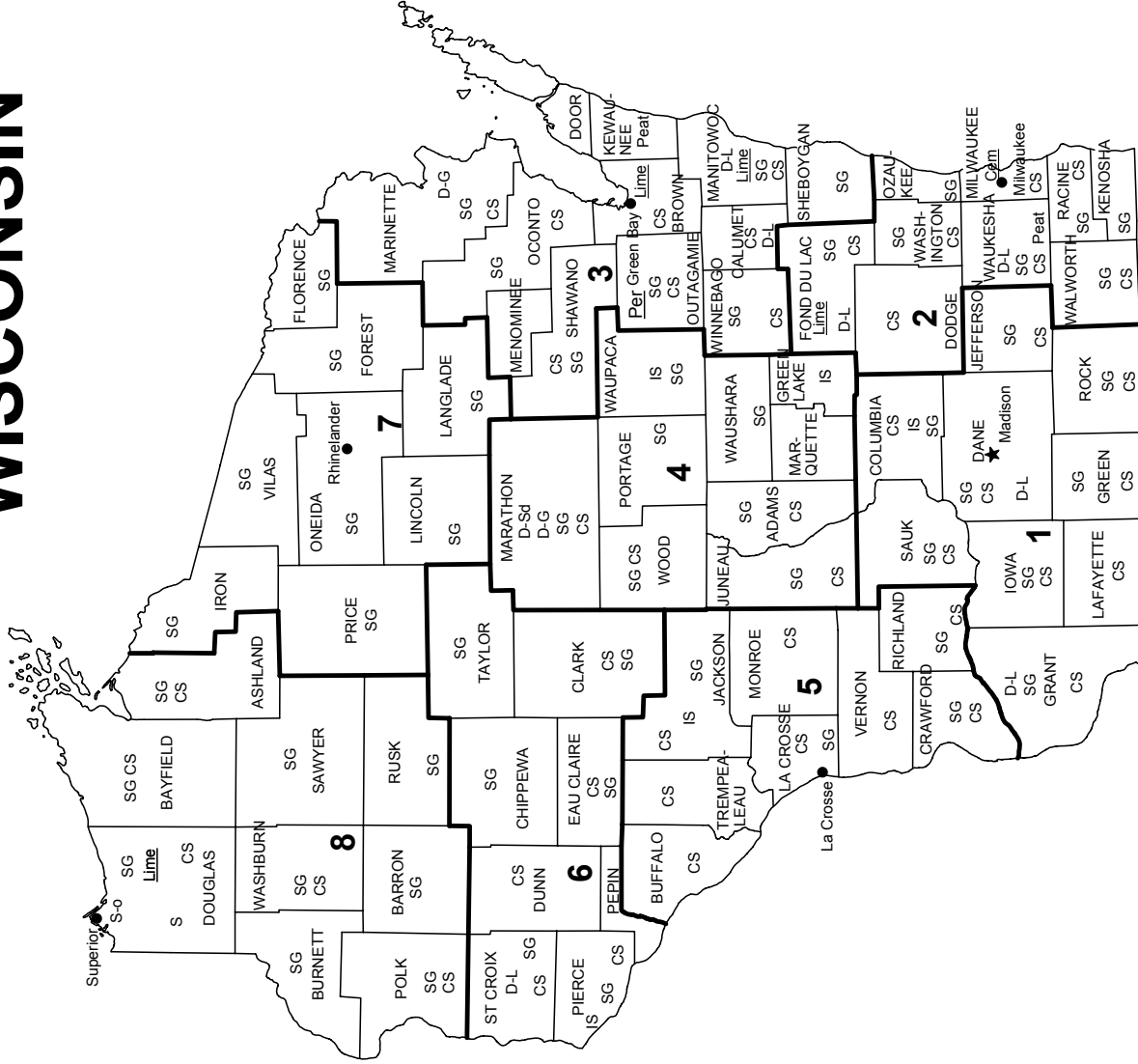


WISCONSIN

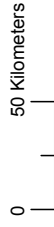


LEGEND

- County boundary
- ★ Capital
- City
- 1 Crushed stone/sand and gravel districts

MINERAL SYMBOLS (Major producing areas)

