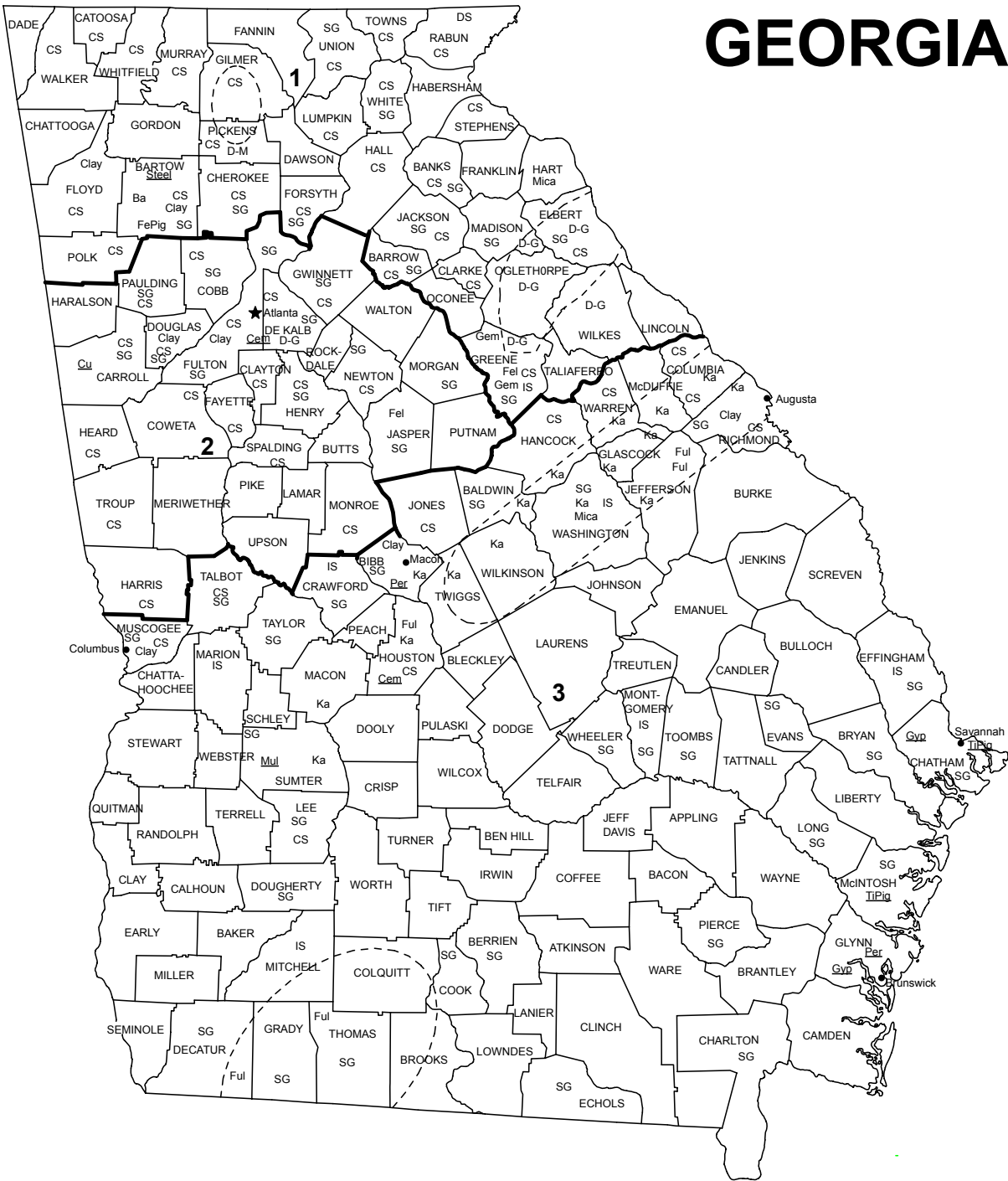


GEORGIA



LEGEND

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

0 50 Kilometers

MINERAL SYMBOLS (Major producing areas)

Ba	Barite	DS	Dimension stone	Mica	Mica
<u>Cem</u>	Cement plant	Fel	Feldspar	<u>Mul</u>	Synthetic mullite plant
Clay	Common clay	FePig	Iron oxide pigments	<u>Per</u>	Perlite plant
CS	Crushed stone	Ful	Fuller's earth	SG	Construction sand and gravel
<u>Cu</u>	Copper plant	Gem	Gemstones	<u>Steel</u>	Steel plant
D-G	Dimension granite	<u>Gyp</u>	Gypsum plant	<u>TiPig</u>	Titanium dioxide pigment plant
D-M	Dimension marble	IS	Industrial sand	(---)	Concentration of mineral operations
		Ka	Kaolin		

Source: Georgia Geologic Survey/U.S. Geological Survey (2004)

THE MINERAL INDUSTRY OF GEORGIA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Georgia Department of Natural Resources, Georgia Geologic Survey, for collecting information on all nonfuel minerals.

