

# **AREA AND NONROAD 2007 BASE YEAR INVENTORIES**

## **FINAL REPORT**

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## I. INTRODUCTION

E.H. Pechan & Associates, Inc. (Pechan) is supporting the Southeastern States Air Resource Managers, Inc. (SESARM) in the Southeastern Modeling, Analysis, and Planning (SEMAP) project that is funded by the same ten states originally involved in the Visibility Improvement – State and Tribal Association of the Southeast (VISTAS) project. The SEMAP project addresses the next phase of ozone, fine particle, and regional haze assessment obligations of the SESARM member states. The SEMAP project is designed to produce technical analyses to aid the participating agencies in developing State Implementation Plans (SIPs) required by the Clean Air Act.

Pechan developed a set of draft 2007 area and nonroad source base year inventory emission estimates (Pechan, 2010). These estimates are reported by county and source classification code (SCC). These emissions inventories were developed using data from a number of sources:

- State/local (S/L) agency emissions data;
- 2007 year emissions data compiled from running EPA’s NONROAD model with a combination of EPA default and S/L agency-supplied inputs;
- 2007 area source emissions estimated by Pechan, generally developed using the emissions estimation procedures used to prepare EPA’s draft 2008 National Emissions Inventory (NEI);<sup>1</sup>
- 2008 commercial marine vessel and aircraft emission estimates from EPA’s draft 2008 NEI, modified by Pechan to reflect 2007 activity levels;
- 2007 Class I line-haul locomotive emission estimates provided by the Eastern Regional Technical Advisory Committee (ERTAC);
- 2008 ERTAC Class II/III line-haul locomotive emission estimates, modified by Pechan to reflect 2007 activity levels; and
- Emission estimates carried forward or grown from EPA’s 2002 area source NEI.<sup>2</sup>

This final inventory incorporates the following information into the draft 2007 area/nonroad source inventory:

1. Additional S/L agency data and comments to revise/remove emission estimates reported in the draft inventory;
2. 2007 ERTAC switchyard locomotive emission estimates; and
3. Effects of point source subtractions on source categories for which draft area source emission estimates reflect total emissions activity (e.g., industrial natural gas combustion).

The following sections provide additional details on the inventory development process. The major topics that are discussed are:

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<sup>1</sup> 2008 NEI methods rely on Eastern Regional Technical Advisory Committee (ERTAC) methods when available.

<sup>2</sup> Based on direction from S/L agencies, some 2002 NEI emission estimates were projected to 2007 using emission activity growth factors from Version 5.0 of the Economic Growth Analysis System (EGAS) (EPA, 2010).

- How Pechan identified source categories and/or pollutants that may be missing from the S/L agency supplied data;
- How Pechan integrated data from the various emission data sources (i.e., S/L agencies, Pechan defaults, ERTAC, and 2008 and 2002 NEI); and
- How Pechan quality assured the integrated emissions inventory.

The balance of this report is organized as follows. Section II describes the development of the stationary area source sector inventory. The development of the nonroad mobile source sector inventory is described in Section III. Section IV presents the area and nonroad source emission summaries for the final 2007 base year inventory for the SEMAP project. Section V presents the references that were consulted in preparing the final inventory in support of the SEMAP project.



## II. STATIONARY AREA SOURCE SECTOR INVENTORY

Pechan developed a final 2007 base year area source inventory for the SEMAP project from a combination of four data sources:

- 1) State/Local agency supplied area source emissions data;
- 2) Pechan 2007 area source emission estimates developed using the emission estimation methods from the 2008 NEI with adjustments to reflect 2007 emissions activity and to subtract point source emissions;
- 3) Pechan 2007 industrial and commercial/institutional fuel combustion area source emission estimates specifically developed for the SESARM states; and
- 4) Area source emission estimates carried forward or grown from EPA's 2002 nonpoint source NEI.

Table II-1 summarizes how these data sources were merged to create a comprehensive stationary area source inventory for jurisdictions covered by the SEMAP project. Although a separate fire emissions inventory is being developed by another contractor, in some cases S/L agencies requested that emissions for certain fire categories be included in our stationary area source inventory. The last row of Table II-1 summarizes S/L agency instructions related to Pechan generating emission estimates for certain fire source categories in this stationary area source inventory. The following sections provide more specifics on the contents of each of these data sources and how they were combined into the final 2007 area source inventory.

### A. AGENCY SUPPLIED INVENTORY DATA

Last Fall, Pechan commenced area source inventory development work by providing S/L agencies with a Technical Memorandum documenting the emission estimation methods and data Pechan was using to develop the U.S. Environmental Protection Agency (EPA)'s 2008 nonpoint source NEI (Pechan, 2009a). The purpose of this memorandum was to provide agencies with information to: (1) review and comment on the methods/data, and (2) assist agencies in evaluating the merits of the NEI methods/data relative to any S/L area source inventory development efforts. State and local agencies were then provided with several months to compile and transmit area source emissions data to Pechan.

Two state agencies (North Carolina and Virginia) and two local agencies (Jefferson County, Kentucky and Davidson County, Tennessee) provided area source data for the draft area source inventory (two additional local agencies provided data for the final area source inventory – Knox County and Shelby County, Tennessee). After receiving these S/L agency data, Pechan compared the source classification code (SCC) and pollutant coverage of these submittals against the SCCs/pollutants in the 2007 emissions data that Pechan was developing for this project (hereafter referred to as the “Pechan default inventory”).

To assist in obtaining direction from SESARM agencies on how to merge the data from these sources, Pechan first identified the SCC/pollutant combinations in the Pechan default inventory that matched to S/L agency data. Next, Pechan reviewed remaining S/L agency SCC/pollutant combinations against Pechan defaults to identify whether it may be possible that these emissions

**Table II-1. Overview of Area Source Inventory Components by State/Local Agency**

	Alabama	Florida	Georgia	Kentucky-Jefferson County	Kentucky-Rest of State	Mississippi	North Carolina	South Carolina	Tennessee-Davidson County	Tennessee-Knox County	Tennessee-Shelby County	Tennessee-Rest of State	Virginia	West Virginia
<b>Agency Contact</b>	Lisa Cole	Kelly Stevens	Byeong Kim	Craig Butler	Martin Luther	Elliott Bickerstaff	Phyllis Jones	Carla Bedenbaugh	John Finke	Steve McDaniel	Chris Boyd	Amanda Davis	Thomas Foster	Bob Betterton
<b>Area Source Emissions Data</b>	Combination of Agency data and Pechan defaults, supplemented with carry-forward categories from 2002 NEI grown using EGAS	Pechan defaults, supplemented with carry-forward categories from 2002 NEI (certain SCCs treated as majority of other states; combination of EGAS and carry forward)	Pechan defaults, supplemented with carry-forward categories from 2005 GA CERR submission grown using EGAS	Combination of Agency data and Pechan defaults.	Pechan defaults, supplemented with carry-forward categories from 2002 NEI grown using EGAS	Pechan defaults, supplemented with carry-forward categories from 2002 NEI (some categories grown using EGAS, others carried forward)	Combination of Agency data and Pechan defaults.	Pechan defaults, supplemented with carry-forward categories from 2002 NEI grown using EGAS	Combination of Agency data and Pechan defaults.	Combination of Agency data and Pechan defaults, supplemented with carry-forward categories from 2002 NEI.	Combination of Agency data and Pechan defaults, supplemented with carry-forward categories from 2002 NEI.	Combination of Agency data (2 SCCs only) and Pechan defaults, supplemented with carry-forward categories from 2002 NEI	Combination of Agency data and Pechan defaults, supplemented with carry-forward categories from 2002 NEI	Combination of Agency data (Mining and Quarrying only) and Pechan defaults, supplemented with carry-forward categories from 2002 NEI
<b>Handling of Fire Source Categories</b>	Include Land Clearing Debris Burning in area inventory			Include Land Clearing Debris Burning in area inventory.			Do not include Land Clearing Debris estimates. Do not delete Agricultural Burning emission estimates.	Include all NEI-based burning categories (e.g., Land Clearing Debris and Residential Waste)			Include Agency Land Clearing Debris estimates.	Include Agency Land Clearing Debris estimates.	Include Land Clearing Debris Burning estimates in area inventory	Do not include Land Clearing Debris Burning (such burning is prohibited)

were covered in the Pechan default inventory under different SCCs. Pechan then developed a list of potential indirect matches between the two data sets for agency review. This list was compiled in an Excel worksheet. Next, Pechan developed a separate worksheet that listed SCC/pollutant combinations in the S/L supplied area source inventory that we were unable to either directly or indirectly match to combinations in the Pechan default inventory. A list of SCC/pollutant combinations in the Pechan default inventory that we were unable to directly or indirectly match to combinations in the S/L agency inventory was also prepared in a separate worksheet. Finally, Pechan developed a worksheet that contained all S/L agency inventory SCC/pollutant combinations with emissions equal to "0." The above worksheets were saved in a single Excel workbook for each Agency. In addition to these workbooks, Pechan transmitted a Word document identifying questions on how to merge the two data sets (e.g., where S/L agency emissions are reported as zero, should Pechan replace any of these with emissions from the Pechan default inventory?). After reviewing S/L agency responses to these questions, Pechan transmitted any follow-up questions that were necessary to clarify S/L agency guidance.

## **B. DEVELOPMENT OF PECHAN DEFAULT 2007 AREA SOURCE INVENTORY**

Pechan created a default 2007 area source inventory that includes all of the source categories covered by the 2008 nonpoint source NEI. For all source categories except industrial and commercial/institutional (ICI) fuel combustion, Pechan either directly incorporated emissions data from the 2008 nonpoint source NEI (when the NEI represented use of 2007 emissions activity data), or recalculated the NEI emission estimates to reflect 2007 activity levels (when the NEI reflected 2006 or 2008 activity levels) and/or to remove emissions associated with activity reflected in the point source inventory. For ICI fuel combustion, the 2008 nonpoint source NEI only developed emissions activity estimates, not emission estimates. Because of the potential importance of these source categories and the availability of methodological improvements, Pechan utilized an emissions estimation method for ICI fuel combustion that incorporates a few refinements to the NEI method. The following section discusses how information from the 2008 nonpoint source NEI was used in this project. The subsequent section provides details on the ICI fuel combustion emissions estimation methods.

### **1. Nonpoint Source NEI**

Pechan is supporting EPA efforts to develop the 2008 nonpoint source NEI. Because of data availability issues, the 2008 NEI is comprised of data of various vintages (2006-2008). Table II-2 provides documentation of the 2008 nonpoint source NEI as follows:

- (1) Source Category – identifies the name of each general source category covered.
- (2) Source Classification Code(s) – lists the SCCs that are inventoried.
- (3) Source Classification Code Description – provides a description of each SCC.

Table II-2. 2008 NEI Area Source Categories for Which EPA Has Developed Emission Estimates

Source Category	Source Classification Code(s)	Source Classification Code Description	Link to Emission Calculation Documentation	Link to Emission Calculation Workbook	Year of Activity Data	Point Source Component
Agriculture Production – Livestock	28050nnnnn	Livestock	<a href="#">Agriculture_Production_Livestock_28050nnnnn_Documentation.zip</a>	<a href="#">Agriculture_Production_Livestock_28050nnnnn_Emissions.zip</a>	2007	Yes
Asphalt Paving	2461021000	Cutback Asphalt	<a href="#">Asphalt_Paving_Cutback_2461021000_Documentation.zip</a>	<a href="#">Asphalt_Paving_Cutback_2461021000_Emissions.zip</a>	2008	No
	2461022000	Emulsified Asphalt	<a href="#">Asphalt_Paving_Emulsified_2461022000_Documentation.zip</a>	<a href="#">Asphalt_Paving_Emulsified_2461022000_Emissions.zip</a>	2008	No
Aviation Gasoline Distribution: Stage I	2501080050	Aviation Gasoline: Stage I	<a href="#">Aviation_Gasoline_Distribution_Stage_I_2501080050_Documentation.zip</a>	<a href="#">Aviation_Gasoline_Distribution_Stage_I_2501080050_Emissions.zip</a>	2008	No
Aviation Gasoline Distribution: Stage II	2501080100	Aviation Gasoline: Stage II	<a href="#">Aviation_Gasoline_Distribution_Stage_II_2501080100_Documentation.zip</a>	<a href="#">Aviation_Gasoline_Distribution_Stage_II_2501080100_Emissions.zip</a>	2008	No
Commercial Cooking	2302002nnn 2302003nnn	Commercial Cooking	<a href="#">Commercial_Cooking_2302002nnn_Documentation.zip</a>	<a href="#">Commercial_Cooking_2302002nnn_Emissions.zip</a>	2008	No
Construction Dust	2311010000	Residential Construction	<a href="#">Residential_Construction_2311010000_Documentation.zip</a>	<a href="#">Residential_Construction_2311010000_Emissions.zip</a>	2008	Yes
	2311020000	Non-Residential Construction	<a href="#">Non-Residential_Construction_2311020000_Documentation.zip</a>	<a href="#">Non-Residential_Construction_2311020000_Emissions.zip</a>	2008	Yes
	2311030000	Road Construction	<a href="#">Road_Construction_2311030000_Documentation.zip</a>	<a href="#">Road_Construction_2311030000_Emissions.zip</a>	2006	No
Fertilizer Application	28017000nn	Fertilizer Application	<a href="#">Fertilizer_Application_28017000nn_Documentation.zip</a>	<a href="#">Fertilizer_Application_28017000nn_Emissions.zip</a>	2007	No
Gasoline Distribution	25010110nn 25010120nn	Portable Fuel Containers	<a href="#">Portable_Fuel_Containers_25010110nn_25010120nn_Documentation.zip</a>	<a href="#">Portable_Fuel_Containers_25010110nn_25010120nn_Emissions.zip</a>	2008	No
	2501050120	Gasoline Distribution Stage I; Bulk Terminals	<a href="#">Gasoline_Distribution_Stage_I_Documentation.zip</a>	<a href="#">Gasoline_Distribution_Stage_I_Bulk_Terminals_2501050120_Emissions.zip</a>	2008	Yes
	2501055120	Gasoline Distribution Stage I; Bulk Plants	<a href="#">Gasoline_Distribution_Stage_I_Documentation.zip</a>	<a href="#">Gasoline_Distribution_Stage_I_Bulk_Plants_2501055120_Emissions.zip</a>	2008	Yes
	250106005n	Gasoline Distribution Stage I; Gasoline Service Station Unloading	<a href="#">Gasoline_Distribution_Stage_I_Documentation.zip</a>	<a href="#">Gasoline_Distribution_Stage_I_Service_Station_Unloading_250106005n_Emissions.zip</a>	2008	Yes
	2501060100	Gasoline Distribution Stage II; Gasoline Service Stations	<a href="#">Gasoline_Distribution_Stage_II_Documentation.zip</a>	<a href="#">Gasoline_Distribution_Stage_II_Gasoline_Service_Stations_2501060100_Emissions.zip</a>	2008	Yes
	2501060201	Gasoline Distribution Stage I; Underground storage tank, breathing and emptying	<a href="#">Gasoline_Distribution_Stage_I_Documentation.zip</a>	<a href="#">Gasoline_Distribution_Stage_I_UST_Breathing_and_Emptying_2501060201_CAP_Emissions.zip</a>	2008	Yes

Source Category	Source Classification Code(s)	Source Classification Code Description	Link to Emission Calculation Documentation	Link to Emission Calculation Workbook	Year of Activity Data	Point Source Component
	2505030120	Gasoline Distribution Stage I; Tank Trucks in Transit	<a href="#">Gasoline Distribution Stage I Documentation.n.zip</a>	<a href="#">Gasoline Distribution Stage I Tank Trucks in Transit 2505030120 Emissions.zip</a>	2008	Yes
	2505040120	Gasoline Distribution Stage I; Pipelines	<a href="#">Gasoline Distribution Stage I Documentation.n.zip</a>	<a href="#">Gasoline Distribution Stage I Pipelines 2505040120 CAP Emissions.zip</a>	2008	Yes
Open Burning	2610000100	Open Burning - Yard Waste - Leaves	<a href="#">Open Burning Yard Waste Leaf 2610000100 and Brush 2610000400 Documentation.zip</a>	<a href="#">Open Burning Yard Waste Leaf 261000100 Emissions.zip</a>	2008	No
	2610000400	Open Burning - Yard Waste - Brush	<a href="#">Open Burning Yard Waste Leaf 2610000100 and Brush 2610000400 Documentation.zip</a>	<a href="#">Open Burning Yard Waste Brush 261000400 Emissions.zip</a>	2008	No
	2610000500	Open Burning - Land Clearing Debris	<a href="#">Open Burning Land Clearing Debris 261000500 Documentation.zip</a>	<a href="#">Open Burning Land Clearing Debris 2610000500 Emissions.zip</a>	Multiple Years	No
	2610030000	Open Burning - Household Waste	<a href="#">Open Burning MSW 2610030000 Documentation.zip</a>	<a href="#">Open Burning MSW 2610030000 Emissions.zip</a>	2008	No
Paved and Unpaved Roads	2294000000	Paved Road Dust	<a href="#">Paved Roads 2294000000 Documentation.zip</a>	<a href="#">Paved Roads 2294000000 Emissions.zip</a>	2007	No
	2296000000	Unpaved Road Dust	<a href="#">Unpaved Roads 2296000000 Documentation.n.zip</a>	<a href="#">Unpaved Roads 2296000000 Emissions.zip</a>	2007	No
Publicly Owned Treatment Works (POTW)	2630020000	Publicly Owned Treatment Works (POTW)	<a href="#">Publicly Owned Treatment Works 2630020000 Documentation.zip</a>	<a href="#">Publicly Owned Treatment Works 630020000 Emissions.zip</a>	2008	Yes
Residential Heating	2104001000	Residential Anthracite Coal	<a href="#">Residential Coal 2104001000 2104002000 Documentation.zip</a>	<a href="#">Residential Coal 2104001000 2104002000 Emissions.zip</a>	2006	No
	2104002000	Residential Bituminous Coal	<a href="#">Residential Coal 2104001000 2104002000 Documentation.zip</a>	<a href="#">Residential Coal 2104001000 2104002000 Emissions.zip</a>	2006	No
	2104004000	Residential Distillate Oil	<a href="#">Residential Distillate Fuel 2104004000 Documentation.zip</a>	<a href="#">Residential Distillate Fuel 2104004000 Emissions.zip</a>	2006	No
	2104006000	Residential Natural Gas	<a href="#">Residential Natural Gas 2104006000 Documentation.zip</a>	<a href="#">Residential Natural Gas 2104006000 Emissions.zip</a>	2006	No
	2104007000	Residential LPG	<a href="#">Residential LPG 2104007000 Documentation.n.zip</a>	<a href="#">Residential LPG 2104007000 Emissions.zip</a>	2006	No
	2104008nnn 2104009000	Residential Wood Combustion and Wax Firelogs	<a href="#">Residential Wood Combustion Documentation.zip</a>	<a href="#">RWC 2008 Toolv4.1 Feb09 2010.zip</a>	Inputs represent various years	No
	2104011000	Residential Kerosene	<a href="#">Residential Kerosene 2104011000 Documentation.zip</a>	<a href="#">Residential Kerosene 2104011000 Emissions.zip</a>	2006	No
Solvent Usage - Surface Coatings	2401001000	Architectural Coatings	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Architectural Coating 2401001000 Emissions.zip</a>	2008	No

