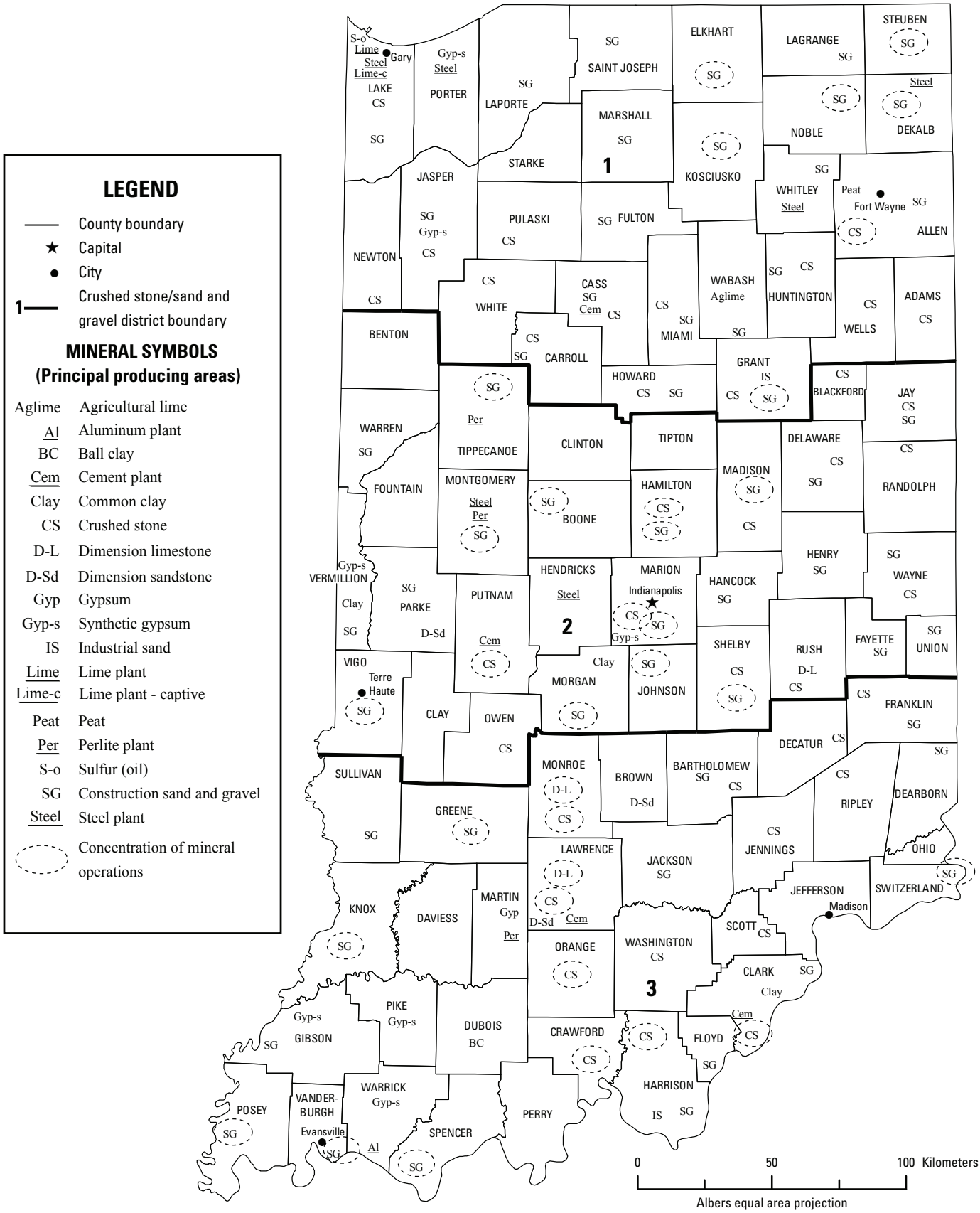
2010–2011 Minerals Yearbook

INDIANA [ADVANCE RELEASE]

U.S. Department of the Interior
U.S. Geological Survey

May 2015

INDIANA



Source: Indiana Geological Survey/U.S. Geological Survey (2010–11).

