**FOSSIL FUEL COMBUSTION – RESIDENTIAL – COAL**

***a. Source Category Description***

Residential Coal Combustion is coal that is burned to heat residential housing.

The general approach to calculating emissions for these two SCCs is to take State Coal Consumption from the EIA and allocate it to the county level using methods described below. County-level coal consumption is multiplied by the emission factors to calculate emissions.

For this source category, the following SCCs were assigned:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SCC** | **Descriptor 1** | **Descriptor 3** | **Descriptor 6** | **Descriptor 8** |
| 2104001000 | Stationary Source Fuel Combustion | Residential | Anthracite Coal | All Boiler Types |
| 2104002000 | Stationary Source Fuel Combustion | Residential | Bituminous/ Subbituminous Coal | All Boiler Types |

***b. Activity Data***

The mass of coal consumed by residential combustion in the U.S. was used to estimate emissions. Coal consumption by energy use sector is presented in State Energy Data 2010 Consumption tables published by the Energy Information Administration (EIA).1 Year 2010 consumption data were used as a surrogate for 2011 emissions because year 2010 data were the latest data available when this inventory was prepared.

EIA data do not distinguish between anthracite and bituminous coal consumption estimates. The EIA table “Domestic Distribution of U.S. Coal by Destination State, Consumer, Origin and Method of Transportation,” provides state-level residential coal distribution data for 2006 that was used to estimate anthracite and bituminous coal consumption. The amount of anthracite distributed to each state and the total coal delivered to each state were used to estimate the proportion of anthracite and bituminous coal consumption.2 The 2006 ratio of anthracite (and bituminous) coal consumption to total coal consumption was used to distribute the EIA’s total residential sector coal consumption data by coal type. Table 1 presents the 2006 anthracite and bituminous coal ratios for each state.

State-level coal consumption was allocated to each county using the US Census Bureau’s 2000 Census Detailed Housing Information.3 These data include the number of housing units using a specific type of fuel for residential heating. State coal consumption was allocated to each county using the ratio of the number of houses burning coal in each county to the total number of houses burning coal in the State.

***c. Control Factors***

No controls were assumed for this category

***d. Emission Factors***

All emission factors except ammonia are from AP-42.5 The ammonia emission factor is from EPA’s *Estimating Ammonia Emissions from Anthropogenic Sources, Draft Final Report*.6

Table 2 shows the SO2 and PM emission factors. The SO2 emission factors require information on the sulfur content of the coal burned, while some of the PM emission factors for anthracite coal require information on the ash content of the coal. State-specific sulfur and ash contents of anthracite and bituminous coal were obtained from data compiled in preparing the 1999 residential coal combustion emissions estimates.4 This study mostly relied on data obtained from US Geological Survey COALQUAL database. States not included in the database, but that reported coal usage were assigned values based on their proximity to coal seams or using an average value for Pennsylvania (see report for details of the analysis). Table 3 presents the bituminous coal sulfur content values used for each state. For anthracite coal, an ash content value of 13.38% and a sulfur content of 0.89% were applied to all states except New Mexico (ash content 16.61%, sulfur content 0.77%), Washington (ash content 12%, sulfur content 0.9%), and Virginia (ash content 13.38%, sulfur content 0.43%).

Table 4 presents a summary of the emission factors for residential anthracite coal combustion (SCC 2104001000) for all pollutants. Table 5 presents a summary of the emission factors for residential bituminous coal combustion (SCC 2104002000) for all pollutants.

For CO and VOC, the emission factors listed for anthracite coal are the emission factors provided in AP-42 for bituminous coal. Emission rates for these pollutants are dependent upon combustion efficiency, with the mass of emissions per unit of heat input generally increasing with decreasing unit size. No anthracite emission rates were provided for residential heaters for these pollutants. Therefore, it was felt that it the AP-42 emission rates from bituminous coal that were derived for smaller hand-fed units, were more appropriate to use than applying anthracite emission factors derived for much larger boilers.

Note that while AP-42 provides emission factors for some metals, these were based on tests at controlled and/or pulverized coal boilers. These are not expected to be a good representation of emission rates for metals from residential heaters, so these pollutants are not included.

The criteria pollutant and HAP emissions were calculated by multiplying the total coal consumed in each county per year by the corresponding emission factor.