Source Category	Source Classification Code(s)	Source Classification Code Description	Link to Emission Calculation Documentation	Link to Emission Calculation Workbook	Year of Activity Data	Point Source Component
	2401005000	Automobile Refinishing	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Automobile Refinishing 2401005000 Emissions.zip</a>	2006	Yes
	2401008000	Traffic Paints	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Traffic Painting 2401008000 Emissions.zip</a>	2007	No
	2401015000	Factory Finished Wood	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Factory Finished Wood 2401015000 Emissions.zip</a>	2006	Yes
	2401020000	Wood Furniture and Fixtures	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Wood Furniture and Fixtures 2401020000 Emissions.zip</a>	2006	Yes
	2401025000	Metal Furniture	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Metal Furniture 2401025000 Emissions.zip</a>	2006	Yes
	2401030000	Paper, Film and Foil	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Paper Film and Foil 2401030000 Emissions.zip</a>	2006	Yes
	2401040000	Metal Cans	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Metal Can Coating 2401040000 Emissions.zip</a>	2006	Yes
	2401045000	Metal Sheet, Strip and Coils	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Metal Sheet Strip Coil 2401045000 Emissions.zip</a>	2006	Yes
	2401055000	Machinery and Equipment	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Machinery and Equipment 2401055000 Emissions.zip</a>	2006	Yes
	2401060000	Appliances	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Appliances 2401060000 Emissions.zip</a>	2006	Yes
	2401065000	Electronic and Other Electrical Coatings	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Electronic and Other Electrical Coatings 2401065000 Emissions.zip</a>	2006	Yes
	2401070000	Motor Vehicles	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Motor Vehicles 2401070000 Emissions.zip</a>	2006	Yes
	2401075000	Aircraft	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Aircraft 2401075000 Emissions.zip</a>	2006	Yes
	2401080000	Marine coatings	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Marine Coatings 2401080000 Emissions.zip</a>	2006	Yes
	2401085000	Railroads	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Railroad 2401085000 Emissions.zip</a>	2006	No
	2401090000	Misc. Manufacturing	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Misc Manufacturing 2401090000 Emissions.zip</a>	2006	Yes
	2401100000	Industrial Maintenance Coatings	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Industrial Maintenance Coating 2401100000 Emissions.zip</a>	2008	No
	2401200000	Other Special Purpose Coatings	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Surface Coating Other Special Purpose Coating 2401200000 Emissions.zip</a>	2008	No

Source Category	Source Classification Code(s)	Source Classification Code Description	Link to Emission Calculation Documentation	Link to Emission Calculation Workbook	Year of Activity Data	Point Source Component
Solvent Usage - Other	2415000000	Cleaning Products: Industrial and Institutional	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Cleaning Products Industrial and Institutional_2415000000_Emissions.zip</a>	2006	Yes
	2420000000	Dry Cleaning	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Dry Cleaning_2420000000_Emissions.zip</a>	2006	No
	2425000000	Graphic Arts	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Graphic Arts_2425000000_Emissions.zip</a>	2006	Yes
	2460100000	Consumer & Commercial - Personal Care Products (Cosmetics and Toiletries)	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer Solvents- Personal Care Products (Cosmetics and Toiletries)_2460100000_Emissions.zip</a>	2008	No
	2460200000	Consumer & Commercial - Household Cleaning Products	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer Solvents- Household Cleaning Products_2460200000_Emissions.zip</a>	2008	No
	2460400000	Consumer & Commercial - Automotive Aftermarket	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer SolventsAutomotive Aftermarket_2460400000_Emissions.zip</a>	2008	No
	2460500000	Consumer & Commercial - Coatings and Related Products	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer SolventsCoatings and Related Products_2460500000_Emissions.zip</a>	2008	No
	2460600000	Consumer & Commercial - Adhesives and Sealants	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer Solvents- Adhesives and Sealants_2460600000_Emissions.zip</a>	2008	No
	2460800000	Consumer & Commercial - FIFRA Regulated Products	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer Solvents_FIFRA Regulated Products_2460800000_Emissions</a>	2008	No
2460900000	Consumer & Commercial - Misc. Products	<a href="#">Solvent Utilization Documentation.zip</a>	<a href="#">Consumer Solvents- Misc. Products_2460900000_Emissions.zip</a>	2008	No	

- (4) Link to Emission Calculation Documentation – provides links to the detailed documentation of the NEI methods;<sup>3</sup>
- (5) Link to Emission Calculation Workbook – provides a link to the draft 2008 NEI emissions or activity data;
- (6) Year of Activity Data – identifies the year represented by the emissions activity data; and
- (7) Point Source Component – signifies whether a portion of the source category’s emissions may be included within the point source inventory.

**a. *Adjustment of NEI Data to Reflect 2007 Activity Levels***

Where the 2008 nonpoint source NEI reflects 2007 activity data, Pechan incorporated the 2008 NEI emission estimates into the Pechan default inventory for this project. When a source category’s NEI data reflect 2006 or 2008 emissions activity data, Pechan updated the NEI estimates to reflect 2007 emission activity levels. Table II-3 documents the specific revisions that were implemented.

For many area source categories, emissions activity data are not available at the county-level. In these cases, county-level emissions are estimated using two sets of activity data: one set reflecting state or regional-level emissions activity (e.g., volume of natural gas consumed by the residential sector in each state), and the other set representing data that are used to allocate emissions activity to the county-level (e.g., number of houses using natural gas as the primary heating fuel in each county). Specifically, the “Backcasting or Forecasting Methodology” column in Table II-3 presents the approach used to update emissions activity data to represent 2007, and the “County Allocation Method” column identifies the approach used to update the county allocation data. As noted in Table II-3, all county allocation data were not updated to 2007. This approach was taken because of the level-of-effort that would be involved in updating some of the allocation data, and the fact that these data are often not expected to differ significantly from year-to-year.

**b. *Adjustment of NEI Data to Remove Activity Reflected in the Point Source Inventory***

To prevent double-counting of emissions in the stationary point source and area source emissions inventories, it was necessary to perform point source subtractions on some of the source categories in the Pechan default inventory. To facilitate the point source subtractions, Pechan prepared crosswalks that link area SCCs to point SCCs. These crosswalks are presented in Appendix A. The general point source subtraction approach consisted of the following steps:

1. Compile 2007 point source emissions and control efficiency data provided by each state for the applicable point SCCs.
2. Identify potential quality assurance issues for S/L agency review;
3. Revise control efficiency data to incorporate S/L agency comments;

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<sup>3</sup> Left clicking on the hyperlink while simultaneously pressing the control key allows one to open or save the documentation/data of interest. The complete list of material can be accessed at: [http://projects.pechan.com/EPA/Non-Point\\_Emission\\_Estimates/](http://projects.pechan.com/EPA/Non-Point_Emission_Estimates/).



**Table II-3. Methods for Updating 2008 NEI Estimates that Are Not Based on 2007 Emissions Activity**

Source Category	Source Classification Code(s)	Source Classification Code Description	Year of Activity Data	Backcasting or Forecasting Methodology	Is Update Actual Activity Data?	Geographic Resolution of Backcast/ Forecast Data	County Allocation Method	Point Source Component
Asphalt Paving	2461021000	Cutback Asphalt	2008	Recalculated using 2007 asphalt usage	Yes	State	Allocated using 2007 county VMT	No
	2461022000	Emulsified Asphalt	2008	Recalculated using 2007 asphalt usage	Yes	State	Allocated using 2007 county VMT	No
Aviation Gasoline Distribution: Stage I	2501080050	Aviation Gasoline: Stage I	2008	Recalculated using 2007 AvGas consumption	Yes	National	Allocated to district-level according to AvGas consumption reported for each Petroleum Administration District and then to county-level using 2008 LTO data for general aviation flights	No
Aviation Gasoline Distribution: Stage II	2501080100	Aviation Gasoline: Stage II	2008	Recalculated using 2007 AvGas consumption	Yes	National	Allocated to district-level according to AvGas consumption reported for each Petroleum Administration District and then to county-level using 2008 LTO data for general aviation flights	No
Commercial Cooking	2302002nnn 2302003nnn	Commercial Cooking	2008	Recalculated using 2007 population estimates	Yes	County		No
Construction Dust	2311010000	Residential Construction	2008	Recalculated surface soil estimate using new privately owned housing units started in 2007 (all other activity data reflects 2007)	Yes	Regional	Allocated to county using 2007 annual housing units	Yes
	2311020000	Non-Residential Construction	2008	Recalculated using 2007 value of construction put in place	Yes	National	Did not revise the county allocation (based on 2006 non-residential construction employment)	Yes
	2311030000	Road Construction	2006	Recalculated using 2007 FHWA capital outlays	Yes	State	NEI county allocation data (number of building starts) are 2007	No
Gasoline Distribution	25010110nn 25010120nn	Portable Fuel Containers	2008	Estimated 2007 using a linear fit between 2002 and 2010 emissions	N/A	County	This is the same procedure used to estimate 2008 estimates for NEI	No
	2501050120	Gasoline Distribution Stage I; Bulk Terminals	2008	Recalculated using 2007 national volume of wholesale gasoline supplied	Yes	National	Allocated to state-level using 2007 refinery, bulk terminal, and natural gas plant stocks of motor gasoline and then to county-level using 2007 County Business Patterns for NAICS code 42471	Yes
	2501055120	Gasoline Distribution Stage I; Bulk Plants	2008	Recalculated using EIA's estimate of 2007 finished motor gasoline supplied	No	National	Allocated to county-level using 2007 County Business Patterns for NAICS code 42471	Yes
	250106005n	Gasoline Distribution Stage I;	2008	Applied county-level CO2	No	County		Yes

Source Category	Source Classification Code(s)	Source Classification Code Description	Year of Activity Data	Backcasting or Forecasting Methodology	Is Update Actual Activity Data?	Geographic Resolution of Backcast/ Forecast Data	County Allocation Method	Point Source Component
		Gasoline Service Station Unloading		emissions ratio: CO2 emissions from 2007 NMIM run : CO2 emissions from 2008 NMIM run				
	2501060100	Gasoline Distribution Stage II; Gasoline Service Stations	2008	Applied county-level CO2 emissions ratio: CO2 emissions from 2007 NMIM run : CO2 emissions from 2008 NMIM run	No	County		Yes
	2501060201	Gasoline Distribution Stage I; Underground storage tank, breathing and emptying	2008	Applied county-level CO2 emissions ratio: CO2 emissions from 2007 NMIM run : CO2 emissions from 2008 NMIM run	No	County		Yes
	2505030120	Gasoline Distribution Stage I; Tank Trucks in Transit	2008	Applied county-level CO2 emissions ratio: CO2 emissions from 2007 NMIM run : CO2 emissions from 2008 NMIM run	No	County		Yes
	2505040120	Gasoline Distribution Stage 1; Pipelines	2008	Recalculated using 2007 national volume of wholesale gasoline supplied	Yes	National	Allocated to PAD-level using 2007 finished motor gasoline moved by pipeline in each PAD in 2007 and then to county-level using 2007 County Business Patterns for NAICS code 42471	Yes
Open Burning	2610000100	Open Burning - Yard Waste - Leaves	2008	Recalculated using 2007 population estimate	Yes	County		No
	2610000400	Open Burning - Yard Waste - Brush	2008	Recalculated using 2007 population estimate	Yes	County		No
	2610000500	Open Burning - Land Clearing Debris	multiple years	Recalculated number of acres disturbed to reflect 2007 residential, non-residential and road construction activity estimates as described above	Yes	County	See methodologies in the Construction Dust categories above	No
	2610030000	Open Burning - Household Waste	2008	Recalculated using 2007 population estimate	Yes	County		No
Publicly Owned Treatment Works (POTW)	2630020000	Publicly Owned Treatment Works (POTW)	2008	Estimated 2007 using a linear fit between 2004 and 2010 POTW flow rates. Allocate to county-level using 2007 population.	Yes	National	This is the same procedure used to estimate 2008 estimates for NEI. Allocated to county-level using 2007 population estimate.	Yes
Residential Heating	2104001000	Residential Anthracite Coal	2006	Recalculated using 2007 coal consumption data and 2007 ratio of anthracite to bituminous coal consumption	Yes	State	County allocation based on 2000 Census data	No

Source Category	Source Classification Code(s)	Source Classification Code Description	Year of Activity Data	Backcasting or Forecasting Methodology	Is Update Actual Activity Data?	Geographic Resolution of Backcast/ Forecast Data	County Allocation Method	Point Source Component
	2104002000	Residential Bituminous Coal	2006	Recalculated using 2007 coal consumption data and 2007 ratio of anthracite to bituminous coal consumption	Yes	State	County allocation based on 2000 Census data	No
	2104004000	Residential Distillate Oil	2006	Recalculated using 2007 distillate oil consumption	Yes	State	County allocation based on 2000 Census data	No
	2104006000	Residential Natural Gas	2006	Recalculated using 2007 natural gas consumption	Yes	State	County allocation based on 2000 Census data	No
	2104007000	Residential LPG	2006	Recalculated using 2007 LPG consumption	Yes	State	County allocation based on 2000 Census data	No
	2104008nnn 2104009000	Residential Wood Combustion and Wax Firelogs	Inputs represent various years	Applied 2007/2008 county-level ratio of occupied housing units	Yes	County		No
	2104011000	Residential Kerosene	2006	Recalculated using 2007 kerosene consumption	Yes	State	County allocation based on 2000 Census data	No
Solvent Usage - Surface Coatings	2401001000	Architectural Coatings	2008	Recalculated using 2007 population estimate	Yes	County		No
	2401005000	Automobile Refinishing	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401015000	Factory Finished Wood	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401020000	Wood Furniture and Fixtures	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401025000	Metal Furniture	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401030000	Paper, Film and Foil	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401040000	Metal Cans	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401045000	Metal Sheet, Strip and Coils	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401055000	Machinery and Equipment	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401060000	Appliances	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401065000	Electronic and Other Electrical Coatings	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401070000	Motor Vehicles	2006	Recalculated using 2007 employment data	Yes	County		Yes

Source Category	Source Classification Code(s)	Source Classification Code Description	Year of Activity Data	Backcasting or Forecasting Methodology	Is Update Actual Activity Data?	Geographic Resolution of Backcast/ Forecast Data	County Allocation Method	Point Source Component
	2401075000	Aircraft	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401080000	Marine coatings	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401085000	Railroads	2006	Recalculated using 2007 employment data	Yes	County		No
	2401090000	Misc. Manufacturing	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2401100000	Industrial Maintenance Coatings	2008	Recalculated using 2007 population estimate	Yes	County		No
	2401200000	Other Special Purpose Coatings	2008	Recalculated using 2007 population estimate	Yes	County		No
Solvent Usage - Other	2415000000	Cleaning Products: Industrial and Institutional	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2420000000	Dry Cleaning	2006	Recalculated using 2007 employment data	Yes	County		No
	2425000000	Graphic Arts	2006	Recalculated using 2007 employment data	Yes	County		Yes
	2460100000	Consumer & Commercial - Personal Care Products (Cosmetics and Toiletries)	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460200000	Consumer & Commercial - Household Cleaning Products	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460400000	Consumer & Commercial - Automotive Aftermarket	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460500000	Consumer & Commercial - Coatings and Related Products	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460600000	Consumer & Commercial - Adhesives and Sealants	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460800000	Consumer & Commercial - FIFRA Regulated Products	2008	Recalculated using 2007 population estimate	Yes	County		No
	2460900000	Consumer & Commercial - Misc. Products	2008	Recalculated using 2007 population estimate	Yes	County		No

4. Back-calculate 2007 uncontrolled point source emissions from reported emissions and control efficiency data -- e.g., 40 tpy of controlled NO<sub>x</sub> emissions and 80% control efficiency = 50 tpy of uncontrolled NO<sub>x</sub> emissions.
5. Sum the emissions for each record from step 4 to the state-level to yield state total uncontrolled point source emissions by pollutant.
6. For each pollutant and state, compute the fraction of total 2007 state-level emissions in the 2007 Pechan default inventory represented by area sources (using step 5 total point source uncontrolled emissions).
7. Multiply the emission estimates in the draft base year inventory by the appropriate percentages in step 6 to yield area source emissions.

With the exception of Georgia, Pechan performed the point source subtractions at the state-rather than county-level because of the uncertainty associated with the NEI county emission allocations in that actual county-level emissions activity data are generally not available (i.e., a surrogate indicator such as employment is typically used to allocate state-level activity to counties).<sup>4</sup> However, at Georgia's request, Pechan performed Georgia's point source subtractions at the county-level.