In 2004, Georgia's nonfuel raw mineral production was valued¹ at \$1.8 billion, based upon annual U.S. Geological Survey (USGS) data. This was about a 3.4% increase from that of 2003² and followed a 6.1% increase from 2002 to 2003. The State was eighth in rank (sixth in 2003) among the 50 States in total nonfuel mineral production value, of which Georgia accounted for more than 4% of the U.S. total.

Georgia was by far the leading clay-producing State in the Nation in 2004, accounting for about 24% of total U.S. clay production (all kinds) and producing more than 2.7 times the quantity of clay as the next highest producing State. Kaolin remained the State's foremost nonfuel raw mineral commodity, accounting for more than 49% of Georgia's total nonfuel mineral production value and, of that, about 86% of its total clay value. Crushed stone was second, accounting for more than 30% of the State's nonfuel mineral value, followed by fuller's earth, portland cement, masonry cement, and construction sand and gravel.

In 2004, increases in the production and related values of crushed stone, masonry cement, kaolin, and construction sand and gravel led the Georgia's increase in value for the year; these increases were \$25 million, nearly \$18 million, \$14 million, and \$7.6 million, respectively. Smaller yet significant increases also took place in the production and values of common clays, industrial sand and gravel, and portland cement. The largest decrease in value was in fuller's earth, down \$3 million (table 1). All other changes were of less than \$1 million, having less of an effect on the overall net total.

In 2003, increases in the production and values of crushed stone and fuller's earth were up \$58 million and about \$51 million, respectively, which led to the State's rise in value. Construction sand and gravel and dimension stone production and values showed smaller yet significant increases of about \$5 million each. The largest decreases took place in kaolin and cement. The value of kaolin was down by \$9 million; and although the production of masonry cement and portland cement each increased, their values decreased, to a combined total of about \$7 million. Decreases of \$2 million or less took place in the values of barite, mica, and feldspar (descending order of change).

In 2004, Georgia continued to lead the Nation in the quantities of kaolin, fuller's earth, and iron oxide pigments produced (descending order of value). It remained second of two barite-producing States and third of five States that produce mica. While the State rose to fourth from fifth in the production of crushed stone and common clays and to eighth from ninth in masonry cement, it decreased to third from second in dimension stone and to fifth from fourth in feldspar. Additionally, Georgia was a significant producer of portland cement and industrial sand and gravel.

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 2004 USGS mineral production data published in this chapter are those available as of December 2005. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

² Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN GEORGIA^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Common	1,310	5,500	1,280	4,430	1,550	8,710
Fuller's earth	979	93,800	1,570	145,000	1,400	142,000
Kaolin	6,830	893,000	6,610	884,000	6,780	898,000
Gemstones	NA	8	NA	8	NA	9
Sand and gravel:						
Construction	6,600	27,200	7,690	31,800	9,270	39,400
Industrial	606	12,200	590	11,900	665	13,400
Stone:						
Crushed	70,500 ^r	461,000 ^r	75,200	519,000	79,500	544,000
Dimension	111	18,200	114	22,700	146	22,100
Combined values of barite, cement, clays [bentonite (2002)], feldspar, iron oxide pigments (crude), lime, mica (crude)	XX	129,000 ^r	XX	117,000	XX	134,000
Total	XX	1,640,000 ^r	XX	1,740,000	XX	1,800,000

^rRevised. NA Not available. XX Not applicable.

