

THE MINERAL INDUSTRY OF INDIANA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Indiana Geological Survey for collecting information on all nonfuel minerals.

Indiana ranked 21st among the 50 States in total nonfuel mineral production value¹ in 1997, according to the U.S. Geological Survey (USGS). Although dropping from a ranking of 20th in 1996, Indiana's 1997 estimated value of \$639 million was up about 2% compared with that of 1996. This followed a 6.6% increase from 1995 to 1996 (based on final 1996 data). The State accounted for more than 1.5% of the U.S. total nonfuel mineral production value.

Indiana's increase in value in 1997 mostly resulted from an \$18 million, or 7%, increase in the value of crushed stone and a \$6 million, or 4%, increase in portland cement. These increases more than compensated for a 14% decrease in construction sand and gravel value (*table 1*). Compared with 1996, all other nonfuel mineral values increased except for those of common clays and peat, which decreased slightly.

Compared with USGS estimates of the quantities of minerals produced in the other 49 States during 1997, Indiana remained first in dimension stone, second in masonry cement, seventh in gypsum, and eighth in lime. Indiana ranked 7th in ball clay production, dropped from 4th, to 6th, in peat and from 6th, to 10th in common clays. Additionally, the State was a significant producer of crushed stone, portland cement, and construction sand and gravel, ranking 12th, 12th, and 14th, respectively. The State's mines exclusively produce industrial minerals and coal; all raw steel and primary aluminum produced in the State are processed from materials received from other domestic and foreign sources. Based on USGS estimates, the State remained third in the production of primary aluminum. Indiana continued to lead the Nation in the production of raw steel with an estimated output of about 23 million metric tons (25 million short tons), according to the American Iron and Steel Institute preliminary estimates.

The following narrative information was provided by the Indiana Geological Survey² (IGS). In 1997, new sand and gravel pits were opened by Niblock Excavating, Inc. in Elkhart County;

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 1997 USGS mineral production data published in this chapter are estimates as of January 1998. For some 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. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset, and request Document # 1000 for a telephone listing of all mineral commodity specialists, or call USGS information at (703) 648-4000 for the specialist's name and number. This telephone listing may also be retrieved over the Internet at <http://minerals.er.usgs.gov/minerals/contacts/comdir.html>. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved by way of MINES FaxBack or over the Internet at <http://minerals.er.usgs.gov/minerals/>.

²Ms Kathryn Shaffer authored the text of State minerals information submitted by the Indiana Geological Survey.

Rieth-Rielly Construction Co., Inc. in St. Joseph County; Esters', Inc. in Shelby County; and Evansville Materials, Inc. in Vanderburgh County. In addition, Kokomo Gravel, Inc., operated next to the abandoned Martin Marietta Aggregates gravel plant near Kokomo, Howard County. Martin Marietta Aggregates will be opening a new sand plant in Howard County. S&G Excavating Co., Inc. opened a new crushed stone quarry in Putnam County called Lincoln Park Stone and a new sand and gravel plant at Montezuma in Parke County. A new dimension limestone quarry, called Walton Quarries, Inc., opened in Lawrence County.

Among major closings, Martin Marietta Aggregates closed its Utica Sand and Gravel plant in Clark County and stopped producing sand at its 96th Street plant, Hamilton County. Leary's Gravel Co., Inc., closed its sand and gravel operation in Hancock County and Old Prairie Products, Inc., closed its gravel plant at Liberty Center, Wells County. Cowles Sand and Gravel, Inc., Fulton County, closed its Collins pit, moved across the road and opened the McKinney farm pit. CBB, Inc., closed its aggregate pit in Lake County, but continues to haul for other companies. Shelby Gravel, Inc., closed two sand and gravel operations in Shelby County and opened another in the same county. Also, Fisher's Asphalt Sand and Gravel, Starke County, was sold and closed.

