The Local Impact of Oil and Gas Production and Drilling in Oklahoma

for

Oklahoma Commission on Marginally Producing Oil and Gas Wells

by

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INTRODUCTION

This report examines the economic impact of Oklahoma's oil and gas industry at the county and region levels. The report highlights the areas of the state where oil and gas activities are concentrated, examines the current trends in drilling and production, and evaluates the economic impact of the oil and gas industry on the various regions of the state.

LOCAL PRODUCTION

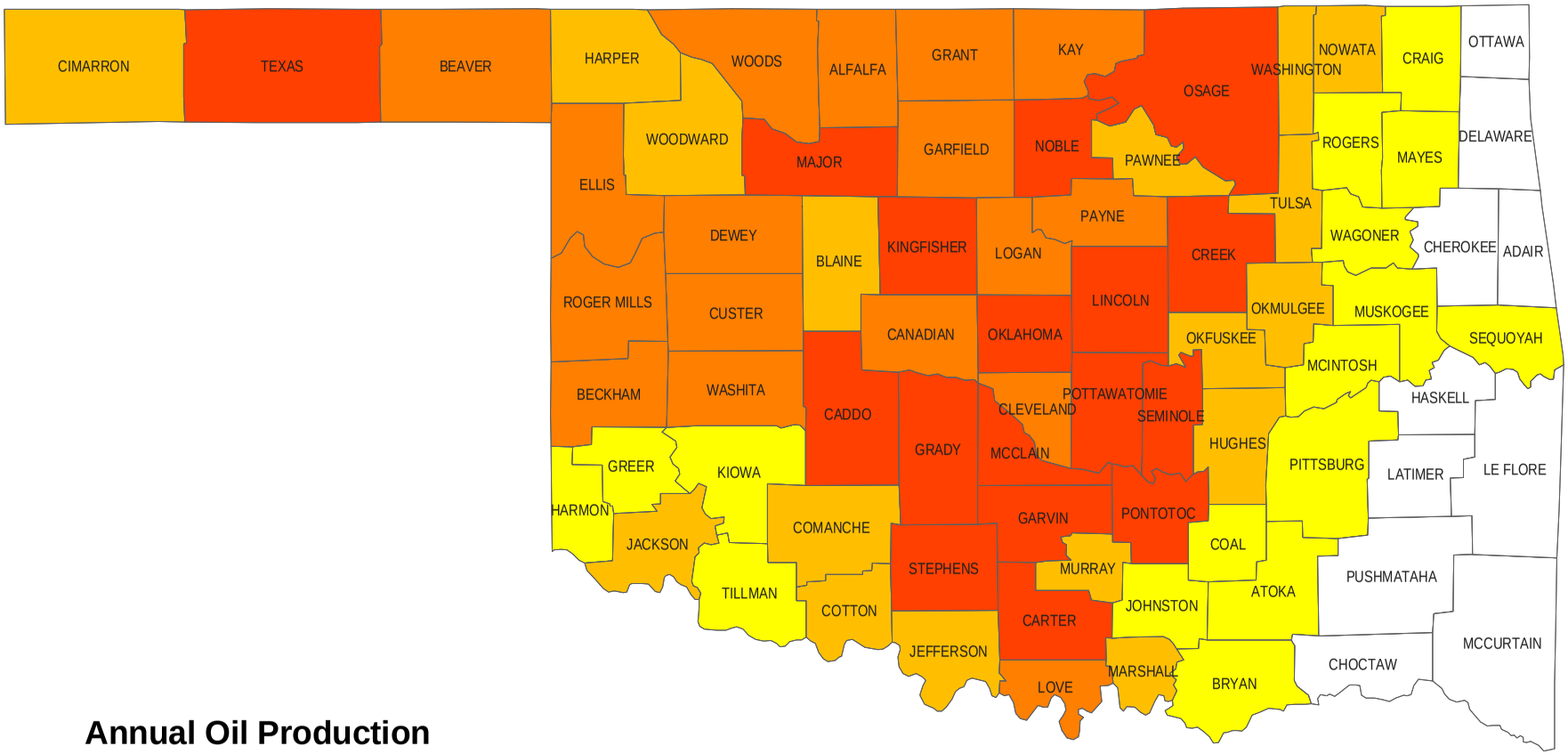
Oil and gas deposits are found throughout most of Oklahoma, with production occurring in all but 5 of the state's 77 counties in 2001. The bulk of Oklahoma's oil production is confined to three areas, as illustrated in Map 1: a large contiguous block of counties in the central and south central portion of the state stretching from Kingfisher and Lincoln Counties in the north to Carter County in the south; the Texas County area in the panhandle; and Osage, Creek, and Noble Counties in the north central portion of the state. Almost no crude oil production occurs along the eastern edge of the state.

The major natural gas producing areas, highlighted in Map 2, are found in the western half of the state, especially Texas and Beaver Counties in the panhandle, along with a large block of counties (notably Roger Mills, Custer, Grady, and Stephens) in the west central portion of the state. Latimar and Pittsburg counties in the southeast are also large natural gas producers.

Oklahoma's counties are ranked by 2001 crude oil and natural gas production in Panels A and B of Table 1. In order to allow county rankings of combined oil and gas production, Panel C of Table 1 shows natural gas production converted to barrel-of-oil equivalent terms and combined with crude oil production. The conversion ratio used is 8 thousand cubic feet (MCF) of natural gas per barrel of oil.

Gas and oil production remain heavily concentrated in a small number of counties: 22 counties produce approximately 80% of state condensate and crude oil output,

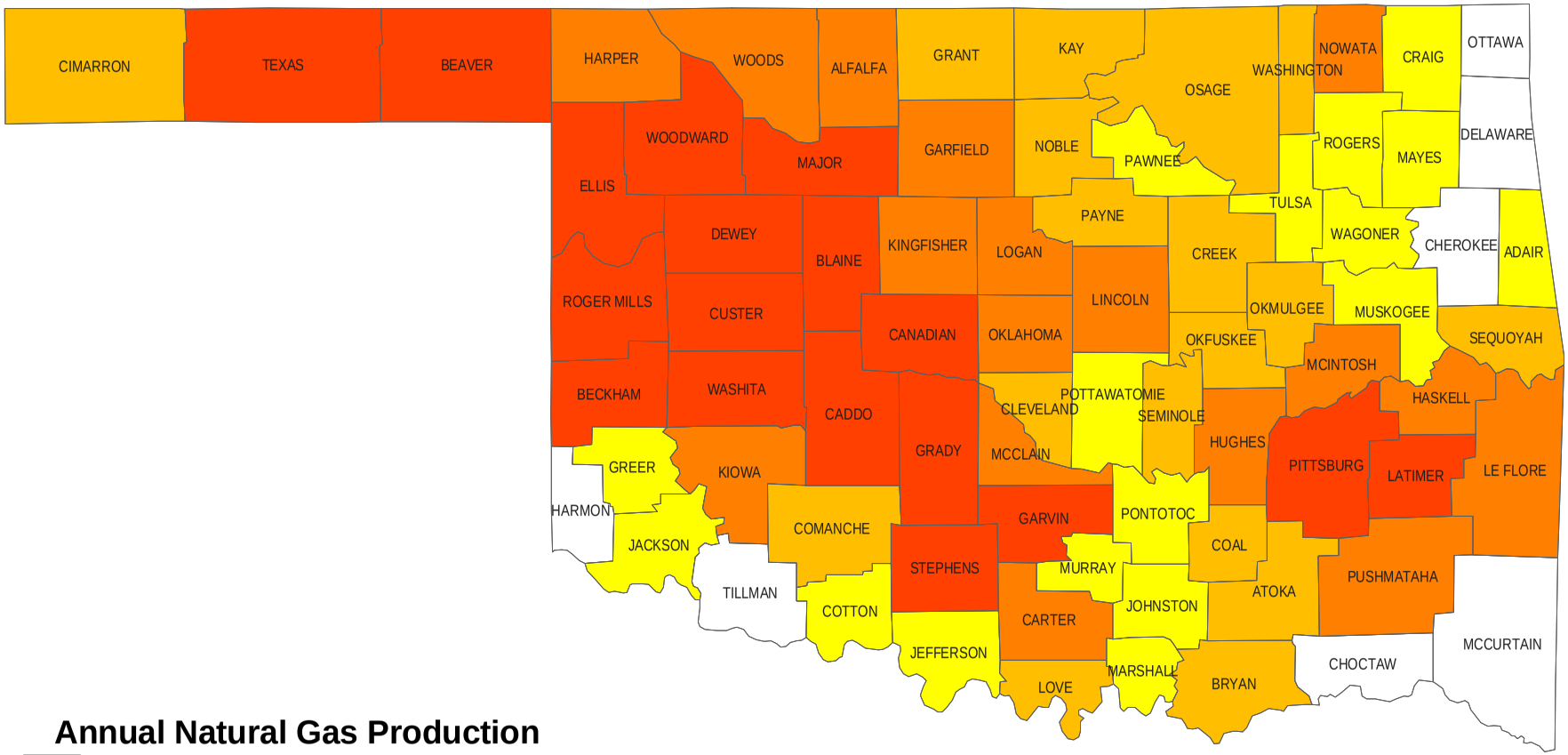
Map 1. Crude Oil and Condensate Production by County, 2001



