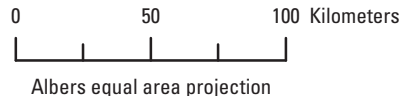
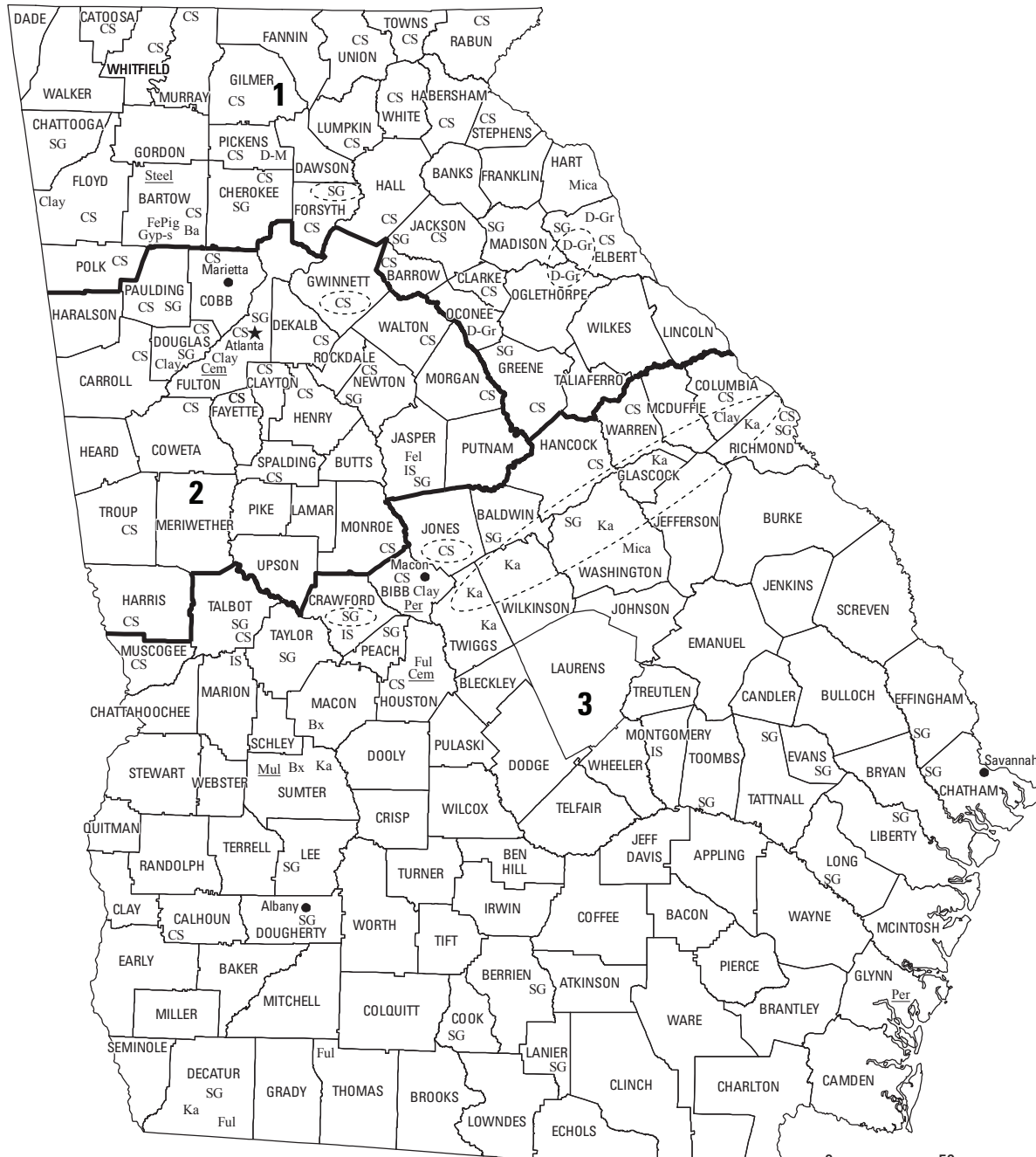




