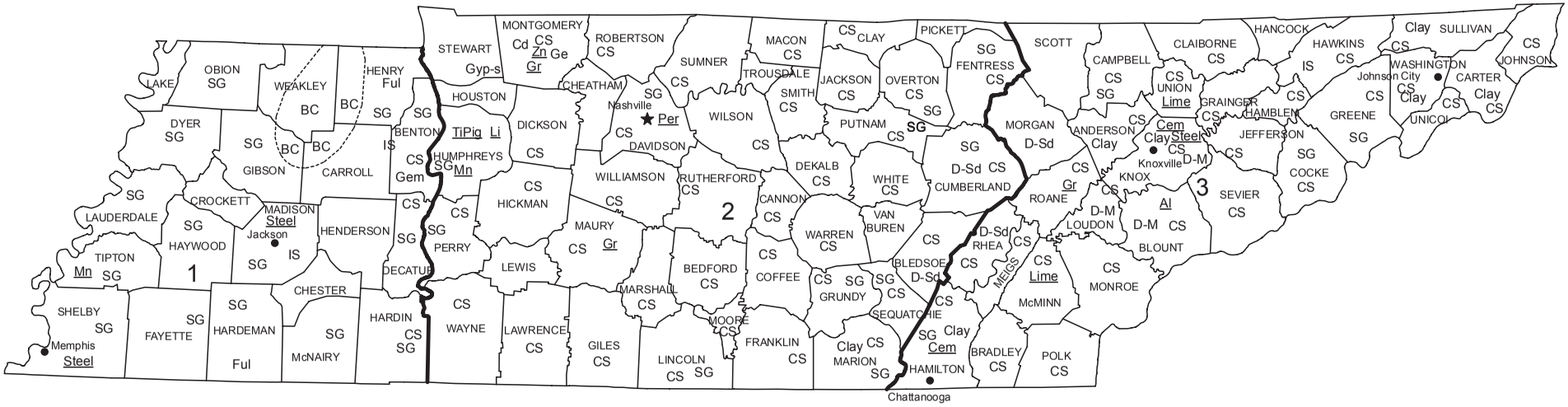
TENNESSEE



LEGEND

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

MINERAL SYMBOLS (Major producing areas)

Al	Aluminum plant
BC	Ball clay
Cd	Cadmium (See Zn)
Cem	Cement plant
Clay	Common clay
CS	Crushed stone
D-M	Dimension marble
D-Sd	Dimension sandstone
Ful	Fuller's earth
Gem	Gemstones
Gr	Graphite plant
Gyp-s	Synthetic gypsum
IS	Industrial sand
Li	Lithium plant
Lime	Lime plant
Mn	Manganese dioxide plant
Per	Perlite plant
SG	Construction sand and gravel
Steel	Steel plant
TiPig	Titanium dioxide pigment plant
Zn	Zinc plant (Cd byproduct cadmium) (Ge byproduct germanium)

Concentration of mineral operations

0 50 Kilometers

Source: Tennessee Department of Environment and Conservation, Division of Geology/U.S. Geological Survey (2004)

THE MINERAL INDUSTRY OF TENNESSEE

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Tennessee Department of Environment and Conservation, Division of Geology for collecting information on all nonfuel minerals.

In 2004, Tennessee's nonfuel raw mineral production was valued[1] at $653 million, based upon annual U.S. Geological Survey (USGS) data. This was a 4.8% increase from the State's total nonfuel mineral value for 2003[2], which was down 3.9% from 2002. Tennessee was 24th in rank (23d in 2003) among the 50 States in total nonfuel mineral production value and accounted for more than 1.4% of the U.S. total value.