Annual Oil Production

- 1 to 119,999 Barrels
- 120,000 to 509,999 Barrels
- 510,000 to 1,199,999 Barrels
- 1,200,000 to 10,000,000 Barrels
- No Oil Production

Map 2. Casinghead and Natural Gas Production by County, 2001



Annual Natural Gas Production

- 0 to 999,999 MCF
- 1,000,000 to 4,999,999 MCF
- 5,000,000 to 29,599,999 MCF
- 29,600,000 to 1,000,000,000 MCF
- No Gas Production

Table 1 - Rankings of Oil and Gas Production by County (2001)

A. Crude Oil Production (bbls)

	County	Production (Barrels)	% of Total	Cumulative % of Total
1	Carter	7,459,153	10.85%	10.85%
2	Stephens	5,643,525	8.21%	19.07%
3	Osage	4,104,898	5.97%	25.04%
4	Grady	4,101,263	5.97%	31.01%
5	Texas	3,976,064	5.79%	36.79%
6	Garvin	3,534,956	5.14%	41.94%
7	Lincoln	3,079,761	4.48%	46.42%
8	Pontotoc	2,428,358	3.53%	49.95%
9	Creek	2,396,787	3.49%	53.44%
10	Caddo	2,164,759	3.15%	56.59%
11	Seminole	2,153,048	3.13%	59.72%
12	McClain	2,115,482	3.08%	62.80%
13	Oklahoma	1,798,112	2.62%	65.41%
14	Pottawatomie	1,658,535	2.41%	67.83%
15	Kingfisher	1,372,679	2.00%	69.83%
16	Major	1,285,565	1.87%	71.70%
17	Noble	1,222,016	1.78%	73.47%
18	Canadian	1,187,247	1.73%	75.20%
19	Beaver	1,163,943	1.69%	76.90%
20	Logan	996,489	1.45%	78.35%
21	Payne	832,775	1.21%	79.56%
22	Kay	782,606	1.14%	80.70%
23	Garfield	767,598	1.12%	81.81%
24	Washita	741,061	1.08%	82.89%
25	Custer	731,109	1.06%	83.95%
26	Cleveland	669,921	0.97%	84.93%
27	Dewey	667,529	0.97%	85.90%
28	Roger Mills	657,254	0.96%	86.86%
29	Love	647,364	0.94%	87.80%
30	Alfalfa	605,637	0.88%	88.68%
31	Ellis	601,749	0.88%	89.56%
32	Grant	547,716	0.80%	90.35%
33	Woods	539,432	0.78%	91.14%
34	Beckham	524,065	0.76%	91.90%
35	Pawnee	506,532	0.74%	92.64%
36	Blaine	489,064	0.71%	93.35%
37	Okfuskee	478,221	0.70%	94.04%
38	Murray	415,801	0.61%	94.65%
39	Jefferson	403,498	0.59%	95.24%
40	Hughes	377,719	0.55%	95.79%
41	Okmulgee	357,364	0.52%	96.31%
42	Comanche	331,435	0.48%	96.79%
43	Tulsa	287,095	0.42%	97.21%
44	Washington	274,811	0.40%	97.61%
45	Harper	270,860	0.39%	98.00%
46	Woodward	234,214	0.34%	98.34%
47	McCurtain	163,785	0.24%	98.58%
48	Cotton	161,667	0.24%	98.81%
49	Nowata	151,505	0.22%	99.04%
50	Cimarron	126,914	0.18%	99.22%
51	Jackson	126,080	0.18%	99.40%
52	Coal	118,420	0.17%	99.58%
53	Muskogee	70,052	0.10%	99.68%
54	Tillman	54,545	0.08%	99.76%
55	Bryan	45,367	0.07%	99.82%
56	Rogers	27,985	0.04%	99.86%
57	Wagoner	27,834	0.04%	99.90%
58	McIntosh	26,465	0.04%	99.94%
59	Kiowa	20,336	0.03%	99.97%
60	Harmon	5,757	0.01%	99.98%
61	Greer	5,444	0.01%	99.99%
62	Johnston	3,848	0.01%	99.99%
63	Atoka	2,228	0.00%	100.00%
64	Mayes	941	0.00%	100.00%
65	Craig	654	0.00%	100.00%
66	Pittsburg	89	0.00%	100.00%
67	Sequoyah	43	0.00%	100.00%
68	Adair	0	0.00%	100.00%
68	Cherokee	0	0.00%	100.00%
68	Choctaw	0	0.00%	100.00%
68	Delaware	0	0.00%	100.00%
68	Haskell	0	0.00%	100.00%
68	Latimer	0	0.00%	100.00%
68	Le Flore	0	0.00%	100.00%
68	Marshall	0	0.00%	100.00%
68	Ottawa	0	0.00%	100.00%
68	Pushmataha	0	0.00%	100.00%
	Statewide	68,725,029		

