

APPENDIX C
AREA SOURCES

Bureau of Air Quality
Department of Environmental Protection

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APPENDIX C-1

**AREA SOURCES EMISSIONS ESTIMATION
METHODOLOGY**

**Bureau of Air Quality
Department of Environmental Protection**

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PENNSYLVANIA 2002 AREA SOURCE CRITERIA AIR POLLUTANT EMISSION ESTIMATION METHODS

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Contract No. SP3580003990
Work Order 9

February 2004

Pechan Rpt. No. 04.02.006/9420.109

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AREA SOURCE DEFINITION

For emission inventory development purposes, the term “area sources” traditionally refers to stationary air pollutant emission sources that are not inventoried at the facility-level. While point sources are inventoried individually, area sources are typically inventoried at the county level (*Introduction to Area Source Emission Inventory Development Volume III: Chapter 1*).¹ Gasoline stations and dry cleaning establishments are often treated as both point and area sources. The main reason they are not exclusively treated as point sources is that the effort required to gather data and estimate emissions for each individual facility is very great, while emissions per facility are generally small. For these sources, a cut-off point, typically based on annual emissions, usually defines the distinction between point and area. The Consolidated Emissions Reporting Rule (CERR) specifies reporting criteria air pollutant (CAP) thresholds for point and area sources, which vary depending on the pollutant and the attainment status of a county (see <http://www.epa.gov/ttn/chief/cerr/index.html>).

Individual emissions sources are grouped with other like sources into source categories. These source categories are grouped in such a way that they can be estimated collectively using one methodology. Most area source categories do not have an analogue in the point source inventory. Pesticide use and commercial/consumer product use are such examples. The boundaries of the individual activities associated with these sources are often hard to determine or are, at best, arbitrary. Even within a point source facility, some activities occur that are more easily treated as area source emissions. Some emissions associated with surface coating operations such as equipment cleaning, for example, can be more practically estimated using area source methods even though other surface coating operations may be reported as part of the point source inventory.

METHODS FOR ESTIMATING AREA SOURCE ACTIVITY AND EMISSIONS

Area source emissions are generally estimated by multiplying an emission factor by some known indicator or collective activity for each area source category at the county level. Several methodologies are available for estimating area source activity levels and emissions. For this 2002 area source inventory, estimates were derived by (1) treating area sources as point sources, (2) obtaining county-level activity data, (3) apportioning national or statewide activity data to counties, (4) use of per capita emission factors, and (5) use of per employee emission factors. Each approach has distinct advantages and disadvantages as discussed below.

Small sources that would normally be treated as area sources may be handled as point sources for several reasons. First, county level activity data may not be readily determinable for certain source categories. Municipal landfills provide an example of this situation.

For some source categories, county activity estimates were available. For example, monthly wine production data for 2002 were available by county from the Pennsylvania Liquor Control Board. If county activity data were not available, Commonwealth totals were apportioned to counties using data for a surrogate of the emissions activity. For example, the quantity of highway gasoline consumed in the Commonwealth was apportioned to the county level on the

basis of vehicle miles traveled per county. Residential, commercial, and industrial fuel combustion were other categories that were handled in this manner. The major drawbacks of this approach are that additional data and resources are needed to apportion activity levels to the local level, and accuracy is lost in the process. If Commonwealth level data were not available, then national data were used in a similar manner.

Sources in certain area source categories were not only numerous and diffuse, but were too difficult to inventory by any of the above procedures. As an example, solvent evaporation from consumer and commercial products such as waxes, aerosol products and window cleaners cannot be routinely determined by DEP. In addition, it would be resource-intensive to develop and implement a survey that would yield such information. Per capita or per employee emission factors are used to estimate emissions for these source categories. The use of per capita emission factors is based on the assumption that, for a given source category, emission activity can be reasonably associated with population. This assumption is valid over broad areas for certain categories such as Architectural Surface Coating and solvent evaporation from Consumer and Commercial Products.

For categories that rely on a per capita emission factor, county population estimates for 2002 were obtained from the U.S. Bureau of the Census. When emissions are calculated from per employee emission factors, county-level employment data for 2002 were estimated from a combination of two sources. Because county employment data for 2002 will not be available from the Bureau of the Census' *County Business Patterns* (CBP) until April 2004, 2001 data for the appropriate North American Industrial Classification System (NAICS) codes were obtained from the 2001 CBP² and projected to 2002 using the Commonwealth-level 2001 to 2002 employment change for the appropriate NAICS codes. The Commonwealth-level employment data were obtained at the NAICS code level from the U.S. Bureau of Labor Statistics.³

In some cases, the Census does not report the employment value for a particular NAICS code/county combination because of confidentiality concerns. In these cases, the Census provides employment data as a range (e.g., between 20 and 99 employees). When a precise number of employees was not available from CBP, an initial estimate was developed based on the mid-point of the reported range (e.g., 60 employees was used for the 20 to 99 employment range). For a given NAICS code, the mid-point estimates were then adjusted up or down to yield the Commonwealth-level employment for that NAICS code as reported in the CBP. The adjustments were computed by first calculating the difference between the Commonwealth-level CBP employment and the total of the employment values for counties for which actual employment values were reported in the CBP. The resulting value represents employment for the counties for which the CBP reports an employment range value. This value was then divided by the sum of the mid-point employment estimates for the counties for which employment was reported as a range. The resulting ratio was multiplied by the mid-point estimates to yield the final county employment estimates. The calculation spreadsheets provide each of the steps used in this estimation procedure.

Control Efficiency (CE)

Control efficiency is the emission reduction percentage associated with a control device, process change or reformulation. Control efficiencies can vary widely by source within an area source category. Area source control efficiency values represent the weighted average control for the category.

Rule Penetration (RP)

Because lower-emitting sources within a source category may not be covered by a regulation, it is important to reflect the extent to which total source category emissions are affected. Rule penetration represents the percentage of total source category emissions that are affected by a regulation.

Rule Effectiveness (RE)

Rule effectiveness is a factor used to adjust the control efficiency to account for failures and uncertainties that affect the actual performance of the control. For example, control equipment performance may be adversely affected by age of the equipment, lack of maintenance, or improper use. With the exception of Federal regulations, a default RE value of 80 percent was applied when information was not available to substantiate the true RE value.¹ An RE of 100 percent was applied to all Federal regulations that require national compliance.

The RE factor is applied to the estimated control efficiency in the calculation of emissions from a source. The formula for the application of CE, RP, and RE is displayed below:

Uncontrolled Emissions	=	50 pounds per day
Control Efficiency	=	90 percent
Rule Penetration	=	60 percent
Rule Effectiveness	=	80 percent

$$\text{Controlled Emissions} = \text{Uncontrolled Emissions} \times (1 - \text{CE}/100 \times \text{RP}/100 \times \text{RE}/100)$$

$$\text{Controlled Emissions} = 50 \times (1 - 0.9 \times 0.6 \times 0.8) = 50 \times (1 - 0.432) = 28.4 \text{ pounds per day}$$

An RE and/or RP value can substantially increase emission estimates when high control efficiencies are involved. For example, if RP was not applied in the above example (equivalent to a 100 percent RP assumption), then estimated emissions are:

$$\text{Controlled Emissions} = 50 \times (1 - 0.9 \times 0.8) = 50 \times (1 - 0.72) = 14 \text{ pounds per day.}$$

Seasonal Emission Calculations

Area source emissions are typically prepared first on an annual basis because activity data are generally only available on an annual basis. The recently promulgated Consolidated Emissions Reporting Rule (CERR) requires States to submit county-level area source CAP emission inventories to EPA for three temporal periods: annual, summer season work weekday, and winter season work weekday (the latter for carbon monoxide and particulate matter emissions

only). Summer season work weekday emission inventories are needed to support planning for ozone NAAQS attainment. The summer season refers to the peak ozone season months of June, July, and August. Winter season work weekday emission inventories are used to support carbon monoxide (CO) NAAQS attainment planning. The winter season refers to January, February, and December of the same year (e.g., 2002).

Seasonal emission estimates are calculated by adjusting the annual inventory to reflect activity during the summer and winter season. Summer work weekday and winter work weekday emissions are calculated by multiplying annual emissions by the appropriate allocation factor. For most source categories, summer and winter work weekday allocation factors were developed from default monthly and weekly profiles available from EPA's Emissions Modeling ClearingHouse (EMCH).⁴

The EMCH provides 807 different monthly profiles and 45 different weekly profiles. The first step in developing summer allocation factors was to compute summer monthly ratios by dividing the sum of the June, July, and August monthly profile values by the total of the twelve monthly profile values. Winter monthly ratios were calculated in a similar manner, except monthly profile values for January, February, and December were incorporated into the calculation. Weekday profile values were computed by dividing the sum of the Monday through Friday weekly profile values by the total profile value for the entire week.

Summer work weekday allocation factors were calculated by multiplying the summer monthly ratios by the appropriate weekday ratio and then dividing the result by 65 (the number of work weekdays in the summer of 2002). In a like manner, winter work weekday allocation factors were computed by multiplying winter monthly ratios by the appropriate weekday ratio and dividing by 65 (the number of work weekdays in the winter of 2002).

These allocation factors were then matched to area source classification codes (SCCs) via a crosswalk between SCCs and temporal profiles available from EPA's EMCH. Annual emissions for each SCC/county/pollutant combination were then multiplied by the appropriate summer work weekday allocation factor to yield summer work weekday emissions. Winter work weekday emissions were calculated for categories emitting CO and/or PM. Similar to the summer calculations, annual CO and PM emissions were multiplied by the appropriate winter work weekday allocation factor to yield winter work weekday emissions.

For source categories for which actual monthly/seasonal activity data were available (e.g., Residential Natural Gas Combustion, Structure Fires, and Wineries), summer and winter season allocation factors were calculated from the available activity data. The following presents sample calculations performed to develop the summer work weekday allocation factor for Bakeries. The individual source category methodology sections present the calculations performed to compute each category's seasonal emission estimates.

SAMPLE CALCULATION OF SUMMER SEASON WORK WEEKDAY ALLOCATION FACTOR:

Bakeries (SCC 2302050000)

$$\text{Summer Season Ratio} = \frac{(\text{June Profile Value} + \text{July Profile Value} + \text{August Profile Value})}{\text{Total of Monthly Profile Values}}$$

$$= \frac{83 + 83 + 83}{996} = 0.25$$

$$\text{Weekday Ratio} = \frac{\text{Sum of Monday through Friday Profile Values}}{\text{Sum of Weekly Values}}$$

$$= \frac{143 + 143 + 143 + 143 + 143}{1000} = 0.715$$

$$\text{Summer Work Weekday Allocation Factor} = 0.25 \times 0.715 \div 65 = 0.00275$$

For source categories for which actual seasonal emissions activity data were available (e.g., Residential Natural Gas Combustion, Structure Fires, and Wineries), the summer and winter season allocation factors were developed from these activity data.

Point Source Subtractions

Source categories can appear in both the area source and point source inventory. For example, emissions from large dry cleaning establishments may be included in the point source inventory, while emissions from smaller dry cleaners (below some specified cutoff) are included in the area source inventory. When a point source inventory and an area source inventory include emissions from the same process, the area source emission estimates are adjusted to avoid double-counting. Although many area source categories (e.g., Architectural Surface Coating) do not have companion point source categories, there are many source categories in the area source inventory for which emissions are reported in the Pennsylvania point source inventory (see Table 1). For these source categories, point source emissions are subtracted from total emission estimates to yield area source emissions. Ideally, this adjustment would occur in the area source emission calculation by subtracting point source emission activity (throughput) from total emission activity as shown below.

$$\text{Area Source Activity} = (\text{Total Activity}) - (\text{Point Source Activity})$$

However, the Pennsylvania point source inventory does not report throughput for most sources. Therefore, it was necessary to calculate the point source subtractions using total and point source emission estimates as identified below.

$$\text{Area Emissions}_p = (\text{Total Emissions}_p) - (\text{Point Source Emissions}_p)$$

where:

$p = \text{pollutant}$

Separate point source inventories were developed for Allegheny and Philadelphia counties and for all other counties. Except for ammonia and lead, the Allegheny inventory reports annual emissions for all pollutants included in the area source inventory. These pollutants are also missing from the Philadelphia County annual inventory. Unlike the Allegheny inventory, the Philadelphia County inventory does not report PM emissions on a filterable and condensable basis, but rather on a primary basis. The inventory for the remaining counties reports annual emissions for the same pollutants as the Philadelphia County inventory, with the exception of primary PM_{2.5} (PM25-PRI), which is not reported for the remaining counties. Given the different ways in which PM emissions are reported in the 2002 Pennsylvania point source inventory, it was necessary to develop PM emissions on a consistent basis to facilitate the point source subtractions. Therefore, for Allegheny County, Pechan summed the condensable and the filterable PM emissions to obtain PM10-PRI and PM25-PRI emission values for use in the point source subtractions.

Although the point source inventories also report winter and summer day emissions, these estimates were not used in the point source subtractions. The annual emission estimates were used in the subtractions because it is not clear if every point source facility that would have emissions during the summer/winter have these emissions reported in the inventory. For example, there are only 14 records with winter day NO_x emissions in the point source inventory, while there are over 4,000 records with annual NO_x emissions reported in the inventory.

To facilitate the point source subtractions, the annual emission records for all point SCCs associated with an area source category were summed to the county level. Because PA DEP indicated that point source subtractions should be applied to the Machinery and Equipment Solvent Coating area source category by subtracting point source emission records associated with the combination of point SCCs 40202501, 40202502, and 40202599 and SIC code 3531, it was also necessary to compile county level annual emissions for these records. In addition, because these point SCCs are also associated with the Miscellaneous Finished Metals Surface Coating area source category, it was necessary to compile county-level annual emissions for all point source records with these SCCs that are not associated with SIC code 3531.

The county-level point source annual emissions were then subtracted from the area source category annual emissions using an area source category-to-point source category crosswalk developed for this project. Note that in keeping with EIIP guidance, when the resulting area source emission estimate was negative, the area source emission value was set to zero. In addition, when the PM10-PRI emission estimate resulted in a zero value, then the companion PM25-PRI emission estimate was set to zero for consistency. In addition to setting PM25-PRI emissions to zero when PM10-PRI emissions were zero, we also set PM25-PRI emissions to PM10-PRI emissions when PM25-PRI emissions were greater than PM10-PRI emissions, after the point source subtractions were performed. Finally, the summer and winter season work weekday emission estimates were updated by multiplying the revised annual emission estimate by the appropriate winter season and/or summer season work weekday allocation factors. The following presents sample point source NO_x emission subtraction calculations for the Commercial/Institutional Bituminous/Subbituminous Coal Combustion category (SCC 2103002000).

Area Source NOx Emissions for SCC 2103002000 = (Total NOx Emissions) – (Point NOx Emissions)

Total NOx Emissions for SCC 2103002000 (Allegheny Cnty) = 1,054.3025 tons per year

Point Source NOx Emissions (Allegheny Cnty) = 152.0751 tons (SCC 10300207) + 6.2277 tons (SCC 10300208)

*Area Source NOx Emissions for SCC 2103002000 = (1,054.3025 tons) – (158.3028 tons)
= 895.9997 tons*

The following individual sections describe the annual and seasonal emission estimation methodology for each area source category. Each section contains a brief description of the source category, identifies whether the category's emission estimates were subject to point source emission subtractions, and presents sample emission calculations (point source subtractions are not included in these sample calculations). All referenced sources are displayed in Appendix A.

Table 1. Area Source Inventory Categories with Point Source Emission Subtractions

SCC	SCC1DESC	SCC3DESC	SCC6DESC	SCC8DESC
2102001000	Stationary Source Fuel Combustion	Industrial	Anthracite Coal	Total: All Boiler Types
2102002000	Stationary Source Fuel Combustion	Industrial	Bituminous/Subbituminous Coal	Total: All Boiler Types
2103001000	Stationary Source Fuel Combustion	Commercial/Institutional	Anthracite Coal	Total: All Boiler Types
2103002000	Stationary Source Fuel Combustion	Commercial/Institutional	Bituminous/Subbituminous Coal	Total: All Boiler Types
2103004000	Stationary Source Fuel Combustion	Commercial/Institutional	Distillate Oil	Total: Boilers and IC Engines
2103005000	Stationary Source Fuel Combustion	Commercial/Institutional	Residual Oil	Total: All Boiler Types
2103006000	Stationary Source Fuel Combustion	Commercial/Institutional	Natural Gas	Total: Boilers and IC Engines
2103007000	Stationary Source Fuel Combustion	Commercial/Institutional	Liquefied Petroleum Gas (LPG)	Total: All Combustor Types
2302050000	Industrial Processes	Food and Kindred Products: SIC 20	Bakery Products	Total
2302070001	Industrial Processes	Food and Kindred Products: SIC 20	Fermentation/Beverages	Breweries
2401015000	Solvent Utilization	Surface Coating	Factory Finished Wood: SIC 2426 thru 242	Total: All Solvent Types
2401020000	Solvent Utilization	Surface Coating	Wood Furniture: SIC 25	Total: All Solvent Types
2401025000	Solvent Utilization	Surface Coating	Metal Furniture: SIC 25	Total: All Solvent Types
2401040000	Solvent Utilization	Surface Coating	Metal Cans: SIC 341	Total: All Solvent Types
2401050000	Solvent Utilization	Surface Coating	Miscellaneous Finished Metals: SIC 34 - (341 + 3498)	Total: All Solvent Types
2401055000	Solvent Utilization	Surface Coating	Machinery and Equipment: SIC 35	Total: All Solvent Types
2401060000	Solvent Utilization	Surface Coating	Large Appliances: SIC 363	Total: All Solvent Types
2401070000	Solvent Utilization	Surface Coating	Motor Vehicles: SIC 371	Total: All Solvent Types
2401080000	Solvent Utilization	Surface Coating	Marine: SIC 373	Total: All Solvent Types
2401085000	Solvent Utilization	Surface Coating	Railroad: SIC 374	Total: All Solvent Types
2401090000	Solvent Utilization	Surface Coating	Miscellaneous Manufacturing	Total: All Solvent Types
2415200000	Solvent Utilization	Degreasing	All Industries: Conveyerized Degreasing	Total: All Solvent Types
2415300000	Solvent Utilization	Degreasing	All Industries: Cold Cleaning	Total: All Solvent Types
2420000370	Solvent Utilization	Dry Cleaning	All Processes	Special Naphthas
2425000000	Solvent Utilization	Graphic Arts	All Processes	Total: All Solvent Types
2501060053	Storage and Transport	Petroleum and Petroleum Product Storage	Gasoline Service Stations	Stage 1: Balanced Submerged Filling
2501060101	Storage and Transport	Petroleum and Petroleum Product Storage	Gasoline Service Stations	Stage 2: Displacement Loss/Uncontrolled
2501060102	Storage and Transport	Petroleum and Petroleum Product Storage	Gasoline Service Stations	Stage 2: Displacement Loss/Controlled
2601010000	Waste Disposal, Treatment, and Recovery	On-site Incineration	Industrial	Total
2601020000	Waste Disposal, Treatment, and Recovery	On-site Incineration	Commercial/Institutional	Total
2620030000	Waste Disposal, Treatment, and Recovery	Landfills	Municipal	Total
2630020010	Waste Disposal, Treatment, and Recovery	Landfills	Wastewater Treatment Processes	Total

AGRICULTURAL PRODUCTION – ANIMAL HUSBANDRY

Emissions from livestock production come from such activities as confinement, manure handling and storage, and land application of manure. Biogenic emission source calculations were derived from EPA's BEIS inventory system.

AGRICULTURAL PRODUCTION – CROPS (Fertilizer Application) (14 SCCs)

(Anhydrous Ammonia SCC 2801700001, Aqueous Ammonia SCC 2801700002, Nitrogen Solutions SCC 2801700003, Urea SCC 2801700004, Ammonium Nitrate SCC 2801700005, Ammonium Sulfate SCC 2801700006, Ammonium Thiosulfate SCC 2801700007, N-P-K (multi-grade nutrient fertilizers) SCC 2801700010, Calcium Ammonium Nitrate SCC 2801700011, Potassium Nitrate SCC 2801700012, Diammonium Phosphate SCC 2801700013, Monoammonium Phosphate SCC 2801700014, Liquid Ammonium Polyphosphate SCC 2801700015, Misc. Fertilizers SCC 2801700099)

Emissions from crops are primarily due to spreading of various fertilizers. Fertilizers spread on fields that contribute to ammonia emissions include anhydrous ammonia, aqueous ammonia, nitrogen solutions, urea, ammonium nitrate, calcium ammonia, and ammonium sulfate. Biogenic emission source calculations were derived from EPA's BEIS inventory system.

ARCHITECTURAL SURFACE COATING (SCC 2401001000)

Architectural surface coatings are used by homeowners and painting contractors to coat the interior and exterior of buildings and other structures. The coatings are applied by spray, brush, or roller and dry or cure at ambient conditions. The VOC emissions from this source category result from the evaporation of the paint and cleanup solvents. Each county's emissions are calculated using a per capita emission factor and U.S. Bureau of the Census 2002 population data. The Federal architectural surface coating regulations call for a 20 percent reduction in the solvent content of architectural surface coatings manufactured after September 1999.⁵ Therefore, a 20 percent CE is applied in the 2002 inventory.

The emission factor that is used in this effort differs from that used for the 1999 area source inventory. The new per capita emission factor was calculated using the Emission Inventory Improvement Program (EIIP) methods for this category. National solvent- and water-based coating per capita use factors were first calculated from 2002 national paint shipments⁶ and 2002 national population data.⁷ These factors were then combined with information on the average volatile organic compound (VOC) content of these coatings to calculate per capita emission factors as follows:

$$\begin{aligned}\text{Water-Based} &= 0.74 \text{ pounds VOC/gallon}^8 \times 589,527,000 \text{ gallons}^6 / 288,368,698 \text{ people}^7 \\ &= 1.5128 \text{ pounds VOC/person/year}\end{aligned}$$

$$\begin{aligned}\text{Solvent-Based} &= 3.87 \text{ pounds VOC/gallon}^8 \times 119,914,000 \text{ gallons}^6 / 288,368,698 \text{ people}^7 \\ &= 1.6093 \text{ pounds VOC/person/year}\end{aligned}$$

Final composite emission factor = 1.5128 + 1.6093 = 3.1221 pounds VOC/person/year

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{EmissionFactor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

Emission Factor = 3.1221 lbs VOC/person/year

Population = 1,269,904 (Allegheny County)⁷

CE (Control Efficiency) = 20%⁵

RP (Rule Penetration) = 100%

RE (Rule Effectiveness) = 100%

$$\text{Annual VOC Emissions} = \left(\frac{3.1221 \text{ lbs VOC} / \text{person}}{\text{year}} \right) (1,269,904 \text{ people}) \left(1 - \frac{20}{100} \cdot \frac{100}{100} \cdot \frac{100}{100} \right)$$

$$\text{Annual VOC Emissions} = 3,171,813.823 \text{ pounds per year} \cdot \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right) = 1585.9069 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00356⁹

Summer work weekday VOC emissions = 1585.9069 × 0.00356 = 5.6484 tons VOC per day

ASPHALT PAVING (2 SCCs)

There are two types of asphalt used for road paving and repair: cutback asphalt and emulsified asphalt. VOC emissions result primarily from the curing of the applied material. The following sections describe the two types of asphalt and identify the methods used to estimate emissions for each type.

Cutback Asphalt (SCC 2461021000)

Cutback asphalt is used as a pavement sealant, a tack coat, and a bonding agent between layers of paving material. Cutback asphalt is prepared by blending or “cutting back” asphalt cement with various blends of petroleum distillates. Emissions from cutback asphalt paving occur during the curing of the road surface when petroleum distillates evaporate.

Annual VOC emissions from cutback asphalt paving were computed from information obtained from the Pennsylvania Association of Asphalt Material Applicators (PAMA) on the amount of cutback asphalt applied in 2002 and the VOC content and density of the asphalt.¹⁰ In addition, it was assumed that 100 percent of cutback asphalt contained diluent and that 70 percent of the

diluent evaporates.¹¹ County emissions were estimated by multiplying State emissions by the ratio of the each county's bituminous paved lane mileage by the State's bituminous paved lane mileage.¹² Based on the State regulation prohibiting use of cutback asphalt during summer months, there are no summer season work weekday emissions estimated for cutback asphalt.¹³

Emulsified Asphalt (SCC 2461022000)

Emulsified asphalt is a type of liquefied road surfacing material that is used in some of the same applications as cutback asphalt. However, instead of blending asphalt cement with petroleum distillates, emulsified asphalt uses a blend of water with an emulsifier.

Annual VOC emissions from emulsified asphalt paving were computed from information obtained from the Pennsylvania Association of Asphalt Material Applicators on the amount of emulsified asphalt applied in 2002, the VOC content and density of the asphalt, and the percentage of emulsified asphalt containing diluent.¹⁰ In addition, it was assumed that 100 percent of the emulsified asphalt diluent evaporates.¹¹ County emissions were estimated by multiplying State emissions by the ratio of the each county's bituminous paved lane mileage by the State's bituminous paved lane mileage.¹⁴ Annual emissions were allocated to the summer season work weekday based on information from PAMA that emulsified asphalt is only applied from March 1 through October 31.¹⁵ In addition, it was assumed that asphalt use is evenly distributed during this period and that paving is only performed on weekdays.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Emission Factor} = (\text{VOC Content})(\text{VOC Density})$$

$$\text{Statewide Annual Emissions} = (\text{Emission Factor})(2002 \text{ State Asphalt Use})(\% \text{ of Diluent Evaporating})$$

$$\text{County Annual VOCEmissions} = \text{Statewide VOC emissions} \times \frac{\text{County Bituminous Paved Lane Miles}}{\text{State Bituminous Paved Lane Miles}}$$

where:

$$\text{Cutback Asphalt VOC Content} = 35\%^{10}$$

$$\text{Emulsified Asphalt VOC Content} = 8\%^{10}$$

$$\text{Cutback Asphalt VOC Density} = 7.1 \text{ lbs/gallon}^{10}$$

$$\text{Emulsified Asphalt VOC Density} = 6.25 \text{ lbs/gallon}^{10}$$

$$2002 \text{ PA Cutback Asphalt Use} = 5,000,000 \text{ gallons}^{10}$$

$$2002 \text{ PA Emulsified Asphalt Use} = 15,000,000 \text{ gallons}^{10}$$

$$\text{Bituminous Paved County Lane Miles} = 2,538 \text{ miles (Allegheny)}^{14}$$

$$\text{Bituminous Paved State Lane Miles} = 83,227 \text{ miles}^{14}$$

$$\% \text{ of Cutback Asphalt Diluent that Evaporates} = 70\%^{11}$$

$$\% \text{ of Emulsified Asphalt Containing Diluent} = 50\%^{10}$$

$$\% \text{ of Emulsified Asphalt Diluent that Evaporates} = 100\%^{11}$$

Cutback Asphalt VOC Emissions Calculation:

$$\text{Emission Factor} = 0.35 \cdot \frac{7.1 \text{ lbs VOC}}{\text{gallon}} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.0012425 \text{ tons VOC per gallon per year}$$

$$\text{Annual VOC Emissions} = \frac{0.0012425 \text{ tons VOC}}{\text{gallon}} \cdot 5 \text{ million gallons cutback asphalt} \cdot 0.7 \cdot \frac{2,538 \text{ miles}}{83,227 \text{ miles}}$$

$$\text{Annual VOC Emissions} = 132.6147 \text{ tons VOC per year}$$

(Summer work weekday emissions are estimated as zero due to State prohibition on use during this period)¹³

Emulsified Asphalt VOC Emissions Calculation:

$$\text{Emission Factor} = 0.08 \cdot \frac{6.25 \text{ lbs VOC}}{\text{gallon}} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.00025 \text{ tons VOC per gallon per year}$$

$$\text{Annual VOC Emissions} = \frac{0.00025 \text{ tons VOC}}{\text{gallon}} \cdot 15 \text{ million gallons emulsified asphalt} \cdot 0.5 \cdot \frac{2,538 \text{ miles}}{83,227 \text{ miles}}$$

$$\text{Annual VOC Emissions} = 57.1780 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 3/8 (fraction of paving performed in the summer months) × 5/7 (fraction of paving performed on weekdays) ÷ 65 (number of weekdays in the summer) = 0.004125¹⁵

Summer work weekday VOC emissions = 57.1780 × 0.004125 = 0.2359 tons VOC per day

AUTOMOTIVE REFINISHING (SCC 2401005000)

Automotive refinishing is the painting of worn or damaged automobiles, light trucks, and other vehicles. The coating of new cars, however, is considered in the point source inventory, and therefore not included in this inventory. The automotive refinishing VOC emission factor of 2.30 lb/person is based on EPA guidance.¹⁶ A control efficiency of 60.94 percent for 2002 was computed by applying an incremental reduction of 38 percent¹⁷ to 1999's 37 percent¹⁸ control efficiency based on the following calculation:

$$2002 \text{ Control Efficiency} = \left(1 - \left(1 - \frac{\text{Incremental 2002 Control Efficiency}}{100} \right) \left(1 - \frac{1999 \text{ Control Efficiency}}{100} \right) \right) \cdot 100$$

$$2002 \text{ Control Efficiency} = \left(1 - \left(1 - \frac{38}{100} \right) \left(1 - \frac{37}{100} \right) \right) \cdot 100 = 60.94\% \text{ Control Efficiency}$$

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

$$\text{Emission Factor} = 2.30 \text{ lbs VOC/person/year}^{16}$$

$$\text{Population} = 1,269,904 \text{ (Allegheny County)}^7$$

$$\text{Control Efficiency} = 60.94\%^{17, 18}$$

$$\text{Rule Penetration} = 100\%$$

$$\text{Rule Effectiveness} = 100\%$$

$$\text{Annual VOC Emissions} = \left(\frac{2.30 \text{ lbs VOC}}{\text{person} \cdot \text{year}} \right) (1,269,904 \text{ people}) \left(1 - \frac{60.94}{100} \cdot \frac{100}{100} \cdot \frac{100}{100} \right)$$

$$\text{Annual VOC Emissions} = 1,140,856 \text{ pounds per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 570.4282 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00385⁹

Summer work weekday VOC emissions = 570.4282 × 0.00385 = 2.1940 tons VOC per day

BAKERIES (SCC 2302050000)

Bakery emissions, primarily ethanol, result from yeast fermentation during the baking process of bread and bakery products. Ethanol is emitted through a vent with any combustion product gases. Relevant NAICS codes for bakeries are 311811 and 311812.

County-level VOC emissions were calculated using an employment-based emission factor and the number of NAICS code 311811 and 311812 employees in each county. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ The Bakeries emission factor is 0.11 tons VOC/employee/year.¹⁹ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Employees})$$

where:

$$\text{Emission Factor} = 0.11 \text{ tons VOC/employee/year}^{19}$$

$$\text{Employees} = 1024^{2, 3} \text{ (Allegheny County)}$$

$$\text{Annual VOC Emissions} = \left(\frac{0.11 \text{ tons VOC} / \text{employee}}{\text{year}} \right) (1024 \text{ employees}) = 112.64 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday VOC emissions = 112.64 × 0.00275 = 0.3098 tons VOC per day

BREWERIES (SCC 2302070001)

Emissions of VOCs from breweries result from compounds such as ethanol, myrcene, ethyl acetate and higher alcohols resulting from the brewing process. There are two brewery emission factors, which differ based on facility production size (i.e., a smaller emission factor is used for facilities with more than 60,000 barrels production, and a larger factor for facilities producing 60,000 barrels or less).

Because facility-level brewery production data were not available, it was necessary to estimate the amount of production in each county associated with small and large facilities. First, county-level beer production was estimated by apportioning State-level production to counties based on county-level brewery employment. Total Pennsylvania beer production was obtained from the Federal Alcohol and Tobacco Tax and Trade Bureau.²⁰ The number of brewery (NAICS code 31212) employees in 2002 was estimated by projecting 2001 county employment, obtained from the 2001 *County Business Patterns*,² to 2002 based on the 2002 to 2001 State-level brewery employment ratio, obtained from the Bureau of Labor Statistics.³

Based on the average Pennsylvania brewery production per employee (2,122 barrels) calculated from the data described above, it was assumed that all facilities in a county reporting fewer than 29 employees would contain only small breweries. The cutoff of 29 employees was chosen based on the observation that, assuming a constant per employee production rate, a brewery with 29 employees would produce approximately 61,500 barrels of beer. It was also assumed that a county with more than 29 brewery employees would have production by both small and large facilities. In lieu of actual data, it was assumed that 1 percent of these counties' production is from small breweries, and 99 percent is from large breweries. Therefore, the small brewery emission factor was applied to 1 percent of the county's beer production, while the large brewery emission factor was applied to 99 percent of the county's production. This 1 percent assumption appears reasonable given that this value results in statewide brewery emissions similar to those estimated for 1996.

