80,024	6.7%
8	\$1,136,597	\$52,283	\$24,649	\$84	\$77,016	6.7%
9	\$1,121,166	\$51,574	\$24,142	\$82	\$75,798	6.7%
10	\$897,516	\$41,286	\$23,815	\$66	\$65,166	6.7%
11			\$19,064		\$19,064	
12						
Cumulative	\$19,326,749	\$889,030	\$410,518	\$1,421	\$1,300,969	6.7%

Profile of Texas Production Tax Distribution Policies

Oil revenues in Texas are used almost entirely to fund ongoing general government expenditures. About three-quarters of the state severance tax is directed to the general fund, and local property taxes on production mostly accrue to county governments and school districts on an annual basis. The state does not dedicate any annual oil production revenue to permanent savings.

The state does levy a small per-barrel fee for the Oil Field Cleanup Fund that provides state resources to mitigate and restore environmental damage across the state. The fund is capped at \$20 million, so the value of the fund in the face of future uncertainty about the environmental outcomes of unconventional oil production is limited.

The following section describes allocation of production taxes between the state government, local governments, permanent trust funds, and tax expenditures.

Allocations

State Share: The state retains 0.5 percent for administration and enforcement of the severance tax. The remaining funds are distributed three-fourths to the general fund and one-quarter to the Foundation School Fund.⁸ The Foundation School Fund is not a permanent fund, but distributes annual revenue from “occupation taxes” (including oil and natural gas production taxes), state lottery revenue, property tax equalization, and additional state funds based on an allocation formula.⁹

Local Share: Local governments retain property taxes levied on production.

Permanent Savings: Texas does not dedicate any annual oil production revenue to permanent savings.

Tax Expenditures: There are no incentives from the severance tax or property tax for oil in Texas.

