

SAND AND GRAVEL, CONSTRUCTION

By Wallace P. Bolen

Construction sand and gravel is one of the most accessible natural resources and a major basic raw material used mostly by the construction industry. Despite the low value of its basic products, the construction sand and gravel industry is a major contributor to and an indicator of the economic well-being of the Nation.

A total of 952 million metric tons of construction sand and gravel was produced in the United States in 1997; this was a 4.2% increase compared with that of 1996. After a decrease in production in 1991, sand and gravel production increased for the following 6 years, an indication of the continuous strong demand for construction aggregates in the United States. (*See table 1.*)

Sand and gravel production increased during 1997 owing to continued growth in construction activity. Total construction activity advanced by 5% to \$346 billion. This follows a 6% increase in 1996 and represents the sixth straight year of moderate increases for the construction industry. Activity increased in all three major categories: residential building, nonresidential building, and nonbuilding construction (Pit and Quarry, 1998). The construction industry is by far the largest consumer of sand and gravel.

In January 1998, the U.S. Geological Survey (USGS) mailed 7,221 construction sand and gravel surveys to operations throughout the United States. In 1997, 5,288 operations were active; 1,672 operations were idle; and 261 operations were either reported as or assumed to be permanently shut down. A small number of the idle sand and gravel operations reported the recycling of asphalt and portland cement concrete but no sand and gravel mining. In 1997, of the 5,288 active operations surveyed, 3,915 or 74%, responded to the USGS. These operations contributed 80.3% of the 952 million tons produced in 1997. The 5,288 operations were run by 3,642 companies with 7,658 active sand and gravel pits.

Foreign trade of construction sand and gravel remained minor in 1997. Exports increased more than 14% to 1.7 million tons, but the value decreased by about 4% to \$22.3 million, when compared with the 1996 figures.

Imports increased about 28% to 1.61 million tons, and the value increased over 14% to \$18.1 million. Because imports and exports are small, domestic apparent consumption of construction sand and gravel, defined as production for consumption (sold or used) plus total imports minus total exports, is essentially equal to the U.S. production of 952 million tons.

Legislation

The Transportation Equity Act for the 21st Century was expected to be passed in 1998. The act was expected to appropriate \$205 billion through 2003, a 44% increase compared to the previous Federal transportation legislation, known as the

Intermodal Surface Transportation Efficiency Act.

The Balanced Budget Act of 1997 (Public Law 105-33) was signed by the President on August 5, 1997. The law included a provision to transfer the entire 4.3 cents gas tax to the Highway Trust Fund and redirect the revenue from the 4.3 cents aviation fuel tax to the Aviation and Airway Trust Fund. It was estimated that as a result of this provision, about \$6 to \$7 billion annually will be transferred into the Highway Trust Fund.

Production

Of the four major geographic regions, the West again led the Nation in the production of construction sand and gravel with 351 million tons, or 37% of the U.S. total. It was followed by the Midwest with 299 million tons, or 32%; the South with 202 million tons, or 21%; and the Northeast with 100 million tons, or 10%. Compared with that of 1996, production increased in all the major geographic regions except the South, where production was virtually unchanged. (*See table 2.*)

Of the nine geographic divisions, the East North Central led the Nation in the production of construction sand and gravel with 198 million tons, or 20.7% of the U.S. total. It was followed by the Pacific with 187 million tons, or 19.6%, and the Mountain with 164 million tons, or 17.1%. (*See table 2 and figure 1.*) Compared with that of 1996, production increased in every division except New England, where production was down 2.7%. Production increases, in descending order, by division, were as follows: the Pacific, 10.9%; the Middle Atlantic, 7.0%; the West North Central, 4.7%; the Mountain, 3.9%; the South Atlantic, 3.5%; the East North Central, 2.8%; the West South Central, 2.6%; and the East South Central, 1.1%.

A review of the production by size of operation indicates that 37.6% of the construction sand and gravel produced in 1997 came from 1,739 operations reporting between 100,000 and 499,999 tons per year, 24.7% came from 381 operations reporting between 500,000 and 999,999 tons per year, and 26.7% came from 170 operations reporting more than 1,000,000 tons per year. At least 4.9%, or 274, of the operations active in 1996 were idled or shut down during 1997. (*See table 8.*)

The estimated production by quarters for 1997 indicates that most of the construction sand and gravel in the United States was produced in the third quarter, followed by the second and the fourth quarters. (*See table 3.*) Estimated production by each quarter was also available for most States. (*See table 5.*)

Construction sand and gravel was produced in 1997 in every State. The 10 leading States were, in descending order of tonnage, California, Michigan, Texas, Ohio, Washington, Arizona, Minnesota, Wisconsin, Illinois, and Utah. Their combined production represented 52% of the national total. Compared with that of 1996, production increased in 27 States, decreased in 20,

and stayed about the same in 3. Of the top 10 States, production increased in 7 and decreased in 3. (*See table 4.*)

Limited information about the production of construction sand and gravel in foreign countries may be found in the USGS "Minerals Yearbook, Volume III, Area Reports: International." For nonreporting countries, estimates of sand and gravel and crushed stone outputs can be based on such indirect sources as the level of cement consumption.

Acquisitions and Consolidations

In an industry with thousands of operating companies, status and ownership changes are many. Although it is not possible to review them all, a few noteworthy events follow.

Martin Marietta Materials acquired from CSR America the Ohio and Indiana operations of American Aggregates Corp. The acquisition includes more than 25 production facilities with an annual capacity of more than 25 million tons (Rock Products, 1997c). Martin Marietta also announced its acquisition of Nuckolls Aggregates, including six sand and gravel pits in north central Iowa (Rock Products, 1997e).

Additionally, Martin Marietta purchased the remaining interest in Kaser Corp., after acquiring its initial 50% interest in 1992. Kaser has two underground mines, seven surface quarries, and four sand and gravel operations in southeast Iowa (Rock Products, 1997a). Martin Marietta bought a sand and gravel operation in Martinsville, IN, about 20 miles south of Indianapolis, that it had been operating under a lease since 1991. The company doubled shipments during that time to more than 500,000 tons per year (Rock Products, 1997b). Martin Marietta also acquired controlling interest in R&S Haulers and Distributors, a sand and gravel producer in New Albany, MS. The company operated one plant with an annual capacity of 900,000 tons and serves northeast Mississippi and parts of Alabama (Rock Products, 1997d).

French company LaFarge SA purchased Redland Plc., making LaFarge the largest producer of aggregates in the world (Rock Products, 1998a). The purchase included Redland's U.S. operations. In 1996, Redland was the fourth largest producer of sand and gravel in the United States while LaFarge ranked 36th. LaFarge is the fourth largest producer in the United States for 1997.

