

Annual Coal Report

2002

Energy Information Administration

Office of Coal, Nuclear, Electric, and Alternate Fuels
U.S. Department of Energy
Washington, DC 20585

This report is available on the Web at:
<http://www.eia.doe.gov/cneaf/coal/acr/acr.pdf>

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Preface

Annual Coal Report (ACR) provides information about U.S. coal production, number of mines, prices, productivity, employment, productive capacity, and recoverable reserves to a wide audience, including Congress, Federal and State agencies, the coal industry, and the general public. This report is published by the Energy Information Administration (EIA) to fulfill data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of 1974 (Public Law 93-275), as amended.

This report presents annual data on coal production, prices, recoverable reserves, employment, productivity, and productive capacity. U.S. coal production, employment, and productivity are based on the U.S. Department of Labor's Mine Safety and Health Administration's Form 7000-2, "Quarterly Mine Employment and Coal Production Report." Prices,

recoverable reserves, and productive capacity are based on EIA's annual survey form, EIA-7A, "Coal Production Report."

This report is the 27th annual report on coal production published by EIA and continues the series formerly included in the *Minerals Yearbook* published by the Bureau of Mines.

The Office of Coal, Nuclear, Electric and Alternate Fuels acknowledges the cooperation of the respondents in supplying the information published in the *Annual Coal Report* and appreciates the valuable assistance of State coal mining agencies; the U.S. Department of the Interior: the Bureau of Land Management, the Minerals Management Service; and the U.S. Department of Labor: the Mine Safety and Health Administration.

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Executive Summary

U.S. coal production declined in 2002 by 33.4 million short tons to end the year at 1,094.3 million short tons (Table ES 1), down 3.0 percent from the 2001 level of 1,127.7 million short tons. Total coal consumption rose in 2002, with the electric power sector increasing consumption by 1.2 percent, more than enough to offset the decreases in consumption experienced by most of the other sectors. Total coal stocks increased by 10.6 million short tons, or 5.8 percent. This phenomenon was a result of both the electric power sector continuing to build stockpiles that had been depleted substantially during 2000, while coal producers increased their stockpiles as a result of only a slight increase in coal demand experienced in 2002.

The sluggish economy coupled with the warm winter experienced over most of the country in 2002, helped to hold down demand for coal during the first half of the year. However, the warmer than normal summer over many parts of the nation, helped to increase coal consumption for electric power generation for the year. Preliminary data show that total electricity generation increased by 3.0 percent in 2002. However, coal-based generation only increased by 1.5 percent, as it was constrained by the increased generation by hydroelectric power which rose for the first time in five years, as well as an increase in natural gas generation for the year. Coal use in the non-electricity sector declined by 7.2 percent to a level of 88.8 million short tons.

For the first time in 20 years, the average delivered price of coal increased in all three consuming sectors for a second consecutive year. The price increase ranged from 0.3 percent in the electric utility sector to 9.2 percent in the coking coal sector and 10.0 percent in the other industrial sector.

Production

The year 2002 proved to be a very interesting one in the coal industry, with declining production of coal, while the consumption increased. The lack of demand for coal deliveries led to some large companies idling mines for periods of time that ranged from a few weeks, to several months. As a result, coal production decreased in 2002 by 3.0 percent to a level of 1,094.3 million short tons (Figure ES1 and Table ES1). In a departure from what usually occurs in a year of declining U.S. coal production, the Western Region increased somewhat, the Interior Region fell only slightly, while the Appalachian Region decreased significantly (Figure ES1). The drop of 33.4 million short tons in U.S. coal production in 2002 was primarily a consequence of lower demand by all coal consuming

sectors due to a weak (sluggish) economy and milder than normal weather for many parts of the country during most of the year.

However, there were other factors that had some affect on coal production in 2002. The coal industry was still in the midst of several legal issues that had some impact on total production. The subject of increasing the weight of coal trucks used to transport coal in West Virginia was not resolved in 2002. The suspension in May of permits by the Corps of Engineers office in Huntington, West Virginia (covering eastern Kentucky, Ohio, and southern West Virginia) due to the ruling in a circuit court, contributed to the delay in the opening of new mines in that area. Bankruptcies again entered into the coal industry picture as both several producers and consumers filed for Chapter 11 during the year. Some of the coal companies filed for bankruptcy protection while they tried to realign their finances. The year also saw several other coal mining companies exit the coal business as they sold off their mining interests to other parties.

Appalachian Region

Coal production in the Appalachian Region dropped dramatically in 2002 to a total of 396.2 million short tons, a level not seen since 1983, as some of the largest coal companies in the region idled mines over the course of the year. The decline in coal production in the Appalachian Region was a result of several factors. Among them were the continued decrease in U.S. coal exports (which are primarily produced in the East), as well as the lower demand for coal deliveries to consumers.

West Virginia, the largest coal producing State in the region and the second largest in the U.S., declined 7.6 percent to end the year with 150.1 million short tons of production. Part of the decrease in coal production in West Virginia was the result of the idling of several mines in the State for varying periods of time due to the lack of demand for coal during the year. Eastern Kentucky produced 99.4 million short tons of coal in 2002, down by 9.7 million short tons, a level not seen since 1978 when a prolonged miners strike affected production for the year. Pennsylvania produced 68.4 million short tons, a drop of 7.8 percent from 2001. Maryland was the only State in the Appalachian Region to show an increase in coal production for the year. Maryland produced 5.1 million short tons of coal in 2002, an increase of 10.8 percent. The remaining four States in the region (Alabama, Ohio, Tennessee, and Virginia) had a decrease in their production levels ranging from 2.2 percent decline in Alabama to 16.7 percent drop in Ohio.

Table ES1. U.S. Coal Supply, Disposition, and Prices, 2001-2002
(Million Short Tons and Dollars per Short Ton)

Item	2001	2002
Production by Region		
Appalachian	431.2	396.2
Interior	146.9	146.6
Western	547.9	550.4
Refuse Recovery	1.8	1.0
Total	1,127.7	1,094.3
Consumption by Sector		
Electric Power	964.4	975.9
Coke Plants	26.1	23.7
Other Industrial Plants	65.3	60.7
Residential/Commercial	4.3	4.4
Total	1,060.1	1,064.7
Year-End Coal Stocks		
Electric Power	138.5	142.0
Coke Plants	1.5	1.4
Other Industrial Plants	6.0	5.8
Producers/Distributors	35.9	43.3
Total	181.9	192.5
Average Delivered Price		
Electric Utilities	\$24.68	\$24.74
Coke Plants	\$46.42	\$50.67
Other Industrial Plants	\$32.26	\$35.49

Notes: Totals may not equal sum of components due to independent rounding. Sum of stock changes and consumption may not equal production, primarily because the supply and disposition data are obtained from different surveys.

Sources: Energy Information Administration, *Annual Coal Report 2002*, tables 1; 26; 27; and 34; DOE/EIA-0584 (2002) (Washington, DC, November 2003).

Interior Region

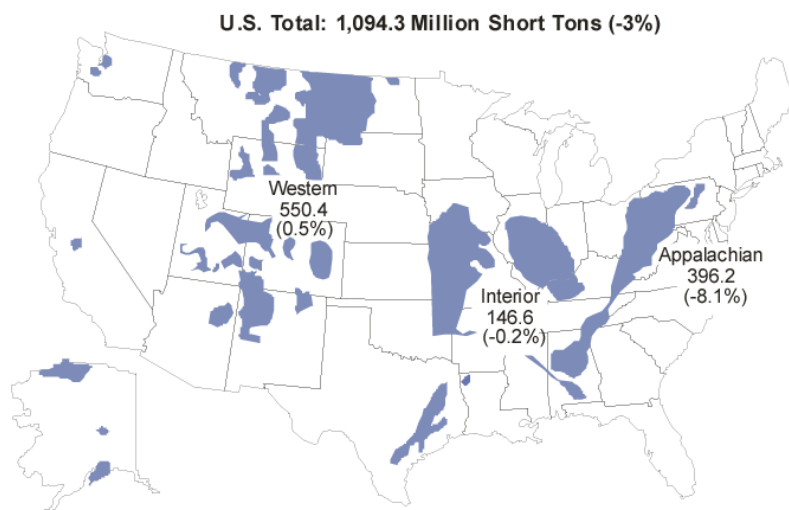
The Interior Region experienced a slight decrease in coal production in 2002, declining only 0.3 million short tons, or 0.2 percent. The primary reason coal production for the Interior Region did not fall further was that Mississippi, with its fourth year of recorded coal production ever, increased production by 1.7 million short tons, to a level of 2.3 million short tons. This additional production was a result of the increased coal needs of the Red Hills mine's only customer, a power plant, reaching full commercial operating status in 2002. Texas, the largest coal-producing State in the region showed a slight increase in coal production, ending the year at 45.2 million short tons, up 0.5 percent. This was the first increase in Texas coal production in three years. Indiana, the second largest coal producing State in the Interior Region declined in 2002 by 3.8 percent to 35.3

million short tons. Coal production in Illinois decreased slightly in 2002, down by 1.4 percent while coal production in Western Kentucky remained level. The other States in the Interior Region (Arkansas, Kansas, Louisiana, Missouri, and Oklahoma), which accounted for only 3.7 percent of the entire region's production in 2002, all fluctuated some from their 2001 coal production levels.

Western Region

Coal production in the Western Region increased slightly in 2002, rising by a total of only 2.6 million short tons, or 0.5 percent. This increase was the smallest experienced in the Western Region since 1992. Of the nine States in

Figure ES1. Coal Production by Coal-Producing Region, 2002
 (Million Short Tons and Percent Change from 2001; Regional totals do not include refuse recovery.)



Source: Energy Information Administration, *Annual Coal Report 2002*, Table 1; DOE/EIA-0584(2002) (Washington, DC, November 2003).

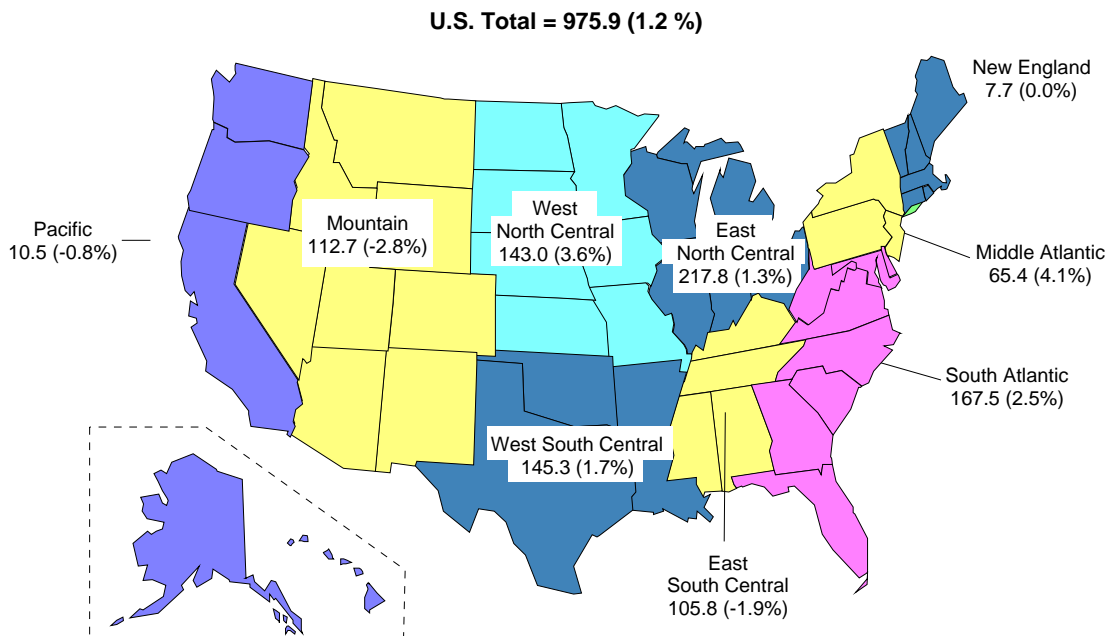
the Western Region, only four had increased coal production in 2002, Colorado, North Dakota, Washington, and Wyoming. The other five States had declines in coal production ranging from 0.4 to over 1.8 million short tons, with causes of the declines ranging from lost coal contracts to closing of some mines in the region. Wyoming continued its dominance as the biggest coal-producing State in the nation, a position it has held for 15 consecutive years. In 2002, Wyoming produced a record 373.2 million short tons of coal, an increase of 1.2 percent for the year. This level was 30.5 million short tons more than the combined total of the next three largest coal producing States (West Virginia, Kentucky, and Pennsylvania). The sheer dominance of Wyoming's coal industry in the U.S. is further illustrated by the fact that if those three (second tier) States' production is excluded, Wyoming's coal production level in 2002 was just 5.3 million short tons less than the total produced by the rest of the 22 coal-producing States. Near the end of the year, the Black Thunder mine, one of the largest mines in the country, shipped its 750th million short ton of coal. This accomplishment was achieved twenty-five years after the first coal shipment.

Colorado produced 35.1 million short tons of coal in 2002, an increase of 1.7 million short tons. The majority of the higher production level is credited to the 1.5

million short ton increase in production at the West Elk mine in Gunnison county. The mine had been bothered by high levels of methane, which impeded production, but through an extensive work program, it has been able to improve methane reduction as well as increase coal production. Coal production in Washington was up in 2002, ending the year at 5.8 million short tons, an increase of 1.2 million short tons. The increase was used to generate electricity to help replace some of the losses due to the still low hydroelectric generation totals in the State. Coal production in North Dakota rose by 1.1 percent in 2002 to end the year at 30.8 million short tons.

Montana, the second largest coal-producing State in the Western Region, had a decline in coal production in 2002 of 1.8 million short tons, to end the year at 37.4 million short tons. The decrease was partly due to a lost coal contract by one of the mining companies. Coal production in Utah fell to 25.3 million short tons, a drop of 1.7 million short tons, as a result of the closing of three mines in 2001. Alaska had a drop of 0.4 million short tons in 2002, to end the year at 1.1 million short tons, as a long-term coal contract with an overseas electricity supplier expired during the year and was not renewed. All of the remaining States in the Western Region experienced declines in their coal production levels in 2002.

Figure ES2. Electric Power Sector Consumption of Coal by Census Division, 2002
(Million Short Tons and Percent Change from 2001)



Sources: Energy Information Administration, *Annual Coal Report 2002*, Table 26, DOE/EIA-0584(2002) (Washington, DC, November 2003).

Consumption

As the economy recovered slightly in 2002, so did total coal consumption. Total coal consumption increased 4.6 million short tons to reach a level of 1064.7 million short tons, still well below the consumption level of 2000. Almost 92 percent of all coal consumed in the U.S. was in the electric power sector, the driving force for all coal consumption. With the exception of the residential and commercial sector, all of the other coal consuming sectors had declining coal consumption in 2002.

Coal consumption in the electric power sector increased by 11.4 million short tons to end 2002 at 975.9 million short tons, still below the 2000 consumption total. Five of the nine Census Divisions had an increase in coal consumption for electricity generation in 2002, the Middle Atlantic, the East North Central, the West North Central, the South Atlantic, and the West South Central. Of the five Census Divisions in which coal usually accounts for over 50 percent of total electric power generation from all energy sources, (the East North Central, The West North Central, the South Atlantic, the

East South Central and the Mountain), two of those five divisions, the West North Central, and the South Atlantic, accounted for over 79 percent of the additional increase in coal consumption for the electric power sector in 2002 (Figure ES2). Helping to drive the increase in total consumption was the hotter-than-normal summer weather experienced in July and August over many parts of the country in 2002. Overall, the U.S. experienced a 17 percent increase in cooling degree-days during the summer. The two Census Divisions that accounted for most of the increased coal consumption for electric power generation had increases of 20 percent (West North Central), and 27 percent (South Atlantic) in cooling degree-days for the year.

Overall coal consumption in the non-electric power sectors decreased in 2002 for the second consecutive year. Although the U.S. Government approved imposing duties on many types of imported steel as a move to help the struggling domestic steel companies that were still operating, coal consumption at coke plants declined in 2002 by 9.3 percent to 23.7 million short tons. The

economic recovery in 2002 did not extend very deeply into the manufacturing sector. As a result, coal consumption in the other industrial sector decreased by 6.9 percent to end the year at 60.7 million short tons. Although it is the smallest of the coal consuming sectors, the amount of coal consumed in the residential and commercial sector remained steady in 2002 at 4.4 million short tons.

Coal Prices

On an annual basis, coal prices increased to all sectors for the second consecutive year in 2002. The average

delivered price of coal to electric utilities (a subset of the electric power sector) was \$24.74 per short ton, an increase of 0.3 percent from the 2001 level of \$24.68 per short ton. Even though there was a shrinking domestic coking coal market, the average delivered price of coal to coke plants increased in 2002 by 9.2 percent to reach \$50.67 per short ton. The average price of coal delivered to the other industrial sector increased in 2002 by 10.0 percent, to \$35.49 per short ton.

Table ES2. U.S. Coal Production by Coal-Producing Region and State, 2001-2002
(Million Short Tons)

Coal-Producing Region and State	2001	2002
Appalachian Total	431.2	369.2
Alabama	19.4	18.9
Kentucky, Eastern	109.1	99.4
Maryland	4.6	5.1
Ohio	25.4	21.2
Pennsylvania Total	74.1	68.4
Anthracite	1.5	1.3
Bituminous	72.7	67.1
Tennessee	3.3	3.2
Virginia	32.8	30.0
West Virginia	162.4	150.1
Northern	38.2	34.0
Southern	124.2	116.0
Interior Total	146.9	146.6
Arkansas	*	*
Illinois	33.8	33.3
Indiana	36.7	35.3
Kansas	0.2	0.2
Kentucky, Western	24.7	24.7
Louisiana	3.7	3.8
Mississippi	0.6	2.3
Missouri	0.4	0.2
Oklahoma	1.7	1.4
Texas	45.0	45.2
Western Total	547.9	550.4
Alaska	1.5	1.1
Arizona	13.4	12.8
Colorado	33.4	35.1
Montana	39.1	37.4
New Mexico	29.6	28.9
North Dakota	30.5	30.8
Utah	27.0	25.3
Washington	4.6	5.8
Wyoming	368.7	373.2
Refuse Recovery	1.8	1.0
U.S. Total	1,127.7	1,094.3

* = Less than 50 thousand short tons.

Note: Totals may not equal the sum of the components due to independent rounding.

Sources: U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Coal Production

Table 1. Coal Production and Number of Mines by State and Mine Type, 2002-2001
(Thousand Short Tons)

Coal-Producing State and Region ¹	2002		2001		Percent Change	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Alabama	41	18,931	40	19,364	2.5	-2.2
Underground.....	9	14,916	10	15,172	-10.0	-1.7
Surface.....	32	4,015	30	4,192	6.7	-4.2
Alaska	1	1,146	1	1,514	-	-24.3
Surface.....	1	1,146	1	1,514	-	-24.3
Arizona	2	12,804	2	13,418	-	-4.6
Surface.....	2	12,804	2	13,418	-	-4.6
Arkansas	4	14	3	14	33.3	-4.0
Underground.....	1	1	1	1	-	-10.6
Surface.....	3	13	2	13	50.0	-3.5
Colorado	13	35,103	13	33,372	-	5.2
Underground.....	8	25,332	8	23,547	-	7.6
Surface.....	5	9,771	5	9,825	-	-0.6
Illinois	22	33,314	20	33,783	10.0	-1.4
Underground.....	15	26,931	13	28,112	15.4	-4.2
Surface.....	7	6,383	7	5,671	-	12.5
Indiana	34	35,337	33	36,738	3.0	-3.8
Underground.....	6	7,909	6	7,191	-	10.0
Surface.....	28	27,428	27	29,546	3.7	-7.2
Kansas	1	205	1	176	-	16.2
Surface.....	1	205	1	176	-	16.2
Kentucky	427	124,142	467	133,834	-8.6	-7.2
Underground.....	233	75,589	264	80,896	-11.7	-6.6
Surface.....	194	48,553	203	52,938	-4.4	-8.3
Eastern	399	99,398	440	109,098	-9.3	-8.9
Underground.....	219	56,413	253	61,836	-13.4	-8.8
Surface.....	180	42,984	187	47,262	-3.7	-9.1
Western	28	24,744	27	24,736	3.7	*
Underground.....	14	19,176	11	19,061	27.3	0.6
Surface.....	14	5,569	16	5,676	-12.5	-1.9
Louisiana	2	3,803	2	3,715	-	2.4
Surface.....	2	3,803	2	3,715	-	2.4
Maryland	17	5,147	15	4,644	13.3	10.8
Underground.....	3	3,328	3	3,245	-	2.6
Surface.....	14	1,820	12	1,399	16.7	30.0
Mississippi	1	2,305	1	604	-	281.8
Surface.....	1	2,305	1	604	-	281.8
Missouri	2	248	2	366	-	-32.3
Surface.....	2	248	2	366	-	-32.3
Montana	6	37,386	6	39,143	-	-4.5
Surface.....	6	37,386	6	39,143	-	-4.5
New Mexico	7	28,916	7	29,618	-	-2.4
Underground.....	1	1,753	1	680	-	157.8
Surface.....	6	27,163	6	28,937	-	-6.1
North Dakota	4	30,799	4	30,475	-	1.1
Surface.....	4	30,799	4	30,475	-	1.1
Ohio	60	21,157	60	25,400	-	-16.7
Underground.....	9	10,851	10	12,894	-10.0	-15.8
Surface.....	51	10,306	50	12,506	2.0	-17.6
Oklahoma	6	1,406	6	1,714	-	-18.0
Underground.....	1	463	1	415	-	11.8
Surface.....	5	943	5	1,300	-	-27.5
Pennsylvania	254	68,393	266	74,146	-4.5	-7.8
Underground.....	69	55,781	73	58,135	-5.5	-4.0
Surface.....	185	12,612	193	16,011	-4.1	-21.2
Anthracite	67	1,303	68	1,484	-1.5	-12.2
Underground.....	26	305	25	341	4.0	-10.5
Surface.....	41	998	43	1,143	-4.7	-12.7
Bituminous	187	67,090	198	72,662	-5.6	-7.7
Underground.....	43	55,476	48	57,793	-10.4	-4.0
Surface.....	144	11,614	150	14,868	-4.0	-21.9
Tennessee	23	3,166	23	3,324	-	-4.8
Underground.....	12	1,085	11	1,321	9.1	-17.9
Surface.....	11	2,081	12	2,003	-8.3	3.9
Texas	12	45,247	14	45,042	-14.3	0.5
Surface.....	12	45,247	14	45,042	-14.3	0.5
Utah	13	25,304	13	26,966	-	-6.2
Underground.....	12	25,036	13	26,966	-7.7	-7.2
Surface.....	1	268	-	-	-	-

See footnotes at end of table.