Since Pennsylvania's brewery production data were available on a monthly basis, the statewide summer month allocation factor was calculated using the ratio of summer beer production to the annual beer production. This was then converted to the summer work weekday allocation factor using weekday temporal allocation data from EPA's Emissions Modeling Clearinghouse (EMCH).^{4 20}

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Statewide Production}) \left(\frac{\text{County Employees}}{\text{State Employees}} \right)$$

where:

- Small Brewery Emission Factor* = 56.743 pounds of VOC/1000 barrels²¹
- Large Brewery Emission Factor* = 4.16791 pounds of VOC/1000 barrels²²
- Adams County Employees* = 7^{2 3}
- Allegheny County Employees* = 261^{2 3}
- 2002 PA Beer Production* = 3,089,646 barrels²⁰

Adams County (Small Breweries Only Assumption) Annual VOC Emissions:

$$\text{Annual VOC Emissions} = \frac{56.743 \text{ lbs VOC}}{1000 \text{ barrels}} \cdot 3,089,646 \text{ barrels} \cdot \frac{7 \text{ County Employees}}{1,456 \text{ State Employees}}$$

$$\text{Annual VOC Emissions} = 842.8634 \text{ lbs VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.4214 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month beer production/annual beer production × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 856,549/3,089,646 \times 0.715/65 = 0.00305^4 \text{ }^{20}$$

$$\text{Summer work weekday allocation factor} = 0.00305$$

$$\text{Summer work weekday VOC emissions} = 0.4214 \times 0.00305 = 0.001285 \text{ tons VOC per day}$$

Allegheny County (Small and Large Breweries Assumption) Annual VOC Emissions:

$$\text{Annual VOC Emissions} = 0.01 \cdot \left(\frac{56.743 \text{ lbs VOC}}{1000 \text{ barrels}} \cdot 3,089,646 \text{ barrels} \cdot \frac{261 \text{ County Employees}}{1,456 \text{ State Employees}} \right) + 0.99 \cdot \left(\frac{4.168 \text{ lbs VOC}}{1000 \text{ barrels}} \cdot 3,089,646 \text{ barrels} \cdot \frac{261 \text{ County Employees}}{1,456 \text{ State Employees}} \right)$$

$$\text{Annual VOC Emissions} = 2599.5583 \text{ lbs VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 1.2998 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month beer production/annual beer production × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 856,549/3,089,646 \times 0.715/65 = 0.00305^4 \text{ }^{20}$$

$$\text{Summer work weekday allocation factor} = 0.00305$$

$$\text{Summer work weekday VOC emissions} = 1.2998 \times 0.00305 = 0.00396 \text{ tons VOC per day}$$

COAL COMBUSTION (6 SCCs)

(Residential Anthracite SCC 2104001000, Residential Bituminous SCC 2104002000, Commercial/Institutional Anthracite SCC 2103001000, Commercial/Institutional Bituminous SCC 2103002000, Industrial Anthracite SCC 2102001000, Industrial Bituminous SCC 2102002000)

This category covers emissions from the burning of coal by residential, and small commercial and industrial users. Coal combustion emissions were estimated for VOC, NO_x, CO, Pb, PM, and SO₂.

Residential coal consumption, in tons per dwelling unit, was estimated using the following equation:

$$\text{Coal consumption per dwelling unit} = 0.003874 e^{(7.6414 - (1000/\text{heating degree days}))}$$

Heating Degree Day (HDD) data were obtained from the National Oceanic and Atmospheric Administration.²³ The HDD of each county was assigned according to the town or city in the county or the nearest town or city of similar latitude for which data were available.

After estimating county-level residential coal consumption per unit, emissions were calculated by multiplying these values by the number of coal-burning dwelling units in each county²⁴ and the emission factor for each pollutant.

Year 2002 Commonwealth-level commercial sector coal consumption (computed from the Energy Information Administration's *State Energy Data 2000*²⁵ and *Annual Coal Report 2002*²⁶) was allocated to individual counties using the number of commercial sector facilities in each county.² County-level emissions were then calculated by multiplying county coal consumption by the emission factor for the applicable CAP.

Industrial coal-burning emissions were computed in a similar way to commercial/institutional emissions. However, county-level industrial employment data (from *County Business Patterns* and *Current Employment Statistics*) were used to allocate coal consumption to individual counties.

In some cases, CAP emission factors differ between anthracite and bituminous coal. Because anthracite is mined in the eastern half of the Commonwealth, while bituminous is mined in the western half, the emission calculations assume that eastern counties burn anthracite coal while western counties burn bituminous coal.

For Commercial and Industrial sector categories, point source emissions, where present, were subtracted from these initial emission estimates.

SAMPLE CALCULATIONS:

Residential Coal Combustion:

Annual Emissions = (Pollutant Emission Factor)(Percent Ash Content, if applicable)·

$$\left(\text{Number of Coal - Burning Dwelling Units} \right) \left(0.003874e^{\left(7.6414 - \frac{1000}{\text{HDD}}\right)} / \text{Coal - Burning Dwelling Units} \right)$$

where:

VOC Emission Factor = 10 lbs/ton anthracite coal/year²⁷; 10 lbs/ton bituminous coal/year³⁹

NO_x Emission Factor = 3 lbs/ton anthracite coal/year²⁷; 9.1 lbs/ton bituminous coal/year³⁹

CO Emission Factor = 275 lbs/ton anthracite coal/year²⁷; 275 lbs/ton bituminous coal/year³⁹

Pb Emission Factor = 0.013182 lbs/ton bituminous coal/year³⁹

PM10-FIL Emission Factor = 10 lbs/ton anthracite coal/year²⁷; 6.2 lbs/ton bituminous coal/year³⁹

PM25-FIL Emission Factor = 0.6 lbs/ton anthracite coal/year²⁷ × 13.38% ash content = 8.028 lbs/ton anthracite coal/year; 3.8 lbs/ton bituminous coal/year³⁹

PM-CON Emission Factor = 0.08 lbs/ton anthracite coal/year²⁷ × 13.38% ash content = 1.0704 lbs/ton anthracite coal/year; 1.04 lbs/ton bituminous coal/year³⁹

SO₂ Emission Factor = 39 lbs/ton anthracite coal/year²⁷ × 0.89% sulfur content = 34.71 lbs/ton anthracite coal/year; 31 lbs/ton bituminous coal/year³⁹ × 2.42% sulfur content = 75.02 lbs/ton bituminous coal/year

Anthracite Coal Sulfur Content = 0.89% sulfur²⁷

Bituminous Coal Sulfur Content = 2.42% sulfur²⁷

Anthracite Coal Ash Content = 13.38% ash²⁷

Number of Coal-Burning Dwelling Units (Allegheny County) = 183²⁴

e = natural base

HDD = Heating Degree Days (Allegheny County) = 5,494²³

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{10 \text{ lbs VOC}}{\text{ton coal}} / \text{year} \right) (183 \text{ dwelling units}) \left[0.003874e^{\left(7.6414 - \frac{1000}{5494}\right)} \text{ tons coal} / \text{dwelling unit} \right]$$

$$\text{Annual VOC Emissions} = 12,307.7791 \text{ pounds VOC per year} \frac{1 \text{ ton}}{2000 \text{ pounds}} = 6.1539 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000110^{4 23}

Summer work weekday VOC emissions = 6.1539 × 0.000110 = 0.000675 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{275 \text{ lbs CO}}{\text{year}} \right) \left(\frac{\text{tons coal}}{\text{year}} \right) (183 \text{ dwelling units}) \left[0.003874e^{\left(\frac{7.6414 - 1000}{5494} \right)} \text{ tons coal} / \text{dwelling unit} \right]$$

$$\text{Annual CO Emissions} = 338,463.9245 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 169.2320 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000110^{4 23}

Summer work weekday CO emissions = 169.2320 × 0.000110 = 0.01856 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00555^{4 23}

Winter work weekday CO emissions = 169.2320 × 0.00555 = 0.9389 tons CO per day

Commercial/Institutional Coal Combustion:

$$\text{Annual Emissions} = (\text{Pollutant Emission Factor})(\text{Coal Consumption}) \left(\frac{\text{Number of County Facilities}}{\text{Number of State Facilities}} \right)$$

where:

VOC Emission Factor = 0.07 lbs/ton anthracite coal/year²⁸; 1.3 lbs/ton bituminous coal/year³⁹

NO_x Emission Factor = 18 lbs/ton anthracite coal/year³⁹; 33 lbs/ton bituminous coal/year³⁹

CO Emission Factor = 0.6 lbs/ton anthracite coal/year³⁹; 11 lbs/ton bituminous coal/year³⁹

Pb Emission Factor = 0.0089 lbs/ton anthracite coal/year³⁹; 0.013182 lbs/ton bituminous coal/year³⁹

SO₂ Emission Factor = 39 lbs/ton anthracite coal/year³⁹ × 0.89% sulfur content = 34.71 lbs/ton anthracite coal/year; 38 lbs/ton bituminous coal/year³⁹ × 2.42% sulfur content = 91.96 lbs/ton bituminous coal/year

PM₁₀-FIL Emission Factor = 2.3 lbs/ton anthracite coal/year³⁹ × 13.38% ash content = 30.774 lbs/ton anthracite coal/year; 13.2 lbs/ton bituminous coal/year³⁹

PM₂₅-FIL Emission Factor = 0.6 lbs/ton anthracite coal/year³⁹ × 13.38% ash content = 8.028 lbs/ton anthracite coal/year; 4.6 lbs/ton bituminous coal/year³⁹

PM-CON Emission Factor = 0.08 lbs/ton anthracite coal/year³⁹ × 13.38% ash content = 1.0704 lbs/ton anthracite coal/year; 1.04 lbs/ton bituminous coal/year³⁹

Anthracite Coal Sulfur Content = 0.89%²⁷

Bituminous Coal Sulfur Content = 2.42%²⁷
Anthracite Coal Ash Content = 13.38% ash²⁷
Pennsylvania Coal Consumption = 512,636 tons^{25 26}
Number of County Facilities (Allegheny County) = 24,654²
Number of Pennsylvania Facilities = 197,795²

Commercial/Institutional Coal Consumption: ^{25 26}

$$\begin{aligned}
 \text{State Coal Consumption} &= 2000 \text{ Commercial Consumption} \cdot \frac{2002 \text{ Commercial and Residential Consumption}}{2000 \text{ Commercial and Residential Consumption}} \\
 &= 648,000 \text{ tons} \cdot \frac{587,000 \text{ tons}}{742,000 \text{ tons}} = 512,636 \text{ tons}
 \end{aligned}$$

VOC Emissions:

$$\text{Annual VOCEmissions} = \frac{1.3 \text{ lbs VOC}}{\text{year} \cdot \text{ton bituminous coal}} \cdot 512,636 \text{ tons} \cdot \frac{24,654 \text{ county facilities}}{197,795 \text{ state facilities}}$$

$$\text{Annual VOCEmissions} = 83,066.2561 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 41.5331 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00170⁴

Summer work weekday VOC emissions = 41.5331 × 0.00170 = 0.0705 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \frac{11 \text{ lbs CO}}{\text{year} \cdot \text{ton bituminous coal}} \cdot 512,636 \text{ tons} \cdot \frac{24,654 \text{ county facilities}}{197,795 \text{ state facilities}}$$

$$\text{Annual CO Emissions} = 702,868.321 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 351.4342 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00170⁴

Summer work weekday CO emissions = 351.4342 × 0.00170 = 0.5967 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00397⁴

Winter work weekday CO emissions = 351.4342 × 0.00397 = 1.3962 tons CO per day

Industrial Coal Combustion:

$$\text{Annual Emissions} = (\text{Pollutant Emission Factor}) (\text{Coal Consumption}) \left(\frac{\text{Number of County Employees}}{\text{Number of State Employees}} \right)$$

The Industrial Coal Combustion emissions were calculated using the same emission factors as Commercial/Institutional Coal (see above).

where:

$$\begin{aligned} \text{Number of Allegheny County Employees} &= 48,544^{2\ 3} \\ \text{Number of Pennsylvania Employees} &= 721,902^{2\ 3} \\ \text{Pennsylvania Coal Consumption} &= 42,900,812.75 \text{ tons}^{25\ 26} \end{aligned}$$

Industrial Coal Consumption:^{25 26}

State Coal Consumption =

$$\begin{aligned} 2000 \text{ Industrial Consumption from State Energy Data} &\cdot \frac{2002 \text{ Other Industrial Consumption (Annual Coal Report)}}{2000 \text{ Other Industrial Consumption (Annual Coal Report)}} \\ &= 48,083,000 \text{ tons} \cdot \frac{3,121,000 \text{ tons}}{3,498,000 \text{ tons}} = 42,900,812.75 \text{ tons} \end{aligned}$$

CO Emissions:

$$\text{Annual CO Emissions} = \frac{11 \text{ lbs CO}}{\text{year}} \cdot \frac{1}{\text{ton bituminous coal}} \cdot 42,900,812.75 \text{ tons} \cdot \frac{48,544 \text{ employees in county}}{721,902 \text{ employees in state}}$$

$$\text{Annual CO Emissions} = 31,733,320.58 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 15,866.6603 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00283⁴

Summer work weekday CO emissions = 15,866.6603 × 0.00283 = 44.8538 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00283⁴

Winter work weekday CO emissions = 15,866.6603 × 0.00283 = 44.8538 tons CO per day

COMMERCIAL AND CONSUMER SOLVENT USE (SCC 2465000000)

This source category covers household products such as special naphthas, alcohols, carbonyls, and other organics that contain VOCs. There are no point sources associated with this category. County-level emissions were calculated using a composite per capita emission factor (see table below) and U.S. Bureau of the Census population data. The emission factor represents pre-control emission rates. A CE of 20 percent²⁹ and an RP of 48.6 percent⁹ were applied to reflect the Federal Rule for consumer products. This yields a post-control VOC emission factor of 7.078 lbs per capita which was used in all emission calculations. Each county's emissions are estimated per the sample calculations listed below.

SUBCATEGORY

Household Products

EMISSION FACTOR

0.79 lbs/person/year

Personal Care Products	2.32 lbs/person/year
Automotive Aftermarket Products	1.36 lbs/person/year
Adhesives and Sealants	0.57 lbs/person/year
FIFRA-Regulated Products	1.78 lbs/person/year
Coatings and Related Products	0.95 lbs/person/year
<u>Miscellaneous Products</u>	<u>0.07 lbs/person/year</u>
Total (Pre-Control)	7.84 lbs/person/year

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

$$\text{Emission Factor} = 7.84 \text{ lbs VOC/person/year}^{30}$$

$$\text{Population} = 1,269,904 \text{ (Allegheny County)}^7$$

$$CE \text{ (Control Efficiency)} = 20\%^{29}$$

$$RP \text{ (Rule Penetration)} = 48.6\%^9$$

$$RE \text{ (Rule Effectiveness)} = 100\%$$

$$\text{Annual VOC Emissions} = \left(\frac{7.84 \text{ lbs VOC}}{\text{person} \cdot \text{year}} \right) (1,269,904 \text{ people}) \left(1 - \frac{20}{100} \cdot \frac{48.6}{100} \cdot \frac{100}{100} \right)$$

$$\text{Annual VOC Emissions} = 8,988,319.557 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 4494.1598 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00274⁹

Summer work weekday VOC emissions = 4494.1598 × 0.00274 = 12.3128 tons VOC per day

COMMERCIAL COOKING (5 SCCs)

Chain-Driven (Conveyorized) Charbroilers SCC 2302002100; Under-Fired Charbroilers SCC 2302002200; Flat Griddles SCC 2302002300; Clamshell Griddles SCC 2302002400; and Deep-Fat Fryers SCC 2302002500

Criteria pollutant annual emissions associated with commercial cooking were compiled from the 2002 nonpoint source National Emissions Inventory (NEI).³¹ The 2002 NEI reports commercial cooking emissions in five SCCs, each of which represents a specific equipment type. Source categories comprise emissions from all meat types for a particular piece of equipment. The following types of meat are included: hamburger, steak, fish, pork, and chicken. Emissions for deep-fat frying of french fries were also estimated. With the exception of deep-fat frying of french fries, commercial cooking activity was developed from survey data obtained from a Public Research Institute (PRI) report on charbroiling activity estimation in the State of

California.³² Further details on the annual emission estimation methodology are available in the forthcoming 2002 nonpoint source NEI documentation.³¹

The NEI reports emissions for the following criteria pollutants: VOC, CO, PM10-PRI, and PM25-PRI (note, however, that each pollutant is not reported for each equipment type). The sources of the commercial cooking criteria pollutant emission factors are documented in a report prepared for EPA.³³

Because temporal allocation data were not developed for this category in the 2002 NEI, the default temporal data reported in the EMCH for SCC 2302002000 (Commercial Charbroiling) were applied to each commercial cooking SCC.⁴ These data were used to estimate both summer season and winter season work weekday emission estimates.

SAMPLE SEASONAL CALCULATIONS (CHAIN-DRIVEN CHARBROILERS):

Annual VOC emissions (Allegheny County) = 10.7792 tons VOC per year
Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor
Summer work weekday allocation factor = 0.00275⁴
Summer work weekday VOC emissions = 10.7792 × 0.00275 = 0.0296 tons VOC per day

Annual PM10-PRI emissions (Allegheny County) = 43.0837 tons VOC per year
Winter work weekday PM10-PRI emissions = annual PM10-PRI emissions × winter work weekday allocation factor
Winter work weekday allocation factor = 0.00275⁴
Winter work weekday PM10-PRI emissions = 43.0837 × 0.00275 = 0.1185 tons VOC per day

COMPOSTING (3 SCCs)

(Biosolids SCC 2680001000, Mixed Waste 2680002000, Green Waste 2680030000)
Composting refers to the use of both aerobic and anaerobic microbial processes to degrade waste materials for beneficial refuse. Compostable wastes include biosolids (sewage sludge), manure, green waste (e.g., landscape trimmings, grass clippings), and other biodegradable materials such as food waste. Composting produces emissions of NH₃, VOC, and methane. Emissions for each county were estimated using a biosolids-generation-based emission factor⁶⁵. Figures on material composted were obtained from *BioCycle's* nationwide survey³⁴

Each county's emissions were estimated per the sample calculations below.

SAMPLE NH₃ EMISSION CALCULATION:

Annual NH₃ Emissions = (Emission Factor)(Tons material composted)

Where:

Emissions Factor = 3.28 lbs NH₃/ton Biosolids
2.81 lbs NH₃/ton Mixed Waste
0.82 lbs NH₃/ton Green Waste

Tons Biosolids = 3,321.65 (Allegheny County)

$$\text{Annual NH}_3 \text{ Emissions} = \left[\frac{3.28 \text{ lbs NH}_3 / \text{ton Biosolids}}{\text{year}} \right] (3,321.65 \text{ tons Biosolids})$$

$$\text{Annual NH}_3 \text{ Emissions} = 10895.012 * \frac{1 \text{ ton}}{2000 \text{ lbs}} = 5.45 \text{ tons NH}_3 / \text{year}$$

DEGREASING (4 SCCs)

(Auto Repair (Cold Cleaning) SCC 2415360000, Manufacturing (Cold Cleaning) SCC 2415300000, Electronics (Vapor/In-Line) SCC 2415230000, Other (Vapor/In-Line) SCC 2415200000)

Surface cleaning, also known as “degreasing”, includes the solvent cleaning or conditioning of metal surfaces and parts, fabricated plastics, electronic and electrical components and other nonporous substrates. These cleaning processes are designed to remove foreign material, such as oils, grease, waxes and moisture, usually in the preparation for further treatment, such as painting, electroplating, galvanizing, anodizing or applying conversion coatings. Three basic types of surface cleaning operations are currently used: cold cleaning, vapor cleaning, and in-line or conveyORIZED cleaning, which can be either a cold or vapor cleaning process. VOC emission results from the evaporation of solvents used in these processes.

Cold cleaning is a batch process in which solvents are applied at room temperature or slightly heated. Parts are immersed in a solvent, usually mineral spirits. Parts too large for immersion may be sprayed or wiped with a solvent. The primary cold cleaning application is cleaning of tools or metal parts at service and automotive repair stations and manufacturing facilities. Cold cleaning may incorporate covers or freeboards to limit the evaporative loss of solvents.

In-line cleaners use automated load systems (typically conveyors) to maintain a continuous feed to the cleaning unit. These units use both cold and vapor-cleaning methods as described above, with the majority being halogenated solvent cleaning systems. These units are used for large-scale operations and are usually enclosed except to the conveyor inlet or exit. A common application of in-line cleaners is cleaning printed circuit boards for the electronic and electrical component industries.

The Emission Inventory Improvement Program (EIIP) developed the following population-based methods for estimating degreasing emissions. Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

Auto Repair (Cold Cleaning) VOC Emission Factor = 2.5 lbs VOC/person/year³⁵

*Manufacturing (Cold Cleaning) VOC Emission Factor = 1.1 lbs
VOC/person/year³⁵*

Electronics (Vapor/In-Line) VOC Emission Factor = 0.21 lbs VOC/person/year³⁵

Other (Vapor/In-Line) VOC Emission Factor = 0.49 lbs VOC/person/year³⁵

Population = 1,269,904 (Allegheny County)⁷

Auto Repair Cold Cleaning CE (Control Efficiency) = 66%³⁶

Manufacturing Cold Cleaning CE (Control Efficiency) = 66%³⁶

Electronics Vapor/In-Line CE (Control Efficiency) = 63%^{36 37}

Other Vapor/In-Line CE (Control Efficiency) = 63%^{36 37}

All Categories RP (Rule Penetration) = 100%

All Categories RE (Rule Effectiveness) = 80%

Allegheny County Auto Repair (Cold Cleaning) VOC Emissions Calculation:

$$\text{Annual VOC Emissions} = \left(\frac{2.5 \text{ lbs VOC} / \text{person}}{\text{year}} \right) (1,269,904 \text{ people}) \left(1 - \frac{66}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 1,498,486.72 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 749.2434 \text{ tons VOC per year}$$

Summer work weekday VOC emissions calculation for Allegheny County Auto Repair (Cold Cleaning):

Degreasing (all categories) summer work weekday allocation factor = 0.00385⁹

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday VOC emissions = 749.2434 × 0.00385 = 2.8817 tons VOC per day

DRY CLEANERS (SCC 2420000370)

Three types of dry cleaning operations are used: coin-operated facilities using perchloroethylene (perc); commercial/industrial facilities using perc; and commercial/industrial facilities using VOC solvents. As perc is no longer considered a VOC, only commercial/industrial facilities using VOC solvents are considered for the area source inventory. The first two categories are not included in the baseline inventory. They are, however, retained for use in the modeling inventory as required by EPA guidance.

Point source emissions, where present, were subtracted from these emission estimates. Each county's emissions were estimated per the sample calculations below using a per capita emission factor and US Census Bureau population data. The emission factor was determined by the Department using 1990 survey data supplied by the industry (contacts with the Pennsylvania and Delaware Cleaners Association indicate that more recent data are not available).³⁸

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population})$$

where:

$$\text{Emission Factor} = 0.15 \text{ lbs VOC/person/year}^{38}$$

$$\text{Population} = 1,269,904 \text{ (2002 Allegheny County)}^7$$

$$\text{Annual VOC Emissions} = \left(\frac{0.15 \text{ lbs VOC} / \text{person}}{\text{year}} \right) (1,269,904 \text{ people})$$

$$\text{Annual VOC Emissions} = 190,485.6 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 95.2428 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 95.2428 × 0.0028 = 0.2674 tons VOC per day

ELECTRICAL APPLIANCES (SCC 2401060000)

The VOC emissions from this source category result from the evaporation of the solvent used in the coating process in the manufacture of electrical appliances such as refrigerators, freezers, laundry equipment, and electric housewares. Emissions for each county were estimated per the sample calculations below using an employment-based emission factor and the number of employees in the NAICS codes, 333414, 335211, 335212, 335221, and 335228. The number of employees in each county for 2001 was obtained from County Business Patterns² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\text{Emission Factor} = 463 \text{ lbs VOC/employee/year}^{16}$$

$$\text{Employees} = 150 \text{ (Allegheny County)}^{2,3}$$

$$\text{Annual VOC Emissions} = \left(\frac{463 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (150 \text{ employees})$$

$$\text{Annual VOC Emissions} = 69,450 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 34.725 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

*Summer work weekday allocation factor = 0.00275*⁴
Summer work weekday VOC emissions = 34.725 x 0.00275=0.0955 tons VOC per day

ELECTRICAL INSULATION (SCC 2401065000)

The VOC emissions from this source category result from the evaporation of the solvent used in the insulation coatings applied to wire and cable. The emissions for each county were calculated using an employment-based emission factor and the number of employees in NAICS codes 331422, 331491, 335311, 335921 and 335929. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Each county’s emissions were estimated per the sample calculations below.

SAMPLE VOC EMISSION CALCULATIONS:

Annual VOC Emissions = (Emission Factor)(Number of Employees)

where:

*Emission Factor = 290 lbs VOC/employee/year*¹⁶
Employees = 58 (Allegheny County)^{2 3}

$$Annual\ VOC\ Emissions = \left(\frac{290\ lbs\ VOC}{employee\ year} \right) (58\ employees)$$

$$Annual\ VOC\ Emissions = 16820\ pounds\ VOC\ per\ year \cdot \frac{1\ ton}{2000\ pounds} = 8.41\ tons\ VOC\ per\ year$$

Summer work weekday VOC emissions = annual VOC emissions x summer work weekday allocation factor
*Summer work weekday allocation factor = 0.00277*⁴
Summer work weekday VOC emissions = 8.41 x 0.00277=0.0233 tons VOC per day

FACTORY FINISHED WOOD (SCC 2401015000)

The VOC emissions from this source category result from the evaporation of the solvent used in the gluing and coating process. The emissions for each county were calculated using an employment-based emission factor and the number of employees in NAICS codes 32192, 33711, 321211, 321212, 321213, 321911, 321918, 321992, and 321999. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\begin{aligned} \text{Emission Factor} &= 131 \text{ lbs VOC/employee/year}^{16} \\ \text{Employees} &= 615 \text{ (Allegheny County)}^{2,3} \end{aligned}$$

$$\text{Annual VOC Emissions} = \left(\frac{131 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (615 \text{ employees})$$

$$\text{Annual VOC Emissions} = 80565 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 40.2825 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 40.2825 × 0.0028 = 0.1141 tons VOC per day

FOREST FIRES (SCC 2810001000)

Forest fires in certain rural areas can produce very large, short-term emissions of VOC, NO_x, and CO, SO₂, and particulates. The emissions for each county were calculated using an emission factor from AP-42³⁹ or the 1999 National Emissions Inventory⁴⁰ and a loading factor from AP-42³⁹. The number of acres burned was obtained from the Department of Conservation and Natural Resources.⁴¹ Each county's emissions were estimated per the sample calculations below.

SAMPLE CALCULATIONS:

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{Loading Factor})(\text{Acres Burned})$$

where:

$$\begin{aligned} \text{VOC Emission Factor} &= 24 \text{ lbs VOC/ton of flora/year}^{39} \\ \text{NO}_x \text{ Emission Factor} &= 4 \text{ lbs NO}_x/\text{ton of flora/year}^{39} \\ \text{CO Emission Factor} &= 140 \text{ lbs CO/ton of flora/year}^{39} \\ \text{Loading Factor} &= 11 \text{ tons of flora/acre}^{39} \\ \text{Acres Burned} &= 3.85 \text{ acres (Westmoreland County)}^{41} \end{aligned}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{24 \text{ lbs VOC}}{\text{ton of flora}} \right) \left(\frac{11 \text{ tons of flora}}{\text{acre}} \right) (3.85 \text{ acres burned})$$

$$\text{Annual VOC Emissions} = 1016.4 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.5082 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0055⁴

Summer work weekday VOC emissions = 0.5082 × 0.0055 = 0.002795 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{140 \text{ lbs CO}}{\text{ton of flora}} \right) \left(\frac{11 \text{ tons of flora}}{\text{acre}} \right) (3.85 \text{ acres burned})$$

$$\text{Annual CO Emissions} = 5929 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 2.9645 \text{ tons CO per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0055⁴

Summer work weekday CO emissions = 2.9645 × 0.0055 = 0.0163 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00056⁴

Winter work weekday CO emissions = 2.9645 × 0.00056 = 0.0017 tons CO per day

FUEL OIL COMBUSTION (3 SCCs)

(Residential Distillate Fuel Oil SCC 2104004000, Commercial/Institutional Distillate Fuel Oil SCC 2103004000, Commercial/Institutional Residual Fuel Oil SCC 2103005000)

Distillate and residual oil combustion sources, which emit VOC, NO_x, CO, SO₂, Pb, and PM are grouped into three categories: Commercial/Institutional, Residential, and Industrial. Industrial source emissions are captured in the point source inventory. For Commercial sector categories, point source emissions, where present, were subtracted from the emissions of the corresponding county. Fuel oil emissions were calculated for each county using fuel use estimates derived by allocating Commonwealth consumption estimates from the Energy Information Administration to individual counties. The county allocations were performed using data obtained from the *County Business Patterns* and the U.S. Census Bureau.

SAMPLE CALCULATIONS:

Residential Distillate Fuel Oil:

Residential fuel oil usage was determined by allocating the total residential fuel oil use to each county. The residential fuel oil consumption was allocated by the ratio of dwelling units (DU) using distillate fuel oil in a county to the number of dwelling units burning distillate fuel oil in the Commonwealth. The following is the general equation for the calculation of usage for residential sources of fuel oil combustion.

$$\text{Annual Fuel Oil Usage} = (\text{PA Residential Distillate Fuel Oil Usage}) \left(\frac{\text{County Fuel - Oil - Burning DU}}{\text{State Fuel - Oil - Burning DU}} \right)$$

where:

$$\begin{aligned} \text{PA Residential Distillate Fuel Use} &= 829,470 \text{ thousands of gallons}^{42} \\ \text{2000 County Fuel-Oil-Burning DUs} &= 8123 \text{ Dwelling Units (Allegheny County)}^7 \\ \text{2000 State Fuel-Oil-Burning DUs} &= 1,217,155 \text{ Dwelling Units}^7 \end{aligned}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \frac{0.7 \text{ lbs VOC}}{1000 \text{ gallons}} \cdot 829,470 \text{ thousands of gallons} \cdot \frac{8123 \text{ Dwelling Units}}{1,217,155 \text{ Dwelling Units}}$$

$$\text{Annual VOC Emissions} = 3874.9784 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 1.9375 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000165⁴

Summer work weekday VOC emissions = 1.9375 × 0.000165 = 0.000319 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \frac{5 \text{ lbs VOC}}{1000 \text{ gallons}} \cdot 829,470 \text{ thousands of gallons} \cdot \frac{8123 \text{ Dwelling Units}}{1,217,155 \text{ Dwelling Units}}$$

$$\text{Annual CO Emissions} = 27,678.4173 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 13.8392 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000165⁴

Summer work weekday CO emissions = 13.8392 × 0.000165 = 0.00228 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.000626⁴

Winter work weekday CO emissions = 13.8392 × 0.000626 = 0.0866 tons CO per day

Commercial/Institutional Distillate Fuel Oil:

The total amount of distillate fuel oil was apportioned to each county according to the number of commercial sector (i.e., SIC code 50-89) facilities. The number of commercial facilities in 2001

was used for this allocation because 2001 data were the last year available.² Total Commonwealth use was obtained from the Energy Information Administration.⁴² Each county's emissions for commercial/institutional fuel oil combustion were estimated per the following sample calculations.

