

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 1998, the preliminary estimated value¹ of nonfuel mineral production for Ohio was \$1.15 billion, according to the U.S. Geological Survey (USGS). This was a more than 10.5% increase from that of 1997,² following an increase of nearly 7.7% from 1996 to 1997. The State ranked 12th in the Nation (13th in 1997) in total nonfuel mineral production value, of which Ohio accounted for nearly 3% of the U.S. total.

In 1998, most of Ohio's rise in value was accounted for by substantial increases in the values of crushed stone and construction sand and gravel, up 22% and 10%, respectively (table 1). The State's other mineral commodities also increased in value except for salt, dimension stone, fire clay, and crude gypsum, which decreased (in descending order of change); gemstones remained the same. During 1997, a \$106 million increase in the value of crushed stone plus smaller increases in construction sand and gravel and lime were somewhat mitigated by a 20% drop in the value of salt.

Compared with USGS estimates of the quantities produced in the other 49 States during 1998, Ohio remained 1st² in fire clays, 4th in crushed stone and construction sand and gravel, 5th in salt and common clays, 9th in industrial sand and gravel, and 10th in masonry cement. The State climbed to second from third in lime and was a significant producer of portland cement and dimension stone. The State's mines exclusively produce industrial minerals and coal; any metals, especially steel and aluminum, produced in the State are processed from materials received from other domestic and foreign sources. Ohio continued to be the Nation's second leading raw steel-manufacturing State with an estimated output of about 15.2 million metric tons of raw steel, as reported by the American Iron and Steel Institute. Based on USGS data, the State remained the fourth leading producer of primary aluminum in the Nation in 1998.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or 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 1998 USGS mineral production data published in this chapter are preliminary estimates as of February 1999 and are expected to change. For some mineral commodities (for example, 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. A telephone listing for the specialists may be retrieved over the Internet at <http://minerals.usgs.gov/minerals/contacts/comdir.html>; by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists); or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1997 may vary from the *Minerals Yearbook, Area Reports: Domestic 1997, Volume II*, owing to the revision of preliminary 1997 to final 1997 data. Data for 1998 are preliminary and expected to change, while related rankings may also be subject to change.

The Ohio Department of Natural Resources, Division of Geological Survey (DGS), provided the following narrative information.³ Aggregate production (crushed limestone and dolomite, crushed sandstone, and sand and gravel) is expected to continue at its record-breaking level, reaching 132 million metric tons. Major projects such as the new Cleveland Browns football stadium and the Columbus Blue Jackets NHL hockey arena add to an already robust construction and road-building industry. New professional football and baseball stadiums in Cincinnati and the rebuilding of I-71 between Cleveland and Columbus during the next few years indicate a healthy aggregate industry in the near term. The National Lime and Stone Association announced plans to spend in excess of \$30 million to expand its Carey limestone plant in Wyandot County. The Bowerston Shale Company completed an upgrade to its brick plant that will significantly increase output at Hanover in Licking County.

The Ohio Aggregates Association has developed a strategic plan. Important aspects of the plan include web site development, the inclusion of other industrial mineral operators in the association, and adoption of a new name (Ohio Aggregates and Industrial Minerals Association). The association moved its offices to Gahanna, OH.

Legislation and Government Programs

DGS will complete the first in a series of three-dimensional (stack unit) surficial-geology maps for the State. This map, the surficial geology of the Ohio portion of the Cincinnati/Falmouth 1:100,000 quadrangles (Open-file map no. GL-B5S), will make available detailed information on the locations of sand, gravel, clay, and peat in this heavily populated region.

The USGS and the States of Illinois, Indiana, and Kentucky have invited DGS to participate in a proposed joint investigation of industrial mineral resource availability along the Ohio River corridor. The proposed investigation would use geographic information system (GIS) technology to display the locations of aggregate resources that are not currently precluded from development because of environmental, zoning, and other land-use constraints.

Ohio House Bill 710, the proposed rewrite of the State's surface mining law, did not make it out of committee, but a court decision on the Martin Marietta Aggregates vs. Clinton County case could have a far-reaching impact on Ohio's mining industry. The court ruled that mining permits cannot be issued until all local conflicts are resolved and that the State was responsible for approximately \$800,000 in attorney fees. The court decision could have an adverse impact on both new permits and amendments to existing permits.

