2009 Minerals Yearbook

INDIANA [ADVANCE RELEASE]

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U.S. Geological Survey

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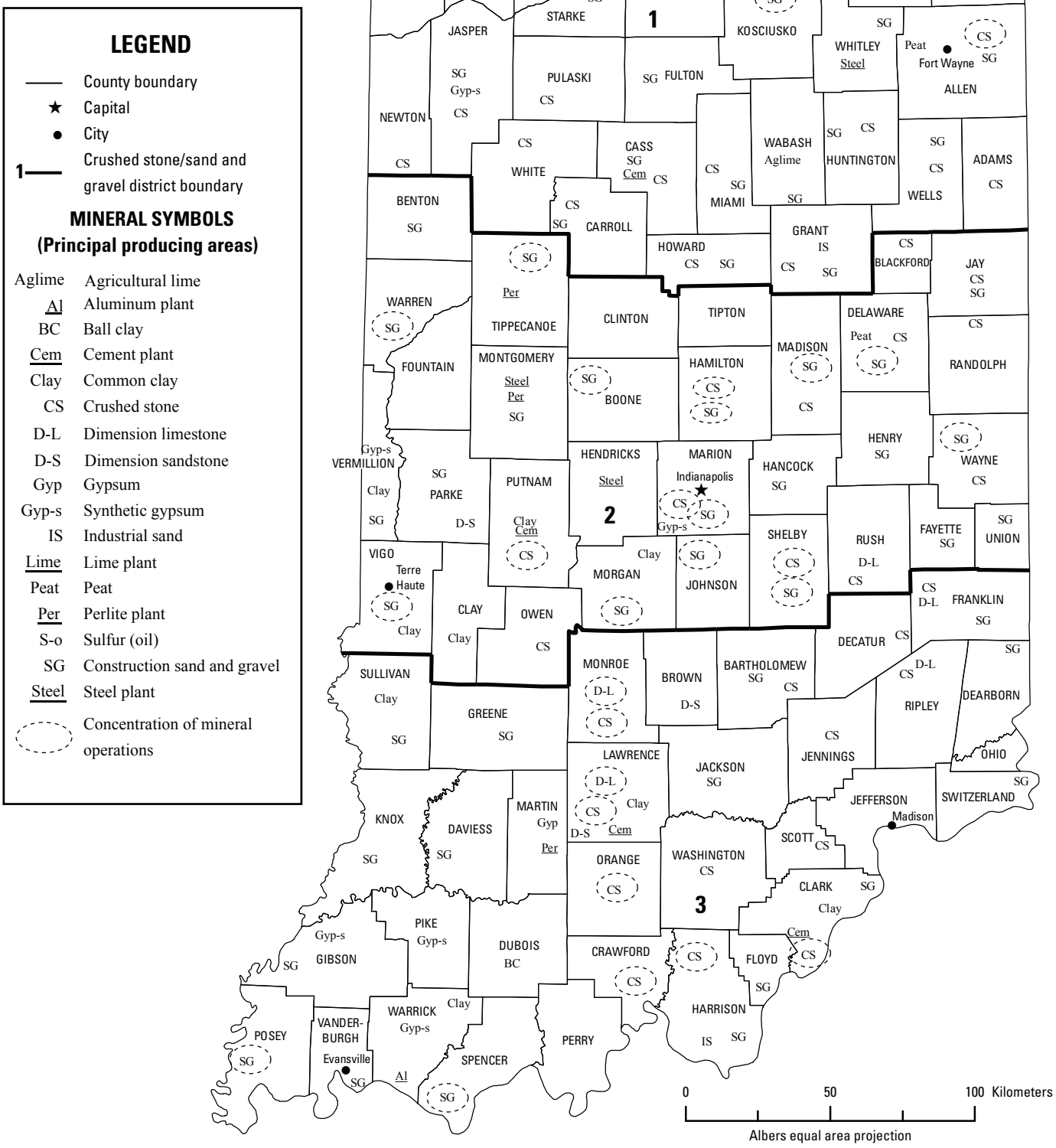
INDIANA



Source: Indiana Geological Survey/ U.S. Geological Survey (2009).