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

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

TABLE 2
 GEORGIA: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2002				2003				2004			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	18	9,480	\$61,500	\$6.49	18	8,770	\$61,800	\$7.04	18	8,450	\$60,100	\$7.12
Marble	6	W	W	6.37	7	W	W	6.51	7	W	W	6.60
Granite	53	59,300	389,000	6.56	54	63,200	434,000	6.87	53	67,800	461,000	6.79
Quartzite	2	W	W	5.25	2	W	W	7.93	2	W	W	7.93
Total or average	XX	70,500 ^r	461,000 ^r	6.54 ^r	XX	75,200	519,000	6.91	XX	79,500	544,000	6.85

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total or average." XX Not applicable.

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

TABLE 3a
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	1,310	\$14,500	\$11.09
Filter stone	W	W	9.37
Other coarse aggregates	161	1,160	7.18
Total or average	1,470	15,700	10.66
Coarse aggregate, graded:			
Concrete aggregate, coarse	9,380	77,300	8.24
Bituminous aggregate, coarse	4,100	35,600	8.67
Railroad ballast	942	5,990	6.36
Other graded coarse aggregates	4,050	33,500	8.28
Total or average	18,500	152,000	8.25
Fine aggregate (-¾ inch):			
Stone sand, concrete	3,690	28,000	7.60
Stone sand, bituminous mix or seal	(2)	(2)	6.17
Screening, undesignated	405	2,820	6.96
Other fine aggregates	3,330	19,000	5.71
Total or average	7,430	49,800	6.71
Coarse and fine aggregates:			
Graded road base or subbase	9,500	56,900	6.00
Unpaved road surfacing	(3)	(3)	6.59
Crusher run or fill or waste	475	2,480	5.22
Other coarse and fine aggregates	3,330	17,800	5.34
Total or average	13,300	77,200	5.81
Other construction materials	188	1,780	9.50
Agricultural limestone	(4)	(4)	5.27
Chemical and metallurgical; cement manufacture	(4)	(4)	9.48
Special:			
Asphalt fillers or extenders	(5)	(5)	5.79
Other fillers or extenders	(5)	(5)	7.72
Total or average	591	4,160	7.03
Unspecified:⁶			
Reported	31,900	207,000	6.49
Estimated	1,840	11,400	6.20
Total or average	33,700	218,000	6.48
Grand total or average	75,200	519,000	6.91

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

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

²Withheld to avoid disclosing company proprietary data; included with "Other fine aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

⁴Withheld to avoid disclosing company proprietary data; included with "Unspecified: Reported."

⁵Withheld to avoid disclosing company proprietary data; included in "Total or average."

⁶Reported and estimated production without a breakdown by end use.

TABLE 3b

GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	W	W	\$11.15
Filter stone	W	W	9.09
Other coarse aggregates	1,550	\$16,700	10.82
Total or average	1,550	16,700	10.82
Coarse aggregate, graded:			
Concrete aggregate, coarse	(2)	(2)	8.38
Bituminous aggregate, coarse	(2)	(2)	8.47
Railroad ballast	740	4,800	6.48
Other graded coarse aggregates	15,400	129,000	8.33
Total or average	16,200	133,000	8.24
Fine aggregate (-¾ inch):			
Stone sand, concrete	(3)	(3)	7.28
Stone sand, bituminous mix or seal	(3)	(3)	6.08
Screening, undesignated	(3)	(3)	2.52
Other fine aggregates	7,200	46,400	6.44
Total or average	7,200	46,400	6.44
Coarse and fine aggregates:			
Graded road base or subbase	(4)	(4)	6.06
Terrazzo and exposed aggregate	(4)	(4)	7.71
Crusher run or fill or waste	613	1,040	1.69
Other coarse and fine aggregates	11,500	67,100	5.83
Total or average	12,100	68,200	5.62
Agricultural limestone	(5)	(5)	5.06
Chemical and metallurgical, cement manufacture	(5)	(5)	8.71
Special, other fillers or extenders	(5)	(5)	7.71
Unspecified:⁶			
Reported	38,600	253,000	6.56
Estimated	2,500	16,000	6.15
Total or average	41,200	269,000	6.54
Grand total or average	79,500	544,000	6.85

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

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

²Withheld to avoid disclosing company proprietary data; included with "Other graded coarse aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other fine aggregates."

⁴Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

⁵Withheld to avoid disclosing company proprietary data; included in "Grand total or average."

⁶Reported and estimated production without a breakdown by end use.