Phoenix Associates Land Syndicate, a real estate development company, announced its acquisition of the Murphy Sand and Gravel operation in Pearl River, LA. The company said it is in the process of securing additional equipment to increase sand and gravel production from the site (Rock Products, 1997f).

U.S. Aggregates acquired A-T Asphalt, Inc. and Southwest Stone, Inc. in Washington County, UT, in the States' southwest corner. Southwest Stone has a sand and gravel operation serving St. George, UT (Rock Products, 1997g).

Pioneer Concrete of America, through its Pioneer Concrete of Arizona subsidiary, acquired Cashway Concrete and Materials in Phoenix. Cashway operates four concrete plants and two sand and gravel plants (Rock Products, 1997a).

Expanding its Oldcastle Materials Group's western division, CRH acquired CPM Development Corp., Spokane, WA. CPM has sand and gravel, asphalt, ready-mix, block, and prestressed concrete operations serving eastern Washington, northern Idaho,

and northern Oregon (Rock Products, 1997a).

Dallas-based TXI expanded its presence in the aggregates industry in the Rocky Mountain region with the purchase of Western Aggregates of Boulder, CO. Western Aggregates produces expanded clay and shale in Colorado and sand and gravel in the Denver metropolitan area (Rock Products, 1998b).

Consumption

Construction sand and gravel reported by producers to the USGS is actually material that was "sold or used" by the companies and is defined as such. Stockpiled production is not reported until it is sold or consumed by the producer. Because no consumption surveys are conducted by the USGS for sand and gravel, the "sold or used" tonnage is assumed to represent the amount produced for domestic consumption and export. Because some of the construction sand and gravel producers did not report a breakdown by end use, their total production is reported under "Unspecified uses, actual." The estimated production of nonrespondents is reported under "Unspecified uses, estimated."

Of the 952 million tons of construction sand and gravel produced in 1997, 397 million tons, or 41.7% of the total, was for unspecified uses. Of the remaining 556 million tons, 42.8% was used as concrete aggregates; 23.3% for road base and coverings and road stabilization; 13.4% as asphaltic concrete aggregates and other bituminous mixtures; 13.0% as construction fill; 1.8% for plaster and gunite sands; 1.7% for concrete products such as blocks, bricks, pipes, etc.; and the remainder for snow and ice control, railroad ballast, roofing granules, filtration, and other miscellaneous uses. (*See table 6.*)

To provide a more accurate estimation of the consumption patterns for construction sand and gravel, the "Unspecified uses" are not included in the aforementioned percentages. It is recommended that in any marketing or use pattern analysis, the quantities included in "Unspecified uses" be distributed among the reported uses by applying the previous percentages.

A review of consumption by geographic regions and divisions indicates that 60% or more of the sand and gravel consumed in the South region was for concrete aggregate but in all other regions less than 45% of the sand and gravel was consumed by this market.

The plaster and gunite market consumed nearly 5% of the sand and gravel from the South Atlantic division, about 2.5% in the West region, and much less than 2% in all the remaining divisions.

About 1% or less of the sand and gravel consumed in the New England, the West North Central, the West South Central, and the Mountain divisions was used for concrete products. In the remaining five divisions, between 2% and 4% of the sand and gravel was consumed for concrete products.

Asphalt concrete consumed between 12% and 17.5% in the Midwest and West regions as well as in the Middle Atlantic and East South Central divisions. In the remaining three divisions, this market consumed less than 10%.

About 37% of the sand and gravel consumed in the Mountain and West North Central divisions was used for road base and coverings. This market consumed between 21% and 26% in the New England, East North Central, and Pacific divisions. In the

East South Central and Middle Atlantic divisions, about 15% of the sand and gravel consumed was for road base and coverings, while the South Atlantic and West South Central divisions consumed about 7.5% for this market.

Over 20% of the sand and gravel produced in the New England division was consumed for fill. In the East South Central division, less than 4% of the sand and gravel was consumed for fill. The remaining divisions consumed between 10% and 16.5% for this market. (See table 7.)

Additional information regarding production and/or consumption of construction sand and gravel by major uses in each State and the State districts may be found in the USGS "Minerals Yearbook, Volume II, Area Reports: Domestic."

Recycling

The aggregates industry has been involved with recycling for several decades. Recently, recycling has become more important to aggregate producers, and the number of aggregate companies that are recycling has been increasing. Recycling in this industry generally refers to the crushing, screening, and reuse of cement and asphalt concretes. In this annual report, the common term "asphalt" is equivalent to "asphalt concrete" and the common term "concrete" is equivalent to "cement concrete". Aggregate and related asphalt and ready-mix companies are often involved at construction projects where they collect and reuse the materials at the site. Others collect materials from construction companies that haul the materials to the recycler. The annual survey of construction sand and gravel producers now collects information on recycling of cement and asphalt concrete by sand and gravel companies. No information on recycling of these materials by the construction or demolition companies is collected by the USGS.

Asphalt Concrete.—A total of 3.43 million tons of asphalt concrete valued at \$13.9 million was recycled by 185 companies in 38 States. This volume represents a 8.3% decrease compared with that of 1996. (See tables 14 and 15.) Leading States were, in descending order of tonnage recycled, California, Minnesota, Michigan, Wisconsin, and Washington. Leading companies were, in order of volume produced, Lehman Brothers Co., Granite Construction Co., Premier Aggregates, Inc., Kalin Construction Co., Inc., and Calmat Co.

Cement Concrete.—A total of 4.15 million tons of cement concrete valued at \$17.4 million was recycled by 170 companies in 33 States. This volume represents a 3% increase compared with that of 1996. (See tables 14 and 16.) Leading States were, in descending order of tonnage recycled, California, Minnesota, New York, Michigan, and Ohio. Leading companies were, in order of volume produced, Premier Aggregates, Inc.; Broad Hollow Estates, Inc.; Danners, Inc.; C&M Aggregates Ltd.; and Kalin Construction Co., Inc.

Transportation

Information regarding the method of transportation of construction sand and gravel from the pit or processing plant to the first point of sale or use is available for each geographic region, as well as for the total United States. (See table 11.) Reports regarding the method of transportation were provided by

the producers for 508 million tons, or 53% of the total U.S. production of construction sand and gravel. Of this total, 84% was transported by truck; 4.4%, by waterway; and 1.6%, by rail. A significant amount of construction sand and gravel produced, about 6.1%, was not transported, but was used at the production site. Because most producers did not either keep records or report shipping distances or cost per ton per mile, no transportation cost data were available.

Prices

Prices in this chapter are f.o.b. plant, usually at the first point of sale or captive use. This value does not include transportation from the plant or yard to the consumer. It does, however, include all costs of mining, processing, in-plant transportation, overhead costs, and profit.

