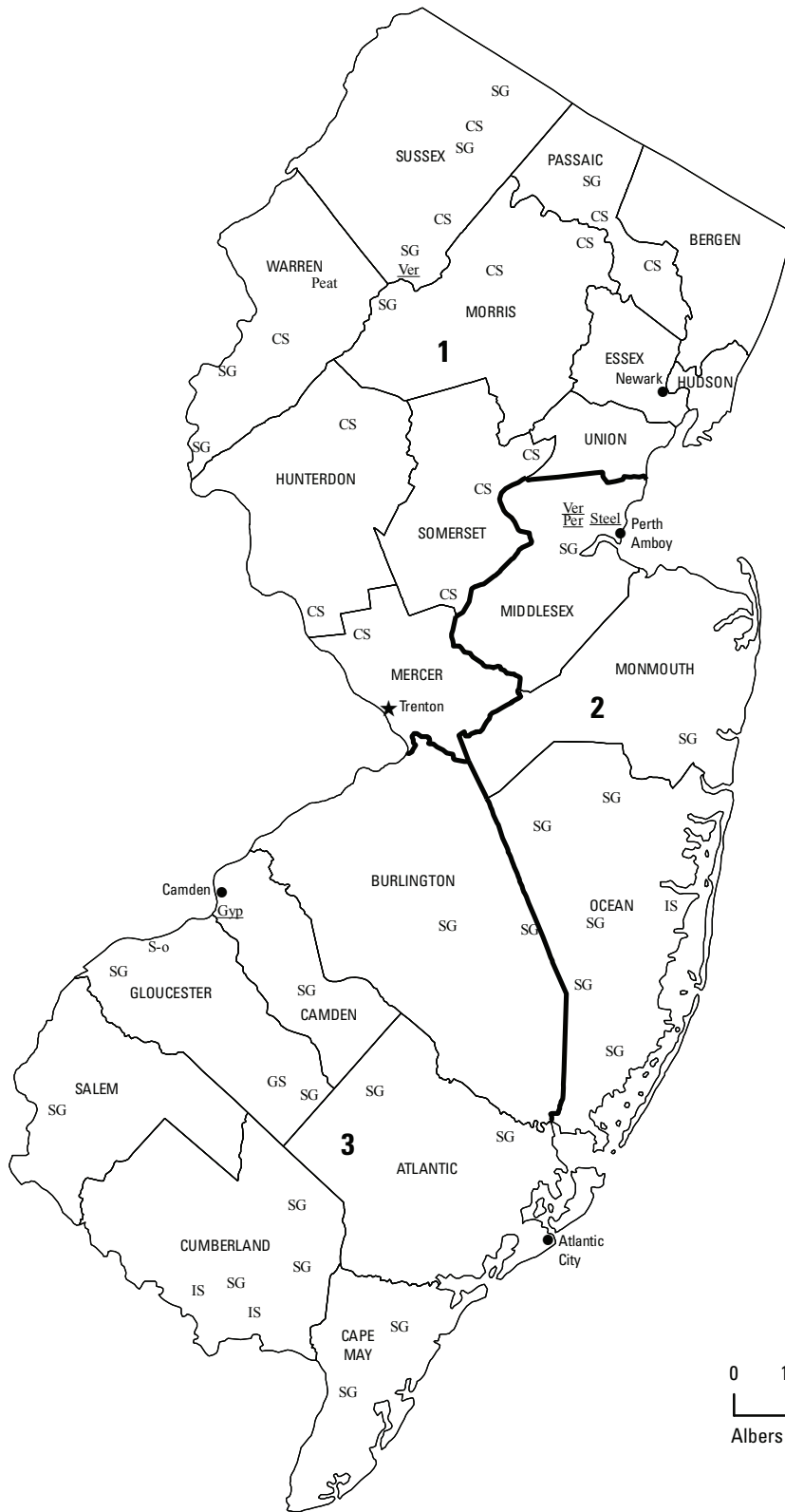




2010–2011 Minerals Yearbook

NEW JERSEY [ADVANCE RELEASE]