Crushed stone has been Tennessee's leading nonfuel mineral commodity, by value, for nearly five decades (except in 1981 when zinc was first); crushed stone went ahead of cement (portland and masonry) in 1957. In 2004, crushed stone accounted for nearly 59% of the State's total nonfuel mineral production value. Cement was the second-leading nonfuel mineral commodity, followed by construction sand and gravel, ball clay, and lime. The largest increases in value for the year were from crushed stone, up $28 million, and cement (proprietary value). Smaller yet significant increases took place in the values of industrial sand and gravel, up $4.3 million, construction sand and gravel, up $3.4 million, and common clays, up $2.6 million (descending order of change). Gemstones also had a significant increase in value. The only substantial decrease in value took place in zinc.

In 2003, increases in the values of several mineral commodities, mostly in crushed stone (up $24 million) and cement (proprietary value), were more than offset by decreases in the values of zinc (proprietary value), construction sand and gravel (down nearly $8 million), and industrial sand and gravel (down nearly $4 million) resulting in the State's net decrease in value for the year.

In 2004, Tennessee continued to be the leading ball clay- and gemstone-producing State and eighth in the quantity of fuller's earth produced. The State rose to 10th from 11th in the production of crushed stone and remained a significant producer of portland cement, industrial sand and gravel, and common clays (descending order of value), but with substantially reduced zinc production it dropped to 5th from 3d in that metal commodity. Primary aluminum and raw steel were produced in Tennessee but were processed from materials obtained from other domestic and foreign sources. The State rose to sixth from eighth in rank in the production of primary aluminum.

The Tennessee Division of Geology[3] (TDG) provided the following narrative information. Data and information in the following text are those reported by the TDG, based upon its own surveys and estimates. By yearend 2004, approximately 330 nonfuel mineral operations were permitted in 82 counties across the State.

Commodity Review

Industrial Minerals

Clay.—Ball clay and kaolin were mined from the Eocene Claiborne and Wilcox Formations in Carroll, Gibson, Henry, and Weakly Counties, northwest Tennessee. Companies operating in the State were Boral Bricks Inc., Franklin Minerals Inc. (H.C. Spinks Co.), IMERYS (Kentucky-Tennessee Clay Co.), Old Hickory Clay Co., and Unimin Corp. (United Clays Inc). Fuller's earth (montmorillonite) was mined in Hardeman County by Moltan Co. and in Henry County by American Colloid Co.

On April 30, 2004, the Industrial Minerals Association-North America (IMA-NA) and the U.S. Department of Labor's Mine Safety and Health Administration (MSHA) announced that the Old Hickory Clay Co. operation in Gleason, TN, received two joint safety recognition awards. The first award, the IMA-NA Safety Achievement Award, recognized the best reportable injury rate for 2003. The second award recognized Old Hickory for having more than 200,000 employee hours without a single reportable injury (Old Hickory Clay Company, 2004§[4]). Recently, H.C. Spinks Co. received the 2004 Safety Achievement Award presented annually by IMA-NA and MSHA. The award criteria evaluated a company's safety performance at all its U.S. facilities and non-U.S. mining sites in North America (H.C. Spinks Clay Company, Inc., 2004§).

Crushed and Dimension Stone.—The crushed stone industry operated 157 quarries in 2004. Except for three quarries in Johnson County, which produced crushed granite and quartzite, limestone and dolomite were produced at 154 quarries and underground mines primarily in District 2 (middle Tennessee) and District 3 (east Tennessee). Crushed limestone and dolomite were produced in 66 counties by 43 different companies and 15 county highway departments. The top three producers expanded their operations in Tennessee in 2004. Vulcan Materials Co., which operated 43 quarries in 30 counties, acquired Columbia Rock Products and its

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[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.

[3]Peter Lemiszki, Chief Geologist with the Tennessee Division of Geology in Knoxville, authored the text of the State mineral industry information provided by that agency.