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{PA Commercial/ Institutional Distillate Fuel Oil Use}) \left(\frac{\text{Number of County Facilities}}{\text{Number of State Facilities}} \right)$$

where:

$$\text{VOC Emission Factor} = 0.34 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{NO}_x \text{ Emission Factor} = 20 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{CO Emission Factor} = 5 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{SO}_2 \text{ Emission Factor} = 142 \text{ lbs/1000 gallons/year}^{39} \times 0.3\% \text{ sulfur content} = 42.6 \text{ lbs/1000 gallons/year}$$

$$\text{PM}_{10}\text{-FIL Emission Factor} = 1.08 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM}_{25}\text{-FIL Emission Factor} = 0.83 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM-CON Emission Factor} = 1.3 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{Lead Emission Factor} = 0.001268 \text{ lbs/1000 gallons/year}$$

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$$\text{Distillate Fuel Sulfur Content} = 0.3\%^{27}$$

$$\text{County Facilities} = 24,654 \text{ (Allegheny County)}^2$$

$$\text{Commonwealth Facilities} = 197,795^2$$

$$\text{PA Commercial/Institutional Distillate Fuel Oil Use} = 301,554,000 \text{ gallons}^{42}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{0.34 \text{ lbs VOC}}{1000 \text{ gallons}} \right) \left(\frac{\text{year}}{\text{year}} \right) (301,554 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual VOC Emissions} = 12,779.5656 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 6.3898 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00170^4$$

$$\text{Summer work weekday VOC emissions} = 6.3898 \times 0.00170 = 0.0108 \text{ tons VOC per day}$$

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{5 \text{ lbsCO} / 1000 \text{ gallons}}{\text{year}} \right) (301,554 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual CO Emissions} = 187,934.7889 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 93.9674 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00170⁴

Summer work weekday CO emissions = 93.9674 × 0.00170 = 0.1595 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0040⁴

Winter work weekday CO emissions = 93.9674 × 0.0040 = 0.3733 tons CO per day

Commercial/Institutional Residual Fuel Oil:

The total amount of residual fuel oil was apportioned to each county according to the number of commercial facilities, which was obtained from *County Business Patterns*.² The total Commonwealth use was obtained from the Energy Information Administration.⁴² Each county's emissions for commercial/institutional fuel oil combustion were estimated per the following sample calculations.

$$\text{Annual Emissions} = (\text{Emission Factor}) (\text{PA Commercial Residual Fuel Oil Use}) \left(\frac{\text{Number of County Facilities}}{\text{Number of State Facilities}} \right)$$

where:

$$\text{VOC Emission Factor} = 1.13 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{NO}_x \text{ Emission Factor} = 55 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{CO Emission Factor} = 5 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{SO}_2 \text{ Emission Factor} = 157 \text{ lbs/1000 gallons/year}^{39} \times 1.05\% \text{ sulfur content} = 164.85 \text{ lbs/1000 gallons/year}$$

$$\text{PM}_{10}\text{-FIL Emission Factor} = 5.17 \text{ lbs/1000 gallons/year} \times 0.19\% \text{ ash content} = 0.9823 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM}_{25}\text{-FIL Emission Factor} = 1.92 \text{ lbs/1000 gallons/year} \times 0.19\% \text{ ash content} = 0.3648 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM-CON Emission Factor} = 1.5 \text{ lbs/1000 gallons/year}^{39}$$

Lead Emission Factor = 0.00155 lbs/1000 gallons/year **Error! Bookmark not defined.**

$$\text{Residual Fuel Sulfur Content} = 1.05\%^{43}$$

$$\text{County Facilities} = 24,654 \text{ (Allegheny County)}^2$$

$$\text{Commonwealth Facilities} = 197,795^2$$

$$\text{PA Commercial/Institutional Residual Fuel Oil Use} = 16,597,000 \text{ gallons}^{42}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{1.13 \text{ lbs VOC} / 1000 \text{ gallons}}{\text{year}} \right) (16,597 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual VOC Emissions} = 2337.6534 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 1.1688 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00170⁴

Summer work weekday VOC emissions = 1.1688 × 0.00170 = 0.00198 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{5 \text{ lbs CO} / 1000 \text{ gallons}}{\text{year}} \right) (16,597 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual CO Emissions} = 10,343.5991 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 5.1718 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00170⁴

Summer work weekday CO emissions = 5.1718 × 0.00170 = 0.00878 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0040⁴

Winter work weekday CO emissions = 5.1718 × 0.0040 = 0.0205 tons CO per day

GASOLINE MARKETING (5 SCCs)

(Stage I SCC 2501060053, Stage II Uncontrolled SCC 2501060101, Stage II Controlled SCC 2501060102, Underground Storage Tank Breathing and Emptying SCC 2501060201, Truck Transit SCC 2505030120)

Gasoline marketing involves the operations typically associated with transporting gasoline from refineries to final consumption in gasoline-powered vehicles. Evaporative emissions of VOCs occur at all points in the distribution process. The operations that were inventoried as area sources are gasoline dispensing outlets and gasoline tank trucks in transit. Bulk terminals and outlets are inventoried as point sources. VOC emissions result from the following sources: 1)

Stage I (tank truck unloading into underground storage tanks), 2) Stage II (vehicle fueling), 3) Underground Storage Tank Breathing and Emptying, and 4) Truck Transit.

Each category's AP-42 emission factor is based on the average daily throughput that was calculated from monthly data obtained from the Pennsylvania Department of Revenue Bureau of Motor Fuel Taxes. The vehicle miles traveled (VMT), which were obtained from Dan Szekeres of the Baker Corporation⁴⁴, was used to apportion the gasoline throughput to each county. Control efficiency (CE), rule penetration (RP), and rule effectiveness (RE) factors were applied to Stage I for each county to reflect the application of vapor balance systems. A RE factor was applied to Stage II to each regulated county. CE, RP, and RE factors were applied to Underground Storage Tank Breathing to reflect the application of pressure relief valves. There were no point sources for this source category. Each county's emissions were estimated per the following sample calculations.

SAMPLE VOC EMISSION CALCULATIONS:

Stage I:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{State Annual Gasoline Sales}) \left(\frac{\text{County Annual VMT}}{\text{State Annual VMT}} \right)$$

where:

- Emission Factor = 1.92 lbs VOC/1000 gallons³⁹*
- State Annual Gasoline Sales = 5,238,145,337 gallons/year⁴⁵*
- County Annual VMT = 8,836,074,725 miles (Allegheny County)⁴⁴*
- State Annual VMT = 97,021,666,321 miles⁴⁴*
- Control Efficiency (CE) = 96%^{46 47}*
- Rule Penetration (RP) = 96%^{46 47}*
- Rule Effectiveness (RE) = 80%*

$$\text{Annual VOC Emissions} = \left(\frac{1.92 \text{ lbs VOC}}{1000 \text{ gallons}} \right) \left(\frac{5,238,145,337 \text{ gallons}}{\text{day}} \right) \left(\frac{8,836,074,725 \text{ miles}}{97,021,666,321 \text{ miles}} \right) \left(1 - \frac{96}{100} \cdot \frac{96}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 240,637.0855 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 120.3185 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month gasoline sales/annual gasoline sales × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 1,370,092,015/5,238,145,337 \times 0.8333/65 = 0.00335^{44 45}$$

$$\text{Summer work weekday VOC emissions} = 120.3185 \times 0.00335 = 0.4035 \text{ tons VOC per day}$$

Stage II:

Vehicle refueling VOC emissions are estimated using MOBILE6.2-based emission factors;⁴⁸ monthly gasoline sales estimates;⁴⁵ and county-level, annual vehicle miles traveled (VMT) data.⁴⁴ MOBILE6.2 provided monthly, emission factors for each county in Pennsylvania. MOBILE6.2 input files were set up to model refueling emission factors in a manner similar to

that used for calculating onroad mobile source emissions for 2002. For each county, twelve monthly scenarios were modeled, along with an ozone season scenario and a winter scenario. These scenarios used the same 2002 monthly temperature and fuel inputs that were used in preparing onroad mobile source emissions. Each input file also called upon the external county-specific age distribution file developed for 2002. No speed information or I/M program information was modeled, as these are not needed in the refueling calculations.

Stage II control program information was included for the counties with controls based on program information regarding control efficiency from Pennsylvania. The Pennsylvania counties with Stage II controls are Allegheny, Armstrong, Beaver, Bucks, Butler, Chester, Delaware, Fayette, Montgomery, Philadelphia, Washington, and Westmoreland.⁴⁹ Vehicle-specific emission factors were then obtained in the database output format of MOBILE6.2. Using the fuel economy data and VMT fraction data contained in the MOBILE6.2 output files, the gram per mile emission factors were first converted to gram per gallon emission factors. These gram per gallon emission factors were then weighted according to the VMT fraction of each gasoline vehicle type to obtain monthly, county-specific gram per gallon emission factors weighted for all gasoline vehicle types.

VMT data were used to allocate monthly Pennsylvania gasoline sales to each county. These are the same gasoline sales figures that are used to estimate Stage I emissions. The MOBILE6.2 emission factors were then multiplied by the corresponding gasoline sales data to estimate refueling emissions. The VOC emissions calculations provide emissions at the county level for each month of 2002.

$$\text{Allegheny June VOC Emissions} = (\text{VOC Emission Factor})(\text{Monthly State Gasoline Sales}) \left(\frac{\text{County VMT}}{\text{State VMT}} \right)$$

where:

$$\begin{aligned} \text{Allegheny County June Emission Factor} &= 1.027 \text{ grams/gallon}^{48} \\ \text{PA June Gasoline Consumption} &= 443,778,938 \text{ gallons}^{45} \\ \text{Allegheny County 2002 VMT} &= 8,836,074,725 \text{ miles}^{44} \\ \text{PA 2002 VMT} &= 97,021,666,321 \text{ miles}^{44} \end{aligned}$$

$$\text{Allegheny June VOC Emissions} = \left(\frac{1.027 \text{ g VOC}}{\text{gallon}} \right) (443,778,938 \text{ gallons}) \left(\frac{8,836,074,725 \text{ miles}}{97,021,666,321 \text{ miles}} \right)$$

$$\text{Allegheny June VOC Emissions} = 41,507,615.1 \text{ g VOC} \cdot \frac{1 \text{ lb}}{453.59 \text{ g}} \cdot \frac{1 \text{ ton}}{2000 \text{ lb}} = 45.7546 \text{ tons VOC}$$

$$\text{Annual Allegheny County VOC Emissions} = \sum \text{Monthly Allegheny County Emissions} = 573.8276 \text{ tons VOC}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month gasoline sales/annual gasoline sales × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 1,370,092,015/5,238,145,337 \times 0.715/65 = 0.00288^{44, 45}$$

Summer work weekday VOC emissions = $573.8276 \times 0.00288 = 1.6510$ tons VOC per day

Underground Storage Tank Breathing and Emptying:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{State Annual Gasoline Sales}) \left(\frac{\text{County Annual VMT}}{\text{State Annual VMT}} \right)$$

where:

$$\text{Emission Factor} = 1.0 \text{ lbs VOC}/1000 \text{ gallons}^{39}$$

$$\text{State Annual Gasoline Sales} = 5,238,145,337 \text{ gallons/year}^{45}$$

$$\text{County Annual VMT} = 8,836,074,725 \text{ miles (Allegheny County)}^{44}$$

$$\text{State Annual VMT} = 97,021,666,321 \text{ miles}^{44}$$

$$\text{Control Efficiency (CE)} = 90\%^{46 \ 50}$$

$$\text{Rule Penetration (RP)} = 96\%^{46 \ 50}$$

$$\text{Rule Effectiveness (RE)} = 80\%$$

$$\text{Annual VOC Emissions} = \left(\frac{1.0 \text{ lbs VOC}}{1000 \text{ gallons}} \right) \left(\frac{5,238,145,337 \text{ gallons}}{\text{day}} \right) \left(\frac{8,836,074,725 \text{ miles}}{97,021,666,321 \text{ miles}} \right) \left(1 - \frac{90}{100} \cdot \frac{96}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 147,314.4698 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 73.6572 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions \times summer work weekday allocation factor

Summer work weekday allocation factor = summer month gasoline sales/annual gasoline sales \times weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 1,370,092,015/5,238,145,337 \times 0.715/65 = 0.00288^{4 \ 45}$$

$$\text{Summer work weekday VOC emissions} = 73.6572 \times 0.00288 = 0.2119 \text{ tons VOC per day}$$

Truck Transit:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{State Annual Gasoline Sales}) \left(\frac{\text{County Annual VMT}}{\text{State Annual VMT}} \right)$$

where:

$$\text{Emission Factor} = 0.06 \text{ lbs VOC}/1000 \text{ gallons}^{39}$$

$$\text{State Annual Gasoline Sales} = 5,238,145,337 \text{ gallons/year}^{45}$$

$$\text{County Annual VMT} = 8,836,074,725 \text{ miles (Allegheny County)}^{44}$$

$$\text{State Annual VMT} = 97,021,666,321 \text{ miles}^{44}$$

(The emission factor is based on the assumption that gasoline delivery is via single trips and accounts for both full and empty truck travel.)

$$\text{Annual VOC Emissions} = \left(\frac{0.06 \text{ lbs VOC}}{1000 \text{ gallons}} \right) \left(\frac{5,238,145,337 \text{ gallons}}{\text{day}} \right) \left(\frac{8,836,074,725 \text{ miles}}{97,021,666,321 \text{ miles}} \right)$$

$$\text{Annual VOC Emissions} = 28,623.2831 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 14.3116 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month gasoline sales/annual gasoline sales × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 1,370,092,015 / 5,238,145,337 \times 0.8333 / 65 = 0.00335^{4 \ 45}$$

$$\text{Summer work weekday VOC emissions} = 14.3116 \times 0.00335 = 0.04799 \text{ tons VOC per day}$$

GRAPHIC ARTS (SCC 2425000000)

Graphic arts include operations that are involved in the printing of newspapers, magazines, books, and other printed material. Emissions of VOCs result from evaporation of solvents used in inks and cleaning. The emissions for each county were calculated using a per capita emission factor and U.S. Census Bureau population data. Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population})$$

where:

$$\text{Emission Factor} = 1.3 \text{ lbs VOC/person/year}^{16}$$

$$\text{Population} = 1,269,904 \text{ (Allegheny County)}^7$$

$$\text{Annual VOC Emissions} = \frac{1.3 \text{ lbs VOC}}{\text{person} \cdot \text{year}} \cdot 1,269,904 \text{ people}$$

$$\text{Annual VOC Emissions} = 1,650,875.2 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 825.4376 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

$$\text{Summer work weekday allocation factor} = 0.0028^4$$

$$\text{Summer work weekday VOC emissions} = 825.4376 \times 0.0028 = 2.2904 \text{ tons VOC per day}$$

HIGH PERFORMANCE INDUSTRIAL MAINTENANCE SOLVENT (SCC 2401100000)

The VOC emissions from this source category result from the evaporation of solvents from surface coating of objects and materials that may exist in extreme conditions. There were no point sources. The emissions for each county were calculated using a per capita emission factor and U.S. Census Bureau population data. Each county's emissions were estimated per the following sample calculations.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

$$\text{Emission Factor} = 0.8 \text{ lbs VOC/person/year}^{16}$$

$$\text{Population} = 1,269,904 \text{ people (Allegheny County)}^7$$

$$\text{CE (Control Efficiency)} = 20\% ^5$$

$$\text{RP (Rule Penetration)} = 100\%$$

$$\text{RE (Rule Effectiveness)} = 100\%$$

$$\text{Annual VOC Emissions} = \frac{0.8 \text{ lbs VOC}}{\text{person} \cdot \text{year}} \cdot 1,269,904 \text{ people} \cdot \left(1 - \frac{20}{100} \cdot \frac{100}{100} \cdot \frac{100}{100} \right)$$

$$\text{Annual VOC Emissions} = 812,738.56 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 406.3693 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00356 ^9$$

$$\text{Summer work weekday VOC emissions} = 406.3693 \times 0.00356 = 1.4473 \text{ tons VOC per day}$$

KEROSENE (2 SCCs)

(Residential Kerosene SCC 2104011000, Commercial/Institutional Kerosene SCC 2103011000)

Kerosene combustion sources, which emit VOC, NO_x, CO, SO₂, and PM are grouped into two area source categories: Commercial/Institutional and Residential (all Industrial sector kerosene emissions are assumed to be included in the point source inventory). Emissions were calculated for each county using emission factors and Energy Information Administration fuel use information. The EIA kerosene consumption data are reported for each State. Commonwealth consumption was allocated to counties using data obtained from the *County Business Patterns* and the U.S. Census Bureau.

SAMPLE CALCULATIONS:

Residential Kerosene:

The emissions for residential kerosene combustion were determined by allocating total residential kerosene consumption in the Commonwealth to each county. This allocation was performed using the ratio of dwelling units (DU) heating with kerosene in a county to the number of dwelling units heating with kerosene in the Commonwealth. The following is the general equation used to calculate emissions from residential kerosene combustion.

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{PA Residential Kerosene Fuel Oil Usage}) \left(\frac{\text{County Kerosene - Burning DU}}{\text{State Kerosene - Burning DU}} \right)$$

where:

$$\text{VOC Emission Factor} = 0.7 \text{ lbs/1000 gallons/year}^{27}$$

$$\text{NO}_x \text{ Emission Factor} = 17.4 \text{ lbs/1000 gallons/year}^{27}$$

$$\text{CO Emission Factor} = 4.8 \text{ lbs/1000 gallons/year}^{27}$$

$$\text{SO}_2 \text{ Emission Factor} = 41.1 \text{ lbs/1000 gallons/year}^{27}$$

$$\text{PM}_{10}\text{-FIL Emission Factor} = 1.08 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM}_{25}\text{-FIL Emission Factor} = 0.83 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM-CON Emission Factor} = 1.3 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PA Residential Kerosene Fuel Use} = 83,366 \text{ thousands of gallons}^{42}$$

$$2000 \text{ County Kerosene-Burning DUs} = 8123 \text{ Dwelling Units (Allegheny County)}^7$$

$$2000 \text{ State Kerosene-Burning DUs} = 1,217,155 \text{ Dwelling Units}^7$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \frac{0.7 \text{ lbs VOC}}{1000 \text{ gallons}} \cdot 83,366 \text{ thousands of gallons} \cdot \frac{8123 \text{ Dwelling Units}}{1,217,155 \text{ Dwelling Units}}$$

$$\text{Annual VOC Emissions} = 389.4553 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 0.1947 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00275^4$$

$$\text{Summer work weekday VOC emissions} = 0.1947 \times 0.00275 = 0.000536 \text{ tons VOC per day}$$

CO Emissions:

$$\text{Annual CO Emissions} = \frac{4.8 \text{ lbs VOC}}{1000 \text{ gallons}} \cdot 83,366 \text{ thousands of gallons} \cdot \frac{8123 \text{ Dwelling Units}}{1,217,155 \text{ Dwelling Units}}$$

$$\text{Annual CO Emissions} = 2670.5503 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 1.3353 \text{ tons CO per year}$$

$$\text{Summer work weekday CO emissions} = \text{annual CO emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00275^4$$

$$\text{Summer work weekday CO emissions} = 1.3353 \times 0.00275 = 0.00367 \text{ tons CO per day}$$

$$\text{Winter work weekday CO emissions} = \text{annual CO emissions} \times \text{winter work weekday allocation factor}$$

$$\text{Winter work weekday allocation factor} = 0.00275^4$$

$$\text{Winter work weekday CO emissions} = 1.3353 \times 0.00275 = 0.00367 \text{ tons CO per day}$$

Commercial/Institutional Kerosene:

The total amount of fuel oil was apportioned to each county according to the number of commercial facilities, which was obtained from *County Business Patterns*.² The total Commercial/Institutional kerosene consumption in the Commonwealth was obtained from the Energy Information Administration.⁴² The emission factors used for Commercial/Institutional Kerosene were the same as those used for Commercial/ Institutional Distillate Fuel Oil as per EIIP guidance. Each county's emissions for commercial/institutional fuel oil combustion were estimated per the following sample calculations.

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{PA Commercial Kerosene Use}) \left(\frac{\text{Number of County Facilities}}{\text{Number of State Facilities}} \right)$$

where:

$$\text{VOC Emission Factor} = 0.34 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{NO}_x \text{ Emission Factor} = 20 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{CO Emission Factor} = 5 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{SO}_2 \text{ Emission Factor} = 142 \text{ lbs/1000 gallons/year}^{39} \times 0.3\% \text{ sulfur content} = 42.6 \text{ lbs/1000 gallons/year}$$

$$\text{PM}_{10}\text{-FIL Emission Factor} = 1.08 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM}_{25}\text{-FIL Emission Factor} = 0.83 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{PM-CON Emission Factor} = 1.3 \text{ lbs/1000 gallons/year}^{39}$$

$$\text{Kerosene Sulfur Content} = 0.3\%^{27}$$

$$\text{County Commercial Sector Facilities} = 24,654 \text{ (Allegheny County)}^2$$

$$\text{Commonwealth Commercial Sector Facilities} = 197,795^2$$

$$\text{Commercial/Institutional Kerosene Oil Use} = 16,290 \text{ thousands of gallons}^{42}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{0.34 \text{ lbs VOC} / 1000 \text{ gallons}}{\text{year}} \right) (16,290 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual VOC Emissions} = 690.3544 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 0.3452 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00283⁴

Summer work weekday VOC emissions = 0.3452 × 0.00283 = 0.000976 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{5 \text{ lbsCO} / 1000 \text{ gallons}}{\text{year}} \right) (16,290 \text{ thousands of gallons}) \left(\frac{24,654 \text{ Facilities}}{197,795 \text{ Facilities}} \right)$$

$$\text{Annual CO Emissions} = 10152.2703 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 5.0761 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00283⁴

Summer work weekday CO emissions = 5.0761 × 0.00283 = 0.0143 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00283⁴

Winter work weekday CO emissions = 5.0761 × 0.00283 = 0.0143 tons CO per day

LANDFILLS (SCC 2620030000)

Municipal solid waste landfills receive primarily household and/or commercial waste. The VOC emissions from landfills are produced by volatilization, chemical reaction, and biological decomposition of refuse material.

The emissions were calculated using the total amount of refuse in Pennsylvania's municipal solid waste landfills, not the landfills' capacity. Since landfills continue to emit VOCs long after they are closed (at least 20 years), data from active and inactive landfills were collected.

For active landfills, data from page two of the 2002 "Annual Facility Capacity Report" for each landfill were collected. In particular, Total Waste Accepted was needed for the final emissions calculation.

Several landfills that were included in the 1996 Pennsylvania area source inventory were not included in the compilation of 2002 facility reports provided by PA DEP. After confirming with PA DEP that these landfills are inactive (in a few cases the landfills had merely been renamed), the 1996 Total Waste Accepted data for these now-closed landfills were incorporated into the 2002 inventory.

Total Waste Accepted was summed at the county level to calculate the total landfill emissions in each county. The emissions estimate was adjusted for precipitation. Each county's emissions were estimated per the following sample calculation.

SAMPLE VOC EMISSION CALCULATION:

Annual VOC Emissions = (Emission Factor)(Precipitation Adjustment Factor)(Tons of Waste)

where:

Emission Factor = 13.6 tons VOC/1,000,000 tons of waste

Precipitation Adjustment Factor = 2.6

Amount of Waste = 19,422,841.6 tons of waste (Allegheny County)

$$\text{Annual VOC Emissions} = \left(\frac{13.6 \text{ tons VOC} / 1,000,000 \text{ tons waste}}{\text{year}} \right) (2.6)(19,422,841.6 \text{ tons of waste})$$

Annual VOC Emissions = 686.7917 tons VOC per year

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday VOC emissions = 686.7917 × 0.00275 = 1.8887 tons VOC per day

MACHINERY AND EQUIPMENT (SCC 2401055000)

The VOC emissions from this source category result from the evaporation of the solvent used in the coating process in manufacturing facilities, such as engines, turbines, farm and garden equipment, computers, and office machinery. The emissions for each county were calculated using an employment-based emission factor and employee data from NAICS Codes 333 (except 333314 and 333315), 33271, 332991, 332997, 3341, and 336391. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from the Machinery and Equipment category emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

Annual VOC Emissions = (Emission Factor)(Number of Employees)

where:

VOC Emission Factor = 77 lbs VOC /employee/year¹⁶

Employees = 4944 employees (Allegheny County)^{2 3}

$$\text{Annual VOC Emissions} = \left(\frac{77 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (4944 \text{ employees})$$

Annual VOC Emissions = 380,688 pounds VOC per year · $\frac{1 \text{ ton}}{2000 \text{ lbs}}$ = 190.344 tons VOC per year

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00277⁴

$$\text{Summer work weekday VOC emissions} = 190.344 \times 0.00277 = 0.5282 \text{ tons VOC per day}$$

MARINE COATING (SCC 2401080000)

This source category includes ship and boat building and repairing. The emissions were calculated using an employment-based emission factor and employee data from NAICS code 33661. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Each county's emissions were estimated per the following sample calculations below. Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\begin{aligned} \text{Emission Factor} &= 308 \text{ lbs VOC /employee/year}^{16} \\ \text{Employees} &= 52 \text{ employees (Allegheny County)}^{2\ 3} \end{aligned}$$

$$\text{Annual VOC Emissions} = \left(\frac{308 \text{ lbs VOC} / \text{Employee}}{\text{year}} \right) (52 \text{ Employees})$$

$$\text{Annual VOC Emissions} = 16,016 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 8.008 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.0028^4$$

$$\text{Summer work weekday VOC emissions} = 8.008 \times 0.0028 = 0.0222 \text{ tons VOC per day}$$

METAL CANS (SCC 2401040000)

This source category includes the manufacturing of metal cans, barrels, drums, kegs, and pails. The emissions from point sources, where present, were subtracted from the emissions of the corresponding county. The emissions for each county were calculated per the calculation below using an employment-based emission factor and employee data from NAICS Codes 332431 and 332439. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATION:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\begin{aligned} \text{Emission Factor} &= 6,029 \text{ lbs VOC/employee/year}^{16} \\ \text{Employees} &= 48 \text{ employees (Allegheny County)}^{2,3} \end{aligned}$$

$$\text{Annual VOC Emissions} = \left(\frac{6,029 \text{ lbs VOC} / \text{Employee}}{\text{year}} \right) (48 \text{ Employees})$$

$$\text{Annual VOC Emissions} = 289,392 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 144.696 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 144.696 × 0.0028 = 0.4015 tons VOC per day

METAL FURNITURE AND FIXTURES (SCC 2401025000)

This source category includes manufacturing metal household and office furniture, such as beds, cabinets, desks, bookcases, and chairs. The emissions for each county were calculated per the sample calculations below using an employment-based emission factor and employee data for NAICS codes 337121, 337124, 337214, and 337215. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\begin{aligned} \text{Emission Factor} &= 1,597 \text{ lbs VOC /employee/year}^{16} \\ \text{Employees} &= 487 \text{ employees (Allegheny County)}^{2,3} \end{aligned}$$

$$\text{Annual VOC Emissions} = \left(\frac{1,597 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (487 \text{ employees})$$

$$\text{Annual VOC Emissions} = 777,739 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 388.8695 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 388.8695 × 0.0028 = 1.0790 tons VOC per day

MISCELLANEOUS FINISHED METAL (SCC 2401050000)

This source category includes facilities which enamel, lacquer, and/or varnish metals. The emissions for each county were calculated per the sample calculations below using an employment-based emission factor and employee data from NAICS Codes 332812, 339911, 339912, and 339914. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS).³ Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

Annual VOC Emissions = (Emission Factor)(Number of Employees)

where:

Emission Factor = 2,877 lbs VOC/employee/year¹⁶

Employees = 683 employees (Allegheny County)^{2 3}

$$\text{Annual VOC Emissions} = \left(\frac{2877 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (683 \text{ employees})$$

$$\text{Annual VOC Emissions} = 1,964,991 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ pounds}} = 982.4955 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 982.4955 × 0.0028 = 2.7262 tons VOC per day

MISCELLANEOUS MANUFACTURING (SCC 2401090000)

This source category includes establishments primarily engaged in manufacturing products not classified in any other group such as jewelry, silverware, musical instruments, dolls, toys, games, pens, pencils, buttons, brooms, and caskets. The emissions for each county were calculated per the sample calculations below using a per capita emission factor and U.S. Census Bureau population data. Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population})$$

where:

$$\text{Emission Factor} = 0.6 \text{ lbs VOC/person/year}^{16}$$

$$\text{Population} = 1,269,904 \text{ (Allegheny County)}^7$$

$$\text{Annual VOC Emissions} = \left(\frac{0.6 \text{ lbs VOC} / \text{person}}{\text{year}} \right) (1,269,904 \text{ people})$$

$$\text{Annual VOC Emissions} = 761,942.4 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 380.9712 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC Emissions = 380.9712 × 0.0028 = 1.0633 tons VOC per day

NATURAL GAS AND LIQUIFIED PETROLEUM GAS (LPG) (4 SCCs)

(Residential Natural Gas SCC 2104006000, Commercial/Institutional Natural Gas SCC 2103006000, Residential LPG SCC 2104007000, Commercial/Institutional LPG SCC 2103007000)

Natural gas and LPG are used in residential, commercial/institutional, and industrial facilities. Industrial natural gas and LPG consumption is considered to be covered in the point source inventory. Area source natural gas and LPG emissions were estimated using fuel consumption data and AP-42 emission factors. Because monthly natural gas consumption data were available, these data were used in developing the summer and winter season work weekday allocation factors. Consumption data were apportioned according to the number of dwelling units heating with natural gas/LPG, which was available from U.S. Census Bureau data (for residential sources), and according to the number of commercial sector facilities, obtained from County Business Patterns (for commercial/institutional sources). Commercial and Residential LPG consumption was not available for 2002; therefore, the 2001 consumption was grown to 2002 by

applying the ratio of 2002 Commercial/Residential propane sales in Pennsylvania to 2001 Commercial/Residential propane sales in the Commonwealth. Commercial LPG consumption in 2001 was obtained from the Energy Information Administration's *State Energy Data 2001*. Propane sales for 2001 and 2002 were obtained from *Petroleum Marketing Annual*.^{51 52} Each county's emissions were estimated using the sample calculations below. For Commercial sector categories, point sources, where present, were subtracted from the emissions of the corresponding county.