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 2011 and 2010, Indiana's nonfuel mineral production[1] was valued at $762 million and $789 million, respectively, based on annual U.S. Geological Survey (USGS) data. In 2011 this was a $27 million (3%) decrease from the State's total nonfuel mineral production value in 2010, and a decrease of $17 million (2%) in 2010 from $806 million in 2009. In 2011, the State's rank was 28th among the 50 States in total nonfuel mineral production value and it accounted for 1.0% of the U.S. total nonfuel mineral production. It was 26th in rank and accounted for 1.2% of the U.S. total nonfuel mineral production value in 2010. On a per capita basis, Indiana ranked 31st in the Nation in 2011 with a production value of about $117, well below the national average of $240, and it ranked 29th with a production value of $121 in 2010.

In descending order of production value, crushed stone continued to be Indiana's leading nonfuel mineral commodity, followed by portland cement, and construction sand and gravel, in both 2011 and 2010. The combined values of these three mineral commodities accounted for over 77% of the State's total nonfuel mineral production value in 2011 and 2010. In 2011, the largest increase in production value was in industrial sand and gravel followed by lime.

Peat production was unchanged in 2010. The largest decrease in production value was in industrial sand and gravel, followed by crude gypsum and masonry cement. In 2010, the largest increase in value of Indiana's nonfuel mineral commodities was for ball clays, followed by peat and lime (actual values withheld—company proprietary data). The production values of natural gemstones remained the same in 2009–2011.

In 2011, Indiana was first among the 50 States in production quantity for masonry cement, 14th in common clays, 6th in crude gypsum, 8th in lime, and 14th in construction sand and gravel. Indiana is a major producer of steel in the United States, using materials obtained from other domestic and foreign sources.

The following narrative was provided by the Indiana Geological Survey (IGS). IGS production data and information, except where otherwise noted, were based upon the agency's own surveys and mine inquiries, company annual reports, and data and information derived from other State government agency sources. These data may differ from USGS annual production figures, which were based upon company responses to USGS surveys and upon USGS estimates.

[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 2010 and 2011 USGS mineral production data published in this chapter are those available as of May 2013. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

Employment

The U.S. Department of Labor reported an average of 2,936 individuals employed in Indiana's nonfuel sector during 2010, a 5.4% decrease from 2009 and a 16.3% decrease from 2007.

Commodity Review

Industrial Minerals

Cement.—Three companies having a total of four plants continued to produce cement in Indiana during 2010. Essroc Cement Corp., a subsidiary of Italcementi Group, operated plants in Cass and Clark Counties. Lehigh Portland Cement Co., a subsidiary of Heidelberger Zement AG, continued to produce cement in Lawrence County, and Buzzi Unicem USA produced cement in Putnam County.

Clay and Shale.—The Brampton Brick Ltd. Plant near Farmersburg, Sullivan County, was in commercial operation for over 1 year. The automated brick plant was operated by a dozen employees and used Indiana shale. The Boral Bricks, Inc. plant in Vigo County was idled because of poor economic conditions in 2009 and remained idled in 2010. The plant opened in 2008 and used methane from a nearby landfill for fuel, and sourced its shale from a nearby abandoned coal mine. Most of its waste material was recycled. The plant is the largest brick facility in the United States, with an annual capacity of 120 million bricks. Other producers using Indiana shale include Brickcraft, LLC in Clay County, Colonial Brick Corp. in Vermillion County, and General Shale Brick, Inc. in Morgan County.

Unimin Corp., in Dubois County, mines and processes Indiana clays for cat litter and as filler material. Hydraulic Press Brick Company (Haydite Division), in Morgan County, produces expanded shale for use as a lightweight aggregate. Indiana shales are also produced for use in the cement industry by Buzzi Unicem USA, Essroc Cement Corp., and Rogers Group, Inc., in Lawrence County. A small amount of clay is mined by Yellow Banks Clay Company, in Warrick County, for hand-thrown pottery.

The Lehigh Hanson, Inc.'s Limedale Quarry closed in October 2010. Hanson Aggregates Midwest, LLC's Lower Huntington Quarry was abandoned in December 2010. Steve McAtee Excavating Plant 1, in Grant County, was abandoned in May 2011.

