

Table 21. Coal Productivity by State and Mine Type, 2016 and 2015

Coal-Producing State, Region ¹ and Mine Type	Number of Mining Operations ²			Number of Employees ³			Average Production per Employee Hour (short tons) ⁴		
	2016	2015	Percent Change	2016	2015	Percent Change	2016	2015	Percent Change
Alabama	37	45	-17.8	2,124	3,212	-33.9	2.12	1.69	25.2
Underground	11	13	-15.4	1,544	2,464	-37.3	2.21	1.63	35.6
Surface	26	32	-18.8	580	748	-22.5	1.87	1.92	-2.8
Alaska	1	1	-	110	113	-2.7	4.51	4.62	-2.3
Surface	1	1	-	110	113	-2.7	4.51	4.62	-2.3
Arizona	1	1	-	385	403	-4.5	5.96	6.97	-14.5
Surface	1	1	-	385	403	-4.5	5.96	6.97	-14.5
Arkansas	3	2	50.0	67	75	-10.7	0.38	0.56	-32.3
Underground	1	1	-	56	73	-23.3	0.35	0.56	-37.2
Surface	2	1	100.0	11	2	450.0	0.48	0.19	148.3
Colorado	8	9	-11.1	1,331	1,642	-18.9	4.49	5.54	-19.1
Underground	5	5	-	912	1,201	-24.1	4.46	5.21	-14.4
Surface	3	4	-25.0	419	441	-5.0	4.54	6.50	-30.1
Illinois	29	31	-6.5	3,219	4,146	-22.4	5.89	6.09	-3.2
Underground	17	19	-10.5	2,995	3,746	-20.0	6.01	6.24	-3.7
Surface	12	12	-	224	400	-44.0	4.32	4.67	-7.5
Indiana	26	30	-13.3	2,819	3,311	-14.9	4.46	4.38	2.0
Underground	12	12	-	1,442	1,818	-20.7	3.75	3.67	2.1
Surface	14	18	-22.2	1,377	1,493	-7.8	5.20	5.21	-0.3
Kansas	1	1	-	7	7	-	20.19	12.26	64.6
Surface	1	1	-	7	7	-	20.19	12.26	64.6
Kentucky Total	232	307	-24.4	6,729	9,821	-31.5	2.94	2.92	0.9
Underground	99	130	-23.8	5,020	7,001	-28.3	2.88	2.77	4.1
Surface	133	177	-24.9	1,709	2,820	-39.4	3.17	3.35	-5.4
Kentucky (East)	207	279	-25.8	4,009	6,304	-36.4	2.03	2.23	-9.0
Underground	84	111	-24.3	2,551	3,879	-34.2	1.73	1.82	-5.1
Surface	123	168	-26.8	1,458	2,425	-39.9	2.67	2.95	-9.8
Kentucky (West)	25	28	-10.7	2,720	3,517	-22.7	4.13	3.92	5.3
Underground	15	19	-21.1	2,469	3,122	-20.9	3.99	3.75	6.3
Surface	10	9	11.1	251	395	-36.5	5.64	5.51	2.3
Louisiana	2	2	-	305	307	-0.7	3.86	5.23	-26.2
Surface	2	2	-	305	307	-0.7	3.86	5.23	-26.2
Maryland	18	19	-5.3	335	359	-6.7	2.30	2.56	-10.3
Underground	3	3	-	174	165	5.5	1.92	1.83	4.9
Surface	15	16	-6.3	161	194	-17.0	2.72	3.13	-13.2
Mississippi	2	2	-	338	330	2.4	4.76	5.59	-14.8
Surface	2	2	-	338	330	2.4	4.76	5.59	-14.8
Missouri	1	1	-	19	15	26.7	5.45	3.52	54.8
Surface	1	1	-	19	15	26.7	5.45	3.52	54.8
Montana	7	6	16.7	1,157	1,330	-13.0	14.26	15.76	-9.5
Underground	1	1	-	237	313	-24.3	11.09	9.49	16.9
Surface	6	5	20.0	920	1,017	-9.5	15.17	17.91	-15.3
New Mexico	3	3	-	1,023	1,130	-9.5	6.68	8.55	-21.8
Underground	1	1	-	404	483	-16.4	5.82	6.83	-14.7
Surface	2	2	-	619	647	-4.3	7.19	9.77	-26.4
North Dakota	5	4	25.0	1,257	1,261	-0.3	11.80	11.79	0.1
Surface	5	4	25.0	1,257	1,261	-0.3	11.80	11.79	0.1
Ohio	26	34	-23.5	1,466	2,309	-36.5	4.15	3.59	15.5
Underground	12	15	-20.0	976	1,559	-37.4	4.57	3.71	23.1
Surface	14	19	-26.3	490	750	-34.7	3.28	3.32	-1.1
Oklahoma	4	5	-20.0	152	161	-5.6	1.71	1.84	-7.0
Underground	1	1	-	76	74	2.7	1.86	1.86	0.1
Surface	3	4	-25.0	76	87	-12.6	1.54	1.82	-15.8
Pennsylvania Total	228	258	-11.6	5,202	6,633	-21.6	4.26	3.61	18.2
Underground	62	70	-11.4	3,638	4,780	-23.9	5.25	4.32	21.5
Surface	166	188	-11.7	1,564	1,853	-15.6	1.53	1.65	-7.7

