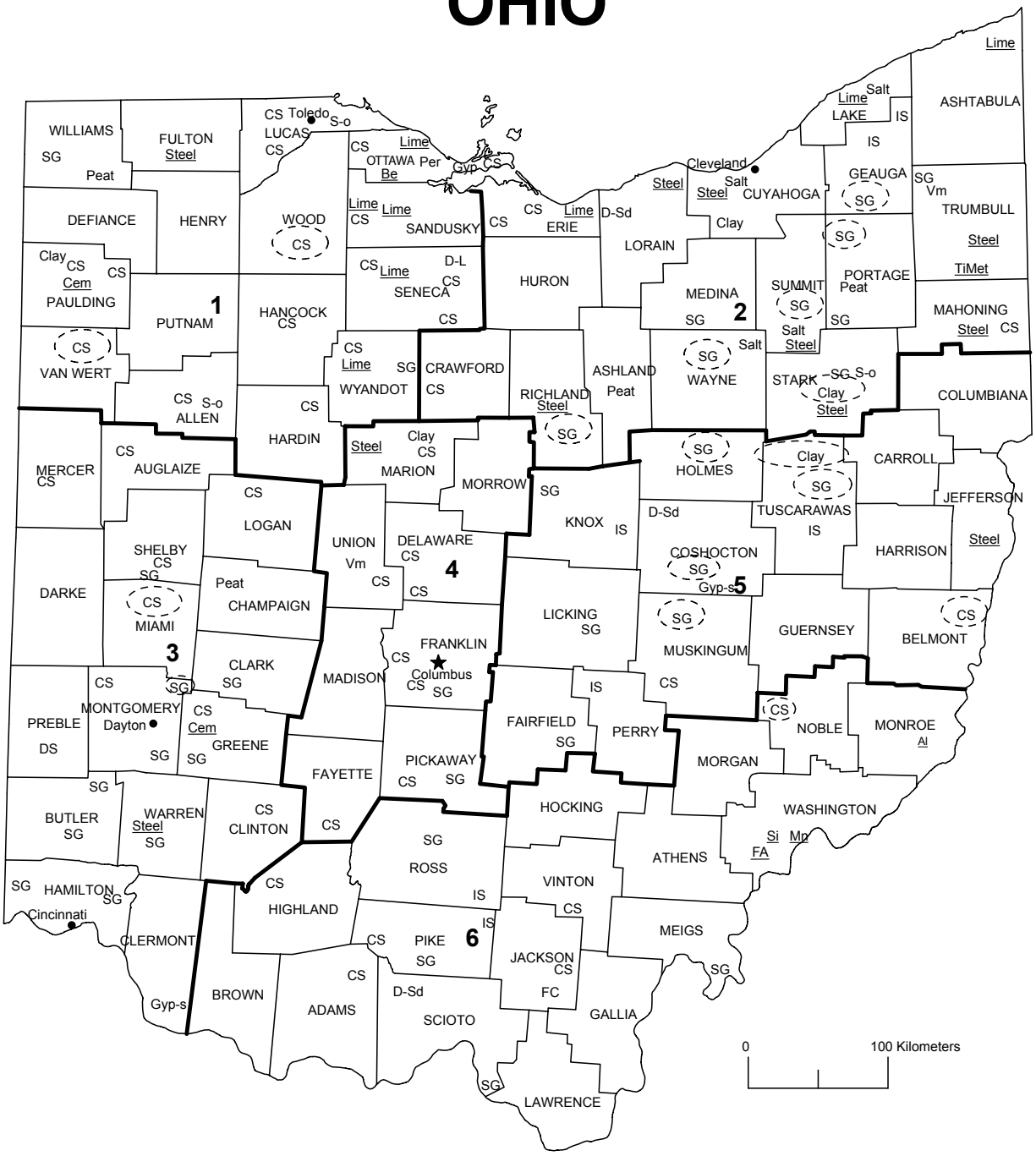
# OHIO




## LEGEND

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

## MINERAL SYMBOLS

| | |
|---|---|
| Al | Aluminum plant |
| Be | Beryllium plant |
| Cem | Cement plant |
| Clay | Common clay |
| CS | Crushed stone |
| D-L | Dimension limestone |
| D-Sd | Dimension sandstone |
| DS | Dimension stone |
| FA | Ferroalloys plant |
| FC | Fire clay |
| Gyp | Gypsum |
| Gyp-s | Synthetic gypsum |
| IS | Industrial sand |
| Lime | Lime plant |
| Mn | Manganese dioxide plant |
| Peat | Peat |
| Per | Perlite plant |