[4]References that include a section mark (§) are found in the Internet References Cited section.

limestone quarry to enter new markets in central Tennessee. Rogers Group Inc., which operated 34 quarries in 28 counties, acquired the assets of three quarries in Nashville, Harriman and Ten Mile from Martin Marietta Materials. Rinker Materials operated 12 quarries in 7 counties and acquired Loven Inc. premix concrete business, comprising six concrete plants in northeast Tennessee and Virginia. Existing Rinker Materials quarries will supply part of Loven's aggregate requirements. Loven operated five concrete plants in Greenville, Morristown, Newport, Kingsport, Johnson City, TN, and one in Bristol, VA.

Rogers Group received the 2004 Tennessee American Business Ethics Award in the midsize category. This honor recognized companies that exemplify high standards of ethical behavior in their everyday business conduct and in response to specific crises or challenges (Pit & Quarry, 2004§).

The Holston Limestone was quarried for dimension marble in Blount, Knox, and Loudon Counties by the Tennessee Marble Co. and Tennessee Valley Marble Inc. Tennessee Marble Co. acquired the Champlain Black Marble quarry in Isle La Motte, VT. The rich black marble is the only Class "A" black marble quarried in the United States (Stone World, 2004§).

Six companies operated eight dimension sandstone quarries in the Pennsylvanian Crab Orchard Sandstone in Bledsoe, Cumberland, Morgan, and Rhea Counties.

Gemstones.—The freshwater pearl was designated the official Tennessee State Gem in 1979. On April 12th 2004, the historic Tennessee River Freshwater Pearl Farm and Museum in Benton County was designated the official site of freshwater pearl culturing in Tennessee (Birdsong Resort, 2004§). The American Pearl Co. operated the only freshwater pearl farm in North America, which cultivated approximately 250,000 mussels each season. The mussels used for culturing freshwater pearls were native to the Tennessee River and were commonly referred to as the washboard and pigtoe varieties (Tennessee River Freshwater Pearls, 2004§). The American Shell Co., American Pearl Co., and Tennessee Shell Co. exported mollusk shells from the Tennessee River and to pearl-producing countries such as China, Japan, Tahiti, and Taiwan. Approximately 90% of all cultured pearls begin with a mother-of-pearl nucleus taken from the shell of a Tennessee mussel. Tennessee has in excess of $50 million in annual exports to foreign countries of the shells alone.

Sand and Gravel.—Construction sand and gravel was produced at 94 sites in 30 counties and was operated by 59 different companies, similar to 2003. The companies that operated at least five sites were Ford Construction Co., Memphis Stone and Gravel Co., and Standard Construction Co. in District 1 (west Tennessee) and Bradley Stone and Sand Inc. in the eastern part of District 2 (middle Tennessee). Industrial sand was mined in Hawkins County by Short Mountain Silica Co. and Fine Sands, LLC. Unimin Corp., which operated two industrial sand mines, was considered a major employer in Benton County. A new industrial sand quarry operated by Teague Transports, LLC was opened in Madison County.

Shale.—General Shale Brick (the U.S. subsidiary of Wienerberger AG, headquartered in Vienna, Austria) operated seven shale mines in Anderson, Carter, Knox, Sullivan, and Washington Counties in east Tennessee to supply its brick production plants. The 75-year-old company produces more than a billion bricks each year, supplying commercial, residential, and specialty architectural bricks and brick pavers. On December 3, 2004, it acquired Wittichen Lime and Cement, a brick and masonry package company headquartered in Memphis, TN. General Shale Brick, the Nation's second largest brick manufacturer, provided more than 200,000 bricks for the construction of East Tennessee State University's new Fossil Site Visitors Interpretive Center in Gray, TN. A groundbreaking ceremony for the 4,600-square-meter visitors' center was held November 16, 2004, while the expected opening date is the fall of 2006 (General Shale Brick, 2004§). Two other companies operated two shale mines in Hamilton and Marion Counties in southeast Tennessee.

