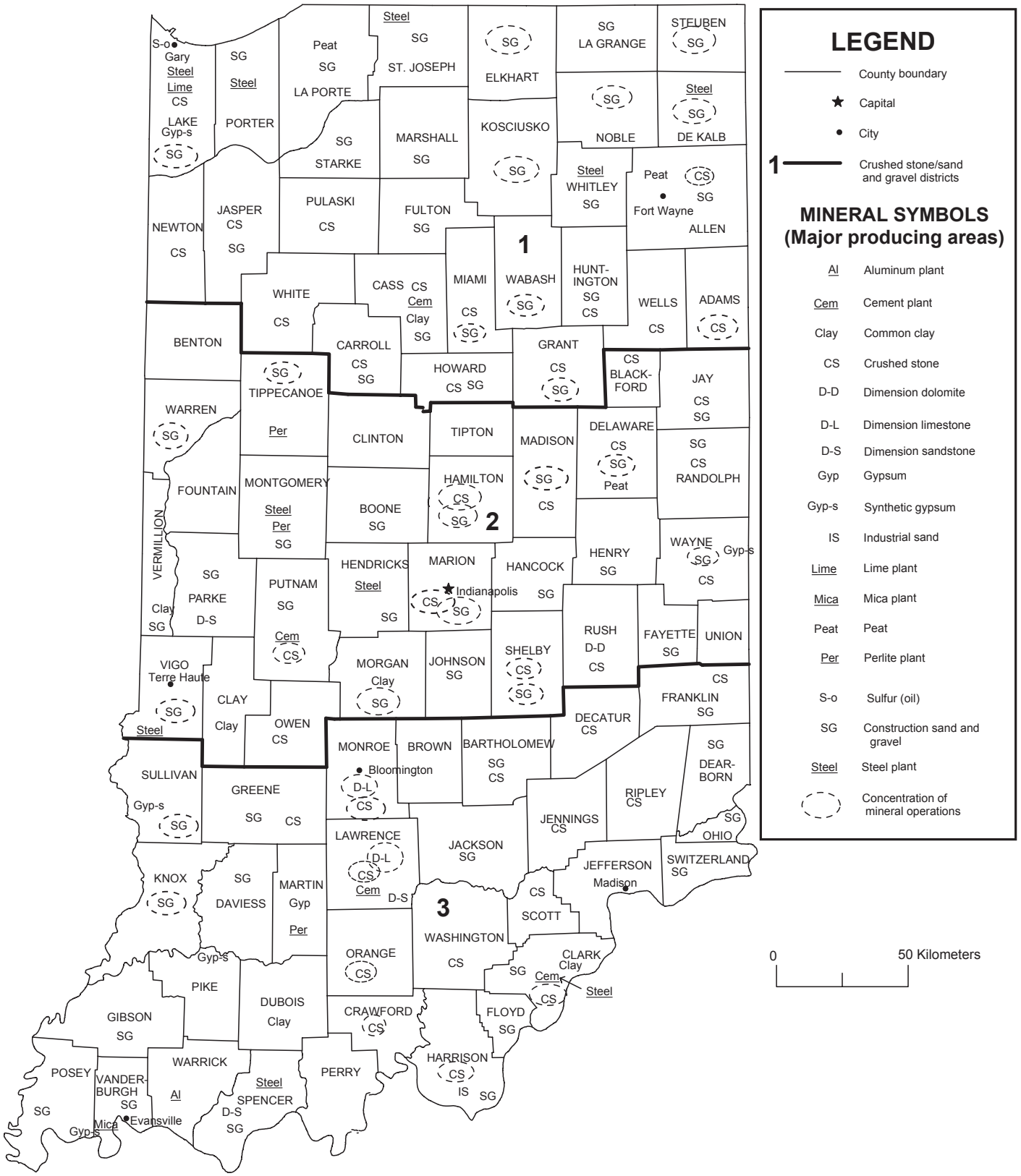
INDIANA



Source: Indiana Geological Survey/U.S. Geological Survey (2004)

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.

In 2004, Indiana's nonfuel raw mineral production[1] was valued at $764 million, based upon annual U.S. Geological Survey (USGS) data. This was a nearly 7% increase of $49 million from that of 2003[2] and followed a 2.5% decrease, from 2002 to 2003. The State was 22d in rank (20th in 2003) among the 50 States in total nonfuel raw mineral production value, of which Indiana accounted for about 1.7% of the U.S. total.