## (Major Producing areas)

| | |
|---|---|
| S-o | Sulfur (oil) |
| Salt | Salt |
| SG | Construction sand and gravel |
| Si | Silicon metal plant |
| Steel | Steel plant |
| TiMet | Titanium metal plant |
| Vm | Vermiculite |
| ⬭ | Concentration of mineral operations |

**Source: Ohio Division of Geological Survey/U.S. Geological Survey (2003)**

# The Mineral Industry of Ohio

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

In 2003, the estimated value[1] of nonfuel mineral production for Ohio was $968 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was a slight decrease from that of 2002[2] and followed a 6.4% decrease from 2001 to 2002. The State remained 15th in the Nation in total nonfuel raw mineral production value, of which Ohio accounted for about 2.5% of the U.S. total.

In 2003, crushed stone by value remained Ohio's leading nonfuel mineral, followed by construction sand and gravel, salt, lime, cement (portland and masonry), and industrial sand and gravel (in descending order of value). Crushed stone and construction sand and gravel accounted for about 57% of the State's total nonfuel raw mineral production value. Increases mostly in the values of lime, salt, and portland cement (descending order of change) were more than offset by decreases in crushed stone and construction sand and gravel (table 1), resulting in a net decrease in total nonfuel mineral value for the year.

In 2002, most of the State's drop in value resulted from decreases in the production and values of salt, down more than $30 million, lime, down about $16 million, crushed stone, down $10 million, and construction sand and gravel, down $6 million (table 1).

Compared with USGS estimates of the quantities produced in the other 49 States during 2003, Ohio remained 3d of 4 fire-clay-producing States, 4th in salt and lime, 5th in construction sand and gravel and common clays, and 10th in industrial sand and gravel. While the State decreased to seventh from sixth in crushed stone, it continued to be a significant producer of portland and masonry cements and dimension stone. The State's mines produced exclusively industrial minerals and coal; any metals, especially those of aluminum and steel, produced in the State were processed from materials received from other domestic and foreign sources. In 2003, Ohio continued to be the Nation's second leading raw-steel-manufacturing State with an estimated output of about 11.9 million metric tons (Mt) of raw steel (American Iron and Steel Institute, 2004, p. 76). Based upon USGS annual data, the State rose to second from third in the production of primary aluminum in 2003.

The Ohio Department of Natural Resources, Division of Geological Survey (ODGS), provided the following narrative information,[3] based upon its own surveys, estimates, and data that it acquired from other State agencies. Based upon preliminary data compiled by the ODGS, approximately 350 companies produced industrial (nonfuel) minerals from more than 700 Ohio mining and quarrying operations in 2003. Thirty-eight of these operations produced multiple mineral commodities, some of which also included the mining of coal (for example, coal and clay). More than 5,300 people were directly employed mining industrial minerals in Ohio during 2003.

## Commodity Review

### *Industrial Minerals*

**Clay and Shale.—**As reported to the ODGS, 38 companies at 46 operations in 24 Ohio counties produced clay and/or shale during 2003. Combined production totaled 2 million metric tons (Mt), a 31% decrease from that of 2002. The apparent decrease in production was largely the result of a change in reporting requirements; the Ohio Environmental Protection Agency (OEPA) was given regulatory authority over the extraction (mining) of low-permeability shales and clays to be used as landfill liners in 2003. The reporting of this production was switched from the ODGS to the OEPA. Columbiana, Cuyahoga, Marion, and Tuscarawas Counties accounted for more than 50% of the total clay and/or shale production in Ohio during the year. Belden Brick Co., Glen-Gary Brick, Inc., and Hydraulic Press Brick Co., were the leading clay- and/or shale-producing companies.

The face brick, lightweight aggregate, and art pottery industries remained very active. At least one major, national brick manufacturer actively explored for new clay reserves in southern Ohio during early 2004.

**Salt.—**Three companies at five operations in five Ohio

[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 2003 USGS mineral production data published in this chapter are preliminary estimates as of July 2004 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 USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2]Values, percentage calculations, and rankings for 2002 may differ from the Minerals Yearbook, Area Reports: Domestic 2002, Volume II, owing to the revision of preliminary 2002 to final 2002 data. Data for 2003 are preliminary and are expected to change; related rankings also may change.