Several acquisitions occurred in the aggregates industry. Martin Marietta Aggregates acquired the Indiana holdings of American Aggregates, with the exception of the Richmond plant in Wayne County, but sold the Harding Street crushed stone quarry in Marion County to Cornerstone/Benchmark Materials Midwest (the Kentucky Stone Co.) because of antitrust laws. American Aggregates sold the Richmond plant to U.S. Aggregates. Martin Marietta Aggregates also acquired the O.K. Sand and Gravel Co., Inc., in Marion County. Richard Klink Sand & Gravel, Steuben County, was acquired by S.E. Johnson Companies, and is now called London Aggregates. West Terre Haute Sand and Gravel, Vigo County, was acquired by JAB Aggregates and Trucking. Elkhart County Gravel Corp. acquired the Vulcan Materials Co.'s Middlebury pit and now has two pits in the Middlebury, Elkhart County, area. Stockberger Group acquired H & K Farms Aggregate Div., Marshall County, which is very near its current operation, but is not currently mining there. The Edward C. Levy Co., Inc., acquired the Vulcan Materials Co. South Bend, St. Joseph County, sand and gravel plant and renamed it Levy Indiana Slag, although no slag is sold at that location. In addition to aggregates, an acquisition occurred in the cement industry when Italy's Italcementi Group acquired ESSROC Materials, Inc., Cass and Clark Counties, and renamed the plants Essroc Cement Corp. In other company changes, Christner Gravel Co., Inc., Ellchart County, was renamed Christner-Schrock Aggregate Co. Morocco Sand and Gravel Co., Jasper County, was purchased by one of its partners who changed

the name to Northwest Indiana Aggregates. Big Lake Stone and Sand, Noble County, changed its name to Tri-County Gravel, Inc.

State legislators passed a new budget in May that provides approximately \$687 million over 4 years for highway construction. The State's general assembly set aside an additional \$100 million from the State's \$1.6 billion surplus over the next 2 years for State road repairs, with money apportioned to all towns and cities on the basis of size and population. Legislators continued with efforts to obtain more Federal funds to support an extension of I-69 between Bloomington and Evansville, and other road construction projects.

The introduced State bills which became law were as follows: HB 1541 redefines the term "special waste" for certain environmental laws to exclude ceramic block materials, fire brick, fire clay, iron and steel slag, some refractory brick, and refractory earth, and makes unnecessary the acquisition of an environmental permit for certain uses of foundry sand; SB 169 allows the disposal of waste tires at mineral extraction sites if the disposer owns or leases the mineral site, if the waste tires were used on off-road construction or mining vehicles or other equipment, and if they are buried at least 25 feet underground; and HB 1992 deals with many environmental issues, and contains the provision that mineral owners or leaseholders will be notified of and allowed to respond to any water protection zones established around community water system wells.

The Indiana Department of Environmental Management will open a Southwest Regional Office in the Evansville area in late summer or early fall 1998. Monroe County passed a new zoning ordinance allowing crushing of minerals in mineral extraction zones but also placed several restrictions on such operations. Hoosier Calcium, which operates an underground limestone mine in Monroe County primarily for glass manufacture, will install equipment for dust control. Essroc Cement Corp. received permission from the State to burn tires for fuel at its Clark County operation but is still investigating the economics.

The Indiana Mineral Aggregates Association along with the Indiana Department of Transportation and the Federal Highway Administration conducted a \$75,000 Superpave study testing a

variety of fine aggregate mixtures using Indiana materials. More cooperative studies may be conducted in the future.