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 2009, Indiana's nonfuel raw mineral production[1] was valued at $806 million, based on annual U.S. Geological Survey (USGS) data. This was an $86 million, or 10%, decrease from the State's total nonfuel mineral production value of $892 million in 2008, which had decreased by $94 million, or 10%, from a total of $986 million in 2007. The State remained 25th in rank among the 50 States in total nonfuel raw mineral production value and accounted for 1.4% of the U.S. total production value. Per capita, the State ranked 26th in the Nation; with a population of about 6.42 million, the value of production was about $125 per capita.

Crushed stone, by production value, continued to be Indiana's leading nonfuel mineral commodity, followed by portland cement, and construction sand and gravel. The combined values of these three mineral commodities accounted for 77% of the State's total nonfuel mineral production value. The largest increase in value of Indiana's nonfuel mineral commodities took place in lime (actual values withheld—company proprietary data), followed by portland cement (up by $7 million), dimension stone (up by $5.9 million), and industrial sand and gravel (withheld—company proprietary data) (table 1). The largest decreases were observed in crushed stone (down by $62 million) and construction sand and gravel (down by $39 million). Smaller, yet significant, decreases took place, in order of decreasing production value, in masonry cement, crude gypsum, common clays, and ball clays. The production values of natural gemstones and peat remained the same as those of 2008.

In 2009, Indiana rose in rank in the quantity produced of several mineral commodities in comparison with other producing States. The State rose in rank to 2d from 6th in masonry cement, to 4th from 8th in crude gypsum, to 8th from 10th in crushed stone, and to 8th from 11th in portland cement. The State continued to be 3d in dimension stone production, 5th in ball clay production out of 5 producing States, 6th in peat production (based on sales), 8th in lime production, and 15th in construction sand and gravel production. Indiana declined in rank to 12th from 10th in the production of common clays. With 16.7 million metric tons (Mt), Indiana accounted for 28% of the 59.4 Mt of total raw steel produced in the United States in 2009 and continued to be the top raw-steel-producing State (American Iron and Steel Institute, 2010, p. 74).

The Indiana Geological Survey[2] (IGS) provided the following narrative information based upon its own surveys, estimates, and data collection efforts.

Employment

The United States Department of Labor, Mine Safety and Health Administration reported an average of 3,103 individuals employed in Indiana's nonfuel mineral sector during 2009. This represented a 10% decrease from 2008 employment levels.

Commodity Review

Industrial Minerals

Clay and Shale.—Commercial production and shipments began in April at the new Brampton Brick Ltd. brick plant in Farmersburg, Sullivan County (Brampton Brick Ltd., 2009, p. 4). The approximately 19,000-square-meter (-m^2) plant had a capacity to produce 100 million bricks per year from an abundant shale resource next to the plant. The Farmersburg plant used a mixture of petroleum coke and natural gas for fuel and used scrubbers to remove sulfur dioxide. The plant began the year operating at about 50% of its production capacity (Greninger, 2009a).

Boral Brick, Inc.'s Terre Haute plant in Vigo County was temporarily idled in February owing to the downturn of the economy and a lowered demand for its products. The plant will continue to sell bricks already produced. The approximately 28,000-m2 plant was the largest brick manufacturing facility in the United States, with a capacity to produce 120 million bricks per year. The plant used methane from a nearby landfill as fuel and nearby abandoned coal mine spoils, and a nearby active shale mine operated by Dennis Trucking Co., Inc. provided the shale for the brick making (Greninger, 2009b).

Hydraulic Press Brick Company in Morgan County, which produces an expanded shale product, applied for exemptions to county requirements regarding hours of operation, a reclamation plan, and stormwater runoff. The county agreed to accept the reclamation plan filed with the State and also allowed the company to change its hours of operation but did not allow the exemption for stormwater runoff.

Gypsum.—Roy's Recycling, Inc. began operations crushing and recycling the natural and synthetic gypsum in wallboard.

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[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 2009 USGS mineral production data published in this chapter are those available as of September 2011. 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.

[2]Kathryn R. Shaffer, Mineral Statistician with the Indiana Geological Survey, submitted the text of the State mineral industry information provided by that State agency.

Roy's Recycling and Cheron, Inc. produce a product called Gypsoil, which is used as an agricultural soil amendment.