2012–2013 Minerals Yearbook

GEORGIA

GEORGIA



| LEGEND | | | |
|--|------------------------------------|--------------|-------------------------------------|
| — | County boundary | <u>Cem</u> | Cement plant |
| ★ | Capital | Clay | Common clay |
| ● | City | CS | Crushed stone |
| 1 | Crushed stone/sand gravel district | D-Gr | Dimension granite |
| | | D-M | Dimension marble |
| | | Fel | Feldspar |
| | | FePig | Iron oxide pigments |
| | | Ful | Fuller's earth |
| | | Gyp-s | Synthetic gypsum |
| | | IS | Industrial sand |
| | | Ka | Kaolin |
| | | Mica | Mica |
| | | <u>Mul</u> | Synthetic mullite plant |
| | | <u>Per</u> | Perlite plant |
| | | SG | Construction sand and gravel |
| | | <u>Steel</u> | Steel plant |
| | | ○ | Concentration of mineral operations |
| MINERAL SYMBOLS (Principal producing areas) | | | |
| Ba | Barite | | |
| Bx | Bauxite | | |

Source: Georgia Department of Natural Resources, Environmental Protection Division/U.S. Geological Survey (2012–13).

THE MINERAL INDUSTRY OF GEORGIA

In 2013, the value of the nonfuel mineral production¹ in the State of Georgia increased to \$1.53 billion, 2.0% of the total U.S. nonfuel mineral production value, ranking it 16th in the Nation. In 2012, the corresponding value was \$1.49 billion, 2.0 % of the U.S. total nonfuel mineral production, ranking it 14th among the 50 States. In 2013, on a per capita basis, nonfuel mineral production in Georgia had a value of \$153 compared with the national average of \$238. In 2012, the per capita value was \$150 compared with the national average of \$241.

The value of nonfuel mineral production in Georgia for the years 2006 through 2013 was as follows (in billions of dollars): \$2.07 (2006), \$2.06 (2007), \$1.79 (2008), \$1.40 (2009), \$1.46 (2010), \$1.48 (2011), \$1.49 (2012), and \$1.53 (2013).

In 2013, there were 1,220 employees in nonfuel mineral mines in Georgia and 3,140 in mills and preparation plants. In 2012, the corresponding numbers were 1,298 in nonfuel mineral mines and 2,991 in mills and preparation plants (U.S. Mine Safety and Health Administration, 2013, p. 8; 2014, p. 8). In 2013, the average annual wage in Georgia for all mining was \$58,991 compared with \$47,515 for all industries. In 2012, the corresponding figures were \$56,347 and \$47,003, respectively (National Mining Association, unpub. data, February 4, 2016).

In 2012–13, on the basis of production quantity, Georgia was the leading producer of kaolin clay and iron oxide pigments out of nine and three producing States, respectively. With attapulgite production and montmorillonite production combined, Georgia was the leading producer of fuller's earth. It was second in the production of barite, attapulgite (fuller's earth), and montmorillonite (fuller's earth) out of 2, 3, and 10 producing States, respectively. It was fifth in the production of dimension stone and feldspar out of 33 and 7 producing States, respectively. In 2013 and 2012, Georgia also produced common clay, construction sand and gravel, crude mica, crushed stone, industrial sand and gravel, lime, masonry and portland cements, and natural gemstones (table 1). Mullite was produced

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>.

in Sumter County and refractory grade bauxite was mined in Sumter and Macon Counties, but the value was not significant to be included in table 1.

There were several mineral industry news items during 2012–13. On July 23, 2013, the Color Pigments and Services business of Rockwood Holdings Inc. started building an advanced technology production facility near Augusta, Georgia, for the production of synthetic iron oxide pigments at an investment of \$115 million. This was the first new iron oxide pigment production plant in the United States in nearly 35 years (Martin, 2013). On September 17, 2013, Huntsman Corp. announced that it would purchase Rockwood Pigments NA's color pigments plants and three other businesses from Rockwood Holdings, Inc. The deal was projected to close in June 2014 (Reuters, 2013). At auction in 2012, JSC Ado Georgia Mining, a Turkish company, acquired a 30-year license to mine barite at the Chordi deposit in northern Georgia. On August 22, 2013, it announced that it would build a beneficiation plant in Chordi for the production of barite concentrate with a capacity of up to 60,000 metric tons per year (Interfax, 2013).

