

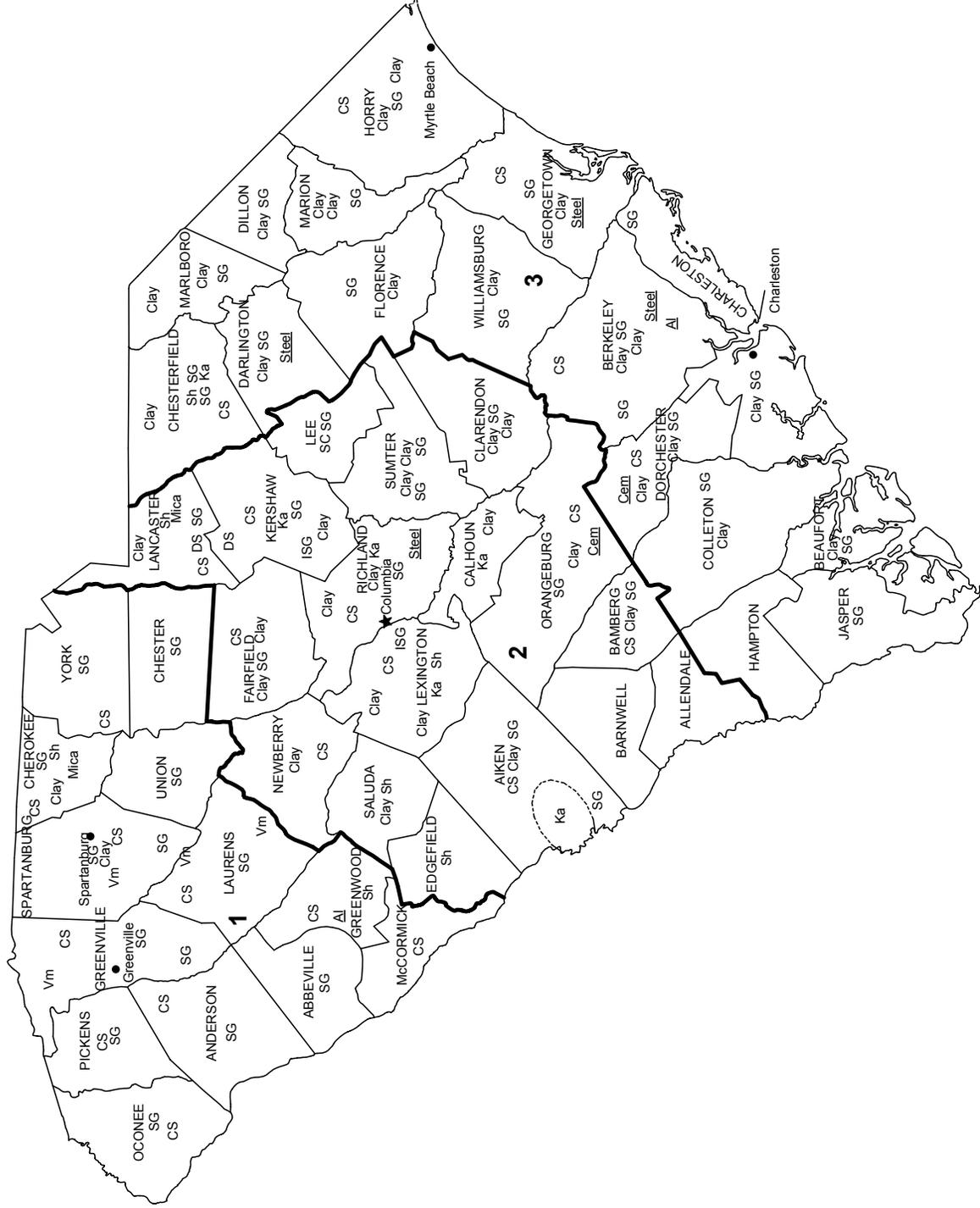
# SOUTH CAROLINA

**LEGEND**

- County boundary
- ★ Capital
- City
- 1** Crushed stone/sand and gravel districts

**MINERAL SYMBOLS (Major producing areas)**

- Al Aluminum plant
- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- DS Dimension stone
- ISG Industrial sand and gravel
- Ka Kaolin
- Mica Mica
- SG Construction sand and gravel
- Sh Shale
- Steel Steel plant
- Vm Vermiculite
- Concentration of mineral operations



# THE MINERAL INDUSTRY OF SOUTH CAROLINA

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

In 2002, the estimated value<sup>1</sup> of nonfuel mineral production for South Carolina was \$460 million, based upon preliminary U.S. Geological Survey (USGS) data. This was a marginal increase from that of 2001<sup>2</sup> and followed a 16.7% decrease from 2000 to 2001. The State was 29th in rank (up from 31st in 2001) among the 50 States in total nonfuel mineral production value, of which South Carolina accounted for more than 1% of the U.S. total. Because data for mica and vermiculite have been withheld to protect company proprietary data, the actual total values for 2001-2002 are somewhat higher than those reported in table 1.