B. Natural Gas Production (mcf)

	County	Production (MCF)	% of Total	Cumulative % of Total
1	Roger Mills	127,692,502	7.96%	7.96%
2	Latimer	126,185,574	7.87%	15.83%
3	Grady	106,502,577	6.64%	22.47%
4	Texas	106,370,490	6.63%	29.10%
5	Caddo	87,573,024	5.46%	34.56%
6	Washita	80,490,688	5.02%	39.58%
7	Beckham	76,683,899	4.78%	44.37%
8	Custer	72,272,429	4.51%	48.87%
9	Pittsburg	71,545,608	4.46%	53.33%
10	Beaver	63,628,499	3.97%	57.30%
11	Stephens	54,713,238	3.41%	60.71%
12	McClain	50,558,132	3.15%	63.86%
13	Canadian	49,164,653	3.07%	66.93%
14	Blaine	48,702,231	3.04%	69.97%
15	Dewey	42,920,165	2.68%	72.64%
16	Garvin	36,646,837	2.29%	74.93%
17	Ellis	35,730,533	2.23%	77.16%
18	Woodward	29,835,743	1.86%	79.02%
19	Kingfisher	29,547,266	1.84%	80.86%
20	Harper	29,042,861	1.81%	82.67%
21	Lincoln	25,827,496	1.61%	84.28%
22	Haskell	24,310,861	1.52%	85.80%
23	Le Flore	22,066,476	1.38%	87.17%
24	Pushmataha	21,474,459	1.34%	88.51%
25	Woods	21,426,973	1.34%	89.85%
26	Garfield	18,870,416	1.18%	91.02%
27	Carter	16,882,868	1.05%	92.08%
28	Major	15,187,243	0.95%	93.02%
29	Logan	12,978,328	0.81%	93.83%
30	Oklahoma	11,056,719	0.69%	94.52%
31	Kiowa	8,041,614	0.50%	95.02%
32	Hughes	6,151,931	0.38%	95.41%
33	Alfalfa	5,713,480	0.36%	95.76%
34	Mayes	5,679,614	0.35%	96.12%
35	Nowata	5,662,534	0.35%	96.47%
36	Noble	4,304,581	0.27%	96.74%
37	Coal	4,250,523	0.27%	97.00%
38	Seminole	4,006,256	0.25%	97.25%
39	Grant	3,686,043	0.23%	97.48%
40	Sequoyah	3,648,951	0.23%	97.71%
41	Love	3,453,711	0.22%	97.93%
42	Osage	3,268,146	0.20%	98.13%
43	Cimarron	3,264,001	0.20%	98.33%
44	Washington	3,174,446	0.20%	98.53%
45	Okfuskee	3,085,869	0.19%	98.72%
46	Comanche	2,882,896	0.18%	98.90%
47	Creek	2,300,256	0.14%	99.05%
48	Cleveland	1,903,817	0.12%	99.17%
49	Atoka	1,877,018	0.12%	99.28%
50	Okmulgee	1,745,715	0.11%	99.39%
51	Bryan	1,637,719	0.10%	99.49%
52	Payne	1,589,209	0.10%	99.59%
53	Kay	1,167,606	0.07%	99.67%
54	Pontotoc	966,133	0.06%	99.73%
55	Pottawatomie	937,049	0.06%	99.79%
56	Tulsa	883,388	0.06%	99.84%
57	Rogers	665,980	0.04%	99.88%
58	McCurtain	605,478	0.04%	99.92%
59	Pawnee	504,312	0.03%	99.95%
60	Muskogee	250,869	0.02%	99.97%
61	Wagoner	100,692	0.01%	99.97%
62	McIntosh	93,655	0.01%	99.98%
63	Greer	73,877	0.00%	99.98%
64	Craig	69,437	0.00%	99.99%
65	Adair	64,260	0.00%	99.99%
66	Johnston	53,155	0.00%	100.00%
67	Cotton	37,782	0.00%	100.00%
68	Murray	21,868	0.00%	100.00%
69	Jefferson	17,475	0.00%	100.00%
70	Jackson	2,852	0.00%	100.00%
71	Cherokee	0	0.00%	100.00%
71	Choctaw	0	0.00%	100.00%
71	Delaware	0	0.00%	100.00%
71	Harmon	0	0.00%	100.00%
71	Marshall	0	0.00%	100.00%
71	Ottawa	0	0.00%	100.00%
71	Tillman	0	0.00%	100.00%
	Statewide	1,603,732,986		

C. Crude Oil & Natural Gas Equivalent Production (1 barrel = 8 MCF)

	County	Barrel of Oil Equivalent	% of Total	Cumulative % of Total
1	Grady	17,414,085	6.47%	6.47%
2	Texas	17,272,375	6.42%	12.89%
3	Roger Mills	16,618,817	6.17%	19.06%
4	Latimer	15,773,197	5.86%	24.92%
5	Caddo	13,111,387	4.87%	29.79%
6	Stephens	12,482,680	4.64%	34.43%
7	Washita	10,802,397	4.01%	38.44%
8	Beckham	10,109,552	3.76%	42.19%
9	Custer	9,765,163	3.63%	45.82%
10	Carter	9,569,512	3.55%	49.38%
11	Beaver	9,117,505	3.39%	52.76%
12	Pittsburg	8,943,290	3.32%	56.09%
13	McClain	8,435,249	3.13%	59.22%
14	Garvin	8,115,811	3.01%	62.23%
15	Canadian	7,332,829	2.72%	64.96%
16	Blaine	6,576,843	2.44%	67.40%
17	Lincoln	6,308,198	2.34%	69.75%
18	Dewey	6,032,550	2.24%	71.99%
19	Ellis	5,068,066	1.88%	73.87%
20	Kingfisher	5,066,087	1.88%	75.75%
21	Osage	4,513,416	1.68%	77.43%
22	Woodward	3,963,682	1.47%	78.90%
23	Harper	3,901,218	1.45%	80.35%
24	Woods	3,217,804	1.20%	81.54%
25	Major	3,183,970	1.18%	82.73%
26	Oklahoma	3,180,202	1.18%	83.91%
27	Garfield	3,126,400	1.16%	85.07%
28	Haskell	3,038,858	1.13%	86.20%
29	Le Flore	2,758,310	1.02%	87.22%
30	Creek	2,684,319	1.00%	88.22%
31	Pushmataha	2,684,307	1.00%	89.22%
32	Seminole	2,653,830	0.99%	90.20%
33	Logan	2,618,780	0.97%	91.18%
34	Pontotoc	2,549,125	0.95%	92.12%
35	Pottawatomie	1,775,666	0.66%	92.78%
36	Noble	1,760,089	0.65%	93.44%
37	Alfalfa	1,319,822	0.49%	93.93%
38	Hughes	1,146,710	0.43%	94.35%
39	Love	1,079,078	0.40%	94.75%
40	Payne	1,031,426	0.38%	95.14%
41	Kiowa	1,025,538	0.38%	95.52%
42	Grant	1,008,471	0.37%	95.89%
43	Kay	928,557	0.34%	96.24%
44	Cleveland	907,898	0.34%	96.58%
45	Okfuskee	863,955	0.32%	96.90%
46	Nowata	859,322	0.32%	97.22%
47	Mayes	710,893	0.26%	97.48%
48	Comanche	691,797	0.26%	97.74%
49	Washington	671,617	0.25%	97.99%
50	Coal	649,735	0.24%	98.23%
51	Okmulgee	575,578	0.21%	98.44%
52	Pawnee	569,571	0.21%	98.65%
53	Cimarron	534,914	0.20%	98.85%
54	Sequoyah	456,162	0.17%	99.02%
55	Murray	418,535	0.16%	99.18%
56	Jefferson	405,682	0.15%	99.33%
57	Tulsa	397,519	0.15%	99.47%
58	Bryan	250,082	0.09%	99.57%
59	McCurtain	239,470	0.09%	99.66%
60	Atoka	236,855	0.09%	99.74%
61	Cotton	166,390	0.06%	99.81%
62	Jackson	126,437	0.05%	99.85%
63	Rogers	111,233	0.04%	99.89%
64	Muskogee	101,411	0.04%	99.93%
65	Tillman	54,545	0.02%	99.95%
66	Wagoner	40,421	0.02%	99.97%
67	McIntosh	38,172	0.01%	99.98%
68	Greer	14,679	0.01%	99.99%
69	Johnston	10,492	0.00%	99.99%
70	Craig	9,334	0.00%	99.99%
71	Adair	8,033	0.00%	100.00%
72	Harmon	5,757	0.00%	100.00%
73	Cherokee	0	0.00%	100.00%
73	Choctaw	0	0.00%	100.00%
73	Delaware	0	0.00%	100.00%
73	Marshall	0	0.00%	100.00%
73	Ottawa	0	0.00%	100.00%
	Statewide	269,191,652		

Source: Oklahoma Corporation Commission

while 19 counties account for 80% of the cashinghead and natural gas produced statewide. Few counties, however, are large producers of both crude oil and natural gas as the state's major oil and gas deposits are not generally concentrated in the same areas. Of the top ten producers based on barrel-of-oil equivalent production, only Grady, Texas, and Caddo counties are in the top ten in both the gas and oil rankings. Of the remaining top ten counties, two are predominately oil producers while five produce mostly natural gas. Carter County, the largest oil-producing county, ranks only 27th among the state's 77 counties in gas production, leaving it with an overall 10th place ranking based on barrel-equivalent production. The top ten rankings also reflect the increasingly important role of natural gas relative to oil, with the top five slots based on barrel-of-oil equivalent production being held by large gas-producing counties.

