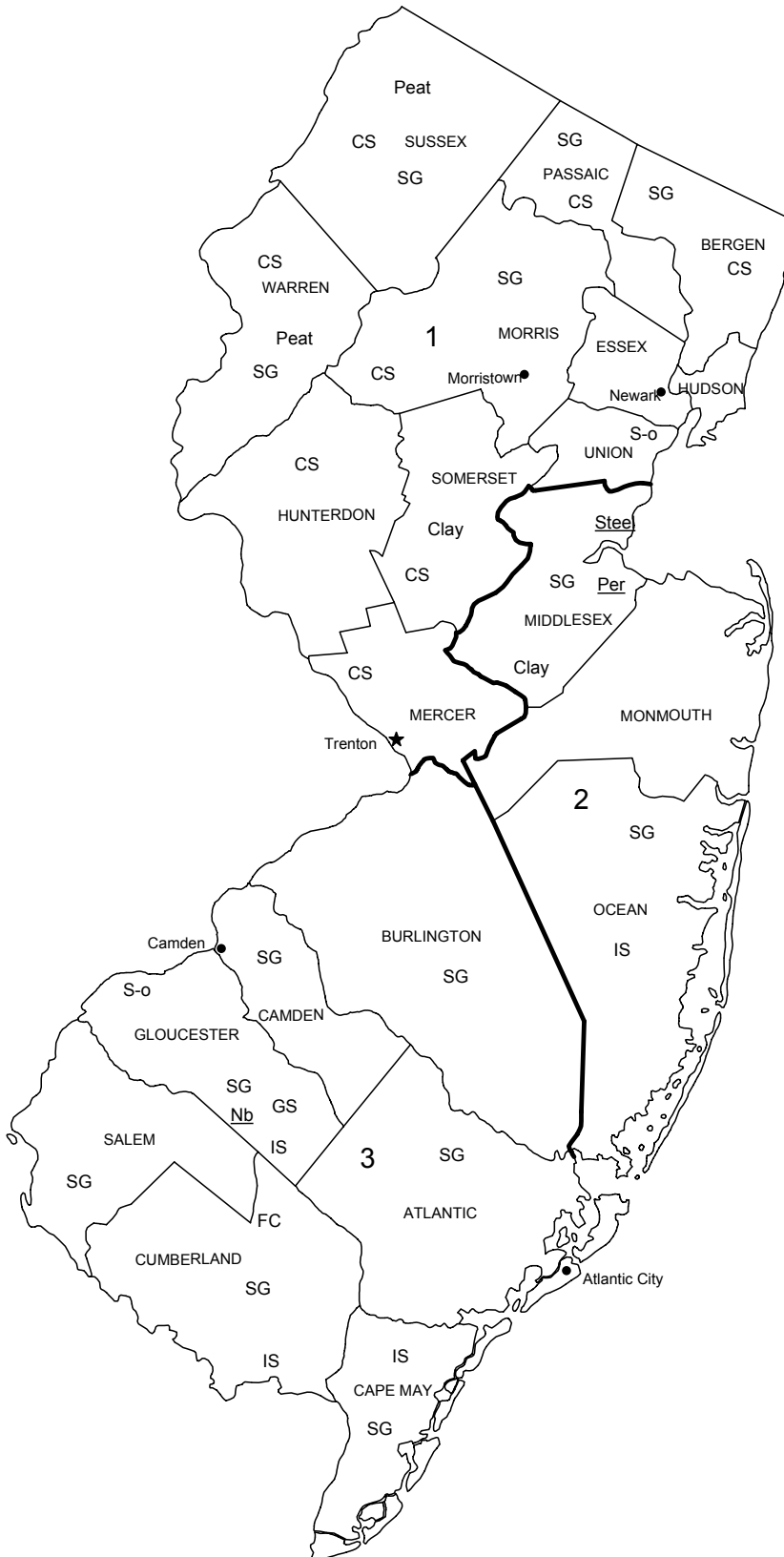


NEW JERSEY

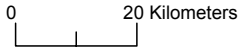


LEGEND

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

**MINERAL SYMBOLS
(Major producing areas)**

- Clay Common clay
- CS Crushed stone
- FC Fire clay
- GS Greensand
- IS Industrial sand
- Nb Columbium (niobium) plant
- Peat Peat
- Per Perlite plant
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Steel Steel plant



Source: New Jersey Geological Survey/U.S. Geological Survey (2002)

THE MINERAL INDUSTRY OF NEW JERSEY

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

In 2002, the estimated value¹ of nonfuel mineral production for New Jersey was \$285 million, based upon preliminary U.S. Geological Survey (USGS) data. This was down about 11% from that of 2001² and followed a 10.3% increase from 2000 to 2001.

Crushed stone and construction sand and gravel, by value, were New Jersey's leading nonfuel mineral commodities, followed by industrial sand and gravel and greensand marl. In 2002, decreases in the production and values of crushed stone and construction sand and gravel accounted for most of the State's decrease in value (table 1). Because data for greensand marl and peat have been withheld for 2000 and 2002 to protect company proprietary data, the actual total values were higher than those reported in table 1. Greensand marl production was down about 20%, while its value was down only about 7%.