Table 1. Coal Production and Number of Mines by State and Mine Type, 2002-2001 (Continued)
(Thousand Short Tons)

Coal-Producing State and Region ¹	2002		2001		Percent Change	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Virginia	137	29,956	157	32,774	-12.7	-8.6
Underground.....	95	20,491	109	22,503	-12.8	-8.9
Surface.....	42	9,465	48	10,271	-12.5	-7.9
Washington	1	5,827	1	4,624	-	26.0
Surface.....	1	5,827	1	4,624	-	26.0
West Virginia	291	150,078	304	162,416	-4.3	-7.6
Underground.....	180	87,918	196	99,550	-8.2	-11.7
Surface.....	111	62,160	108	62,865	2.8	-1.1
Northern	64	34,032	62	38,170	3.2	-10.8
Underground.....	38	28,683	38	32,753	-	-12.4
Surface.....	26	5,350	24	5,418	8.3	-1.3
Southern	227	116,045	242	124,245	-6.2	-6.6
Underground.....	142	59,235	158	66,798	-10.1	-11.3
Surface.....	85	56,810	84	57,447	1.2	-1.1
Wyoming	18	373,161	17	368,749	5.9	1.2
Surface.....	18	373,161	17	368,749	5.9	1.2
Appalachian Total	1,222	396,226	1,305	431,165	-6.4	-8.1
Underground.....	596	250,783	665	274,654	-10.4	-8.7
Surface.....	626	145,443	640	156,511	-2.2	-7.1
Northern	395	128,730	403	142,360	-2.0	-9.6
Underground.....	119	98,642	124	107,025	-4.0	-7.8
Surface.....	276	30,088	279	35,335	-1.1	-14.8
Central	786	248,565	862	269,442	-8.8	-7.7
Underground.....	468	137,225	531	152,457	-11.9	-10.0
Surface.....	318	111,340	331	116,984	-3.9	-4.8
Southern	41	18,931	40	19,364	2.5	-2.2
Underground.....	9	14,916	10	15,172	-10.0	-1.7
Surface.....	32	4,015	30	4,192	6.7	-4.2
Interior Total	112	146,622	109	146,890	2.8	-0.2
Underground.....	37	54,480	32	54,780	15.6	-0.5
Surface.....	75	92,142	77	92,111	-2.6	*
Illinois Basin Total	84	93,395	80	95,258	5.0	-2.0
Underground.....	35	54,016	30	54,364	16.7	-0.6
Surface.....	49	39,380	50	40,894	-2.0	-3.7
Western Total	65	550,446	64	547,879	1.6	0.5
Underground.....	21	52,122	22	51,193	-4.5	1.8
Surface.....	44	498,324	42	496,686	4.8	0.3
Powder River Basin	18	396,663	17	392,693	5.9	1.0
Underground.....	-	-	-	-	-	-
Surface.....	18	396,663	17	392,693	5.9	1.0
Uinta Region	23	59,504	22	59,685	4.5	-0.3
Underground.....	19	50,056	19	50,244	-	-0.4
Surface.....	4	9,448	3	9,441	33.3	*
East of Miss. River	1,307	491,927	1,386	527,027	-5.7	-6.7
West of Miss. River	92	601,368	92	598,908	-	0.4
U.S. Subtotal	1,399	1,093,295	1,478	1,125,935	-5.3	-2.9
Refuse Recovery	27	988	34	1,754	-20.6	-43.7
U.S. Total	1,426	1,094,283	1,512	1,127,689	-5.7	-3.0

¹ For a definition of coal producing regions, see the Glossary.

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Totals may not equal sum of components because of independent rounding.

Source: • U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 2. Coal Production and Number of Mines by State, County, and Mine Type, 2002
(Thousand Short Tons)

Coal-Producing State and County	Underground		Surface		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Alabama	9	14,916	32	4,015	41	18,931
Bibb.....	-	-	1	11	1	11
Fayette.....	-	-	1	10	1	10
Jefferson.....	3	5,950	6	591	9	6,541
Marion.....	-	-	1	52	1	52
Shelby.....	1	30	-	-	1	30
Tuscaloosa.....	4	8,893	6	896	10	9,789
Walker.....	1	43	15	2,180	16	2,224
Winston.....	-	-	2	276	2	276
Alaska	-	-	1	1,146	1	1,146
Yukon-Koyukuk Division.....	-	-	1	1,146	1	1,146
Arizona	-	-	2	12,804	2	12,804
Navajo.....	-	-	2	12,804	2	12,804
Arkansas	1	1	3	13	4	14
Johnson.....	-	-	1	*	1	*
Sebastian.....	1	1	2	12	3	13
Colorado	8	25,332	5	9,771	13	35,103
Delta.....	1	5,396	-	-	1	5,396
Garfield.....	1	327	-	-	1	327
Gunnison.....	3	9,634	-	-	3	9,634
La Plata.....	1	312	-	-	1	312
Las Animas.....	-	-	1	204	1	204
Moffat.....	-	-	2	7,388	2	7,388
Montrose.....	-	-	1	386	1	386
Rio Blanco.....	1	2,089	-	-	1	2,089
Routt.....	1	7,573	1	1,792	2	9,366
Illinois	15	26,931	7	6,383	22	33,314
Gallatin.....	1	190	2	3,884	3	4,075
Jackson.....	-	-	1	1,296	1	1,296
Jefferson.....	1	1,670	-	-	1	1,670
Macoupin.....	2	4,872	-	-	2	4,872
Mcdonough.....	-	-	1	479	1	479
Montgomery.....	1	2,019	-	-	1	2,019
Perry.....	-	-	1	440	1	440
Randolph.....	1	2,549	-	-	1	2,549
Saline.....	4	8,633	-	-	4	8,633
Sangamon.....	1	1,759	-	-	1	1,759
Vermilion.....	2	1,900	-	-	2	1,900
Wabash.....	1	1,491	1	8	2	1,498
White.....	1	1,847	-	-	1	1,847
Williamson.....	-	-	1	276	1	276
Indiana	6	7,909	28	27,428	34	35,337
Clay.....	-	-	3	1,150	3	1,150
Daviess.....	-	-	3	3,590	3	3,590
Gibson.....	1	1,933	5	9,932	6	11,864
Greene.....	-	-	2	280	2	280
Knox.....	4	3,636	3	1,918	7	5,554
Parke.....	-	-	1	85	1	85
Pike.....	1	2,341	4	3,128	5	5,469
Spencer.....	-	-	1	412	1	412
Sullivan.....	-	-	1	1,293	1	1,293
Vigo.....	-	-	2	4,455	2	4,455
Warrick.....	-	-	3	1,184	3	1,184
Kansas	-	-	1	205	1	205
Linn.....	-	-	1	205	1	205
Kentucky	233	75,589	194	48,553	427	124,142
Bell.....	9	1,277	8	1,242	17	2,519
Breathitt.....	-	-	4	1,435	4	1,435
Christian.....	-	-	1	119	1	119
Clay.....	1	39	4	64	5	103
Daviess.....	-	-	1	247	1	247
Floyd.....	24	1,797	8	1,073	32	2,870
Harlan.....	28	8,576	13	2,208	41	10,784
Henderson.....	1	1,462	1	1,097	2	2,559
Hopkins.....	4	2,294	4	2,007	8	4,300
Jackson.....	-	-	3	23	3	23
Johnson.....	3	467	2	46	5	513
Knott.....	23	5,544	21	5,241	44	10,784
Knox.....	10	273	5	144	15	417

See footnotes at end of table.

Table 2. Coal Production and Number of Mines by State, County, and Mine Type, 2002 (Continued)
(Thousand Short Tons)

Coal-Producing State and County	Underground		Surface		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Kentucky (continued)						
Laurel.....	-	-	1	34	1	34
Lawrence.....	1	580	5	921	6	1,501
Lee	-	-	1	49	1	49
Leslie.....	7	4,192	8	1,907	15	6,099
Letcher.....	22	5,716	15	3,234	37	8,951
Magoffin.....	-	-	1	20	1	20
Martin.....	11	4,550	8	4,957	19	9,508
Mclean.....	-	-	1	277	1	277
Morgan.....	-	-	1	11	1	11
Muhlenberg.....	2	3,257	5	1,807	7	5,064
Ohio.....	1	345	1	15	2	360
Owsley.....	-	-	3	48	3	48
Perry.....	9	4,762	21	8,760	30	13,522
Pike.....	69	18,501	44	11,500	113	30,001
Union.....	3	3,819	-	-	3	3,819
Webster.....	3	7,999	-	-	3	7,999
Whitley.....	2	137	4	67	6	204
Louisiana	-	-	2	3,803	2	3,803
De Soto.....	-	-	1	3,193	1	3,193
Red River.....	-	-	1	609	1	609
Maryland	3	3,328	14	1,820	17	5,147
Allegany.....	1	7	11	1,619	12	1,626
Garrett.....	2	3,321	3	200	5	3,521
Mississippi	-	-	1	2,305	1	2,305
Choctaw.....	-	-	1	2,305	1	2,305
Missouri	-	-	2	248	2	248
Bates.....	-	-	2	248	2	248
Montana	-	-	6	37,386	6	37,386
Big Horn.....	-	-	3	24,237	3	24,237
Richland.....	-	-	1	328	1	328
Rosebud.....	-	-	2	12,820	2	12,820
New Mexico	1	1,753	6	27,163	7	28,916
Colfax.....	-	-	1	660	1	660
Mckinley.....	-	-	2	12,677	2	12,677
San Juan.....	1	1,753	3	13,826	4	15,579
North Dakota	-	-	4	30,799	4	30,799
Mclean.....	-	-	1	7,622	1	7,622
Mercer.....	-	-	2	18,654	2	18,654
Oliver.....	-	-	1	4,523	1	4,523
Ohio	9	10,851	51	10,306	60	21,157
Athens.....	1	1,158	-	-	1	1,158
Belmont.....	1	3,871	8	1,999	9	5,871
Carroll.....	1	36	3	110	4	146
Columbiana.....	1	356	5	150	6	506
Coshocton.....	-	-	1	252	1	252
Gallia.....	-	-	1	271	1	271
Guernsey.....	-	-	2	59	2	59
Harrison.....	1	1,351	6	1,533	7	2,884
Holmes.....	-	-	1	10	1	10
Jackson.....	-	-	2	844	2	844
Jefferson.....	2	310	5	548	7	858
Mahoning.....	-	-	1	7	1	7
Meigs.....	1	417	-	-	1	417
Monroe.....	1	3,352	-	-	1	3,352
Muskingum.....	-	-	1	478	1	478
Noble.....	-	-	1	453	1	453
Perry.....	-	-	1	825	1	825
Stark.....	-	-	3	673	3	673
Tuscarawas.....	-	-	8	853	8	853
Vinton.....	-	-	2	1,241	2	1,241
Oklahoma	1	463	5	943	6	1,406
Craig.....	-	-	1	184	1	184
Haskell.....	-	-	1	406	1	406
Le Flore.....	1	463	1	280	2	743
Okmulgee.....	-	-	1	3	1	3
Rogers.....	-	-	1	70	1	70
Pennsylvania	69	55,781	185	12,612	254	68,393
Allegheny.....	1	*	-	-	1	*
Armstrong.....	12	3,563	11	793	23	4,357
Beaver.....	1	270	-	-	1	270

See footnotes at end of table.

Table 2. Coal Production and Number of Mines by State, County, and Mine Type, 2002 (Continued)
(Thousand Short Tons)

Coal-Producing State and County	Underground		Surface		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Pennsylvania (continued)						
Bedford	-	-	1	13	1	13
Butler	-	-	3	330	3	330
Cambria.....	1	248	8	680	9	927
Centre.....	-	-	1	24	1	24
Clarion	-	-	6	458	6	458
Clearfield.....	1	42	32	2,912	33	2,954
Columbia.....	1	*	4	84	5	84
Dauphin.....	1	*	-	-	1	*
Elk	-	-	3	353	3	353
Fayette.....	-	-	10	350	10	350
Greene.....	8	41,046	5	413	13	41,460
Indiana.....	9	2,255	15	637	24	2,892
Jefferson.....	1	119	13	737	14	856
Lackawanna.....	-	-	2	16	2	16
Lawrence.....	-	-	2	60	2	60
Luzerne.....	-	-	7	387	7	387
Lycoming.....	-	-	1	224	1	224
Northumberland.....	7	193	1	9	8	201
Schuylkill.....	17	112	26	503	43	615
Somerset.....	7	1,458	18	2,837	25	4,295
Sullivan.....	-	-	1	1	1	1
Venango.....	-	-	2	49	2	49
Washington.....	2	6,475	5	552	7	7,027
Westmoreland.....	-	-	8	192	8	192
Tennessee	12	1,085	11	2,081	23	3,166
Anderson.....	1	17	2	42	3	58
Campbell.....	5	452	3	562	8	1,014
Claiborne.....	5	464	4	1,170	9	1,634
Cumberland.....	-	-	1	292	1	292
Fentress.....	-	-	1	15	1	15
Scott.....	1	153	-	-	1	153
Texas	-	-	12	45,247	12	45,247
Atascosa.....	-	-	1	3,293	1	3,293
Freestone.....	-	-	1	4,278	1	4,278
Harrison.....	-	-	1	4,028	1	4,028
Hopkins.....	-	-	1	2,354	1	2,354
Leon.....	-	-	1	6,730	1	6,730
Milam.....	-	-	1	5,574	1	5,574
Panola.....	-	-	1	7,247	1	7,247
Robertson.....	-	-	1	1,929	1	1,929
Rusk.....	-	-	1	4,460	1	4,460
Titus.....	-	-	2	5,331	2	5,331
Webb.....	-	-	1	22	1	22
Utah	12	25,036	1	268	13	25,304
Carbon.....	6	9,195	1	268	7	9,463
Emery.....	4	7,288	-	-	4	7,288
Sevier.....	2	8,552	-	-	2	8,552
Virginia	95	20,491	42	9,465	137	29,956
Buchanan.....	31	8,186	14	1,862	45	10,048
Dickenson.....	16	2,452	4	328	20	2,779
Lee.....	2	77	1	180	3	257
Russell.....	3	166	3	390	6	557
Tazewell.....	7	1,184	1	252	8	1,435
Wise.....	36	8,426	19	6,453	55	14,879
Washington	-	-	1	5,827	1	5,827
Lewis.....	-	-	1	5,827	1	5,827
West Virginia	180	87,918	111	62,160	291	150,078
Barbour.....	6	815	3	101	9	916
Boone.....	23	16,220	17	15,713	40	31,932
Brooke.....	1	1,270	-	-	1	1,270
Clay.....	1	1	2	4,214	3	4,215
Fayette.....	3	1,041	10	3,439	13	4,479
Grant.....	2	203	1	1,234	3	1,437
Greenbrier.....	3	633	1	124	4	757
Harrison.....	5	5,767	4	238	9	6,006
Kanawha.....	7	8,333	8	6,732	15	15,065
Lincoln.....	3	327	-	-	3	327
Logan.....	8	3,437	11	6,928	19	10,365
Marion.....	1	2	3	86	4	88
Marshall.....	1	4,797	-	-	1	4,797

See footnotes at end of table.

Table 2. Coal Production and Number of Mines by State, County, and Mine Type, 2002 (Continued)
(Thousand Short Tons)

Coal-Producing State and County	Underground		Surface		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
West Virginia (continued)						
Mcdowell	43	2,630	8	2,066	51	4,696
Mercer	-	-	1	6	1	6
Mineral	-	-	2	69	2	69
Mingo	19	9,625	11	9,927	30	19,552
Monongalia	5	6,195	5	340	10	6,535
Nicholas	5	639	4	4,330	9	4,969
Ohio	1	3,359	-	-	1	3,359
Preston	1	2,422	4	42	5	2,464
Raleigh	10	7,395	4	581	14	7,977
Tucker	-	-	1	131	1	131
Upshur	7	1,242	2	58	9	1,300
Wayne	4	3,748	1	377	5	4,124
Webster	8	2,610	1	3,051	9	5,661
Wyoming	13	5,207	7	2,375	20	7,582
Wyoming	-	-	18	373,161	18	373,161
Campbell	-	-	12	332,796	12	332,796
Carbon	-	-	2	715	2	715
Converse	-	-	1	26,809	1	26,809
Lincoln	-	-	1	4,242	1	4,242
Sweetwater	-	-	2	8,599	2	8,599
U.S. Subtotal	654	357,385	745	735,910	1,399	1,093,295
Refuse Recovery	-	-	-	-	27	988
U.S. Total	654	357,385	745	735,910	1,426	1,094,283

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Coal production is attributed to the county in which the mine originally opened, unless the mine crosses State boundaries.

Source: • U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 3. Underground Coal Production by State and Mining Method, 2002
(Thousand Short Tons)

Coal-Producing State and Region ¹	Continuous ²	Conventional ³	Longwall ⁴	Other ⁵	Total
Alabama.....	120	-	14,796	-	14,916
Arkansas.....	-	-	-	1	1
Colorado.....	1,235	-	24,097	-	25,332
Illinois.....	15,689	-	11,242	-	26,931
Indiana.....	7,909	-	-	-	7,909
Kentucky Total.....	62,645	4,669	8,199	75	75,589
Eastern.....	48,700	4,669	2,969	75	56,413
Western.....	13,946	-	5,230	-	19,176
Maryland.....	373	-	2,948	7	3,328
New Mexico.....	-	-	1,753	-	1,753
Ohio.....	2,053	1,158	7,640	-	10,851
Oklahoma.....	463	-	-	-	463
Pennsylvania Total.....	8,322	50	47,352	57	55,781
Anthracite.....	198	50	-	57	305
Bituminous.....	8,124	-	47,352	*	55,476
Tennessee.....	1,075	-	-	10	1,085
Utah.....	1,787	-	23,246	4	25,036
Virginia.....	14,222	-	6,238	32	20,491
West Virginia Total.....	47,450	147	40,254	67	87,918
Northern.....	9,200	54	19,417	12	28,683
Southern.....	38,251	93	20,837	55	59,235
Appalachian Total.....	122,314	6,024	122,197	248	250,783
Northern.....	19,947	1,262	77,357	76	98,642
Central.....	102,247	4,762	30,044	172	137,225
Southern.....	120	-	14,796	-	14,916
Interior Total.....	38,007	-	16,473	1	54,480
Illinois Basin.....	37,543	-	16,473	-	54,016
Western Total.....	3,022	-	49,096	4	52,122
Powder River Basin.....	-	-	-	-	-
Uinta Region.....	2,710	-	47,343	4	50,056
East of Miss. River.....	159,857	6,024	138,670	248	304,799
West of Miss. River.....	3,486	-	49,096	4	52,586
U.S. Total.....	163,343	6,024	187,766	252	357,385

¹ For a definition of coal producing regions, see the Glossary.

² Mines that produce greater than 50 percent of their coal by continuous mining methods.

³ Mines that produce greater than 50 percent of their coal by conventional mining methods.

⁴ Mines that have any production from the longwall mining method. A typical longwall mining operation uses 80 percent longwall mining and 20 percent continuous mining.

⁵ Mines that produce coal using shortwall, scoop loading, hand loading, or other mining methods or a 50/50 percent continuous conventional split in mining method, or mines that produce less than 10,000 short tons, which are not required to provide data.

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 4. Coal Production by Coalbed Thickness and Mine Type, 2002
(Thousand Short Tons)

Coalbed Thickness (inches)	Underground	Surface	Total
< 7	-	148	148
7-12	-	2,783	2,783
13-18	-	7,036	7,036
19-24	184	14,461	14,646
25-30	2,992	21,278	24,270
31-36	18,181	25,133	43,315
37-42	18,671	26,240	44,911
43-48	40,290	26,433	66,723
49-54	29,638	17,979	47,617
55-60	39,366	27,172	66,538
61-66	17,652	16,643	34,294
67-72	56,295	11,097	67,392
73-78	33,264	12,137	45,401
79-84	26,088	9,056	35,144
85-90	16,306	4,749	21,055
91-96	11,539	6,183	17,722
97-102	7,455	7,036	14,491
103-108	8,648	17,890	26,538
109-114	5,795	11,368	17,163
115-120	811	1,664	2,475
> 120	23,959	468,822	492,781
Unknown¹	252	603	1,843
U.S. Total	357,385	735,910	1,094,283

¹ Includes mines with production of less than 10,000 short tons, which are not required to provide data, and refuse recovery.

Note: • Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 5. Coal Production and Coalbed Thickness by Major Coalbeds and Mine Type, 2002

Coalbed ID Number ¹ Coalbed Name	Production (thousand short tons)			Thickness (inches)		
	Underground	Surface	Total	Average ²	Low	High
1699 Wyodak.....	-	321,748	321,748	760	56	1,000
0036 Pittsburgh.....	75,976	2,976	78,951	72	24	159
0489 No. 9.....	30,574	10,658	41,232	63	42	86
0111 Hazard No. 5-A.....	8,806	23,655	32,462	70	11	138
1569 Beulah-Zap.....	-	28,692	28,692	184	144	210
1697 Canyon.....	-	25,260	25,260	625	331	840
0151 Upper Elkhorn No. 3.....	17,130	4,391	21,521	53	14	99
0484 Herrin (Illinois No. 6).....	16,655	4,587	21,242	73	34	96
0103 Stockton-Lewiston.....	5,088	15,985	21,073	75	12	240
0135 Hazard No. 4.....	11,764	6,785	18,549	47	20	90
0084 Lower Kittanning.....	6,876	10,049	16,925	53	12	86
1808 Rosebud.....	-	15,779	15,779	267	216	288
1696 Anderson-Dietz 1-Dietz 2.....	-	15,344	15,344	809	600	960
0168 Pond Creek.....	11,365	2,030	13,395	59	14	96
0176 Eagle.....	12,031	1,050	13,081	53	9	67
1787 Roland.....	-	12,698	12,698	540	518	660
0142 Williamson (Amburgy).....	8,946	2,609	11,555	44	18	72
1753 Somerset B.....	11,127	-	11,127	161	90	264
1488 Fruitland No. 8.....	1,753	8,767	10,521	241	162	360
0344 Pocahontas No. 3.....	10,375	-	10,375	64	39	75
1750 Wadge.....	7,573	1,739	9,312	116	108	150
0483 Hymera (Indiana No. VI).....	-	9,051	9,051	41	15	70
0071 Upper Freeport.....	5,618	3,127	8,745	57	13	84
0076 Upper Kittanning.....	3,387	5,076	8,462	53	12	81
0170 Powellton.....	7,643	635	8,278	52	22	66
Major Coalbeds Total.....	252,686	532,690	785,376	402	9	1,000
Other Coalbeds.....	104,447	202,617	307,064	89	5	830
Unknown³.....	252	603	1,843	NA	NA	NA
U.S. Total.....	357,385	735,910	1,094,283	313	5	1,000

¹ The coalbed ID number is a unique code assigned by EIA to each correlated coalbed or to coal-bearing geologic formations, coal groups, or coal zones. See Coalbed name discussion in note below.

² Average thickness is the bed thickness weighted by bed production.

³ Includes mines with production of less than 10,000 short tons, which are not required to provide data, and refuse recovery.

NA = This estimated value is not available due to insufficient data or inadequate data/model performance.

Notes: • Major coalbeds for this table are the top 25 producing coalbeds. The category "Other Coalbeds" includes all coalbeds from which less than 8.3 million short tons were produced during the year. In some regions, coalbeds are characteristically discontinuous or uncorrelatable from one location to another, and production is identified by the geological formations, coal groups, or coal zones of the native rock where the coalbeds occur. These types of coalbeds are found primarily in the Rocky Mountain States and even in the Gulf Coast lignite belt. Coalbeds of these types are also included in "Other Coalbeds," even though production may exceed 8.3 million short tons. Totals may not equal sum of components due to independent rounding. • The coalbed name given is the name most commonly used in the State having the greatest production from that coalbed. The States having greatest production for each coalbed are Eastern Kentucky (coalbeds 0111, 0135, 0142, 0151, 0168, and 0176); West Virginia (0036, 0076, 0084, 0103, 0170, and 0344); Pennsylvania (0071); Western Kentucky (0489); Illinois (0484); Indiana (0483); Colorado (1750, and 1753); New Mexico (1488); North Dakota (1569); Montana (1696, and 1808); and Wyoming (1697, 1699, and 1787). In some other States where these are major producing beds, the following alternative coalbed names are also used: 0084, No 5 Block (Eastern Kentucky); 0111, Coalburg (West Virginia); 0135, Chilton (West Virginia); 0151, Jellico (Tennessee); Taggart (Virginia); Cedar Grove (West Virginia); 0168, No 2 Gas (West Virginia); 0176, Middle Eagle (West Virginia); 0484, No 11 (Western Kentucky); 0489, No 5 (Illinois and Indiana).