As part of step 2, Pechan identified a significant number of PM-PRI and PM-FIL point source control efficiency records. These data could not be directly used in the point source subtraction procedure because all point source emissions data are provided for PM10, PM2.5, or PM-CON. For the PM-FIL records, Pechan was able to use EPA's PM calculator database to compile PM10-FIL and PM2.5-FIL control efficiency values.<sup>5</sup> Pechan specifically linked the PM calculator database's PM10-FIL and PM2.5-FIL emission control efficiency values to SEMAP point source inventory PM-FIL control efficiency records using the SCCs and emissions control device codes that are reported in the SEMAP inventory. These control efficiency values were then applied to the point source PM10-FIL and PM2.5-FIL emission records to estimate uncontrolled PM10-FIL and PM2.5-FIL emissions. In lieu of any better information, we assumed that the PM-FIL control efficiencies had no effect on PM-CON emissions. Pechan then summed the estimated uncontrolled PM10-FIL and PM2.5-FIL emissions with the PM-CON emissions to estimate uncontrolled point source PM10-PRI and PM2.5-PRI emissions. This procedure yielded uncontrolled emission estimates for all six PM species.

Because of the inconsistent reporting of throughput data in the SEMAP point source inventory, throughput data were used in the point source subtraction procedure in only a limited number of cases. These cases are listed below in Table II-4. For these areas/SCCs, all pollutants' total emissions are adjusted by the same percentage. For a few area source categories, it was necessary to incorporate source category-specific point source subtraction procedures. Appendix A summarizes the specific point source subtraction approaches for these source categories.

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<sup>4</sup> Efforts to perform subtractions at the county-level commonly result in negative emission estimates.

<sup>5</sup> Because the PM calculator database requires PM-FIL input data., it was not possible to use the PM-PRI control efficiency records to estimate uncontrolled emissions.

**Table II-4. Throughput-Based Area Source Emission Adjustments**

Area	SCC	Area Source %
South Carolina	2102002000	25.35
	2102004000	0.00
	2102005000	0.00
	2102006000	32.95
	2102007000	0.00
	2102007000	99.84
	2102008000	43.40
	2103001000	0.00
	2103004000	93.14
	2103006000	94.10
	2103008000	49.36
	2401015000	94.40
Knox County, TN	2102006000	76.71
	2103006000	99.13
	2415000000	93.64
Jefferson County, TX	2102008000	95.66

## 2. Estimation of Area Source Emissions from Industrial and Commercial/Institutional Fuel Combustion

Currently, the 2008 NEI data for the ICI fuel combustion categories represent *total emission activity* estimates, rather than *area source emission* estimates. Because emission estimates are not available and because of the relative importance of this category, Pechan recommended that 2007 ICI combustion area source emission estimates be developed as part of this project. This section documents the emission inventory development methodology that Pechan used in preparing 2007 year ICI fuel combustion area source emission estimates for the SESARM states. The following are elements of the methodology that provide improvements over the 2008 NEI methodology:

- Obtained Industrial and Commercial/Institutional energy consumption by fuel type and SESARM state for the year 2007 from the Energy Information Administration (EIA)'s State Energy Data System (SEDS) – the 2008 NEI uses 2006 year data;
- Obtained geographic- and year-specific estimates of non-fuel use consumption of industrial energy from the 2006 Manufacturing Energy Consumption Survey (MECS) – the 2008 NEI uses data from the 2002 MECS survey;
- Applied a county allocation procedure that reflects the energy-intensity of each industrial sector – the 2008 NEI methods only reflect the number of employees in each sector; and

- Updated SO<sub>2</sub> emission factors to reflect coal sulfur content estimates for coal used in the industrial sector in 2007 – a recent review of industrial coal sulfur content values concluded that the NEI values are based on unrepresentative data (Pechan, 2009b).

Table II-5 identifies the SCCs for which Pechan prepared ICI fuel combustion area source emission estimates. The key data inputs in the emissions estimation methodology are:

1. Total Industrial and total Commercial/Institutional energy consumption by fuel type and SESARM state for the year 2007;
2. Estimates of the percentage of total ICI distillate fuel and liquefied petroleum gas (LPG) consumption from stationary sources;
3. Industrial energy consumption used for non-fuel purposes by fuel type and state in 2006;
4. ICI energy consumption by fuel type for point sources by SESARM state in year 2007;
5. Emission factors relating emission rates to volume of energy consumed by fuel type for the ICI sectors;
6. Sulfur content of coal consumed in the ICI sectors by state in year 2007;
7. County-level Industrial sector energy consumption estimates by state for year 2007; and
8. County-level Commercial/Institutional sector employment by state for the year 2006.<sup>6</sup>

**Table II.5. ICI Fuel Combustion Area Source Classification Codes**

SCC	DESCRIPTION
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
2102004000	Stationary Source Fuel Combustion; Industrial; Distillate Oil; Total: Boilers and IC Engines
2102005000	Stationary Source Fuel Combustion; Industrial; Residual Oil; Total: All Boiler Types
2102006000	Stationary Source Fuel Combustion; Industrial; Natural Gas; Total: Boilers and IC Engines
2102007000	Stationary Source Fuel Combustion; Industrial; Liquid Petroleum Gas; Total: All Boiler Types
2102008000	Stationary Source Fuel Combustion; Industrial; Wood; Total: All Boiler Types
2102011000	Stationary Source Fuel Combustion; Industrial; Kerosene; 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; Liquid Petroleum Gas; Total: All Combustor Types
2103008000	Stationary Source Fuel Combustion; Commercial/Institutional; Wood; Total: All Boiler Types
2103011000	Stationary Source Fuel Combustion; Commercial/Institutional; Kerosene; Total: All Combustor Types

<sup>6</sup> To conserve project resources, Pechan will rely on 2006 employment data compiled in support of the 2008 NEI rather than develop 2007 employment data (note that year-to-year county employment proportions are expected to remain relatively constant).

The following sections describe the methodology/data source(s) for developing each of these data inputs, and the source(s) of information for each of these data elements. In selecting the information sources for each of these data elements, Pechan evaluated the completeness, representativeness, comparability, and accuracy criteria identified in the Quality Assurance Project Plan (QAPP) for this project. For example, information sources that provide data specific to the source category/geography/inventory period were selected over those that were less specific.

**a. Total ICI Energy Consumption**

For total Industrial and total Commercial/Institutional energy consumption by fuel type/state, Pechan primarily used the same source that EPA uses in developing ICI combustion emission estimates for the NEI—EIA’s SEDS (EIA, 2009a). The SEDS provides total energy consumption estimates by sector, state, fuel type, and year. To facilitate use with the criteria pollutant emission factors, Pechan compiled the SEDS energy consumption data in both sets of units provided by the EIA: physical units and British thermal units (Btus). For estimates of industrial distillate consumption, Pechan relied on estimates reported in EIA’s “Fuel Oil and Kerosene Sales” (EIA, 2009b). This source is preferred over the SEDS data because it provides additional sectoral detail that is needed to perform the stationary source energy consumption adjustments described below.

**b. Stationary Source Energy Consumption**

To avoid double-counting with energy consumption accounted for in mobile source inventories, it was necessary to adjust 2007 year SEDS distillate and LPG consumption estimates for mobile source fuel consumption. For LPG, the adjustments account for energy consumption reflected in the nonroad mobile sector. The adjustments were performed by subtracting estimated proportions of total Industrial sector and Commercial sector consumption computed from a national NONROAD model run. Pechan compiled national LPG consumption estimates for relevant SCCs from a 2006 run of EPA’s NONROAD model (a 2006 run was performed in support of the NEI—it is not anticipated that the percentages differ considerably between 2006 and 2007). Table II-6 identifies a complete list of nonroad SCCs associated with Industrial and Commercial sector LPG. The shaded entries in this table indicate where NONROAD reports LPG consumption. This procedure estimates that nonroad mobile sources account for 9 percent of Industrial sector, and 18 percent of Commercial sector LPG consumption. The SEDS LPG consumption estimates for each state/sector were adjusted downward using these percentages.

For distillate oil, it was necessary to remove energy consumption reflected in onroad/nonroad mobile source emission inventories. To facilitate this step, Pechan used more detailed distillate fuel consumption estimates reported in EIA’s “Fuel Oil and Kerosene Sales,” and stationary source fuel consumption percentage assumptions used in the regulatory impact analysis for EPA’s nonroad diesel emissions rulemaking (EPA, 2003a). Table II-7 displays the assumptions that were applied to the state-level Industrial sector distillate fuel consumption estimates reported in “Fuel Oil and Kerosene Sales” to estimate Industrial sector stationary source consumption. Table II-8 identifies the assumptions that were applied to estimate total stationary source Commercial/Institutional sector consumption.



Table II-6. LPG Nonroad Mobile Source Classification Codes

SCC	Description_2	Description_3	Description_4
<i>Industrial Sector</i>			
2267002000	LPG	Construction and Mining Equipment	All
2267002003	LPG	Construction and Mining Equipment	Pavers
2267002006	LPG	Construction and Mining Equipment	Tampers/Rammers
2267002009	LPG	Construction and Mining Equipment	Plate Compactors
2267002015	LPG	Construction and Mining Equipment	Rollers
2267002018	LPG	Construction and Mining Equipment	Scrapers
2267002021	LPG	Construction and Mining Equipment	Paving Equipment
2267002024	LPG	Construction and Mining Equipment	Surfacing Equipment
2267002027	LPG	Construction and Mining Equipment	Signal Boards/Light Plants
2267002030	LPG	Construction and Mining Equipment	Trenchers
2267002033	LPG	Construction and Mining Equipment	Bore/Drill Rigs
2267002036	LPG	Construction and Mining Equipment	Excavators
2267002039	LPG	Construction and Mining Equipment	Concrete/Industrial Saws
2267002042	LPG	Construction and Mining Equipment	Cement and Mortar Mixers
2267002045	LPG	Construction and Mining Equipment	Cranes
2267002048	LPG	Construction and Mining Equipment	Graders
2267002051	LPG	Construction and Mining Equipment	Off-highway Trucks
2267002054	LPG	Construction and Mining Equipment	Crushing/Processing Equipment
2267002057	LPG	Construction and Mining Equipment	Rough Terrain Forklifts
2267002060	LPG	Construction and Mining Equipment	Rubber Tire Loaders
2267002063	LPG	Construction and Mining Equipment	Rubber Tire Tractors/Dozers
2267002066	LPG	Construction and Mining Equipment	Tractors/Loaders/Backhoes
2267002069	LPG	Construction and Mining Equipment	Crawler Tractor/Dozers
2267002072	LPG	Construction and Mining Equipment	Skid Steer Loaders
2267002075	LPG	Construction and Mining Equipment	Off-Highway Tractors
2267002078	LPG	Construction and Mining Equipment	Dumpers/Tenders
2267002081	LPG	Construction and Mining Equipment	Other Construction Equipment
2267003000	LPG	Industrial Equipment	All
2267003010	LPG	Industrial Equipment	Aerial Lifts
2267003020	LPG	Industrial Equipment	Forklifts
2267003030	LPG	Industrial Equipment	Sweepers/Scrubbers
2267003040	LPG	Industrial Equipment	Other General Industrial Equipment

SCC	Description_2	Description_3	Description_4
2267003050	LPG	Industrial Equipment	Other Material Handling Equipment
2267003060	LPG	Industrial Equipment	AC/Refrigeration
2267003070	LPG	Industrial Equipment	Terminal Tractors
2267005000	LPG	Agricultural Equipment	All
2267005010	LPG	Agricultural Equipment	2-Wheel Tractors
2267005015	LPG	Agricultural Equipment	Agricultural Tractors
2267005020	LPG	Agricultural Equipment	Combines
2267005025	LPG	Agricultural Equipment	Balers
2267005030	LPG	Agricultural Equipment	Agricultural Mowers
2267005035	LPG	Agricultural Equipment	Sprayers
2267005040	LPG	Agricultural Equipment	Tillers >6 HP
2267005045	LPG	Agricultural Equipment	Swathers
2267005050	LPG	Agricultural Equipment	Hydro-power Units
2267005055	LPG	Agricultural Equipment	Other Agricultural Equipment
2267005060	LPG	Agricultural Equipment	Irrigation Sets
2267007000	LPG	Logging Equipment	All
2267007005	LPG	Logging Equipment	Chain Saws > 6 HP
2267007010	LPG	Logging Equipment	Shredders > 6 HP
2267007015	LPG	Logging Equipment	Forest Eqp – Feller/Bunch/Skidder
2267009000	LPG	Underground Mining Equipment	All
2267009010	LPG	Underground Mining Equipment	Other Underground Mining Equipment
2267010000	LPG	Industrial Equipment	All
2267010010	LPG	Industrial Equipment	Other Oil Field Equipment
<b>Commercial Sector</b>			
2267004011	LPG	Lawn and Garden Equipment	Lawn Mowers (Commercial)
2267004016	LPG	Lawn and Garden Equipment	Rotary Tillers < 6 HP (Commercial)
2267004021	LPG	Lawn and Garden Equipment	Chain Saws < 6 HP (Commercial)
2267004026	LPG	Lawn and Garden Equipment	Trimmers/Edgers/Brush Cutters (Commercial)
2267004031	LPG	Lawn and Garden Equipment	Leafblowers/Vacuums (Commercial)
2267004036	LPG	Lawn and Garden Equipment	Snowblowers (Commercial)
2267004041	LPG	Lawn and Garden Equipment	Rear Engine Riding Mowers (Commercial)
2267004046	LPG	Lawn and Garden Equipment	Front Mowers (Commercial)
2267004051	LPG	Lawn and Garden Equipment	Shredders < 6 HP (Commercial)
2267004056	LPG	Lawn and Garden Equipment	Lawn and Garden Tractors (Commercial)
2267004061	LPG	Lawn and Garden Equipment	Wood Splitters (Commercial)
2267004066	LPG	Lawn and Garden Equipment	Chippers/Stump Grinders (Commercial)

SCC	Description_2	Description_3	Description_4
2267004071	LPG	Lawn and Garden Equipment	Turf Equipment (Commercial)
2267004076	LPG	Lawn and Garden Equipment	Other Lawn and Garden Equipment (Commercial)
2267006000	LPG	Commercial Equipment	All
2267006005	LPG	Commercial Equipment	Generator Sets
2267006010	LPG	Commercial Equipment	Pumps
2267006015	LPG	Commercial Equipment	Air Compressors
2267006020	LPG	Commercial Equipment	Gas Compressors
2267006025	LPG	Commercial Equipment	Welders
2267006030	LPG	Commercial Equipment	Pressure Washers
2267006035	LPG	Commercial Equipment	Hydro-power Units
2267008000	LPG	Airport Ground Support Equipment	All
2267008005	LPG	Airport Ground Support Equipment	Airport Ground Support Equipment

Note: EPA's NONROAD model reports emissions/fuel consumption for the shaded entries.

**Table II-7. Assumptions Used to Estimate Industrial Sector Stationary Source Distillate Fuel Consumption**

Sector	Distillate Fuel Type	% of Total Consumption from Stationary Sources
Industrial	No. 1 Distillate Fuel Oil	60
	No. 2 Distillate Fuel Oil	100
	No. 2 Distillate/Low and High Sulfur Diesel	15 <sup>a</sup>
	No. 4 Distillate Fuel Oil	100
Farm	Diesel	0
	Other Distillate Fuel Oil	100
Off-Highway (Construction and Other)	Distillate Fuel Oil	5
Oil Company	Distillate Fuel Oil	50

<sup>a</sup> This value differs from the 0% assumption adopted in EPA's nonroad diesel emissions rulemaking because it is known that some diesel fuel is used by stationary sources (a 15 percent value was selected for use as an approximate mid-point of a potential range of 8 to 24% stationary source use computed from a review of national data from the EIA's *Manufacturing Energy Consumption Survey* and "Fuel Oil and Kerosene Sales").

**Table II-8. Assumptions Used to Estimate Commercial/Institutional Sector Stationary Source Distillate Fuel Consumption**

Sector	Distillate Fuel Type	% of Total Consumption from Stationary Sources
Commercial	No. 1 Distillate Fuel Oil	80
	No. 2 Distillate Fuel Oil	100
	No. 2 Distillate/Ultra-Low, Low, and High Sulfur Diesel	0 <sup>a</sup>
	No. 4 Distillate Fuel Oil	100

<sup>a</sup> A very small portion of total commercial/institutional diesel is actually consumed by point sources (SCC 203001xx).

### *c. Non-Fuel Energy Consumption*

Some Industrial sector energy is consumed for non-fuel purposes. For example, natural gas is used as a feedstock in chemical manufacturing plants and to make nitrogenous fertilizer, and LPG is used to create intermediate products that are made into plastics. To estimate the volume of fuel that is associated with ICI combustion, it is necessary to subtract the volume of fuel consumption for non-energy uses from the volume of total fuel consumption. The EPA's State Inventory Tool (SIT) provides national defaults representing the percentage of total Industrial fuel consumption from non-energy uses. These default values have an additional limitation beyond their lack of geographic detail - they represent the EIA's definition of the Industrial sector, which includes fuel use that is accounted for in other inventory source categories (e.g.,

Farm, Mining, Construction, and Commercial sectors fuel use that is accounted for in the nonroad inventory). Because of these limitations, Pechan used regional non-fuel use percentages computed from energy consumption data from the EIA's *2006 Manufacturing Energy Consumption Survey* (MECS) for all fuel types (EIA, 2009c).

There are two reasons why MECS provides a more representative data set for use in this project: (1) MECS provides data specific to the region of interest; and (2) MECS focuses solely on the Manufacturing sector. The latter characteristic is particularly important for fuel types which consume significant amounts of non-Manufacturing sector energy that is already included elsewhere (e.g., distillate fuel used by the Construction sector, which is included in the nonroad inventory). The MECS non-fuel consumption data treat coal that is used to produce coke as a feedstock (Lorenz, 2009). However, available data indicate that only four of the SESARM states produce coke (Alabama, Kentucky, Virginia, West Virginia; EIA, 2008a) and coke combustion is not included in the area source emissions inventory. Because of this, Pechan estimated the percent energy consumption from non-fuel use for SESARM states without coke plants by subtracting the coal used in the primary metals industrial subsector (NAICS code 331\*) from the MECS coal dataset. More than 97 percent of coking coal is ultimately consumed in this subsector (Lorenz, 2009). Table II-9 presents the non-fuel use percentages by type of energy.