Compared with that of 1996, the 1997 average unit price increased about 2% to \$4.47 per ton. By use, the unit prices varied from a high of \$8.97 for roofing granules to a low of \$2.74 for fill. The largest increases were recorded for roofing granules, 55% and filtration, 11.7%. The largest average unit price declines were for railroad ballast, 23% and road stabilization (lime), 22%. (See table 6.)

Foreign Trade

The widespread distribution of domestic sand and gravel deposits and the high cost of transportation limits foreign trade mostly to local transactions across international boundaries. U.S. imports and exports are small, representing less than 1% of the domestic consumption.

Exports of construction sand increased about 23% to 1.43 million tons compared with that of 1996, but the value decreased by 5.7% to \$17.1 million. Mexico was the major destination, receiving about 60% of the total, and was followed by Canada with 20%. Exports of construction gravel declined 15% to 312,000 tons, but the value increased slightly to \$5.24 million. Canada was the major destination, receiving about 81% of the total. (See table 12.)

Imports increased by about 28% to 1.61 million tons, and the value increased by about 14% to \$18.1 million. Canada was the major source of imported construction sand and gravel with 73.9% of the total, and was followed by The Bahamas with 15.1%. (See table 13.)

Outlook

The demand for construction sand and gravel in 1998 is expected to be about 1.02 billion tons, or about 7% more than that of 1997. The projected increases will be influenced by construction activity, primarily in the public construction sector. Compared with that of fiscal year 1997, Federal spending for construction-related programs was slated to increase significantly in fiscal year 1998.

Construction sand and gravel f.o.b. prices are expected to increase only marginally. The delivered prices of construction sand and gravel are, however, expected to increase, especially in and near metropolitan areas, mainly because more aggregates are

transported from distant sources.

For 1998, the industry is expected to continue to consolidate. Resistance to mining at the local level will push production to more rural areas and increase transportation cost. Acquisition cost will escalate because of the difficulty of starting a greenfield operation, which will allow resourceholders to demand higher prices for already permitted operations.

References Cited

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- Rock Products, 1997a, A busy month for acquisitions: Rock Products, v. 100, no. 10, p. 7.
- 1997b, Martin Marietta buys Indiana operation: Rock Products, v. 100, no. 2, p. 7.
- 1997c, Martin Marietta completes purchase of American Aggregates: Rock Products, v. 100, no. 7, p. 9.
- 1997d, Martin Marietta expands into North Mississippi: Rock Products, v. 100, no. 11, p. 5.
- 1997e, Martin Marietta Materials makes moves in the Midwest: Rock Products, v. 100, no. 6, p. 7.
- 1997f, Real estate developer buys sand & gravel operation: Rock Products, v. 100, no. 8, p. 7.
- 1997g, U.S. Aggregates add to Utah, Nevada presence: Rock Products, v. 100, no. 9, p. 7.
- 1998a, Redland accepts \$3 billion acquisition bid from LaFarge: Rock Products, v. 101, no. 1, p. 5.
- 1998b, TXI expands in Rocky Mountain region: Rock Products, v. 101, no. 1, p. 5.

SOURCES OF INFORMATION

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¹Prior to January 1996, published by the U.S. Bureau of Mines.

TABLE 1
SALIENT U.S. CONSTRUCTION SAND AND GRAVEL STATISTICS 1/

		1993	1994	1995	1996	1997
Sold or used by producers:						
Quantity 2/	thousand metric tons	869,000 e/ 3/	891,000	906,700	914,000 3/	952,000
Value 2/	thousands	\$3,530,000 e/ 3/	\$3,740,000	\$3,900,000	\$4,000,000 3/	\$4,260,000
Exports, value	do.	\$15,600	\$20,300	\$24,700	\$23,300	\$22,300
Imports, value	do.	\$15,400	\$14,800	\$12,000	\$15,800	\$18,100

e/ Estimated.

1/ Data are rounded to three significant digits.

2/ Puerto Rico excluded from all sand and gravel statistics.

3/ Excludes Hawaii.

TABLE 2
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY
PRODUCERS IN THE UNITED STATES, BY GEOGRAPHIC DIVISION 1/

Region/Division	1996				1997			
	Quantity (thousand metric tons)	Percent of total	Value (thousands)	Percent of total	Quantity (thousand metric tons)	Percent of total	Value (thousands)	Percent of total
Northeast:								
New England	40,500	4.4	\$202,000	5.0	39,500	4.1	\$193,000	4.5
Middle Atlantic	56,400	6.2	301,000	7.5	60,300	6.3	318,000	7.5
Midwest:								
East North Central	192,000	21.0	761,000	19.0	198,000	20.7	791,000	18.5
West North Central	96,500	10.6 r/	324,000	8.1	101,000	11.0	353,000	8.4
South:								
South Atlantic	67,400	7.4	295,000	7.4	69,800	7.3	330,000	7.7
East South Central	42,800	4.7	182,000	4.5	43,300	4.5	185,000	4.3
West South Central	91,700	10.0	402,000	10.0	89,300	9.3	408,000	9.6
West:								
Mountain	158,000	17.3	670,000	16.7	164,000	17.1	672,000	15.7
Pacific	169,000 2/	18.4	867,000 2/	21.7	187,000	19.6	1,010,000	23.7
Total	914,000	100	4,000,000	100	952,000	100	4,260,000	100

r/ Revised.

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

2/ Excludes Hawaii.

TABLE 3
SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997, BY QUARTER AND DIVISION 1/

Region/Division	Quantity 1st quarter (thousand metric tons)	Per- cent change 3/	Quantity 2d quarter (thousand metric tons)	Per- cent change 3/	Quantity 3d quarter (thousand metric tons)	Per- cent change 3/	Quantity 4th quarter (thousand metric tons)	Per- cent change 3/	Total 2/ (thousand metric tons)	Value total 2/ (thousands)
Northeast:										
New England	6,600	53.6	12,200	10.7	17,900	24.4	14,300	33.2	51,100	\$251,000
Middle Atlantic	7,100	4.1	17,900	12.5	19,900	4.2	14,900	2.0	59,800	322,000
Midwest:										
East North Central	21,500	21.2	54,200	3.4	66,500	-4.2	51,000	-3.4	193,000	769,000
West North Central	11,000	17.1	32,300	13.5	40,100	10.1	25,600	16.0	109,000	374,000
South:										
South Atlantic	16,100	18.3	19,700	7.2	19,700	5.9	16,600	-1.2	72,100	318,000
East South Central	7,400	-0.6	11,700	-6.1	13,400	5.3	11,300	10.9	43,900	187,000
West South Central	17,800	-17.1	23,900	-7.6	25,200	8.3	22,700	7.7	89,600	383,000
West:										
Mountain	31,300	-3.7	39,300	-8.5	45,900	5.1	40,700	5.0	157,000	663,000
Pacific 4/	33,500	22.6	44,400	2.7	49,300	0.0	44,500	13.0	172,000	896,000
Total 2/	152,300	8.3	255,600	1.9	298,000	3.8	241,600	6.7	956,000 5/	4,190,000 5/

1/As published in the "Crushed Stone and Sand and Gravel in the Fourth Quarter of 1997" Mineral Industry Surveys.

