

THE MINERAL INDUSTRY OF ILLINOIS

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

In 1997, Illinois ranked 17th among the 50 States in total nonfuel mineral production value,¹ according to the U.S. Geological Survey (USGS). The State had ranked 16th for the previous 7 years. The estimated value for 1997 was \$880 million, a 4% increase from the \$846 million achieved in 1996. This followed a 2.2% increase from 1995 to 1996 (based on final 1996 data). The State accounted for more than 2% of the U.S. total nonfuel mineral production value.

Illinois' total nonfuel mineral production value in 1997 resulted from the production of industrial minerals. In terms of nonfuel mineral value, crushed stone was the State's leading commodity, accounting for 44% of the total, followed by portland cement with 21%, and construction sand and gravel with 18%. A 7%, or \$25 million, increase in the estimated value of crushed stone, and an 11%, or \$16 million, increase in construction sand and gravel led the State's increase in total nonfuel mineral production value (*table 1*). There were no significant drops in the values of any of the State's nonfuel mineral values. In 1996, less than \$10 million decreases in each of fluorspar, lime, and zinc were more than compensated for by the combined increases of crushed stone, portland cement, and tripoli, resulting in the year's overall increase (*table 1*).

Compared with USGS estimates of the quantities of minerals produced in the other 49 States, Illinois remained first in industrial sand and gravel and tripoli in 1997, third in peat, fourth in fuller's earth, fifth in crushed stone, seventh in lime, and eighth in portland cement. The State rose from ninth to eighth in gemstones (by value) and dropped from seventh to eighth in the production of construction sand and gravel. Raw steel was produced in Illinois, but it was processed from materials obtained from other domestic and foreign sources. Illinois remained fourth in the Nation in the manufacture of raw steel with an estimated output of 7.4 million metric tons (8.2 million short tons), according to the American Iron and Steel Institute.

The following narrative information was provided by the

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

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

Illinois State Geological Survey² (ISGS). On November 14, 1997, an exemption from Illinois Sales and Use Taxes (P.A. 90-529) became effective for all machinery and equipment required to produce noncoal minerals. The tax exemption includes the purchase of all machinery and equipment used for mineral exploration, mining, off-highway hauling, mineral processing, maintenance, and reclamation. It also provides that "equipment purchased for lease" is tax exempt. Probably the most significant provision is that the exemption extends to replacement parts and equipment. This tax exemption will help support the vitality and growth of construction aggregate and other mineral producing industries in Illinois. It gives them the same tax benefits enjoyed by coal and oil producers, farmers, graphic arts companies, and other key parts of the State's economy. It also gives them tax breaks similar to ones enjoyed by competing producers in adjacent States, such as Indiana, where a broader tax break is given for aggregate and other mineral production machinery and equipment.

The construction aggregate industry had a productive year in 1997 and maintained a strong base for future productivity. In the Chicago metropolitan area (northeastern Illinois), Vulcan Materials Co. successfully replaced production from its old Joliet Quarry with that of the new Laraway Quarry, a few miles farther south of Joliet. An early emphasis on good community relations greatly assisted this accomplishment. In order to supply the booming construction market in Lake County, Vulcan constructed rail yards in the county and is now shipping crushed stone in from Wisconsin on unit trains. In Kankakee County, the company completed construction of its Manteno lime plant and idled its Momenca Quarry. Also in Kankakee County, a closed operation, the Niner Quarry, was reopened in 1997 by a new company, the Bedrock Stone Co.

McHenry Co., located on the northeastern corner of the metropolitan Chicago area, contains some of the largest and highest quality gravel deposits in the State. Gravel mining was well established early this century when the railroad was the only way to get material to market. In recent years, the county has been experiencing unprecedented real estate development, which is in part responsible for the strong negative attitude that exists today against the mining industry. It is very difficult to open new operations in such an environment. Over the last couple of years, Meyer Material Co. managed to increase its production by acquiring three existing operations; Griebel Sand and Gravel, Harvard Ready Mix, and Powell Sand and Gravel. At the same time, they improved their reserve position by purchasing or leasing properties adjacent to the new acquisitions. The company has also been working on its public image by explaining its plans

²The State contact, John H. Masters, Senior Staff Geologist with the Illinois State Geological Survey authored the text of information submitted by that agency.

to its neighbors in advance of any new activity.

A northern Illinois company that experienced significant growth in 1997, often by purchasing smaller operations, is the Prairie Group. The Prairie Group purchased four sand and gravel plants in northeastern Illinois from Road Materials Corp., including one plant on the south side of Elgin. In cooperation with the city, a quarry has been developed by the Prairie Group in the stone that was found below their sand and gravel operation. As mining continues, the 19-hectare site is being progressively reclaimed into a public recreation center with many ball fields and a large lake. Prairie has purchased three quarries from Markgraf Materials: two in Livingston County and one in Iroquois County. They purchased the North-Central Materials quarry in Kankakee County and have acquired adjacent property. At their Dixon-Marquette Cement operation in Lee County, they have built a modern processing plant on the floor of their old cement-rock quarry that is capable of either supplying limestone to the cement manufacturing plant or producing portland cement-grade aggregate from their dolomite reserves. They have also acquired a sand and gravel operation and ready-mix plants in central Illinois.