- Cem Cement plant
- CS Crushed stone
- D-G Dimension granite
- D-L Dimension limestone
- D-Sd Dimension sandstone
- IS Industrial sand
- Lime Lime plant
- Peat Peat
- Per Perlite plant
- S Sulfur (recovered)
- S-o Sulfur (oil)
- SG Construction sand and gravel



THE MINERAL INDUSTRY OF WISCONSIN

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

In 2004, Wisconsin's nonfuel raw mineral production was valued¹ at \$470 million, based upon annual U.S. Geological Survey (USGS) data. This was a 12.7% increase from the State's total nonfuel mineral value for 2003,² which was up 6.4% from 2002. The State ranked 33d (31st in 2003) among the 50 States in total nonfuel mineral production value and accounted for 1% of the U.S. total value. [Because data for peat and portland cement have been withheld (company proprietary data), the actual total values for 2002 to 2004 are higher than those reported in table 1.]

Construction sand and gravel and crushed stone were (in descending order of value) Wisconsin's leading nonfuel minerals in 2004 (a reversal from 2003), accounting for nearly 38% and 35.5%, respectively, of the State's total nonfuel raw mineral production value (table 1). These were followed by lime, representing more than 11% of the total value, industrial sand and gravel, about 10%, and dimension stone, 5% of the total value.

Virtually all the State's mineral commodities rose in production and value in 2004. A nearly 13% increase in construction sand and gravel production resulted in an increase of \$28 million in value from 2003 (table 1). Production of lime increased in value by nearly \$8 million, crushed stone and industrial sand and gravel increased by about \$7 million each, and dimension stone value was up slightly more than \$4 million; a significant increase also took place in the production and value of portland cement. The value of peat decreased slightly and gemstones was unchanged.

In 2003, lime with a nearly 26% increase in production led the State's mineral commodities with a \$10.4 million increase in value, followed by an increase of \$9 million in crushed stone (production down slightly), and \$7.5 million rise in industrial sand and gravel value. Portland cement also had a relatively substantial increase in production and value.

In 2004, Wisconsin continued to be ninth in the quantity of lime produced and rose to second from fourth in dimension stone, to third from fourth in industrial sand and gravel, and to seventh from eighth in construction sand and gravel. Also, the State was a significant producer of crushed stone.

The following narrative information was provided by the Wisconsin Geological and Natural History Survey³.

Exploration and development

In 2004, many aggregate producers of crushed stone and sand and gravel actively sought new reserves to replace operations that were nearing depletion or that could not be expanded because of nearby residential development. A prime consideration in aggregate exploration in and around major urban areas, such as southeast Wisconsin, has increasingly become whether permits and zoning can be obtained before development makes mining an unacceptable land use.

Wisconsin's nonmetallic mining reclamation law (Department of Natural Resources N.R. 135) provides for registration of operating or undeveloped nonmetallic mineral deposits as a protection from future local zoning changes that would preclude mining. In 2004, there has been significant registration activity in reaction to comprehensive planning, which is being used to discourage or prohibit resource development in some urbanizing areas of the State.

Dimension limestone producers have followed the lead of the aggregate industry in seeking new reserves in less developed regions where permitting was much easier. There has been little exploration activity for high purity limestone or dolomite resources suitable for lime production or for roofing granule materials, but in 2004 industrial sand producers indicated an interest in expanding foundry sand reserves and locating potential hydrofrac sand in anticipation of demand from the petroleum industry.

There has been no significant metallic mineral exploration or leasing activity in Wisconsin for several years. The last exploration drillhole was completed in January 1998.