NEW JERSEY

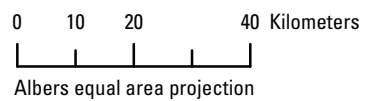


LEGEND

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

**MINERAL SYMBOLS
(Principal producing areas)**

- CS Crushed stone
- GS Greensand
- IS Industrial sand
- Peat Peat
- Per Perlite plant
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Steel Steel plant
- Ver Vermiculite plant



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 2011, New Jersey's nonfuel mineral production¹ was valued at \$275 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$15.8 million (6%) increase from the State's total nonfuel mineral value of \$259 million in 2010, which had decreased by 4% from \$269.6 million in 2009. In 2010 and 2011, the State ranked 39th among the 50 States in total nonfuel mineral production, down from 37th in 2009. Because production data for greensand marl and peat were withheld to avoid disclosing company proprietary data, the State's actual annual total values are slightly higher than those listed in table 1. On a per capita basis, New Jersey ranked 49th in the Nation in nonfuel mineral production with a per capita value of \$29 in 2010 and \$31 in 2011; the national average was \$240.

In 2011, the value of all mineral commodities produced in the State increased, except for greensand marl. Crushed stone and construction sand and gravel were New Jersey's leading nonfuel mineral commodities by value, together accounting for 87% of the State's total value in 2010 and 93% in 2011. Although production quantity decreased by 710,000 metric tons (t) (5%) in 2011, crushed stone saw the most significant increase in production value, by \$12.1 million (10%), accounting for 76% of the State's value increase. Both construction sand and gravel and industrial sand and gravel increased slightly less than 3% in value in 2011; in production quantity, however, construction sand and gravel increased by 17% and industrial sand by 6%. Peat sales remained steady between 2009 and 2010 but decreased in production quantity in 2011, although the production value increased (production figure withheld—company proprietary data).

In 2010, industrial sand and gravel was the only mineral commodity to increase in value, by \$3.4 million (11%). The most significant decrease in production value was a \$10.5 million (9%) decrease in construction sand and gravel, which accounted for the majority of the State's decrease in total mineral production in that year. Crushed stone decreased slightly in value, by \$3.3 million (less than 3%). From 2009 to 2011, greensand marl production quantity and value remained essentially unchanged (production figure withheld—company proprietary data).

In 2010 and 2011, New Jersey continued to be the only State to produce greensand marl, which is glauconite-rich sand most commonly used as a soil conditioner, but also used in water

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 2010 USGS mineral production data published in this chapter are those available as of May 2013. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. 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>.

softeners. In 2011, the State rose to 9th from 11th in 2010 of the 13 peat-producing States, and fell to 14th in 2011 from 10th in 2010 in industrial sand of 33 producing States. New Jersey continued to rank in the middle among the 50 States for the production of construction sand and gravel and crushed stone.

The narrative information that follows was provided by the New Jersey Geological and Water Survey (NJGWS).² The NJGWS production data and information, except where otherwise noted, were based upon the agency's own surveys and mine inquiries, company annual reports, and data and information derived from other State government agency sources. These data may differ from USGS annual production figures, which were based upon company responses to USGS surveys and upon USGS estimates.

Overview

The New Jersey mining industry's gross domestic product (GDP) value experienced a drop from \$308 million in 2009 to \$240 million in 2010, a 22% decrease. Mining and logging occupational categories for 2010 saw seasonal fluctuations throughout the year with a low count of approximately 1,310 total personnel, contrasted to the previous 2009 low of approximately 1,480, or a difference for yearly lows of 170 positions, an 11.5% decrease, according to the New Jersey Department of Labor and Workforce Development (NJDLWD) annual statistical records. The peak employment count for 2010 mirrored the 2009 low at approximately 1,480 positions, a drop of 120 positions from the 2009 peak of approximately 1,600 workers in the mining and logging industry, a 7.5% reduction. No labor statistics for 2011 were available at the time of this publication.

Neither new mineral exploration and discoveries nor new mine development activities were found to have taken place in New Jersey, according to the research performed for the 2010 and 2011 survey.