The production trend in most of the counties reflects the ongoing overall decline in total crude oil and natural gas production across the state. Table 2 illustrates the change in output by county over the ten-year period 1991 to 2001. Of the top 20 crude oil-producing counties, each producing in excess of one million barrels annually, only two counties (Lincoln and Texas) registered increases in production over the period. The remaining 18 counties experienced declines in total production averaging 36%, with only Canadian and Logan Counties, two of the smallest in the top 20, managing a decline in output of less than 20%.

Of the 20 largest gas-producing counties, each producing more than approximately 29,000,000 MCF annually, only three (Caddo, Stephens, and Washita) expanded output in the ten years ended 2001. The remaining 17 of the top 20 gas producers saw output declines averaging 29% in the period.

DRILLING ACTIVITY

Volatility in energy prices led to erratic drilling activity across Oklahoma in recent years. Table 3 shows the fluctuating volume of total wells drilled by county in the 1991 to 2001 period, along with a breakdown of well completions by type for 1991 and 2001. A rebound in crude oil and natural gas prices led to a resurgence in drilling activity in 2001, with eight counties completing more than 100 wells. Beaver (193), Pittsburg

Table 2 - Change in Crude Oil and Natural Gas Producton, 1991-2001

	Crude Oil & Condensate (barrels)			Casinghead & Natural Gas (MCF)		
County	**1991**	**2001**	**%Change**	**1991**	**2001**	**%Change**
Adair	0	0	-	0	64,260	nm
Alfalfa	1,002,500	605,637	-39.6%	11,803,821	5,713,480	-51.6%
Atoka	2,111	2,228	5.5%	3,596,095	1,877,018	-47.8%
Beaver	1,912,513	1,163,943	-39.1%	90,994,441	63,628,499	-30.1%
Beckham	691,931	524,065	-24.3%	93,191,005	76,683,899	-17.7%
Blaine	724,613	489,064	-32.5%	78,754,739	48,702,231	-38.2%
Bryan	100,868	45,367	-55.0%	1,860,844	1,637,719	-12.0%
Caddo	3,669,954	2,164,759	-41.0%	83,521,204	87,573,024	4.9%
Canadian	1,377,636	1,187,247	-13.8%	89,472,155	49,164,653	-45.1%
Carter	14,675,166	7,459,153	-49.2%	23,398,297	16,882,868	-27.8%
Cherokee	0	0	-	0	0	-
Choctaw	0	0	-	0	0	-
Cimarron	320,888	126,914	-60.4%	10,123,990	3,264,001	-67.8%
Cleveland	1,413,381	669,921	-52.6%	4,074,745	1,903,817	-53.3%
Coal	165,134	118,420	-28.3%	5,775,650	4,250,523	-26.4%
Comanche	208,314	331,435	59.1%	6,038,150	2,882,896	-52.3%
Cotton	340,828	161,667	-52.6%	50,831	37,782	-25.7%
Craig	13,943	654	-95.3%	2,224	69,437	3022.2%
Creek	4,336,153	2,396,787	-44.7%	4,654,296	2,300,256	-50.6%
Custer	1,474,646	731,109	-50.4%	114,585,133	72,272,429	-36.9%
Delaware	0	0	-	0	0	-
Dewey	1,437,150	667,529	-53.6%	58,081,115	42,920,165	-26.1%
Ellis	617,180	601,749	-2.5%	36,571,473	35,730,533	-2.3%
Garfield	1,768,308	767,598	-56.6%	32,814,129	18,870,416	-42.5%
Garvin	5,602,413	3,534,956	-36.9%	56,715,111	36,646,837	-35.4%
Grady	5,212,048	4,101,263	-21.3%	115,327,178	106,502,577	-7.7%
Grant	1,768,277	547,716	-69.0%	7,415,043	3,686,043	-50.3%
Greer	12,861	5,444	-57.7%	274,066	73,877	-73.0%
Harmon	23,400	5,757	-75.4%	0	0	-
Harper	390,472	270,860	-30.6%	61,098,745	29,042,861	-52.5%
Haskell	0	0	-	48,785,576	24,310,861	-50.2%
Hughes	826,826	377,719	-54.3%	12,545,483	6,151,931	-51.0%
Jackson	40,620	126,080	210.4%	0	2,852	nm
Jefferson	386,987	403,498	4.3%	90,214	17,475	-80.6%
Johnston	28	3,848	nm	8,264	53,155	543.2%
Kay	1,378,959	782,606	-43.2%	2,824,654	1,167,606	-58.7%
Kingfisher	2,699,201	1,372,679	-49.1%	50,793,039	29,547,266	-41.8%
Kiowa	59,583	20,336	-65.9%	218,751	8,041,614	3576.1%
Latimer	522	0	-100.0%	216,216,461	126,185,574	-41.6%
Le Flore	0	0	-	33,124,449	22,066,476	-33.4%
Lincoln	1,229,304	3,079,761	150.5%	7,370,583	25,827,496	250.4%
Logan	1,105,113	996,489	-9.8%	11,756,281	12,978,328	10.4%
Love	886,703	647,364	-27.0%	2,924,692	3,453,711	18.1%
Major	2,328,508	1,285,565	-44.8%	26,258,889	15,187,243	-42.2%
Marshall	0	0	-	0	0	-
Mayes	3,382	941	-72.2%	5,083,893	5,679,614	11.7%
McClain	2,958,362	2,115,482	-28.5%	82,543,581	50,558,132	-38.7%
McCurtain	521,898	163,785	-68.6%	6,793,673	605,478	-91.1%
McIntosh	20,661	26,465	28.1%	6	93,655	nm
Murray	1,388,015	415,801	-70.0%	408,662	21,868	-94.6%
Muskogee	219,516	70,052	-68.1%	762,664	250,869	-67.1%
Noble	2,368,364	1,222,016	-48.4%	6,716,878	4,304,581	-35.9%
Nowata	591,199	151,505	-74.4%	428,296	5,662,534	1222.1%
Okfuskee	950,054	478,221	-49.7%	4,299,207	3,085,869	-28.2%
Oklahoma	3,126,151	1,798,112	-42.5%	26,125,947	11,056,719	-57.7%
Okmulgee	1,070,430	357,364	-66.6%	3,541,031	1,745,715	-50.7%
Osage	6,189,828	4,104,898	-33.7%	4,783,537	3,268,146	-31.7%
Ottawa	0	0	-	0	0	-
Pawnee	1,118,000	506,532	-54.7%	2,669,335	504,312	-81.1%
Payne	1,543,939	832,775	-46.1%	3,774,595	1,589,209	-57.9%
Pittsburg	149	89	-40.3%	101,949,269	71,545,608	-29.8%
Pontotoc	3,450,721	2,428,358	-29.6%	727,521	966,133	32.8%
Pottawatomie	2,841,710	1,658,535	-41.6%	5,611,986	937,049	-83.3%
Pushmataha	0	0	-	0	21,474,459	nm
Roger Mills	1,147,873	657,254	-42.7%	170,647,447	127,692,502	-25.2%
Rogers	96,631	27,985	-71.0%	184,098	665,980	261.8%
Seminole	3,392,129	2,153,048	-36.5%	2,519,447	4,006,256	59.0%
Sequoyah	0	43	nm	10,423,583	3,648,951	-65.0%
Stephens	9,252,252	5,643,525	-39.0%	45,168,746	54,713,238	21.1%
Texas	2,403,226	3,976,064	65.4%	116,795,924	106,370,490	-8.9%
Tillman	126,737	54,545	-57.0%	0	0	-
Tulsa	589,946	287,095	-51.3%	979,293	883,388	-9.8%
Wagoner	176,509	27,834	-84.2%	146,344	100,692	-31.2%
Washington	749,145	274,811	-63.3%	442,753	3,174,446	617.0%
Washita	527,048	741,061	40.6%	58,216,362	80,490,688	38.3%
Woods	535,769	539,432	0.7%	30,915,865	21,426,973	-30.7%
Woodward	350,997	234,214	-33.3%	34,958,741	29,835,743	-14.7%