Indiana continued to produce more steel than any State in the nation and several developments occurred in the industry. Construction of the \$1.1 billion AK Steel Corp. plant in Rockport, Spencer County, continued with completion scheduled for late 1998. The new Spencer County Port Authority plans to build a new port on the Ohio River at Rockport and to connect the Port to the AK Steel Corp. plant with a 11.3-kilometer railway extension. Bethlehem Steel Corp., Porter County, announced plans to purchase Lukens, Inc. As part of the deal, two plate steel mills in Burns Harbor will be consolidated, as well as four others outside Indiana. Construction has begun on the Qualitech Steel Corp. minimill near Pittsboro, Hendricks County. Ground was broken in April for Wayne Steel, Inc.'s, new \$9 million steel plant in Clark Maritime Centre, Clark County. Paragon Steel and Feralloy North American Steel will build a \$4 million plant in Butler, DeKalb County, next to the Steel Dynamics, Inc.'s minimill. USX-US Steel Group, Inc., Lake County, is modernizing its plate mill at a cost of \$40 million to allow product improvement and the addition of other products. National Steel Corp., Porter County, sold a coke oven battery to a subsidiary of DTE Energy Co., but will continue to purchase coke from that company. Additionally, National Steel Corp. contracted to operate and maintain the coke battery for 12 years. A cogeneration electric powerplant will be built at Burns Harbor using waste heat from a new Inland Steel Industries, Inc., coke-producing facility. The plant will provide power for Inland Steel Industries, Inc., Lake County.

A new secondary aluminum smelter with a projected production capacity range of 5,400 to 6,800 tons per year is being built at New Haven, Allen County, by Superior Aluminum Alloys. The IMCO aluminum recycling plant in Bedford, Lawrence County, is expanding.

At the IGS, a new Directory of Industrial Minerals Producers in Indiana was completed as well as an update of Miscellaneous Map 41, Map of Indiana Showing Locations of Coal and Industrial Minerals Operations.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,330	143,000	2,350	153,000 e/	2,390	160,000 e/
Clays:						
Ball	38	W	38	W	38	W
Common	877	3,350	1,510	3,500	915	2,780
Gemstones	NA	36	NA	3	NA	3
Peat	17	281	W	W	W	W
Sand and gravel, construction	24,900	93,900	24,800	100,000	20,800	85,900
Stone:						
Crushed	49,200	234,000 3/	53,700 3/	254,000 3/	55,600 3/	272,000 3/
Dimension metric tons	172,000	31,400	156,000 3/	24,500 3/	157,000 3/	24,600 3/
Combined value of cement (masonry), gypsum (crude), lime, sand and gravel (industrial), stone [crushed slate, dimension dolomite (1996-97)], and values indicated by symbol W	XX	82,700	XX	92,800	XX	94,700
Total	XX	589,000	XX	628,000	XX	640,000

e/ Estimated. p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" 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.

3/ Excludes certain stones; kind and value included with "Combined value" data.

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

Kind	1995				1996			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	73	42,400	\$201,000	\$4.73 r/	75	46,500	\$217,000	\$4.66
Dolomite	14	6,760	33,500	4.96	14	7,170	37,400	5.22
Slate	1	74	(3/)	(3/)	(4/)	(4/)	(4/)	(4/)
Total	XX	49,200	234,000	4.76	XX	53,700	254,000	4.73

r/ Revised. XX Not applicable.

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

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

3/ Excludes slate value from State total to avoid disclosing company proprietary data.

4/ Excludes slate from State total to avoid disclosing company proprietary data.

TABLE 3
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1996, BY USE 1/2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	57	\$181	\$3.18
Riprap and jetty stone	1,180	5,440	4.61
Filter stone	408	2,090	5.11
Other coarse aggregate	277	1,570	5.68
Coarse aggregate, graded:			
Concrete aggregate, coarse	5,310	19,900	3.75
Bituminous aggregate, coarse	3,940	15,300	3.89
Bituminous surface-treatment aggregate	1,750	6,410	3.67
Railroad ballast	376	1,610	4.29
Other graded coarse aggregate	1,480	2,390	1.62
Fine aggregate (-3/8 inch):			
Stone sand, concrete	237	1,050	4.43
Stone sand, bituminous mix or seal	284	1,530	5.38
Screening, undesignated	215	745	3.47
Other fine aggregate	W	W	7.37
Coarse and fine aggregates:			
Graded road base or subbase	4,060	18,500	4.55
Unpaved road surfacing	3,900	19,300	4.94
Terrazzo and exposed aggregate	W	W	4.67
Crusher run or fill or waste	1,290	5,910	4.57
Other coarse and fine aggregates	287	1,360	4.73
Agricultural: Agricultural limestone 3/	1,510	7,840	5.20
Chemical and metallurgical:			
Cement manufacture	3,530	9,270	2.63
Dead-burned dolomite manufacture	(4/)	(4/)	4.64
Flux stone	(4/)	(4/)	2.53
Chemical stone	(4/)	(4/)	7.00
Sulfur oxide removal	859	3,190	3.71
Other specified uses not listed	(4)	(4)	6.59
Unspecified: 5/			
Actual	19,100	111,000	5.84
Estimated	3,550	19,000	5.34
Total	53,700	254,000	4.73