[3]Mark Wolfe, a Geologist with the Ohio Division of Geological Survey, authored the text of the State mineral industry information provided by that State agency.

counties produced salt during 2003. Production from two large underground rock salt mines in Cuyahoga and Lake Counties was estimated by the ODGS to be slightly less than 3 Mt, and production at three salt-solution-mining operations was somewhat less than 1 Mt for a total of about 3.5 Mt, about a 25% increase from 2002. Cargill Salt Inc. and Morton International, Inc. were the dominant Ohio salt producers. The major use of salt mined in Ohio is for highway deicing applications.

**Sand and Gravel.**—Sand and gravel was produced by 214 companies at an estimated 297 operations in 59 Ohio counties plus Lake Erie in 2003. Production increased 1.2 % to 47.5 Mt compared to 2002. Five counties, located primarily in the State's metropolitan areas, produced more than 4 Mt each in 2003: Hamilton (5.0 Mt), Butler (4.5 Mt), Portage (4.4 Mt), Franklin (4.2 Mt), and Stark (4.2 Mt). Most Ohio sand and gravel operations are small to medium in size, although five pits produced more than 1 Mt each, led by Olen Corp.'s Columbus Plant No. 3 (2.4 Mt).

**Sand, Industrial.**—Sandstone and conglomerate were produced by 20 companies at 31 operations in 17 Ohio counties during 2003. Production was 1.5 Mt, an 11% decrease from 2002. Geauga, Perry, Knox, Trumbull, and Pike Counties accounted for 80% of the total sandstone and conglomerate production. Best Sand Corp. and Oglebay Norton Co. were the leading sandstone producing companies in the State. Ohio's crushed sandstone and conglomerate were used primarily for glassmaking.

**Stone, Crushed and Dimension.**—Limestone and dolomite were produced by 61 companies at 122 operations in 49 Ohio counties in 2003. Production totaled 70.6 Mt, a 1.6% increase from 2002. The counties that produced the largest quantity of limestone and dolomite in 2003 were Erie (7.3 Mt), Ottawa (6.6 Mt), Franklin (5.9 Mt), Delaware (5.1 Mt), and Seneca (4.3 Mt) Counties. In 2003, crushed stone for road construction was the primary use for Ohio limestone and dolomite.

Shelly Materials, Inc. (an Ohio affiliate of Oldcastle Materials, Inc.) was the largest producer of crushed stone in Ohio during 2003. Shelly also was the most active in acquiring additional crushed stone operations during 2003, purchasing Stoneco, Inc., Ohio's fifth largest crushed-stone producer. Hanson Aggregates Midwest, Inc. also was active, acquiring the Wagner quarry (Sandusky, Ohio), an operation that has the capacity to produce more than 2 Mt annually.

Dimension sandstone production increased 1.3% to 53,600 metric tons (t), the highest level of production since 1986. Demand for the Mississippian age Berea Sandstone, Pennsylvanian age Massillon (Briar Hill) sandstone, and Mississippian age sandstone of the Buena Vista Member of the Cuyahoga Formation remains strong for institutional and residential projects.

**Other Industrial Minerals.**—One company at one operation in Ottawa County produced gypsum. Production totaled more than 100,000 t. According to the ODGS, The total value of gypsum sold in 2003 was about $430,000. The major uses of Ohio gypsum in 2003 were as a soil conditioner and a retarder in cement applications.

Peat production in Ohio, based upon ODGS public data, during 2003, remained small, totaling about 400 t at a value of approximately $12,000.

## Government Programs

The Ohio Governor's Jobs and Progress Plan, announced in August 2003, devoted $5 billion during the next 10 years to maintain and expand Ohio's highway network. The plan was funded by a 6-cent-per-gallon increase in the State's gasoline sales tax to be phased in during 3 years and an increase in the percentage of Federal gasoline tax returned to Ohio (a minimum 95% return). It was estimated that the plan would create 4,000 highway construction jobs and additional employment in the Ohio aggregate industry.