nm = not meaningful

Source: Oklahoma Corporation Commission

Table 3 - Well Completions in Oklahoma by County

	1991						2001						Total Well Completions										
Area	Oil	Gas	Dry	Total	Avg. Depth (Feet)	Success Ratio	Oil	Gas	Dry	Total	Avg. Depth (Feet)	Success Ratio	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Adair	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
Alfalfa	10	3	4	17	5,577	76.5%	8	1	2	11	6,684	81.8%	17	35	19	29	22	16	10	5	3	12	11
Atoka	0	1	1	2	8,661	50.0%	0	5	0	5	9,121	100.0%	2	3	1	0	2	4	4	2	0	2	5
Beaver	21	72	13	106	6,649	87.7%	20	159	14	193	7,170	92.8%	106	64	90	88	74	79	56	59	89	123	193
Beckham	1	9	1	11	14,046	90.9%	4	39	5	48	13,884	89.6%	11	12	30	23	21	32	27	21	21	41	48
Blaine	8	18	3	29	9,173	89.7%	11	57	4	72	9,724	94.4%	29	17	28	34	33	42	45	42	52	54	72
Bryan	2	4	0	6	5,592	100.0%	0	5	2	7	5,022	71.4%	6	0	1	1	1	2	0	3	0	0	7
Caddo	34	17	13	64	10,487	79.7%	5	47	4	56	13,593	92.9%	64	30	50	46	23	39	61	54	27	43	56
Canadian	7	34	4	45	10,199	91.1%	14	55	4	73	10,421	94.5%	45	19	40	34	24	26	20	51	33	44	73
Carter	95	6	19	120	4,441	84.2%	41	13	26	80	2,666	67.5%	120	49	184	100	87	88	81	54	36	51	80
Cherokee	0	0	1	1	415	0.0%	0	0	0	0	0	0.0%	1	0	0	0	0	0	0	0	0	0	0
Choctaw	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
Cimarron	0	3	1	4	4,622	75.0%	0	6	1	7	4,159	85.7%	4	6	11	5	3	5	4	5	10	11	7
Cleveland	17	1	2	20	7,591	90.0%	5	0	1	6	7,798	83.3%	20	14	15	8	6	2	9	1	2	2	6
Coal	0	11	0	11	3,024	100.0%	0	13	0	13	6,304	100.0%	11	9	15	14	7	3	4	10	4	13	13
Comanche	2	4	2	8	5,891	75.0%	3	1	2	6	3,970	66.7%	8	9	14	19	7	8	10	4	6	5	6
Cotton	0	0	2	2	1,850	0.0%	0	0	0	0	0	0.0%	2	10	7	2	2	0	0	2	0	1	0
Craig	0	0	0	0	0	0.0%	0	19	2	21	780	90.5%	0	0	0	0	0	0	0	3	2	2	21
Creek	38	5	9	52	3,084	82.7%	7	3	2	12	2,948	83.3%	52	43	47	23	29	30	26	20	8	15	12
Custer	2	33	2	37	13,305	94.6%	0	40	2	42	13,348	95.2%	37	49	75	32	18	29	42	64	44	55	42
Delaware	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
Dewey	23	21	3	47	9,753	93.6%	8	50	1	59	9,333	98.3%	47	7	22	24	22	21	30	47	50	56	59
Ellis	3	19	1	23	9,730	95.7%	11	52	2	65	9,050	96.9%	23	11	26	31	31	28	49	45	35	56	65
Garfield	24	8	5	37	6,764	86.5%	28	12	0	40	5,644	100.0%	37	21	31	24	15	20	19	26	10	30	40
Garvin	73	17	14	104	6,505	86.5%	56	19	10	85	7,792	88.2%	104	46	89	63	86	56	49	64	24	60	85
Grady	23	47	1	71	11,615	98.6%	43	71	10	124	11,796	91.9%	71	38	123	77	75	60	60	89	65	91	124
Grant	10	5	0	15	5,629	100.0%	12	8	0	20	5,222	100.0%	15	19	7	9	7	6	13	19	10	12	20
Greer	0	2	0	2	1,523	100.0%	0	0	0	0	0	0.0%	2	1	1	0	0	0	3	0	0	0	0
Harmon	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	2	0	0	0	0	0	0	0	0	0
Harper	10	45	6	61	7,824	90.2%	3	49	3	55	7,175	94.6%	61	16	40	47	27	43	35	26	32	52	55
Haskell	0	28	2	30	4,689	93.3%	0	108	1	109	2,498	99.1%	30	30	39	32	34	15	27	23	72	87	109
Hughes	17	42	5	64	2,942	92.2%	2	26	4	32	3,335	87.5%	64	65	48	34	17	19	15	19	18	21	32
Jackson	0	0	1	1	9,100	0.0%	1	0	0	1	8,571	100.0%	1	2	0	1	3	3	1	2	1	0	1
Jefferson	6	1	3	10	1,716	70.0%	0	0	0	0	0	0.0%	10	15	0	0	0	0	2	1	0	0	0
Johnston	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	1	0	1	0	0	0	1	0	1	0
Kay	35	5	6	46	3,569	87.0%	5	4	3	12	3,429	75.0%	46	34	31	8	13	5	13	18	13	16	12
Kingfisher	26	11	3	40	8,401	92.5%	8	8	1	17	8,435	94.1%	40	12	23	27	29	25	32	20	16	19	17
Kiowa	6	1	4	11	2,124	63.6%	0	1	0	1	10,111	100.0%	11	7	3	4	2	6	9	9	13	5	1
Latimer	0	70	14	84	11,582	83.3%	0	97	0	97	9,885	100.0%	84	45	53	28	38	56	45	63	47	88	97
Le Flore	0	31	4	35	6,838	88.6%	0	75	1	76	3,792	98.7%	35	18	43	27	23	19	17	18	18	34	76
Lincoln	25	2	5	32	4,447	84.4%	49	17	10	76	5,101	86.8%	32	29	43	28	20	31	17	35	62	97	76
Logan	13	17	10	40	4,401	75.0%	35	26	10	71	5,533	85.9%	40	34	38	22	31	28	32	23	33	51	71
Love	5	1	2	8	9,185	75.0%	6	0	1	7	8,996	85.7%	8	5	6	6	3	5	8	5	6	10	7
McClain	33	6	0	39	10,710	100.0%	13	5	2	20	9,585	90.0%	39	9	30	18	15	10	9	29	6	23	20
McCurtain	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	1	0	0	0	0	0	0	0	0	0
McIntosh	0	6	0	6	2,444	100.0%	1	35	2	38	2,570	94.7%	6	14	4	6	7	11	15	21	32	32	38
Major	34	16	4	54	8,639	92.6%	31	91	1	123	8,518	99.2%	54	48	96	94	85	73	91	78	62	95	123
Marshall	11	0	0	11	6,809	100.0%	1	1	3	5	5,900	40.0%	11	4	7	6	6	0	0	2	1	2	5
Mayes	2	1	2	5	378	60.0%	0	0	0	0	0	0.0%	5	0	1	0	0	0	0	0	0	0	0
Murray	6	1	2	9	3,717	77.8%	0	1	0	1	4,100	100.0%	9	8	2	3	9	6	1	2	3	3	1
Muskogee	0	7	0	7	1,308	100.0%	0	3	0	3	2,355	100.0%	7	12	7	2	1	1	0	0	1	1	3
Noble	53	5	9	67	4,663	86.6%	45	12	5	62	3,356	91.9%	67	46	35	29	16	33	57	49	32	55	62
Nowata	69	0	41	110	711	62.7%	6	42	5	53	1,144	90.6%	110	9	8	1	8	10	14	38	45	61	53
Okfuskee	26	12	8	46	4,026	82.6%	16	18	2	36	3,344	94.4%	46	43	42	29	18	13	28	14	18	18	36
Oklahoma	39	24	5	68	6,800	92.7%	11	5	5	21	6,467	76.2%	68	42	57	41	20	26	25	18	10	20	21
Okmulgee	38	7	12	57	2,079	79.0%	7	8	0	15	2,336	100.0%	57	51	24	14	12	3	9	7	3	15	15
Osage	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	82	1	0	1	0	0	0	0	0	0
Ottawa	0	0	0	0	0	0.0%	0	0	0	0	0	0.0%	0	0	0	0	0	0	0	0	0	0	0
Pawnee	8	2	1	11	2,787	90.9%	1	0	1	2	4,066	50.0%	11	29	11	4	2	11	0	0	0	3	2
Payne	39	5	4	48	3,940	91.7%	10	2	3	15	3,905	80.0%	48	56	38	34	27	22	25	21	6	17	15
Pittsburg	0	44	2	46	6,862	95.7%	0	172	4	176	4,523	97.7%	46	35	54	60	47	47	55	74	87	126	176
Pontotoc	25	1	6	32	3,260	81.3%	8	3	1	12	3,936	91.7%	32	14	41	13	17	18	8	19	13	9	12
Pottawatomie	26	4	6	36	4,370	83.3%	11	2	1	14	4,784	92.9%	36	42	21	20	18	17	11	11	5	11	14
Pushmataha	0	0	0	0	0	0.0%	0	9	2	11	9,337	81.8%	0	0	0	0	0	0	0	0	1	7	11
Roger Mills	4	65	2	71	13,357	97.2%	5	79	2	86	13,154	97.7%	71	59	101	64	57	46	59	64	40	54	86
Rogers	2	0	0	2	1,266	100.0%	0	23	0	23	1,099	100.0%	2	2	9	0	0	1	7	10	4	8	23
Seminole	44	2	9	55	3,320	83.6%	36	16	10	62	4,310	83.9%	55	44	36	21	19	23	27	20	25	48	62
Sequoyah	0	11	0	11	5,405	100.0%	0	10	0	10	4,783	100.0%	11	12	4	4	2	7	8	12	9	6	10
Stephens	58	20	16	94	4,753	83.0%	61	38	22	121	5,956	81.8%	94	56	74	66	57	79	49	54	35	65	121
Texas	9	17	12	38	6,360	68.4%	48	95	29	172	5,887	83.1%	38	36	40	34	53	40	102	132	105	141	172
Tillman	18	0	0	18	1,811	100.0%	0	0	0	0	0	0.0%	18	7	0	0	0	0	0	0	0	0	0
Tulsa	7	4	3	14	1,610	78.6%	5	2	0	7	1,549	100.0%	14	4	6	2	3	1	5	57	32	4	7
Wagoner	3	3	1	7	1,472	85.7%	0	0	1	1	780	0.0%	7	5	7	3	4	3	1	6	1	1	1
Washington	38	1	13	52	1,275	75.0%	1	31	3	35	1,416	91.4%	52	14	23	5	13	19	23	18	11	6	35
Washita	0	16	2	18	13,114	88.9%	7	52	4	63	13,057	93.7%	18	7	28	12	29	34	33	30	40	48	63
Woods	9	25	20	54	6,345	63.0%	8	58	3	69	6,218	95.7%	54	35	59	35	20	27	37	36	54	46	69
Woodward	3	13	1	17	7,397	94.1%	6	116	2	124	7,495	98.4%	17	24	30	37	26	27	54	44	58	82	124
Statewide	1,140	912	347	2,399	6,258	85.5%	723	2,015	241	2,979	6,902	91.9%	2,399	1,677	2,189	1,608	1,427	1,459	1,628	1,819	1,601	2,267	2,979

