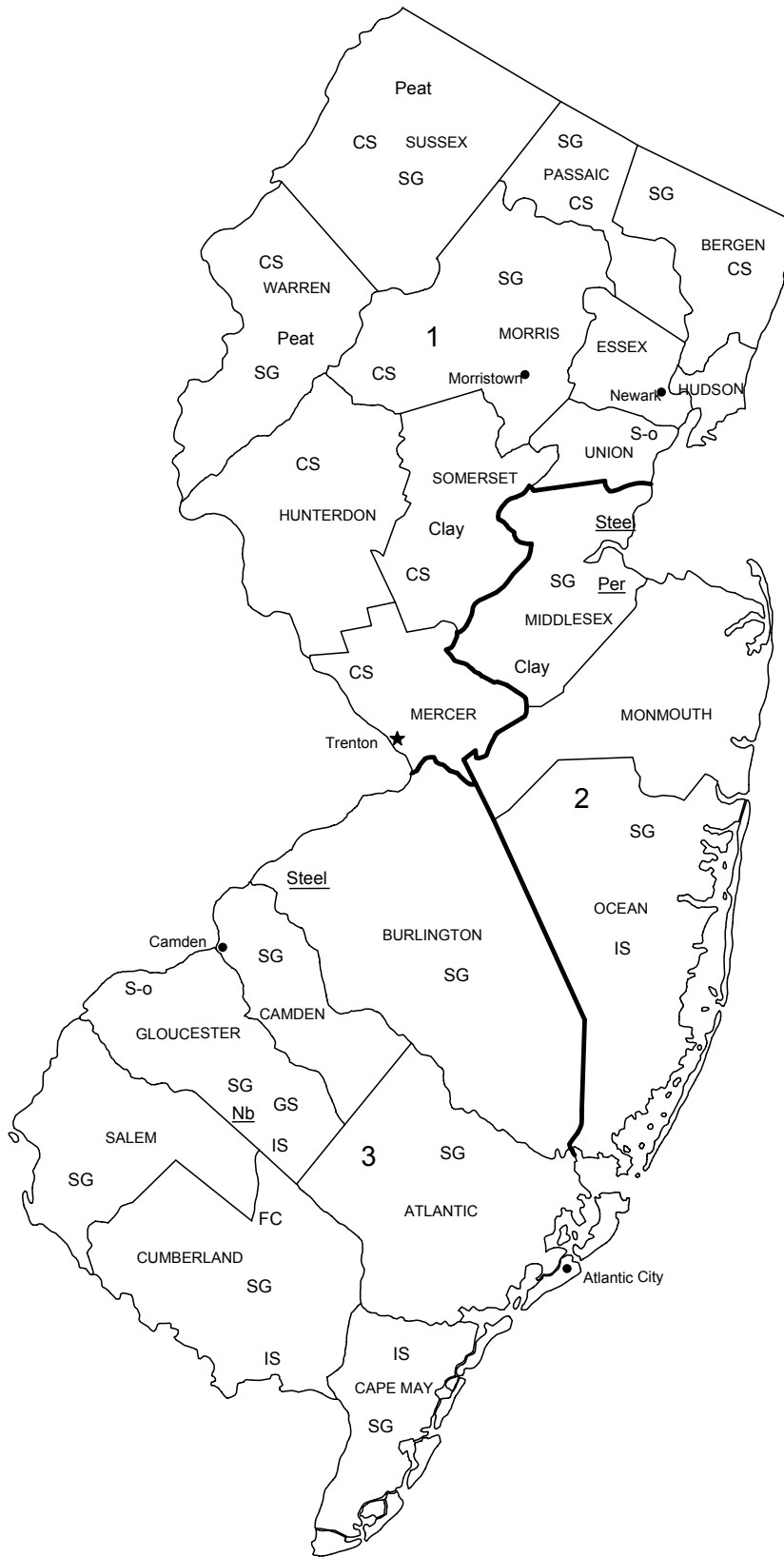


# NEW JERSEY

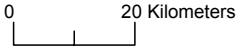


**LEGEND**

- 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 (2004)

# 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 2004, New Jersey's nonfuel raw mineral production was valued<sup>1</sup> at \$341 million, based upon annual U.S. Geological Survey (USGS) data. This was a 6.2% increase compared with that of 2003,<sup>2</sup> which was up nearly 28% from 2002. 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 2004, each of New Jersey's top three nonfuel minerals (based upon value) significantly contributed to the State's rise in value. A more than 10% increase in construction sand and gravel production generated a 14%, or \$15 million, increase in the commodity's value from 2003. A relatively smaller increase in the production of crushed stone led to a \$7 million rise in its value, while a nearly 29% increase in industrial sand and gravel production resulted in an increase in value of more than \$3 million. Production and values of greensand marl, peat, and common clays increased (descending order of change) (table 1).

