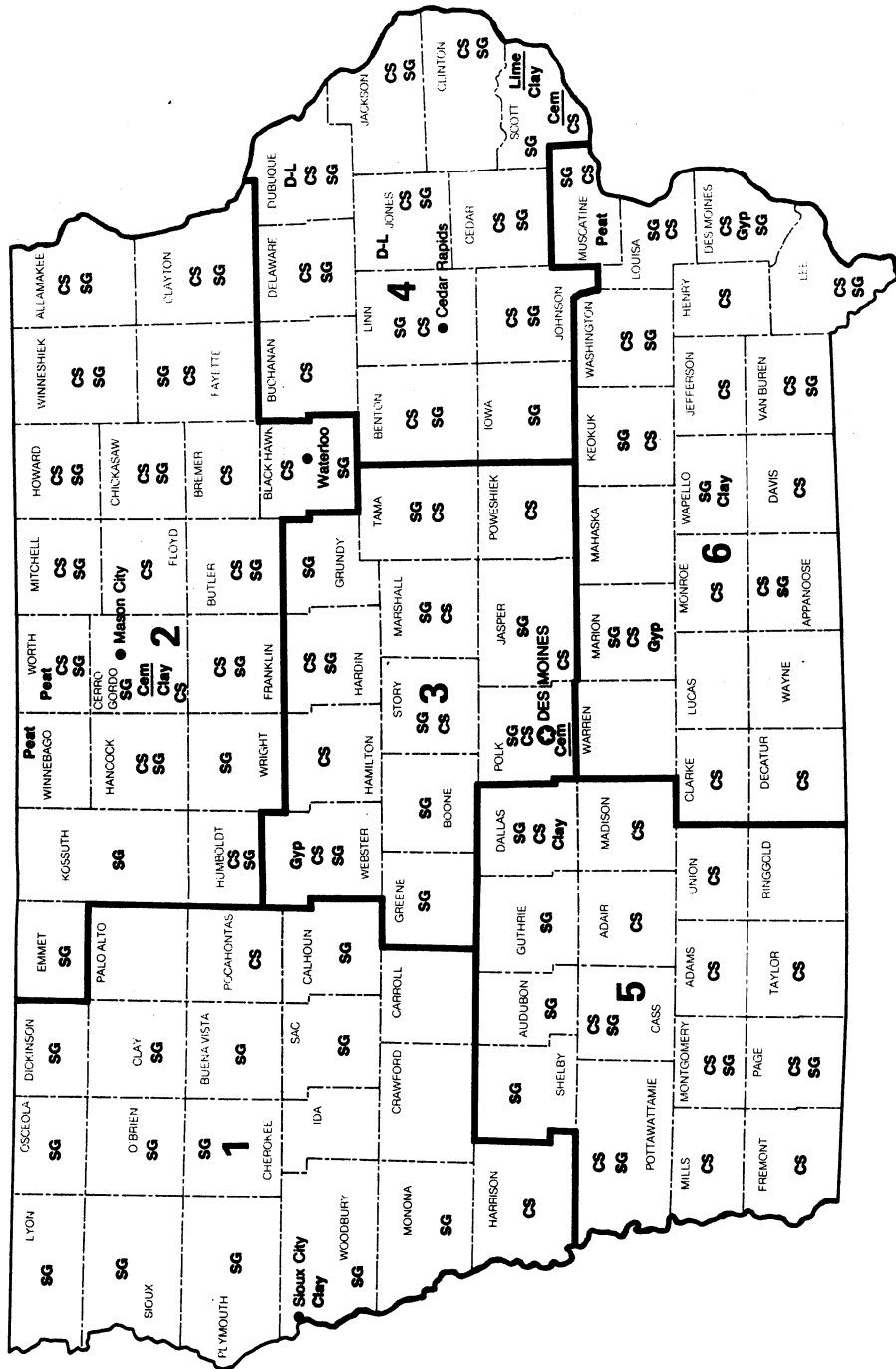


# IOWA



**LEGEND**

- State boundary
- - - County boundary
- Capital
- City
- Crushed stone/sand & gravel districts

