Appalachian Basin Bituminous Coal: Sulfur Content and Potential Sulfur Dioxide Emissions of Coal Mined for Electrical Power Generation

By Michael H. Trippi, Leslie F. Ruppert, Emil D. Attanasi, Robert C. Milici, and Philip A. Freeman

Chapter G.5 of
Coal and Petroleum Resources in the Appalachian Basin: Distribution, Geologic Framework, and Geochemical Character
Edited by Leslie F. Ruppert and Robert T. Ryder

Professional Paper 1708

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation:
Trippi, M.H., Ruppert, L.F., Attanasi, E.D., Milici, R.C., and Freeman, P.A., 2014, Appalachian basin bituminous coal; Sulfur content and potential sulfur dioxide emissions of coal mined for electrical power generation, chap. G.5 *of* Ruppert, L.F., and Ryder, R.T., eds., Coal and petroleum resources in the Appalachian basin; Distribution, geologic framework, and geochemical character: U.S. Geological Survey Professional Paper 1708, 68 p., http://dx.doi.org/10.3133/pp1708G.5.

Contents

Figures

Tables

Conversion Factors

Multiply	By	To obtain
	Mass	
ton, short (2,000 lb)	0.9072	megagram (Mg)
	Energy	
British thermal unit (Btu)	1,055.056	joule (J)
British thermal unit per pound (Btu/lb)	2,326	joule per kilogram (J/kg)

Appalachian Basin Bituminous Coal: Sulfur Content and Potential Sulfur Dioxide Emissions of Coal Mined for Electrical Power Generation

By Michael H. Trippi,[1] Leslie F. Ruppert,[1] Emil D. Attanasi,[1] Robert C. Milici,[1] and Philip A. Freeman[1]

Abstract

Data from 157 counties in the Appalachian basin of average sulfur content of coal mined for electrical power generation from 1983 through 2005 show a general decrease in the number of counties where coal mining has occurred and a decrease in the number of counties where higher sulfur coals (>2 percent sulfur) were mined. Calculated potential SO_2 emissions (assuming no post-combustion SO_2 removal) show a corresponding decrease over the same period of time.

Discussion

The purpose of this report is to present trends in average sulfur content and calculated potential sulfur dioxide (SO_2) emission (assuming no post-combustion SO_2 removal) levels of coal mined for electrical power generation from 1983 through 2005 in the Appalachian basin. During this time, the U.S. Congress passed several rules and regulations that set upper limits on SO_2 emissions from coal-burning powerplants. In 1990, the Congress set a national ceiling of 9.5 million tons of SO_2 emissions per year from electrical power generation plants with the passing of Phase II of the 1990 Clean Air Act Amendments (Public Law 101–549) (U.S. Environmental Protection Agency, 2008). In 2005, the U.S. Environmental Protection Agency declared a new ceiling for annual SO_2 emissions from coal-fired power plants for 28 States and the District of Columbia with the adoption of the Clean Air Interstate Rule (CAIR) (U.S. Environmental Protection Agency, 2007). In 2008, a U.S. court ordered the Environmental Protection Agency to issue a new rule to implement the Clean Air Act requirements concerning the transport of air pollution across State lines, and the U.S. Environmental Protection Agency adapted the Cross-State Air Pollution Rule (CSAPR; U.S. Environmental Protection Agency, 2011). In 2014, the CSAPR was upheld by the U.S. Supreme Court. The new rule sets annual SO_2 (and other emissions, including nitrogen dioxide and particulate matter) ceilings for the 28 States and the District of Columbia. Powerplant compliance may be achieved through the use of a combination of (1) initial SO_2 emissions allowances; (2) purchase of additional emissions allowances from other powerplants; (3) use of low sulfur coal; and (4) reduction of sulfur using other techniques such as removal of sulfur-bearing minerals through washing and use of flue-gas desulfurization "scrubbers" during combustion. As of the end of 2005, there were still 6.2 million tons of SO_2 emissions allowances banked by the industry as a result of overcompliance in the 1980s and 1990s (U.S. Environmental Protection Agency, 2006). Until this inventory is reduced, actual SO_2 emissions will probably exceed the annual allocation to the industry.

This report is an update of a previous report by Attanasi and Milici (1998), who compiled data from the Federal Energy Regulatory Commission (FERC) and the Energy Information Administration (EIA) for 1983 through 1995. Their original data can be found in tables 1 through 3 of this report. Data for the years 1996 through 2005 were obtained from COALdat, a database (released in April 2006) of U.S. coal production and market transactions available by subscription from Platts, a division of The McGraw-Hill Companies, Inc. These original data can be found in tables 1 through 4 of the report. In addition, pounds of SO_2 per million British thermal units (lb SO_2/MMBtu) were calculated for the years 1983 through 1995, and are shown in table 4.

Data in this report represent average values of coal mined for electrical power generation in each county and should not be used to infer detailed spatial and stratigraphic distribution of the sulfur content and SO_2 emissions of the coal. Finally, it should be noted that in these data there is no way to distinguish between washed and unwashed coal.

Data Presentation

Comparison of the weighted average sulfur percentage maps for the years 1983 through 1995 (fig. 1; table 3) and 1996 through 2005 (fig. 2; table 3) shows a general decrease

[1]U.S. Geological Survey, Reston, Va.

in the number of counties where coal mining has occurred and a decrease in the number of counties where higher sulfur coals (>2 percent sulfur) were mined. During the period 1996 through 2005, 19.1 percent of the counties shown in figure 1 reported no mining production (table 5). Of the 127 counties that reported mining production between 1996 and 2005, 41.7 percent of the counties showed an increase in weight percent sulfur, 55.9 percent showed a decrease in weight percent sulfur, and 2.4 percent showed no change in weight percent sulfur. The vast majority of sulfur increases and decreases (93.5 percent) were one percentage point or less (table 5). Five counties showed increases in weight percent sulfur of greater than one percentage point (Guernsey and Washington Counties, Ohio; Mercer County, Pa.; Grundy County, Tenn.; and Ohio County, W. Va.). Mercer County, Pa., showed the greatest increase (4.21 percentage points) (table 5). Three counties showed decreases in weight percent sulfur of greater than one percentage point (Greenup and Wolfe Counties, Ky., and Mason County, W. Va.). Mason County, W. Va., showed the greatest decrease (2.12 percentage points) (table 5).

The decreases in sulfur percentages may be due to increased coal cleaning or increased mining of coal beds with lower sulfur content. Herhal and Minnucci (1991) report that 50 percent of all coal produced in the United States in 1983 was mechanically cleaned, including 73 percent of Central Appalachian basin coal, 79 percent of Southern Appalachian basin coal, and 70 percent of Northern Appalachian basin coal. Akers and others (1994) state that 77 percent of bituminous coal shipments from Eastern and Midwestern States was cleaned to some degree, and Laurila (1998) reports that 55 percent of coal produced in the United States was cleaned. Unfortunately, detailed data describing the amount of coal cleaned annually are not included in EIA, FERC, or Platts databases available to the public and are probably not collected by these or any other organizations. Likewise, data about coal beds mined are very sparse and can only be conjectured without detailed data availability.

Figures 3 and 4 and table 4 show weighted average pounds of SO_2 per million British thermal units for Appalachian basin coal produced for electrical power generation for the periods 1983 to 1995 and 1996 to 2005, respectively. These maps exhibit trends similar to those observed in the percent sulfur maps for the corresponding time periods (figs. 1, 2). Of the 127 counties that reported mining activity from 1996 to 2005, 45.7 percent of the counties showed an increase in pounds of SO_2 per million British thermal units, 53.5 percent showed a decrease in pounds of SO_2 per million British thermal units, and 0.8 percent of the counties showed no change in pounds of SO_2 per million British thermal units (table 5). Most of the SO_2 increases and decreases (81.7 percent) were less than one pound of SO_2 per million British thermal units (table 5). Twelve counties showed increases of greater than 1 pound of SO_2 per million British thermal units. Mercer County, Pa., had the greatest increase (8.18 lb SO_2 /MMBtu) (table 5). Eleven counties showed decreases of greater than 1 pound of SO_2 per million British thermal units; Mason County, W. Va., had the greatest decrease (3.75 lb SO_2 /MMBtu) (table 5).

Between 1983 and 2005, 14 counties had peak annual coal production values greater than 10,000 thousand tons; these values are graphed by year in figures 5 through 7. Of these counties, six exhibited increasing production (fig. 5), two exhibited decreasing production (fig. 6), and six exhibited fluctuating production (fig. 7). Variations in weight percent of sulfur for the same 14 counties remained relatively constant for 12 of the counties throughout the 23-year period (figs. 8–10). In Indiana County, Pa., the coal exhibited a slight increase in weight percent sulfur after 1998 (fig. 9), and in Marshall County, W. Va., the coal exhibited a decrease in weight percent sulfur after 1998 (fig. 10). Trends of pounds of SO_2 per million British thermal units are similar to those observed for weight percent sulfur (figs. 11–13). Most counties had coal with relatively steady levels of SO_2 except for Indiana County, Pa., where the coal exhibited a slight increase in SO_2 after 1998 (fig. 12) and Marshall County, W. Va., where the coal exhibited a large decrease in SO_2 after 1998 (fig. 13). Coal mined in Marshall County, W. Va., is predominantly from the Pittsburgh bed, and has been cleaned for many years (Mitch Blake, West Virginia Geological and Economic Survey, written commun., 2007). We must therefore conclude that the decrease in sulfur in Marshall County, W. Va., must be due to mining of coal beds with lower sulfur content and (or) closing of mines in high sulfur coal beds. The decrease in sulfur content of coal mined in Marshall County, W. Va., as delivered to powerplants may be due to selective mining within Pittsburgh coal bed mines, mining of additional coal beds with lower sulfur content, and (or) closing of mines with higher sulfur content. Without detailed county-level data about coal cleaning and coal beds being mined, we can only speculate that decreases in weight percent sulfur and pounds of SO_2 per million British thermal units within particular counties may be due to increased coal cleaning or increased mining of coal beds with lower sulfur content.

References Cited

Akers, D., Raleigh, C., Shirey, G., and Dospoy, R., 1994, The effect of coal cleaning on trace elements; Draft report, application of algorithms: Palo Alto, Calif., Electric Power Research Institute (EPRI). (Prepared for EPRI by CQ, Inc.)

Attanasi, E.D., and Milici, R.C., 1998, Appalachian basin bituminous coal; Weight percent sulfur of produced coal by county, as received at the powerplant; U.S. Geological Survey Open-File Report 98–763, available only online at http://pubs.usgs.gov/of/1998/of98-763/.

Herhal, A.J., and Minnucci, Chris, 1991, Project summary; Assessment of physical coal cleaning practices for

sulfur removal: U.S. Environmental Protection Agency [Report] EPA/600/S7–90/013, 12 p. (Also available online from http://www.epa.gov/nscep/index.html; search for 600S790013.)

Laurila, Mel, 1998, Coal prep in the next millennium, *in* Keystone Coal Industry Manual: Chicago, Ill., Intertec Publishing Company, p. 258–267.

U.S. Environmental Protection Agency, 2006, Acid rain program; 2005 progress report: U.S. Environmental Protection Agency Web site at http://www.epa.gov/airmarket/progress/docs/2005report.pdf. (Accessed July 7, 2008.)

U.S. Environmental Protection Agency, 2007, Clean Air Interstate Rule [CAIR]: U.S. Environmental Protection Agency Web site at http://www.epa.gov/cleanairinterstaterule. (Accessed July 7, 2008.)

U.S. Environmental Protection Agency, 2008, Clean Air Act: U.S. Environmental Protection Agency Web site at http://www.epa.gov/air/caa/. (Accessed July 7, 2008.)

U.S. Environmental Protection Agency, 2012, Cross-State Air Pollution Rule: U.S. Environmental Protection Agency Web page accessed May 13, 2014, at http://www.epa.gov/airtransport/CSAPR/.

Figures 1–13

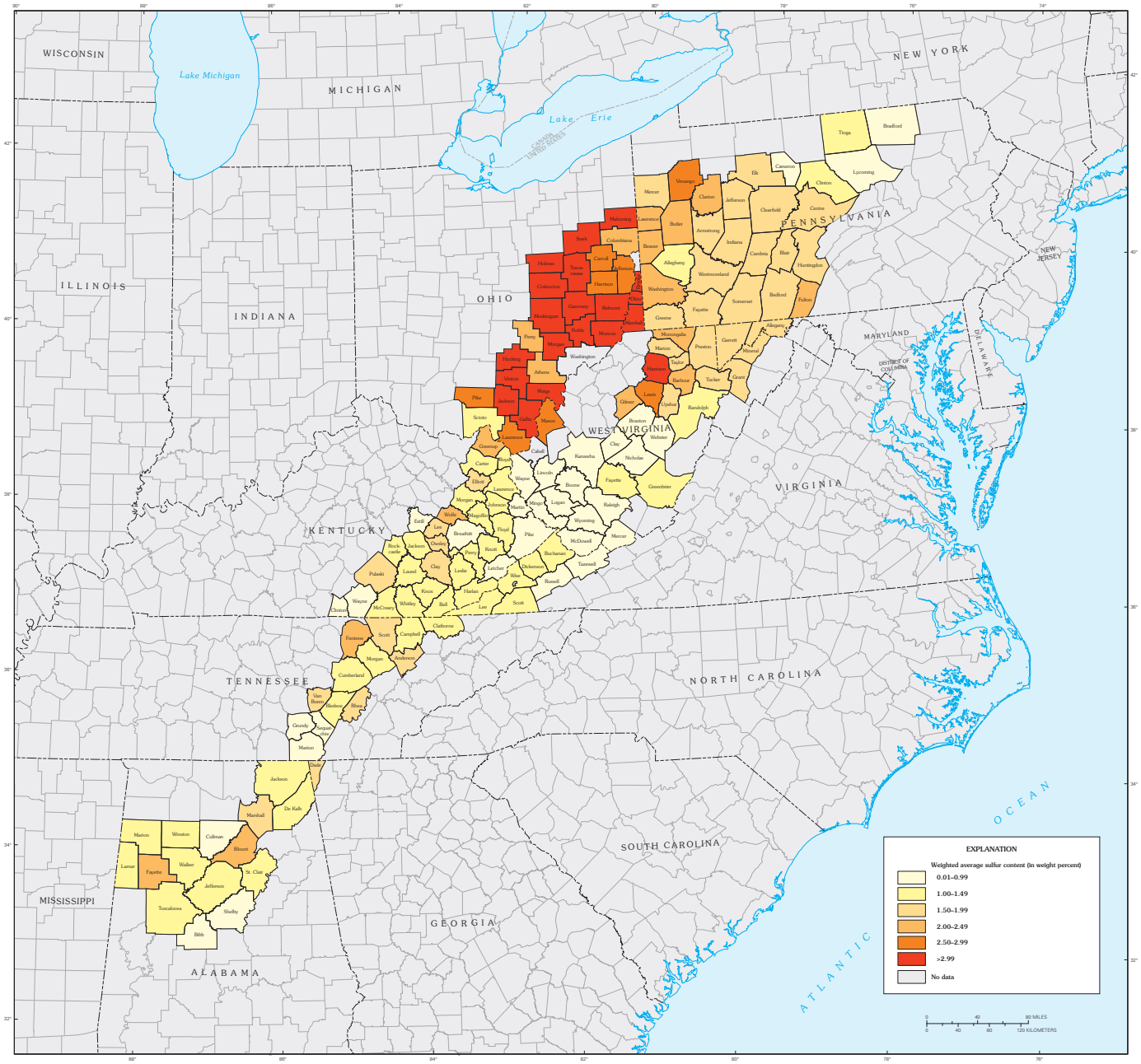

Figure 1. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation. Data are shown by county for 1983 through 1995 and are given in table 3.

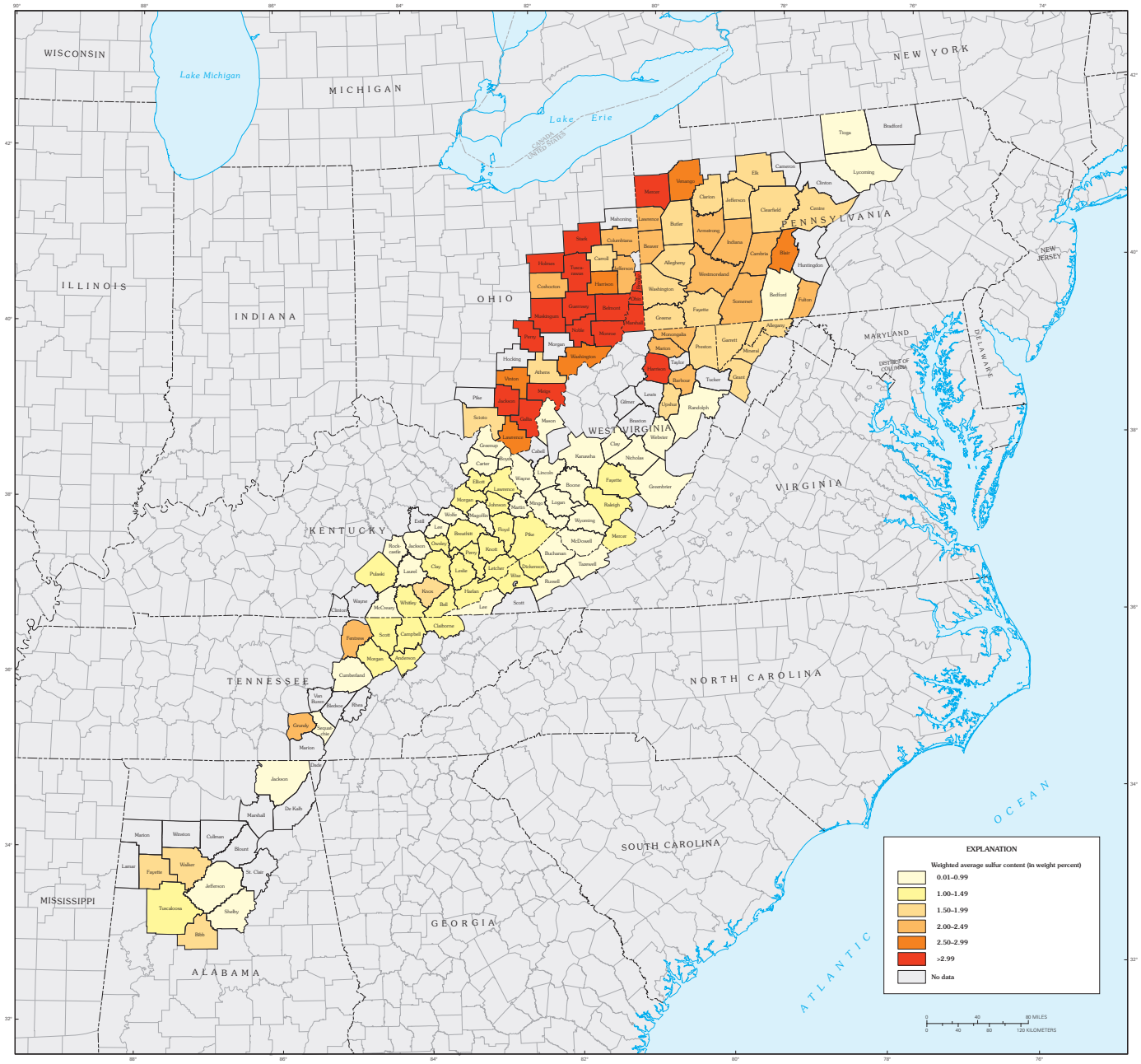

Figure 2. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation. Data are shown by county for 1996 through 2005 and are given in table 3.

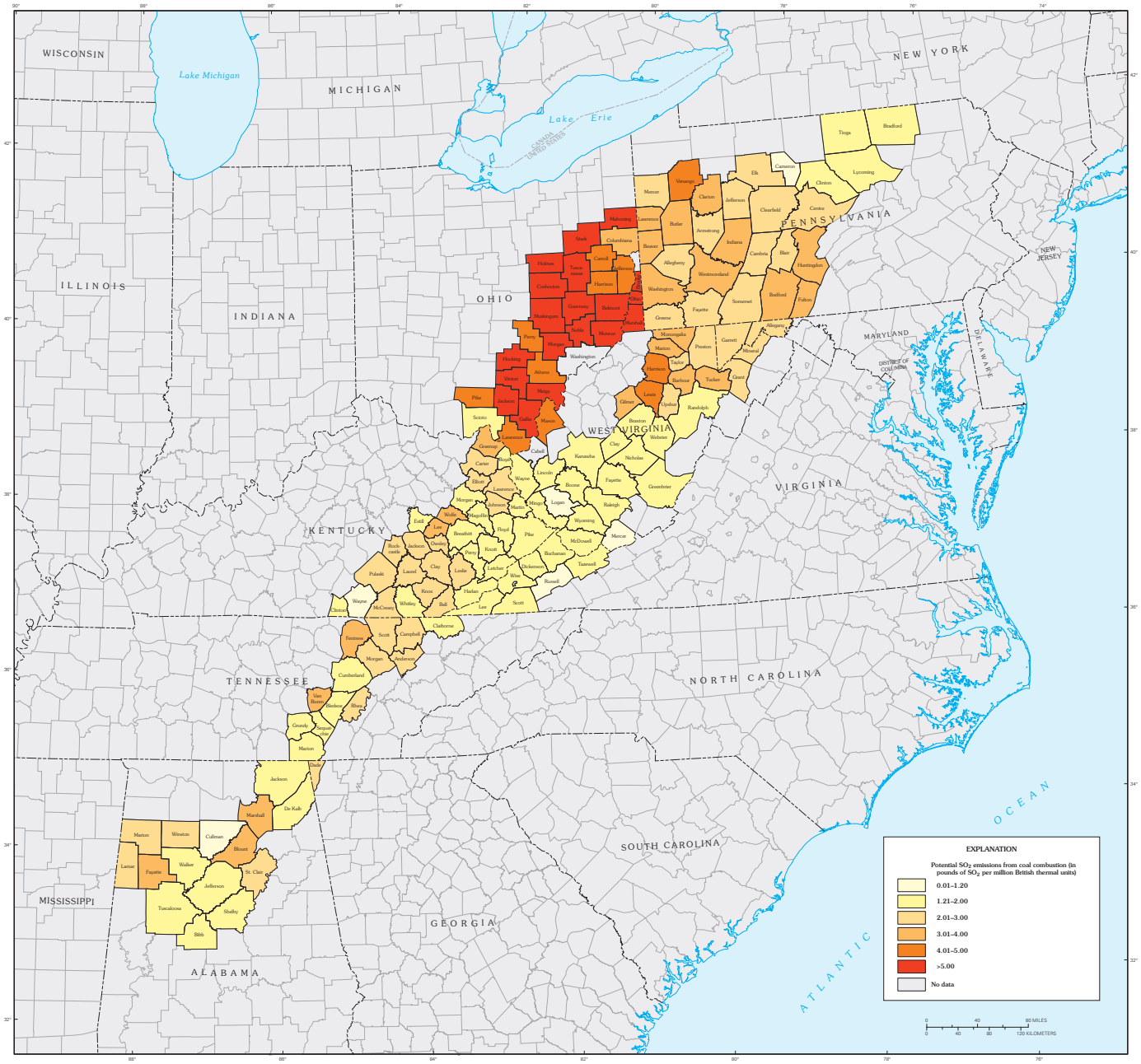

Figure 3. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation. Data are shown by county for 1983 through 1995 and are given in table 4.

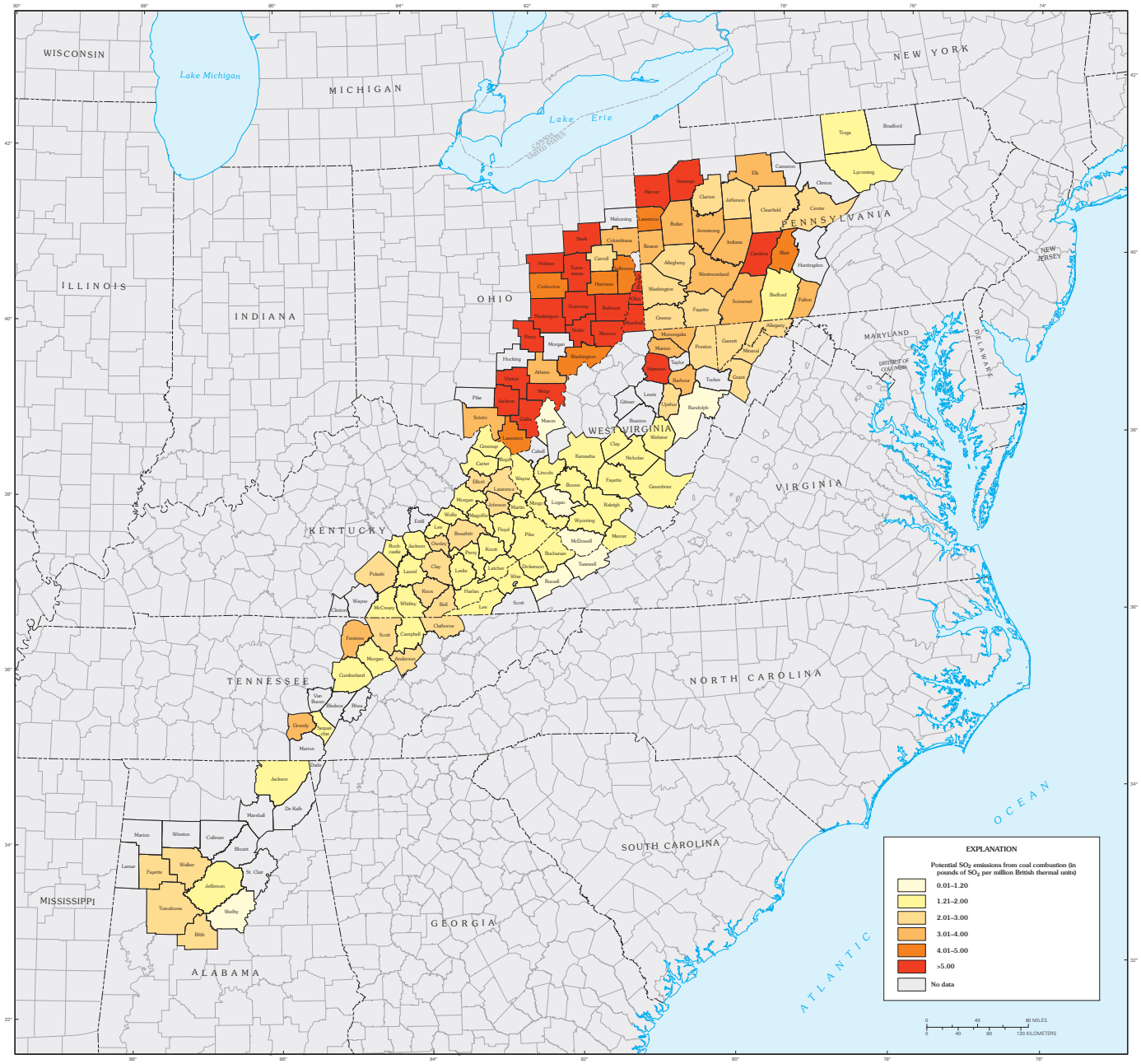

Figure 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation. Data are shown by county for 1996 through 2005 and are given in table 4.

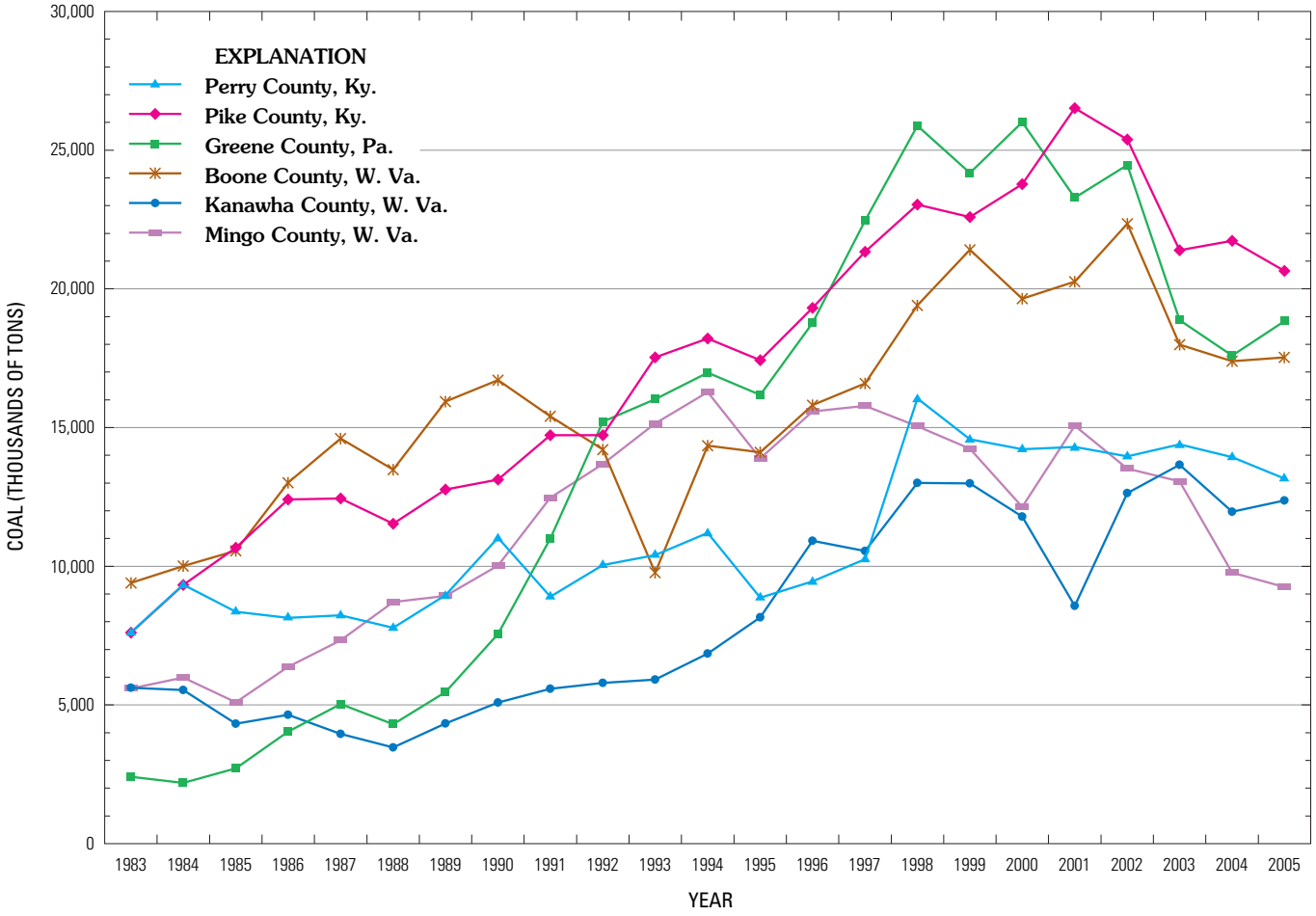

Figure 5. Amount of bituminous coal (in thousands of tons) that was mined for electrical power generation from six Appalachian basin counties that exhibited generally increasing production trends. Data are shown for 1983 through 2005 and are given in table 1.

