



2005 Minerals Yearbook

NEW YORK

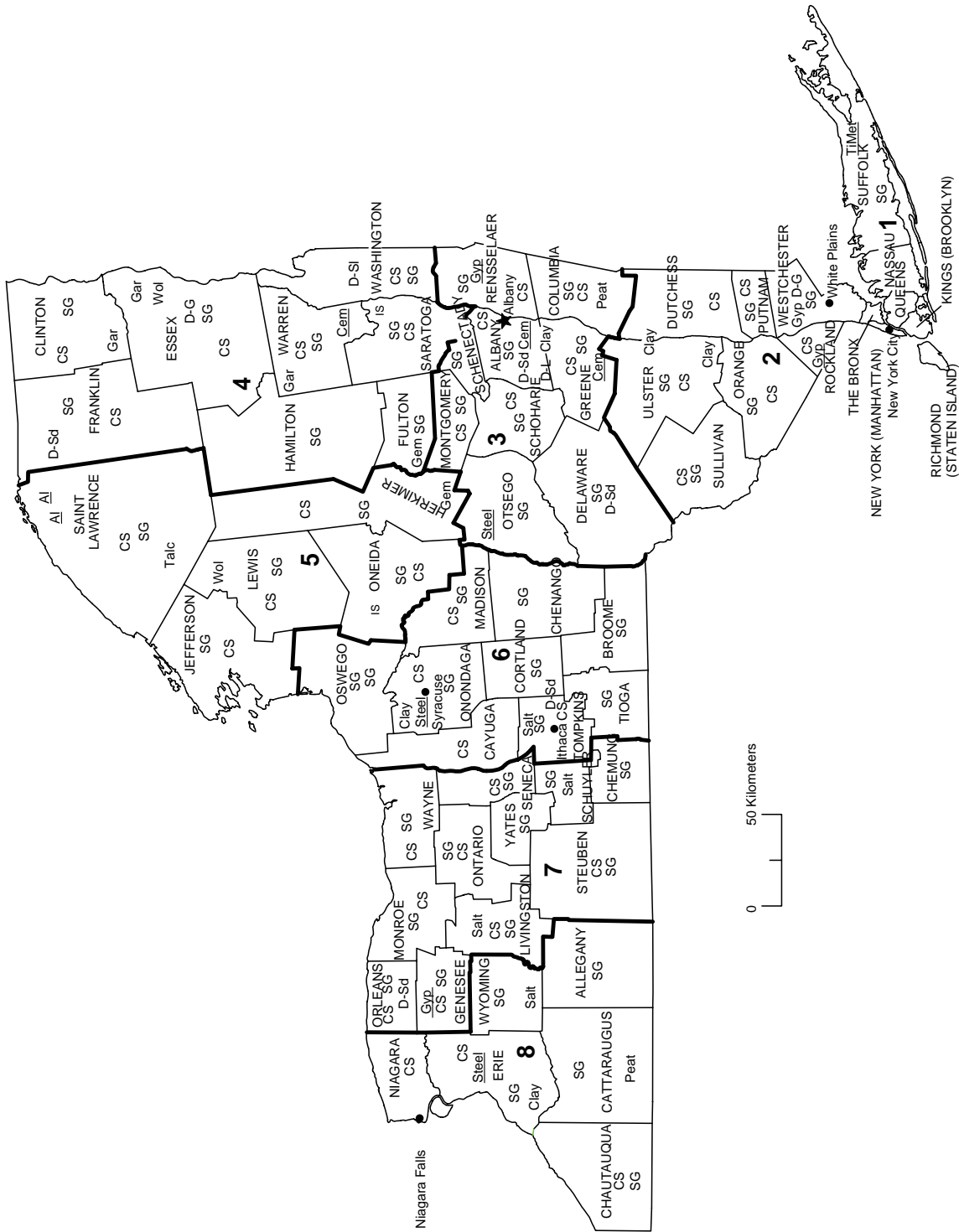
NEW YORK

LEGEND

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

MINERAL SYMBOLS (Major producing areas)