In 2002, cement (portland and masonry) by value remained the State's leading nonfuel mineral commodity, followed by crushed stone, construction sand and gravel, kaolin, industrial sand and gravel, and vermiculite. The first three accounted for 90% of South Carolina's total nonfuel mineral production value. An overall increase in the nonfuel mineral value of cement (portland and masonry) of more than \$8 million offset decreases in construction sand and gravel, crushed stone, vermiculite, common clay, and kaolin (descending order of

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<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or 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 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

<sup>2</sup>Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

change), resulting in a small net increase for the year (table 1). Gold had been a significant portion of the State's nonfuel mineral economy for more than a decade, but gold has not been produced in South Carolina since Kennecott Minerals Co.'s Ridgeway Mine in Fairfield County ceased production in the fall of 1999.

In 2001, a net decrease of \$38 million in cement and a \$28 million drop in the value of crushed stone accounted for most of South Carolina's drop in total nonfuel mineral value. Additionally, smaller decreases occurred in lime, construction sand and gravel, vermiculite, industrial sand and gravel, and mica, while masonry cement and all three clays had increases in value (table 1). The decrease in lime resulted from the closure of the State's only lime plant, Palmetto Lime LLC of Charleston, SC, in June 2000. The plant, then a joint venture of SCANA Corp. and Chemical Lime Co., remained idle throughout 2001 and on into 2002. In 2002, SCANA sold its interests in Palmetto to Chemical Lime, making it the sole owner of the plant (Miller, 2003<sup>3</sup>).

Based upon USGS estimates of the quantities produced in the 50 States in 2002, South Carolina remained first of 2 States that produce vermiculite, third in kaolin and masonry cement, and fourth in mica. The State increased to 9th from 11th in portland cement and decreased to 7th from 6th in common clay. In addition, significant quantities of crushed stone and industrial sand and gravel were produced in South Carolina. Primary aluminum and raw steel also were produced in the State but from raw materials that were acquired from other domestic and foreign sources. South Carolina continued to be seventh of 13 States in the production of primary aluminum in 2002.

## Internet Reference Cited

Miller, M.M., 2003, Lime, *in* Metals and minerals, v. I of U.S. Geological Survey Minerals Yearbook 2002, accessed October 20, 2003, at URL <http://minerals.er.usgs.gov/minerals/pubs/commodity/lime/limemyb02rev.pdf>.

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<sup>3</sup>A reference that includes a section mark (§) is found in the Internet Reference Cited section.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN SOUTH CAROLINA<sup>1,2</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2000		2001		2002 <sup>p</sup>		
	Quantity	Value	Quantity	Value	Quantity	Value	
Cement:							
Masonry	411	45,500 <sup>e</sup>	487	52,600 <sup>e</sup>	460 <sup>e</sup>	50,000 <sup>e</sup>	
Portland	2,910	210,000 <sup>e</sup>	2,560	165,000 <sup>e</sup>	2,740 <sup>e</sup>	176,000 <sup>e</sup>	
Clays:							
Common	890	2,790	1,050	4,150	1,150	3,440	
Fire	40	50	42	53	--	--	
Kaolin	397	21,900	377	22,800	376	22,200	
Gemstones	NA	1	NA	1	NA	1	
Sand and gravel:							
Construction	10,300	40,800	10,500	36,900	9,800	32,200	
Industrial	755	18,600	694	15,900	694	15,900	
Stone:							
Crushed	29,400	189,000	26,700	161,000	25,800	159,000	
Dimension	metric tons	W	W	9,230	855	9,230	855
Combined values of lime (2000), mica (crude), vermiculite, and value indicated by symbol W							
Total	XX	21,900	XX	(3) <sup>e</sup>	XX	(3)	
Total	XX	551,000	XX	459,000	XX	460,000	

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

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

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Value withheld to avoid disclosing company proprietary data.

