



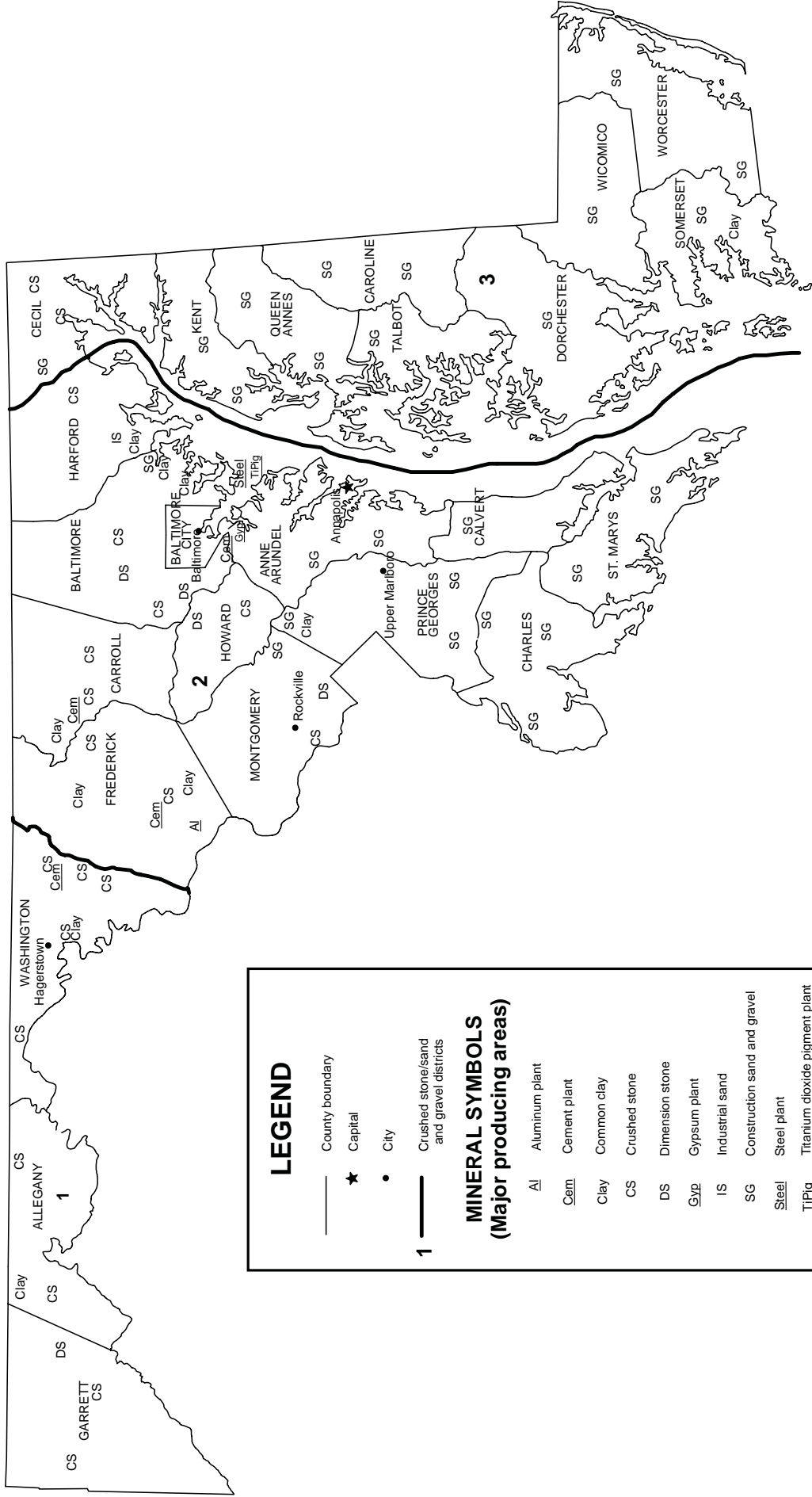
# 2005 Minerals Yearbook

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## MARYLAND

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# THE MINERAL INDUSTRY OF MARYLAND

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Maryland Department of the Environment, Minerals, Oil, and Gas Division, for collecting information on all nonfuel minerals.

