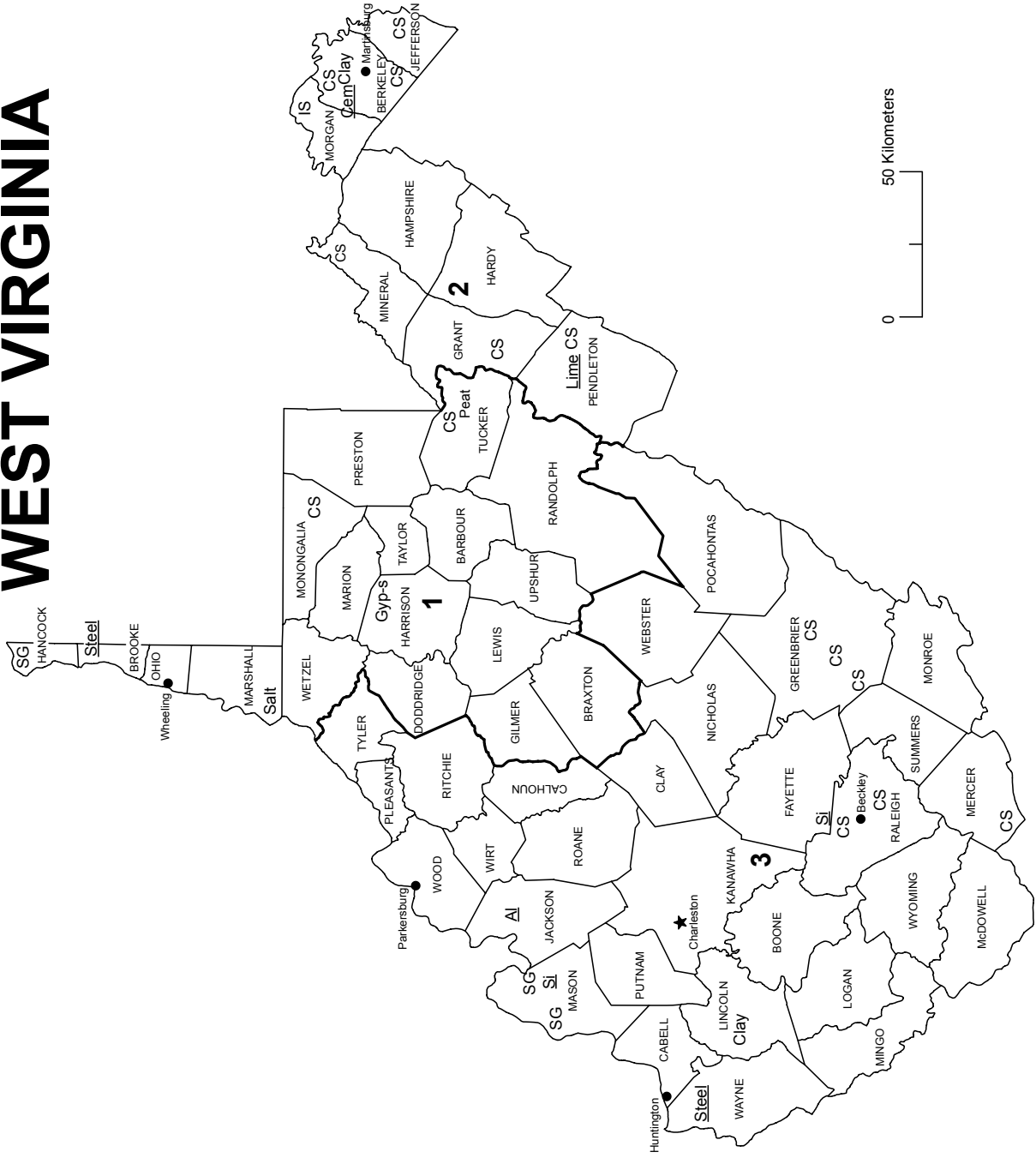


WEST VIRGINIA

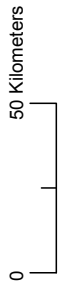


LEGEND

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

MINERAL SYMBOLS (Major producing areas)

- △ Aluminum plant
- ▭ Cem Cement plant
- Clay Common clay
- ◇ CS Crushed stone
- Gyp-s Synthetic gypsum
- ★ IS Industrial sand
- Lime Lime plant
- ⊥ Peat Peat
- ▤ Salt Salt
- ⊕ SG Construction sand and gravel
- ◻ Si Silicon metal plant
- ▬ Steel Steel plant



THE MINERAL INDUSTRY OF WEST VIRGINIA

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

In 2004, West Virginia's nonfuel raw mineral production was valued¹ at \$167 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$3 million increase in value from 2003², which was down by the same amount from 2002.