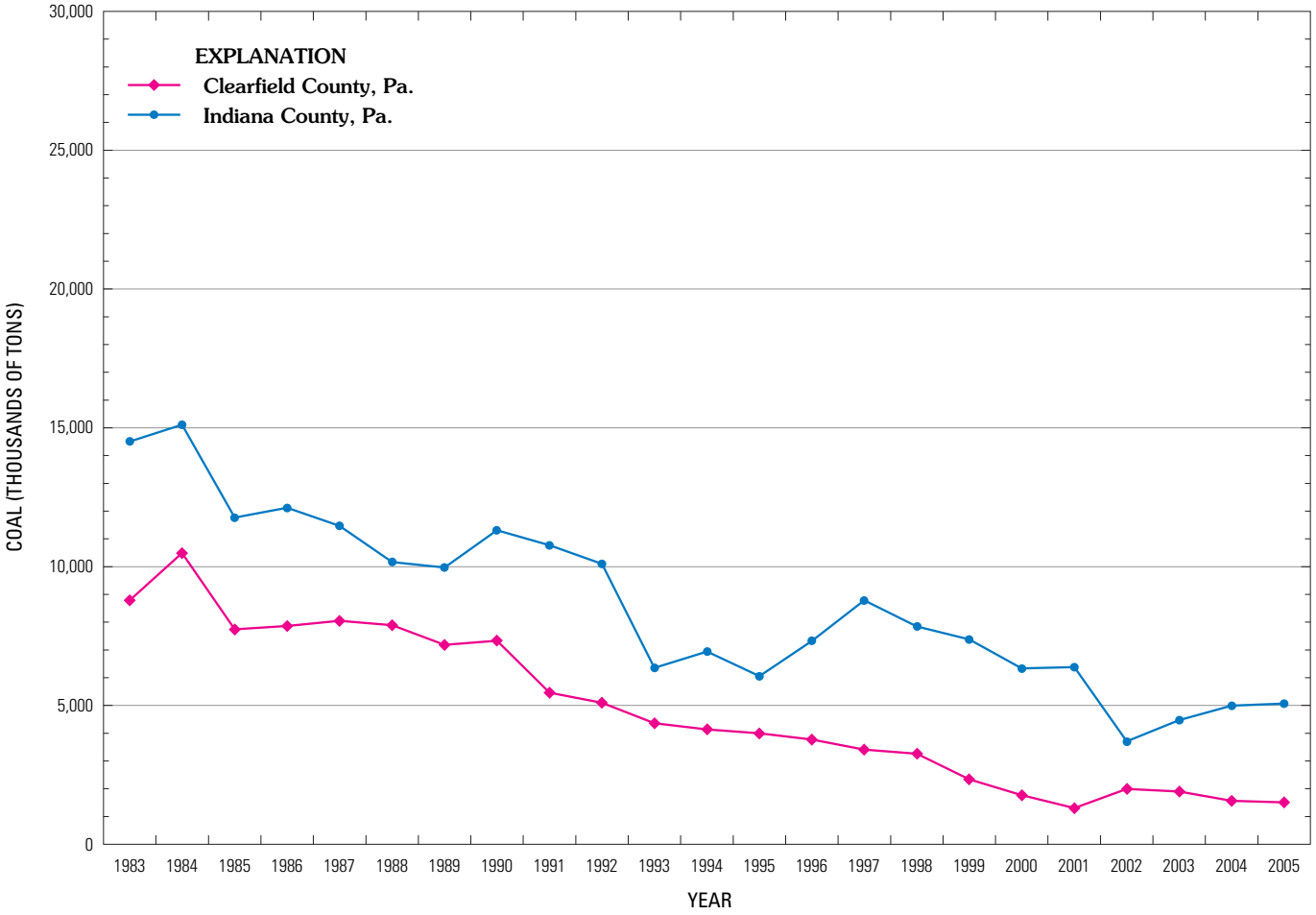

Figure 6. Amount of bituminous coal (in thousands of tons) that was mined for electrical power generation from two Appalachian basin counties that exhibited generally decreasing production trends. Data are shown for 1983 through 2005 and are given in table 1.

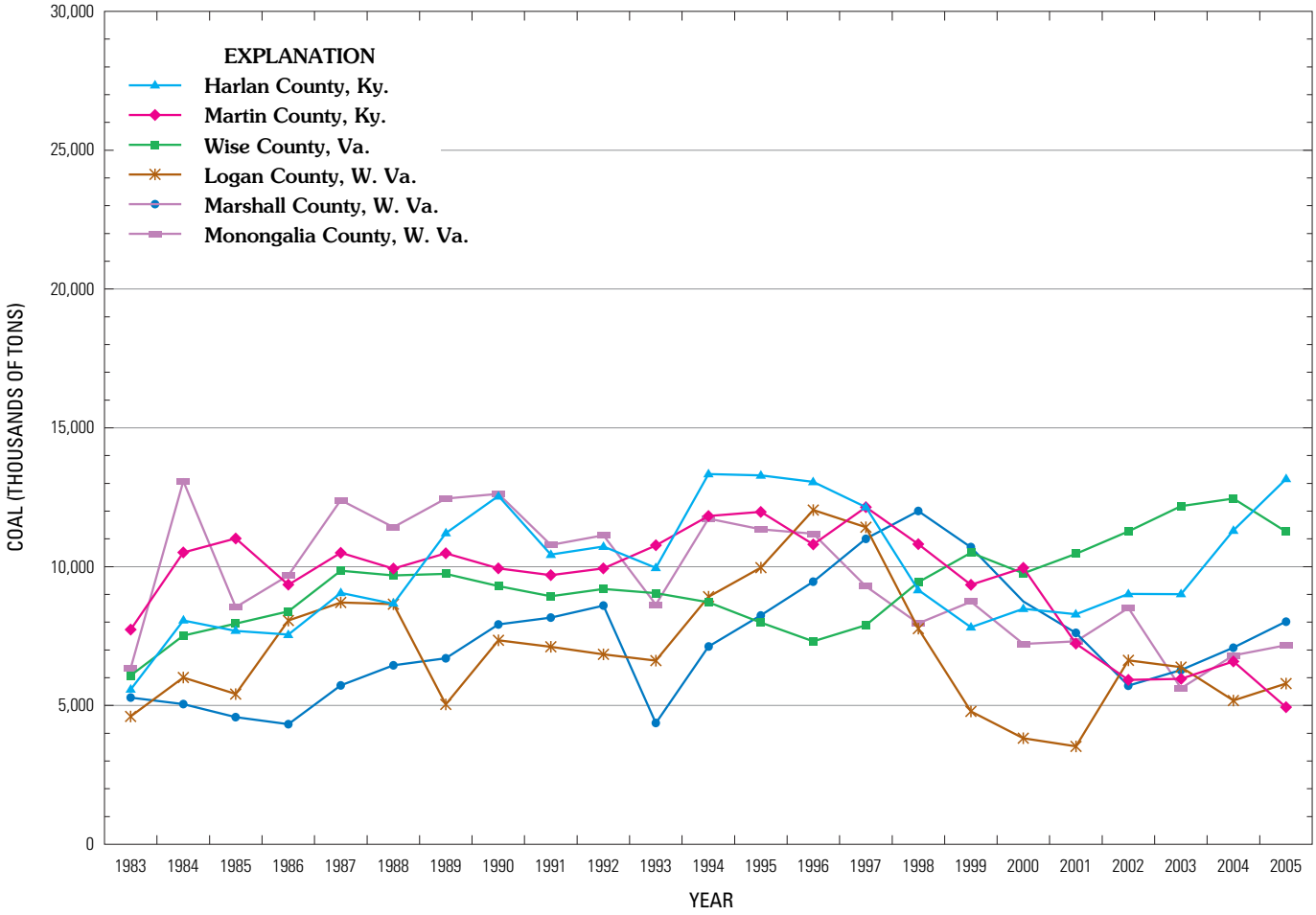

Figure 7. Amount of bituminous coal (in thousands of tons) that was mined for electrical power generation from six Appalachian basin counties that exhibited fluctuating production trends. Data are shown for 1983 through 2005 and are given in table 1.

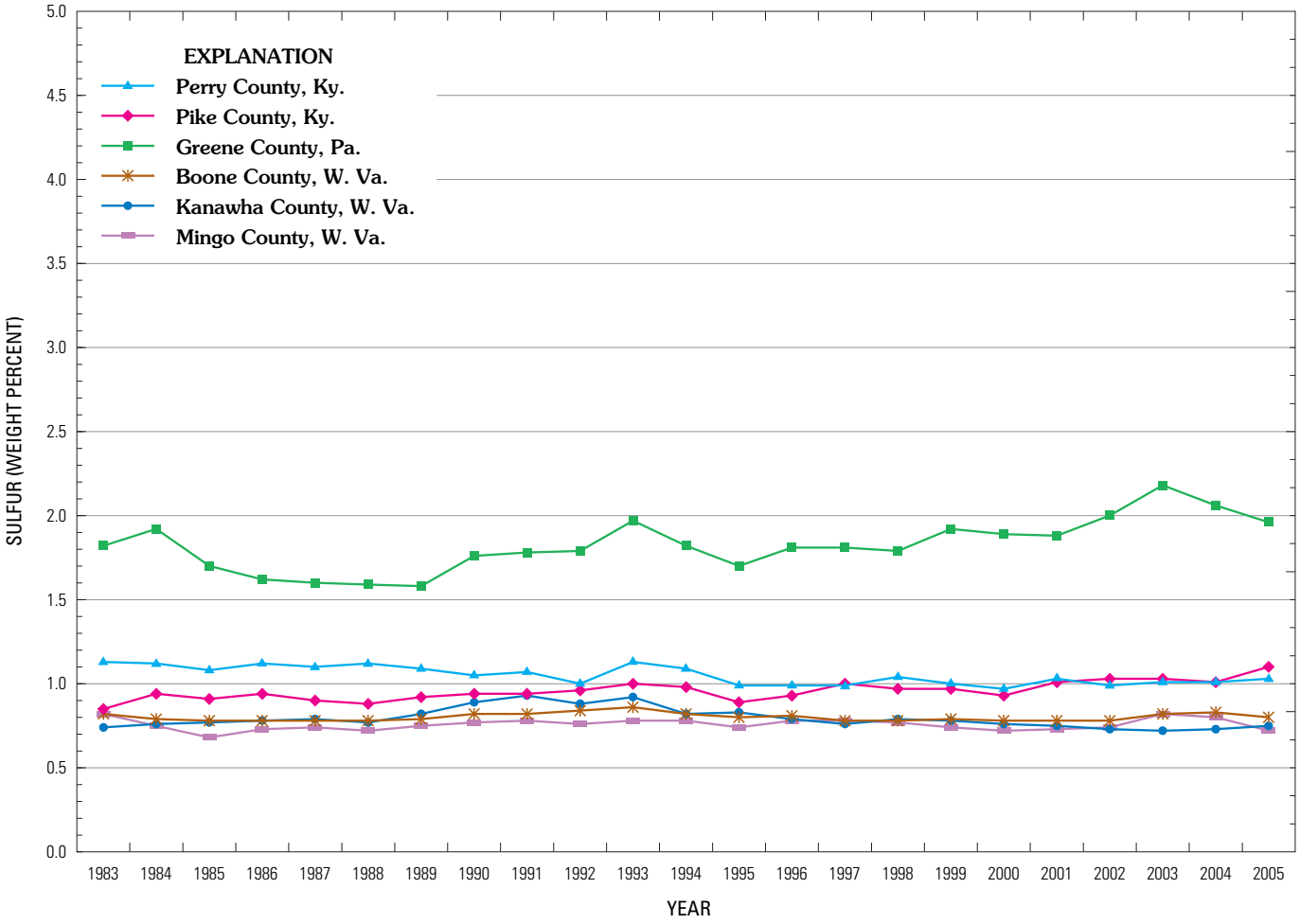

Figure 8. Sulfur content (in weight percent) of bituminous coal that was mined for electrical power generation from six Appalachian basin counties that exhibited generally increasing production trends. Data are shown for 1983 through 2005 and are given in table 3.

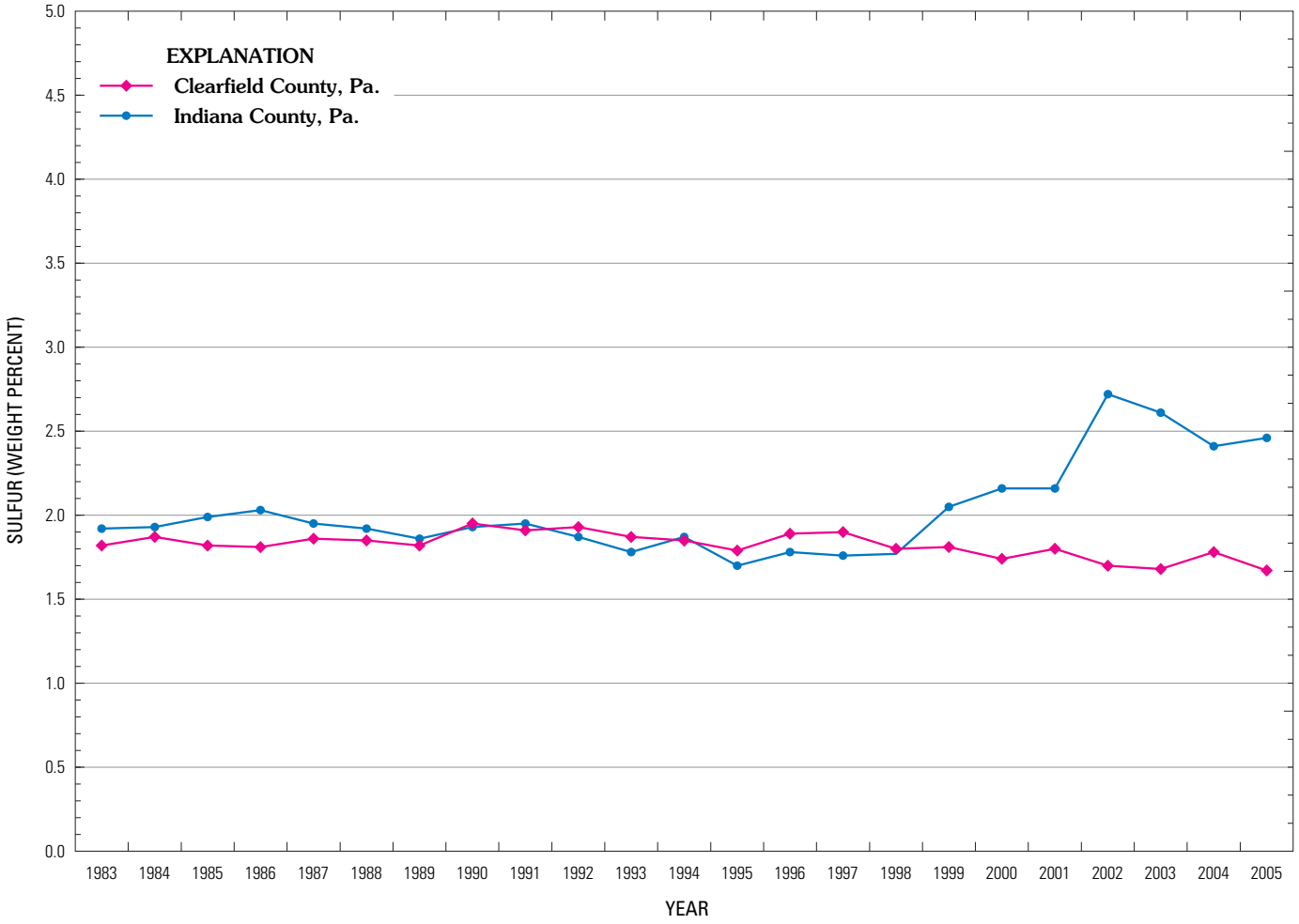

Figure 9. Sulfur content (in weight percent) of bituminous coal that was mined for electrical power generation from two Appalachian basin counties that exhibited generally decreasing production trends. Data are shown for 1983 through 2005 and are given in table 3.

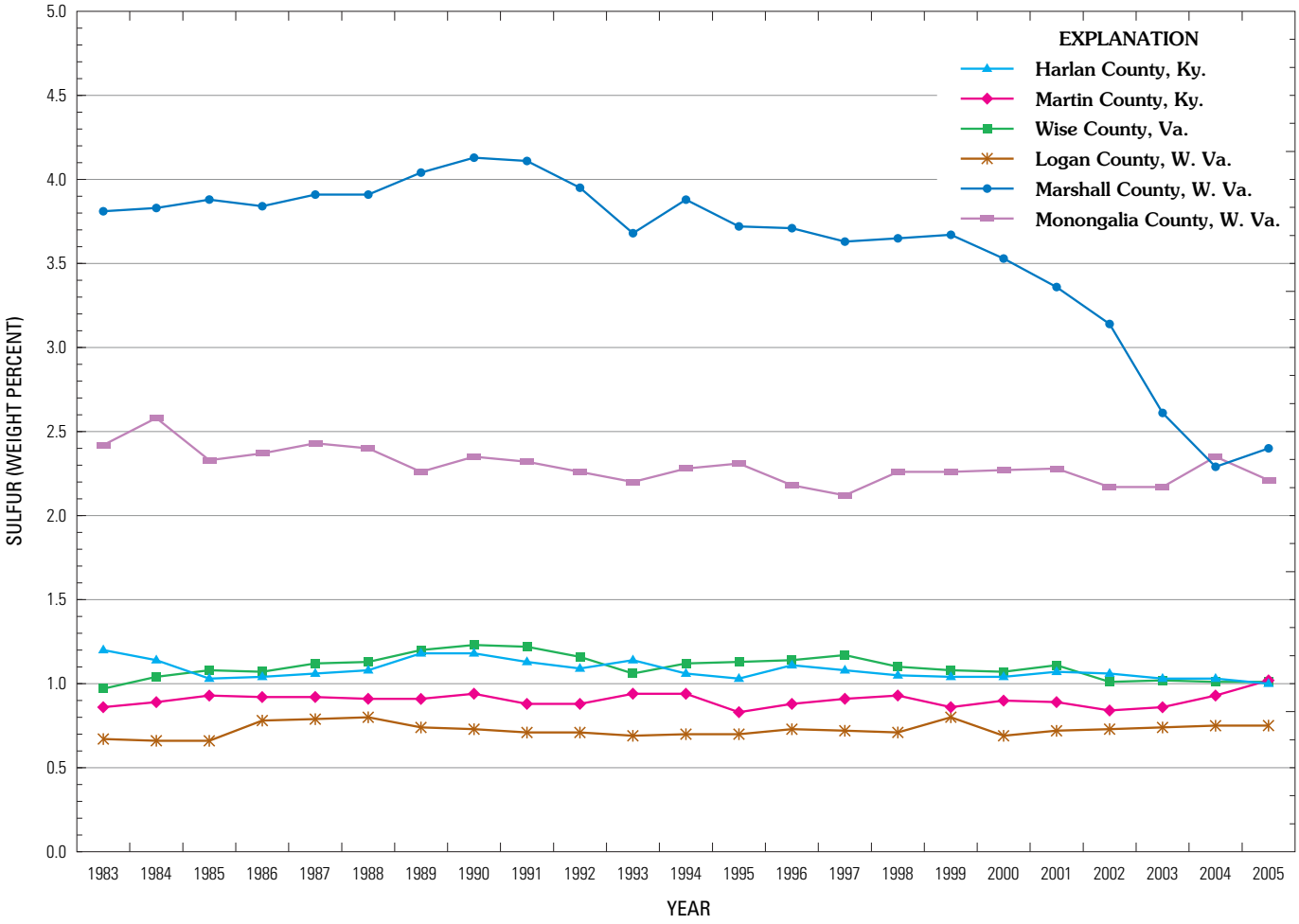

Figure 10. Sulfur content (in weight percent) of bituminous coal that was mined for electrical power generation from six Appalachian basin counties that exhibited fluctuating production trends. Data are shown for 1983 through 2005 and are given in table 3.

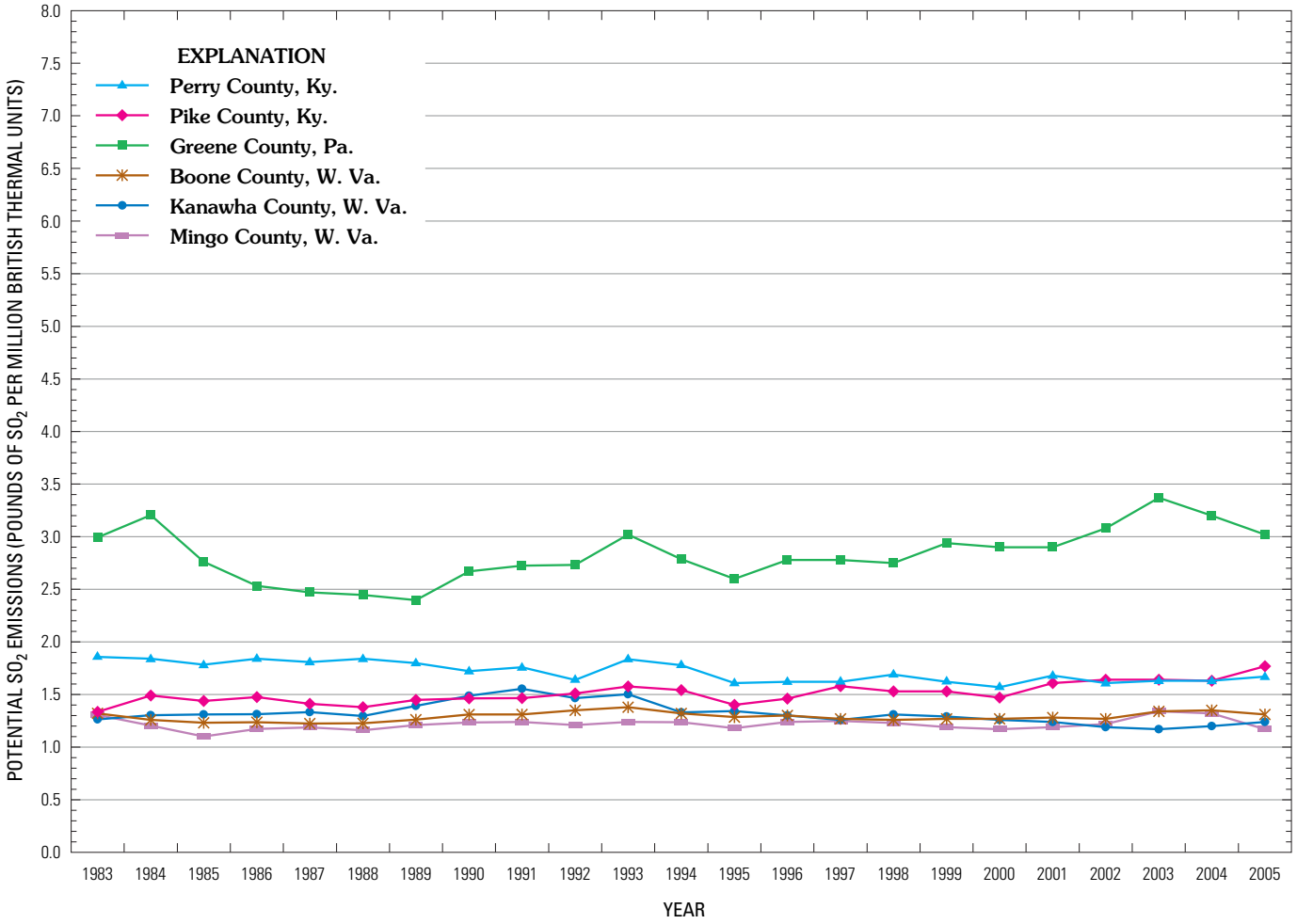

Figure 11. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) based on sulfur percentages of coal that was mined for electrical power generation from six Appalachian basin counties that exhibited generally increasing production trends. Data are shown for 1983 through 2005 and are given in table 4.

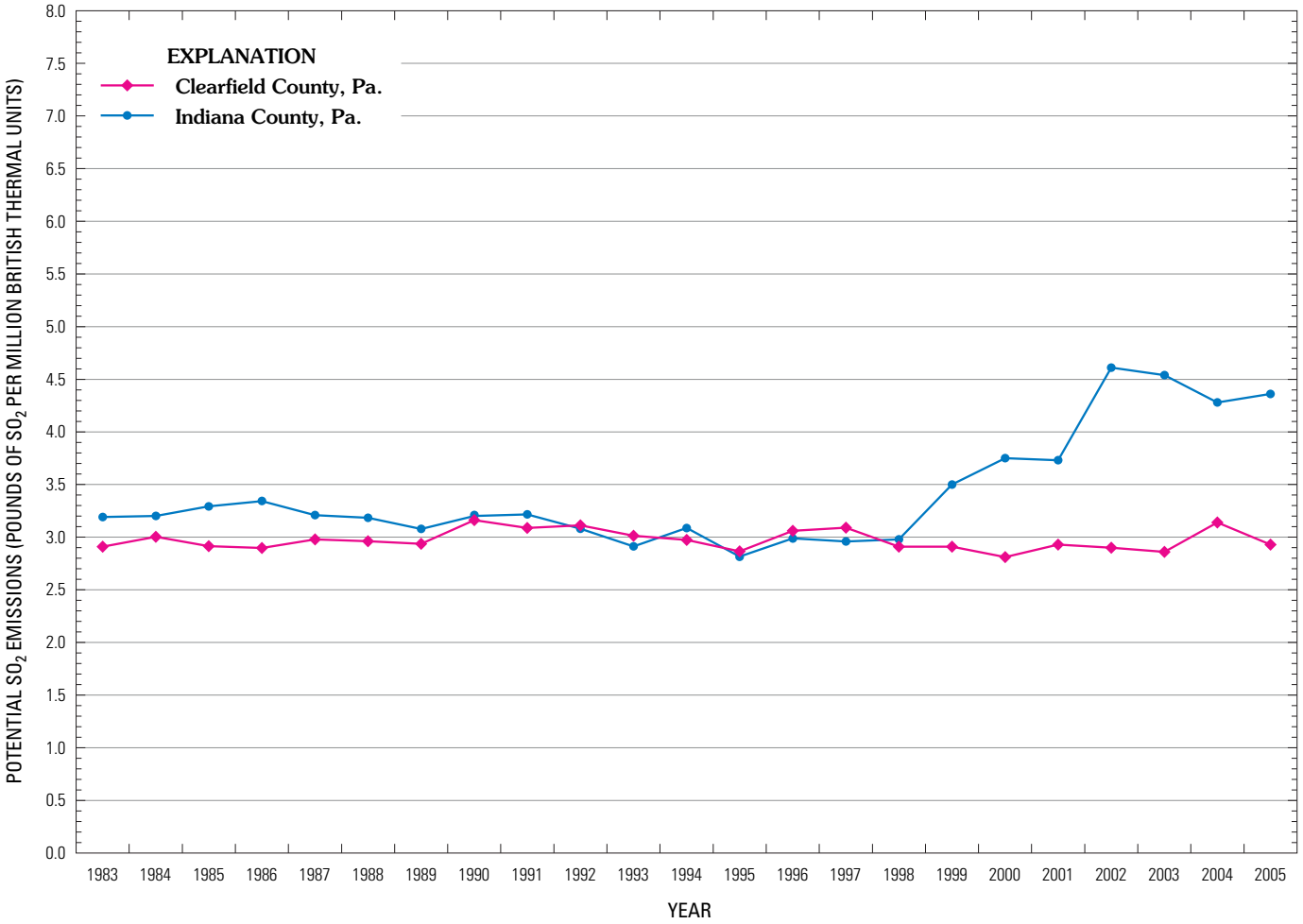

Figure 12. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) based on sulfur percentages of coal that was mined for electrical power generation from two Appalachian basin counties that exhibited generally decreasing production trends. Data are shown for 1983 through 2005 and are given in table 4.

