

THE MINERAL INDUSTRY OF OKLAHOMA

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

Oklahoma ranked 33d in the Nation in total nonfuel mineral value¹ in 1994, climbing from 34th in 1993, according to the U.S. Bureau of Mines (USBM). The estimated value for 1994 was \$338 million, a 13% increase over the more than \$298 million achieved in 1993. This increase followed an 18% increase in 1993 as measured against that of 1992. The State accounted for 1% of the U.S. total. In 1994, crushed stone continued as Oklahoma's leading nonfuel mineral commodity, accounting for more than 40% of the total value, while the combined values for crushed stone, portland cement, construction sand and gravel, and gypsum accounted for 80% of the same total. The significantly increased mineral values of the past 2 years mainly resulted from increases in crushed stone and portland cement; during the same time construction sand and gravel, gypsum, and industrial sand and gravel also contributed to the State's rising mineral economy. Compared with 1993, the mineral commodity values increased for the following: crushed stone, portland cement, construction sand and gravel, gypsum, lime,

masonry cement, salt, and common clays. Decreases occurred for iodine, feldspar, dimension stone, and gemstones.

Based on USBM estimates of the quantities of minerals produced in the United States during 1994, Oklahoma remained the only domestic source of iodine, first in the production of gypsum, third in feldspar, and ninth in industrial sand and gravel. Oklahoma mines produced significant quantities of crushed stone, construction sand and gravel, and common clays, while similar production of portland and masonry cement was achieved at manufacturing plants within the State. Oklahoma's mines exclusively produced industrial minerals; no metals were mined in the State.

According to the Oklahoma Geological Survey, industrial mineral activity Statewide improved moderately during 1994. Production increased for most construction materials including crushed stone, construction sand and gravel, gypsum, and portland and masonry cement in response to growth in homebuilding, highway construction,

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN OKLAHOMA¹

Mineral	1992		1993		1994 ^p		
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	
Cement:							
Masonry	thousand metric tons	W	W	85	\$6,719	99	\$7,760
Portland	do.	931	\$39,280	1,696	77,624	1,910	87,500
Clays	do.	622	3,296	613	2,938	662	2,950
Gemstones		NA	1,863	NA	W	NA	W
Gypsum (crude)	thousand metric tons	2,361	14,915	2,651	15,434	2,900	17,000
Iodine (crude)	metric tons	1,995	20,877	1,935	15,443	2,030	15,300
Sand and gravel:							
Construction	thousand metric tons	8,985	24,204	^e 9,700	^e 27,300	10,500	31,000
Industrial	do.	972	19,011	1,208	23,155	W	W
Stone:							
Crushed	do.	^e 24,948	^e 2105,300	27,055	113,958	^e 30,500	^e 136,000
Dimension	metric tons	^e 4,701	^e 706	² 2,350	² 838	^e 9,110	^e 472
Combined value of feldspar, lime, salt, stone [crushed granite (1992), dimension limestone and sandstone (1993)], tripoli (1992-93), and values indicated by symbol W							
		XX	23,144	XX	14,930	XX	40,500
Total		XX	252,596	XX	298,339	XX	³ 338,000

^eEstimated. ^pPreliminary. ^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Excludes certain stones; kind and value included with "Combined value" figure.

³Data do not add to total shown because of independent rounding.

TABLE 2
OKLAHOMA: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS IN 1993, BY USE

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$3.72
Riprap and jetty stone	126	\$695	5.52
Filter stone	279	1,228	4.40
Other coarse aggregate	W	W	4.30
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,928	9,204	4.77
Bituminous aggregate, coarse	839	4,186	4.99
Bituminous surface-treatment aggregate	199	1,177	5.91
Railroad ballast	1,373	7,643	5.57
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	2.84
Stone sand, bituminous mix or seal	283	530	1.87
Screening, undesignated	1,168	2,806	2.40
Coarse and fine aggregates:			
Graded road base or subbase	1,208	3,610	2.99
Unpaved road surfacing	121	415	3.43
Terrazzo and exposed aggregate	W	W	5.81
Crusher run or fill or waste	1,631	6,202	3.80
Other coarse and fine aggregates	W	W	5.34
Other construction materials	217	956	4.41
Agricultural: Agricultural limestone ²	259	1,300	5.02
Chemical and metallurgical:			
Cement manufacture ³	3,019	6,573	2.18
Unspecified:⁴			
Actual	12,286	59,308	4.83
Estimated	2,119	8,123	3.83
Total ⁵	27,055	113,958	4.21
Total ^{6 7}	29,823	113,958	3.82

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

¹Includes granite, limestone, sandstone, and shell.

²Includes poultry grit and mineral food.

³Includes cement manufacture.