In 2003, a \$61 million increase in the value of crushed stone led New Jersey's increase in total value, reversing a decrease of similar size that took place in 2002 (\$66 million down from 2001). A nearly \$9 million rise in construction sand and gravel value accounted for most of the balance of the State's increase for the year. Greensand marl production and value also showed relatively small increases (table 1).

In 2004, New Jersey continued to be the only State to produce greensand marl and rose to fourth from sixth in the quantity of industrial sand produced. 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.

The following narrative information was provided by the New Jersey Geological Survey<sup>3</sup> (NJGS).

## Exploration and Development

Mineral exploration activity for sand and gravel along New Jersey's Atlantic Coast was limited owing to environmental concerns and government regulations.

## Commodity Review

### *Industrial Minerals*

Mining activities in New Jersey were limited to production of crushed stone (traprock, granite, limestone, dolomite, and marble), construction sand and gravel, industrial sand, and to a lesser extent, the production of greensand marl, clay and peat (listings in order of quantity produced).

Demand for industrial minerals was strong because of the continuing construction boom and a particularly strong housing sector. The demand for new home construction remained very strong, with little sign of letting up at the end of 2004. Significant quantities of construction sand and gravel and crushed stone were produced at mining sites throughout the State. With no new pits or quarries opened during the year, it has become increasingly difficult to keep pace with demand. Rising real estate prices, environmental concerns, and government regulations pressured the industry to close many operations.

No significant mergers or takeovers in the mining sector took place during the year. Increasing demand for additional concrete capacity, however, stimulated some merger and acquisition interest at year end. The New Jersey Department of Transportation "Victory Bridge Project", between Sayreville and Perth Amboy, and several other large public works projects have tightened concrete supplies.

Offshore mining was limited to the sand derived from the maintenance dredging of the Ambrose Shipping Channel in Raritan Bay. Additional maintenance dredging projects were being evaluated by Federal officials and the Port Authority of New York and New Jersey.

## Government Activities

The U.S. Army Corps of Engineers and the New Jersey Department of Environmental Protection remained committed to long-term beach replenishment projects along the Atlantic Coast. Most of the sand used came from sites within 5 kilometers of the coast. In support of this effort and also to identify offshore resources, the New Jersey Geological Survey entered into its 20th year of

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<sup>1</sup>The 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>.

<sup>2</sup>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.

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

cooperation with the U.S. Minerals Management Service in an effort to locate and document offshore sand occurrences. This was accomplished by conducting marine seismic surveys and collecting vibra-core samples from the sea bed at various locations along the New Jersey coast. For 2004, efforts included vibra-core sampling in the waters off Atlantic City.

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

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN NEW JERSEY<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	W	W	W	W	W	122
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	16,000	96,300	18,200	105,000	20,100	120,000
Industrial	1,420	32,700	1,570	32,700	2,020	35,800
Stone, crushed	20,500	118,000 <sup>†</sup>	24,800	179,000	25,500	186,000
Combined values of greensand marl, peat, and values indicated by symbol W	XX	3,910	XX	4,190	XX	(3)
Total	XX	251,000 <sup>†</sup>	XX	321,000	XX	341,000

<sup>†</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined value" data. XX Not applicable

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

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

<sup>3</sup>Value excluded to avoid disclosing company proprietary data.

TABLE 2  
NEW JERSEY: CRUSHED STONE SOLD OR USED, BY KIND<sup>1</sup>

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	1	W	W	\$7.28 <sup>r</sup>	1	W	W	\$7.28	--	--	--	--
Granite	9 <sup>r</sup>	7,240 <sup>r</sup>	\$45,600 <sup>r</sup>	6.30 <sup>r</sup>	9	10,100	\$72,300	7.16	7	W	W	\$7.15
Traprock	14 <sup>r</sup>	12,600 <sup>r</sup>	68,200 <sup>r</sup>	5.42 <sup>r</sup>	14	14,300	105,000	7.29	15	16,800	\$124,000	7.37
Miscellaneous stone	(2)	W	W	3.58	(2)	W	W	3.58	(2)	W	W	3.58
Total or average	XX	20,500	118,000 <sup>r</sup>	5.78 <sup>r</sup>	XX	24,800	179,000	7.23	XX	25,500	186,000	7.28

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total or average." XX Not applicable. -- Zero.