In 2004, for the second consecutive year, cement (portland and masonry), by value, was Indiana's leading nonfuel mineral commodity, followed by crushed stone, construction sand and gravel, and lime. (For more than a decade prior to 2003, crushed stone had been the State's leading nonfuel mineral commodity.) The combined values of these four mineral commodities accounted for nearly 92% of the State's total nonfuel value. Increases in the values of crushed stone (up $16 million), portland cement (up $15 million), lime (up nearly $13 million), and masonry cement in 2004 led the State's increase in total value for the year. Smaller yet significant increases also took place in dimension stone and gypsum (descending order of value). The only decrease in value was that of construction sand and gravel (down $13 million) (table 1).

In 2003, Indiana's decrease in nonfuel mineral value mostly resulted from decreases in the production and values of crushed stone (down $31 million) and masonry cement, and less so from decreases in the values of gypsum, industrial sand and gravel, and common clays. These were countered, in part, by the rising values of construction sand and gravel (up $7 million) portland cement (up $6 million), lime (up about $6 million), and dimension stone (up $2.6 million) (table 1).

In 2004, Indiana continued to be first in the quantity of dimension stone produced as compared with other producing States, seventh in gypsum, eighth in lime, and ninth in portland cement. The State was among the top four masonry cement-producing States and it decreased to sixth from fifth in the production of peat. Additionally, Indiana was a significant producer of crushed stone and construction sand and gravel, ranking 11th and 15th, respectively. The State's mines produced exclusively industrial minerals and coal; all raw steel and primary aluminum produced in the State were processed from materials received from other domestic and foreign sources. Indiana continued to lead the Nation in the production of raw steel, with an estimated output of about 24.8 million metric tons of raw steel, as reported by the American Iron and Steel Institute (2005, p. 76). Based upon USGS annual data, the State rose to second from third in the production of primary aluminum.

The following narrative information was provided by the Indiana Geological Survey[3] (IGS).

Employment

Approximately 3,564 individuals were employed in Indiana's nonfuel sector during 2004; this represents an increase of 1% from 2003 employment figures, according to the U.S. Department of Labor, Mine Safety and Health Administration (MSHA).

Commodity Review

Industrial Minerals

Cement.—The Lone Star Industries, Inc. and Buzzi Unicem USA, Inc. merger was completed by January 1, 2005, and Lone Star Industries, Inc. has changed its name to Buzzi Unicem USA, Inc. The company operated a plant in Putnam County, IN, and a plant in Texas.

Clay and Shale.—Unimin Corporation, which in recent years, had purchased its raw materials, opened a captive shale pit near Jasper in Dubois County. The company is still producing processed clay but is no longer producing fine-ground limestone or talc. Brickcraft LLC opened a brick plant in Clay County and is mining its own shale from a pit behind the plant. The abandoned Medora Brick Company plant in Jackson County was named as one of the top 10 most endangered landmarks in Indiana by the Historic Landmarks Foundation of Indiana.

Crushed Stone.—Ward Stone Company began production at its new Dinn Quarry in Shelby County. At existing dimension limestone quarries, overburden to produce aggregate has increased in recent years. During 2004, BTI Crushed Stone Sales, Inc. began crushing stone overburden for the Victor Oolitic Stone Company, and S & G Excavating, Inc. began a similar operation for the American Limestone LLC Stinesville Quarry; both operations are in Monroe County. Several other dimension stone quarries crush overburden for their own use or for local distribution. No company acquisitions or mergers took place in the Indiana crushed stone

[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]Kathryn R. Shaffer, Minerals Statistician, authored the text of State mineral industry information provided by the Indiana Geological Survey.

industry during 2004. Hanson Aggregates Midwest received permission to expand its Fort Wayne quarry in Allen County by an additional 49 hectares (ha), which will probably assure an additional 50 years of production at this locality. Quarry shots will be limited to two per day because of its proximity to a residential area. The company's Harding Street underground mine is currently inactive, but the company is still producing from the surface quarry. Barrett Paving Materials, Inc. will also expand its quarry near Richmond in Wayne County by 11 ha; however, they must obtain a $50,000 performance bond and meet other conditions. Mulzer Crushed Stone, Inc. is using a hydraulic material handler to load barges at its Ohio River operations. Liter's Quarry, Inc.'s underground mine in Clark County was currently inactive. Parker Brothers Stone and Gravel Corp. in Putnam County ceased production during the year. Marengo Quarry, an abandoned crushed stone quarry in Crawford County currently used as a warehouse, the Marengo Warehouse and Distribution Center, may also become the site of a biotech lab that grows bioengineered crops for the pharmaceutical industry. Cross-contamination with other pollens will probably be prevented by growing the plants underground (Heikens, 2004). The McAlpine lock was closed for repairs on the Ohio River, stopping barge traffic for 2 weeks in August.