³David Stith, Geologist and Supervisor, and Mark Wolfe, Geologist, authored the text of Ohio mineral industry information submitted by the Division of Geological Survey.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN OHIO 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1996		1997		1998 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement: Portland	W	W	1,040	76,900	W	W
Clays:						
Common	1,960	7,450	1,210	5,600	1,230	5,710
Fire	103	3,230	301	4,310	272	3,990
Gemstones	NA	153	NA	3	NA	3
Lime	1,950 r/	105,000 r/	1,960	111,000	2,030	112,000
Sand and gravel:						
Construction	46,600	215,000	47,000	222,000	50,100	244,000
Industrial	1,270	29,800	1,140	28,600	1,170	29,600
Stone:						
Crushed	63,600	291,000	74,100	397,000	80,900	485,000
Dimension metric tons	19,800	2,060	24,600	3,240	21,000	2,090
Combined values of cement (masonry), gypsum (crude), peat, salt, silica stone (1996-97), and values indicated by symbol W	XX	314,000	XX	193,000	XX	269,000
Total	XX	966,000 r/	XX	1,040,000	XX	1,150,000

p/ Preliminary. r/ Revised. 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 three significant digits; may not add to totals shown.

TABLE 2
OHIO: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1996				1997			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit Value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit Value
Limestone	83 r/	45,400 r/	\$210,000 r/	\$4.64 r/	94	54,900	\$312,000	\$5.68
Dolomite	20	15,400	63,900	4.15	20	16,100	68,000	4.23
Limestone-dolomite	6	2,790	16,000	5.73	6	3,090	17,000	5.50
Sandstone	4	42	155	3.69	4	44	197	4.48
Total	XX	63,600	291,000	4.57	XX	74,100	397,000	5.36

r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 3
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1997, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit Value
Coarse aggregate (+1 1/2 inch):			
Macadam	1	\$6	\$6.00
Riprap and jetty stone	657	3,440	5.24
Filter stone	107	609	5.69
Other coarse aggregate	1,490	6,090	4.10
Coarse aggregate, graded:			
Concrete aggregate, coarse	3,860	16,900	4.38
Bituminous aggregate, coarse	2,440	10,300	4.24
Bituminous surface-treatment aggregate	208	1,380	6.63
Railroad ballast	64	171	2.67
Other graded coarse aggregate	298	1,350	4.51
Fine aggregate (-3/8 inch):			
Stone sand, concrete	427	1,390	3.24
Stone sand, bituminous mix or seal	786	3,350	4.26
Screening, undesignated	280	1,250	4.46
Other fine aggregate	50	290	5.80
Coarse and fine aggregates:			
Graded road base or subbase	9,130	36,300	3.98
Unpaved road surfacing	5,260	25,400	4.82
Crusher run or fill or waste	884	2,620	2.97
Other coarse and fine aggregates	2,760	15,100	5.47
Other construction materials	186	891	4.79
Agricultural limestone	892	5440	6.10
Chemical and metallurgical:			
Cement manufacture	W	W	2.76
Flux stone	W	W	10.56
Special:			
Asphalt fillers or extenders	W	W	10.60
Whiting or whiting substitute	W	W	10.82
Building products	5	79	15.80
Other specified uses not listed	498	2,440	4.90
Unspecified: 3/			
Actual	28,400	178,000	6.26
Estimated	13,800	78,600	5.70
Total	74,100	397,000	5.36

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

1/ Includes dolomite, limestone, limestone-dolomite, and sandstone.

2/ Data are rounded to three significant digits, except unit value; may not add to totals shown.

3/ Includes reported and estimated production without a breakdown by end use.