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 6. Coal Production and Number of Mines by State and Coal Rank, 2002
(Thousand Short Tons)

Coal-Producing State and Region ¹	Bituminous		Subbituminous		Lignite		Anthracite		Total	
	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production	Number of Mines	Production
Alabama.....	39	18,920	-	-	-	-	-	-	39	18,920
Alaska.....	-	-	1	1,146	-	-	-	-	1	1,146
Arizona.....	2	12,804	-	-	-	-	-	-	2	12,804
Arkansas.....	1	12	-	-	-	-	-	-	1	12
Colorado.....	11	27,715	2	7,388	-	-	-	-	13	35,103
Illinois.....	21	33,307	-	-	-	-	-	-	21	33,307
Indiana.....	32	35,321	-	-	-	-	-	-	32	35,321
Kansas.....	1	205	-	-	-	-	-	-	1	205
Kentucky Total.....	365	123,883	-	-	-	-	-	-	365	123,883
Eastern.....	337	99,139	-	-	-	-	-	-	337	99,139
Western.....	28	24,744	-	-	-	-	-	-	28	24,744
Louisiana.....	-	-	-	-	2	3,803	-	-	2	3,803
Maryland.....	14	5,122	-	-	-	-	-	-	14	5,122
Mississippi.....	-	-	-	-	1	2,305	-	-	1	2,305
Missouri.....	2	248	-	-	-	-	-	-	2	248
Montana.....	-	-	5	37,058	1	328	-	-	6	37,386
New Mexico ²	5	14,428	2	14,488	-	-	-	-	7	28,916
North Dakota.....	-	-	-	-	4	30,799	-	-	4	30,799
Ohio.....	51	21,109	-	-	-	-	-	-	51	21,109
Oklahoma.....	5	1,403	-	-	-	-	-	-	5	1,403
Pennsylvania Total.....	145	66,921	-	-	-	-	29	1,189	174	68,110
Anthracite.....	-	-	-	-	-	-	29	1,189	29	1,189
Bituminous.....	145	66,921	-	-	-	-	-	-	145	66,921
Tennessee.....	20	3,151	-	-	-	-	-	-	20	3,151
Texas.....	1	22	-	-	11	45,225	-	-	12	45,247
Utah.....	12	25,300	-	-	-	-	-	-	12	25,300
Virginia.....	128	29,909	-	-	-	-	-	-	128	29,909
Washington.....	-	-	1	5,827	-	-	-	-	1	5,827
West Virginia Total.....	264	149,943	-	-	-	-	-	-	264	149,943
Northern.....	56	33,998	-	-	-	-	-	-	56	33,998
Southern.....	208	115,945	-	-	-	-	-	-	208	115,945
Wyoming.....	2	715	16	372,447	-	-	-	-	18	373,161
Appalachian Total.....	998	394,214	-	-	-	-	29	1,189	1,027	395,403
Northern.....	266	127,150	-	-	-	-	29	1,189	295	128,339
Central.....	693	248,144	-	-	-	-	-	-	693	248,144
Southern.....	39	18,920	-	-	-	-	-	-	39	18,920
Interior Total.....	91	95,261	-	-	14	51,332	-	-	105	146,594
Illinois Basin.....	81	93,372	-	-	-	-	-	-	81	93,372
Western Total.....	32	80,962	27	438,353	5	31,127	-	-	64	550,443
Powder River Basin.....	-	-	18	396,663	-	-	-	-	18	396,663
Uinta Region.....	20	52,112	2	7,388	-	-	-	-	22	59,500
East of Miss. River.....	1,079	487,586	-	-	1	2,305	29	1,189	1,109	491,081
West of Miss. River.....	42	82,852	27	438,353	18	80,154	-	-	87	601,359
U.S. Subtotal.....	1,121	570,438	27	438,353	19	82,459	29	1,189	1,196	1,092,440
Unknown³.....	-	-	-	-	-	-	-	-	213	890
Refuse Recovery⁴.....	14	896	-	-	-	-	3	58	17	953
U.S. Total.....	1,135	571,334	27	438,353	19	82,459	32	1,247	1,426	1,094,283

¹ For a definition of coal producing regions, see Glossary.

² One Mine in New Mexico periodically produces both bituminous and subbituminous coal. When this occurs, it is double counted as a subbituminous and bituminous mine, but is not double counted in the total.

³ Includes all mines and refuse recovery operations producing less than 10,000 short tons.

⁴ Excludes refuse recovery operations producing less than 10,000 short tons.

Note: • Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 7. Coal Production by State, Mine Type, and Union Status, 2002
(Thousand Short Tons)

Coal-Producing State and Region ¹	Union		Nonunion		Total	
	Underground	Surface	Underground	Surface	Underground	Surface
Alabama.....	14,796	-	120	4,004	14,916	4,004
Alaska.....	-	-	-	1,146	-	1,146
Arizona.....	-	12,804	-	-	-	12,804
Arkansas.....	-	-	-	12	-	12
Colorado.....	2,089	4,218	23,243	5,553	25,332	9,771
Illinois.....	12,853	2,227	14,079	4,148	26,931	6,376
Indiana.....	-	3,806	7,909	23,606	7,909	27,412
Kansas.....	-	-	-	205	-	205
Kentucky Total.....	7,368	3,419	68,145	44,950	75,514	48,369
Eastern.....	147	2,623	56,191	40,177	56,338	42,800
Western.....	7,222	796	11,954	4,773	19,176	5,569
Louisiana.....	-	-	-	3,803	-	3,803
Maryland.....	-	-	3,321	1,801	3,321	1,801
Mississippi.....	-	-	-	2,305	-	2,305
Missouri.....	-	-	-	248	-	248
Montana.....	-	28,460	-	8,925	-	37,386
New Mexico.....	1,753	20,774	-	6,389	1,753	27,163
North Dakota.....	-	7,524	-	23,275	-	30,799
Ohio.....	4,288	258	6,563	10,000	10,851	10,258
Oklahoma.....	-	-	463	940	463	940
Pennsylvania Total.....	28,147	635	27,577	11,751	55,724	12,386
Anthracite.....	-	333	248	608	248	941
Bituminous.....	28,147	302	27,329	11,143	55,476	11,445
Tennessee.....	188	-	887	2,076	1,075	2,076
Texas.....	-	29,244	-	16,002	-	45,247
Utah.....	4,963	-	20,070	268	25,033	268
Virginia.....	4,304	521	16,155	8,929	20,459	9,450
Washington.....	-	5,827	-	-	-	5,827
West Virginia Total.....	38,108	13,344	49,743	48,749	87,851	62,092
Northern.....	19,966	-	8,704	5,328	28,670	5,328
Southern.....	18,142	13,344	41,039	43,421	59,181	56,764
Wyoming.....	-	10,024	-	363,137	-	373,161
Appalachian Total.....	89,979	17,381	160,556	127,487	250,535	144,868
Northern.....	52,401	893	46,165	28,880	98,566	29,773
Central.....	22,781	16,488	114,272	94,603	137,053	111,091
Southern.....	14,796	-	120	4,004	14,916	4,004
Interior Total.....	20,074	36,073	34,405	56,042	54,479	92,115
Illinois Basin.....	20,074	6,829	33,942	32,527	54,016	39,356
Western Total.....	8,805	89,633	43,313	408,692	52,118	498,324
Powder River Basin.....	-	28,132	-	368,530	-	396,663
Uinta Region.....	7,051	3,832	43,001	5,616	50,052	9,448
East of Miss. River.....	110,053	24,210	194,498	162,320	304,551	186,529
West of Miss. River.....	8,805	118,877	43,777	429,901	52,582	548,778
Unknown².....	-	-	-	-	252	603
U.S. Total.....	118,858	143,087	238,275	592,220	357,385	735,910

¹ For a definition of coal producing regions, see Glossary.

² Includes mines with production of less than 10,000 short tons, which are not required to provide data.

Note: • Totals may not equal sum of components because of independent rounding. Excludes refuse recovery operations.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 8. Coal Disposition by State, 2002
(Thousand Short Tons)

Coal-Producing State	Open Market Sales ¹	Captive Sales/Transactions ²	Total
Alabama.....	18,221	703	18,924
Alaska.....	W	-	W
Arizona.....	W	-	W
Arkansas.....	W	-	W
Colorado.....	32,554	2,486	35,041
Illinois.....	32,989	44	33,034
Indiana.....	34,572	807	35,380
Kansas.....	W	-	W
Kentucky Total.....	120,923	2,911	123,834
Eastern.....	98,297	863	99,160
Western.....	22,626	2,048	24,674
Louisiana.....	W	W	W
Maryland.....	4,586	374	4,960
Mississippi.....	W	-	W
Missouri.....	W	-	W
Montana.....	36,555	696	37,250
New Mexico.....	27,977	-	27,977
North Dakota.....	31,003	-	31,003
Ohio.....	18,482	2,411	20,894
Oklahoma.....	1,393	-	1,393
Pennsylvania Total.....	66,932	1,199	68,131
Anthracite.....	1,227	-	1,227
Bituminous.....	65,705	1,199	66,904
Tennessee.....	3,237	-	3,237
Texas.....	9,119	36,543	45,662
Utah.....	19,234	5,157	24,391
Virginia.....	28,399	1,238	29,637
Washington.....	-	W	W
West Virginia Total.....	142,788	5,912	148,701
Northern.....	32,031	2,054	34,084
Southern.....	110,758	3,859	114,616
Wyoming.....	354,539	18,495	373,034
U.S. Total³.....	1,003,161	86,401	1,089,562

¹ Open market sales include all coal sold on the open market to other coal companies or consumers.

² Captive sales transactions include all coal used by the producing company or sold to affiliated or parent companies.

³ Excludes mines producing less than 10,000 short tons, which are not required to provide data, and refuse recovery.

W = Withheld to avoid disclosure of individual company data.

Note: • Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report."

Table 9. Major U.S. Coal Mines, 2002

Rank	Mine Names/Company	Mine Type	State	Production (short tons)
1	North Antelope Rochelle Comple/Powder River Coal Company	Surface	Wyoming	74,792,642
2	Black Thunder/Thunder Basin Coal Company, LLC	Surface	Wyoming	65,125,564
3	Cordero Mine/Cordero Mining Co.	Surface	Wyoming	38,277,100
4	Jacobs Ranch Mine/Jacobs Ranch Coal Company	Surface	Wyoming	31,728,341
5	Antelope Coal Mine/Antelope Coal Company	Surface	Wyoming	26,808,505
6	Caballo Mine/Caballo Coal Company	Surface	Wyoming	25,967,932
7	Eagle Butte Mine/Rag Coal West, Inc.	Surface	Wyoming	24,901,828
8	North Rochelle/Triton Coal Company LLC	Surface	Wyoming	23,883,760
9	Buckskin Mine/Triton Coal Company	Surface	Wyoming	18,334,186
10	Belle Ayr Mine/Rag Coal West Incorp	Surface	Wyoming	17,431,329
11	Freedom Mine/The Coteau Properties Company	Surface	North Dakota	15,653,071
12	Decker Mine/Decker Coal Co.	Surface	Montana	10,028,398
13	Rosebud #6 Mine&Crusher & Conv/Western Energy Company	Surface	Montana	10,015,036
14	Bailey Mine/Consol Pennsylvania Coal Company	Underground	Pennsylvania	9,660,905
15	Enlow Fork Mine/Consol Pennsylvania Coal Company	Underground	Pennsylvania	9,569,787
16	Spring Creek Coal Company/Spring Creek Coal Company	Surface	Montana	8,925,368
17	Kayenta/Peabody Western Coal Company	Surface	Arizona	8,233,863
18	Navajo Mine/Bhp Navajo Coal Company	Surface	New Mexico	8,099,216
19	Falkirk Mine/The Falkirk Mining Company	Surface	North Dakota	7,621,709
20	Sufco/Canyon Fuel Company LLC	Underground	Utah	7,600,348
21	Foidel Creek Mine/Twenty mile Coal Company	Underground	Colorado	7,573,438
22	Beckville Strip/Txu Mining Company LP	Surface	Texas	7,246,826
23	Jewett Mine/Northwestern Resources Company	Surface	Texas	6,730,459
24	Cumberland Mine/Rag Cumberland Resources LP	Underground	Pennsylvania	6,636,700
25	Emerald Mine #1/Rag Emerald Resources LP	Underground	Pennsylvania	6,564,616
26	West Elk Mine/Mountain Coal Company LLC	Underground	Colorado	6,556,211
27	Lee Ranch Coal Co./Lee Ranch Coal Company	Surface	New Mexico	6,388,727
28	Galatia Mine/The American Coal Company	Underground	Illinois	6,303,728
29	Mckinley/Pittsburg & Midway Coal Mining	Surface	New Mexico	6,288,202
30	Centralia Coal Mine/Trans Alta Centralia Mining LLC	Surface	Washington	5,827,162
31	Jim Bridger Mine/Bridger Coal Company	Surface	Wyoming	5,782,014
32	Sandow Mine/Alcoa Inc	Surface	Texas	5,573,795
33	Bowie Mine #2/Bowie Resources Ltd	Underground	Colorado	5,396,329
34	Colowyo Mine/Colowyo Coal Company LP	Surface	Colorado	5,348,392
35	Absaloka Mine/Washington Group International	Surface	Montana	5,283,532
36	Hobet 21 Surface Mine/Hobet Mining, Inc.	Surface	West Virginia	5,031,770
37	Robinson Run No. 95/Consolidation Coal Company	Underground	West Virginia	4,995,507
38	Federal No 2/Eastern Associated Coal Corp	Underground	West Virginia	4,994,916
39	Samples Mine/Catenary Coal Company	Surface	West Virginia	4,986,374
40	Dry Fork Mine/Dry Fork Coal Company	Surface	Wyoming	4,889,214
41	Blacksville No 2/Consolidation Coal Company	Underground	Pennsylvania	4,816,887
42	Mcelroy Mine/Mc Elroy Coal Company	Underground	West Virginia	4,797,128
43	Black Mesa/Peabody Western Coal Company	Surface	Arizona	4,570,194
44	Center Mine/Bni Coal, Ltd.	Surface	North Dakota	4,522,831
45	Dotiki Mine/Webster County Coal LLC	Underground	Kentucky	4,498,859
46	Oak Hill Strip/Txu Mining Company LP	Surface	Texas	4,459,964
47	Bjg Brown Strip/Txu Mining Company LP	Surface	Texas	4,278,122
48	No 1 Surface/Alex Energy, Inc.	Surface	West Virginia	4,274,099
49	Kemmerer Mine/Pittsburg & Midway Coal Mining	Surface	Wyoming	4,242,456
50	Surface Mine No. 2/Fola Coal Company, LLC	Surface	West Virginia	4,182,510
51	Farmersburg Mine/Black Beauty Coal Company	Surface	Indiana	4,077,765
52	Buchanan Mine #1/Consolidation Coal Company	Underground	Virginia	4,062,806
53	South Hallsville No 1 Mine/The Sabine Mining Company	Surface	Texas	4,028,315
54	La Plata Mine/San Juan Coal Company	Surface	New Mexico	4,023,725
	Subtotal			621,892,461
	All Other Mines			472,390,600
	U.S. Total			1,094,283,061

Note: • Major mines are mines that produced more than 4 million short tons in 2002. The company is the firm operating the mine.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and/or U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 10. Major U.S. Coal Producers, 2002

Rank	Company Name	Production (thousand short tons)	Percent of Total Production
1	Peabody Coal Sales Co.	149,602	13.7
2	Kennecott Energy & Coal Co.	111,088	10.2
3	Arch Coal, Inc.	110,759	10.1
4	RAG American Coal Holding, Inc.	70,234	6.4
5	Consol Energy Inc	61,534	5.6
6	A.T. Massey Coal Co., Inc.	43,498	4.0
7	Vulcan Partners, L.P.	42,218	3.9
8	Horizon Natural Resources Inc.	39,509	3.6
9	North American Coal Corp.	29,537	2.7
10	TXU Corporation	23,670	2.2
11	Westmoreland Mining LLC	20,075	1.8
12	Robert Murray	19,839	1.8
13	Black Beauty Coal Co.	18,891	1.7
14	Alliance Coal, LLC	18,304	1.7
15	BHP Minerals Group	15,106	1.4
16	Pittsburg & Midway Coal Mining Company	14,471	1.3
17	Alpha Natural Resources, LLC	12,284	1.1
18	James River Coal Co.	11,138	1.0
19	Peter Kiewit/Kennecott	10,028	0.9
20	PacifiCorp	9,766	0.9
21	Andalex Resources, Inc.	6,803	0.6
22	Transalta Centralia Mining LLC	5,827	0.5
23	Cumberland Resources Corp.	5,665	0.5
24	Alcoa, Inc.	5,574	0.5
25	U.S. Steel Mining Co., LLC	5,469	*
26	Walter Industries, Inc.	5,463	*
27	Westmoreland Coal Company	5,284	*
28	Western Fuels/Phillips Coal	5,256	*
29	Lodestar Energy, Inc.	5,252	*
	Subtotal	882,147	80.6
	All Other Coal Producers	212,136	19.4
	U.S. Total	1,094,283	100.0

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Major coal producers are companies that produced more than 5 million short tons in 2002. A controlling company of a mine is defined as the company "controlling the coal, particularly the sale of the coal." Most often, but not always, this is the owner of the mine.

Source: • COALdat, a product of RDI/Platts and U.S. Department of Labor, Mine Safety and Health Administration Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Productive Capacity

Table 11. Productive Capacity of Coal Mines by State, 2002, 2001
(Thousand Short Tons)

Coal-Producing State	2002			2001			Percent Change		
	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total
Alabama.....	18,728	5,204	23,932	18,072	5,085	23,158	3.6	2.3	3.3
Alaska.....	-	W	W	-	W	W	-	W	W
Arizona.....	-	W	W	-	W	W	-	W	W
Arkansas.....	-	W	W	-	-	-	-	W	W
Colorado.....	33,786	10,104	43,891	30,839	10,358	41,197	9.6	-2.4	6.5
Illinois.....	40,286	6,996	47,283	34,130	6,306	40,436	18.0	11.0	16.9
Indiana.....	9,417	33,512	42,929	9,079	33,459	42,538	3.7	0.2	0.9
Kansas.....	-	W	W	-	W	W	-	W	W
Kentucky Total.....	104,845	70,014	174,859	107,184	66,669	173,853	-2.2	5.0	0.6
Eastern.....	80,175	63,094	143,269	83,888	60,066	143,954	-4.4	5.0	-0.5
Western.....	24,670	6,919	31,589	23,296	6,603	29,899	5.9	4.8	5.7
Louisiana.....	-	W	W	-	W	W	-	W	W
Maryland.....	W	W	5,362	W	W	4,873	W	W	10.0
Mississippi.....	-	W	W	-	W	W	-	W	W
Missouri.....	-	W	W	-	W	W	-	W	W
Montana.....	-	51,584	51,584	-	51,634	51,634	-	*	*
New Mexico.....	W	W	40,648	W	W	33,953	W	W	19.7
North Dakota.....	-	32,400	32,400	-	32,300	32,300	-	0.3	0.3
Ohio.....	15,781	18,044	33,825	14,219	16,781	31,001	11.0	7.5	9.1
Oklahoma.....	W	W	1,955	W	W	2,180	W	W	-10.3
Pennsylvania Total.....	67,497	19,423	86,920	67,094	20,513	87,606	0.6	-5.3	-0.8
Anthracite.....	272	3,220	3,492	315	2,637	2,952	-13.4	22.1	18.3
Bituminous.....	67,224	16,204	83,428	66,779	17,876	84,655	0.7	-9.4	-1.4
Tennessee.....	1,411	2,878	4,289	2,666	2,925	5,591	-47.1	-1.6	-23.3
Texas.....	-	48,428	48,428	-	47,534	47,534	-	1.9	1.9
Utah.....	W	W	31,294	35,526	-	35,526	W	W	-11.9
Virginia.....	26,475	12,518	38,993	26,448	13,479	39,927	0.1	-7.1	-2.3
Washington.....	-	W	W	-	W	W	-	W	W
West Virginia Total.....	119,615	77,761	197,376	128,115	75,778	203,893	-6.6	2.6	-3.2
Northern.....	37,441	6,271	43,712	37,150	5,667	42,818	0.8	10.6	2.1
Southern.....	82,175	71,490	153,664	90,964	70,111	161,075	-9.7	2.0	-4.6
Wyoming.....	-	428,177	428,177	-	401,200	401,200	-	6.7	6.7
U.S. Total.....	480,090	884,900	1,364,990	478,425	849,576^R	1,328,001^R	0.3	4.2	2.8

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

W = Withheld to avoid disclosure of individual company data.

R = Revised.

Note: • Productive capacity is the maximum amount of coal that can be produced annually as reported by mining companies on Form EIA-7A. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report."

Table 12. Capacity Utilization of Coal Mines by State, 2002, 2001
(Percent)

Coal-Producing State	2002			2001		
	Underground	Surface	Total	Underground	Surface	Total
Alabama.....	79.65	76.94	79.06	83.93	82.38	83.59
Alaska.....	-	W	W	-	W	W
Arizona.....	-	W	W	-	W	W
Arkansas.....	-	W	W	-	-	-
Colorado.....	74.98	96.70	79.98	76.35	94.86	81.00
Illinois.....	66.85	91.13	70.44	82.37	89.79	83.52
Indiana.....	83.98	81.80	82.28	79.16	88.29	86.34
Kansas.....	-	W	W	-	W	W
Kentucky Total.....	72.02	69.09	70.85	75.38	79.10	76.81
East.....	70.27	67.84	69.20	73.59	78.39	75.59
West.....	77.73	80.48	78.33	81.82	85.64	82.66
Louisiana.....	-	W	W	-	W	W
Maryland.....	W	W	95.53	W	W	94.74
Mississippi.....	-	W	W	-	W	W
Missouri.....	-	W	W	-	W	W
Montana.....	-	72.48	72.48	-	75.81	75.81
New Mexico.....	W	W	71.14	W	W	87.23
North Dakota.....	-	95.06	95.06	-	94.35	94.35
Ohio.....	68.76	56.85	62.41	90.62	74.29	81.78
Oklahoma.....	W	W	71.80	W	W	78.44
Pennsylvania Total.....	82.56	63.77	78.36	86.55	77.00	84.32
Anthracite.....	91.03	29.23	34.06	93.37	40.97	46.55
Bituminous.....	82.52	70.63	80.21	86.52	82.32	85.63
Tennessee.....	76.20	72.14	73.48	49.55	68.05	59.23
Texas.....	-	93.43	93.43	-	94.76	94.76
Utah.....	W	W	80.85	75.91	-	75.91
Virginia.....	77.28	75.49	76.70	84.86	76.06	81.89
Washington.....	-	W	W	-	W	W
West Virginia Total.....	73.44	79.85	75.97	77.66	82.83	79.58
Northern.....	76.58	84.96	77.78	88.15	94.81	89.04
Southern.....	72.02	79.40	75.45	73.37	81.86	77.06
Wyoming.....	-	87.15	87.15	-	91.91	91.91
U.S. Total.....	74.39	83.09	80.03	79.49	87.65	84.71

W = Withheld to avoid disclosure of individual company data.