**Table II-9. Industrial Sector Energy Consumption from Non-Fuel Uses**

Energy Type	2006 MECS % Energy Consumption from Non-Fuel Use	
	South <sup>1</sup>	National
Residual	30%	20%
Distillate	12%	12%
Natural Gas	11%	7%
LPG/NGL	99%	97%
Coal (excludes coking coal)	9%	6%

Sources: EIA, 2009c and Lorenz, 2009.

<sup>1</sup> All SESARM states are in the South region.

#### **d. Emission Factors**

Table II-10 presents the criteria pollutant emission factors that Pechan used in calculating ICI combustion area source emissions. Except as noted below, all criteria air pollutant emission factors are from an EPA database used to prepare the 2008 nonpoint source NEI (Huntley, 2009).<sup>7</sup> Wood combustion emission factors are from *AP-42* (EPA, 2003b). Because there are no NH<sub>3</sub> emission factors for ICI fuel combustion available in the 2008 NEI emission factor database, *AP-42*, or EPA's WebFIRE, Pechan used emission factors reported in an NH<sub>3</sub> emissions Emission Inventory Improvement Program (EIIP) guidance document (Pechan, 2004).

<sup>7</sup> All criteria pollutant emission factors were rounded to two decimal places.

Table II-10. Criteria Pollutant Emission Factors for ICI Combustion Area Source Categories

SCC	Description	Emission Factor Units <sup>1</sup>	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM2.5-FIL	PM10-FIL	PM-CON	NH <sub>3</sub>
2102001000	Industrial Anthracite Coal	lb/ton	0.3	9	0.6	39 * S%	0.48 * A%	1.1 * A%	0.08	0.03
2102002000	Industrial Bitum/Subbitum Coal	lb/ton	0.05	11	5	38 * S%	1.4	12	1.04	0.03
2102004000	Industrial Distillate Oil	lb/1000 gal	0.2	20	5	142 * S%	0.25	1	1.3	0.8
2102005000	Industrial Residual Oil	lb/1000 gal	0.28	55	5	157 * S%	4.67 * (1.12 * S% + 0.37)	7.17 * (1.12 * S% + 0.37)	1.5	0.8
2102006000	Industrial Natural Gas	lb/MMcf	5.5	100	84	0.6	0.11	0.2	0.32	0.49
2102007000	Industrial LPG <sup>2</sup>	lb/1000 bbl	21.9	398	502	2.39	0.438	0.797	1.275	1.95
2102008000	Industrial Wood <sup>3</sup>	lb/MMBtu	0.017	0.22	0.6	0.025	0.43	0.5	0.017	0.007 <sup>4</sup>
2102011000	Industrial Kerosene	lb/1000 gal	0.19	19.29	4.82	142 * S%	0.24	0.96	1.25	0.771
2103001000	Comm/Inst Anthracite Coal	lb/ton	0.3	9	0.6	39 * S%	0.48 * A%	1.1 * A%	0.08 * A%	0.03
2103002000	Comm/Inst Bitum/Subbitum Coal	lb/ton	0.05	11	5	38 * S%	1.4	12	1.04	0.03
2103004000	Comm/Inst Distillate Oil	lb/1000 gal	0.34	20	5	142 * S%	0.83	1.08	1.3	0.8
2103005000	Comm/Inst Residual Oil	lb/1000 gal	1.13	55	5	157 * S%	1.92 * (1.12 * S% + 0.37)	5.17 * (1.12 * S% + 0.37)	1.5	0.8
2103006000	Comm/Inst Natural Gas	lb/MMcf	5.5	100	84	0.6	0.11	0.2	0.32	0.49
2103007000	Comm/Inst LPG	lb/1000 bbl	21.9	398	502	2.39	0.438	0.797	1.275	1.95
2103008000	Comm/Inst Wood <sup>3</sup>	lb/MMBtu	0.017	0.22	0.6	0.025	0.43	0.5	0.017	0.005 <sup>4</sup>
2103011000	Comm/Inst Kerosene	lb/1000 gal	0.33	19.29	4.82	142 * S%	0.8	1.04	1.25	0.771

Source: Unless otherwise noted, 2008 nonpoint source NEI (Huntley, 2009).

Notes: <sup>1</sup> lb = pound; ton = short ton; gal = gallon; MMcf = million cubic feet; MMBtu = million British thermal units; bbl = barrels; S = sulfur content; A = ash content

<sup>2</sup> Emission factors from Commercial/Institutional LPG.

<sup>3</sup> Emission factors from AP-42, Section 1.6, Wood Residue Combustion in Boilers (EPA, 2003b).

<sup>4</sup> Emission factor from Pechan, 2004 (converted from lb/ton using 0.08 ton/MMBtu for Industrial sector and 0.0625 ton/MMBtu for Commercial sector).

With a few notable exceptions, the 2008 NEI emission factors are the same as those used for the 2002 NEI.<sup>8</sup> The PM emission factors for natural gas and LPG combustion are the major exceptions. Because the 2002 emission factors were deemed too high because of artifact formation in the test method (method 202) during stack testing, EPA developed a set of SCC-specific adjustment factors to apply to the 2002 NEI to better reflect PM emissions from these fuels.<sup>9</sup> In preparation for the 2008 NEI, EPA developed revised natural gas PM emission factors by applying these adjustment factors to the 2002 NEI emission factors. Revised emission factors for LPG were computed by applying appropriate conversion factors to the updated natural gas emission factors.

*e. Coal Sulfur and Ash Content*

For a recent ICI combustion area source inventory project for the Central Regional Air Planning Association (CENRAP), Pechan evaluated the reliability of various data sources for coal sulfur content to be used to estimate emissions in that project. Pechan evaluated five potential data sources:

1. 2002 CENRAP state point source inventories;
2. U.S. Geological Survey (USGS)'s U.S. Coal Quality Database;
3. Energy Information Administration (EIA)'s "Cost and Quality of Fuels for Electric Plants 2002 and 2003."
4. EIA's "EIA-423 - Monthly Nonutility Fuel Receipts and Fuel Quality Data, 2002;" and
5. EIA's "Quarterly Coal Report, January–March 2003."

Pechan evaluated these coal sulfur content data sources with respect to two specific criteria identified in the QAPP for this project: representativeness and accuracy. Based on these evaluations, Pechan used the average sulfur content data from EIA's "Quarterly Coal Report" to estimate the sulfur content of both Industrial and Commercial/Institutional sector bituminous/subbituminous coal in each SESARM state (EIA, 2008b). Even though this source does not report whether the coal is bituminous/subbituminous or anthracite, it is appropriate to treat the values for this source as representative of bituminous/subbituminous coal because anthracite accounts for only a very small proportion of coal consumption in SESARM states.

Due to the lack of available data for anthracite coal, Pechan used the average ash content (13.38 percent) and sulfur content (0.89 percent) from the 2002 NEI for the Industrial and Commercial/Institutional sectors. These percentages are based on the composition of anthracite coal seams in Pennsylvania, where all anthracite coal imported by SESARM states originated in 2007 (EIA, 2008c). Tables II-11 and II-12 report the coal ash and/or sulfur content values that were used in calculating ICI combustion area source emissions for the 2007 base year inventory.

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<sup>8</sup> The 2002 NEI documentation provides citations to the AP-42 source for each emission factor.

<sup>9</sup> These factors reduce PM emissions by more than 90 percent.

**Table II-11. Bituminous/Subbituminous Coal Sulfur Content for 2007 ICI Combustion**

State	Industrial Coal <sup>1</sup> Sulfur Content (%)	Commercial/ Institutional Coal <sup>2</sup> Sulfur Content (%)
Alabama	0.94	0.94
Florida	0.87	0.87
Georgia	0.95	0.95
Kentucky	0.89	0.89
Mississippi	2.01	2.01
South Carolina	1.10	1.10
North Carolina	0.90	0.90
Tennessee	1.21	1.21
Virginia	0.96	0.96
West Virginia	0.95	0.95

<sup>1</sup>Reflects the average from coal received in 2007.

<sup>2</sup>Assumes that coal burned in the Commercial/Institutional sector has the same composition as coal burned in the Industrial sector.

**Table II-12. Anthracite Coal Ash and Sulfur Content for 2007 ICI Combustion**

State	Industrial		Commercial/Institutional	
	Ash Content (%)	Sulfur Content (%)	Ash Content (%)	Sulfur Content (%)
Alabama	13.38	0.89	13.38	0.89
Florida	13.38	0.89	13.38	0.89
Georgia	13.38	0.89	13.38	0.89
Kentucky	13.38	0.89	13.38	0.89
Mississippi	13.38	0.89	13.38	0.89
South Carolina	13.38	0.89	13.38	0.89
North Carolina	13.38	0.89	13.38	0.89
Tennessee	13.38	0.89	13.38	0.89
Virginia	13.38	0.89	13.38	0.89
West Virginia	13.38	0.89	13.38	0.89



### *f. County Allocation Data*

After computing state-level area source emissions using the data described above, the next step is to allocate these emissions to individual counties. Separate allocation approaches were implemented for the Industrial and Commercial/Institutional sectors. For Commercial/Institutional sector source categories, the approach relies on county employment data compiled from government sources. For Industrial sector source categories, the approach utilizes county-level Industrial sector energy consumption estimates developed in this effort.

#### *Commercial/Institutional*

Because SEDS data originate from EIA fuel sector-specific surveys of energy suppliers,<sup>10</sup> Pechan reviewed these survey forms/instructions for further details on what SEDS considers Commercial sector use of each fuel. This review found that the surveys/guidance do not always provide further clarity. In addition, the EIA has admitted that energy suppliers may use their own account classifications as well as EIA guidance in determining whether a particular account belongs in the Residential, Commercial, Industrial, or Transportation sector. The only source of NAICS-code based EIA definitions of the Commercial energy sector is a “rough crosswalk” between Commercial building types and NAICS codes developed for EIA’s Commercial Building Energy Consumption Survey (CBECS). With the exception of NAICS code 814 (Private Households), this crosswalk links all NAICS codes between 42 and 92 with Commercial building energy consumption. Employment data for the CBECS-identified NAICS codes (42 through 92 with exception of 814) were used to allocate SEDS energy consumption data to individual counties. Pechan used private sector 2006 employment data from *County Business Patterns* (CBP) and public sector 2006 employment data from the *Census of Governments* (Census, 2009a; and Census, 2009b) because these data were already compiled in support of the 2008 NEI (year-to-year changes in county employment proportions are expected to be minimal).

#### *Industrial*

Unlike the Commercial sector, documentation provides a clear listing of the NAICS codes associated with SEDS Industrial energy consumption data: “the industrial sector encompasses the following types of activity: Manufacturing (NAICS codes 31–33); Agriculture, Forestry, Fishing and Hunting (NAICS code 11); Mining, including Oil and Gas Extraction (NAICS code 21); and Construction (NAICS code 23).” As noted earlier, a portion of Industrial sector consumption (Agriculture, Mining and Construction) is already accounted for in other emission inventory sectors and was removed. Therefore, Pechan did not expand the list of NAICS codes used to represent the area source Industrial fuel combustion category beyond the Manufacturing sector NAICS codes (31-33).

Employment-based county allocation methods lead to overrepresentation of energy consumption in counties with sectors that have high employment but low energy intensities (measured on a Btu per employee basis), and vice-versa. Given that Manufacturing sectors have much greater energy intensity variability than Commercial/Institutional sectors, Pechan utilized energy use per

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<sup>10</sup> For natural gas, for example – EIA-176 “Annual Report of Natural and Supplemental Gas Supply and Disposition.”

employee values by NAICS code to improve upon the employment-based county allocation approach used in the 2008 NEI for the Industrial fuel combustion category. This procedure relied on 2007 national energy consumption data by NAICS code as reported by EIA in *Annual Energy Outlook* (EIA, 2009d). Energy intensity values were computed by dividing these Btu-based energy consumption estimates by NAICS code-level 2007 national employment data. The resulting intensity values were then multiplied by county/NAICS code-level employment estimates from CBP to estimate total county energy consumption by NAICS code. These values were then summed for the appropriate Industrial fuel combustion NAICS codes. The resulting county-level total Industrial energy consumption estimates were used to apportion state-level area source Industrial fuel combustion emissions to each county.

#### Estimation of Withheld Employment Data

Due to concerns with releasing confidential business information, the CBP withholds values for a given county/NAICS code if it would be possible to identify individual businesses from these values. In such cases, the CBP reports a letter code, representing a particular employment size range. Pechan used the following procedure to estimate data for withheld counties/NAICS codes.

1. County-level employment for counties with reported values are totaled by state for the applicable NAICS code.
2. Value from step 1 is subtracted from the state employment value for the NAICS code.
3. Each of the withheld counties is assigned an initial employment estimate reflecting the midpoint of the CBP range code (e.g., code A, which reflects 1-19 employees, is assigned an estimate of 10 employees).
4. The initial employment estimates from step 3 are then summed to the state level.
5. The value from step 2 is divided by the value from step 4 to yield an adjustment factor to apply to the initial employment estimates to yield employment values that will sum to the state employment total for the applicable NAICS code.
6. The final county-level employment values are estimated by multiplying the initial employment estimates from step 3 by the step 5 adjustment factors.

**Example: NAICS 31-33 (Manufacturing) in Maine**

fipsstate	fipscty	naics	empflag	emp
23	001	31----		6,774
23	003	31----		3,124
23	005	31----		10,333
23	007	31----		1,786
23	009	31----		1,954
23	011	31----		2,535
23	013	31----		1,418
23	015	31----	F	0
23	017	31----		2,888
23	019	31----		4,522
23	021	31----		948
23	023	31----	I	0
23	025	31----		4,322
23	027	31----		1,434
23	029	31----		1,014
23	031	31----		9,749

1. The total of employees not including counties 015 and 023 is 52,801.
2. The state-level CBP reports 59,322 employees in NAICS 31—the difference is 6,521.
3. County 015 is given a midpoint of 1,750 (since range code F is 1,000-2,499) and County 023 is given a midpoint of 17,500.
4. State total for these two counties is 19,250.
5.  $6,521/19,250 = 0.33875$ .

The final employment estimate for county 015 is  $1,750 * 0.33875 = 593$ . The county 023 final employment estimate is computed as  $17,500 * 0.33875 = 5,928$ .

**C. INVENTORY SUPPLEMENTATION/FINAL DATA MERGING**

As directed by S/L agencies, Pechan supplemented 2007 S/L agency supplied emissions data (when supplied) and Pechan default emissions data with emissions data from the 2002 nonpoint source NEI, or in the case of Georgia, the state's 2005 Consolidated Emissions Reporting Rule (CERR) submittal. To assist agencies that supplied S/L emissions data, Pechan compiled a list of SCC/pollutant combinations in the S/L area's portion of the 2002 nonpoint source NEI that did not match to combinations in either the S/L agency inventory or Pechan's default inventory. This list was documented in an Excel worksheet and transmitted along with a request for agencies to identify whether each combination's emissions should be carried forward or grown to 2007 using EGAS growth factors. Pechan contacted agencies with any necessary follow-up questions to clarify guidance on the NEI supplementation procedure.

To assist agencies that did not supply their own emissions data, Pechan compiled a list of SCC/pollutant combinations in the state's portion of the 2002 nonpoint source NEI that did not match to combinations in Pechan's default inventory. These lists were documented in an Excel workbook, which also contained a worksheet identifying associated inventory supplementation

questions (e.g., “the 2002 NEI reports VOC emissions under Dry Cleaning/Perchloroethylene SCCs—Pechan’s default inventory does not include VOC emissions for this SCC because perchloroethylene is no longer considered a VOC by EPA. Please confirm that VOC emissions from these SCCs should not be carried forward/grown”). After reviewing state agency responses to these data merging questions, Pechan contacted agencies with follow-up questions as necessary to clarify state guidance.

Table II-13 displays the SCC/pollutant combinations for which 2002 nonpoint source NEI emissions were carried forward or grown to 2007 using growth factors from EGAS.<sup>11</sup> Further documenting the data merging procedures are NIF EM table records and the SCC/county-level emission summaries that display a data source code for each record. Table II-14 presents the data source codes used to document the source of each area source emission record. The compiled inventory was converted into EPA’s NIF 3.0 nonpoint source format.<sup>12</sup>

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<sup>11</sup> Note that for some SCCs, EGAS did not provide growth factors. In these cases, Pechan used underlying EGAS 5.0 information (i.e., the EGAS Version 5.0 SCC-to-growth indicator crosswalk and economic output data from version 5.5 of the Regional Economic Models, Inc. [REMI] model) to develop growth factors.