⁴Includes production reported without a breakdown by use and estimates for nonrespondents.

⁵Data may not add to totals shown because of independent rounding.

⁶One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

⁷Total shown in thousand short tons and thousand dollars.

and commercial building. Further increases in these activities were anticipated for 1995, and additional airbase construction, such as runways, also was expected.

In other industry developments, iodine markets continued to grow somewhat in 1994, with consumption tied, in part, to increases in construction, automobile production, and population growth. A new company, Deepwater Iodides, Inc., opened a plant at Woodward in northwestern Oklahoma to manufacture a broad line of inorganic and organic iodine compounds. (All Oklahoma iodine production comes from the northwestern portion of the State.) The North American Brine Resources iodine plant north of Woodward is now idle, but the company continued

production at Dover. Woodward Iodine Corp. and IoChem Corp. also continued iodine production. The number of industrial sand plants has been progressively reduced due to the increased usage of plastics packaging. At least 8 Oklahoma glass plants have closed since the early 1980's, when 13 plants were operating. However, Anchor Glass reversed the trend in 1994 by completing a \$12.8-million capital investment in the upgrading and modernizing of its Henryetta plant.

¹The term value means the total monetary value as represented by either mine shipments, mineral commodity sales, or marketable production as is applicable to the individual mineral commodities.

TABLE 3
OKLAHOMA: CRUSHED STONE SOLD OR USED, BY KIND

Kind	1991				1993			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	57	'21,653	'\$87,689	'\$4.05	50	23,386	\$97,861	\$4.18
Shell	1	'4	5	'1.25	—	—	—	—
Granite	'4	'3,280	'13,269	'4.05	4	3,081	13,262	4.30
Sandstone	5	738	3,518	4.77	4	588	2,835	4.82
Total ¹	XX	'25,675	'104,481	'4.07	XX	27,055	113,958	4.21
Total ^{2,3}	XX	28,302	'104,481	'3.69	XX	29,823	113,958	3.82

Revised. XX Not applicable.

¹Data may not add to totals shown because of independent rounding.

²One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

³Total shown in thousand short tons and thousand dollars.

TABLE 4
OKLAHOMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1993, BY USE AND DISTRICT

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:						
Coarse aggregate (+1 1/2 inch) ¹	—	—	W	W	W	W
Coarse aggregate, graded ²	—	—	1,243	6,632	498	2,243
Fine aggregate (-3/8 inch) ³	—	—	W	W	W	W
Coarse and fine aggregate ⁴	—	—	1,244	4,718	953	3,165
Other construction materials	—	—	742	1,954	459	1,594
Agricultural ⁵	—	—	(⁶)	(⁶)	(⁶)	(⁶)
Chemical and metallurgical ⁸	—	—	(⁶)	(⁶)	(⁶)	(⁶)
Other miscellaneous uses	—	—	895	1,760	1,404	3,236
Unspecified:⁹						
Actual	—	—	1,499	6,689	40	221
Estimated	—	—	96	131	—	—
Total ¹⁰	—	—	5,719	21,884	3,354	10,460
Total ^{11 12}	—	—	6,304	21,884	3,697	10,460
	District 4		District 5			
	Quantity	Value	Quantity	Value		
Construction aggregates:						
Coarse aggregate (+1 1/2 inch) ¹	66	349	W	W		
Coarse aggregate, graded ²	W	W	W	W		
Fine aggregate (-3/8 inch) ³	W	W	122	388		
Coarse and fine aggregate ⁴	313	825	514	1,861		
Other construction materials	2,274	10,401	943	4,522		
Agricultural ⁵	—	—	(⁷)	(⁷)		
Chemical and metallurgical ⁸	(⁷)	(⁷)	—	—		
Other miscellaneous uses	—	—	—	—		
Unspecified:⁹						
Actual	(⁷)	(⁷)	(⁷)	(⁷)		
Estimated	1,681	6,429	343	1,563		
Total ¹⁰	13,510	61,240	4,472	20,374		
Total ^{11 12}	14,892	61,240	4,930	20,374		

W Withheld to avoid disclosing company proprietary data; included with "Other constructions uses."

¹Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

²Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.

³Includes stone sand (concrete), stone sand (bituminous mix or seal), and screening (undesignated).

⁴Includes graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregate.

⁵Includes agricultural limestone and poultry grit and mineral food.

⁶Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses."

⁷Withheld to avoid disclosing company proprietary data; included with "Total."

⁸Includes cement manufacture and lime manufacture.

⁹Includes production reported without a breakdown by use and estimates for nonrespondents.

¹⁰Data may not add to totals shown because of independent rounding.

¹¹One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

¹²Total shown in thousand short tons and thousand dollars.