- Al Aluminum plant
- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- D-G Dimension granite
- D-L Dimension limestone
- D-Sd Dimension sandstone
- D-Si Dimension slate
- Gar Garnet
- Gem Gemstones
- Gyp Gypsum
- Gyp Gypsum plant
- IS Industrial sand
- Peat Peat
- Salt Salt
- SG Construction sand and gravel
- Steel Steel plant
- Talc Talc
- TiMet Titanium metal plant
- Wol Wollastonite



THE MINERAL INDUSTRY OF NEW YORK

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

In 2005, New York's nonfuel raw mineral production was valued¹ at \$1.29 billion, based upon annual U.S. Geological Survey (USGS) data. This was an 18.3% increase from the \$1.09 billion total value for 2004, which was up 9% from that of 2003. The State was 15th in rank (14th in 2004) among the 50 States in total nonfuel mineral production value, of which the State accounted for more than 2.3% of the U.S. total value.

In 2005, crushed stone, by value, remained New York's leading nonfuel mineral, followed by salt, cement (portland and masonry), construction sand and gravel, and wollastonite. These five mineral commodities accounted for more than 97% of the State's total nonfuel mineral production value. Crushed stone led New York's increase in value; a nearly 7% increase in production generated a 36%, or \$118 million increase in the commodity's value—a substantial increase in unit value. Although cement production was down slightly, its total value rose by nearly \$30 million. The total value of salt production increased by \$26 million and those of construction sand and gravel (production down 5%) and crude gypsum (occasional producers resumed production) went up \$15 million and \$11 million, respectively. Smaller, yet significant increases also took place in the values of dimension stone, wollastonite, and industrial garnet (descending order of change) (table 1). The only decreases in value were somewhat small decreases in the values of industrial sand and gravel (no production) and talc.

In 2005, New York continued to be the only State to produce wollastonite, as well as first in the quantity of industrial garnet produced of three producing States, third in the production of salt, and fourth in talc. The State rose to fourth in the production of crude gypsum and to eighth from ninth in dimension stone production. Additionally, New York mining and mineral processing operations produced significant quantities of, in descending order of value, crushed stone (14th in rank), portland cement (13th), construction sand and gravel (14th), masonry cement (13th), and common clays (14th). Primary aluminum and raw steel were produced from materials obtained from foreign and other domestic sources. With a significant increase in primary aluminum production in 2005, New York rose to fourth from seventh in rank among 12 producing States.

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 2005 USGS mineral production data published in this chapter are those available as of December 2006. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

The following narrative information was provided by the New York State Geological Survey² (NYSGS) and the Division of Mineral Resources (DMR) of the New York State Department of Environmental Conservation (DEC). Continuing the trend of the last few years, the number of permitted nonfuel mineral mining operations in New York decreased in 2005. Of the 2,249 active mines, which were located in 56 of the State's 62 counties, 1,759 operations were run by the private mining industry and 490 were run by local or State government entities. In 2005, the DEC issued a total of 411 mine permits, 66 for new operations and 345 for either renewals or modifications. Of the new operations, 53 were for sand and gravel, 4 for bluestone, 6 for shale, and 1 each for limestone, granite, and slate.

On a limited basis near yearend, operations were resumed at the furloughed Balmat zinc mine in St. Lawrence County. As a result of low zinc prices, the mine had been maintained on a care-and-maintenance basis since May 2001. The mine was operated by St. Lawrence Zinc Co. (a subsidiary of Hudson Bay Mining and Smelting Co). This vertically integrated Canadian mining company was the producer of copper, zinc, and precious metals from its mines and plants in Manitoba and Saskatchewan. At the mine, St. Lawrence Zinc planned additional exploratory drilling and a full reopening when economic conditions permit.

Overall, nearly 19,800 hectares (ha) (nearly 48,900 acres) in New York was affected by mining in 2005 from a total life-of-mine approved area of 45,600 ha. In 2005, seven counties (Albany, Dutchess, Genesee, Onondaga, Ontario, Rensselaer, and Rockland) had between 0.36% to 0.44% of their land surface under a mining permit. For most of the State's counties with active mines, less than 0.25% of the land is covered by mining permits.