Dimension Stone.—The decrease in construction activities had an overall negative effect on Indiana's dimension stone industry and most companies experienced decreased sales. Some companies compensated with more international shipments of stone, mostly for residential work in Canada, but some stone was exported overseas. High-end residential work also continued in the United States. Resilience Capital Partners, a private equity firm, acquired Indiana Limestone Company from

Johnson Ventures. Resilience Capital acquired Victor Oolitic Stone Company in 2009, merging the two leading producers of dimension limestone in the State. The combined companies began conducting business as Indiana Limestone Company on January 1, 2011.

Gypsum.—Two companies, the National Gypsum Company and U.S. Gypsum Company, produced gypsum from underground mines near the town of Shoals in Martin County.

Sand and Gravel.—Irving Materials, Inc., started production at its Fall Creek Plant in Hamilton County in July, and Area Excavating, Inc. opened a pit in LaPorte County in August, 2009. Speedway Sand and Gravel acquired the Disko pit and plant on the Fulton and Wabash County line, in May 2010. This pit had operated as W.W. Gravel Company from 1981 until May of 2010. Their workings were in Wabash County; however, much of the new workings are expected to be in Fulton County. Rogers Group, Inc.'s Interstate Plant, in Warren County, built a new processing plant that opened in 2010. Eagle Materials, LLC's Smith Valley Plant in Johnson County closed in May but was acquired by VCNA Prairie, Inc. in June; however, production had not commenced by yearend 2011.

Stone, Crushed.—Heritage Aggregates, LLC opened the Springville Quarry and plant in Lawrence County in November of 2009, ramping up production through 2010. Northgate Aggregates began mining in Monon, in White County, in October 2010, on property leased from Natural Resources Partners L.P. Other openings include Naas, LLC, Milltown Crushed Stone, in Harrison County, Fort Wayne Rocks, Inc., and Bluffton Quarry in Wells County. The Ohio River Trading Company, a subsidiary of The North American Limestone Corp., operated a fine-grind processing plant at Cloverdale, in Putnam County, that opened in the fourth quarter. The plant was built, and is owned by, Natural Resource Partners L.P. and is located near the 243 Quarry, the Ohio River Trading Company's mine, which opened in 2008. The ground high-calcium carbonate is marketed for a variety of purposes, including powerplant emissions control, glass manufacturing, and animal feed supplements. The mining and crushing at the quarry was conducted by contract with S. & G. Excavating, Inc. Rogers Group, Inc., which began crushing overburden for Victor Oolitic Stone Company's dimension limestone quarry in Monroe County.

Metals

Aluminum.—Alcoa's Warrick Operations permanently idled one of its potlines for economic reasons; this reduced the plant's capacity by 40,000 metric tons (t) per year to 269,000 t of aluminum per year.

Iron and Steel.—Arcelor Mittal USA in Lake County restarted the No. 4 blast furnace and the No. 3 steel-producing shop at the East Chicago Mill in April in response to improved economic conditions. They had been idled since May 2009, affecting about 750 employees. The company also made improvements to a hot strip mill in Indiana Harbor, in Lake County, and a plate mill at Burns Harbor in Porter County. As part of the company's environmental program, Arcelor Mittal USA also started the No. 7 Blast Furnace Flare Capture project at Indiana Harbor, where enough electricity to power 30,000 homes a year is planned to be generated from waste gas. The $63.2 million project was funded by the company, the U.S. Department of Energy, and the American Recovery and Reinvestment Act of 2009. It will decrease the waste gas to about 5%. The company also received a $376,000 State grant for energy-efficiency upgrades. The company's permit for a 30-hectare (ha) landfill at Burns Harbor was contested because of concerns over possible pollutants contained in the waste, some of which was allegedly stored on the surface for several years coupled with inadequate testing requirements. MultiServ, a subsidiary of Harsco Corp., discontinued its slag, scrap, and other steel-making byproduct processing at the Indiana Harbor East Facility, terminating 90 employees. Phoenix Services replaced the company at both Indiana Harbor East and West. In November, the Indiana Department of Environmental Management (IDEM) issued draft wastewater permits for Arcelor Mittal Burns Harbor and U.S. Steel Midwest. There was a 15-year delay in preparing the draft permits owing to a backlog at IDEM. Both mills affect water quality in Lake Michigan. Both companies were working with Ivy Tech Community College to create training programs for people interested in careers in the steel industry.