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

1/ Includes dolomite, limestone, and limestone-dolomite; excludes slate from State total to avoid disclosing company proprietary data.

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

3/ Includes other agricultural uses.

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

5/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.

TABLE 4
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1996, BY USE AND DISTRICT 1/ 2/

(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) 3/	W	W	W	W	1,020	\$4,610
Coarse aggregate, graded 4/	W	W	W	W	W	W
Fine aggregate (-3/8 inch) 5/	W	W	W	W	W	W
Coarse and fine aggregate 6/	8,300	\$38,000	3,260	\$14,700	12,500	45,900
Agricultural 7/	(8/)	(8/)	(8/)	(8/)	(8/)	(8/)
Chemical and metallurgical 9/	(8/)	(8/)	(8/)	(8/)	(8/)	(8/)
Other miscellaneous use 10/	(8/)	(8/)	--	--	--	--
Unspecified: 11/						
Actual	4,480	26,500	11,500	69,500	3,090	15,300
Estimated	1,960	10,200	151	814	1,44	7,920
Total	16,100	79,600	15,700	86,400	22,000	88,300

W Withheld to avoid disclosing company proprietary data; included with "Coarse and fine aggregate."

1/ Excludes slate from State total to avoid disclosing company proprietary data.

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

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

4/ Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroadballast, and other graded coarse aggregate.

5/ Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesigned), and other fine aggregate.6/ Includes graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregates.

7/ Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

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

9/ Includes cement manufacture, chemical stone for alkali works, dead-burned dolomite manufacture, flux stone, and sulfur oxide removal.

10/ Includes other specified uses not listed.

11/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.

TABLE 5
INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1996,
BY MAJOR USE CATEGORY 1/

Use	Quantity	Value (thousands)	Value per ton
	(thousand metric tons)		
Concrete aggregate (including concrete sand)	8,350	\$30,800	\$3.69
Plaster and gunite sands	89	611	6.87
Concrete products (blocks, bricks, pipe, decorative, etc.)	187	1,140	6.12
Asphaltic concrete aggregates and other bituminous mixtures	1,370	6,000	4.39
Road base and coverings 2/	1,430	5,550	3.88
Fill	2,520	10,600	4.19
Snow and ice control	247	740	3.00
Other miscellaneous uses 3/	176	1,090	6.20
Unspecified: 4/			
Actual	7,770	33,900	4.37
Estimated	2,700	9,590	3.55
Total or average	24,900	100,000	4.03

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

2/ Includes road and other stabilization (cement and lime).

3/ Includes filtration.

4/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.

TABLE 6
 INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1996,
 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 and concrete products 2/	1,920	6,180	4,030	19,300	2,680	7,030
Asphaltic concrete aggregates and road base materials 3/	1,150	5,020	1,150	4,740	494	1,780
Fill	409	1,050	1,950	9,160	166	357
Snow and ice control	150	448	73	238	24	54
Other miscellaneous uses 4/	92	561	61	393	23	137
Unspecified: 5/						
Actual	902	4,250	4,870	19,500	2,000	10,200
Estimated	1,380	4,630	964	3,530	359	1,430
Total	6,000	22,100	13,100	56,900	5,740	21,000

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 and lime).

4/ Includes filtration.

5/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.