

# THE MINERAL INDUSTRY OF SOUTH CAROLINA

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 South Carolina Geological Survey for collecting information on all nonfuel minerals.

South Carolina ranked 29th in the Nation in total nonfuel mineral value<sup>1</sup> in 1994, dropping from 27th in 1993, according to the U.S. Bureau of Mines (USBM). The estimated value for 1994 was \$415 million, a 6% increase compared with that of 1993. This followed a 13% increase in 1993 as measured against 1992. The State accounted for more than 1% of the U.S. total value. In both years, crushed stone and portland cement had the largest impacts on the increasing values; more moderate increases in masonry cement and construction sand and gravel also contributed to 1994's higher level of mineral value. Although the State experienced a sizable rise in nonfuel mineral value during 1994, the increases were less than those of 1993, a year in which crushed stone values rose by 37% and portland cement by 16% compared with that of 1992. The rising values in 1993 were offset by a drop in gold values for that year. Compared with 1993, mineral commodity values increased for the following: crushed stone, portland cement, construction sand and gravel, masonry cement, industrial sand and gravel, vermiculite, and gemstones. Decreases occurred in gold, dimension stone, and silver.

Based on a comparison of USBM estimated quantities of minerals produced in the United States during 1994,

South Carolina remained the 1st of two States that produced vermiculite; 2d in kaolin clay-production; and 7th of the 13 U.S. gold-producing States. The State was one of the top four producers of masonry cement; moved up one place from eighth to seventh in the production of common clays, and remained fifth of five States producing mica. South Carolina also remained 11th in the production of both portland cement and industrial sand and gravel. Manganiferous ore was produced only in South Carolina; the ore, a manganiferous schist, was used as a brick colorant and not in the production of manganese metal. In addition, the State's mines produced significant quantities of construction sand and gravel and crushed stone. Nationally, South Carolina ranked 11th of 14 States in both the quantity and value of primary aluminum produced in 1994, all bauxite and alumina feedstock materials being received from foreign sources.

According to the South Carolina Geological Survey, news in the mineral industry was dominated by gold companies. The proposed sale of Kennecott Minerals Co.'s Ridgeway Mine, Fairfield County, to Kinross Gold Corp. did not take place as expected. During 1994, the Ridgeway Mine shipped more than 3,700 kilograms (kg), [120,000 troy ounces (tr oz)], of gold. Production amounted to more

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN SOUTH CAROLINA<sup>1</sup>

Mineral	1992		1993		1994 <sup>p</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) thousand metric tons	2,083	\$93,385	2,132	\$109,369	2,280	\$117,000
Clays do.	1,608	27,694	1,539	31,304	1,830	32,500
Gemstones	NA	641	NA	W	NA	W
Gold <sup>2</sup> kilograms	6,747	74,832	W	W	W	W
Sand and gravel:						
Construction thousand metric tons	6,256	19,923	<sup>e</sup> 6,800	<sup>e</sup> 21,800	7,900	26,100
Industrial do.	770	17,316	749	18,964	W	W
Stone (crushed) do.	<sup>e</sup> 315,966	<sup>e</sup> 83,800	19,765	120,939	<sup>e</sup> 20,500	<sup>e</sup> 128,000
Combined value of cement (masonry), manganiferous ore, mica (scrap), peat, silver, stone [crushed dolomite (1992), dimension], vermiculite, and values indicated by symbol W	XX	29,305	XX	88,671	XX	112,000
Total	XX	346,896	XX	391,047	XX	<sup>4</sup> 415,000

<sup>a</sup>Estimated. <sup>p</sup>Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

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

<sup>2</sup>Recoverable content of ores, etc.

<sup>3</sup>Excludes certain stones; kind and value included with "Combined value" data.

<sup>4</sup>Data do not add to total and shown of independent rounding.

than 5.3 million metric tons (mt), or 5.9 million short tons (st), with an average grade of 0.82 grams per mt (0.024 tr oz/st), most of which came from the mine's south pit, according to company reports. Mining operations at Nevada Goldfields Inc.'s Barite Hill Mine, a gold heap-leach operation in McCormick County, ceased in mid-October. While reclamation proceeded at a rapid pace, the company reported that residual production from the continued leaching of the mine heaps was expected to continue through 1995, resulting in an anticipated 200 kg (6,500 tr oz) of gold. Reclamation plans for Costain Minerals Inc.'s Brewer Gold Mine,

Chesterfield County, were undergoing modification to include backfilling, even though only one-half of the total potential ore was believed to have been mined. Amax Gold Inc. was attempting to sell its Haile Gold Mine near Kershaw in Lancaster County. Open pit heap-leach gold operations had been suspended since late 1991. Some exploration for gold was reportedly taking place north of the Brewer Mine, as well as adjacent to the Haile Mine property. In construction aggregate news, Martin Marrietta Aggregates bought the Jamestown quarry from another of the State's major producers, Southern Aggregates Co.

