

**The Economic and Fiscal Impacts of  
Devon Energy Corporation  
in the Barnett Shale of North Texas:  
An Update**

Prepared for Devon Energy by

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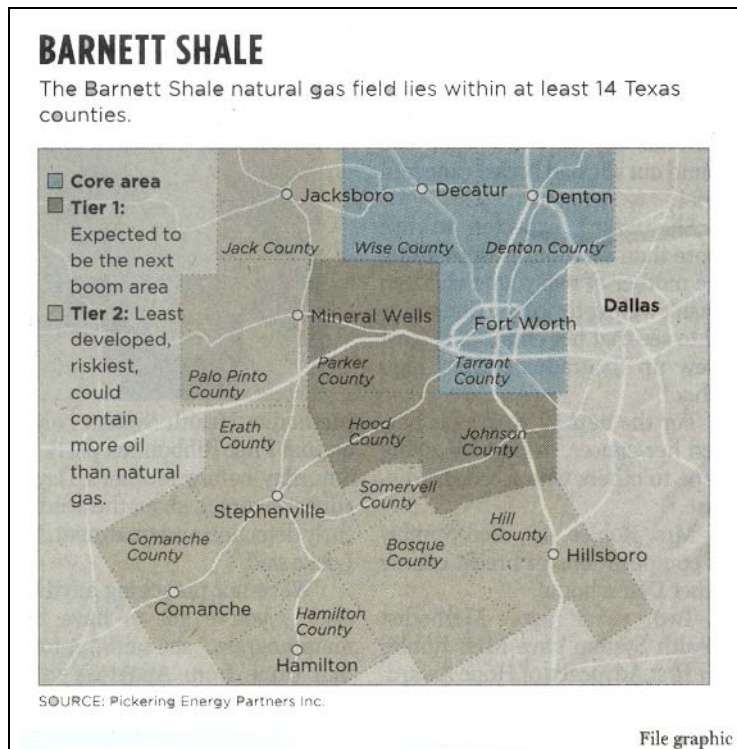
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A. *Introduction*

For more than eight years, natural gas exploration and production have been expanding rapidly across the Barnett Shale in north Texas. Helped by rising prices and new technologies, energy companies and contractors have drilled more than 4000 wells in the Fort Worth Basin alone. Though initially focused in Tarrant, Denton, and Wise Counties, exploration and drilling has expanded to include many other counties in north Texas over the past several years (see Figure 1). Today, the field spans eight million acres across at least fourteen counties and produces 1.4 billion cubic feet per day, about 2.5 percent of all natural gas produced in the United States. It's the second-largest gas play in the continental U.S. and still growing.