Exploration and Development

The main focus of exploration and development for the mining industry the past several years has been to expand existing operations, including sand and gravel and hard rock quarries. In Onondaga County, the owner of a 733-ha (1,810-acre) limestone mine, which dates back to 1878, applied for a 46-ha permit modification to mine an area currently occupied by waste stone remaining from 125 years of operation. The company proposed to process more than 33 million metric tons of stone into marketable products in order to uncover the original quarry floor, after which it would mine the limestone to the depth already authorized for the surrounding mine. Although no changes were planned in the mine's overall production,

²William Kelly, State Geologist of New York, authored the text of the State mineral industry information provided by the New York State Geological Survey (a bureau of the New York State Museum in the State Education Department), Division of Research and Collections in collaboration with the New York State Department of Environmental Conservation, Division of Mineral Resources.

and this part of the mine would be grandfathered into the overall mine plan, the DEC staff had the task to evaluate the applicability of the State Environmental Quality Review Act provisions.

The DEC received an application for one new limestone mine by a company in Clinton County. The site, surrounded by wetlands on three sides, was in a rural area of abandoned farms and scattered residences. The applicant proposed dewatering the site into the adjoining wetlands. An interstate highway, 61 meters (m) (200 feet) east of the proposed mine, would provide an excellent transportation route. In Wayne County, a sand and gravel operation applied to the DEC for a 324-ha expansion to its permitted life-of-mine area.

Controversy not uncommonly surrounded proposals to expand existing mines in several areas of the State. This was true for expansions that were horizontal or vertical (or both) of the footprint of the mine, as well as such changes as going from sand and gravel extraction to mining the underlying bedrock. The main issues associated with these operations have been assessing the effects of mining to the underlying water table and water aquifers. Other issues of concern to the public continued to include noise, blasting, traffic, visual impacts, environmental justice, and extended life-of-mine terms. An Erie County crushed stone producer proposed to move its processing and asphalt plants from its existing locations to mine the stone resources beneath the plant and its surrounding area. Town officials, citizen group representatives, and individual neighbors identified zoning, traffic, odor, dust, and blasting issues as problematic.

Significant public opposition arose regarding plans to deepen or expand existing life-of-mine permits in localities Statewide. One example was a proposed permit modification to mine 30 m deeper at an operation in Rensselaer County. The proposal would require excavation below the water table. Hearings were held regarding the impact of the mine on wells and its discharge to the stream that would be required to dewater the mine. In another case, a Schoharie County producer's proposal to expand its operation from 35 to 63 ha drew significant public opposition. On Long Island, a similar opposition arose to a proposal to modify an existing mining permit to allow for an increase in the final size and depth of an excavation pond. Since towns in New York in recent years have been zoning out mining in new areas, this proposal has been part of an increasing trend toward deeper mines on Long Island and elsewhere in New York.

Mine Reclamation and Awards

A total of about 540 ha was reclaimed in 2005, comprised of more than 325 ha at closed mines and nearly 215 ha of concurrent reclamation. Since 1975, more than 9,710 ha of land affected by mining have been reclaimed. In 2005, the DEC collected \$2.6 million in annual regulatory fees from industry and State-owned mines. Mines owned by other governmental entities are exempt.

The DEC Mined Land Reclamation Program (MLRP) held \$107 million in financial security to guarantee mine reclamation. However, recent experience with reclamation work contracted

by the DEC demonstrated that individual mine financial security amounts were too low. Based upon 2005 prices, approximately two-thirds of existing Mined Land Reclamation Permits had bonds that would not cover reclamation costs if the sites were abandoned. Because the State's Mined Land Reclamation Law gives the DEC the authority to set bonds at the level necessary to adequately reclaim a mine, the agency increased reclamation bonds to an average of about \$12,000 per hectare (\$5,000 per acre) at the time of mining permit renewal. The DEC performed 1,982 mine inspections, traveling more than 338,000 km (210,000 miles) in 2005.

The MLRP collected in excess of \$116,000 in fines and penalties. The DEC staff, in cooperation with the U.S. Department of Agriculture, the U.S. Department of the Interior's Fish and Wildlife Service, and the Sullivan County Soil Conservation Service, designed and implemented a reclamation project in Sullivan County. The site, near the Delaware River, was enrolled in the Wildlife Habitat Incentive Program, which was planned to be a prototype for future reclamation efforts. The site was to be graded, dotted with small, spring-fed ponds, and planted with warm season grasses. In addition, the DEC reclaimed abandoned mines in Chautauqua and Chenango Counties using seized financial security. The 10.5-ha Chenango County site is the largest such project undertaken to date by the DEC.