Sand and Gravel.—Vulcan Materials Company split its operations into east region and west region business units, with Indiana in the west region, which comprises mostly quarries. Reavis Mining in Madison County was the only sand and gravel operation to commence operations in 2009. Mauckport Sand and Gravel acquired Lucas Corp.'s Plant 1 in Harrison County; Heritage Aggregates, LLC acquired Harco Sand and Gravel, Inc. in Marion County and renamed it the "Harding Street Plant." There were several closures during 2009: Bell Aggregates and Trucking in Vigo County; Bottamiller Enterprises, Inc. in Hamilton County; Clark Farm Aggregates in Elkhart County; Engineering Aggregates Corp.'s Portable #1 in Cass County; Fidler, Inc.'s Pit #3 in Elkhart County; Kopetsky Hauling, Inc.'s Kopetsky Sand and Gravel in Marion County; Martinsville Rockmakers, Inc.'s MRI Sand and Gravel in Morgan County; Noblesville Landfill, Inc. in Hamilton County; Rieth-Riley Materials' Mooresville plant in Morgan County; Silver Creek Sand and Gravel Company, Inc.'s Five Mile Lane plant in Floyd County; Tri-County Sand and Gravel, LLC in Union County; and Vulcan Construction Materials' Bass Lake Sand and Gravel in Starke County.

Stone, Crushed.—Lincoln Park Stone, Inc. added a portable crusher to its Putnamville Quarry in Putnam County. The unit produces larger riprap than the company had previously been able to produce and can be moved to other company locations. Steve McAtee Excavating's Plant 1 began operations in Grant County. Rogers Group, Inc. sold its asphalt and construction divisions to Dave O'Mara Contractor, Inc. so that it could concentrate on its crushed stone, sand and gravel, and finely ground limestone products in southern Indiana.

Stone, Dimension.—The Indiana Limestone Institute of America reported that commercial construction was low owing to the state of the economy, but the demand for high-end residential architecture and restoration work remained steady. Many Indiana companies were active in the residential market, and the eastern and southern parts of the United States were key areas for this work. The trend towards the restoration of older buildings was also on the upswing. The Indiana limestone industry has been actively involved in the restoration market since many older, particularly governmental and educational, buildings were originally built using Indiana limestone. The stone is virtually maintenance free, requiring only the periodic repointing of joints and, if desired, occasional cleaning. Owing to general neglect and a lack of maintenance over the years, many buildings have fallen into disrepair. The ability of the industry to easily match stones quarried up to 100 years ago with stone quarried today, and to match stone to existing buildings is a big factor in the restoration market. Building restoration using limestone is a steady segment of the market. In many instances, Indiana limestone has also been used to replace often highly detailed but less durable stones.

Owing to many projects completed in 2009, Indiana dimension limestone withstood the economic downturn. The new Yankee Stadium, which opened in New York City in April, is composed of approximately 6,700 m^2 of limestone quarried from the Indiana Limestone Company's Empire Quarry in Lawrence County and milled by Indiana Limestone Fabricators in Owen County. The façade is also composed of granite from Canada. The limestone in the Great Hall and on the "Legends Suites" boxes was provided by the Victor Oolitic Stone Company's Victor Quarry, located in Monroe County. A custom-designed machine to cut the letters was designed by W.F. Meyers Co. in Lawrence County (Parsons, 2009).

The Indiana Limestone Company contributed stone for other jobs, including Simon Hall on the Indiana University Bloomington campus, and the Raleigh Convention Center in Raleigh, North Carolina, both completed in 2009. Victor Oolitic Stone Company, which had been mining since 1898, was acquired by Resilience Capital Partners. In August, Star Stone Company, Inc. closed its Patton Hill Quarry in Lawrence County.

Metals

Aluminum.—Alcoa Corp. announced in January that it was cutting 15,000 jobs worldwide, 1,700 of which were contractors. Included in that total were 100 jobs at the Warrick operation in Warrick County, which was announced in October 2008 (Alcoa Corporation, 2009). The plant was not affected as dramatically by the recession as were some other Alcoa operations.

