2012–2013 Minerals Yearbook

OKLAHOMA [ADVANCE RELEASE]

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U.S. Geological Survey

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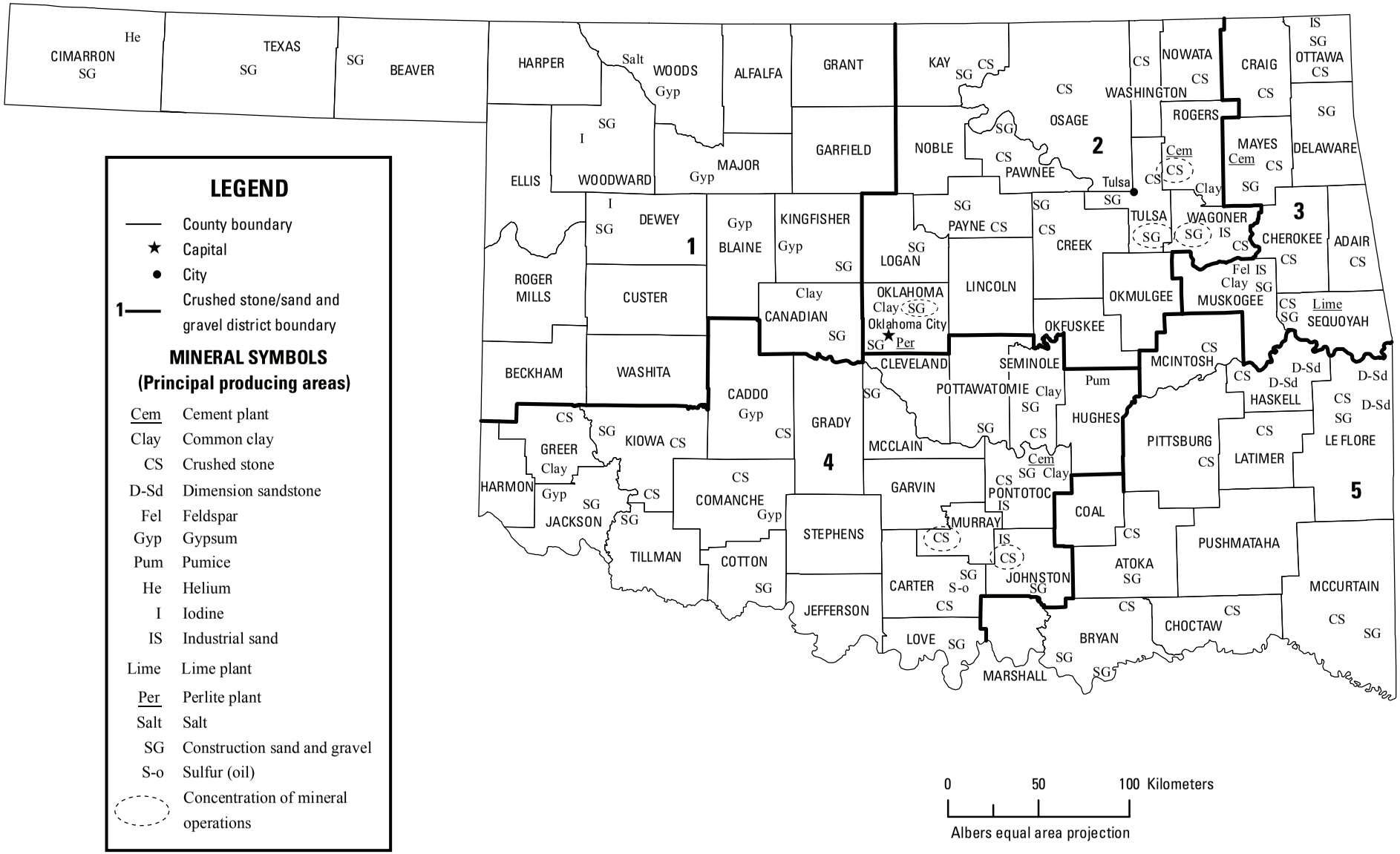
OKLAHOMA



LEGEND

County boundary

★ Capital

● City

1 Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS
(Principal producing areas)

Cem	Cement plant
Clay	Common clay
CS	Crushed stone
D-Sd	Dimension sandstone
Fel	Feldspar
Gyp	Gypsum
Pum	Pumice
He	Helium
I	Iodine
IS	Industrial sand
Lime	Lime plant
Per	Perlite plant
Salt	Salt
SG	Construction sand and gravel
S-o	Sulfur (oil)

Concentration of mineral operations

Source: Oklahoma Geological Survey/U.S. Geological Survey (2012–13).

