2012–2013 Minerals Yearbook

SOUTH CAROLINA [ADVANCE RELEASE]

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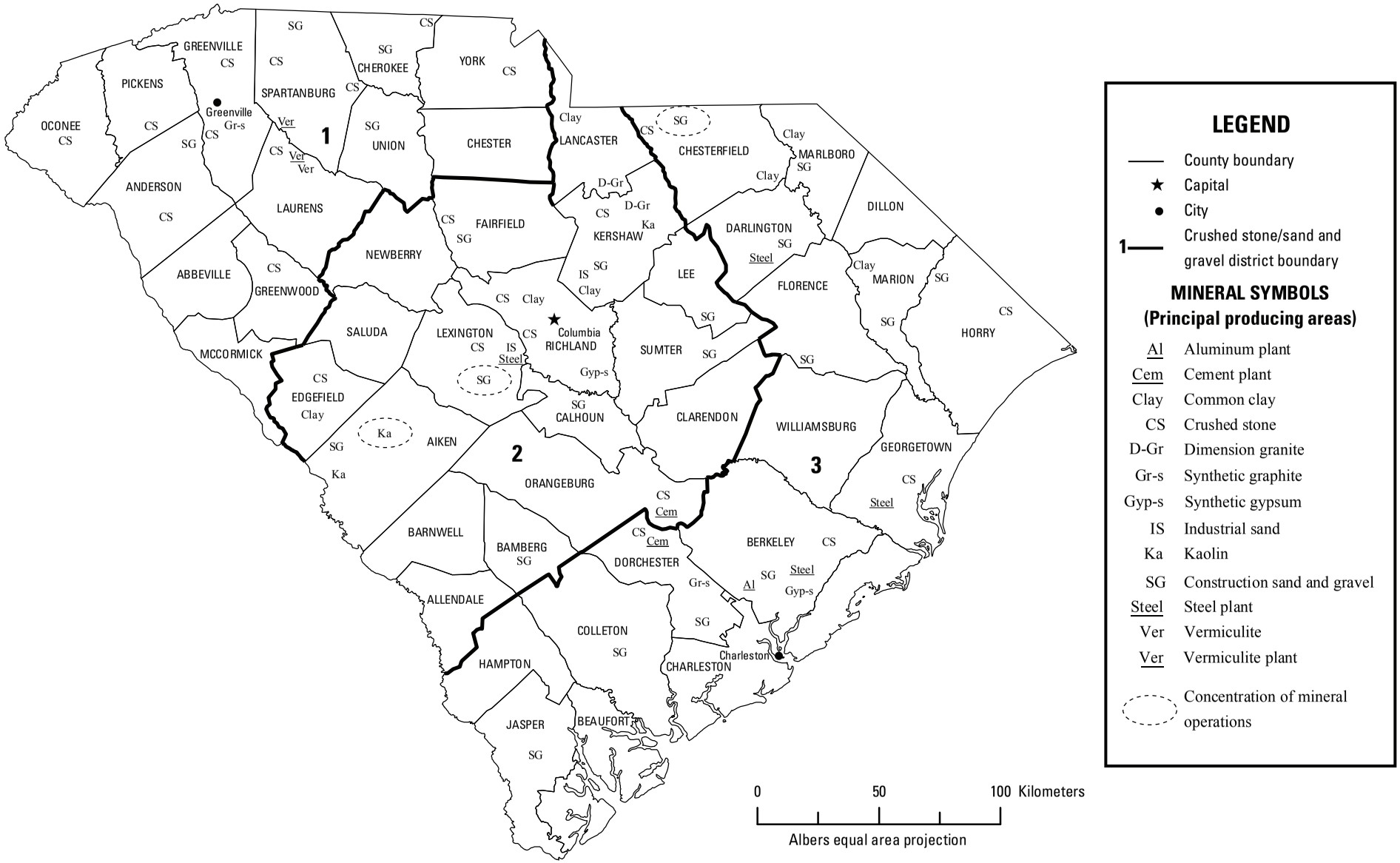
SOUTH CAROLINA



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

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 2013, the value of the nonfuel mineral production[1] in the State of South Carolina increased to $547 million,[2] 0.73% of the total U.S. nonfuel mineral production, ranking it 34th in the Nation. In 2012, the corresponding value was $510 million,[2] 0.67% of the U.S. total nonfuel mineral production, ranking it 33d among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in South Carolina had a value of $115 compared with the national average of $238. In 2012, the per capita value was $107 compared with the national average of $241.

The value of nonfuel mineral production in South Carolina for the years 2006 through 2013 was as follows (in millions of dollars):[2] $729 (2006), $808 (2007), $642 (2008), $449 (2009), $468 (2010), $483 (2011), $510 (2012), and $547 (2013).

In 2013, there were 609 employees in nonfuel mineral mines in South Carolina and 596 in mills and preparation plants. In 2012, the corresponding numbers were 615 in nonfuel mineral mines and 603 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 15; 2014, p. 15). In 2013, the average annual wage in South Carolina for all mining was $52,834 compared with $39,131 for all industries. In 2012, the corresponding figures were $51,321 and $38,660, respectively (National Mining Association, unpub. data, February 4, 2016).