***e. Sample Calculations***

Annual emissions are calculated for each county using emission factors and activity as:

E*x,p* = FC*x* × (1 - CE*x,p*) × EF*x,p*

where:

E*x,p* = annual emissions for fuel type x and pollutant p (lb/year),

FC*x* = annual county-level fuel consumption for fuel type x,

CE*x,p* = control efficiency for fuel type x and pollutant p, and

EF*x,p* = emission factor for fuel type x and pollutant p.

County level fuel consumption is calculated using:

FC*x* = AState x RatioAnth, Bit x RatioCounty houses

where:

AState = total tons of coal reported by the EIA,

RatioAnth, Bit = ratio reported in Table 1, and

RatioCounty houses = county allocation ratio based on number of houses burning coal.

**Example:**

Using Allegheny County, PA as an example:

The State of Pennsylvania had a reported use of 20,121 tons of coal in the residential sector in 2010. Statewide anthracite coal use is calculated using the ratio of anthracite to bituminous in Table 1 for PA: 80.6%. Allegheny County, PA had 183 houses out of the state total of 67,986 that use coal as the primary heating fuel. This equates to a share of 0.27% of the coal used for residential heating in the state. Thus, the anthracite fuel consumption for Allegheny County is:

FCAllegheny, anth = 20,121 × 0.806 × 0.0027 = 44 tons anthracite coal

The PM2.5-PRI emission factor for residential heating with anthracite coal is 4.6 + 0.08 lbs/ton× state-specific % ash content (See Table 2). The ash content is 13.38%, (see section ***d. Emission Factors***, above) so the emission factor is 5.67 lbs/ton.

EmisAllegheny, anth, PM2.5-PRI = 44 tons anthracite coal × 5.67 lbs PM2.5-PRI per ton coal

= 249 lbs PM2.5-PRI

***f.*** ***References***

1. U.S. Department of Energy, Energy Information Administration (EIA). [State Energy Data 2010 Consumption](https://www.eia.gov/state/seds/). Washington, DC 2012. accessed June 2019.

2. EIA, 2008. U.S. Department of Energy, Energy Information Administration, “[Domestic Distribution of U.S. Coal by Destination State, Consumer, Origin and Method of Transportation](https://www.eia.gov/coal/distribution/annual/)”, 2006, accessed June 2019.

3. U.S. Census Bureau. "[Table H40. House Heating Fuel Type](https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t)", Census 2000: Summary File 3, accessed June 2019.

4. U.S. Environmental Protection Agency. Emission Factor and Inventory Group. [Final Summary of the Development and Results of a Methodology for Calculating Area Source Emissions from Residential Fuel Combustion](https://www.epa.gov/air-emissions-inventories). Prepared by Pacific Environmental Services, Inc. Research Triangle Park, NC. September 2002. Accessed June 2019

5. U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, 5th Edition, AP-42, Volume I: Stationary Point and Area Sources. Research Triangle Park, North Carolina. 1996.

6. U.S. Environmental Protection Agency. Emission Inventory Improvement Program. Estimating Ammonia Emissions from Anthropogenic Sources, Draft Final Report. Prepared by E.H. Pechan and Associates, Inc. Research Triangle Park, NC. April 2004.