In 2004, crushed stone continued to be West Virginia's leading nonfuel mineral by value, representing nearly 44% of the State's total nonfuel mineral production value. Cement (portland and masonry), industrial sand and gravel, lime, and salt followed. These five mineral commodities accounted for about 98% of the State's total nonfuel raw mineral production value. In 2004, production of cement, crushed stone (value up \$4 million), and lime (descending order of change in value) increased, offsetting decreases in the production and related values of salt and construction sand and gravel (down \$2.3 million) (table 1).

In 2003, increases that took place in the production and values of crushed stone (value up \$5.7 million with slightly lowered production), salt, masonry cement, and lime, were slightly more than offset by decreases in the same of portland cement, construction sand and gravel (down \$3.7 million) and industrial sand and gravel, resulting in a small net decrease for the year. The State's other nonfuel minerals either showed a small decrease in value or were unchanged (table 1).

West Virginia continued to rank eighth in the quantity of salt produced and remained a significant producer of crushed stone, industrial sand and gravel, and masonry cement. The State's mines produced only industrial minerals and coal; no metals were mined in the State. Primary aluminum and raw steel were produced in the State, but both metals were processed from materials acquired from foreign and other domestic sources. In 2004, West Virginia ranked ninth in the Nation (11th in 2003) in the production of primary aluminum among 12 producing States.

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 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>.

²Values, 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 WEST VIRGINIA^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays, common	151	407	142	376	161	441
Gemstones	NA	1	NA	1	NA	1
Sand and gravel:						
Construction	1,700	8,450	971	4,750	524	2,500
Industrial	W	W	W	W	343	17,300
Stone, crushed	14,400	63,400	14,100	69,100	14,700	73,100
Combined values of cement, lime, peat, salt, stone (dimension sandstone), and values indicated by symbol W	XX	94,900	XX	90,100	XX	73,500
Total	XX	167,000	XX	164,000	XX	167,000

NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. 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
WEST VIRGINIA: CRUSHED STONE SOLD OR USED, BY KIND¹

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	30	12,200	\$51,500	\$4.23	29	12,600	\$60,200	\$4.78	28	13,400	\$64,700	\$4.84
Sandstone	9	2,230	11,800	5.31	8	1,480	8,900	6.02	8	1,330	8,460	6.38
Total or average	XX	14,400	63,400	4.40	XX	14,100	69,100	4.91	XX	14,700	73,100	4.98

XX Not applicable.

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

TABLE 3a

WEST VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$6.28
Riprap and jetty stone	158	\$1,170	7.39
Filter stone	W	W	9.82
Other coarse aggregates	55	362	6.58
Total or average	213	1,530	7.19
Coarse aggregate, graded:			
Concrete aggregate, coarse	313	2,060	6.57
Bituminous aggregate, coarse	346	2,210	6.39
Bituminous surface-treatment aggregate	75	477	6.36
Railroad ballast	(2)	(2)	6.28
Other graded coarse aggregates	317	1,710	5.40
Total or average	1,050	6,460	6.15
Fine aggregate (-¾ inch):			
Stone sand, bituminous mix or seal	(3)	(3)	6.59
Screening, undesignated	216	1,410	6.53
Other fine aggregates	409	2,630	6.43
Total or average	625	4,040	6.47
Coarse and fine aggregate:			
Graded road base or subbase	507	3,270	6.45
Unpaved road surfacing	184	1,110	6.05
Crusher run or fill or waste	976	5,350	5.48
Other coarse and fine aggregates	331	1,720	5.18
Total or average	2,000	11,400	5.73
Other construction materials	15	89	5.93
Agricultural limestone	7	49	7.00
Chemical and metallurgical, lime manufacture	(4)	(4)	2.61
Other miscellaneous uses, waste material	(4)	(4)	3.25
Unspecified:⁵			
Reported	6,560	30,200	4.61
Estimated	3,600	15,000	4.24
Total or average	10,100	45,400	4.48
Grand total or average	14,100	69,100	4.91

W Withheld to avoid disclosing company proprietary data; included with "Other coarse aggregates."

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

²Withheld to avoid disclosing company proprietary data; included with "Other graded coarse aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other fine aggregates."

⁴Withheld to avoid disclosing company proprietary data; included in "Grand total or average."

⁵Reported and estimated production without a breakdown by end use.