Steel.—Owing to a reduction in demand, ArcelorMittal USA in Lake County closed its Indiana Harbor East specialty bar operation in February for a few weeks (Holecek, 2009a). About 500 employees were laid off early in the year at Burns Harbor, and another 900 employees worked fewer hours. Other small layoffs took place during the year, and the company temporarily stopped various employee incentive programs (Holecek, 2009b). It also temporarily laid off 700 employees at the Indiana Harbor plants in July (Times of Northwest Indiana Staff, 2009a). Blast furnace No. 7 remained operational at Indiana Harbor East, but ironmaking was halted at Indiana Harbor West. Owing to an improved market, ArcelorMittal's Indiana Harbor operation restarted the No. 5 blast furnace in July after 8 months of inactivity and the No. 6 blast furnace in October after 2 years of inactivity (Tweh, 2009a). In November, the Indiana Harbor facility received a $31.6 million American Recovery and Reinvestment Act grant from the U.S. Department of Energy for a project to capture waste gas from the blast furnace and use it to produce electricity and steam for use at the plant (Tweh, 2009b). In December, ArcelorMittal announced plans to eliminate 10,000 jobs worldwide in 2010. They also planned to resume mergers, acquisitions, and other investment activities to capture selected growth opportunities in emerging markets (ArcelorMittal S.A., 2010, p. 23). The effects on Indiana mills, if any, are currently unknown. Near yearend, the company was under scrutiny by the Indiana Department of Environmental Management for their waste disposal methods at the Burns Harbor facility and worked on getting a landfill permit (Times of Northwest Indiana Staff, 2009b).

U.S. Steel Corp. in Lake County offered early retirement packages to its nonunion employees in January in a cost-cutting effort, and 500 employees accepted the offer (Holecek, 2009c). Shutdowns and slowdowns at other company plants resulted in shifting work to the Gary Works steel manufacturing plant,

which was operating at full employment in late February (Holecek, 2009d). U.S. Steel restarted its No. 1 caster and No. 6 blast furnace, but the No. 8 blast furnace remained idle until April. There was a serious failure at the No. 14 blast furnace in late April, which resulted in several weeks of repair and layoffs at the plant (Holecek, 2009e). By early May, about 300 employees had been laid off owing to the weak market for steel and the blast furnace problems, but most were rehired by early June. The No. 14 furnace was shut down for maintenance in December and owing to lower demand, the furnace remained closed until the end of the year. U.S. Steel participated in a land swap with the city of Portage wherein the city received 2.8 hectares (ha) adjacent to a new city park and U.S. Steel received 4.3 ha for construction of a new training facility; however, no construction is expected at the new site until there is an improvement in the economy (Russell, 2009). Late in the year, public comment was sought on the draft National Pollutant Discharge Elimination System permit, which stipulates increased pollutant control requirements for the plant beyond those set in the 2007 permit (Tompkins, 2009). No decision had been made by yearend.

Steel Dynamics, Inc. had a 51% loss in net sales during 2009 compared to 2008 and eliminated a total of 662 jobs that were not expected to be restored (Steel Dynamics, Inc., 2010, p. 41). In addition, many Steel Dynamics employees worked fewer hours and received fewer production incentives during the year. A second upgrade to the Butler flat-rolling mill's electric-arc furnace was completed in the second quarter, increasing the capacity of the mill to 2.7 Mt, which the mill met in August, setting a new company production record. Steel Dynamics' New Millennium Building Systems in Dekalb County, which produces steel joists, trusses, and decking, absorbed operations and some employees from a sister plant in Continental, Ohio, which was forced to close owing to the downturn of the economy. OmniSource Corp., a subsidiary scrap and secondary metals distributor of Steel Dynamics, laid off 135 employees in May. Another Steel Dynamics subsidiary, Dynamic Composites, LLC, shipped its first order of composite railroad crossties in April (Steel Dynamics, Inc., 2009). The ties are composed of a core of steel surrounded by concrete, shredded tires, and recycled plastics, and are being marketed as strong, long lasting, and environmentally friendly. Steel Dynamics will use old glass and waste dust from electric-arc furnaces to make sandblasting materials at a new company in LaPorte County.

Nucor Corp. in Montgomery County had its first loss of earnings in 40 years during the first quarter of 2009. The company announced a 29% loss in the fourth quarter of 2009 compared to the fourth quarter of 2008 (Nucor Corporation, 2010a). Nucor posted a net loss of $294 million compared with record net earnings of $1.83 billion in 2008 (Nucor Corporation, 2010b, p. 3). In an effort to improve its environmental standing, the company's Crawfordsville mill tested a process to recycle zinc and other metals from waste materials, which could remove approximately 9,000 metric tons (20 million pounds) from the company's reported annual toxic releases. The company filed a complaint with the Indiana Utility Regulatory Commission requesting reasonable charges and conditions for electric service provided by Duke Energy Indiana (Howe, 2009). Nucor, which uses an electric-arc furnace, is Duke Energy's largest Indiana customer and stated that it needed assistance to remain profitable.