SAMPLE CALCULATIONS:

Natural Gas:

Residential Natural Gas:

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{Statewide Residential Natural Gas Consumption}) \cdot \left(\frac{\text{Natural - Gas - Burning County Dwelling Units}}{\text{Natural - Gas - Burning State Dwelling Units}} \right)$$

where:

- VOC Emission Factor = 5.5 lbs/MMcf (million cubic feet)/year³⁹
- NO_x Emission Factor = 94 lbs/MMcf/year³⁹
- CO Emission Factor = 40 lbs/MMcf/year³⁹
- SO₂ Emission Factor = 0.6 lbs/MMcf/year³⁹
- PM10-FIL Emission Factor = 1.9 lbs/MMcf/year³⁹
- PM25-FIL Emission Factor = 1.9 lbs/MMcf/year³⁹
- PM-CON Emission Factor = 5.7 lbs/MMcf/year³⁹
- Pb Emission Factor = 0.0005 lbs/MMcf/year³⁹
- Residential Natural Gas Consumption = 237,640 MMcf⁵³
- County Dwelling Units Heating with Natural Gas = 474,292 (Allegheny County)⁷
- State Dwelling Units Heating with Natural Gas = 2,452,941 units⁷

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{5.5 \text{ lbs VOC}}{\text{MMcf}} \right) \left(\frac{\text{year}}{\text{year}} \right) (237,640 \text{ MMcf}) \left(\frac{474,292 \text{ county dwelling units}}{2,452,941 \text{ state dwelling units}} \right)$$

$$\text{Annual VOC Emissions} = 252,720.7666 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 126.3604 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000783⁵⁴

Summer work weekday VOC emissions = 126.3604 × 0.000783 = 0.0989 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{40 \text{ lbs VOC}}{\text{MMcf} \cdot \text{year}} \right) (237,640 \text{ MMcf}) \left(\frac{474,292 \text{ county dwelling units}}{2,452,941 \text{ state dwelling units}} \right)$$

$$\text{Annual CO Emissions} = 1,837,969.211 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 918.9846 \text{ tons CO per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.000783⁵⁴

Summer work weekday CO emissions = 918.9846 × 0.000783 = 0.7196 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00526⁵⁴

Winter work weekday CO emissions = 918.9846 × 0.00526 = 4.8370 tons CO per day

Commercial/Institutional Natural Gas:

$$\text{Annual Emissions} = (\text{Emission Factor}) (\text{PA Commercial Natural Gas Consumption}) \left(\frac{\text{County Commercial Units}}{\text{State Commercial Units}} \right)$$

where:

VOC Emission Factor = 5.5 lbs/MMcf (million cubic feet)/year³⁹

NO_x Emission Factor = 100 lbs/MMcf/year³⁹

CO Emission Factor = 84 lbs/MMcf/year³⁹

SO₂ Emission Factor = 0.6 lbs/MMcf/year³⁹

PM10-FIL Emission Factor = 1.9 lbs/MMcf/year³⁹

PM25-FIL Emission Factor = 1.9 lbs/MMcf/year³⁹

PM-CON Emission Factor = 5.7 lbs/MMcf/year³⁹

Pb Emission Factor = 0.0005 lbs/MMcf/year³⁹

Commercial Natural Gas Consumption = 148,346 MMcf⁵³

County Commercial Sector Facilities = 24,654 (Allegheny County)²

Commonwealth Commercial Sector Facilities = 197,795²

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{5.5 \text{ lbs VOC}}{\text{MMcf} \cdot \text{year}} \right) (148,346 \text{ MMcf}) \left(\frac{24,654 \text{ county commercial units}}{197,795 \text{ state commercial units}} \right)$$

$$\text{Annual VOC Emissions} = 101,697.5786 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 50.8488 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00125⁵⁵

Summer work weekday VOC emissions = 50.8488 × 0.00125 = 0.0634 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{84 \text{ lbs CO} / \text{MMcf}}{\text{year}} \right) (148,346 \text{ MMcf}) \left(\frac{24,654 \text{ county commercial units}}{197,795 \text{ state commercial units}} \right)$$

$$\text{Annual CO Emissions} = 1,553,199.382 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 776.5997 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00125⁵⁵

Summer work weekday CO emissions = 776.5997 × 0.00125 = 0.9683 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00478⁵⁵

Winter work weekday CO emissions = 776.5997 × 0.00478 = 3.7121 tons CO per day

LPG:

Residential LPG:

Annual Emissions = (Emission Factor)(Residential LPG Consumption) ·

$$\left(\frac{\text{LPG – Burning County Dwelling Units}}{\text{LPG – Burning State Dwelling Units}} \right)$$

where:

VOC Emission Factor = 0.5 lbs/1000 gallons/year³⁹

NO_x Emission Factor = 14 lbs/1000 gallons/year³⁹

CO Emission Factor = 1.9 lbs/1000 gallons/year³⁹

*SO₂ Emission Factor = 0.1 lbs/1000 gallons/year³⁹ × 0.54 grains/100 cubic feet
= 0.054 lbs/1000 gallons/year*

PM10-FIL Emission Factor = 0.4 lbs/1000 gallons/year³⁹

PM25-FIL Emission Factor = 0.4 lbs/1000 gallons/year³⁹

PM-CON Emission Factor = 0.506 lbs/1000 gallons/year³⁹

Residential LPG Sulfur Content = 0.54 grains/100 cubic feet²⁷

Residential LPG Consumption = 157,014,873.6 gallons^{25 51 52}

County Dwelling Units Heating with LPG = 4317 units (Allegheny County)⁷

Commonwealth Dwelling Units Heating with LPG = 145,254 units⁷

Residential LPG Consumption Calculation:^{25 51 52}

$$\begin{aligned}
2002 \text{ Residential LPG Consumption} &= (2001 \text{ Residential LPG Consumption}) \cdot \frac{2002 \text{ PA Propane Consumption}}{2001 \text{ PA Propane Consumption}} \\
&= 3479.92024 \text{ thousand barrels LPG} \cdot \frac{822.8 \text{ thousand gallons LPG per day}}{765.9 \text{ thousand gallons LPG per day}} \\
&= 3738.449 \text{ thousand barrels LPG}
\end{aligned}$$

$$3738.449 \text{ thousand barrels LPG} \cdot \frac{42 \text{ gallons}}{1 \text{ barrel}} = 157,014,873.6 \text{ gallons LPG}$$

Data Sources for Residential LPG Consumption Calculation:

2001 Residential LPG Consumption²⁵

2002 PA Propane Consumption⁵¹

2001 PA Propane Consumption⁴³

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{0.5 \text{ lbs VOC} / 1000 \text{ gallons}}{\text{year}} \right) (157,014,873.6 \text{ gallons}) \left(\frac{4,317 \text{ county dwelling units}}{145,254 \text{ county dwelling units}} \right)$$

$$\text{Annual VOC Emissions} = 2333.2687 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 1.1666 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday VOC emissions = 1.1666 × 0.00275 = 0.00321 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{1.9 \text{ lbs VOC} / 1000 \text{ gallons}}{\text{year}} \right) (157,014,873.6 \text{ gallons}) \left(\frac{4,317 \text{ county dwelling units}}{145,254 \text{ county dwelling units}} \right)$$

$$\text{Annual CO Emissions} = 8866.4209 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 4.4332 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday CO emissions = 4.4332 × 0.00275 = 0.0122 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00275⁴

Winter work weekday CO emissions = 4.4332 × 0.00275 = 0.0122 tons CO per day

Commercial/Institutional LPG:

$$\text{Annual Emissions} = (\text{EmissionFactor})(\text{CommercialLPGConsumption}) \left(\frac{\text{CountyCommercialUnits}}{\text{StateCommercialUnits}} \right)$$

where:

$$\begin{aligned} \text{VOC Emission Factor} &= 0.5 \text{ lbs/1000 gallons/year}^{39} \\ \text{NO}_x \text{ Emission Factor} &= 14 \text{ lbs/1000 gallons/year}^{39} \\ \text{CO Emission Factor} &= 1.9 \text{ lbs/1000 gallons/year}^{39} \\ \text{SO}_2 \text{ Emission Factor} &= 0.1 \text{ lbs/1000 gallons/year}^{39} \times 0.54 \text{ grains/100 cubic feet} \\ &= 0.054 \text{ lbs/1000 gallons/year} \\ \text{PM}_{10}\text{-FIL Emission Factor} &= 0.4 \text{ lbs/1000 gallons/year}^{39} \\ \text{PM}_{25}\text{-FIL Emission Factor} &= 0.4 \text{ lbs/1000 gallons/year}^{39} \\ \text{PM-CON Emission Factor} &= 0.506 \text{ lbs/1000 gallons/year}^{39} \\ \text{Commercial/Institutional LPG Sulfur Content} &= 0.54 \text{ grains/100 cubic feet}^{27} \\ \text{Commercial LPG Consumption} &= 1,380,620.1 \text{ gallons}^{25 \ 51 \ 52} \text{ (computed in the} \\ &\text{same manner as Residential LPG Consumption above)} \\ \text{County Commercial Facilities} &= 24,654 \text{ (Allegheny County)}^2 \\ \text{Commonwealth Commercial Facilities} &= 197,795 \text{ units}^2 \end{aligned}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{0.5 \text{ lbsVOC} / 1000 \text{ gallons}}{\text{year}} \right) (1,380,620.1 \text{ gallons}) \left(\frac{24,654 \text{ county commercial units}}{197,795 \text{ state commercial units}} \right)$$

$$\text{Annual VOC Emissions} = 86.0431 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.0430 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday VOC emissions = 0.0430 × 0.0028 = 0.000122 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{1.9 \text{ lbsCO} / 1000 \text{ gallons}}{\text{year}} \right) (1,380,620.1 \text{ gallons}) \left(\frac{24,654 \text{ county commercial units}}{197,795 \text{ state commercial units}} \right)$$

$$\text{Annual CO Emissions} = 326.9640 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.1635 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0028⁴

Summer work weekday CO emissions = 0.1635 × 0.0028 = 0.000462 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0028⁴

Winter work weekday CO emissions = 0.1635 × 0.0028 = 0.000462 tons CO per day

OPEN BURNING (5 SCCs)

(Residential Municipal Solid Waste Open Burning SCC 2610030000; Residential Leaf Open Burning SCC 2610000100; Residential Brush Open Burning SCC 2610000400; Commercial/Institutional Open Burning SCC 2610020000, Industrial Open Burning SCC 2610010000)

Open burning can be done in open drums or baskets, in fields and yards, and in large open dumps or pits. Materials commonly disposed of in this manner include municipal waste, auto body components, landscape refuse, agricultural field refuse, wood refuse, bulky industrial refuse, and leaves. For emission inventory purposes, Open Burning is divided into five categories: Residential Municipal Solid Waste (MSW); Residential Leaf; Residential Brush; Commercial/Institutional; and Industrial.

Criteria pollutant annual emissions associated with three of the Residential Open Burning categories (i.e., MSW, Leaf, and Brush) were compiled from an inventory prepared for the Mid-Atlantic/Northeast Visibility Union (MANE-VU).⁵⁶ Because the MANE-VU estimates were prepared at the Census tract level, it was necessary to aggregate these estimates to the county-level. In many cases, it was necessary to develop a county-level RP value by weighting MANE-VU inventory Census tract level RP values by Census tract emissions. Seasonal emission estimates were calculated from the annual estimates using the temporal allocation profiles developed in the MANE-VU inventory project.

Annual emission estimates for Commercial/Institutional and Industrial Open Burning were calculated in this project using AP-42 emission factors and population and employment based emission activity loading factors.^{16 39} U.S. Census Bureau population data were used in the Residential and Commercial/Institutional calculations, while the number of Manufacturing employees (NAICS 31-33) was used for the Industrial category. The 2001 Manufacturing sector employment data from County Business Patterns² was grown to 2002 using the ratio of the 2002 Pennsylvania Manufacturing sector employment to the 2001 Pennsylvania Manufacturing sector employment obtained from the Bureau of Labor Statistics.³ Seasonal Commercial/Institutional and Industrial emission estimates were developed by applying temporal allocation profiles from EPA's EMCH to the annual emission estimates.⁴ Commercial/Institutional and Industrial Open Burning are prohibited in the Commonwealth. An 80 percent RE value was applied to each county's Commercial/Institutional and Industrial emissions to reflect less than 100 percent compliance with the burning ban.⁵⁷ For the Industrial and Commercial sector source categories, point source emissions, where present, were subtracted from these emission estimates.

The following provides samples of the emission calculations performed in this effort for each of the five open burning categories.

SAMPLE CALCULATIONS:

Residential MSW Open Burning:

(See MANE-VU inventory report for discussion of annual emission calculations)⁵⁶

Annual VOC emissions (Allegheny County) = 0.3823 tons VOC per year

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0021⁵⁶

Summer work weekday VOC emissions = 0.3823 × 0.0021 = 0.0008 tons VOC per day

Annual PM10-PRI emissions (Allegheny County) = 1.6979 tons VOC per year

Winter work weekday PM10-PRI emissions = annual PM10-PRI emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0021⁵⁶

Winter work weekday PM10-PRI emissions = 1.6979 × 0.0021 = 7.2489 tons VOC per day

Residential Leaf Open Burning:

(See MANE-VU inventory report for discussion of annual emission calculations)⁵⁶

Because the summer and winter season work weekday allocation factors for leaf burning are 0, summer season work weekday and winter season work weekday emissions are 0.

Residential Brush Open Burning:

(See MANE-VU inventory report for discussion of annual emission calculations)⁵⁶

Annual VOC emissions (Allegheny County) = 0.2263 tons VOC per year

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.0005⁵⁶

Summer work weekday VOC emissions = 0.2263 × 0.0005 = 0.0001 tons VOC per day

Annual PM10-PRI emissions (Allegheny County) = 0.235 tons VOC per year

Winter work weekday PM10-PRI emissions = annual PM10-PRI emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0017⁵⁶

Winter work weekday PM10-PRI emissions = 0.235 × 0.0017 = 0.00004 tons VOC per day

Commercial/Institutional Open Burning:

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{Loading Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

VOC Emission Factor = 30 lbs VOC/ton waste/year³⁹

NO_x Emission Factor = 6 lbs NO_x/ton waste/year³⁹

CO Emission Factor = 85 lbs CO/ton waste/year³⁹

Loading Factor = 24 tons waste/1000 people³⁹

Population = 94,437 people (Adams County – this is non-air basin county)⁷
CE (Control Efficiency) = 100%⁵⁷
RP (Rule Penetration) = 100%
RE (Rule Effectiveness) = 80%⁵⁷

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{30 \text{ lbs VOC}}{\text{ton waste}} \right) \left(\frac{24 \text{ tons waste}}{1000 \text{ people}} \right) (94,437 \text{ people}) \left(1 - \frac{100}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 13,598.928 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 6.7995 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor
Summer work weekday allocation factor = 0.00275⁴
Summer work weekday VOC emissions = 6.7995 × 0.00275 = 0.0187 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{85 \text{ lbs CO}}{\text{ton waste}} \right) \left(\frac{24 \text{ tons waste}}{1000 \text{ people}} \right) (94,437 \text{ people}) \left(1 - \frac{100}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual CO Emissions} = 38,530.296 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 19.2651 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor
Summer work weekday allocation factor = 0.00275⁴
Summer work weekday CO emissions = 19.2651 × 0.00275 = 0.0530 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor
Winter work weekday allocation factor = 0.00275⁴
Winter work weekday CO emissions = 19.2651 × 0.00275 = 0.0530 tons CO per day

Industrial Open Burning:

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{Loading Factor})(\text{Employees}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

Emission Factors are the same as for Commercial/Institutional Open Burning
Loading Factor = 160 tons waste/1000 employees³⁹
Employees = 8,216 employees (Adams County – this is non-air basin county)^{2 3}
Control Efficiency = 100%⁵⁷
Rule Penetration = 100%

$$\text{Rule Effectiveness} = 80\%^{57}$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{30 \text{ lbs VOC} / \text{ton waste}}{\text{year}} \right) \left(\frac{160 \text{ tons waste}}{1000 \text{ employees}} \right) (8216 \text{ employees}) \left(1 - \frac{100}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 7887.36 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 3.9437 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday VOC emissions = 3.9437 × 0.00275 = 0.0108 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{85 \text{ lbs CO} / \text{ton waste}}{\text{year}} \right) \left(\frac{160 \text{ tons waste}}{1000 \text{ employees}} \right) (8216 \text{ employees}) \left(1 - \frac{100}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual CO Emissions} = 22,347.52 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 11.1738 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday CO emissions = 11.1738 × 0.00275 = 0.0307 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00275⁴

Winter work weekday CO emissions = 11.1738 × 0.00275 = 0.0307 tons CO per day

OTHER SPECIAL PURPOSE COATING (SCC 2401200000)

This category includes special purpose coatings used for applications such as maintenance operations at industrial and other facilities, auto refinishing, traffic paints, marine finishes, and aerosol sprays. Note that this category covers those specific coating processes not already included in other source categories (e.g., High Performance Industrial Maintenance Coatings). Emissions for this category were estimated using a per capita emission factor and U.S. Bureau of the Census population data. Each county's emissions were calculated per the following sample calculations.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Population}) \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100} \right)$$

where:

$$\text{VOC Emission Factor} = 0.8 \text{ lbs VOC/person/year}^{16}$$

$$\text{Population} = 1,269,904 \text{ (Allegheny County)}^7$$

$$\text{Control Efficiency} = 20\% ^5$$

$$\text{Rule Penetration} = 100\%$$

$$\text{Rule Effectiveness} = 100\%$$

$$\text{Annual VOC Emissions} = \left(\frac{0.8 \text{ lbs VOC} / \text{person}}{\text{year}} \right) (1,269,904 \text{ people}) \left(1 - \frac{20}{100} \cdot \frac{100}{100} \cdot \frac{100}{100} \right)$$

$$\text{Annual VOC Emissions} = 812,738.56 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 406.3693 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00356 ^9$$

$$\text{Summer work weekday VOC emissions} = 406.3693 \times 0.00356 = 1.4473 \text{ tons VOC per day}$$

OTHER TRANSPORTATION (SCC 2401085000)

This source category includes the finishing of vehicles and vehicle parts not included in other source categories (note that area source emissions were not estimated for the Motor Vehicle Surface Coating category because all Pennsylvania automobile assembly plants are assumed to be included in the point source inventory). The emissions for each county were calculated per the sample calculations below using an employment-based emission factor and employee data from NAICS Codes 33633, 33634, 33635, 333924, 336312, 336322, 336399, 336411, 336413, and 33651. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics.³ Point source emissions, where present, were subtracted from these emission estimates. Note that emissions for this category are reported using the Railroad SCC because there is no “Other Transportation” SCC.

SAMPLE VOC EMISSION CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{Emission Factor})(\text{Number of Employees})$$

where:

$$\text{VOC Emission Factor} = 35 \text{ lbs VOC/employee/year}^{16}$$

$$\text{Employees} = 2556 \text{ employees (Allegheny County)}^{2,3}$$

$$\text{Annual VOC Emissions} = \left(\frac{35 \text{ lbs VOC} / \text{employee}}{\text{year}} \right) (2556 \text{ employees})$$

$$\text{Annual VOC Emissions} = 89,460 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 44.73 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00287⁴

Summer work weekday VOC emissions = 44.73 × 0.00287 = 0.1282 tons VOC per day

PESTICIDE APPLICATION (SCC 2461800000)

Pesticides, which contain petroleum solvents and synthetic organic ingredients, are used to kill or retard the growth of insects, rodents, fungi, weeds, or microorganisms. The bulk of pesticide application is associated with agriculture and, therefore, occurs in rural areas. The VOC emissions for each county were estimated using an emission factor based on the number of harvested acres. Harvested acreage data were obtained from the U.S. Department of Agriculture's National Agricultural Statistics Service.⁵⁸

SAMPLE VOC EMISSION CALCULATIONS:

Annual VOC Emissions = (Emission Factor)(Acres Harvested)

where:

VOC Emission Factor = 3.5 lbs VOC /acre harvested/year¹⁶

Acres Harvested = 10,527.2490 acres harvested (Allegheny County)⁵⁸

$$\text{Annual VOC Emissions} = \left(\frac{3.5 \text{ lbs VOC} / \text{acres harvested}}{\text{year}} \right) (10,527.2490 \text{ acres harvested})$$

$$\text{Annual VOC Emissions} = 36,845.3716 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 18.4227 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00277⁴

Summer work weekday VOC emissions = 18.4227 × 0.00277 = 0.0510 tons VOC per day

PORTABLE GASOLINE CONTAINERS (SCC 2501060300)

This category covers emissions from residential and commercial sector portable gasoline containers. This category accounts for permeation, diurnal, transport, spillage, and vapor

displacement emissions. Permeation, diurnal, and transport emissions are based on daily gasoline container throughput data. Gasoline throughput for 2002 was estimated based on gas container population and use data obtained from a California Air Resources Board survey.⁵⁹ The year 2002 residential container population was estimated from the county-level number of occupied housing units.⁶⁰ For counties for which 2002 occupied housing units data were not available, 2000 year housing units data⁶¹ were projected to 2002 based on county population growth rates.⁷ The year 2002 commercial container population was estimated from the number of commercial sector businesses.⁶² County-level nonroad equipment gasoline consumption estimates were obtained from the NONROAD model.⁶³

County-level year 2002 housing unit, commercial facility, and gasoline throughput data were then used in the emission calculation procedures described in *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*.⁹ For the permeation, diurnal, and transport emission processes, these procedures result in daily emission estimates for both residential and commercial. These emissions were converted to annual emissions by multiplying by 214 days based on the assumption that nonroad equipment is fueled via gas containers primarily between April and October. The resulting annual emission estimates were then added to the spillage and vapor displacement annual emissions estimates, which were developed from annual NONROAD model gasoline consumption data, to yield total portable gasoline container annual emissions for each county. Summer season work weekday allocation factors were developed from the NONROAD model temporal allocations and applied to the annual emissions estimates to obtain summer season workday emissions.⁶³

SAMPLE VOC EMISSION CALCULATION:

For Allegheny County:

$$\text{Annual Permeation, Diurnal, and Transport VOC Emissions} = \sum \text{Daily Emissions} \times 214 \text{ days}$$

where (calculated using Ozone Transport Commission methods):

$$\text{Allegheny Residential Permeation VOC Emissions} = 299,065.1043 \text{ g/day}$$

$$\text{Allegheny Residential Diurnal VOC Emissions} = 2,582,567.049 \text{ g/day}$$

$$\text{Allegheny Residential Transport VOC Emissions} = 141,733.9079 \text{ g/day}$$

$$\text{Allegheny Commercial Permeation VOC Emissions} = 41,816.3711 \text{ g/day}$$

$$\text{Allegheny Commercial Diurnal VOC Emissions} = 408,285.9064 \text{ g/day}$$

$$\text{Allegheny Commercial Transport VOC Emissions} = 255,584.0428 \text{ g/day}$$

$$\text{Annual Permeation, Diurnal, and Transport VOC Emissions} = 3,729,052.382 \text{ g/day} \times 214$$

$$\text{Annual Permeation, Diurnal, and Transport VOC Emissions} = 798,017,209.6 \text{ g/year}$$

$$\text{Total Annual Emissions} = \text{Annual Permeation, Diurnal, and Transport Emissions} + \text{Annual Spillage Emissions} + \text{Annual Vapor Displacement Emissions}$$

where:

$$\text{Spillage VOC Emissions} = 307,338,392.7 \text{ g/year}$$

$$\text{Vapor Displacement VOC Emissions} = 93,509,532.4 \text{ g/year}$$

$$\begin{aligned}
 \text{Total Annual Emissions} &= 798,017,209.6 \text{ g/year} + 307,338,392.7 \text{ g/year} + 93,509,532.4 \text{ g/year} \\
 \text{Total Annual Emissions} &= 1,198,865,134.7 \text{ g/year} \times \frac{1 \text{ ton}}{907,184.74 \text{ g}} \\
 &= 1,321.5226 \text{ tons/year}
 \end{aligned}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor
Summer work weekday allocation factor = summer month proportion × weekday ratio/number of weekdays in summer

$$\text{Summer work weekday allocation factor} = 0.3600 \times 0.692/65 = 0.00383^{63}$$

$$\text{Summer work weekday VOC emissions} = 1321.5226 \times 0.00383 = 5.0639 \text{ tons VOC per day}$$

REFRIGERANT LOSSES (SCC 2399010000)

This source category covers industrial refrigerant losses from refrigeration equipment used in such industries as ice cream manufacturing, meat packing plants, ice manufacturing, and refrigerated warehousing. Losses occur in both the normal use of refrigeration systems and during malfunctions. Emissions for each county were estimated using an employment-based emission factor^{64,65} and the number of employees in the following NAICS codes: 311611, 311612, 311613, 311615, 311512-311514, 31152, 311411, 311412, 311421-311423, 31181, 31132, 31133, 31211-31213, 31171, 312113, 311991, 311999, 325211, 49312, 311612, 42281, 42282. The number of employees in each county was obtained from *County Business Patterns*⁶⁶ and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the Bureau of Labor Statistics (BLS). Each county's emissions were estimated per the sample calculations below.

SAMPLE NH₃ EMISSION CALCULATION:

$$\text{Annual NH}_3 \text{ Emissions} = (\text{Emission Factor})(\text{Number of Employees in Sector})$$

Where:

$$\text{Emission Factor} = 30 \text{ lbs NH}_3/\text{employee}/\text{year}$$

$$\text{Employees} = 8265 \text{ (Allegheny County)}$$

$$\text{Annual NH}_3 \text{ Emissions} \equiv \left[\frac{30 \text{ lbs NH}_3/\text{employee}}{\text{year}} \right] (8265 \text{ employees})$$

$$\text{Annual NH}_3 \text{ Emissions} = 247,950 \text{ pounds NH}_3 \text{ per year} * \frac{1 \text{ ton}}{2000 \text{ lbs}} = 123.975 \text{ tons NH}_3/\text{year}$$

PUBLIC OWNED TREATMENT WORKS (3 SCCs)

Public Owned Treatment Works (POTWs) are wastewater treatment plants typically owned by municipalities. Emissions are calculated for three POTW processes: POTW Wastewater Treatment Processes (SCC 2630020010), POTW Biosolids Processes (SCC 2630020020), and Biosolids Land Application (SCC 2630050000). Biosolids are recyclable solid, semisolid, or liquid untreated residue from sewage treatment in a wastewater treatment plant.

Although both VOC and NH₃ emissions result from each of the three processes included in this category, VOC emissions are only estimated for POTW Wastewater Treatment Processes (SCC 2630020010) because of the lack of VOC emission factors for the other processes. Annual NH₃ emission estimates were taken from an on-going Mid-Atlantic/Northeast Visibility Union (MANE-VU) inventory development project. As part of this Pennsylvania inventory effort, annual VOC emissions were estimated for the POTW Wastewater Treatment Processes category using the MANE-VU project Pennsylvania emission activity data (total POTW flow) and an AP-42 sewage treatment emission factor.²⁸ Summer season work weekday emissions were calculated for each process using a summer season work weekday allocation factor based on EIIP temporal allocation guidance.¹

Year 2000 POTW flow data for Pennsylvania facilities were obtained from the EPA Office of Wastewater Management's year 2000 Clean Watersheds Needs Survey.⁶⁷ Year 2002 wastewater flow was estimated from the county population change between 2000 and 2002.⁷ Year 2000 statewide biosolids generation was obtained from BioCycle 2000.⁶⁸ Facility-level biosolids production was estimated based on allocating State generation using facility-level wastewater flow rates. Year 2002 biosolids generation was estimated by applying Bureau of Census county population growth rates to year 2000 generation.⁷ Land application of total biosolids generation was calculated by multiplying total generation by 55 percent, which represents the percentage of total Pennsylvania biosolids generation applied to land.⁶⁸ Further information on the annual emission estimation methods for the processes in this category will be available in a forthcoming report prepared for MANE-VU. Where present, point source emissions were subtracted from the emissions of the corresponding county. Each county's emissions were calculated per the following sample calculations.

SAMPLE VOC CALCULATIONS:

$$\text{Annual VOC Emissions} = (\text{EmissionFactor})(\text{CountyWastewaterFlow})$$

where:

$$\begin{aligned} \text{Emission Factor} &= 8.9 \text{ lbs VOC/millions of gallons flow} \\ \text{Flow} &= 75,290.54 \text{ million gallons (Allegheny County)} \end{aligned}$$

$$\text{Annual VOC Emissions} = \left(\frac{8.9 \text{ lbs VOC} / \text{million gallons}}{\text{year}} \right) (75,290.54 \text{ E6 gallons}) = 670,085.81 \text{ lbs}$$

$$\text{Annual VOC Emissions} = 670,085.81 \text{ lbs} \left(\frac{1 \text{ ton}}{2000 \text{ lbs}} \right) = 335.04 \text{ tons VOC}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00385^1$$

$$\text{Summer work weekday VOC emissions} = 335.04 \times 0.00385 = 1.2899 \text{ tons VOC per day}$$

SAMPLE NH₃ CALCULATION:

$$\text{Annual NH}_3 \text{ Emissions} = (G \times EF_{\text{NH}_3}) / 2000$$

Where:

G = Annual amount of wastewater processed (MMgal) = 75,290 (Allegheny Co.)

EF_{NH_3} = Ammonia emission factor of 0.027 lb/ MMgal (Pechan, 2004a)⁶⁴

$$\text{Annual NH}_3 \text{ Emissions} = (75,290 \text{ MMgal} \times 0.027 \text{ lb NH}_3) / 2000 = 1.016415 \text{ Tons NH}_3$$

RESIDENTIAL WOOD COMBUSTION (7 SCCs)

(Fireplaces: Without Inserts SCC 2104008001; Fireplaces: Inserts - Catalytic, non-EPA-certified SCC 2104008002; Fireplaces: Inserts - Non-catalytic, EPA-certified SCC 2104008003; Fireplaces: Inserts - Catalytic, EPA-certified SCC 2104008004; Woodstoves - Conventional SCC 2104008010; Woodstoves - Catalytic SCC 2104008030; and Woodstoves - Non-catalytic SCC 2104008050)

Criteria pollutant annual emissions associated with residential heating with wood were compiled from the 2002 nonpoint source National Emissions Inventory (NEI).³¹ The 2002 NEI reports residential wood combustion emissions in seven SCCs, each of which representing a specific combustion equipment type. The NEI reports emissions for the following criteria pollutants: VOC, NO_x, CO, SO₂, PM10-PRI, and PM25-PRI. The NEI residential wood combustion emission estimation methodology is based on the national population of each equipment type and an estimate of the amount of wood burned in each type of equipment. The national wood combustion estimates by equipment type were then allocated to counties using a number of steps. These steps incorporated information on heating degree days by climate zone, and the urban/rural designation and number of single-family detached homes in each county. Further details on the annual emission estimation methodology are available in a forthcoming 2002 nonpoint source NEI document.³¹

The majority of the residential wood combustion emission factors were obtained from EPA's AP-42 document.³⁹ County-level seasonal throughput percentages developed for the 2002 NEI were applied in this effort to estimate winter season work weekday emissions (no residential wood combustion activity was allocated to summer season months).

SAMPLE SEASONAL CALCULATION (FIREPLACES WITHOUT INSERTS):

Annual PM10-PRI emissions (Allegheny County) = 59.8205 tons VOC per year

Winter work weekday PM10-PRI emissions = annual PM10-PRI emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.0044

Winter work weekday VOC emissions = 59.8205 × 0.0044 = 0.2632 tons VOC per day

SOLID WASTE INCINERATION (2 SCCs)

(Commercial/Institutional Solid Waste Incineration SCC 2601020000, Industrial Solid Waste Incineration SCC 2601010000)

Solid waste may consist of any discarded solid materials from commercial or industrial sources. The materials may be combustible or noncombustible, and are often burned to reduce bulk, unless direct burial is either available or practical. The resulting pollutants for the purpose of this inventory are VOC, NO_x, and CO. On-site incineration is the confined burning of waste leaves, landscape refuse, or other refuse or rubbish. Slash and large scale agricultural open burning are not included in this emission category.

The emissions for each county were estimated per the sample calculations below using emission factors and loading factors from AP-42, population data from the U.S. Census Bureau, and employee data from *County Business Patterns*. Point source emissions, where present, were subtracted from these emission estimates.

SAMPLE CALCULATIONS:

Commercial/Institutional Solid Waste Incineration:

$$\text{Annual Emissions} = (\text{Emission Factor})(\text{Loading Factor})(\text{Population})$$

where:

$$\text{VOC Emission Factor} = 9.8 \text{ lbs VOC/ton waste burned/year}^{39}$$

$$\text{NO}_x \text{ Emission Factor} = 3.7 \text{ lbs NO}_x\text{/ton waste burned/year}^{39}$$

$$\text{CO Emission Factor} = 37 \text{ lbs CO/ton waste burned/year}^{39}$$

$$\text{Loading Factor} = 54 \text{ tons/1000 people}^{39}$$

$$\text{Population} = 1,269,904 \text{ people (Allegheny County)}^7$$

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{9.8 \text{ lbs VOC}}{\text{ton waste burned}} \right) \left(\frac{54 \text{ tons waste}}{1000 \text{ people}} \right) (1,269,904 \text{ people})$$

$$\text{Annual VOC Emissions} = 672,033.1968 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 336.0166 \text{ tons VOC per year}$$

$$\text{Summer work weekday VOC emissions} = \text{annual VOC emissions} \times \text{summer work weekday allocation factor}$$

$$\text{Summer work weekday allocation factor} = 0.00275^4$$

$$\text{Summer work weekday VOC emissions} = 336.0166 \times 0.00275 = 0.9240 \text{ tons VOC per day}$$

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{37 \text{ lbs CO}}{\text{ton waste burned}} \right) \left(\frac{54 \text{ tons waste}}{1000 \text{ people}} \right) (1,269,904 \text{ people})$$

$$\text{Annual CO Emissions} = 2,537,268.192 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 1268.6341 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday CO emissions = 1268.6341 × 0.00275 = 3.4887 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00275⁴

Winter work weekday CO emissions = 1268.6341 × 0.00275 = 3.4887 tons CO per day

Industrial Solid Waste Incineration:

Annual VOC Emissions = (Emission Factor)(Loading Factor)(Number of Employees)

where:

Emission Factors are the same as noted above

Loading Factor = 560 tons/1000 employees³⁹

Employees = 48,544 employees (Allegheny County)^{2 3}

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{9.8 \text{ lbs VOC}}{\text{ton waste burned}} \right) \left(\frac{560 \text{ tons waste burned}}{1000 \text{ employees}} \right) (48,544 \text{ employees})$$

$$\text{Annual VOC Emissions} = 266,409.472 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 133.2047 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday VOC emissions = 133.2047 × 0.00275 = 0.3663 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{37 \text{ lbs CO}}{\text{ton waste burned}} \right) \left(\frac{560 \text{ tons waste burned}}{1000 \text{ employees}} \right) (48,544 \text{ employees})$$

$$\text{Annual CO Emissions} = 1,005,831.68 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 502.9158 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.00275⁴

Summer work weekday CO emissions = 502.9158 × 0.00275 = 1.3830 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor

Winter work weekday allocation factor = 0.00275⁴

Winter work weekday CO emissions = 502.9158 × 0.00275 = 1.3830 tons CO per day

STRUCTURE FIRES (SCC 2810030000)

Building fires can produce short-term emissions of VOC, NO_x, CO, and PM. Structure fire emissions were estimated using emission factors, a loading factor, and a default number of fires per capita (note that PM10-FIL, PM25-FIL, and PM-CON emission factors were not available). Population data were obtained from the U.S. Census Bureau. Each county's emissions were calculated per the following sample calculations.