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

<sup>2</sup>Sales/distribution yards.

TABLE 3a

NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
<b>Coarse aggregate (+1½ inch):</b>			
Macadam	W	W	\$6.61
Riprap and jetty stone	72	\$981	13.63
Other coarse aggregate	595	4,420	7.43
Total or average	667	5,400	8.10
<b>Coarse aggregate, graded:</b>			
Concrete aggregate	2,560	19,900	7.77
Bituminous aggregate coarse	1,610	12,400	7.73
Railroad ballast	276	2,480	8.98
Other graded coarse aggregate	1,910	15,900	8.32
Total or average	6,360	50,700	7.98
<b>Fine aggregate (-¾ inch):</b>			
Stone sand, concrete	1,180	6,820	5.77
Stone sand, bituminous mix or seal	(2)	(2)	7.31
Screening, undesignated	1,640	10,900	6.64
Other fine aggregate	417	3,510	8.42
Total or average	3,240	21,200	6.55
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	1,960	14,600	7.43
Crusher run (select material or fill)	(3)	(3)	7.31
Other coarse and fine aggregate	5,550	38,400	6.93
Total or average	7,510	53,000	7.06
<b>Unspecified:<sup>4</sup></b>			
Reported	2,500	17,900	7.16
Estimated	4,500	31,000	6.86
Total or average	7,000	49,000	6.97
Grand total or average	24,800	179,000	7.23

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

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

<sup>2</sup>Withheld to avoid disclosing company proprietary data; included with "Other fine aggregates."

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

<sup>4</sup>Reported and estimated production without a breakdown by end use.

TABLE 3b

NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
<b>Coarse aggregate (+1½ inch):</b>			
Riprap and jetty stone	72	\$630	\$8.75
Filter stone	W	W	7.28
Other coarse aggregates	126	1,070	8.49
Total or average	199	1,700	8.52
<b>Coarse aggregate, graded:</b>			
Concrete aggregate	1,880	15,200	8.11
Bituminous aggregate coarse	(2)	(2)	7.11
Railroad ballast	(2)	(2)	8.40
Other graded coarse aggregates	2,260	18,900	8.36
Total or average	4,130	34,100	8.25
<b>Fine aggregate (-¾ inch):</b>			
Stone sand, concrete	(3)	(3)	7.28
Stone sand, bituminous mix or seal	(3)	(3)	7.39
Screening, undesignated	881	6,130	6.96
Other fine aggregates	229	1,680	7.35
Total or average	1,110	7,810	7.04
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	1,000	7,320	7.32
Terrazzo and exposed aggregate	(4)	(4)	16.86
Crusher run or fill or waste	55	388	7.05
Other coarse and fine aggregates	5,740	39,400	6.86
Total or average	6,800	47,100	6.93
<b>Unspecified:<sup>5</sup></b>			
Reported	9,180	67,100	7.30
Estimated	4,100	28,000	6.84
Total or average	13,300	94,900	7.16
Grand total or average	25,500	186,000	7.28

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

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

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

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

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

<sup>5</sup>Reported and estimated production without a breakdown by end use.

TABLE 4a

NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE AND DISTRICT<sup>1, 2, 3</sup>

(Thousand metric tons and thousand dollars)

Use	District 1 and 3	
	Quantity	Value
<b>Construction:</b>		
Coarse aggregate (+1½ inch) <sup>4</sup>	667	5,400
Coarse aggregate, graded <sup>5</sup>	6,360	50,700
Fine aggregate (-¾ inch) <sup>6</sup>	3,240	21,200
Coarse and fine aggregate <sup>7</sup>	7,510	53,000
<b>Unspecified:<sup>8</sup></b>		
Reported	2,500	17,900
Estimated	4,500	31,000
<b>Total</b>	<b>24,800</b>	<b>179,000</b>

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>No crushed stone produced for District 2.<sup>3</sup>District 3 included in District 1 to avoid disclosing company proprietary data.<sup>4</sup>Includes macadam, riprap and jetty stone, and other coarse aggregates.<sup>5</sup>Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.<sup>6</sup>Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.<sup>7</sup>Includes crusher run (select material or fill), graded road base or subbase, and other coarse and fine aggregates.<sup>8</sup>Reported and estimated production without a breakdown by end use.