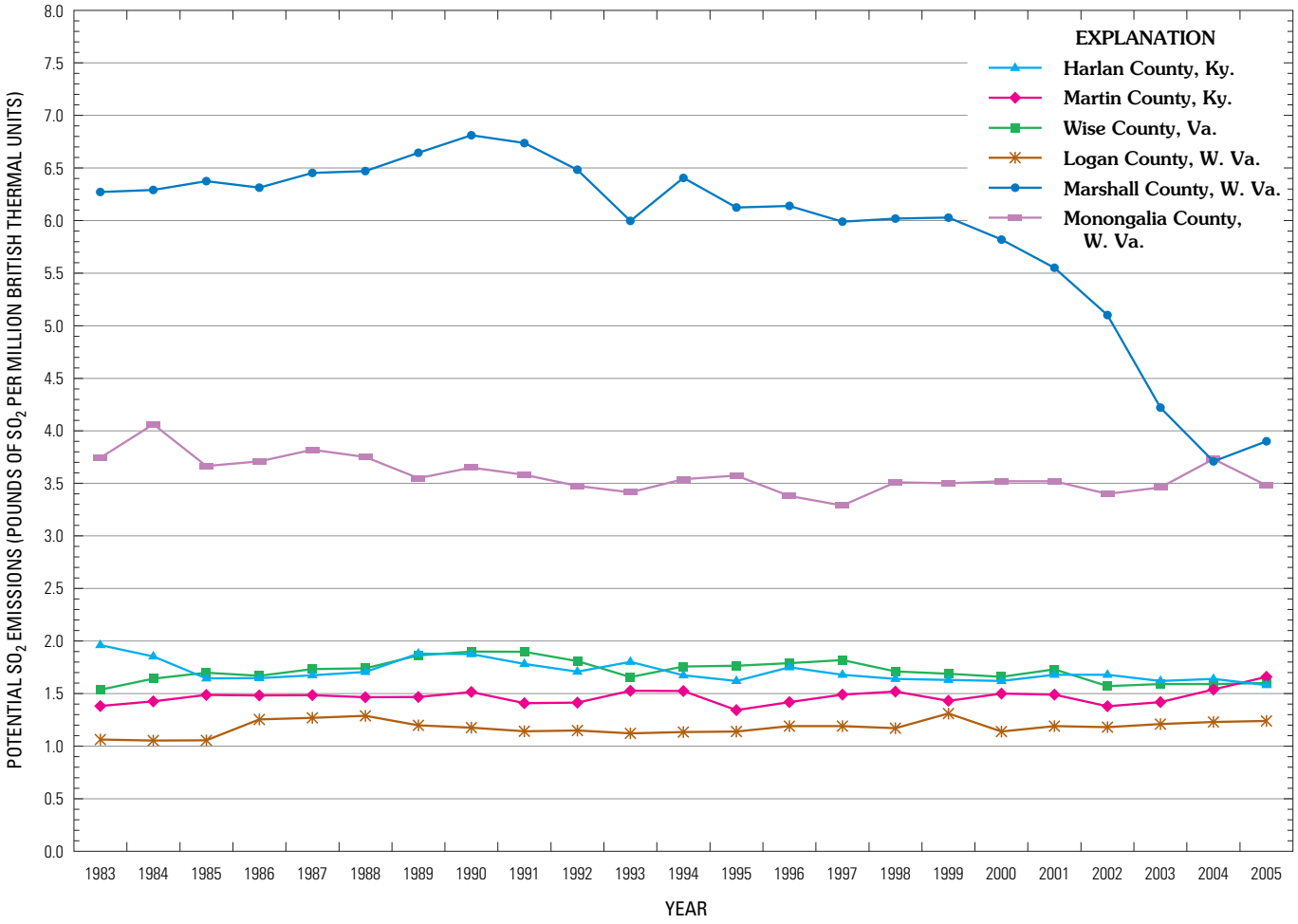

Figure 13. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) based on sulfur percentages of coal that was mined for electrical power generation from six Appalachian basin counties that exhibited fluctuating production trends. Data are shown for 1983 through 2005 and are given in table 4.

Tables 1–5

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
Ala.	Bibb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00
Ala.	Blount	0.00	186.00	582.00	155.00	17.00	0.00	0.00	85.00	9.00	0.00	0.00	0.00	0.00	1,034.00
Ala.	Cullman	232.00	162.00	0.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	406.00
Ala.	De Kalb	0.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.00
Ala.	Fayette	1,193.00	1,127.00	1,349.00	1,375.00	1,461.00	1,127.00	1,932.00	2,080.00	1,971.00	1,878.00	2,279.00	1,447.00	1,794.00	21,013.00
Ala.	Jackson	166.00	125.00	21.00	13.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	450.00
Ala.	Jefferson	4,096.00	4,574.00	5,240.00	5,692.00	5,643.00	5,091.00	3,893.00	5,041.00	5,328.00	5,254.00	5,778.00	6,471.00	5,562.00	67,663.00
Ala.	Lamar	0.00	0.00	0.00	0.00	0.00	130.00	202.00	0.00	0.00	0.00	0.00	0.00	0.00	332.00
Ala.	Marion	0.00	441.00	403.00	407.00	461.00	556.00	572.00	604.00	135.00	30.00	73.00	46.00	0.00	3,728.00
Ala.	Marshall	206.00	110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	316.00
Ala.	St. Clair	0.00	0.00	8.00	0.00	4.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.00
Ala.	Shelby	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	653.00	653.00
Ala.	Tuscaloosa	184.00	137.00	585.00	1,776.00	1,678.00	1,765.00	2,522.00	2,419.00	2,465.00	2,635.00	2,025.00	2,632.00	3,001.00	23,824.00
Ala.	Walker	8,392.00	8,085.00	8,176.00	6,919.00	5,877.00	5,917.00	5,833.00	5,949.00	7,202.00	6,461.00	5,973.00	4,839.00	4,616.00	84,239.00
Ala.	Winston	0.00	0.00	183.00	10.00	10.00	6.00	25.00	202.00	94.00	174.00	268.00	181.00	0.00	1,153.00
Ga.	Dade	1.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Ky.	Bell	4,327.00	5,064.00	4,456.00	4,637.00	5,111.00	5,344.00	5,128.00	5,060.00	5,348.00	4,156.00	2,718.00	2,908.00	3,883.00	58,140.00
Ky.	Boyd	1,594.00	1,334.00	637.00	756.00	215.00	173.00	489.00	230.00	304.00	512.00	718.00	939.00	919.00	8,820.00
Ky.	Breathitt	1,631.00	5,455.00	4,083.00	4,840.00	4,834.00	4,057.00	4,179.00	4,399.00	1,467.00	1,664.00	2,258.00	3,483.00	2,013.00	44,363.00
Ky.	Carter	74.00	244.00	298.00	55.00	170.00	95.00	41.00	57.00	52.00	69.00	0.00	32.00	0.00	1,187.00
Ky.	Clay	5,795.00	6,171.00	3,263.00	3,502.00	4,188.00	965.00	848.00	512.00	1,235.00	831.00	205.00	276.00	170.00	27,961.00
Ky.	Clinton	0.00	0.00	78.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	78.00
Ky.	Elliott	345.00	434.00	468.00	209.00	57.00	0.00	130.00	87.00	10.00	0.00	0.00	0.00	0.00	1,740.00
Ky.	Estill	1.00	0.00	0.00	42.00	0.00	0.00	0.00	0.00	0.00	0.00	199.00	43.00	83.00	368.00
Ky.	Floyd	3,526.00	4,473.00	4,651.00	4,027.00	4,373.00	4,353.00	4,693.00	5,865.00	3,891.00	3,590.00	5,240.00	5,344.00	5,770.00	59,796.00
Ky.	Greenup	100.00	434.00	1.00	21.00	403.00	1,175.00	207.00	277.00	235.00	263.00	537.00	224.00	236.00	4,113.00
Ky.	Harlan	5,573.00	8,059.00	7,683.00	7,552.00	9,060.00	8,663.00	11,205.00	12,550.00	10,435.00	10,730.00	9,958.00	13,337.00	13,285.00	128,090.00
Ky.	Jackson	44.00	159.00	29.00	91.00	0.00	5.00	1.00	27.00	1.00	8.00	0.00	84.00	108.00	557.00
Ky.	Johnson	1,951.00	2,095.00	727.00	893.00	1,309.00	824.00	802.00	1,050.00	845.00	905.00	1,051.00	738.00	679.00	13,869.00
Ky.	Knott	316.00	1,096.00	1,065.00	1,080.00	743.00	463.00	915.00	1,615.00	2,844.00	3,925.00	4,786.00	5,277.00	4,488.00	28,613.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
Ala.	Bibb	120.25	126.62	92.74	0.00	0.00	0.00	0.00	0.00	34.02	252.35	625.98
Ala.	Blount	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	Cullman	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	De Kalb	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	Fayette	69.61	0.00	0.00	0.00	0.00	598.43	203.28	0.00	0.00	0.00	871.32
Ala.	Jackson	0.00	0.00	0.00	0.00	2.51	0.00	0.00	58.78	81.47	117.20	259.96
Ala.	Jefferson	8,112.49	6,750.74	6,610.95	5,339.09	4,599.87	4,132.65	4,703.23	4,825.86	4,534.94	3,162.36	52,772.18
Ala.	Lamar	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	Marion	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	Marshall	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	St. Clair	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ala.	Shelby	400.02	689.45	441.80	0.00	12.67	63.27	0.00	0.00	0.00	0.00	1,607.21
Ala.	Tuscaloosa	4,372.08	4,154.38	5,681.69	5,220.77	4,539.68	2,288.80	789.19	2,405.19	1,626.68	4,513.99	35,592.45
Ala.	Walker	3,747.40	4,311.24	3,849.30	2,706.75	1,863.30	5,219.12	5,480.38	4,653.24	5,266.73	2,165.56	39,263.02
Ala.	Winston	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ga.	Dade	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ky.	Bell	4,122.35	3,605.60	3,386.82	2,814.66	1,579.84	690.35	1,425.22	1,251.70	978.97	1,557.19	21,412.70
Ky.	Boyd	303.05	397.72	387.87	412.50	821.33	1,256.99	1,102.14	740.23	857.63	422.25	6,701.71
Ky.	Breathitt	1,042.61	1,390.26	737.13	496.33	229.30	271.30	347.69	524.47	488.26	223.69	5,751.04
Ky.	Carter	0.00	0.00	79.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.00
Ky.	Clay	628.40	508.00	411.60	490.80	173.40	403.75	266.64	194.32	362.00	515.01	3,953.92
Ky.	Clinton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ky.	Elliott	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ky.	Estill	9.50	10.00	0.00	9.14	220.30	295.30	53.00	52.00	20.00	0.00	669.24
Ky.	Floyd	4,650.69	4,013.14	4,879.03	3,024.67	2,323.98	839.26	1,371.72	958.84	1,724.11	1,990.17	25,775.61
Ky.	Greenup	201.00	266.00	264.00	172.00	173.00	8.00	0.00	0.00	0.00	0.00	1,084.00
Ky.	Harlan	13,055.86	12,143.29	9,159.63	7,820.85	8,483.03	8,285.30	9,021.87	9,004.16	11,302.96	13,158.26	101,435.21
Ky.	Jackson	0.00	0.00	0.00	0.00	0.00	0.00	8.75	0.00	0.00	0.00	8.75
Ky.	Johnson	1,386.85	1,895.80	1,536.60	1,429.65	1,085.70	1,708.80	1,225.22	1,202.67	305.38	137.60	11,914.27
Ky.	Knott	5,778.05	7,025.75	6,588.82	6,998.43	6,878.00	7,969.58	8,504.12	5,696.82	7,419.92	7,620.92	70,480.41

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
Ky.	Knox	289.00	542.00	693.00	678.00	499.00	296.00	271.00	9.00	15.00	14.00	35.00	17.00	74.00	3,432.00
Ky.	Laurel	472.00	1,350.00	869.00	985.00	907.00	999.00	152.00	436.00	7.00	12.00	22.00	0.00	1.00	6,212.00
Ky.	Lawrence	118.00	328.00	175.00	246.00	515.00	408.00	417.00	225.00	56.00	125.00	190.00	349.00	92.00	3,244.00
Ky.	Lee	0.00	0.00	278.00	165.00	51.00	17.00	48.00	28.00	0.00	0.00	7.00	0.00	5.00	599.00
Ky.	Leslie	2,751.00	2,966.00	3,459.00	2,818.00	2,964.00	4,185.00	4,327.00	4,763.00	4,441.00	5,671.00	7,094.00	6,962.00	7,517.00	59,918.00
Ky.	Letcher	1,701.00	3,254.00	3,270.00	4,389.00	5,357.00	7,004.00	7,284.00	7,735.00	5,580.00	5,385.00	7,635.00	6,748.00	7,267.00	72,609.00
Ky.	McCreary	786.00	817.00	1,725.00	1,518.00	1,378.00	533.00	0.00	0.00	0.00	25.00	186.00	24.00	59.00	7,051.00
Ky.	Magoffin	1,238.00	1,662.00	2,437.00	2,034.00	1,407.00	1,373.00	1,890.00	1,907.00	1,680.00	1,342.00	810.00	955.00	911.00	19,646.00
Ky.	Martin	7,731.00	10,507.00	11,013.00	9,344.00	10,504.00	9,928.00	10,480.00	9,939.00	9,695.00	9,933.00	10,759.00	11,822.00	11,970.00	133,625.00
Ky.	Morgan	31.00	17.00	3.00	90.00	149.00	1.00	6.00	24.00	0.00	0.00	0.00	19.00	0.00	340.00
Ky.	Owsley	31.00	122.00	82.00	248.00	65.00	205.00	157.00	28.00	18.00	8.00	17.00	10.00	0.00	991.00
Ky.	Perry	7,613.00	9,331.00	8,356.00	8,135.00	8,232.00	7,777.00	8,961.00	11,025.00	8,902.00	10,044.00	10,399.00	11,202.00	8,869.00	118,846.00
Ky.	Pike	7,606.00	9,326.00	10,669.00	12,410.00	12,445.00	11,533.00	12,768.00	13,121.00	14,727.00	14,723.00	17,532.00	18,208.00	17,430.00	172,498.00
Ky.	Pulaski	553.00	721.00	484.00	401.00	514.00	459.00	432.00	419.00	388.00	394.00	365.00	417.00	318.00	5,865.00
Ky.	Rockcastle	28.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	31.00
Ky.	Wayne	0.00	0.00	0.00	77.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	77.00
Ky.	Whitley	1,514.00	2,055.00	2,044.00	1,948.00	2,994.00	3,063.00	3,197.00	2,161.00	1,811.00	1,833.00	1,948.00	1,561.00	1,152.00	27,281.00
Ky.	Wolfe	2.00	99.00	235.00	481.00	399.00	53.00	28.00	0.00	59.00	169.00	213.00	135.00	14.00	1,887.00
Md.	Allegany	290.00	478.00	118.00	453.00	706.00	513.00	534.00	573.00	394.00	321.00	174.00	162.00	97.00	4,813.00
Md.	Garrett	1,418.00	1,708.00	1,042.00	1,581.00	2,111.00	1,959.00	1,830.00	2,430.00	3,118.00	2,901.00	2,809.00	2,814.00	3,125.00	28,846.00
Ohio	Athens	6.00	0.00	0.00	0.00	128.00	103.00	96.00	74.00	47.00	0.00	0.00	0.00	0.00	454.00
Ohio	Belmont	8,682.00	8,470.00	6,462.00	6,427.00	6,468.00	6,175.00	6,583.00	5,954.00	4,882.00	4,877.00	5,474.00	6,089.00	4,730.00	81,273.00
Ohio	Carroll	103.00	167.00	247.00	238.00	236.00	153.00	130.00	65.00	41.00	505.00	574.00	444.00	185.00	3,088.00
Ohio	Columbiana	395.00	563.00	754.00	938.00	867.00	1,071.00	1,008.00	1,043.00	562.00	429.00	661.00	905.00	780.00	9,976.00
Ohio	Coshocton	1,354.00	1,178.00	1,543.00	1,923.00	1,867.00	1,785.00	2,123.00	2,036.00	1,763.00	1,894.00	1,884.00	1,802.00	1,625.00	22,777.00
Ohio	Gallia	207.00	399.00	263.00	236.00	72.00	0.00	0.00	0.00	0.00	0.00	207.00	336.00	307.00	2,027.00
Ohio	Guernsey	0.00	10.00	0.00	0.00	0.00	0.00	138.00	121.00	4.00	66.00	58.00	70.00	35.00	502.00
Ohio	Harrison	2,898.00	3,224.00	2,579.00	2,691.00	2,536.00	1,668.00	2,197.00	2,132.00	3,475.00	3,853.00	3,512.00	3,156.00	2,359.00	36,280.00
Ohio	Hocking	377.00	1,003.00	762.00	894.00	902.00	629.00	804.00	904.00	561.00	463.00	217.00	6.00	0.00	7,522.00
Ohio	Holmes	0.00	0.00	0.00	0.00	0.00	23.00	293.00	313.00	336.00	332.00	350.00	399.00	222.00	2,268.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
Ky.	Knox	0.00	0.00	21.80	0.00	0.00	0.00	25.43	38.24	118.40	24.72	228.59
Ky.	Laurel	1.00	0.00	5.93	3.60	6.00	1.00	0.00	0.60	21.22	0.00	39.35
Ky.	Lawrence	84.33	51.50	409.90	929.47	1,870.75	2,869.19	2,359.44	4,152.60	4,453.25	3,384.21	20,564.64
Ky.	Lee	0.00	0.00	0.00	0.00	0.00	0.00	5.09	0.00	0.00	0.00	5.09
Ky.	Leslie	4,737.13	5,202.07	2,923.65	3,436.06	2,130.07	2,570.72	773.86	97.40	422.19	604.93	22,898.08
Ky.	Letcher	6,067.85	5,703.18	7,000.65	5,164.35	2,936.06	4,940.28	4,548.43	8,098.47	7,663.69	6,570.17	58,693.13
Ky.	McCreary	48.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.94
Ky.	Magoffin	542.51	427.65	936.20	252.29	215.70	229.60	335.10	234.60	337.49	377.20	3,888.34
Ky.	Martin	10,799.70	12,145.33	10,808.79	9,345.58	9,957.19	7,222.13	5,919.34	5,956.65	6,588.29	4,933.41	83,676.41
Ky.	Morgan	0.00	0.00	12.60	12.60	36.80	94.20	0.00	0.00	0.00	0.00	156.20
Ky.	Owsley	0.00	0.00	10.40	14.00	0.00	0.00	6.82	31.85	19.62	14.90	97.59
Ky.	Perry	9,458.24	10,250.25	16,045.58	14,578.61	14,222.48	14,302.38	13,961.96	14,395.93	13,932.90	13,161.35	134,309.68
Ky.	Pike	19,316.84	21,340.31	23,038.98	22,591.93	23,772.24	26,514.41	25,384.20	21,391.08	21,732.54	20,645.98	225,728.51
Ky.	Pulaski	0.00	0.00	9.00	226.16	593.71	340.00	513.00	656.32	166.80	0.00	2,504.99
Ky.	Rockcastle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.00	66.00
Ky.	Wayne	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ky.	Whitley	797.75	484.37	333.74	234.63	48.00	88.30	102.52	278.84	481.98	912.80	3,762.93
Ky.	Wolfe	52.90	166.20	64.70	37.70	0.00	0.00	0.00	0.00	0.00	0.00	321.50
Md.	Allegany	309.10	176.64	196.43	85.41	66.26	65.97	771.89	792.63	787.41	757.78	4,009.52
Md.	Garrett	2,817.19	3,462.01	3,675.71	3,014.37	3,201.35	2,884.67	4,332.54	5,051.04	7,507.44	6,522.31	42,468.63
Ohio	Athens	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.00	46.55	52.60	104.65
Ohio	Belmont	6,174.59	6,013.10	5,433.11	5,325.08	5,723.27	6,362.77	6,784.02	6,014.87	5,028.40	4,866.73	57,725.94
Ohio	Carroll	0.00	68.50	0.00	2.30	0.00	0.00	112.56	103.54	115.97	118.17	521.04
Ohio	Columbiana	749.53	801.93	537.71	553.99	412.67	404.44	344.04	240.07	308.43	521.40	4,874.21
Ohio	Coshocton	1,860.90	2,421.70	2,137.60	2,143.20	2,395.50	2,630.30	3,152.80	2,504.50	1,947.00	1,982.80	23,176.30
Ohio	Gallia	341.30	282.90	325.20	317.80	335.20	322.20	1,827.50	4,427.30	6,177.50	6,053.50	20,410.40
Ohio	Guernsey	1,165.30	1,031.00	1,240.20	0.40	0.60	13.30	0.00	0.00	0.00	0.00	3,450.80
Ohio	Harrison	1,065.10	1,694.25	1,622.41	1,587.03	1,750.66	1,379.05	1,485.68	2,519.77	2,858.43	2,554.19	18,516.57
Ohio	Hocking	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ohio	Holmes	114.42	161.25	178.35	143.23	135.14	136.46	41.94	0.00	0.00	0.00	910.79

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
Ohio	Jackson	226.00	316.00	338.00	678.00	696.00	654.00	887.00	988.00	789.00	586.00	928.00	918.00	1,248.00	9,252.00
Ohio	Jefferson	1,576.00	1,679.00	2,363.00	2,836.00	2,547.00	2,387.00	2,196.00	2,258.00	2,118.00	2,294.00	2,451.00	1,102.00	463.00	26,270.00
Ohio	Lawrence	453.00	430.00	418.00	468.00	950.00	287.00	740.00	1,191.00	2,216.00	2,173.00	2,119.00	993.00	727.00	13,165.00
Ohio	Mahoning	179.00	135.00	128.00	228.00	250.00	201.00	236.00	147.00	79.00	21.00	46.00	34.00	10.00	1,694.00
Ohio	Meigs	3,297.00	4,919.00	5,599.00	4,870.00	5,128.00	4,984.00	3,857.00	5,572.00	5,887.00	5,207.00	3,744.00	4,324.00	4,655.00	62,043.00
Ohio	Monroe	2,824.00	3,472.00	3,242.00	3,601.00	3,029.00	2,228.00	1,974.00	1,359.00	766.00	106.00	657.00	1,792.00	570.00	25,620.00
Ohio	Morgan	504.00	318.00	386.00	0.00	0.00	0.00	118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,326.00
Ohio	Muskingum	2,959.00	3,182.00	2,995.00	2,636.00	700.00	501.00	510.00	446.00	462.00	443.00	278.00	251.00	106.00	15,469.00
Ohio	Noble	1,056.00	1,029.00	831.00	1,458.00	3,223.00	2,881.00	3,087.00	2,539.00	3,197.00	3,634.00	3,084.00	2,331.00	1,701.00	30,051.00
Ohio	Perry	1,325.00	1,588.00	1,620.00	1,745.00	1,364.00	893.00	1,104.00	1,149.00	104.00	243.00	375.00	395.00	316.00	12,221.00
Ohio	Pike	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	101.00	101.00
Ohio	Scioto	0.00	17.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.00
Ohio	Stark	203.00	224.00	229.00	280.00	195.00	125.00	13.00	24.00	19.00	2.00	48.00	0.00	0.00	1,362.00
Ohio	Tuscarawas	273.00	895.00	755.00	710.00	786.00	706.00	595.00	591.00	1,062.00	1,028.00	1,010.00	1,066.00	774.00	10,251.00
Ohio	Vinton	152.00	244.00	322.00	339.00	330.00	319.00	956.00	388.00	286.00	414.00	453.00	582.00	401.00	5,186.00
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pa.	Allegheny	684.00	650.00	625.00	951.00	1,521.00	1,291.00	1,292.00	1,497.00	834.00	589.00	178.00	17.00	0.00	10,129.00
Pa.	Armstrong	1,473.00	2,069.00	4,065.00	4,225.00	4,228.00	4,728.00	4,575.00	4,397.00	4,097.00	4,894.00	4,059.00	3,786.00	3,736.00	50,332.00
Pa.	Beaver	0.00	0.00	0.00	40.00	75.00	60.00	127.00	91.00	170.00	146.00	46.00	4.00	0.00	759.00
Pa.	Bedford	88.00	68.00	118.00	73.00	20.00	40.00	43.00	40.00	1.00	9.00	12.00	0.00	0.00	512.00
Pa.	Blair	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	1.00	0.00	0.00	11.00
Pa.	Bradford	122.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	122.00
Pa.	Butler	897.00	1,354.00	1,484.00	1,395.00	1,636.00	1,347.00	1,878.00	1,122.00	460.00	417.00	531.00	417.00	136.00	13,074.00
Pa.	Cambria	4,407.00	4,266.00	3,937.00	3,771.00	4,350.00	3,818.00	4,422.00	4,463.00	4,038.00	2,649.00	2,083.00	1,719.00	1,406.00	45,329.00
Pa.	Cameron	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Pa.	Centre	130.00	288.00	163.00	142.00	105.00	106.00	150.00	141.00	110.00	186.00	265.00	144.00	49.00	1,979.00
Pa.	Clarion	1,658.00	1,465.00	1,058.00	1,292.00	1,696.00	1,654.00	1,825.00	1,325.00	1,089.00	966.00	784.00	567.00	280.00	15,659.00
Pa.	Clearfield	8,784.00	10,494.00	7,745.00	7,863.00	8,048.00	7,888.00	7,182.00	7,329.00	5,461.00	5,098.00	4,361.00	4,137.00	3,997.00	88,387.00
Pa.	Clinton	108.00	0.00	1.00	5.00	16.00	12.00	59.00	175.00	110.00	40.00	0.00	2.00	0.00	528.00
Pa.	Elk	171.00	207.00	171.00	50.00	31.00	7.00	53.00	13.00	32.00	45.00	60.00	39.00	58.00	937.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
Ohio	Jackson	1,399.30	1,438.40	1,175.20	699.80	641.10	930.10	1,212.86	690.19	408.88	644.36	9,240.19
Ohio	Jefferson	234.70	189.00	340.90	246.80	335.60	330.50	501.12	433.69	542.74	478.45	3,633.50
Ohio	Lawrence	0.00	253.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	253.10
Ohio	Mahoning	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ohio	Meigs	5,996.60	6,239.80	5,160.60	4,553.60	4,306.50	4,260.10	463.10	0.00	0.00	0.00	30,980.30
Ohio	Monroe	2,438.60	2,028.40	1,464.00	1,158.20	8.70	77.40	1,065.60	2,486.52	2,503.86	3,480.13	16,711.41
Ohio	Morgan	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ohio	Muskingum	94.60	126.40	199.30	100.50	312.10	533.20	192.80	0.00	0.00	1,078.90	2,637.80
Ohio	Noble	842.30	737.50	1,035.58	1,644.30	1,996.80	1,396.85	984.80	740.98	600.37	332.04	10,311.52
Ohio	Perry	512.10	601.57	543.60	296.30	665.90	994.20	90.60	215.79	1,000.82	262.94	5,183.82
Ohio	Pike	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Ohio	Scioto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.60	0.00	29.60
Ohio	Stark	33.40	15.70	22.67	30.41	10.67	6.07	0.00	0.00	0.00	0.00	118.92
Ohio	Tuscarawas	529.38	449.54	337.73	255.48	375.36	389.50	525.65	90.10	29.70	0.00	2,982.44
Ohio	Vinton	1,179.60	858.10	1,556.80	1,198.00	1,263.50	1,387.50	700.10	184.40	320.35	124.33	8,772.68
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,410.00	2,409.80	2,473.70	7,293.50
Pa.	Allegheny	15.00	37.30	0.00	16.00	39.58	47.64	79.33	0.00	0.00	4.27	239.12
Pa.	Armstrong	4,209.41	3,919.08	4,843.82	4,205.73	2,073.53	2,473.07	6,498.09	8,480.00	8,779.11	8,264.03	53,745.87
Pa.	Beaver	0.00	0.00	0.00	16.40	131.50	0.00	22.75	10.21	209.18	349.67	739.71
Pa.	Bedford	0.00	0.00	0.00	0.37	24.40	0.00	0.00	7.71	0.96	0.00	33.44
Pa.	Blair	5.00	5.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.30
Pa.	Bradford	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Pa.	Butler	608.13	1,241.15	1,400.90	806.95	646.32	820.77	806.62	101.55	430.68	255.88	7,118.95
Pa.	Cambria	1,240.60	1,057.40	1,092.60	521.30	354.13	216.50	1,084.83	867.38	1,811.95	3,835.19	12,081.88
Pa.	Cameron	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Pa.	Centre	53.00	36.00	18.00	0.00	0.00	0.00	0.00	28.28	0.00	0.00	135.28
Pa.	Clarion	114.20	173.36	128.57	207.92	125.73	87.90	57.87	31.62	20.77	172.48	1,120.42
Pa.	Clearfield	3,776.81	3,408.26	3,264.86	2,335.79	1,771.59	1,308.05	1,996.88	1,900.47	1,562.48	1,512.95	22,838.14
Pa.	Clinton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Pa.	Elk	52.92	63.01	38.75	170.48	20.56	74.78	112.44	42.06	418.88	281.54	1,275.42