<sup>1</sup>The term value, referring throughout this document to that of nonfuel mineral value, here addresses 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 2  
SOUTH CAROLINA: CRUSHED STONE<sup>1</sup> 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	470	\$2,302	\$4.90
Riprap and jetty stone	W	W	9.50
Filter stone	127	812	6.39
Coarse aggregate, graded:			
Concrete aggregate, coarse <sup>2</sup>	4,497	14,028	3.12
Fine aggregate (-3/8 inch):			
Screening, undesignated <sup>3</sup>	3,192	17,898	5.61
Coarse and fine aggregates:			
Graded road base or subbase	1,946	10,211	5.25
Unpaved road surfacing	127	812	6.39
Crusher run or fill or waste	W	W	6.71
Other construction materials	1,140	7,949	6.97
Chemical and metallurgical:			
Cement manufacture	( <sup>4</sup> )	( <sup>4</sup> )	8.26
Special:			
Other specified uses not listed	( <sup>4</sup> )	( <sup>4</sup> )	27.56
Unspecified: <sup>5</sup>			
Actual	( <sup>4</sup> )	( <sup>4</sup> )	5.46
Total <sup>6</sup>	19,765	120,939	6.12
Total <sup>7 8</sup>	21,787	120,939	5.55

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

<sup>1</sup>Includes dolomite, limestone, calcareous marl, and shell.

<sup>2</sup>Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, and other graded coarse aggregate.

<sup>3</sup>Includes sand stone (concrete), sand stone (bituminous mix or seal) and other fine aggregate.

<sup>4</sup>Withheld to avoid disclosing company proprietary data; included with "Total."

<sup>5</sup>Includes production reported without a breakdown by use and estimates for nonrespondents.

<sup>6</sup>Data may not add to totals shown because of independent rounding.

<sup>7</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>8</sup>Total shown in thousand short tons and thousand dollars.

TABLE 3  
SOUTH CAROLINA: CRUSHED STONE SOLD OR USED, BY KIND

Kind	1991 <sup>1</sup>				1993			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	2	2,256	\$10,935	\$4.85	5	W	W	5.38
Dolomite	—	—	—	—	1	W	W	6.08
Calcareous marl	4	2,990	6,812	2.28	3	2,889	16,149	5.59
Shell	1	122	554	4.54	1	W	W	4.59
Granite	21	11,156	65,959	5.91	22	14,287	90,604	6.34
Total <sup>2</sup>	XX	16,525	84,260	5.10	XX	19,765	120,939	6.12
Total <sup>3,4</sup>	XX	18,216	84,260	4.63	XX	21,787	120,939	5.55

<sup>1</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

<sup>2</sup>Excludes dolomite.

<sup>3</sup>Data do not add to total shown because of independent rounding.

<sup>4</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>5</sup>Total shown in thousand short tons and thousand dollars.

TABLE 4  
SOUTH CAROLINA: 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) <sup>1</sup>	304	2,104	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Coarse aggregate, graded <sup>3</sup>	3,128	22,245	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Fine aggregate (-3/8 inch) <sup>4</sup>	1,821	9,209	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Coarse and fine aggregate <sup>5</sup>	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	—	—
Other construction materials	( <sup>2</sup> )	( <sup>2</sup> )	—	—	—	—
Chemical and metallurgical <sup>6</sup>	—	—	—	—	( <sup>2</sup> )	( <sup>2</sup> )
Other miscellaneous uses <sup>7</sup>	—	—	( <sup>2</sup> )	( <sup>2</sup> )	—	—
Unspecified: <sup>8</sup>						
Actual	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Total <sup>9</sup>	8,226	50,442	7,491	44,476	4,048	26,021
Total <sup>10,11</sup>	9,068	50,442	8,257	44,476	4,462	26,021

<sup>1</sup>Includes filter stone, macadam, and riprap and jetty stone.

<sup>2</sup>Withheld to avoid disclosing company proprietary data; included with "Total."

<sup>3</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and other graded coarse aggregate.

<sup>4</sup>Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and other fine aggregate.

<sup>5</sup>Includes graded road base or subbase, unpaved road surfacing, and crusher run (select material or fill).

<sup>6</sup>Includes cement manufacture.

<sup>7</sup>Includes other specified uses not listed.

<sup>8</sup>Includes production reported without a breakdown by use and estimates for nonrespondents.

<sup>9</sup>Data may not add to totals shown because of independent rounding.

<sup>10</sup>One short ton is equal to 907 kilograms or 2,000 pounds. To convert metric tons to short tons, divide metric tons by 0.907185.

<sup>11</sup>Total shown in thousand short tons and thousand dollars.