In 2013, on the basis of production quantity, South Carolina continued to be the leading State for the production of vermiculite out of two producing States. Vermiculite concentrate was shipped to 18 exfoliation plants around the country. South Carolina had two of these exfoliation plants and ranked second out of 11 States (Tanner, 2015). South Carolina remained the second leading State in kaolin clay sold or used by producers. South Carolina mines produced about 4% of the U.S. total; the State has historically ranked second to Georgia. Most of South Carolina's production came from Aiken County, which borders Georgia and is on the northeastern end of the Alabama-Georgia-South Carolina kaolin belt. Domestically, the leading end use for kaolin was in paper coating and filling; however, the sales distribution for South Carolina kaolin producers was, in descending order of tonnage, rubber, crockery and other earthenware, fiberglass, brick, paper coating, sanitaryware, portland cement, plastics, paint, adhesives, and animal feed (Virta, 2015, p. 18.5).

In 2013, on the basis of value, portland cement remained the leading nonfuel mineral commodity in South Carolina, closely followed by crushed stone (table 1). From 2012, industrial sand and gravel production increased 8% in quantity and increased 16% in value. Nationally, the total quantity of industrial sand and gravel sold or used increased by 23% with a 30% increase in value, but much of that was owing to its increasing use as a proppant in hydraulic fracturing in the oil and gas industry. In South Carolina, industrial sand from the Tuscaloosa Formation of the Sandhills region was suited for multiple end uses such as building products, fillers and extenders, filtration, glass, and oil and gas proppants (U.S. Silica, 2014, p. 47).

Metals were not mined in South Carolina, but a gold mine was under development. The Haile Mine in Lancaster County, which last produced gold in 1991, was discovered in 1827 and was considered the most productive gold mine east of the Mississippi River (Lancaster County Library, 2014). The Haile Mine was undergoing the permitting process to reopen to include eight pits and have a mine life of about 13 years (U.S. Army Corps of Engineers, 2013, p. 25). Gold has not been mined in South Carolina since the Ridgeway Mine in Fairfield County closed in 1999.

Metals were produced at downstream operations using materials obtained from other domestic and foreign sources. The State had one primary aluminum smelter and four steel mills. Synthetic substitutes for industrial minerals were also produced in South Carolina, such as synthetic graphite and synthetic gypsum (a material that is produced during flue gas desulfurization).

References Cited

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U.S. Mine Safety and Health Administration, [2013], Mine injury and worktime, quarterly, January–December 2012, Final, closeout edition, 33 p. (Accessed February 8, 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 8, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20135.pdf.)

[1]1The 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.

[2]Partial total; excludes values that must be withheld to avoid disclosing company proprietary data.

U.S. Silica, 2014, Form 10–K—2013: U.S. Securities and Exchange Commission, 128 p. (Accessed May 23, 2016, at http://www.sec.gov/Archives/edgar/data/1524741/000119312514069687/d639815d10k.htm.)

Virta, R.L., 2015, Clay and shale [advance release], in Metals and minerals: U.S. Geological Survey Minerals Yearbook 2013, v. I, p. 18.1–18.22. (Accessed May 3, 2016, at http://minerals.usgs.gov/minerals/pubs/commodity/clays/myb1-2013-clays.pdf.)

TABLE 1
NONFUEL MINERAL PRODUCTION IN SOUTH CAROLINA[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2011		2012		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	143	18,300 [e]	158	20,800 [e]	155	22,000 [e]
Portland	2,480	197,000 [e]	2,770	222,000 [e]	2,780	236,000 [e]
Clays:						
Common	227	1,250	197	1,120	144	921
Kaolin	246	19,700	256	20,600	257	21,800
Gemstones, natural	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	7,070	31,400	6,380	36,300	6,430	37,700
Industrial	451	16,700	483	20,300	521	23,600
Stone:						
Crushed	19,500	199,000	19,100	188,000	19,800	205,000
Dimension	W	W	W	W	W	W
Vermiculite	W	W	W	W	W	W
Total	XX	483,000	XX	510,000	XX	547,000

[e]Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." 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
SOUTH CAROLINA: 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]	7	4,590	$29,100	$6.34	7	5,070	$33,500	$6.61
Marble	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Calcareous marl	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Granite	25	12,100	145,000	12.04	25	12,600	159,000	12.64
Miscellaneous stone	4	2,400	13,800	5.77	4	2,190	12,100	5.52
Total or average	XX	19,100	188,000	9.88	XX	19,800	205,000	10.31

XX Not applicable.
[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]Withheld to avoid disclosing company proprietary data; included with "Miscellaneous stone."