TABLE 2  
SOUTH CAROLINA: CRUSHED STONE SOLD OR USED, BY KIND<sup>1</sup>

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	5 <sup>r</sup>	3,040 <sup>r</sup>	\$19,000 <sup>r</sup>	\$6.25 <sup>r</sup>	5	2,730	\$17,100	\$6.28
Marble	1	W	W	7.94	1	W	W	6.94
Calcareous marl	3 <sup>r</sup>	W	W	4.71	3	W	W	3.88
Granite	24	22,000	147,000	6.67	24	20,100	127,000	6.32
Total or average	XX	29,400	189,000	6.42	XX	26,700	161,000	6.03

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

<sup>1</sup>Data are rounded to no more than three significant digits, except unit values; may not add to totals shown.

TABLE 3  
SOUTH CAROLINA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE<sup>1</sup>

Use	Quantity		Unit value
	(thousand metric tons)	Value (thousands)	
<b>Construction:</b>			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$5.90
Riprap and jetty stone	W	W	12.81
Filter stone	W	W	14.01
Other coarse aggregates	3,350	\$20,900	6.23
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	8.81
Bituminous aggregate, coarse	W	W	8.39
Bituminous surface-treatment aggregate	W	W	17.64
Railroad ballast	W	W	15.64
Other graded coarse aggregates	6,960	49,500	7.12
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	6.32
Stone sand, bituminous mix or seal	W	W	6.54
Screening, undesignated	W	W	5.30
Other fine aggregates	2,120	10,900	5.16
Coarse and fine aggregates:			
Graded road base or subbase	W	W	9.62
Crusher run or fill or waste	W	W	6.44
Other coarse and fine aggregates	2,750	14,600	5.31
Chemical and metallurgical, cement manufacture	(2)	(2)	3.88
Unspecified: <sup>3</sup>			
Reported	7,890	50,400	6.39
Estimated	440	2,530	5.75
Total or average	26,700	161,000	6.03

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

<sup>1</sup>Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

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

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 4  
SOUTH CAROLINA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction:</b>						
Coarse aggregate (+1 1/2 inch) <sup>2</sup>	W	W	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	W	W	W	W	W	W
Fine aggregate (-3/8 inch) <sup>4</sup>	W	W	W	W	W	W
Coarse and fine aggregate <sup>5</sup>	W	W	--	--	W	W
Chemical and metallurgical <sup>6</sup>	--	--	W	W	W	W
Unspecified: <sup>7</sup>						
Reported	1,110	7,100	3,710	23,700	3,070	19,600
Estimated	--	--	230	1,500	210	1,100
Total	11,200	65,000	7,910	48,600	7,610	47,800

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

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

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

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

<sup>5</sup>Includes crusher run (select material or fill), graded road base or subbase, and other coarse and fine aggregates.

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

<sup>7</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
SOUTH CAROLINA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity		Unit value
	(thousand metric tons)	Value (thousands)	
Concrete aggregates (including concrete sand) <sup>2</sup>	5,160	\$20,600	\$3.98
Concrete products (blocks, bricks, pipe, decorative, etc.)	441	1,640	3.71
Asphaltic concrete aggregates and other bituminous mixtures	378	1,240	3.29
Road base and coverings	470	977	2.08
Fill	1,460	2,460	1.68
Other miscellaneous uses <sup>3</sup>	429	1,950	4.54
Unspecified: <sup>4</sup>			
Reported	790	3,590	4.55
Estimated	1,300	4,500	3.34
Total or average	10,500	36,900	3.52

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes road and other stabilization (cement).

<sup>3</sup>Includes filtration and snow and ice control.

<sup>4</sup>Reported and estimated production without a breakdown by end use.

TABLE 6  
SOUTH CAROLINA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products	W	W	W	W	3,980	16,300
Asphaltic concrete aggregates and road base materials	W	W	W	W	803	2,080
Fill	37	113	105	194	1,320	2,150
Other miscellaneous uses <sup>2</sup>	406	1,560	1,300	4,630	400	1,800
Unspecified: <sup>3</sup>						
Reported	40	158	352	1,200	398	2,240
Estimated	113	451	356	1,380	865	2,630
Total	596	2,280	2,110	7,400	7,760	27,200

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes filtration and snow and ice control.

<sup>3</sup>Reported and estimated production without a breakdown by end use.