Repairs on the No. 14 blast furnace at U.S. Steel Corp.'s Gary Works mill in Lake County were completed in mid-March 2010. The furnace had been idled since December 2009. The company was constructing a $220 million, two-module, carbon-alloy facility that plans to produce a coke-replacement product called Cokonyx, licensed from Carbonyx, Inc., at the Gary Works mill. It is the first such facility to be built in the country. The energy-efficient and environmentally compliant facility will have the capacity to manufacture 454,000 t of Cokonyx that can replace about 20% of traditional steel-making coke. To build the facility, the company agreed with the Environmental Protection Agency (EPA) to keep Coke Battery 3 closed, to permanently shut down Coke Batteries 5 and 7, and to close Quench Towers 5 and 6. The facility will be able to use lower quality coals, which was expected to provide cost savings, making the mill more independent because less coke will need to be purchased on the spot market. Two more modules may be built depending upon the performance of the first two modules. The company completed a sediment remediation project for part of the Grand Calumet River that was affected by mill activities as part of a consent decree with the EPA from 1998. The company was also under a consent decree to restore that section of the river's ecology, which was initiated, and to pay $1 million in monitoring costs. The closure of a third waste hazardous site began in 2011. The company must also develop a plan to monitor, sample, and analyze groundwater, as per the consent decree. U.S. Steel was planning on upgrading its wastewater treatment plant. In addition, the company sold most of the Elgin, Joliet and Eastern Railway Company, retaining a portion and renaming it the Gary Railway Company. Olympic Steel will purchase an existing property at the Gary Works to create a new temper mill and cut-to-length line.

Steel Dynamics, Inc.'s Flat Roll Division in Butler, in DeKalb County, shipped over 2.4 million metric tons (Mt) of steel, which set new records for production and shipments. The mill

began receiving shipments of manufactured iron nuggets from the company's new Mesabi Nugget plant in St. Louis County, Minnesota, to use as feedstock. Iron Dynamics produces iron nuggets from fine iron reduced directly with coal. The company may eventually supply its own iron through both Iron Dynamics and Mesabi Nugget. Technology, equipment, and technical support for Mesabi Nugget was licensed from Kobe Steel, Ltd., of Japan. Iron Dynamics, and OmniSource in Fort Wayne, in Allen County, grew, but New Millennium Building Systems headquartered in Butler, in DeKalb County, continued to face issues because of the depressed construction industry. It planned on expanding into the western and southwestern States seeking new markets. A second caster came online at the Structural and Rail Division's mill at Columbia City, in Whitley County, producing steel used to make light structural and rail products. Production was being ramped up at yearend 2011. The Engineered Bar Products Division (of Steel Dynamics, Inc.) in Pittsboro, in Hendricks County, showed an 87% increase in shipping since 2009; more than 515,000 t shipped, setting new records for production and shipping. The Division is also marketing a manufactured ceramic abrasive that can replace sand in the process of sandblasting. It uses waste dust from electric-arc furnaces and old glass to produce a product called Equiaxx. During use, the material fractures and maintains its abrasive character, so it can be reused. Production started in 2010.

In 2010, Nucor Corp. at Crawfordsville, in Montgomery County, acquired a 50% interest in NuMit LLC from Mitsui and Co., Inc., including 100% ownership of Steel Technologies, Inc., which provided support for a number of steel-related activities. Steel Technologies, Inc. will retain its name. There are several locations for that company around the United States, Mexico, and Canada, including in Indiana: Crawfordsville, in Montgomery County; Greensburg, in Decatur County; and a joint venture with Kasle Metal Processing, LLC in Jeffersonville, in Clark County. Nucor Corp.'s Castrip facility at Crawfordsville, which casts molten steel into its final shape and thickness, used the period of time when production was down during the recession to work on developing new products using the Castrip technology. The facility also participated in the startup of a second Castrip facility near Blytheville, Arkansas, in Mississippi County, by providing technical support in late 2009 and 2010. More than 5,260 ha (13,000 acres) at Crawfordsville along Nucor Road, which includes the Nucor Corp. site, was designated as a tax increment financing district to encourage development that could lead to more jobs.