In 2001, a \$14 million increase in the value of crushed stone and a \$13 million rise in that of construction sand and gravel led the State's increase for the year. [Additionally, the inclusion of the combined value of slightly more than \$4 million for common clays, greensand marl, and peat in 2001 also added to the State's total for that year (table 1).]

Based upon USGS estimates of the quantities of minerals produced in the United States in 2002, New Jersey continued to be the only State to produce greensand marl and was sixth in the production of industrial sand and gravel. Greensand marl was used directly as an organic conditioner and fertilizer for soils and as a water filtration medium to remove soluble iron and manganese from well water. Additionally, significant quantities of construction sand and gravel and crushed stone were produced in the State.

The following narrative information was provided by the New Jersey Geological Survey³ (NJGS).

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

All 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 and are expected to change. Construction sand and gravel and crushed stone estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

³Lloyd Mullikin, Supervising Geologist, authored the text of the State mineral industry information provided by the New Jersey Geological Survey.

Exploration

Sand and gravel exploration and development remained an area of particular interest, in part because of the continuing construction boom during the year. Most if not all new exploration was in the offshore area along New Jersey's Atlantic Coast. The U.S. Department of the Interior, USGS, and Minerals Management Service (MMS) remained interested in exploring the feasibility of the sale of sand and gravel at locations 5 to 19 kilometers (km) off the New Jersey coast in Federal waters of the Atlantic Ocean. Development of these offshore sand and gravel resources remained a topic of much interest and discussion. Offers to help offset the expense of beach restoration and to cap of the Historic Area Remediation Site in exchange for permission to mine sand from the ocean floor were still being extended by the mining industry. No decisions have been made concerning the development of these resources. Offshore mining remained limited to the sand derived from the maintenance dredging of the Ambrose Shipping Channel and to limited evaluation dredging in the Sandy Hook Shipping Channel in Raritan Bay.

Commodity Review

Mining activities in New Jersey were limited to sand and gravel, industrial sand, and crushed stone, and to a lesser extent clay, greensand, and peat production. No new land-based mining operations of any significance started up during 2002, and as buildable land has become scarcer, the cost of developing mining properties has increased.

Various large-scale capital projects and strong private-sector activity during the year continued to contribute to the States healthy construction sector. Major road widening and realignment projects, light rail line construction, and rapid growth associated with Atlantic City and its casino gambling industry continued to fuel the demand for industrial minerals. Construction was completed in June 2002 on the \$1 billion Borgata Casino and Entertainment Resort, making it the first, new, large casino resort in Atlantic City since the Taj Mahal was built in 1990. Another major project was announced in April 2002, a \$225 million expansion of the Tropicana Casino and Resort, scheduled for completion in 2004.

Merger and takeover activity during the year included the Monterrey, Mexico-based Cemex, Inc. selling its Sparta Facility on Limecrest Road, Lafayette Township, Sussex County, to Oldcastle Material Group (a subsidiary of Dublin, Ireland-based CRH plc). Ralph Clayton & Sons purchased the Central Concrete Corp. sand and gravel pit in Lacey Township, Ocean County; Central Concrete is a subsidiary of the US Concrete Co.

Legislation and Government Programs

The U.S. Army Corps of Engineers (USACE) and the New Jersey Department of Environmental Protection (NJDEP) continued their commitment to long-term beach replenishment projects along the Atlantic Coast. The NJGS and the NJDEP, in cooperation with the MMS, continued to locate and document offshore sand occurrences during the year by collecting vibro-core samples from the seabed off Monmouth County between Sandy Hook and Manasquan Borough 5 to 16 km offshore in Federal waters. This was an area where the USACE has entered

into a 50-year agreement to replenish and maintain the beaches and shoreline.

A lack of uniformity in regulations and local ordinances related to mining activity caused the State legislature to consider legislation that shifted control of the mining sector from the municipal to the State level. Other pending State legislation addressed the expansion needs and operational considerations of small businesses and the mining sector.

Recent publications and maps concerning New Jersey geology are available at URL <http://www.njgeology.org/>.

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

(Thousand metric tons and thousand dollars)

Mineral	2000		2001		2002 ^P	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	W	130	W	W	--	--
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,300	85,000	16,800	98,000	15,800	94,200
Industrial	1,690	35,700	1,580	34,800	1,570	34,700
Stone, crushed	24,900	170,000	26,400	184,000	22,000	156,000
Combined values of greensand marl, peat, and values indicated by symbol W	XX	(3)	XX	4,170	XX	(3)
Total	XX	291,000	XX	321,000	XX	285,000

^PPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. 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.

³Value excluded to avoid disclosing company proprietary data.