Figure 6: Texas Distribution Policy Applied to a Typical Unconventional Oil Well

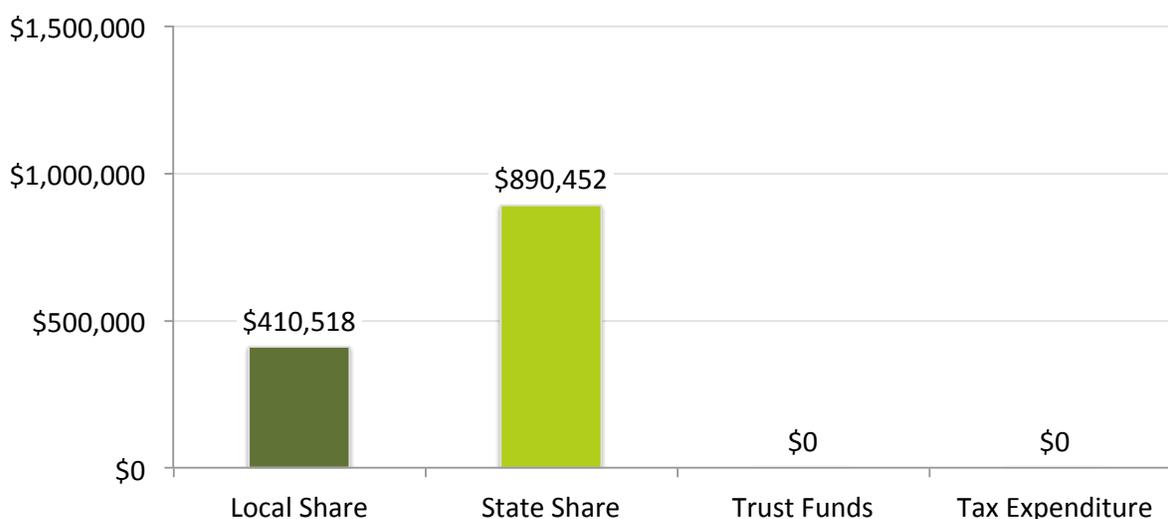


Table 2: Texas Distribution Policy Applied to a Typical Unconventional Oil Well

Distribution	Description	Amount	Share of Total
State Share		\$890,452	68.4%
General Fund	75% of the remaining gross production tax (after 0.5% is retained for tax administration and enforcement) is deposited in the General Revenue Fund. Revenue collected from any incremental production from a qualifying lease, and deposited to the General Revenue Fund may only be spent to fund the Texas tuition assistance grant program.	\$663,439	51.0%
Infrastructure Spending		\$0	0.0%
Natural Resources Mgmt.	Oilfield cleanup regulatory fee of \$0.00625 per barrel is imposed when the Texas Oil Field Cleanup Fund balance falls below \$10 million, and until the balance exceeds \$20 million.	\$1,421	0.1%
Other	0.5% of the gross production tax is retained in the state treasury for the use of the comptroller for tax administration and enforcement. 25% of the remaining gross production tax is deposited in the Foundation School Fund.	\$225,591	17.3%
Local Government		\$410,518	31.6%
Local Production Taxes	Local governments levy property taxes directly against the net production value of oil extracted in each taxing jurisdiction.	\$410,518	31.6%
Direct Distributions		\$0	0.0%
Impact Grants		\$0	0.0%
Trust Funds		\$0	0.0%
Natural Resources Trust Fund		\$0	0.0%
Schools Trust Fund		\$0	0.0%
Other Trust Funds		\$0	0.0%
Tax Expenditures (Incentives)		\$0	0.0%
Production Tax Incentives		\$0	0.0%
Dedicated Tax Relief		\$0	0.0%
Total Distributions		\$1,300,969	100.0%

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Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions in the West.

Endnotes

¹ Headwaters Economics. *Oil and Natural Gas Fiscal Best Practices: Lessons for State and Local Governments*. November 2012. http://headwaterseconomics.org/wphw/wp-content/uploads/Energy_Fiscal_Best_Practices.pdf.

² See, for example: Energy Information Administration. 2013a. NEMS Model Documentation 2013: Oil and Gas Supply Module. Appendix 2.C: Decline Curve Analysis. U.S. Department of Energy. Washington, D.C.

³ This same approach is used by other analysts. See, for example, Ernst & Young LLP. 2012. Analysis of Ohio Severance Tax Provisions of H.B. 487. Prepared by Ernst & Young LLP for the Ohio Business Roundtable. <http://jobs-ohio.com/images/Ernst-Young-Severance-Tax-Analysis-Prepared-for-the-Ohio-Business-Roundtable-5-15-12.pdf>. See also Montana Department of Revenue. 2012. Oil and Gas Production Tax Comparison: Montana and North Dakota. Helena, MT. http://revenue.mt.gov/content/committees/legislative_interim_committee/oil_and_gas_prod_tax_comp_july_rtic.pdf.

⁴ Montana Board of Oil and Gas Conservation. Production data for Elm Coulee Horizontally Completed Wells. 2000 to 2013. Department of Natural Resources and Conservation. Analysis by Headwaters Economics.

⁵ Texas Constitution and Statutes. Tax Code. Chapter 202. Oil Production Tax. <http://www.statutes.legis.state.tx.us/Docs/TX/htm/TX.202.htm>.

⁶ Texas Administrative Code. Title 34, Public Finance. Part 1, Comptroller of Public Accounts. Oil Field Cleanup Regulatory Fee. [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=34&pt=1&ch=3&rl=731](http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=34&pt=1&ch=3&rl=731).

⁷ Texas Comptroller of Public Accounts, Biennial Property Tax Report. Tax years 2010 and 2011. <http://www.window.state.tx.us/taxinfo/proptax/references/survey-publications/biennial-report/2010-2011/96-1728.pdf>.

⁸ Texas Constitution and Statutes. Tax Code. Chapter 202. Oil Production Tax. Subchapter I. Classification of Tax and Allocation of Revenue. <http://www.statutes.legis.state.tx.us/Docs/TX/htm/TX.201.htm>.

⁹ TTARA Research Foundation. 2012. *An introduction to school finance in Texas*. Austin, TX. <http://www.ttara.org/files/document/file-4f1732f763446.pdf>.