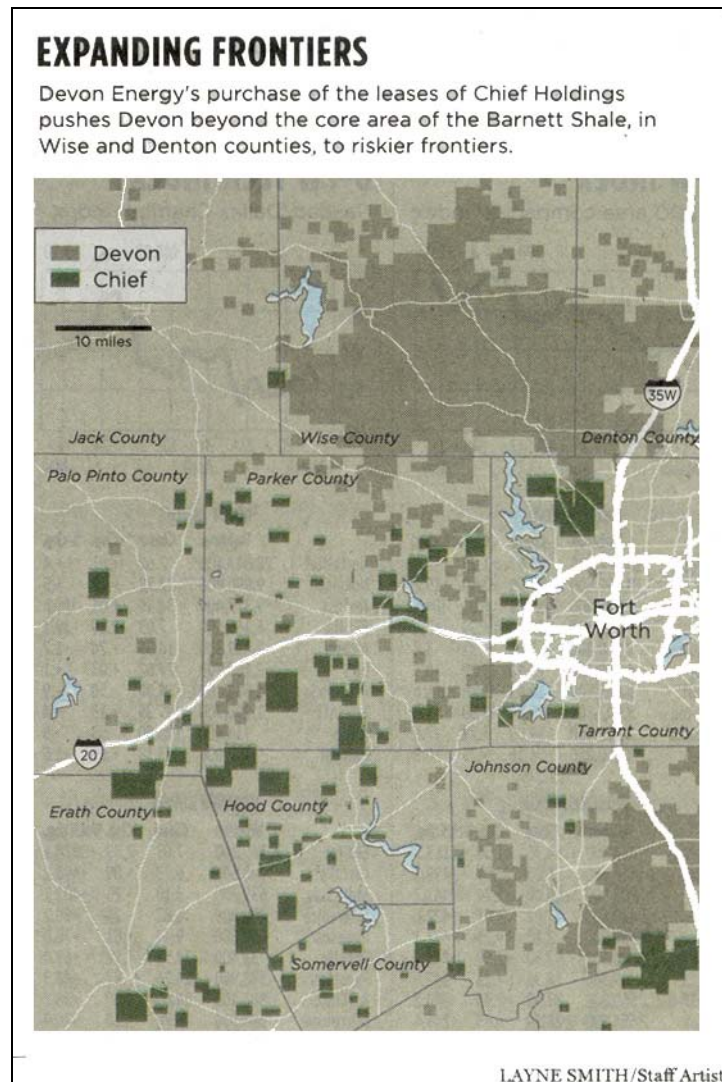
**Figure 1**



Though a number of companies have been active in the shale, Devon Energy is the largest operator, having completed approximately 2,500 wells since 1998. And the

recent acquisition of Chief Holdings by Devon has expanded their lease holdings beyond the core area of the Barnett Shale (see Figure 2). With more than 1,600 local employees and contractors, Devon is a major player in the north Texas economy.

**Figure 2**



For example, a 2004 analysis by the authors found that Devon Energy was generating more than \$600 million of economic output in Denton, Tarrant and Wise Counties each year. In addition, the company's activities supported about 2,500 direct

and indirect jobs directly while providing \$89 million in tax revenues to the state, local municipalities, and school districts.

Over the past few years, Devon has expanded its operations into Johnson, Parker, Palo Pinto, Erath, Hood and Hill Counties with concomitant benefits to these communities in terms of investment, jobs, and expanded tax base. In what follows, we update our 2004 report by examining the size and scope of Devon Energy's economic and fiscal contributions in a nine-county region comprising the six listed above plus the three original counties.

Our impact assessment is based primarily on data provided to us by Devon Energy for the year 2005. These data are then used as inputs into the IMPLAN input/output model to estimate total impacts in the nine-county area. IMPLAN is widely used for academic and professional studies and offers appropriately conservative estimates of the direct, indirect, and induced impacts of Devon's activities. The "direct" impacts are those that stem from Devon's spending on exploration and production activities. "Indirect" impacts represent the economic activity generated by Devon's vendors as they perform services or make products purchased by Devon. Finally, estimates of "induced" impacts are derived from spending by Devon's employees and contractors in the local economy.

Our analysis is divided into three sections. In the first, we estimate the total economic and fiscal impacts from Devon's expenditures on site development, drilling, and recurring outlays for operations and maintenance. The value of royalties, rents and lease bonuses that remain in the nine-county region is included in these impacts. Second, we examine recent demographic and employment trends to illustrate how Devon's

operations are contributing to regional prosperity. Finally, we look at the windfalls to area school districts from rising energy-related property values and the boost to Texas' state finances from higher severance tax collections.

*B. Economic and fiscal impacts from Devon's site development, drilling, and operational outlays*

**Operating Impacts**

As noted earlier, activity in the Barnett Shale has increased dramatically since our previous analysis of Devon's operations. In 2005, Devon and affiliated entities spent more than \$719 million on site development and drilling activities in the nine-county study area. These operating expenditures generated more than \$1 billion in regional economic activity, supported almost 6,900 jobs, and boosted area labor income by \$327 million (see Table 1). In addition to site development and drilling activities, production support activities and expenditures at producing wells boosted regional economic activity even further.

In 2005, Devon spent more than \$114 million on production activities. These activities added over \$155 million to regional economic activity generating about 960 jobs paying almost \$50 million an annual wages, salaries, and benefits.

While site development and drilling activities are temporary, meaning they stop when the well is developed, the impacts of temporary and recurring production expenditures in any given year are additive. In sum, Devon and its affiliated entities spent about \$834 million in developing and operating gas wells in the nine-county study area in 2005.