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
Pa.	Fayette	1,534.00	1,808.00	2,130.00	2,620.00	2,373.00	2,246.00	1,504.00	1,866.00	273.00	574.00	1,198.00	1,025.00	1,160.00	20,311.00
Pa.	Fulton	9.00	15.00	25.00	18.00	12.00	11.00	12.00	8.00	8.00	13.00	5.00	0.00	3.00	139.00
Pa.	Greene	2,412.00	2,188.00	2,712.00	4,036.00	5,029.00	4,307.00	5,467.00	7,562.00	10,995.00	15,208.00	16,018.00	16,973.00	16,178.00	109,085.00
Pa.	Huntingdon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	5.00	3.00	9.00	0.00	20.00
Pa.	Indiana	14,502.00	15,109.00	11,770.00	12,125.00	11,469.00	10,161.00	9,972.00	11,310.00	10,769.00	10,095.00	6,354.00	6,940.00	6,057.00	136,633.00
Pa.	Jefferson	2,562.00	2,377.00	2,011.00	1,710.00	1,532.00	1,727.00	1,848.00	1,799.00	1,395.00	1,283.00	1,559.00	1,237.00	1,119.00	22,159.00
Pa.	Lawrence	380.00	318.00	294.00	430.00	423.00	220.00	169.00	254.00	108.00	47.00	31.00	0.00	78.00	2,752.00
Pa.	Lycoming	146.00	195.00	161.00	120.00	169.00	199.00	218.00	248.00	195.00	217.00	191.00	180.00	132.00	2,371.00
Pa.	Mercer	320.00	261.00	140.00	345.00	101.00	84.00	113.00	267.00	909.00	255.00	40.00	4.00	0.00	2,839.00
Pa.	Somerset	1,674.00	2,057.00	1,579.00	1,818.00	2,284.00	2,287.00	2,533.00	2,829.00	2,788.00	3,922.00	4,023.00	4,270.00	4,661.00	36,725.00
Pa.	Tioga	427.00	355.00	330.00	275.00	300.00	254.00	168.00	6.00	0.00	0.00	0.00	0.00	0.00	2,115.00
Pa.	Venango	428.00	642.00	488.00	580.00	603.00	484.00	623.00	632.00	322.00	16.00	0.00	0.00	0.00	4,818.00
Pa.	Washington	393.00	1,229.00	1,450.00	1,104.00	965.00	905.00	1,889.00	1,660.00	1,268.00	2,169.00	2,511.00	1,746.00	2,509.00	19,798.00
Pa.	Westmoreland	316.00	359.00	122.00	172.00	443.00	515.00	552.00	474.00	396.00	761.00	453.00	405.00	523.00	5,491.00
Tenn.	Anderson	1,163.00	940.00	810.00	860.00	750.00	693.00	1,037.00	1,142.00	800.00	503.00	12.00	6.00	9.00	8,725.00
Tenn.	Bledsoe	0.00	8.00	83.00	7.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.00
Tenn.	Campbell	773.00	652.00	898.00	985.00	1,176.00	620.00	339.00	752.00	928.00	1,179.00	1,031.00	504.00	433.00	10,270.00
Tenn.	Claiborne	1,204.00	1,189.00	1,251.00	1,315.00	1,355.00	1,352.00	1,321.00	1,284.00	72.00	9.00	0.00	0.00	115.00	10,467.00
Tenn.	Cumberland	19.00	10.00	3.00	14.00	8.00	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.00
Tenn.	Fentress	25.00	97.00	105.00	117.00	63.00	18.00	42.00	25.00	0.00	0.00	0.00	0.00	0.00	492.00
Tenn.	Grundy	35.00	42.00	71.00	51.00	25.00	21.00	19.00	39.00	27.00	0.00	0.00	0.00	0.00	330.00
Tenn.	Marion	0.00	0.00	12.00	136.00	32.00	62.00	398.00	27.00	0.00	0.00	0.00	0.00	0.00	667.00
Tenn.	Morgan	178.00	217.00	348.00	297.00	129.00	96.00	64.00	131.00	70.00	77.00	119.00	130.00	185.00	2,041.00
Tenn.	Rhea	1.00	13.00	2.00	12.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.00
Tenn.	Scott	193.00	191.00	175.00	209.00	206.00	245.00	144.00	161.00	298.00	244.00	294.00	420.00	491.00	3,271.00
Tenn.	Sequatchie	33.00	81.00	10.00	112.00	160.00	275.00	300.00	587.00	986.00	829.00	510.00	533.00	675.00	5,091.00
Tenn.	Van Buren	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00
Va.	Buchanan	2,194.00	2,837.00	3,193.00	3,686.00	4,393.00	3,688.00	3,523.00	3,094.00	2,310.00	2,457.00	2,097.00	2,649.00	3,431.00	39,552.00
Va.	Dickenson	1,635.00	803.00	775.00	808.00	691.00	788.00	800.00	866.00	1,485.00	1,759.00	2,014.00	1,576.00	1,152.00	15,152.00
Va.	Lee	2,267.00	2,749.00	3,658.00	3,416.00	2,526.00	2,374.00	2,432.00	2,292.00	2,356.00	2,479.00	3,004.00	2,538.00	1,080.00	33,171.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
Pa.	Fayette	905.15	712.23	807.56	481.23	444.87	454.46	85.22	79.93	205.74	509.15	4,685.54
Pa.	Fulton	8.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.08
Pa.	Greene	18,775.22	22,454.05	25,875.71	24,177.75	26,012.28	23,285.67	24,465.22	18,874.68	17,596.01	18,832.57	220,349.16
Pa.	Huntingdon	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Pa.	Indiana	7,323.50	8,782.20	7,848.41	7,374.68	6,339.58	6,380.56	3,706.52	4,473.44	4,989.60	5,063.95	62,282.44
Pa.	Jefferson	1,059.89	727.95	761.34	355.35	122.31	60.40	268.95	321.37	203.86	352.20	4,233.62
Pa.	Lawrence	8.80	0.00	0.00	0.00	9.00	0.00	0.00	2.79	0.00	2.79	23.38
Pa.	Lycoming	100.60	144.40	257.51	244.74	134.50	0.00	46.79	106.92	125.73	96.63	1,257.82
Pa.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.52	2.35	0.00	4.87
Pa.	Somerset	4,163.79	4,750.30	4,324.69	3,115.77	2,612.33	2,824.21	3,475.13	2,149.02	1,711.56	1,267.46	30,394.26
Pa.	Tioga	0.00	0.00	0.00	0.00	0.00	0.00	9.88	11.78	16.47	2.66	40.79
Pa.	Venango	7.53	1.60	21.80	5.20	0.00	0.00	15.24	35.04	4.00	5.96	96.37
Pa.	Washington	3,244.85	4,228.35	6,615.89	5,650.93	4,447.38	3,389.10	4,021.90	4,642.54	4,228.86	4,076.71	44,546.51
Pa.	Westmoreland	589.50	597.80	259.90	620.68	355.86	216.50	0.00	0.00	53.81	152.72	2,846.77
Tenn.	Anderson	668.96	1,220.66	1,103.81	366.92	0.00	0.00	0.00	16.40	160.88	33.00	3,570.63
Tenn.	Bledsoe	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Tenn.	Campbell	431.87	28.01	0.00	0.00	0.00	126.42	366.98	283.97	203.24	483.59	1,924.08
Tenn.	Claiborne	378.55	438.48	358.70	457.70	562.30	875.60	890.60	822.02	992.20	993.60	6,769.75
Tenn.	Cumberland	0.00	0.00	85.12	258.26	269.64	261.06	284.83	235.43	91.44	46.36	1,532.14
Tenn.	Fentress	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.06	0.00	8.06
Tenn.	Grundy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.20	7.20
Tenn.	Marion	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Tenn.	Morgan	294.88	17.81	6.95	4.90	0.00	0.00	0.00	0.00	0.00	0.00	324.54
Tenn.	Rhea	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Tenn.	Scott	473.76	400.41	327.66	457.52	351.93	142.13	0.00	0.00	26.32	132.00	2,311.73
Tenn.	Sequatchie	691.30	943.59	552.73	429.14	402.97	0.00	0.00	0.00	0.00	0.00	3,019.73
Tenn.	Van Buren	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Va.	Buchanan	3,125.36	2,797.43	2,727.16	3,043.71	2,216.09	2,768.20	3,490.85	2,945.61	1,637.65	1,727.81	26,479.87
Va.	Dickenson	1,601.36	917.87	1,126.46	1,788.01	1,909.02	816.21	423.23	1,040.04	593.92	756.91	10,973.03
Va.	Lee	1,782.14	2,419.27	2,386.46	2,997.87	3,614.65	5,255.99	5,199.24	5,418.30	2,291.77	1,757.00	33,122.69

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
Va.	Russell	1,562.00	1,876.00	1,295.00	1,367.00	1,375.00	1,488.00	1,445.00	1,774.00	1,070.00	619.00	462.00	787.00	799.00	15,919.00
Va.	Scott	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Va.	Tazewell	71.00	75.00	54.00	70.00	84.00	33.00	44.00	7.00	0.00	0.00	0.00	0.00	0.00	438.00
Va.	Wise	6,081.00	7,515.00	7,945.00	8,386.00	9,850.00	9,686.00	9,741.00	9,299.00	8,935.00	9,195.00	9,050.00	8,717.00	7,989.00	112,389.00
W. Va.	Barbour	2,388.00	3,190.00	2,492.00	1,428.00	1,528.00	1,934.00	1,905.00	2,046.00	2,059.00	2,628.00	2,830.00	2,669.00	1,074.00	28,171.00
W. Va.	Boone	9,403.00	10,007.00	10,561.00	13,014.00	14,606.00	13,480.00	15,935.00	16,711.00	15,408.00	14,208.00	9,764.00	14,343.00	14,112.00	171,552.00
W. Va.	Braxton	392.00	389.00	208.00	189.00	296.00	296.00	68.00	63.00	6.00	0.00	146.00	0.00	0.00	2,053.00
W. Va.	Brooke	1,040.00	1,288.00	990.00	1,014.00	1,047.00	833.00	1,188.00	1,572.00	1,505.00	1,669.00	1,694.00	1,232.00	1,049.00	16,121.00
W. Va.	Clay	0.00	25.00	0.00	1.00	92.00	330.00	707.00	524.00	271.00	300.00	664.00	878.00	979.00	4,771.00
W. Va.	Fayette	391.00	366.00	322.00	405.00	491.00	1,425.00	1,850.00	2,088.00	2,011.00	1,930.00	1,878.00	2,142.00	1,651.00	16,950.00
W. Va.	Gilmer	5.00	5.00	0.00	0.00	38.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.00
W. Va.	Grant	3,224.00	3,678.00	3,363.00	3,110.00	3,145.00	3,368.00	4,138.00	4,117.00	4,117.00	3,959.00	2,732.00	2,853.00	3,052.00	44,856.00
W. Va.	Greenbrier	53.00	63.00	96.00	50.00	57.00	13.00	3.00	0.00	2.00	11.00	6.00	4.00	21.00	379.00
W. Va.	Harrison	2,715.00	2,782.00	3,045.00	3,353.00	3,781.00	3,353.00	4,303.00	4,369.00	4,103.00	3,901.00	2,258.00	4,124.00	4,536.00	46,623.00
W. Va.	Kanawha	5,618.00	5,540.00	4,324.00	4,646.00	3,957.00	3,464.00	4,332.00	5,090.00	5,582.00	5,793.00	5,912.00	6,848.00	8,159.00	69,265.00
W. Va.	Lewis	1,191.00	1,036.00	1,059.00	1,012.00	665.00	565.00	192.00	48.00	0.00	0.00	2.00	56.00	30.00	5,856.00
W. Va.	Lincoln	0.00	0.00	0.00	0.00	22.00	31.00	45.00	24.00	66.00	1,456.00	1,828.00	1,335.00	946.00	5,753.00
W. Va.	Logan	4,608.00	6,008.00	5,412.00	8,060.00	8,707.00	8,649.00	5,042.00	7,349.00	7,113.00	6,840.00	6,613.00	8,917.00	9,967.00	93,285.00
W. Va.	McDowell	47.00	119.00	11.00	41.00	239.00	74.00	67.00	25.00	80.00	40.00	20.00	17.00	19.00	799.00
W. Va.	Marion	9,342.00	4,946.00	4,593.00	4,065.00	4,527.00	3,856.00	3,706.00	4,652.00	3,885.00	1,981.00	1,977.00	1,998.00	1,272.00	50,800.00
W. Va.	Marshall	5,281.00	5,050.00	4,583.00	4,322.00	5,723.00	6,451.00	6,700.00	7,920.00	8,165.00	8,591.00	4,366.00	7,122.00	8,249.00	82,523.00
W. Va.	Mason	47.00	0.00	0.00	0.00	107.00	52.00	37.00	73.00	113.00	12.00	42.00	41.00	0.00	524.00
W. Va.	Mercer	0.00	0.00	67.00	27.00	66.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	160.00
W. Va.	Mineral	40.00	176.00	39.00	84.00	77.00	167.00	240.00	98.00	145.00	248.00	219.00	197.00	53.00	1,783.00
W. Va.	Mingo	5,590.00	5,985.00	5,097.00	6,370.00	7,329.00	8,710.00	8,929.00	10,028.00	12,468.00	13,681.00	15,145.00	16,280.00	13,887.00	129,499.00
W. Va.	Monongalia	6,340.00	13,080.00	8,541.00	9,682.00	12,393.00	11,424.00	12,453.00	12,624.00	10,785.00	11,127.00	8,630.00	11,734.00	11,343.00	140,156.00
W. Va.	Nicholas	1,499.00	2,583.00	2,482.00	3,649.00	4,472.00	4,133.00	3,268.00	2,662.00	1,922.00	1,175.00	1,155.00	1,729.00	1,655.00	32,384.00
W. Va.	Ohio	62.00	0.00	435.00	163.00	85.00	15.00	286.00	255.00	94.00	162.00	495.00	1,029.00	108.00	3,189.00
W. Va.	Preston	2,787.00	4,096.00	3,362.00	3,053.00	3,637.00	3,599.00	3,580.00	3,144.00	2,500.00	2,093.00	1,695.00	1,940.00	1,442.00	36,928.00
W. Va.	Raleigh	70.00	31.00	73.00	77.00	0.00	0.00	10.00	45.00	68.00	250.00	10.00	0.00	0.00	634.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
Va.	Russell	615.14	1,251.80	1,326.64	1,440.34	1,799.26	2,081.82	1,379.80	1,515.48	1,250.02	1,069.20	13,729.50
Va.	Scott	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
Va.	Tazewell	14.84	0.00	0.00	0.00	0.00	0.00	131.00	85.43	21.21	185.49	437.97
Va.	Wise	7,313.16	7,894.78	9,436.11	10,501.09	9,761.55	10,463.30	11,269.57	12,179.83	12,450.29	11,257.39	102,527.07
W. Va.	Barbour	1,430.68	1,401.22	1,340.81	1,316.71	587.08	419.48	1,088.98	577.23	554.19	218.70	8,935.08
W. Va.	Boone	15,805.31	16,591.65	19,405.75	21,413.87	19,642.15	20,259.40	22,345.84	17,991.56	17,390.87	17,530.85	188,377.25
W. Va.	Braxton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
W. Va.	Brooke	1,034.30	1,520.80	1,858.60	1,630.80	1,373.10	813.64	368.10	0.00	0.00	0.00	8,599.34
W. Va.	Clay	2,351.83	3,566.51	4,405.73	4,512.39	3,718.98	3,352.04	4,656.03	3,660.15	3,170.09	2,667.93	36,061.68
W. Va.	Fayette	1,989.50	2,324.61	1,715.09	1,268.36	989.34	1,074.72	301.76	426.72	51.42	514.05	10,655.57
W. Va.	Gilmer	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
W. Va.	Grant	3,597.31	1,579.53	1,319.60	1,146.89	1,048.01	705.95	608.64	811.04	516.57	46.48	11,380.02
W. Va.	Greenbrier	0.00	0.00	0.00	57.62	240.08	273.59	281.32	6.82	0.00	0.00	859.43
W. Va.	Harrison	5,322.42	5,699.56	6,362.78	6,051.66	6,346.36	4,659.20	5,926.26	5,142.09	5,792.22	4,924.53	56,227.08
W. Va.	Kanawha	10,917.43	10,552.34	13,001.72	12,986.05	11,792.65	8,570.06	12,640.36	13,655.55	11,962.58	12,370.68	118,449.42
W. Va.	Lewis	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
W. Va.	Lincoln	54.30	29.80	102.90	1.60	259.77	1,307.46	221.38	106.09	288.26	788.92	3,160.48
W. Va.	Logan	12,043.56	11,417.21	7,774.41	4,786.92	3,819.52	3,526.70	6,620.69	6,381.00	5,177.26	5,785.50	67,332.77
W. Va.	McDowell	10.70	0.00	0.00	41.60	291.89	624.91	1,063.62	771.00	464.09	188.14	3,455.95
W. Va.	Marion	1,073.65	2,601.98	2,858.67	968.14	0.00	338.94	28.82	465.67	1,926.86	3,450.46	13,713.19
W. Va.	Marshall	9,460.74	11,009.08	12,004.55	10,698.35	8,742.01	7,610.70	5,711.08	6,278.32	7,081.14	8,025.50	86,621.47
W. Va.	Mason	0.00	0.00	0.00	0.00	49.00	0.00	0.00	0.00	23.81	0.00	72.81
W. Va.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	189.00	0.00	0.00	0.00	189.00
W. Va.	Mineral	57.41	0.00	0.00	0.00	6.46	0.00	0.00	0.00	0.00	8.59	72.46
W. Va.	Mingo	15,578.28	15,780.88	15,047.33	14,232.95	12,143.20	15,068.58	13,517.08	13,063.86	9,766.25	9,253.90	133,452.31
W. Va.	Monongalia	11,183.44	9,289.71	7,955.86	8,733.56	7,219.10	7,306.60	8,515.11	5,621.55	6,807.78	7,167.00	79,799.71
W. Va.	Nicholas	849.09	613.22	189.53	1,515.56	3,417.99	5,322.29	4,001.05	4,490.34	3,911.82	4,220.46	28,531.35
W. Va.	Ohio	0.00	0.00	0.00	0.00	91.70	0.00	0.00	0.00	0.00	0.00	91.70
W. Va.	Preston	1,679.62	1,481.96	1,374.09	1,259.18	1,244.28	1,072.50	2,280.97	1,342.27	1,510.85	1,280.85	14,526.57
W. Va.	Raleigh	92.90	322.43	458.91	285.50	62.10	218.10	394.45	312.61	468.55	848.80	3,464.35

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total weight (1983–1995)
W. Va.	Randolph	677.00	861.00	990.00	1,215.00	1,150.00	989.00	868.00	551.00	234.00	52.00	81.00	37.00	10.00	7,715.00
W. Va.	Taylor	0.00	0.00	14.00	8.00	0.00	7.00	7.00	7.00	0.00	17.00	1.00	0.00	0.00	61.00
W. Va.	Tucker	5.00	91.00	39.00	62.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	197.00
W. Va.	Upshur	1,442.00	983.00	866.00	439.00	260.00	188.00	185.00	98.00	40.00	269.00	533.00	330.00	472.00	6,105.00
W. Va.	Wayne	88.00	0.00	1.00	172.00	95.00	84.00	147.00	202.00	549.00	1,109.00	2,346.00	2,491.00	3,866.00	11,150.00
W. Va.	Webster	129.00	342.00	647.00	911.00	1,092.00	1,426.00	1,822.00	1,670.00	1,032.00	1,248.00	2,026.00	2,102.00	2,582.00	17,029.00
W. Va.	Wyoming	869.00	476.00	743.00	374.00	318.00	317.00	202.00	0.00	0.00	0.00	43.00	40.00	24.00	3,406.00

Table 1. Total weight of bituminous coal (in thousands of tons) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total weight (1996–2005)
W. Va.	Randolph	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.55
W. Va.	Taylor	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
W. Va.	Tucker	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.00
W. Va.	Upshur	775.65	761.17	1,078.08	1,633.15	2,541.44	2,426.07	1,408.77	1,205.42	844.20	890.47	13,564.42
W. Va.	Wayne	4,056.42	4,525.65	5,276.40	6,398.99	5,720.36	4,729.62	3,599.59	3,915.70	5,172.62	6,087.81	49,483.16
W. Va.	Webster	3,007.49	3,507.67	3,704.58	4,431.69	4,363.27	4,274.94	4,036.61	3,660.83	2,239.05	2,553.30	35,779.43
W. Va.	Wyoming	56.48	186.50	455.04	307.57	273.43	791.01	874.57	915.27	539.25	855.46	5,254.58

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Ala.	Bibb	0	0	0	0	0	0	0	0	0	0	0	0	10,263	11,820	11,742	12,340	0	0	0	0	0	11,775	12,179
Ala.	Blount	0	12,309	12,246	12,452	12,897	13,040	0	11,979	12,050	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	Cullman	13,295	13,312	0	12,417	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	De Kalb	0	0	0	12,631	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	Fayette	12,042	12,043	12,099	12,211	12,201	12,125	12,075	12,060	11,999	12,049	12,015	11,994	12,089	12,169	0	0	0	0	12,015	12,152	0	0	0
Ala.	Jackson	13,168	13,073	12,421	12,251	11,904	0	0	0	0	0	0	12,204	0	0	0	0	0	11,600	0	0	11,976	12,000	12,161
Ala.	Jefferson	12,414	12,389	12,470	12,466	12,573	12,478	12,395	12,397	12,312	12,210	12,339	12,377	12,463	12,413	12,315	12,351	12,306	12,392	12,265	12,247	12,177	12,155	12,142
Ala.	Lamar	0	0	0	0	0	12,149	11,993	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	Marion	0	11,849	11,553	11,656	11,743	11,827	11,722	11,807	11,755	11,638	11,902	11,252	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	Marshall	12,077	11,753	0	0	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	St. Clair	0	0	12,460	0	12,483	12,040	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ala.	Shelby	0	0	0	0	0	0	0	0	0	0	0	0	12,663	12,629	12,643	12,233	0	12,065	12,261	0	0	0	0
Ala.	Tuscaloosa	12,057	12,491	12,209	12,499	12,614	12,612	12,446	12,439	12,325	12,276	12,378	12,358	12,435	12,319	12,306	12,495	12,355	12,225	12,095	12,265	12,219	12,159	12,205
Ala.	Walker	11,934	11,966	11,998	12,127	12,123	12,021	11,934	11,999	11,996	11,941	11,930	12,027	12,126	12,104	12,139	12,138	11,902	11,851	11,843	11,890	11,792	11,588	11,725
Ala.	Winston	0	0	12,207	11,916	12,147	11,858	12,019	12,248	12,289	12,032	11,986	11,702	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ga.	Dade	12,500	13,258	0	0	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ky.	Bell	12,565	12,463	12,444	12,413	12,477	12,519	12,510	12,377	12,404	12,476	12,542	12,519	12,690	12,518	12,602	12,655	12,640	12,538	12,718	12,915	12,817	12,992	12,663
Ky.	Boyd	11,420	11,461	11,357	11,447	11,616	12,237	11,997	12,682	12,573	12,583	12,534	12,391	12,519	12,468	12,247	11,999	12,348	12,118	11,925	12,104	12,044	12,061	11,790
Ky.	Breathitt	11,892	11,628	11,523	11,601	11,806	11,908	11,705	11,823	12,135	12,080	12,098	12,062	12,042	12,032	12,188	12,001	11,997	12,336	12,041	12,314	12,252	12,186	12,416
Ky.	Carter	10,863	11,293	11,759	11,375	11,316	11,720	11,622	11,072	11,041	11,260	0	11,188	0	0	0	12,472	0	0	0	0	0	0	0
Ky.	Clay	12,409	12,391	12,313	12,327	12,227	12,273	12,226	12,375	12,291	12,664	12,587	12,614	12,748	12,277	12,312	12,275	12,279	12,590	12,489	12,664	12,598	11,939	11,959
Ky.	Clinton	0	0	13,290	0	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ky.	Elliott	11,624	11,416	11,566	11,458	11,536	0	11,388	11,635	10,739	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ky.	Estill	12,025	0	0	12,895	0	0	0	0	0	0	12,423	11,994	12,862	12,500	12,821	0	12,577	11,697	11,929	11,968	12,106	12,171	0
Ky.	Floyd	12,409	12,380	12,341	12,376	12,316	12,241	12,154	12,123	12,123	12,222	12,197	12,061	12,249	12,213	12,086	12,200	12,148	11,929	12,213	12,593	12,444	12,500	12,278
Ky.	Greenup	10,834	11,261	10,902	10,881	11,464	11,325	11,293	11,550	11,450	11,551	11,856	12,059	12,379	12,445	12,429	12,349	12,366	12,203	12,304	0	0	0	0
Ky.	Harlan	12,244	12,310	12,528	12,631	12,657	12,659	12,548	12,590	12,685	12,767	12,655	12,662	12,717	12,732	12,804	12,790	12,816	12,786	12,712	12,670	12,704	12,584	12,599
Ky.	Jackson	11,986	12,367	12,704	12,182	0	11,632	11,769	11,703	11,624	11,566	0	11,899	11,848	0	0	0	0	0	0	12,508	0	0	0
Ky.	Johnson	11,782	11,670	11,686	11,859	11,925	11,963	11,668	11,829	11,778	11,852	11,795	11,743	11,942	11,947	11,560	11,932	12,049	12,058	11,881	11,949	11,928	11,899	11,463
Ky.	Knott	12,081	12,513	12,459	12,575	12,713	12,428	12,297	12,310	12,554	12,520	12,478	12,428	12,394	12,378	12,348	12,410	12,497	12,564	12,465	12,415	12,535	12,401	12,402

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Ky.	Knox	13,180	12,758	12,494	12,401	12,230	12,232	12,258	11,292	13,120	12,901	12,987	11,812	12,352	0	0	11,556	0	0	0	11,934	12,353	12,014	11,905
Ky.	Laurel	12,075	12,061	12,212	12,150	12,140	12,347	12,151	12,188	11,857	11,985	12,616	0	11,145	12,417	0	11,808	11,552	11,625	11,033	0	11,607	12,715	0
Ky.	Lawrence	11,245	10,975	11,861	11,466	11,653	11,676	11,583	11,218	11,319	11,684	11,598	11,675	11,745	11,323	11,383	11,598	12,300	11,863	11,875	11,865	11,490	11,720	11,795
Ky.	Lee	0	0	11,963	11,984	11,959	12,168	11,405	11,419	0	0	11,117	0	11,974	0	0	0	0	0	0	11,893	0	0	0
Ky.	Leslie	12,084	12,038	12,223	12,447	12,469	12,353	12,306	12,281	12,391	12,508	12,391	12,460	12,500	12,670	12,786	12,564	12,492	12,584	12,297	12,254	12,244	11,940	11,873
Ky.	Letcher	12,655	12,793	12,845	12,972	12,960	12,961	12,820	12,857	12,755	12,749	12,849	12,872	12,983	12,980	12,991	13,031	12,969	12,756	12,724	12,741	12,822	12,640	12,724
Ky.	McCreary	12,319	12,490	12,356	12,383	12,556	12,425	0	0	0	13,250	12,886	13,017	13,167	13,121	0	0	0	0	0	0	0	0	0
Ky.	Magoffin	12,126	12,021	11,715	11,925	11,945	11,989	11,879	12,004	12,167	12,093	11,996	11,829	11,864	11,952	11,778	11,655	12,455	12,486	12,622	12,575	12,681	11,979	11,945
Ky.	Martin	12,447	12,480	12,513	12,415	12,380	12,421	12,393	12,418	12,484	12,440	12,317	12,329	12,356	12,305	12,247	12,200	12,045	12,060	12,005	12,102	12,101	12,111	12,311
Ky.	Morgan	11,568	11,006	11,974	11,821	11,893	12,228	11,091	11,563	0	0	0	10,859	0	0	0	11,628	11,327	11,153	11,216	0	0	0	0
Ky.	Owsley	11,696	11,920	11,915	11,723	11,667	11,739	11,698	11,728	11,993	12,058	11,692	12,188	0	0	0	12,718	12,693	0	0	12,472	12,326	11,211	12,099
Ky.	Perry	12,161	12,163	12,114	12,177	12,165	12,172	12,126	12,190	12,164	12,215	12,314	12,262	12,299	12,253	12,218	12,328	12,403	12,362	12,298	12,313	12,347	12,357	12,343
Ky.	Pike	12,719	12,617	12,652	12,734	12,755	12,752	12,693	12,836	12,826	12,708	12,692	12,700	12,708	12,694	12,606	12,602	12,645	12,660	12,561	12,599	12,590	12,443	12,482
Ky.	Pulaski	12,413	12,067	11,911	12,021	12,156	12,108	11,916	11,929	12,177	12,198	12,122	12,163	12,194	0	0	12,503	12,534	11,863	11,948	11,968	12,140	12,009	0
Ky.	Rockcastle	11,609	0	11,124	0	0	0	0	0	0	0	11,201	0	0	0	0	0	0	0	0	0	0	0	11,782
Ky.	Wayne	0	0	0	11,693	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ky.	Whitley	12,747	12,725	12,662	12,828	12,920	12,817	12,660	12,692	12,747	12,753	12,700	12,674	12,832	12,741	12,704	12,566	12,562	12,505	12,565	12,456	12,505	12,634	12,589
Ky.	Wolfe	11,666	12,120	11,911	11,791	11,755	11,420	12,483	0	12,071	12,260	12,251	12,370	12,195	11,735	11,232	11,502	11,347	0	0	0	0	0	0
Md.	Allegany	11,984	11,735	12,127	11,975	11,950	12,153	11,792	11,721	11,825	11,921	12,231	12,156	12,059	12,036	12,026	11,855	11,974	12,239	12,315	11,638	11,575	11,504	11,456
Md.	Garrett	12,515	12,404	12,550	12,652	12,605	12,788	12,723	12,822	12,749	12,636	12,652	12,820	12,859	12,655	12,476	12,367	12,309	12,162	12,018	12,311	12,440	12,446	12,182
Ohio	Athens	10,719	0	0	0	11,727	11,638	11,508	11,418	11,385	0	0	0	0	0	0	0	0	0	0	10,701	0	11,425	10,791
Ohio	Belmont	11,674	11,720	11,815	11,855	11,890	11,914	11,862	12,115	12,334	12,442	12,329	12,429	12,509	12,400	12,434	12,380	12,408	12,422	12,337	12,316	12,416	12,371	12,231
Ohio	Carroll	11,786	11,827	11,871	11,751	11,923	11,880	11,777	11,619	12,172	12,094	12,172	12,117	12,096	0	11,921	0	12,152	0	0	12,389	12,365	12,372	12,674
Ohio	Columbiana	12,185	11,981	12,108	12,092	12,326	12,267	12,168	12,119	12,157	12,306	12,086	12,138	12,399	12,415	12,408	12,357	12,268	12,364	12,329	12,050	12,130	12,124	12,321
Ohio	Coshocton	12,073	11,946	12,012	12,131	12,085	11,917	11,935	11,888	11,998	12,166	12,022	11,859	11,953	11,893	11,787	11,939	11,983	12,018	11,692	11,714	11,737	11,678	11,730
Ohio	Gallia	11,934	11,517	11,589	11,797	11,709	0	0	0	0	0	11,165	11,174	11,110	11,077	11,120	10,982	11,067	10,975	10,936	12,163	12,270	12,352	12,438
Ohio	Guernsey	0	11,025	0	0	0	11,499	11,292	11,232	12,102	11,893	11,853	11,544	11,725	11,594	11,470	11,414	11,001	11,688	11,635	0	0	0	0
Ohio	Harrison	12,378	12,283	12,332	12,493	12,481	12,377	12,387	12,303	12,238	12,250	12,468	12,181	12,262	12,339	12,302	12,327	12,184	12,289	12,124	12,332	12,098	12,079	12,125
Ohio	Hocking	11,174	11,078	11,158	11,168	11,118	11,212	11,147	11,199	11,310	11,399	11,506	11,170	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ohio	Holmes	0	0	0	0	0	11,347	11,439	11,329	11,648	11,875	11,707	11,559	11,639	11,557	11,527	11,318	11,535	11,598	11,718	11,559	0	0	0