Commodity Review

Industrial Minerals

The aggregate industry of Wisconsin, which consists of numerous small- to medium-size local or regional (in-state) producers, remained fairly stable during 2004. Mathy Construction Inc. of Onalaska acquired the aggregate operations of American Materials Corporation of Eau Claire in what was probably the most significant aggregate industry acquisition. The former independent

¹The 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 2004 USGS mineral production data published in this chapter are those available as of December 2005. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

² Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

³ Bruce A. Brown, Geologist (nonmetallic minerals), and Thomas J. Evans, Geologist (metallic minerals), both of the Wisconsin Geological and Natural History Survey, coauthored the text of the State mineral industry information provided by that agency.

Wisconsin Fracsand Inc. of Maiden Rock in Pierce County, which operated Wisconsin's only underground mining operation, was acquired by Fairmount Minerals.

Wisconsin's nonmetallic mineral industry remained strong in 2004, led by aggregates, dimension stone, and industrial sand. Many aggregate producers, including paving companies and ready-mix concrete producers who operate their own gravel pits and quarries, sought local permits for new sites and expansion of existing operations to meet current demand and ensure future reserves.

Crushed Stone and Dimension Stone.—Dimension limestone production was dominated by flagstone, building stone, and landscape stone quarried from the Silurian rocks of eastern Wisconsin. Several producers have sought to expand operations in the Byron area of Fond du Lac County, and near Chilton in Calumet County since the historically important Sussex-Lannon area of Waukesha County has continued to have a significant degree of residential development. The demand for landscape stone created some interest in the dimension stone potential of the Ordovician Prairie du Chien and Galena-Platteville carbonates of western Wisconsin.

Sandstone for flagstone and facing stone has been produced from silica-cemented beds in the Cambrian rocks of central Wisconsin on a limited scale for many years, but 2004 saw one new quarry and plant opened at Rudolph in Wood County, and renewed interest in exploration for new resources. Wisconsin continued to produce the well known red monument granite from the Wausau area on a limited basis, but hardrock (granite, traprock, and quartzite) was increasingly in demand for riprap, railroad ballast, and specialty aggregates, such as seal coat chips, requiring high durability. Stones for use in landscaping, including glacial boulders, weathered limestone blocks, and washed gravel have become an increasingly lucrative sideline for many aggregate and stone producers.

The lime industry has remained steady, with producers seeking to expand existing quarry operations for lime production and byproducts such as aggregate and riprap. Industrial sand producers report a strong demand for foundry sand and an increased demand for hydrofrac sand for the oil industry. Wisconsin continued to produce a wide variety of industrial sand products from Cambrian, Ordovician, and Quaternary source materials.

Mine Reclamation

Significant progress was made toward implementation of Wisconsin's nonmetallic mining reclamation rules (Department of Natural Resources N.R. 135). These rules, which require reclamation of all new and existing mines operating as of September 1, 2001, granted existing mines an automatic permit until a reclamation plan was prepared and approved. By 2004, most operators had final plans accepted by the county or other administrative authority and financial assurance in place. A workshop sponsored by DNR, the Aggregate Producers of Wisconsin, and Wisconsin Road and Transportation Builders was held in late 2004 to address remaining issues regarding financial assurance and clarify remaining technical issues relating to ground water and highwalls.

Legislation and Government Programs

In 2004, important legislation enacted included ACT 307, which requires municipalities or counties doing comprehensive (Smart Growth) planning to notify mine owners and operators of any action that would affect future mining operations. ACT 308 eliminates the possible requirement of duplicate financial assurance for mine reclamation under N.R. 135. ACT 276 provides for environmental self-audits and exemption from civil penalties for certain violations of permit conditions, and ACT 145 provides for small business regulatory reform, which seeks to evaluate the impact of regulations on small businesses, and provide relief and waivers for self-disclosure.

The aggregate industry has been proactive in development of administrative rules under the Wisconsin Job Creation Act, a law designed to consolidate and streamline the review process for a variety of State issued permits that affect the nonmetallic mining industry. The industry associations have also actively campaigned to reform and expedite the air quality permit process.