In the aftermath of the AKZO, Inc. Retsof salt mine failure, a desalinization plant was under construction in Livingston County. The purpose of the plant was to stabilize the level of salt-contaminated ground water rising in that area of the flooded mine. The AKZO Brine Mitigation Project states that this will prevent the brine from mixing with and degrading the quality of the ground water in the bedrock and surficial aquifers. Salt water levels have been rising owing to the slow closure of the flooded mine. As mine space is reduced, salt water is forced up the collapse and into the overlying aquifer. Salt from the desalinization plant will be pelletized and marketed for use in water softeners, and the purified water will augment the drinking water supply of the local community.

In 1998, United States Gypsum Co. (USG) decommissioned their underground mine in Genesee County. The DEC is working with USG to establish closure and monitoring timetables.

The 2005 NYS Mined Land Reclamation Award was presented to a mining company called It's Greener Now in Schuyler County. The company reclaimed 24 ha of abandoned mine land, which after grading and revegetation now supports a herd of 32 elk. The elk farm, in close proximity to Watkins Glen State Park, was expected to become a popular tourist destination. Another company in Cattaraugus County dedicated a new public fishing site on a portion of its mining property. Some 162 ha of excavated lakes at the reclaimed site was made available to the public. A reclamation project in Broome County offered the opportunity to compare a restored and nonrestored mine over a long term. A remote 0.4-ha (one-acre) site within a nearly 650-ha managed forest tract was treated with an application of overburden and a heavy dose of animal manure; the open area of the reclaimed mine was immediately used by wildlife.

For reclamation work at its Freedom Pit in Cattaraugus County, Lafarge North America Inc. won the Pollinator Protector of the Year Award presented at the Wildlife Habitat Council Annual Symposium in Baltimore, MD (Kauffman, 2006³). The award recognized the company's efforts to create viable habitat for pollinator species, which have been in steep decline in recent decades. The DEC released a Revegetation Procedures Manual, a 91-page guide to help mine operators tailor specific planting decisions to the specific features of their site and final intended use. The manual, which is available online at URL <http://www.dec.ny.gov/lands/5401.html>, discusses how to minimize the adverse impacts of mining on important soil properties that affect revegetation success.

In conjunction with the DEC's MLRP, meetings were held in several parts of the State to educate contractors, students, and officials regarding mine reclamation issues. The DEC Mined Land Program staff participated in the Association of General Contractors/Department of Transportation (DOT) meeting to discuss the applicability of mined land reclamation permits in relation to DOT contracts. The same staff hosted the annual meeting of the National Association of State Land Reclamationists. Presentations included those on reclamation of the endangered Karner Blue butterfly habitat, alternative reclamation bonding instruments, and the role of landscape architects in mine reclamation. An open house, held in a Clinton County crushed stone quarry, drew 300 junior high school students who toured the facility, witnessed a blast, and examined excavating equipment. Additionally, MLP staff visited several classrooms to educate students about the mineral products they use every day.

Legislation and Government Programs

Mines on lands associated with the Native American Indian Nations continued to present challenges to the MLRP. The Oneida Nation occupies a 13-ha reservation in Madison County but owns nearly 6,900 ha throughout Madison and Oneida Counties. A claim was filed by the Oneida Indian Nation regarding a mine it owns on purchased land that is operating outside of the Mined Land Reclamation Law. In an 8-1 decision, the Supreme Court of the United States ruled that the Oneidas

³A reference that includes a section mark (§) is found in the Internet Reference Cited section.

cannot regain sovereignty simply by purchasing the land. This mine supplies mineral products on a commercial basis to construction projects in the area. The Supreme Court ruling affects regulatory control of this mine and a sand and gravel mine in Cayuga County affected by the Cayuga Nation land claim.