<sup>12</sup> Pechan removed throughput data when 2002 nonpoint source NEI data were carried forward,

Table II-13. Summary of Data Carried/Forward Grown From 2002 NEI

Source Classification Code	Source Classification Code Description	Alabama	Florida	Georgia <sup>1</sup>	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State <sup>2</sup>	Virginia	West Virginia
2275085000	Aircraft/Unpaved Airstrips/Total		EGAS (Majority)	EGAS						
2275900000	Aircraft/Refueling: All Fuels/All Processes ** (Use 25-01-080-xxx)			EGAS						
2301030000	Chemical Manufacturing/Process Emissions from Pharmaceutical Manuf/Total		Carry	EGAS	EGAS			Carry	Carry	Carry
2301040000	Chemical Manufacturing/Fugitive Emissions from Synthetic Organic Chem Manuf/Total		Carry (Majority)	EGAS		Carry				Carry
2302050000	Food & Kindred Products/Bakery Products/Total	EGAS	EGAS (Majority)	EGAS		Carry	EGAS			Carry
2302070005	Food & Kindred Products/Fermentation/Beverages/Wineries			EGAS						
2302070010	Food & Kindred Products/Fermentation/Beverages/Distilleries			EGAS						
2305070000	Mineral Processes/Concrete, Gypsum, Plaster Products/Total							Carry		
2306000000	Petroleum Refining/All Processes/Total			EGAS						Carry
2306010000	Petroleum Refining/Asphalt Paving/Roofing Materials/Total							Carry		
2307060000	Wood Products/Misc Wood Products/Total							Carry		
2308000000	Rubber/Plastics/All Processes/Total		Carry (Majority)					Carry		
2309000000	Fabricated Metals/All Processes/Total							Carry		
2309100010	Fabricated Metals/Coating, Engraving, and Allied Services/Electroplating							Carry		
2309100230	Fabricated Metals/Coating, Engraving, and Allied Services/Alkaline Cleaning							Carry		
2310000000	Oil & Gas Expl & Prod/All Processes/Total: All Processes	EGAS	Carry (Majority)	EGAS	EGAS	Carry		Carry		Carry
2325000000	Mining & Quarrying/All Processes/Total		Carry	EGAS	EGAS	EGAS	EGAS	Carry	Carry	
2399000000	Industrial Processes: NEC/Industrial Processes: NEC/Total	EGAS	Carry (Majority)	EGAS	EGAS			Carry		Carry
2401001010	Surface Coating/Architectural Coatings/Primers, Sealers, and Undercoaters							Carry		
2401001050	Surface Coating/Architectural Coatings/All Other Architectural Categories							Carry		
2401005600	Surface Coating/Auto Refinishing/Primers							Carry		
2401005700	Surface Coating/Auto Refinishing/Top Coats							Carry		
2440000000	Misc Industrial/All Processes/Total: All Solvent Types		Carry		EGAS			Carry		
2461800000	Misc Non-industrial: Commercial/Pesticide Applic.: All Processes/Total: All Solvent Types	EGAS	EGAS (Majority)	EGAS	EGAS	Carry	EGAS			
2461850000	Misc Non-indus: Consumer/Pesticide Application: Agricultural/All Processes			EGAS	EGAS	Carry		Carry		

Source Classification Code	Source Classification Code Description	Alabama	Florida	Georgia <sup>1</sup>	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State <sup>2</sup>	Virginia	West Virginia
2465800000	Misc Non-indus: Consumer/Pesticide Application/Total: All Solvent Types				EGAS			Carry		
2501000090	Petrol & Petrol Product Storage/All Storage Types: Breathing Loss/Distillate Oil							Carry		
2501050090	Petrol & Petrol Product Storage/Bulk Terminals: All Evaporative Losses/Distillate Oil							Carry		
2501050150	Petrol & Petrol Product Storage/Bulk Terminals: All Evaporative Losses/Jet Naphtha							Carry		
2501050180	Petrol & Petrol Product Storage/Bulk Terminals: All Evaporative Losses/Kerosene							Carry		
2501070000	Diesel Service Stations/Total: All Products/All Processes			EGAS						
2501070051	Diesel Service Stations/Stage 1: Submerged Filling		Carry (Majority)							Carry
2501070052	Diesel Service Stations/Stage 1: Splash Filling									Carry
2501070101	Diesel Service Stations/Stage 2: Displacement Loss/Uncontrolled									Carry
2501070103	Diesel Service Stations/Stage 2: Spillage									Carry
2501070201	Diesel Service Stations/Underground Tank: Breathing and Emptying		Carry (Majority)							Carry
2510000000	Organic Chemical Storage/All Storage Types: Breathing Loss/Total: All Products							Carry		
2530000020	Bulk Materials Storage/All Storage Types/Cement							Carry		
2530000100	Bulk Materials Storage/All Storage Types/Limestone							Carry		
2530000120	Bulk Materials Storage/All Storage Types/Sand							Carry		
2530050000	Bulk Materials Storage/Bulk Stations/Terminals/Total: All Products							Carry		
2601000000	On-site Incineration/All Categories/Total		Carry (Majority)							
2601010000	On-site Incineration/Industrial/Total		EGAS (Majority)	EGAS						
2601020000	On-site Incineration/Commercial/Institutional/Total		EGAS (Majority)	EGAS	EGAS			Carry		
2620000000	Landfills/All Categories/Total		EGAS (Majority)							
2620030000	Landfills/Municipal/Total		Carry (Majority)	EGAS				Carry		Carry
2630020000	Wastewater Treatment/Public Owned/Total Processed							Carry		
2630020001	Wastewater Treatment/Public Owned/Flaring of Gases							Carry		
2640000000	TSDFs/All TSDF Types/Total: All Processes		EGAS (Majority)	EGAS	EGAS	EGAS		Carry		Carry
2660000000	Leaking Underground Storage Tanks/Leaking Underground Storage Tanks/Total: All Storage Types		EGAS (Majority)	EGAS						Carry
2801000000	Agric - Crops/Total		Carry	EGAS		Carry	EGAS	Carry	Carry	
2801000003	Agric - Crops/Tilling		Carry	EGAS	EGAS	Carry	EGAS	Carry	Carry	Carry

Source Classification Code	Source Classification Code Description	Alabama	Florida	Georgia <sup>1</sup>	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State <sup>2</sup>	Virginia	West Virginia
2805001000	Agric - Livestock/Beef cattle - finishing operations on feedlots (drylots)/Dust Kicked-up by Hooves		EGAS (Majority)	EGAS			EGAS			Carry
2810001000	Forest Wildfires - Wildfires - Unspecified							Carry		
2810015000	Prescribed Forest Burning/Unspecified							Carry		
2810030000	Structure Fires/Unspecified		Carry	EGAS	EGAS	Carry	EGAS	Carry		Carry
2810050000	Motor Vehicle Fires/Unspecified		EGAS (Majority)	EGAS						Carry
2810060200	Cremation/Animals									
2830000000	Catastrophic/Accidental Releases/All Catastrophic/Accidental Releases/Total		Carry							
2830001000	Catastrophic/Accidental Releases/Industrial Accidents/Total		Carry							
2841000040	Misc Repair Shops/Misc Repair Shops/Soldering Operations							Carry		

<sup>1</sup> Pechan Default inventory for GA supplemented with EGAS-grown emissions from Georgia's 2005 CERR submission.

<sup>2</sup> PM emission records for SCCs 2401055000 and 2401200000 grown from 2002 NEI using EGAS (only affects Knox County).

**Table II-14. Area Source Inventory Data Source Codes**

<b>Code</b>	<b>Description</b>
P-07-X-NPT	Pechan default area source estimate
P-07-X-PT	Pechan default total source estimate adjusted for point source activity (note that adjustment only occurred if emissions were reported in point source inventory).
N-02-G	2002 nonpoint source NEI estimate grown using EGAS
N-02-F	2002 nonpoint source NEI estimate carried forward (no growth)
S-05-G	2005 Georgia area source CERR submission estimate grown using EGAS
S-07-X	State agency-supplied estimate
L-07-X	Local agency-supplied estimate
L-07-X-VR	Estimated from local agency VOC estimate and Pechan default inventory derived ratio of pollutant emission factor to VOC emission factor.

## D. QA/QC PROCEDURES

In addition to the quality assurance procedures that Pechan performed on the draft 2007 stationary area source inventory (e.g., running EPA's NIF QA/Content Checker program to check for referential integrity issues, invalid entries, and out of typical range values), Pechan quality assured all updates provided by state/local agencies to ensure that they were correctly incorporated into the final inventory, and reviewed the ratios of post-point source subtraction emissions to pre-point source subtraction emissions to confirm that these subtractions were properly implemented.<sup>13</sup>

<sup>13</sup> It is important to note that it was not possible to perform the PM10-PRI and PM2.5-PRI emissions check that was implemented on the draft area source inventory because the point source subtraction procedure does not require that the sum of PM10-FIL plus PM-CON emissions and PM2.5-FIL and PM-CON emissions equal PM10-PRI and PM2.5-PRI emissions, respectively.



### III. 2007 NONROAD MOBILE SOURCE INVENTORY

The nonroad sector is comprised of nonroad engines included in EPA's NONROAD model, as well as other engines not modeled in NONROAD, including aircraft, commercial marine vessels and locomotives. A 2007 nonroad sector inventory was developed using the following general procedures:

- NONROAD model categories were based on the National Mobile Inventory Model (NMIM2008). SESARM agencies were asked to review the latest 2007 NMIM County Database and provide revisions as needed to the NMIM inputs.
- The aircraft category was based on EPA's 2008 NEI. The 2008 estimates were backcast to 2007, and any state comments were incorporated.
- The commercial marine vessel category was based on EPA's 2008 NEI, adjusted to 2007, and supplemented with any state emissions data.
- The locomotive category was based on draft Class I and Class II/III line haul emissions, as well as draft railyard emissions developed by ERTAC. Passenger and commuter rail emissions were based on EPA's 2002 NEI. State emission estimates were also included.

A more detailed description of how 2007 emissions estimates for all nonroad categories were prepared is provided below.

#### A. NONROAD MODEL CATEGORIES

NONROAD model categories include equipment such as recreational marine and land-based vehicles, farm, construction and industrial machinery, and lawn and garden equipment. These equipment are powered by compression-ignition engines, which are typically diesel-fueled, as well as spark-ignition or gasoline-fueled engines. Compressed natural gas (CNG) and LPG engines are also included in the NONROAD model. Criteria pollutant emissions may not be reported for all SCCs for all counties in the SESARM region, and will depend on the geographic allocation methods used by the model, or state-specific allocation data.

NMIM2008 incorporates EPA's latest NONROAD model (NONROAD2008) released in April 2009, and reflects all of EPA's final nonroad standards to date. Pechan first distributed the 2007 year NMIM county-level database (NCD) to SESARM agencies for review and comment. Pechan prepared a report to accompany nonroad-related tables from the 2007 NCD providing instructions for agencies to provide any updates to these files that may represent S/L/T improvements to the NMIM/NONROAD defaults (Pechan, 2009d). A summary of the tables distributed and comments received from states is provided in Table III-1.

**Table III-1. Summary of 2007 NCD Tables and State Comments**

NMIM Table	Description	Comments	State(s)
County	County-specific variables	Revised OzoneSeasonStartMonth and OzoneSeasonEndMonth Update Barometric Pressure	AL, SC, VA  Jefferson County KY, VA
CountyYearMonthHour	Hourly temps and relative humidity by month and county	Revised temperatures and relative humidity using NCDC data and EPA-prescribed methodology	VA
CountyNRFile	External NONROAD data files	Provided updates to SEASON.DAT file  Revised Underground Mining Cty Allocation File	NC  WV
CountyYear	Additional external data files (mostly onroad related)	None	
CountyYearMonth	Maps counties to monthly fuel data	Revised county/monthly gasoline profile assignments	GA, KY, Jefferson County KY, NC, SC, Davidson County TN, VA
Gasoline	Gasoline fuel properties	Revised/added gasoline fuel profiles	GA, KY, Jefferson County KY, NC, SC, Davidson Cty TN, VA
Diesel	Diesel sulfur content	Revised Diesel sulfur content	Davidson County, TN
Natural Gas	Natural gas content	None	

Further descriptions of the state data provided and how they were evaluated and used is provided below.

#### *CountyYearMonthHour Table*

Virginia provided revised temperatures and relative humidity using National Climatic Data Center (NCDC) data and the EPA-prescribed methodology for stretching hourly averages to capture daily minima and maxima values.

#### *CountyNR Table*

North Carolina provided an updated SEASON.DAT file (37000.sea) that changed the seasonal profile assignment for North Carolina from the default Mid-Atlantic region to the Southeast region.

West Virginia provided an updated county allocation file for distributing activity and emissions related to underground mining equipment in their state. This revised county distribution was based on 2007 Underground Coal Production values as reported by the West Virginia's *Office of Miners' Health Safety and Training 2007 Coal Production by County*.

### *CountyYearMonth, Gasoline, and Diesel Tables*

Several states provided revised fuel profile assignments by county, as reflected in changes to the CountyYearMonth table. In many cases, this also involved the creation of new gasoline profiles in the Gasoline table. The revisions submitted primarily related to changes by month for Reid Vapor Pressure (RVP) values as well as gasoline sulfur content. Updates to the oxygenated fuel data were provided for some states as well.

Some states also revised the diesel fuel sulfur content values for 2007. For regional consistency, unless the values were based on actual testing that reflected the diesel sulfur content in use for an area, the NMIM default values of 1218 parts per million (ppm) for land-based equipment 1389 ppm for recreational marine were retained.

Once the inputs to NMIM/NONROAD were quality assured, Pechan ran NMIM to generate 2007 annual emission estimates for all SESARM states for all nonroad SCCs. Emissions from aircraft ground support equipment are now entirely addressed by the aircraft sector inventory (see discussion under Section III.B of this report). Pechan removed emission estimates from the NMIM output for the airport GSE SCCs (i.e., SCCs 2265008005, 2267008005, and 2270008005).

## **B. AIRCRAFT**

Airport-related emission estimates were developed for the following SCCs listed in Table III-2.

**Table III-2. Aircraft Source Classification Codes**

<b>Description</b>	<b>SCC</b>
Military Aircraft	2275001000
Commercial Aircraft	2275020000
General Aviation - Piston	2275050011
General Aviation - Turbine	2275050012
Air Taxi - Piston	2275060011
Air Taxi - Turbine	2275060012
Auxiliary Power Unit (APU)	2275070000
4-Stroke Gasoline GSE	2265008005
LPG GSE	2267008005
CNG GSE	2268008005
Diesel GSE	2270008005

2007 aircraft emissions were primarily based on EPA's 2008 NEI. The procedures and data for developing aircraft emissions are described in further detail in EPA's 2008 NEI documentation (EPA, 2009a).

For commercial aircraft, the emission estimation methodology relied on airport and aircraft-specific landing and take-off (LTO) data, coupled with mode and aircraft-specific emission rates

from the FAA's Emission and Dispersion Modeling System (EDMS). Emissions for ground support equipment (GSE) and auxiliary power units (APUs) associated with commercial air carriers were estimated by EDMS, using operating time defaults based on the type of service performed. LTO data for general aviation and air taxi were obtained from FAA's Terminal Area Forecasts (TAF) and 5010 Forms. This activity was assigned to jet and propeller-driven fractions, and fleet-average emission factors were then applied.

A portion of the military aircraft LTO is also reported by the FAA's TAF and incorporated into the NEI and the SEMAP inventory. Emissions for military aircraft were only available for VOC, NO<sub>x</sub>, CO, and SO<sub>2</sub>, with no PM being reported. Since development of the initial draft SEMAP inventory, EPA made additions to the 2008 military aircraft emission estimates. However, many agencies have already reviewed and provided comments on the draft inventory compiled for SESARM. We are providing an electronic file showing additional emission records calculated by EPA for military aircraft by airport for the SESARM region. These records (with a few noted exceptions) are currently not incorporated in the inventory. Pechan is requesting feedback from each agency as to whether these records should be added to their inventory, or left out since military operations may already be adequately accounted for.

The 2008 emissions and LTO data were back-cast to 2007 using approach operations by airport and aircraft type compiled from the FAA's Air Traffic Activity Data System (ATADS) (FAA, 2010). The airport-level LTOs were assigned to counties and summed for the county. For counties with aircraft emissions without a county match in ATADS, state average growth factors were calculated and applied. The county-level growth factors are not presented in this report, but could be provided to SESARM if requested. The 2007 to 2008 growth factors were developed for each of the six airport source categories. Commercial aircraft, APU, and GSE categories relied on growth factors calculated from commercial air carrier LTOs. General aviation and air taxi were grown using LTO data reported for these specific aviation categories. Military aircraft were held constant from 2008 to 2007.

State-supplied data are summarized in Table III-3. Comments from Alabama, Georgia, and Davidson County, Tennessee related to removing non-operational airports, correcting county assignments for individual airports, or updating emissions for specific commercial airports. Georgia, North Carolina, and Virginia submitted military aircraft emissions for military bases in their state. In addition, North Carolina provided emissions for military aircraft activity at commercial airports, and also provided diesel GSE emissions associated with all military aircraft. Note that for several North Carolina facilities, EPA had already reported diesel GSE emissions associated with commercial aircraft activity, so state-provided diesel GSE emissions were added to these existing EPA estimates at the SCC level.

**Table III-3. Summary of State Updates to Aircraft Category Emissions**

State/County	SCC	SCC Description	Pollutants	Comments	
Alabama	2275050011	General Aviation Piston	All	Removed emissions for 1 non-operational airport; 1 airport in GA incorrectly assigned to AL county	
	2275050012	General Aviation Turbine			
Georgia	2275001000	Military Aircraft	All	Updated emissions for Dobbins Air Reserve Base	
	2275007000	Auxiliary Power Unit (APU)	All	Updated emissions for Dobbins Air Reserve Base	
	2275050011	General Aviation Piston	All	Made revisions to county assignments for 2 airports	
	2275050012	General Aviation Turbine			
	All SCCs	See Table III-2	All	Updated emissions for Atlanta Hartsfield Airport	
North Carolina	2275001000	Military Aircraft	All	Added military aircraft emissions at military bases and civilian airports	
	2270008005	Diesel Airport GSE			
Davidson County, TN	2275050011	General Aviation Piston	All	Removed emissions for 4 non-operational airports; reassigned 1 airport from Davidson to Rutherford County	
	2275050012	General Aviation Turbine			
	2275020000	Commercial Aircraft	All		Updated emissions for Nashville International Airport
	2265008005	Gasoline Airport GSE	All		Updated emissions for Nashville International Airport
	2270008005	Diesel Airport GSE	All		Updated emissions for Nashville International Airport
Virginia	2275001000	Military Aircraft	All but PM-10 and PM-2.5	Added military aircraft emissions for 15 military bases	

North Carolina and Georgia provided estimates for all needed pollutants, and Virginia provided estimates for all pollutants, with some exceptions for PM-10 and PM-2.5. Where PM-10 was provided by Virginia for two facilities, we estimated PM-2.5 using a particle size multiplier of 0.669, from Table “Military Aircraft Emission Factors” in Appendix A to EPA 2008 NEI documentation (ERG, 2009a). PM emissions for the remaining military facilities in Virginia were not estimated.

### C. COMMERCIAL MARINE VESSELS

Commercial marine vessel emissions are reported under the following SCCs:

- 2280002100 – Diesel, In Port
- 2280002200 – Diesel, Underway
- 2280003100 – Residual, In Port
- 2280003200 – Residual, Underway

For the purpose of the NEI it was assumed that Category 1 and 2 vessels typically use distillate fuels, while Category 3 vessels primarily use residual blends. Category 3 engines are defined as having displacement above 30 liters per cylinder.