The Mineral Industry of Oklahoma

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Oklahoma Geological Survey for collecting information on all nonfuel minerals.

In 2013, the value of nonfuel mineral production[1] in the State of Oklahoma decreased to $709 million, 0.9 % of the total U.S. nonfuel mineral production, ranking it 30th in the Nation. In 2012, the corresponding value was $720 million, 1.0 % of the U.S. total nonfuel mineral production, again ranking it 30th among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in Oklahoma had a value of $184 compared with the national average of $238. In 2012, the per capita value was $196 compared with the national average of $241.

The value of nonfuel mineral production in Oklahoma for the years 2006 through 2013 was as follows (in millions of dollars): $696 (2006), $734 (2007), $817 (2008), $660 (2009), $696 (2010), $612 (2011), $720 (2012), and $709 (2013).

In 2013, there were 1,799 employees in nonfuel mineral mines in Oklahoma and 693 in mills and preparation plants. In 2012, the corresponding numbers were 1,750 in nonfuel mineral mines and 693 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 14; 2014, p. 14). In 2013, the average annual wage in Oklahoma for all mining was $52,281 compared with $42,733 for all industries. In 2012, the corresponding figures were $50,928 and $41,768, respectively (National Mining Association, unpub. data, February 4, 2016).

Oklahoma's leading mineral commodities, by production value, included crushed stone, industrial sand and gravel, and construction sand and gravel (table 1). A 20% decrease in production value of industrial sand and gravel was the primary reason for the decrease in the State's total nonfuel mineral production value in 2013; however, in 2012, there had been a 61% increase in production value from 2011. Even with the decrease from 2012 to 2013, the production value of industrial sand and gravel in 2013 and the State's total nonfuel mineral value were 28% and 16% higher than in 2011, respectively. The additional industrial sand was used for hydraulic fracturing by the oil and gas industry.

On the basis of production quantity, the State ranked first in iodine out of 2 producing States and second in gypsum out of 16 producing States. Cement, feldspar, helium, lime, pumice, and salt were also produced in the State; however, production quantity and production values were withheld to prevent disclosing company proprietary data. Some regional statistics were available and are reported below.

[1]The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All USGS mineral production data published in this chapter are those available as of February 2016. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at http://minerals.usgs.gov/minerals.

In 2012–13, there were four active cement plants in Arkansas and Oklahoma. The quantity of masonry cement produced in these two States increased 8% in 2013 compared with that in 2012. This was close to the national increase in masonry cement production of 10%. Production of portland cement decreased slightly in 2013 compared to a nationwide increase of 3%.

In 2013 compared to 2012, gypsum production from 18 mines in Kansas, Oklahoma, and Texas increased 13% in quantity and 31% in value. Nationally, the increases were 5% and 19%, respectively.

In 2013, there was a slight decrease in quantity and value of lime produced by the six active lime plants in Arkansas, Louisiana, Oklahoma, and Texas, compared with 2012. Nationally, the amount of lime produced increased slightly while its value increased by 4%.

In 2013 compared with 2012, salt production in Arizona, California, Nevada, New Mexico, and Oklahoma increased 9% in quantity and 18% in value. Nationally, salt production increased 24% in quantity and increased 43% in value.

Commodity Review

The Oklahoma Geological Survey[2] (OGS) provided production and other data based upon that agency's own surveys for the mineral industry of the State covering activities in 2012 and 2013 from which the following data have been extracted.

In 2013, nonfuel mineral production, on the basis of tonnage mined in Oklahoma as reported by the Oklahoma Mining Commision Department of Mines (2013, 2014), increased about 3% in 2013 from 2012, exclusive of iodine and helium. Though the economy was still regarded as relatively sluggish, this increase was primarily in construction materials production, including cement (portland and masonry), common clay for brick manufacture, construction sand and gravel, crushed stone for aggregates, dimension stone, and gypsum used in portland cement and wallboard.

In 2013, there were 819 permitted mining sites of which 424 were active, as reported by 315 mine operators. In 2012, there were 828 permitted mining sites of which 568 were active, as reported by 382 mine operators.