The DEC continued work with the NYSGS to locate and map abandoned underground mines. Active mostly in the late 1800s to early 1900s, New York has roughly 300 such mines, each a potential danger to individuals and environmental threats caused by land subsidence and cave-ins. One of the DEC's main objectives was to publish a map of the State's underground mines on the agency's Web site to assist engineers, homeowners, and land-use planners to increase awareness of the locations and possible dangers from the State's typically long-forgotten abandoned underground mines.

The NYSGS continued bedrock and surficial geologic mapping projects in several regions of the State. Mapping priority was given to areas in which expanding development surrounding urban areas and along transportation corridors drove a need for, and understanding of, mineral resources, among other topics. The NYSGS has been an active participant in the STATEMAP program. STATEMAP is a component of the congressionally mandated National Cooperative Geological Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: FEDMAP, which funds Federal geologic mapping projects, STATEMAP, which is a matching-funds grant program with State geological surveys, and EDMAP, a matching-funds grant program for universities with a goal to train the next generation of geologic mappers. Maps were produced at a scale of 1:24,000. In 2005, digital maps were produced of six 7 ½ minute quadrangles in New York. These included the Greenwood Lake bedrock map, the Little Falls bedrock geologic map, the Ossining surficial map, the Owasco bedrock and surficial geological maps, and the Warwick bedrock map.

Internet Reference Cited

Kauffman, V. C., 2006, Lafarge North America Inc. receives international habitat conservation award, accessed January 7, 2008, at URL <http://www.wildlifehc.org/news/membernews/Index.cmf?Page=1&NewsID=29993>.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2003		2004		2005	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	644	8,050	756	10,900	785	11,700
Gemstones	NA	65	NA	74	NA	78
Gypsum, crude	--	--	--	--	2,230	11,400
Salt	5,230	225,000	6,430	301,000	6,840	327,000
Sand and gravel, construction	30,200	172,000	33,100	189,000	31,300	204,000
Stone:						
Crushed	53,700	352,000	49,400 ^r	327,000 ^r	52,700	445,000
Dimension	65	6,110	44	4,560	42	7,470
Combined values of cement, garnet (industrial), peat, sand and gravel (industrial [2003-04]), talc (crude), wollastonite	XX	235,000	XX	256,000	XX	286,000
Total	XX	998,000	XX	1,090,000 ^r	XX	1,290,000

^rRevised. NA Not available. XX Not applicable. -- Zero.

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.

TABLE 2
NEW YORK: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	58	30,700 ^r	\$196,000 ^r	59	31,900	\$267,000
Dolomite	12 ^r	8,380 ^r	62,200 ^r	14	10,200	86,500
Marble	1	W	W	1	W	W
Granite	7	3,850 ^r	20,700 ^r	7	3,540	28,400
Traprock	2	W	W	2	W	W
Sandstone	9	2,240 ^r	18,800 ^r	12	2,330	22,200
Slate	1	73	416	1	90	737
Miscellaneous stone	3	W	W	4	327	2,430
Total	XX	49,400 ^r	327,000 ^r	XX	52,700	445,000

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." 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 3
NEW YORK: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	289	2,690
Filter stone	421	3,280
Other coarse aggregates	412	4,480
Total	1,120	10,400
Coarse aggregate, graded:		
Concrete aggregate, coarse	2,060	16,700
Bituminous aggregate, coarse	3,110	28,600
Bituminous surface-treatment aggregate	1,290	17,600
Railroad ballast	32	296
Other graded coarse aggregates	2,040	20,200
Total	8,530	83,500
Fine aggregate (-¾ inch):		
Stone sand, concrete	81	650
Stone sand, bituminous mix or seal	719	5,100
Screening, undesignated	335	2,290
Other fine aggregates	1,610	16,500
Total	2,750	24,500
Coarse and fine aggregates:		
Graded road base or subbase	3,870	23,600
Unpaved road surfacing	(2)	(2)
Terrazzo and exposed aggregate	(2)	(2)
Crusher run or fill or waste	2,250	14,200
Other coarse and fine aggregates	3,780	26,400
Total	9,900	64,300
Other construction materials ³	668	17,800
Agricultural:		
Agricultural limestone	498	3,240
Poultry grit and mineral food	(4)	(4)
Other agricultural uses	6	284
Total	504	3,520
Chemical and metallurgical, lime manufacture	(5)	(5)
Special, other fillers or extenders	(5)	(5)
Other miscellaneous uses and specified uses not listed	500	5,840
Unspecified:⁶		
Reported	11,600	95,100
Estimated	17,000	139,000
Total	28,700	235,000
Grand total	52,700	445,000

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."