**MINERAL SYMBOLS**

- Cam Cement plant
- Clay Clay
- CS Crushed Stone
- D-L Dimension Limestone
- Gyp Gypsum
- Lime Lime plant
- Peat Peat
- SG Sand and Gravel

Principal Mineral-Producing Localities

# THE MINERAL INDUSTRY OF IOWA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Bureau of Mines, U.S. Department of the Interior, and the Geological Survey Bureau, Division of Energy and Geological Resources, Iowa Department of Natural Resources, for collecting information on all nonfuel minerals.

By Donald K. Harrison<sup>1</sup> and Robert M. McKay<sup>2</sup>

The value of nonfuel mineral production in 1990 was at an alltime high of \$316.4 million, a \$33.7 million increase compared with the 1989 value. Portland cement, crushed stone, construction sand and gravel, and gypsum accounted for the majority of the State's mineral production value. Most of these commodities were utilized by the construction industry. Other mineral commodities produced included masonry cement, clays, lime, peat, and dimension stone. Nationally, Iowa ranked 32d in the value of nonfuel mineral production. The State ranked first in crude gypsum output and value and second of 28 States that reported calcined gypsum production.

Construction activity in the State, which depended heavily on the availability of mineral commodities, remained steady in

1990. The number of private and public residential units authorized in the State rose 3.3%, from 7,392 units in 1989 to 7,637 units in 1990. The value of nonresidential construction also rose slightly (up 1.5%), from \$571 million in 1989 to \$579 million in 1990. Value of State road contracts awarded remained relatively unchanged at \$1.07 billion. As a result of the continuing healthy construction activity, demand for portland cement, crushed stone, and construction sand and gravel remained strong. Output of portland cement, the State's leading mineral commodity in terms of value, rose almost 22% in 1990. Estimated output of crushed stone, the State's second leading mineral commodity, rose 4%, while construction sand and gravel production increased almost 17% from 1989 levels.

## EMPLOYMENT

In 1990, the average number of workers<sup>3</sup> employed in the nonfuel minerals industries in Iowa was 2,341. This included 214 workers at underground mines, 1,434 at surface plants, and 693 workers at mills and preparation plants in the State. In addition, about 100 workers were employed in coal mining. In the mineral-dependent construction industry, the annual average number of workers was about 45,000--up from an average of 40,500 in 1989. Stone, clay, and glass product employees averaged 5,800, and primary and fabricated metal product employees numbered about 26,000 workers.

TABLE 1  
NONFUEL MINERAL PRODUCTION IN IOWA<sup>1</sup>

Mineral	1988		1989		1990		
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	
<b>Cement:</b>							
Masonry	thousand short tons	W	W	47	\$4,450	53	\$5,054
Portland	do.	2,029	\$98,930	2,072	\$102,387	2,525	122,466
Clays	metric tons	403,923	1,588	439,323	1,773	423,227	1,376
Gemstones		NA	W	NA	10	NA	14
Gypsum (crude)	thousand short tons	2,047	13,710	2,273	16,884	2,192	14,243
Peat	do.	15	433	W	W	W	W
Sand and gravel (construction)	do.	11,880	36,087	*12,800	*37,800	14,953	46,432
<b>Stone:</b>							
Crushed	do.	*29,200	*128,500	28,049	111,182	*29,000	*118,600
Dimension	short tons	W	*588	15,151	613	W	W
Combined value of other industrial minerals and values indicated by symbol W							
		XX	10,420	XX	7,603	XX	8,185
<b>Total</b>		XX	290,256	XX	282,702	XX	316,370

\*Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data; value included in "Combined value" figure. XX Not applicable.