Almost all nonfuel mineral production in 2013 and 2012 was from open pit mines, with the exception of iodine and salt, which were produced from brine wells; helium, which was produced from natural gas wells; and limestone that was produced from one underground limestone mine.

Out of 77 counties in the State of Oklahoma, 74 had extant mining permits and 72 recorded nonfuel mineral production in both 2013 and in 2012.

[2]Stanley T. Krukowski, Oklahoma Geological Survey, provided the State nonfuel mineral industry information.

References Cited

Oklahoma Mining Commission Department of Mines, 2013, Annual report 2012, 34 p. (Accessed April 11, 2016, at https://www.ok.gov/mines/documents/AnnualReport2012.pdf).

Oklahoma Mining Commission Department of Mines, 2014, Annual report 2013, 33 p. (Accessed April 11, 2016, at https://www.ok.gov/mines/documents/AnnualReport2013.pdf).

U.S. Mine Safety and Health Administration, 2013, Mine injury and worktime, quarterly, January–December 2012, Final, closeout edition, 33 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20125.pdf.)

U.S. Mine Safety and Health Administration, 2014, Mine injury and worktime, quarterly, January–December 2013, Final, closeout edition, 34 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20135.pdf.)

TABLE 1
NONFUEL MINERAL PRODUCTION IN OKLAHOMA[1, 2]

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2011		2012		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	570	2,720	638	3,010	603	1,990
Gemstones, natural	NA	4	NA	4	NA	4
Sand and gravel:						
Construction	11,000 r	68,000 r	11,800	73,200	12,000	83,200
Industrial	1,780	69,600	2,850	112,000	2,120	89,100
Stone:						
Crushed	39,200 r	304,000 r	39,900	303,000	39,800	303,000
Dimension	35	6,310	53	7,420	43	7,880
Combined values of cement, feldspar, gypsum (crude), helium [Grade–A (2012–13)], iodine (crude), lime, pumice and pumicite (2013), and salt	XX	162,000 r	XX	222,000	XX	223,000
Total	XX	612,000 r	XX	720,000	XX	709,000

[r]Revised. NA Not available. XX Not applicable.
[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
[2]Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2
OKLAHOMA: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE[1]

Type	2012				2013			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone[2]	47	32,800	$242,000	$7.38	48	33,300	$247,000	$7.42
Dolomite	1	273	2,040	7.50	--	267	1,970	7.37
Granite	4	3,310	32,500	9.83	3	3,420	31,300	9.15
Traprock	1	211	1,550	7.35	1	18	132	7.48
Sandstone and quartzite[3]	12	611	4,910	8.04	12	717	5,700	7.94
Miscellaneous stone	14	2,700	19,700	7.27	8	2,130	17,600	8.24
Total or average	XX	39,900	303,000	7.59	XX	39,800	303,000	7.62

XX Not applicable. -- Zero.
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes limestone-dolomite reported with no distinction between the two kinds of stone.
[3]Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

TABLE 3
OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS BY USE[1]

Use	2012 Quantity (thousand metric tons)	2012 Value (thousands)	2012 Unit value	2013 Quantity (thousand metric tons)	2013 Value (thousands)	2013 Unit value
Construction:						
Coarse aggregate (+1½ inch):						
Macadam	--	--	--	377	$2,810	$7.44
Riprap and jetty stone	94	$1,530	$16.25	364	5,910	16.23
Filter stone	19	229	12.03	104	1,080	10.44
Unspecified coarse aggregate	447	2,390	5.35	2,370	19,400	8.19
Coarse aggregate, graded:						
Concrete aggregate, coarse	187	2,180	11.65	826	6,970	8.44
Bituminous aggregate, coarse	105	982	9.35	749	6,790	9.07
Bituminous surface-treatment aggregate	181	2,490	13.77	W	W	W
Railroad ballast	446	6,130	13.75	519	4,580	8.82
Unspecified graded coarse aggregate	W	W	W	1,380	13,500	9.79
Fine aggregate (-⅜ inch):						
Stone sand, concrete	--	--	--	W	W	W
Stone sand, bituminous mix or seal	42	321	7.65	475	2,580	5.42
Screening, undesignated	557	2,420	4.35	1,370	8,150	5.95
Unspecified fine aggregate	259	1,640	6.34	W	W	W
Coarse and fine aggregates:						
Graded road base or subbase	427	3,810	8.92	3,560	25,700	7.23
Unpaved road surface	W	W	W	233	2,400	10.32
Terrazzo and exposed aggregate	3	294	97.93	--	--	--
Crusher run or fill or waste	805	8,310	10.33	3,710	24,700	6.67
Unspecified coarse and fine aggregates	842	4,060	4.82	116	1,400	12.00
Unspecified and other construction materials	11	38	3.44	36	232	6.37
Agricultural:						
Agricultural Limestone	151	1,010	6.69	129	1,410	10.93
Poultry grit and mineral food	W	W	W	W	W	W
Chemical and metallurgical:						
Cement manufacture	W	W	W	W	W	W
Lime manufacture	W	W	W	W	W	W
Flux stone	236	1,870	7.94	--	--	--
Chemical Stone	W	W	W	W	W	W
Sulfur oxide removal	9	74	8.18	--	--	--
Special:						
Mining dusting or acid water treatment	W	W	W	W	W	W
Asphalt fillers or extenders	W	W	W	W	W	W
Other fillers or extenders	W	W	W	W	W	W
Other miscellaneous uses and specified uses not listed	1	2	4.89			
Unspecified:[2]						
Reported	24,500	190,000	7.73	14,600	118,000	8.06
Estimated	7,930	58,400	7.37	6,220	42,100	6.77
Total or average	39,900	303,000	7.59	39,800	303,000	7.62