Note: • Capacity utilization is the ratio of annual production to annual productive capacity. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," for productive capacity, and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report," for annual production.

Table 13. Productive Capacity and Capacity Utilization of Underground Coal Mines by State and Mining Method, 2002
(Thousand Short Tons)

Coal-Producing State	Continuous		Conventional		Longwall		Other		Total	
	Productive Capacity	Capacity Utilization Percent	Productive Capacity	Capacity Utilization Percent	Productive Capacity	Capacity Utilization Percent	Productive Capacity	Capacity Utilization Percent	Productive Capacity	Capacity Utilization Percent
Alabama.....	W	W	-	-	W	W	-	-	18,728	79.65
Colorado.....	W	W	-	-	W	W	-	-	33,786	74.98
Illinois.....	W	W	-	-	W	W	-	-	40,286	66.85
Indiana.....	9,417	83.98	-	-	-	-	-	-	9,417	83.98
Kentucky Total.....	88,243	70.99	6,444	72.46	10,158	80.72	-	-	104,845	72.02
Eastern.....	W	W	6,444	72.46	W	W	-	-	80,175	70.27
Western.....	W	W	-	-	W	W	-	-	24,670	77.73
Maryland.....	W	W	-	-	W	W	-	-	W	W
New Mexico.....	-	-	-	-	W	W	-	-	W	W
Ohio.....	2,631	78.03	W	W	W	W	-	-	15,781	68.76
Oklahoma.....	W	W	-	-	-	-	-	-	W	W
Pennsylvania Total.....	13,326	62.45	W	W	W	W	-	-	67,497	82.56
Anthracite.....	W	W	W	W	-	-	-	-	272	91.03
Bituminous.....	W	W	-	-	W	W	-	-	67,224	82.52
Tennessee.....	1,411	76.20	-	-	-	-	-	-	1,411	76.20
Utah.....	W	W	-	-	W	W	-	-	W	W
Virginia.....	W	W	-	-	W	W	-	-	26,475	77.28
West Virginia Total.....	69,251	68.52	840	17.50	49,524	81.28	-	-	119,615	73.44
Northern.....	W	W	W	W	W	78.61	-	-	37,441	76.58
Southern.....	W	W	W	W	W	83.94	-	-	82,175	72.02
U.S. Total.....	237,017	68.92	8,604	70.01	234,469	80.08	-	-	480,090	74.39

W = Withheld to avoid disclosure of individual company data.

Note: • Productive capacity is the maximum amount of coal that can be produced annually. Capacity utilization is the ratio of total production to annual productive capacity. Excludes mines producing less than 10,000 short tons, which are not required to provide data and recovery operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," for productive capacity, and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report," for annual production.

Recoverable Reserves

Table 14. Recoverable Coal Reserves and Average Recovery Percentage at Producing Mines by State, 2002, 2001
(Million Short Tons)

Coal-Producing State	2002		2001		Percent Change Recoverable Coal Reserves
	Recoverable Coal Reserves	Average Recovery Percentage	Recoverable Coal Reserves	Average Recovery Percentage	
Alabama.....	366	55.54	352	55.54	4.0
Alaska.....	W	W	W	W	W
Arizona.....	W	W	W	W	W
Arkansas.....	W	W	-	-	-
Colorado.....	629	72.46	562	75.55	11.8
Illinois.....	900	58.91	819	59.03	9.9
Indiana.....	381	67.04	397	70.62	-4.1
Kansas.....	W	W	W	W	W
Kentucky Total.....	1,010	56.87	1,087	58.54	-7.0
Eastern.....	703	58.16	829	60.05	-15.1
Western.....	307	53.91	258	53.68	18.9
Louisiana.....	W	W	W	W	W
Maryland.....	65	61.35	72	61.47	-9.0
Mississippi.....	W	W	W	W	W
Missouri.....	W	W	W	W	W
Montana.....	1,115	91.26	1,155	91.30	-3.5
New Mexico.....	1,385	91.05	1,404	92.44	-1.3
North Dakota.....	1,211	89.53	1,151	89.27	5.2
Ohio.....	356	72.97	450	73.12	-20.9
Oklahoma.....	18	68.52	19	69.55	-8.1
Pennsylvania Total.....	576	68.57	558	68.68	3.2
Anthracite.....	26	49.71	16	46.72	58.1
Bituminous.....	550	69.46	541	69.35	1.6
Tennessee.....	16	72.00	24	74.94	-34.5
Texas.....	673	92.12	724	92.14	-7.1
Utah.....	356	51.51	364	52.05	-2.4
Virginia.....	261	58.60	240	58.20	8.9
Washington.....	W	W	W	W	W
West Virginia Total.....	1,433	63.07	1,502	62.11	-4.5
Northern.....	451	61.25	521	63.47	-13.3
Southern.....	982	63.91	981	61.39	0.1
Wyoming.....	6,673	92.96	6,100	93.47	9.4
U.S. Total.....	18,216	81.64	17,801	81.70	2.3

W = Withheld to avoid disclosure of individual company data.

Note: • Recoverable reserves represent the quantity of coal that can be recovered (i.e., mined) from existing coal reserves at reporting mines. Average recovery percentage represents the percentage of coal that can be recovered from coal reserves at reporting mines, weighted for all mines in the reported geographic area. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 15. Recoverable Coal Reserves at Producing Mines, Estimated Recoverable Reserves, and Demonstrated Reserve Base by Mining Method, 2002
(Million Short Tons)

Coal-Resource State	Underground - Minable Coal			Surface - Minable Coal			Total		
	Recoverable Reserves at Producing Mines	Estimated Recoverable Reserves	Demonstrated Reserve Base	Recoverable Reserves at Producing Mines	Estimated Recoverable Reserves	Demonstrated Reserve Base	Recoverable Reserves at Producing Mines	Estimated Recoverable Reserves	Demonstrated Reserve Base
Alabama.....	344	553	1,097	21	2,295	3,221	366	2,848	4,318
Alaska.....	-	2,745	5,423	W	548	692	W	3,293	6,115
Arizona.....	-	-	-	W	30	38	W	30	38
Arkansas.....	-	127	272	W	101	144	W	228	417
Colorado.....	429	6,120	11,661	199	3,752	4,769	629	9,872	16,430
Georgia.....	-	1	2	-	1	2	-	2	4
Idaho.....	-	2	4	-	-	-	-	2	4
Illinois.....	873	27,978	88,077	27	10,083	16,570	900	38,061	104,648
Indiana.....	223	3,645	8,801	158	488	835	381	4,134	9,637
Iowa.....	-	807	1,732	-	320	457	-	1,127	2,189
Kansas.....	-	-	-	W	681	973	W	681	973
Kentucky Total.....	812	7,636	17,484	198	7,577	13,130	1,010	15,213	30,614
Eastern.....	535	833	1,491	168	5,298	9,486	703	6,131	10,977
Western.....	277	6,803	15,993	30	2,279	3,644	307	9,082	19,637
Louisiana.....	-	-	-	W	323	437	W	323	437
Maryland.....	W	327	597	W	49	72	65	376	669
Michigan.....	-	55	123	-	3	5	-	59	128
Mississippi.....	-	-	-	W	-	-	W	-	-
Missouri.....	-	689	1,479	W	3,159	4,512	W	3,848	5,991
Montana.....	-	35,923	70,958	1,115	39,145	48,418	1,115	75,067	119,377
New Mexico.....	W	2,860	6,199	W	4,121	6,051	1,385	6,981	12,249
North Carolina.....	-	5	11	-	-	-	-	5	11
North Dakota.....	-	-	-	1,211	6,993	9,166	1,211	6,993	9,166
Ohio.....	214	7,757	17,631	141	3,789	5,788	356	11,546	23,419
Oklahoma.....	W	575	1,233	W	230	328	18	804	1,562
Oregon.....	-	7	15	-	2	3	-	9	17
Pennsylvania Total.....	468	10,880	23,541	108	1,074	4,297	576	11,954	27,838
Anthracite.....	2	340	3,845	24	420	3,359	26	761	7,204
Bituminous.....	466	10,540	19,696	84	654	938	550	11,194	20,634
South Dakota.....	-	-	-	-	277	366	-	277	366
Tennessee.....	5	283	516	10	184	271	16	467	787
Texas.....	-	-	-	673	9,668	12,559	673	9,668	12,559
Utah.....	W	2,582	5,267	W	212	268	356	2,794	5,534
Virginia.....	220	700	1,247	41	386	603	261	1,086	1,850
Washington.....	-	674	1,332	W	18	23	W	693	1,356
West Virginia Total.....	1,074	15,863	29,722	359	2,518	3,991	1,433	18,381	33,713
Northern.....	436	NA	NA	15	NA	NA	451	NA	NA
Southern.....	638	NA	NA	345	NA	NA	982	NA	NA
Wyoming.....	-	22,950	42,501	6,673	19,688	22,790	6,673	42,638	65,291
U.S. Total.....	5,231	151,744	336,928	12,985	117,713	160,780	18,216	269,457	497,708

W = Withheld to avoid disclosure of individual company data.

NA = This estimated value is not available due to insufficient data or inadequate data/model performance.

Note: • Recoverable coal reserves at producing mines represent the quantity of coal that can be recovered (i.e. mined) from existing coal reserves at reporting mines. EIA's estimated recoverable reserves include the coal in the demonstrated reserve base considered recoverable after excluding coal estimated to be unavailable due to land use restrictions or currently economically unattractive for mining, and after applying assumed mining recovery rates; see Glossary for criteria. The demonstrated reserve base includes publicly available data on coal mapped to measured and indicated degrees of accuracy and found at depths and in coalbed thicknesses considered technologically minable at the time of determinations; see Glossary for criteria. Excludes silt, culm, refuse bank, slurry dam, and dredge operations except for Pennsylvania anthracite. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report," and EIA estimates.

Table 16. Recoverable Coal Reserves and Average Recovery Percentage at Producing Underground Coal Mines by State and Mining Method, 2002
(Million Short Tons)

Coal-Producing State	Continuous ¹		Conventional ²		Longwall ³		Other ⁴		Total	
	Recoverable Coal Reserves at Producing Mines	Average Recovery Percentage	Recoverable Coal Reserves at Producing Mines	Average Recovery Percentage	Recoverable Coal Reserves at Producing Mines	Average Recovery Percentage	Recoverable Coal Reserves at Producing Mines	Average Recovery Percentage	Recoverable Coal Reserves at Producing Mines	Average Recovery Percentage
Alabama.....	W	W	-	-	W	W	-	-	344	53.59
Colorado.....	W	W	-	-	W	W	-	-	429	64.54
Illinois.....	W	W	-	-	W	W	-	-	873	58.13
Indiana.....	223	58.22	-	-	-	-	-	-	223	58.22
Kentucky Total.....	762	50.62	W	51.15	W	44.65	-	-	812	50.38
Eastern.....	W	W	W	51.15	W	W	-	-	535	50.65
Western.....	W	W	-	-	W	W	-	-	277	49.85
Maryland.....	W	W	-	-	W	W	-	-	W	W
New Mexico.....	-	-	-	-	W	W	-	-	W	W
Ohio.....	22	60.00	W	W	W	W	-	-	214	64.42
Oklahoma.....	W	W	-	-	-	-	-	-	W	W
Pennsylvania Total.....	87	61.50	W	W	W	W	-	-	468	66.28
Anthracite.....	W	W	W	W	-	-	-	-	2	79.27
Bituminous.....	W	W	-	-	W	W	-	-	466	66.22
Tennessee.....	5	60.28	-	-	-	-	-	-	5	60.28
Utah.....	W	W	-	-	W	W	-	-	W	51.43
Virginia.....	W	W	-	-	W	W	-	-	220	53.16
West Virginia Total.....	576	52.62	5	51.49	493	62.53	-	-	1,074	57.16
Northern.....	W	W	W	W	W	63.85	-	-	436	60.78
Southern.....	W	W	W	W	W	60.12	-	-	638	54.69
U.S. Total.....	2,456	53.71	24	52.46	2,751	61.75	-	-	5,231	57.93

¹ Mines that produce greater than 50 percent of their coal by continuous mining methods.

² Mines that produce greater than 50 percent of their coal by conventional mining methods.

³ Mines that have any production from the longwall mining method. A typical longwall mining operation uses 80 percent longwall mining and 20 percent continuous mining.

⁴ Mines that produce coal using shortwall, scoop loading, hand loading, or other mining methods or 50/50 percent continuous conventional split in mining method.

W = Withheld to avoid disclosure of individual company data.

Note: • Recoverable coal reserves at producing mines represent the quantity of coal that can be recovered (i.e. mined) from existing coal reserves at reporting mines. Average recovery percentage represents the percentage of coal that can be recovered from coal reserves at reporting mines, weighted for all mines in the reported geographic area. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 17. Recoverable Coal Reserves and Average Recovery Percentage at Producing U.S. Mines by Mine Production Range and Mine Type, 2002
(Million Short Tons)

Mine Production Range (thousand short tons)	Underground		Surface		Total	
	Recoverable Coal Reserves	Average Recovery Percentage	Recoverable Coal Reserves	Average Recovery Percentage	Recoverable Coal Reserves	Average Recovery Percentage
Over 1,000	3,915	59.34	12,263	91.72	16,177	83.88
500 to 1,000	358	53.55	236	82.10	594	64.89
200 to 500	441	52.91	326	85.62	767	66.81
100 to 200	171	55.12	60	82.85	231	62.29
50 to 100	119	49.09	31	82.70	149	55.97
10 to 50	228	57.05	70	65.96	298	59.14
U.S. Total	5,231	57.93	12,985	91.19	18,216	81.64

Note: • Recoverable coal reserves at producing mines represent the quantity of coal that can be recovered (i.e. mined) from existing coal reserves at reporting mines. Average recovery percentage represents the percentage of coal that can be recovered from coal reserves at reporting mines, weighted for all mines in the reported geographic area. Excludes mines producing less than 10,000 short tons, which are not required to provide data and refuse recovery.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Employment

Table 18. Average Number of Employees by State and Mine Type, 2002, 2001

Coal-Producing State and Region ¹	2002			2001			Percent Change		
	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total
Alabama.....	2,722	667	3,389	2,702	631	3,333	0.7	5.7	1.7
Alaska.....	-	99	99	-	119	119	-	-16.8	-16.8
Arizona.....	-	681	681	-	698	698	-	-2.4	-2.4
Arkansas.....	22	5	27	13	4	17	69.2	25.0	58.8
Colorado.....	1,416	649	2,065	1,325	626	1,951	6.9	3.7	5.8
Illinois.....	3,046	531	3,577	3,025	428	3,453	0.7	24.1	3.6
Indiana.....	908	1,794	2,702	756	1,787	2,543	20.1	0.4	6.3
Kansas.....	-	8	8	-	9	9	-	-11.1	-11.1
Kentucky Total.....	11,310	5,732	17,042	11,779	5,755	17,534	-4.0	-0.4	-2.8
Eastern.....	9,281	5,237	14,518	9,915	5,197	15,112	-6.4	0.8	-3.9
Western.....	2,029	495	2,524	1,864	558	2,422	8.9	-11.3	4.2
Louisiana.....	-	205	205	-	186	186	-	10.2	10.2
Maryland.....	283	228	511	290	180	470	-2.4	26.7	8.7
Mississippi.....	-	135	135	-	128	128	-	5.5	5.5
Missouri.....	-	13	13	-	38	38	-	-65.8	-65.8
Montana.....	-	806	806	-	843	843	-	-4.4	-4.4
New Mexico.....	229	1,445	1,674	142	1,586	1,728	61.3	-8.9	-3.1
North Dakota.....	-	939	939	-	912	912	-	3.0	3.0
Ohio.....	1,255	1,312	2,567	1,513	1,409	2,922	-17.1	-6.9	-12.1
Oklahoma.....	39	99	138	38	115	153	2.6	-13.9	-9.8
Pennsylvania Total.....	5,062	2,601	7,663	5,635	2,751	8,386	-10.2	-5.5	-8.6
Anthracite.....	229	643	872	272	683	955	-15.8	-5.9	-8.7
Bituminous.....	4,833	1,958	6,791	5,363	2,068	7,431	-9.9	-5.3	-8.6
Tennessee.....	297	322	619	276	290	566	7.6	11.0	9.4
Texas.....	-	2,375	2,375	-	2,470	2,470	-	-3.8	-3.8
Utah.....	1,524	24	1,548	1,479	6	1,485	3.0	300.0	4.2
Virginia.....	3,720	1,321	5,041	4,084	1,371	5,455	-8.9	-3.6	-7.6
Washington.....	-	548	548	-	557	557	-	-1.6	-1.6
West Virginia Total.....	11,019	5,228	16,247	11,840	4,739	16,579	-6.9	10.3	-2.0
Northern.....	3,260	510	3,770	3,562	427	3,989	-8.5	19.4	-5.5
Southern.....	7,759	4,718	12,477	8,278	4,312	12,590	-6.3	9.4	-0.9
Wyoming.....	-	4,699	4,699	-	4,365	4,365	-	7.7	7.7
Appalachian Total.....	33,639	16,916	50,555	36,255	16,568	52,823	-7.2	2.1	-4.3
Northern.....	9,860	4,651	14,511	11,000	4,767	15,767	-10.4	-2.4	-8.0
Central.....	21,057	11,598	32,655	22,553	11,170	33,723	-6.6	3.8	-3.2
Southern.....	2,722	667	3,389	2,702	631	3,333	0.7	5.7	1.7
Interior Total.....	6,044	5,660	11,704	5,696	5,723	11,419	6.1	-1.1	2.5
Illinois Basin.....	5,983	2,820	8,803	5,645	2,773	8,418	6.0	1.7	4.6
Western Total.....	3,169	9,890	13,059	2,946	9,712	12,658	7.6	1.8	3.2
Powder River Basin.....	-	4,646	4,646	-	4,365	4,365	-	6.4	6.4
Uinta Region.....	2,874	614	3,488	2,758	568	3,326	4.2	8.1	4.9
East of Miss. River.....	39,622	19,871	59,493	41,900	19,469	61,369	-5.4	2.1	-3.1
West of Miss. River.....	3,230	12,595	15,825	2,997	12,534	15,531	7.8	0.5	1.9
U.S. Subtotal.....	42,852	32,466	75,318	44,897	32,003	76,900	-4.6	1.4	-2.1
Refuse Recovery.....	-	-	148	-	-	188	-	-	-21.3
U.S. Total.....	42,852	32,466	75,466	44,897	32,003	77,088	-4.6	1.4	-2.1

¹ For a definition of coal producing regions, see Glossary.

Note: • Includes all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes preparation plants with less than 5,000 employee hours per year, which are not required to provide data.

Source: • U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 19. Average Number of Employees at Underground and Surface Mines by State and Mine Production Range, 2002

Coal-Producing State, Region ¹ , and Mine Type	Mine Production Range (thousand short tons)								Total Number of Employees
	1,000 and Greater	500 to 1,000	200 to 500	100 to 200	50 to 100	10 to 50	Less Than 10	Zero ²	
Alabama	2,144	426	225	151	81	200	11	151	3,389
Underground.....	2,144	388	-	-	-	77	-	113	2,722
Surface.....	-	38	225	151	81	123	11	38	667
Alaska	99	-	-	-	-	-	-	-	99
Surface.....	99	-	-	-	-	-	-	-	99
Arizona	646	-	-	-	-	-	-	35	681
Surface.....	646	-	-	-	-	-	-	35	681
Arkansas	-	-	-	-	-	2	25	-	27
Underground.....	-	-	-	-	-	-	22	-	22
Surface.....	-	-	-	-	-	2	3	-	5
Colorado	1,810	104	146	-	-	-	-	5	2,065
Underground.....	1,220	104	87	-	-	-	-	5	1,416
Surface.....	590	-	59	-	-	-	-	-	649
Illinois	2,979	217	128	113	-	-	9	131	3,577
Underground.....	2,634	217	-	113	-	-	-	82	3,046
Surface.....	345	-	128	-	-	-	9	49	531
Indiana	1,978	297	236	55	34	-	-	25	2,702
Underground.....	804	6	79	-	-	-	-	19	908
Surface.....	1,174	291	157	55	34	-	25	58	1,794
Kansas	-	-	8	-	-	-	-	-	8
Surface.....	-	-	8	-	-	-	-	-	8
Kentucky	4,632	2,533	3,356	1,771	969	1,230	471	2,080	17,042
Underground.....	3,534	1,450	2,061	1,087	771	834	228	1,345	11,310
Surface.....	1,098	1,083	1,295	684	198	396	243	735	5,732
Eastern	3,140	2,049	3,165	1,639	943	1,209	471	1,902	14,518
Underground.....	2,201	1,049	1,983	1,029	771	828	228	1,192	9,281
Surface.....	939	1,000	1,182	610	172	381	243	710	5,237
Western	1,492	484	191	132	26	21	-	178	2,524
Underground.....	1,333	401	78	58	-	6	-	153	2,029
Surface.....	159	83	113	74	26	15	-	25	495
Louisiana	169	36	-	-	-	-	-	-	205
Surface.....	169	36	-	-	-	-	-	-	205
Maryland	196	66	108	8	22	59	17	35	511
Underground.....	196	-	46	-	-	9	-	32	283
Surface.....	-	66	62	8	22	59	8	3	228
Mississippi	135	-	-	-	-	-	-	-	135
Surface.....	135	-	-	-	-	-	-	-	135
Missouri	-	-	7	-	-	6	-	-	13
Surface.....	-	-	7	-	-	6	-	-	13
Montana	793	-	13	-	-	-	-	-	806
Surface.....	793	-	13	-	-	-	-	-	806
New Mexico	1,579	95	-	-	-	-	-	-	1,674
Underground.....	229	-	-	-	-	-	-	-	229
Surface.....	1,350	95	-	-	-	-	-	-	1,445
North Dakota	939	-	-	-	-	-	-	-	939
Surface.....	939	-	-	-	-	-	-	-	939
Ohio	1,052	310	672	138	53	87	53	202	2,567
Underground.....	1,052	-	105	-	15	7	2	74	1,255
Surface.....	-	310	567	138	38	80	51	128	1,312
Oklahoma	-	-	100	25	11	-	2	-	138
Underground.....	-	-	39	-	-	-	-	-	39
Surface.....	-	-	61	25	11	-	2	-	99
Pennsylvania	3,775	333	1,052	454	344	513	232	960	7,663
Underground.....	3,671	211	389	168	48	120	78	377	5,062
Surface.....	104	122	663	286	296	393	154	583	2,601
Anthracite	-	-	43	95	41	171	135	387	872
Underground.....	-	-	-	43	-	48	75	63	229
Surface.....	-	-	43	52	41	123	60	324	643
Bituminous	3,775	333	1,009	359	303	342	97	573	6,791
Underground.....	3,671	211	389	125	48	72	3	314	4,833
Surface.....	104	122	620	234	255	270	94	259	1,958
Tennessee	-	-	295	131	27	68	33	65	619
Underground.....	-	-	37	131	15	48	28	38	297
Surface.....	-	-	258	-	12	20	5	27	322
Texas	2,339	-	-	-	-	36	-	-	2,375
Surface.....	2,339	-	-	-	-	36	-	-	2,375
Utah	1,186	189	20	16	-	66	15	56	1,548
Underground.....	1,186	189	-	16	-	66	15	52	1,524
Surface.....	-	-	20	-	-	-	-	4	24

See footnotes at end of table.