Government Programs

The Indiana Department of Transportation (INDOT) awarded 1,082 transportation projects across the State using its $658 million share of the American Recovery and Reinvestment Act designated for highways and bridges. Also, by the end of the year, eight contracts for a total of 45 miles of roadways were awarded for construction of the $3 billion, 142-mile highway extension of I–69 from Evansville to Indianapolis, and construction had begun on some parts of the Interstate. Through its Joint Transportation Research Program, INDOT, worked with Purdue University engineers on a project to evaluate the use of cement kiln dust as a replacement for lime in highway construction projects. The dust performed satisfactorily in the projects and it was estimated that it could be substituted for about 70% of the lime used annually on Indiana highway projects, saving taxpayers $300,000. The cement dust came from an undisclosed Indiana cement company.

Recognizing the importance of the dimension limestone industry for many of the Nation's monuments and public buildings, an online digital collection of 1,600 historic images, interviews, timeline, and documents of the industry was created by the Monroe County Public Library and Monroe County History Center; these can be viewed at http://www.indianabedrock.org.

The Indiana Geological Survey published several publications of interest to the industrial minerals industry during 2010. Maps published as part of the U.S. Geological Survey STATEMAP Project include "Preliminary Bedrock Geologic Map of the Tunnelton 7.5-minute Quadrangle, Indiana" (Thompson and others, 2010), and "Preliminary Bedrock Geologic Map of the Norman 7.5-minute Quadrangle, Indiana" (Keith and others, 2010). A "Directory of Industrial Mineral Producers in Indiana" in book or on CD-ROM (Shaffer, 2010), a map, "Surficial Geology of Lagrange County–digital compilation" (Karaffa and Sowder, 2010), a "Shaded Relief Map of Spencer County, Indiana" (Sowder and Irwin, 2010a), a "Shaded Relief Map of Tippecanoe County, Indiana" (Sowder and Irwin, 2010b), a "Generalized Stratigraphic Column of Indiana Bedrock" (Thompson and Sowder, 2010), and the "Geology of the Late Neogene Pipe Creek Sinkhole" (Grant County, Indiana) (Farlow and others, 2010) were also completed.

References Cited

Farlow, J.O., Argast, A., and Sunderman, J.A., 2010, Geology of the Late Neogene Pipe Creek sinkhole (Grant County, Indiana): Indiana Geological Survey Special Report 69, 93 p.

Karaffa, M.D., and Sowder, K.H., 2010, Surficial geology of Lagrange County—Digital compilation: Indiana Geological Survey Miscellaneous Map 79, scale 1:48,000.

Keith, B.D., Thompson, T.A., Hasenmueller, W.A., and Estell, C.M., 2010, Preliminary bedrock geologic map of the Norman 7.5-minute quadrangle, Indiana: Indiana Geological Survey Open-File Study 10-03, scale 1:24,000.

Shaffer, K.R., 2010, Directory of industrial mineral producers in Indiana: Indiana Geological Survey Directory 11, 76 p., or CD-ROM.

Sowder, K.H., and Irwin, P.N., 2010a, Shaded relief map of Spencer County, Indiana: Indiana Geological Survey Shaded Relief Topographic Map 74, scale 1:48,000.

Sowder, K.H., and Irwin, P.N., 2010b, Shaded relief map of Tippecanoe County, Indiana: Indiana Geological Survey Shaded Relief Topographic Map 79, scale 1:48,000.

Thompson, T.A., Keith, B.D., Estell, C.M., and Hasenmueller, W.A., 2010, Preliminary bedrock geologic map of the Tunnelton 7.5-minute quadrangle, Indiana: Indiana Geological Survey Open-File Study 10-02, scale 1:24,000.

Thompson, T.A., and Sowder, K.H., 2010, Generalized stratigraphic column of Indiana bedrock: Indiana Geological Survey Poster 06A.

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

(Thousand metric tons and thousand dollars)

Mineral	2009		2010		2011	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,690	233,000 [e]	2,470	199,000 [e]	2,290	179,000 [e]
Clays, common	413	6,610	358	7,110	332	6,620
Gemstones, natural	NA	4	NA	4	NA	4
Sand and gravel, construction	19,200 [r]	102,000 [r]	18,900	116,000	18,800	111,000
Stone:						
Crushed	44,100	290,000	44,400	294,000	42,200	301,000
Dimension	206	41,500	173	31,400	164	29,200
Combined values of cement (masonry), clays (ball), gypsum (crude), lime, peat, sand and gravel (industrial)	XX	134,000	XX	140,000	XX	136,000
Total	XX	806,000	XX	789,000	XX	762,000