**Table 1. 2006 Anthracite and Bituminous Coal Distribution for the Residential and Commercial Sectors**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **State** | **Ratio of Bituminous** | **Ratio of Anthracite** | **State** | **Ratio of Bituminous** | **Ratio of Anthracite** |
| Alabama | 1.000 | 0.000 | Montana | 1.000 | 0.000 |
| Alaska | 1.000 | 0.000 | Nebraska | 1.000 | 0.000 |
| Arizona | 0.814 | 0.186 | Nevada | 1.000 | 0.000 |
| Arkansas | 0.814 | 0.186 | New Hampshire | 0.000 | 1.000 |
| California | 1.000 | 0.000 | New Jersey | 0.000 | 1.000 |
| Colorado | 0.996 | 0.004 | New Mexico | 1.000 | 0.000 |
| Connecticut | 0.000 | 1.000 | New York | 0.600 | 0.400 |
| Delaware | 0.814 | 0.186 | North Carolina | 1.000 | 0.000 |
| Dist. Columbia | 1.000 | 0.000 | North Dakota | 1.000 | 0.000 |
| Florida | 0.814 | 0.186 | Ohio | 0.873 | 0.127 |
| Georgia | 1.000 | 0.000 | Oklahoma | 0.917 | 0.083 |
| Hawaii | 1.000 | 0.000 | Oregon | 1.000 | 0.000 |
| Idaho | 0.979 | 0.021 | Pennsylvania | 0.194 | 0.806 |
| Illinois | 0.998 | 0.002 | Rhode Island | 0.000 | 1.000 |
| Indiana | 0.947 | 0.053 | South Carolina | 0.997 | 0.003 |
| Iowa | 0.999 | 0.001 | South Dakota | 1.000 | 0.000 |
| Kansas | 1.000 | 0.000 | Tennessee | 0.994 | 0.006 |
| Kentucky | 0.998 | 0.002 | Texas | 0.814 | 0.186 |
| Louisiana | 1.000 | 0.000 | Utah | 1.000 | 0.000 |
| Maine | 0.000 | 1.000 | Vermont | 0.000 | 1.000 |
| Maryland | 0.929 | 0.071 | Virginia | 0.963 | 0.037 |
| Massachusetts | 0.500 | 0.500 | Washington | 1.000 | 0.000 |
| Michigan | 0.667 | 0.333 | West Virginia | 0.905 | 0.095 |
| Minnesota | 0.997 | 0.003 | Wisconsin | 0.991 | 0.009 |
| Mississippi | 1.000 | 0.000 | Wyoming | 1.000 | 0.000 |
| Missouri | 1.000 | 0.000 |  |  |  |

**Table 2. SO2 and PM Emission Factors for Residential Anthracite and Bituminous Coal Combustion**

|  |  |  |
| --- | --- | --- |
| **Pollutant** | **Emission Factor**  **(lb/ton)** | **Data Source,**  **AP-42 Table No.** |
| **Anthracite Emission Factors** (SCC 2104001000) | | |
| PM-CON | 0.08 \* % Ash | 1.2-3 (stoker) |
| PM10-FIL | 10 | 1.2-3 (hand-fired) |
| PM25-FIL | 4.6 | Fig. 1.2-1 (ratio of PM2.5/PM10=1.25/2.70=0.46)  0.46\*10=4.6 |
| PM10-PRI | 10 + 0.08 \* % Ash | 1.2-3 |
| PM25-PRI | 4.6 + 0.08 \* % Ash | 1.2-3 and Fig 1.2-1 |
| Sulfur Dioxide | 39 \* % Sulfur | 1.2-1 (residential space heater) |
| **Bituminous Emission Factors** (SCC 2104002000) | | |
| PM-CON | 1.04[[1]](#footnote-1) | 1.1-5 (stoker) |
| PM10-FIL | 6.2 | 1.1-4 (hand-fed) |
| PM25-FIL | 3.8 | 1.1-11 (underfeed stoker) |
| PM10-PRI | 7.24 | 1.1-5 and 1.1-4 |
| PM25-PRI | 4.84 | 1.1-5 and 1.1-11 |
| Sulfur Dioxide | 31 \* % Sulfur | 1.1-3 (hand-fed) |
| NOTE: PM10, PM2.5, and condensable PM emission factors for bituminous coal as well as filterable emission factors for PM10 and PM2.5  for anthracite coal do not require ash content. | | |