The 2002 Report on Ohio Mineral Industries, prepared annually by the ODGS, is available online at URL http://www.ohiodnr.com/ geosurvey/ and contains detailed production, employment, and geologic information on each industrial mineral operation in the State. An online, interactive Ohio mineral industries map at the same Web site provides direct access to industrial minerals information for each operation shown on the map. Two important publications were also recently released by the ODGS in 2003. The first is a guidebook to the Pennsylvanian age Sharon formation in northeast Ohio, which is a significant source of high-silica sand (Foos and others, 2003). The second publication is a detailed investigation into the origins of possibly the single most complex geologic structure exposed in Ohio, the Serpent Mound disturbance in Adams, Highland, and Pike Counties (Baranoski and others, 2003).

## References Cited

American Iron and Steel Institute, 2004, Pig iron and raw steel production—Final 2003, AIS-7, subsection of Annual statistical report 2003: Washington, DC, American Iron and Steel Institute, 130 p.

Baranoki, M.T., Schumacher, G.A., Watts, D.H., Carlton, R.W., and El-Saiti, B.M., 2003, Subsurface geology of the Serpent Mound Disturbance, Adams, Highland, and Pike Counties, Ohio: Ohio Division of Geological Survey Report of Investigations 146, 60 p.

Foos, A.M., Wells, N.A., Evans, J.E., Hannibal, J.T., and Waugh, D.A., 2003, Pennsylvanian Sharon Formation, past and present—Sedimentology, hydrogeology, and historical and environmental significance: Ohio Division of Geological Survey Guidebook 18, 93 p.

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

(Thousand metric tons and thousand dollars)

| Mineral | 2001 | | 2002 | | 2003[p] | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Cement: | | | | | | |
| Masonry | 74 | 9,000 [e] | W | W | 85 | 11,100 |
| Portland | 1,040 | 80,400 [e] | 1,020 | 78,000 [e] | 1,050 | 80,900 |
| Clays, common | 1,320 | 7,410 | 1,310 | 7,820 | 1,310 | 7,820 |
| Gemstones | NA | 3 | NA | 4 | NA | 4 |
| Lime | 1,900 | 114,000 | 1,630 | 98,100 | 1,700 | 110,000 |
| Sand and gravel: | | | | | | |
| Construction | 50,400 | 256,000 | 48,700 | 250,000 | 47,000 | 242,000 |
| Industrial | 1,120 | 30,700 | 1,000 | 28,900 | 1,040 | 29,700 |
| Stone: | | | | | | |
| Crushed | 75,900 | 339,000 | 72,600 | 329,000 | 68,800 | 310,000 |
| Dimension | 31 | 5,150 | 30 | 4,990 | 30 | 4,860 |
| Combined values of clays (fire), gypsum (crude), peat, salt, and value indicated by symbol W | XX | 198,000 | XX | 176,000 | XX | 172,000 |
| Total | XX | 1,040,000 | XX | 973,000 | XX | 968,000 |

[e]Estimated. [p]Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "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
OHIO: CRUSHED STONE SOLD OR USED, BY KIND[1]

| Kind | 2001 | | | | 2002 | | | |
|---|---|---|---|---|---|---|---|---|
| | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value |
| Limestone[2] | 92 | 66,500 | $293,000 | $4.41 | 92 | 61,700 | $275,000 | $4.45 |
| Dolomite | 13 | 8,970 | 43,700 | 4.88 | 14 | 10,600 | 52,600 | 4.98 |
| Sandstone | 6 | 381 | 1,610 | 4.23 | 4 | 385 | 1,640 | 4.25 |
| Total or average | XX | 75,900 | 339,000 | 4.46 | XX | 72,600 | 329,000 | 4.53 |

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.

TABLE 3
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE[1]