## **Property Income Impacts**

One of the significant differences in the drilling and production of natural gas wells versus other economic activities is the boost to personal income from leasehold rentals and royalty payments. During 2005, Devon paid more than \$287 million in royalties to mineral rights holders for properties located in the nine-county study area (see Table 1). In addition, almost \$50 million was paid in 2005 for leases of unproven properties. Combined, that is almost \$337 million in non-labor income associated with drilling and production activity in the Barnett Shale area from Devon operations. Based on records provided by Devon, about 60 percent of the royalty and leasehold income is paid to households residing in the Barnett Shale region. Even if these households immediately save or invest over half of this income (55%), and the tax man gets his due, the impacts of this additional income will boost regional economic activity by \$131 million, increase labor income by \$33.7 million, and increase employment by over 1,000 jobs. The remainder of the property income that is saved or invested provides important investment capital and resources for regional economic growth and development. In addition, this income offers families retirement security and long-term family wealth development across a wide range of economic strata.

*In total, Devon's operations in the Barnett Shale, including royalties and rentals paid to local households, boosted regional economic activity by \$1.36 billion in 2005. More than 8,800 jobs were supported that increased regional labor income by about \$411 million, with another \$98 million added in indirect and induced property income.*

**Table 1**

**Economic and Property Income Impacts of Devon Operations  
In Nine Counties of North Central Texas  
2005**

Description	Impact
<b>Site Development, Exploration &amp; Drilling Activity</b>	
Expenditures	\$ 719,255,000
Total Economic Activity Supported	\$ 1,077,057,000
Total Labor Income	\$ 327,141,000
Total Employment (jobs)	6,875
Indirect Property Income	\$ 66,083,000
<b>Recurring Production Activities</b>	
Expenditures	\$ 114,595,000
Total Economic Activity Supported	\$ 155,590,000
Total Labor Income	\$ 49,907,000
Total Employment (jobs)	960
Indirect Property Income	\$ 10,758,000
<b>Property Income</b>	
Royalties and Leasehold Rentals Paid	\$ 336,776,000
Proportion Paid to Area Households (60%)	\$ 198,098,000
Proportion Assumed for Household Activities (45%)	\$ 89,144,000
Total Economic Activity Supported	\$ 130,765,000
Total Labor Income	\$ 33,669,000
Total Employment (jobs)	1,009
Indirect Property Income from Operating Activities*	\$ 21,320,000
<b>Total Impacts Exploration, Drilling, Production Activities and Property Income</b>	
<b>Expenditures</b>	<b>\$ 833,850,000</b>
<b>Total Economic Activity Supported</b>	<b>\$ 1,363,412,000</b>
<b>Total Labor Income</b>	<b>\$ 410,717,000</b>
<b>Total Employment (jobs)</b>	<b>8,844</b>
<b>Indirect Property Income from All Activities*</b>	<b>\$ 98,161,000</b>

\* Includes indirect and induced property income impacts to rents, royalties, dividends, and corporate profits. Study area includes Denton, Erath, Hill, Hood, Johnson, Palo Pinto, Parker, Tarrant, and Wise counties.

Remembering that the IMPLAN model accounts for economic leakage, we separately consider the impacts of Devon operations on the Texas economy. By focusing on the state as a whole, we capture the impacts of some Devon spending that leaves the nine-county Barnett Shale area but remains elsewhere within the state. An example

would be purchasing goods or services to support drilling operations in Wise County from a firm located in Midland-Odessa. Table 2 shows slightly higher impacts for the same level of spending with operating expenditure impacts rising to almost \$200 million in 2005 and drilling and exploration total impacts of almost \$1.3 billion. In addition, the impacts of new household income for royalty and leasehold rental payments are higher at the state level. Devon estimates that about 88 percent of all recipients of these property income payments reside in Texas. Thus, *the total increase in statewide economic activity associated with Devon's Barnett Shale operations was \$1.7 billion in 2005 supporting over 11,000 jobs that paid \$564 million in salaries, wages, and benefits.*