TABLE 4b

NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE AND DISTRICT<sup>1, 2, 3</sup>

(Thousand metric tons and thousand dollars)

Use	District 1 and 3	
	Quantity	Value
<b>Construction:</b>		
Coarse aggregate (+1½ inch) <sup>4</sup>	199	1,700
Coarse aggregate, graded <sup>5</sup>	4,130	34,100
Fine aggregate (-¾ inch) <sup>6</sup>	1,110	7,810
Coarse and fine aggregate <sup>7</sup>	6,800	47,100
<b>Unspecified:<sup>8</sup></b>		
Reported	9,180	67,100
Estimated	4,100	28,000
<b>Total</b>	<b>25,500</b>	<b>186,000</b>

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>No crushed stone produced for District 2.<sup>3</sup>District 3 included in District 1 to avoid disclosing company proprietary data.<sup>4</sup>Includes filter stone, riprap and jetty stone, and other coarse aggregates.<sup>5</sup>Includes bituminous aggregate (coarse), concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.<sup>6</sup>Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.<sup>7</sup>Includes crusher run or fill or waste, graded road base or subbase, terrazzo and exposed aggregate, and other coarse and fine aggregates.<sup>8</sup>Reported and estimated production without a breakdown by end use.

TABLE 5a  
 NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,  
 BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,830	\$14,100	\$7.69
Plaster and gunite sands	32	350	10.94
Concrete products (blocks, bricks, pipe, decorative, etc.)	110	722	6.56
Asphaltic concrete aggregates and other bituminous mixtures	1,600	9,830	6.14
Road base and coverings	115	881	7.66
Fill	2,110	12,000	5.69
Snow and ice control	40	312	7.80
Other miscellaneous uses <sup>2</sup>	142	1,220	8.58
Unspecified: <sup>3</sup>			
Reported	5,420	27,200	5.02
Estimated	6,800	38,000	5.63
Total or average	18,200	105,000	5.77

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

<sup>2</sup>Includes filtration.

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 5b  
 NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,  
 BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,880	\$19,100	\$6.63
Plaster and gunite sands	254	1,910	7.54
Concrete products (blocks, bricks, pipe, decorative, etc.)	152	2,110	13.90
Asphaltic concrete aggregates and other bituminous mixtures	4,730	27,600	5.83
Road base and coverings	278	1,750	6.28
Fill	1,340	4,650	3.48
Snow and ice control	30	193	6.42
Other miscellaneous uses <sup>2</sup>	374	4,100	10.97
Unspecified: <sup>3</sup>			
Reported	3,100	17,900	5.75
Estimated	7,000	40,000	5.80
Total or average	20,100	120,000	5.95

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

<sup>2</sup>Includes filtration.

<sup>3</sup>Reported and estimated production without a breakdown by end use.

TABLE 6a  
 NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	W	W	864	6,840	W	W
Asphaltic concrete aggregates and road base materials	W	W	1,060	7,110	W	W
Fill	54	326	1,540	9,640	511	2,020
Other miscellaneous uses <sup>3</sup>	895	7,880	38	417	1,010	5,130
Unspecified: <sup>4</sup>						
Reported	795	2,790	2,210	12,000	2,410	12,400
Estimated	1,400	9,700	2,600	13,600	2,800	15,000
Total	3,140	20,700	8,350	49,700	6,690	34,500

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

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

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes filtration and snow and ice control.

<sup>4</sup>Reported and estimated production without a breakdown by end use.

TABLE 6b  
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004, BY USE AND DISTRICT<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	824	8,710	859	5,110	1,610	9,330
Asphaltic concrete aggregates and road base materials	W	W	4,210	25,200	W	W
Fill	572	1,980	325	1,470	441	1,200
Other miscellaneous uses <sup>3</sup>	296	2,930	112	807	796	4,650
Unspecified: <sup>4</sup>						
Reported	--	--	2,240	12,500	867	5,360
Estimated	1,300	8,300	1,700	9,800	4,000	22,000
Total	2,970	21,900	9,400	54,900	7,740	42,800

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

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

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes filtration and snow and ice control.

<sup>4</sup>Reported and estimated production without a breakdown by end use.