Dimension Stone.—The Indiana dimension stone industry has been fairly stable for several years, but some overall improvement in market sales is expected in concert with the upswing in the U.S. economy. Several companies reported that they are being kept very busy (Schroeder, 2004). The Big Creek, LLC quarry, under development in 2003, was in full production during 2004, and is located near Stinesville in Monroe County. The company holds 138 ha. The Indiana Limestone Company was expanding the Empire Quarry, from which stone was excavated for the Empire State Building in New York City, NY. The quarry closed after completion of that job, but reopened in 1998 to provide stone for repairs to the Empire State Building. It is part of the company's PMB quarry complex near Bedford in Lawrence County. Victor Oolitic Stone Company supplied limestone for the restoration of the Barclay-Vesey Building at Ground Zero in New York. The Marble Institute of America awarded a Restoration Award of Merit under its Pinnacle Awards program for the project. Limestone Material Supply LLC, Luttrell & Galloway Quarry, was listed as abandoned during 2004. The quarry, which was open for only 2 years, produced intermittently. Plans are also being made to restore the long-abandoned Woolery Stone Mill in Bloomington, Monroe County, for tourism. The development will include condominiums, a hotel, a rock climbing facility, and a restaurant. The $6 million project is designed to attract Bloomington area tourism, and it received a tax abatement from the city.

Dimension sandstone is also produced in Indiana. Mansfield Stone, Inc. temporarily closed its sandstone quarry in Parke County and began redevelopment of the St. Meinrad sandstone quarry on property owned by the St. Meinrad Archabbey in Spencer County. The company plans to reopen and to expand the Parke County quarry in 2005.

Gypsum.—National Gypsum, which operates a gypsum mine at Shoals in Martin County, is opening a cement backer board plant at Clinton in Vermillion County under the name Unifix, Inc.

Sand and Gravel.—Five sand and gravel companies received MSHA identification numbers during the year, and all were in production at yearend. New operations include Parr Excavating in Sullivan County, White Sand & Gravel, Inc. in Marion County, and Greenfield Gravel, Inc. in Hancock County. In addition, Stonehenge Concrete Company, Inc. closed a pit north of Modoc in Randolph County and opened a new one about 14 kilometers south. Julian Earthwork, Inc. closed a plant in Steuben County and opened another in the area and named it the Creek Bank Road Pit. Nine known pit closures were reported. Significant among them were Harrison Sand & Gravel Company, Inc.'s Brookville Pit in Franklin County, which had operated since 1979, and St. Henry Tile Company, Inc.'s Limberlost Sand and Gravel in Adams County, which had operated since 1982. Irving Gravel Company, Inc. also closed its Auburn Pit. The Edward C. Levy Co., Inc. has stopped production of sand and gravel at its two pits in St. Joseph County and is now exclusively processing and selling crushed slag. County Stone is operating the former Kirk Materials pit in De Kalb County. R.L.R. Materials, Inc. acquired Sandy Ridge Materials in Lake County. Rogers Group, Inc. purchased the Abram & Hawkins Excavating Co., Inc.'s plant in Sullivan County and renamed it Graysville Sand & Gravel. The plant received a First Step Award, and the company's Greene County Plant earned an Outstanding Achievement Award as part of the National Stone, Sand and Gravel Association's (NSSGA) About Face Program. In addition, the company's Morgan County Sand & Gravel received a NSSGA Certificate of Achievement for Community Relations, and its interstate sand and gravel operation in Warren County achieved 1,700 days without any injuries.

Mastodon skull, teeth, and bones were found during excavation at a stockyard for the Irving Materials, Inc.'s Kewanna Plant in Fulton County. The company worked with the Indiana State Museum to recover the fossils.

Crisman Sand Co., Inc. is no longer producing industrial sand but is preparing to produce construction grade sand from a pit in Porter County.