Commodity Review

Industrial Minerals

Sand and Gravel, Construction, and Stone, Crushed.—The number of surface mining operations (sand, gravel borrow pits, and aggregate stone quarries) for 2010 showed a 2.6% drop from the previous year, as demonstrated by the change from 156 to 152 Mine Registration Certificates issued for 2010 from the NJDLWD Office of Mine Safety & Compliance and a further 3.9% drop for Mine Registration Certificates issued

²Mark A. Godfrey, Environmental Specialist 4 with the New Jersey Geological and Water Survey, authored the text of the State mineral industry information provided by that State agency.

for 2011 (146). These certificates are necessary for all quarries, underground mines, sand, gravel, and borrow pit extractions, and portable crushers that are active in the State. Certificates corresponding to sites that represent only crushing facilities without active onsite mining of material (4 for portable crushers in 2010/12 in 2011) were not considered in the tally. Of the total certificates issued in 2010, 103 correspond to the mining method type categorized as sand and gravel pit (same as 2009), 27 as quarry (4 less than 2009), 21 as borrow pit (same as 2009), and 1 as underground mine (same as 2009) for a total of 152. For certificates issued in 2011, 98 correspond to sand and gravel pit, 32 as quarry, 16 as borrow pit, and zero as underground mine for a total of 146.

Products from these active mining sites show 97 (2010) and 94 (2011) producing sand and gravel, 42 (2010) and 30 (2011) producing fill dirt, 21 (2010) and 19 (2011) producing industrial sand, 13 (2010) and 14 (2011) producing crushed granite, 6 (2010) and 7 (2011) producing crushed basalt, 4 (2010) and 4 (2011) producing crushed diabase, 3 (2010) and 3 (2011) producing crushed limestone, 3 (2010) and 5 (2011) producing crushed shale, 1 (2010) and 1 (2011) producing clay, and 1 (2010) and 1 (2011) producing peat. As in prior years, the sole subsurface mining facility, owned by Mt. Hope Hydro Inc., remained in standby mode for 2010 and no Mine Registration Certificate was issued for 2011.

One explanation for the reduction in the quarry category total was that smaller quarries closed because they were of short-term duration, having been located directly on construction sites around the State. These short-term type quarries only remain open during site construction and close when site development is completed. Potential discrepancies between the total certificates issued for 2010 and 2011, and the categories of mining method versus products produced may be explained by one facility operating via multiple mining methods, or producing more than one product. Also, discrepancies may be attributable to applicants not correctly or completely providing the requested information on their Mine Registration Application.

In May of 2010, Tilcon New York announced the closing of the 77-hectare (190-acre) Millington Quarry located in Bernards Township, Somerset County. Both Tilcon and the property owner, Millington Quarry Inc., pledged to work with local and State officials regarding reclamation and the future use of the site. The site had been quarried since 1895 for basalt, also known as “trap rock.” The decision to close the facility was based on an evaluation of market conditions and the amount of available reserves at the quarry.

In December 2010, it was reported that an economic slump took place for New Jersey’s specialized industrial silica sand production typically used for making clear glass, casting of metals in the foundry industry, uses in specialized sporting fields, and extracting natural gas from shale.

Government Programs and Activities

The Limecrest Quarry in Sparta Township, Sussex County, consisted of a pit currently flooded with water. The removal of surficial gneissic rock (statistically considered granite) continued in 2009 and 2010, whereas marble had been formerly

recovered. In the summer of 2009, Riverbank Power Corp. drilled two 610-meter (m) (2,000-foot) cores in the dry margins of this pit to investigate the potential of using the flooded pit for a below-ground alternative energy storage and power generation facility. The investigation resulted in vastly improved knowledge of the bedrock lithology and structure of this site (Volkert, 2010). Riverbank Power Corp. decided that the underlying rock structure below this quarry was too fractured at the requisite 610-m depth to obtain the necessary water-tight cavern needed to complete the other half of the water pump-storage cycle.