**Table 3. State-Specific Sulfur Content for Bituminous Coal (SCC 2104002000)**

| **State** | **Percent Sulfur Content** | **State** | **Percent Sulfur Content** |
| --- | --- | --- | --- |
| Alabama | 2.08 | Montana | 0.60 |
| Alaska | 0.31 | Nebraska | 2.43 |
| Arizona | 0.47 | Nevada | 2.30 |
| Arkansas | 1.20 | New Hampshire | 2.42 |
| California | 0.47 | New Jersey | 2.42 |
| Colorado | 0.61 | New Mexico | 0.75 |
| Connecticut | 2.42 | New York | 2.42 |
| Delaware | 1.67 | North Carolina | 1.62 |
| District of Columbia | 1.67 | North Dakota | 0.97 |
| Florida | 1.28 | Ohio | 3.45 |
| Georgia | 1.28 | Oklahoma | 3.08 |
| Hawaii | 1.00 | Oregon | 0.50 |
| Idaho | 0.31 | Pennsylvania | 2.42 |
| Illinois | 3.48 | Rhode Island | 2.42 |
| Indiana | 2.49 | South Carolina | 1.28 |
| Iowa | 4.64 | South Dakota | 0.97 |
| Kansas | 5.83 | Tennessee | 1.62 |
| Kentucky | 1.93 | Texas | 1.14 |
| Louisiana | 0.86 | Utah | 0.80 |
| Maine | 2.42 | Vermont | 2.42 |
| Maryland | 1.67 | Virginia | 1.19 |
| Massachusetts | 2.42 | Washington | 0.50 |
| Michigan | 1.20 | West Virginia | 1.25 |
| Minnesota | 0.97 | Wisconsin | 1.00 |
| Mississippi | 1.24 | Wyoming | 0.87 |
| Missouri | 3.39 |  |  |

**Table 4. National Criteria and HAP Emission Factors for Residential Anthracite Coal Combustion (SCC 2104001000)**

| SCC | Pollutant Code | Pollutant Code Description | Factor Numeric Value | Factor Unit Numerator | Factor Unit Denominator | Data Source, AP-42 Table No. |
| --- | --- | --- | --- | --- | --- | --- |
| 2104001000 | 83329 | ACENAPHTHENE | 0.000022 | LB | TON | 1.2-5 |
| 2104001000 | 208968 | ACENAPHTHYLENE | 0.000086 | LB | TON | 1.2-5 |
| 2104001000 | 120127 | ANTHRACENE | 0.000025 | LB | TON | 1.2-5 |
| 2104001000 | 56553 | BENZO[A]ANTHRACENE (Benz[a]Anthracene) | 0.000071 | LB | TON | 1.2-5 |
| 2104001000 | 50328 | BENZO[A]PYRENE | 0.0000053 | LB | TON | 1.2-5 |
| 2104001000 | 192972 | BENZO[E]PYRENE | 0.0000062 | LB | TON | 1.2-5 |
| 2104001000 | 191242 | BENZO[G,H,I,]PERYLENE | 0.0000055 | LB | TON | 1.2-5 |
| 2104001000 | 207089 | BENZO[K]FLUORANTHRENE (Benzo[k]Fluoranthene) | 0.000025 | LB | TON | 1.2-5 |
| 2104001000 | 218019 | CHRYSENE | 0.000083 | LB | TON | 1.2-5 |
| 2104001000 | 206440 | FLUORANTHRENE (Fluoranthene) | 0.00017 | LB | TON | 1.2-5 |
| 2104001000 | 86737 | FLUORENE | 0.000025 | LB | TON | 1.2-5 |
| 2104001000 | 7647010 | HYDROGEN CHLORIDE | 1.2 | LB | TON | 1.1-15 |
| 2104001000 | 7664393 | HYDROGEN FLUORIDE | 0.15 | LB | TON | 1.1-15 |
| 2104001000 | 91203 | NAPHTHALENE | 0.00022 | LB | TON | 1.2-5 |
| 2104001000 | 7439976 | MERCURY | 0.00013 | LB | TON | 1.2-7 |
| 2104001000 | 198550 | PERYLENE | 0.0000012 | LB | TON | 1.2-5 |
| 2104001000 | 85018 | PHENANTHRENE | 0.00024 | LB | TON | 1.2-5 |
| 2104001000 | 129000 | PYRENE | 0.00012 | LB | TON | 1.2-5 |
| 2104001000 | CH4 | METHANE | 8 | LB | TON | 1.2-6 |
| 2104001000 | CO | CARBON MONOXIDE | 275 | LB | TON | 1.1-3 |
| 2104001000 | NH3 | AMMONIA | 2 | LB | TON | Ref #6 |
| 2104001000 | NOX | NITROGEN OXIDES | 3 | LB | TON | 1.2-1 |
| 2104001000 | PM10-FIL | PRIMARY PM10, FILTERABLE PORTION | 10 | LB | TON | 1.2-3 |
| 2104001000 | PM10-FIL | PRIMARY PM2.5, FILTERABLE PORTION | 4.6 | LB | TON | 1.2-3 and Fig 1.2-1 |
| 2104001000 | VOC | VOLATILE ORGANIC COMPOUNDS | 10 | LB | TON | 1.1-19 |