2007 CMV emissions were based largely on EPA's 2008 NEI. For Category 1 and 2 engines, national diesel emissions, based on national 2008 fuel sales, were split into near-shore port and underway components. Port emissions were assigned to 150 largest ports using port traffic data per *Waterborne Commerce of the U.S.* For the county allocation procedure, EPA developed a GIS shape file library based on Bureau of Transportation data to more precisely assign port emissions to counties, and to better allocate underway emissions to line segments/counties. This represents an improvement to the spatial allocation procedure used for previous versions of the NEI.

2008 Category 3 CMV estimates were projected from a 2002 hourly modeling inventory developed by EPA's Office of Transportation and Air Quality (OTAQ), and aggregated to an annual basis for the NEI. EPA developed Category 3 inventories for a total of 117 deep sea and inland ports, accounting for 4 different types of near-port emissions, including hotelling, maneuvering, reduced-speed zone, and cruise mode. EPA spatially allocated emissions using GIS shapefiles to specify the geographic locations for each type of near port emissions. Additional details concerning the methodologies are described in EPA's 2008 NEI documentation (EPA, 2009b).

The 2008 CMV estimates were then adjusted to represent 2007. For Category 1 & 2 diesel commercial marine vessels, 2007 emissions were estimated by applying growth factors to the 2008 emissions. National 2007 and 2008 emissions, by pollutant, were used to estimate the growth factors (EPA, 2008a). Emissions were adjusted at a national level because the surrogate data used to estimate county-level emissions for the 2008 NEI actually represent year 2007. Table III-4 shows the growth factors, by pollutant. The PM10-PRI and PM25-PRI growth factor value was also used for NH<sub>3</sub>.

**Table III-4. Category 1 & CMV Growth Factors, by Pollutant**

Pollutant	Growth Factor
CO	1.009
NH <sub>3</sub>	1.045
NO <sub>x</sub>	1.016
PM10-PRI	1.045
PM25-PRI	1.045
SO <sub>2</sub>	1.110
VOC	1.008

To estimate 2007 emissions for Category 3 residual commercial marine vessels, an annual average regional growth rate was applied as a corresponding decrease to the 2008 NEI emissions (EPA, 2008b). A correspondence was developed between the SESARM states and available regional growth rates for the East Coast and Gulf Coast. Table III-5 contains this correspondence along with the growth factor. Counties in the state of Florida were assigned to the two regions as appropriate.

**Table III-5. Category 3 CMV Growth Factors, by State and SCC**

FIPSST	State	SCC	Region	GF
01	AL	2280003100	Gulf Coast	0.955
01	AL	2280003200	Gulf Coast	0.955
12	FL	2280003100	Gulf Coast	0.955
12	FL	2280003200	Gulf Coast	0.955
12	FL	2280003100	East Coast	0.971
12	FL	2280003200	East Coast	0.971
13	GA	2280003100	East Coast	0.971
13	GA	2280003200	East Coast	0.971
21	KY	2280003100	East Coast	0.971
21	KY	2280003200	East Coast	0.971
28	MS	2280003100	Gulf Coast	0.955
28	MS	2280003200	Gulf Coast	0.955
37	NC	2280003100	East Coast	0.971
37	NC	2280003200	East Coast	0.971
45	SC	2280003100	East Coast	0.971
45	SC	2280003200	East Coast	0.971
47	TN	2280003100	East Coast	0.971
47	TN	2280003200	East Coast	0.971
51	VA	2280003100	East Coast	0.971
51	VA	2280003200	East Coast	0.971
54	WV	2280003100	East Coast	0.971
54	WV	2280003200	East Coast	0.971

State provided data are listed in Table III-6. South Carolina provided a county-level inventory for the port of Charleston for 2005. The 2005 estimates were grown to 2007 using Army Corps of Engineers data on total commodity tonnage handled at the Port of Charleston (ACE, 2010). Davidson County provided a county-level CMV inventory reported under the general SCC 2280000000. Finally, Virginia also provided a military marine emissions inventory, with the exclusion of Coast Guard Vessels, since activity for these ships should be captured by EPA's Category 1 & 2 inventory. The port and underway components of Virginia's marine inventory were assigned to the Residual, In Port and Residual, Underway SCCs, respectively. In counties where EPA had already reported residual port or underway emissions, state-provided military marine emissions were added to these existing EPA estimates at the SCC level. Any necessary pollutant augmentation is described in Table III-6.

**Table III-6. Summary of State Updates to Commercial Marine Category Emissions**

State/County	SCC	SCC Description	Pollutants	Comments	Additional Revisions
Charleston County, SC	2280002100	Category 1&2 Residual Port	All but NH <sub>3</sub>	Removed NEI emissions and added SC supplied emissions for Charleston County, SC.	NH <sub>3</sub> estimated using PM-10 multiplier of 0.00477 (ERG, 2009b)
	2280002200	Category 1&2 Residual Underway	All but NH <sub>3</sub>		NH <sub>3</sub> estimated using the ratio of 2008 NEI NH <sub>3</sub> /PM-10 emissions for the particular County/SCC.
	2280003100	Category 3 Diesel Port	All but NH <sub>3</sub>		NH <sub>3</sub> estimated using PM-10 multiplier of 0.00477 (ERG, 2009b)
	2280003200	Category 3 Diesel Underway	All but NH <sub>3</sub>		NH <sub>3</sub> estimated using the ratio of 2008 NEI NH <sub>3</sub> /PM-10 emissions for the particular County/SCC.
Davidson County, TN	2280000000	All Commercial Marine	All but PM-10, PM-25 and NH <sub>3</sub>	Removed all CMV NEI emissions for Davidson County, TN and added emissions supplied by the county.	PM-10 estimated using emission factor (EPA, 2008a) and fuel consumption (provided by Davidson County, TN).  PM-25 estimated using PM-10 multiplier of 0.92 (EPA, 2008a).  NH <sub>3</sub> estimated using PM-10 multiplier of 0.00477 (ERG, 2009b)
Shelby County, TN	2280002100	Category 1&2 Residual Port	All	Replaced CMV NEI emissions for Shelby County, TN with emissions supplied by the county.	
	2280002200	Category 1&2 Residual Underway	All but NH <sub>3</sub>		Relied on EPA NEI NH <sub>3</sub> emissions
Virginia	2280003100	Category 3 Diesel Port	All but VOC, PM-25, and NH <sub>3</sub>	Added military marine emissions	VOC estimated using HC multiplier of 1.053 (EPA, 2008a).  PM-25 estimated using PM-10 multiplier of 0.92 (EPA, 2008a).  NH <sub>3</sub> estimated using ratio of 2008 NEI NH <sub>3</sub> /PM-10 emissions for the particular County/SCC.
	2280003200	Category 3 Diesel Underway	All but VOC, PM-25, and NH <sub>3</sub>		VOC estimated using HC multiplier of 1.053 (EPA, 2008a).  PM-25 estimated using PM-10 multiplier of 0.92 (EPA, 2008a).  NH <sub>3</sub> estimated using ratio of 2008 NEI NH <sub>3</sub> /PM-10 emissions for the particular County/SCC.



## D. LOCOMOTIVES

Locomotive emissions are reported under the following SCCs:

- 2285002006 – Diesel Class I Line Haul
- 2285002007 – Diesel Class II/III Line Haul
- 2285002008 – Diesel Passenger (Amtrak)
- 2285002009 – Diesel Commuter
- 2285002010 – Diesel Switchyard Locomotives

Class I line haul operations typically account for the majority of fuel consumed and emissions when preparing locomotive inventories. As such, resources should be focused on developing emission estimates for these operations relative to other rail-related operations. However, for some local areas, certain operations related to switchyard activity may also be important.

For Class I line-haul locomotives, emissions are normally calculated by multiplying the amount of fuel consumed in the inventory area by pollutant-specific emission factors. This calculation is performed for each railroad. The results for each railroad are then summed to obtain the total Class I railroad emissions in the inventory area.

For Class I line haul, Pechan obtained 2007 emission estimates from the Eastern Regional Technical Advisory Committee (ERTAC, 2010a). ERTAC used the Federal Railroad Administration's GIS data to construct a dataset of link-level million gross tons per mile (MGT). Next the Railroad Fuel Consumption Index (RFCI) value was calculated for each railroad, which represents the number of GTM produced per gallon of diesel fuel. When applied to each link's GTM per year, link-based fuel consumption can be calculated. This methodology allows for a more accurate reflection of how GTM are actually concentrated across rail line route miles. Finally, the fuel consumed is multiplied by the various emission factors derived for each Class I rail line to determine link-level emissions for each pollutant. An important aspect is determining the fraction of locomotives that fall under each regulatory "Tier," since each Tier has an increasingly stringent emission rate for pollutants of concern.

A limitations of the link-level MGT data maintained by the FRA is that the data are proprietary and can only be publicly released with the express permission of each Class I railroad. In addition, when the FRA coded the link-level MGT data they did not provide a means for separating out individual MGT contributions for links that are operated by multiple railroad companies. As such, some assumptions were made for these contributions by ERTAC.

Class II/III line haul emissions were also developed and distributed by ERTAC (ERTAC, 2010b). Limited documentation has been developed to describe the procedures used by ERTAC to develop this inventory. Generally, fuel consumption for all Class II/III railroads was obtained from the American Shortline and Regional Railroad Association and assigned to counties using route miles by rail line within each county. An average fuel use factor expressed in gallons per mile was then multiplied by the route miles to estimate fuel consumption by railroad and by county. Class II/III locomotives were all assumed to be uncontrolled with respect to emission rates used for estimating pollutant emissions. Class II/III rail emissions represent calendar year

2008, and as such were back-cast to 2007 using a surrogate growth indicator. A SESARM regional growth factor of 1.438 was developed using 2007 and 2008 total distillate fuel sales/deliveries to railroad consumers which were obtained from the DOE Energy Information Administration State Energy Data (DOE, 2009a).

Passenger and commuter rail line emissions from EPA's 2002 NEI were grown to 2007. For both categories, the growth factor was developed using 2002 and 2007 passenger/commuter fuel use data obtained from the DOE Transportation Energy Data Book (DOE, 2009b). For passenger rail operations, the growth factor value was 0.732. For commuter rail operations, a growth factor of 1.11 was used.

Finally, the draft switchyard inventory was completed by ERTAC on June 4, 2010 (ERTAC, 2010c). This inventory was compiled at a railyard level by ERTAC, but was summed to a county level for use in the SEMAP 2007 inventory. Documentation describing the specific procedures used is not available to date. We are providing an electronic file that provides 2007 emissions at a railyard level, so that SESARM agencies can review the data that form the basis of the county-level estimates, and make revisions at that level as needed.

Some state data were provided for the locomotive category. These data are summarized in Table III-7. North Carolina provided a statewide passenger rail inventory for 2007. Davidson County provided a county level inventory comprised of Class I line haul and switchyard activity, reported under the general SCC 2285000000. Shelby County provided an updated Class I line haul, passenger, and yard locomotive inventory for most pollutants. Any needed pollutant augmentation is described in Table III-7.

## **E. QA/QC PROCEDURES**

Pechan performed the following quality assurance procedures on the final 2007 nonroad sector inventory.

For the NONROAD/NMIM categories, Pechan quality assured all NCD updates provided by states to ensure consistency with the NCD formats, and for reasonableness. Where questions came up, we coordinated with the appropriate state/local agency. Cross-checks were performed to confirm that state-supplied revisions were correctly incorporated into the NCD. Pechan compared results with 2007 emission estimates prepared by EPA using a prior version of the NCD. These comparisons were performed to ensure that results changed as expected given the updates made by specific states to the NMIM inputs.

Table III-7. Summary of State Updates to Locomotive Category Emissions

State	SCC	SCC Description	Pollutants	Comments	Additional Revisions
North Carolina	2285002008	Line Haul Locomotives: Passenger Trains (Amtrak)	All but NH <sub>3</sub>	Replaced NEI passenger emissions with NC supplied emissions	NH <sub>3</sub> estimated using the ratio of 2008 NEI NH <sub>3</sub> /PM-25 emissions for the particular County/SCC.
	2285002007	Line Haul Locomotives: Class II/III Locomotives	All	Removed activity/emissions for several rail lines	
Davidson County, TN	2285000000	All Railroad All Fuels	All but PM-25 and NH <sub>3</sub>	Replaced ERTAC rail emissions with Davidson County supplied emissions	PM-25 estimated using PM-10 multiplier of 0.97 (EPA, 2008a).  NH <sub>3</sub> estimated using ratio of 2008 NEI NH <sub>3</sub> /PM-25 emissions for the particular County/SCC.
Shelby County, TN	2285002006	Line Haul Locomotives: Class I Operations	All but NH <sub>3</sub> , PM-25, and SO <sub>2</sub>	Replaced ERTAC rail emissions with Shelby County supplied emissions	Relied on ERTAC emissions for missing pollutants
	2285002008	Line Haul Locomotives: Passenger Trains (Amtrak)			
	2285002010	Yard Locomotives			

Pechan compiled records for the SESARM region from EPA's NEI for aircraft, CMV, and passenger/commuter rail, and obtained Class I and Class II/III line haul, and railyard emission estimates from ERTAC. Pechan performed and quality assured any needed adjustments to year 2007 (i.e., correct application of growth or backcast factors). Cross-checks were also performed to verify that state-supplied emission estimates were correctly incorporated into the draft inventory. Pechan also calculated missing pollutants for SCC-level state emission estimates, where emission factors or emission ratios were available.

Emission estimates were converted into EPA's NIF3.0 as a final deliverable. For the NMIM categories, commercial marine, and locomotive, separate database files were prepared for each subsector following EPA's NIF3.0 nonpoint format. Aircraft emission estimates were prepared in EPA's NIF3.0 point source format. EPA's NIF QA Checker program was then run on these final files, and any referential integrity issues and invalid codes were identified and corrected. Finally, data source codes as described in Table III-8 were added to the NIF3.0 files to represent the source of the SCC, county-level emissions data for the final inventory.

**Table III-8. Data Source Codes Used for Final 2007 Nonroad Mobile Emission Estimates**

<b>Code</b>	<b>Description</b>
P-07-X	Pechan default
N-02-G	2002 NEI grown
S-07-X	State supplied
S-07-X-PS	State supplied added to Pechan default
S-05-G	State supplied 2005 grown
L-07-X	Local agency supplied

## IV. EMISSIONS SUMMARIES

This section presents the emission summaries for the final 2007 stationary area and nonroad mobile emissions inventory for the SEMAP project. In addition to the summaries provided in this section, Pechan has also provided SESARM with detailed county-level emission summaries in Excel worksheets.

### A. STATIONARY AREA SOURCE EMISSIONS

Table IV-1 provides a summary of the final 2007 SESARM area source emissions inventory by the four major area source subsectors. Table IV-2 displays final area source emission estimates by state, as well as the percent contribution of each state to total regional emissions. Similar summaries providing 2007 annual state-level emission estimates for each major area source sector, as well as percent contributions by state, are shown in Tables IV-3 through IV-6.

**Table IV-1. Final 2007 SESARM Area Source Emissions by Major Sector**

Category	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Combustion	216,767	170,127	71,647	309,345	259,998	508,852	10,825
Solvents			737,351	24	4	0	
Fugitive Dust				2,427,626	247,499		
All Other	4,038	25,071	443,988	365,164	174,587	499,231	576,402
<b>All Nonpoint</b>	<b>220,805</b>	<b>195,198</b>	<b>1,252,986</b>	<b>3,102,158</b>	<b>682,089</b>	<b>1,008,084</b>	<b>587,227</b>

Table IV-2. Final 2007 Area Source Emission Estimates by State

State	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	13,133	22,063	80,222	406,339	84,352	101,744	63,105
Florida	5,266	13,203	286,787	335,106	52,516	71,350	34,100
Georgia	35,102	45,395	177,555	696,265	125,912	117,663	86,742
Kentucky	15,606	12,634	76,961	225,217	40,379	64,010	52,402
Mississippi	348	6,115	75,400	326,590	42,999	24,065	58,789
North Carolina	77,889	39,256	174,362	305,329	186,591	260,135	170,904
South Carolina	6,063	11,422	81,888	273,028	45,816	92,340	30,301
Tennessee	26,589	17,969	120,214	224,025	43,553	120,225	34,781
Virginia	34,297	23,525	145,985	209,746	42,977	130,045	43,219
West Virginia	6,510	3,617	33,612	100,513	16,993	26,506	12,884
<b>Total SESARM</b>	<b>220,805</b>	<b>195,198</b>	<b>1,252,986</b>	<b>3,102,158</b>	<b>682,089</b>	<b>1,008,084</b>	<b>587,227</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	5.9	11.3	6.4	13.1	12.4	10.1	10.7
Florida	2.4	6.8	22.9	10.8	7.7	7.1	5.8
Georgia	15.9	23.3	14.2	22.4	18.5	11.7	14.8
Kentucky	7.1	6.5	6.1	7.3	5.9	6.3	8.9
Mississippi	0.2	3.1	6.0	10.5	6.3	2.4	10.0
North Carolina	35.3	20.1	13.9	9.8	27.4	25.8	29.1
South Carolina	2.7	5.9	6.5	8.8	6.7	9.2	5.2
Tennessee	12.0	9.2	9.6	7.2	6.4	11.9	5.9
Virginia	15.5	12.1	11.7	6.8	6.3	12.9	7.4
West Virginia	2.9	1.9	2.7	3.2	2.5	2.6	2.2
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table IV-3. Final 2007 Combustion Emission Estimates by State