Metals

Steel.—Steel prices increased overall this year. The price of scrap metal was high and decreased to some extent the primary advantage that minimills have over integrated steel producers. Surcharges were added to steel prices to compensate for increased costs. Coke supplies were also low, driving the price up to record levels. Improvement in the shortage of steel scrap and coke is not expected before at least 2006 (Holecek, 2004§[4]).

Ispat International acquired LNM Holdings to form Mittal Steel Company NV. The new company also announced that it would merge with the International Steel Group (ISG). The merger will make the international company the top steel producer in the world. ISG also closed its Port of Indiana Chicago Cold Rolling plant acquired from the holdings of Bethlehem Steel Corp., but moved all United Mine Workers of America (UMWA) employees to its Burns Harbor cold-rolling mill and considered employees with

[4]A reference that includes a section mark (§) is found in the Internet Reference Cited section.

management experience for other positions within ISG. East Chicago awarded ISG with a $23.1 million tax abatement during the next 10 years, retroactive to 2003, because of company expenses in 2003 and discussed an additional $20 million tax abatement, also during the next 10 years, on improvements made during 2004. ISG planned to acquire and reopen an LTV Corp. coke plant in Chicago; the plant will need extensive repairs.

Ispat Inland demolished two blast furnaces that had been unused for 12 years. The 11,000 metric tons of scrap steel in those blast furnaces was recycled. The company eliminated 130 salaried employees—10% of its work force—at the Indiana Harbor Works to make the company more competitive. The company relined its No. 7 furnace last year and, as a result, was able to set a slab production record. It began some limited hiring to replace employees who have left.

U.S. Steel made a property tax settlement with Lake County by donating 81 ha of redeveloped lakefront property to the city of Gary, putting $150 million into plant improvements during a period of 4 years, paying $44 million in taxes owed for 3 years, and paying legal and other fees. The State will also pay Lake County $8.9 million in tax credits that would have come to it had the taxes been paid on time. The company will not claim a tax refund of $65 million. The 81 ha will need extensive environmental evaluation and treatment. A new Gary Waterfront Joint Authority Board will supervise the remediation and will look for sources of income to assist with the cleanup. U.S. Steel Corp. made two blast furnace repairs at its Gary Works. About 925 employees who lost health insurance benefits as part of National Steel's bankruptcy proceedings will receive coverage under the UMWA Funds 1992 Benefit Plan. The company was acquired by U.S. Steel in 2003. U.S. Steel anticipates further employments cuts.

Along with the 81 ha of lakefront property from U.S. Steel for a major lakefront development project on Lake Michigan, the city of Gary will also receive the abandoned Lehigh Cement Company Buffington Station land as well. The city will also acquire the land occupied by Northern Indiana Public Service Company's abandoned Mitchell electric plant for this project. A feasibility study for the planned development will be conducted. Electric rates for steel mills have increased because of the closing of the electric plant and could go higher.

Steel Dynamics, Inc. experienced record production and sales in 2003. Renovations were completed on the Qualitech Steel mill at Pittsboro in Hendricks County; the plant was acquired last year and was restarted as Steel Dynamics Inc.'s Structural Bar Division. Expansion is still underway at that mill, but it is showing profitability. The company's Iron Dynamics plant at Butler began liquid pig iron production. The company, along with Cleveland-Cliffs Inc and Kobe Steel, may open a new Butler plant that would produce an iron nugget raw material that can substitute for pig iron at about one-half the cost. Steel Dynamics may also construct a new mill at Columbia City to weld the railroad rails produced at Columbia City into longer lengths of rail, up to 490 meters long; such long segments would require less maintenance by railroad companies.

Nucor Corporation experienced increased profits in 2004 that were attributed to increased demand, a raw materials surcharge to offset the high cost of scrap metal, and improvements in production and decreased costs at new facilities. The company's new Castrip facility was proving to be productive and profitable.

Twelve steel-processing plants, with the prospects of more, operated at the Clark Maritime Centre at Jeffersonville; many of them primarily serve the auto industry.

Environmental Issues

The Indiana Department of Environmental Management (IDEM) Web site at URL http://www.IN.gov/idem/rules includes a list of all State environmental rules and tracks changes to them. IDEM is participating in the new National Environmental Information Exchange Network that will allow real-time data sharing. Indiana University and the Indiana Geological Survey will receive $50,000 from an IDEM grant to investigate the use of waste tire material as a substitute for aggregate in onsite sewage distribution fields. The Indiana Department of Transportation (INDOT) is working in cooperation with other States to create an electronic system to report on air quality.