In 2005, Maryland's nonfuel raw mineral production was valued<sup>1</sup> at \$577 million, based upon annual U.S. Geological Survey (USGS) data. This was an increase of \$103 million, up 21.7% from the State's total value of \$474 million of 2004, which followed a \$47 million or 11% increase from 2003 to 2004. The State ranked 33d among the 50 States in total nonfuel raw mineral production value and accounted for slightly more than 1% of the U.S. total value.

Crushed stone, portland cement, construction sand and gravel, and masonry cement, based upon value, were Maryland's leading nonfuel raw mineral commodities, the first three of which accounted for more than 99% of the State's reportable total nonfuel mineral value (table 1). Crushed marble, shell, and traprock, included in "Combined values" in table 1 for 2003, were included in the crushed stone data for 2004-05. (Because data for industrial sand and gravel and masonry cement (2004-05) were withheld (company proprietary data), the actual total values for those years are higher than those reported in table 1.)

In 2005, although crushed stone production was down about 6%, its \$60 million rise in value, a 28% increase, led the way in Maryland's increase in total value. This was followed by increases in portland cement and construction sand and gravel values. Portland cement production rose 40%, accounting for a \$35 million, or 20%, increase in value, and construction sand and gravel value was up \$14 million, despite a small decrease in production (table 1). With a relatively small increase in production, the value of masonry cement significantly increased. Although production was only down slightly, the largest decrease in value was a \$6.6 million drop in the value of dimension stone.

All nonfuel minerals mined in Maryland were industrial minerals. In 2005, the State continued to be a producer of significant quantities of crushed stone, portland cement, construction sand and gravel, dimension stone, and common clays (descending order of value), as compared with that of other producing States. All metal production, especially that of primary aluminum and raw steel, consisted of the processing and refining of materials received from other domestic and foreign sources. In 2005, Maryland remained eighth among 12 States in the production of primary aluminum. However, Eastalco Aluminum Co., the State's only producer of primary aluminum, closed its plant in Fredrick, MD, on December 19. Eastalco curtailed aluminum production, owing to unsuccessful attempts to secure a new, competitive supply of power for the facility with its then current supplier, Allegheny Power

(Allegheny Energy, Inc.), or other power providers in the Maryland, New Jersey, and Pennsylvania market area that services the company (Alcoa, Inc., 2006§<sup>2</sup>).

The narrative information that follows was provided by the Maryland Department of the Environment's (MDE) Mining Program<sup>3</sup>. In 2005, Maryland's mining operations continued to be very active, overall following the same increasing production trends of the past several years.

## Commodity Review

### *Industrial Minerals*

**Common Clays (Shale).**—In Frederick County in the Piedmont area, Redland Brick Inc. added another 24 hectares (ha) (60 acres) of shale reserves to its mining operations in order to supply feed materials to its expanding Rocky Ridge moulded brick plant outside Thurmont in northern Frederick County. Redland also had a brick plant and shale reserves permitted near Williamsport in Washington County. Here at the company's Cushwa plant, authentic handmade brick was produced by experienced brickmakers, as well as machine-moulded face brick and pavers. The Cushwa line was Redland Brick's premier producer of special brick shapes and sizes (Redland Brick Inc., 2007§).

**Construction Sand and Gravel.**—Increasingly, materials were being produced for use in the more traditional construction markets. One new mining operation, Bayside Sand and Gravel, opened in 2005 with a 14-ha permit to mine bank run gravel in Worcester County to supply the growing construction demands of this southeastern Maryland county. The company's reserve of materials was being quickly consumed for use for local development needs, less so to the nearby vicinity's traditional beach replenishment. Another aggregate company in Worcester County, Pocomoke, LLC expanded its mining operation to keep up with the growing demand in the area. Pocomoke continued to produce very clean sand also being used in the area's building industry.