<sup>1</sup>Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

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## REGULATORY ISSUES

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Early in the year, Iowa joined with 28 other States in suing asbestos companies to have them pay for removing the substance from public buildings. One estimate of ridding the State's public buildings of asbestos was close to \$500 million. Nationally, the price tag was estimated to be as high as \$750 billion. The suit, led by the State of Washington, alleged that the almost 30 defendants (primarily asbestos companies) had the responsibility to provide products that were safe for their intended uses or warn the States of the danger posed by their products.<sup>4</sup>

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## LEGISLATION AND GOVERNMENT PROGRAMS

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A number of bills concerning mineral-related or environmental issues were introduced by the Iowa Legislature in 1990. Topics addressed included sales tax exemptions for precious metals, establishing a mineral severance tax, reorganizing the Department of Natural Resources (DNR), and the issuing of environmental quality control permits by the DNR. All of these bills died while still in committee. However, in February, Senate Resolution 108 was adopted by the State Legislature. This resolution proposes that September 23 be designated "American Coal Miners' Memorial Day" to honor U.S. coal miners. The purpose of the holiday would be to educate school children about the dangers of coal mining and the importance of the Nation's coal industry.

The Iowa Geological Survey Bureau (IGSB) continued work on its Ground Water Vulnerability Mapping Program. Part of the effort involved the continuation of preparing a bedrock topographic map for the State. This tool, scheduled for completion in 1992, will benefit minerals explorationists in addition to ground water researchers. Work also continued on an unconsolidated material thickness map. This project, also expected to be completed in 1992, will be useful to

aggregate producers in identifying new sources of crushed stone. In April, the IGSB published results of the AMOCO Production Co. M.D. Escheid No. 1 deep petroleum test done in Carroll County in 1987. The 17,851-foot deep dry hole was plugged and abandoned but provided information on potential oil source rocks elsewhere in the region.

The Federal Office of Surface Mining, in January, awarded the State \$500,000 in grants for abandoned mine reclamation projects. Part of the grant will be used for a reseeding project at the Rouwenhorst West reclamation project, site of an abandoned mine near Knoxville. About \$334,000 of the money is to be used to defray the cost of administering the State's abandoned mined lands reclamation program.

Under the State Mining and Mineral Resources Research Institute Program Act (Public Law 98-409), the U.S. Bureau of Mines awarded a basic allotment grant of \$145,000 to Iowa State University. The monies were used to perform basic and applied research related to Iowa's mineral resources and for the general benefit of the Nation's mineral industry. Under stipulations of the act, the State of Iowa was required to match this grant on a 2:1 basis.

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## REVIEW BY NONFUEL MINERAL COMMODITIES

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### Industrial Minerals

**Cement.**—Four companies produced cement in Iowa in 1990. Two of the companies produced both portland and masonry cement; two produced only portland cement. The companies that produced both cements were the Davenport Cement Co., which operated a plant near Buffalo, Scott County, and Holnam Inc., Dundee Div. (formerly Northwestern States Portland Cement Co.) at a plant near Mason City. Lehigh Portland Cement Co. also operated a plant near Mason City and produced only portland cement and Monarch Cement Co. ground clinker from its Humboldt, KS, facility at a plant in Des Moines,

Polk County. All of the plants are foreign-owned except for Monarch Cement. Principal markets for the cement were ready-mix concrete companies, concrete product manufacturers, highway contractors, and building material dealers.

In January, Northwestern States Portland Cement Co. stockholders approved the company's acquisition by Dundee Cement Co. Purchase price of the Mason City operations was \$44 million. The Mason City cement plant has an annual capacity of 900,000 short tons of portland and masonry cement. Dundee, with headquarters in Dundee, MI, is a subsidiary of Holderbank Financiere Glarus AG of Switzerland.