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Ohio	Jackson	11,302	11,161	11,228	11,401	11,266	11,131	11,205	11,141	11,153	11,163	11,162	11,176	11,063	10,985	11,032	10,937	10,922	11,180	11,325	11,361	11,421	11,482	11,222
Ohio	Jefferson	12,050	12,013	11,642	11,690	11,895	11,964	11,950	11,938	12,101	12,124	12,086	11,934	12,081	11,879	11,565	11,885	11,904	11,795	11,800	12,011	11,940	11,875	11,940
Ohio	Lawrence	11,338	11,315	11,213	11,320	11,276	11,106	11,176	11,368	11,446	11,522	11,669	11,687	11,761	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ohio	Mahoning	11,816	11,950	11,887	11,901	12,151	12,052	12,234	12,188	11,948	12,222	12,357	12,046	11,923	0	11,560	0	0	0	0	0	0	0	0
Ohio	Meigs	11,133	11,127	11,213	11,252	11,234	11,216	11,146	11,203	11,259	11,337	11,458	11,543	11,454	11,363	11,349	11,187	11,221	11,304	11,301	11,364	0	0	0
Ohio	Monroe	12,322	12,134	12,073	12,126	12,099	12,056	12,084	12,066	12,180	12,147	12,199	12,060	12,105	12,136	12,239	12,203	12,200	12,223	12,579	12,442	12,451	12,431	12,477
Ohio	Morgan	11,386	11,390	11,452	0	0	0	11,454	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ohio	Muskingum	11,283	11,367	11,437	11,463	11,560	11,555	11,521	11,661	11,724	11,559	11,437	11,517	11,678	11,601	11,476	11,387	11,534	11,409	11,507	11,247	0	0	11,457
Ohio	Noble	11,404	11,391	11,455	11,446	11,451	11,470	11,329	11,415	11,452	11,425	11,438	11,505	11,676	11,582	11,598	11,548	11,559	11,640	11,644	11,662	11,648	11,406	11,277
Ohio	Perry	11,151	11,263	11,303	11,277	11,346	11,445	11,403	11,548	11,550	11,275	11,146	11,307	11,282	11,312	11,305	11,280	11,246	11,499	11,489	11,154	11,685	11,660	12,569
Ohio	Pike	0	0	0	0	0	0	0	0	0	0	0	0	11,941	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ohio	Scioto	0	11,582	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,532	0
Ohio	Stark	12,001	11,591	11,723	11,653	11,835	11,560	11,740	11,827	11,849	11,643	11,612	0	0	11,751	11,515	11,702	11,965	12,556	12,654	0	0	0	0
Ohio	Tuscarawas	11,741	11,997	12,064	12,104	12,112	11,989	12,011	11,994	11,788	11,829	11,792	11,745	11,495	11,290	11,806	11,531	11,504	11,163	10,931	11,235	11,470	11,117	0
Ohio	Vinton	11,511	10,992	11,031	11,177	11,270	11,470	11,188	11,259	11,373	11,284	11,355	11,300	11,138	11,451	11,416	11,381	11,341	11,391	11,351	11,341	11,316	11,503	11,553
Ohio	Washington	0	0	0	0	0	0	0	11,713	0	0	0	0	0	0	0	0	0	0	0	0	12,983	13,018	13,044
Pa.	Allegheny	12,852	12,889	12,795	12,606	12,432	12,404	12,421	12,190	12,356	12,578	12,276	12,213	0	13,171	8,202	0	11,922	12,139	12,120	12,591	0	0	10,859
Pa.	Armstrong	12,445	12,488	12,466	12,412	12,327	12,419	12,419	12,308	12,397	12,369	12,289	12,240	12,293	12,321	12,260	12,189	12,334	12,380	12,374	12,252	12,351	12,412	12,616
Pa.	Beaver	0	0	0	12,086	11,984	12,002	12,096	12,148	12,228	12,174	11,919	11,790	0	0	0	0	12,172	12,144	0	12,080	12,235	11,860	12,128
Pa.	Bedford	12,555	12,655	12,901	12,730	12,671	13,072	12,576	12,641	12,538	9,490	10,632	0	0	0	0	0	12,758	12,360	0	0	7,788	8,500	0
Pa.	Blair	0	0	0	11,921	0	0	0	0	0	13,124	13,121	0	0	11,117	11,062	0	0	0	0	0	0	0	0
Pa.	Bradford	10,462	0	0	0	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Pa.	Butler	12,355	12,280	12,285	12,395	12,475	12,470	12,701	12,698	12,095	12,093	12,092	12,062	12,105	11,883	11,773	12,033	11,858	12,034	12,000	12,090	11,899	11,879	11,430
Pa.	Cambria	12,429	12,515	12,517	12,479	12,495	12,353	12,394	12,346	12,387	12,447	12,451	12,614	12,580	12,645	12,443	12,353	12,423	12,501	12,400	7,806	6,978	6,590	6,013
Pa.	Cameron	0	0	0	0	11,599	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Pa.	Centre	12,724	12,688	12,801	12,738	12,548	12,209	11,214	12,250	11,850	11,905	12,223	11,914	12,333	12,672	12,939	12,757	0	0	0	0	12,134	0	0
Pa.	Clarion	12,727	12,661	12,668	12,822	12,713	12,811	12,722	12,669	12,614	12,656	12,687	12,755	12,766	12,513	12,350	12,562	12,638	12,805	12,831	12,229	12,389	12,422	11,103
Pa.	Clearfield	12,514	12,453	12,492	12,491	12,488	12,492	12,395	12,339	12,374	12,398	12,409	12,446	12,492	12,352	12,323	12,364	12,447	12,357	12,302	11,717	11,777	11,320	11,411
Pa.	Clinton	12,930	0	11,579	10,537	11,924	12,246	10,772	10,974	11,171	10,736	0	11,850	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Pa.	Elk	12,762	12,683	12,655	12,526	12,267	12,045	12,168	12,150	12,291	12,449	12,223	11,810	11,808	12,064	12,522	12,066	12,472	12,547	12,514	12,244	11,113	10,322	9,659

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Pa.	Fayette	12,335	12,248	12,363	12,390	12,472	12,567	12,517	12,520	12,267	12,366	12,387	12,381	12,268	12,276	12,101	12,175	12,624	12,542	12,591	11,987	11,904	11,625	11,747
Pa.	Fulton	12,624	12,461	12,593	12,944	12,597	12,871	12,701	12,594	12,502	12,556	12,135	0	12,306	12,502	0	0	0	0	0	0	0	0	0
Pa.	Greene	12,164	11,983	12,311	12,788	12,945	13,002	13,185	13,183	13,061	13,098	13,040	13,058	13,077	13,014	13,027	13,039	13,077	13,041	12,984	12,967	12,950	12,902	12,958
Pa.	Huntingdon	0	0	0	0	0	0	0	11,246	11,786	10,972	10,691	11,138	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Pa.	Indiana	12,036	12,054	12,083	12,145	12,152	12,061	12,083	12,056	12,122	12,141	12,220	12,111	12,077	11,907	11,931	11,909	11,720	11,541	11,562	11,820	11,494	11,285	11,287
Pa.	Jefferson	12,768	12,809	12,767	12,794	12,707	12,625	12,594	12,537	12,704	12,601	12,467	12,693	12,608	12,462	12,390	12,492	12,534	12,539	12,645	12,210	12,545	11,818	11,774
Pa.	Lawrence	11,986	11,801	12,021	11,971	12,167	11,930	11,759	11,972	12,021	12,142	12,278	0	12,041	12,093	0	0	0	11,239	0	0	8,065	0	9,735
Pa.	Lycoming	12,362	11,987	11,997	11,577	11,385	11,535	10,967	10,780	11,034	11,125	11,345	10,994	11,441	11,633	11,489	10,575	10,561	10,500	0	10,514	11,329	10,690	10,905
Pa.	Mercer	12,477	12,494	12,414	12,585	12,412	12,542	12,568	12,381	12,731	12,924	12,669	12,092	0	0	0	0	0	0	0	0	10,996	10,732	0
Pa.	Somerset	12,250	12,247	12,280	12,308	12,469	12,444	12,427	12,437	12,572	12,538	12,405	12,482	12,338	12,474	12,363	12,235	12,512	12,522	12,424	12,127	11,846	11,667	11,561
Pa.	Tioga	11,435	11,155	11,205	11,158	11,304	11,153	11,276	8,781	0	0	0	0	0	0	0	0	0	0	0	7,711	7,932	6,812	7,381
Pa.	Venango	12,712	12,656	12,928	13,023	13,031	12,710	12,765	12,787	12,746	12,627	0	0	0	11,719	10,580	10,419	11,014	0	0	9,983	10,122	10,187	10,719
Pa.	Washington	12,193	12,752	12,775	12,921	12,937	12,973	12,540	12,542	12,636	12,839	12,474	12,475	12,847	13,148	13,144	13,160	13,161	13,127	13,114	13,066	12,980	12,962	12,983
Pa.	Westmoreland	12,173	12,110	12,206	12,196	12,311	12,335	12,266	12,385	12,393	12,375	12,209	12,131	12,154	12,307	12,198	12,391	12,442	12,291	12,400	0	0	8,909	10,064
Tenn.	Anderson	12,315	12,395	12,273	12,609	12,719	12,545	12,515	12,525	12,445	12,448	12,611	12,519	12,932	12,190	12,432	12,200	12,341	0	0	0	12,396	12,791	12,665
Tenn.	Bledsoe	0	11,875	12,539	12,683	11,801	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tenn.	Campbell	12,270	12,419	12,366	12,465	12,395	12,482	12,341	12,538	12,731	12,713	12,645	12,507	12,793	12,749	12,844	0	0	0	12,790	12,566	12,508	12,439	12,580
Tenn.	Claiborne	12,966	12,950	12,711	12,546	12,677	12,717	12,827	12,919	12,583	12,703	0	0	12,567	12,603	12,706	12,855	12,851	13,085	12,789	13,126	13,030	12,806	12,894
Tenn.	Cumberland	11,860	11,909	12,395	12,264	12,326	12,755	0	0	0	0	0	0	0	0	0	12,737	12,563	12,500	12,672	12,603	12,353	12,318	12,500
Tenn.	Fentress	12,192	11,649	11,929	12,054	12,142	11,726	11,803	11,857	0	0	0	12,910	0	0	0	0	0	0	0	0	0	11,495	0
Tenn.	Grundy	12,409	12,355	12,491	12,443	12,150	12,598	12,266	11,930	11,871	0	0	0	0	0	0	0	0	0	0	0	0	0	12,858
Tenn.	Marion	0	0	12,437	12,525	12,285	12,345	12,374	12,209	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tenn.	Morgan	12,392	12,573	12,353	12,440	12,324	12,363	12,587	13,333	13,308	12,803	12,975	13,041	12,632	12,637	13,000	13,000	12,799	0	0	0	0	0	0
Tenn.	Rhea	13,120	11,935	12,217	12,553	12,944	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tenn.	Scott	12,032	12,107	12,219	12,397	12,507	13,001	13,024	13,039	13,324	13,626	13,377	13,238	13,131	12,732	12,944	12,748	12,326	12,604	12,710	0	0	12,094	12,491
Tenn.	Sequatchie	11,679	12,066	11,965	12,269	12,581	12,480	12,285	12,366	12,322	12,442	12,354	12,421	12,483	12,423	12,386	12,382	12,400	12,553	0	0	0	0	0
Tenn.	Van Buren	11,411	0	0	0	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Va.	Buchanan	12,825	12,908	12,975	13,078	13,143	13,247	13,260	13,373	13,440	13,489	13,427	13,302	13,448	13,247	13,445	13,551	13,403	13,432	13,393	13,527	13,230	13,106	12,318
Va.	Dickenson	12,907	13,071	13,141	13,176	13,127	13,288	13,046	13,224	12,951	12,842	12,870	12,736	12,863	12,601	12,779	12,800	12,914	12,907	12,871	13,183	12,907	12,750	12,861
Va.	Lee	12,960	12,950	12,944	12,927	12,662	12,541	12,518	12,587	12,637	12,546	12,642	12,616	12,417	12,540	12,674	12,643	12,638	12,735	12,505	12,502	12,359	12,333	12,539

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Va.	Russell	12,680	12,969	13,087	12,901	12,926	12,803	12,677	12,562	12,421	12,471	12,539	12,536	12,389	12,440	12,348	12,280	12,444	12,321	12,419	12,315	12,272	12,288	12,376
Va.	Scott	0	0	0	12,869	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Va.	Tazewell	13,139	13,106	13,220	13,435	13,399	13,586	13,475	13,175	0	0	0	0	0	13,576	0	0	0	0	0	12,399	12,595	12,504	12,708
Va.	Wise	12,634	12,661	12,718	12,823	12,934	12,990	12,875	12,944	12,855	12,827	12,795	12,744	12,801	12,778	12,793	12,800	12,831	12,904	12,788	12,897	12,831	12,665	12,629
W. Va.	Barbour	12,769	12,585	12,531	12,480	12,645	12,999	12,848	12,880	12,848	12,821	12,805	12,945	12,995	12,889	12,792	12,818	12,954	12,936	13,061	12,719	12,644	12,968	12,966
W. Va.	Boone	12,407	12,552	12,666	12,623	12,743	12,707	12,529	12,507	12,521	12,445	12,473	12,422	12,435	12,376	12,288	12,300	12,369	12,294	12,176	12,325	12,271	12,254	12,278
W. Va.	Braxton	13,133	13,330	13,165	13,546	13,514	13,351	12,958	12,949	13,071	0	12,366	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
W. Va.	Brooke	11,932	11,760	11,980	12,190	12,204	12,169	12,207	12,244	12,213	12,124	12,240	12,203	12,304	12,410	12,362	12,422	12,307	12,308	12,257	12,322	0	0	0
W. Va.	Clay	0	13,190	0	11,633	12,097	12,156	12,063	12,175	12,202	12,161	12,109	12,163	12,198	12,358	12,410	12,415	12,415	12,436	12,288	12,404	12,460	12,383	12,361
W. Va.	Fayette	12,263	11,949	12,490	12,558	12,240	12,238	12,245	12,439	12,403	12,413	12,434	12,486	12,545	12,557	12,442	12,288	12,479	12,672	12,585	12,285	12,035	12,402	12,577
W. Va.	Gilmer	12,864	12,581	0	0	12,984	12,924	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
W. Va.	Grant	12,109	12,181	12,144	12,357	12,505	12,509	12,468	12,592	12,601	12,622	12,614	12,420	12,432	12,564	12,551	12,146	12,336	12,201	12,033	12,068	11,827	11,972	11,741
W. Va.	Greenbrier	13,346	13,094	13,246	13,200	12,921	12,009	11,654	0	13,026	12,607	12,696	12,610	11,636	0	0	0	13,059	13,078	12,943	12,894	13,211	0	0
W. Va.	Harrison	13,087	13,005	13,025	12,992	13,076	13,124	13,062	13,039	13,111	13,091	13,066	13,053	12,490	12,549	12,632	12,656	12,584	12,519	12,339	12,374	12,382	12,328	12,305
W. Va.	Kanawha	11,718	11,669	11,754	11,877	11,857	11,880	11,777	11,968	11,973	12,005	12,234	12,316	12,366	12,142	12,053	11,989	12,113	12,099	12,131	12,292	12,303	12,234	12,148
W. Va.	Lewis	12,864	12,793	12,896	12,951	12,898	12,900	12,837	12,968	0	0	12,950	12,463	12,577	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
W. Va.	Lincoln	0	0	0	0	12,722	12,499	12,030	11,948	11,712	11,916	11,895	11,792	12,161	12,139	11,995	11,756	11,738	12,971	12,651	12,632	12,718	12,573	12,354
W. Va.	Logan	12,614	12,540	12,495	12,438	12,457	12,407	12,351	12,410	12,437	12,369	12,304	12,344	12,281	12,206	12,121	12,092	12,230	12,161	12,068	12,385	12,311	12,179	12,121
W. Va.	McDowell	13,253	13,048	12,600	12,847	13,133	12,870	12,775	12,995	12,921	13,742	13,339	13,147	11,842	12,290	0	0	13,756	13,456	12,946	13,262	13,442	13,521	13,632
W. Va.	Marion	12,530	12,561	12,531	12,466	12,340	12,302	12,383	12,415	12,332	12,293	12,829	12,341	12,363	13,085	13,173	13,125	12,882	0	12,998	12,403	10,458	12,133	12,562
W. Va.	Marshall	12,150	12,173	12,174	12,163	12,118	12,083	12,160	12,124	12,199	12,186	12,271	12,111	12,149	12,089	12,120	12,137	12,165	12,156	12,120	12,326	12,397	12,334	12,287
W. Va.	Mason	11,546	0	0	0	11,648	11,648	11,844	12,072	12,077	11,788	11,508	11,250	0	0	0	0	0	13,596	0	0	0	12,399	0
W. Va.	Mercer	0	0	13,106	12,202	12,803	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,018	0	0	0
W. Va.	Mineral	11,862	11,608	11,736	11,676	12,144	12,278	12,048	11,778	11,694	11,709	11,692	12,035	11,811	11,714	0	0	0	11,951	0	0	0	0	11,975
W. Va.	Mingo	12,570	12,441	12,347	12,440	12,451	12,398	12,403	12,486	12,578	12,570	12,595	12,615	12,533	12,511	12,452	12,430	12,340	12,325	12,267	12,172	12,195	12,150	12,259
W. Va.	Monongalia	12,930	12,704	12,714	12,778	12,728	12,800	12,738	12,876	12,954	13,002	12,883	12,881	12,924	12,885	12,899	12,877	12,927	12,899	12,966	12,759	12,538	12,563	12,671
W. Va.	Nicholas	12,868	12,874	12,852	12,880	12,796	12,808	12,768	12,679	12,764	12,727	12,668	12,554	12,603	12,537	12,783	12,372	12,378	12,359	12,120	12,493	12,392	12,149	12,026
W. Va.	Ohio	13,302	0	10,721	10,748	10,935	11,696	12,432	11,855	11,845	12,197	12,181	12,187	12,202	0	0	0	0	12,043	0	0	0	0	0
W. Va.	Preston	12,464	12,378	12,585	12,620	12,592	12,562	12,528	12,570	12,688	12,610	12,573	12,707	12,907	12,911	12,950	12,928	13,058	13,140	13,217	13,136	12,927	12,915	13,053
W. Va.	Raleigh	12,421	13,676	13,808	13,574	0	0	13,113	13,581	13,325	13,449	13,830	0	0	11,879	11,332	11,374	11,434	10,904	11,615	12,950	12,768	12,340	12,472

Table 2. Heating values of bituminous coal (in British thermal units per pound) that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
W. Va.	Randolph	13,104	13,019	13,154	13,189	12,990	12,749	12,568	12,124	11,979	12,701	12,109	12,714	11,973	0	0	0	0	0	0	0	12,697	0	0
W. Va.	Taylor	0	0	12,177	12,148	0	12,117	11,971	11,970	0	12,234	11,893	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
W. Va.	Tucker	11,855	11,558	11,555	11,636	0	0	0	0	0	0	0	0	0	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
W. Va.	Upshur	13,069	13,025	13,022	13,107	13,088	13,144	12,927	12,938	13,061	13,095	12,838	12,868	12,679	12,551	12,510	12,758	12,956	12,892	12,925	12,836	12,649	12,121	12,307
W. Va.	Wayne	12,458	0	11,290	12,083	11,305	11,646	11,947	12,149	12,290	12,030	11,873	11,876	11,911	11,940	11,985	11,968	11,934	11,942	11,946	12,135	12,307	12,193	12,036
W. Va.	Webster	13,005	12,995	13,054	13,011	12,881	12,999	12,963	13,148	13,120	13,010	12,815	12,914	12,754	12,692	12,632	12,616	12,498	12,543	12,498	12,438	12,421	12,372	12,400
W. Va.	Wyoming	13,737	13,856	13,767	13,679	13,469	13,270	13,725	0	0	0	13,793	13,089	12,833	12,119	12,720	13,000	13,708	13,649	12,869	12,885	12,819	12,876	12,837

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ala.	Bibb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.73
Ala.	Blount	0.00	2.37	2.27	1.80	1.09	1.00	0.00	2.45	1.96	0.00	0.00	0.00	0.00	2.21
Ala.	Cullman	0.72	0.72	0.00	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74
Ala.	De Kalb	0.00	0.00	0.00	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Ala.	Fayette	2.32	2.39	2.22	2.06	2.07	2.20	2.05	2.13	2.26	2.10	1.86	1.82	1.81	2.08
Ala.	Jackson	1.22	1.20	1.23	0.52	0.60	0.00	0.00	0.00	0.00	0.00	0.00	1.73	0.00	1.27
Ala.	Jefferson	1.24	1.45	1.35	1.33	1.20	1.25	1.39	1.31	1.11	1.23	1.15	1.08	1.03	1.23
Ala.	Lamar	0.00	0.00	0.00	0.00	0.00	1.38	1.36	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Ala.	Marion	0.00	1.56	1.14	1.12	1.07	1.19	1.33	1.42	1.83	1.57	1.48	1.26	0.00	1.30
Ala.	Marshall	1.99	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.94
Ala.	St. Clair	0.00	0.00	1.34	0.00	1.18	1.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31
Ala.	Shelby	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.84
Ala.	Tuscaloosa	1.84	1.97	1.46	1.51	1.40	1.43	1.36	1.16	1.03	1.09	0.98	0.98	1.07	1.19
Ala.	Walker	1.28	1.21	1.16	1.21	1.11	1.11	1.10	1.14	1.19	1.10	1.04	1.05	1.00	1.14
Ala.	Winston	0.00	0.00	1.37	0.94	1.39	0.97	1.45	1.49	1.35	1.35	1.16	1.23	0.00	1.31
Ga.	Dade	1.50	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Ky.	Bell	1.32	1.30	1.29	1.24	1.28	1.29	1.23	1.33	1.26	1.19	1.26	1.31	1.37	1.28
Ky.	Boyd	1.19	1.26	2.44	1.74	0.95	0.61	0.91	0.69	0.72	0.92	0.86	0.84	0.76	1.15
Ky.	Breathitt	0.88	0.84	0.85	0.89	1.04	1.06	1.02	1.09	1.17	1.08	1.16	1.09	0.96	0.99
Ky.	Carter	1.93	1.09	0.96	0.98	1.06	1.03	0.78	1.25	1.49	1.39	0.00	1.52	0.00	1.14
Ky.	Clay	1.55	1.62	1.54	1.57	1.59	1.58	1.40	1.37	1.42	1.09	1.44	1.36	1.16	1.54
Ky.	Clinton	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
Ky.	Elliott	1.53	1.67	1.68	1.49	1.63	0.00	1.34	1.18	1.14	0.00	0.00	0.00	0.00	1.57
Ky.	Estill	3.52	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.75	1.41	0.95	0.88
Ky.	Floyd	1.06	1.07	1.10	1.08	1.10	1.06	1.03	0.97	0.96	0.94	1.08	1.07	0.95	1.04
Ky.	Greenup	1.66	1.60	2.76	2.93	2.18	2.36	1.83	2.44	2.56	2.40	2.19	1.98	0.80	2.11
Ky.	Harlan	1.20	1.14	1.03	1.04	1.06	1.08	1.18	1.18	1.13	1.09	1.14	1.06	1.03	1.10
Ky.	Jackson	1.03	1.37	1.49	1.94	0.00	0.95	0.98	1.45	1.65	2.19	0.00	0.92	0.88	1.29
Ky.	Johnson	1.20	1.19	1.02	1.15	1.17	1.25	1.32	1.21	1.19	1.25	1.29	1.38	1.23	1.21
Ky.	Knott	1.17	1.04	1.09	1.14	0.90	0.78	1.20	1.21	1.13	1.05	1.14	1.05	0.97	1.07

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ala.	Bibb	1.80	0.92	1.01	0.00	0.00	0.00	0.00	0.00	1.73	1.79	1.50
Ala.	Blount	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	Cullman	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	De Kalb	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	Fayette	1.83	0.00	0.00	0.00	0.00	1.59	1.76	0.00	0.00	0.00	1.65
Ala.	Jackson	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.86	0.86	0.67	0.77
Ala.	Jefferson	0.92	0.76	0.72	0.78	0.73	0.79	0.75	0.75	1.06	1.27	0.84
Ala.	Lamar	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	Marion	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	Marshall	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	St. Clair	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ala.	Shelby	0.70	0.68	0.73	0.00	0.71	0.67	0.00	0.00	0.00	0.00	0.70
Ala.	Tuscaloosa	1.46	1.25	1.20	1.17	1.21	1.21	1.51	1.47	1.66	1.75	1.35
Ala.	Walker	1.27	1.66	1.67	1.35	1.55	1.39	1.61	1.52	1.58	1.68	1.53
Ala.	Winston	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ga.	Dade	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ky.	Bell	1.33	1.42	1.43	1.34	1.26	1.39	1.06	1.07	0.97	1.05	1.29
Ky.	Boyd	0.72	0.72	0.85	0.77	0.87	0.83	1.05	1.00	0.98	0.96	0.90
Ky.	Breathitt	1.09	1.50	1.44	1.28	1.03	1.15	1.61	1.49	1.25	1.54	1.35
Ky.	Carter	0.00	0.00	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Ky.	Clay	1.18	1.14	1.10	1.13	1.40	1.27	1.22	1.27	1.66	1.40	1.26
Ky.	Clinton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ky.	Elliott	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ky.	Estill	0.88	0.82	0.00	0.91	1.21	1.06	0.66	0.67	0.70	0.00	1.03
Ky.	Floyd	1.00	1.09	0.93	0.95	0.92	1.05	1.18	1.13	1.33	1.28	1.05
Ky.	Greenup	0.81	0.79	0.91	0.89	0.88	0.84	0.00	0.00	0.00	0.00	0.85
Ky.	Harlan	1.11	1.08	1.05	1.04	1.04	1.07	1.06	1.03	1.03	1.00	1.05
Ky.	Jackson	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.83
Ky.	Johnson	1.28	1.30	1.30	1.30	1.13	1.10	1.07	1.02	1.05	1.03	1.19
Ky.	Knott	1.11	1.14	1.13	1.12	1.03	1.08	1.08	1.14	1.20	1.14	1.12