TABLE 3
SOUTH CAROLINA: 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	--	--	--	77	$2,040	$26.46
Riprap and jetty stone	W	W	W	W	W	W
Filter stone	W	W	W	40	999	25.05
Unspecified coarse aggregate	W	W	W	W	W	W
Coarse aggregate, graded:						
Concrete aggregate, coarse	W	W	W	W	W	W
Bituminous aggregate, coarse	W	W	W	--	--	--
Bituminous surface-treatment aggregate	W	W	W	--	--	--
Railroad ballast	W	W	W	--	--	--
Unspecified graded coarse aggregate	W	W	W	W	W	W
Fine aggregate (-⅜ inch):						
Stone sand, bituminous mix or seal	W	W	W	--	--	--
Screening, undesignated	89	$455	$5.12	162	1,010	6.22
Unspecified fine aggregate	W	W	W	W	W	W
Coarse and fine aggregates:						
Graded road base or subbase	355	2,920	8.22	603	5,090	8.45
Crusher run or fill or waste	290	2,310	7.96	W	W	W
Unspecified coarse and fine aggregates	W	W	W	W	W	W
Agricultural:						
Agricultural Limestone	--	--	--	W	W	W
Unspecified and other agricultural uses	20	263	13.16	15	195	13.23
Chemical and metallurgical:						
Cement manufacture	2,290	5,980	2.61	1,160	4,390	3.77
Other miscellaneous uses and specified uses not listed						
Unspecified:[2]						
Reported	6,800	70,000	10.30	8,990	75,400	8.39
Estimated	2,540	14,400	5.68	1,810	15,200	8.43
Total or average	19,100	188,000	9.88	19,800	205,000	10.31

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

SOUTH CAROLINA: 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]	W	W	W	W	W	W
Coarse aggregate, graded[3]	W	W	W	W	W	W
Fine aggregate (-⅜ inch)[4]	W	W	W	W	W	W
Coarse and fine aggregates[5]	W	W	W	W	642	6,370
Other construction materials	--	--	--	--	--	--
Agricultural[6]	--	--	--	--	20	263
Chemical and metallurgical[7]	--	--	2,290	5,980	--	--
Special	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified:[8]						
Reported	2,520	25,900	1,970	20,300	2,310	23,800
Estimated	91	1,120	36	365	2,410	12,900
Total	6,270	72,000	6,360	54,400	6,440	61,900

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, crusher run, and unspecified coarse and fine aggregates.

[6]Includes other agricultural uses.

[7]Includes cement manufacture.

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

TABLE 5
SOUTH CAROLINA: 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]	193	4,540	W	W	W	W
Coarse aggregate, graded[3]	W	W	W	W	W	W
Fine aggregate (-⅜ inch)[4]	W	W	W	W	W	W
Coarse and fine aggregates[5]	W	W	W	W	798	7,910
Other construction materials	--	--	W	W	--	--
Agricultural[6]	--	--	--	--	W	W
Chemical and metallurgical[7]	--	--	--	--	W	W
Special	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified:[8]						
Reported	2,310	23,700	4,300	26,800	2,390	24,900
Estimated	--	--	54	559	1,760	14,700
Total	6,000	70,900	6,800	60,400	7,040	73,200

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, crusher run, and unspecified coarse and fine aggregates.
[6]Includes other agricultural uses.
[7]Includes cement manufacture.
[8]Reported and estimated production without a breakdown by end use.

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products[2]	2,160	$12,200	$5.65
Asphaltic concrete aggregates and road base materials[3]	445	2,150	4.83
Fill	432	1,420	3.29
Other miscellaneous uses[4]	127	1,750	13.76
Unspecified:[5]			
Reported	1,420	8,270	5.84
Estimated	1,810	10,500	5.80
Total or average	6,380	36,300	5.68

[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 road and other stabilization (cement).
[4]Includes golf course.
[5]Reported and estimated production without a breakdown by end use.

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,030	$12,900	$6.37
Concrete products (blocks, bricks, pipe, decorative, and so forth)	29	162	5.59
Asphaltic concrete aggregates and other bituminous mixtures	189	999	5.29
Fill	564	1,480	2.62
Other miscellaneous uses[2]	42	925	22.02
Unspecified:[3]			
Reported	1,980	11,700	5.93
Estimated	1,600	9,470	5.92
Total or average	6,430	37,700	5.86

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

TABLE 8
SOUTH CAROLINA: 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 aggregate and concrete products[2]	W	W	W	W	1,340	8,330
Asphaltic concrete aggregates and road base materials[3]	W	W	W	W	308	1,520
Fill	5	60	100	480	328	881
Other miscellaneous uses[4]	--	--	42	467	85	1,280
Unspecified:[5]						
Reported	--	--	503	2,940	912	5,330
Estimated	71	410	618	3,610	1,120	6,480
Total	172	1,110	2,120	11,300	4,100	23,800

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 road and other stabilization (cement).
[4]Includes golf course.
[5]Reported and estimated production without a breakdown by end use.

TABLE 9
SOUTH CAROLINA: 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 aggregate and concrete products	W	W	W	W	1,070	7,210
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	189	999
Fill	--	--	119	348	445	1,130
Other miscellaneous uses[2]	7	90	--	--	36	835
Unspecified:[3]						
Reported	--	--	903	5,430	1,070	6,290
Estimated	108	693	263	1,650	1,230	7,130
Total	143	1,050	2,240	13,000	4,050	23,600

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 golf course and railroad ballast.
[3]Reported and estimated production without a breakdown by end use.