In mid-December, Lafarge Corp., Reston, VA, began transactions to acquire various operations of Cementia Holdings AG of Zurich, Switzerland, including the Buffalo, IA, plant of its Davenport Cement Co. subsidiary. Also included in the proposed agreement would be cement manufacturing plants in Illinois and Missouri, more than 30 related ready-mixed concrete and aggregate operations, and 16 terminals along the Mississippi River and its tributaries. Lafarge reportedly would become the second largest cement producer in the Mississippi River region, with a combined capacity of 3.8 million short tons of cement. The transactions were expected to be completed in January 1991.

**Gypsum.**—Iowa ranked first in the Nation in crude gypsum output and second in calcined gypsum production. Crude gypsum was mined by five companies at six mines and processed at five plants. Both underground and open pit mining methods were used. In 1990, production and value of crude gypsum declined 3.6% and 15.6%, respectively, from 1989 levels. Total gypsum calcined in 1990 amounted to 1,505,792 short tons, a 1% increase from that of 1989.

USG Corp.'s Sperry Mine in Des Moines County was a runner-up in the underground nonmetals category for the prestigious Sentinels of Safety award. The annual award is presented by the

Federal Mine Safety and Health Administration and the American Mining Congress to honor the mines in each of six categories that have worked the most employee-hours during the year while suffering no lost-time injuries. In terms of total output, the Sperry Mine was the fifth largest in the Nation. The adjoining Sperry plant ranked fourth in production of 71 calcining plants in the Nation.

**Lime.**—Lime production and value remained unchanged in 1990. Linwood Mining & Minerals Corp., the State's only producer, produced lime at a plant in Scott County. Most of the production was quicklime; a small amount of hydrated lime also was produced.

**Sand and Gravel.**—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only; data for odd-numbered years are based on annual company estimates. This chapter contains actual data for 1988 and 1990 and estimates for 1989.

Iowa construction sand and gravel statistics are compiled by geographical districts. Table 3 presents end-use statistics for the six districts outlined in the State map.

Construction sand and gravel was the third leading mineral commodity produced in the State. In 1990, production and value increased 17% and 23%, respectively. These increases were largely attributable to the continuing strong construction activity in the State. A total of 109 companies mined construction sand and gravel from 172 operations in 65 counties. Leading counties, in order of output, were Polk, Washington, and Sioux. The material was used mainly for concrete aggregate, asphaltic concrete, road base and coverings, and fill.

**Stone.**—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only; data for even-numbered years are based on annual company estimates. This chapter contains estimates for 1988 and 1990 and actual data for 1989.

**Crushed.**—Crushed stone, the second leading mineral commodity produced in the State, accounted for 37% of the State's nonfuel mineral value. Limestone-dolomite was the only type of crushed stone produced in the State. Estimated 1990 production and value increased 3% and 7%, respectively. Major uses were for road base, cement manufacturing, and agricultural limestone.

In February, Kuhlman Construction Co., Colesburg, received the Recognition of Excellence for Outstanding Achievement award, the highest safety award presented by the Iowa Limestone Producers Association. Employees of Kuhlman, a construction aggregate producer, had worked a total of 20 years without incurring a single lost-time accident.

**Dimension.**—Dimension limestone was produced by one company in Jones County. Most of the stone was sold for irregular-shaped stone, veneer, sawed blocks, and flagging.

**Other Industrial Minerals.**—Four companies mined clay in 1990. Production and value decreased 4% and 22%, respectively, from 1989 levels. The clay was used primarily in manufacturing portland cement and for common brick. The estimated value of gem stones, collected by amateur collectors and rockhounds, was \$14,000 in 1990. Two companies produced peat from bogs in Muscatine and Worth Counties. The peat was used primarily for general soil improvement and as a seed inoculant. National Gypsum Co. expanded crude perlite, received from out-of-State, at two plants in Webster County. The expanded perlite was used primarily for plaster aggregate.