By the end of 2004, no proposed legislation related to metallic mining had been passed by the State Legislature. Proposals to modify existing statutes related to metallic mining and ground water, metallic mining and hazardous waste regulation, possible exemptions from administrative rules for metallic mining, and banning the use of cyanide compounds in metallic mineral processing were not enacted.

The need for good public relations has inspired many large and small operators to stage open house events and educational programs for neighbors and K-12 students from local schools. Around the State, large operators sponsor events such as Quarry Quest, Dozer Days, and the Big Dig, which provide family education and entertainment. These events provided demonstrations of quarrying and construction equipment and educational activities relating to geology, environmental issues, and the importance of minerals to society. The largest events are attended by several thousand people and raise thousands of dollars for local charities.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN WISCONSIN^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	W	(3)	W	(3)	W	(3)
Gemstones	NA	6	NA	6	NA	6
Lime	603	35,600	757	46,000	850	53,900
Peat	W	(3)	W	(3)	W	(3)
Sand and gravel:						
Construction	39,000	154,000	38,500	150,000	43,400	178,000
Industrial	1,740	32,700	1,930	40,200	2,140	47,000
Stone:						
Crushed	36,200	151,000	35,900	160,000	38,600	167,000
Dimension	100	19,300	101	19,700	232	23,800
Total	XX	392,000	XX	417,000	XX	470,000

NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Value excluded to avoid disclosing company proprietary data.

TABLE 2
WISCONSIN: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2002				2003				2004			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	136	28,900 ^r	\$121,000 ^r	\$4.17	139	30,200	\$135,000	\$4.46	157	32,500	\$139,000	\$4.29
Dolomite	9	2,540 ^r	10,900 ^r	4.28 ^r	12	1,050	4,740	4.50	9	1,100	4,980	4.52
Granite	3 ^r	1,490 ^r	6,590 ^r	4.43 ^r	4	1,780	8,610	4.83	4	1,820	7,570	4.17
Sandstone and quartzite	5	1,740	6,920	3.97 ^r	4	1,590	6,630	4.16	3	1,490	6,210	4.17
Traprock	4	1,450	5,800	4.01	4	1,280	5,830	4.56	5	1,780	9,030	5.06
Total or average	XX	36,200	151,000	4.17	XX	35,900	160,000	4.47	XX	38,600	167,000	4.32

^rRevised. XX Not applicable.

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

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

TABLE 3a
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$4.70
Riprap and jetty stone	124	\$770	6.24
Filter stone	142	728	5.13
Other coarse aggregates	1,250	6,070	4.85
Total or average	1,520	7,570	4.98
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,510	8,490	5.62
Bituminous aggregate, coarse	298	1,600	5.37
Bituminous surface-treatment aggregate	251	1,240	4.95
Railroad ballast	(2)	(2)	4.41
Other graded coarse aggregates	11	49	4.45
Total or average	2,070	11,400	5.50
Fine aggregate (-¾ inch):			
Stone sand, concrete	(3)	(3)	8.78
Stone sand, bituminous mix or seal	(3)	(3)	7.38
Screening, undesignated	802	3,630	4.53
Other fine aggregates	1,000	4,070	4.06
Total or average	1,810	7,700	4.26
Coarse and fine aggregate:			
Graded road base or subbase	5,460	29,600	5.42
Unpaved road surfacing	252	853	3.38
Terrazzo and exposed aggregate	(4)	(4)	4.96
Crusher run or fill or waste	286	1,090	3.80
Roofing granules	(4)	(4)	6.87
Other coarse and fine aggregates	1,860	13,100	7.04
Total or average	7,860	44,600	5.68
Other construction materials	33	155	4.70
Agricultural:			
Agricultural limestone	300	2,710	9.04
Other agricultural uses	17	65	3.82
Total or average	317	2,780	8.76
Chemical and metallurgical, lime manufacture	(5)	(5)	4.91
Unspecified:⁶			
Reported	993	4,670	4.68
Estimated	21,000	82,000	3.83
Total or average	22,300	86,200	3.86
Grand total or average	35,900	160,000	4.47

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

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

²Withheld to avoid disclosing company proprietary data; included with "Other graded coarse aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other fine aggregates."