³Includes drain fields.

⁴Withheld to avoid disclosing company proprietary data; included with "Other agricultural uses."

⁵Withheld to avoid disclosing company proprietary data; included in "Grand total."

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

TABLE 4
NEW YORK: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE AND DISTRICT^{1,2}

(Thousand metric tons and thousand dollars)

Use	District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ³	203	2,600	150	1,590	W	W
Coarse aggregate, graded ⁴	W	W	2,000	15,800	W	W
Fine aggregate (-¾ inch) ⁵	W	W	1,030	9,010	222	1,380
Coarse and fine aggregates ⁶	W	W	1,720	12,200	612	4,480
Other construction materials ⁷	--	--	75	2,500	--	--
Agricultural ⁸	W	W	W	W	W	W
Chemical and metallurgical ⁹	--	--	--	--	--	--
Special ¹⁰	--	--	--	--	--	--
Other miscellaneous uses and specified uses not listed	--	--	460	3,350	--	--
Unspecified:¹¹						
Reported	8,930	73,000	--	--	--	--
Estimated	2,900	24,000	6,500	53,000	2,300	19,000
Total	14,400	127,000	12,000	98,200	4,560	45,600
	District 5		District 6		District 7	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ³	W	W	83	754	162	1,300
Coarse aggregate, graded ⁴	W	W	W	W	1,080	8,750
Fine aggregate (-¾ inch) ⁵	W	W	W	W	316	2,340
Coarse and fine aggregates ⁶	W	W	W	W	3,390	20,000
Other construction materials ⁷	52	1,150	153	4,840	239	7,900
Agricultural ⁸	W	W	--	--	10	111
Chemical and metallurgical ⁹	--	--	--	--	--	--
Special ¹⁰	W	W	--	--	--	--
Other miscellaneous uses and specified uses not listed	40	2,490	--	--	--	--
Unspecified:¹¹						
Reported	1,720	14,000	--	--	979	8,000
Estimated	1,600	13,000	1,700	14,000	184	1,500
Total	5,280	44,600	5,330	41,300	6,380	50,000
	District 8					
	Quantity	Value				
Construction:						
Coarse aggregate (+1½ inch) ³	W	W				
Coarse aggregate, graded ⁴	W	W				
Fine aggregate (-¾ inch) ⁵	W	W				
Coarse and fine aggregates ⁶	W	W				
Other construction materials ⁷	149	1,440				
Agricultural ⁸	W	W				
Chemical and metallurgical ⁹	W	W				
Special ¹⁰	--	--				
Other miscellaneous uses and specified uses not listed	--	--				
Unspecified:¹¹						
Reported	--	--				
Estimated	1,900	15,000				
Total	4,660	38,300				

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

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

²No crushed stone produced in District 1.

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 (concrete), stone sand bituminous mix or seal, and other fine aggregates.

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

⁷Includes drain fields.

TABLE 4--Continued
 NEW YORK: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE AND DISTRICT^{1,2}

⁸Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁹Includes lime manufacture.

¹⁰Includes other fillers or extenders.

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

TABLE 5
 NEW YORK: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	6,890	\$54,800	\$7.95
Plaster and gunite sands	184	1,380	7.49
Concrete products (blocks, bricks, pipe, decorative, etc.)	191	2,020	10.59
Asphaltic concrete aggregates and other bituminous mixtures	2,310	15,400	6.66
Road base and coverings	4,360	23,300	5.34
Road stabilization (cement and lime)	414	2,500	6.04
Fill	1,950	7,810	4.00
Snow and ice control	1,210	5,520	4.56
Railroad ballast	15	63	4.20
Filtration	103	774	7.51
Other miscellaneous uses	244	1,970	8.09
Unspecified: ²			
Reported	4,220	30,800	7.31
Estimated	9,200	57,200	6.22
Total or average	31,300	204,000	6.50

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

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