Table 19. Average Number of Employees at Underground and Surface Mines by State and Mine Production Range, 2002 (Continued)

Coal-Producing State, Region ¹ , and Mine Type	Mine Production Range (thousand short tons)								Total Number of Employees
	1,000 and Greater	500 to 1,000	200 to 500	100 to 200	50 to 100	10 to 50	Less Than 10	Zero ²	
Virginia	635	370	1,804	590	506	395	89	652	5,041
Underground.....	635	163	1,202	429	419	335	66	471	3,720
Surface.....	-	207	602	161	87	60	23	181	1,321
Washington	548	-	-	-	-	-	-	-	548
Surface.....	548	-	-	-	-	-	-	-	548
West Virginia	7,525	2,043	2,170	985	436	805	221	2,062	16,247
Underground.....	4,832	1,382	1,588	778	369	562	166	1,342	11,019
Surface.....	2,693	661	582	207	67	243	55	720	5,228
Northern Total	2,379	262	391	188	75	158	59	258	3,770
Underground.....	2,114	262	391	138	48	78	42	187	3,260
Surface.....	265	-	-	50	27	80	17	71	510
Southern Total	5,146	1,781	1,779	797	361	647	162	1,804	12,477
Underground.....	2,718	1,120	1,197	640	321	484	124	1,155	7,759
Surface.....	2,428	661	582	157	40	163	38	649	4,718
Wyoming	4,654	-	45	-	-	-	-	-	4,699
Surface.....	4,654	-	45	-	-	-	-	-	4,699
Appalachian Total	18,467	5,597	9,491	4,096	2,412	3,336	1,127	6,029	50,555
Underground.....	14,731	3,193	5,350	2,535	1,637	1,977	577	3,639	33,639
Surface.....	3,736	2,404	4,141	1,561	775	1,359	550	2,390	16,916
Northern	7,402	971	2,223	788	494	817	361	1,455	14,511
Underground.....	7,033	473	931	306	111	205	131	670	9,860
Surface.....	369	498	1,292	482	383	612	230	785	4,651
Central	8,921	4,200	7,043	3,157	1,837	2,319	755	4,423	32,655
Underground.....	5,554	2,332	4,419	2,229	1,526	1,695	446	2,856	21,057
Surface.....	3,367	1,868	2,624	928	311	624	309	1,567	11,598
Southern	2,144	426	225	151	81	200	11	151	3,389
Underground.....	2,144	388	-	-	-	77	-	113	2,722
Surface.....	-	38	225	151	81	123	11	38	667
Interior Total	9,092	1,034	670	325	71	65	61	386	11,704
Underground.....	4,771	624	196	171	-	6	22	254	6,044
Surface.....	4,321	410	474	154	71	59	39	132	5,660
Illinois Basin	6,449	998	555	300	60	21	34	386	8,803
Underground.....	4,771	624	157	171	-	6	-	254	5,983
Surface.....	1,678	374	398	129	60	15	34	132	2,820
Western Total	12,254	388	224	16	-	66	15	96	13,059
Underground.....	2,635	293	87	16	-	66	15	57	3,169
Surface.....	9,619	95	137	-	-	-	-	39	9,890
Powder River Basin	4,646	-	-	-	-	-	-	-	4,646
Surface.....	4,646	-	-	-	-	-	-	-	4,646
Uinta Region	2,996	293	41	16	-	66	15	61	3,488
Underground.....	2,406	293	21	16	-	66	15	57	2,874
Surface.....	590	-	20	-	-	-	-	4	614
East of Miss. River	25,051	6,595	10,046	4,396	2,472	3,357	1,161	6,415	59,493
Underground.....	19,502	3,817	5,507	2,706	1,637	1,983	577	3,893	39,622
Surface.....	5,549	2,778	4,539	1,690	835	1,374	584	2,522	19,871
West of Miss. River	14,762	424	339	41	11	110	42	96	15,825
Underground.....	2,635	293	126	16	-	66	37	57	3,230
Surface.....	12,127	131	213	25	11	44	5	39	12,595
Subtotal	39,813	7,019	10,385	4,437	2,483	3,467	1,203	6,511	75,318
Underground.....	22,137	4,110	5,633	2,722	1,637	2,049	614	3,950	42,852
Surface.....	17,676	2,909	4,752	1,715	846	1,418	589	2,561	32,466
Refuse Recovery	-	-	-	34	11	71	24	8	148
U.S. Total	39,813	7,019	10,385	4,471	2,494	3,538	1,227	6,519	75,466

¹ For a definition of coal producing regions, see Glossary.

² Includes all employees at preparation plants and tipples not co-located with a mine.

Note: • Includes all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes preparation plants with less than 5,000 employee hours per year, which are not required to provide data.

Source: • U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 20. Average Number of Employees at Underground and Surface Mines by State and Union Status, 2002

Coal-Producing State and Region ¹	Union ²		Nonunion ²	
	Underground	Surface	Underground	Surface
Alabama.....	2,587	-	135	664
Alaska.....	-	-	-	99
Arizona.....	-	681	-	-
Arkansas.....	-	-	-	2
Colorado.....	173	288	1,243	361
Illinois.....	1,512	234	1,534	298
Indiana.....	3	354	905	1,419
Kansas.....	-	-	-	8
Kentucky Total.....	988	250	10,094	5,272
Eastern.....	87	167	8,966	4,853
Western.....	901	83	1,128	419
Louisiana.....	-	-	-	205
Maryland.....	-	-	274	220
Mississippi.....	-	-	-	135
Missouri.....	-	-	-	13
Montana.....	-	680	-	126
New Mexico.....	229	1,148	-	297
North Dakota.....	-	280	-	659
Ohio.....	495	72	758	1,189
Oklahoma.....	-	-	39	97
Pennsylvania Total.....	2,864	265	2,120	2,217
Anthracite.....	-	208	154	401
Bituminous.....	2,864	57	1,966	1,816
Tennessee.....	55	-	214	317
Texas.....	-	1,552	-	823
Utah.....	474	-	1,035	27
Virginia.....	699	79	2,955	1,230
Washington.....	-	548	-	-
West Virginia Total.....	4,807	1,238	6,046	3,955
Northern.....	1,979	-	1,239	493
Southern.....	2,828	1,238	4,807	3,462
Wyoming.....	-	656	-	4,043
Appalachian Total.....	11,594	1,821	21,468	14,645
Northern.....	5,338	337	4,391	4,119
Central.....	3,669	1,484	16,942	9,862
Southern.....	2,587	-	135	664
Interior Total.....	2,416	2,223	3,606	3,419
Illinois Basin.....	2,416	671	3,567	2,136
Western Total.....	876	4,281	2,278	5,612
Powder River Basin.....	-	667	-	3,979
Uinta Region.....	647	259	2,212	358
East of Miss. River.....	14,010	2,492	25,035	16,916
West of Miss. River.....	876	5,833	2,317	6,760
U.S. Total.....	14,886	8,325	27,352	23,676

¹ For a definition of coal producing regions, see Glossary.

² Includes all employees at preparation plants and tipples not co-located with a mine.

Note: • Includes all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes mines producing less than 10,000 short tons and preparation plants with less than 5,000 employee hours per year, which are not required to provide data.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Productivity

Table 21. Coal Mining Productivity by State and Mine Type, 2002, 2001

Coal-Producing State, Region ¹ , and Mine Type	Number of Mining Operations ²			Number of Employees ³			Average Production per Employee per Hour (short tons) ⁴		
	2002	2001	Percent Change	2002	2001	Percent Change	2002	2001	Percent Change
Alabama	49	60	-18.3	3,389	3,333	1.7	2.56	2.75	-6.8
Underground.....	14	20	-30.0	2,722	2,702	0.7	2.49	2.69	-7.3
Surface.....	35	40	-12.5	667	631	5.7	2.85	2.97	-4.2
Alaska	1	1	-	99	119	-16.8	4.98	5.99	-16.9
Surface.....	1	1	-	99	119	-16.8	4.98	5.99	-16.9
Arizona	3	3	-	681	698	-2.4	7.21	7.69	-6.2
Surface.....	3	3	-	681	698	-2.4	7.21	7.69	-6.2
Arkansas	4	3	33.3	27	17	58.8	*	*	-33.3
Underground.....	1	1	-	22	13	69.2	*	*	-44.2
Surface.....	3	2	50.0	5	4	25.0	2.15	1.86	15.5
Colorado	14	15	-6.7	2,065	1,951	5.8	8.29	8.43	-1.6
Underground.....	9	10	-10.0	1,416	1,325	6.9	8.81	8.58	2.7
Surface.....	5	5	-	649	626	3.7	7.20	8.09	-11.0
Illinois	31	28	10.7	3,577	3,453	3.6	4.23	4.22	0.3
Underground.....	20	19	5.3	3,046	3,025	0.7	4.07	4.07	*
Surface.....	11	9	22.2	531	428	24.1	5.05	5.11	-1.3
Indiana	46	41	12.2	2,702	2,543	6.3	5.35	5.69	-6.0
Underground.....	13	9	44.4	908	756	20.1	3.79	4.02	-5.8
Surface.....	33	32	3.1	1,794	1,787	0.4	6.07	6.33	-4.1
Kansas	1	1	-	8	9	-11.1	11.04	10.42	5.9
Surface.....	1	1	-	8	9	-11.1	11.04	10.42	5.9
Kentucky	556	601	-7.5	17,042	17,534	-2.8	3.47	3.66	-5.1
Underground.....	299	334	-10.5	11,310	11,779	-4.0	3.22	3.32	-2.7
Surface.....	257	267	-3.7	5,732	5,755	-0.4	3.94	4.34	-9.3
Eastern	520	566	-8.1	14,518	15,112	-3.9	3.32	3.52	-5.5
Underground.....	279	318	-12.3	9,281	9,915	-6.4	3.03	3.10	-2.3
Surface.....	241	248	-2.8	5,237	5,197	0.8	3.82	4.28	-10.8
Western	36	35	2.9	2,524	2,422	4.2	4.22	4.43	-4.7
Underground.....	20	16	25.0	2,029	1,864	8.9	4.00	4.30	-7.0
Surface.....	16	19	-15.8	495	558	-11.3	5.19	4.92	5.5
Louisiana	2	2	-	205	186	10.2	8.73	9.08	-3.9
Surface.....	2	2	-	205	186	10.2	8.73	9.08	-3.9
Maryland	19	16	18.8	511	470	8.7	4.71	4.46	5.7
Underground.....	4	4	-	283	290	-2.4	5.38	4.94	9.0
Surface.....	15	12	25.0	228	180	26.7	3.83	3.63	5.4
Mississippi	1	1	-	135	128	5.5	8.42	2.58	226.3
Surface.....	1	1	-	135	128	5.5	8.42	2.58	226.3
Missouri	2	2	-	13	38	-65.8	10.64	3.97	167.9
Surface.....	2	2	-	13	38	-65.8	10.64	3.97	167.9
Montana	6	6	-	806	843	-4.4	23.42	23.67	-1.0
Surface.....	6	6	-	806	843	-4.4	23.42	23.67	-1.0
New Mexico	8	7	14.3	1,674	1,728	-3.1	8.29	8.03	3.2
Underground.....	2	1	100.0	229	142	61.3	3.44	2.25	52.9
Surface.....	6	6	-	1,445	1,586	-8.9	9.12	8.55	6.7
North Dakota	4	4	-	939	912	3.0	17.00	17.12	-0.7
Surface.....	4	4	-	939	912	3.0	17.00	17.12	-0.7
Ohio	77	72	6.9	2,567	2,922	-12.1	3.58	3.82	-6.1
Underground.....	17	15	13.3	1,255	1,513	-17.1	3.91	4.03	-3.0
Surface.....	60	57	5.3	1,312	1,409	-6.9	3.29	3.61	-8.9
Oklahoma	6	6	-	138	153	-9.8	4.17	4.39	-5.1
Underground.....	1	1	-	39	38	2.6	4.98	4.61	8.2
Surface.....	5	5	-	99	115	-13.9	3.86	4.33	-10.8
Pennsylvania	338	358	-5.6	7,663	8,386	-8.6	4.18	4.06	2.8
Underground.....	100	109	-8.3	5,062	5,635	-10.2	5.02	4.70	6.9
Surface.....	238	249	-4.4	2,601	2,751	-5.5	2.40	2.73	-12.0
Anthracite	112	118	-5.1	872	955	-8.7	0.78	0.81	-4.4
Underground.....	40	43	-7.0	229	272	-15.8	0.78	0.71	9.9
Surface.....	72	75	-4.0	643	683	-5.9	0.78	0.85	-8.7
Bituminous	226	240	-5.8	6,791	7,431	-8.6	4.57	4.43	3.2
Underground.....	60	66	-9.1	4,833	5,363	-9.9	5.18	4.86	6.5
Surface.....	166	174	-4.6	1,958	2,068	-5.3	2.93	3.29	-10.9
Tennessee	31	31	-	619	566	9.4	2.70	3.09	-12.6
Underground.....	16	15	6.7	297	276	7.6	2.39	2.99	-20.1
Surface.....	15	16	-6.3	322	290	11.0	2.90	3.16	-8.3
Texas	12	15	-20.0	2,375	2,470	-3.8	9.05	8.67	4.4
Surface.....	12	15	-20.0	2,375	2,470	-3.8	9.05	8.67	4.4
Utah	17	19	-10.5	1,548	1,485	4.2	7.70	8.99	-14.4
Underground.....	15	17	-11.8	1,524	1,479	3.0	7.77	9.03	-14.0
Surface.....	2	2	-	24	6	300.0	4.13	-	-

See footnotes at end of table.

Table 21. Coal Mining Productivity by State and Mine Type, 2002, 2001 (Continued)

Coal-Producing State, Region ¹ , and Mine Type	Number of Mining Operations ²			Number of Employees ³			Average Production per Employee per Hour (short tons) ⁴		
	2002	2001	Percent Change	2002	2001	Percent Change	2002	2001	Percent Change
Virginia	185	199	-7.0	5,041	5,455	-7.6	2.94	2.91	0.9
Underground	120	132	-9.1	3,720	4,084	-8.9	2.81	2.67	5.2
Surface	65	67	-3.0	1,321	1,371	-3.6	3.25	3.62	-10.3
Washington	1	1	-	548	557	-1.6	4.81	3.95	21.5
Surface	1	1	-	548	557	-1.6	4.81	3.95	21.5
West Virginia	411	409	0.5	16,247	16,579	-2.0	4.33	4.54	-4.6
Underground	247	259	-4.6	11,019	11,840	-6.9	3.89	4.01	-2.9
Surface	164	150	9.3	5,228	4,739	10.3	5.15	5.73	-10.1
Northern	81	80	1.3	3,770	3,989	-5.5	4.48	4.62	-3.1
Underground	47	47	-	3,260	3,562	-8.5	4.42	4.45	-0.7
Surface	34	33	3.0	510	427	19.4	4.79	5.96	-19.6
Southern	330	329	0.3	12,477	12,590	-0.9	4.29	4.52	-5.0
Underground	200	212	-5.7	7,759	8,278	-6.3	3.68	3.83	-3.8
Surface	130	117	11.1	4,718	4,312	9.4	5.19	5.71	-9.2
Wyoming	18	17	5.9	4,699	4,365	7.7	38.10	39.67	-4.0
Surface	18	17	5.9	4,699	4,365	7.7	38.10	39.67	-4.0
Appalachian Total	1,630	1,711	-4.7	50,555	52,823	-4.3	3.71	3.85	-3.4
Underground	797	872	-8.6	33,639	36,255	-7.2	3.61	3.64	-0.7
Surface	833	839	-0.7	16,916	16,568	2.1	3.91	4.28	-8.6
Northern	515	526	-2.1	14,511	15,767	-8.0	4.16	4.16	-0.1
Underground	168	175	-4.0	9,860	11,000	-10.4	4.70	4.54	3.6
Surface	347	351	-1.1	4,651	4,767	-2.4	3.02	3.33	-9.3
Central	1,066	1,125	-5.2	32,655	33,723	-3.2	3.64	3.80	-4.3
Underground	615	677	-9.2	21,057	22,553	-6.6	3.23	3.29	-1.9
Surface	451	448	0.7	11,598	11,170	3.8	4.31	4.76	-9.5
Southern	49	60	-18.3	3,389	3,333	1.7	2.56	2.75	-6.8
Underground	14	20	-30.0	2,722	2,702	0.7	2.49	2.69	-7.3
Surface	35	40	-12.5	667	631	5.7	2.85	2.97	-4.2
Interior Total	141	134	5.2	11,704	11,419	2.5	5.54	5.56	-0.4
Underground	55	46	19.6	6,044	5,696	6.1	4.00	4.14	-3.4
Surface	86	88	-2.3	5,660	5,723	-1.1	7.17	6.99	2.6
Illinois Basin	113	104	8.7	8,803	8,418	4.6	4.59	4.75	-3.4
Underground	53	44	20.5	5,983	5,645	6.0	4.00	4.14	-3.4
Surface	60	60	-	2,820	2,773	1.7	5.75	5.90	-2.7
Western Total	72	73	-1.4	13,059	12,658	3.2	20.07	20.64	-2.8
Underground	26	28	-7.1	3,169	2,946	7.6	7.89	8.48	-7.0
Surface	46	45	2.2	9,890	9,712	1.8	23.93	24.22	-1.2
Powder River Basin	18	17	5.9	4,646	4,365	6.4	40.92	42.71	-4.2
Underground	-	-	-	-	-	-	-	-	-
Surface	18	17	5.9	4,646	4,365	6.4	40.92	42.71	-4.2
Uinta Region	28	30	-6.7	3,488	3,326	4.9	8.17	8.79	-7.0
Underground	23	25	-8.0	2,874	2,758	4.2	8.37	8.90	-6.0
Surface	5	5	-	614	568	8.1	7.26	8.21	-11.6
East of Miss. River	1,744	1,816	-4.0	59,493	61,369	-3.1	3.86	3.98	-2.9
Underground	850	916	-7.2	39,622	41,900	-5.4	3.67	3.71	-1.0
Surface	894	900	-0.7	19,871	19,469	2.1	4.22	4.53	-6.8
West of Miss. River	99	102	-2.9	15,825	15,531	1.9	18.06	18.32	-1.4
Underground	28	30	-6.7	3,230	2,997	7.8	7.80	8.39	-7.1
Surface	71	72	-1.4	12,595	12,534	0.5	20.67	20.63	0.2
Subtotal	1,843	1,918	-3.9	75,318	76,900	-2.1	6.81	6.82	-0.2
Underground	878	946	-7.2	42,852	44,897	-4.6	3.98	4.02	-0.8
Surface	965	972	-0.7	32,466	32,003	1.4	10.38	10.60	-2.1
Refuse Recovery	32	34	-5.9	148	188	-21.3	3.86	5.28	-26.9
U.S. Total	1,875	1,952	-3.9	75,466	77,088	-2.1	6.80	6.82	-0.2

¹ For a definition of coal producing regions, see Glossary.

² Mining operations that consist of a mine and preparation plant or preparation plant only processing both underground and surface coal are reported as two operations.

³ Includes all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers.

⁴ Calculated by dividing total coal production by the total labor hours worked by all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers.

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Excludes preparation plants with less than 5,000 employee hours per year, which are not required to provide data.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 22. Underground Coal Mining Productivity by State and Mining Method, 2002
(Short Tons Produced per Employee per Hour)

Coal-Producing State and Region ¹	Continuous ²	Conventional ³	Longwall ⁴	Other ⁵	Total
Alabama.....	0.70	-	2.55	-	2.49
Colorado.....	3.57	-	9.53	-	8.81
Illinois.....	3.97	-	4.23	-	4.07
Indiana.....	3.83	-	-	-	3.83
Kentucky Total.....	3.23	2.78	3.71	-	3.24
East.....	3.02	2.78	3.94	-	3.03
West.....	4.26	-	3.59	-	4.05
Maryland.....	3.18	-	6.06	-	5.50
New Mexico.....	-	-	3.52	-	3.52
Ohio.....	2.60	5.17	4.28	-	3.88
Oklahoma.....	4.98	-	-	-	4.98
Pennsylvania Total.....	3.71	0.78	5.44	-	5.06
Anthracite.....	0.85	0.78	-	-	0.83
Bituminous.....	4.04	-	5.44	-	5.18
Tennessee.....	2.43	-	-	-	2.43
Utah.....	2.70	-	9.10	-	7.78
Virginia.....	2.46	-	4.34	-	2.84
West Virginia Total.....	3.48	2.66	4.57	-	3.90
Northern.....	3.75	2.81	4.89	-	4.45
Southern.....	3.42	2.59	4.31	-	3.69
Appalachian Total.....	3.11	2.98	4.40	-	3.62
Northern.....	3.56	4.11	5.17	-	4.72
Central.....	3.05	2.78	4.28	-	3.24
Southern.....	0.70	-	2.55	-	2.49
Interior Total.....	3.42	-	3.55	-	3.46
Illinois Basin.....	4.04	-	4.00	-	4.03
Western Total.....	3.00	-	8.80	-	7.91
Powder River Basin.....	-	-	-	-	-
Uinta Region.....	3.05	-	9.31	-	8.38
East of Miss. River.....	3.29	2.98	4.35	-	3.69
West of Miss. River.....	3.17	-	8.80	-	7.87
U.S. Total.....	3.29	2.98	5.01	-	4.00

¹ For a definition of coal producing regions, see Glossary.

² Mines that produce greater than 50 percent of their coal by continuous mining methods.

³ Mines that produce greater than 50 percent of their coal by conventional mining methods.

⁴ Mines that have any production from longwall mining method. A typical longwall mining operation uses 80 percent longwall mining and 20 percent continuous mining.

⁵ Mines that produce coal using shortwall, scoop loading, hand loading, or other mining methods, or a 50/50 percent conventional/conventional split in mining method.