Indiana aggregate producers won several awards in 2004. During its Environmental Eagle Awards Program, the National Stone & Gravel Association gave Hanson Aggregates Midwest Versailles Quarry the Silver Award for medium-sized operations. They also awarded Hanson Aggregates Midwest Aggrock Quarry a Showplace Award in its About Face Program. Hanson Aggregates Midwest; Irving Materials, Inc.; Rogers Group, Inc.; and U.S. Aggregates were awarded Gold Awards at the 2004 Indiana Mineral Aggregates Association's "Excellence in Mining" Awards Program, which recognizes companies for exemplary environmental programs, safety activities, and employee and community relations.

Government Programs

The Evansville-to-Indianapolis corridor of the I-69 extension project received Federal approval. Studies are underway to determine the exact path of the highway.

The Indiana State Legislature passed legislation that redefined certain wetland terms. The legislation ranks wetlands into three classes and also contains revisions to the IDEM permitting process relating to wetlands. Indiana also passed legislation that provides for the licensing of those who handle explosives, and State rules will be written to govern the use of regulated explosives. This law excludes coal mining, which is covered under existing laws. INDOT is working on electronic reporting methods to reduce the amount of paper that is generated.

A Carmel city ordinance put in place during 2003 to prevent the expansion of the Martin Marietta Aggregates' Carmel Sand & Gravel pit, north of 106 Street in Indianapolis, Marion County, near a residential and commercial area, was withdrawn because of litigation by Martin Marietta Aggregates. The Carmel ordinance is being revised. In recent years, a number of sand and gravel operations have been opened in Morgan County. In response, the Morgan County Commissioners passed an ordinance that places

controls over new operations and those wishing to expand. It does not apply to existing operations. The new ordinance has stopped at least one company's plans to open a new plant in that county.

MSHA presented safety awards to 122 companies at an Indiana Mineral Aggregates Association meeting; a combined 450 years were worked by these companies without a lost-time injury.

USGS-funded STATEMAP projects continued at the IGS. The IGS released numerous publications of interest to the mining industry during 2004 including a report on a new slow-logging technique for unconsolidated materials (Bleuer, 2004, 39 p.) and geologic maps of the Wabash 30 x 60-Minute Quadrangle (Hasenmueller, 2004; Hasenmueller and James, 2004). Also available through the IGS is a book about the lives of some Indiana dimension limestone carvers (Ferrucci, 2004, 82 p.). A new Directory of Industrial Mineral Producers in Indiana is in press and will be available in 2005. To acquire copies or to obtain further geologic information, contact the IGS by phone (812-855-7636) or on its Web site at URL http://igs.indiana.edu.

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

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,940	197,000 [e]	2,930	203,000 [e]	3,080	218,000 [e]
Clays, common	429 [r]	1,240 [r]	385	767	729	1,890
Gemstones	NA	4	NA	4	NA	4
Sand and gravel, construction	27,600	122,000	32,900	129,000	28,300	116,000
Stone:						
Crushed	55,500	268,000	50,500	237,000	56,800	253,000
Dimension	237	39,500	242	42,100	251	45,500
Combined values of cement (masonry), clays (ball), gypsum (crude), lime, peat, sand and gravel (industrial)	XX	104,000	XX	104,000	XX	130,000
Total	XX	733,000 [r]	XX	716,000	XX	764,000

[e]Estimated. [r]Revised. NA Not available. 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
INDIANA: CRUSHED STONE SOLD OR USED, BY KIND[1]

Kind	2002				2003				2004			
	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]	69 r	45,500 r	$222,000 r	$4.87	71	43,100	$191,000	$4.43	74	48,900	$212,000	$4.33
Dolomite	17 r	W	W	4.65 r	17	7,390	45,900	6.21	18	7,900	41,600	5.27
Slate	1	W	W	6.06	--	--	--	--	--	--	--	--
Total or average	XX	55,500	268,000	4.83	XX	50,500	237,000	4.69	XX	56,800	253,000	4.46

rRevised. XX Not applicable. W Withheld to avoid disclosing company proprietary data. -- Zero.
[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