2/Data may not add to totals shown because of independent rounding, and differences between projected totals by States and regions.

3/All percentage changes are calculated using unrounded totals; percentage changes are based on the previous year's corresponding quarter.

4/ Does not include Alaska and Hawaii.

5/ Includes Alaska.

TABLE 4
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY
PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	13,800	\$60,600	\$4.40	13,400	\$58,800	\$4.38
Alaska 2/	9,380	35,900	3.83	12,500	57,400	4.60
Arizona	41,900	199,000	4.75	39,500	187,000	4.74
Arkansas	11,000	43,500	3.97	10,600	48,100	4.54
California	103,000	583,000	5.65	115,000	668,000	5.83
Colorado	31,600	133,000	4.19	32,100	142,000	4.43
Connecticut	6,380	26,900	4.21	5,410	24,800	4.57
Delaware	2,370	6,820	2.88	2,540	12,400	4.87
Florida	18,500	68,800	3.72	19,200	75,500	3.93
Georgia	6,520	24,500	3.75	6,410	24,600	3.85
Hawaii	W	W	W	378	4,210	11.15
Idaho	14,700	46,100	3.14	14,800	42,700	2.88
Illinois	34,600	144,000	4.17	33,400	143,000	4.28
Indiana	24,800	100,000	4.03	21,900	93,100	4.24
Iowa	13,300	54,600	4.11	12,600	51,300	4.08
Kansas	11,500	31,300	2.72	11,200	31,600	2.82
Kentucky	7,310	25,600	3.50	8,140	26,600	3.27
Louisiana	11,500	53,200	4.62	10,400	46,600	4.50
Maine	6,440	27,500	4.27	6,280	28,400	4.53
Maryland	9,700	61,400	6.33	10,100	65,400	6.50
Massachusetts	14,200	82,500	5.79	13,500	71,500	5.31
Michigan	53,800	197,000	3.66	62,000	223,000	3.60
Minnesota	31,800	107,000	3.36	34,500	127,000	3.67
Mississippi	13,400	60,600	4.54	13,000	59,600	4.57
Missouri	9,820	35,600	3.62	9,530	35,600	3.73
Montana	9,260	35,800	3.87	8,390	30,800	3.67
Nebraska	12,900	44,300	3.44	13,700	46,700	3.42
Nevada	22,400	113,000	5.02	23,600	110,000	4.68
New Hampshire	7,620	36,500	4.79	8,440	36,400	4.31
New Jersey	13,200	70,400	5.33	16,100	85,300	5.31
New Mexico	9,880	48,500	4.91	9,390	46,600	4.97
New York	28,100	145,000	5.17	28,500	144,000	5.06
North Carolina	10,000	50,500	5.03	11,100	61,200	5.54
North Dakota	8,320	23,800	2.86	9,360	26,800	2.86
Ohio	46,600	215,000	4.60	47,000	222,000	4.73
Oklahoma	7,910	27,700	3.50	8,250	29,000	3.51
Oregon	18,300	86,800	4.75	19,100	100,000	5.26
Pennsylvania	15,100	85,600	5.68	15,700	88,500	5.63
Rhode Island	1,990	13,300	6.68	1,960	15,700	7.99
South Carolina	8,780	29,000	3.31	8,130	30,400	3.74
South Dakota	8,750	27,700	3.16	10,200	34,100	3.36
Tennessee	8,380	35,300	4.21	8,650	39,500	4.56
Texas	61,300	278,000	4.53	60,100	284,000	4.72
Utah	24,700	80,500	3.26	33,200	99,400	2.99
Vermont	3,870	15,200	3.93	3,890	15,800	4.07
Virginia	9,780	45,800	4.68	10,700	52,700	4.94
Washington	37,900	162,000	4.27	40,500	180,000	4.45
West Virginia	1,730	7,710	4.44	1,670	8,010	4.78
Wisconsin	32,600	105,000	3.23	33,500	110,000	3.28
Wyoming	3,420	14,700	4.28	3,090	12,300	3.99
Total	914,000	4,000,000	4.38	952,000	4,260,000	4.47

W Withheld to avoid disclosing company proprietary data.

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

2/ Data derived in part from Alaska Division of Geological and Geophysical Surveys information.

TABLE 5
SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY QUARTER AND STATE 1/