⁴Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

⁵Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

⁶Reported and estimated production without a breakdown by end use.

TABLE 3b
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$5.37
Riprap and jetty stone	298	\$2,050	6.88
Filter stone	123	658	5.35
Other coarse aggregates	462	2,470	5.34
Total or average	883	5,170	5.86
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,660	9,720	5.86
Bituminous aggregate, coarse	239	1,300	5.42
Bituminous surface-treatment aggregate	316	1,690	5.36
Railroad ballast	11	75	6.82
Other graded coarse aggregates	62	364	5.87
Total or average	2,290	13,100	5.75
Fine aggregate (-¾ inch):			
Stone sand, concrete	(2)	(2)	6.14
Stone sand, bituminous mix or seal	(2)	(2)	5.71
Screening, undesignated	865	3,900	4.51
Other fine aggregates	39	160	4.10
Total or average	905	4,070	4.50
Coarse and fine aggregates:			
Graded road base or subbase	5,550	30,300	5.47
Unpaved road surfacing	304	980	3.22
Crusher run or fill or waste	609	5,630	9.25
Roofing granules	(3)	(3)	6.94
Other coarse and fine aggregates	1,120	5,710	5.08
Total or average	7,580	42,700	5.63
Agricultural:			
Agricultural limestone	324	3,190	9.85
Other agricultural uses	14	54	3.86
Total or average	338	3,250	9.60
Chemical and metallurgical, cement manufacture	(4)	(4)	3.00
Other miscellaneous uses:			
Refractory stone	(4)	(4)	1.37
Other specified uses not listed	(4)	(4)	4.80
Unspecified:⁵			
Reported	1,900	7,690	4.04
Estimated	24,000	88,000	3.68
Total or average	25,800	95,700	3.71
Grand total or average	38,600	167,000	4.32

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

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

²Withheld to avoid disclosing company proprietary data; included in "Total or average."

³Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

⁴Withheld to avoid disclosing company proprietary data; included in "Grand total or average."

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

TABLE 4a
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ³	W	W	W	W	W	W	W	W
Coarse aggregate, graded ⁴	W	W	W	W	528	2,570	W	W
Fine aggregate (-¾ inch) ⁵	106	310	W	W	W	W	W	W
Coarse and fine aggregate ⁶	W	W	1,720	11,000	W	W	793	2,850
Other construction materials	--	--	--	--	24	110	9	45
Agricultural ⁷	112	568	W	W	W	W	--	--
Chemical and metallurgical ⁸	--	--	--	--	(9)	(9)	--	--
Unspecified:¹⁰								
Reported	657	2,740	65	263	246	1,180	31	479
Estimated	1,700	7,000	3,400	13,000	2,300	6,200	570	2,300
Total	5,590	29,500	7,490	37,200	6,040	25,100	2,460	10,100
Use	District 5		District 6		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ³	--	--	W	W	20	141	75	332
Coarse aggregate, graded ⁴	--	--	W	W	W	W	--	--
Fine aggregate (-¾ inch) ⁵	--	--	--	--	W	W	115	617
Coarse and fine aggregate ⁶	--	--	W	W	262	1,330	341	1,520
Other construction materials	--	--	--	--	--	--	--	--
Agricultural ⁷	--	--	--	--	W	W	--	--
Chemical and metallurgical ⁸	--	--	--	--	--	--	--	--
Unspecified:¹⁰								
Reported	--	--	--	--	--	--	--	--
Estimated	10,000	40,000	2,400	9,600	970	4,300	--	--
Total	10,000	40,000	2,470	10,000	1,380	6,450	531	2,470

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

¹No crushed stone was produced in District 7.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

⁴Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁵Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.

⁶Includes crusher run (select material or fill), graded road base or subbase, roofing granules, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

⁷Includes agricultural limestone and other agricultural uses.

⁸Includes lime manufacture.