## Metals

Several mineral commodities produced in other States were processed or refined in Iowa. Aluminum Co. of America (Alcoa) operated an aluminum rolling complex near Davenport. In 1990, a new rolling mill was started up at the plant.

The new rolling mill was part of a \$1.2 billion plant and equipment program that began at the complex in 1983. The Davenport Works, which employs almost 2,800 workers, produces more than 600 million pounds of aluminum per year and generates \$1 billion in sales revenues annually. The primary markets served by the plant are the aerospace, automotive, and light sheet metal industries.

Quanex Corp., a Houston, TX, metals firm, announced plans to build a \$60 million aluminum minimill in Davenport. The new mill will be adjacent to the company's existing Nichols-Homeshield aluminum operations. The proposed plant will melt aluminum scrap and process it into sheets of aluminum for the homebuilding industry. The expected plant completion date is mid-1992.

Keokuk Ferro-Sil Inc. produced silvery pig iron and 50% ferrosilicon at a plant in Keokuk. The plant was the Nation's only producer of silvery pig iron, which is used to manufacture steel alloys.

PMX Industries, a subsidiary of Poongsan Corp. of Seoul, South Korea, continued construction of its new 80,000-ton-per-year copper, brass, and specialty steel mill at Cedar Rapids. In October, the U.S. Congress, as part of an appropriations bill, attached a provision granting the PMX operation Free Trade Zone Status. This status grants the facility special import benefits, and, for the first time, circumvents the zone creation process overseen by the U.S. Commerce Department.

<sup>1</sup>State Mineral Officer, U.S. Bureau of Mines, Pittsburgh, PA. He has 17 years of mineral-related experience and has covered the mineral activities in Iowa for the past 2 years. Assistance in the preparation of the chapter was given by Wanda West and Sally J. Stephenson, editorial assistance.

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<sup>3</sup>"Average number of workers" is a summary of the average number of persons working at individual mining establishments during periods (not necessarily continuous) of active operations in 1990.

<sup>4</sup>Des Moines Register. Iowa, 28 States Sue Asbestos Companies. Jan. 31, 1990, p. 3M.

**TABLE 2**  
**IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1990, BY MAJOR USE CATEGORY**

Use	Quantity (thousand short tons)	Value (thousands)	Value per ton
Concrete aggregates (including concrete sand)	2,098	\$7,321	\$3.49
Plaster and gunite sands	47	209	4.45
Concrete products (blocks, bricks, pipe, decorative, etc.)	101	378	3.74
Asphaltic concrete aggregates and other bituminous mixtures-	417	1,264	3.03
Road base and coverings <sup>1</sup>	1,704	4,116	2.42
Fill	707	1,381	1.95
Snow and ice control	88	313	3.56
Railroad ballast	W	W	4.33
Other <sup>2</sup>	56	448	8.00
Unspecified: <sup>3</sup>			
Actual	7,857	26,310	3.35
Estimated	1,879	4,693	2.50
Total <sup>4</sup> or average	14,953	46,432	3.11

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

<sup>1</sup>Includes road and other stabilization (cement).

<sup>2</sup>Includes roofing granules.

<sup>3</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.

<sup>4</sup>Data may not add to totals shown because of independent rounding.