**Crushed Stone.**—The Arundel Corp. (a subsidiary of Florida Rock Industries, Inc.) began overburden stripping in preparation for its newly permitted 36-ha Reichlin property in Carroll County. The quarry is expected to supply limestone to central Maryland customers in 2007. The site includes several historical structures that will be preserved.

<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 2005 USGS mineral production data published in this chapter are those available as of December 2006. 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>.

<sup>2</sup>References that include a section mark (§) are found in the Internet References Cited section.

<sup>3</sup>C. Edmon Larrimore, Program Manager of the Mining Program of the MDE, authored the text of the State mineral industry information provided by that agency.

## Internet References Cited

Alcoa, Inc., 2006, Alcoa to curtail Eastalco smelter on December 19 because of high power costs; company will continue to explore competitively-priced, long-term power, accessed August 9, 2007, at URL <http://www.alcoa.com/>

[global/en/news/news\\_detail.asp?pageID=20051123005210en&newsYear=2005](http://global/en/news/news_detail.asp?pageID=20051123005210en&newsYear=2005).

Redland Brick Inc., 2007, With Cushwa brick products, your building really shapes up, accessed June, 18, 2007, at URL <http://www.redlandbrick.com/cushwa.html>.

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

(Thousand metric tons and thousand dollars)

Mineral	2003		2004		2005	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,200	147,000 <sup>e</sup>	2,520	175,000 <sup>e</sup>	3,550	210,000 <sup>e</sup>
Clays, common	269	550	262	571	317	686
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	11,800	79,900	12,700	75,500	12,300	89,500
Stone:						
Crushed	26,200 <sup>3</sup>	165,000 <sup>3</sup>	35,300 <sup>r</sup>	214,000 <sup>r</sup>	33,100	274,000
Dimension	24	2,700	27	9,580	26	3,010
Combined values of cement (masonry), sand and gravel (industrial), stone [crushed marble, shell, traprock (2003)]	XX	31,700	XX	(4) <sup>r</sup>	XX	(4)
Total	XX	427,000	XX	474,000 <sup>r</sup>	XX	577,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. 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 three significant digits; may not add to totals shown.

<sup>3</sup>Excludes certain stones; kind and value included with "Combined values" data.

<sup>4</sup>Value withheld to avoid disclosing company proprietary data.

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

Kind	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone <sup>2</sup>	19	51,500 <sup>r</sup>	\$133,000 <sup>r</sup>	18	21,400	\$181,000
Granite	4	8,320	52,500	3	5,710	40,200
Marble	1	W	W	--	--	--
Sandstone	2	W	W	1	W	W
Shell	1	249	1,520	1	322	2,730
Traprock	2	3,320	15,800	2	W	W
Miscellaneous stone	1	W	W	--	--	--
Total	XX	35,300 <sup>r</sup>	214,000 <sup>r</sup>	XX	33,100	274,000

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." 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>Includes limestone-dolomite reported with no distinction between the two.