Source: Oklahoma Corporation Commission

(176), and Texas (172) Counties led the way, accounting for nearly 20% of all well completions statewide in 2001.

The primary trend in the data is the increased emphasis on natural gas drilling, as total gas well completions statewide more than doubled from 912 wells in 1991 to 2,015 wells in 2001. Each of the current top ten gas producing counties experienced an increase in gas well completions in the same period. Other counties experiencing rapid expansion in the number of gas well completions include Beaver, Major, and Woodward Counties in the northwest and Haskell County in the southeast. Pittsburg (172 gas completions), Beaver (159 gas completions), and Woodward (116 gas completions) Counties are further evidence of the trend toward gas production, as they completed more than 100 total wells yet engaged in almost no oil drilling activity.

Conversely, the total number of oil well completions declined by 37%, from 1,140 wells in 1991 to 723 wells in 2001. Five of the top ten crude oil producing counties posted declines in crude well completions, with only Grady, Lincoln, Stephens, and Texas Counties managing to post gains. Of the eight counties with more than 100 total well completions in 2001, only Stephens County experienced the completion of more oil than gas wells.

EMPLOYMENT AND EARNINGS

The state's oil and gas sector jobs were highly concentrated in the Oklahoma City and Tulsa metropolitan statistical areas (MSAs) in 2000. Table 4 shows that more than 30,000 oil and gas jobs, representing 54% of the industry workforce, were located in the counties comprised by the state's two major metro areas.[1] The concentration of employment reflects the historical location of corporate headquarters and branch facilities in the urban areas of the state. These facilities tend to house administrative, professional, and technical workers rather than production and drilling employees. A large portion of the remaining oil and gas jobs are located in a second tier of counties including Carter, Garfield, Kay, Osage, Stephens, and Washington Counties, most of

[1] The Oklahoma City MSA includes Canadian, Cleveland, Logan, McClain, Oklahoma, and Pottawatomie Counties. The Tulsa MSA includes Creek, Osage, Rogers, Tulsa, and Wagoner Counties.

TABLE 4. Mining Industry Employment and Income (1999)