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- U.S. Mine Safety and Health Administration, [2014], Mine injury and worktime, quarterly, January–December 2013: U.S. Mine Safety and Health Administration, Final, closeout edition, 34 p. (Accessed February 4, 2016, at http://arlweb.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20135.pdf.)

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

(Thousand metric tons and thousand dollars)

| Mineral | 2011 | | 2012 | | 2013 | |
|--|---------------------|------------------------|----------|-----------|----------|-----------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Barite | 7 | 1,350 | 7 | 1,350 | 7 | 1,350 |
| Clays: | | | | | | |
| Common | 644 | 6,880 | 687 | 3,770 | W | W |
| Kaolin | 5,480 ^r | 814,000 ^r | 5,410 | 844,000 | 5,450 | 836,000 |
| Gemstones, natural | NA | 103 | NA | 103 | NA | 103 |
| Sand and gravel: | | | | | | |
| Construction | 5,150 ^r | 30,300 ^r | 5,410 | 33,800 | 4,260 | 28,500 |
| Industrial | 655 | 19,600 | 585 | 16,500 | 596 | 15,800 |
| Stone: | | | | | | |
| Crushed | 41,400 ^r | 478,000 ^r | 37,700 | 451,000 | 40,300 | 493,000 |
| Dimension | 141 | 20,300 | 142 | 16,800 | 145 | 17,200 |
| Combined values of bauxite, cement, clays (fuller's earth), feldspar, iron oxide pigments (crude), lime, mica (crude), and value indicated by symbol W | XX | 114,000 | XX | 119,000 | XX | 137,000 |
| Total | XX | 1,480,000 ^r | XX | 1,490,000 | XX | 1,530,000 |

^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 IN THE UNITED STATES, BY TYPE¹

| 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 | 12 | 4,580 | \$55,700 | \$12.16 | 11 | 4,680 | \$58,900 | \$12.58 |
| Marble | 3 | 1,540 | 32,200 | 20.94 | 3 | 1,750 | 31,000 | 17.74 |
| Granite | 67 | 31,000 | 356,000 | 11.49 | 67 | 33,100 | 395,000 | 11.92 |
| Sandstone and quartzite ³ | 2 | 597 | 6,570 | 11.01 | 2 | 720 | 7,930 | 11.02 |
| Slate | 1 | 15 | 403 | 27.26 | 1 | 20 | 575 | 29.35 |
| Miscellaneous stone | -- | -- | -- | -- | -- | -- | -- | -- |
| Total or average | XX | 37,700 | 451,000 | 11.96 | XX | 40,300 | 493,000 | 12.24 |

XX Not applicable. -- Zero.

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

²Includes limestone-dolomite reported with no distinction between the two kinds of stone.

³Includes sandstone-quartzite reported with no distinction between the two kinds of stone.

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

| Use | 2012 | | | 2013 | | |
|--|---------------------------------------|----------------------|---------------|---------------------------------------|----------------------|---------------|
| | Quantity (thousand metric tons) | Value (thousands) | Unit value | Quantity (thousand metric tons) | Value (thousands) | Unit value |
| Construction: | | | | | | |
| Coarse aggregate (+1½ inch): | | | | | | |
| Riprap and jetty stone | 42 | \$527 | \$12.55 | 42 | \$524 | \$12.58 |
| Filter stone | W | W | W | 246 | 3,060 | 12.40 |
| 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 (-¾ inch): | | | | | | |
| Stone sand, concrete | W | W | W | W | W | W |
| Stone sand, bituminous mix or seal | -- | -- | -- | W | W | W |
| Screening, undesignated | 93 | 865 | 9.30 | 108 | 588 | 5.46 |
| Unspecified fine aggregate | W | W | W | W | W | W |
| Coarse and fine aggregates: | | | | | | |
| Graded road base or subbase | 489 | 4,950 | 10.12 | 256 | 1,930 | 7.51 |
| Unpaved road surface | W | W | W | 4 | 20 | 5.51 |
| Terrazzo and exposed aggregate | -- | -- | -- | W | W | W |
| Crusher run or fill or waste | W | W | W | 8 | 45 | 5.46 |
| Roofing granules | W | W | W | -- | -- | -- |
| Unspecified coarse and fine aggregates | W | W | W | W | W | W |
| Unspecified and other construction materials | 15 | 403 | 26.87 | 20 | 578 | 28.95 |
| Agricultural: | | | | | | |
| Agricultural Limestone | W | W | W | -- | -- | -- |
| Chemical and metallurgical: | | | | | | |
| Cement manufacture | -- | -- | -- | W | W | W |
| Special: | | | | | | |
| Mining dusting or acid water treatment | W | W | W | W | W | W |
| Other fillers or extenders | W | W | W | W | W | W |
| Other miscellaneous uses and specified uses not listed | | | | 181 | 5,805 | 32.11 |
| Unspecified:² | | | | | | |
| Reported | 13,400 | 155,000 | 11.56 | 13,200 | 157,000 | 11.90 |
| Estimated | 9,010 | 103,000 | 11.41 | 11,100 | 135,000 | 12.13 |
| Total or average | 37,700 | 451,000 | 11.96 | 40,300 | 493,000 | 12.24 |

