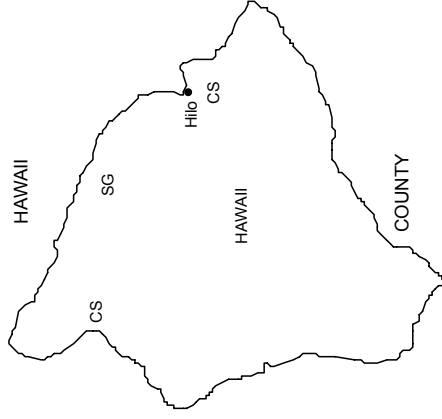
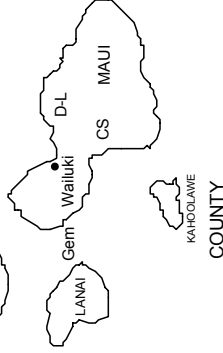
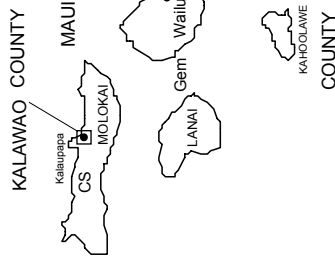
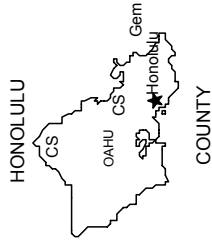
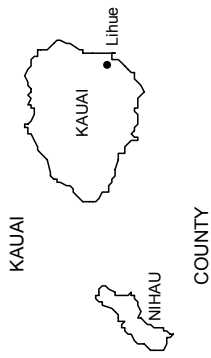


# HAWAII

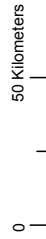


## LEGEND

- ★ Capital
- City

## MINERAL SYMBOLS (Major producing areas)

- CS Crushed stone
- D-L Dimension limestone
- Gem Gemstones
- SG Construction sand and gravel



# THE MINERAL INDUSTRY OF HAWAII

**This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Hawaii Department of Land Resources, Commission of Water Resources Management, for collecting information on all nonfuel minerals.**

In 2004, Hawaii nonfuel raw mineral production was valued<sup>1</sup> at \$71.2 million, based upon annual U.S. Geological Survey (USGS) data. This was a decrease in value of about 5.2% compared with that of 2003,<sup>2</sup> which was up 3.9% from 2002. Mining in Hawaii consisted mostly of the quarrying of stone, used to produce crushed stone, and the extraction of sand and gravel from open pits, both commodities produced for use by the construction industry. Gemstones also were produced, mostly black coral and precious coral.

In 2004, construction sand and gravel production increased by more than 55%, with its related value up about \$2.5 million. But this was more than balanced out by a decrease in the production of crushed stone, its value down \$6.5 million, resulting in the State's net decrease for the year. Although having minimal effect on the State's overall change in value, gemstones production, based on value, more than doubled, up about 120%.

Similarly, in 2003, construction sand and gravel production increased, with its value up about \$2.6 million; and although crushed stone production was down by about 12%, its value was up, slightly (table 1). Gemstones also had a small increase in its value for the year. Hawaii Cement Co. produced a small quantity of masonry cement in 2003 from what remained of the company's stockpiled portland cement materials (table 1). In 2001, Hawaii Cement had decided to stop production at its plant on the island of Oahu, Honolulu County, and rely solely on imported cement. This operation, which had produced cement from imported clinker, was the only cement plant in the State. (Clinker is the intermediate, kiln-processed product of cement manufacture.) The company stopped importing clinker in March 2001 and permanently closed its grinding plant in September (van Oss, 2003, p. 16.3). In 2001, in coordination with the shutdown, the company completed construction of its twin 30,000-metric-ton cement silos for storage of imported cement (Wurlitzer, 2001).

## References Cited

- van Oss, H.G., 2003, Cement, in *Metals and minerals: U.S. Geological Survey Minerals Yearbook 2001*, v. I, p. 16.1-16.31.  
Wurlitzer, Dane, 2001, Hawaiian success: *International Cement Review*, March, p. 41-42.

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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.