INDIANA: 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):			
Macadam	284	$2,070	$7.30
Riprap and jetty stone	416	2,360	5.67
Filter stone	229	1,400	6.11
Other coarse aggregates	655	2,840	4.33
Total or average	1,580	8,670	5.47
Coarse aggregate, graded:			
Concrete aggregate, coarse	2,910	19,300	6.65
Bituminous aggregate, coarse	1,230	9,150	7.47
Bituminous surface-treatment aggregate	1,460	13,200	9.04
Railroad ballast	323	1,790	5.54
Other graded coarse aggregates	5,540	19,300	3.48
Total or average	11,500	62,800	5.48
Fine aggregate (-⅜ inch):			
Stone sand, concrete	44	224	5.09
Stone sand, bituminous mix or seal	371	2,400	6.46
Screening, undesignated	112	504	4.50
Other fine aggregates	2,110	7,040	3.33
Total or average	2,640	10,200	3.85
Coarse and fine aggregates:			
Graded road base or subbase	3,130	18,300	5.83
Unpaved road surfacing	772	4,150	5.37
Crusher run or fill or waste	670	3,500	5.23
Roofing granules	W	W	5.51
Other coarse and fine aggregates	2,620	14,510	5.54
Total or average	7,190	40,400	5.62
Other construction materials	25	204	8.16
Agricultural:			
Limestone	2,030	8,050	3.96
Poultry grit and mineral food	(2)	(2)	3.31
Chemical and metallurgical:			
Cement manufacture	4,140	10,600	2.53
Dead burned dolomite	(3)	(3)	5.51
Flux stone	(3)	(3)	6.65
Sulfur oxide removal	(3)	(3)	3.31
Total or average	4,890	13,300	2.71
Special, whiting or whiting substitute	(2)	(2)	4.08
Unspecified:[4]			
Reported	17,300	77,800	4.51
Estimated	3,200	15,000	4.59
Total or average	20,400	92,400	4.52
Grand total or average	50,500	237,000	4.69

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

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

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

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

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

TABLE 3b

INDIANA: 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):			
Macadam	193	$1,320	$6.83
Riprap and jetty stone	405	2,550	6.31
Filter stone	93	561	6.03
Other coarse aggregates	1,430	4,900	3.42
Total or average	2,120	9,330	4.40
Coarse aggregate, graded:			
Concrete aggregate, coarse	2,130	13,000	6.12
Bituminous aggregate, coarse	1,110	7,580	6.81
Bituminous surface-treatment aggregate	615	4,840	7.87
Railroad ballast	428	2,430	5.69
Other graded coarse aggregates	3,980	13,900	3.50
Total or average	8,260	41,800	5.06
Fine aggregate (-⅜ inch):			
Stone sand, concrete	39	223	5.72
Stone sand, bituminous mix or seal	298	1,820	6.12
Screening, undesignated	137	622	4.54
Other fine aggregates	2,170	7,290	3.37
Total or average	2,640	9,960	3.77
Coarse and fine aggregates:			
Graded road base or subbase	2,650	15,700	5.90
Unpaved road surfacing	798	4,310	5.40
Crusher run or fill or waste	301	1,560	5.17
Other coarse and fine aggregates	1,770	9,260	5.24
Total or average	5,520	30,800	5.58
Other construction materials[2]	61	411	6.74
Agricultural:			
Limestone	880	4,100	4.66
Poultry grit and mineral food	W	W	3.47
Chemical and metallurgical:			
Cement manufacture	(3)	(3)	3.87
Flux stone	(3)	(3)	6.89
Sulfur oxide removal	(3)	(3)	3.37
Total or average	1,770	6,460	3.66
Special, whiting or whiting substitute	W	W	3.42
Unspecified:[4]			
Reported	30,500	129,000	4.22
Estimated	4,700	21,000	4.41
Total or average	35,200	149,000	4.24
Grand total or average	56,800	253,000	4.46

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

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

[2]Includes pipe bedding.

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

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

TABLE 4a

INDIANA: 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]	530	3,210	152	1,050	903	4,400
Coarse aggregate, graded[3]	3,130	20,600	1,780	13,600	6,560	28,600
Fine aggregate (-⅜ inch)[4]	275	1,540	161	981	2,200	7,650
Coarse and fine aggregates[5]	W	W	W	W	W	W
Other construction materials	--	--	25	204	--	--
Agricultural[6]	W	W	W	W	W	W
Chemical and metallurgical[7]	W	W	W	W	W	W
Special[8]	--	--	--	--	W	W
Unspecified:[9]						
Reported	3,160	14,500	9,510	45,200	4,580	18,100
Estimated	1,100	4,800	490	2,200	1,600	7,500
Total	11,800	62,200	15,500	77,900	23,200	96,600

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

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

[6]Includes agricultural limestone and poultry grit and mineral food.