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ky.	Knox	1.13	1.16	1.37	1.52	1.56	1.42	1.24	1.05	0.75	0.99	1.17	1.83	1.09	1.36
Ky.	Laurel	1.53	1.71	1.51	1.54	1.45	1.28	1.17	1.11	0.85	1.41	1.97	0.00	1.63	1.48
Ky.	Lawrence	1.42	1.53	0.85	1.32	1.06	1.10	1.10	1.35	1.12	1.07	1.06	1.21	1.43	1.19
Ky.	Lee	0.00	0.00	1.97	2.04	1.02	1.05	1.47	2.20	0.00	0.00	1.69	0.00	1.15	1.84
Ky.	Leslie	1.42	1.43	1.32	1.25	1.31	1.51	1.38	1.35	1.26	1.23	1.35	1.19	1.13	1.30
Ky.	Letcher	0.88	0.84	0.90	0.82	0.78	0.80	0.84	0.85	0.91	0.95	1.05	1.09	1.11	0.92
Ky.	McCreary	1.22	1.06	1.48	1.53	1.63	2.29	0.00	0.00	0.00	0.99	1.11	0.96	0.92	1.49
Ky.	Magoffin	0.98	1.04	1.09	1.08	1.10	1.09	1.11	1.08	1.14	1.11	1.01	0.99	1.05	1.08
Ky.	Martin	0.86	0.89	0.93	0.92	0.92	0.91	0.91	0.94	0.88	0.88	0.94	0.94	0.83	0.90
Ky.	Morgan	1.30	2.06	1.27	1.29	0.84	1.36	1.36	1.34	0.00	0.00	0.00	1.43	0.00	1.14
Ky.	Owsley	1.21	1.00	1.03	1.78	2.00	2.25	1.90	1.24	1.44	1.25	1.88	1.52	0.00	1.71
Ky.	Perry	1.13	1.12	1.08	1.12	1.10	1.12	1.09	1.05	1.07	1.00	1.13	1.09	0.99	1.08
Ky.	Pike	0.85	0.94	0.91	0.94	0.90	0.88	0.92	0.94	0.94	0.96	1.00	0.98	0.89	0.93
Ky.	Pulaski	1.63	1.66	1.78	1.96	1.92	1.65	1.46	1.56	1.58	1.65	1.72	1.60	1.41	1.67
Ky.	Rockcastle	1.27	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	1.21
Ky.	Wayne	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
Ky.	Whitley	1.31	1.23	1.19	1.09	1.09	1.12	1.16	1.27	1.20	1.31	1.23	1.25	1.02	1.18
Ky.	Wolfe	1.19	2.42	2.64	2.61	2.86	2.38	1.55	0.00	1.18	1.23	1.28	1.30	1.27	2.21
Md.	Allegany	1.79	1.81	1.39	1.54	1.62	1.63	1.78	1.72	1.65	1.61	1.59	1.45	1.54	1.66
Md.	Garrett	1.67	1.66	1.68	1.56	1.63	1.58	1.60	1.59	1.57	1.69	1.68	1.63	1.51	1.61
Ohio	Athens	2.78	0.00	0.00	0.00	1.72	2.69	2.72	2.27	2.43	0.00	0.00	0.00	0.00	2.33
Ohio	Belmont	2.93	2.92	2.85	2.88	2.89	2.90	3.14	3.50	3.71	3.74	3.72	3.99	3.96	3.26
Ohio	Carroll	1.94	2.39	2.94	3.08	2.65	2.93	2.43	2.12	2.78	2.48	2.59	2.78	3.00	2.66
Ohio	Columbiana	2.25	2.48	2.57	2.37	2.32	2.58	2.70	2.49	2.70	2.17	2.19	2.23	2.25	2.43
Ohio	Coshocton	3.18	3.21	3.21	3.07	3.23	3.22	3.22	3.23	3.21	3.26	3.20	2.92	2.52	3.13
Ohio	Gallia	3.53	3.10	3.07	3.55	3.16	0.00	0.00	0.00	0.00	0.00	3.37	3.07	2.97	3.20
Ohio	Guernsey	0.00	4.56	0.00	0.00	0.00	2.65	4.13	4.19	1.91	1.87	2.14	2.68	3.04	3.33
Ohio	Harrison	2.63	2.70	2.63	2.51	2.41	2.49	2.55	2.51	3.16	3.16	2.75	3.33	3.89	2.86
Ohio	Hocking	3.32	3.50	3.31	3.30	3.15	3.24	3.47	3.55	3.56	3.50	3.58	3.68	0.00	3.39
Ohio	Holmes	0.00	0.00	0.00	0.00	0.00	3.41	3.69	3.72	3.44	3.43	3.56	3.65	3.37	3.56

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ky.	Knox	0.00	0.00	3.53	0.00	0.00	0.00	0.94	1.09	1.68	1.68	1.68
Ky.	Laurel	0.87	0.00	1.23	1.54	0.80	0.66	0.00	1.06	0.85	0.00	0.96
Ky.	Lawrence	0.94	0.84	0.91	1.15	1.24	1.18	1.04	1.38	1.41	1.18	1.25
Ky.	Lee	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00	0.00	0.91
Ky.	Leslie	1.08	1.02	1.03	1.10	0.98	1.09	1.23	1.28	1.23	1.16	1.07
Ky.	Letcher	1.16	1.21	1.22	1.41	1.12	1.19	1.10	1.19	1.19	1.25	1.21
Ky.	McCreary	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Ky.	Magoffin	0.94	1.66	0.98	0.80	0.68	0.70	0.70	0.72	0.86	0.97	0.95
Ky.	Martin	0.88	0.91	0.93	0.86	0.90	0.89	0.84	0.86	0.93	1.02	0.90
Ky.	Morgan	0.00	0.00	0.67	0.64	0.81	1.17	0.00	0.00	0.00	0.00	1.00
Ky.	Owsley	0.00	0.00	1.24	1.71	0.00	0.00	0.83	1.54	1.48	1.54	1.47
Ky.	Perry	0.99	0.99	1.04	1.00	0.97	1.03	0.99	1.01	1.01	1.03	1.01
Ky.	Pike	0.93	1.00	0.97	0.97	0.93	1.01	1.03	1.03	1.01	1.10	1.00
Ky.	Pulaski	0.00	0.00	1.37	1.32	1.20	1.41	1.30	1.26	1.28	0.00	1.28
Ky.	Rockcastle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.78
Ky.	Wayne	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ky.	Whitley	1.05	1.04	1.16	0.98	1.16	1.00	0.96	1.08	1.12	1.20	1.10
Ky.	Wolfe	0.97	0.90	0.99	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Md.	Allegany	1.41	1.30	1.44	1.34	1.02	0.98	1.60	1.58	1.64	1.73	1.57
Md.	Garrett	1.57	1.67	1.68	1.87	1.79	1.65	1.69	1.39	1.67	1.91	1.69
Ohio	Athens	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	1.85	1.54	1.70
Ohio	Belmont	3.88	3.80	3.80	3.88	3.80	3.89	3.89	4.00	4.02	4.04	3.90
Ohio	Carroll	0.00	2.46	0.00	3.82	0.00	0.00	1.58	1.64	1.94	1.32	1.74
Ohio	Columbiana	2.14	2.43	2.25	2.34	2.19	2.25	2.59	2.88	2.71	2.62	2.39
Ohio	Coshocton	2.68	2.68	2.70	2.70	2.36	2.15	2.47	2.27	2.23	2.24	2.44
Ohio	Gallia	2.83	2.84	2.69	2.81	2.84	2.70	3.65	3.80	3.70	3.61	3.60
Ohio	Guernsey	4.89	4.31	4.40	2.04	3.06	3.19	0.00	0.00	0.00	0.00	4.53
Ohio	Harrison	3.14	3.14	2.97	2.59	2.63	2.54	2.63	2.90	2.85	2.79	2.82
Ohio	Hocking	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ohio	Holmes	3.38	3.44	3.49	3.58	3.81	3.89	4.21	0.00	0.00	0.00	3.62

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ohio	Jackson	2.34	2.95	3.03	2.33	2.94	3.15	3.17	3.29	3.25	3.49	3.46	3.39	3.70	3.22
Ohio	Jefferson	2.83	3.08	2.93	2.86	2.66	2.70	2.87	3.00	2.99	3.08	3.12	3.23	2.73	2.92
Ohio	Lawrence	3.46	3.30	3.01	3.25	2.44	2.91	2.41	2.53	2.74	2.57	2.57	2.84	2.82	2.71
Ohio	Mahoning	2.98	2.74	2.82	3.11	3.06	3.57	3.41	2.96	3.12	4.01	3.25	3.62	3.02	3.15
Ohio	Meigs	3.48	3.40	3.34	3.39	3.44	3.41	3.25	3.43	3.44	3.36	3.29	3.10	3.04	3.34
Ohio	Monroe	3.85	4.09	4.14	4.15	4.04	3.96	4.01	4.14	4.10	3.87	3.32	3.72	3.65	4.00
Ohio	Morgan	4.36	4.27	4.32	0.00	0.00	0.00	2.48	0.00	0.00	0.00	0.00	0.00	0.00	4.16
Ohio	Muskingum	4.24	4.15	4.26	4.31	4.11	4.21	4.24	4.20	4.34	4.27	4.52	4.53	4.63	4.25
Ohio	Noble	4.38	4.28	4.27	4.40	4.57	4.62	4.59	4.59	4.74	4.41	4.58	4.73	4.90	4.58
Ohio	Perry	2.44	2.47	2.14	2.13	2.06	2.37	2.51	2.37	3.04	2.86	2.69	3.35	3.20	2.38
Ohio	Pike	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	2.60
Ohio	Scioto	0.00	1.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08
Ohio	Stark	3.07	4.10	3.57	3.66	3.18	3.29	3.89	3.33	3.97	2.66	2.62	0.00	0.00	3.49
Ohio	Tuscarawas	3.62	3.14	3.25	2.88	3.03	3.18	3.09	3.02	3.35	3.21	3.39	3.41	3.50	3.24
Ohio	Vinton	3.28	3.45	3.38	3.24	3.06	2.95	3.15	3.20	3.23	3.23	3.24	3.12	2.97	3.18
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pa.	Allegheny	1.26	1.17	1.35	1.43	1.31	1.32	1.38	1.42	1.53	1.67	2.78	2.16	0.00	1.40
Pa.	Armstrong	1.82	1.66	1.58	1.57	1.53	1.66	1.69	1.71	1.74	1.71	1.89	1.79	1.79	1.70
Pa.	Beaver	0.00	0.00	0.00	3.28	2.97	2.62	1.95	1.99	2.85	2.15	1.72	1.59	0.00	2.40
Pa.	Bedford	2.12	2.03	1.98	1.92	1.68	1.90	1.47	1.83	2.31	1.17	1.36	0.00	0.00	1.90
Pa.	Blair	0.00	0.00	0.00	2.12	0.00	0.00	0.00	0.00	0.00	1.83	1.64	0.00	0.00	1.81
Pa.	Bradford	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82
Pa.	Butler	1.83	1.86	1.87	2.17	2.44	2.63	2.07	1.88	1.84	2.19	1.80	1.92	1.72	2.08
Pa.	Cambria	1.54	1.58	1.47	1.49	1.45	1.72	1.66	1.72	1.71	1.91	1.87	1.87	1.81	1.64
Pa.	Cameron	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Pa.	Centre	1.84	1.96	1.82	1.99	1.85	1.62	1.58	1.65	1.66	1.76	1.75	1.65	1.64	1.77
Pa.	Clarion	2.39	2.44	2.34	2.27	2.00	2.17	2.22	2.25	2.21	2.27	2.05	1.77	1.61	2.21
Pa.	Clearfield	1.82	1.87	1.82	1.81	1.86	1.85	1.82	1.95	1.91	1.93	1.87	1.85	1.79	1.86
Pa.	Clinton	1.47	0.00	0.89	0.60	1.64	2.03	0.67	0.96	0.71	0.72	0.00	1.57	0.00	1.01
Pa.	Elk	1.79	1.94	1.62	1.80	1.63	1.92	1.77	1.75	1.66	1.68	1.86	1.55	1.37	1.75

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ohio	Jackson	3.65	3.42	3.55	3.52	3.11	2.98	3.17	3.36	3.42	3.70	3.40
Ohio	Jefferson	3.59	3.00	2.46	2.29	2.46	2.50	2.37	2.37	2.21	2.34	2.48
Ohio	Lawrence	0.00	2.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.84
Ohio	Mahoning	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ohio	Meigs	3.20	3.52	3.52	3.53	3.54	3.62	3.68	0.00	0.00	0.00	3.48
Ohio	Monroe	4.28	4.32	4.41	4.37	3.87	3.73	4.19	4.13	4.37	4.33	4.30
Ohio	Morgan	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ohio	Muskingum	4.95	4.32	4.41	4.58	3.13	3.00	2.91	0.00	0.00	3.73	3.61
Ohio	Noble	4.97	5.06	5.09	4.64	3.03	2.78	2.49	1.99	2.55	4.01	3.64
Ohio	Perry	2.93	3.01	2.79	2.76	3.34	3.55	3.71	3.35	3.81	4.07	3.35
Ohio	Pike	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Ohio	Scioto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93	0.00	1.93
Ohio	Stark	3.86	3.56	3.21	3.01	2.34	1.94	0.00	0.00	0.00	0.00	3.24
Ohio	Tuscarawas	3.33	2.97	3.47	3.35	3.57	3.61	3.78	3.98	2.83	0.00	3.45
Ohio	Vinton	2.71	3.00	2.96	3.00	2.92	3.17	3.22	2.99	3.21	3.02	2.99
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.59	2.61	2.70	2.63
Pa.	Allegheny	2.42	0.85	0.00	1.43	2.31	2.36	0.73	0.00	0.00	1.62	1.50
Pa.	Armstrong	1.95	2.13	2.16	1.93	2.20	2.01	2.22	2.41	2.41	2.28	2.22
Pa.	Beaver	0.00	0.00	0.00	0.90	2.16	0.00	1.80	1.70	2.55	2.09	2.19
Pa.	Bedford	0.00	0.00	0.00	1.12	0.96	0.00	0.00	0.92	0.97	0.00	0.95
Pa.	Blair	2.83	2.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.54
Pa.	Bradford	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Pa.	Butler	1.95	1.83	2.06	1.97	1.59	1.60	1.76	1.04	2.08	2.69	1.88
Pa.	Cambria	1.82	2.03	2.15	2.21	2.04	2.50	2.06	2.30	2.25	2.39	2.21
Pa.	Cameron	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Pa.	Centre	1.46	1.25	1.17	0.00	0.00	0.00	0.00	2.20	0.00	0.00	1.52
Pa.	Clarion	1.71	1.80	1.61	1.73	1.26	1.25	2.08	1.12	1.68	1.93	1.67
Pa.	Clearfield	1.89	1.90	1.80	1.81	1.74	1.80	1.70	1.68	1.78	1.67	1.80
Pa.	Clinton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Pa.	Elk	1.29	1.74	1.94	1.61	1.91	2.24	1.89	1.60	1.79	1.63	1.74

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Pa.	Fayette	1.97	2.13	1.99	1.93	1.80	1.85	1.75	1.85	1.56	1.67	1.71	1.41	1.82	1.85
Pa.	Fulton	1.40	1.93	1.90	2.18	1.92	2.05	2.09	2.33	2.03	2.38	2.09	0.00	1.54	2.01
Pa.	Greene	1.82	1.92	1.70	1.62	1.60	1.59	1.58	1.76	1.78	1.79	1.97	1.82	1.70	1.77
Pa.	Huntingdon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	1.66	1.59	1.35	2.36	0.00	1.91
Pa.	Indiana	1.92	1.93	1.99	2.03	1.95	1.92	1.86	1.93	1.95	1.87	1.78	1.87	1.70	1.92
Pa.	Jefferson	1.77	1.72	1.72	1.71	1.81	1.83	1.71	1.63	1.66	1.71	1.77	1.57	1.55	1.71
Pa.	Lawrence	1.99	2.62	2.60	2.50	1.85	2.11	2.32	2.45	2.03	2.74	2.58	0.00	1.42	2.26
Pa.	Lycoming	0.89	0.88	0.78	0.78	0.82	0.88	0.86	0.97	0.93	0.99	0.93	0.94	0.97	0.90
Pa.	Mercer	2.29	1.51	1.50	1.60	1.33	1.54	1.56	1.62	1.69	1.98	1.52	2.85	0.00	1.72
Pa.	Somerset	1.46	1.24	1.26	1.39	1.53	1.60	1.55	1.67	1.71	1.95	1.99	1.90	2.08	1.73
Pa.	Tioga	1.16	1.14	1.02	0.86	1.01	1.34	1.28	0.83	0.00	0.00	0.00	0.00	0.00	1.10
Pa.	Venango	3.37	3.30	3.14	2.52	2.48	2.31	2.19	2.34	2.05	1.64	0.00	0.00	0.00	2.64
Pa.	Washington	1.75	1.76	1.88	1.77	1.54	1.70	1.99	2.29	2.52	2.26	2.57	2.45	1.90	2.11
Pa.	Westmoreland	1.55	1.23	1.15	1.37	1.90	2.13	1.87	1.91	2.07	2.09	2.16	2.17	2.08	1.92
Tenn.	Anderson	1.75	1.58	1.45	1.50	1.69	1.92	2.13	2.22	2.05	2.33	1.56	1.52	0.68	1.85
Tenn.	Bledsoe	0.00	1.20	1.17	1.30	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Tenn.	Campbell	1.83	1.77	1.69	1.66	1.56	1.74	1.21	1.31	1.20	1.31	1.40	1.24	1.06	1.48
Tenn.	Claiborne	0.88	0.90	0.97	1.01	1.03	1.03	1.06	1.13	1.52	1.12	0.00	0.00	1.45	1.01
Tenn.	Cumberland	1.39	1.20	0.79	0.85	0.95	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07
Tenn.	Fentress	1.91	2.43	2.61	1.93	1.76	3.10	1.33	1.90	0.00	0.00	0.00	1.36	0.00	2.14
Tenn.	Grundy	0.89	0.86	0.95	0.89	0.81	0.80	0.75	0.92	0.88	0.00	0.00	0.00	0.00	0.88
Tenn.	Marion	0.00	0.00	1.70	0.84	1.48	0.89	0.71	0.70	0.00	0.00	0.00	0.00	0.00	0.81
Tenn.	Morgan	1.17	0.91	1.45	1.17	1.37	1.34	1.38	2.08	1.82	1.82	2.27	2.40	1.32	1.48
Tenn.	Rhea	1.20	1.88	1.34	1.55	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Tenn.	Scott	1.86	2.28	1.76	1.83	1.44	1.33	1.66	1.55	1.53	1.70	1.61	1.47	1.28	1.59
Tenn.	Sequatchie	2.79	3.10	3.40	1.10	0.74	0.79	0.83	0.79	1.00	0.80	0.91	0.87	0.86	0.92
Tenn.	Van Buren	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.80
Va.	Buchanan	1.06	1.03	1.09	1.13	1.07	1.07	1.06	1.06	0.98	1.00	0.91	0.87	0.85	1.02
Va.	Dickenson	1.07	1.07	1.25	1.28	1.30	1.44	1.32	1.21	1.17	0.99	0.94	0.91	1.02	1.10
Va.	Lee	0.92	0.88	0.87	0.91	0.93	1.14	1.21	1.14	1.14	1.12	1.26	1.15	0.83	1.04

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Pa.	Fayette	1.83	1.60	2.00	1.61	1.54	1.60	1.07	1.08	1.74	2.78	1.82
Pa.	Fulton	2.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12
Pa.	Greene	1.81	1.81	1.79	1.92	1.89	1.88	2.00	2.18	2.06	1.96	1.92
Pa.	Huntingdon	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Pa.	Indiana	1.78	1.76	1.77	2.05	2.16	2.16	2.72	2.61	2.41	2.46	2.11
Pa.	Jefferson	1.72	1.73	1.70	1.74	1.77	1.55	1.73	1.53	2.16	1.84	1.74
Pa.	Lawrence	1.20	0.00	0.00	0.00	2.95	0.00	0.00	3.69	0.00	3.39	2.43
Pa.	Lycoming	0.76	0.86	0.68	0.70	0.60	0.00	0.87	0.89	1.04	0.92	0.78
Pa.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.40	5.42	0.00	5.93
Pa.	Somerset	1.91	2.11	2.11	1.97	1.97	2.05	2.08	2.21	2.33	1.87	2.06
Pa.	Tioga	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.64	0.50	0.48	0.63
Pa.	Venango	1.84	2.35	2.47	2.26	0.00	0.00	3.00	3.16	4.90	4.05	2.94
Pa.	Washington	1.52	1.49	1.46	1.49	1.47	1.48	1.57	1.61	1.55	1.59	1.52
Pa.	Westmoreland	2.03	2.14	2.32	2.17	2.34	2.30	0.00	0.00	0.71	1.43	2.11
Tenn.	Anderson	1.53	1.19	1.50	1.30	0.00	0.00	0.00	0.84	0.89	1.42	1.35
Tenn.	Bledsoe	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Tenn.	Campbell	1.07	1.21	0.00	0.00	0.00	0.94	0.90	0.88	0.95	1.40	1.07
Tenn.	Claiborne	1.50	1.50	1.40	1.37	1.30	1.37	1.33	1.26	1.28	1.32	1.34
Tenn.	Cumberland	0.00	0.00	0.81	0.94	1.02	0.73	0.70	0.75	0.88	0.73	0.83
Tenn.	Fentress	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.21	0.00	2.21
Tenn.	Grundy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	2.17
Tenn.	Marion	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Tenn.	Morgan	1.20	1.50	1.60	1.56	0.00	0.00	0.00	0.00	0.00	0.00	1.23
Tenn.	Rhea	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Tenn.	Scott	1.32	1.27	1.28	1.35	1.28	1.04	0.00	0.00	1.10	1.66	1.31
Tenn.	Sequatchie	0.88	0.86	0.88	0.89	0.75	0.00	0.00	0.00	0.00	0.00	0.86
Tenn.	Van Buren	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Va.	Buchanan	0.87	0.83	0.80	0.83	0.77	0.80	0.84	0.86	0.87	0.85	0.83
Va.	Dickenson	1.06	1.09	0.93	1.13	1.03	1.01	0.99	1.10	1.11	1.35	1.08
Va.	Lee	1.03	1.06	0.97	0.93	0.74	0.76	0.76	0.77	0.84	0.88	0.84

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Va.	Russell	0.71	0.76	0.74	0.75	0.76	0.76	0.75	0.77	0.81	0.75	0.77	0.70	0.75	0.75
Va.	Scott	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Va.	Tazewell	0.79	0.76	0.92	0.85	0.79	0.76	1.22	0.56	0.00	0.00	0.00	0.00	0.00	0.85
Va.	Wise	0.97	1.04	1.08	1.07	1.12	1.13	1.20	1.23	1.22	1.16	1.06	1.12	1.13	1.12
W. Va.	Barbour	2.65	2.32	2.19	2.04	2.21	2.06	1.81	1.82	1.82	1.83	1.80	1.76	1.19	2.00
W. Va.	Boone	0.82	0.79	0.78	0.78	0.78	0.78	0.79	0.82	0.82	0.84	0.86	0.82	0.80	0.81
W. Va.	Braxton	0.80	0.78	0.72	0.81	0.79	0.82	0.92	0.84	0.89	0.00	1.02	0.00	0.00	0.81
W. Va.	Brooke	3.27	3.39	3.22	3.32	3.24	3.31	3.22	2.95	2.85	2.88	2.83	3.27	3.27	3.12
W. Va.	Clay	0.00	0.84	0.00	1.77	0.89	1.05	1.35	1.16	1.10	1.11	0.82	0.77	0.72	0.96
W. Va.	Fayette	0.78	1.18	0.68	0.72	1.02	1.33	1.27	1.04	1.19	1.30	1.23	0.93	0.88	1.11
W. Va.	Gilmer	0.77	0.71	0.00	0.00	2.79	2.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40
W. Va.	Grant	1.78	1.77	1.77	1.76	1.75	1.73	1.75	1.70	1.63	1.64	1.62	1.73	1.65	1.71
W. Va.	Greenbrier	1.16	1.22	1.05	1.15	1.06	0.89	0.80	0.00	0.62	0.93	0.97	1.02	0.88	1.08
W. Va.	Harrison	3.22	3.19	3.26	3.16	3.07	3.02	3.08	3.17	3.12	3.14	2.97	3.10	3.57	3.17
W. Va.	Kanawha	0.74	0.76	0.77	0.78	0.79	0.77	0.82	0.89	0.93	0.88	0.92	0.82	0.83	0.83
W. Va.	Lewis	2.73	2.80	2.86	2.88	2.80	3.30	3.03	1.62	0.00	0.00	2.43	2.68	2.99	2.86
W. Va.	Lincoln	0.00	0.00	0.00	0.00	0.68	0.80	0.77	0.70	0.84	0.79	0.78	0.85	0.73	0.79
W. Va.	Logan	0.67	0.66	0.66	0.78	0.79	0.80	0.74	0.73	0.71	0.71	0.69	0.70	0.70	0.72
W. Va.	McDowell	0.83	0.74	0.73	0.64	0.81	0.72	0.98	0.79	0.96	0.66	0.95	0.61	1.03	0.81
W. Va.	Marion	2.47	2.06	1.99	1.86	1.80	1.70	1.65	1.71	1.86	1.74	2.26	1.70	1.91	1.96
W. Va.	Marshall	3.81	3.83	3.88	3.84	3.91	3.91	4.04	4.13	4.11	3.95	3.68	3.88	3.72	3.92
W. Va.	Mason	2.45	0.00	0.00	0.00	2.85	2.85	2.93	2.48	2.84	2.59	3.59	3.54	0.00	2.87
W. Va.	Mercer	0.00	0.00	0.71	0.57	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
W. Va.	Mineral	1.55	1.74	1.78	1.49	1.38	1.52	1.63	1.69	1.67	1.75	1.80	1.71	1.66	1.67
W. Va.	Mingo	0.82	0.75	0.68	0.73	0.74	0.72	0.75	0.77	0.78	0.76	0.78	0.78	0.74	0.76
W. Va.	Monongalia	2.42	2.58	2.33	2.37	2.43	2.40	2.26	2.35	2.32	2.26	2.20	2.28	2.31	2.35
W. Va.	Nicholas	0.84	0.89	0.88	0.84	0.92	0.90	0.87	0.94	0.89	0.95	1.10	0.92	0.86	0.90
W. Va.	Ohio	1.60	0.00	2.88	3.02	2.69	3.03	2.94	2.98	2.90	2.87	3.12	3.68	2.78	3.16
W. Va.	Preston	1.82	1.86	1.57	1.54	1.65	1.71	1.59	1.60	1.50	1.51	1.47	1.45	1.47	1.62
W. Va.	Raleigh	0.92	1.05	0.93	1.01	0.00	0.00	0.83	0.69	0.80	0.80	0.85	0.00	0.00	0.86

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Va.	Russell	0.70	0.74	0.74	0.73	0.70	0.75	0.73	0.70	0.74	0.85	0.74
Va.	Scott	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
Va.	Tazewell	1.18	0.00	0.00	0.00	0.00	0.00	0.59	0.56	0.52	0.53	0.58
Va.	Wise	1.14	1.17	1.10	1.08	1.07	1.11	1.01	1.02	1.01	1.01	1.06
W. Va.	Barbour	1.83	2.35	2.47	2.04	1.72	1.31	1.74	2.41	1.66	2.54	2.04
W. Va.	Boone	0.81	0.78	0.78	0.79	0.78	0.78	0.78	0.82	0.83	0.80	0.79
W. Va.	Braxton	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
W. Va.	Brooke	3.64	3.76	4.05	3.72	3.76	3.68	3.79	0.00	0.00	0.00	3.79
W. Va.	Clay	0.79	0.82	0.85	0.89	0.75	0.74	0.79	0.77	0.74	0.77	0.80
W. Va.	Fayette	1.03	1.02	1.05	1.09	1.20	1.14	0.74	0.64	1.20	0.84	1.03
W. Va.	Gilmer	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
W. Va.	Grant	1.61	1.53	1.61	1.74	1.71	1.60	1.68	1.67	1.81	1.75	1.64
W. Va.	Greenbrier	0.00	0.00	0.00	0.89	0.86	0.93	0.85	0.53	0.00	0.00	0.88
W. Va.	Harrison	3.38	3.48	3.44	3.34	3.27	3.27	3.28	3.25	3.51	3.54	3.38
W. Va.	Kanawha	0.79	0.76	0.79	0.78	0.76	0.75	0.73	0.72	0.73	0.75	0.76
W. Va.	Lewis	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
W. Va.	Lincoln	0.60	0.68	0.86	1.20	1.25	0.93	0.86	0.90	0.75	0.84	0.90
W. Va.	Logan	0.73	0.72	0.71	0.80	0.69	0.72	0.73	0.74	0.75	0.75	0.73
W. Va.	McDowell	0.71	0.00	0.00	0.71	0.79	0.80	0.80	0.70	0.80	0.83	0.78
W. Va.	Marion	2.50	2.08	2.14	2.78	0.00	2.11	3.13	2.04	2.22	2.33	2.26
W. Va.	Marshall	3.71	3.63	3.65	3.67	3.53	3.36	3.14	2.61	2.29	2.40	3.28
W. Va.	Mason	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.70	0.00	0.75
W. Va.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	1.12	0.00	0.00	0.00	1.12
W. Va.	Mineral	1.61	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.03	1.67
W. Va.	Mingo	0.78	0.78	0.77	0.74	0.72	0.73	0.74	0.82	0.80	0.72	0.76
W. Va.	Monongalia	2.18	2.12	2.26	2.26	2.27	2.28	2.17	2.17	2.35	2.21	2.22
W. Va.	Nicholas	0.90	0.73	0.82	1.02	0.84	0.79	1.03	0.97	0.93	0.99	0.92
W. Va.	Ohio	0.00	0.00	0.00	0.00	4.17	0.00	0.00	0.00	0.00	0.00	4.17
W. Va.	Preston	1.41	1.48	1.49	1.37	1.47	1.46	1.69	1.61	1.64	1.58	1.53
W. Va.	Raleigh	0.76	1.04	0.99	1.01	1.10	1.07	0.88	0.98	1.36	1.30	1.11

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
W. Va.	Randolph	1.10	1.11	1.07	1.14	1.17	1.24	1.24	1.45	1.37	1.08	1.56	0.85	1.10	1.18
W. Va.	Taylor	0.00	0.00	1.39	1.41	0.00	1.53	1.59	1.66	0.00	1.59	1.70	0.00	0.00	1.52
W. Va.	Tucker	2.03	1.80	1.92	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77
W. Va.	Upshur	1.19	1.17	1.19	1.18	1.53	2.58	2.28	2.07	2.63	2.88	2.19	2.41	2.51	1.63
W. Va.	Wayne	0.98	0.00	2.25	1.16	1.83	1.08	0.84	0.69	0.68	0.84	0.89	0.86	0.83	0.86
W. Va.	Webster	0.66	0.69	0.76	0.77	0.83	0.85	0.82	0.82	0.82	0.85	0.96	0.84	0.84	0.84
W. Va.	Wyoming	0.98	1.11	0.94	0.96	0.76	0.77	0.73	0.00	0.00	0.00	0.65	0.68	0.74	0.92