⁹Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

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

TABLE 4b
WISCONSIN: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ³	W	W	714	4,230	252	1,230	--	--
Coarse aggregate, graded ⁴	461	2,510	W	W	617	3,200	--	--
Fine aggregate (-¾ inch) ⁵	W	W	W	W	518	2,110	--	--
Coarse and fine aggregate ⁶	W	W	W	W	1,980	10,000	(7)	(7)
Agricultural ⁸	W	W	W	W	W	W	--	--
Chemical and metallurgical ⁹	--	--	--	--	W	W	--	--
Other miscellaneous uses ¹⁰	--	--	--	--	W	W	--	--
Unspecified: ¹¹								
Reported	567	2,340	--	--	--	--	1,670	6,820
Estimated	2,200	8,900	3,500	13,000	5,000	13,000	840	3,400
Total	6,200	32,600	7,750	38,600	8,670	30,300	2,510	10,200
Use	District 5		District 6		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch) ³	--	--	W	W	W	W	115	523
Coarse aggregate, graded ⁴	--	--	W	W	W	W	--	--
Fine aggregate (-¾ inch) ⁵	--	--	--	--	--	--	149	773
Coarse and fine aggregate ⁶	--	--	W	W	W	W	433	1,910
Agricultural ⁸	--	--	--	--	--	--	--	--
Chemical and metallurgical ⁹	--	--	--	--	--	--	--	--
Other miscellaneous uses ¹⁰	--	--	W	W	--	--	--	--
Unspecified: ¹¹								
Reported	--	--	--	--	--	--	--	--
Estimated	7,700	30,000	3,200	12,000	1,300	6,400	--	--
Total	7,700	30,000	3,590	14,600	1,510	7,090	697	3,210

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

¹No crushed stone was produced in District 7.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

⁴Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁵Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.

⁶Includes crusher run or fill or waste, graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.

⁷Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

⁸Includes agricultural limestone and other agricultural uses.

⁹Includes cement manufacture.

¹⁰Includes refractory stone and other specified uses not listed.

¹¹Reported and estimated production without a breakdown by end use.

TABLE 5a
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	6,420	\$29,500	\$4.60
Plaster and gunitite sands	29	158	5.45
Concrete products (blocks, bricks, pipe, decorative, etc.)	305	1,070	3.51
Asphaltic concrete aggregates and other bituminous mixtures	1,970	7,950	4.04
Road base and coverings	3,750	12,200	3.25
Road and other stabilization (lime)	196	883	4.51
Fill	2,010	5,660	2.82
Snow and ice control	100	393	3.93
Roofing granules	9	55	6.11
Filtration	33	184	5.58
Other miscellaneous uses	140	1,180	8.45
Unspecified: ²			
Reported	7,760	29,300	3.77
Estimated	16,000	62,000	3.92
Total or average	38,500	150,000	3.91

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

²Reported and estimated production without a breakdown by end use.

TABLE 5b
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	5,630	\$25,100	\$4.46
Plaster and gunit sands	24	178	7.47
Concrete products (blocks, bricks, pipe, decorative, etc.)	242	1,160	4.78
Asphaltic concrete aggregates and other bituminous mixtures	2,670	14,100	5.29
Road base and coverings	7,250	26,900	3.71
Road and other stabilization (cement and lime)	491	2,720	5.54
Fill	1,560	4,830	3.10
Snow and ice control	251	1,040	4.16
Filtration	40	232	5.81
Other miscellaneous uses ²	102	504	4.93
Unspecified: ³			
Reported	4,160	17,600	4.23
Estimated	21,000	84,000	4.01
Total or average	43,400	178,000	4.11

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

²Includes roofing granules.

³Reported and estimated production without a breakdown by end use.

