

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 for collecting information on all nonfuel minerals.

In 1999, Delaware's preliminary estimated value¹ of nonfuel mineral production was \$9.62 million, according to the U.S. Geological Survey (USGS). This was a decrease of about \$2 million from that of 1998,² and followed a decrease of about \$1 million from 1997 to 1998. Production data for magnesium compounds were withheld to protect company proprietary data, so the State's actual total values are higher than those shown in table 1.

In 1999, whereas the value of construction sand and gravel decreased and accounted for the State's drop in value, the value of magnesium compounds showed a small increase. In 1998, the value of construction sand and gravel decreased by about \$0.8 million and that of magnesium compounds rose slightly. Gemstones mined by hobbyists were valued at the same level for both years. Based upon USGS estimates of the quantities produced in the United States during 1999, Delaware remained fifth of five States that produce magnesium compounds. Magnesium compounds, extracted from seawater close to the mouth of the Delaware Bay, near Lewes, Sussex County, were used to manufacture chemical and pharmaceutical products.

The narrative information that follows was provided by the Delaware Geological Survey³ (DGS). According to the DGS, there are at least 11 major sand and gravel production operations in Delaware. General locations are shown on the map on the facing page and on the DGS Internet web site at: <http://www.udel.edu/dgs/sandmap.html>. The DGS estimates of the quantities of sand and gravel produced from the State's natural resources are typically higher than those previously reported by the U.S. Bureau of Mines (USBM) and currently (table 1) by the

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 1999 USGS mineral production data published in this chapter are preliminary estimates as of May 2000, and are expected to change. For some mineral commodities, such as, construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1998 may vary from the Minerals Yearbook, Area Reports: Domestic 1998, Volume II, owing to the revision of preliminary 1998 to final 1998 data. Data for 1999 are preliminary and are expected to change; related rankings may also be subject to change.

³John H. Talley, Associate Director, authored the text of the State minerals information provided by the Delaware Geological Survey.

USGS (Delaware Geological Survey, 1998, from Mineral resources/energy: sand and gravel, accessed June 12, 2000, at URL <http://www.udel.edu/dgs/sand.html>). Reasons for this discrepancy include (1) not all major producers necessarily report production to the USGS, (2) government agencies or companies that produce from pits for their own use do not necessarily report production, (3) many operations that mine relatively small amounts of sand and gravel are not contacted and therefore do not report production, and (4) production of sand from offshore areas may not be included in the figures. For example, in 1992, as reported to the USBM, approximately 2.3 million metric tons (2.5 million short tons) of sand and gravel, valued at \$8.6 million, was produced in Delaware. That information was reported to the USBM by 7 companies operating 10 pits. According to the Delaware Department of Transportation during the same year, about 5.9 million short tons of "borrow/soil" were produced from 18 pits for use in the construction of State Route 1.

The U.S. Department of the Interior's Minerals Management Service (MMS) continued to provide support for studies characterizing offshore sand resources in both State and Federal waters for possible use in beach replenishment. The DGS recently completed a report entitled "Geologic Framework, Distribution, and Quality of Sand Resources in the Atlantic Offshore Delaware." A geologic framework was developed and three potential sand resource areas were identified that potentially contain nearly 70 million cubic meters of sand suitable for beach replenishment.

The DGS developed and currently operates the "DGS Atlantic Outer Continental Shelf Core and Sample Repository." Samples were contributed by Federal agencies, other State agencies, and private institutions that recognize the value of having a centralized repository. The repository 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, thin sections of cores and cuttings, and micropaleontology and palynology slides. A summary of holdings can be found on the DGS Internet web site at <http://www.udel.edu/dgs/ocsrepos.htm>. The DGS is designated as the primary repository for these samples by the MMS.

The DGS continues to be actively involved in the mineral industry in Delaware through identification and evaluation of sand and gravel resources as part of its geologic mapping program and through service on committees involved in evaluating and renewing applications for extractive use operations.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN DELAWARE 1/ 2/

(Thousand metric tons and thousand dollars)

Mineral	1997		1998		1999 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	1	NA	1	NA	1
Sand and gravel: Construction	2,540	12,400	2,560	11,500	2,100	9,620
Total 3/	XX	12,400	XX	11,500	XX	9,620

p/ Preliminary. NA Not available. XX Not applicable.

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

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

3/ Partial total, excludes values of magnesium compounds that must be concealed to avoid disclosing company proprietary data.

TABLE 2
DELAWARE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1998,
BY MAJOR USE CATEGORY 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit Value
Concrete aggregate	1,300	\$6,810	\$5.25
Plaster and gunite sands	W	W	4.60
Road base and coverings	W	W	7.97
Fill	982	3,170	3.22
Unspecified 3/	109	544	4.99
Total or average	2,560	11,500	4.50

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

1/ To avoid disclosing company proprietary data, no district tables were produced for 1998.

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

3/ Estimated production without a breakdown by end use.