State	Quantity 1st quarter (thousand metric tons)	Per- cent change 3/	Quantity 2d quarter (thousand metric tons)	Per- cent change 3/	Quantity 3d quarter (thousand metric tons)	Per- cent change 3/	Quantity 4th quarter (thousand metric tons)	Per- cent change 3/	Total 2/ (thousand metric tons)	Value total 2/ (thousands)
Alabama	2,500	-17.4	3,800	-1.0	4,100	10.9	3,700	12.8	14,100	\$61,700
Alaska 4/	--	--	--	--	--	--	--	--	8,500	32,600
Arizona	9,200	-8.3	10,400	-7.3	11,000	3.2	10,300	3.6	41,000	194,000
Arkansas	2,300	-9.7	3,300	10.6	3,600	21.5	2,900	15.4	12,100	47,800
California	22,000	23.3	28,200	0.3	31,900	1.9	29,800	15.9	112,000	634,000
Colorado	6,000	27.5	8,600	-7.9	10,200	0.9	8,300	10.6	33,000	139,000
Connecticut	800	20.8	1,600	-13.1	2,300	-0.7	2,100	33.8	6,790	28,600
Delaware	--	--	--	--	--	--	--	--	1,840	5,310
Florida	4,400	0.6	5,000	1.5	5,200	11.5	4,600	2.2	19,200	71,500
Georgia	1,300	-4.8	1,800	-0.5	1,700	-2.3	1,400	-11.8	6,220	23,400
Hawaii 4/	--	--	--	--	--	--	--	--	--	--
Idaho	3,000	-7.3	4,200	31.3	4,400	14.6	2,800	-36.3	14,400	45,200
Illinois	3,800	20.2	11,200	11.6	12,200	2.5	9,000	-5.6	36,200	151,000
Indiana	3,300	20.8	6,200	-10.1	6,200	-32.0	4,900	-20.4	20,500	82,700
Iowa	1,000	-1.9	4,000	-0.6	5,100	-10.7	3,200	28.0	13,400	54,800
Kansas	1,800	21.6	3,400	-20.4	3,300	0.7	2,700	11.5	11,200	30,600
Kentucky	1,300	26.5	2,100	0.6	2,400	6.2	2,100	7.7	7,880	27,600
Louisiana	2,100	-23.5	3,100	-4.6	3,100	6.5	3,600	31.0	11,700	54,300
Maine	400	-17.8	1,700	5.6	3,000	15.2	2,400	40.7	7,560	32,300
Maryland	2,300	52.0	2,900	16.4	3,000	-2.8	2,500	-6.0	10,700	67,500
Massachusetts	3,000	44.4	3,600	-3.3	4,500	-1.3	4,700	22.0	15,800	91,600
Michigan	5,500	31.8	15,300	12.2	21,800	4.6	15,000	-1.0	57,600	211,000
Minnesota	2,100	-27.7	14,500	70.1	18,100	48.7	9,900	20.3	44,600	150,000
Mississippi	2,200	-1.8	3,300	-16.4	3,800	-8.3	3,400	10.0	12,700	57,300
Missouri	1,700	29.2	2,600	-9.9	3,200	-4.6	2,500	11.7	10,000	36,400
Montana 5/	--	--	--	--	--	--	--	--	9,220	35,600
Nebraska	1,700	115.7	4,000	17.0	5,200	-8.0	3,300	5.7	14,100	48,500
Nevada	5,100	-12.7	4,000	-32.0	4,700	-10.2	5,000	-8.8	18,800	94,700
New Hampshire	2,200	186.6	3,600	83.0	5,600	101.5	3,400	60.8	14,800	70,800
New Jersey	2,600	50.3	5,200	28.8	4,600	38.8	5,200	26.1	17,600	93,900
New Mexico	1,800	-24.0	2,500	-4.2	2,600	2.2	1,900	-22.4	8,720	42,800
New York	3,300	4.1	8,400	6.9	10,300	1.1	6,200	-10.2	28,200	145,000
North Carolina	2,900	50.8	3,300	25.0	3,200	14.6	2,900	10.9	12,300	62,300
North Dakota 5/	--	--	--	--	--	--	--	--	8,320	24,400
Ohio	6,000	28.5	11,400	-9.0	16,000	-1.3	13,600	3.3	47,000	217,000
Oklahoma	1,700	3.8	2,600	10.5	2,600	30.2	2,100	12.9	9,070	31,800
Oregon	3,800	36.4	6,100	38.5	5,300	-13.5	4,400	-12.8	19,500	92,700
Pennsylvania	1,400	-24.0	4,400	8.4	5,100	-6.0	3,600	-2.5	14,600	82,600
Rhode Island 5/	--	--	--	--	--	--	--	--	1,970	13,200
South Carolina	2,000	8.8	2,400	-3.4	2,400	3.4	2,100	3.2	9,000	29,700
South Dakota	900	76.8	2,400	0.1	3,900	-5.5	2,100	16.4	9,200	29,100
Tennessee	1,400	44.9	2,600	0.8	3,400	21.9	2,200	10.8	9,670	40,700
Texas	11,700	-20.3	14,500	-17.2	15,400	0.7	13,300	-4.0	54,900	249,000
Utah	2,800	6.7	6,900	0.5	10,900	24.3	9,700	52.6	30,400	99,000
Vermont	200	-35.9	900	-26.0	1,500	12.6	1,000	3.5	3,640	14,300
Virginia	2,500	38.7	3,100	12.7	2,900	3.9	2,300	-7.2	10,800	50,400
Washington	7,500	15.5	10,700	1.0	12,000	-2.5	9,500	11.0	39,600	169,000
West Virginia	200	3.5	500	3.1	600	8.4	400	-1.6	1,800	8,010
Wisconsin	2,700	-11.6	10,600	14.0	10,900	-2.9	9,100	1.2	33,300	107,000
Wyoming	--	--	--	--	--	--	--	--	2,980	12,800
Total	XX	XX	XX	XX	XX	XX	XX	XX	956,000	4,190,000

XX Not applicable.

1/ As published in the "Crushed Stone and Sand and Gravel in the Fourth Quarter of 1997" Mineral Industry Surveys.

2/ Data may not add to totals shown because of independent rounding and differences between projected totals by States and regions.

3/ All percentage changes are calculated using unrounded totals; percentage changes are based on the previous year's corresponding quarter.

4/ State not included in quarterly survey.

5/ Due to a low number of reporting companies, no production estimates by quarters were generated.

TABLE 6
CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN THE UNITED STATES IN 1997,
BY MAJOR USE 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	238,000	\$1,170,000	\$4.93
Plaster and gunite sands	9,800	50,800	5.18
Concrete products (blocks, bricks, pipe, decorative, etc.)	9,560	48,600	5.09
Asphaltic concrete aggregates and other bituminous mixtures	74,700	391,000	5.24
Road base and coverings	123,000	482,000	3.91
Road stabilization (cement)	5,290	18,000	3.40
Road stabilization (lime)	973	4,070	4.18
Fill	72,200	198,000	2.74
Snow and ice control	6,890	28,400	4.13
Railroad ballast	2,130	8,110	3.80
Roofing granules	300	2,690	8.97
Filtration	1,330	8,220	6.19
Other miscellaneous uses	11,400	70,000	6.16
Unspecified: 2/			
Actual	210,000	985,000	4.70
Estimated	187,000	793,000	4.24
Total	952,000	4,260,000	4.47

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

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

TABLE 7
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES IN 1997,
BY GEOGRAPHIC DIVISION AND MAJOR USE 1/

(Thousand metric tons and thousand dollars)

Region/Division	Concrete aggregates (including concrete sand)		Plaster and gunitite sands		Concrete products (blocks, bricks, pipe decorative, etc.)		Asphaltic concrete aggregates and other bituminous mixtures		Road base and coverings 2/	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Northeast:										
New England	8,920	53,400	145	1,210	232	1,780	2,440	17,900	5,500	25,900
Middle Atlantic	17,600	106,000	454	2,680	860	5,820	6,230	33,500	6,070	27,200
Midwest:										
East North Central	37,200	155,000	924	4,330	2,080	10,900	17,800	66,700	26,300	93,200
West North Central	22,200	87,300	662	3,170	653	3,560	7,520	31,600	21,600	60,700
South:										
South Atlantic	27,800	136,000	2,080	8,550	1,620	7,940	2,190	10,600	2,920	14,600
East South Central	15,300	60,900	411	2,640	585	3,380	4,360	22,400	3,860	16,200
West South Central	32,600	156,000	406	2,050	364	1,500	3,370	18,900	4,290	15,100
West:										
Mountain	30,400	150,000	2,160	9,350	506	2,570	12,800	65,800	34,700	124,000
Pacific	45,900	268,000	2,550	16,800	2,660	11,200	17,900	124,000	24,200	127,000
Total	238,000	1,170,000	9,800	50,800	9,560	48,600	74,700	391,000	129,000	504,000
Region/Division	Fill		Snow and ice control		Railroad ballast		Other uses		Total	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Northeast:										
New England	5,840	15,000	2,050	8,300	88	487	14,200	68,700	39,500	193,000
Middle Atlantic	6,090	16,000	1,950	8,310	9	25	21,000	119,000	60,300	318,000
Midwest:										
East North Central	16,900	55,100	1,160	4,310	71	425	95,400	402,000	198,000	791,000
West North Central	5,950	13,000	654	2,200	240	802	41,500	150,000	101,000	353,000
South:										
South Atlantic	6,340	17,100	W	W	W	W	26,400	133,000	69,800	330,000
East South Central	860	2,200	W	W	W	W	17,900	76,700	43,300	185,000
West South Central	7,440	15,000	W	W	--	--	40,800	199,000	89,300	408,000
West:										
Mountain	9,880	20,900	516	2,280	1,190	3,540	71,900	294,000	164,000	672,000
Pacific	12,900	43,200	254	1,750	360	1,470	80,400	417,000	187,000	1,010,000
Total	72,200	198,000	6,890	28,400	2,140	8,110	410,000	1,860,000	952,000	4,260,000