Legislation and Government Programs and Activities

Through the Governor's Major Moves program, money from the lease of the toll road in northern Indiana supported road construction projects and helped balance some of the effects of the economic recession. Purdue University won its largest grant ever and received $105 million from the National Science Foundation to manage a consortium of researchers from 14 universities studying earthquake- and tsunami-resistant construction. Purdue University also opened a new lab to study concrete (Purdue News Service, 2009).

The IGS has been an active participant in the STATEMAP Program. STATEMAP is a component of the congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: (1) FEDMAP, which funds Federal geologic mapping projects; (2) STATEMAP, which is a matching-funds grant program with State geological surveys; and (3) EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers. The IGS published several geologic maps of interest to the industrial minerals industry during 2009. Maps published as part of the USGS STATEMAP Project include: Geologic Map of the Clear Creek 7.5-Minute Quadrangle, Indiana (Keith and others, 2009a); Preliminary Bedrock Geologic Maps of the Bedford East and Bedford West 7.5-Minute Quadrangles, Indiana (Keith and others, 2009b; Thompson and others, 2009); and the Bedrock Geologic Map of Monroe County, Indiana (Hasenmueller and others, 2009). A series of shaded relief maps were published for Bartholomew, Decatur, Greene, Jackson, Jennings, Lawrence, Montgomery, Owen, Putnam, and St. Joseph Counties (Sowder and Irwin, 2009). A set of three posters titled "Indiana Whetstone Posters" (Kvale and Powell, 2009) and a poster titled "Sedimentary Rocks of Indiana" (Thompson and Keith, 2009) were published in 2009, as well as "Indiana Limestones and Dolomites for Flue Gas Desulfurization" (Shaffer and Sadowski, 2009), and "Processes Contributing to the Development of Pad Marks on Indiana Limestone" (Ennis and others, 2009). A revised directory of industrial mineral producers was in production and was scheduled to be released in early 2010.

Minerals Industry Awards and Achievements

Buzzi Unicem USA's Greencastle Plant in Putnam County received the Portland Cement Association's 2009 Cement Industry Energy and Environmental Award in the Innovation category for developing a method to handle, process, and store spent pot liner, a waste product of aluminum manufacture. The aluminum is produced elsewhere, and the processed pot liner is then injected as part of the cement plant's fuel supply, reducing

the amount of coal burned. In addition, the process, to some extent, reduces the use of sand and shale as raw materials in cement production. The Environmental Management System of Essroc Cement Corp.'s Logansport Plant in Cass County received ISO 14001 certification from Lloyd's Register Quality Assurance in the United Kingdom. The company belongs to the Italcementi Group, headquartered in Bergamo, Italy. This was international recognition that the plant met high environmental standards. The company's plant in Clark County and two company plants in Pennsylvania also hold this certification. Three Lehigh Hanson, Inc. quarries received awards from the National Stone, Sand & Gravel Association's National Stars of Excellence program for 2009. The company's Harding Street Quarry in Marion County received an Environmental Excellence Silver Award, and its Limedale and Putnamville Quarries, both in Putnam County, each received an Environmental Excellence Bronze Award (National Stone, Sand & Gravel Association, 2010, p. 14–15). J.C. Stone, Inc. won a 2009 Pinnacle Award from the Marble Institute of America, recognizing the use of dimension stone in high-quality construction projects, for renovations and additions to the Bowdoin College Museum of Art in Brunswick, Maine, using stone from the Indiana Limestone Company (Marble Institute of America, 2009).