TABLE 4
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1997, 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 aggregates:						
Coarse aggregate (+1 1/2 inch) 2/	1,290	5,170	W	W	213	1,300
Coarse aggregate, graded 3/	3,070	12,100	W	W	978	4,780
Fine aggregate (-3/8 inch) 4/	662	2,350	W	W	155	779
Coarse and fine aggregate 5/	10,600	42,500	W	W	2,010	10,800
Other construction materials	183	925	2,470	8,970	--	--
Agricultural 6/	422	1,900	(7/)	(7/)	(7/)	(7/)
Chemical and metallurgical 8/	611	734	--	--	(7/)	(7/)
Special 9/	498	2,440	--	--	(7/)	(7/)
Unspecified: 10/						
Actual	9,410	44,000	(7/)	(7/)	3,580	28,700
Estimated	2,220	15,900	584	2,240	3,100	16,100
Total	29,000	128,000	6,270	26,800	11,100	68,300
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:						
Coarse aggregate (+1 1/2 inch) 2/	79	476	244	1,490	W	W
Coarse aggregate, graded 3/	1,280	6,830	167	1,080	W	W
Fine aggregate (-3/8 inch) 4/	W	W	125	618	W	W
Coarse and fine aggregate 5/	W	W	1,620	10,300	1,120	6,240
Other construction materials	2,260	8,430	--	--	346	1,840
Agricultural 6/	87	569	136	1,140	138	826
Chemical and metallurgical 8/	--	--	--	--	--	--
Special 9/	--	--	--	--	--	--
Unspecified: 10/						
Actual	6,900	58,600	139	984	5,150	30,000
Estimated	6,950	38,700	--	--	933	5,560
Total	17,600	114,000	2,430	15,600	7,690	44,500

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

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

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

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

6/ Includes agricultural limestone.

7/ Withheld to avoid disclosing company proprietary data; included in "Total."

8/ Includes cement manufacture and flux stone.

9/ Includes asphalt fillers or extenders, other fillers or extenders, other specified uses not listed, and whitening or whitening substitute.

10/ Includes reported and estimated production without a breakdown by end use.

TABLE 5
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1997,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand Metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	9,320	\$45,400	\$4.87
Plaster and gunite sands	51	292	5.73
Concrete products (blocks, bricks, pipe, decorative, etc.)	624	3,950	6.32
Asphaltic concrete aggregates and other bituminous mixtures	3,600	17,400	4.82
Road base and coverings 2/	3,110	16,900	5.42
Fill	5,260	22,200	4.22
Snow and ice control	64	304	4.75
Filtration	34	313	9.21
Other miscellaneous uses 3/	1,520	7,220	4.76
Unspecified: 4/			
Actual	17,000	79,000	4.65
Estimated	6,410	29,400	4.58
Total or average	47,000	222,000	4.73

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes road and other stabilization (cement).

3/ Includes railroad ballast and roofing granules.

4/ Includes reported and estimated production without a breakdown by end use.

TABLE 6
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1997,
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	W	W	4,430	19,800	2,150	10,600
Concrete products 2/	--	--	337	1,810	190	1,700
Asphaltic concrete aggregate	W	W	1,420	6,400	712	3,530
Roadbase and coverings 3/	W	W	1,050	6,180	564	3,240
Fill	W	W	1,120	6,030	1,610	4,380
Snow and ice control	--	--	8	53	W	W
Other miscellaneous uses 4/	61	315	195	1,160	386	2,710
Unspecified: 5/						
Actual	W	W	1,460	9,060	11,100	49,000
Estimated	348	1,270	1,390	8,060	1,140	4,940
Total	1,740	8,140	11,400	58,500	17,800	80,200
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate	1,050	4,990	1,140	7,080	W	W
Concrete products 2/	W	W	W	W	85	411
Asphaltic concrete aggregate	W	W	582	2,880	220	1,280
Roadbase and coverings 3/	W	W	823	4,070	37	199
Fill	W	W	313	1,390	W	W
Snow and ice control	W	W	23	120	W	W
Other miscellaneous uses 4/	40	184	223	1,130	644	2,040
Unspecified: 5/						
Actual	W	W	W	W	815	3,980
Estimated	774	3,360	1,310	5,130	1,460	6,610
Total	6,620	31,500	5,890	28,300	3,500	15,500

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

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Includes road and other stabilization (cement).

4/ Includes filtration, railroad ballast and roofing granules.

5/ Includes reported and estimated production without a breakdown by end use.