[7]Includes cement manufacture, dead burned dolomite, flux stone, and sulfur oxide removal.

[8]Includes whiting or whiting substitute.

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

TABLE 4b

INDIANA: 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]	1,920	12,200	1,630	11,400	4,710	18,200
Fine aggregate (-⅜ inch)[4]	241	1,270	159	927	2,240	7,660
Coarse and fine aggregates[5]	1,590	7,820	1,920	12,500	2,010	10,400
Other construction materials[6]	--	--	61	411	--	--
Agricultural[7]	W	W	W	W	W	W
Chemical and metallurgical[8]	W	W	--	--	W	W
Special[9]	--	--	--	--	W	W
Unspecified:[10]						
Reported	6,520	29,400	14,700	64,200	9,210	34,900
Estimated	1,700	7,600	260	1,100	2,700	12,000
Total	13,200	64,200	19,000	92,200	24,600	96,800

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 stone sand (bituminous mix or seal), stone sand (concrete), screening (undesignated), 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 pipe bedding.

[7]Includes agricultural limestone and poultry grit and mineral food.

[8]Includes cement manufacture, flux stone, and sulfur oxide removal.

[9]Includes whiting or whiting substitute.

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

TABLE 5a
INDIANA: 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)	11,400	$42,800	$3.75
Plaster and gunite sands	22	258	11.71
Concrete products (blocks, bricks, pipe, decorative, etc.)	588	3,360	5.71
Asphaltic concrete aggregates and other bituminous mixtures	1,630	7,550	4.62
Road base and coverings[2]	1,000	4,900	4.84
Fill	2,850	11,200	3.92
Snow and ice control	525	1,730	3.29
Other miscellaneous uses	60	527	8.85
Unspecified:[3]			
Reported	10,300	39,000	3.81
Estimated	4,500	18,000	3.91
Total or average	32,900	129,000	3.92

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

TABLE 5b
INDIANA: 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 (including concrete sand)	8,970	$36,500	$4.07
Plaster and gunite sands	22	270	12.09
Concrete products (blocks, bricks, pipe, decorative, etc.)	140	732	5.22
Asphaltic concrete aggregates and other bituminous mixtures	1,720	8,930	5.19
Road base and coverings	1,120	5,600	4.99
Road and other stabilization (cement and lime)	118	492	4.16
Fill	2,480	10,300	4.14
Snow and ice control	524	1,680	3.22
Other miscellaneous uses	46	278	6.07
Unspecified:[2]			
Reported	5,230	21,200	4.06
Estimated	7,900	30,000	3.82
Total or average	28,300	116,000	4.11

[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 6a

INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED 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
Concrete aggregate (including concrete sand)	1,930	7,100	2,910	14,900	6,580	20,800
Concrete products (blocks, bricks, pipe, decorative, etc.) [2]	W	W	485	2,940	W	W
Asphaltic concrete aggregates and other bituminous mixtures	687	2,600	747	4,220	199	733
Road base and coverings [3]	307	1,610	600	2,720	95	561
Fill	610	2,010	2,090	8,570	153	625
Snow and ice control	118	376	380	1,280	27	73
Other miscellaneous uses	98	518	42	420	45	258
Unspecified:[4]						
Reported	1,430	6,540	8,670	31,700	159	835
Estimated	2,300	9,100	1,500	5,700	690	2,800
Total	7,510	29,800	17,400	72,400	7,940	26,700

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]Includes plaster and gunite sands.

[3]Includes road and other stabilization (cement and lime).

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

TABLE 6b

INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED 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
Concrete aggregate (including concrete sand)	1,590	5,020	3,700	15,900	3,680	15,600
Concrete products (blocks, bricks, pipe, decorative, etc.) [2]	W	W	96	571	W	W
Asphaltic concrete aggregates and other bituminous mixtures	582	2,900	741	4,110	397	1,930
Road base and coverings [3]	322	1,660	763	3,470	155	956
Fill	643	2,020	1,620	7,280	214	974
Snow and ice control	W	W	439	1,450	W	W
Other miscellaneous uses	84	508	--	--	40	230
Unspecified:[4]						
Reported	418	1,890	4,650	18,700	163	645
Estimated	2,400	9,800	2,800	12,000	2,700	8,400
Total	6,130	24,000	14,800	63,600	7,340	28,800

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