State	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	13,078	20,366	3,334	53,517	39,916	55,702	1,128
Florida	5,095	12,041	5,850	21,832	16,713	47,345	745
Georgia	34,771	43,492	7,604	57,626	44,203	93,891	2,050
Kentucky	15,266	11,228	5,388	11,394	8,610	39,662	741
Mississippi	210	5,297	1,547	1,314	1,283	11,620	321
North Carolina	76,486	31,132	28,494	127,570	122,945	115,391	2,374
South Carolina	5,916	8,962	2,911	11,394	8,808	25,196	481
Tennessee	26,227	14,528	4,950	5,877	3,849	36,583	910
Virginia	33,336	20,052	9,028	16,010	11,186	65,433	1,625
West Virginia	6,382	3,028	2,543	2,811	2,485	18,028	450
<b>Total SESARM</b>	<b>216,767</b>	<b>170,127</b>	<b>71,647</b>	<b>309,345</b>	<b>259,998</b>	<b>508,852</b>	<b>10,825</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	6.0	12.0	4.7	17.3	15.4	10.9	10.4
Florida	2.4	7.1	8.2	7.1	6.4	9.3	6.9
Georgia	16.0	25.6	10.6	18.6	17.0	18.5	18.9
Kentucky	7.0	6.6	7.5	3.7	3.3	7.8	6.8
Mississippi	0.1	3.1	2.2	0.4	0.5	2.3	3.0
North Carolina	35.3	18.3	39.8	41.2	47.3	22.7	21.9
South Carolina	2.7	5.3	4.1	3.7	3.4	5.0	4.4
Tennessee	12.1	8.5	6.9	1.9	1.5	7.2	8.4
Virginia	15.4	11.8	12.6	5.2	4.3	12.9	15.0
West Virginia	2.9	1.8	3.5	0.9	1.0	3.5	4.2
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table IV-4. Final 2007 Solvent Emission Estimates by State

State	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama			53,677				
Florida			161,069				
Georgia			109,294				
Kentucky			46,090	1	1		
Mississippi			43,023				
North Carolina			116,799			0.1	
South Carolina			38,970				
Tennessee			64,531	22	4		
Virginia			89,798				
West Virginia			14,100				
<b>Total SESARM</b>			<b>737,351</b>	<b>24</b>	<b>4</b>	<b>0.1</b>	

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama			7.3	0.0	0.0	0.0	
Florida			21.8	0.0	0.0	0.0	
Georgia			14.8	0.0	0.0	0.0	
Kentucky			6.3	5.0	16.5	0.0	
Mississippi			5.8	0.0	0.0	0.0	
North Carolina			15.8	0.0	0.0	100.0	
South Carolina			5.3	0.0	0.0	0.0	
Tennessee			8.8	95.0	83.5	0.0	
Virginia			12.2	0.0	0.0	0.0	
West Virginia			1.9	0.0	0.0	0.0	
<b>Total SESARM</b>			<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	



Table IV-5. Final 2007 Fugitive Dust Emission Estimates by State

State	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama				318,858	33,717		
Florida				270,262	22,326		
Georgia				580,492	62,104		
Kentucky				184,551	19,979		
Mississippi				301,642	32,897		
North Carolina				124,698	11,834		
South Carolina				235,508	23,304		
Tennessee				184,393	20,240		
Virginia				155,204	14,422		
West Virginia				72,018	6,676		
<b>Total SESARM</b>				<b>2,427,626</b>	<b>247,499</b>		

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama				13.1	13.6		
Florida				11.1	9.0		
Georgia				23.9	25.1		
Kentucky				7.6	8.1		
Mississippi				12.4	13.3		
North Carolina				5.1	4.8		
South Carolina				9.7	9.4		
Tennessee				7.6	8.2		
Virginia				6.4	5.8		
West Virginia				3.0	2.7		
<b>Total SESARM</b>				<b>100</b>	<b>100</b>		

**Table IV-6. Final 2007 All Other Area Source Emission Estimates by State**

State	Pollutant Emissions, TPY						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	56	1,697	23,212	33,963	10,719	46,042	61,977
Florida	171	1,162	119,868	43,012	13,477	24,006	33,355
Georgia	331	1,903	60,658	58,148	19,605	23,771	84,693
Kentucky	340	1,406	25,484	29,271	11,789	24,347	51,662
Mississippi	138	817	30,829	23,634	8,819	12,445	58,467
North Carolina	1,403	8,124	29,069	53,061	51,812	144,743	168,530
South Carolina	147	2,460	40,007	26,127	13,703	67,144	29,820
Tennessee	362	3,441	50,733	33,732	19,461	83,643	33,871
Virginia	961	3,473	47,159	38,533	17,370	64,613	41,594
West Virginia	128	589	16,969	25,683	7,833	8,478	12,433
<b>Total SESARM</b>	<b>4,038</b>	<b>25,071</b>	<b>443,988</b>	<b>365,164</b>	<b>174,587</b>	<b>499,231</b>	<b>576,402</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM2.5-PRI	CO	NH <sub>3</sub>
Alabama	1.4	6.8	5.2	9.3	6.1	9.2	10.8
Florida	4.2	4.6	27.0	11.8	7.7	4.8	5.8
Georgia	8.2	7.6	13.7	15.9	11.2	4.8	14.7
Kentucky	8.4	5.6	5.7	8.0	6.8	4.9	9.0
Mississippi	3.4	3.3	6.9	6.5	5.1	2.5	10.1
North Carolina	34.8	32.4	6.5	14.5	29.7	29.0	29.2
South Carolina	3.7	9.8	9.0	7.2	7.8	13.4	5.2
Tennessee	9.0	13.7	11.4	9.2	11.1	16.8	5.9
Virginia	23.8	13.9	10.6	10.6	9.9	12.9	7.2
West Virginia	3.2	2.3	3.8	7.0	4.5	1.7	2.2
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

## B. NONROAD MOBILE SOURCE EMISSIONS

Table IV-7 provides a summary of final 2007 nonroad mobile annual emissions by the four major nonroad subsectors for the SESARM region. PM-10 and PM-2.5 emissions represent primary PM, and are reported as PM10-PRI, and PM25-PRI. The commercial marine category is the most significant contributor regionally to SO<sub>2</sub> emissions. Nonroad model categories account for the large majority of emissions for NO<sub>x</sub>, VOC, PM10-PRI, PM25-PRI, and CO.

Table IV-8 presents a summary of the final annual NONROAD model emission estimates by state, as well as the percent contribution of each state to total regional emissions. Similar summaries providing 2007 annual state-level emission estimates for aircraft, commercial marine, and locomotives, as well as the percent contributions, are shown in Tables IV-9, IV-10, and IV-11, respectively.

Since development of the draft inventory, locomotive switchyard emissions developed by ERTAC have been added. These emission estimates were developed at a railyard level, and summed to the county level for the 2007 SEMAP inventory. As mentioned in Section III.D, we

are providing an electronic file that provides emissions at a railyard level, so that SESARM agencies can review the data that form the basis of the county-level estimates, and make any needed revisions. In addition, for the aircraft category, EPA made some additions to the 2008 military aircraft NEI that formed the basis of the initial draft SEMAP inventory. As discussed in Section III.B, we are distributing an electronic file showing additional emission records calculated by EPA for military aircraft by airport for the SESARM region. Agencies should provide feedback as to whether these records should be added to their inventory.

**Table IV-7. Final 2007 SESARM Nonroad Source Emissions by Major Sector**

Category	Pollutant Emissions, tons per year						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
NONROAD Model	23,308	404,091	630,621	41,489	39,517	4,674,012	447
Aircraft	3,099	32,104	18,442	3,825	2,871	185,654	NA
Commercial Marine	33,605	162,983	4,520	7,875	7,468	28,761	86
Locomotive	2,085	155,015	8,285	5,085	4,694	21,633	67
<b>All Nonroad</b>	<b>62,098</b>	<b>754,194</b>	<b>661,868</b>	<b>58,274</b>	<b>54,551</b>	<b>4,910,060</b>	<b>601</b>

Table IV-8. Final 2007 NONROAD Model Emission Estimates by State

State	Pollutant Emissions, tons per year						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	1,483	26,695	49,956	2,806	2,665	316,138	30
Florida	6,714	109,218	193,974	11,543	10,986	1,431,464	134
Georgia	3,079	51,524	69,914	5,315	5,067	629,419	56
Kentucky	1,630	28,665	36,641	2,877	2,749	240,397	28
Mississippi	1,147	20,050	33,760	2,126	2,025	187,258	21
North Carolina	3,111	55,743	76,568	5,434	5,181	597,360	58
South Carolina	1,522	26,742	42,293	2,661	2,534	328,606	29
Tennessee	1,884	36,756	54,089	3,637	3,467	388,496	38
Virginia	2,329	41,169	56,092	4,132	3,937	448,264	45
West Virginia	410	7,529	17,333	957	905	106,610	9
<b>Total SESARM</b>	<b>23,308</b>	<b>404,091</b>	<b>630,621</b>	<b>41,489</b>	<b>39,517</b>	<b>4,674,012</b>	<b>447</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	6.4	6.6	7.9	6.8	6.7	6.8	6.7
Florida	28.8	27.0	30.8	27.8	27.8	30.6	29.9
Georgia	13.2	12.8	11.1	12.8	12.8	13.5	12.6
Kentucky	7.0	7.1	5.8	6.9	7.0	5.1	6.2
Mississippi	4.9	5.0	5.4	5.1	5.1	4.0	4.7
North Carolina	13.3	13.8	12.1	13.1	13.1	12.8	13.0
South Carolina	6.5	6.6	6.7	6.4	6.4	7.0	6.6
Tennessee	8.1	9.1	8.6	8.8	8.8	8.3	8.4
Virginia	10.0	10.2	8.9	10.0	10.0	9.6	10.0
West Virginia	1.8	1.9	2.7	2.3	2.3	2.3	2.0
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table IV-9. Final 2007 Aircraft Emission Estimates by State

State	Pollutant Emissions, tons per year					
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO
Alabama	48	413	891	192	135	10,015
Florida	991	10,734	5,060	982	740	55,189
Georgia	608	4,907	2,779	427	341	27,772
Kentucky	219	2,256	918	200	151	11,350
Mississippi	25	212	665	142	99	7,292
North Carolina	369	3,498	2,470	517	421	22,292
South Carolina	68	584	930	201	143	10,682
Tennessee	353	4,051	1,623	279	217	15,682
Virginia	410	5,396	2,850	831	585	22,489
West Virginia	7	55	257	56	39	2,891
<b>Total SESARM</b>	<b>3,099</b>	<b>32,104</b>	<b>18,442</b>	<b>3,825</b>	<b>2,871</b>	<b>185,654</b>

State	Percentage of Regional Total					
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO
Alabama	1.6	1.3	4.8	5.0	4.7	5.4
Florida	32.0	33.4	27.4	25.7	25.8	29.7
Georgia	19.6	15.3	15.1	11.2	11.9	15.0
Kentucky	7.1	7.0	5.0	5.2	5.3	6.1
Mississippi	0.8	0.7	3.6	3.7	3.5	3.9
North Carolina	11.9	10.9	13.4	13.5	14.6	12.0
South Carolina	2.2	1.8	5.0	5.2	5.0	5.8
Tennessee	11.4	12.6	8.8	7.3	7.6	8.4
Virginia	13.2	16.8	15.5	21.7	20.4	12.1
West Virginia	0.2	0.2	1.4	1.5	1.4	1.6
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table IV-10. Final 2007 Commercial Marine Vessel Emission Estimates by State**

State	Pollutant Emissions, tons per year						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	1,739	18,554	411	726	699	3,723	8
Florida	18,146	48,271	1,261	2,971	2,778	7,014	29
Georgia	2,044	10,582	257	476	456	1,845	5
Kentucky	1,015	15,726	338	576	558	3,009	11
Mississippi	1,784	18,119	401	710	683	3,368	10
North Carolina	1,846	4,233	109	222	209	670	2
South Carolina	1,289	1,946	109	138	123	220	1
Tennessee	610	7,565	765	502	469	2,082	4
Virginia	4,096	21,954	525	967	923	3,762	10
West Virginia	1,035	16,034	344	587	569	3,068	8
<b>Total SESARM</b>	<b>33,605</b>	<b>162,983</b>	<b>4,520</b>	<b>7,875</b>	<b>7,468</b>	<b>28,761</b>	<b>86</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	5.2	11.4	9.1	9.2	9.4	12.9	9.4
Florida	54.0	29.6	27.9	37.7	37.2	24.4	33.2
Georgia	6.1	6.5	5.7	6.1	6.1	6.4	5.3
Kentucky	3.0	9.6	7.5	7.3	7.5	10.5	12.6
Mississippi	5.3	11.1	8.9	9.0	9.2	11.7	11.3
North Carolina	5.5	2.6	2.4	2.8	2.8	2.3	2.3
South Carolina	3.8	1.2	2.4	1.8	1.6	0.8	1.0
Tennessee	1.8	4.6	16.9	6.4	6.3	7.2	4.6
Virginia	12.2	13.5	11.6	12.3	12.4	13.1	11.5
West Virginia	3.1	9.8	7.6	7.5	7.6	10.7	8.9
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table IV-11. Final 2007 Locomotive Emission Estimates by State

State	Pollutant Emissions, tons per year						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	196	17,899	972	598	552	2,542	8
Florida	175	11,625	592	356	332	1,505	5
Georgia	252	24,066	1,303	801	739	3,402	11
Kentucky	173	16,806	888	550	508	2,355	7
Mississippi	131	9,933	489	304	280	1,295	4
North Carolina	130	11,592	622	378	350	1,610	5
South Carolina	99	8,968	479	296	273	1,264	4
Tennessee	274	19,451	1,083	650	593	2,799	8
Virginia	444	21,639	1,180	728	678	3,066	9
West Virginia	212	13,037	677	423	389	1,796	6
<b>Total SESARM</b>	<b>2,085</b>	<b>155,015</b>	<b>8,285</b>	<b>5,085</b>	<b>4,694</b>	<b>21,633</b>	<b>67</b>

State	Percentage of Regional Total						
	SO <sub>2</sub>	NO <sub>x</sub>	VOC	PM10-PRI	PM25-PRI	CO	NH <sub>3</sub>
Alabama	9.4	11.5	11.7	11.8	11.8	11.8	11.8
Florida	8.4	7.5	7.1	7.0	7.1	7.0	6.9
Georgia	12.1	15.5	15.7	15.7	15.7	15.7	15.8
Kentucky	8.3	10.8	10.7	10.8	10.8	10.9	10.9
Mississippi	6.3	6.4	5.9	6.0	6.0	6.0	6.0
North Carolina	6.2	7.5	7.5	7.4	7.5	7.4	7.5
South Carolina	4.8	5.8	5.8	5.8	5.8	5.8	5.8
Tennessee	13.1	12.5	13.1	12.8	12.6	12.9	12.5
Virginia	21.3	14.0	14.2	14.3	14.4	14.2	14.0
West Virginia	10.2	8.4	8.2	8.3	8.3	8.3	8.7
<b>Total SESARM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

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## **APPENDIX A. POINT SOURCE SUBTRACTION PROCEDURE DETAILS**

This Appendix describes source category-specific details on the point source subtraction procedures, and displays the area SCC to point SCC crosswalk (see Tables A-1 through A-8).

### **A. ICI FUEL COMBUSTION**

To assist in the point source subtractions for industrial, commercial, and institutional (ICI) fuel combustion, Pechan developed two crosswalks: one between each Industrial fuel combustion area SCC and associated point SCCs (Table A-1), and an analogous crosswalk developed for Commercial/Institutional fuel combustion (Table A-2).

Because natural gas consumed as pipeline fuel is not included by the Energy Information Administration (EIA) in EIA's state energy consumption data for the Industrial sector, it was necessary to exclude pipeline natural gas combustion emissions from the point source subtraction procedure. Since there are no SCCs specific to pipeline natural gas combustion, point source pipeline natural gas combustion emission estimates were compiled by summing emissions for industrial sector natural gas internal combustion engine records (SCC 202002xx) with a pipeline-related Standard Industrial Classification (SIC) or North American Industrial Classification System (NAICS) code (SIC codes 1311, 1321, 1381, 4612, 4613, 4619, 4922, 4923, 4924, 4925, or 4931; NAICS codes 211111, 21112, 22121, 221210, 486110, 48621, 486210, 486910, 48699, or 486990).

### **B. CONSTRUCTION DUST**

Table A-3 displays the point SCCs associated with dust from Construction activities. These SCCs do not provide information to separate activity into the two area source category processes:

- 2311010000 - Construction: SIC 15-17; Residential; Total; and
- 2311020000 - Construction: SIC 15-18; Industrial/Commercial/Institutional; Total.

Pechan apportioned point source construction dust emissions between the two categories using state-level acreage data reported in the EPA October 2008 report "Economic Analysis of Final Effluent Limitation Guidelines and Standards for the Construction and Development Industry" (EPA, 2009a). These proportions for each SESARM state are displayed below.

### Percentage of Construction Acreage by State and Type of Construction

State	Residential %	Other %
Alabama	36	64
Florida	41	59
Georgia	39	61
Kentucky	31	69
Mississippi	24	76
North Carolina	48	52
South Carolina	42	58
Tennessee	35	65
Virginia	45	55
West Virginia	40	60

Source: Table 4-8 from EPA, 2009a.

### C. SOLVENT UTILIZATION

Table A-5 presents the point source crosswalk for each solvent utilization nonpoint SCC. This crosswalk was derived from the crosswalk used in performing VOC emissions-based point source subtractions for the 2002 NEI. As noted in the Table A-5 crosswalk, two area source solvent utilization SCCs (2401005000-Auto Refinishing and 2401070000-Motor Vehicles) are associated with the same point SCCs. For the Auto Refinishing area source category, point source subtractions for the listed SCCs were limited to records identified with Auto Refinishing industry sector SIC/NAICS codes (e.g., NAICS code 8111\*). Emissions for all other applicable point SCC state/local inventory records were subtracted from total emissions for the Motor Vehicles source category.

### D. GASOLINE DISTRIBUTION

Table A-6 displays the point SCCs associated with gasoline distribution. Some of these SCCs do not provide information to separate activity into each area source stage I gasoline distribution filling technology. Therefore, Pechan allocated the emissions from these point SCCs to each filling technology based on the proportion of emissions from Pechan's default inventory.