Annual Emissions = (Emission Factor)(Loading Factor)(Per Capita # of Fires)(Population)

where:

VOC Emission Factor = 11 lbs VOC/ton material burned/year¹⁶

NO_x Emission Factor = 1.4 lbs NO_x/ton material burned/year¹⁶

CO Emission Factor = 60 lbs CO/ton material burned/year¹⁶

Loading Factor = 1.15 tons material/fire⁶⁹

Per Capita Number of Fires = 0.0018 fires/person⁷⁰

Population = 1,269,904 (Allegheny County)⁷

VOC Emissions:

$$\text{Annual VOC Emissions} = \left(\frac{11 \text{ lbs VOC}}{\text{tons material}} \right) \left(\frac{1.15 \text{ tons material}}{\text{fire}} \right) \left(\frac{0.0018 \text{ fires}}{\text{person}} \right) (1,269,904 \text{ people})$$

$$\text{Annual VOC Emissions} = 28,912.168 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 14.4560 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = 0.002427⁷¹

Summer work weekday VOC emissions = 14.4560 × 0.002427 = 0.03509 tons VOC per day

CO Emissions:

$$\text{Annual CO Emissions} = \left(\frac{60 \text{ lbs CO}}{\text{ton material}} \right) \left(\frac{1.15 \text{ tons material}}{\text{fire}} \right) \left(\frac{0.0018 \text{ fires}}{\text{person}} \right) (1,269,904 \text{ people})$$

$$\text{Annual CO Emissions} = 157,702.7342 \text{ pounds CO per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 78.8514 \text{ tons CO per year}$$

Summer work weekday CO emissions = annual CO emissions × summer work weekday allocation factor
Summer work weekday allocation factor = 0.002427⁷¹
Summer work weekday CO emissions = 78.8514 × 0.002427 = 0.1914 tons CO per day

Winter work weekday CO emissions = annual CO emissions × winter work weekday allocation factor
Winter work weekday allocation factor = 0.003126⁷¹
Winter work weekday CO emissions = 78.8514 × 0.003126 = 0.2465 tons CO per day

TRAFFIC LINE PAINTING (SCC 2401008000)

Traffic paints are used to mark pavement in applications such as dividing lines for traffic lanes, parking space markings, crosswalks, and arrows. The markings are usually applied by Commonwealth or local highway maintenance crews. VOC emissions result from the evaporation of organic solvents during and shortly after application of the marking paint. Each county’s emissions were calculated per “Alternative Method Three” described in the EIIP emission estimation guidance document for this category.⁷² The calculation uses a national per capita emission factor based on 2002 data for national traffic paint consumption and U.S. population. Control efficiency, rule penetration, and rule effectiveness factors were incorporated into the final calculation.

SAMPLE VOC EMISSION CALCULATIONS:

$$Annual\ VOC\ Emissions = (Emission\ Factor)(Per\ Capita\ Usage\ Factor)(Population) \cdot \left(1 - \frac{CE}{100} \cdot \frac{RP}{100} \cdot \frac{RE}{100}\right)$$

$$Per\ Capita\ Usage\ Factor = \frac{2002\ National\ Traffic\ Paint\ Consumption}{2002\ U.S.\ Population}$$

$$National\ per\ Capita\ Usage\ Factor = 39,397,000\ gallons^{73} / 288,368,698\ people^7$$

$$National\ per\ Capita\ Usage\ Factor = 0.1366\ gallons/person$$

where:

- Emission Factor = 3.36 lbs VOC/gallon⁷²*
- National per Capita Usage Factor = 0.1366 gallons/person*
- Population = 1,269,904 (Allegheny County)⁷*
- CE (Control Efficiency) = 20%⁵*
- RP (Rule Penetration) = 100%*
- RE (Rule Effectiveness) = 100%*

$$Annual\ VOC\ Emissions = \left(\frac{3.36\ lbs\ VOC}{gallon} \right) (0.1366\ gallons/ person) (1,269,904\ people) \left(1 - \frac{20}{100} \cdot \frac{100}{100} \cdot \frac{100}{100} \right)$$

$$Annual\ VOC\ Emissions = 466,353.4473\ pounds\ VOC\ per\ year \cdot \frac{1\ ton}{2000\ lbs} = 233.1767\ tons\ VOC\ per\ year$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

*Summer work weekday allocation factor = 0.00356*⁹

Summer work weekday VOC emissions = 233.1767 × 0.00356 = 0.8305 tons VOC per day

WINERIES (SCC 2302070005)

Winery emissions result from the entrainment of ethanol by carbon dioxide during wine fermentation. Factors affecting ethanol emissions are handling techniques, temperature, process equipment design, and fermenting parameters. Other sources of emissions from the wine making process are blending, transferring, racking and storing of the wine.

Emissions were determined using 2002 county-level wine production data provided by the Pennsylvania Liquor Control Board (PLCB).⁷⁴ Because monthly production data were available, these data were used to develop the seasonal allocation factors for this category. The emission factors for both red and white wines were obtained from AP-42.⁷⁵ Since the emission factors for the two types of wines are different, but wine type production data are no longer available, wine production in the Commonwealth was assumed to be 60 percent white wine and 40 percent red wine.⁷⁶ Point source emissions, where present, were subtracted from these emission estimates. Each county's emissions were estimated per the following sample calculations.

SAMPLE VOC EMISSION CALCULATIONS:

Annual VOC Emissions = (0.6 × White Wine Emission Factor + 0.4 × Red Wine Emission Factor) × (2002 Total Wine Production)

where:

*White Wine Emission Factor = 1.80873 lbs VOC/1000 gallons white wine/year*⁷⁵

*Red Wine Emission Factor = 4.6236 lbs VOC/1000 gallons red wine/year*⁷⁵

*2002 Total Wine Production = 8.270 thousand gallons (Adams County)*⁷⁴

*2002 Summer Wine Production = 3.000 thousand gallons (Adams County)*⁷⁴

*White Wine Production Factor = 60% of wine produced*⁷⁶

*Red Wine Production Factor = 40% of wine produced*⁷⁶

$$\text{Annual VOC Emissions} = \left(0.6 \cdot \frac{1.80873 \text{ lbs}}{1000 \text{ gallons}} + 0.4 \cdot \frac{4.6236 \text{ lbs}}{1000 \text{ gallons}} \right) (8.270 \text{ thousand gallons})$$

$$\text{Annual VOC Emissions} = 24.2698 \text{ lbs VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 0.0121 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

Summer work weekday allocation factor = summer month wine production/annual wine production × weekday ratio/number of weekdays in summer

Summer work weekday allocation factor = 3.000/8.270 × 0.715/65 = 0.00399 (Adams County)^{4 74}

Summer work weekday VOC emissions = 0.0121 × 0.00399 = 0.0000484 tons VOC per day

WOOD FURNITURE MANUFACTURING (SCC 2401020000)

This source category includes establishments engaged in the manufacture of wood home or office furniture. VOC emissions result from the evaporation of solvents used in the finish coats and cleanup procedures. Point source emissions, where present, were subtracted from these emission estimates. Each county's emissions were calculated according to the sample calculations below using a per employee emission factor and the number of employees in NAICS codes 337122, 337127, 337129, 337211, and 337212. The number of employees in each county for 2001 was obtained from *County Business Patterns*² and grown to 2002 using the ratio of 2002 total Commonwealth employees to 2001 total Commonwealth employees obtained from the *Bureau of Labor Statistics (BLS)*.³

A 30 percent reduction in VOC emissions was assumed based on a RACT-based regulation.⁷⁷

SAMPLE VOC EMISSION CALCULATION:

Annual VOC Emissions = (Emission Factor)(Employees)(30% Control Efficiency Reduction)

where:

*Emission Factor = 1,311 lbs VOC/employee/year*⁷⁸

Employees = 256 employees (Allegheny County)^{2 3}

*Control Efficiency = 30%*⁷⁷

Rule Penetration = 100%

Rule Effectiveness = 80%

$$\text{Annual VOC Emissions} = \left(\frac{1311 \text{ lbs VOC}}{\text{employee}} \right) (256 \text{ employees}) \left(1 - \frac{30}{100} \cdot \frac{100}{100} \cdot \frac{80}{100} \right)$$

$$\text{Annual VOC Emissions} = 255,068.16 \text{ pounds VOC per year} \cdot \frac{1 \text{ ton}}{2000 \text{ lbs}} = 127.5341 \text{ tons VOC per year}$$

Summer work weekday VOC emissions = annual VOC emissions × summer work weekday allocation factor

*Summer work weekday allocation factor = 0.00277*⁴

Summer work weekday VOC emissions = 127.5341 × 0.00277 = 0.3539 tons VOC per day

APPENDIX A: REFERENCES

- ¹ Eastern Research Group, Inc., “Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 1, Introduction to Area Source Emission Inventory Development (Revised Final),” prepared for the Area Sources Committee, Emission Inventory Improvement Program, January 2001. (Note: Because this inventory was prepared prior to November 2005, the Commonwealth did not apply the rule effectiveness guidance found in EPA-454/P-05-001)
- ² U.S. Department of Commerce, Bureau of the Census, *County Business Patterns 2001, Pennsylvania*, available from <http://www.census.gov/epcd/cbp/view/cbpview.html>, 2003, accessed October 2003.
- ³ U.S. Bureau of Labor Statistics, *Current Employment Statistics*, available from <http://www.bls.gov/cew/home.htm>, accessed November 2003.
- ⁴ U.S. Environmental Protection Agency, “Temporal Allocation Data,” Emissions Modeling Clearinghouse, available from <http://www.epa.gov/ttn/chief/emch/temporal/>, accessed November 2003.
- ⁵ 63 FR 48848, 1998: *Federal Register*, “National Volatile Organic Compound Emission Standards for Architectural Coatings, Final Rule, Volume 63, Number 176, September 11, 1998.
- ⁶ U.S. Department of Commerce, Bureau of the Census, “Table 2: 2002 Architectural Coating Shipments,” *Current Industrial Reports, Paint and Allied Products: 2002*, available from <http://www.census.gov/industry/1/ma325f02.pdf>, accessed October 2003.
- ⁷ U.S. Department of Commerce, Bureau of the Census, “County Population Estimates Data Sets,” available from http://eire.census.gov/popest/estimates_dataset.php, accessed November 2003.
- ⁸ Eastern Research Group, “Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 3, Architectural Surface Coating,” prepared for the Area Sources Committee, Emission Inventory Improvement Program, November 1995.
- ⁹ E.H. Pechan & Associates, Inc., *Control Measure Development Support Analysis of Ozone Transport Commission Model Rules*, prepared for the Ozone Transport Commission, March 2001.
- ¹⁰ Glen Heilman, Pennsylvania Association of Asphalt Material Applicators, personal communication with Andrea Ramsey, E.H. Pechan & Associates, Inc., February 2004.
- ¹¹ Eastern Research Group, Inc., “Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 17, Asphalt Paving (Revised Final),” prepared for the Area Sources Committee, Emission Inventory Improvement Program, January 2001.
- ¹² Dan Szekeres, Michael Baker Corporation, personal communication with Andy Bollman, E. H. Pechan & Associates, Inc., December 2003.
- ¹³ 25 Pa. Code Section 129.64, “Cutback Asphalt Paving,” available from <http://www.pacode.com/secure/data/025/chapter129/s129.64.html>, accessed February 2004.
- ¹⁴ Dan Szekeres, Michael Baker Corporation, personal communication with Andy Bollman, E. H. Pechan & Associates, Inc., December 2003.
- ¹⁵ Steve Fulk, Pennsylvania Association of Asphalt Material Applicators, personal communication with Andrea Ramsey, E. H. Pechan & Associates, Inc., February, 2004.
- ¹⁶ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone, Volume I, General Guidance for Stationary Sources*, EPA-450/4-91-016, May 1991.
- ¹⁷ 25 Pa. Code Section 129.75, “Mobile Equipment Repair and Refinishing,” available from <http://www.pacode.com/secure/data/025/chapter129/s129.75.html>, accessed January 2004.
- ¹⁸ 63 FR 48806, 1998: *Federal Register*, “National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings, Final Rule,” Volume 63, Number 176, September 11, 1998.
- ¹⁹ Lucy Adams, Radian Corporation, memorandum to SIP inventory preparers and EPA Regions, “VOC Emissions from Bakeries,” prepared under contract to the Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency (EPA Contract No. 68-D0-0125), April 24, 1992.
- ²⁰ Monthly statewide beer production data from Alcohol and Tobacco Tax and Trade Bureau, available from <http://www.ttb.gov/alcohol/stats/02stats/02beerstats.htm>, accessed December 2003.
- ²¹ Brewery emission factor is the sum of individual brewery process emission factors found in Table 4-2 of *Emission Factor Documentation for AP-42 Section 9.12.1: Malt Beverages, Final Report*, prepared by Midwest

Research Institute October 1996 and available from <http://www.epa.gov/ttn/chief/ap42/ch09/bgdocs/b9s12-1.pdf>, accessed February 2004.

²² Brewery emission factor is the sum of individual brewery process emission factors found in Table 4-3 of *Emission Factor Documentation for AP-42 Section 9.12.1: Malt Beverages, Final Report*, prepared by Midwest Research Institute October 1996 and available from <http://www.epa.gov/ttn/chief/ap42/ch09/bgdocs/b9s12-1.pdf>, accessed February 2004.

²³ National Oceanic and Atmospheric Administration, *Climatological Data: Pennsylvania July-December 2002* (Volume 107, Numbers 07-12), published by National Climatic Data Center, 2003.

²⁴ U.S. Department of Commerce, Bureau of the Census, "Table H40 - House Heating Fuel Type", *Census 2000: Summary File 3*, [Data file], March 2003.

²⁵ U.S. Department of Energy, Energy Information Administration, *State Energy Data, Pennsylvania*, available from www.eia.doe.gov/emeu/states/main_pa.html, 2003, accessed November 2003.

²⁶ U.S. Department of Energy, Energy Information Administration, *Annual Coal Report 2002*, DOE/EIA-0584 (2002), 2003.

²⁷ Pacific Environmental Services, Inc., "Final Summary of the Development and Results of a Methodology for Calculating Area Source Emissions from Residential Fuel Combustion," prepared for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, September 2002.

²⁸ U.S. Environmental Protection Agency, *Factor Information Retrieval Data System (FIRE) 6.23*, October 2000.

²⁹ 63 FR 48819, 1998: *Federal Register*, "National Volatile Organic Compound Emission Standards for Consumer Products, Final Rule," Volume 63, Number 176, September 11, 1998.

³⁰ Eastern Research Group, "Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 6, Solvent Cleaning," prepared for the Area Sources Committee, Emission Inventory Improvement Program, September 1997.

³¹ E.H. Pechan & Associates, Inc., "Documentation for the 2002 Nonpoint Source National Emission Inventory for Criteria and Hazardous Air Pollutants," prepared for Emission Factor and Inventory Group, U.S. Environmental Protection Agency, <http://www.epa.gov/ttn/chief/net/2002inventory.html>, (forthcoming).

³² Public Research Institute, "Charbroiling Activity Estimation, Draft Report," prepared for California Environmental Protection Agency, California Air Resources Board, March 2003.

³³ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, "Methods for Developing a National Emission Inventory for Commercial Cooking Processes: Technical Memorandum," prepared by E.H. Pechan & Associates, Inc., September 2003.

³⁴ BioCycle, 2000. "2000 BioCycle National Survey – Solid Waste Composting Trends in the U.S.," BioCycle, November 2000.

³⁵ Eastern Research Group, "Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 5, Consumer and Commercial Solvent Use," prepared for the Area Sources Committee, Emission Inventory Improvement Program, August 1996.

³⁶ 25 Pa. Code Section 129.63, "Degreasing Operations," available from <http://www.pacode.com/secure/data/025/chapter129/s129.63.html>, accessed January 2004.

³⁷ *Federal Register*, "Subpart T—National Emission Standards for Halogenated Solvent Cleaning," Volume 59, Number 2331, December 2, 1994.

³⁸ The Pennsylvania Dry Cleaners Association disclosed that 1.8 million pounds of VOCs were emitted in Pennsylvania in 1990 from dry cleaning operations.

$$\begin{aligned}\text{Emission Factor} &= \text{Total VOC emitted} \div \text{Pennsylvania Population} \\ &= 1.8 \text{ million lbs VOC} \div 11.88 \text{ million people (1990 census)} \\ &= 0.15 \text{ lbs VOC/person/year}\end{aligned}$$

³⁹ U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, AP-42, Fifth Edition, January 1995.

⁴⁰ E.H. Pechan & Associates, Inc., "Documentation for the Draft 1999 National Emissions Inventory (Version 3.0) for Criteria Air Pollutants and Ammonia: Area Sources," prepared for Office of Air Quality Planning and Standards, Emission Factor and Inventory Group, U.S. Environmental Protection Agency, March 2003. Available from ftp://ftp.epa.gov/pub/EmisInventory/draftnei99ver3/criteria/documentation/area/ardoc_99nei_draftv3_0303.pdf, accessed February 2004.

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- ⁴¹ Stan Piorkowski, Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, personal communication with PJ Disclafani, E.H. Pechan & Associates, Inc., December 2003.
- ⁴² U.S. Department of Energy, Energy Information Administration, *Fuel Oil and Kerosene Sales, 2002*, available from http://www.eia.doe.gov/oil_gas/petroleum/data_publications/fuel_oil_and_kerosene_sales/foks.html, accessed November 2003.
- ⁴³ U.S. Environmental Protection Agency, median sulfur content reported in the 1999 National Emissions Inventory, available from <http://www.epa.gov/ttn/chief/net/1999inventory.html#final3crit>, accessed October 2003.
- ⁴⁴ Dan Szekeres, Michael Baker Corporation, personal communication with Maureen Mullen, E. H. Pechan & Associates, Inc., February 2004.
- ⁴⁵ Pennsylvania Department of Revenue, Bureau of Motor Fuel Taxes, “Monthly Report of Gallons” for 2002, provided by Paul Sload, December 2003.
- ⁴⁶ 25 Pa. Code Section 129.60, “Bulk Gasoline Plants,” available from <http://www.pacode.com/secure/data/025/chapter129/s129.60.html>, accessed February 2004.
- ⁴⁷ 25 Pa. Code Section 129.61, “Small Gasoline Storage Tank Control (Stage I Control),” available from <http://www.pacode.com/secure/data/025/chapter129/s129.61.html>, accessed February 2004.
- ⁴⁸ U.S. Environmental Protection Agency, “User’s Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model,” EPA420-R-02-028, U.S. Environmental Protection Agency, Office of Transportation and Air Quality, October 2002.
- ⁴⁹ 25 Pa. Code Section 129.82. “Control of VOCs from Gasoline Dispensing Facilities (Stage II),” available from <http://www.pacode.com/secure/data/025/chapter129/s129.82.html>, accessed February 2004.
- ⁵⁰ 25 Pa. Code Section 129.59. “Bulk Gasoline Terminals,” available from <http://www.pacode.com/secure/data/025/chapter129/s129.59.html>, accessed February 2004.
- ⁵¹ U.S. Department of Energy, Energy Information Administration, *Petroleum Marketing Annual 2001*, available from <http://tonto.eia.doe.gov/FTPROOT/petroleum/048701.pdf>, accessed November 2003.
- ⁵² U.S. Department of Energy, Energy Information Administration, *Petroleum Marketing Annual 2002*, available from http://www.eia.doe.gov/oil_gas/petroleum/data_publications/petroleum_marketing_annual/pma.html, accessed November 2003.
- ⁵³ U.S. Department of Energy, Energy Information Administration, “Pennsylvania Natural Gas Long Summary,” available from http://tonto.eia.doe.gov/dnav/ng/ng_sum_lsum_spa_a_d.htm, accessed November 2003.
- ⁵⁴ U.S. Department of Energy, Energy Information Administration, “Pennsylvania Natural Gas Residential Consumption,” available from <http://tonto.eia.doe.gov/dnav/ng/hist/n3010pa2M.htm>, accessed November 2003.
- ⁵⁵ U.S. Department of Energy, Energy Information Administration, “Natural Gas Deliveries to Commercial Consumers in Pennsylvania,” available from <http://tonto.eia.doe.gov/dnav/ng/hist/n3020pa2M.htm>, accessed November 2003.
- ⁵⁶ E.H. Pechan & Associates, Inc., “Open Burning in Residential Areas, Emissions Inventory Development Report,” prepared for Mid-Atlantic/Northeast Visibility Union, January 31, 2004.
- ⁵⁷ Pennsylvania Department of Environmental Protection, “Summary of the Methodology Used to Determine Volatile Organic Compounds, Nitrogen Oxides, and Carbon Monoxide Emissions by Source Type for Calendar Year 1999 in Pennsylvania,” no date reported.
- ⁵⁸ U.S. Department of Agriculture, National Agricultural Statistics Service, “Agricultural Statistics Database, Crops County Data,” available from <http://www.nass.usda.gov:81/ipedb/>, accessed October 2003.
- ⁵⁹ California Air Resources Board, *Public Meeting to Consider Approval of California’s Portable Gasoline-Container Emissions Inventory*, September 1999.
- ⁶⁰ U.S. Bureau of the Census, *2002 American Community Survey*, available from <http://www.census.gov/acs/www/Products/Profiles/Single/2002/ACS/PA.htm>, accessed February 2004.
- ⁶¹ U.S. Bureau of the Census, *Census 2000*, available from http://factfinder.census.gov/servlet/GCTTable?_bm=y&-geo_id=04000US42&-box_head_nbr=GCT-H6&-ds_name=DEC_2000_SF1_U&-lang=en&-redoLog=false&-format=ST-2&-mt_name=DEC_2000_SF1_U_GCTH6_US9&-sse=on, accessed February 2004.
- ⁶² Dun & Bradstreet, Inc., *MarketPlace* CD-ROM, Jan.-Mar., 2002, April 2002.
- ⁶³ U.S. Environmental Protection Agency, Office of Transportation and Air Quality, Draft NONROAD2002a, [Computer software]. Available June 16, 2003 at <http://www.epa.gov/otaq/nonroadmdl.htm>.
- ⁶⁴ Pechan. *Estimating Ammonia Emissions from Anthropogenic Sources – Draft Report*, prepared for the US EPA, Emissions Inventory Improvement Program, prepared by E.H. Pechan & Associates, Inc. March 2004.

⁶⁵ Pechan. *Technical Memorandum: MANE-VU 2002 Ammonia Emissions Inventory for Miscellaneous Sources – Final*, prepared for MARAMA by E.H. Pechan & Associates, Inc. March, 2004.

⁶⁶ U.S. Department of Commerce, Bureau of the Census, *County Business Patterns 2001, Pennsylvania*, available from <http://www.census.gov/epcd/cbp/view/cbpview.html>. 2003, accessed October 2003.

⁶⁷ U.S. Environmental Protection Agency, “Clean Watersheds Needs Survey 2000,” Office of Wastewater Management, available from <http://cfpub.epa.gov/cwns/>, accessed December 2003.

⁶⁸ JG Press, Inc. “2000 Biocycle National Survey – Solid Waste Composting Trends in the U.S.” *BioCycle*, Vol. 41 Issue 11, November 2000.

⁶⁹ Eastern Research Group, “Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 18, Structure Fires,” prepared for Area Sources Committee, Emission Inventory Improvement Program, January 2001.

⁷⁰ National Fire Protection Association, *Fire Loss in the United States During 2002*, September 2003.

⁷¹ U.S. Fire Administration, Federal Emergency Management Agency, National Fire Data Center, *Fire in the United States: 1987-1996*, August 1999, available from <http://www.usfa.fema.gov/downloads/pdf/publications/fius11th.pdf>, accessed December 2003.

⁷² Eastern Research Group, “Emission Inventory Improvement Program, Document Series, Volume III, Area Sources, Chapter 14, Traffic Markings” prepared for Area Sources Committee, Emission Inventory Improvement Program, May 1997.

⁷³ U.S. Department of Commerce, Bureau of the Census, *Current Industrial Reports: Paint and Allied Products: 2002*, MA325F(02)-1, July 2003.

⁷⁴ Susan Rose, Office of Planning and Policy Management, Pennsylvania Liquor Control Board, personal communication with PJ Disclafani, E.H. Pechan & Associates, Inc., December 2003.

⁷⁵ From Table 9.12.2-1 of emission factor documentation for AP-42 Section 9.12.2 *Wines and Brandy*, October 1995, available from <http://www.epa.gov/ttn/chief/ap42/ch09/final/c9s12-2.pdf>, accessed February 2004.

⁷⁶ Pennsylvania Liquor Control Board figures showing Pennsylvania wine production in 1990.

⁷⁷ 30 Pa.B 2995, 2000: *Pennsylvania Bulletin*, "Surface Coating Processes," Volume 30, Number 24, Harrisburg, PA, June 10, 2000.

⁷⁸ “Short List” of AMS SCCs and Emission Factors. July 1992.

APPENDIX C-2

**AREA SOURCES ANNUAL EMISSIONS
(provided in electronic form only)**

**Bureau of Air Quality
Department of Environmental Protection**

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Poll	Data	Total
NH3	Sum of 2002	4,821.3717
	Sum of 2009	5,749.1249
NOX	Sum of 2002	13,029.4460
	Sum of 2009	13,774.6235
PM10-FIL	Sum of 2002	48,568.4489
	Sum of 2009	53,095.1519
PM10-PRI	Sum of 2002	55,224.3979
	Sum of 2009	59,533.3149
PM25-FIL	Sum of 2002	5,502.4036
	Sum of 2009	6,125.4914
PM25-PRI	Sum of 2002	10,019.7085
	Sum of 2009	10,324.2038
SO2	Sum of 2002	13,152.9957
	Sum of 2009	13,972.2380
VOC	Sum of 2002	59,227.0268
	Sum of 2009	55,868.3724

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

FIPS	County	SCC	Description	Poll	2002	2009
42101	Philadelphia	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NOX	0.0002	0.0001
42101	Philadelphia	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	VOC	0.0003	0.0002
42101	Philadelphia	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM25-PRI	0.0006	0.0004
42101	Philadelphia	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM10-PRI	0.0007	0.0004
42045	Delaware	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	SO2	0.0008	0.0008
42045	Delaware	2302070005	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Wineries	VOC	0.0009	0.0009
42091	Montgomery	2302070005	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Wineries	VOC	0.0010	0.0010
42029	Chester	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	SO2	0.0016	0.0016
42045	Delaware	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.0018	0.0018
42101	Philadelphia	2302070005	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Wineries	VOC	0.0019	0.0019
42017	Bucks	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.0023	0.0024
42101	Philadelphia	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.0029	0.0030
42017	Bucks	2805001200	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Manure handling and storage	NH3	0.0030	0.0037
42017	Bucks	2801700012	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Potassium Nitrate	NH3	0.0032	0.0039
42091	Montgomery	2805001200	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Manure handling and storage	NH3	0.0034	0.0042
42091	Montgomery	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.0035	0.0037
42091	Montgomery	2801700005	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Nitrate	NH3	0.0040	0.0049
42091	Montgomery	2801700014	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Monoammonium Phosphate	NH3	0.0067	0.0083
42091	Montgomery	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	SO2	0.0105	0.0105
42029	Chester	2805001200	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Manure handling and storage	NH3	0.0125	0.0155
42045	Delaware	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	VOC	0.0142	0.0148

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NH3	0.0162	0.0098
42101	Philadelphia	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	SO2	0.0166	0.0167
42045	Delaware	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	SO2	0.0180	0.0179
42017	Bucks	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	VOC	0.0212	0.0222
42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	SO2	0.0212	0.0128
42045	Delaware	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	NOX	0.0220	0.0220
42101	Philadelphia	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	SO2	0.0233	0.0233
42017	Bucks	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	SO2	0.0235	0.0235
42045	Delaware	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	0.0255	0.0267
42045	Delaware	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	0.0255	0.0267
42045	Delaware	2805030008	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Geese	NH3	0.0284	0.0352
42101	Philadelphia	2805030008	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Geese	NH3	0.0284	0.0352
42045	Delaware	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	SO2	0.0298	0.0299
42101	Philadelphia	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	VOC	0.0313	0.0328
42029	Chester	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	SO2	0.0317	0.0318
42091	Montgomery	2801700012	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Potassium Nitrate	NH3	0.0318	0.0394
42091	Montgomery	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	VOC	0.0329	0.0344
42091	Montgomery	2805030008	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Geese	NH3	0.0354	0.0438
42017	Bucks	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	0.0385	0.0403
42017	Bucks	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	0.0385	0.0403
42029	Chester	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	VOC	0.0390	0.0402

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42101	Philadelphia	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	SO2	0.0412	0.0414
42045	Delaware	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	SO2	0.0417	0.0419
42029	Chester	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	NOX	0.0429	0.0429
42029	Chester	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	SO2	0.0443	0.0445
42017	Bucks	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	SO2	0.0451	0.0452
42101	Philadelphia	2801700003	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Nitrogen Solutions	NH3	0.0457	0.0567
42045	Delaware	2801700099	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Miscellaneous Fertilizers	NH3	0.0496	0.0615
42091	Montgomery	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	SO2	0.0519	0.0521
42045	Delaware	2801700013	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Diammonium Phosphate	NH3	0.0545	0.0676
42017	Bucks	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	VOC	0.0554	0.0570
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	SO2	0.0558	0.0557
42101	Philadelphia	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	SO2	0.0576	0.0578
42101	Philadelphia	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	0.0589	0.0617
42101	Philadelphia	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	0.0589	0.0617
42091	Montgomery	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	0.0596	0.0624
42091	Montgomery	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	0.0596	0.0624
42045	Delaware	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	VOC	0.0610	0.0627
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NH3	0.0630	0.0379
42017	Bucks	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	SO2	0.0630	0.0633
42045	Delaware	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM25-PRI	0.0644	0.0644
42091	Montgomery	2805053100	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - outdoor operations (unspecified animal age), Confinement	NH3	0.0696	0.0862

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42091	Montgomery	2805022200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Manure handling and storage	NH3	0.0713	0.0883
42045	Delaware	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM10-PRI	0.0715	0.0715
42091	Montgomery	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	SO2	0.0726	0.0729
42045	Delaware	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	SO2	0.0739	0.0742
42045	Delaware	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	VOC	0.0754	0.0752
42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NOX	0.0774	0.0465
42029	Chester	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	SO2	0.0785	0.0788
42017	Bucks	2805022200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Manure handling and storage	NH3	0.0796	0.0986
42045	Delaware	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.0818	0.0850
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	SO2	0.0824	0.0495
42101	Philadelphia	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	NOX	0.0831	0.0834
42091	Montgomery	2801700013	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Diammonium Phosphate	NH3	0.0891	0.1104
42091	Montgomery	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	VOC	0.0912	0.0938
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NH3	0.0925	0.0923
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NH3	0.0925	0.0923
42017	Bucks	2805030008	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Geese	NH3	0.0952	0.1179
42045	Delaware	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	SO2	0.1034	0.1038
42017	Bucks	2302070005	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Wineries	VOC	0.1072	0.1075
42045	Delaware	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	NOX	0.1075	0.1073
42029	Chester	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	SO2	0.1099	0.1103
42017	Bucks	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	SO2	0.1117	0.1121

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42101	Philadelphia	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	NOX	0.1163	0.1167
42029	Chester	2801700015	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Liquid Ammonium Polyphosphate	NH3	0.1171	0.1451
42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NH3	0.1194	0.0717
42045	Delaware	2801700005	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Nitrate	NH3	0.1212	0.1502
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NH3	0.1215	0.0730
42029	Chester	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	VOC	0.1216	0.1694
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	SO2	0.1219	0.1216
42091	Montgomery	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.1230	0.1278
42029	Chester	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM25-PRI	0.1255	0.1255
42091	Montgomery	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	SO2	0.1287	0.1291
42045	Delaware	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	VOC	0.1305	0.1819
42029	Chester	2302070005	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Wineries	VOC	0.1312	0.1315
42045	Delaware	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	VOC	0.1320	0.1320
42029	Chester	2805030008	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Geese	NH3	0.1373	0.1701
42091	Montgomery	2805019300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Land application of manure	NH3	0.1386	0.1717
42029	Chester	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM10-PRI	0.1394	0.1394
42029	Chester	2630020010	Waste Disposal, Treatment, and Recovery	NH3	0.1449	0.1553
42017	Bucks	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.1466	0.1523
42045	Delaware	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	NOX	0.1492	0.1497
42017	Bucks	2805019300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Land application of manure	NH3	0.1544	0.1914
42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	SO2	0.1562	0.0938
42017	Bucks	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	SO2	0.1562	0.1568