**Table 2**

**Economic and Property Income Impacts of Devon Operations  
On the Overall Texas Economy  
2005**

Description	Impact
<b>Site Development, Exploration &amp; Drilling Activity</b>	
Expenditures	\$ 719,255,000
Total Economic Activity Supported	\$ 1,292,525,000
Total Labor Income	\$ 423,754,000
Total Employment (jobs)	7,966
Indirect Property Income	\$ 99,108,000
<b>Recurring Production Activities</b>	
Expenditures	\$ 114,595,000
Total Economic Activity Supported	\$ 196,854,000
Total Labor Income	\$ 83,123,000
Total Employment (jobs)	1,530
Indirect Property Income	\$ 15,503,000
<b>Property Income</b>	
Royalties and Leasehold Rentals Paid	\$ 336,776,000
Proportion Paid to Texas Households (88%)	\$ 296,363,000
Proportion Assumed for Household Activities (45%)	\$ 133,363,000
Total Economic Activity Supported (after taxes)	\$ 214,081,000
Total Labor Income	\$ 57,505,000
Total Employment (jobs)	1,667
Indirect Property Income from Operating Activities*	\$ 35,198,000
<b>Total Impacts Exploration, Drilling, Production Activities and Property Income</b>	
<b>Expenditures</b>	<b>\$ 833,850,000</b>
<b>Total Economic Activity Supported</b>	<b>\$ 1,703,460,000</b>
<b>Total Labor Income</b>	<b>\$ 564,382,000</b>
<b>Total Employment (jobs)</b>	<b>11,168</b>
<b>Indirect Property Income from All Activities*</b>	<b>\$ 149,809,000</b>

\* Includes indirect and induced property income impacts to rents, royalties, dividends, and corporate profits.

### **Fiscal Impacts**

Fiscal impacts associated with Devon operations include state and local sales taxes, property taxes, fees for permits and licenses, and severance taxes. State severance taxes are paid on natural gas production based on well-head prices. For production

activities in the study area, Devon and its affiliated entities paid over \$62 million in severance taxes to the State of Texas. Overall, natural gas severance taxes contribute about 2.5 percent of total state revenues – approximately equal to net lottery proceeds. Though our model does not provide details on state sales and use tax payments, a broad estimate would place Devon’s contributions to state sales and use taxes at several million dollars.

Local taxing entities also benefit greatly from Devon’s drilling and production activities. Ad valorem taxes paid directly by Devon to taxing jurisdictions in the study area approached \$45 million in 2005 (see Table 3). Of this total, \$8 million was paid to counties and county agencies, such as hospital districts and community college districts; \$1.1 million went to municipalities; and area school districts enjoyed over \$35 million in related property tax revenues. Other local taxing entities, such as local water districts, received about \$94,000 in 2005.

The indirect and induced economic activities generated by Devon’s exploration and production activities also generate tax revenue of state and local jurisdictions. These revenues include receipts from sales taxes, property taxes, licensing fees, and permit fees paid by businesses and individuals who derive income from Devon’s activities. For example, if a Devon supplier of drill parts purchases office supplies, it pays sales tax on that purchase. In addition, direct and contract employees pay sales and property taxes from their Devon earnings. The IMPLAN model provides estimates of these tax payments based on data from the US Bureau of Economic Analysis. For 2005, these indirect and induced revenues for state and local government totaled more than \$29 million. In sum, even without being able to specify an estimate of direct sales and use tax

payments to state and local governments, Devon's operations added between \$130 million and \$145 million to state and local tax coffers in 2005.

**Table 3**  
**Fiscal Impacts of Devon Operations**  
**2005**

Description	Impact
State Severance Taxes*	\$ 62,449,000
Local Property Taxes*	
County and County Entities^	\$ 8,008,000
Municipalities	\$ 1,112,000
Public School Districts	\$ 35,578,000
Other Taxing Entities <sup>+</sup>	\$ 94,000
Total Local Property Taxes	\$ 44,792,000
Indirect and Induced State and Local Tax Revenues <sup>#</sup>	\$ 29,307,000
Estimated Total State Tax Revenues <sup>@</sup>	\$ 135,000,000 to \$ 150,000,000

\*Based on activities in Denton, Erath, Hill, Hood, Johnson, Palo Pinto, Parker, Tarrant, and Wise counties.