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

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

2/ Includes road and other stabilization (cement and lime).

TABLE 8
CONSTRUCTION SAND AND GRAVEL PRODUCTION IN THE UNITED STATES IN 1997,
BY REGION AND SIZE OF OPERATION 1/

Size range (metric tons)	Northeast				Midwest				South			
	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total
Less than 25,000	347	37.2	2,840	2.9	472	23.9	4,720	1.6	191	19.9	1,970	1.0
25,000 to 49,999	131	14.0	4,240	4.3	310	15.7	10,300	3.5	103	10.8	3,340	1.7
50,000 to 99,999	143	15.3	9,620	9.6	387	19.6	25,200	8.4	163	17.0	10,600	5.3
100,000 to 199,999	152	16.3	19,000	19.1	331	16.8	43,100	14.4	171	17.8	22,000	10.9
200,000 to 299,999	75	8.0	17,000	17.1	158	8.0	35,900	12.0	98	10.2	21,600	10.7
300,000 to 399,999	26	2.8	7,960	8.0	96	4.9	29,900	10.0	62	6.5	19,400	9.6
400,000 to 499,999	18	1.9	7,230	7.2	53	2.7	21,300	7.1	35	3.7	14,300	7.0
500,000 to 599,999	14	1.5	6,960	7.0	45	2.3	22,000	7.4	28	2.9	14,000	6.9
600,000 to 699,999	8	0.9	4,730	4.7	38	1.9	22,400	7.5	26	2.7	15,000	7.4
700,000 to 799,999	7	0.8	4,670	4.7	29	1.5	19,600	6.6	21	2.2	14,100	7.0
800,000 to 899,999	2	0.2	1,540	1.5	13	0.7	10,000	3.4	14	1.5	10,600	5.2
900,000 to 999,999	--	--	--	--	8	0.4	6,810	2.3	7	0.7	5,950	2.9
1,000,000 to 1,499,999	7	0.8	7,360	7.4	17	0.9	17,700	5.9	26	2.7	27,400	13.6
1,500,000 to 1,999,999	1	0.1	1,420	1.4	8	0.4	12,600	4.2	9	0.9	14,000	6.9
2,000,000 to 2,499,999	1	0.1	1,820	1.8	5	0.3	9,970	3.3	4	0.4	7,970	3.9
2,500,000 to 4,999,999	1	0.1	3,310	3.3	3	0.2	7,230	2.4	--	--	--	--
5,000,000 and over	--	--	--	--	--	--	--	--	--	--	--	--
Total	933	100	99,800	100	1,973	100	299,000	100	958	100	202,000	100

Size range (metric tons)	West				U.S. total			
	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total	Number of operations	Percent of total	Quantity (thousand metric tons)	Percent of total
Less than 25,000	328	23.0	3,110	0.9	1,338	25.3	12,600	1.3
25,000 to 49,999	169	11.9	5,740	1.6	713	13.5	23,600	2.5
50,000 to 99,999	254	17.8	16,800	4.8	947	17.9	62,400	6.5
100,000 to 199,999	207	14.5	27,000	7.7	861	16.3	111,000	11.6
200,000 to 299,999	121	8.5	26,300	7.5	452	8.5	101,000	10.5
300,000 to 399,999	76	5.3	23,900	6.8	260	4.9	81,200	8.5
400,000 to 499,999	60	4.2	24,500	7.0	166	3.1	67,200	7.0
500,000 to 599,999	39	2.7	19,300	5.5	125	2.4	62,300	6.5
600,000 to 699,999	29	2.0	16,900	4.8	101	1.9	59,100	6.2
700,000 to 799,999	23	1.6	15,800	4.5	80	1.5	54,100	5.7
800,000 to 899,999	12	0.8	9,200	2.6	41	0.8	31,400	3.3
900,000 to 999,999	19	1.3	16,400	4.7	34	0.6	29,200	3.0
1,000,000 to 1,499,999	42	2.9	45,500	13.0	92	1.7	98,000	10.2
1,500,000 to 1,999,999	22	1.5	34,400	9.8	40	0.8	62,400	6.5
2,000,000 to 2,499,999	13	0.9	26,500	7.5	23	0.4	46,300	4.8
2,500,000 to 4,999,999	8	0.6	24,900	7.1	12	0.2	35,500	3.7
5,000,000 and over	2	0.1	14,700	4.2	3	0.1	14,700	1.5
Total	1,424	100	351,000	100	5,288	100	952,000	100

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

TABLE 9
NUMBER OF CONSTRUCTION SAND AND GRAVEL OPERATIONS AND PROCESSING PLANTS IN THE
UNITED STATES IN 1997, BY GEOGRAPHIC DIVISION

Region/Division	Mining operations on land				Dredging operations	Total active operations
	Stationary	Portable	Stationary and portable	No plants or unspecified		
Northeast:						
New England	152	142	42	45	1	382
Middle Atlantic	180	241	45	49	36	551
Midwest:						
East North Central	366	355	109	89	89	1,008
West North Central	222	417	37	72	217	965
South:						
South Atlantic	121	48	12	65	118	364
East South Central	108	20	9	16	59	212
West South Central	178	51	11	56	86	382
West:						
Mountain	253	448	103	38	21	863
Pacific 1/	276	152	66	34	33	561
Total	1,856	1,874	434	464	660	5,288

1/ An undetermined number of operations leased from the Bureau of Land Management in Alaska are counted as one operation.