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Reported and estimated production without a breakdown by end use.

TABLE 4

OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2012, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch)[2]	--	--	84	1,400	W	W
Coarse aggregate, graded[3]	--	--	W	W	--	--
Fine aggregate (-⅜ inch)[4]	--	--	W	W	W	W
Coarse and fine aggregates[5]	--	--	994	9,560	W	W
Other construction materials	--	--	--	--	W	W
Agricultural[6]	--	--	16	97	W	W
Chemical and metallurgical[7]	--	--	541	1,790	W	W
Special[8]	--	--	--	--	W	W
Other miscellaneous uses and specified uses not listed[9]	--	--	(10)	2	--	--
Unspecified:[11]						
Reported	--	--	5,640	41,500	655	4,820
Estimated	--	--	2,210	16,300	936	6,820
Total	--	--	10,400	78,800	3,420	21,200

Use	District 4		District 5	
	Quantity	Value	Quantity	Value
Construction:				
Coarse aggregate (+1½ inch)[2]	12	187	W	W
Coarse aggregate, graded[3]	680	9,020	W	W
Fine aggregate (-⅜ inch)[4]	202	1,020	W	W
Coarse and fine aggregates[5]	69	567	546	4,410
Other construction materials	--	--	W	W
Agricultural[6]	W	W	107	751
Chemical and metallurgical[7]	W	W	245	1,950
Special[8]	W	W	--	--
Other miscellaneous uses and specified uses not listed[9]	--	--	--	--
Unspecified:[11]				
Reported	15,100	118,000	3,170	25,700
Estimated	2,530	18,700	2,250	16,700
Total	19,600	152,000	6,430	50,400

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes riprap and jetty stone, filter stone, and unspecified coarse aggregate.

[3]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggregate.

[4]Includes stone sand (bituminous mix or seal), screening (undesignated), and unspecified fine aggregate.

[5]Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

[6]Includes agricultural limestone, and poultry grit and mineral food.

[7]Includes cement manufacture, lime manufacture, flux stone, chemical stone, and sulfur oxide removal.

[8]Includes mine dusting or acid water treatment, asphalt fillers or extenders, and other fillers or extenders.

[9]Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

[10]Less than ½ unit.

[11]Reported and estimated production without a breakdown by end use.

TABLE 5

OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2013, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch)[2]	--	--	186	2,660	W	W
Coarse aggregate, graded[3]	--	--	W	W	--	--
Fine aggregate (-⅜ inch)[4]	--	--	W	W	W	W
Coarse and fine aggregates[5]	--	--	1,950	15,100	W	W
Other construction materials	--	--	W	W	W	W
Agricultural[6]	--	--	5	58	W	W
Chemical and metallurgical[7]	--	--	W	W	W	W
Special[8]	--	--	--	--	W	W
Unspecified:[9]						
Reported	--	--	3,110	23,500	625	4,730
Estimated	--	--	1,520	11,400	2,370	13,100
Total	--	--	9,150	68,300	3,570	22,500