^ Includes counties, county hospital districts, county community college districts, special county taxing entities such as road districts. + Includes water districts and other entities. @ Estimates of direct sales and use tax payments are not available, but likely total several million dollars each year.

### **Outlook for 2006 through 2010**

As impressive as the impacts are, Devon's planning calls for continued increases in Barnett Shale operations. Over the next five years (2006 through 2010), Devon expects to spend almost \$8.5 billion for site development, exploration, and drilling activities. In addition, more than \$1.0 billion will be spent on recurring operations during this 5-year period with continued contributions to local household income and spending through royalty and leasehold payments. For the years 2006 through 2010, Devon's impact on total economic activity in the 9-county study area will exceed \$15 billion (see Table 4). This activity will support an average of about 19,600 jobs each year paying almost \$4.6 billion in salaries, wages, and benefits over the 5-year period. Indirect property income from 2006 through 2010 will also exceed \$1 billion.

In addition, the fiscal impacts of Devon’s operations will remain sizeable during the forecast period. However, it should be cautioned that the projected increases in exploration and operations will not be realized if regulatory and/or tax policies become a significant hindrance to operations or returns on investment. These projections also assume that natural gas market prices do not experience a long term decline from current levels.

**Table 4**  
**Economic and Property Income Impacts of Devon Operations**  
**Barnett Shale Operating Area**  
**2006-2010**

Description	Impact
<b>Total Impacts Exploration, Drilling, Production Activities and Property Income</b>	
Exploration and Production Expenditures	\$ 9,470,000,000
Total Economic Activity Supported	\$ 15,192,360,000
Total Labor Income	\$ 4,584,498,000
Total Employment (average annual jobs)	19,644
Indirect Property Income from All Activities*	\$ 1,060,004,000

Estimates not adjusted for inflation. \* Includes indirect and induced property income impacts to rents, royalties, dividends, and corporate profits. Study area includes Denton, Erath, Hill, Hood, Johnson, Palo Pinto, Parker, Tarrant, and Wise counties.

*C. Demographic and employment trends in the 9-county region*

As indicated in the previous section, Devon Energy’s site development, drilling and operating expenditures have had a significant impact on the north Texas economy. Indeed, activities by Devon and other companies producing in the Barnett Shale are largely responsible for the rapid population, employment and income gains recorded in many north Texas counties in recent years.

For example, as indicated in Table 5, Denton and Wise Counties have posted population gains well in excess of Dallas County and the DFW metropolitan region as a

whole. In fact, five of the nine counties where Devon operates have shown population growth greater than the regional average since 1990. The same is true for employment growth, with seven of the nine counties recording job gains faster than Dallas County and the regional average (see Table 5).

**Table 5**

**Population Change  
1990-2005**

<b>County</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>	<b>% Change 1990-2000</b>	<b>% Change 2000-2005</b>
Dallas	1,852,810	2,218,899	2,267,080	19.8%	2.2%
Denton	273,525	432,976	544,511	58.3%	25.8%
Tarrant	1,170,103	1,446,219	1,595,715	23.6%	10.3%
Wise	34,679	48,793	58,650	40.7%	20.2%
Johnson	97,165	126,811	143,757	30.5%	13.4%
Parker	64,785	88,495	99,846	36.6%	12.8%
Palo Pinto	25,055	27,026	27,500	7.9%	1.8%
Erath	27,991	33,001	36,700	17.9%	11.2%
Hood	28,981	41,100	48,050	41.8%	16.9%
Hill	27,146	32,321	34,378	19.1%	6.4%
DFW MSA *	3,885,415	5,196,397	5,819,475	33.7%	12.0%

*Source: North Central Texas Council of Governments and U.S Census*

*\* 1990 Census figures reflect DFW CMSA*

Job growth in the nine-county region has been accompanied by significant income gains (see Table 6). In both the 1990-2000 period and the 2000-2004 period, personal income grew at a considerably faster clip in each of the nine Barnett Shale counties than was the case in Dallas County or the region as a whole (see Table 7). Clearly, energy exploration and production has been a major contributor to this rapid growth.