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42029	Chester	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	NOX	0.1585	0.1591
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	SO2	0.1589	0.0955
42029	Chester	2801700001	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Anhydrous Ammonia	NH3	0.1593	0.1974
42101	Philadelphia	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	VOC	0.1686	0.1735
42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	VOC	0.1698	0.1020
42017	Bucks	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	VOC	0.1703	0.2373
42045	Delaware	2630020010	Waste Disposal, Treatment, and Recovery	NH3	0.1746	0.1871
42091	Montgomery	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	SO2	0.1800	0.1807
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	SO2	0.1830	0.1905
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NH3	0.1943	0.2023
42045	Delaware	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	NOX	0.2087	0.2095
42101	Philadelphia	2801700099	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Miscellaneous Fertilizers	NH3	0.2139	0.2651
42029	Chester	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	NOX	0.2217	0.2225
42017	Bucks	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	NOX	0.2253	0.2262
42029	Chester	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	VOC	0.2348	0.2156
42091	Montgomery	2805023200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Manure handling and storage	NH3	0.2548	0.3157
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	SO2	0.2560	0.2665
42029	Chester	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	VOC	0.2574	0.2574
42091	Montgomery	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	NOX	0.2596	0.2606
42091	Montgomery	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	VOC	0.2637	0.3676
42101	Philadelphia	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.2645	0.2748

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42101	Philadelphia	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	VOC	0.2667	0.3717
42029	Chester	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	VOC	0.2726	0.2857
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	SO2	0.2733	0.2909
42017	Bucks	2630020010	Waste Disposal, Treatment, and Recovery	NH3	0.2752	0.2948
42091	Montgomery	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	NOX	0.2809	0.2809
42017	Bucks	2805023200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Manure handling and storage	NH3	0.2825	0.3500
42101	Philadelphia	2805045000	Miscellaneous Area Sources, Agriculture Production - Livestock, Goats Waste Emissions, Not Elsewhere Classified	NH3	0.2930	0.3631
42029	Chester	2302070001	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Breweries	VOC	0.2988	0.3260
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NOX	0.3005	0.1805
42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM25-PRI	0.3009	0.1808
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NH3	0.3034	0.3158
42045	Delaware	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM25-PRI	0.3067	0.3060
42017	Bucks	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	NOX	0.3152	0.3164
42029	Chester	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	SO2	0.3224	0.3349
42045	Delaware	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM10-PRI	0.3349	0.3341
42045	Delaware	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM10-PRI	0.3509	0.2108
42045	Delaware	2805040000	Miscellaneous Area Sources, Agriculture Production - Livestock, Sheep and Lambs Waste Emissions, Total	NH3	0.3538	0.4383
42091	Montgomery	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	NOX	0.3631	0.3645
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NOX	0.3671	0.3662
42045	Delaware	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquified Petroleum Gas (LPG), Total: All Combustor Types	NOX	0.3683	0.3857
42091	Montgomery	2630020010	Waste Disposal, Treatment, and Recovery	NH3	0.3699	0.3964
42045	Delaware	2805002000	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle production composite, Not Elsewhere Classified	NH3	0.3749	0.4645

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42091	Montgomery	2801700006	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Sulfate	NH3	0.3787	0.4693
42029	Chester	2801700014	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Monoammonium Phosphate	NH3	0.3822	0.4736
42045	Delaware	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	VOC	0.3856	0.4138
42017	Bucks	2801700007	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Thiosulfate	NH3	0.3892	0.4823
42101	Philadelphia	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	SO2	0.4025	0.4040
42017	Bucks	2302070001	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Breweries	VOC	0.4214	0.4489
42045	Delaware	2302070001	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Breweries	VOC	0.4214	0.4383
42101	Philadelphia	2302070001	Industrial Processes, Food and Kindred Products: SIC 20, Fermentation/Beverages, Breweries	VOC	0.4214	0.4154
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	VOC	0.4220	0.4438
42017	Bucks	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	VOC	0.4305	0.3953
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	VOC	0.4340	0.4565
42045	Delaware	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	VOC	0.4419	0.4058
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	SO2	0.4427	0.4756
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NH3	0.4531	0.4822
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NOX	0.4552	0.4541
42017	Bucks	2801700015	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Liquid Ammonium Polyphosphate	NH3	0.4672	0.5790
42091	Montgomery	2805019100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Confinement	NH3	0.4910	0.6085
42029	Chester	2805022200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Manure handling and storage	NH3	0.5267	0.6526
42017	Bucks	2805019100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Confinement	NH3	0.5465	0.6771
42017	Bucks	2501080100	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 2: Total	VOC	0.5507	0.7019
42091	Montgomery	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	VOC	0.5598	0.5140

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42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NOX	0.5695	0.3421
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	NOX	0.5796	0.3482
42017	Bucks	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	0.5942	0.6222
42091	Montgomery	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	SO2	0.5988	0.6232
42017	Bucks	2805030007	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Ducks	NH3	0.6151	0.7622
42101	Philadelphia	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	VOC	0.6234	0.6258
42017	Bucks	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	NOX	0.6277	0.6277
42029	Chester	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	NOX	0.6522	0.7008
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	VOC	0.6592	0.3960
42101	Philadelphia	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	SO2	0.6650	0.6675
42045	Delaware	2805045000	Miscellaneous Area Sources, Agriculture Production - Livestock, Goats Waste Emissions, Not Elsewhere Classified	NH3	0.7049	0.8734
42091	Montgomery	2801700007	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Thiosulfate	NH3	0.7058	0.8746
42091	Montgomery	2805039300	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - operations with lagoons (unspecified animal age), Land application of manure	NH3	0.7141	0.8849
42045	Delaware	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	SO2	0.7223	0.7250
42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NH3	0.7309	0.7854
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NH3	0.7339	0.7886
42045	Delaware	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	VOC	0.7575	0.7869
42029	Chester	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM25-PRI	0.7615	1.0615
42029	Chester	2630020020	POTW Biosolids Processes	NH3	0.7623	0.8167
42029	Chester	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	SO2	0.7672	0.7702
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NOX	0.7712	0.8026
42045	Delaware	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	NOX	0.8018	0.7998
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	VOC	0.8134	0.8554

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42045	Delaware	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM25-PRI	0.8176	1.1396
42091	Montgomery	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM25-PRI	0.8217	0.8217
42045	Delaware	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	VOC	0.8455	0.8862
42101	Philadelphia	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM10-PRI	0.8478	0.8510
42101	Philadelphia	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM25-PRI	0.8478	0.8510
42029	Chester	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM10-PRI	0.8509	1.1861
42101	Philadelphia	2401065000	Solvent Utilization, Surface Coating, Electronic and Other Electrical: SIC 36 - 363, Total: All Solvent Types	VOC	0.8700	0.8575
42101	Philadelphia	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	VOC	0.8720	0.8753
42091	Montgomery	2805022300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Land application of manure	NH3	0.8831	1.0942
42017	Bucks	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	NOX	0.8844	0.9411
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	VOC	0.8867	0.9325
42101	Philadelphia	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	0.8867	0.9284
42045	Delaware	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	NOX	0.8977	0.9540
42091	Montgomery	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	SO2	0.8988	0.9083
42029	Chester	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM25-PRI	0.9123	0.9388
42091	Montgomery	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM10-PRI	0.9131	0.9131
42045	Delaware	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM10-PRI	0.9135	1.2734
42045	Delaware	2630020020	POTW Biosolids Processes	NH3	0.9185	0.9841
42091	Montgomery	2103007000	Stationary Source Fuel Combustion, Commercial/Institutional, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	0.9196	0.9629
42101	Philadelphia	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	SO2	0.9302	0.9337
42101	Philadelphia	2461800000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Pesticide Application: All Processes, Total: All Solvent Types	VOC	0.9465	0.9459
42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	SO2	0.9630	1.0347

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42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NH3	0.9756	1.0382
42017	Bucks	2805022300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Land application of manure	NH3	0.9874	1.2234
42029	Chester	2805019300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Land application of manure	NH3	1.0322	1.2791
42017	Bucks	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM25-PRI	1.0667	1.4868
42029	Chester	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM10-PRI	1.0770	1.1083
42017	Bucks	2801700005	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Nitrate	NH3	1.0859	1.3456
42017	Bucks	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	SO2	1.0909	1.0950
42029	Chester	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	VOC	1.1011	1.1331
42017	Bucks	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	VOC	1.1031	1.1562
42091	Montgomery	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	NOX	1.1105	1.1559
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM25-PRI	1.1167	1.1139
42045	Delaware	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	VOC	1.1188	1.1230
42091	Montgomery	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	VOC	1.1391	1.1834
42091	Montgomery	2501080100	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 2: Total	VOC	1.1498	1.4656
42029	Chester	2401065000	Solvent Utilization, Surface Coating, Electronic and Other Electrical: SIC 36 - 363, Total: All Solvent Types	VOC	1.1600	1.2657
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM25-PRI	1.1681	0.7017
42101	Philadelphia	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM10-PRI	1.1860	1.1905
42101	Philadelphia	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM25-PRI	1.1860	1.1905
42029	Chester	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	VOC	1.1885	1.1930
42017	Bucks	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM10-PRI	1.1919	1.6614
42045	Delaware	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	SO2	1.1934	1.1979

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42029	Chester	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	SO2	1.1943	1.2947
42029	Chester	2501080100	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 2: Total	VOC	1.2183	1.5529
42101	Philadelphia	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	VOC	1.2360	1.2407
42091	Montgomery	2805030007	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Ducks	NH3	1.2448	1.5424
42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	VOC	1.2492	0.7505
42045	Delaware	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	SO2	1.2493	1.2625
42091	Montgomery	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	SO2	1.2568	1.2616
42029	Chester	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	SO2	1.2677	1.2725
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	VOC	1.2713	0.7638
42029	Chester	2302003000	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Deep Fat Frying	VOC	1.2732	1.3102
42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	SO2	1.2854	1.3678
42017	Bucks	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM25-PRI	1.2943	1.3318
42045	Delaware	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	VOC	1.3095	2.2811
42101	Philadelphia	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	VOC	1.3179	2.2957
42017	Bucks	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	VOC	1.3572	1.4099
42091	Montgomery	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM10-PRI	1.3620	0.8182
42045	Delaware	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	1.3726	1.4259
42045	Delaware	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	1.3726	1.4259
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	VOC	1.3829	1.4544
42091	Montgomery	2401080000	Solvent Utilization, Surface Coating, Marine: SIC 373, Total: All Solvent Types	VOC	1.3860	1.4607
42091	Montgomery	2805019200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Manure handling and storage	NH3	1.3860	1.7174

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42045	Delaware	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	VOC	1.3917	1.4321
42101	Philadelphia	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	NOX	1.3925	1.4798
42101	Philadelphia	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-FIL	1.3926	1.7255
42101	Philadelphia	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-PRI	1.3926	1.7255
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	VOC	1.3949	1.3915
42017	Bucks	2640000000	Waste Disposal, Treatment, and Recovery, TSDFs, All TSDF Types, Total: All Processes	VOC	1.4100	1.5107
42045	Delaware	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM25-PRI	1.4248	1.4661
42017	Bucks	2630020020	POTW Biosolids Processes	NH3	1.4472	1.5505
42045	Delaware	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM10-PRI	1.4485	1.4449
42029	Chester	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	VOC	1.4538	2.5324
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NOX	1.4932	1.5541
42045	Delaware	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM10-PRI	1.5215	1.5273
42045	Delaware	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM25-PRI	1.5215	1.5273
42017	Bucks	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM10-PRI	1.5279	1.5723
42091	Montgomery	2805022100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Confinement	NH3	1.5312	1.8973
42017	Bucks	2805019200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Manure handling and storage	NH3	1.5444	1.9137
42045	Delaware	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	VOC	1.5650	1.5709
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM10-PRI	1.6152	1.6112
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM25-PRI	1.6152	1.6112
42029	Chester	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM10-PRI	1.6163	1.6224
42029	Chester	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM25-PRI	1.6163	1.6224

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42029	Chester	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM25-PRI	1.6275	1.4944
42091	Montgomery	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM25-PRI	1.6521	2.3029
42029	Chester	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	VOC	1.6624	1.6687
42045	Delaware	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	NOX	1.6677	1.7343
42045	Delaware	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	SO2	1.6693	1.6756
42101	Philadelphia	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM25-PRI	1.6705	2.3286
42045	Delaware	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM10-PRI	1.6820	1.7309
42091	Montgomery	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	VOC	1.6856	1.6856
42017	Bucks	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	VOC	1.6879	1.7369
42017	Bucks	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	VOC	1.6898	1.6962
42017	Bucks	2805022100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Confinement	NH3	1.7028	2.1099
42091	Montgomery	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	VOC	1.7086	1.7909
42029	Chester	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	NOX	1.7154	1.8717
42101	Philadelphia	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	VOC	1.7277	1.8108
42101	Philadelphia	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	VOC	1.7289	1.7355
42045	Delaware	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM25-PRI	1.7473	1.6044
42045	Delaware	2805018000	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle composite, Not Elsewhere Classified	NH3	1.7556	2.1754
42029	Chester	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	SO2	1.7733	1.7800
42029	Chester	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	SO2	1.7803	1.7991
42017	Bucks	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	SO2	1.8024	1.8092
42045	Delaware	2302003000	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Deep Fat Frying	VOC	1.8202	1.8730
42017	Bucks	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM25-PRI	1.8359	1.8359

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42091	Montgomery	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM10-PRI	1.8460	2.5732
42017	Bucks	2401060000	Solvent Utilization, Surface Coating, Large Appliances: SIC 363, Total: All Solvent Types	VOC	1.8520	1.9132
42045	Delaware	2401060000	Solvent Utilization, Surface Coating, Large Appliances: SIC 363, Total: All Solvent Types	VOC	1.8520	1.9132
42101	Philadelphia	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	PM10-PRI	1.8666	2.6019
42029	Chester	2805023200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Manure handling and storage	NH3	1.8744	2.3226
42017	Bucks	2302003000	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Deep Fat Frying	VOC	1.9022	1.9575
42091	Montgomery	2630020020	POTW Biosolids Processes	NH3	1.9457	2.0845
42091	Montgomery	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	VOC	1.9468	1.9542
42091	Montgomery	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	VOC	1.9982	3.4808
42045	Delaware	2805035000	Miscellaneous Area Sources, Agriculture Production - Livestock, Horses and Ponies Waste Emissions, Not Elsewhere Classified	NH3	2.0064	2.4861
42101	Philadelphia	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM10-PRI	2.0188	2.0264
42101	Philadelphia	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM25-PRI	2.0188	2.0264
42017	Bucks	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	SO2	2.0345	2.2056
42017	Bucks	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	PM10-PRI	2.0399	2.0399
42045	Delaware	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	VOC	2.0557	2.0506
42091	Montgomery	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	2.0640	2.1443
42091	Montgomery	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	2.0640	2.1443
42091	Montgomery	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	SO2	2.0766	2.0844
42029	Chester	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	VOC	2.0851	2.2374
42017	Bucks	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	VOC	2.0853	3.6325
42101	Philadelphia	2461160000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Tank/Drum Cleaning: All Processes, Total: All Solvent Types	NOX	2.0909	2.5156

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42029	Chester	2401085000	Solvent Utilization, Surface Coating, Railroad: SIC 374, Total: All Solvent Types	VOC	2.1000	2.4170
42045	Delaware	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM10-PRI	2.1283	2.1364
42045	Delaware	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM25-PRI	2.1283	2.1364
42091	Montgomery	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM25-PRI	2.1302	2.1921
42101	Philadelphia	2630020010	Waste Disposal, Treatment, and Recovery	NH3	2.1422	2.2952
42029	Chester	2805009200	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - broilers, Manure handling and storage	NH3	2.1516	2.6661
42101	Philadelphia	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	NOX	2.1620	2.1607
42045	Delaware	2461800000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Pesticide Application: All Processes, Total: All Solvent Types	VOC	2.1715	2.1661
42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM25-PRI	2.2137	1.3299
42045	Delaware	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	VOC	2.2181	2.2265
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NOX	2.2298	2.3728
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM25-PRI	2.2529	1.3535
42029	Chester	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM10-PRI	2.2609	2.2695
42029	Chester	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM25-PRI	2.2609	2.2695
42017	Bucks	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	SO2	2.2742	2.4200
42017	Bucks	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM25-PRI	2.2796	2.0932
42017	Bucks	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM10-PRI	2.2981	2.3068
42017	Bucks	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM25-PRI	2.2981	2.3068
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM25-PRI	2.3459	2.4416
42029	Chester	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	VOC	2.3562	2.3652
42017	Bucks	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	VOC	2.3637	2.3726

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42029	Chester	2801700013	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Diammonium Phosphate	NH3	2.3829	2.9527
42101	Philadelphia	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	VOC	2.4495	2.5447
42017	Bucks	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	2.4592	2.5548
42017	Bucks	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	2.4592	2.5548
42091	Montgomery	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	VOC	2.4633	2.5349
42029	Chester	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	VOC	2.4671	2.5387
42091	Montgomery	2805045000	Miscellaneous Area Sources, Agriculture Production - Livestock, Goats Waste Emissions, Not Elsewhere Classified	NH3	2.5080	3.1077
42091	Montgomery	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	VOC	2.5113	2.6137
42091	Montgomery	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM10-PRI	2.5149	2.5879
42017	Bucks	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	SO2	2.5213	2.5308
42029	Chester	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM10-PRI	2.5812	1.5507
42101	Philadelphia	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	NOX	2.6160	2.6259
42017	Bucks	2810015000	Miscellaneous Area Sources, Other Combustion, Prescribed Burning for Forest Management, Total	PM10-PRI	2.6268	1.5781
42017	Bucks	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	SO2	2.6406	2.6685
42091	Montgomery	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM10-PRI	2.6476	2.6577
42091	Montgomery	2104008030	Stationary Source Fuel Combustion, Residential, Wood, Catalytic Woodstoves: General	PM25-PRI	2.6476	2.6577
42045	Delaware	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM25-PRI	2.7225	2.8933
42091	Montgomery	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	VOC	2.7232	2.7335
42101	Philadelphia	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM10-PRI	2.8239	2.8346
42101	Philadelphia	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM25-PRI	2.8239	2.8346
42101	Philadelphia	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-FIL	2.8974	3.2915
42101	Philadelphia	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-PRI	2.8974	3.2915

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42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NOX	2.9006	3.1167
42091	Montgomery	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	SO2	2.9048	2.9158
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	VOC	2.9305	3.0500
42091	Montgomery	2302003000	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Deep Fat Frying	VOC	2.9336	3.0188
42017	Bucks	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	VOC	2.9787	3.1963
42029	Chester	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	VOC	2.9848	3.1009
42045	Delaware	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	VOC	2.9923	3.1800
42091	Montgomery	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM10-PRI	3.0431	3.1672
42045	Delaware	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	VOC	3.1027	3.1145
42017	Bucks	2805045000	Miscellaneous Area Sources, Agriculture Production - Livestock, Goats Waste Emissions, Not Elsewhere Classified	NH3	3.1680	3.9255
42017	Bucks	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	NOX	3.2146	3.4240
42017	Bucks	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM10-PRI	3.2146	3.2268
42017	Bucks	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM25-PRI	3.2146	3.2268
42029	Chester	2805010200	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - turkeys, Manure handling and storage	NH3	3.2340	4.0073
42101	Philadelphia	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	SO2	3.2926	3.3273
42029	Chester	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	VOC	3.2959	3.3084
42045	Delaware	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM10-PRI	3.3126	3.5204
42017	Bucks	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	VOC	3.3502	3.3628
42101	Philadelphia	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	VOC	3.4254	3.6757
42029	Chester	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM10-PRI	3.4579	3.1751
42045	Delaware	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	VOC	3.4604	3.5609

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42101	Philadelphia	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	NOX	3.5043	3.4538
42091	Montgomery	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM25-PRI	3.5309	3.2421
42045	Delaware	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	SO2	3.5497	3.8483
42101	Philadelphia	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM25-PRI	3.5703	3.2783
42045	Delaware	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	VOC	3.5734	3.6111
42091	Montgomery	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	NOX	3.5808	3.7269
42029	Chester	2630050000	Biosolids Land Application	NH3	3.6081	3.8657
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	NOX	3.6111	3.8802
42045	Delaware	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM10-PRI	3.6229	3.6366
42045	Delaware	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM25-PRI	3.6229	3.6366
42017	Bucks	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	VOC	3.6312	3.7366
42029	Chester	2805019100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Confinement	NH3	3.6432	4.5143
42091	Montgomery	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM10-PRI	3.7036	3.7176
42091	Montgomery	2104008004	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; catalytic	PM25-PRI	3.7036	3.7176
42045	Delaware	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM10-PRI	3.7124	3.4087
42017	Bucks	2810001000	Miscellaneous Area Sources, Other Combustion, Forest Wildfires, Total	VOC	3.7660	3.7660
42017	Bucks	2401085000	Solvent Utilization, Surface Coating, Railroad: SIC 374, Total: All Solvent Types	VOC	3.8150	4.3908
42029	Chester	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM10-PRI	3.8485	3.8631
42029	Chester	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM25-PRI	3.8485	3.8631
42091	Montgomery	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	VOC	3.8597	3.8744
42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	NOX	3.8716	4.1199
42101	Philadelphia	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM25-PRI	3.9409	4.0554

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42045	Delaware	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM25-PRI	3.9845	6.9410
42101	Philadelphia	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM25-PRI	4.0101	6.9856
42091	Montgomery	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	SO2	4.0223	4.3606
42091	Montgomery	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	VOC	4.0947	4.3939
42101	Philadelphia	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	VOC	4.2061	4.3283
42101	Philadelphia	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM25-PRI	4.2231	4.4881
42101	Philadelphia	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	SO2	4.2400	5.6526
42091	Montgomery	2805039100	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - operations with lagoons (unspecified animal age), Confinement	NH3	4.2900	5.3158
42045	Delaware	2630050000	Biosolids Land Application	NH3	4.3475	4.6579
42017	Bucks	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	NOX	4.4010	4.6771
42029	Chester	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM25-PRI	4.4236	7.7058
42101	Philadelphia	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	4.4384	4.6110
42101	Philadelphia	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	4.4384	4.6110
42045	Delaware	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM10-PRI	4.4522	7.7556
42029	Chester	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	SO2	4.4575	4.7897
42101	Philadelphia	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM10-PRI	4.4808	7.8055
42101	Philadelphia	2501080100	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 2: Total	VOC	4.5637	5.8170
42101	Philadelphia	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	VOC	4.6416	4.9328
42101	Philadelphia	2302003200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Clamshell Griddle Frying	PM10-PRI	4.6525	4.7876
42101	Philadelphia	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	NOX	4.6548	4.6724
42017	Bucks	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	VOC	4.6862	4.7040

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42045	Delaware	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	NOX	4.6947	4.7125
42017	Bucks	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM10-PRI	4.8435	4.4473
42029	Chester	2801700005	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Nitrate	NH3	4.8698	6.0342
42029	Chester	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM10-PRI	4.9428	8.6102
42091	Montgomery	2805047300	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - deep-pit house operations (unspecified animal age), Land application of manure	NH3	4.9632	6.1499
42029	Chester	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	NOX	4.9871	5.0060
42045	Delaware	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM10-PRI	5.0677	5.0869
42045	Delaware	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM25-PRI	5.0677	5.0869
42029	Chester	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	VOC	5.1244	5.5063
42101	Philadelphia	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM10-PRI	5.1385	5.4608
42101	Philadelphia	2302003000	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Deep Fat Frying	VOC	5.1395	5.2887
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM10-PRI	5.2983	5.5145
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM25-PRI	5.2983	5.5145
42091	Montgomery	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	NOX	5.3623	5.6987
42029	Chester	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM10-PRI	5.3834	5.4038
42029	Chester	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM25-PRI	5.3834	5.4038
42091	Montgomery	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	VOC	5.3991	5.4195
42029	Chester	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM10-PRI	5.4085	5.6188
42029	Chester	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	PM25-PRI	5.4085	5.6188
42029	Chester	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	NOX	5.4359	5.7770
42091	Montgomery	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	NOX	5.4655	5.7602
42045	Delaware	2505030120	Storage and Transport, Petroleum and Petroleum Product Transport, Truck, Gasoline	VOC	5.4661	5.3752

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42017	Bucks	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM10-PRI	5.4719	5.4926
42017	Bucks	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM25-PRI	5.4719	5.4926
42091	Montgomery	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	VOC	5.5386	5.6994
42017	Bucks	2801700013	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Diammonium Phosphate	NH3	5.7704	7.1501
42091	Montgomery	2805040000	Miscellaneous Area Sources, Agriculture Production - Livestock, Sheep and Lambs Waste Emissions, Total	NH3	5.9136	7.3276
42017	Bucks	2805001300	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Land application of manure	NH3	5.9532	7.3766
42091	Montgomery	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM25-PRI	6.0801	10.5915
42017	Bucks	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	SO2	6.3000	8.3989
42045	Delaware	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	VOC	6.3001	6.2845
42091	Montgomery	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM10-PRI	6.3042	6.3281
42091	Montgomery	2104008050	Stationary Source Fuel Combustion, Residential, Wood, Non-catalytic Woodstoves: EPA certified	PM25-PRI	6.3042	6.3281
42045	Delaware	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-FIL	6.3401	7.2024
42045	Delaware	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-PRI	6.3401	7.2024
42017	Bucks	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM25-PRI	6.3452	11.0533
42029	Chester	2505030120	Storage and Transport, Petroleum and Petroleum Product Transport, Truck, Gasoline	VOC	6.4665	6.3590
42029	Chester	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	NOX	6.4823	7.0727
42101	Philadelphia	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	NOX	6.5112	6.5359
42029	Chester	2805022300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Land application of manure	NH3	6.5208	8.0799
42091	Montgomery	2805001300	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Land application of manure	NH3	6.7056	8.3089
42017	Bucks	2805040000	Miscellaneous Area Sources, Agriculture Production - Livestock, Sheep and Lambs Waste Emissions, Total	NH3	6.7188	8.3253
42091	Montgomery	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	VOC	6.7433	7.0184
42029	Chester	2805045000	Miscellaneous Area Sources, Agriculture Production - Livestock, Goats Waste Emissions, Not Elsewhere Classified	NH3	6.7848	8.4071

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42091	Montgomery	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM10-PRI	6.7938	11.8347
42045	Delaware	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-FIL	6.8264	8.4586
42045	Delaware	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-PRI	6.8264	8.4586
42017	Bucks	2630050000	Biosolids Land Application	NH3	6.8500	7.3390
42017	Bucks	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	VOC	6.9490	7.3947
42101	Philadelphia	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-FIL	6.9628	8.6276
42101	Philadelphia	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-PRI	6.9628	8.6276
42101	Philadelphia	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-FIL	6.9700	9.2921
42101	Philadelphia	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-PRI	6.9700	9.2921
42017	Bucks	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	PM10-PRI	7.0900	12.3506
42017	Bucks	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	NOX	7.0908	7.1176
42029	Chester	2302050000	Industrial Processes, Food and Kindred Products: SIC 20, Bakery Products, Total	VOC	7.1179	7.7662
42029	Chester	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	NOX	7.1503	9.9670
42017	Bucks	2805001100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Confinement	NH3	7.4316	9.2085
42017	Bucks	2505030120	Storage and Transport, Petroleum and Petroleum Product Transport, Truck, Gasoline	VOC	7.5002	7.3755
42091	Montgomery	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM10-PRI	7.5020	6.8884
42101	Philadelphia	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	PM10-PRI	7.5856	6.9652
42017	Bucks	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM10-PRI	7.6542	7.6832
42017	Bucks	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM25-PRI	7.6542	7.6832
42045	Delaware	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	NOX	7.6766	10.7006
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM10-PRI	7.9120	8.4195
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM25-PRI	7.9120	8.4195

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42045	Delaware	2640000000	Waste Disposal, Treatment, and Recovery, TSDFs, All TSDF Types, Total: All Processes	VOC	7.9200	8.4854
42045	Delaware	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	NOX	7.9695	8.2876
42029	Chester	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	VOC	8.1487	8.3853
42091	Montgomery	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	NOX	8.1693	8.2003
42045	Delaware	2801700010	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, N-P-K (multi-grade nutrient fertilizers)	NH3	8.2568	10.2311
42045	Delaware	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	VOC	8.3386	8.6714
42045	Delaware	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	NOX	8.3535	8.3851
42091	Montgomery	2805001100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Confinement	NH3	8.3820	10.3862
42091	Montgomery	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	SO2	8.4800	11.3051
42017	Bucks	2401065000	Solvent Utilization, Surface Coating, Electronic and Other Electrical: SIC 36 - 363, Total: All Solvent Types	VOC	8.5550	9.1123
42091	Montgomery	2805039200	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - operations with lagoons (unspecified animal age), Manure handling and storage	NH3	8.5668	10.6152
42029	Chester	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	VOC	8.5771	9.3584
42091	Montgomery	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	VOC	8.7257	9.0817
42017	Bucks	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	NOX	8.7903	9.3629
42091	Montgomery	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM10-PRI	8.8185	8.8519
42091	Montgomery	2104008003	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; EPA certified; non-catalytic	PM25-PRI	8.8185	8.8519
42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM25-PRI	8.8236	9.4810
42101	Philadelphia	2505030120	Storage and Transport, Petroleum and Petroleum Product Transport, Truck, Gasoline	VOC	8.8341	8.6873
42029	Chester	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	NOX	8.8738	8.9074
42017	Bucks	2501080050	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 1: Total	VOC	9.0598	11.5480
42101	Philadelphia	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	VOC	9.1058	9.3703
42091	Montgomery	2805003100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on pasture/range, Confinement	NH3	9.1740	11.3675

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42091	Montgomery	2630050000	Biosolids Land Application	NH3	9.2094	9.8669
42045	Delaware	2401020000	Solvent Utilization, Surface Coating, Wood Furniture: SIC 25, Total: All Solvent Types	VOC	9.4654	9.8432
42017	Bucks	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	VOC	9.5382	10.1499
42029	Chester	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM25-PRI	9.5587	9.8363
42029	Chester	2805009300	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - broilers, Land application of manure	NH3	9.6888	12.0054
42029	Chester	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM10-PRI	9.8607	10.1471
42017	Bucks	2805003100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on pasture/range, Confinement	NH3	9.9132	12.2835
42029	Chester	2805040000	Miscellaneous Area Sources, Agriculture Production - Livestock, Sheep and Lambs Waste Emissions, Total	NH3	10.0056	12.3980
42017	Bucks	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	NOX	10.0156	13.9609
42101	Philadelphia	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-FIL	10.0600	13.4115
42101	Philadelphia	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-PRI	10.0600	13.4115
42017	Bucks	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	VOC	10.0699	10.7157
42029	Chester	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	NOX	10.1972	9.3632
42045	Delaware	2801700003	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Nitrogen Solutions	NH3	10.2006	12.6396
42091	Montgomery	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM25-PRI	10.2141	10.6308
42029	Chester	2805019200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - flush dairy, Manure handling and storage	NH3	10.2564	12.7087
42045	Delaware	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	SO2	10.3862	11.0377
42091	Montgomery	2505030120	Storage and Transport, Petroleum and Petroleum Product Transport, Truck, Gasoline	VOC	10.4773	10.3031
42029	Chester	2805007300	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - layers with dry manure management systems, Land application of manure	NH3	10.5732	13.1013
42045	Delaware	2401015000	Solvent Utilization, Surface Coating, Factory Finished Wood: SIC 2426 thru 242, Total: All Solvent Types	VOC	10.6110	11.0345