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

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	1	W	W	\$12.67	2	W	W	\$14.24
Granite	11	10,000	\$59,700	5.97	11	11,100	\$72,800	6.54
Traprock	12	14,200	102,000	7.19	12	14,900	105,000	7.06
Miscellaneous stone	1	W	W	6.32	1	W	W	3.54
Total or average	XX	24,900	170,000	6.82	XX	26,400	184,000	6.95

W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

TABLE 3
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	144	\$1,620	\$11.24
Filter stone	W	W	17.64
Other coarse aggregate	436	1,770	4.06
Total or average	580	3,390	5.84
Coarse aggregate, graded:			
Concrete aggregate, coarse	437	1,850	4.22
Bituminous aggregate, coarse	W	W	8.81
Bituminous surface-treatment aggregate	W	W	6.61
Other graded coarse aggregate	2,940	21,300	7.24
Total or average	3,370	23,100	6.85
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	5.18
Stone sand, bituminous mix or seal	W	W	4.19
Screening, undesignated	2,040	13,600	6.66
Other fine aggregate	816	3,360	4.12
Total or average	2,850	16,900	5.93
Coarse and fine aggregates:			
Graded road base or subbase	2,590	17,500	6.75
Terrazzo and exposed aggregate	W	W	9.19
Crusher run or fill or waste	1,090	6,790	6.21
Roofing granules	W	W	20.04
Other coarse and fine aggregates	2,950	16,600	5.62
Total or average	6,640	40,900	6.16
Other construction materials	198	986	4.98
Agricultural:			
Limestone	(2)	(2)	34.17
Poultry grit and mineral food	(2)	(2)	34.17
Chemical and metallurgical, flux stone	(3)	(3)	(4)
Special:			
Mine dusting or acid water treatment	(2)	(2)	11.81
Asphalt fillers or extenders	(2)	(2)	13.23
Whiting or whiting substitute	(2)	(2)	13.95
Other fillers or extenders	(2)	(2)	16.21
Unspecified: ⁵			
Reported	8,100	66,800	8.24
Estimated	4,600	29,000	6.34
Total or average	12,700	96,100	7.55
Grand total or average	26,400	184,000	6.95

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

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

²Withheld to avoid disclosing company proprietary data; included in "Grand total."

³Less than 1/2 unit.

⁴Withheld to avoid disclosing company proprietary data.

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

TABLE 4
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE AND DISTRICT^{1, 2, 3}

(Thousand metric tons and thousand dollars)

Use	District 1 and 3	
	Quantity	Value
Construction:		
Coarse aggregate (+1 1/2 inch) ⁴	580	3,390
Coarse aggregate, graded ⁵	3,370	23,100
Fine aggregate (-3/8 inch) ⁶	2,850	16,900
Coarse and fine aggregate ⁷	6,640	40,900
Other construction materials	198	986
Agricultural ⁸	65	2,210
Chemical and metallurgical ⁹	(10)	(10)
Special ¹¹	11	150
Unspecified: ¹²		
Reported	8,100	66,800
Estimated	4,600	29,000
Total	26,400	184,000

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

²No production reported for District 2.

³District 3 included in District 1 to avoid disclosing company proprietary data.

⁴Includes filter stone, riprap and jetty stone, and other coarse aggregates.

⁵Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁶Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.

⁷Includes crusher run (select material or fill), graded road base or subbase, roofing granules, terrazzo and exposed aggregate, and other coarse and fine aggregates.

⁸Includes agricultural limestone and poultry grit and mineral food.

⁹Includes flux stone.

¹⁰Less than 1/2 unit.

¹¹Includes asphalt fillers or extenders, mine dusting or acid water treatment, whiting or whiting substitute, and other fillers or extenders.

¹²Reported and estimated production without a breakdown by end use.

TABLE 5
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY¹

Use	Quantity	Value	Unit
	(thousand metric tons)	(thousands)	value
Concrete aggregates (including concrete sand)	3,360	\$22,900	\$6.82
Plaster and gunit sands	186	963	5.18
Concrete products (blocks, bricks, pipe, decorative, etc.)	247	2,090	8.45
Asphalt concrete aggregates and other bituminous mixtures	2,690	21,200	7.87
Road base and coverings ²	437	1,670	3.82
Road stabilization (lime)	84	445	5.30
Fill	827	3,670	4.44
Snow and ice control	119	574	4.82
Other miscellaneous uses ³	275	1,910	6.94
Unspecified: ⁴			
Reported	5,070	26,200	5.17
Estimated	3,500	16,000	4.70
Total or average	16,800	98,000	5.84

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

²Includes road and other stabilization (cement).

³Includes filtration.

⁴Reported and estimated production without a breakdown by end use.

TABLE 6
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	1,320	9,320	W	W	W	W
Asphaltic concrete aggregates and road base materials ³	1,420	9,580	W	W	W	W
Fill	263	1,630	271	1,190	294	855
Other miscellaneous uses ⁴	235	1,710	3,380	26,300	939	4,320
Unspecified: ⁵						
Reported	64	481	2,590	13,700	2,410	12,100
Estimated	100	530	830	3,800	2,600	12,000
Total or average	3,500	23,700	7,080	45,000	6,200	29,300

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

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

²Includes plaster and gunitite sands.

³Includes road and other stabilization (cement and lime).

⁴Includes filtration, railroad ballast, and snow and ice control.

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