**Table 5. National Criteria and HAP Emission Factors for Residential Bituminous Coal Combustion (SCC 2104002000)**

| SCC | Pollutant Code | Pollutant Code Description | Factor Numeric Value | Factor Unit Numerator | Factor Unit Denominator | Data Source,  AP-42 Table No. |
| --- | --- | --- | --- | --- | --- | --- |
| 2104002000 | 532274 | 2-CHLOROACETOPHENONE | 0.0000070 | LB | TON | 1.1-14 |
| 2104002000 | 121142 | 2,4-DINITROTOLUENE | 0.00000028 | LB | TON | 1.1-14 |
| 2104002000 | 3697243 | 5-METHLY CHRYSENE | 0.000000022 | LB | TON | 1.1-13 |
| 2104002000 | 83329 | ACENAPHTHENE | 0.00000051 | LB | TON | 1.1-13 |
| 2104002000 | 208968 | ACENAPHTHYLENE | 0.00000025 | LB | TON | 1.1-13 |
| 2104002000 | 75070 | ACETALDEHYDE | 0.00057 | LB | TON | 1.1-14 |
| 2104002000 | 98862 | ACETOPHENONE | 0.000015 | LB | TON | 1.1-14 |
| 2104002000 | 107028 | ACROLEIN | 0.00029 | LB | TON | 1.1-14 |
| 2104002000 | 120127 | ANTHRACENE | 0.00000021 | LB | TON | 1.1-13 |
| 2104002000 | 56553 | BENZ[A]ANTHRACENE | 0.00000008 | LB | TON | 1.1-13 |
| 2104002000 | 71432 | BENZENE | 0.0013 | LB | TON | 1.1-14 |
| 2104002000 | 50328 | BENZO[A]PYRENE | 0.000000038 | LB | TON | 1.1-13 |
| 2104002000 | 191242 | BENZO[G,H,I,]PERYLENE | 0.000000027 | LB | TON | 1.1-13 |
| 2104002000 | 100447 | BENZYL CHLORIDE | 0.00070 | LB | TON | 1.1-14 |
| 2104002000 | 92524 | BIPHENYL | 0.0000017 | LB | TON | 1.1-13 |
| 2104002000 | 117817 | BIS(2-ETHYLHEXYL)PHTHALATE | 0.000073 | LB | TON | 1.1-14 |
| 2104002000 | 75252 | BROMOFORM | 0.000039 | LB | TON | 1.1-14 |
| 2104002000 | 75150 | CARBON DISULFIDE | 0.00013 | LB | TON | 1.1-14 |
| 2104002000 | 108907 | CHLOROBENZENE | 0.000022 | LB | TON | 1.1-14 |
| 2104002000 | 67663 | CHLOROFORM | 0.000059 | LB | TON | 1.1-14 |
| 2104002000 | 218019 | CHRYSENE | 0.0000001 | LB | TON | 1.1-13 |
| 2104002000 | 98828 | CUMENE | 0.0000053 | LB | TON | 1.1-14 |
| 2104002000 | 57125 | CYANIDE | 0.0025 | LB | TON | 1.1-14 |
| 2104002000 | 77781 | DIMETHYL SULFATE | 0.000048 | LB | TON | 1.1-14 |
| 2104002000 | 100414 | ETHYL BENZENE | 0.000094 | LB | TON | 1.1-14 |
| 2104002000 | 75003 | ETHYL CHLORIDE | 0.000042 | LB | TON | 1.1-14 |
| 2104002000 | 106934 | ETHYLENE DIBROMIDE | 0.0000012 | LB | TON | 1.1-14 |
| 2104002000 | 107062 | ETHYLENE DICHLORIDE | 0.00004 | LB | TON | 1.1-14 |
| 2104002000 | 206440 | FLUORANTHENE | 0.00000071 | LB | TON | 1.1-13 |
| 2104002000 | 86737 | FLUORENE | 0.00000091 | LB | TON | 1.1-13 |
| 2104002000 | 50000 | FORMALDEHYDE | 0.00024 | LB | TON | 1.1-14 |
| 2104002000 | 110543 | HEXANE | 0.000067 | LB | TON | 1.1-14 |