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42045	Delaware	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	VOC	10.6220	10.9304
42017	Bucks	2805025000	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production composite, Not Elsewhere Classified (see also 28-05-039, -047, -053)	NH3	10.8240	13.4121
42029	Chester	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	VOC	10.9474	11.8682
42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	VOC	11.0222	11.8435
42091	Montgomery	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	NOX	11.0378	11.6331
42101	Philadelphia	2401060000	Solvent Utilization, Surface Coating, Large Appliances: SIC 363, Total: All Solvent Types	VOC	11.1120	11.4791
42091	Montgomery	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM10-PRI	11.1533	11.6083
42101	Philadelphia	2630020020	POTW Biosolids Processes	NH3	11.2666	12.0709
42029	Chester	2805022100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - deep pit dairy, Confinement	NH3	11.2728	13.9682
42029	Chester	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM10-PRI	11.4457	12.2986
42091	Montgomery	2805047100	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production - deep-pit house operations (unspecified animal age), Confinement	NH3	11.6424	14.4261
42045	Delaware	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	NOX	11.6850	11.7293
42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM25-PRI	11.7773	12.5326
42029	Chester	2805009100	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - broilers, Confinement	NH3	11.8668	14.7042
42045	Delaware	2801700004	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Urea	NH3	12.0416	14.9208
42029	Chester	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	NOX	12.4128	12.4598
42017	Bucks	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	VOC	12.4645	12.8265
42017	Bucks	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	NOX	12.6169	12.6647
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM10-PRI	12.8136	13.7684
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	PM25-PRI	12.8136	13.7684

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42017	Bucks	2801700014	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Monoammonium Phosphate	NH3	12.8139	15.8778
42045	Delaware	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	VOC	13.0289	13.0611
42101	Philadelphia	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	VOC	13.1126	13.1450
42017	Bucks	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM25-PRI	13.3474	14.1847
42045	Delaware	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM25-PRI	13.4075	13.7968
42029	Chester	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these matls), All Processes	VOC	13.4579	14.4607
42017	Bucks	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	NOX	13.6005	14.4728
42101	Philadelphia	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	SO2	13.6481	14.7961
42045	Delaware	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM10-PRI	13.7031	14.7043
42045	Delaware	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM25-PRI	13.7031	14.7043
42045	Delaware	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM10-PRI	13.8310	14.2327
42029	Chester	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM25-PRI	13.9582	14.3636
42017	Bucks	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM25-PRI	14.0690	14.4776
42029	Chester	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM25-PRI	14.0968	15.1267
42091	Montgomery	2801700099	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Miscellaneous Fertilizers	NH3	14.1218	17.4984
42091	Montgomery	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-FIL	14.3497	16.3014
42091	Montgomery	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-PRI	14.3497	16.3014
42029	Chester	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	VOC	14.4645	14.5003
42029	Chester	2801700099	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Miscellaneous Fertilizers	NH3	14.4760	17.9373
42017	Bucks	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM10-PRI	14.5135	14.9350
42091	Montgomery	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	NOX	14.5361	14.5911

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42017	Bucks	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	VOC	14.6700	15.5903
42101	Philadelphia	2401015000	Solvent Utilization, Surface Coating, Factory Finished Wood: SIC 2426 thru 242, Total: All Solvent Types	VOC	14.6720	14.4607
42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	VOC	14.7120	15.6555
42091	Montgomery	2805023100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Confinement	NH3	14.7840	18.3189
42017	Bucks	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-FIL	15.0429	17.0888
42017	Bucks	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-PRI	15.0429	17.0888
42029	Chester	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM10-PRI	15.1273	16.3997
42029	Chester	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM25-PRI	15.1273	16.3997
42029	Chester	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	SO2	15.2302	21.2297
42029	Chester	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM10-PRI	15.2355	16.3487
42017	Bucks	2610000400	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Brush Species Unspecified	PM10-PRI	15.2772	16.2570
42091	Montgomery	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	NOX	15.5130	21.6239
42101	Philadelphia	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	NOX	15.6859	21.8650
42017	Bucks	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	VOC	16.0728	17.1198
42101	Philadelphia	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	SO2	16.1111	17.1218
42029	Chester	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	VOC	16.1371	16.3073
42029	Chester	2805010300	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - turkeys, Land application of manure	NH3	16.2360	20.1181
42017	Bucks	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM10-PRI	16.2403	17.2591
42091	Montgomery	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM25-PRI	16.2629	17.2832
42029	Chester	2610000100	Waste Disposal, Treatment, and Recovery, Open Burning, All Categories, Yard Waste - Leaf Species Unspecified	VOC	16.3082	17.5234
42045	Delaware	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	SO2	16.3511	22.7923
42017	Bucks	2805023100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Confinement	NH3	16.3680	20.2817

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42029	Chester	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM25-PRI	16.4861	17.5204
42045	Delaware	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these matls), All Processes	VOC	16.5454	16.5045
42101	Philadelphia	2810030000	Miscellaneous Area Sources, Other Combustion, Structure Fires, Total	VOC	16.9870	16.9769
42101	Philadelphia	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	VOC	17.5214	17.2691
42045	Delaware	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM25-PRI	17.6411	18.1534
42017	Bucks	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	NOX	17.6488	17.7156
42091	Montgomery	2805021100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Confinement	NH3	17.6880	21.9173
42091	Montgomery	2805021200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Manure handling and storage	NH3	17.6880	21.9173
42091	Montgomery	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	VOC	17.8745	18.9958
42029	Chester	2805010100	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production - turkeys, Confinement	NH3	17.9520	22.2444
42045	Delaware	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	NOX	17.9974	18.7158
42029	Chester	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	VOC	18.1198	19.2565
42101	Philadelphia	2461160000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Tank/Drum Cleaning: All Processes, Total: All Solvent Types	PM10-FIL	18.1818	21.8745
42101	Philadelphia	2461160000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Tank/Drum Cleaning: All Processes, Total: All Solvent Types	PM10-PRI	18.1818	21.8745
42101	Philadelphia	2461160000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Tank/Drum Cleaning: All Processes, Total: All Solvent Types	PM25-FIL	18.1818	21.8745
42101	Philadelphia	2461160000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Tank/Drum Cleaning: All Processes, Total: All Solvent Types	PM25-PRI	18.1818	21.8745
42017	Bucks	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these matls), All Processes	VOC	18.2496	19.4200
42091	Montgomery	2801700003	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Nitrogen Solutions	NH3	18.2925	22.6662
42029	Chester	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM10-PRI	18.3661	18.8994
42029	Chester	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	NOX	18.5123	20.1985
42091	Montgomery	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	VOC	18.5154	19.0531
42029	Chester	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-FIL	18.6108	21.1419

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42029	Chester	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM25-PRI	18.6108	21.1419
42017	Bucks	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	VOC	18.6496	20.2182
42029	Chester	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	VOC	18.6954	20.0885
42045	Delaware	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-FIL	18.7968	18.7504
42045	Delaware	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-PRI	18.7968	18.7504
42091	Montgomery	2501080050	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 1: Total	VOC	18.9177	24.1132
42029	Chester	2302000000	Industrial Processes, Food and Kindred Products: SIC 20, All Processes, Total	VOC	19.2700	19.7976
42017	Bucks	2805021100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Confinement	NH3	19.5360	24.2071
42017	Bucks	2805021200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Manure handling and storage	NH3	19.5360	24.2071
42017	Bucks	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM25-PRI	19.7455	21.1882
42091	Montgomery	2401015000	Solvent Utilization, Surface Coating, Factory Finished Wood: SIC 2426 thru 242, Total: All Solvent Types	VOC	19.7470	20.8119
42091	Montgomery	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM10-PRI	19.7877	21.0291
42091	Montgomery	2805023300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Land application of manure	NH3	19.8000	24.5343
42091	Montgomery	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	VOC	19.8813	19.9304
42029	Chester	2501080050	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 1: Total	VOC	20.0443	25.5492
42029	Chester	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	PM10-PRI	20.0593	21.3177
42091	Montgomery	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	NOX	20.3333	20.4103
42017	Bucks	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	VOC	20.7480	20.7994
42017	Bucks	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	NOX	20.8658	19.1593
42045	Delaware	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	21.2097	22.0344
42045	Delaware	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	SO2	21.3000	28.3961
42017	Bucks	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	SO2	21.3331	29.7368

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42017	Bucks	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM25-PRI	21.3962	22.0175
42045	Delaware	2302050000	Industrial Processes, Food and Kindred Products: SIC 20, Bakery Products, Total	VOC	21.4500	22.3062
42091	Montgomery	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM25-PRI	21.4595	22.0826
42101	Philadelphia	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	NOX	21.4881	21.1786
42045	Delaware	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	NOX	21.5085	19.7494
42029	Chester	2805030007	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Ducks	NH3	21.5160	26.6606
42045	Delaware	2805030007	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Ducks	NH3	21.5160	26.6606
42101	Philadelphia	2805030007	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Ducks	NH3	21.5160	26.6606
42017	Bucks	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM10-PRI	21.5371	23.1107
42017	Bucks	2805023300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Land application of manure	NH3	21.9120	27.1512
42091	Montgomery	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM10-PRI	22.1374	22.7803
42029	Chester	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	NH3	22.1574	23.8084
42091	Montgomery	2401060000	Solvent Utilization, Surface Coating, Large Appliances: SIC 363, Total: All Solvent Types	VOC	22.2240	22.9581
42029	Chester	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM10-PRI	22.3676	22.6035
42029	Chester	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM25-PRI	22.3676	22.6035
42045	Delaware	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM10-PRI	22.6341	22.8729
42045	Delaware	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM25-PRI	22.6341	22.8729
42091	Montgomery	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	VOC	22.7027	22.9422
42091	Montgomery	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these mats), All Processes	VOC	22.9157	23.8506
42045	Delaware	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM10-PRI	23.2120	23.8861

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42091	Montgomery	2805035000	Miscellaneous Area Sources, Agriculture Production - Livestock, Horses and Ponies Waste Emissions, Not Elsewhere Classified	NH3	23.3640	28.9504
42029	Chester	2415230000	Solvent Utilization, Degreasing, Electronic and Other Elec. (SIC 36): Conveyerized Degreasing, Total: All Solvent Types	VOC	23.4443	25.1913
42101	Philadelphia	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM10-PRI	23.7453	23.8352
42101	Philadelphia	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM25-PRI	23.7453	23.8352
42017	Bucks	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	VOC	23.9199	24.1723
42029	Chester	2401040000	Solvent Utilization, Surface Coating, Metal Cans: SIC 341, Total: All Solvent Types	VOC	24.1160	26.3126
42029	Chester	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	VOC	24.6018	26.4350
42045	Delaware	2399010000	Refrigerant Losses	NH3	24.6300	24.6300
42029	Chester	2805001300	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Land application of manure	NH3	25.0800	31.0767
42101	Philadelphia	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM10-PRI	25.5203	27.3849
42101	Philadelphia	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM25-PRI	25.5203	27.3849
42101	Philadelphia	2461022000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Emulsified Asphalt, Total: All Solvent Types	VOC	25.7504	30.9802
42017	Bucks	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM10-PRI	25.7703	27.9379
42017	Bucks	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM25-PRI	25.7703	27.9379
42029	Chester	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these matls), All Processes	NH3	25.9659	27.9007
42091	Montgomery	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	NOX	26.2449	24.0984
42101	Philadelphia	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-FIL	26.2935	29.8695
42101	Philadelphia	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-PRI	26.2935	29.8695
42029	Chester	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	NOX	26.6578	28.6442
42029	Chester	2801700006	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Sulfate	NH3	26.7135	33.1008
42045	Delaware	2461022000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Emulsified Asphalt, Total: All Solvent Types	VOC	26.8543	32.3083
42017	Bucks	2801700010	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, N-P-K (multi-grade nutrient fertilizers)	NH3	27.0545	33.5233
42101	Philadelphia	2401040000	Solvent Utilization, Surface Coating, Metal Cans: SIC 341, Total: All Solvent Types	VOC	27.1305	26.7397

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42045	Delaware	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	NH3	27.2407	27.1733
42091	Montgomery	2610010000	Waste Disposal, Treatment, and Recovery, Open Burning, Industrial, Total	VOC	27.3274	28.8010
42045	Delaware	2501060201	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Underground Tank: Breathing and Emptying	VOC	28.1320	27.6643
42017	Bucks	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM10-PRI	28.1529	28.9704
42029	Chester	2401015000	Solvent Utilization, Surface Coating, Factory Finished Wood: SIC 2426 thru 242, Total: All Solvent Types	VOC	28.8200	31.4451
42045	Delaware	2415230000	Solvent Utilization, Degreasing, Electronic and Other Elec. (SIC 36): Conveyerized Degreasing, Total: All Solvent Types	VOC	28.8229	28.7516
42101	Philadelphia	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-FIL	28.9743	32.9149
42101	Philadelphia	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-PRI	28.9743	32.9149
42029	Chester	2640000000	Waste Disposal, Treatment, and Recovery, TSDFs, All TSDF Types, Total: All Processes	VOC	29.9600	32.0988
42017	Bucks	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	NH3	30.0465	31.9734
42045	Delaware	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	VOC	30.2459	30.1711
42091	Montgomery	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM25-PRI	30.5836	32.8182
42045	Delaware	2401045000	Solvent Utilization, Surface Coating, Metal Coils: SIC 3498, Total: All Solvent Types	VOC	30.6200	39.0359
42091	Montgomery	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM25-PRI	31.2259	32.1327
42029	Chester	2805001100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on feedlots (drylots), Confinement	NH3	31.2840	38.7641
42017	Bucks	2415230000	Solvent Utilization, Degreasing, Electronic and Other Elec. (SIC 36): Conveyerized Degreasing, Total: All Solvent Types	VOC	31.7917	33.8306
42091	Montgomery	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	NOX	31.8940	33.1342
42045	Delaware	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these matls), All Processes	NH3	31.9229	31.8440
42029	Chester	2430000000	Solvent Utilization, Rubber/Plastics, All Processes, Total: All Solvent Types	VOC	31.9500	41.7916
42029	Chester	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	VOC	32.4115	35.3637
42045	Delaware	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	VOC	32.5393	35.2763
42045	Delaware	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	NOX	32.5496	56.7009

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42101	Philadelphia	2401085000	Solvent Utilization, Surface Coating, Railroad: SIC 374, Total: All Solvent Types	VOC	32.7250	37.6646
42101	Philadelphia	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	NOX	32.7588	57.0653
42029	Chester	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	SO2	32.8502	30.1635
42101	Philadelphia	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	VOC	32.8670	33.8215
42091	Montgomery	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	PM10-PRI	32.9935	35.4042
42091	Montgomery	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	SO2	33.0426	46.0589
42101	Philadelphia	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	VOC	33.2564	33.6072
42029	Chester	2501060201	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Underground Tank: Breathing and Emptying	VOC	33.2809	32.7276
42017	Bucks	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	VOC	33.3612	35.5008
42101	Philadelphia	2103011000	Stationary Source Fuel Combustion, Commercial/Institutional, Kerosene, Total: All Combustor Types	SO2	33.4110	46.5724
42017	Bucks	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM10-PRI	33.4712	33.8243
42017	Bucks	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM25-PRI	33.4712	33.8243
42029	Chester	2420000370	Solvent Utilization, Dry Cleaning, All Processes, Special Naphthas	VOC	33.7620	36.2778
42017	Bucks	2805035000	Miscellaneous Area Sources, Agriculture Production - Livestock, Horses and Ponies Waste Emissions, Not Elsewhere Classified	NH3	34.0560	42.1989
42045	Delaware	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-FIL	34.1320	42.2931
42045	Delaware	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-PRI	34.1320	42.2931
42101	Philadelphia	2801700010	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, N-P-K (multi-grade nutrient fertilizers)	NH3	34.2430	42.4306
42017	Bucks	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	NOX	34.6905	36.9502
42029	Chester	2401060000	Solvent Utilization, Surface Coating, Large Appliances: SIC 363, Total: All Solvent Types	VOC	34.7250	35.8721
42101	Philadelphia	2430000000	Solvent Utilization, Rubber/Plastics, All Processes, Total: All Solvent Types	VOC	35.0200	45.8072
42017	Bucks	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these mats), All Processes	NH3	35.2111	37.4692

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42101	Philadelphia	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM25-PRI	35.2809	36.3054
42029	Chester	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	NOX	36.1362	62.9488
42101	Philadelphia	2302002100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Conveyorized Charbroiling	PM10-PRI	36.3954	37.4523
42045	Delaware	2430000000	Solvent Utilization, Rubber/Plastics, All Processes, Total: All Solvent Types	VOC	36.8000	48.1355
42091	Montgomery	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	VOC	36.8711	39.9723
42091	Montgomery	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	NH3	37.7288	39.2680
42101	Philadelphia	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	NOX	37.8171	37.2724
42017	Bucks	2401015000	Solvent Utilization, Surface Coating, Factory Finished Wood: SIC 2426 thru 242, Total: All Solvent Types	VOC	37.9835	40.4577
42017	Bucks	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	38.0003	39.4781
42017	Bucks	2501060201	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Underground Tank: Breathing and Emptying	VOC	38.6011	37.9594
42017	Bucks	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM25-PRI	38.7950	41.2830
42029	Chester	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-FIL	39.1100	52.1396
42029	Chester	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-PRI	39.1100	52.1396
42017	Bucks	2805030000	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Not Elsewhere Classified (see also 28-05-007, -008, -009)	NH3	39.4680	48.9050
42045	Delaware	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM25-PRI	39.6450	39.7430
42029	Chester	2801700004	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Urea	NH3	39.8464	49.3738
42045	Delaware	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	VOC	39.8473	41.4378
42101	Philadelphia	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM25-PRI	39.8997	39.9984
42091	Montgomery	2415230000	Solvent Utilization, Degreasing, Electronic and Other Elec. (SIC 36): Conveyorized Degreasing, Total: All Solvent Types	VOC	39.9202	41.5488
42091	Montgomery	2401030000	Solvent Utilization, Surface Coating, Paper: SIC 26, Total: All Solvent Types	VOC	40.0800	44.2131
42091	Montgomery	2805021300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Land application of manure	NH3	40.3920	50.0499

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42091	Montgomery	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM10-PRI	41.0867	42.2798
42045	Delaware	2420000370	Solvent Utilization, Dry Cleaning, All Processes, Special Naphthas	VOC	41.5076	41.4050
42091	Montgomery	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	VOC	41.8910	43.6000
42017	Bucks	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM10-PRI	42.3623	45.0791
42045	Delaware	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM10-PRI	42.6134	42.7748
42045	Delaware	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM25-PRI	42.6134	42.7748
42091	Montgomery	2461022000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Emulsified Asphalt, Total: All Solvent Types	VOC	42.6469	51.3084
42029	Chester	2801700010	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, N-P-K (multi-grade nutrient fertilizers)	NH3	42.9319	53.1971
42029	Chester	2805003100	Miscellaneous Area Sources, Agriculture Production - Livestock, Beef cattle - finishing operations on pasture/range, Confinement	NH3	43.1640	53.4847
42091	Montgomery	2801700010	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, N-P-K (multi-grade nutrient fertilizers)	NH3	43.2652	53.6101
42029	Chester	2399010000	Refrigerant Losses	NH3	43.9050	43.9050
42017	Bucks	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	VOC	43.9517	46.8147
42029	Chester	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM25-PRI	44.0134	44.1223
42091	Montgomery	2420000370	Solvent Utilization, Dry Cleaning, All Processes, Special Naphthas	VOC	44.1012	45.9003
42091	Montgomery	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these mats), All Processes	NH3	44.2138	46.0176
42045	Delaware	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM10-PRI	44.2981	44.4077
42101	Philadelphia	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM10-PRI	44.5828	44.6930
42101	Philadelphia	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these mats), All Processes	VOC	44.6115	44.5852
42017	Bucks	2805021300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Land application of manure	NH3	44.6160	55.2839
42045	Delaware	2401025000	Solvent Utilization, Surface Coating, Metal Furniture: SIC 25, Total: All Solvent Types	VOC	44.7160	51.4408
42045	Delaware	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM10-PRI	44.9635	48.7454
42045	Delaware	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM25-PRI	44.9635	48.7454
42029	Chester	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	NOX	44.9710	49.0672

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42029	Chester	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM10-PRI	45.2675	45.4389
42029	Chester	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM25-PRI	45.2675	45.4389
42101	Philadelphia	2501060201	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Underground Tank: Breathing and Emptying	VOC	45.4662	44.7104
42045	Delaware	2401055000	Solvent Utilization, Surface Coating, Machinery and Equipment: SIC 35, Total: All Solvent Types	VOC	45.5070	96.0099
42017	Bucks	2420000370	Solvent Utilization, Dry Cleaning, All Processes, Special Naphthas	VOC	45.7830	48.7192
42045	Delaware	2501060053	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 1: Balanced Submerged Filling	VOC	45.9534	45.1894
42045	Delaware	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	VOC	47.6688	49.5715
42091	Montgomery	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	NOX	47.6916	50.2633
42017	Bucks	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-FIL	47.7700	50.6204
42017	Bucks	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-PRI	47.7700	50.6204
42029	Chester	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-FIL	47.7700	50.6204
42029	Chester	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-PRI	47.7700	50.6204
42045	Delaware	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-FIL	47.7700	50.6204
42045	Delaware	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-PRI	47.7700	50.6204
42091	Montgomery	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-FIL	47.7700	50.6204
42091	Montgomery	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-PRI	47.7700	50.6204
42101	Philadelphia	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-FIL	47.7700	50.6204
42101	Philadelphia	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM25-PRI	47.7700	50.6204
42029	Chester	2630020010	Waste Disposal, Treatment, and Recovery	VOC	47.7766	51.1872
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-FIL	48.3935	50.8975
42091	Montgomery	2401065000	Solvent Utilization, Surface Coating, Electronic and Other Electrical: SIC 36 - 363, Total: All Solvent Types	VOC	48.7200	51.3473
42029	Chester	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	VOC	49.0321	53.4982
42029	Chester	2461022000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Emulsified Asphalt, Total: All Solvent Types	VOC	49.0901	59.0602
42029	Chester	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM10-PRI	49.1793	49.3009
42091	Montgomery	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	NOX	49.6688	86.5223
42045	Delaware	2401080000	Solvent Utilization, Surface Coating, Marine: SIC 373, Total: All Solvent Types	VOC	49.7420	51.7274
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-FIL	49.7780	52.3536

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42017	Bucks	2461022000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Emulsified Asphalt, Total: All Solvent Types	VOC	50.2391	60.4425
42045	Delaware	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-FIL	50.2935	57.1337
42045	Delaware	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-PRI	50.2935	57.1337
42091	Montgomery	2461800000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Pesticide Application: All Processes, Total: All Solvent Types	VOC	50.4715	52.5305
42045	Delaware	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-FIL	50.7300	67.6308
42045	Delaware	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-PRI	50.7300	67.6308
42091	Montgomery	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM10-PRI	50.8261	51.3623
42091	Montgomery	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM25-PRI	50.8261	51.3623
42101	Philadelphia	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM10-PRI	50.8703	32.7824
42101	Philadelphia	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM25-PRI	50.8703	32.7824
42017	Bucks	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	SO2	50.9196	54.1140
42091	Montgomery	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM10-PRI	50.9491	55.2345
42091	Montgomery	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM25-PRI	50.9491	55.2345
42101	Philadelphia	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM10-PRI	51.6797	52.2250
42101	Philadelphia	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	PM25-PRI	51.6797	52.2250
42017	Bucks	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	NOX	51.8342	90.2945
42101	Philadelphia	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM25-PRI	53.3184	54.8667
42101	Philadelphia	2630050000	Biosolids Land Application	NH3	53.3287	57.1357
42091	Montgomery	2501060201	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Underground Tank: Breathing and Emptying	VOC	53.9232	53.0268
42091	Montgomery	2401085000	Solvent Utilization, Surface Coating, Railroad: SIC 374, Total: All Solvent Types	VOC	54.1800	62.3581
42029	Chester	2501060053	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 1: Balanced Submerged Filling	VOC	54.3641	53.4604

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42045	Delaware	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	NOX	54.4682	56.6422
42029	Chester	2415200000	Solvent Utilization, Degreasing, All Industries: Conveyerized Degreasing, Total: All Solvent Types	VOC	54.7034	58.7797
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-PRI	54.8459	57.6838
42091	Montgomery	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	VOC	55.1892	58.1653
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-PRI	56.4150	59.3341
42029	Chester	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-FIL	56.4400	75.2431
42029	Chester	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-PRI	56.4400	75.2431
42029	Chester	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-FIL	56.9256	64.6678
42029	Chester	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-PRI	56.9256	64.6678
42101	Philadelphia	2461021000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Cutback Asphalt, Total: All Solvent Types	VOC	59.7237	71.8534
42091	Montgomery	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM25-PRI	60.4959	60.6455
42101	Philadelphia	2401055000	Solvent Utilization, Surface Coating, Machinery and Equipment: SIC 35, Total: All Solvent Types	VOC	60.5605	127.7696
42017	Bucks	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-FIL	61.4260	69.7802
42017	Bucks	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-PRI	61.4260	69.7802
42091	Montgomery	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	SO2	62.0422	65.9345
42045	Delaware	2461021000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Cutback Asphalt, Total: All Solvent Types	VOC	62.2840	74.9337
42101	Philadelphia	2401080000	Solvent Utilization, Surface Coating, Marine: SIC 373, Total: All Solvent Types	VOC	62.2840	61.3869
42029	Chester	2104001000	Stationary Source Fuel Combustion, Residential, Anthracite Coal, Total: All Combustor Types	SO2	62.8937	66.8394
42017	Bucks	2501060053	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 1: Balanced Submerged Filling	VOC	63.0545	62.0063
42017	Bucks	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM25-PRI	63.1333	63.2895

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42017	Bucks	2302050000	Industrial Processes, Food and Kindred Products: SIC 20, Bakery Products, Total	VOC	63.2500	67.3701
42045	Delaware	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-FIL	63.4013	72.0242
42045	Delaware	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-PRI	63.4013	72.0242
42017	Bucks	2399010000	Refrigerant Losses	NH3	63.4950	63.4950
42017	Bucks	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM10-PRI	64.3623	64.6060
42017	Bucks	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM25-PRI	64.3623	64.6060
42045	Delaware	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	SO2	64.4667	59.1942
42029	Chester	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM25-PRI	65.6706	67.5777
42091	Montgomery	2805030000	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Not Elsewhere Classified (see also 28-05-007, -008, -009)	NH3	65.8680	81.6173
42017	Bucks	2801700099	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Miscellaneous Fertilizers	NH3	66.9493	82.9571
42017	Bucks	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	SO2	67.0930	61.6057
42045	Delaware	2415200000	Solvent Utilization, Degreasing, All Industries: Conveyerized Degreasing, Total: All Solvent Types	VOC	67.2534	67.0872
42091	Montgomery	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM10-PRI	67.5963	67.7635
42101	Philadelphia	2420000370	Solvent Utilization, Dry Cleaning, All Processes, Special Naphthas	VOC	67.6013	67.5614
42045	Delaware	2401030000	Solvent Utilization, Surface Coating, Paper: SIC 26, Total: All Solvent Types	VOC	67.9200	74.9239
42029	Chester	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM10-PRI	67.9336	69.9064
42017	Bucks	2801700006	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Ammonium Sulfate	NH3	67.9520	84.1995
42029	Chester	2401045000	Solvent Utilization, Surface Coating, Metal Coils: SIC 3498, Total: All Solvent Types	VOC	68.5200	87.3527
42101	Philadelphia	2104007000	Stationary Source Fuel Combustion, Residential, Liquified Petroleum Gas (LPG), Total: All Combustor Types	NOX	68.5852	71.2523
42101	Philadelphia	2302003100	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Frying, Flat Griddle Frying	PM10-PRI	70.1557	72.1931
42091	Montgomery	2302050000	Industrial Processes, Food and Kindred Products: SIC 20, Bakery Products, Total	VOC	70.4300	74.2280
42017	Bucks	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	PM10-PRI	70.5434	70.7178
42101	Philadelphia	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non- EPA certified	PM10-PRI	71.1582	45.8565
42101	Philadelphia	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non- EPA certified	PM25-PRI	71.1582	45.8565

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42101	Philadelphia	2640000000	Waste Disposal, Treatment, and Recovery, TSDFs, All TSDF Types, Total: All Processes	VOC	71.5800	76.6899
42045	Delaware	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-FIL	73.2000	97.5867
42045	Delaware	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-PRI	73.2000	97.5867
42101	Philadelphia	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	NH3	73.4492	73.4059
42017	Bucks	2415200000	Solvent Utilization, Degreasing, All Industries: Conveyerized Degreasing, Total: All Solvent Types	VOC	74.1517	78.9072
42091	Montgomery	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM10-PRI	74.1523	74.4331
42091	Montgomery	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	PM25-PRI	74.1523	74.4331
42101	Philadelphia	2501060053	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 1: Balanced Submerged Filling	VOC	74.2639	73.0294
42029	Chester	2401055000	Solvent Utilization, Surface Coating, Machinery and Equipment: SIC 35, Total: All Solvent Types	VOC	74.8055	157.8234
42101	Philadelphia	2501080050	Storage and Transport, Petroleum and Petroleum Product Storage, Airports : Aviation Gasoline, Stage 1: Total	VOC	75.0840	95.7047
42029	Chester	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM25-PRI	76.0403	81.7065
42091	Montgomery	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	NOX	76.1041	80.2081
42045	Delaware	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	SO2	76.8844	133.9315
42101	Philadelphia	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	SO2	77.3785	134.7921
42091	Montgomery	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-FIL	77.4743	80.6349
42091	Montgomery	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-PRI	77.4743	80.6349
42101	Philadelphia	2415230000	Solvent Utilization, Degreasing, Electronic and Other Elec. (SIC 36): Conveyerized Degreasing, Total: All Solvent Types	VOC	77.7154	77.6695
42091	Montgomery	2801700004	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Urea	NH3	80.6146	99.8899
42101	Philadelphia	2680002000	Waste Disposal, Treatment, and Recovery, Composting, Mixed Waste (e.g., a 50:50 mixture of biosolids and green wastes), All Processes	VOC	81.5521	81.5040
42091	Montgomery	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-FIL	82.0096	101.6184
42091	Montgomery	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-PRI	82.0096	101.6184
42029	Chester	2401008000	Solvent Utilization, Surface Coating, Traffic Markings, Total: All Solvent Types	VOC	82.6573	61.2834

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42029	Chester	2610030000	Waste Disposal, Treatment, and Recovery, Open Burning, Residential, Household Waste (use 26-10-000-xxx for Yard Wastes)	PM10-PRI	83.0325	89.2197
42029	Chester	2104007000	Stationary Source Fuel Combustion, Residential, Liquefied Petroleum Gas (LPG), Total: All Combustor Types	NOX	83.5750	86.8250
42029	Chester	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	SO2	85.3563	148.6894
42045	Delaware	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM25-PRI	85.6029	88.0888
42101	Philadelphia	2680001000	Waste Disposal, Treatment, and Recovery, Composting, 100% Biosolids (e.g., sewage sludge, manure, mixtures of these mats), All Processes	NH3	86.0740	86.0233
42091	Montgomery	2430000000	Solvent Utilization, Rubber/Plastics, All Processes, Total: All Solvent Types	VOC	87.1500	113.9949
42091	Montgomery	2501060053	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 1: Balanced Submerged Filling	VOC	88.0831	86.6188
42101	Philadelphia	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	VOC	88.1087	41.9835
42045	Delaware	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM10-PRI	88.5529	91.1244
42029	Chester	2805025000	Miscellaneous Area Sources, Agriculture Production - Livestock, Swine production composite, Not Elsewhere Classified (see also 28-05-039, -047, -053)	NH3	90.0240	111.5491
42091	Montgomery	2401045000	Solvent Utilization, Surface Coating, Metal Coils: SIC 3498, Total: All Solvent Types	VOC	90.6200	115.5268
42017	Bucks	2630020010	Waste Disposal, Treatment, and Recovery	VOC	90.7037	97.1787
42101	Philadelphia	2401030000	Solvent Utilization, Surface Coating, Paper: SIC 26, Total: All Solvent Types	VOC	91.0700	100.4611
42045	Delaware	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM10-PRI	91.2920	58.8314
42045	Delaware	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM25-PRI	91.2920	58.8314
42017	Bucks	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	VOC	91.8828	97.8680
42101	Philadelphia	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-FIL	92.2968	104.8497
42101	Philadelphia	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-PRI	92.2968	104.8497
42091	Montgomery	2415200000	Solvent Utilization, Degreasing, All Industries: Conveyerized Degreasing, Total: All Solvent Types	VOC	93.1471	96.9472
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-FIL	93.2797	98.1063
42029	Chester	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM10-PRI	96.9780	62.4956

