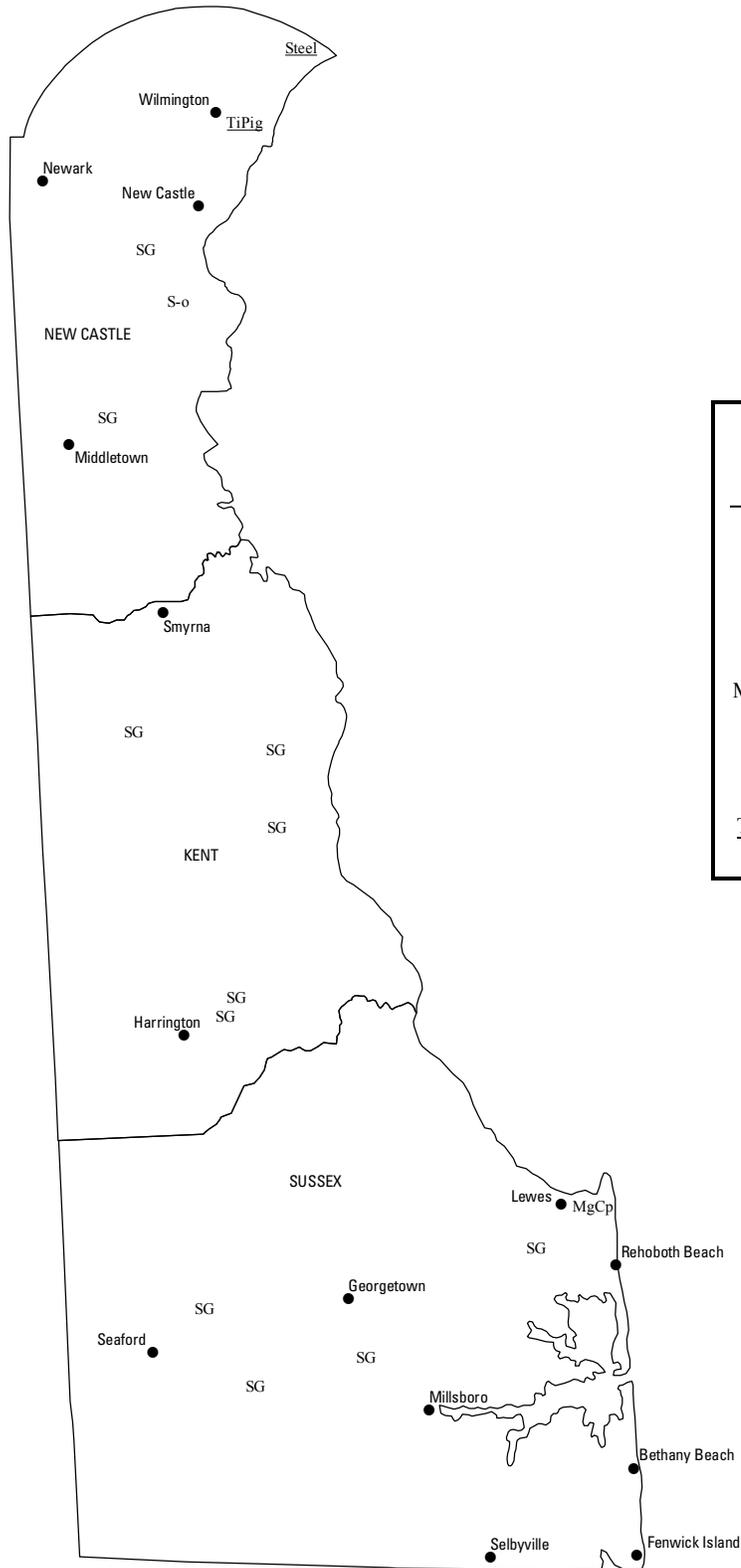




2008 Minerals Yearbook

DELAWARE

DELAWARE

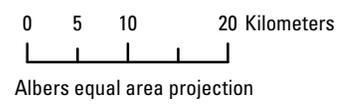


LEGEND

— County boundary
 ★ Capital
 ● City

**MINERAL SYMBOLS
 (Principal producing areas)**

MgCp Magnesium compounds
 S-o Sulfur (oil)
 SG Construction sand and gravel
Steel Steel plant
TiPig Titanium dioxide pigment plant



Source: Delaware Geological Survey/ U.S. Geological Survey (2008).

THE MINERAL INDUSTRY OF DELAWARE

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

In 2008, Delaware's nonfuel raw mineral production¹ was valued at \$20.6 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$5.8 million or 22%, decrease in the State's total nonfuel mineral value of \$26.4 million for 2007, which followed a 18% increase from 2006 to 2007. Because production data for magnesium compounds and crushed stone were withheld (company proprietary data), the State's actual annual total values are significantly higher than those listed in table 1.