Use	District 4		District 5	
	Quantity	Value	Quantity	Value
Construction:				
Coarse aggregate (+1½ inch)[2]	W	W	W	W
Coarse aggregate, graded[3]	W	W	577	5,650
Fine aggregate (-⅜ inch)[4]	W	W	W	W
Coarse and fine aggregates[5]	W	W	1,300	9,910
Other construction materials	--	--	W	W
Agricultural[6]	W	W	34	377
Chemical and metallurgical[7]	W	W	--	--
Special[8]	W	W	--	--
Unspecified:[9]				
Reported	8,140	67,600	2,720	21,700
Estimated	1,620	12,100	714	5,550
Total	21,100	164,000	5,980	48,900

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes riprap and jetty stone, filter stone, and unspecified coarse aggregate.

[3]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggregate.

[4]Includes stone sand (bituminous mix or seal), screening (undesignated), and unspecified fine aggregate.

[5]Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

[6]Includes agricultural limestone, and poultry grit and mineral food.

[7]Includes cement manufacture, lime manufacture, flux stone, chemical stone, and sulfur oxide removal.

[8]Includes mine dusting or acid water treatment, asphalt fillers or extenders, and other fillers or extenders.

[9]Reported and estimated production without a breakdown by end use.

TABLE 6
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates and concrete products[2]	2,760	$17,700	$6.41
Asphaltic concrete aggregates and other bituminous mixtures	454	2,480	5.46
Road base and coverings	672	5,000	7.44
Fill	462	1,470	3.18
Other miscellaneous uses[3]	8	192	24.00
Unspecified:[4]			
Reported	2,710	17,000	6.27
Estimated	4,700	29,300	6.23
Total or average	11,800	73,200	6.20

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Includes snow and ice control.
[4]Reported and estimated production without a breakdown by end use.

TABLE 7
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	3,620	$28,100	$7.77
Plaster and gunite sands	57	598	10.49
Concrete products (blocks, bricks, pipe, decorative, and so forth)	6	49	8.17
Asphaltic concrete aggregates and other bituminous mixtures	294	1,490	5.05
Road base and coverings	402	3,340	8.31
Fill	968	2,720	2.81
Other miscellaneous uses[2]	174	2,490	14.30
Unspecified:[3]			
Reported	1,680	14,300	8.52
Estimated	4,810	30,100	6.26
Total or average	12,000	83,200	6.93

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes snow and ice control.
[3]Reported and estimated production without a breakdown by end use.

TABLE 8
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[2]	W	W	1,330	7,140	W	W
Asphaltic concrete aggregates and road base materials	W	W	343	1,390	W	W
Fill	7	26	333	972	2	6
Other miscellaneous uses[3]	--	--	--	--	--	--
Unspecified:[4]						
Reported	980	6,290	1,140	6,800	583	3,870
Estimated	615	3,840	1,700	10,600	539	3,370
Total	2,130	14,800	4,840	26,900	1,640	10,400

Use	District 4		District 5	
	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[2]	W	W	166	1,460
Asphaltic concrete aggregates and road base materials	W	W	186	1,480
Fill	83	331	36	135
Other miscellaneous uses[3]	--	--	4	64
Unspecified:[4]				
Reported	10	63	--	--
Estimated	813	5,080	1,030	6,450
Total	1,730	11,500	1,430	9,600

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Includes snow and ice control.
[4]Reported and estimated production without a breakdown by end use.

TABLE 9
OKLAHOMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[2]	W	W	2,270	15,800	W	W
Asphaltic concrete aggregates and road base materials	W	W	229	890	W	W
Fill	302	647	557	1,810	8	22
Other miscellaneous uses[3]	1	5	--	--	23	335
Unspecified:[4]						
Reported	48	585	689	6,650	542	3,580
Estimated	501	3,210	1,820	11,200	790	4,900
Total	2,030	15,400	5,570	36,400	1,400	9,140

Use	District 4		District 5	
	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[2]	W	W	--	--
Asphaltic concrete aggregates and road base materials	W	W	--	--
Fill	101	242	--	--
Other miscellaneous uses[3]	150	2,150	--	--
Unspecified:[4]				
Reported	32	619	368	2,870
Estimated	470	3,110	1,220	7,700
Total	1,420	11,700	1,590	10,600

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Includes snow and ice control.
[4]Reported and estimated production without a breakdown by end use.