Other Industrial Minerals.—Synthetic gypsum was produced from Tennessee Valley Authority byproducts at the Allied Custom Gypsum plant in Stewart County. Lime plants operated by Bowater Southern Paper Corp. in McMinn County produced high-calcium quicklime, and Global Stone Tenn-Luttrell Inc., in Union County, produced high-calcium quicklime and hydrated lime.

Metals

Zinc.—Zinc mining and processing operations have been suspended in all of Tennessee's zinc mines (Clinch Valley, Coy, Gordonsville, Immel, and Young). Tennessee Valley Resources (TVR) purchased the New Market and Young zinc mines in Jefferson and Knox Counties, previously owned by ASARCO Incorporated. TVR used the mines to supply limestone to produce agricultural limes and other limestone-base products.

Rogers Group, Inc. acquired 57 hectares of property and additional assets at the Gordonsville Mine in Smith County from Pasminco Ltd. (Rogers Group, Inc., 2003§). Rogers Group's acquisition of these assets will lengthen the life of this operation for more than 50 years and will provide a new open quarry mining area. The Coy Mine (Jefferson County) and the Immel Mine (Knox County) remained closed.

Pasminco closed the Clinch Valley Mine in Grainger County in March 2004 and then sold it to Mossy Creek Mining, LLC. Mossy Creek Mining, LLC, with locations in Gordonsville and Jefferson City, provided a quality agricultural-lime product used as a soil neutralizing agent.

Pasminco operated the electrolytic zinc plant in Clarksville (Montgomery County). The Clarksville zinc plant produced primary cadmium as a byproduct of roasting and leaching zinc concentrate. Production has been impacted in part by lower zinc grade of the raw materials following the closure of the Gordonsville Mine.

Government Programs

As part of the USGS STATEMAP program, the TDG completed 1:24,000-scale geologic maps and mineral resource summaries of the Mascot and Camelot quadrangles in 2004 and the Mosheim quadrangle in 2003. The Immel Mine in Knox County and the Beaver

Creek Mine in Jefferson County are on the Mascot quadrangle in east Tennessee. These geologic maps have been produced in GIS format and are available as open-file publications through the Division of Geology's Nashville office.

The TDG has been an active participant in the STATEMAP program. STATEMAP is a component of the congressionally mandated National Cooperative Geological Mapping Program (NCGMP), which distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: FEDMAP, which funds Federal geologic mapping projects, STATEMAP, which is a matching-funds grant program with State geological surveys, and EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers.

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TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN TENNESSEE[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Ball	660	28,100	766	33,400	762	34,300
Common	262	1,540	304	585	365	3,140
Fuller's earth	W	W	92 [e]	5,000 [e]	W	W
Sand and gravel:						
Construction	9,220	51,900	7,550	44,100	7,830	47,500
Industrial	1,070	25,700	961	21,800	975	26,100
Stone, crushed	54,900	330,000	55,100	354,000	57,900	382,000
Combined values of cement, clays [kaolin (2002, 2004)], gemstones, lime, salt, stone (dimension marble), zinc, and values indicated by symbol W	XX	212,000	XX	164,000	XX	160,000
Total	XX	648,000	XX	623,000	XX	653,000

[e]Estimated. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. 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

TENNESSEE: CRUSHED STONE SOLD OR USED, BY KIND[1]

	2002				2003				2004			
Kind	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[2]	112 r	52,700 r	$317,000 r	$6.00 r	113	53,100	$340,000	$6.40	109	55,600	$365,000	$6.57
Dolomite	5 r	W	W	7.12 r	5	W	W	7.42	5	W	W	7.51
Granite	1	W	W	4.63	1	W	W	4.63	1	W	W	4.63
Sandstone	1	W	W	3.64	1	W	W	9.37	1	W	W	9.37
Total or average	XX	54,900	330,000	6.00	XX	55,100	354,000	6.42	XX	57,900	382,000	6.59

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

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

[2]Includes limestone-dolomite reported with no distinction between the two.