County	Total Employment		Wage & Salary Income ($Thou.)	
Adair	30	(71)	93	(76)
Alfalfa	83	(57)	1,423	(58)
Atoka	76	(59)	2,455	(49)
Beaver	252	(36)	5,913	(35)
Beckham	723	(17)	27,738	(11)
Blaine	249	(37)	5,069	(38)
Bryan	80	(58)	1,798	(54)
Caddo	270	(31)	6,268	(34)
Canadian	1,146	(10)	22,635	(13)
Carter	1,719	(4)	115,317	(4)
Cherokee	42	(67)	932	(65)
Choctaw	256	(34)	9,362	(26)
Cimarron	12	(76)	146	(74)
Cleveland	1,159	(9)	18,637	(14)
Coal	27	(72)	265	(71)
Comanche	222	(41)	4,815	(41)
Cotton	91	(56)	1,394	(60)
Craig	111	(53)	3,329	(44)
Creek	815	(14)	16,747	(16)
Custer	418	(25)	7,535	(30)
Delaware	35	(70)	150	(73)
Dewey	129	(49)	2,420	(51)
Ellis	49	(66)	1,100	(63)
Garfield	1,533	(6)	45,884	(8)
Garvin	936	(12)	30,594	(10)
Grady	536	(22)	11,589	(22)
Grant	97	(55)	2,159	(53)
Greer	23	(73)	809	(67)
Harmon	10	(77)	75	(77)
Harper	133	(48)	2,471	(48)
Haskell	170	(45)	3,615	(43)
Hughes	226	(40)	2,450	(50)
Jackson	52	(65)	901	(66)
Jefferson	65	(63)	1,400	(59)
Johnston	175	(44)	6,345	(33)
Kay	1,271	(8)	84,811	(5)
Kingfisher	808	(15)	18,274	(15)
Kiowa	102	(54)	2,356	(52)
Latimer	1,026	(11)	32,423	(9)
Le Flore	256	(35)	9,583	(23)
Lincoln	338	(29)	7,024	(32)
Logan	429	(24)	8,229	(27)
Love	36	(69)	801	(68)
McClain	267	(32)	8,104	(28)
McCurtain	39	(68)	1,160	(62)
McIntosh	66	(62)	790	(69)
Major	576	(21)	15,766	(17)
Marshall	128	(50)	3,261	(45)
Mayes	55	(64)	1,494	(56)
Murray	370	(28)	9,383	(25)
Muskogee	222	(42)	2,792	(46)
Noble	181	(43)	1,188	(61)
Nowata	164	(46)	1,068	(64)
Okfuskee	136	(47)	4,943	(39)
Oklahoma	12,478	(1)	681,219	(2)
Okmulgee	394	(26)	4,131	(42)
Osage	1,462	(7)	79,740	(6)
Ottawa	118	(52)	4,935	(40)
Pawnee	373	(27)	9,436	(24)
Payne	735	(16)	14,991	(19)
Pittsburg	484	(23)	13,303	(20)
Pontotoc	612	(19)	11,941	(21)
Pottawatomie	582	(20)	7,771	(29)
Pushmataha	15	(75)	254	(72)
Roger Mills	68	(60)	1,745	(55)
Rogers	275	(30)	5,287	(37)
Seminole	716	(18)	15,587	(18)
Sequoyah	68	(60)	596	(70)
Stephens	1,667	(5)	72,527	(7)
Texas	266	(33)	7,250	(31)
Tillman	15	(74)	100	(75)
Tulsa	10,563	(2)	876,209	(1)
Wagoner	128	(51)	1,425	(57)
Washington	3,240	(3)	216,090	(3)
Washita	229	(39)	5,575	(36)
Woods	232	(38)	2,732	(47)
Woodward	924	(13)	26,384	(12)
Statewide	54,064		2,636,511	

Source: Bureau of Economic Analysis, Oklahoma State Econometric Model

which also serve as either the headquarters or a large branch facility of oil and gas companies.

Table 4 also contains wage and salary earnings by county and illustrates that income, like employment, is highly concentrated in the metropolitan areas. The counties in the Tulsa and Oklahoma City MSAs account for 65% of the more than $2.6 billion in payroll earned by oil and gas wage and salary workers in 2000. The income is further concentrated within the MSA hub counties, with Tulsa and Oklahoma Counties alone accounting for 59% of state oil and gas wage and salary income.

LOCAL ECONOMIC IMPACT

The local economic impact of oil and gas activity is estimated for each of the four Oklahoma Corporation Commission districts. The districts, as shown in Map 3, divide the state into four quadrants. Summary statistics for each District are presented in Table 5.

District 1, which contains Tulsa and the northeast quadrant of the state, generates the largest portion of wage and salary income and the second largest pool of employment. It is, however, the smallest overall barrel-equivalent producer of oil and gas among the four districts. District 2, which includes Oklahoma City and the northwest quadrant of the state, contains the largest number of wage and salary workers and is the largest overall producer of natural gas. District 3 covers the southwest portion of the state, including Carter and Stephens Counties; although it has significantly less oil and gas jobs than Districts 1 and 2, it is the largest producer of crude oil and the second largest producer of natural gas among the four districts. District 4, covering the southeast quadrant of the state, has the smallest number of jobs and exceeds only District 1 in overall oil and gas production.

Input-output models are constructed for each district and used to estimate the impact of the oil and gas industry within each region.[2] The impact within each District is measured in terms of employment and income rather than production levels because of the disparity between the location of production and employment. In describing the

[2] The IMPLAN input-output model is used to estimate the economic impact multipliers. All estimates are in constant 1999 dollars, representing the most recent year in which these data are available.