Table 3. Weighted average sulfur content (in weight percent) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 are from Attanasi and Milici (1998); data for 1996 through 2005 are from the COALdat database. nd, no data]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
W. Va.	Randolph	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.72
W. Va.	Taylor	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
W. Va.	Tucker	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	No production
W. Va.	Upshur	2.42	2.02	1.61	1.49	1.53	1.55	2.20	2.42	2.09	1.61	1.80
W. Va.	Wayne	0.79	0.79	0.80	0.81	0.78	0.79	0.81	0.77	0.80	0.84	0.80
W. Va.	Webster	0.83	0.86	0.88	0.92	0.96	0.95	1.07	1.09	1.12	1.09	0.97
W. Va.	Wyoming	1.08	0.65	0.74	0.71	0.79	0.75	0.98	0.85	0.80	0.93	0.84

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ala.	Bibb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	1.42
Ala.	Blount	0.00	3.85	3.71	2.89	1.69	0.00	0.00	4.09	3.25	0.00	0.00	0.00	0.00	3.61
Ala.	Cullman	1.08	1.08	0.00	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.12
Ala.	De Kalb	0.00	0.00	0.00	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
Ala.	Fayette	3.85	3.97	3.67	3.37	3.39	3.63	3.40	3.53	3.77	3.49	3.10	3.03	2.99	3.45
Ala.	Jackson	1.85	1.84	1.98	0.85	1.01	0.00	0.00	0.00	0.00	0.00	0.00	2.84	0.00	2.00
Ala.	Jefferson	2.00	2.34	2.17	2.13	1.91	2.00	2.24	2.11	1.80	2.01	1.86	1.75	1.65	1.98
Ala.	Lamar	0.00	0.00	0.00	0.00	0.00	2.27	2.27	0.00	0.00	0.00	0.00	0.00	0.00	2.27
Ala.	Marion	0.00	2.63	1.97	1.92	1.82	2.01	2.27	2.41	3.11	2.70	2.49	2.24	0.00	2.21
Ala.	Marshall	3.30	3.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.25
Ala.	St. Clair	0.00	0.00	2.15	0.00	1.89	2.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11
Ala.	Shelby	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.33
Ala.	Tuscaloosa	3.05	3.15	2.39	2.42	2.22	2.27	2.19	1.87	1.67	1.78	1.58	1.59	1.72	1.92
Ala.	Walker	2.15	2.02	1.93	2.00	1.83	1.85	1.84	1.90	1.98	1.84	1.74	1.75	1.65	1.90
Ala.	Winston	0.00	0.00	2.24	1.58	2.29	1.64	2.41	2.43	2.20	2.24	1.94	2.10	0.00	2.17
Ga.	Dade	2.40	2.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43
Ky.	Bell	2.10	2.09	2.07	2.00	2.05	2.06	1.97	2.15	2.03	1.91	2.01	2.09	2.16	2.05
Ky.	Boyd	2.08	2.20	4.30	3.04	1.64	1.00	1.52	1.09	1.15	1.46	1.37	1.36	1.21	1.96
Ky.	Breathitt	1.48	1.44	1.48	1.53	1.76	1.78	1.74	1.84	1.93	1.79	1.92	1.81	1.59	1.68
Ky.	Carter	3.55	1.93	1.63	1.72	1.87	1.76	1.34	2.26	2.70	2.47	0.00	2.72	0.00	2.01
Ky.	Clay	2.50	2.61	2.50	2.55	2.60	2.57	2.29	2.21	2.31	1.72	2.29	2.16	1.82	2.50
Ky.	Clinton	0.00	0.00	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26
Ky.	Elliott	2.63	2.93	2.91	2.60	2.83	0.00	2.35	2.03	2.12	0.00	0.00	0.00	0.00	2.73
Ky.	Estill	5.85	0.00	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.00	1.21	2.35	1.48	1.41
Ky.	Floyd	1.71	1.73	1.78	1.75	1.79	1.73	1.69	1.60	1.58	1.54	1.77	1.77	1.55	1.69
Ky.	Greenup	3.06	2.84	5.06	5.39	3.80	4.17	3.24	4.23	4.47	4.16	3.69	3.28	1.29	3.67
Ky.	Harlan	1.96	1.85	1.64	1.65	1.67	1.71	1.88	1.87	1.78	1.71	1.80	1.67	1.62	1.75
Ky.	Jackson	1.72	2.22	2.35	3.19	0.00	1.63	1.67	2.48	2.84	3.79	0.00	1.55	1.49	2.13
Ky.	Johnson	2.04	2.04	1.75	1.94	1.96	2.09	2.26	2.05	2.02	2.11	2.19	2.35	2.06	2.06
Ky.	Knott	1.94	1.66	1.75	1.81	1.42	1.26	1.95	1.97	1.80	1.68	1.83	1.69	1.57	1.72

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ala.	Bibb	3.04	1.57	1.64	0.00	0.00	0.00	0.00	0.00	2.94	2.94	2.49
Ala.	Blount	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	Cullman	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	De Kalb	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	Fayette	3.01	0.00	0.00	0.00	0.00	2.64	2.90	0.00	0.00	0.00	2.73
Ala.	Jackson	0.00	0.00	0.00	0.00	1.52	0.00	0.00	1.43	1.43	1.11	1.29
Ala.	Jefferson	1.49	1.23	1.17	1.26	1.18	1.28	1.22	1.23	1.74	2.09	1.36
Ala.	Lamar	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	Marion	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	Marshall	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	St. Clair	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ala.	Shelby	1.11	1.07	1.19	0.00	1.18	1.09	0.00	0.00	0.00	0.00	1.11
Ala.	Tuscaloosa	2.37	2.04	1.91	1.90	1.98	2.00	2.47	2.41	2.73	2.86	2.20
Ala.	Walker	2.10	2.73	2.75	2.26	2.61	2.34	2.70	2.58	2.72	2.86	2.57
Ala.	Winston	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ga.	Dade	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ky.	Bell	2.12	2.25	2.26	2.12	2.01	2.18	1.63	1.67	1.49	1.66	2.04
Ky.	Boyd	1.16	1.17	1.42	1.25	1.44	1.39	1.74	1.66	1.62	1.63	1.50
Ky.	Breathitt	1.82	2.45	2.40	2.13	1.67	1.90	2.61	2.43	2.04	2.48	2.22
Ky.	Carter	0.00	0.00	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37
Ky.	Clay	1.92	1.85	1.80	1.84	2.23	2.03	1.93	2.02	2.78	2.34	2.05
Ky.	Clinton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ky.	Elliott	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ky.	Estill	1.41	1.28	0.00	1.45	2.06	1.78	1.10	1.11	1.14	0.00	1.73
Ky.	Floyd	1.64	1.80	1.53	1.56	1.54	1.72	1.88	1.81	2.13	2.09	1.71
Ky.	Greenup	1.30	1.26	1.47	1.44	1.45	1.37	0.00	0.00	0.00	0.00	1.38
Ky.	Harlan	1.75	1.68	1.64	1.63	1.62	1.68	1.68	1.62	1.64	1.58	1.65
Ky.	Jackson	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	0.00	0.00	1.33
Ky.	Johnson	2.14	2.26	2.17	2.16	1.87	1.86	1.78	1.71	1.76	1.80	2.01
Ky.	Knott	1.79	1.85	1.81	1.80	1.64	1.73	1.74	1.81	1.93	1.83	1.79

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ky.	Knox	1.71	1.82	2.19	2.45	2.55	2.32	2.02	1.86	1.14	1.53	1.80	3.10	1.76	2.18
Ky.	Laurel	2.53	2.84	2.47	2.53	2.39	2.07	1.93	1.82	1.43	2.35	3.12	0.00	2.93	2.43
Ky.	Lawrence	2.53	2.79	1.43	2.30	1.82	1.88	1.90	2.41	1.98	1.83	1.83	2.07	2.44	2.07
Ky.	Lee	0.00	0.00	3.29	3.40	1.71	1.73	2.58	3.85	0.00	0.00	3.04	0.00	1.92	3.10
Ky.	Leslie	2.35	2.38	2.16	2.01	2.10	2.44	2.24	2.20	2.03	1.97	2.18	1.91	1.81	2.10
Ky.	Letcher	1.39	1.31	1.40	1.26	1.20	1.23	1.31	1.32	1.43	1.49	1.63	1.69	1.71	1.43
Ky.	McCreary	1.98	1.70	2.40	2.47	2.60	3.69	0.00	0.00	0.00	1.49	1.72	1.47	1.40	2.39
Ky.	Magoffin	1.62	1.73	1.86	1.81	1.84	1.82	1.87	1.80	1.87	1.84	1.68	1.67	1.77	1.80
Ky.	Martin	1.38	1.43	1.49	1.48	1.49	1.47	1.47	1.51	1.41	1.41	1.53	1.52	1.34	1.46
Ky.	Morgan	2.25	3.74	2.12	2.18	1.41	2.22	2.45	2.32	0.00	0.00	0.00	2.63	0.00	1.97
Ky.	Owsley	2.07	1.68	1.73	3.04	3.43	3.83	3.25	2.11	2.40	2.07	3.22	2.49	0.00	2.91
Ky.	Perry	1.86	1.84	1.78	1.84	1.81	1.84	1.80	1.72	1.76	1.64	1.84	1.78	1.61	1.77
Ky.	Pike	1.34	1.49	1.44	1.48	1.41	1.38	1.45	1.46	1.47	1.51	1.58	1.54	1.40	1.47
Ky.	Pulaski	2.63	2.75	2.99	3.26	3.16	2.73	2.45	2.62	2.60	2.71	2.84	2.63	2.31	2.76
Ky.	Rockcastle	2.19	0.00	1.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.00	0.00	2.09
Ky.	Wayne	0.00	0.00	0.00	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01
Ky.	Whitley	2.06	1.93	1.88	1.70	1.69	1.75	1.83	2.00	1.88	2.05	1.94	1.97	1.59	1.86
Ky.	Wolfe	2.04	3.99	4.43	4.43	4.87	4.17	2.48	0.00	1.96	2.01	2.09	2.10	2.08	3.72
Md.	Allegany	2.99	3.08	2.29	2.57	2.71	2.68	3.02	2.93	2.79	2.70	2.60	2.39	2.55	2.79
Md.	Garrett	2.67	2.68	2.68	2.47	2.59	2.47	2.52	2.48	2.46	2.67	2.66	2.54	2.35	2.54
Ohio	Athens	5.19	0.00	0.00	0.00	2.93	4.62	4.73	3.98	4.27	0.00	0.00	0.00	0.00	4.03
Ohio	Belmont	5.02	4.98	4.82	4.86	4.86	4.87	5.29	5.78	6.02	6.01	6.03	6.42	6.33	5.41
Ohio	Carroll	3.29	4.04	4.95	5.24	4.45	4.93	4.13	3.65	4.57	4.10	4.26	4.59	4.96	4.44
Ohio	Columbiana	3.69	4.14	4.25	3.92	3.76	4.21	4.44	4.11	4.44	3.53	3.62	3.67	3.63	3.99
Ohio	Coshocton	5.27	5.37	5.34	5.06	5.35	5.40	5.40	5.43	5.35	5.36	5.32	4.92	4.22	5.22
Ohio	Gallia	5.92	5.38	5.30	6.02	5.40	0.00	0.00	0.00	0.00	0.00	6.04	5.49	5.35	5.58
Ohio	Guernsey	0.00	8.27	0.00	0.00	0.00	0.00	7.31	7.46	3.16	3.14	3.61	4.64	5.19	5.84
Ohio	Harrison	4.25	4.40	4.27	4.02	3.86	4.02	4.12	4.08	5.16	5.16	4.41	5.47	6.34	4.63
Ohio	Hocking	5.94	6.32	5.93	5.91	5.67	5.78	6.23	6.34	6.30	6.14	6.22	6.59	0.00	6.07
Ohio	Holmes	0.00	0.00	0.00	0.00	0.00	6.01	6.45	6.57	5.91	5.78	6.08	6.32	5.79	6.14

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ky.	Knox	0.00	0.00	6.11	0.00	0.00	0.00	1.56	1.76	2.79	2.83	2.80
Ky.	Laurel	1.40	0.00	2.08	2.67	1.38	1.20	0.00	1.83	1.33	0.00	1.58
Ky.	Lawrence	1.65	1.48	1.58	1.87	2.08	2.00	1.76	2.39	2.40	2.01	2.13
Ky.	Lee	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.00	0.00	0.00	1.53
Ky.	Leslie	1.71	1.60	1.63	1.76	1.56	1.77	2.00	2.10	2.06	1.95	1.70
Ky.	Letcher	1.79	1.86	1.88	2.18	1.76	1.87	1.73	1.86	1.89	1.96	1.88
Ky.	McCreary	1.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42
Ky.	Magoffin	1.57	2.82	1.68	1.28	1.09	1.11	1.11	1.14	1.43	1.63	1.59
Ky.	Martin	1.42	1.49	1.52	1.43	1.50	1.49	1.38	1.42	1.54	1.66	1.48
Ky.	Morgan	0.00	0.00	1.14	1.14	1.46	2.08	0.00	0.00	0.00	0.00	1.78
Ky.	Owsley	0.00	0.00	1.95	2.70	0.00	0.00	1.33	2.49	2.64	2.54	2.42
Ky.	Perry	1.62	1.62	1.69	1.62	1.57	1.68	1.61	1.63	1.63	1.67	1.64
Ky.	Pike	1.46	1.58	1.53	1.53	1.47	1.61	1.64	1.64	1.63	1.77	1.59
Ky.	Pulaski	0.00	0.00	2.19	2.11	2.03	2.37	2.18	2.08	2.13	0.00	2.13
Ky.	Rockcastle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32	1.32
Ky.	Wayne	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ky.	Whitley	1.64	1.64	1.84	1.56	1.86	1.59	1.55	1.72	1.78	1.91	1.74
Ky.	Wolfe	1.64	1.60	1.73	1.76	0.00	0.00	0.00	0.00	0.00	0.00	1.65
Md.	Allegany	2.34	2.17	2.43	2.23	1.67	1.59	2.75	2.73	2.84	3.01	2.69
Md.	Garrett	2.48	2.67	2.71	3.04	2.94	2.75	2.74	2.23	2.68	3.13	2.74
Ohio	Athens	0.00	0.00	0.00	0.00	0.00	0.00	3.50	0.00	3.23	2.86	3.06
Ohio	Belmont	6.27	6.12	6.14	6.26	6.12	6.31	6.31	6.45	6.51	6.61	6.30
Ohio	Carroll	0.00	4.12	0.00	6.29	0.00	0.00	2.55	2.66	3.14	2.08	2.82
Ohio	Columbiana	3.45	3.91	3.64	3.81	3.54	3.65	4.29	4.74	4.48	4.25	3.89
Ohio	Coshocton	4.50	4.55	4.52	4.50	3.93	3.68	4.21	3.87	3.82	3.83	4.13
Ohio	Gallia	5.11	5.11	4.90	5.07	5.18	4.94	6.00	6.20	6.00	5.80	5.89
Ohio	Guernsey	8.43	7.52	7.72	3.71	5.24	5.48	0.00	0.00	0.00	0.00	7.89
Ohio	Harrison	5.10	5.10	4.82	4.25	4.28	4.19	4.27	4.79	4.72	4.61	4.62
Ohio	Hocking	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ohio	Holmes	5.85	5.97	6.17	6.22	6.57	6.64	7.28	0.00	0.00	0.00	6.28

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Ohio	Jackson	4.14	5.29	5.40	4.09	5.22	5.66	5.66	5.91	5.83	6.25	6.20	6.07	6.69	5.76
Ohio	Jefferson	4.70	5.13	5.03	4.89	4.47	4.51	4.80	5.03	4.94	5.08	5.16	5.41	4.52	4.90
Ohio	Lawrence	6.10	5.83	5.37	5.74	4.33	5.24	4.31	4.45	4.79	4.46	4.40	4.86	4.80	4.73
Ohio	Mahoning	5.04	4.59	4.74	5.23	5.04	5.92	5.57	4.86	5.22	6.56	5.26	6.01	5.07	5.22
Ohio	Meigs	6.25	6.11	5.96	6.03	6.12	6.08	5.83	6.12	6.11	5.93	5.74	5.37	5.31	5.93
Ohio	Monroe	6.25	6.74	6.86	6.84	6.68	6.57	6.64	6.86	6.73	6.37	5.44	6.17	6.03	6.60
Ohio	Morgan	7.66	7.50	7.54	0.00	0.00	0.00	4.33	0.00	0.00	0.00	0.00	0.00	0.00	7.29
Ohio	Muskingum	7.52	7.30	7.45	7.52	7.11	7.29	7.36	7.20	7.40	7.39	7.90	7.87	7.93	7.43
Ohio	Noble	7.68	7.51	7.46	7.69	7.98	8.06	8.10	8.04	8.28	7.72	8.01	8.22	8.39	8.00
Ohio	Perry	4.38	4.39	3.79	3.78	3.63	4.14	4.40	4.10	5.26	5.07	4.83	5.93	5.67	4.21
Ohio	Pike	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35	4.35
Ohio	Scioto	0.00	1.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.86
Ohio	Stark	5.12	7.07	6.09	6.28	5.37	5.69	6.63	5.63	6.70	4.57	4.51	0.00	0.00	5.95
Ohio	Tuscarawas	6.17	5.23	5.39	4.76	5.00	5.30	5.15	5.04	5.68	5.43	5.75	5.81	6.09	5.45
Ohio	Vinton	5.70	6.28	6.13	5.80	5.43	5.14	5.63	5.68	5.68	5.72	5.71	5.52	5.33	5.65
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pa.	Allegheny	1.96	1.82	2.11	2.27	2.11	2.13	2.22	2.33	2.48	2.66	4.53	3.54	0.00	2.25
Pa.	Armstrong	2.92	2.66	2.53	2.53	2.48	2.67	2.72	2.78	2.81	2.76	3.08	2.92	2.91	2.74
Pa.	Beaver	0.00	0.00	0.00	5.43	4.96	4.37	3.22	3.28	4.66	3.53	2.89	2.70	0.00	3.97
Pa.	Bedford	3.38	3.21	3.07	3.02	2.65	2.91	2.34	2.90	3.68	2.47	2.56	0.00	0.00	3.01
Pa.	Blair	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.79	2.50	0.00	0.00	2.76
Pa.	Bradford	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57
Pa.	Butler	2.96	3.03	3.04	3.50	3.91	4.22	3.26	2.96	3.04	3.62	2.98	3.18	2.84	3.36
Pa.	Cambria	2.48	2.52	2.35	2.39	2.32	2.78	2.68	2.79	2.76	3.07	3.00	2.96	2.88	2.64
Pa.	Cameron	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Pa.	Centre	2.89	3.09	2.84	3.12	2.95	2.65	2.82	2.69	2.80	2.96	2.86	2.77	2.66	2.89
Pa.	Clarion	3.76	3.85	3.69	3.54	3.15	3.39	3.49	3.55	3.50	3.59	3.23	2.78	2.52	3.48
Pa.	Clearfield	2.91	3.00	2.91	2.90	2.98	2.96	2.94	3.16	3.09	3.11	3.01	2.97	2.87	2.98
Pa.	Clinton	2.27	0.00	1.54	1.14	2.75	3.32	1.24	1.75	1.27	1.34	0.00	2.65	0.00	1.73
Pa.	Elk	2.81	3.06	2.56	2.87	2.66	3.19	2.91	2.88	2.70	2.70	3.04	2.62	2.32	2.79

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Ohio	Jackson	6.65	6.20	6.50	6.45	5.57	5.26	5.58	5.89	5.97	6.60	6.10
Ohio	Jefferson	6.04	5.19	4.13	3.84	4.18	4.24	3.94	3.97	3.72	3.92	4.17
Ohio	Lawrence	0.00	4.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91
Ohio	Mahoning	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ohio	Meigs	5.64	6.20	6.29	6.29	6.26	6.40	6.47	0.00	0.00	0.00	6.16
Ohio	Monroe	7.06	7.05	7.22	7.17	6.33	5.94	6.74	6.64	7.02	6.95	6.96
Ohio	Morgan	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ohio	Muskingum	8.54	7.53	7.74	7.95	5.48	5.21	5.18	0.00	0.00	6.52	6.30
Ohio	Noble	8.59	8.73	8.81	8.03	5.20	4.78	4.27	3.41	4.47	7.10	6.29
Ohio	Perry	5.18	5.32	4.94	4.91	5.80	6.17	6.65	5.73	6.53	6.47	5.80
Ohio	Pike	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Ohio	Scioto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.08	0.00	3.08
Ohio	Stark	6.56	6.18	5.49	5.03	3.72	3.07	0.00	0.00	0.00	0.00	5.48
Ohio	Tuscarawas	5.89	5.04	6.02	5.82	6.40	6.61	6.73	6.94	5.09	0.00	6.10
Ohio	Vinton	4.74	5.26	5.20	5.30	5.13	5.58	5.67	5.29	5.58	5.22	5.26
Ohio	Washington	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	4.01	4.14	4.05
Pa.	Allegheny	3.67	2.08	0.00	2.40	3.80	3.89	1.16	0.00	0.00	2.99	2.56
Pa.	Armstrong	3.17	3.48	3.54	3.13	3.55	3.25	3.62	3.90	3.88	3.62	3.60
Pa.	Beaver	0.00	0.00	0.00	1.48	3.55	0.00	2.98	2.77	4.30	3.44	3.64
Pa.	Bedford	0.00	0.00	0.00	1.76	1.55	0.00	0.00	2.35	2.28	0.00	1.76
Pa.	Blair	5.09	4.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.58
Pa.	Bradford	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Pa.	Butler	3.28	3.10	3.42	3.32	2.64	2.67	2.91	1.75	3.50	4.71	3.15
Pa.	Cambria	2.88	3.26	3.47	3.56	3.26	4.03	5.28	6.59	6.84	7.94	5.71
Pa.	Cameron	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Pa.	Centre	2.30	1.93	1.83	0.00	0.00	0.00	0.00	3.63	0.00	0.00	2.42
Pa.	Clarion	2.73	2.91	2.56	2.73	1.97	1.94	3.39	1.82	2.71	3.48	2.71
Pa.	Clearfield	3.06	3.09	2.91	2.91	2.81	2.93	2.90	2.86	3.14	2.93	2.97
Pa.	Clinton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Pa.	Elk	2.13	2.78	3.22	2.58	3.04	3.58	3.10	2.88	3.48	3.38	3.18

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Pa.	Fayette	3.19	3.48	3.22	3.12	2.89	2.94	2.80	2.96	2.54	2.70	2.76	2.28	2.97	2.99
Pa.	Fulton	2.22	3.10	3.02	3.37	3.05	3.19	3.29	3.70	3.25	3.79	3.44	0.00	2.50	3.19
Pa.	Greene	2.99	3.20	2.76	2.53	2.47	2.45	2.40	2.67	2.73	2.73	3.02	2.79	2.60	2.73
Pa.	Huntingdon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.82	2.90	2.53	4.24	0.00	3.43
Pa.	Indiana	3.19	3.20	3.29	3.34	3.21	3.18	3.08	3.20	3.22	3.08	2.91	3.09	2.82	3.17
Pa.	Jefferson	2.77	2.69	2.69	2.67	2.85	2.90	2.72	2.60	2.61	2.71	2.84	2.47	2.46	2.70
Pa.	Lawrence	3.32	4.44	4.33	4.18	3.04	3.54	3.95	4.09	3.38	4.51	4.20	0.00	2.36	3.78
Pa.	Lycoming	1.44	1.47	1.30	1.35	1.44	1.53	1.57	1.80	1.69	1.78	1.64	1.71	1.70	1.59
Pa.	Mercer	3.67	2.42	2.42	2.54	2.14	2.46	2.48	2.62	2.65	3.06	2.40	4.71	0.00	2.72
Pa.	Somerset	2.38	2.02	2.05	2.26	2.45	2.57	2.49	2.69	2.72	3.11	3.21	3.04	3.37	2.79
Pa.	Tioga	2.03	2.04	1.82	1.54	1.79	2.40	2.27	1.89	0.00	0.00	0.00	0.00	0.00	1.96
Pa.	Venango	5.30	5.21	4.86	3.87	3.81	3.63	3.43	3.66	3.22	2.60	0.00	0.00	0.00	4.11
Pa.	Washington	2.87	2.76	2.94	2.74	2.38	2.62	3.17	3.65	3.99	3.52	4.12	3.93	2.96	3.33
Pa.	Westmoreland	2.55	2.03	1.88	2.25	3.09	3.45	3.05	3.08	3.34	3.38	3.54	3.58	3.42	3.13
Tenn.	Anderson	2.84	2.55	2.36	2.38	2.66	3.06	3.40	3.54	3.29	3.74	2.47	2.43	1.05	2.97
Tenn.	Bledsoe	0.00	2.02	1.87	2.05	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88
Tenn.	Campbell	2.98	2.85	2.73	2.66	2.52	2.79	1.96	2.09	1.89	2.06	2.21	1.98	1.66	2.37
Tenn.	Claiborne	1.36	1.39	1.53	1.61	1.62	1.62	1.65	1.75	2.42	1.76	0.00	0.00	2.31	1.58
Tenn.	Cumberland	2.34	2.02	1.27	1.39	1.54	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77
Tenn.	Fentress	3.13	4.17	4.38	3.20	2.90	5.29	2.25	3.20	0.00	0.00	0.00	0.00	0.00	3.60
Tenn.	Grundy	1.43	1.39	1.52	1.43	1.33	1.27	1.22	1.54	1.48	0.00	0.00	0.00	0.00	1.43
Tenn.	Marion	0.00	0.00	2.73	1.34	2.41	1.44	1.15	1.15	0.00	0.00	0.00	0.00	0.00	1.30
Tenn.	Morgan	1.89	1.45	2.35	1.88	2.22	2.17	2.19	3.12	2.74	2.84	3.50	3.68	2.09	2.33
Tenn.	Rhea	1.83	3.15	2.19	2.47	1.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61
Tenn.	Scott	3.09	3.77	2.88	2.95	2.30	2.05	2.55	2.38	2.30	2.50	2.41	2.22	1.95	2.46
Tenn.	Sequatchie	4.78	5.14	5.68	1.79	1.18	1.27	1.35	1.28	1.62	1.29	1.47	1.40	1.38	1.50
Tenn.	Van Buren	3.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15
Va.	Buchanan	1.65	1.60	1.68	1.73	1.63	1.62	1.60	1.59	1.46	1.48	1.36	1.31	1.26	1.55
Va.	Dickenson	1.66	1.64	1.90	1.94	1.98	2.17	2.02	1.83	1.81	1.54	1.46	1.43	1.59	1.70
Va.	Lee	1.42	1.36	1.34	1.41	1.47	1.82	1.93	1.81	1.80	1.79	1.99	1.82	1.34	1.64

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Pa.	Fayette	2.98	2.65	3.29	2.54	2.46	2.54	1.78	1.81	3.00	4.74	3.00
Pa.	Fulton	3.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.39
Pa.	Greene	2.78	2.78	2.75	2.94	2.90	2.90	3.08	3.37	3.20	3.02	2.96
Pa.	Huntingdon	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Pa.	Indiana	2.99	2.96	2.98	3.50	3.75	3.73	4.61	4.54	4.28	4.36	3.62
Pa.	Jefferson	2.77	2.79	2.72	2.77	2.82	2.46	2.83	2.45	3.65	3.13	2.81
Pa.	Lawrence	1.99	0.00	0.00	0.00	5.25	0.00	0.00	9.14	0.00	6.96	4.69
Pa.	Lycoming	1.30	1.50	1.29	1.32	1.14	0.00	1.65	1.57	1.94	1.69	1.44
Pa.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.64	10.11	0.00	10.90
Pa.	Somerset	3.06	3.41	3.45	3.14	3.15	3.30	3.43	3.73	3.99	3.24	3.36
Pa.	Tioga	0.00	0.00	0.00	0.00	0.00	0.00	2.27	1.63	1.46	1.30	1.69
Pa.	Venango	3.14	4.44	4.74	4.10	0.00	0.00	6.00	6.25	9.63	7.55	5.70
Pa.	Washington	2.31	2.26	2.22	2.27	2.24	2.26	2.41	2.48	2.39	2.44	2.32
Pa.	Westmoreland	3.30	3.50	3.75	3.49	3.82	3.71	0.00	0.00	1.59	2.83	3.46
Tenn.	Anderson	2.52	1.92	2.46	2.11	0.00	0.00	0.00	1.34	1.39	2.24	2.20
Tenn.	Bledsoe	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Tenn.	Campbell	1.67	1.88	0.00	0.00	0.00	1.47	1.44	1.40	1.53	2.23	1.70
Tenn.	Claiborne	2.37	2.36	2.18	2.13	1.99	2.14	2.03	1.93	1.99	2.04	2.08
Tenn.	Cumberland	0.00	0.00	1.28	1.49	1.63	1.15	1.11	1.21	1.43	1.17	1.32
Tenn.	Fentress	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.84	0.00	3.84
Tenn.	Grundy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.38	3.38
Tenn.	Marion	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Tenn.	Morgan	1.89	2.31	2.46	2.44	0.00	0.00	0.00	0.00	0.00	0.00	1.93
Tenn.	Rhea	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Tenn.	Scott	2.07	1.96	2.00	2.20	2.03	1.64	0.00	0.00	1.81	2.66	2.06
Tenn.	Sequatchie	1.42	1.40	1.42	1.44	1.19	0.00	0.00	0.00	0.00	0.00	1.39
Tenn.	Van Buren	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Va.	Buchanan	1.31	1.24	1.18	1.24	1.14	1.19	1.24	1.30	1.33	1.38	1.25
Va.	Dickenson	1.69	1.70	1.45	1.75	1.60	1.57	1.51	1.71	1.73	2.10	1.68
Va.	Lee	1.64	1.68	1.53	1.47	1.17	1.22	1.21	1.25	1.37	1.41	1.34