[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 IN THE UNITED STATES, BY TYPE[1]

Type	2009				2010				2011			
	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]	82 r	40,300 r	$259,000	$6.43	81	40,200 r	$264,000 r	$6.57 r	75	37,700	$267,000	$7.09
Dolomite	13	3,830	30,200	7.88	13	4,010 r	29,200 r	7.29	14	4,360	33,100	7.60
Miscellaneous stone	1	89	550	6.20	1	138	1,020	7.40	1	138	994	7.22
Total or average	XX	44,100	290,000	6.56	XX	44,400 r	294,000 r	6.63 r	XX	42,200	301,000	7.14

[r]Revised. 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 kinds of stone.

TABLE 3
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2010, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	326	2,670
Filter stone	151	1,390
Other coarse aggregate	986	5,280
Coarse aggregate, graded:		
Concrete aggregate, coarse	1,270	11,900
Bituminous aggregate, coarse	1,320	11,700
Bituminous surface-treatment aggregate	1,360	14,200
Railroad ballast	281	2,160
Other graded coarse aggregate	5,340	30,600
Fine aggregate (-⅜ inch):		
Stone sand, concrete	97	713
Stone sand, bituminous mix or seal	387	2,480
Screening, undesignated	69	255
Other fine aggregate	2,660	13,600
Coarse and fine aggregates:		
Graded road base or subbase	2,040	13,700
Unpaved road surface	279	2,520
Crusher run or fill or waste	790	3,400
Other coarse and fine aggregates	2,310	15,800
Other construction materials	42	228
Agricultural:		
Agricultural, limestone	1,460	8,330
Poultry grit and mineral food	395	3,380
Other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	3,240	12,500
Lime manufacture	14	120
Flux stone	W	W
Sulfur oxide removal	W	W
Special, whiting or whiting substitute	1	5
Unspecified:[2]		
Reported	12,100	90,700
Estimated	4,340	29,700
Total	44,400	294,000

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

[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 4
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2011, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	308	2,550
Filter stone	W	W
Unspecified coarse aggregate	1,370	7,950
Coarse aggregate, graded:		
Concrete aggregate, coarse	1,250	11,600
Bituminous aggregate, coarse	980	11,100
Bituminous surface-treatment aggregate	1,100	11,300
Railroad ballast	391	3,910
Unspecified graded coarse aggregate	4,270	26,700
Fine aggregate (-⅜ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	435	3,600
Screening, undesignated	270	1,210
Unspecified fine aggregate	1,150	7,090
Coarse and fine aggregates:		
Graded road base or subbase	1,950	13,900
Unpaved road surface	353	2,500
Crusher run or fill or waste	310	1,290
Unspecified coarse and fine aggregates	3,280	20,700
Unspecified and other construction materials	134	831
Agricultural:		
Agricultural, limestone	822	5,500
Poultry grit and mineral food	W	W
Unspecified and other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	3,150	15,600
Flux stone	W	W
Sulfur oxide removal	W	W
Special:		
Asphalt fillers or extenders	W	W
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	(3)	1
Unspecified:[2]		
Reported	12,400	101,000
Estimated	4,480	31,900
Total	42,200	301,000

W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals show
[2]Reported and estimated production without a breakdown by end use.
[3]Less than ½ unit.

TABLE 5
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2010, 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]	268	2,660	134	1,200	1,130	6,090
Coarse aggregate, graded[3]	3,150	28,300	1,170	11,300	5,260	31,000
Fine aggregate (-⅜ inch)[4]	478	2,740	154	1,120	2,580	13,200
Coarse and fine aggregates[5]	2,110	12,500	1,740	12,300	1,570	10,600
Other construction materials	W	W	W	W	W	W
Agricultural[6]	1,050	7,540	187	1,110	623	3,100
Chemical and metallurgical[7]	W	W	W	W	4,510	18,500
Special[8]	--	--	--	--	W	W
Unspecified:[9]						
Reported	3,250	24,900	4,300	34,600	4,600	31,200
Estimated	1,190	8,720	1,190	8,830	1,960	12,100
Total[10]	11,800	89,000	10,200	75,900	22,200	126,000

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

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

[2]Includes macadam, riprap and jetty stone, filter stone, and other coarse aggregates.