Map 3. Oklahoma Corporation Commission Districts

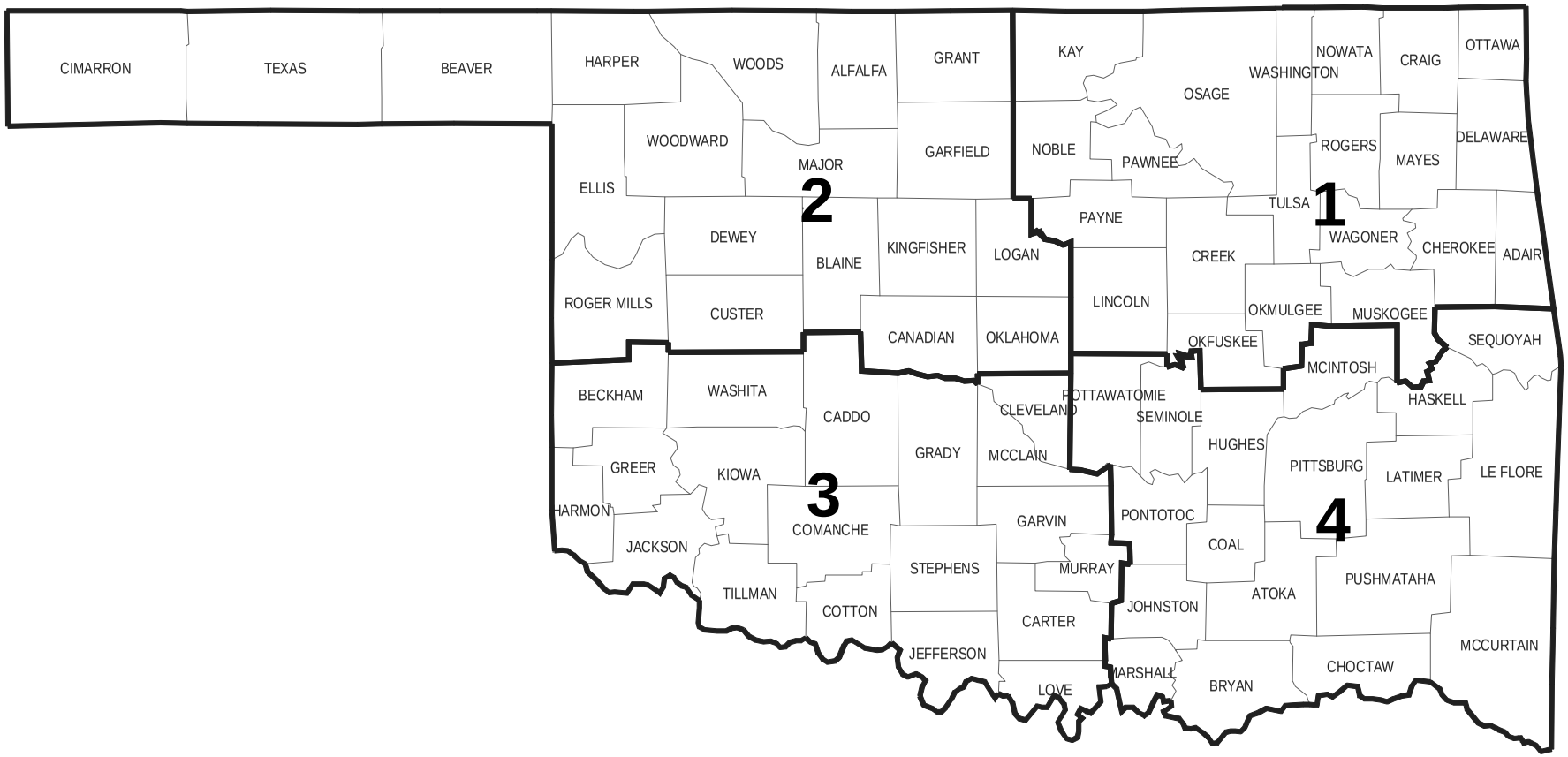


Table 5 - Oklahoma Corporation Commission District Data

District	2001 Crude Oil & Condensate Production (bbls)	2001 Casinghead & Natural Gas Production (mcf)	Well Completions by Type- 2001						Total Well Completions											2000 Wage & Salary Income ($000)	2000 Mining Employ-ment
			Oil	Gas	Dry	Total	Avg. Depth (Feet)	Success Ratio	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001		
1	14,627,361	54,758,451	152	184	37	373	2,855	90.1%	557	459	333	182	167	183	225	296	238	319	373	1,336,815	20,861
2	18,849,092	762,461,464	267	967	86	1,320	8,025	93.5%	803	554	833	711	597	607	755	804	746	1,013	1,320	858,354	21,012
3	28,296,195	491,116,266	245	287	87	619	9,139	85.9%	610	327	656	448	425	428	412	421	285	448	619	318,383	9,348
4	6,952,381	295,396,805	59	577	31	667	4,863	95.4%	429	337	367	267	238	241	236	298	332	487	667	122,959	5,420
All	68,725,026	1,603,732,986	723	2,015	241	2,979	6,902	91.9%	2,399	1,677	2,189	1,608	1,427	1,459	1,628	1,819	1,601	2,267	2,979	2,636,511	56,641

Source: Oklahoma Corporation Commission, Bureau of Economic Analysis

economic impact, the actual level of employment and income in the oil and gas industry is deemed the “direct” effect, which in turn generates what are referred to as ”indirect” and “induced” effects. The indirect effect is the economic activity in other industries resulting from the direct purchases of goods and services by the oil and gas sector. Induced effects reflect the economic activity resulting from new household spending out of employee compensation received as part of the direct and indirect effects.

The estimated impact of the oil and gas industry on employment and earnings within each district is summarized in Table 6. The direct, indirect, and induced effects are shown for both production and drilling activities. For example, the direct economic impact in District 1 is measured as 26,820 production workers and 1,593 drilling workers earning $866.9 million and $33.4 million, respectively. The indirect and induced impacts generate an additional 17,330 jobs with a combined payroll of $868.5 million. Measured as a percentage of District 1 economic activity, oil and gas production and drilling supports 5.8% of total employment and 9.1% of total district income. District 2, which includes the northwest quadrant of the state and Oklahoma County, has approximately the same total employment impact as District 1 with 20,082 direct production and drilling employees earning income of $502.1 million. These jobs support an additional 28,619 indirect and induced jobs with annual income of $621.4 million. Districts 3 ranks third in overall impact from oil and gas activity with 15,968 direct, indirect, and induced jobs generating annual income of $318.3 million. Production and drilling have the smallest impact in District 4, accounting for 5,174 total jobs with annual pay of $78.5 million.

Across all districts, production has a much larger impact than drilling. Production workers support approximately 5% of all jobs statewide, while drilling workers support .76%. The overall impact of production is greatest in District 1, which contains the Tulsa MSA, where oil and gas activity supports more than 42,000 total jobs and $1.68 billion in earnings. This represents 5.3% of total district employment and 8.7% of total district wage and salary income. However, measured as a percentage of district employment, the greatest impact is felt in District 2 where 5.96% of the workforce is supported by oil and gas activity. The smallest district-wide employment impact is in District 4, where only 1.7% of the local workforce is directly or indirectly related to oil and gas activity.

Table 6 - Regional Economic Impact of Oil and Gas Production and Drilling, 1999

Production

	Employment						Earnings ($million)					
District	Direct	Indirect	Induced	Total Impact	% of District Employment		District	Direct	Indirect	Induced	Total Impact	% of District Earnings
1	26,820	8,879	6,313	42,012	5.34%		1	866.9	277.0	540.2	1,684.2	8.65%
2	16,902	10,346	14,605	41,853	5.96%		2	447.0	227.7	308.0	982.8	5.58%
3	5,493	3,311	4,145	12,949	4.08%		3	127.7	63.7	73.3	264.7	3.83%
4	1,825	728	964	3,517	1.69%		4	27.3	11.4	15.0	53.7	1.46%
All	51,040	23,264	26,027	100,331	4.98%		All	$1,468.9	$579.9	$936.5	$2,985.4	6.26%

Drilling

	Employment						Earnings ($million)					
District	Direct	Indirect	Induced	Total Impact	% of District Employment		District	Direct	Indirect	Induced	Total Impact	% of District Earnings
1	1,593	921	1,216	3,731	0.47%		1	33.4	25.2	26.1	84.8	0.44%
2	3,180	1,713	1,955	6,848	0.97%		2	55.1	44.5	41.2	140.9	0.80%
3	1,534	717	769	3,019	0.95%		3	24.3	15.7	13.6	53.6	0.78%
4	898	366	393	1,657	0.80%		4	12.0	6.7	6.1	24.8	0.67%
All	7,205	3,717	4,333	15,255	0.76%		All	$124.8	$92.2	$87.1	$304.1	0.64%

Source: IMPLAN Input-Output Model

Drilling activity has the largest impact in gas-rich Districts 2 and 3, which include the two western quadrants of the state and the Oklahoma City MSA. This is due in large part to the trend toward more natural gas drilling. Drilling supports 1% of employment and .8% of income in both Districts 2 and 3. While District 1 enjoys the greatest impact from production, it has the lowest percentage of district employment (.47%) and district earnings (.44%) from drilling among the four districts.

SUMMARY OF THE ECONOMIC IMPACT

Oklahoma oil and gas production occurs statewide, but production remains concentrated in a small number of counties: 80% of oil production occurred in 22 counties, and 80% of gas production occurred in 19 counties in 2001. Crude oil production occurs mainly in the central portion of the state and the panhandle, while casinghead and natural gas production is concentrated in the western half of the state and a few counties in the southeast.

Most Oklahoma counties experienced a steady decline in total oil and gas production over the past decade. The balance of production continues to shift toward natural gas relative to crude oil. Drilling activity across Oklahoma also reflects the increased emphasis on natural gas, with gas wells representing more than two-thirds of total well completions in 2001, outnumbering oil well completions nearly three to one.

Despite production occurring across most areas of Oklahoma, employment and earnings both are highly concentrated in the state's two major metropolitan areas. Fifty percent of oil and gas industry employment along with 65% of wage and salary income is located in the Tulsa and Oklahoma City metro areas.

The economic impact of oil and gas drilling and production differs greatly among the four Oklahoma Corporation Commission Districts. Districts 1 and 2 contain the state's major metropolitan areas and have a significantly larger economic impact than Districts 3 and 4.

District 1, which includes the northeast quadrant of the state and the Tulsa area, has the smallest combined production of oil and gas but has the second largest total employment impact and the largest earnings impact of the four districts. District 2 contains the Oklahoma City metro area and the northwest quadrant of the state and has

the largest total employment impact and the second largest income impact. The greatest amount of drilling activity is in District 2 as well.

District 3 represents the southwest quadrant of the state and is the second largest oil and gas producing district. The employment and income impacts for District 3 trail far behind Districts 1 and 2 but nonetheless include nearly 16,000 total district jobs paying more than $318 million annually. District 4 covers the southeast quadrant of the state and has the second lowest combined production of oil and gas. It also has the smallest total employment and income impacts of the four districts.