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
Va.	Russell	1.12	1.17	1.13	1.16	1.18	1.19	1.18	1.23	1.30	1.20	1.23	1.12	1.21	1.18
Va.	Scott	0.00	0.00	0.00	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55
Va.	Tazewell	1.20	1.16	1.39	1.27	1.18	1.12	1.81	0.85	0.00	0.00	0.00	0.00	0.00	1.27
Va.	Wise	1.54	1.64	1.70	1.67	1.73	1.74	1.86	1.90	1.90	1.81	1.66	1.76	1.77	1.75
W. Va.	Barbour	4.15	3.69	3.50	3.27	3.50	3.17	2.82	2.83	2.83	2.85	2.81	2.72	1.83	3.13
W. Va.	Boone	1.32	1.26	1.23	1.24	1.22	1.23	1.26	1.31	1.31	1.35	1.38	1.32	1.29	1.29
W. Va.	Braxton	1.22	1.17	1.09	1.20	1.17	1.23	1.42	1.30	1.36	0.00	1.65	0.00	0.00	1.23
W. Va.	Brooke	5.48	5.77	5.38	5.45	5.31	5.44	5.28	4.82	4.67	4.75	4.62	5.36	5.32	5.14
W. Va.	Clay	0.00	1.27	0.00	3.04	1.47	1.73	2.24	1.91	1.80	1.83	1.35	1.27	1.18	1.58
W. Va.	Fayette	1.27	1.98	1.09	1.15	1.67	2.17	2.07	1.67	1.92	2.09	1.98	1.49	1.40	1.79
W. Va.	Gilmer	1.20	1.13	0.00	0.00	4.30	4.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70
W. Va.	Grant	2.94	2.91	2.92	2.85	2.80	2.77	2.81	2.70	2.59	2.60	2.57	2.79	2.65	2.76
W. Va.	Greenbrier	1.74	1.86	1.59	1.74	1.64	1.48	1.37	0.00	0.95	1.48	1.53	1.62	1.51	1.67
W. Va.	Harrison	4.92	4.91	5.01	4.86	4.70	4.60	4.72	4.86	4.76	4.80	4.55	4.75	5.72	4.88
W. Va.	Kanawha	1.26	1.30	1.31	1.31	1.33	1.30	1.39	1.49	1.55	1.47	1.50	1.33	1.34	1.38
W. Va.	Lewis	4.24	4.38	4.44	4.45	4.34	5.12	4.72	2.50	0.00	0.00	3.75	4.30	4.75	4.44
W. Va.	Lincoln	0.00	0.00	0.00	0.00	1.07	1.28	1.28	1.17	1.43	1.33	1.31	1.44	1.20	1.33
W. Va.	Logan	1.06	1.05	1.06	1.25	1.27	1.29	1.20	1.18	1.14	1.15	1.12	1.13	1.14	1.17
W. Va.	McDowell	1.25	1.13	1.16	1.00	1.23	1.12	1.53	1.22	1.49	0.96	1.42	0.93	1.74	1.24
W. Va.	Marion	3.94	3.28	3.18	2.98	2.92	2.76	2.66	2.75	3.02	2.83	3.52	2.76	3.09	3.15
W. Va.	Marshall	6.27	6.29	6.37	6.31	6.45	6.47	6.64	6.81	6.74	6.48	6.00	6.41	6.12	6.44
W. Va.	Mason	4.24	0.00	0.00	0.00	4.89	4.89	4.95	4.11	4.70	4.39	6.24	6.29	0.00	4.89
W. Va.	Mercer	0.00	0.00	1.08	0.93	1.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
W. Va.	Mineral	2.61	3.00	3.03	2.55	2.27	2.48	2.71	2.87	2.86	2.99	3.08	2.84	2.81	2.82
W. Va.	Mingo	1.30	1.21	1.10	1.17	1.19	1.16	1.21	1.23	1.24	1.21	1.24	1.24	1.18	1.21
W. Va.	Monongalia	3.74	4.06	3.67	3.71	3.82	3.75	3.55	3.65	3.58	3.48	3.42	3.54	3.57	3.66
W. Va.	Nicholas	1.31	1.38	1.37	1.30	1.44	1.41	1.36	1.48	1.39	1.49	1.74	1.47	1.36	1.41
W. Va.	Ohio	2.41	0.00	5.37	5.62	4.92	5.18	4.73	5.03	4.90	4.71	5.12	6.04	4.56	5.33
W. Va.	Preston	2.92	3.01	2.50	2.44	2.62	2.72	2.54	2.55	2.36	2.39	2.34	2.28	2.28	2.58
W. Va.	Raleigh	1.48	1.54	1.35	1.49	0.00	0.00	1.27	1.02	1.20	1.19	1.23	0.00	0.00	1.28

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
Va.	Russell	1.13	1.19	1.20	1.17	1.13	1.21	1.19	1.14	1.21	1.38	1.19
Va.	Scott	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
Va.	Tazewell	1.74	0.00	0.00	0.00	0.00	0.00	0.95	0.89	0.83	0.84	0.91
Va.	Wise	1.79	1.82	1.71	1.69	1.66	1.73	1.57	1.59	1.59	1.60	1.66
W. Va.	Barbour	2.85	3.67	3.86	3.15	2.65	2.01	2.73	3.81	2.55	3.92	3.18
W. Va.	Boone	1.30	1.27	1.26	1.27	1.27	1.28	1.27	1.34	1.35	1.31	1.29
W. Va.	Braxton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
W. Va.	Brooke	5.86	6.08	6.53	6.05	6.11	6.01	6.16	0.00	0.00	0.00	6.15
W. Va.	Clay	1.28	1.32	1.37	1.43	1.21	1.20	1.27	1.24	1.20	1.25	1.28
W. Va.	Fayette	1.63	1.64	1.72	1.75	1.89	1.81	1.20	1.07	1.94	1.33	1.66
W. Va.	Gilmer	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
W. Va.	Grant	2.57	2.43	2.65	2.82	2.80	2.66	2.78	2.83	3.03	2.99	2.66
W. Va.	Greenbrier	0.00	0.00	0.00	1.37	1.31	1.44	1.32	0.80	0.00	0.00	1.35
W. Va.	Harrison	5.39	5.51	5.43	5.31	5.23	5.29	5.30	5.25	5.69	5.75	5.41
W. Va.	Kanawha	1.30	1.26	1.31	1.29	1.26	1.24	1.19	1.17	1.20	1.24	1.25
W. Va.	Lewis	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
W. Va.	Lincoln	0.98	1.13	1.46	2.04	1.92	1.46	1.36	1.41	1.20	1.36	1.43
W. Va.	Logan	1.19	1.19	1.17	1.31	1.14	1.19	1.18	1.21	1.23	1.24	1.20
W. Va.	McDowell	1.16	0.00	0.00	1.03	1.17	1.23	1.20	1.04	1.18	1.22	1.16
W. Va.	Marion	3.82	3.16	3.27	4.31	0.00	3.25	5.05	3.90	3.67	3.71	3.56
W. Va.	Marshall	6.14	5.99	6.02	6.03	5.82	5.55	5.10	4.22	3.71	3.90	5.39
W. Va.	Mason	0.00	0.00	0.00	0.00	1.15	0.00	0.00	0.00	1.13	0.00	1.14
W. Va.	Mercer	0.00	0.00	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	1.72
W. Va.	Mineral	2.76	0.00	0.00	0.00	2.83	0.00	0.00	0.00	0.00	3.39	2.84
W. Va.	Mingo	1.24	1.25	1.23	1.19	1.17	1.19	1.22	1.34	1.32	1.17	1.23
W. Va.	Monongalia	3.38	3.29	3.51	3.50	3.52	3.52	3.40	3.46	3.73	3.48	3.47
W. Va.	Nicholas	1.44	1.14	1.32	1.65	1.37	1.30	1.65	1.57	1.54	1.64	1.50
W. Va.	Ohio	0.00	0.00	0.00	0.00	6.93	0.00	0.00	0.00	0.00	0.00	6.93
W. Va.	Preston	2.19	2.28	2.30	2.10	2.24	2.20	2.58	2.50	2.54	2.42	2.35
W. Va.	Raleigh	1.28	1.83	1.73	1.77	2.02	1.84	1.37	1.53	2.21	2.09	1.84

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Weighted average (1983–1995)
W. Va.	Randolph	1.68	1.71	1.63	1.73	1.80	1.95	1.97	2.39	2.29	1.70	2.58	1.34	1.84	1.85
W. Va.	Taylor	0.00	0.00	2.28	2.32	0.00	2.53	2.66	2.77	0.00	2.60	2.86	0.00	0.00	2.51
W. Va.	Tucker	3.42	3.11	3.32	2.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.05
W. Va.	Upshur	1.82	1.80	1.83	1.80	2.34	3.93	3.53	3.20	4.03	4.40	3.41	3.75	3.96	2.51
W. Va.	Wayne	1.57	0.00	3.99	1.92	3.24	1.85	1.41	1.14	1.11	1.40	1.50	1.45	1.39	1.44
W. Va.	Webster	1.01	1.06	1.16	1.18	1.29	1.31	1.27	1.25	1.25	1.31	1.50	1.30	1.32	1.30
W. Va.	Wyoming	1.43	1.60	1.37	1.40	1.13	1.16	1.06	0.00	0.00	0.00	0.94	1.04	1.15	1.35

Table 4. Potential SO_2 emissions (in pounds of SO_2 per million British thermal units) of bituminous coal that was mined in the Appalachian basin for electrical power generation.—Continued

[Data are shown by county. Data for 1983 through 1995 were calculated from data given in tables 1–3; data for 1996 through 2005 are from the COALdat database. n/a, not available]

State	County	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Weighted average (1996–2005)
W. Va.	Randolph	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.00	1.13
W. Va.	Taylor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
W. Va.	Tucker	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No production
W. Va.	Upshur	3.86	3.23	2.53	2.30	2.37	2.40	3.43	3.83	3.44	2.61	2.84
W. Va.	Wayne	1.33	1.31	1.34	1.35	1.30	1.32	1.34	1.25	1.31	1.40	1.33
W. Va.	Webster	1.31	1.37	1.39	1.47	1.54	1.52	1.72	1.75	1.81	1.76	1.55
W. Va.	Wyoming	1.78	1.02	1.14	1.04	1.16	1.16	1.52	1.32	1.25	1.44	1.30

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
Ala.	Bibb	0.73	1.50	0.77	Increase		1.42	2.49	1.07	Increase	1.07
Ala.	Blount	2.21	No production	No production	No production		3.61	No production	No production	No production	
Ala.	Cullman	0.74	No production	No production	No production		1.12	No production	No production	No production	
Ala.	De Kalb	1.18	No production	No production	No production		1.87	No production	No production	No production	
Ala.	Fayette	2.08	1.65	-0.43	Decrease		3.45	2.73	-0.72	Decrease	
Ala.	Jackson	1.27	0.77	-0.50	Decrease		2.00	1.29	-0.71	Decrease	
Ala.	Jefferson	1.23	0.84	-0.39	Decrease		1.98	1.36	-0.62	Decrease	
Ala.	Lamar	1.37	No production	No production	No production		2.27	No production	No production	No production	
Ala.	Marion	1.30	No production	No production	No production		2.21	No production	No production	No production	
Ala.	Marshall	1.94	No production	No production	No production		3.25	No production	No production	No production	
Ala.	St. Clair	1.31	No production	No production	No production		2.11	No production	No production	No production	
Ala.	Shelby	0.84	0.70	-0.14	Decrease		1.33	1.11	-0.22	Decrease	
Ala.	Tuscaloosa	1.19	1.35	0.16	Increase		1.92	2.20	0.28	Increase	
Ala.	Walker	1.14	1.53	0.39	Increase		1.90	2.57	0.67	Increase	
Ala.	Winston	1.31	No production	No production	No production		2.17	No production	No production	No production	
Ga.	Dade	1.60	No production	No production	No production		2.43	No production	No production	No production	
Ky.	Bell	1.28	1.29	0.01	Increase		2.05	2.04	-0.01	Decrease	
Ky.	Boyd	1.15	0.90	-0.25	Decrease		1.96	1.50	-0.46	Decrease	
Ky.	Breathitt	0.99	1.35	0.36	Increase		1.68	2.22	0.54	Increase	
Ky.	Carter	1.14	0.86	-0.28	Decrease		2.01	1.37	-0.64	Decrease	
Ky.	Clay	1.54	1.26	-0.28	Decrease		2.50	2.05	-0.45	Decrease	
Ky.	Clinton	0.84	No production	No production	No production		1.26	No production	No production	No production	
Ky.	Elliott	1.57	No production	No production	No production		2.73	No production	No production	No production	
Ky.	Estill	0.88	1.03	0.15	Increase		1.41	1.73	0.32	Increase	
Ky.	Floyd	1.04	1.05	0.01	Increase		1.69	1.71	0.02	Increase	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
Ky.	Greenup	2.11	0.85	-1.26	Decrease	-1.26	3.67	1.38	-2.29	Decrease	-2.29
Ky.	Harlan	1.10	1.05	-0.05	Decrease		1.75	1.65	-0.10	Decrease	
Ky.	Jackson	1.29	0.83	-0.46	Decrease		2.13	1.33	-0.80	Decrease	
Ky.	Johnson	1.21	1.19	-0.02	Decrease		2.06	2.01	-0.05	Decrease	
Ky.	Knott	1.07	1.12	0.05	Increase		1.72	1.79	0.07	Increase	
Ky.	Knox	1.36	1.68	0.32	Increase		2.18	2.80	0.62	Increase	
Ky.	Laurel	1.48	0.96	-0.52	Decrease		2.43	1.58	-0.85	Decrease	
Ky.	Lawrence	1.19	1.25	0.06	Increase		2.07	2.13	0.06	Increase	
Ky.	Lee	1.84	0.91	-0.93	Decrease		3.10	1.53	-1.57	Decrease	-1.57
Ky.	Leslie	1.30	1.07	-0.23	Decrease		2.10	1.70	-0.40	Decrease	
Ky.	Letcher	0.92	1.21	0.29	Increase		1.43	1.88	0.45	Increase	
Ky.	McCreary	1.49	0.93	-0.56	Decrease		2.39	1.42	-0.97	Decrease	
Ky.	Magoffin	1.08	0.95	-0.13	Decrease		1.80	1.59	-0.21	Decrease	
Ky.	Martin	0.90	0.90	0.00	No change		1.46	1.48	0.02	Increase	
Ky.	Morgan	1.14	1.00	-0.14	Decrease		1.97	1.78	-0.19	Decrease	
Ky.	Owsley	1.71	1.47	-0.24	Decrease		2.91	2.42	-0.49	Decrease	
Ky.	Perry	1.08	1.01	-0.07	Decrease		1.77	1.64	-0.13	Decrease	
Ky.	Pike	0.93	1.00	0.07	Increase		1.47	1.59	0.12	Increase	
Ky.	Pulaski	1.67	1.28	-0.39	Decrease		2.76	2.13	-0.63	Decrease	
Ky.	Rockcastle	1.21	0.78	-0.43	Decrease		2.09	1.32	-0.77	Decrease	
Ky.	Wayne	0.59	No production	No production	No production		1.01	No production	No production	No production	
Ky.	Whitley	1.18	1.10	-0.08	Decrease		1.86	1.74	-0.12	Decrease	
Ky.	Wolfe	2.21	0.94	-1.27	Decrease	-1.27	3.72	1.65	-2.07	Decrease	-2.07
Md.	Allegany	1.66	1.57	-0.09	Decrease		2.79	2.69	-0.10	Decrease	
Md.	Garrett	1.61	1.69	0.08	Increase		2.54	2.74	0.20	Increase	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
Ohio	Athens	2.33	1.70	-0.63	Decrease		4.03	3.06	-0.97	Decrease	
Ohio	Belmont	3.26	3.90	0.64	Increase		5.41	6.30	0.89	Increase	
Ohio	Carroll	2.66	1.74	-0.92	Decrease		4.44	2.82	-1.62	Decrease	-1.62
Ohio	Columbiana	2.43	2.39	-0.04	Decrease		3.99	3.89	-0.10	Decrease	
Ohio	Coshocton	3.13	2.44	-0.69	Decrease		5.22	4.13	-1.09	Decrease	-1.09
Ohio	Gallia	3.20	3.60	0.40	Increase		5.58	5.89	0.31	Increase	
Ohio	Guernsey	3.33	4.53	1.20	Increase	1.20	5.84	7.89	2.05	Increase	2.05
Ohio	Harrison	2.86	2.82	-0.04	Decrease		4.63	4.62	-0.01	Decrease	
Ohio	Hocking	3.39	No production	No production	No production		6.07	No production	No production	No production	
Ohio	Holmes	3.56	3.62	0.06	Increase		6.14	6.28	0.14	Increase	
Ohio	Jackson	3.22	3.40	0.18	Increase		5.76	6.10	0.34	Increase	
Ohio	Jefferson	2.92	2.48	-0.44	Decrease		4.90	4.17	-0.73	Decrease	
Ohio	Lawrence	2.71	2.84	0.13	Increase		4.73	4.91	0.18	Increase	
Ohio	Mahoning	3.15	No production	No production	No production		5.22	No production	No production	No production	
Ohio	Meigs	3.34	3.48	0.14	Increase		5.93	6.16	0.23	Increase	
Ohio	Monroe	4.00	4.30	0.30	Increase		6.60	6.96	0.36	Increase	
Ohio	Morgan	4.16	No production	No production	No production		7.29	No production	No production	No production	
Ohio	Muskingum	4.25	3.61	-0.64	Decrease		7.43	6.30	-1.13	Decrease	-1.13
Ohio	Noble	4.58	3.64	-0.94	Decrease		8.00	6.29	-1.71	Decrease	-1.71
Ohio	Perry	2.38	3.35	0.97	Increase		4.21	5.80	1.59	Increase	1.59
Ohio	Pike	2.60	No production	No production	No production		4.35	No production	No production	No production	
Ohio	Scioto	1.08	1.93	0.85	Increase		1.86	3.08	1.22	Increase	1.22
Ohio	Stark	3.49	3.24	-0.25	Decrease		5.95	5.48	-0.47	Decrease	
Ohio	Tuscarawas	3.24	3.45	0.21	Increase		5.45	6.10	0.65	Increase	
Ohio	Vinton	3.18	2.99	-0.19	Decrease		5.65	5.26	-0.39	Decrease	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
Ohio	Washington	0.00	2.63	2.63	Increase	2.63	0.00	4.05	4.05	Increase	4.05
Pa.	Allegheny	1.40	1.50	0.10	Increase		2.25	2.56	0.31	Increase	
Pa.	Armstrong	1.70	2.22	0.52	Increase		2.74	3.60	0.86	Increase	
Pa.	Beaver	2.40	2.19	-0.21	Decrease		3.97	3.64	-0.33	Decrease	
Pa.	Bedford	1.90	0.95	-0.95	Decrease		3.01	1.76	-1.25	Decrease	-1.25
Pa.	Blair	1.81	2.54	0.73	Increase		2.76	4.58	1.82	Increase	1.82
Pa.	Bradford	0.82	No production	No production	No production		1.57	No production	No production	No production	
Pa.	Butler	2.08	1.88	-0.20	Decrease		3.36	3.15	-0.21	Decrease	
Pa.	Cambria	1.64	2.21	0.57	Increase		2.64	5.71	3.07	Increase	3.07
Pa.	Cameron	0.58	No production	No production	No production		1.00	No production	No production	No production	
Pa.	Centre	1.77	1.52	-0.25	Decrease		2.89	2.42	-0.47	Decrease	
Pa.	Clarion	2.21	1.67	-0.54	Decrease		3.48	2.71	-0.77	Decrease	
Pa.	Clearfield	1.86	1.80	-0.06	Decrease		2.98	2.97	-0.01	Decrease	
Pa.	Clinton	1.01	No production	No production	No production		1.73	No production	No production	No production	
Pa.	Elk	1.75	1.74	-0.01	Decrease		2.79	3.18	0.39	Increase	
Pa.	Fayette	1.85	1.82	-0.03	Decrease		2.99	3.00	0.01	Increase	
Pa.	Fulton	2.01	2.12	0.11	Increase		3.19	3.39	0.20	Increase	
Pa.	Greene	1.77	1.92	0.15	Increase		2.73	2.96	0.23	Increase	
Pa.	Huntingdon	1.91	No production	No production	No production		3.43	No production	No production	No production	
Pa.	Indiana	1.92	2.11	0.19	Increase		3.17	3.62	0.45	Increase	
Pa.	Jefferson	1.71	1.74	0.03	Increase		2.70	2.81	0.11	Increase	
Pa.	Lawrence	2.26	2.43	0.17	Increase		3.78	4.69	0.91	Increase	
Pa.	Lycoming	0.90	0.78	-0.12	Decrease		1.59	1.44	-0.15	Decrease	
Pa.	Mercer	1.72	5.93	4.21	Increase	4.21	2.72	10.90	8.18	Increase	8.18
Pa.	Somerset	1.73	2.06	0.33	Increase		2.79	3.36	0.57	Increase	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
Pa.	Tioga	1.10	0.63	-0.47	Decrease		1.96	1.69	-0.27	Decrease	
Pa.	Venango	2.64	2.94	0.30	Increase		4.11	5.70	1.59	Increase	1.59
Pa.	Washington	2.11	1.52	-0.59	Decrease		3.33	2.32	-1.01	Decrease	-1.01
Pa.	Westmoreland	1.92	2.11	0.19	Increase		3.13	3.46	0.33	Increase	
Tenn.	Anderson	1.85	1.35	-0.50	Decrease		2.97	2.20	-0.77	Decrease	
Tenn.	Bledsoe	1.18	No production	No production	No production		1.88	No production	No production	No production	
Tenn.	Campbell	1.48	1.07	-0.41	Decrease		2.37	1.70	-0.67	Decrease	
Tenn.	Claiborne	1.01	1.34	0.33	Increase		1.58	2.08	0.50	Increase	
Tenn.	Cumberland	1.07	0.83	-0.24	Decrease		1.77	1.32	-0.45	Decrease	
Tenn.	Fentress	2.14	2.21	0.07	Increase		3.60	3.84	0.24	Increase	
Tenn.	Grundy	0.88	2.17	1.29	Increase	1.29	1.43	3.38	1.95	Increase	1.95
Tenn.	Marion	0.81	No production	No production	No production		1.30	No production	No production	No production	
Tenn.	Morgan	1.48	1.23	-0.25	Decrease		2.33	1.93	-0.40	Decrease	
Tenn.	Rhea	1.60	No production	No production	No production		2.61	No production	No production	No production	
Tenn.	Scott	1.59	1.31	-0.28	Decrease		2.46	2.06	-0.40	Decrease	
Tenn.	Sequatchie	0.92	0.86	-0.06	Decrease		1.50	1.39	-0.11	Decrease	
Tenn.	Van Buren	1.80	No production	No production	No production		3.15	No production	No production	No production	
Va.	Buchanan	1.02	0.83	-0.19	Decrease		1.55	1.25	-0.30	Decrease	
Va.	Dickenson	1.10	1.08	-0.02	Decrease		1.70	1.68	-0.02	Decrease	
Va.	Lee	1.04	0.84	-0.20	Decrease		1.64	1.34	-0.30	Decrease	
Va.	Russell	0.75	0.74	-0.01	Decrease		1.18	1.19	0.01	Increase	
Va.	Scott	1.00	No production	No production	No production		1.55	No production	No production	No production	
Va.	Tazewell	0.85	0.58	-0.27	Decrease		1.27	0.91	-0.36	Decrease	
Va.	Wise	1.12	1.06	-0.06	Decrease		1.75	1.66	-0.09	Decrease	
W. Va.	Barbour	2.00	2.04	0.04	Increase		3.13	3.18	0.05	Increase	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
W. Va.	Boone	0.81	0.79	-0.02	Decrease		1.29	1.29	0.00	No change	
W. Va.	Braxton	0.81	No production	No production	No production		1.23	No production	No production	No production	
W. Va.	Brooke	3.12	3.79	0.67	Increase		5.14	6.15	1.01	Increase	1.01
W. Va.	Clay	0.96	0.80	-0.16	Decrease		1.58	1.28	-0.30	Decrease	
W. Va.	Fayette	1.11	1.03	-0.08	Decrease		1.79	1.66	-0.13	Decrease	
W. Va.	Gilmer	2.40	No production	No production	No production		3.70	No production	No production	No production	
W. Va.	Grant	1.71	1.64	-0.07	Decrease		2.76	2.66	-0.10	Decrease	
W. Va.	Greenbrier	1.08	0.88	-0.20	Decrease		1.67	1.35	-0.32	Decrease	
W. Va.	Harrison	3.17	3.38	0.21	Increase		4.88	5.41	0.53	Increase	
W. Va.	Kanawha	0.83	0.76	-0.07	Decrease		1.38	1.25	-0.13	Decrease	
W. Va.	Lewis	2.86	No production	No production	No production		4.44	No production	No production	No production	
W. Va.	Lincoln	0.79	0.90	0.11	Increase		1.33	1.43	0.10	Increase	
W. Va.	Logan	0.72	0.73	0.01	Increase		1.17	1.20	0.03	Increase	
W. Va.	McDowell	0.81	0.78	-0.03	Decrease		1.24	1.16	-0.08	Decrease	
W. Va.	Marion	1.96	2.26	0.30	Increase		3.15	3.56	0.41	Increase	
W. Va.	Marshall	3.92	3.28	-0.64	Decrease		6.44	5.39	-1.05	Decrease	-1.05
W. Va.	Mason	2.87	0.75	-2.12	Decrease	-2.12	4.89	1.14	-3.75	Decrease	-3.75
W. Va.	Mercer	0.66	1.12	0.46	Increase		1.03	1.72	0.69	Increase	
W. Va.	Mineral	1.67	1.67	0.00	No change		2.82	2.84	0.02	Increase	
W. Va.	Mingo	0.76	0.76	0.00	No change		1.21	1.23	0.02	Increase	
W. Va.	Monongalia	2.35	2.22	-0.13	Decrease		3.66	3.47	-0.19	Decrease	
W. Va.	Nicholas	0.90	0.92	0.02	Increase		1.41	1.50	0.09	Increase	
W. Va.	Ohio	3.16	4.17	1.01	Increase	1.01	5.33	6.93	1.60	Increase	1.60
W. Va.	Preston	1.62	1.53	-0.09	Decrease		2.58	2.35	-0.23	Decrease	
W. Va.	Raleigh	0.86	1.11	0.25	Increase		1.28	1.84	0.56	Increase	

Table 5. Summary statistics comparing weighted average sulfur content (in weight percent) and potential SO_2 emissions (in pounds of SO_2 per million British thermal units) for 1983 through 1995 and 1996 through 2005.—Continued

[Data are shown by county. Data shown in columns 3 and 4 are from table 3; data shown in columns 8 and 9 are from table 4. SO_2, sulfur dioxide; lb SO_2/MMBtu, pounds of sulfur dioxide per million British thermal units]

State	County	Weighted average sulfur for 1983–1995	Weighted average sulfur for 1996–2005	Change in weighted average sulfur (weight percent)	Decrease or increase	Decrease or increase greater than 1	Weighted average of potential SO_2 emissions for 1983–1995	Weighted average of potential SO_2 emissions for 1996–2005	Change in weighted average of potential SO_2 emissions (lb SO_2/MMBtu)	Decrease or increase	Decrease or increase greater than 1
W. Va.	Randolph	1.18	0.72	-0.46	Decrease		1.85	1.13	-0.72	Decrease	
W. Va.	Taylor	1.52	No production	No production	No production		2.51	No production	No production	No production	
W. Va.	Tucker	1.77	No production	No production	No production		3.05	No production	No production	No production	
W. Va.	Upshur	1.63	1.80	0.17	Increase		2.51	2.84	0.33	Increase	
W. Va.	Wayne	0.86	0.80	-0.06	Decrease		1.44	1.33	-0.11	Decrease	
W. Va.	Webster	0.84	0.97	0.13	Increase		1.30	1.55	0.25	Increase	
W. Va.	Wyoming	0.92	0.84	-0.08	Decrease		1.35	1.30	-0.05	Decrease	

Total records	157	100.0 percent	Total records	157	100.0 percent
No production 1996–2005	30	19.1 percent	No production 1996–2005	30	19.1 percent
Produced 1996–2005	127	80.9 percent	Produced 1996–2005	127	80.9 percent
Showed increased percent sulfur	53	41.7 percent	Showed increase in lb SO_2/MMBtu	58	45.7 percent
Showed decreased percent sulfur	71	55.9 percent	Showed decrease in lb SO_2/MMBtu	68	53.5 percent
Showed no change in percent sulfur	3	2.4 percent	Showed no change in lb SO_2/MMBtu	1	0.8 percent
Showed increase greater than 1	5	4.0 percent	Showed increase greater than 1	12	9.5 percent
Showed decrease less than -1	3	2.4 percent	Showed decrease less than -1	11	8.7 percent
Showed change between -1 and 1	116	93.5 percent	Showed change between -1 and 1	103	81.7 percent
Maximum increase	4.21		Maximum increase	8.18	
Maximum decrease	-2.12		Maximum decrease	-3.75	