Construction sand and gravel, by value, remained Delaware's leading nonfuel mineral commodity, followed by magnesium compounds and crushed stone. Significant increases took place in the production and related value of magnesium compounds production. Decreases in the production and value of construction sand and gravel and crushed stone led the State's decrease in value in 2008. The quantity of construction sand and gravel decreased by 28%, accounting for \$6 million, or 22% decrease in its production value. In 2008, Delaware continued to rank fourth of five States in the quantities of magnesium compounds produced.

The narrative information that follows was provided by the Delaware Geological Survey² (DGS).

Commodity Review

Industrial Minerals

Sand and Gravel, Construction.—According to the DGS, there were at least 11 major sand and gravel production operations in the State. The DGS estimates that the quantities of sand and gravel produced from the State's natural resources are typically higher than those reported by the USGS (table 1). Reasons for this include (1) not being certain that all major producers report production to the USGS, (2) State and local government agencies or companies that produce from pits for their own use do not necessarily report production, (3) some operations that mine relatively small amounts of sand and gravel may not have been contacted and, therefore, do not report production, and, possibly singly affecting the data the most, and (4) production of sand from offshore areas for beach

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 2008 USGS mineral production data published in this chapter are those available as of June 2010. 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>.

²John H. Talley, Director and State Geologist, authored the text of the State mineral industry information provided by the Delaware Geological Survey.

replenishment is not included in USGS figures. For example, according to the Delaware Department of Natural Resources and Environmental Control, in 2004 and 2005, approximately 4 million metric tons (Mt) of sand with an estimated value of \$20.3 million was dredged from the Delaware Bay and the Atlantic Ocean in offshore Delaware and placed on beaches along the Atlantic Coast and Delaware Bay.

Government Programs and Activities

The DGS remained actively involved in the mineral industry in Delaware through the identification and evaluation of sand and gravel resources as part of its geologic and hydrologic mapping programs, and through service on a county committee involved in evaluating and renewing applications for extractive use operations.

The U.S. Department of the Interior's Minerals Management Service (MMS) continued to provide support for studies to characterize offshore sand resources in State and Federal waters for possible use for beach replenishment. The DGS had identified 16 areas offshore of Delaware (covering more than 28 square kilometers) to be excellent or good sand resource areas containing an estimated 140 Mt of the resource (McKenna and Ramsey, 2002, p. 7–8). Exploration and evaluation activities continued on into 2008.

The DGS continued to operate and maintain the "DGS Atlantic Outer Continental Shelf Core and Sample Repository." Recognizing the value of having a centralized repository, Federal agencies, State agencies, and private institutions continued to contribute samples to the facility, which contains samples from all 51 oil and gas exploratory wells drilled on the North, Middle, and South Atlantic Outer Continental Shelf between 1977 and 1984. Samples include cores, unwashed cuttings, vials containing samples processed for micropaleontology and palynology, micropaleontology and palynology slides, and thin sections of cores and cuttings. A description of the DGS repository and a summary of holdings are on the DGS Web site (Delaware Geological Survey, 2007). The DGS is designated as the primary depository for these samples by the MMS.

References Cited

- Delaware Geological Survey, 2007, The DGS Outer Continental Shelf core and sample repository—Summary of holdings: Delaware Geological Survey. (Accessed February 1, 2011, at <http://www.dgs.udel.edu/projects/outer-continental-shelf-core-and-sample-repository>.)
- McKenna, K.K., and Ramsey, K.W., 2002, An evaluation of sand resources, Atlantic offshore, Delaware: Delaware Geological Survey Report of Investigations No. 63. (Accessed February 1, 2011, at <http://www.dgs.udel.edu/publications/ri63-evaluation-sand-resources-atlantic-offshore-delaware>.)

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

(Thousand metric tons and thousand dollars)

Mineral	2006		2007		2008	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones, natural	NA	1	NA	1	NA	1
Magnesium compounds	W	W	W	W	W	W
Sand and gravel, construction	2,790	22,400	3,520 ^r	26,400 ^r	2,550	20,600
Stone, crushed	W	W	W	W	W	W
Total	XX	22,400	XX	26,400 ^r	XX	20,600

^rRevised. 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
DELAWARE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2008,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,190	\$10,700	\$9.02
Fill	439	2,000	4.55
Unspecified: ²			
Reported	218	1,870	8.56
Estimated	701	6,020	8.58
Total or average	2,550	20,600	8.09

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.