In northwestern Illinois, crushed stone and sand and gravel producers are in the process of closing their smaller and more isolated operations and increasing production at their more economic sites. Also, a few smaller companies have been bought by bigger ones that are better equipped to cope with economic and environmental problems. These trends are accompanied by the State-wide trend over the last few years of less State and local money being available for road, bridge, and other types of infrastructure construction and maintenance projects. One of the larger companies in the region, Moline Consumers Co., has initiated a long term program of successively replacing aggregate production plants built in the late 1950's with more efficient, fully automated plants at its Allied, Cleveland, and Midway quarries. By purchasing surrounding properties over the years, these sites have large reserves that, like the new plants, will be developed using the latest environmental and technological methods. Because the company expects production from these three quarries to increase significantly, it is concerned about increasing costs and environmental and safety factors related to increasing truck traffic. Therefore the company is taking a new look at rail and barge transportation of aggregates, especially to more distant markets. This trend toward fewer, but bigger operations tends to favor the development of rock quarries over sand and gravel pits in northwestern Illinois. In this area, relatively thick limestone and dolomite rock units are present near the surface. These rock units can be quarried at favorable sites for many more years, with fewer product quality and environmental problems than are encountered at most sand and gravel sites in this area.

Martin Marietta Aggregates is continuing to move back into

the Illinois construction aggregates industry. Its River Central District has opened a new office in Paducah, KY. It will manage the three quarries the company acquired in 1997 with the purchase of Hardin County Materials in the southeastern-most part of Illinois in Hardin County. Included in the purchase was Rock Dust Products, a company that grinds locally mined limestone to a powder. This "dust" is commonly used as a safety precaution by spraying it on the interior surfaces of underground coal mines in order to suppress potentially explosive coal dust. The River Central District will also manage the newly purchased Kaskaskia Stone Co. (Stotz Mine), acquired from Perry County Stone Co. of Missouri. It is a horizontal adit mine in the east bluff of the Mississippi River valley, located in Randolph County about 129 kilometers south of East St. Louis. Other adit-type limestone mines in the bluffs of the same region have been idled or closed in recent years due to market and transportation problems. Mines affected include: the Valmeyer Mine of the Columbia Quarry Co., the Solvay Mine of Bluff City Materials, Inc., and in 1997, the Chester Mine of Midland Terminal Co.

Illinois once again led the nation in 1997 in the production of silica sand, mainly due to the productivity of Unimin Corp., U.S. Silica Co., and Wedron Silica Co. These companies in northern Illinois (La Salle and Ogle Counties) mine a high-purity quartz sandstone. More silica sand is consumed by the glass manufacturing industry than any other industry. Several years ago, Manito Investment Co. added a quartz-feldspar glass sand to its line of foundry sand products. The company mines surficial sand dune deposits in central Illinois (Mason County). The quartz-feldspar product was sold to Hillsboro Glass Co. (Montgomery County) for the manufacture of amber glass bottles, however Manito lost that market when Hillsboro closed its glass plant in 1997.

Although fluorspar is no longer mined commercially in southeastern Illinois, Hastie Mining and Trucking Co., a quarry company in Hardin County, continues to lease Ozark-Mahoning Co.'s mineral drying and bagging facilities in Rosiclare. Hastie processes fluorspar purchased from the National Defense Stockpile.

The new American Fluorite Museum in Rosiclare, about 2 kilometers north of the Ohio River in Hardin Co., is now open on a limited time basis. Tours of the facilities are being given. The museum is on the grounds of the former Rosiclare Lead and Fluorspar Mining Co. The office building has been restored, with a gift shop and displays inside. The smoke stack, processing plant, and flotation mill no longer exist. The hoist house and other buildings are being restored. Future plans include the possibility of exposing a portion of the vein at the surface, providing visitors an opportunity to see a part of one of the largest fissure-vein fluorspar deposits in the United States.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,560	169,000	2,620	181,000 e/	2,670	189,000 e/
Clays:						
Common	503	1,220	115	736	128	642
Fuller's earth	332	W	330	W	330	W
Fluorspar metric tons	51,400	W	8,180	W	NA	W
Gemstones	NA	269	NA	890	NA	1,200
Sand and gravel:						
Construction	36,100	147,000	34,600	144,000	37,500	160,000
Industrial	4,410	67,500	4,460	66,400	4,490	65,900
Stone, crushed	61,400	335,000	66,500	364,000	70,000	389,000
Combined value of barite (1995), copper (1995-96), lead (1995-96), lime, peat, silver (1995-96), tripoli (1995-96), zinc, (1995-96) and values indicated by symbol W	XX	107,000	XX	89,100	XX	74,500
Total	XX	828,000	XX	846,000	XX	880,000

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

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

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

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

Kind	1995				1996			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	134 r/	53,700 r/	\$296,000 r/	\$5.50 r/	127	57,700	\$319,000	\$5.52
Dolomite	21 r/	7,690 r/	39,700 r/	5.17 r/	19	8,800	45,000	5.11
Total	XX	61,400	335,000	5.46	XX	66,500	364,000	5.47

r/ Revised. XX Not applicable.