TABLE 10
NUMBER OF CONSTRUCTION SAND AND GRAVEL OPERATIONS AND PROCESSING PLANTS IN THE
UNITED STATES IN 1997, BY STATE

State	Mining operations on land				Dredging operations	Total active operations
	Stationary	Portable	Stationary and portable	No plants or unspecified		
Alabama	40	6	--	11	21	78
Alaska 1/	5	4	1	2	1	13
Arizona	51	55	23	4	2	135
Arkansas	34	7	2	3	6	52
California	156	46	40	11	16	269
Colorado	50	101	26	10	12	199
Connecticut	23	13	7	4	1	48
Delaware	3	1	--	3	3	10
Florida	17	5	--	4	34	60
Georgia	8	2	--	1	28	39
Hawaii	1	--	--	1	--	2
Idaho	26	75	3	7	1	112
Illinois	38	33	25	10	31	137
Indiana	54	24	16	5	22	121
Iowa	49	51	5	9	32	146
Kansas	15	37	1	18	46	117
Kentucky	8	3	3	--	7	21
Louisiana	19	3	1	1	34	58
Maine	24	52	3	16	--	95
Maryland	22	4	3	13	2	44
Massachusetts	56	16	12	7	--	91
Michigan	95	128	28	37	13	301
Minnesota	70	151	16	16	1	254
Mississippi	33	3	6	5	20	67
Missouri	32	13	1	1	31	78
Montana	33	61	8	5	1	108
Nebraska	23	19	1	5	107	155
Nevada	19	36	13	4	1	73
New Hampshire	19	19	8	4	--	50
New Jersey	23	4	5	4	15	51
New Mexico	31	37	12	5	--	85
New York	102	211	29	39	9	390
North Carolina	24	20	2	26	25	97
North Dakota	10	56	5	1	--	72
Ohio	107	21	21	27	20	196
Oklahoma	14	8	--	15	27	64
Oregon	38	31	6	5	5	85
Pennsylvania	55	26	11	6	12	110
Rhode Island	11	--	2	--	--	13
South Carolina	15	5	4	6	13	43
South Dakota	23	90	8	22	--	143
Tennessee	27	8	--	--	11	46
Texas	111	33	8	37	19	208
Utah	32	56	14	2	1	105
Vermont	19	42	10	14	--	85
Virginia	20	10	3	12	11	56
Washington	76	71	19	15	11	192
West Virginia	12	1	--	--	2	15
Wisconsin	72	149	19	10	3	253
Wyoming	11	27	4	1	3	46
Total	1,856	1,874	434	464	660	5,288

1/ An undetermined number of operations leased from the Bureau of Land Management in Alaska are counted as one operation.

TABLE 11
CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN THE UNITED STATES
IN 1997, BY REGION AND METHOD OF TRANSPORTATION 1/

(Thousand metric tons)

Region/Division	Truck	Rail	Water	Other	Not transported	Not specified	Total
Northeast:							
New England	22,100	750	--	595	1,480	14,600	39,500
Middle Atlantic	31,700	107	2,030	1,760	2,250	22,500	60,300
Midwest:							
East North Central	87,100	W	3,900	W	3,600	101,000	198,000
West North Central	41,900	1,050	3,550	5,060	3,480	45,900	101,000
South:							
South Atlantic	37,600	977	3,220	1,520	2,440	24,000	69,800
East South Central	20,500	W	1,840	W	285	19,600	43,300
West South Central	39,500	2,650	W	W	2,730	41,900	89,300
West:							
Mountain	66,800	W	W	4,410	3,860	88,800	164,000
Pacific	78,600	2,280	6,030	2,930	10,900	86,300	187,000
Total	426,000	8,230	22,500	20,400	31,000	444,000	952,000

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

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

TABLE 12
U.S. EXPORTS OF CONSTRUCTION SAND AND GRAVEL IN 1997,
BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

Country or Territory	Sand		Gravel	
	Quantity	F.a.s. value 2/	Quantity	F.a.s. value 2/
North America:				
Bahamas, The	1	131	--	--
British Virgin Islands	--	--	4	51
Canada	280	4,680	253	1,530
Mexico	858	3,430	33	2,620
Netherlands Antilles	1	45	8	173
Trinidad and Tobago	62	171	--	--
Other 3/	6	250	2	22
Total	1,210	8,700	300	4,400
South America:				
Argentina	4	429	1	158
Ecuador	121	937	--	--
Peru	5	477	--	--
Venezuela	14	1,390	1	119
Other 4/	2	102	(5/)	4
Total	146	3,330	1	281
Europe:				
Belgium	4	294	(5/)	4
Germany	(5/)	300	2	71
Spain	3	58	--	--
Sweden	(5/)	83	(5/)	4
United Kingdom	7	155	(5/)	134
Other 6/	14	1,180	5	158
Total	28	2,070	7	371
Asia:				
Hong Kong	1	23	--	--
Japan	1	289	--	--
Korea, Republic of	6	295	2	69
Philippines	--	--	(5/)	3
Singapore	1	241	(5/)	6
Taiwan	(5/)	66	1	20
Thailand	2	126	--	--
Other 7/	5	1,180	1	28
Total	16	2,220	3	126
Oceania, other 8/	1	333	1	51
Middle East, other 9/	1	309	(5/)	9
Africa, other 10/	32	102	--	--
Grand total	1,430	17,100	312	5,240

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

2/ Value of material at U.S. port of export; based on transaction price, including all charges incurred in placing material alongside ship.

3/ Includes Anguilla, Antigua and Barbuda, Bermuda, Dominican Republic, El Salvador, Guatemala, Jamaica, Nicaragua, Panama, St. Christopher and Nevis, St. Lucia, and Trinidad and Tobago.

4/ Includes Bolivia, Brazil, Chile, Colombia, Suriname, and Uruguay.

5/ Less than 1/2 unit.

6/ Includes Austria, Denmark, France, Italy, the Netherlands, Norway, Poland, Portugal, Russia, Switzerland, and Turkey.

7/ Includes Bangladesh, China, India, Indonesia, Malaysia, and Pakistan.

8/ Includes Australia, Marshall Islands, and New Zealand.

9/ Includes Israel, Saudi Arabia, and the United Arab Emirates.

10/ Includes Cameroon, Egypt, Equatorial Guinea, Ghana, Nigeria, South Africa, and Sudan.

Source: Bureau of the Census.

TABLE 13
U.S. IMPORTS FOR CONSUMPTION OF CONSTRUCTION SAND AND GRAVEL,
BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

Country or Territory	1996		1997	
	Quantity	C.i.f. value 2/	Quantity	C.i.f. value 2/
Australia	7	1,080	6	1,100
Bahamas, The	159	410	243	1,410
British Virgin Islands	1	8	--	--
Canada	965	8,100	1,190	9,770
Dominica	22	284	20	272
France	1	326	1	261
Japan	2	534	25	1,100
Mexico	51	1,260	21	1,550
Netherlands Antilles	32	401	26	299
United Kingdom	3	882	1	502
Other 3/	22	2,540 r/	79	1,820
Total	1,260	15,800	1,610	18,100

r/ Revised.