Note: • For each State, stand alone preparation plant hours are distributed across mining methods by the proportion of production for all stand alone mines. Productivity is calculated by dividing total coal production by the total direct labor hours worked by all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes mines producing less than 10,000 short tons of coal and preparation plants with less than 5,000 employee hours during the year, which are not required to provide data.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 23. Coal Mining Productivity by State, Mine Type, and Mine Production Range, 2002
(Short Tons Coal Produced per Employee per Hour)

Coal-Producing State, Region ¹ , and Mine Type	Mine Production Range							Total ²
	1,000 and Greater	500 to 1,000	200 to 500	100 to 200	50 to 100	10 to 50	Less Than 10	
Alabama	2.96	1.27	2.85	3.03	2.92	1.60	*	2.56
Underground.....	2.96	0.80	-	-	-	0.88	-	2.49
Surface.....	-	4.97	2.85	3.03	2.92	2.28	*	2.85
Alaska	4.98	-	-	-	-	-	-	4.98
Surface.....	4.98	-	-	-	-	-	-	4.98
Arizona	7.49	-	-	-	-	-	-	7.21
Surface.....	7.49	-	-	-	-	-	-	7.21
Arkansas	-	-	-	-	-	2.79	*	*
Underground.....	-	-	-	-	-	-	*	*
Surface.....	-	-	-	-	-	2.79	0.70	2.15
Colorado	8.85	3.29	4.35	-	-	-	-	8.29
Underground.....	9.55	3.29	3.94	-	-	-	-	8.81
Surface.....	7.42	-	4.90	-	-	-	-	7.20
Illinois	4.47	4.16	3.97	2.34	-	-	*	4.23
Underground.....	4.25	4.16	-	2.34	-	-	-	4.07
Surface.....	5.89	-	3.97	-	-	-	*	5.05
Indiana	5.52	5.55	5.89	4.38	2.28	-	*	5.35
Underground.....	3.86	-	4.63	-	-	-	-	3.79
Surface.....	6.52	5.70	6.38	4.38	2.28	-	*	6.07
Kansas	-	-	11.04	-	-	-	-	11.04
Surface.....	-	-	11.04	-	-	-	-	11.04
Kentucky	4.54	4.59	3.75	2.98	2.62	2.22	*	3.47
Underground.....	4.30	4.14	3.44	2.54	2.44	1.94	*	3.22
Surface.....	5.25	5.15	4.19	3.71	3.22	2.69	*	3.94
Eastern	4.37	4.81	3.69	2.97	2.63	2.20	*	3.32
Underground.....	4.09	4.36	3.44	2.61	2.44	1.92	*	3.03
Surface.....	4.98	5.24	4.07	3.62	3.34	2.67	*	3.82
Western	4.89	3.63	4.98	3.09	2.25	4.61	-	4.22
Underground.....	4.64	3.56	3.66	1.46	-	13.86	-	4.00
Surface.....	6.98	3.98	5.49	4.39	2.25	3.77	-	5.19
Louisiana	8.81	8.32	-	-	-	-	-	8.73
Surface.....	8.81	8.32	-	-	-	-	-	8.73
Maryland	6.89	5.19	4.20	7.70	1.78	1.45	*	4.71
Underground.....	6.89	-	3.62	-	-	-	*	5.38
Surface.....	-	5.19	4.65	7.70	1.78	1.45	1.07	3.83
Mississippi	8.42	-	-	-	-	-	-	8.42
Surface.....	8.42	-	-	-	-	-	-	8.42
Missouri	-	-	12.46	-	-	6.41	-	10.64
Surface.....	-	-	12.46	-	-	6.41	-	10.64
Montana	23.58	-	13.30	-	-	-	-	23.42
Surface.....	23.58	-	13.30	-	-	-	-	23.42
New Mexico	8.54	3.71	-	-	-	-	-	8.29
Underground.....	3.44	-	-	-	-	-	-	3.44
Surface.....	9.46	3.71	-	-	-	-	-	9.12
North Dakota	17.00	-	-	-	-	-	-	17.00
Surface.....	17.00	-	-	-	-	-	-	17.00
Ohio	4.27	4.50	3.74	2.82	3.08	1.63	*	3.58
Underground.....	4.27	-	3.90	-	3.64	2.26	-	3.91
Surface.....	-	4.50	3.71	2.82	2.96	1.56	*	3.29
Oklahoma	-	-	4.48	3.20	3.78	-	0.65	4.17
Underground.....	-	-	4.98	-	-	-	-	4.98
Surface.....	-	-	4.19	3.20	3.78	-	0.65	3.86
Pennsylvania	5.67	3.55	4.14	3.13	2.67	2.36	*	4.18
Underground.....	5.66	4.43	5.46	2.90	2.80	1.57	*	5.02
Surface.....	5.73	2.22	3.37	3.25	2.65	2.58	*	2.40
Anthracite	-	-	2.32	1.57	1.68	1.59	*	0.78
Underground.....	-	-	-	1.80	-	0.88	*	0.78
Surface.....	-	-	2.32	1.35	1.68	1.88	*	0.78
Bituminous	5.67	3.55	4.22	3.53	2.85	2.75	*	4.57
Underground.....	5.66	4.43	5.46	3.34	2.80	2.12	*	5.18
Surface.....	5.73	2.22	3.44	3.61	2.86	2.90	*	2.93
Tennessee	-	-	3.25	3.29	2.44	2.01	*	2.70
Underground.....	-	-	3.61	3.29	1.88	1.85	*	2.39
Surface.....	-	-	3.21	-	3.09	2.27	*	2.90
Texas	9.16	-	-	-	-	*	-	9.05
Surface.....	9.16	-	-	-	-	*	-	9.05
Utah	9.49	3.47	4.96	3.00	-	*	*	7.70
Underground.....	9.49	3.47	-	3.00	-	*	*	7.77
Surface.....	-	-	4.96	-	-	-	-	4.13

See footnotes at end of table.

Table 23. Coal Mining Productivity by State, Mine Type, and Mine Production Range, 2002 (Continued)
(Short Tons Coal Produced per Employee per Hour)

Coal-Producing State, Region ¹ , and Mine Type	Mine Production Range							Total ²
	1,000 and Greater	500 to 1,000	200 to 500	100 to 200	50 to 100	10 to 50	Less Than 10	
Virginia	4.34	3.97	3.50	2.74	2.34	2.27	*	2.94
Underground.....	4.34	3.64	3.20	2.79	2.33	2.16	*	2.81
Surface.....	-	4.21	4.05	2.60	2.39	2.88	*	3.25
Washington	4.81	-	-	-	-	-	-	4.81
Surface.....	4.81	-	-	-	-	-	-	4.81
West Virginia	5.56	5.20	4.05	3.36	2.77	2.47	*	4.33
Underground.....	5.03	4.68	3.63	3.30	2.58	2.29	*	3.89
Surface.....	6.44	6.21	5.07	3.56	3.75	2.77	*	5.15
Northern Total	5.11	4.13	5.05	3.75	3.21	2.68	*	4.48
Underground.....	4.86	4.13	5.05	3.77	2.80	2.27	*	4.42
Surface.....	6.90	-	-	3.72	4.06	2.88	*	4.79
Southern Total	5.75	5.35	3.89	3.28	2.63	2.39	*	4.29
Underground.....	5.15	4.79	3.28	3.22	2.52	2.29	*	3.68
Surface.....	6.39	6.21	5.07	3.49	3.44	2.67	*	5.19
Wyoming	38.40	-	7.41	-	-	-	-	38.10
Surface.....	38.40	-	7.41	-	-	-	-	38.10
Appalachian Total	4.98	4.55	3.76	3.06	2.61	2.20	*	3.71
Underground.....	4.69	4.05	3.61	2.89	2.45	1.95	*	3.61
Surface.....	6.03	5.15	3.93	3.32	2.87	2.46	*	3.91
Northern	5.33	4.12	4.13	3.23	2.77	2.24	*	4.16
Underground.....	5.26	4.27	5.00	3.22	2.88	1.78	*	4.70
Surface.....	6.57	3.99	3.59	3.24	2.74	2.36	*	3.02
Central	5.15	4.95	3.68	3.01	2.54	2.26	*	3.64
Underground.....	4.63	4.51	3.33	2.85	2.41	2.08	*	3.23
Surface.....	5.97	5.46	4.21	3.43	3.04	2.67	*	4.31
Southern	2.96	1.27	2.85	3.03	2.92	1.60	*	2.56
Underground.....	2.96	0.80	-	-	-	0.88	-	2.49
Surface.....	-	4.97	2.85	3.03	2.92	2.28	*	2.85
Interior Total	6.03	4.47	5.17	3.09	2.50	1.46	*	5.54
Underground.....	4.30	3.70	4.45	2.02	-	13.86	*	4.00
Surface.....	7.93	5.55	5.38	4.16	2.50	1.34	*	7.17
Illinois Basin	4.91	4.35	5.12	3.08	2.27	4.61	*	4.59
Underground.....	4.30	3.70	4.24	2.02	-	13.86	-	4.00
Surface.....	6.44	5.33	5.35	4.39	2.27	3.77	*	5.75
Western Total	21.16	3.48	5.55	3.00	-	*	*	20.07
Underground.....	8.96	3.42	3.94	3.00	-	*	*	7.89
Surface.....	24.45	3.71	6.43	-	-	-	-	23.93
Powder River Basin	40.92	-	-	-	-	-	-	40.92
Surface.....	40.92	-	-	-	-	-	-	40.92
Uinta Region	9.10	3.42	6.11	3.00	-	*	*	8.17
Underground.....	9.52	3.42	7.54	3.00	-	*	*	8.37
Surface.....	7.42	-	4.96	-	-	-	-	7.26
East of Miss. River	4.97	4.52	3.83	3.06	2.60	2.21	*	3.86
Underground.....	4.59	4.00	3.62	2.84	2.45	1.96	*	3.67
Surface.....	6.20	5.17	4.06	3.40	2.83	2.47	*	4.22
West of Miss. River	19.11	3.87	5.47	3.13	3.78	0.64	*	18.06
Underground.....	8.96	3.42	4.32	3.00	-	*	*	7.80
Surface.....	21.28	5.05	6.06	3.20	3.78	1.06	*	20.67
Subtotal	9.89	4.49	3.88	3.06	2.61	2.13	*	6.81
Underground.....	5.07	3.96	3.63	2.84	2.45	1.86	*	3.98
Surface.....	15.98	5.17	4.14	3.40	2.84	2.41	*	10.38
Refuse Recovery	-	-	-	8.72	2.83	2.33	0.90	3.86
U.S. Total	9.89	4.49	3.88	3.11	2.61	2.13	*	6.80

¹ For a definition of coal producing regions, see Glossary.

² Includes all employees at preparation plants and tipples not co-located with a mine.

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Productivity is calculated by dividing total coal production by the total labor hours worked by all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes preparation plants with less than 5,000 employee hours during the year, which are not required to provide data.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 24. Coal Mining Productivity by State, Mine Type, and Union Status, 2002
(Short Tons Produced per Employee per Hour)

Coal-Producing State and Region ¹	Union		Nonunion	
	Underground	Surface	Underground	Surface
Alabama.....	2.58	-	*	2.87
Alaska.....	-	-	-	4.98
Arizona.....	-	7.21	-	-
Arkansas.....	-	-	-	2.79
Colorado.....	5.80	6.83	9.24	7.50
Illinois.....	3.94	3.72	4.20	6.32
Indiana.....	-	4.85	3.80	6.35
Kansas.....	-	-	-	11.04
Kentucky Total.....	3.30	5.52	3.23	3.86
Eastern.....	0.89	6.26	3.05	3.73
Western.....	3.49	3.98	4.38	5.47
Louisiana.....	-	-	-	8.73
Maryland.....	-	-	5.50	3.87
Mississippi.....	-	-	-	8.42
Missouri.....	-	-	-	10.64
Montana.....	-	21.13	-	35.82
New Mexico.....	3.44	8.75	-	10.57
North Dakota.....	-	14.57	-	17.96
Ohio.....	3.93	1.84	3.91	3.40
Oklahoma.....	-	-	4.98	3.92
Pennsylvania Total.....	4.45	1.05	5.86	2.62
Anthracite.....	-	0.69	0.80	0.81
Bituminous.....	4.45	2.52	6.22	2.98
Tennessee.....	2.59	-	2.40	2.90
Texas.....	-	8.86	-	9.43
Utah.....	5.02	-	9.04	4.13
Virginia.....	2.96	2.90	2.78	3.28
Washington.....	-	4.81	-	-
West Virginia Total.....	3.82	4.76	3.97	5.30
Northern.....	4.80	-	3.76	4.86
Southern.....	3.12	4.76	4.01	5.36
Wyoming.....	-	7.94	-	42.55
Appalachian Total.....	3.63	4.19	3.62	3.90
Northern.....	4.53	1.20	4.96	3.21
Central.....	3.03	4.85	3.28	4.24
Southern.....	2.58	-	*	2.87
Interior Total.....	3.76	7.39	4.17	7.06
Illinois Basin.....	3.76	4.31	4.16	6.20
Western Total.....	4.74	9.84	9.15	34.88
Powder River Basin.....	-	21.28	-	44.02
Uinta Region.....	5.23	6.80	9.32	7.61
East of Miss. River.....	3.65	4.23	3.70	4.25
West of Miss. River.....	4.74	9.58	9.07	30.41
U.S. Total.....	3.71	7.89	4.16	11.32

¹ For a definition of coal producing regions, see Glossary.

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

Note: • Productivity is calculated by dividing total coal production by the total direct labor hours worked by all employees engaged in production, preparation, processing, development, maintenance, repair shop, or yard work at mining operations, including office workers. Excludes mines producing less than 10,000 short tons of coal and preparation plants with less than 5,000 employee hours during the year, which are not required to provide data.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Domestic Markets

Table 25. Coal Consumers in the Manufacturing and Coke Sectors, 2002

Company Name	Plant Location
Top Ten Manufacturers	
Aluminum Co of America	(IN)(TX)
Archer Daniels Midland	(IA)(IL)(MN)
BPB America	(IL)
Carmeuse North American Group	(AL)(IL)(IN)(KY)(MI)(OH)(PA)(TX)
Dakota Coal Company	(ND)
Eastman Kodak Co	(AR)(NY)(SC)(TN)(TX)
Georgia-Pacific Corp	(AL)(GA)(OK)(VA)(WI)
International Paper Co	(AL)(FL)(GA)(IN)(LA)(MI)(MN)(NC)(SC)(VA)
Lafarge North America	(AL)(GA)(IA)(IL)(KS)(MI)(MO)(NY)(OK)(PA)(SC)(WA)
Mead Westvaco Corporation	(MD)(MI)(OH)(SC)(VA)
Other Major Manufacturers	
A E Stanley Manufacturing Co	(IL)(IN)(TN)
Amalgamated Sugar Co	(ID)
American Crystal Sugar Co	(MN)(ND)
Ash Grove Cement Co	(AR)(KS)(MT)(NE)(UT)
Bethlehem Steel Corp	(IN)
Blue Ridge Paper Prod Inc	(NC)
Bowater Newsprint	(AL)(TN)
California Portland Cement Co	(AZ)(CA)
Cargill Incorporated	(AL)(GA)(IA)(NC)(NY)(OH)(TN)
Celanese Acetate Corp	(SC)(VA)
Celanese Ltd	(TX)
Cemex, Inc	(AL)(CO)(FL)(GA)(KY)(MI)(OH)(PA)(TN)(TX)
Central Power & Lime Inc	(FL)
E I DuPont DE Nemours & Co	(DE)(MS)(NC)(SC)(TN)(WV)
ESSROC Materials Inc	(IN)(MD)(PA)
FMC Corporation	(WV)(WY)
G E Company	(IN)(KY)(PA)
General Chemical Corporation	(WY)
Holcim Inc	(AL)(CO)(IA)(MI)(MS)(SC)(UT)
Ispat US Holdings BV	(IN)
IMC Chemical Co	(CA)
Kennecott Utah Copper	(UT)
Lehigh Cement Co	(AL)(IA)(IN)(MD)(PA)
PPG Industries Inc	(WV)
Silver Bay Power Company	(MN)
Smurfit Stone Container Corp	(FL)(MI)(SC)(VA)
Solutia Inc	(AL)(MA)
Stora Enso North America	(WI)
TXI Operations, LP	(TX)
Weyerhaeuser Inc	(AL)(NC)(PA)(TN)(WA)
Top Ten Coke Producers	
AK Steel Corp	(KY)(OH)
Bethlehem Steel Corp	(IN)
Citizens Gas & Coke Utility	(IN)
Drummond Company Inc	(AL)
DTE Energy Services	(IN)
Indiana Harbor Coke Co LP	(IN)
Jewell Coke Company LP	(VA)
National Steel Corp	(IL)(MI)
U S Steel Mining Company LLC	(IN)(PA)
Wheeling-Pittsburgh Steel Corp	(WV)

Note: • Major manufactures are the top 40 coal consumers in the manufacturing sector. Major coke producers are the top 10 coal consumers in the coke plant sector. Manufacturers and coke producers are listed in alphabetical order.

Source: • Energy Information Administration, Manufacturers: Form EIA-3, "Quarterly Coal Consumption Report, Manufacturing Plants;" and, Coke Plants: Form EIA-5, "Coke Plant Report - Quarterly."

Table 26. U.S. Coal Consumption by End Use Sector, by Census Division and State, 2002, 2001
(Thousand Short Tons)

Census Division and State	2002				2001				Total		
	Electric Power ¹	Other Industrial	Coke	Residential and Commercial	Electric Power ¹	Other Industrial	Coke	Residential and Commercial	2002	2001	Percent Change
New England	7,696	133	-	101	7,696	179	-	31	7,930	7,905	0.3
Connecticut	1,393	-	-	W	1,623	-	-	W	W	W	-14.2
Maine	129	W	-	W	180	W	-	W	219	307	-28.7
Massachusetts	4,648	W	-	W	4,359	W	-	W	4,780	4,429	7.9
New Hampshire	1,527	-	-	W	1,533	-	-	W	W	W	-0.4
Rhode Island	-	-	-	W	-	-	-	W	W	W	19.1
Vermont	-	-	-	W	-	-	-	W	W	W	-43.2
Middle Atlantic	65,411	W	W	W	62,861	W	W	W	77,897	W	W
New Jersey	4,466	W	-	W	4,305	W	-	W	4,475	4,315	3.7
New York	10,070	1,155	W	45	9,258	1,609	W	114	W	W	-2.2
Pennsylvania	50,875	3,121	W	587	49,297	3,355	W	785	W	W	3.1
East North Central	217,830	14,147	11,154	1,253	214,973	14,967	12,981	907	244,385	243,827	0.2
Illinois	49,447	3,297	W	173	45,732	3,479	W	228	W	W	4.4
Indiana	55,669	5,196	8,093	331	57,397	5,334	8,100	251	69,288	71,082	-2.5
Michigan	33,378	1,802	W	266	33,928	2,177	W	9	W	W	-2.1
Ohio	55,990	2,136	W	357	53,834	2,327	W	230	W	W	2.8
Wisconsin	23,347	1,716	-	127	24,081	1,651	-	189	25,189	25,921	-2.8
West North Central	143,037	W	-	W	138,080	W	-	W	156,376	151,461	3.2
Iowa	22,028	2,860	-	313	21,305	2,814	-	279	25,201	24,398	3.3
Kansas	22,650	178	-	*	20,150	165	-	*	22,828	20,316	12.4
Minnesota	19,148	1,261	-	106	18,427	1,254	-	2	20,515	19,683	4.2
Missouri	39,703	994	-	188	38,585	1,015	-	212	40,885	39,812	2.7
Nebraska	12,210	388	-	7	12,606	518	-	6	12,605	13,130	-4.0
North Dakota	25,247	W	-	W	24,795	W	-	W	31,984	31,524	1.5
South Dakota	2,051	306	-	1	2,212	378	-	9	2,358	2,599	-9.3
South Atlantic	167,486	W	W	W	163,379	W	W	W	182,017	178,598	1.9
Delaware	1,541	W	-	W	1,480	W	-	W	1,640	1,653	-0.8
District of Columbia	-	-	-	W	-	-	-	W	W	W	-88.4
Florida	25,162	1,196	-	10	28,696	1,172	-	60	26,368	29,927	-11.9
Georgia	32,793	1,828	-	5	30,891	1,994	-	11	34,626	32,896	5.3
Maryland	11,050	1,323	-	3	11,158	1,286	-	76	12,376	12,519	-1.1
North Carolina	29,445	1,597	-	132	28,649	1,704	-	128	31,174	30,481	2.3
South Carolina	14,347	1,923	-	*	14,382	2,038	-	-	16,269	16,421	-0.9
Virginia	15,367	2,152	W	77	15,428	2,348	W	129	W	W	-1.5
West Virginia	37,781	1,536	W	34	32,694	1,611	W	48	W	W	14.5
East South Central	105,824	W	2,319	W	107,927	W	2,608	W	115,220	118,291	-2.6
Alabama	33,441	2,133	W	4	33,801	2,297	W	16	W	W	-1.3
Kentucky	39,836	1,134	W	252	41,305	1,357	W	218	W	W	-4.5
Mississippi	7,917	W	-	W	8,334	W	-	W	8,066	8,488	-5.0
Tennessee	24,630	3,340	-	64	24,487	3,575	-	140	28,034	28,202	-0.6
West South Central	145,313	5,247	-	66	142,902	W	-	W	150,626	148,600	1.4
Arkansas	14,165	422	-	*	15,110	437	-	-	14,587	15,547	-6.2
Louisiana	14,574	W	-	W	14,854	W	-	W	14,628	14,934	-2.1
Oklahoma	21,365	W	-	W	20,500	724	-	1	22,090	21,224	4.1
Texas	95,209	4,046	-	65	92,438	4,439	-	17	99,321	96,894	2.5
Mountain	112,726	3,773	-	550	115,996	4,848	W	519	117,049	W	W
Arizona	19,328	626	-	1	20,158	672	-	1	19,955	20,830	-4.2
Colorado	19,448	W	-	W	19,765	W	-	W	19,879	20,367	-2.4
Idaho	-	469	-	19	-	534	-	19	487	553	-11.8
Montana	9,746	W	-	W	10,838	W	-	W	9,841	11,000	-10.5
Nevada	7,887	W	-	W	8,190	W	-	W	8,072	8,399	-3.9
New Mexico	15,195	W	-	W	15,955	W	-	W	15,273	16,031	-4.7
Utah	15,644	592	-	198	14,906	1,235	W	60	16,434	W	W
Wyoming	25,479	1,535	-	94	26,184	1,660	-	139	27,108	27,984	-3.1
Pacific	10,536	2,177	-	495	10,620	2,179	-	495	13,207	13,294	-0.7
Alaska	545	W	-	W	515	W	-	W	1,018	989	2.9
California	1,025	1,973	-	*	897	1,937	-	*	2,997	2,834	5.8
Hawaii	643	W	-	W	716	W	-	W	692	829	-16.4
Oregon	2,155	W	-	W	2,490	-	-	W	2,205	W	W
Washington	6,168	W	-	W	6,001	W	-	W	6,295	6,151	2.3
U.S. Total	975,858	60,747	23,656	4,445	964,433	65,268	26,075	4,369	1,064,706	1,060,146	0.4

¹ The electric power sector (electric utilities and independent power producers) comprises electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public -- i.e. NAICS 22 plants

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

W = Withheld to avoid disclosure of individual company data.

Note: • Totals may not equal sum of components because of independent rounding. Electric power sector data is preliminary.

Source: • Energy Information Administration, Form EIA-906, "Power Plant Report," Form EIA-3, "Quarterly Coal Consumption Report - Manufacturing Plants," Form EIA-5, "Coke Plant Report - Quarterly," Form EIA-6A, "Coal Distribution Report," and, Form EIA-860B, "Annual Electric Generator Report - Nonutility."

Table 27. Year-End Coal Stocks by End-Use Sector, by Census Division, 2002, 2001
(Thousand Short Tons)

Census Division and State	2002			2001			Total		
	Electric Power ¹	Other Industrial	Coke	Electric Power ¹	Other Industrial	Coke	2002	2001	Percent Change
New England	894	48	-	1,195	50	-	942	1,244	-24.3
Middle Atlantic	7,353	447	W	8,713	505	W	W	W	-14.8
East North Central	37,300	1,761	570	35,268	1,823	637	39,631	37,729	5.0
West North Central	23,372	1,301	-	21,162	1,222	-	24,673	22,384	10.2
South Atlantic	23,308	715	W	27,409	924	W	W	W	-15.1
East South Central.....	14,300	401	208	12,741	476	266	14,909	13,483	10.6
West South Central	21,077	349	-	18,419	411	-	21,427	18,830	13.8
Mountain	13,297	560	-	12,752	366	W	13,857	W	W
Pacific.....	1,125	209	-	836	230	-	1,334	1,066	25.1
U.S. Total.....	142,026	5,792	1,364	138,496	6,006	1,510	149,182	146,012	2.2

¹ The electric power sector (electric utilities and independent power producers) comprises electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public -- i.e. NAICS 22 plants.

W = Withheld to avoid disclosure of individual company data.