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

(Thousand metric tons and thousand dollars)

Mineral	2007 Quantity	2007 Value	2008 Quantity	2008 Value	2009 Quantity	2009 Value
Cement, portland	2,980	263,000 e	2,590	226,000 e	2,690	233,000 e
Clays, common	624	8,980	667	8,080	413	6,610
Gemstones, natural	NA	4	NA	4	NA	4
Sand and gravel, construction	28,300	154,000 r	23,300 r	139,000 r	18,800	100,000
Stone:						
Crushed	57,800	383,000	51,800 r	352,000 r	44,100	290,000
Dimension	236	37,800	203	35,600	206	41,500
Combined values of cement (masonry), clays (ball), gypsum (crude), lime, peat, sand and gravel (industrial)	XX	140,000 r	XX	131,000 r	XX	134,000
Total	XX	986,000 r	XX	892,000 r	XX	806,000

[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 TYPE[1]

Type	2008 Number of quarries	2008 Quantity (thousand metric tons)	2008 Value (thousands)	2009 Number of quarries	2009 Quantity (thousand metric tons)	2009 Value (thousands)
Limestone[2]	79 r	47,200 r	$320,000	81	40,200	$259,000
Dolomite	13	4,660 r	32,500 r	13	3,830	30,200
Miscellaneous stone	1	13	85	1	89	550
Total	XX	51,800 r	352,000 r	XX	44,100	290,000

[r]Revised. XX Not applicable.
[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 3
INDIANA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2009, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	403	3,530
Filter stone	W	W
Other coarse aggregate	1,710	9,280
Coarse aggregate, graded:		
Concrete aggregate, coarse	2,080	17,800
Bituminous aggregate, coarse	1,140	9,890
Bituminous surface-treatment aggregate	1,320	14,400
Railroad ballast	312	2,480
Other graded coarse aggregate	4,120	23,700
Fine aggregate (-⅜ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	167	582
Other fine aggregate	2,890	15,700
Coarse and fine aggregates:		
Graded road base or subbase	2,920	19,300
Unpaved road surfacing	598	3,940
Crusher run or fill or waste	293	1,250
Other coarse and fine aggregates	507	4,000
Other construction materials	40	221
Agricultural:		
Limestone	982	6,220
Poultry grit and mineral food	W	W
Other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	W	W
Lime manufacture	W	W
Flux stone	W	W
Sulfur oxide removal	W	W
Special:		
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Unspecified:[2]		
Reported	12,700	93,800
Estimated	5,920	38,200
Total	44,100	290,000

W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits; 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 2009, 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	1,470	7,510
Coarse aggregate, graded[3]	3,510	29,200	1,820	16,900	3,630	22,200
Fine aggregate (-⅜ inch)[4]	W	W	W	W	W	W
Coarse and fine aggregates[5]	1,620	10,400	1,690	11,300	1,010	6,840
Other construction materials	22	119	10	59	8	45
Agricultural[6]	929	5,040	W	W	W	W
Chemical and metallurgical[7]	W	W	W	W	5,080	20,800
Special[8]	--	--	--	--	W	W
Unspecified:[9]						
Reported	2,740	23,300	3,950	32,100	5,990	38,400
Estimated	1,270	8,260	3,000	19,100	1,650	10,800
Total	11,300	84,900	11,300	84,500	21,600	121,000

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 filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

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

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

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

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

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

[8]Includes whiting or whiting substitute and other fillers or extenders.

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

TABLE 5
INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	3,300	$18,100	$5.47
Plaster and gunite sands	1,960	6,810	3.48
Concrete products (blocks, bricks, pipe, decorative, etc.)	37	421	11.38
Asphaltic concrete aggregates and other bituminous mixtures	1,100	6,630	6.03
Road base and coverings[2]	601	4,080	6.78
Fill	1,420	7,510	5.30
Snow and ice control	243	965	3.97
Other miscellaneous uses[3]	18	141	7.83
Unspecified:[4]			
Reported	3,090	21,000	6.78
Estimated	7,070	34,400	4.86
Total or average	18,800	100,000	5.31

[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 6

INDIANA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, 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)	815	3,760	836	6,490	1,650	7,840
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	W	W	332	2,510	W	W
Asphaltic concrete aggregates and other bituminous mixtures	W	W	229	1,720	W	W
Road base and coverings[3]	229	1,600	289	1,950	83	525
Fill	364	1,460	959	5,600	93	452
Other miscellaneous uses[4]	512	3,390	192	843	2,090	6,500
Unspecified:[5]						
Reported	815	5,420	2,060	14,400	217	1,150
Estimated	2,320	11,400	2,780	14,100	1,970	8,900
Total	5,060	27,000	7,680	47,500	6,100	25,400

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.