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

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

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	783	\$3,910	\$5.00
Riprap and jetty stone	566	4,270	7.54
Filter stone	146	864	5.92
Other coarse aggregate	270	1,600	5.93
Coarse aggregate, graded:			
Concrete aggregate, coarse	6,830	37,600	5.50
Bituminous aggregate, coarse	4,830	29,600	6.12
Bituminous surface-treatment aggregate	1,640	10,200	6.21
Railroad ballast	557	2,930	5.26
Other graded coarse aggregate	289	1,550	5.36
Fine aggregate (-3/8 inch):			
Stone sand, concrete	507	2,160	4.27
Stone sand, bituminous mix or seal	306	1,300	4.25
Screening, undesignated	1,040	4,290	4.13
Other fine aggregate	11	72	6.55
Coarse and fine aggregates:			
Graded road base or subbase	9,630	42,900	4.46
Unpaved road surfacing	3,120	14,600	4.67
Crusher run or fill or waste	380	1,660	4.36
Other construction materials 3/	1,330	7,240	5.44
Agricultural:			
Agricultural limestone	2,500	11,100	4.45
Poultry grit and mineral food	78	1,470	18.87
Other agricultural uses	W	W	2.80
Chemical and metallurgical:			
Cement manufacture	2,360	9,080	3.84
Flux stone	W	W	5.52
Chemical stone	527	2,610	4.96
Sulfur oxide removal	W	W	3.55
Special:			
Mine dusting or acid water treatment	W	W	11.25
Asphalt fillers or extenders	W	W	5.17
Other fillers or extenders	W	W	53.91
Unspecified: 4/			
Actual	18,000	97,300	5.39
Estimated	9,950	50,000	5.03
Total	66,500	364,000	5.47

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

1/ Includes dolomite, limestone, and limestone-dolomite.

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

3/ Includes other coarse and fine aggregates.

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

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

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:								
Coarse aggregate (+1 1/2 inch) 2/	891	4,770	229	1,660	282	2,270	364	1,950
Coarse aggregate, graded 3/	W	W	W	W	W	W	2,870	14,600
Fine aggregate (-3/8 inch) 4/	W	W	W	W	W	W	158	671
Coarse and fine aggregate 5/	6,980	30,500	725	3,350	3,500	17,400	3,090	14,100
Other construction materials	8,570	48,500	271	1,840	4,310	25,000	-	--
Agricultural 6/	(7/)	(7/)	(7/)	(7/)	932	4,930	819	3,660
Chemical and metallurgical 8/	(7/)	(7/)	-	-	(7/)	(7/)	(7/)	(7/)
Special 9/	-	--	(7/)	(7/)	(7/)	(7/)	(7/)	(7/)
Unspecified: 10/								
Actual	11,400	59,400	3,230	20,800	1,010	6,390	2,440	10,700
Estimated	3,480	17,500	1,320	6,470	1,520	7,600	3,620	18,400
Total	32,700	166,000	6,640	60,000	13,200	70,900	14,000	67,000

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

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

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

3/ Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other coarse aggregate

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

5/ Includes graded road base or subbase, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregates.

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

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

8/ Includes cement manufacture, chemical stone for alkali works, flux stone, and sulfur oxide removal.

9/ Includes asphalt fillers or extenders, mine dusting or acid water treatment, and other fillers or extenders.

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

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

Use	Quantity (thousand metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	7,390	\$28,100	\$3.80
Plaster and gunite sands	303	1,120	3.70
Concrete products (blocks, bricks, pipe, decorative, etc.)	855	3,760	4.39
Asphaltic concrete aggregates and other bituminous mixtures	1,560	6,150	3.93
Road base and coverings 2/	5,520	30,300	5.49
Fill	3,260	11,200	3.45
Snow and ice control	34	169	4.97
Other miscellaneous uses 3/	246	1,420	5.76
Unspecified: 4/			
Actual	10,800	44,400	4.10
Estimated	4,560	17,500	3.84
Total or average	34,600	144,000	4.17

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

2/ Includes road and other stabilization (cement).

3/ Includes filtration and roofing granules.

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

TABLE 6
ILLINOIS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1996,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	4,650	18,800	921	2,920	1,770	7,110	1,210	4,140
Asphaltic concrete aggregates and road base materials 3/	4,730	26,000	533	2,140	1,240	6,080	567	2,200
Fill	1,820	6,230	312	915	926	3,540	207	558
Snow and ice control	16	78	--	--	18	90	(4/)	(4/)
Other miscellaneous uses 5/	121	702	44	345	80	371	--	--
Unspecified: 6/								
Actual	8,860	38,400	653	3,030	982	2,100	347	877
Estimated	2,390	10,600	687	2,230	836	2,180	645	2,490
Total	22,600	101,000	3,150	11,600	5,860	21,500	2,980	10,300

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

2/ Includes plaster and gunite sands.

3/ Includes road and other stabilization (cement).

4/ Less than 1/2 unit.

5/ Includes filtration and roofing granules.

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