TABLE 3a

TENNESSEE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	1,010	$6,920	$6.87
Filter stone	674	4,320	6.41
Other coarse aggregates	1,600	6,550	4.10
Total or average	3,280	17,800	5.43
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,800	12,400	6.91
Bituminous aggregate, coarse	W	W	7.28
Bituminous surface-treatment aggregate	W	W	6.04
Other graded coarse aggregates	3,640	24,000	6.59
Total or average	14,200	99,400	7.02
Fine aggregate (-⅜ inch):			
Stone sand, concrete	436	3,860	8.85
Stone sand, bituminous mix or seal	W	W	7.78
Screening, undesignated	W	W	6.95
Other fine aggregates	1,520	12,600	8.34
Total or average	3,730	28,900	7.75
Coarse and fine aggregate:			
Graded road base or subbase	8,060	47,600	5.90
Unpaved road surfacing	205	1,060	5.17
Crusher run or fill or waste	332	1,940	5.84
Other coarse and fine aggregates	2,310	14,600	6.35
Total or average	10,900	65,200	5.98
Agricultural limestone	203	1,650	8.13
Chemical and metallurgical:			
Cement manufacture	W	W	3.08
Lime manufacture	W	W	33.01
Sulfur oxide removal	W	W	6.12
Total or average	2,700	24,300	8.99
Special:			
Mine dusting or acid water treatment	W	W	5.51
Asphalt fillers or extenders	W	W	6.61
Other fillers of extenders	W	W	16.53
Total or average	254	3,600	14.19
Unspecified:[2]			
Reported	12,400	70,600	5.68
Estimated	7,500	43,000	5.72
Total or average	19,900	113,000	5.70
Grand total or average	55,100	354,000	6.42

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

[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 3b

TENNESSEE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Riprap and jetty stone	954	$6,960	$7.29
Filter stone	801	5,090	6.35
Other coarse aggregates	1,370	7,460	5.44
Total or average	3,130	19,500	6.24
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,280	9,970	7.77
Bituminous aggregate, coarse	W	W	7.28
Bituminous surface-treatment aggregate	W	W	8.08
Railroad ballast	W	W	5.95
Other graded coarse aggregates	3,320	23,400	7.03
Total or average	15,600	113,000	7.24
Fine aggregate (-⅜ inch):			
Stone sand, concrete	1,120	9,060	8.08
Stone sand, bituminous mix or seal	(2)	(2)	6.40
Screening, undesignated	1,900	14,100	7.42
Other fine aggregates	2,060	16,700	8.08
Total or average	5,080	39,800	7.83
Coarse and fine aggregates:			
Graded road base or subbase	11,200	66,000	5.88
Unpaved road surfacing	177	1,010	5.72
Crusher run or fill or waste	448	2,490	5.55
Other coarse and fine aggregates	2,550	15,700	6.16
Total or average	14,400	85,200	5.92
Other construction materials	141	864	6.13
Agricultural limestone	279	2,110	7.58
Chemical and metallurgical:			
Cement manufacture	(3)	(3)	3.09
Lime manufacture	(3)	(3)	33.07
Sulfur oxide removal	(3)	(3)	6.12
Special:			
Mine dusting or acid water treatment	(3)	(3)	5.51
Other fillers of extenders	(3)	(3)	16.53
Unspecified:[4]			
Reported	9,590	52,300	5.45
Estimated	6,800	42,000	6.12
Total or average	16,400	94,100	5.73
Grand total or average	57,900	382,000	6.59

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

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

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

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

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

TABLE 4a

TENNESSEE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, 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	1,710	8,430	W	W
Coarse aggregate, graded[3]	W	W	W	W	6,780	46,700
Fine aggregate (-⅜ inch)[4]	W	W	1,140	8,290	W	W
Coarse and fine aggregate[5]	W	W	W	W	6,330	39,400
Agricultural[6]	W	W	W	W	W	W
Chemical and metallurgical[7]	--	--	W	W	W	W
Special[8]	--	--	W	W	W	W
Unspecified:[9]						
Reported	512	3,080	9,490	52,400	2,410	15,100
Estimated	--	--	5,600	33,000	1,900	9,600
Total	3,690	23,800	28,700	169,000	22,700	161,000

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

[3]Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), and other graded coarse aggregates.