Note: • Stocks for residential and commercial sector are not included. Electric power sector data is preliminary. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration, Form EIA-906, "Power Plant Report," Form EIA-3, "Quarterly Coal Consumption Report - Manufacturing Plants," and Form EIA-5, "Coke Plants Report - Quarterly."

F.O.B. Mine Sales Price

Table 28. Average Open Market Sales Price of Coal by State and Mine Type, 2002, 2001
(Dollars per Short Ton)

Coal-Producing State	2002			2001			Percent Change		
	Underground	Surface	Total	Underground	Surface	Total	Underground	Surface	Total
Alabama.....	34.11	34.87	34.28	34.95	32.39	34.36	-2.4	7.6	-0.2
Alaska.....	-	W	W	-	W	W	-	W	W
Arizona.....	-	W	W	-	W	W	-	W	W
Arkansas.....	-	W	W	-	-	-	-	W	W
Colorado.....	16.58	20.37	17.72	15.89	20.02	17.20	4.4	1.7	3.0
Illinois.....	23.50	26.30	24.04	23.06	25.86	23.52	1.9	1.7	2.2
Indiana.....	25.92	21.24	22.20	24.10	19.89	20.67	7.5	6.8	7.4
Kansas.....	-	W	W	-	W	W	-	W	W
Kentucky Total.....	28.03	27.38	27.77	26.59	27.04	26.77	5.4	1.2	3.7
Eastern.....	29.77	28.11	29.04	28.11	27.76	27.96	5.9	1.2	3.9
Western.....	22.37	21.81	22.23	21.72	21.10	21.58	3.0	3.3	3.0
Louisiana.....	-	W	W	-	W	W	-	W	W
Maryland.....	W	W	23.08	W	W	23.83	W	W	-3.2
Mississippi.....	-	W	W	-	W	W	-	W	W
Missouri.....	-	W	W	-	W	W	-	W	W
Montana.....	-	9.27	9.27	-	8.83	8.83	-9.27	4.9	4.9
New Mexico.....	W	W	22.47	W	W	22.02	W	W	2.1
North Dakota.....	-	8.46	8.46	-	8.48	8.48	-	-0.2	-0.2
Ohio.....	20.88	22.00	21.44	21.54	21.44	21.48	-3.1	2.6	-0.2
Oklahoma.....	W	W	27.86	W	W	27.07	W	W	2.9
Pennsylvania Total.....	25.52	27.42	25.87	24.15	28.42	25.07	5.7	-3.5	3.2
Anthracite.....	40.73	49.55	47.78	42.33	49.28	47.67	-3.8	0.5	0.2
Bituminous.....	25.45	25.49	25.46	24.04	26.90	24.63	5.9	-5.2	3.4
Tennessee.....	33.53	27.57	29.56	29.83	26.00	27.57	12.4	6.0	7.2
Texas.....	-	17.02	17.02	-	18.77	18.77	-	-9.3	-9.3
Utah.....	W	W	18.30	19.86	-	19.86	W	W	-7.9
Virginia.....	31.68	29.77	31.09	28.85	28.41	28.72	9.8	4.8	8.2
West Virginia Total.....	30.20	28.77	29.59	27.21	26.75	27.03	11.0	7.5	9.5
Northern.....	24.42	27.93	24.98	22.47	29.86	23.48	8.7	-6.4	6.4
Southern.....	33.03	28.84	30.92	29.51	26.48	28.08	11.9	8.9	10.1
Wyoming.....	-	6.37	6.37	-	5.62	5.62	-	13.4	13.4
U.S. Total.....	26.68	13.65	17.98	25.37	13.18	17.38	5.1	3.6	3.5

W = Withheld to avoid disclosure of individual company data.

Note: • Open market includes all coal sold on the open market to other coal companies or consumers. An average open market sales price is calculated by dividing the total free on board (f.o.b) rail/barge value of the open market coal sold by the total open market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 29. Average Open Market Sales Price of Coal by State and Underground Mining Method, 2002
(Dollars per Short Ton)

Coal-Producing State	Continuous ¹	Conventional ²	Longwall ³	Other ⁴	Total
Alabama.....	W	-	W	-	34.11
Colorado.....	W	-	W	-	16.58
Illinois.....	W	-	W	-	23.50
Indiana.....	25.92	-	-	-	25.92
Kentucky Total.....	28.31	27.92	25.99	-	28.03
Eastern.....	W	27.92	W	-	29.77
Western.....	W	-	W	-	22.37
Maryland.....	-	-	W	-	W
New Mexico.....	-	-	W	-	W
Ohio.....	27.55	W	W	-	20.88
Oklahoma.....	W	-	-	-	W
Pennsylvania Total.....	22.78	W	W	-	25.52
Anthracite.....	W	W	-	-	40.73
Bituminous.....	W	-	W	-	25.45
Tennessee.....	33.53	-	-	-	33.53
Utah.....	W	-	W	-	W
Virginia.....	W	-	W	-	31.68
West Virginia Total.....	30.65	29.05	29.63	-	30.20
Northern.....	24.02	W	24.58	-	24.42
Southern.....	32.01	W	35.38	-	33.03
U.S. Total.....	28.21	26.10	25.32	-	26.68

¹ Mines that produce greater than 50 percent of their coal by continuous mining methods.

² Mines that produce greater than 50 percent of their coal by conventional mining methods.

³ Mines that have any production from longwall mining method. A typical longwall mining operation uses 80 percent longwall mining and 20 percent continuous mining.

⁴ Mines that produce coal using shortwall, scoop loading, hand loading, or other mining methods, or a 50/50 percent conventional/conventional split in mining method.

W = Withheld to avoid disclosure of individual company data.

Note: • Open market includes all coal sold on the open market to other coal companies or consumers. An average open market sales price is calculated by dividing the total free on board (f.o.b) rail/barge value of the open market coal sold by the total open market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 30. Average Open Market Sales Price of Coal by State, County, and Number of Mines, 2002
(Thousand Short Tons, Dollars per Short Ton)

Coal-Producing State and County	Number of Mines	Open Market Sales	Average Open Market Sales Price
Alabama	39	18,221	34.28
Bibb.....	1	W	W
Jefferson.....	9	W	W
Marion.....	1	W	W
Shelby.....	1	W	W
Tuscaloosa.....	10	9,812	32.00
Walker.....	15	2,237	34.22
Winston.....	2	W	W
Alaska	1	W	W
Yukon-Koyukuk Division.....	1	W	W
Arizona	2	W	W
Navajo.....	2	W	W
Arkansas	1	W	W
Sebastian.....	1	W	W
Colorado	13	32,554	17.72
Delta.....	1	W	W
Garfield.....	1	W	W
Gunnison.....	3	W	W
La Plata.....	1	W	W
Las Animas.....	1	W	W
Moffat.....	2	W	W
Montrose.....	1	W	W
Rio Blanco.....	1	-	-
Routt.....	2	W	W
Illinois	21	32,989	24.04
Gallatin.....	3	W	W
Jackson.....	1	W	W
Jefferson.....	1	W	W
Macoupin.....	2	W	W
Mcdonough.....	1	W	W
Montgomery.....	1	W	W
Perry.....	1	W	W
Randolph.....	1	W	W
Saline.....	4	W	W
Sangamon.....	1	W	W
Vermilion.....	2	W	W
Wabash.....	1	W	W
White.....	1	W	W
Williamson.....	1	W	W
Indiana	32	34,572	22.20
Clay.....	3	W	W
Daviess.....	3	W	W
Gibson.....	6	11,871	20.95
Greene.....	2	W	W
Knox.....	7	5,200	24.82
Parke.....	1	W	W
Pike.....	5	5,057	22.37
Spencer.....	1	W	W
Sullivan.....	1	W	W
Vigo.....	2	W	W
Warrick.....	1	W	W
Kansas	1	W	W
Linn.....	1	W	W
Kentucky	365	120,923	27.77
Bell.....	14	2,717	27.89
Breathitt.....	4	W	W
Christian.....	1	W	W
Clay.....	3	W	W
Daviess.....	1	W	W
Floyd.....	24	3,008	27.26
Harlan.....	40	10,205	28.79
Henderson.....	2	W	W
Hopkins.....	8	2,832	25.34
Jackson.....	1	W	W
Johnson.....	4	W	W
Knott.....	40	10,850	28.15
Knox.....	8	429	35.99
Laurel.....	1	W	W
Lawrence.....	6	W	W

See footnotes at end of table.

Table 30. Average Open Market Sales Price of Coal by State, County, and Number of Mines, 2002 (Continued)
(Thousand Short Tons, Dollars per Short Ton)

Coal-Producing State and County	Number of Mines	Open Market Sales	Average Open Market Sales Price
Kentucky (continued)			
Lee	1	W	W
Leslie.....	13	6,407	26.80
Letcher.....	31	8,546	30.12
Magoffin.....	1	W	W
Martin.....	18	9,365	27.01
Mclean.....	1	W	W
Morgan.....	1	W	W
Muhlenberg.....	7	W	W
Ohio.....	2	W	W
Owsley.....	2	W	W
Perry.....	25	12,921	28.90
Pike.....	96	29,733	30.49
Union.....	3	W	W
Webster.....	3	W	W
Whitley.....	4	173	33.44
Louisiana.....	2	W	W
De Soto.....	1	W	W
Red River.....	1	W	W
Maryland.....	14	4,586	23.08
Allegany.....	10	W	W
Garrett.....	4	W	W
Mississippi.....	1	W	W
Choctaw.....	1	W	W
Missouri.....	2	W	W
Bates.....	2	W	W
Montana.....	6	36,555	9.27
Big Horn.....	3	W	W
Richland.....	1	W	W
Rosebud.....	2	W	W
New Mexico.....	7	27,977	22.47
Colfax.....	1	W	W
Mckinley.....	2	W	W
San Juan.....	4	W	W
North Dakota.....	4	31,003	8.46
Mclean.....	1	W	W
Mercer.....	2	W	W
Oliver.....	1	W	W
Ohio.....	51	18,482	21.44
Athens.....	1	W	W
Belmont.....	8	W	W
Carroll.....	3	W	W
Columbiana.....	4	W	W
Coshocton.....	1	W	W
Gallia.....	1	W	W
Guernsey.....	2	W	W
Harrison.....	6	W	W
Jackson.....	2	W	W
Jefferson.....	7	529	23.00
Meigs.....	1	W	W
Monroe.....	1	W	W
Muskingum.....	1	W	W
Noble.....	1	W	W
Perry.....	1	W	W
Stark.....	3	W	W
Tuscarawas.....	6	W	W
Vinton.....	2	W	W
Oklahoma.....	5	1,393	27.86
Craig.....	1	W	W
Haskell.....	1	W	W
Le Flore.....	2	W	W
Rogers.....	1	W	W
Pennsylvania.....	174	66,932	25.87
Armstrong.....	22	4,336	23.55
Beaver.....	1	W	W
Bedford.....	1	W	W
Butler.....	1	W	W
Cambria.....	7	976	24.89
Centre.....	1	W	W
Clarion.....	3	W	W
Clearfield.....	24	2,952	28.50

See footnotes at end of table.

Table 30. Average Open Market Sales Price of Coal by State, County, and Number of Mines, 2002 (Continued)
(Thousand Short Tons, Dollars per Short Ton)

Coal-Producing State and County	Number of Mines	Open Market Sales	Average Open Market Sales Price
Pennsylvania (continued)			
Columbia.....	3	W	W
Elk.....	3	W	W
Fayette.....	5	W	W
Greene.....	11	40,338	25.40
Indiana.....	20	2,836	24.51
Jefferson.....	11	849	27.63
Lackawanna.....	1	W	W
Lawrence.....	2	W	W
Luzerne.....	3	W	W
Lycoming.....	1	W	W
Northumberland.....	1	W	W
Schuylkill.....	21	523	40.44
Somerset.....	21	4,263	21.32
Venango.....	1	W	W
Washington.....	5	W	W
Westmoreland.....	5	183	20.56
Tennessee.....	20	3,237	29.56
Anderson.....	2	W	W
Campbell.....	7	1,027	31.05
Claiborne.....	8	1,696	27.18
Cumberland.....	1	W	W
Fentress.....	1	W	W
Scott.....	1	W	W
Texas.....	12	9,119	17.02
Atascosa.....	1	-	-
Freestone.....	1	-	-
Harrison.....	1	-	-
Hopkins.....	1	-	-
Leon.....	1	W	W
Milam.....	1	-	-
Panola.....	1	-	-
Robertson.....	1	W	W
Rusk.....	1	-	-
Titus.....	2	-	-
Webb.....	1	W	W
Utah.....	12	19,234	18.30
Carbon.....	7	8,498	19.38
Emery.....	3	W	W
Sevier.....	2	W	W
Virginia.....	128	28,399	31.09
Buchanan.....	38	8,999	33.72
Dickenson.....	20	2,932	35.69
Lee.....	3	W	W
Russell.....	5	W	W
Tazewell.....	8	1,380	30.93
Wise.....	54	14,260	28.57
Washington.....	1	-	-
Lewis.....	1	-	-
West Virginia.....	264	142,788	29.59
Barbour.....	8	616	18.24
Boone.....	39	31,432	30.80
Brooke.....	1	W	W
Clay.....	2	W	W
Fayette.....	11	4,389	31.43
Grant.....	3	W	W
Greenbrier.....	4	W	W
Harrison.....	9	W	W
Kanawha.....	15	15,273	30.38
Lincoln.....	3	W	W
Logan.....	17	10,071	28.84
Marion.....	2	W	W
Marshall.....	1	W	W
Mcdowell.....	45	4,709	33.29
Mineral.....	2	W	W
Mingo.....	30	19,694	30.83
Monongalia.....	10	W	W
Nicholas.....	6	W	W
Ohio.....	1	W	W
Preston.....	2	W	W
Raleigh.....	13	4,890	35.62

See footnotes at end of table.

Table 30. Average Open Market Sales Price of Coal by State, County, and Number of Mines, 2002 (Continued)
(Thousand Short Tons, Dollars per Short Ton)

Coal-Producing State and County	Number of Mines	Open Market Sales	Average Open Market Sales Price
West Virginia (continued)			
Tucker.....	1	W	W
Upshur.....	8	1,052	18.90
Wayne.....	5	W	W
Webster.....	8	W	W
Wyoming.....	18	W	W
Wyoming.....	18	354,539	6.37
Campbell.....	12	320,627	6.15
Carbon.....	2	W	W
Converse.....	1	W	W
Lincoln.....	1	W	W
Sweetwater.....	2	W	W
U.S. Total.....	1,196	1,003,161	17.98

W = Withheld to avoid disclosure of individual company data.

Note: • Open market includes all coal sold on the open market to other coal companies or consumers. An average open market sales price is calculated by dividing the total free on board (f.o.b) rail/barge value of the open market coal sold by the total open market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 31. Average Open Market Sales Price of Coal by State and Coal Rank, 2002
(Dollars per Short Ton)

Coal-Producing State	Bituminous	Subbituminous	Lignite	Anthracite	Total
Alabama.....	34.28	-	-	-	34.28
Alaska.....	-	W	-	-	W
Arizona.....	W	-	-	-	W
Arkansas.....	W	-	-	-	W
Colorado.....	W	W	-	-	17.72
Illinois.....	24.04	-	-	-	24.04
Indiana.....	22.20	-	-	-	22.20
Kansas.....	W	-	-	-	W
Kentucky Total.....	27.77	-	-	-	27.77
Eastern.....	29.04	-	-	-	29.04
Western.....	22.23	-	-	-	22.23
Louisiana.....	-	-	W	-	W
Maryland.....	23.08	-	-	-	23.08
Mississippi.....	-	-	W	-	W
Missouri.....	W	-	-	-	W
Montana.....	-	W	W	-	9.27
New Mexico.....	W	W	-	-	22.47
North Dakota.....	-	-	8.46	-	8.46
Ohio.....	21.44	-	-	-	21.44
Oklahoma.....	27.86	-	-	-	27.86
Pennsylvania Total.....	25.46	-	-	47.78	25.87
Anthracite.....	-	-	-	47.78	47.78
Bituminous.....	25.46	-	-	-	25.46
Tennessee.....	29.56	-	-	-	29.56
Texas.....	W	-	W	-	17.02
Utah.....	18.30	-	-	-	18.30
Virginia.....	31.09	-	-	-	31.09
West Virginia Total.....	29.59	-	-	-	29.59
Northern.....	24.98	-	-	-	24.98
Southern.....	30.92	-	-	-	30.92
Wyoming.....	W	W	-	-	6.37
U.S. Total.....	26.57	7.34	11.07	47.78	17.98

W = Withheld to avoid disclosure of individual company data.

Note: • Open market includes all coal sold on the open market to other coal companies or consumers. An average open market sales price is calculated by dividing the total free on board (f.o.b) rail/barge value of the open market coal sold by the total open market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 32. Average Open Market Sales Price of Coal by Mine Production Range and Mine Type, 2002
(Dollars per Short Ton)

Mine Production Range (thousand short tons)	Underground	Surface	Total
Over 1,000	25.69	11.16	15.39
500 to 1,000	29.34	27.16	28.24
200 to 500	28.41	27.32	27.83
100 to 200	29.25	27.56	28.49
50 to 100	29.25	28.04	28.73
10 to 50	29.67	26.57	27.97
U.S. Total	26.68	13.65	17.98

Note: • Open market includes all coal sold on the open market to other coal companies or consumers. An average open market sales price is calculated by dividing the total free on board (f.o.b) rail/barge value of the open market coal sold by the total open market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations. Totals may not equal sum of components because of independent rounding.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Table 33. Average Sales Price of U.S. Coal by State and Disposition, 2002
(Dollars per Short Ton)

Coal-Producing State	Open Market ¹	Captive ²
Alabama.....	34.28	44.18
Alaska.....	W	-
Arizona.....	W	-
Arkansas.....	W	-
Colorado.....	17.72	29.40
Illinois.....	24.04	20.65
Indiana.....	22.20	20.46
Kansas.....	W	-
Kentucky Total.....	27.77	25.39
Eastern.....	29.04	28.75
Western.....	22.23	23.97
Louisiana.....	W	W
Maryland.....	23.08	20.23
Mississippi.....	W	-
Missouri.....	W	-
Montana.....	9.27	5.81
New Mexico.....	22.47	-
North Dakota.....	8.46	-
Ohio.....	21.44	22.20
Oklahoma.....	27.86	-
Pennsylvania Total.....	25.87	23.05
Anthracite.....	47.78	-
Bituminous.....	25.46	23.05
Tennessee.....	29.56	-
Texas.....	17.02	13.93
Utah.....	18.30	16.71
Virginia.....	31.09	23.91
Washington.....	-	W
West Virginia Total.....	29.59	33.83
Northern.....	24.98	28.97
Southern.....	30.92	36.41
Wyoming.....	6.37	9.19
U.S. Total.....	17.98	16.85

¹ Open market includes coal sold on the open market to other coal companies or consumers.

² Captive includes all coal used by the producing company or sold to affiliated or parent companies.

W = Withheld to avoid disclosure of individual company data.

Note: • An average open market sales price is calculated by dividing the total free on board (f.o.b.) rail/barge value of the open market coal sold, by the total open market coal sold. An average captive market sales price is calculated by dividing the total free on board (f.o.b.) rail/barge value of the captive market coal sold, by the total captive market coal sold. Excludes mines producing less than 10,000 short tons, which are not required to provide data. Excludes silt, culm, refuse bank, slurry dam, and dredge operations.

Source: • Energy Information Administration Form EIA-7A, "Coal Production Report," and U.S. Department of Labor, Mine Safety and Health Administration, Form 7000-2, "Quarterly Mine Employment and Coal Production Report."

Consumer Prices

Table 34. Average Price of Coal Delivered to End Use Sector by Census Division and State, 2002, 2001
(Dollars per Short Ton)

Census Division and State	2002			2001			Annual Percent Change		
	Electric Utility Plants	Other Industrial Plants	Coke Plants	Electric Utility Plants	Other Industrial Plants	Coke Plants	Electric Utility Plants	Other Industrial Plants	Coke Plants
New England	48.78	62.85	-	43.52	55.65	-	12.1	12.9	-
Connecticut	-	W	-	-	W	-	-	-	-
Maine	-	W	-	-	W	-	-	13.0	-
Massachusetts	56.43	W	-	-	W	-	-	13.9	-
New Hampshire	47.75	W	-	43.52	W	-	9.7	-	-
Rhode Island	-	W	-	-	W	-	-	-	-
Vermont	-	W	-	-	W	-	-	-	-
Middle Atlantic	41.80	W	W	37.14	W	W	12.5	5.0	14.1
New Jersey	60.60	W	-	58.58	W	-	3.4	10.6	-
New York	40.10	49.78	W	37.06	41.27	W	8.2	20.6	10.1
Pennsylvania	30.62	37.60	W	31.12	38.39	W	-1.6	-2.0	16.8
East North Central	25.03	38.64	52.80	25.25	36.47	47.53	-0.9	6.0	11.1
Illinois	22.50	30.23	W	23.01	30.17	W	-2.2	0.2	-4.4
Indiana	24.62	38.54	54.67	23.91	36.11	48.39	3.0	6.7	13.0
Michigan	26.66	44.75	W	26.06	40.72	W	2.3	9.9	7.3
Ohio	28.95	40.59	W	30.97	38.55	W	-6.5	5.3	6.4
Wisconsin	19.90	46.24	-	19.06	42.39	-	4.4	9.1	-
West North Central	14.69	W	-	14.97	W	-	-1.9	22.7	-
Iowa	14.95	30.87	-	14.09	29.83	-	6.1	3.5	-
Kansas	16.85	36.40	-	18.20	34.91	-	-7.4	4.3	-
Minnesota	18.68	32.01	-	18.13	32.51	-	3.0	-1.5	-
Missouri	15.82	35.89	-	17.08	33.56	-	-7.4	6.9	-
Nebraska	10.05	23.52	-	9.71	22.35	-	3.5	5.2	-
North Dakota	9.76	W	-	9.74	W	-	0.2	7.6	-
South Dakota	22.14	20.23	-	17.41	18.49	-	27.2	9.4	-
South Atlantic	38.91	W	W	38.21	W	W	1.8	7.1	-2.4
Delaware	-	W	-	54.54	W	-	-100.0	20.5	-
District of Columbia	-	W	-	-	W	-	-	-	-
Florida	42.48	46.27	-	41.74	46.14	-	1.8	0.3	-
Georgia	39.17	51.51	-	39.04	48.62	-	0.3	5.9	-
Maryland	-	40.94	-	-	37.14	-	-	10.2	-
North Carolina	43.22	50.43	-	39.20	45.05	-	10.3	11.9	-
South Carolina	40.25	51.94	-	39.40	48.95	-	2.2	6.1	-
Virginia	40.79	49.71	W	40.29	46.26	W	1.2	7.5	-2.2
West Virginia	30.08	40.13	W	30.31	36.32	W	-0.8	10.5	-2.6
East South Central	29.04	W	50.03	28.60	W	47.69	1.5	4.5	4.9
Alabama	30.64	42.72	W	30.61	40.96	W	*	4.3	5.5
Kentucky	27.25	47.31	W	25.29	46.09	W	7.8	2.7	1.4
Mississippi	38.86	W	-	38.31	W	-	1.4	4.9	-
Tennessee	27.73	40.17	-	28.31	38.18	-	-2.0	5.2	-
West South Central	18.41	25.60	-	19.17	W	-	-4.0	W	-
Arkansas	14.52	46.28	-	15.23	44.40	-	-4.7	4.3	-
Louisiana	20.27	W	-	20.64	W	-	-1.8	-14.7	-
Oklahoma	16.27	W	-	15.75	27.63	-	3.3	W	-
Texas	20.66	22.54	-	20.39	23.47	-	1.3	-4.0	-
Mountain	20.50	30.02	-	21.49	29.83	W	-4.6	0.6	W
Arizona	25.52	42.85	-	25.43	41.66	-	0.4	2.8	-
Colorado	18.58	W	-	17.93	W	-	3.6	9.1	-
Idaho	-	35.61	-	-	34.80	-	-	2.3	-
Montana	10.29	W	-	12.42	W	-	-17.1	6.5	-
Nevada	30.21	W	-	28.35	W	-	6.6	-8.1	-
New Mexico	28.87	W	-	27.43	W	-	5.2	0.6	-
Utah	21.88	25.84	-	25.96	26.03	W	-15.7	-0.7	W
Wyoming	13.76	25.09	-	13.56	25.41	-	1.5	-1.3	-
Pacific	23.11	39.43	-	19.33	40.10	-	19.6	-1.7	-
Alaska	-	W	-	-	W	-	-	-	-
California	-	39.16	-	-	38.93	-	-	0.6	-
Hawaii	-	W	-	-	W	-	-	-4.4	-
Oregon	23.11	W	-	19.33	W	-	19.6	-	-
Washington	-	W	-	-	W	-	-	-7.6	-
U.S. Total	24.74	35.49	50.67	24.68	32.26	46.42	0.3	10.0	9.2

* = The unit of measure is less than 0.5 or percent change is less than 0.1%.