Coal-Producing State, Region ¹ and Mine Type	Number of Mining Operations ²			Number of Employees ³			Average Production per Employee Hour (short tons) ⁴		
	2016	2015	Percent Change	2016	2015	Percent Change	2016	2015	Percent Change
Pennsylvania (Anthracite)	92	94	-2.1	952	1,005	-5.3	0.83	0.94	-11.7
Underground	21	17	23.5	90	82	9.8	0.58	0.57	0.6
Surface	71	77	-7.8	862	923	-6.6	0.86	0.97	-11.8
Pennsylvania (Bituminous)	136	164	-17.1	4,250	5,628	-24.5	4.95	4.07	21.6
Underground	41	53	-22.6	3,548	4,698	-24.5	5.34	4.38	22.1
Surface	95	111	-14.4	702	930	-24.5	2.45	2.39	2.5
Tennessee	8	12	-33.3	178	276	-35.5	1.84	1.69	8.9
Underground	5	5	-	136	181	-24.9	1.59	1.46	8.5
Surface	3	7	-57.1	42	95	-55.8	2.64	2.18	21.3
Texas	14	14	-	2,561	2,689	-4.8	7.02	6.28	11.8
Surface	14	14	-	2,561	2,689	-4.8	7.02	6.28	11.8
Utah	15	17	-11.8	1,178	1,211	-2.7	5.66	5.66	0.1
Underground	12	14	-14.3	1,129	1,158	-2.5	5.67	5.87	-3.4
Surface	3	3	-	49	53	-7.5	5.39	2.15	151.1
Virginia	76	89	-14.6	2,417	2,993	-19.2	2.46	2.16	13.7
Underground	36	45	-20.0	1,729	2,166	-20.2	2.36	2.03	16.4
Surface	40	44	-9.1	688	827	-16.8	2.70	2.53	6.8
West Virginia Total	204	234	-12.8	11,561	15,490	-25.4	3.19	2.77	15.0
Underground	113	128	-11.7	9,259	12,555	-26.3	3.19	2.69	18.5
Surface	91	106	-14.2	2,302	2,935	-21.6	3.18	3.12	2.0
West Virginia (Northern)	28	39	-28.2	4,148	5,497	-24.5	4.75	3.89	22.1
Underground	21	25	-16.0	4,075	5,315	-23.3	4.79	3.93	22.0
Surface	7	14	-50.0	73	182	-59.9	1.79	2.57	-30.3
West Virginia (Southern)	176	195	-9.7	7,413	9,993	-25.8	2.28	2.15	6.0
Underground	92	103	-10.7	5,184	7,240	-28.4	1.88	1.77	6.0
Surface	84	92	-8.7	2,229	2,753	-19.0	3.22	3.15	2.2
Wyoming	17	16	6.3	5,756	6,635	-13.2	25.66	27.38	-6.3
Underground	1	1	-	279	308	-9.4	1.90	4.43	-57.0
Surface	16	15	6.7	5,477	6,327	-13.4	26.99	28.61	-5.7
Appalachia Total	804	970	-17.1	27,292	37,576	-27.4	3.10	2.72	14.2
Underground	326	390	-16.4	20,007	27,749	-27.9	3.27	2.73	19.6
Surface	478	580	-17.6	7,285	9,827	-25.9	2.60	2.67	-2.6
Appalachia Central	467	575	-18.8	14,017	19,566	-28.4	2.24	2.17	3.1
Underground	217	264	-17.8	9,600	13,466	-28.7	1.92	1.82	5.4
Surface	250	311	-19.6	4,417	6,100	-27.6	2.97	2.99	-0.6
Appalachia Northern	300	350	-14.3	11,151	14,798	-24.6	4.38	3.69	18.7
Underground	98	113	-13.3	8,863	11,819	-25.0	4.90	4.03	21.6
Surface	202	237	-14.8	2,288	2,979	-23.2	2.03	2.22	-8.4
Appalachia Southern	37	45	-17.8	2,124	3,212	-33.9	2.12	1.69	25.2
Underground	11	13	-15.4	1,544	2,464	-37.3	2.21	1.63	35.6
Surface	26	32	-18.8	580	748	-22.5	1.87	1.92	-2.8
Interior Region Total	107	116	-7.8	12,207	14,558	-16.1	5.22	5.05	3.3
Underground	46	52	-11.5	7,038	8,833	-20.3	4.75	4.70	1.0
Surface	61	64	-4.7	5,169	5,725	-9.7	5.90	5.65	4.5
Illinois Basin	80	89	-10.1	8,758	10,974	-20.2	4.88	4.84	0.8
Underground	44	50	-12.0	6,906	8,686	-20.5	4.81	4.76	1.1
Surface	36	39	-7.7	1,852	2,288	-19.1	5.15	5.17	-0.4
Other Interior	27	27	-	3,449	3,584	-3.8	6.13	5.77	6.4
Underground	2	2	-	132	147	-10.2	1.35	1.29	4.8
Surface	25	25	-	3,317	3,437	-3.5	6.34	6.00	5.8
Western Region Total	57	57	-	12,197	13,725	-11.1	16.40	17.92	-8.5
Underground	20	22	-9.1	2,961	3,463	-14.5	5.37	5.97	-9.9
Surface	37	35	5.7	9,236	10,262	-10.0	20.09	22.04	-8.9
Powder River Basin	18	16	12.5	5,692	6,633	-14.2	27.62	29.34	-5.9
Surface	18	16	12.5	5,692	6,633	-14.2	27.62	29.34	-5.9
Uinta Basin	19	22	-13.6	2,344	2,664	-12.0	5.09	5.77	-11.8
Underground	15	17	-11.8	1,931	2,229	-13.4	5.24	5.68	-7.7
Surface	4	5	-20.0	413	435	-5.1	4.34	6.24	-30.4
Other Western	20	19	5.3	4,161	4,428	-6.0	7.81	8.36	-6.6
Underground	5	5	-	1,030	1,234	-16.5	5.63	6.48	-13.0