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

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

²Reported and estimated production without a breakdown by end use.

TABLE 4
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2012, 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 | W | W | W | W | W | W |
| Fine aggregate (-¾ inch) ⁴ | W | W | W | W | W | W |
| Coarse and fine aggregates ⁵ | W | W | W | W | W | W |
| Other construction materials | 15 | 403 | -- | -- | -- | -- |
| Agricultural | -- | -- | -- | -- | W | W |
| Chemical and metallurgical | -- | -- | -- | -- | -- | -- |
| Special ⁶ | W | W | -- | -- | -- | -- |
| Other miscellaneous uses and specified uses not listed | -- | -- | -- | -- | -- | -- |
| Unspecified:⁷ | | | | | | |
| Reported | 4,520 | 51,600 | 3,970 | 46,800 | 4,950 | 56,800 |
| Estimated | 2,470 | 29,800 | 4 | 51 | 6,530 | 73,100 |
| Total | 11,200 | 147,000 | 12,100 | 141,000 | 14,500 | 162,000 |

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 macadam, riprap and jetty stone, filter stone, and unspecified coarse aggregate.

³Includes concrete aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggregate.

⁴Includes stone sand (concrete), screening (undesignated), and unspecified fine aggregate.

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

⁶Includes mine dusting or acid water treatment and other fillers or extenders.

⁷Reported and estimated production without a breakdown by end use.

TABLE 5
 GEORGIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2013, 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 | W | W | W | W | W | W |
| Fine aggregate (-¾ inch) ⁴ | W | W | W | W | W | W |
| Coarse and fine aggregates ⁵ | W | W | W | W | W | W |
| Other construction materials | 20 | 575 | W | W | -- | -- |
| Agricultural | -- | -- | -- | -- | -- | -- |
| Chemical and metallurgical ⁶ | -- | -- | -- | -- | W | W |
| Special ⁷ | W | W | -- | -- | -- | -- |
| Other miscellaneous uses and specified uses not listed ⁸ | 181 | 5,810 | -- | -- | -- | -- |
| Unspecified:⁹ | | | | | | |
| Reported | 3,390 | 40,900 | 3,240 | 39,300 | 6,580 | 77,100 |
| Estimated | 4,720 | 55,700 | 502 | 6,070 | 5,890 | 72,900 |
| Total | 12,700 | 167,000 | 12,800 | 153,000 | 14,700 | 173,000 |

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 macadam, riprap and jetty stone, filter stone, and unspecified coarse aggregate.

³Includes concrete aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and unspecified graded coarse aggregate.

⁴Includes stone sand (concrete), screening (undesignated), and unspecified fine aggregate.

⁵Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, and unspecified coarse and fine aggregates.

⁶Includes cement manufacture, lime manufacture, and sulfur oxide removal.

⁷Includes mine dusting or acid water treatment and other fillers or extenders.