**Table 6****Employment Change  
Aug. 2000-Aug. 2006**

<b>County</b>	<b>Aug. 2000</b>	<b>Aug. 2006</b>	<b>% Change 2000-2006</b>
Dallas	1,140,046	1,154,840	1.3%
Denton	259,820	308,605	18.8%
Tarrant	763,435	828,910	8.6%
Wise	24,368	27,223	11.7%
Johnson	63,719	70,962	11.4%
Parker	44,523	49,754	11.7%
Palo Pinto	12,758	13,986	9.6%
Erath	15,509	16,751	8.0%
Hood	19,302	21,857	13.2%
Hill	14,581	14,659	0.5%
DFW MSA	2,744,263	2,978,473	8.5%

Source: Texas Workforce Commission

**Table 7****Change in Personal Income  
1990-2004**

<b>County</b>	<b>1990</b>	<b>2000</b>	<b>2004</b>	<b>% Change 1990-2000</b>	<b>% Change 2000-2004</b>
Dallas	\$42,235,901	\$80,217,322	\$88,450,084	89.9%	10.3%
Denton	\$5,199,622	\$14,506,927	\$17,511,626	179.0%	20.7%
Tarrant	\$23,080,004	\$44,068,188	\$51,951,087	90.9%	17.9%
Wise	\$496,504	\$1,076,166	\$1,325,300	116.7%	23.2%
Johnson	\$1,457,601	\$3,088,334	\$3,728,541	111.9%	20.7%
Parker	\$1,045,787	\$2,548,899	\$2,974,960	143.7%	16.7%
Palo Pinto	\$343,645	\$585,523	\$661,747	70.4%	13.0%
Erath	\$435,869	\$734,255	\$858,073	68.5%	16.9%
Hood	\$450,733	\$1,149,864	\$1,323,387	155.1%	15.1%
Hill	\$351,785	\$652,168	\$781,813	85.4%	19.9%
DFW MSA	\$83,682,643	\$176,530,068	\$202,219,327	111.0%	14.6%

Source: Bureau of Economic Analysis

According to the latest projections from the North Central Texas Council of Governments (NCTCOG), the Barnett Shale counties will continue to post significant population and employment gains for the foreseeable future (see Tables 8 and 9). Energy production will continue to be a major driver of growth for these counties.

**Table 8**

**Population Projections  
2005-2030**

<b>County</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>% Change 2005-2030</b>
Dallas	2,388,186	2,565,713	2,749,375	2,945,410	3,162,134	3,400,638	42.4%
Denton	515,897	603,269	696,266	793,227	895,478	1,002,361	94.3%
Tarrant	1,553,806	1,662,906	1,777,265	1,895,743	2,021,029	2,152,759	38.5%
Wise	53,186	59,302	65,162	71,166	77,182	83,010	56.1%
Johnson	138,806	152,216	166,809	182,200	198,069	214,250	54.4%
Parker	96,555	105,249	114,401	123,633	132,396	140,592	45.6%
Palo Pinto	28,132	29,401	30,800	32,128	33,367	34,511	22.7%
Erath	35,790	38,083	40,162	42,245	44,146	45,924	28.3%
Hood	44,641	48,429	52,580	56,908	61,136	65,190	46.0%
Hill	34,293	36,565	38,938	41,271	43,479	45,591	32.9%
DFW MSA	5,668,679	6,197,537	6,751,742	7,338,736	7,971,664	8,646,776	52.5%

*Source: Texas State Data Center*

*Note: All projections based on "0.5 Scenario"*

**Table 9**  
**Employment Projections**  
**2005-2030**

County	2005	2010	2020	2030	% Change 2005-2030
Dallas	1,178,753	1,270,155	1,458,124	1,683,484	42.8%
Denton	313,121	367,847	483,675	611,196	95.2%
Tarrant	843,630	903,753	1,030,295	1,169,978	38.7%
Wise	26,497	29,651	35,583	41,505	56.6%
Johnson	73,670	84,564	101,222	119,028	61.6%
Parker	48,428	52,889	62,127	70,649	45.9%
Palo Pinto	12,639	13,067	14,279	15,338	21.4%
Erath	16,783	17,879	19,833	21,561	28.5%
Hood	21,436	23,283	27,360	31,341	46.2%
Hill	14,528	15,494	17,488	19,318	33.0%
DFW MSA	3,569,201	3,896,953	4,658,669	5,416,718	51.8%