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

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

[5]Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

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

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

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

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

[10]District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 6

INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2011, 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]	106	1,050	106	1,030	W	W
Coarse aggregate, graded[3]	2,070	18,500	1,650	17,000	W	W
Fine aggregate (-⅜ inch)[4]	261	1,710	493	3,460	1,100	6,730
Coarse and fine aggregates[5]	1,250	8,310	1,700	11,400	2,940	18,700
Other construction materials	--	--	W	W	W	W
Agricultural[6]	W	W	132	842	293	1,800
Chemical and metallurgical[7]	W	W	W	W	4,710	22,600
Special[8]	W	W	W	W	W	W
Other miscellaneous uses and specified uses not listed[9]	--	--	W	W	--	--
Unspecified:[10]						
Reported	3,780	28,500	5,790	52,100	2,800	20,200
Estimated	1,010	7,300	612	4,420	2,860	20,200
Total	9,630	72,300	11,900	99,800	20,600	129,000

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

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

[2]Includes macadam, riprap and jetty stone, filter stone, and other coarse aggregates.

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

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

[5]Includes graded road base or subbase, unpaved road surface, terrazzo and exposed aggregate, crusher run, roofing granules, and other coarse and fine aggregates.

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

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

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

[9]Includes drain fields, waste material, lightweight aggregate (slate), pipe bedding, refractory stone (including ganister), and other miscellaneous uses.

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

TABLE 7
INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	4,520	$22,600	$5.00
Plaster and gunite sands	12	135	11.25
Concrete products (blocks, bricks, pipe, decorative, etc.)	22	253	11.50
Asphaltic concrete aggregates and other bituminous mixtures	1,110	8,080	7.28
Road base and coverings[2]	1,690	12,700	7.50
Fill	1,230	6,400	5.19
Snow and ice control	284	1,250	4.40
Other miscellaneous uses[3]	129	990	7.67
Unspecified:[4]			
Reported	3,360	23,400	6.95
Estimated	6,240	38,900	6.23
Total or average	18,900	116,000	6.14

[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 (lime).
[3]Includes filtration and golf course.
[4]Reported and estimated production without a breakdown by end use.

TABLE 8
INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011,
BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	5,380	$28,500	$5.30
Plaster and gunite sands	11	126	11.45
Concrete products (blocks, bricks, pipe, decorative, etc.)	16	188	11.75
Asphaltic concrete aggregates and other bituminous mixtures	1,160	8,220	7.09
Road base and coverings	576	4,180	7.26
Fill	1,870	8,800	4.71
Snow and ice control	312	1,250	4.01
Other miscellaneous uses[2]	119	838	7.04
Unspecified:[3]			
Reported	2,620	18,100	6.91
Estimated	6,740	40,300	5.98
Total or average	18,800	111,000	5.90

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

TABLE 9

INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010, 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)	928	4,270	1,440	10,400	2,150	7,910
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	W	W	21	241	W	W
Asphaltic concrete aggregates and other bituminous mixtures	W	W	302	2,380	W	W
Road base and coverings[3]	201	1,470	395	2,850	1,100	8,380
Fill	511	2,360	629	3,530	93	513
Other miscellaneous uses[4]	145	891	252	1,280	16	69
Unspecified:[5]						
Reported	634	4,080	2,350	17,200	372	2,090
Estimated	2,240	13,600	2,770	17,800	1,230	7,470
Total[6]	5,190	30,800	8,160	55,700	5,250	28,200

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 (lime).

[4]Includes filtration, golf course, and snow and ice control.

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

[6]District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 10

INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011, 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)	856	4,400	1,720	12,000	2,810	12,100
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	W	W	W	W	W	W
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	W	W
Road base and coverings	214	1,750	307	2,040	55	387
Fill	677	2,910	841	4,940	348	942
Other miscellaneous uses[3]	70	365	347	1,660	12	61
Unspecified:[4]						
Reported	907	5,610	1,710	12,500	--	--
Estimated	2,610	15,500	2,730	16,700	1,400	8,120
Total	5,720	33,800	8,020	52,700	5,060	24,000

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

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

[2]Includes plaster and gunite sands.

[3]Includes filtration, golf course, and snow and ice control.

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