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

2/ Value of material at U.S. port of entry; based on purchase price and includes all charges except U.S. import duties) in bringing material from foreign country to alongside carrier.

3/ Includes Antigua and Barbuda, Austria (1997), Bosnia-Herzegovina (1996), China, Dominican Republic (1996), Germany (1996), Guyana (1997), India (1996), Namibia (1996), New Zealand, and Venezuela.

Source: Bureau of the Census.

TABLE 14
RECYCLED ASPHALT AND CONCRETE SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY REGION 1/

Region/Division	Recycled asphalt						Recycled concrete					
	1996			1997			1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Northeast:												
New England	276	\$1,020	\$3.69	290	\$1,700	\$5.87	165	\$794	\$4.81	332	\$1,760	\$5.30
Middle Atlantic	21	129	6.14	15	107	7.13	362	2,370	6.54	320	2,100	6.56
Midwest:												
East North Central	549	1,750	3.19	529	2,250	4.25	425	1,920	4.52	806	3,090	3.83
West North Central	394	1,260	3.19	634	2,390	3.77	1,180	3,140	2.65	1,090	3,630	3.33
South:												
South Atlantic	542	2,210	4.08	79	248	3.14	179	734	4.10	W	W	4.28
East South Central	291	889	3.05	413	1,320	3.19	--	--	--	--	--	--
West South Central	16	49	3.06	27	205	7.59	28	42	1.50	W	W	16.88
West:												
Mountain	463	2,010	4.35	369	1,580	4.28	419	1,570	3.76	355	1,070	3.02
Pacific 2/	1,190	4,980	3.85	1,080	4,070	3.78	1,270	4,530	3.58	1,120	4,730	4.21
Total	3,740	14,300	3.82	3,430	13,900	4.04	4,030	15,100	3.75	4,150	17,400	4.20

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

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

2/ Excludes Hawaii in 1996.

TABLE 15
 RECYCLED ASPHALT SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alabama	12	\$50	\$4.17	27	\$62	\$2.30
Alaska	W	W	4.35	114	763	6.69
Arizona	80	592	7.40	W	W	4.40
California	678	3,040	4.49	681	2,130	3.12
Colorado	43	174	4.05	136	711	5.23
Connecticut	W	W	7.60	W	W	6.20
Idaho	W	W	1.87	W	W	1.82
Illinois	127	214	1.69	32	94	2.94
Indiana	28	217	7.75	9	10	1.11
Iowa	10	50	5.00	44	198	4.50
Kansas	72	255	3.54	4	101	25.25
Louisiana	5	36	7.20	--	--	--
Maine	125	608	4.86	80	371	4.64
Massachusetts	122	280	2.30	62	493	7.95
Michigan	141	584	4.14	257	1,130	4.40
Minnesota	297	868	2.92	499	1,640	3.28
Mississippi	177	525	2.97	W	W	3.30
Montana	132	425	3.22	41	270	6.59
Nebraska	5	25	5.00	--	--	--
Nevada	--	--	--	57	251	4.40
New Hampshire	21	79	3.76	49	127	2.59
New Jersey	10	46	4.60	W	W	6.20
New Mexico	87	422	4.85	24	87	3.63
New York	10	72	7.20	W	W	5.00
North Carolina	318	1,290	4.05	69	144	2.09
North Dakota	W	W	5.33	W	W	3.79
Ohio	15	82	5.47	--	--	--
Oklahoma	--	--	--	W	W	5.00
Oregon	35	399	11.40	53	311	5.87
Pennsylvania	W	W	6.00	W	W	10.00
Rhode Island	--	--	--	W	W	8.62
South Carolina	224	924	4.13	1	4	4.00
South Dakota	W	W	6.00	57	341	5.98
Tennessee	103	314	3.05	W	W	3.21
Texas	W	W	1.08	25	190	7.60
Utah	W	W	3.50	W	W	2.34
Vermont	3	13	4.33	5	21	4.20
Virginia	--	--	--	W	W	11.11
Washington	381	1,130	2.96	226	868	3.84
Wisconsin	239	656	2.74	233	1,010	4.34
Wyoming	35	234	6.69	(2/)	3	5.52
Total	3,740	14,300	3.82	3,430	13,900	4.04

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

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

2/ Less than 1/2 unit.

TABLE 16
 RECYCLED CONCRETE SOLD OR USED BY SAND AND GRAVEL PRODUCERS IN
 THE UNITED STATES, BY STATE 1/

State	1996			1997		
	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value
Alaska	--	--	--	W	W	\$8.00
Arizona	9	\$10	\$1.11	W	W	2.24
California	1,040	3,710	3.57	957	\$3,820	3.99
Colorado	57	273	4.79	74	361	4.88
Connecticut	--	--	--	W	W	5.93
Hawaii	(2/)	(2/)	(2/)	3	21	7.00
Idaho	W	W	3.00	W	W	3.00
Illinois	124	552	4.45	186	697	3.75
Indiana	W	W	4.04	54	150	2.78
Iowa	69	405	5.87	54	309	5.72
Kansas	2	5	2.50	W	W	4.50
Maine	11	58	5.27	4	17	4.25
Maryland	92	203	2.21	W	W	4.67
Massachusetts	153	736	4.81	173	897	5.18
Michigan	106	513	4.84	278	1,050	3.79
Minnesota	1,120	2,730	2.44	951	2,970	3.13
Montana	W	W	4.61	W	W	2.78
Nevada	W	W	3.32	136	150	1.10
New Hampshire	W	W	2.45	3	14	4.67
New Jersey	W	W	4.00	W	W	6.47
New Mexico	88	393	4.47	W	W	4.60
New York	360	2,350	6.54	305	2,000	6.55
North Carolina	W	W	5.60	W	W	5.69
North Dakota	--	--	--	--	--	--
Ohio	W	W	7.73	223	890	3.99
Oregon	65	271	4.17	25	130	5.20
Pennsylvania	W	W	5.50	W	W	5.00
Rhode Island	--	--	--	53	248	4.68
South Carolina	W	W	6.67	W	W	1.12
South Dakota	--	--	--	83	340	4.10
Texas	28	42	1.50	W	W	16.49
Utah	W	W	2.05	W	W	3.17
Vermont	--	--	--	W	W	4.78
Washington	160	547	3.42	95	423	4.45
Wisconsin	59	185	3.14	66	297	4.50
Wyoming	W	W	6.67	--	--	--
Total	4,030	15,100	3.75	4,150	17,400	4.20

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

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

2/ Withheld to avoid disclosing company proprietary data; not included in "Total."

FIGURE 1

PRODUCTION OF CONSTRUCTION SAND AND GRAVEL IN THE UNITED STATES IN 1997, BY GEOGRAPHIC DIVISION