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42029	Chester	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM25-PRI	96.9780	62.4956
42029	Chester	2401050000	Solvent Utilization, Surface Coating, Miscellaneous Finished Metals: SIC 34 - (341 + 3498), Total: All Solvent Types	VOC	97.5375	120.8808
42091	Montgomery	2461021000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Cutback Asphalt, Total: All Solvent Types	VOC	98.9124	119.0012
42101	Philadelphia	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	VOC	100.1642	98.7216
42017	Bucks	2430000000	Solvent Utilization, Rubber/Plastics, All Processes, Total: All Solvent Types	VOC	100.1900	131.0516
42017	Bucks	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM25-PRI	100.4520	103.3691
42017	Bucks	2461800000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Pesticide Application: All Processes, Total: All Solvent Types	VOC	100.8715	107.3405
42045	Delaware	2401008000	Solvent Utilization, Surface Coating, Traffic Markings, Total: All Solvent Types	VOC	101.6204	69.9447
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-FIL	101.6870	106.9486
42029	Chester	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM25-PRI	102.3643	107.2897
42029	Chester	2801700003	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Nitrogen Solutions	NH3	102.8555	127.4487
42029	Chester	2620030000	Waste Disposal, Treatment, and Recovery, Landfills, Municipal, Total	VOC	103.8549	111.2688
42017	Bucks	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM10-PRI	103.9137	106.9313
42045	Delaware	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-FIL	105.4374	119.7774
42045	Delaware	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-PRI	105.4374	119.7774
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-PRI	105.7170	111.1871
42091	Montgomery	2103005000	Stationary Source Fuel Combustion, Commercial/Institutional, Residual Oil, Total: All Boiler Types	SO2	106.6048	97.8859
42101	Philadelphia	2610020000	Waste Disposal, Treatment, and Recovery, Open Burning, Commercial/Institutional, Total	VOC	107.4406	105.8932
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	NOX	108.5055	114.1199
42029	Chester	2805023100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Confinement	NH3	108.6360	134.6113
42091	Montgomery	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-FIL	109.5900	146.1001
42091	Montgomery	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-PRI	109.5900	146.1001

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42045	Delaware	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM25-PRI	109.8984	115.1863
42017	Bucks	2302000000	Industrial Processes, Food and Kindred Products: SIC 20, All Processes, Total	VOC	111.3100	114.3576
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	NOX	111.6098	117.3848
42017	Bucks	2401008000	Solvent Utilization, Surface Coating, Traffic Markings, Total: All Solvent Types	VOC	112.0875	82.3004
42029	Chester	2461021000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Cutback Asphalt, Total: All Solvent Types	VOC	113.8564	136.9803
42045	Delaware	2401085000	Solvent Utilization, Surface Coating, Railroad: SIC 374, Total: All Solvent Types	VOC	114.0920	131.3134
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-PRI	115.2453	121.2084
42029	Chester	2805035000	Miscellaneous Area Sources, Agriculture Production - Livestock, Horses and Ponies Waste Emissions, Not Elsewhere Classified	NH3	115.7640	143.4436
42045	Delaware	2302000000	Industrial Processes, Food and Kindred Products: SIC 20, All Processes, Total	VOC	116.0600	119.2376
42029	Chester	2415300000	Solvent Utilization, Degreasing, All Industries: Cold Cleaning, Total: All Solvent Types	VOC	116.1830	124.8404
42017	Bucks	2461021000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Cutback Asphalt, Total: All Solvent Types	VOC	116.5212	140.1863
42091	Montgomery	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	SO2	117.3211	204.3716
42029	Chester	2401020000	Solvent Utilization, Surface Coating, Wood Furniture: SIC 25, Total: All Solvent Types	VOC	118.5668	129.3665
42029	Chester	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	VOC	119.1123	129.9617
42091	Montgomery	2630020010	Waste Disposal, Treatment, and Recovery	VOC	121.5359	130.2120
42017	Bucks	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-FIL	121.5900	162.0980
42017	Bucks	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM25-PRI	121.5900	162.0980
42017	Bucks	2104011000	Stationary Source Fuel Combustion, Residential, Kerosene, Total: All Heater Types	SO2	122.4360	213.2817
42029	Chester	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	NOX	123.0029	131.9901
42101	Philadelphia	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	VOC	123.2478	58.7273
42045	Delaware	2401050000	Solvent Utilization, Surface Coating, Miscellaneous Finished Metals: SIC 34 - (341 + 3498), Total: All Solvent Types	VOC	123.7110	153.3183

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42029	Chester	2401090000	Solvent Utilization, Surface Coating, Miscellaneous Manufacturing, Total: All Solvent Types	VOC	124.3980	133.6675
42101	Philadelphia	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	VOC	125.1077	135.6306
42017	Bucks	2401020000	Solvent Utilization, Surface Coating, Wood Furniture: SIC 25, Total: All Solvent Types	VOC	127.3313	135.6256
42045	Delaware	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM10-PRI	127.7007	82.2943
42045	Delaware	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM25-PRI	127.7007	82.2943
42045	Delaware	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	NOX	129.1694	138.6071
42029	Chester	2805021100	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Confinement	NH3	129.7560	160.7812
42029	Chester	2805021200	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Manure handling and storage	NH3	129.7560	160.7812
42017	Bucks	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-FIL	133.8272	165.8258
42017	Bucks	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-PRI	133.8272	165.8258
42101	Philadelphia	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	NOX	134.0258	132.0954
42029	Chester	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM10-PRI	135.6543	87.4198
42029	Chester	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM25-PRI	135.6543	87.4198
42017	Bucks	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM10-PRI	137.8852	88.8574
42017	Bucks	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM25-PRI	137.8852	88.8574
42091	Montgomery	2401008000	Solvent Utilization, Surface Coating, Traffic Markings, Total: All Solvent Types	VOC	140.7460	101.0766
42101	Philadelphia	2401020000	Solvent Utilization, Surface Coating, Wood Furniture: SIC 25, Total: All Solvent Types	VOC	141.4831	139.4454
42017	Bucks	2415300000	Solvent Utilization, Degreasing, All Industries: Cold Cleaning, Total: All Solvent Types	VOC	143.1052	152.2828
42045	Delaware	2415300000	Solvent Utilization, Degreasing, All Industries: Cold Cleaning, Total: All Solvent Types	VOC	143.3717	143.0173
42017	Bucks	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM25-PRI	143.3832	150.2822
42091	Montgomery	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-FIL	143.4974	163.0138

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42091	Montgomery	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-PRI	143.4974	163.0138
42029	Chester	2401200000	Solvent Utilization, Surface Coating, Other Special Purpose Coatings, Total: All Solvent Types	VOC	144.0510	106.8016
42029	Chester	2401100000	Solvent Utilization, Surface Coating, Industrial Maintenance Coatings, Total: All Solvent Types	VOC	144.0512	106.8018
42091	Montgomery	2302000000	Industrial Processes, Food and Kindred Products: SIC 20, All Processes, Total	VOC	144.2500	148.1994
42029	Chester	2805023300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - drylot/pasture dairy, Land application of manure	NH3	145.2000	179.9179
42101	Philadelphia	2401045000	Solvent Utilization, Surface Coating, Metal Coils: SIC 3498, Total: All Solvent Types	VOC	146.2600	186.4594
42045	Delaware	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	VOC	146.4389	152.2840
42091	Montgomery	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM25-PRI	149.2169	153.5502
42017	Bucks	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-FIL	150.4287	170.8878
42017	Bucks	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-PRI	150.4287	170.8878
42017	Bucks	2425000000	Solvent Utilization, Graphic Arts, All Processes, Total: All Solvent Types	VOC	152.4197	162.1947
42091	Montgomery	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM10-PRI	154.3590	158.8416
42091	Montgomery	2601010000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Industrial, Total	VOC	155.7584	164.1578
42017	Bucks	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	VOC	156.5224	166.7182
42045	Delaware	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	VOC	158.1202	75.3438
42091	Montgomery	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-FIL	158.1500	210.8380
42091	Montgomery	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-PRI	158.1500	210.8380
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-FIL	158.5964	166.8026
42091	Montgomery	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM10-PRI	158.8587	102.3734
42091	Montgomery	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	PM25-PRI	158.8587	102.3734
42091	Montgomery	2399010000	Refrigerant Losses	NH3	161.3250	161.3250
42091	Montgomery	2415300000	Solvent Utilization, Degreasing, All Industries: Cold Cleaning, Total: All Solvent Types	VOC	162.6228	169.2572
42045	Delaware	2401090000	Solvent Utilization, Surface Coating, Miscellaneous Manufacturing, Total: All Solvent Types	VOC	163.5305	163.1263

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42029	Chester	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	VOC	167.9684	80.0365
42101	Philadelphia	2415300000	Solvent Utilization, Degreasing, All Industries: Cold Cleaning, Total: All Solvent Types	VOC	171.4021	171.3009
42045	Delaware	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-FIL	172.3799	171.9538
42045	Delaware	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-PRI	172.3799	171.9538
42101	Philadelphia	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM10-PRI	172.8761	187.4168
42101	Philadelphia	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	PM25-PRI	172.8761	187.4168
42017	Bucks	2401090000	Solvent Utilization, Surface Coating, Miscellaneous Manufacturing, Total: All Solvent Types	VOC	173.0320	184.1289
42017	Bucks	2401055000	Solvent Utilization, Surface Coating, Machinery and Equipment: SIC 35, Total: All Solvent Types	VOC	174.7515	368.6879
42017	Bucks	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-FIL	175.4800	233.9415
42017	Bucks	2399000000	Industrial Processes, Industrial Processes: NEC, Industrial Processes: NEC, Total	PM10-PRI	175.4800	233.9415
42045	Delaware	2401200000	Solvent Utilization, Surface Coating, Other Special Purpose Coatings, Total: All Solvent Types	VOC	177.0990	121.8962
42045	Delaware	2401100000	Solvent Utilization, Surface Coating, Industrial Maintenance Coatings, Total: All Solvent Types	VOC	177.0992	121.8964
42029	Chester	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	NOX	179.3085	187.9361
42045	Delaware	2501060102	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 2: Displacement Loss/Controlled	VOC	179.7119	122.9471
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM25-PRI	179.7426	189.0430
42017	Bucks	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	NOX	180.9040	194.1217
42101	Philadelphia	2415200000	Solvent Utilization, Degreasing, All Industries: Conveyerized Degreasing, Total: All Solvent Types	VOC	181.3359	181.2289
42091	Montgomery	2401020000	Solvent Utilization, Surface Coating, Wood Furniture: SIC 25, Total: All Solvent Types	VOC	183.1584	193.0353
42045	Delaware	2805030000	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry Waste Emissions, Not Elsewhere Classified (see also 28-05-007, -008, -009)	NH3	183.4800	227.3508
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-FIL	185.5083	195.1070
42029	Chester	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-FIL	186.1077	211.4193
42029	Chester	2311010000	Industrial Processes, Construction: SIC 15 - 17, Residential, Total	PM10-PRI	186.1077	211.4193

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42029	Chester	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	NOX	187.1014	202.8387
42017	Bucks	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-FIL	187.5437	199.5712
42017	Bucks	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-PRI	187.5437	199.5712
42045	Delaware	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-FIL	187.7699	187.3058
42045	Delaware	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-PRI	187.7699	187.3058
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-FIL	190.8155	200.6889
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-PRI	191.9607	201.8933
42017	Bucks	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM10-PRI	192.8760	124.2952
42017	Bucks	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM25-PRI	192.8760	124.2952
42017	Bucks	2401100000	Solvent Utilization, Surface Coating, Industrial Maintenance Coatings, Total: All Solvent Types	VOC	195.3408	143.4292
42017	Bucks	2401200000	Solvent Utilization, Surface Coating, Other Special Purpose Coatings, Total: All Solvent Types	VOC	195.3410	143.4293
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-PRI	197.4526	207.6694
42029	Chester	2401005000	Solvent Utilization, Surface Coating, Auto Refinishing: SIC 7532, Total: All Solvent Types	VOC	202.2074	217.2700
42091	Montgomery	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	VOC	202.8104	213.7471
42091	Montgomery	2640000000	Waste Disposal, Treatment, and Recovery, TSDFs, All TSDF Types, Total: All Processes	VOC	204.1400	218.7129
42101	Philadelphia	2399010000	Refrigerant Losses	NH3	207.9600	207.9600
42091	Montgomery	2401055000	Solvent Utilization, Surface Coating, Machinery and Equipment: SIC 35, Total: All Solvent Types	VOC	209.0935	441.1421
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	NOX	209.1473	219.9692
42045	Delaware	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	SO2	209.2348	220.0612
42029	Chester	2501060102	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 2: Displacement Loss/Controlled	VOC	212.6772	145.4999
42029	Chester	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	SO2	215.2209	226.3570
42045	Delaware	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	NOX	217.4197	227.8811
42045	Delaware	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	NOX	218.3490	220.6526

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42101	Philadelphia	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	NOX	219.5750	235.6183
42029	Chester	2461800000	Solvent Utilization, Miscellaneous Non-industrial: Commercial, Pesticide Application: All Processes, Total: All Solvent Types	VOC	219.9531	236.3429
42045	Delaware	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	VOC	221.1810	105.3921
42091	Montgomery	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM25-PRI	222.0842	232.7700
42091	Montgomery	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM10-PRI	222.2141	143.2015
42091	Montgomery	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	PM25-PRI	222.2141	143.2015
42091	Montgomery	2401090000	Solvent Utilization, Surface Coating, Miscellaneous Manufacturing, Total: All Solvent Types	VOC	223.6551	232.7793
42101	Philadelphia	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM25-PRI	224.5602	235.3651
42101	Philadelphia	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-FIL	225.6367	225.5036
42101	Philadelphia	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-PRI	225.6367	225.5036
42091	Montgomery	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-FIL	226.3602	257.1463
42091	Montgomery	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM25-PRI	226.3602	257.1463
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	NOX	227.9977	239.7950
42101	Philadelphia	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	VOC	230.4101	231.2825
42017	Bucks	2801700003	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Nitrogen Solutions	NH3	230.8328	286.0258
42029	Chester	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	VOC	234.9569	111.9563
42017	Bucks	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	VOC	238.8208	113.7974
42017	Bucks	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-FIL	238.8700	253.1231
42017	Bucks	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-PRI	238.8700	253.1231
42029	Chester	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-FIL	238.8700	253.1231
42029	Chester	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-PRI	238.8700	253.1231
42045	Delaware	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-FIL	238.8700	253.1231
42045	Delaware	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-PRI	238.8700	253.1231
42091	Montgomery	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-FIL	238.8700	253.1231
42091	Montgomery	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-PRI	238.8700	253.1231
42101	Philadelphia	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-FIL	238.8700	253.1231
42101	Philadelphia	2325000000	Industrial Processes, Mining and Quarrying: SIC 14, All Processes, Total	PM10-PRI	238.8700	253.1231

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42091	Montgomery	2401100000	Solvent Utilization, Surface Coating, Industrial Maintenance Coatings, Total: All Solvent Types	VOC	245.2854	176.1516
42091	Montgomery	2401200000	Solvent Utilization, Surface Coating, Other Special Purpose Coatings, Total: All Solvent Types	VOC	245.2855	176.1516
42017	Bucks	2501060102	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 2: Displacement Loss/Controlled	VOC	247.3536	169.2232
42045	Delaware	2401005000	Solvent Utilization, Surface Coating, Auto Refinishing: SIC 7532, Total: All Solvent Types	VOC	248.5975	247.9800
42017	Bucks	2401025000	Solvent Utilization, Surface Coating, Metal Furniture: SIC 25, Total: All Solvent Types	VOC	255.5200	293.9477
42029	Chester	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-FIL	256.2249	275.3175
42029	Chester	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM25-PRI	256.2249	275.3175
42029	Chester	2440020000	Solvent Utilization, Miscellaneous Industrial, Adhesive (Industrial) Application, Total: All Solvent Types	VOC	262.0700	349.3791
42101	Philadelphia	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-FIL	262.9346	298.6950
42101	Philadelphia	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-PRI	262.9346	298.6950
42101	Philadelphia	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM25-PRI	264.8772	272.5693
42029	Chester	2415360000	Solvent Utilization, Degreasing, Auto Repair Services (SIC 75): Cold Cleaning, Total: All Solvent Types	VOC	265.5944	285.3852
42091	Montgomery	2425000000	Solvent Utilization, Graphic Arts, All Processes, Total: All Solvent Types	VOC	267.1801	278.0799
42101	Philadelphia	2401050000	Solvent Utilization, Surface Coating, Miscellaneous Finished Metals: SIC 34 - (341 + 3498), Total: All Solvent Types	VOC	267.8643	331.9712
42029	Chester	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-FIL	268.0607	332.1551
42029	Chester	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM25-PRI	268.0607	332.1551
42101	Philadelphia	2302050000	Industrial Processes, Food and Kindred Products: SIC 20, Bakery Products, Total	VOC	269.0745	265.1991
42029	Chester	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	SO2	269.6720	289.3756
42091	Montgomery	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	NOX	270.0751	289.8081
42101	Philadelphia	2401008000	Solvent Utilization, Surface Coating, Traffic Markings, Total: All Solvent Types	VOC	273.9999	188.9484
42101	Philadelphia	2302002200	Industrial Processes, Food and Kindred Products: SIC 20, Commercial Cooking - Charbroiling, Under-fired Charbroiling	PM10-PRI	274.0051	281.9622
42017	Bucks	2401005000	Solvent Utilization, Surface Coating, Auto Refinishing: SIC 7532, Total: All Solvent Types	VOC	274.2035	291.7800
42091	Montgomery	2104008010	Stationary Source Fuel Combustion, Residential, Wood, Woodstoves: General	VOC	275.1474	131.1070

**Philadelphia Nonattainment Area
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42045	Delaware	2425000000	Solvent Utilization, Graphic Arts, All Processes, Total: All Solvent Types	VOC	281.6337	280.9375
42017	Bucks	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	NOX	283.6650	297.3138
42029	Chester	2805021300	Miscellaneous Area Sources, Agriculture Production - Livestock, Dairy cattle - scrape dairy, Land application of manure	NH3	295.6800	366.3783
42045	Delaware	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	SO2	301.4272	323.4510
42045	Delaware	2440020000	Solvent Utilization, Miscellaneous Industrial, Adhesive (Industrial) Application, Total: All Solvent Types	VOC	302.6000	403.4118
42101	Philadelphia	2501060102	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 2: Displacement Loss/Controlled	VOC	305.3464	208.8981
42029	Chester	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	NOX	305.9465	309.1742
42029	Chester	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	SO2	309.0735	323.9449
42017	Bucks	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	NOX	318.7385	345.5479
42091	Montgomery	2401050000	Solvent Utilization, Surface Coating, Miscellaneous Finished Metals: SIC 34 - (341 + 3498), Total: All Solvent Types	VOC	324.1625	401.7430
42045	Delaware	2415360000	Solvent Utilization, Degreasing, Auto Repair Services (SIC 75): Cold Cleaning, Total: All Solvent Types	VOC	326.5267	325.7195
42091	Montgomery	2501060102	Storage and Transport, Petroleum and Petroleum Product Storage, Gasoline Service Stations, Stage 2: Displacement Loss/Controlled	VOC	330.6714	226.2237
42017	Bucks	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	VOC	334.0663	159.1817
42045	Delaware	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	NOX	335.0278	335.8563
42029	Chester	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM10-PRI	336.3102	352.4921
42101	Philadelphia	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	NOX	337.1806	338.0144
42017	Bucks	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-FIL	339.5208	385.6973
42017	Bucks	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-PRI	339.5208	385.6973
42091	Montgomery	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-FIL	343.5904	390.3204
42091	Montgomery	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-PRI	343.5904	390.3204
42091	Montgomery	2401005000	Solvent Utilization, Surface Coating, Auto Refinishing: SIC 7532, Total: All Solvent Types	VOC	344.3118	358.3500
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	NOX	355.5973	373.9970
42091	Montgomery	2620030000	Waste Disposal, Treatment, and Recovery, Landfills, Municipal, Total	VOC	357.5463	383.0704

**Philadelphia Nonattainment Area
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42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-FIL	357.5722	376.0741
42017	Bucks	2415360000	Solvent Utilization, Degreasing, Auto Repair Services (SIC 75): Cold Cleaning, Total: All Solvent Types	VOC	360.1596	383.2574
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-PRI	370.0095	389.1549
42017	Bucks	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-FIL	371.6579	395.4931
42017	Bucks	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-PRI	371.6579	395.4931
42029	Chester	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	NOX	371.9444	372.8642
42045	Delaware	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM10-PRI	384.6445	403.1520
42091	Montgomery	2104008002	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: Insert; non-EPA certified	VOC	384.8806	183.3945
42017	Bucks	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	SO2	388.5205	416.9077
42091	Montgomery	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-FIL	388.9874	404.8566
42091	Montgomery	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-PRI	388.9874	404.8566
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-FIL	389.8001	409.9696
42101	Philadelphia	2601020000	Waste Disposal, Treatment, and Recovery, On-site Incineration, Commercial/Institutional, Total	VOC	393.8021	388.1303
42017	Bucks	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	SO2	403.3057	424.1740
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-PRI	403.3584	424.2294
42091	Montgomery	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-FIL	410.0480	508.0921
42091	Montgomery	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-PRI	410.0480	508.0921
42045	Delaware	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	VOC	413.4948	415.0603
42045	Delaware	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	SO2	419.2577	439.4307
42017	Bucks	2401040000	Solvent Utilization, Surface Coating, Metal Cans: SIC 341, Total: All Solvent Types	VOC	422.0300	449.5208
42045	Delaware	2401040000	Solvent Utilization, Surface Coating, Metal Cans: SIC 341, Total: All Solvent Types	VOC	422.0300	438.8752
42017	Bucks	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	NOX	433.2009	437.7712
42101	Philadelphia	2401090000	Solvent Utilization, Surface Coating, Miscellaneous Manufacturing, Total: All Solvent Types	VOC	438.8597	438.6008

**Philadelphia Nonattainment Area
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42029	Chester	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	VOC	439.2486	440.9116
42091	Montgomery	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	NOX	439.3646	460.5051
42101	Philadelphia	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	SO2	439.6556	462.4048
42101	Philadelphia	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	NOX	444.2630	465.6392
42091	Montgomery	2415360000	Solvent Utilization, Degreasing, Auto Repair Services (SIC 75): Cold Cleaning, Total: All Solvent Types	VOC	452.2450	470.6948
42029	Chester	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-FIL	454.3212	488.1750
42029	Chester	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM25-PRI	454.3212	488.1750
42017	Bucks	2801700004	Miscellaneous Area Sources, Agriculture Production - Crops, Fertilizer Application, Urea	NH3	458.8980	568.6223
42029	Chester	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-FIL	461.1229	523.8379
42029	Chester	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM25-PRI	461.1229	523.8379
42101	Philadelphia	2401025000	Solvent Utilization, Surface Coating, Metal Furniture: SIC 25, Total: All Solvent Types	VOC	467.1225	537.3731
42029	Chester	2805007100	Miscellaneous Area Sources, Agriculture Production - Livestock, Poultry production layers with dry manure management systems, Confinement	NH3	469.9200	582.2798
42101	Philadelphia	2401100000	Solvent Utilization, Surface Coating, Industrial Maintenance Coatings, Total: All Solvent Types	VOC	477.5139	329.2902
42101	Philadelphia	2401200000	Solvent Utilization, Surface Coating, Other Special Purpose Coatings, Total: All Solvent Types	VOC	477.5140	329.2903
42017	Bucks	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM10-PRI	501.8411	525.9877
42045	Delaware	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-FIL	502.9349	571.3366
42045	Delaware	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-PRI	502.9349	571.3366
42017	Bucks	2401050000	Solvent Utilization, Surface Coating, Miscellaneous Finished Metals: SIC 34 - (341 + 3498), Total: All Solvent Types	VOC	505.4260	626.3876
42029	Chester	2501060300	Portable Gasoline Containers	VOC	508.3552	390.0120
42091	Montgomery	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	NOX	511.2326	512.4969
42045	Delaware	2501060300	Portable Gasoline Containers	VOC	531.4441	378.5131
42017	Bucks	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	NOX	533.5212	534.8406
42101	Philadelphia	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	SO2	539.0114	578.3943
42017	Bucks	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	SO2	547.0006	573.3201

**Philadelphia Nonattainment Area
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42045	Delaware	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	NOX	556.1270	602.9034
42029	Chester	2401001000	Solvent Utilization, Surface Coating, Architectural Coatings, Total: All Solvent Types	VOC	562.1778	416.8073
42029	Chester	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-FIL	569.2560	646.6776
42029	Chester	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-PRI	569.2560	646.6776
42091	Montgomery	2103004000	Stationary Source Fuel Combustion, Commercial/Institutional, Distillate Oil, Total: Boilers and IC Engines	SO2	596.6510	640.2453
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-FIL	607.9528	639.4101
42017	Bucks	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-FIL	614.2596	697.8020
42017	Bucks	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-PRI	614.2596	697.8020
42017	Bucks	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	VOC	624.5324	626.8969
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	PM10-PRI	629.0990	661.6505
42091	Montgomery	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	NOX	630.1598	683.1632
42101	Philadelphia	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	NOX	630.1642	636.8124
42029	Chester	2401025000	Solvent Utilization, Surface Coating, Metal Furniture: SIC 25, Total: All Solvent Types	VOC	638.7238	734.7815
42091	Montgomery	2401040000	Solvent Utilization, Surface Coating, Metal Cans: SIC 341, Total: All Solvent Types	VOC	642.0845	676.7092
42101	Philadelphia	2630020010	Waste Disposal, Treatment, and Recovery	VOC	645.6883	691.7820
42091	Montgomery	2103006000	Stationary Source Fuel Combustion, Commercial/Institutional, Natural Gas, Total: Boilers and IC Engines	NOX	666.8686	673.9041
42017	Bucks	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-FIL	669.1358	829.1289
42017	Bucks	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-PRI	669.1358	829.1289
42101	Philadelphia	2401005000	Solvent Utilization, Surface Coating, Auto Refinishing: SIC 7532, Total: All Solvent Types	VOC	670.2952	669.8900
42091	Montgomery	2102001000	Stationary Source Fuel Combustion, Industrial, Anthracite Coal, Total: All Boiler Types	SO2	685.7101	721.1908
42045	Delaware	2401001000	Solvent Utilization, Surface Coating, Architectural Coatings, Total: All Solvent Types	VOC	691.1518	475.7158
42091	Montgomery	2104008001	Stationary Source Fuel Combustion, Residential, Wood, Fireplaces: General	VOC	719.5289	722.2530

**Philadelphia Nonattainment Area
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42017	Bucks	2501060300	Portable Gasoline Containers	VOC	731.4887	555.7780
42091	Montgomery	2440020000	Solvent Utilization, Miscellaneous Industrial, Adhesive (Industrial) Application, Total: All Solvent Types	VOC	756.9400	1,009.1161
42017	Bucks	2401001000	Solvent Utilization, Surface Coating, Architectural Coatings, Total: All Solvent Types	VOC	762.3419	559.7504
42101	Philadelphia	2440020000	Solvent Utilization, Miscellaneous Industrial, Adhesive (Industrial) Application, Total: All Solvent Types	VOC	773.1900	1,030.7798
42091	Montgomery	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-FIL	773.9106	805.4831
42091	Montgomery	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-PRI	773.9106	805.4831
42091	Montgomery	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM10-PRI	777.2946	814.6949
42101	Philadelphia	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	PM10-PRI	785.9605	823.7778
42045	Delaware	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	SO2	792.8991	794.8599
42101	Philadelphia	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	SO2	797.9940	799.9675
42091	Montgomery	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	SO2	847.2414	888.0073
42101	Philadelphia	2103001000	Stationary Source Fuel Combustion, Commercial/Institutional, Anthracite Coal, Total: All Boiler Types	SO2	856.6872	897.9076
42101	Philadelphia	2425000000	Solvent Utilization, Graphic Arts, All Processes, Total: All Solvent Types	VOC	864.9179	864.4076
42029	Chester	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	SO2	880.2683	882.4452
42101	Philadelphia	2415360000	Solvent Utilization, Degreasing, Auto Repair Services (SIC 75): Cold Cleaning, Total: All Solvent Types	VOC	880.4163	879.8968
42101	Philadelphia	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-FIL	922.9684	1,048.4968
42101	Philadelphia	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-PRI	922.9684	1,048.4968
42091	Montgomery	2401001000	Solvent Utilization, Surface Coating, Architectural Coatings, Total: All Solvent Types	VOC	957.2571	687.4535
42091	Montgomery	2501060300	Portable Gasoline Containers	VOC	958.9638	712.6332
42045	Delaware	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-FIL	1,054.3739	1,197.7740
42045	Delaware	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-PRI	1,054.3739	1,197.7740
42101	Philadelphia	2501060300	Portable Gasoline Containers	VOC	1,116.4156	796.6504
42091	Montgomery	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	SO2	1,209.9172	1,212.9093
42017	Bucks	2104004000	Stationary Source Fuel Combustion, Residential, Distillate Oil, Total: All Combustor Types	SO2	1,262.6668	1,265.7894

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42029	Chester	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-FIL	1,340.3037	1,660.7757
42029	Chester	2801000003	Miscellaneous Area Sources, Agriculture Production - Crops, Agriculture - Crops, Tilling	PM10-PRI	1,340.3037	1,660.7757
42091	Montgomery	2401025000	Solvent Utilization, Surface Coating, Metal Furniture: SIC 25, Total: All Solvent Types	VOC	1,491.5980	1,715.9194
42029	Chester	2465000000	Solvent Utilization, Miscellaneous Non-industrial: Consumer, All Products/Processes, Total: All Solvent Types	VOC	1,593.1054	1,468.7379
42017	Bucks	2620030000	Waste Disposal, Treatment, and Recovery, Landfills, Municipal, Total	VOC	1,779.3541	1,906.3768
42101	Philadelphia	2401001000	Solvent Utilization, Surface Coating, Architectural Coatings, Total: All Solvent Types	VOC	1,863.5578	1,285.0962
42017	Bucks	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-FIL	1,873.4393	1,993.5867
42017	Bucks	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-PRI	1,873.4393	1,993.5867
42045	Delaware	2465000000	Solvent Utilization, Miscellaneous Non-industrial: Consumer, All Products/Processes, Total: All Solvent Types	VOC	1,958.5932	1,676.3188
42101	Philadelphia	2104006000	Stationary Source Fuel Combustion, Residential, Natural Gas, Total: All Combustor Types	NOX	2,138.2040	2,318.0505
42017	Bucks	2465000000	Solvent Utilization, Miscellaneous Non-industrial: Consumer, All Products/Processes, Total: All Solvent Types	VOC	2,160.3325	1,972.4381
42045	Delaware	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-FIL	2,238.5244	2,232.9908
42045	Delaware	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-PRI	2,238.5244	2,232.9908
42091	Montgomery	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-FIL	2,263.6018	2,571.4630
42091	Montgomery	2311020000	Industrial Processes, Construction: SIC 15 - 17, Industrial/Commercial/Institutional, Total	PM10-PRI	2,263.6018	2,571.4630
42029	Chester	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-FIL	2,559.5879	2,750.3156
42029	Chester	2296000000	Mobile Sources, Unpaved Roads, All Unpaved Roads, Total: Fugitives	PM10-PRI	2,559.5879	2,750.3156
42091	Montgomery	2465000000	Solvent Utilization, Miscellaneous Non-industrial: Consumer, All Products/Processes, Total: All Solvent Types	VOC	2,712.6853	2,422.4360
42101	Philadelphia	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-FIL	3,327.9565	3,325.9930
42101	Philadelphia	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-PRI	3,327.9565	3,325.9930
42017	Bucks	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-FIL	3,395.2081	3,856.9734
42017	Bucks	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-PRI	3,395.2081	3,856.9734
42091	Montgomery	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-FIL	3,435.9041	3,903.2043
42091	Montgomery	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-PRI	3,435.9041	3,903.2043
42017	Bucks	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-FIL	4,274.2585	4,548.3752
42017	Bucks	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-PRI	4,274.2585	4,548.3752
42029	Chester	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-FIL	4,572.4088	4,913.1218
42029	Chester	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-PRI	4,572.4088	4,913.1218
42029	Chester	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-FIL	4,611.2287	5,238.3789
42029	Chester	2311030000	Industrial Processes, Construction: SIC 15 - 17, Road Construction, Total	PM10-PRI	4,611.2287	5,238.3789

**Philadelphia Nonattainment Area
PM 2.5 SIP Inventory**

42091	Montgomery	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-FIL	4,677.4204	4,868.2404
42091	Montgomery	2294000000	Mobile Sources, Paved Roads, All Paved Roads, Total: Fugitives	PM10-PRI	4,677.4204	4,868.2404
42101	Philadelphia	2465000000	Solvent Utilization, Miscellaneous Non-industrial: Consumer, All Products/Processes, Total: All Solvent Types	VOC	5,280.9697	4,528.3987