TABLE 4  
PRINCIPAL PRODUCERS

Commodity and company	Address	Type of activity	County
<b>Cement:</b>			
Davenport Cement Co., a subsidiary of Cementia Holdings AG. <sup>1</sup>	Box 4288 Davenport, IA 52801	Quarry, clay pit, plant	Scott.
Lehigh Portland Cement Co., a subsidiary of Heidelberger Zement AG. <sup>1</sup>	Box 1882 Allentown, PA 18105	do.	Cerro Gordo.
Monarch Cement Co. Holnam Inc., Dundee Div.	Humboldt, KS 66748 Box 1008 Mason City, IA 50401	Plant Quarry and plant	Polk. Cerro Gordo.
<b>Clays:</b>			
Midland Brick Co.	Box A Redfield, IA 50233	Pits and plants	Dallas and Wapello.
Sioux City Brick & Tile Co.	Box 807 Sioux City, IA 51102	do.	Dallas and Woodbury.
<b>Gypsum:</b>			
Celotex Div., a subsidiary of Jim Walter Corp.	4010 Boy Scout Blvd. Tampa, FL 33607	Open pit mine and plant	Webster.
Georgia-Pacific Corp.	133 Peachtree St., NE Atlanta, GA 30303	do.	Do.
Kaser Corp.	Box 3569 Des Moines, IA 50322	Underground mine and plant	Marion.
National Gypsum Co.	2001 Rexford Rd. Charlotte, NC 28211	Open pit mine and plant	Webster.
USG Corp.	101 South Wacker Dr. Chicago, IL 60606	Underground mine and plant Open pit mine and plant	Des Moines. Webster.
<b>Lime:</b>			
Linwood Mining & Minerals Corp.	Route 2 Davenport, IA 52804	Plant	Scott.
<b>Peat:</b>			
Colby Pioneer Peat Co.	Box 8 Hanlontown, IA 50444	do.	Worth.
Pikes Peat Co.	Route 6, Box 21 Muscatine, IA 52761	do.	Muscatine.
<b>Perlite (expanded):</b>			
National Gypsum Co.	2001 Rexford Rd. Charlotte, NC 28211	do.	Webster.
<b>Sand and gravel (construction):</b>			
Acme Fuel & Material Co.	Route 5, Box 34 Muscatine, IA 52761	Pit and plant	Muscatine.
Basic Materials Corp.	Box 2277 Waterloo, IA 50704	Pits and plants	Black Hawk and Waterloo.
A. Finley Co.	Box 406 Harlan, IA 51537	do.	Cass, Dallas, Montgomery, Page, Pottawattamie, Shelby.
Hallett Construction Co.	Box 13 Boone, IA 50036	do.	Audubon, Boone, Buena Vista, Cherokee, Dallas, Greene, Marshall, Osceola, Polk, Sac, Story.
Martin Marietta Aggregates,	Box 30013 Raleigh, NC 27622	do.	Various (20 counties).
Stevens Sand & Gravel Co. Inc.	Route 4, Box 35 Iowa City, IA 52240	do.	Johnson and Washington.

See footnotes at end of table.

TABLE 4-Continued  
**PRINCIPAL PRODUCERS**

Commodity and company	Address	Type of activity	County
<b>Stone (limestone, 1989):</b>			
<b>Crushed:</b>			
Kaser Corp.	7200 Hickman Rd. Des Moines, IA 50322	Underground mines, quarries, plants	Des Moines, Jasper, Keokuk, Mahaska, Marion, Monroe, Washington.
Martin Marietta Aggregates, Central Div.	Box 30013 Raleigh, NC 27622	do.	Clarke, Decatur, Linn, Madison, Marshall, Polk, Story.
P. Niemann Construction Co.	106 North Maple St. Sumner, IA 50674	Quarries and plants	Black Hawk, Bremer, Buchanan, Butler, Chickasaw, Fayette, Winneshiek.
River Products Co.	220 Savings and Loan Bldg. Iowa City, IA 52240	Underground mine, quarries, plants	Johnson, Louisa, Washington.
Schildberg Construction Co. Inc.	Box 358 Greenfield, IA 50849	Quarries and plants	Adair, Adams, Cass, Madison, Pottawattamie, Union.
Vulcan Materials Co.	5300 North Park Place NE Box 1428	do.	Benton, Buchanan, Clinton, Jackson, Johnson, Jones, Linn, Tama.
<b>Dimension:</b>			
Weber Stone Co. <sup>2</sup>	Route 1 Anamosa, IA 52205	Quarry and plant	Jones.

<sup>1</sup>Also clay.

<sup>2</sup>Also crushed limestone.