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

[5]Includes crusher run (select material or fill), graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

[6]Includes agricultural limestone.

[7]Includes cement manufacture, lime manufacture, and sulfur oxide removal.

[8]Includes asphalt fillers or extenders, mine dusting or acid water treatment, and other fillers or extenders.

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

TABLE 4b

TENNESSEE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, 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	6,740	47,100
Fine aggregate (-⅜ inch)[4]	W	W	W	W	3,500	28,300
Coarse and fine aggregate[5]	W	W	W	W	5,860	36,800
Other construction materials	--	--	141	864	--	--
Agricultural[6]	W	W	W	W	W	W
Chemical and metallurgical[7]	--	--	W	W	W	W
Special[8]	--	--	--	--	W	W
Unspecified:[9]						
Reported	287	1,720	6,520	33,300	2,790	17,200
Estimated	--	--	5,100	33,000	1,700	8,700
Total	3,090	21,400	30,600	187,000	24,200	173,000

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

[3]Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

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

[5]Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

[6]Includes agricultural limestone.

[7]Includes cement manufacture, lime manufacture, and sulfur oxide removal.

[8]Includes mine dusting or acid water treatment and other fillers or extenders.

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

TABLE 5a
TENNESSEE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,630	$10,800	$6.67
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	416	3,380	8.13
Asphaltic concrete aggregates and other bituminous mixtures	1,460	8,240	5.66
Road base and coverings	1,040	4,780	4.58
Fill	119	705	5.92
Unspecified:[3]			
Reported	615	3,650	5.93
Estimated	2,300	13,000	5.43
Total or average	7,550	44,100	5.84

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes plaster and gunite sands.
[3]Reported and estimated production without a breakdown by end use.

TABLE 5b
TENNESSEE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products[2]	1,910	$13,700	$7.17
Asphaltic concrete aggregates and other bituminous mixtures	765	5,340	6.98
Road base and coverings[3]	358	1,710	4.77
Fill	128	808	6.31
Unspecified:[4]			
Reported	2,110	12,100	5.71
Estimated	2,600	14,000	5.43
Total or average	7,830	47,500	6.06

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

TABLE 6a
TENNESSEE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
BY USE AND DISTRICT[1, 2]

(Thousand metric tons and thousand dollars)

Use	District 1		District 2 and 3	
	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products[3]	966	6,790	1,080	7,430
Asphaltic concrete aggregates and road base materials	1,800	8,080	698	4,940
Fill	119	705	--	--
Unspecified:[4]				
Reported	495	2,750	120	900
Estimated	1,100	5,400	1,200	7,100
Total	4,470	23,700	3,080	20,400

-- Zero.

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

[2]Districts 2 and 3 are combined to avoid disclosing company proprietary data.

[3]Includes plaster and gunite sands.

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

TABLE 6b
TENNESSEE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
BY USE AND DISTRICT[1, 2]

(Thousand metric tons and thousand dollars)

Use	District 1		Districts 2 and 3	
	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products[3]	721	5,670	1,190	7,990
Asphaltic concrete aggregates and road base materials[4]	W	W	W	W
Fill	127	804	1	4
Other miscellaneous uses	356	1,040	767	6,010
Unspecified:[5]				
Reported	1,940	10,900	167	1,130
Estimated	1,800	9,200	740	4,700
Total	4,970	27,700	2,860	19,800

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Districts 2 and 3 are combined to avoid disclosing company proprietary data.
[3]Includes plaster and gunite sands.
[4]Includes road and other stabilization (cement).
[5]Reported and estimated production without a breakdown by end use.