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

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, masonry	W	(3)	W	(3)	--	--
Gemstones	NA	109	NA	119	NA	262
Sand and gravel, construction	610	7,010	808	9,560	1,260	12,100
Stone, crushed	6,380	65,100	5,620	65,400	5,190	58,900
Total	XX	72,300	XX	75,100	XX	71,200

NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable. -- Zero.

<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  
HAWAII: 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	6	W	W	\$9.19	2	W	W	\$13.79	1	W	W	\$16.63
Traprock	14	5,600	\$57,800	10.34	17	4,870	\$58,100	11.94	16	4,640	\$53,600	11.56
Volcanic cinder and scoria	3	W	W	8.38	1	W	W	8.60	1	W	W	8.60
Miscellaneous stone	1	W	W	9.49	1	W	W	9.81	1	W	W	9.81
Total or average	XX	6,380	65,100	10.20	XX	5,620	65,400	11.63	XX	5,190	58,900	11.34

W Withheld to avoid disclosing company proprietary data; included in "Total or average." XX Not applicable.

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

TABLE 3a  
HAWAII: 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>			
Riprap and jetty stone	W	W	\$30.18
Filter stone	W	W	17.21
Other coarse aggregates	71	\$1,280	18.03
Total or average	71	1,280	18.03
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	(2)	(2)	14.90
Bituminous surface-treatment aggregate	(2)	(2)	13.34
Other graded coarse aggregates	837	12,900	15.41
Total or average	837	12,900	15.41
<b>Fine aggregate (-¾ inch):</b>			
Stone sand, concrete	(3)	(3)	28.30
Stone sand, bituminous mix or seal	(3)	(3)	14.72
Other fine aggregates	463	11,300	24.45
Total or average	463	11,300	24.45
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	(4)	(4)	8.57
Terrazzo and exposed aggregate	(4)	(4)	4.41
Crusher run or fill or waste	(4)	(4)	7.82
Other coarse and fine aggregates	995	8,410	8.46
Total or average	995	8,410	8.46
Other construction materials	4	103	24.64
Unspecified, estimated <sup>5</sup>	3,300	31,000	9.65
Grand total or average	5,620	65,400	11.63

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>Estimated production without a breakdown by end use.

TABLE 3b  
HAWAII: 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	W	W	\$35.42
Filter stone	W	W	15.14
Other coarse aggregates	60	\$988	16.47
Total or average	60	988	16.47
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	(2)	(2)	14.57
Bituminous surface-treatment aggregate	(2)	(2)	13.37
Other graded coarse aggregates	778	11,400	14.66
Total or average	778	11,400	14.66
<b>Fine aggregate (-¾ inch):</b>			
Stone sand, concrete	(3)	(3)	29.04
Stone sand, bituminous mix or seal	(3)	(3)	10.23
Other fine aggregates	376	9,200	24.46
Total or average	376	9,200	24.46
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	(4)	(4)	12.12
Crusher run or fill or waste	965	5,850	6.06
Other coarse and fine aggregates	171	2,140	12.51
Total or average	1,140	7,990	7.03
Unspecified, estimated <sup>5</sup>	2,800	29,000	10.32
Grand total or average	5,190	58,900	11.34

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>Estimated production without a breakdown by end use.

TABLE 4a  
HAWAII: 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 and concrete products	224	W	W
Concrete products (blocks, bricks, pipe, decorative, etc.) <sup>2</sup>	22	W	W
Asphaltic concrete aggregates and road base materials	276	W	W
Fill	132	W	W
Other miscellaneous uses	12	W	W
Unspecified, estimated <sup>3</sup>	140	\$1,600	\$11.02
Total or average	808	9,560	11.82

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

<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 plaster and gunite sands.

<sup>3</sup>Estimated production without a breakdown by end use.

TABLE 4b  
HAWAII: 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)	331	W	W
Concrete products (blocks, bricks, pipe, decorative, etc.) <sup>2</sup>	24	W	W
Asphaltic concrete aggregates and road base materials	155	W	W
Fill	449	W	W
Other miscellaneous uses	16	W	W
Unspecified, estimated <sup>3</sup>	280	\$2,600	\$9.27
Total or average	1,260	12,100	9.65

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

<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>Estimated production without a breakdown by end use.