TABLE 6a
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	1,240	5,890	2,080	9,150	1,180	5,390
Asphaltic concrete aggregates and road base materials ³	493	2,080	1,140	5,060	1,420	4,690
Fill	101	462	742	2,630	336	767
Snow and ice control	14	45	5	54	37	131
Roofing granules	9	55	--	--	--	--
Other miscellaneous uses ⁴	44	220	11	71	23	82
Unspecified: ⁵						
Reported	1,230	5,140	5,430	21,000	70	280
Estimated	300	1,300	3,200	13,000	1,400	5,200
Total	3,460	15,200	12,600	50,800	4,430	16,500
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	276	1,230	W	W	790	2,710
Asphaltic concrete aggregates and road base materials ³	W	W	W	W	430	2,140
Fill	111	421	W	W	219	538
Snow and ice control	5	15	--	--	24	58
Roofing granules	--	--	--	--	--	--
Other miscellaneous uses ⁴	236	1,040	183	705	15	68
Unspecified: ⁵						
Reported	933	2,700	--	--	5	9
Estimated	4,100	16,000	1,200	4,600	2,600	11,000
Total	5,630	21,300	1,350	5,290	4,100	16,500
Use	District 7		District 8		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	W	W	515	3,220	563	2,770
Asphaltic concrete aggregates and road base materials ³	211	562	1,660	4,270	266	1,200
Fill	W	W	113	189	286	315
Snow and ice control	8	28	8	61	--	--
Roofing granules	--	--	--	--	--	--
Other miscellaneous uses ⁴	132	686	24	191	8	85
Unspecified: ⁵						
Reported	23	55	64	107	--	--
Estimated	1,700	6,200	1,000	3,500	400	1,600
Total	2,040	7,510	3,310	11,500	1,540	5,990

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

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

²Includes plaster and gunite sands.

³Includes road and other stabilization (lime).

⁴Includes filtration.

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

TABLE 6b
WISCONSIN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates (including concrete sand)	1,170	6,110	2,330	10,600	1,160	5,070
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	W	W	169	713	14	83
Asphaltic concrete aggregates and other bituminous mixtures	W	W	1,840	10,900	201	750
Road base and coverings ⁴	W	W	4,500	20,900	1,130	3,810
Fill	143	546	764	2,690	322	695
Snow and ice control	W	W	9	150	102	403
Other miscellaneous uses ⁵	356	1,290	1	14	20	118
Unspecified: ⁶						
Reported	319	1,890	2,310	9,250	114	492
Estimated	1,600	6,400	3,600	15,000	1,500	6,000
Total	3,580	16,200	15,500	69,700	4,580	17,400
Use	District 4		Districts 5 and 6		District 7	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates (including concrete sand)	165	654	W	W	W	W
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	W	W	W	W	--	--
Asphaltic concrete aggregates and other bituminous mixtures	W	W	183	781	W	W
Road base and coverings ⁴	W	W	589	1,360	301	855
Fill	58	239	160	420	18	43
Snow and ice control	--	--	59	151	W	W
Other miscellaneous uses ⁵	168	897	591	1,920	70	274
Unspecified: ⁶						
Reported	813	2,550	476	2,390	6	226
Estimated	4,700	19,000	4,300	18,000	1,600	6,100
Total	5,950	23,300	6,360	24,700	2,000	7,460
Use	District 8		Unspecified districts			
	Quantity	Value	Quantity	Value		
Concrete aggregates (including concrete sand)	194	714	--	--		
Concrete products (blocks, bricks, pipe, decorative, etc.) ³	--	--	--	--		
Asphaltic concrete aggregates and other bituminous mixtures	272	979	--	--		
Road base and coverings ⁴	1,040	2,370	--	--		
Fill	95	197	--	--		
Snow and ice control	58	219	--	--		
Other miscellaneous uses ⁵	10	17	--	--		
Unspecified: ⁶						
Reported	120	807	--	--		
Estimated	2,500	10,000	1,100	4,200		
Total	4,290	15,400	1,100	4,200		

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

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

²Districts 5 and 6 are combined to avoid disclosing company proprietary data.

³Includes plaster and gunite sands.

⁴Includes road and other stabilization (cement and lime).

⁵Includes filtration and roofing granules.

⁶Reported and estimated production without a breakdown by end use.