The NJGWS applied for a Federal Emergency Management Agency grant to locate and characterize all New Jersey historic nonindustrial mineral underground mines, pits, and quarries. According to the NJGWS, these relics of New Jersey’s significant mining past need to be accurately located and evaluated for risk, as these formerly mined regions of the State continue to develop culturally. The information derived from this project would contribute to the New Jersey Office of Emergency Management’s State Hazard Mitigation Plan. This 3-year grant was subsequently awarded, effective September 30, 2010. Significant historical research and field inspection for these abandoned mines began in 2011.

NJGWS released a publication describing a portion of the state’s mineral history in their newsletter *Unearthing New Jersey*, a semiannual informational publication. Copper of the Northern New Jersey Piedmont (Muller, 2010) discusses the historical discovery and limited development of copper mineralization in the central region of the State. The article describes shipments of ore during the first half of the eighteenth century yet also indicates that ground water ultimately inhibited development and production despite employment of the first steam-driven pumps in North America. Ultimately, copper in New Jersey was to become more speculative in nature than a true, viable metal mineral resource commodity. A companion article addressing copper mining history was published in a subsequent “*Unearthing New Jersey*” issue—“*Central New Jersey Copper*” (Muller, 2011)—which describes specific locales and copper mineralization types.

New Jersey’s Highlands Council in 2010 announced the designation of an additional “*Highlands Redevelopment Area*,” an area of the protected New Jersey Highlands Preservation Area available for new development in restricted circumstances, limited to previously developed or contaminated property. The designated site, along Goldmine Road in Mount Olive Township, Morris County, would enable building construction and restoration of a preexisting mined quarry site.

References Cited

- Muller, F.L., 2010, Copper of the Northern New Jersey Piedmont: *Unearthing New Jersey*, v. 6, no. 1, p. 8–9. (Accessed December 8, 2014, at <http://www.state.nj.us/dep/njgs/enviroed/newsletter/v6n1.pdf>.)
- Muller, F.L., 2011, Central New Jersey Copper: *Unearthing New Jersey*, v. 7, no. 1, p. 6–8. (Accessed August 27, 2015, at <http://www.state.nj.us/dep/njgs/enviroed/newsletter/v7n1.pdf>.)
- Volkert, R.A., 2010, Deep drilling at Limecrest Quarry, Sparta, New Jersey: A geologic perspective: *Unearthing New Jersey*, v. 6, no. 1, p. 1–6. (Accessed December 8, 2014, at <http://www.state.nj.us/dep/njgs/enviroed/newsletter/v6n1.pdf>.)

TABLE 1
 NONFUEL RAW MINERAL PRODUCTION IN NEW JERSEY^{1,2}
 (Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2009			2010			2011		
	Quantity	Value	Unit	Quantity	Value	Unit	Quantity	Value	Unit
Gemstones, natural	NA	1	I	NA	1	NA	NA	1	I
Greensand marl	W	W	W	W	W	W	W	W	W
Peat	W	W	W	W	W	W	W	W	W
Sand and gravel:									
Construction	11,100	116,000	10,000	10,000	105,000	11,800	108,000		
Industrial	906	30,200	918	918	33,600	974	34,400		
Stone, crushed	14,500	124,000	14,500	14,500	120,000	13,800	132,000		
Total	XX	270,000	XX	XX	259,000	XX	275,000		

NA Not available. W Withheld to avoid disclosing company proprietary data; excluded from "Total." 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.

TABLE 2
 NEW JERSEY: CRUSHED STONE SOLD OR USED IN THE UNITED STATES, BY TYPE¹

Type	2009			2010			2011					
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Quantity (thousand metric tons)	Value (thousands)	Unit value	
Limestone ²	--	--	--	--	1	126	\$1,070	\$8.51	1	141	\$1,290	\$9.09
Granite	6	5,770	\$51,000	8	8	5,330	48,700	9.14	9	5,560	50,700	9.13
Traprock	13	8,660	71,800	14	14	9,070	70,600	7.78	11	8,120	80,400	9.91
Miscellaneous stone	1	107	908	--	--	--	--	--	--	--	--	--
Total or average	XX	14,500	124,000	XX	XX	14,500	120,000	8.28	XX	13,800	132,000	9.59

XX Not applicable. -- Zero.