TABLE 4a

GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE AND DISTRICT¹

(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	5,880	49,500	W	W	W	W
Fine aggregate (-¾ inch) ⁴	W	W	W	W	W	W
Coarse and fine aggregate ⁵	4,620	27,400	W	W	W	W
Other construction materials	188	1,780	--	--	--	--
Agricultural ⁶	(7)	(7)	--	--	--	--
Chemical and metallurgical ⁸	--	--	--	--	(7)	(7)
Special ⁹	W	W	W	W	--	--
Unspecified: ¹⁰						
Reported	7,570	48,900	9,290	61,200	15,000	96,800
Estimated	1,840	11,400	--	--	--	--
Total	23,300	163,000	34,800	247,000	17,100	109,000

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

¹Data are rounded to no more than three significant digits; may not add to totals shown.²Includes filter stone, riprap and jetty stone, and other coarse aggregates.³Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.⁴Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.⁵Includes crusher run (select material or fill), graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.⁶Includes agricultural limestone.⁷Withheld to avoid disclosing company proprietary data; included with "Unspecified: Reported."⁸Includes cement manufacture.⁹Includes asphalt fillers or extenders and other fillers or extenders.¹⁰Reported and estimated production without a breakdown by end use.

TABLE 4b
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE AND DISTRICT¹

(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	3,400	28,400	11,700	97,800	W	W
Fine aggregate (-¾ inch) ⁴	1,610	12,800	W	W	W	W
Coarse and fine aggregate ⁵	2,760	17,700	W	W	W	W
Agricultural ⁶	W	W	--	--	--	--
Chemical and metallurgical ⁷	--	--	--	--	W	W
Special ⁸	W	W	--	--	--	--
Unspecified:⁹						
Reported	12,800	87,000	8,750	58,700	17,100	108,000
Estimated	2,500	16,000	--	--	--	--
Total	23,800	167,000	35,900	251,000	19,800	126,000

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

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

²Includes filter stone, riprap and jetty stone, and other coarse aggregates.

³Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

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

⁵Includes crusher run or fill or waste, graded road base or subbase, terrazzo and exposed aggregate, and other coarse and fine aggregates.

⁶Includes agricultural limestone.

⁷Includes cement manufacture.

⁸Includes other fillers or extenders.

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

TABLE 5a
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,380	\$10,000	\$4.22
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	633	2,830	4.47
Asphaltic concrete aggregates and other bituminous mixtures	70	261	3.73
Fill	60	178	2.96
Other miscellaneous uses	19	108	5.59
Unspecified: ³			
Reported	2,780	10,600	3.81
Estimated	1,800	7,800	4.49
Total or average	7,690	31,800	4.14

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

²Includes plaster and gunite sands.

³Reported and estimated production without a breakdown by end use.

TABLE 5b
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products ²	3,820	\$17,500	\$4.57
Fill	50	239	4.75
Other miscellaneous uses	8	65	7.70
Unspecified: ³			
Reported	3,810	15,100	3.97
Estimated	1,600	6,500	4.16
Total or average	9,270	39,400	4.26

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

²Includes asphaltic concrete aggregates and other bituminous mixtures, and plaster and gunite sands.

³Reported and estimated production without a breakdown by end use.

TABLE 6a

GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003, BY USE AND DISTRICT ¹

(Thousand metric tons and thousand dollars)

Use	District 1 and 2 ²		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	W	W	W	W
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	W	W	W	W
Fill	--	--	60	178
Other miscellaneous uses ⁴	373	1,680	2,730	11,500
Unspecified: ⁵				
Reported	456	1,630	2,320	8,960
Estimated	320	1,900	1,400	5,900
Total	1,150	5,250	6,540	26,600

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

¹Data are rounded to no more than three significant digits; may not add to totals shown.²Districts 1 and 2 are combined to avoid disclosing company proprietary data.³Includes plaster and gunite sands.⁴Includes asphaltic concrete aggregates.⁵Reported and estimated production without a breakdown by end use.

TABLE 6b
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004, BY USE AND DISTRICT¹

(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	218	1,210	134	807	3,470	15,500
Fill	18	160	--	--	32	79
Other miscellaneous uses	--	--	--	--	8	65
Unspecified: ³						
Reported	--	--	265	1,100	3,550	14,000
Estimated	260	1,100	150	670	1,200	4,800
Total	491	2,420	551	2,570	8,220	34,500

-- Zero.

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

²Includes asphaltic concrete aggregates and other bituminous mixtures, and plaster and gunite sands.

³Reported and estimated production without a breakdown by end use.