| Use | Quantity (thousand metric tons) | Value (thousands) | Unit value |
|---|---|---|---|
| Construction: | | | |
| Coarse aggregate (+1 1/2 inch): | | | |
| Macadam | W | W | $4.29 |
| Riprap and jetty stone | 2,090 | $10,400 | 4.97 |
| Filter stone | W | W | 5.51 |
| Other coarse aggregates | 533 | 2,240 | 4.21 |
| Total or average | 2,620 | 12,600 | 4.82 |
| Coarse aggregate, graded: | | | |
| Concrete aggregate, coarse | 2,480 | 11,800 | 4.75 |
| Bituminous aggregate, coarse | 1,560 | 8,780 | 5.62 |
| Bituminous surface-treatment aggregate | 537 | 2,500 | 4.65 |
| Railroad ballast | 165 | 682 | 4.13 |
| Other graded coarse aggregates | 2,170 | 10,400 | 4.79 |
| Total or average | 6,910 | 34,100 | 4.94 |
| Fine aggregate (-3/8 inch): | | | |
| Stone sand, concrete | 113 | 460 | 4.07 |
| Stone sand, bituminous mix or seal | 344 | 1,510 | 4.38 |
| Screening, undesignated | W | W | 4.02 |
| Other fine aggregates | 597 | 2,960 | 4.96 |
| Total or average | 1,050 | 4,930 | 4.67 |
| Coarse and fine aggregates: | | | |
| Graded road base or subbase | 4,540 | 20,400 | 4.50 |
| Unpaved road surfacing | 612 | 2,290 | 3.75 |
| Crusher run or fill or waste | 310 | 1,170 | 3.76 |
| Other coarse and fine aggregates | 8,990 | 39,100 | 4.35 |
| Total or average | 14,400 | 63,000 | 4.36 |
| Other construction materials | 1,910 | 7,290 | 3.82 |
| Agricultural, limestone | 588 | 2,580 | 4.38 |
| Chemical and metallurgical: | | | |
| Cement manufacture | (2) | (2) | 3.58 |
| Lime manufacture | (2) | (2) | 5.51 |
| Dead-burned dolomite manufacture | (2) | (2) | 5.51 |
| Flux stone | (2) | (2) | 4.13 |
| Total or average | 3,990 | 15,100 | 3.79 |
| Special: | | | |
| Mine dusting or acid water treatment | (2) | (2) | 4.41 |
| Asphalt fillers or extenders | (2) | (2) | 5.51 |
| Whiting or whiting substitute | (2) | (2) | 12.68 |
| Other fillers or extenders | (2) | (2) | 5.84 |
| Total or average | 411 | 2,550 | 6.21 |
| Other miscellaneous uses and specified uses not listed | 5,030 | 23,400 | 4.65 |
| Unspecified:[3] | | | |
| Reported | 20,700 | 96,200 | 4.65 |
| Estimated | 15,000 | 67,000 | 4.49 |
| Total or average | 35,700 | 163,000 | 4.58 |
| Grand total or average | 72,600 | 329,000 | 4.53 |

W Withheld to avoid disclosing company proprietary data; included with "Other."
[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 in "Total."
[3]Reported and estimated production without a breakdown by end use.

TABLE 4

OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

| Use | District 1 | | District 2 | | District 3 | | District 4 | |
|---|---|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
| Construction: | | | | | | | | |
| Coarse aggregate (+1 1/2 inch)[2] | 2,140 | 10,000 | W | W | 217 | 1,230 | W | W |
| Coarse aggregate, graded[3] | 2,860 | 13,400 | 387 | 2,890 | 1,510 | 6,990 | 145 | 880 |
| Fine aggregate (-3/8 inch)[4] | 320 | 1,430 | 11 | 49 | 133 | 612 | 18 | 80 |
| Coarse and fine aggregate[5] | 4,530 | 19,700 | W | W | 1,340 | 6,130 | W | W |
| Other construction materials | 911 | 3,530 | 359 | 1,270 | 151 | 777 | 469 | 1,650 |
| Agricultural[6] | W | W | W | W | W | W | W | W |
| Chemical and metallurgical[7] | 1,920 | 7,770 | W | W | W | W | W | W |
| Special[8] | W | W | W | W | W | W | -- | -- |
| Other miscellaneous uses | 2,100 | 9,490 | 122 | 565 | 435 | 2,200 | 2,330 | 10,900 |
| Unspecified:[9] | | | | | | | | |
| Reported | 5,220 | 28,100 | 390 | 1,810 | 3,980 | 19,000 | 6,530 | 29,900 |
| Estimated | 7,600 | 34,000 | 4,000 | 19,000 | 1,000 | 4,400 | -- | -- |
| Total | 27,800 | 128,000 | 11,900 | 51,800 | 9,160 | 42,900 | 10,800 | 48,300 |