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

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

TABLE 3
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2010, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	47	782
Filter stone	W	W
Other coarse aggregate	102	1,070
Coarse aggregate, graded:		
Concrete aggregate, coarse	W	W
Bituminous aggregate, coarse	W	W
Railroad ballast	W	W
Other graded coarse aggregate	185	1,650
Fine aggregate (-¾ inch):		
Stone sand, concrete	W	W
Screening, undesignated	858	7,100
Other fine aggregate	444	2,790
Coarse and fine aggregates:		
Graded road base or subbase	W	W
Unpaved road surface	W	W
Crusher run or fill or waste	W	W
Other coarse and fine aggregates	W	W
Unspecified: ²		
Reported	5,090	44,800
Estimated	2,870	24,500
Total	14,500	120,000

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

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 4
NEW JERSEY: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2011, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	96	1,990
Unspecified coarse aggregate	W	W
Coarse aggregate, graded:		
Concrete aggregate, coarse	W	W
Bituminous aggregate, coarse	5,300	48,200
Railroad ballast	W	W
Fine aggregate (-¾ inch):		
Stone sand, concrete	W	W
Screening, undesignated	994	9,950
Unspecified fine aggregate	W	W
Coarse and fine aggregates:		
Graded road base or subbase	W	W
Crusher run or fill or waste	W	W
Unspecified coarse and fine aggregates	W	W
Unspecified: ²		
Reported	--	--
Estimated	2,620	23,800
Total	13,800	132,000

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

¹Data are rounded to no more than three significant digits.

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

TABLE 5
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,680	\$14,200	\$8.47
Plaster and gunite sands	21	302	14.38
Concrete products (blocks, bricks, pipe, decorative, etc.)	185	2,320	12.54
Asphaltic concrete aggregates and other bituminous mixtures	451	6,210	13.76
Road base and coverings	422	10,100	23.86
Fill	510	3,260	6.39
Snow and ice control	43	675	15.70
Filtration	282	1,540	5.44
Other miscellaneous uses	70	970	13.86
Unspecified: ²			
Reported	754	6,670	8.84
Estimated	5,630	59,300	10.53
Total or average	10,000	105,000	10.50

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.

TABLE 6
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,600	\$24,500	\$9.42
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	62	1,010	16.29
Asphaltic concrete aggregates and other bituminous mixtures	935	5,420	5.80
Road base and coverings	275	6,080	22.11
Fill	469	2,320	4.95
Snow and ice control	31	440	14.19
Filtration	461	2,130	4.62
Other miscellaneous uses ³	291	3,570	12.27
Unspecified: ⁴			
Reported	1,310	11,200	8.55
Estimated	5,340	51,600	9.66
Total or average	11,800	108,000	9.15

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

²Includes plaster and gunite sands.

³Includes golf course and railroad ballast.

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

TABLE 7
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010, 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	611	8,600	71	550	1,200	7,670
Asphaltic concrete aggregates and road base materials	W	W	665	13,800	W	W
Fill	102	114	111	381	296	1,770
Other miscellaneous uses ³	357	2,870	1	41	3	39
Unspecified: ⁴						
Reported	--	--	1	35	752	6,630
Estimated	1,640	17,600	2,930	31,100	1,300	14,300
Total ⁵	2,710	29,200	3,780	45,900	3,550	30,400

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 filtration, and snow and ice control.

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

⁵District totals may not add up to the published State total, owing to revisions made after the production of the table and (or) proprietary data being withheld.

TABLE 8
NEW JERSEY: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011, 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	W	W	W	W	1,420	9,270
Asphaltic concrete aggregates and road base materials	W	W	W	W	304	3,470
Fill	74	637	39	171	357	1,510
Other miscellaneous uses ³	418	2,940	1	18	365	3,180
Unspecified: ⁴						
Reported	49	422	729	6,740	536	4,010
Estimated	1,470	14,100	2,880	27,700	988	9,780
Total	3,010	32,200	4,790	44,800	3,970	31,200

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

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

²Includes plaster and gunite sands.

³Includes filtration, golf course, railroad ballast, and snow and ice control.

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