TABLE 3  
 MARYLAND: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
<b>Construction:</b>		
<b>Coarse aggregate (+1½ inch):</b>		
Macadam	W	W
Riprap and jetty stone	485	3,850
Filter stone	W	W
Other coarse aggregates	862	4,260
Total	1,380	8,460
<b>Coarse aggregate, graded:</b>		
Concrete aggregate, coarse	777	4,970
Bituminous aggregate, coarse	1,730	14,000
Bituminous surface-treatment aggregate	215	2,020
Railroad ballast	142	1,090
Other graded coarse aggregates	2,560	35,800
Total	5,420	57,900
<b>Fine aggregate (-¾ inch):</b>		
Stone sand, concrete	238	2,230
Stone sand, bituminous mix or seal	736	5,340
Screening, undesignated	99	579
Other fine aggregates	948	13,800
Total	2,020	21,900
<b>Coarse and fine aggregates:</b>		
Graded road base or subbase	3,530	27,200
Unpaved road surfacing	W	W
Crusher run or fill or waste	914	5,470
Roofing granules	W	W
Other coarse and fine aggregates	2,140	17,600
Total	7,000	52,500
Other construction materials <sup>2</sup>	(3)	(3)
Agricultural, limestone	(3)	(3)
<b>Chemical and metallurgical:</b>		
Cement manufacture	2,750	16,300
Flux stone	W	W
Sulfur oxide removal	W	W
Total	2,880	17,100
Other miscellaneous uses and specified uses not listed	173	2,270
<b>Unspecified:<sup>4</sup></b>		
Reported	13,300	106,000
Estimated	481	4,100
Total	13,800	110,000
Grand total	33,100	274,000

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

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

<sup>2</sup>Includes building products.

<sup>3</sup>Withheld to avoid disclosing company proprietary data; included in "Grand total."

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

TABLE 4  
MARYLAND: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, 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
<b>Construction:</b>						
Coarse aggregate (+1½ inch) <sup>2</sup>	W	W	W	W	W	W
Coarse aggregate, graded <sup>3</sup>	W	W	5,060	55,700	W	W
Fine aggregate (-¾ inch) <sup>4</sup>	W	W	W	W	68	375
Coarse and fine aggregate <sup>5</sup>	W	W	4,460	36,200	W	W
Other construction materials <sup>6</sup>	--	--	W	W	--	--
Agricultural <sup>7</sup>	--	--	W	W	--	--
Chemical and metallurgical <sup>8</sup>	W	W	W	W	--	--
Other miscellaneous uses	--	--	173	2,270	--	--
<b>Unspecified:<sup>9</sup></b>						
Reported	1,770	12,700	8,930	71,800	2,620	21,700
Estimated	--	--	159	1,300	322	2,700
Total	4,620	30,000	24,400	212,000	4,100	32,300

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

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

<sup>2</sup>Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

<sup>3</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

<sup>4</sup>Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregate.

<sup>5</sup>Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, roofing granules, and other coarse and fine aggregates.

<sup>6</sup>Includes building products.

<sup>7</sup>Includes limestone.

<sup>8</sup>Includes cement manufacture, flux stone, and sulfur oxide removal.

<sup>9</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	7,600	\$56,500	\$7.43
Plaster and gunite sands	153	1,330	8.69
Asphaltic concrete aggregates and other bituminous mixtures	237	1,620	6.85
Road base and coverings <sup>2</sup>	339	2,510	7.42
Fill	553	2,590	4.69
Other miscellaneous uses <sup>3</sup>	293	2,270	7.72
<b>Unspecified:<sup>4</sup></b>			
Reported	2,340	14,400	6.14
Estimated	837	8,300	9.92
Total or average	12,300	89,500	7.25

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

<sup>2</sup>Includes road base and other stabilization (cement).

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

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

TABLE 6  
 MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005, BY USE AND DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand) <sup>3</sup>	4,240	35,400	3,510	22,500
Asphaltic concrete aggregates and road base materials <sup>4</sup>	554	4,020	22	115
Fill	284	1,480	270	1,120
Other miscellaneous uses <sup>5</sup>	18	210	275	2,050
Unspecified: <sup>6</sup>				
Reported	2,320	14,100	18	223
Estimated	837	8,300	--	--
Total	8,250	63,500	4,090	26,000

-- Zero.

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

<sup>2</sup>Districts 1 and 2 are combined to avoid disclosing company proprietary data.

<sup>3</sup>Includes plaster and gunite sands.

<sup>4</sup>Includes road and other stabilization (cement).

<sup>5</sup>Includes snow and ice control and filtration.

<sup>6</sup>Reported and estimated production without a breakdown by end use.