W = Withheld to avoid disclosure of individual company data.

Note: • Includes manufacturing plants only.

Source: • Federal Energy Regulatory Commission, FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants, Energy Information Administration, Form EIA-3, "Quarterly Coal Consumption Report - Manufacturing Plants," and Form EIA-5, "Coke Plant Report - Quarterly."

Glossary

American Indian Coal Lease: A lease granted to a mining company to produce coal from American Indian lands in exchange for royalties and other revenues; obtained by direct negotiation with Indian tribal authorities, but subject to approval and administration by the U.S. Department of the Interior.

Anthracite: The highest rank of coal; used primarily for residential and commercial space heating. It is a hard, brittle, and black lustrous coal, often referred to as hard coal, containing a high percentage of fixed carbon and a low percentage of volatile matter. The moisture content of fresh-mined anthracite generally is less than 15 percent. The heat content of anthracite ranges from 22 to 28 million Btu per short ton on a moist, mineral-matter-free basis. The heat content of anthracite coal consumed in the United States averages 25 million Btu per short ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter). Note: Since the 1980's, anthracite refuse or mine waste has been used for steam electric power generation. This fuel typically has a heat content of 15 million Btu per short ton or less.

Appalachian Region: See Coal-Producing Regions.

Area (Surface) Mining: A method used on flat terrain to recover coal by mining long cuts or pits successively. The material excavated from the cut being mined is deposited in the cut previously mined.

Auger Mine: A surface mine where coal is recovered through the use of a large-diameter drill driven into a coalbed in a hillside. It usually follows contour surface mining, particularly when the overburden is too costly to excavate.

Average Number of Employees: The arithmetic mean number of employees working each day at a mining operation. Includes maintenance, office, as well as production-related employees.

Average Open Market Sales Price: The ratio of the total value of the open market sales of coal produced at the mine to the total open market sales tonnage.

Average Production per Miner per Hour: The ratio of the total production at a mining operation to the total direct labor hours worked at the operation.

Average Recovery Percentage: Average recovery percentage represents the percentage of coal that can be recovered from coal reserves at reporting mines, averaged for all mines in the reported geographic area.

Bed, Coalbed: All the coal and partings lying between a roof and floor.

Bituminous Coal: A dense coal, usually black, sometimes dark brown, often with well-defined bands of bright and dull material, used primarily as fuel in steam-electric power generation, with substantial quantities also used for heat and power applications in manufacturing and to make coke. Bituminous coal is the most abundant coal in active U.S. mining regions. Its moisture content usually is less than 20 percent. The heat content of bituminous coal ranges from 21 to 30 million Btu per ton on a moist, mineral-matter-free basis. The heat content of bituminous coal consumed in the United States averages 24 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Capacity Utilization: Capacity utilization is computed by dividing production by productive capacity and multiplying by 100.

Captive Coal: Coal produced and consumed by the mine operator, a subsidiary, or parent company (for example, steel companies and electric utilities).

Census Divisions: The nine geographic divisions of the United States established by the Bureau of the Census, U.S. Department of Commerce for statistical analysis. The boundaries of Census divisions coincide with State boundaries. In some cases, the Pacific Division is subdivided into the Pacific Contiguous and Pacific Noncontiguous areas.

Central Appalachian Region: See Coal-Producing Regions.

CIF: See Cost, Insurance, Freight.

Coal: A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

Coal Carbonized: The amount of coal decomposed into solid coke and gaseous products by heating in a coke oven in a limited air supply or in the absence of air.

Coal (coke): See Coke (coal).

Coal Mining Productivity: Coal mining productivity is calculated by dividing total coal production by the total direct labor hours worked by all mine employees.

Coal Preparation/Washing: The treatment of coal to reject waste. In its broadest sense, preparation is any processing of mined coal to prepare it for market, including crushing and screening or sieving the coal to reach a uniform size, which normally results in removal of some non-coal material. The term coal preparation most commonly refers to processing, including crushing and screening, passing the material through one or more processes to remove impurities, sizing the product, and loading for shipment. Many of the processes separate rock, clay, and other minerals from coal in a liquid medium; hence the term washing is widely used. In some cases coal passes through a drying step before loading.

Coal-Producing Regions: A geographic classification of areas where coal is produced.

Appalachian Region. Consists of Alabama, Eastern Kentucky, Maryland, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

Northern Appalachian Region. Consists of Maryland, Pennsylvania Bituminous, and Northern West Virginia.

Central Appalachian Region. Consists of Eastern Kentucky, Virginia, Southern West Virginia, and the Tennessee counties of: Anderson, Campbell, Claiborne, Cumberland, Fentress, Morgan, Overton, Pickett, Putnam, Roane, and Scott.

Southern Appalachian Region: Consists of Alabama, and the Tennessee counties of: Bledsoe, Coffee, Franklin, Grundy, Hamilton, Marion, Rhea, Sequatchie, Van Buren, Warren, and White.

Interior Region (with Gulf Coast). Consists of Arkansas, Illinois, Indiana, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, Texas, and Western Kentucky.

Illinois Basin: Consists of Illinois, Indiana, and Western Kentucky.

Western Region. Consists of Alaska, Arizona, Colorado, Montana, New Mexico, North Dakota, Utah, Washington, and Wyoming.

Powder River Basin: Consists of the Montana counties of Big Horn, Custer, Powder River, Rosebud, and Treasure and the Wyoming counties of Campbell, Converse, Crook, Johnson, Natrona, Niobrara, Sheridan, and Weston.

Uinta Basin: Consists of the Colorado counties of Delta, Garfield, Gunnison, Mesa, Moffat, Pitkin, Rio Blanco, Routt and the Utah counties of Carbon, Duchesne, Emery, Grand, Sanpete, Sevier, Uintah, Utah, and Wasatch.

Coal-Producing States: The States where mined and/or purchased coal originates are defined as follows:

Alabama, Alaska, Arizona, Arkansas, Colorado, Illinois, Indiana, Kansas, Kentucky Eastern, Kentucky Western, Louisiana, Maryland, Mississippi, Missouri, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania anthracite, Pennsylvania bituminous, Tennessee, Texas, Utah, Virginia, Washington, West Virginia Northern, West Virginia Southern, and Wyoming. The following Coal-Producing States are split in origin of coal, as defined by:

Kentucky, Eastern. All mines in the following counties in Eastern Kentucky: Bell, Boyd, Breathitt, Carter, Clay, Clinton, Elliot, Estill, Floyd, Greenup, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Magoffin, Martin, McCreary, Menifee, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Rowan, Wayne, Whitley, and Wolfe.

Kentucky, Western. All mines in the following counties in Western Kentucky: Breckinridge, Butler, Caldwell, Christian, Crittenden, Daviess, Edmonson, Grayson, Hancock, Hart, Henderson, Hopkins, Logan, McLean, Muhlenberg, Ohio, Simpson, Todd, Union, Warren, and Webster.

Pennsylvania Anthracite. All mines in the following counties: Carbon, Columbia, Dauphin, Lackawanna, Lebanon, Luzerne, Northumberland, Schuylkill, Sullivan, and Susquehanna. All anthracite mines in Bradford County.

Pennsylvania Bituminous. All mines located in the following counties: Allegheny, Armstrong, Beaver, Bedford, Butler, Cambria, Clarion, Clearfield, Elk, Fayette, Green, Indiana, Jefferson, Lawrence, Lycoming, Somerset, Venango, Washington, and Westmoreland, and all bituminous mines in Bradford County.

West Virginia, Northern. All mines in the following counties (formerly defined as Coal-Producing Districts 1, 3, & 6): Barbour, Brooke, Braxton, Calhoun, Doddridge, Gilmer, Grant, Hancock, Harrison, Jackson, Lewis, Marion, Marshall, Mineral, Monongalia, Ohio, Pleasants, Preston, Randolph, Ritchie, Roane, Taylor, Tucker, Tyler, Upshur, Webster, Wetzell, Wirt, and Wood.

West Virginia, Southern. All mines in the following counties (formerly defined as Coal-Producing Districts 7 & 8): Boone, Cabell, Clay, Fayette, Greenbrier, Kanawha, Lincoln, Logan, Mason, McDowell, Mercer,

Mingo, Nicholas, Pocahontas, Putnam, Raleigh, Summers, Wayne, and Wyoming.

Coal Rank: The classification of coals according to their degree of progressive alteration from lignite to anthracite. In the United States, the standard ranks of coal include lignite, subbituminous coal, bituminous coal, and anthracite and are based on fixed carbon, volatile matter, heating value, and agglomerating (or caking) properties.

Coal Stocks: Coal quantities that are held in storage for future use and disposition. Note: When coal data are collected for a particular reporting period (month, quarter, or year), coal stocks are commonly measured as of the last day of this period.

Coalbed: A bed or stratum of coal. Also called a coal seam.

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam) used for industrial, commercial, heating, and cooling purposes. To receive status as a qualifying facility (QF) under the Public Utility Regulatory Policies Act (PURPA), the facility must produce electric energy and "another form of useful thermal energy through the sequential use of energy," and meet certain ownership, operating, and efficiency criteria established by the Federal Energy Regulatory Commission (FERC). (See the Code of Federal Regulation, Title 18, Part 292.)

Coke (coal): A solid carbonaceous residue derived from low-ash, low-sulfur bituminous coal from which the volatile constituents are driven off by baking in an oven at temperatures as high as 2,000 degrees Fahrenheit so that the fixed carbon and residual ash are fused together. Coke is used as a fuel and as a reducing agent in smelting iron ore in a blast furnace. Coke from coal is grey, hard, and porous and has a heating value of 24.8 million Btu per short ton.

Coke Plants: Plants where coal is carbonized in slot or beehive ovens for the manufacture of coke.

Coking Coal: Bituminous coal suitable for making coke. See Coke (coal).

Continuous Mining: A form of room-and-pillar mining in which a continuous mining machine extracts and removes coal from the working face in one operation; no blasting is required.

Conventional Mining: The oldest form of room-and-pillar mining which consists of a series of operations that involve cutting the coalbed so it breaks easily when

blasted with explosives or high-pressure air, and then loading the broken coal.

Cost, Insurance, Freight (CIF): A type of sale in which the buyer of the product agrees to pay a unit price that includes the F.O.B. value of the product at the point of origin plus all costs of insurance and transportation. This type of transaction differs from a "delivered" purchase in that the buyer accepts the quantity as determined at the loading port (as certified by the Bill of Lading and Quality Report) rather than pay on the basis of the quantity and quality ascertained at the unloading port. It is similar to the terms of an F.O.B. sale, except that the seller, as a service for which he is compensated, arranges for transportation and insurance.

Culm: Waste from Pennsylvania anthracite preparation plants, consisting of coarse rock fragments containing as much as 30 percent small-sized coal; sometimes defined as including very fine coal particles called silt. Its heat value ranges from 8 to 17 million Btu per short ton.

Demonstrated Reserve Base: A collective term for the sum of coal in both measured and indicated resource categories of reliability which represents 100 percent of the coal in these categories in place as of a certain date. Includes beds of bituminous coal and anthracite 28 inches or more thick and beds of subbituminous coal 60 inches or more thick that occur at depths to 1 thousand feet. Includes beds of lignite 60 inches or more thick that can be surface mined. Includes also thinner and/or deeper beds that presently are being mined or for which there is evidence that they could be mined commercially at this time. Represents that portion of identified coal resources from which reserves are calculated.

Direct Labor Hours: Direct labor hours worked by all mining employees at a mining operation during the year. Includes hours worked by those employees engaged in production, preparation, development, maintenance, repair, shop or yard work, management, office workers, and technical or engineering work.

Dredge Mining: A method of recovering coal from rivers or streams.

Drift Mine: An underground mine that has a horizontal or nearly horizontal entry driven along to a coalbed exposed in a hillside.

Electric Power Sector: The electric power sector (electric utilities and independent power producers) comprises electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public.

Estimated Recoverable Reserves: See recoverable reserves.

Federal Coal Lease: A lease granted to a mining company to produce coal from land owned and administered by the Federal Government in exchange for royalties and other revenues.

Hand Loading: An underground loading method by which coal is removed from the working face by manual labor through the use of a shovel for conveyance to the surface.

Illinois Basin: See Coal-Producing Regions.

Indicated Resources: Coal for which estimates of the rank, quality, and quantity have been computed partly from sample analyses and measurements and partly from reasonable geologic projections. Indicated resources are computed partly from specified measurements and partly from projection of visible data for a reasonable distance on the basis of geologic evidence. The points of observation are 0.5 to 1.5 miles apart. Indicated coal is projected to extend as a 0.5-mile-wide belt that lies more than 0.25 miles from the outcrop or points of observation or measurement.

Industrial Sector: The industrial sector is comprised of manufacturing industries which make up the largest part of the sector, along with mining, construction, agriculture, fisheries, and forestry. Establishments in the sector range from steel mills, to small farms, to companies assembling electronic components.

Interior Region: See Coal-Producing Regions.

Lignite: The lowest rank of coal, often referred to as brown coal, used almost exclusively as fuel for steam-electric power generation. It is brownish-black and has a high inherent moisture content, sometimes as high as 45 percent. The heat content of lignite ranges from 9 to 17 million Btu per ton on a moist, mineral-matter-free basis. The heat content of lignite consumed in the United States averages 13 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Longwall Mining: An automated form of underground coal mining characterized by high recovery and extraction rates, feasible only in relatively flat-lying, thick, and uniform coalbeds. A high-powered cutting machine is passed across the exposed face of coal, shearing away broken coal, which is continuously hauled away by a floor-level conveyor system. Longwall mining extracts all machine-minable coal between the floor and ceiling within a contiguous block of coal, known as a panel, leaving no support pillars within the panel area. Panel dimensions vary over time and with mining conditions but currently average about 900 feet wide (coal face width) and more than 8,000 feet long (the

minable extent of the panel, measured in direction of mining). Longwall mining is done under movable roof supports that are advanced as the bed is cut. The roof in the mined-out area is allowed to fall as the mining advances.

Manufacturing (except coke plants): Those industrial users/plants, not including coke plants, that are engaged in the mechanical or chemical transformation of materials or substances into new (i.e., finished or semifinished) products. Includes coal used for gasification/liquifaction and coal used for coal synfuels.

Minable: Capable of being mined under current mining technology and environmental and legal restrictions, rules, and regulations.

Mine Type: See Surface Mine and Underground Mine.

Northern Appalachian: See Coal-Producing Regions.

Number of Mines: The number of mines, or mines collocated with preparation plants or tipples, located in a particular geographic area (State or region).

Number of Mining Operations: The number of mining operations includes preparation plants. Mining operations that consist of a mine and preparation plant, or a preparation plant only, will be counted as two operations if the preparation plant processes both underground and surface coal.

Open Market Coal: Coal sold in the open market, i.e., coal sold to companies other than the reporting company's parent company or an operating subsidiary of the parent company.

Operating Subsidiary: A company which is controlled through the ownership of voting stock, or a corporate joint venture in which a corporation is owned by a small group of businesses as a separate and specific business or project for the mutual benefit of the members of the group.

Other Industrial Plant: Industrial users, not including coke plants, engaged in the mechanical or chemical transformation of materials or substances into new products (manufacturing); and companies engaged in the agriculture, mining, or construction industries.

Parent Company: A company which solely or jointly owns the reporting company and which is not itself a subsidiary of, or owned by, another company.

Percent Utilization: The ratio of total production to productive capacity, times 100.

Powder River Basin: See Coal-Producing Regions.

Preparation Plant: A facility at which coal is crushed, screened, and mechanically cleaned.

Productive Capacity: The maximum amount of coal that a mining operation can produce or process during a period with the existing mining equipment and/or preparation plant in place, assuming that the labor and materials sufficient to utilize the plant and equipment are available, and that the market exists for the maximum production.

Recoverability: In reference to accessible coal resources, the condition of being physically, technologically, and economically minable. Recovery rates and recovery factors may be determined or estimated for coal resources without certain knowledge of their economic minability; therefore, the availability of recovery rates or factors does not predict recoverability.

Recoverable Coal: Coal that is, or can be, extracted from a coal bed during mining.

Recoverable Reserves at Producing Mines: The amount of in situ coal that can be recovered by mining existing reserves at mines reporting on Form EIA-7A.

Recoverable Reserves, Estimated Recoverable Reserves: Reserve estimates (broad meaning) based on a demonstrated reserve base adjusted for assumed accessibility factors and recovery factors. The term is used by EIA to distinguish estimated recoverable reserves, which are derived without specific economic feasibility criteria by factoring (downward) from a demonstrated reserve base for one or more study areas or regions, from recoverable reserves at active mines, which are aggregated (upward) from reserve estimates reported by currently active, economically viable mines on Form EIA-7A.

Recoverable Reserves of Coal: An estimate of the amount of coal that can be recovered (mined) from the accessible reserves of the demonstrated reserve base.

Recovery Factor: The percentage of total tons of coal estimated to be recoverable from a given area in relation to the total tonnage estimated to be in the demonstrated reserve base. For the purpose of calculating depletion factors only, the estimated recovery factors for the demonstrated reserve base generally are 50 percent for underground mining methods and 80 percent for surface mining methods. More precise recovery factors can be computed by determining the total coal in place and the total coal recoverable in any specific locale.

Recovery Percentage: The percentage of coal that can be recovered from the coal deposits at existing mines.

Refuse Bank: A repository for waste material generated by the coal cleaning process.

Refuse Recovery: A surface mine where coal is recovered from previously mined coal. It may also be known as a silt bank, culm bank, refuse bank, slurry dam, or dredge operation.

Remaining (Resources/Reserves): The amount of coal in the ground after some mining, excluding coal in the ground spoiled or left in place for which later recovery is not feasible.

Reserve(s): Root meaning: The amount of in-situ coal in a defined area that can be recovered by mining at a sustainable profit at the time of determination. Broad meaning: That portion of the demonstrated reserve base that is estimated to be recoverable at the time of determination. The reserve is derived by applying a recovery factor to that component of the identified resources of coal designated as the demonstrated reserve base.

Residential and Commercial Sector: Housing units; wholesale and retail businesses (except coal wholesale dealers); health institutions (hospitals); social and educational institutions (schools and universities); and Federal, State, and local governments (military installations, prisons, office buildings).

Royalties: Payments, in money or kind, of a stated share of production from mineral deposits, by the lessee to the lessor. Royalties may be an established minimum, a sliding-scale, or a step-scale. A step-scale royalty rate increases by steps as the average production on the lease increases. A sliding-scale royalty rate is based on average production and applies to all production from the lease.

Run-of-mine: The raw coal recovered from a mine, prior to any treatment.

Salable Coal: The shippable product of a coal mine or preparation plant. Depending on customer specifications, salable coal may be run-of-mine, crushed-and-screened (sized) coal, or the clean coal yield from a preparation plant.

Sales Volume: The reported output from Federal and/or Indian lands, the basis of royalties. It is approximately equivalent to production, which includes coal sold, and coal added to stockpiles.

Scoop Loading: An underground loading method by which coal is removed from the working face by a tractor unit equipped with a hydraulically operated bucket attached to the front; also called a front-end loader.

Seam: A bed of coal lying between a roof and floor. Equivalent term to bed, commonly used by industry.

Shaft Mine: An underground mine that reaches the coalbed by means of a vertical shaft. In addition to the passages providing entry to the coalbed, a network of other passages are also dug, some to provide access to various parts of the mine and some for ventilation.

Short Ton: A unit of weight equal to 2,000 pounds.

Shortwall Mining: A form of underground mining that involves the use of a continuous mining machine and movable roof supports to shear coal panels 150 to 200 feet wide and more than half a mile long. Although similar to longwall mining, shortwall mining is generally more flexible because of the smaller working area. Productivity is lower than with longwall mining because the coal is hauled to the mine face by shuttle cars as opposed to conveyors.

Silt: Waste from Pennsylvania anthracite preparation plants, consisting of coarse rock fragments containing as much as 30 percent small-sized coal; sometimes defined as including very fine coal particles called silt. Its heat value ranges from 8 to 17 million Btu per short ton. Synonymous with culm.

Silt, Culm Refuse Bank, or Slurry Dam Mining: A mining operation producing coal from these sources of coal. (See refuse recovery.)

Slope Mine: An underground mine in which the entry is driven at an angle to reach the coal deposit.

Slurry Dam: A repository for the silt or culm from a preparation plant.

Southern Appalachian: See Coal-Producing Regions.

Stocks: The supply of coal or coke at a mine, plant, or utility at the end of the reporting period.

Subbituminous Coal: A coal whose properties range from those of lignite to those of bituminous coal and used primarily as fuel for steam-electric power generation. It may be dull, dark brown to black, soft and crumbly, at the lower end of the range, to bright, jet black, hard, and relatively strong, at the upper end. Subbituminous coal contains 20 to 30 percent inherent moisture by weight. The heat content of subbituminous coal ranges from 17 to 24 million Btu per ton on a moist, mineral-matter-free basis. The heat content of subbituminous coal consumed in the United States averages 17 to 18 million Btu per ton, on the as-received basis (i.e., containing both inherent moisture and mineral matter).

Surface Mine: A coal mine that is usually within a few hundred feet of the surface. Earth and rock above or around the coal (overburden) is removed to expose the coalbed, which is then mined with surface excavation equipment such as draglines, power shovels, bulldozers, loaders, and augers. Surface mines include: area, contour, open-pit, strip, or auger mine.

Tipple: A central facility used in loading coal for transportation by rail or truck.

Uinta Region: See Coal-Producing Regions.

Underground Mine: A mine where coal is produced by tunneling into the earth to the coalbed, which is then mined with underground mining equipment such as cutting machines and continuous, longwall, and shortwall mining machines. Underground mines are classified according to the type of opening used to reach the coal, i.e., drift (level tunnel), slope (inclined tunnel), or shaft (vertical tunnel).

Underground Mining: The extraction of coal or its products from between enclosing rock strata by underground mining methods, such as room and pillar, longwall, and shortwall, or through in-situ gasification.

Western Region: See Coal-Producing Regions.