TABLE 3b

WEST VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$6.61
Riprap and jetty stone	125	\$1,040	8.30
Filter stone	W	W	9.79
Other coarse aggregates	45	210	4.67
Total or average	222	1,430	6.44
Coarse aggregate, graded:			
Concrete aggregate, coarse	138	846	6.13
Bituminous aggregate, coarse	W	W	5.70
Bituminous surface-treatment aggregate	W	W	6.06
Railroad ballast	W	W	6.17
Other graded coarse aggregates	244	1,290	5.29
Total or average	507	2,860	5.64
Fine aggregate (-¾ inch):			
Stone sand, concrete	W	W	4.83
Stone sand, bituminous mix or seal	W	W	5.84
Screening, undesignated	W	W	6.44
Other fine aggregates	8	60	7.50
Total or average	128	775	6.05
Coarse and fine aggregate:			
Graded road base or subbase	347	2,050	5.91
Unpaved road surfacing	(2)	(2)	10.08
Crusher run or fill or waste	111	682	6.14
Other coarse and fine aggregates	263	1,290	4.90
Total or average	721	4,020	5.58
Agricultural:			
Limestone	(3)	(3)	6.62
Other agricultural uses	1	2	2.00
Special, mine dusting or acid water treatment	(3)	(3)	6.10
Unspecified:⁴			
Reported	10,100	49,700	4.93
Estimated	3,000	14,000	4.65
Total or average	13,100	63,700	4.86
Grand total or average	14,700	73,100	4.98

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

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

²Withheld to avoid disclosing company proprietary data; included with "Other coarse and fine aggregates."

³Withheld to avoid disclosing company proprietary data; included in "Grand total or average."

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

TABLE 4a
 WEST VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	W	W	W	W	177	1,290
Coarse aggregate, graded ³	W	W	W	W	646	3,810
Fine aggregate (-¾ inch) ⁴	W	W	W	W	W	W
Coarse and fine aggregate ⁵	W	W	W	W	1,410	8,150
Other construction materials	5	28	10	61	--	--
Agricultural ⁶	W	W	W	W	W	W
Chemical and metallurgical ⁷	W	W	--	--	--	--
Other miscellaneous uses ⁸	--	--	--	--	W	W
Unspecified:⁹						
Reported	3,440	16,500	1,900	8,290	1,220	5,370
Estimated	930	4,800	2,300	8,800	340	1,600
Total	5,130	25,800	4,630	19,700	4,310	23,600

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

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

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

³Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁴Includes screening (undesignated), stone sand (bituminous mix or seal), and other fine aggregates.

⁵Includes crusher run (select material or fill), graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes agricultural limestone.

⁷Includes lime manufacture.

⁸Includes waste material.

⁹Reported and estimated production without a breakdown by end use.

TABLE 4b
WEST VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	W	W	W	W	W	W
Coarse aggregate, graded ³	W	W	W	W	W	W
Fine aggregate (-¾ inch) ⁴	W	W	W	W	W	W
Coarse and fine aggregate ⁵	W	W	W	W	W	W
Agricultural ⁶	W	W	--	--	W	W
Special ⁷	W	W	W	W	--	--
Unspecified:⁸						
Reported	4,220	20,900	2,460	9,860	3,420	19,000
Estimated	910	4,600	1,600	6,700	540	2,700
Total	5,590	28,300	4,580	19,800	4,530	25,000

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

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

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

³Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁴Includes screening (undesignated), stone sand (bituminous mix or seal), stone sand (concrete), and other fine aggregates.

⁵Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes agricultural limestone and other agricultural uses.

⁷Includes mine dusting or acid water treatment.

⁸Reported and estimated production without a breakdown by end use.

TABLE 5a
 WEST VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
 BY MAJOR USE CATEGORY^{1,2}

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products	W	W	\$4.58
Fill	20	\$87	4.35
Other miscellaneous uses	760	3,700	4.87
Unspecified: ³			
Reported	W	W	4.96
Estimated	200	1,000	5.00
Total or average	971	4,750	4.90

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses."

¹To avoid disclosing company proprietary data, no district tables were produced in 2003.

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

³Reported and estimated production without a breakdown by end use.

TABLE 5b
 WEST VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
 BY MAJOR USE CATEGORY^{1,2}

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Fill ³	179	\$812	\$4.54
Unspecified: ⁴			
Reported	251	1,230	4.91
Estimated	94	460	4.91
Total or average	524	2,500	4.78

¹To avoid disclosing company proprietary data, no district tables were produced in 2004.

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

³Includes concrete aggregate and concrete products.

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