Coal-Producing State, Region ¹ and Mine Type	Number of Mining Operations ²			Number of Employees ³			Average Production per Employee Hour (short tons) ⁴		
	2016	2015	Percent Change	2016	2015	Percent Change	2016	2015	Percent Change
Surface	15	14	7.1	3,131	3,194	-2.0	8.54	9.11	-6.3
East of Mississippi River	886	1,061	-16.5	36,388	48,880	-25.6	3.57	3.24	10.2
Underground	370	440	-15.9	26,913	36,435	-26.1	3.68	3.24	13.7
Surface	516	621	-16.9	9,475	12,445	-23.9	3.22	3.24	-0.5
West of Mississippi River	82	82	-	15,308	16,979	-9.8	14.20	15.51	-8.5
Underground	22	24	-8.3	3,093	3,610	-14.3	5.18	5.74	-9.7
Surface	60	58	3.4	12,215	13,369	-8.6	16.54	18.20	-9.1
U.S. Subtotal	968	1,143	-15.3	51,696	65,859	-21.5	6.61	6.28	5.3
Underground	392	464	-15.5	30,006	40,045	-25.1	3.83	3.45	11.0
Surface	576	679	-15.2	21,690	25,814	-16.0	10.73	10.95	-1.9
Refuse Recovery	18	25	-28.0	99	112	-11.6	5.55	8.99	-38.3
U.S. Total	986	1,168	-15.6	51,795	65,971	-21.5	6.61	6.28	5.2

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

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

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

- = No data reported.

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

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