| 2104002000 | 7647010 | HYDROGEN CHLORIDE | 1.2 | LB | TON | 1.1-15 |
| 2104002000 | 7664393 | HYDROGEN FLUORIDE | 0.15 | LB | TON | 1.1-15 |
| 2104002000 | 193395 | INDENO[1,2,3-C,D]PYRENE | 0.000000061 | LB | TON | 1.1-13 |
| 2104002000 | 78591 | ISOPHORONE | 0.00058 | LB | TON | 1.1-14 |
| 2104002000 | 7439976 | MERCURY | 0.000083 | LB | TON | 1.1-18 |
| 2104002000 | CH4 | METHANE | 5 | LB | TON | 1.1-19 |
| 2104002000 | 74839 | METHYL BROMIDE | 0.00016 | LB | TON | 1.1-14 |
| 2104002000 | 74873 | METHYL CHLORIDE | 0.00053 | LB | TON | 1.1-14 |
| 2104002000 | 80626 | METHYL METHACRYLATE | 0.000020 | LB | TON | 1.1-14 |
| 2104002000 | 1634044 | METHYL TERT BUTYL ETHER | 0.000035 | LB | TON | 1.1-14 |
| 2104002000 | 75092 | METHYLENE CHLORIDE | 0.00029 | LB | TON | 1.1-14 |
| 2104002000 | 91203 | NAPHTHALENE | 0.000013 | LB | TON | 1.1-13 |
| 2104002000 | N2O | NITROUS OXIDE | 0.04 | LB | TON | 1.1-19 |
| 2104002000 | 85018 | PHENANTHRENE | 0.0000027 | LB | TON | 1.1-13 |
| 2104002000 | 108952 | PHENOL | 0.000016 | LB | TON | 1.1-14 |
| 2104002000 | 123386 | PROPIONALDEHYDE | 0.00038 | LB | TON | 1.1-14 |
| 2104002000 | 129000 | PYRENE | 0.00000033 | LB | TON | 1.1-13 |
| 2104002000 | 100425 | STYRENE | 0.000025 | LB | TON | 1.1-14 |
| 2104002000 | 127184 | TETRACHLOROETHYLENE | 0.000043 | LB | TON | 1.1-14 |
| 2104002000 | 108883 | TOLUENE | 0.00024 | LB | TON | 1.1-14 |
| 2104002000 | 108054 | VINYL ACETATE | 0.0000076 | LB | TON | 1.1-14 |
| 2104002000 | 1330207 | XYLENES | 0.000037 | LB | TON | 1.1-14 |
| 2104002000 | CO | CARBON MONOXIDE | 275 | LB | TON | 1.1-3 |
| 2104002000 | NH3 | AMMONIA | 2.0 | LB | TON | Ref# 6 |
| 2104002000 | NOX | NITROGEN OXIDES | 9.1 | LB | TON | 1.1-3 |
| 2104002000 | PM10-FIL | PRIMARY PM10, FILTERABLE PORTION | 6.2 | LB | TON | 1.1-4 |
| 2104002000 | PM25-FIL | PRIMARY PM2.5, FILTERABLE PORTION | 3.8 | LB | TON | 1.1-11 |
| 2104002000 | PM-CON | PRIMARY PM CONDENSIBLE PORTION | 1.04 | LB | TON | 1.1-5[[2]](#footnote-2) |
| 2104002000 | PM10-PRI | PRIMARY PM10 (FILT + COND) | 7.24 | LB | TON | 1.1-4, 1.1-5 |
| 2104002000 | PM25-PRI | PRIMARY PM2.5 (FILT + COND) | 4.84 | LB | TON | 1.1-5, 1.1-11 |
| 2104002000 | VOC | VOLATILE ORGANIC COMPOUNDS | 10 | LB | TON | 1.1-19 |

1. Emission factor provided in AP-42 is 0.04 lb/MMBtu. This was multiplied by the conversion factor of 26 MMBtu/ton provided in AP-42 for bituminous coal. [↑](#footnote-ref-1)
2. Emission factor provided in AP-42 is 0.04 lb/MMBtu. This was multiplied by the conversion factor of 26 MMBtu/ton provided in AP-42 for bituminous coal. [↑](#footnote-ref-2)