⁸Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

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

TABLE 6
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
 BY MAJOR USE CATEGORY¹

| Use | Quantity (thousand metric tons) | Value (thousands) | Unit value |
|--|---------------------------------------|----------------------|---------------|
| Concrete aggregate (including concrete sand) | 2,000 | \$12,100 | \$6.05 |
| Plaster and gunit sands ² | 411 | 2,380 | 5.79 |
| Road base and coverings ³ | 14 | 52 | 3.71 |
| Fill | 82 | 275 | 3.35 |
| Unspecified: ⁴ | | | |
| Reported | 1,130 | 7,700 | 6.81 |
| Estimated | 1,780 | 11,200 | 6.29 |
| Total or average | 5,410 | 33,800 | 6.25 |

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

²Includes concrete products (blocks, bricks, pipe, decorative, and so forth).

³Includes road and other stabilization (lime).

⁴Reported and estimated production without a breakdown by end use.

TABLE 7
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
 BY MAJOR USE CATEGORY¹

| Use | Quantity (thousand metric tons) | Value (thousands) | Unit value |
|--|---------------------------------------|----------------------|---------------|
| Concrete aggregate (including concrete sand) | 1,570 | \$10,700 | \$6.84 |
| Plaster and gunit sands ² | 177 | 1,020 | 5.75 |
| Road base and coverings | 17 | 82 | 4.82 |
| Fill | 25 | 95 | 3.80 |
| Other miscellaneous uses ³ | 15 | 122 | 8.13 |
| Unspecified: ⁴ | | | |
| Reported | 354 | 3,100 | 8.75 |
| Estimated | 2,100 | 13,400 | 6.36 |
| Total or average | 4,260 | 28,500 | 6.69 |

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

²Includes concrete products (blocks, bricks, pipe, decorative, and so forth).

³Includes golf course.

⁴Reported and estimated production without a breakdown by end use.

TABLE 8
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2012,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

| Use | Districts 1 and 2 | | District 3 | |
|--|-----------------------|-------|------------|--------|
| | Quantity | Value | Quantity | Value |
| Concrete aggregates and concrete products ² | 149 | 1,230 | 2,260 | 13,300 |
| Road base and coverings ³ | 13 | 50 | 1 | 2 |
| Fill | 12 | 46 | 71 | 228 |
| Unspecified: ⁴ | | | | |
| Reported | 811 | 4,920 | 251 | 2,280 |
| Estimated | 251 | 1,580 | 1,530 | 9,650 |
| Total | 1,240 | 7,820 | 4,110 | 25,500 |
| | Unspecified districts | | | |
| Use | Quantity | Value | | |
| Concrete aggregates and concrete products ² | -- | -- | | |
| Road base and coverings ³ | -- | -- | | |
| Fill | -- | -- | | |
| Unspecified: ⁴ | | | | |
| Reported | 65 | 494 | | |
| Estimated | -- | -- | | |
| Total | 65 | 494 | | |

-- Zero.

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

²Includes plaster and gunite sands.

³Includes road and other stabilization (lime).

⁴Reported and estimated production without a breakdown by end use.

TABLE 9
 GEORGIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2013,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

| Use | Districts 1 and 2 | | District 3 | |
|--|-----------------------|-------|------------|--------|
| | Quantity | Value | Quantity | Value |
| Concrete aggregates and concrete products ² | 135 | 1,010 | 1,610 | 10,700 |
| Road base and coverings | 15 | 71 | 2 | 11 |
| Fill | 24 | 95 | 2 | 574 |
| Other miscellaneous uses ³ | 6 | 38 | 9 | 83 |
| Unspecified: ⁴ | | | | |
| Reported | -- | -- | 275 | 2,500 |
| Estimated | 236 | 1,570 | 1,870 | 11,200 |
| Total | 416 | 2,780 | 3,760 | 25,100 |
| | Unspecified districts | | | |
| Use | Quantity | Value | | |
| Concrete aggregates and concrete products ² | -- | -- | | |
| Road base and coverings ³ | -- | -- | | |
| Fill | -- | -- | | |
| Other miscellaneous uses ³ | -- | -- | | |
| Unspecified: ⁴ | | | | |
| Reported | 80 | 599 | | |
| Estimated | -- | -- | | |
| Total | 80 | 599 | | |

-- Zero.

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

²Includes plaster and gunite sands.

³Includes golf course.

⁴Reported and estimated production without a breakdown by end use.