*Source: Texas State Data Center; U.S. Census; Bureau of Labor Statistics; The Real Estate Center at Texas A&M; North Central Texas Council of Governments; and Authors' Estimates*

*D. The oil and gas industry: Generating new revenues for local governments and school districts in the Barnett Shale.*

As indicated in Table 3, local governments and school districts in the Barnett Shale are receiving a windfall of tax receipts—almost \$45 million—from Devon’s operations alone. The activities of other energy companies are also contributing to the tremendous gains in oil and gas property values (mainly gas) since 2000 (see Table 10). Importantly, these higher valuations have increased the fiscal capacity of many area school districts (see Table 11). For example, in the Northwest Independent School District, oil and gas properties account for almost 23 percent of the tax base. In the Decatur ISD, they account for more than 35 percent.

Devon and the other operators in the Barnett Shale have also helped fill the coffers of the state treasury through exponentially higher natural gas severance tax

revenues (see Table 12). In 2005, production taxes on natural gas exceeded \$1.6 billion—the highest level ever. What’s more, gas production taxes last year were more than double the amount collected from oil production taxes.

**Table 10**  
**Oil and Gas Property Values**

<b>County</b>	<b>2000</b>	<b>2005</b>	<b>% Change 2000-2005</b>
Denton	\$48,200,100	\$2,748,406,110	5602%
Tarrant	\$1,226,703	\$741,825,050	60373%
Wise	\$196,502,840	\$1,991,325,370	913%
Johnson	\$66,932	\$145,666,190	217533%
Parker	\$29,004,240	\$135,907,200	369%
Palo Pinto	\$51,693,210	\$124,568,510	141%
Erath	\$9,549,790	\$15,326,210	60%
Hood	\$4,534,040	\$7,540,760	66%
Hill	\$27,175	\$11,360	-58%
<b>Total</b>	<b>\$340,805,030</b>	<b>\$5,910,576,760</b>	<b>1634%</b>

*Source: Texas Comptroller of Public Accounts*

**Table 11**  
**Oil, Gas, and Minerals in School District Tax Base  
2005**

<b>County</b>	<b>Total</b>	<b>OGM</b>	<b>% OGM</b>
Denton ISD (Denton Co.)	\$7,280,054,652	\$37,189,184	0.5108%
Northwest ISD (Denton Co.)	\$7,456,681,553	\$1,704,160,200	22.8541%
Bridgeport ISD (Wise Co.)	\$955,564,830	\$77,215,860	8.0807%
Decatur ISD (Wise Co.)	\$1,355,073,370	\$476,976,620	35.1993%

*Source: Texas Comptroller of Public Accounts*

**Table 12**

**Natural Gas Severance Tax Revenue  
(in millions)**

	2000	2001	2002	2003	2004	2005	2006*	% Change 2000-2005
Texas	\$697.6	\$1,596.9	\$628.5	\$1,069.9	\$1,392.4	\$1,657.1	\$708.9	137.5%

Source: Texas Comptroller of Public Accounts

\* YTD July 2006

*E. Conclusion*

A decade ago, no one would have predicted that north Texas would become one of the major energy-producing areas of the nation. But thanks to the Barnett Shale, a significant new industry has blossomed in the region. Site development, drilling and production spending by Devon Energy and other companies currently generates about \$6 billion of annual economic activity in north Texas which, in turn, supports thousands of local jobs and produces millions of tax dollars and bonus payments for local municipalities, counties and school districts. The state of Texas' revenue picture has also improved markedly in recent years, in part due to growing severance tax collections from production in the Barnett Shale.

America's economic engine runs as much on natural gas as it does on oil. Gas not only heats our homes but serves as a raw material for everything from plastics to fertilizer. It's also a major power source for key industries—including electricity generation, food processing, iron and steel, textiles, glass and paper—and it accounts for 65 percent of the energy required to produce ethanol. In short, the need for natural gas will continue to increase in the years ahead. This demand for the growing output from the Barnett Shale will help sustain the economy of the entire north Texas region.