| | District 5 | | District 6 | | Unspecified districts | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Construction: | | | | | | |
| Coarse aggregate (+1 1/2 inch)[2] | 31 | 162 | W | W | -- | -- |
| Coarse aggregate, graded[3] | W | W | W | W | -- | -- |
| Fine aggregate (-3/8 inch)[4] | W | W | W | W | -- | -- |
| Coarse and fine aggregate[5] | W | W | 2,470 | 12,700 | -- | -- |
| Other construction materials | 18 | 64 | -- | -- | -- | -- |
| Agricultural[6] | 86 | 313 | 196 | 1,140 | -- | -- |
| Chemical and metallurgical[7] | -- | -- | -- | -- | -- | -- |
| Special[8] | W | W | -- | -- | -- | -- |
| Other miscellaneous uses | -- | -- | 44 | 266 | -- | -- |
| Unspecified:[9] | | | | | | |
| Reported | 3,580 | 13,200 | 695 | 3,140 | 293 | 1,070 |
| Estimated | 1,200 | 4,600 | 1,200 | 5,400 | -- | -- |
| Total | 5,420 | 21,300 | 7,240 | 35,700 | 293 | 1,070 |

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, macadam, 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 (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, dead-burned dolomite, flux stone, and lime manufacture.

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

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

TABLE 5
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002,
BY MAJOR USE CATEGORY[1]

| Use | Quantity (thousand metric tons) | Value (thousands) | Unit value |
|---|---|---|---|
| Concrete aggregate (including concrete sand) | 8,740 | $43,900 | $5.03 |
| Plaster and gunite sands | 152 | 1,490 | 9.81 |
| Concrete products (blocks, bricks, pipe, decorative, etc.) | 790 | 4,770 | 6.04 |
| Asphaltic concrete aggregates and other bituminous mixtures | 3,460 | 17,600 | 5.09 |
| Road base and coverings | 2,340 | 13,600 | 5.81 |
| Road stabilization (cement and lime) | 348 | 2,380 | 6.83 |
| Fill | 3,490 | 14,200 | 4.06 |
| Snow and ice control | 117 | 459 | 3.92 |
| Filtration | 77 | 452 | 5.87 |
| Other miscellaneous uses[2] | 2,790 | 15,900 | 5.72 |
| Unspecified:[3] | | | |
| Reported | 22,200 | 115,000 | 5.18 |
| Estimated | 4,200 | 20,000 | 4.83 |
| Total or average | 48,700 | 250,000 | 5.14 |

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

TABLE 6
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002,
BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

| | District 1 | | District 2 | | District 3 | |
|---|---|---|---|---|---|---|
| Use | Quantity | Value | Quantity | Value | Quantity | Value |
| Concrete aggregate and concrete products[2] | 460 | 2,260 | 2,920 | 15,700 | 2,460 | 13,200 |
| Asphaltic concrete aggregates and other bituminous mixtures | W | W | 1,300 | 6,840 | 615 | 3,050 |
| Road base and coverings[3] | 174 | 967 | 652 | 3,970 | 623 | 3,550 |
| Fill | 36 | 151 | 970 | 5,380 | 1,960 | 6,340 |
| Other miscellaneous uses[4] | 249 | 1,440 | 393 | 2,650 | 284 | 1,890 |
| Unspecified:[5] | | | | | | |
| Reported | -- | -- | 2,660 | 15,000 | 11,600 | 56,400 |
| Estimated | 120 | 500 | 1,700 | 8,400 | 1,100 | 5,400 |
| Total | 1,040 | 5,310 | 10,600 | 57,900 | 18,600 | 89,900 |
| | District 4 | | District 5 | | District 6 | |
| Use | Quantity | Value | Quantity | Value | Quantity | Value |
| Concrete aggregate and concrete products[2] | 1,130 | 6,260 | 1,410 | 6,320 | 1,290 | 6,360 |
| Asphaltic concrete aggregates and other bituminous mixtures | W | W | 837 | 3,960 | 127 | 642 |
| Road base and coverings[3] | 530 | 3,460 | 579 | 3,090 | 127 | 905 |
| Fill | 92 | 495 | 380 | 1,580 | 54 | 226 |
| Other miscellaneous uses[4] | 2,130 | 11,700 | 447 | 2,040 | 56 | 293 |
| Unspecified:[5] | | | | | | |
| Reported | 1,200 | 6,100 | 3,560 | 20,200 | 3,250 | 17,500 |
| Estimated | -- | -- | 700 | 3,500 | 610 | 2,500 |
| Total | 5,090 | 28,000 | 7,910 | 40,700 | 5,520 | 28,400 |

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- 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 and lime).
[4]Includes filtration, roofing granules, and snow and ice control.
[5]Reported and estimated production without a breakdown by end use.