**Table A-1. Industrial Fuel Combustion Crosswalk for Point Source Subtractions.**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2102001000 - Stationary Source Fuel Combustion; Industrial; Anthracite Coal; Total: All Boiler Types					
10200101	External Combustion Boilers	Industrial	Anthracite Coal	Pulverized Coal	
10200104	External Combustion Boilers	Industrial	Anthracite Coal	Traveling Grate (Overfeed) Stoker	
10200107	External Combustion Boilers	Industrial	Anthracite Coal	Hand-fired	
10200117	External Combustion Boilers	Industrial	Anthracite Coal	Fluidized Bed Boiler Burning Anthracite-Culm Fuel	
39000189	Industrial Processes	In-process Fuel Use	Anthracite Coal	General	
39000199	Industrial Processes	In-process Fuel Use	Anthracite Coal	General	
2102002000 - Stationary Source Fuel Combustion; Industrial; Bituminous/Subbituminous Coal; Total: All Boiler Types					
10200201	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Wet Bottom	
10200202	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom	
10200203	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Cyclone Furnace	
10200204	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Spreader Stoker	
10200205	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Overfeed Stoker	
10200206	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Underfeed Stoker	
10200210	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Overfeed Stoker **	
10200212	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom (Tangential)	
10200213	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Wet Slurry	
10200217	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Atmospheric Fluidized Bed Combustion: Bubbling Bed (Bituminous Coal)	
10200218	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Atmospheric Fluidized Bed Combustion: Circulating Bed (Bitum. Coal)	
10200219	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Cogeneration (Bituminous Coal)	
10200221	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Wet Bottom (Subbituminous Coal)	
10200222	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom (Subbituminous Coal)	
10200223	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Cyclone Furnace (Subbituminous Coal)	
10200224	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Spreader Stoker (Subbituminous Coal)	
10200225	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Traveling Grate (Overfeed) Stoker (Subbituminous Coal)	
10200226	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom Tangential (Subbituminous Coal)	
10200229	External Combustion Boilers	Industrial	Bituminous/Subbituminous Coal	Cogeneration (Subbituminous Coal)	
10500102	External Combustion Boilers	Space Heaters	Industrial	Coal **	
39000201	Industrial Processes	In-process Fuel Use	Bituminous Coal	Cement Kiln/Dryer (Bituminous Coal)	
39000203	Industrial Processes	In-process Fuel Use	Bituminous Coal	Lime Kiln (Bituminous)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
39000288	Industrial Processes	In-process Fuel Use	Bituminous Coal	General (Subbituminous)	
39000289	Industrial Processes	In-process Fuel Use	Bituminous Coal	General (Bituminous)	
39000299	Industrial Processes	In-process Fuel Use	Bituminous Coal	General (Bituminous)	
50390002	Waste Disposal	Solid Waste Disposal - Industrial	Auxiliary Fuel/No Emissions	Coal	
2102004000 - Stationary Source Fuel Combustion; Industrial; Distillate Oil; Total: Boilers and IC Engines					
10200501	External Combustion Boilers	Industrial	Distillate Oil	Grades 1 and 2 Oil	
10200502	External Combustion Boilers	Industrial	Distillate Oil	10-100 Million Btu/hr **	
10200503	External Combustion Boilers	Industrial	Distillate Oil	< 10 Million Btu/hr **	
10200504	External Combustion Boilers	Industrial	Distillate Oil	Grade 4 Oil	
10200505	External Combustion Boilers	Industrial	Distillate Oil	Cogeneration	
10201403	External Combustion Boilers	Industrial	CO Boiler	Distillate Oil	
10500105	External Combustion Boilers	Space Heaters	Industrial	Distillate Oil	
20200101	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Turbine	
20200102	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Reciprocating	
20200103	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Turbine: Cogeneration	
20200104	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Reciprocating: Cogeneration	
20200105	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Reciprocating: Crankcase Blowby	
20200106	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20200107	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Reciprocating: Exhaust	
20200108	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20200109	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)	Turbine: Exhaust	
20200401	Internal Combustion Engines	Industrial	Large Bore Engine	Diesel	
20200405	Internal Combustion Engines	Industrial	Large Bore Engine	Crankcase Blowby	
20200406	Internal Combustion Engines	Industrial	Large Bore Engine	Evaporative Losses (Fuel Storage and Delivery System)	
20200407	Internal Combustion Engines	Industrial	Large Bore Engine	Exhaust	
27000320	Internal Combustion Engines	Off-highway Diesel Engines	Industrial Equipment	Industrial Fork Lift: Diesel	
30190001	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30190011	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30190021	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
30290001	Industrial Processes	Food and Agriculture	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30390001	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30390011	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30390021	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
30400406	Industrial Processes	Secondary Metal Production	Lead	Pot Furnace Heater: Distillate Oil	
30490001	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30490011	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30490021	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
30490031	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Distillate Oil (No. 2): Furnaces	
30500208	Industrial Processes	Mineral Products	Asphalt Concrete	Asphalt Heater: Distillate Oil	
30505022	Industrial Processes	Mineral Products	Asphalt Processing (Blowing)	Asphalt Heater: Distillate Oil	
30590001	Industrial Processes	Mineral Products	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30590011	Industrial Processes	Mineral Products	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30590021	Industrial Processes	Mineral Products	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
30600901	Industrial Processes	Petroleum Industry	Flares	Distillate Oil	
30609901	Industrial Processes	Petroleum Industry	Incinerators	Distillate Oil (No. 2)	
30790001	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30790011	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30790021	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
30890001	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30890011	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
30890021	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
30990001	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Distillate Oil (No. 2): Process Heaters	
30990011	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
31000401	Industrial Processes	Oil and Gas Production	Process Heaters	Distillate Oil (No. 2)	
31000411	Industrial Processes	Oil and Gas Production	Process Heaters	Distillate Oil (No. 2): Steam Generators	
31390001	Industrial Processes	Electrical Equipment	Process Heaters	Distillate Oil (No. 2)	
39000501	Industrial Processes	In-process Fuel Use	Distillate Oil	Asphalt Dryer **	
39000502	Industrial Processes	In-process Fuel Use	Distillate Oil	Cement Kiln/Dryer	
39000503	Industrial Processes	In-process Fuel Use	Distillate Oil	Lime Kiln	
39000589	Industrial Processes	In-process Fuel Use	Distillate Oil	General	
39000598	Industrial Processes	In-process Fuel Use	Distillate Oil	Grade 4 Oil: General	
39000599	Industrial Processes	In-process Fuel Use	Distillate Oil	General	
39900501	Industrial Processes	Miscellaneous Manufacturing Industries	Process Heater/Furnace	Distillate Oil	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
39990001	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Distillate Oil (No. 2): Process Heaters	
39990011	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Distillate Oil (No. 2): Incinerators	
39990021	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Distillate Oil (No. 2 Oil): Flares	
40201002	Petroleum and Solvent Evaporation	Surface Coating Operations	Coating Oven Heater	Distillate Oil	
40290011	Petroleum and Solvent Evaporation	Surface Coating Operations	Fuel Fired Equipment	Distillate Oil: Incinerator/Afterburner	
49090011	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Distillate Oil (No. 2): Incinerators	
49090021	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Distillate Oil (No. 2): Flares	
50390005	Waste Disposal	Solid Waste Disposal - Industrial	Auxiliary Fuel/No Emissions	Distillate Oil	
2102005000 - Stationary Source Fuel Combustion; Industrial; Residual Oil; Total: All Boiler Types					
10200401	External Combustion Boilers	Industrial	Residual Oil	Grade 6 Oil	
10200402	External Combustion Boilers	Industrial	Residual Oil	10-100 Million Btu/hr **	
10200403	External Combustion Boilers	Industrial	Residual Oil	< 10 Million Btu/hr **	
10200404	External Combustion Boilers	Industrial	Residual Oil	Grade 5 Oil	
10200405	External Combustion Boilers	Industrial	Residual Oil	Cogeneration	
10201404	External Combustion Boilers	Industrial	CO Boiler	Residual Oil	
20200501	Internal Combustion Engines	Industrial	Residual/Crude Oil	Reciprocating	
20200505	Internal Combustion Engines	Industrial	Residual/Crude Oil	Reciprocating: Crankcase Blowby	
20200506	Internal Combustion Engines	Industrial	Residual/Crude Oil	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20200507	Internal Combustion Engines	Industrial	Residual/Crude Oil	Reciprocating: Exhaust	
30190002	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Residual Oil: Process Heaters	
30190012	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Residual Oil: Incinerators	
30190022	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Residual Oil: Flares	
30290002	Industrial Processes	Food and Agriculture	Fuel Fired Equipment	Residual Oil: Process Heaters	
30390002	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Residual Oil: Process Heaters	
30390012	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Residual Oil: Incinerators	
30390022	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Residual Oil: Flares	
30490002	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Residual Oil: Process Heaters	
30490012	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Residual Oil: Incinerators	
30490022	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Residual Oil: Flares	



Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
30490032	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Residual Oil: Furnaces	
30500207	Industrial Processes	Mineral Products	Asphalt Concrete	Asphalt Heater: Residual Oil	
30505021	Industrial Processes	Mineral Products	Asphalt Processing (Blowing)	Asphalt Heater: Residual Oil	
30590002	Industrial Processes	Mineral Products	Fuel Fired Equipment	Residual Oil: Process Heaters	
30590012	Industrial Processes	Mineral Products	Fuel Fired Equipment	Residual Oil: Incinerators	
30600111	Industrial Processes	Petroleum Industry	Process Heaters	Oil-fired (No. 6 Oil) > 100 Million Btu Capacity Residual Oil	
30600902	Industrial Processes	Petroleum Industry	Flares	Residual Oil	
30609902	Industrial Processes	Petroleum Industry	Incinerators	Residual Oil	
30790002	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Residual Oil: Process Heaters	
30790012	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Residual Oil: Incinerators	
30790022	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Residual Oil: Flares	
30890002	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Residual Oil: Process Heaters	
30890012	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Residual Oil: Incinerators	
30890022	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Residual Oil: Flares	
30990002	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Residual Oil: Process Heaters	
30990012	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Residual Oil: Incinerators	
31000402	Industrial Processes	Oil and Gas Production	Process Heaters	Residual Oil	
31000412	Industrial Processes	Oil and Gas Production	Process Heaters	Residual Oil: Steam Generators	
31390002	Industrial Processes	Electrical Equipment	Process Heaters	Residual Oil	
39000402	Industrial Processes	In-process Fuel Use	Residual Oil	Cement Kiln/Dryer	
39000403	Industrial Processes	In-process Fuel Use	Residual Oil	Lime Kiln	
39000489	Industrial Processes	In-process Fuel Use	Residual Oil	General	
39000499	Industrial Processes	In-process Fuel Use	Residual Oil	General	
39990002	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Residual Oil: Process Heaters	
39990012	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Residual Oil: Incinerators	
39990022	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Residual Oil: Flares	
40201003	Petroleum and Solvent Evaporation	Surface Coating Operations	Coating Oven Heater	Residual Oil	
40290012	Petroleum and Solvent Evaporation	Surface Coating Operations	Fuel Fired Equipment	Residual Oil: Incinerator/Afterburner	
49090012	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Residual Oil: Incinerators	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
49090022	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Residual Oil: Flares	
2102006000 - Stationary Source Fuel Combustion; Industrial; Natural Gas; Total: Boilers and IC Engines					
10200601	External Combustion Boilers	Industrial	Natural Gas	> 100 Million Btu/hr	
10200602	External Combustion Boilers	Industrial	Natural Gas	10-100 Million Btu/hr	
10200603	External Combustion Boilers	Industrial	Natural Gas	< 10 Million Btu/hr	
10200604	External Combustion Boilers	Industrial	Natural Gas	Cogeneration	
10201401	External Combustion Boilers	Industrial	CO Boiler	Natural Gas	
10500106	External Combustion Boilers	Space Heaters	Industrial	Natural Gas	
20200201	Internal Combustion Engines	Industrial	Natural Gas	Turbine	Exclude compressor station natural gas
20200202	Internal Combustion Engines	Industrial	Natural Gas	Reciprocating	Exclude compressor station natural gas
20200203	Internal Combustion Engines	Industrial	Natural Gas	Turbine: Cogeneration	Exclude compressor station natural gas
20200204	Internal Combustion Engines	Industrial	Natural Gas	Reciprocating: Cogeneration	Exclude compressor station natural gas
20200205	Internal Combustion Engines	Industrial	Natural Gas	Reciprocating: Crankcase Blowby	Exclude compressor station natural gas
20200206	Internal Combustion Engines	Industrial	Natural Gas	Reciprocating: Evaporative Losses (Fuel Delivery System)	Exclude compressor station natural gas
20200207	Internal Combustion Engines	Industrial	Natural Gas	Reciprocating: Exhaust	Exclude compressor station natural gas
20200208	Internal Combustion Engines	Industrial	Natural Gas	Turbine: Evaporative Losses (Fuel Delivery System)	Exclude compressor station natural gas
20200209	Internal Combustion Engines	Industrial	Natural Gas	Turbine: Exhaust	Exclude compressor station natural gas
20200251	Internal Combustion Engines	Industrial	Natural Gas	2-cycle Rich Burn	Exclude compressor station natural gas
20200252	Internal Combustion Engines	Industrial	Natural Gas	2-cycle Lean Burn	Exclude compressor station natural gas
20200253	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Rich Burn	Exclude compressor station natural gas
20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Exclude compressor station natural gas
20200255	Internal Combustion Engines	Industrial	Natural Gas	2-cycle Clean Burn	Exclude compressor station natural gas
20200256	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Clean Burn	Exclude compressor station natural gas
30190003	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Natural Gas: Process Heaters	
30190013	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Natural Gas: Incinerators	
30190023	Industrial Processes	Chemical Manufacturing	Fuel Fired Equipment	Natural Gas: Flares	
30290003	Industrial Processes	Food and Agriculture	Fuel Fired Equipment	Natural Gas: Process Heaters	
30291001	Industrial Processes	Food and Agriculture	Fuel Fired Equipment	Broiling Food: Natural Gas	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
30390003	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Natural Gas: Process Heaters	
30390013	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Natural Gas: Incinerators	
30390023	Industrial Processes	Primary Metal Production	Fuel Fired Equipment	Natural Gas: Flares	
30400407	Industrial Processes	Secondary Metal Production	Lead	Pot Furnace Heater: Natural Gas	
30490003	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Natural Gas: Process Heaters	
30490013	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Natural Gas: Incinerators	
30490023	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Natural Gas: Flares	
30490033	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Natural Gas: Furnaces	
30500206	Industrial Processes	Mineral Products	Asphalt Concrete	Asphalt Heater: Natural Gas	
30505020	Industrial Processes	Mineral Products	Asphalt Processing (Blowing)	Asphalt Heater: Natural Gas	
30590003	Industrial Processes	Mineral Products	Fuel Fired Equipment	Natural Gas: Process Heaters	
30590013	Industrial Processes	Mineral Products	Fuel Fired Equipment	Natural Gas: Incinerators	
30590023	Industrial Processes	Mineral Products	Fuel Fired Equipment	Natural Gas: Flares	
30600105	Industrial Processes	Petroleum Industry	Process Heaters	Natural Gas	
30600903	Industrial Processes	Petroleum Industry	Flares	Natural Gas	
30602401	Industrial Processes	Petroleum Industry	Reciprocating Engine Compressors	Natural Gas Fired	
30609903	Industrial Processes	Petroleum Industry	Incinerators	Natural Gas	
30790003	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Natural Gas: Process Heaters	
30790013	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Natural Gas: Incinerators	
30790023	Industrial Processes	Pulp and Paper and Wood Products	Fuel Fired Equipment	Natural Gas: Flares	
30890003	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Natural Gas: Process Heaters	
30890013	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Natural Gas: Incinerators	
30890023	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Natural Gas: Flares	
30990003	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Natural Gas: Process Heaters	
30990013	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Natural Gas: Incinerators	
30990023	Industrial Processes	Fabricated Metal Products	Fuel Fired Equipment	Natural Gas: Flares	
31000404	Industrial Processes	Oil and Gas Production	Process Heaters	Natural Gas	
31000414	Industrial Processes	Oil and Gas Production	Process Heaters	Natural Gas: Steam Generators	
31390003	Industrial Processes	Electrical Equipment	Process Heaters	Natural Gas	
39000602	Industrial Processes	In-process Fuel Use	Natural Gas	Cement Kiln/Dryer	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
39000603	Industrial Processes	In-process Fuel Use	Natural Gas	Lime Kiln	
39000605	Industrial Processes	In-process Fuel Use	Natural Gas	Metal Melting **	
39000689	Industrial Processes	In-process Fuel Use	Natural Gas	General	
39000699	Industrial Processes	In-process Fuel Use	Natural Gas	General	
39900601	Industrial Processes	Miscellaneous Manufacturing Industries	Process Heater/Furnace	Natural Gas	
39990003	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Natural Gas: Process Heaters	
39990013	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Natural Gas: Incinerators	
39990023	Industrial Processes	Miscellaneous Manufacturing Industries	Miscellaneous Manufacturing Industries	Natural Gas: Flares	
40201001	Petroleum and Solvent Evaporation	Surface Coating Operations	Coating Oven Heater	Natural Gas	
40290013	Petroleum and Solvent Evaporation	Surface Coating Operations	Fuel Fired Equipment	Natural Gas: Incinerator/Afterburner	
40290023	Petroleum and Solvent Evaporation	Surface Coating Operations	Fuel Fired Equipment	Natural Gas: Flares	
49090013	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Natural Gas: Incinerators	
49090023	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Fuel Fired Equipment	Natural Gas: Flares	
50390006	Waste Disposal	Solid Waste Disposal - Industrial	Auxiliary Fuel/No Emissions	Natural Gas	
2102007000 - Stationary Source Fuel Combustion; Industrial; Liquefied Petroleum Gas (LPG); Total: All Boiler Types					
10201001	External Combustion Boilers	Industrial	Liquefied Petroleum Gas (LPG)	Butane	
10201002	External Combustion Boilers	Industrial	Liquefied Petroleum Gas (LPG)	Propane	
10201003	External Combustion Boilers	Industrial	Liquefied Petroleum Gas (LPG)	Butane/Propane Mixture: Specify Percent Butane in Comments	
10500110	External Combustion Boilers	Space Heaters	Industrial	Liquefied Petroleum Gas (LPG)	
20201001	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Propane: Reciprocating	
20201002	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Butane: Reciprocating	
20201005	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Reciprocating: Crankcase Blowby	
20201006	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20201007	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Reciprocating: Exhaust	
20201008	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20201009	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Turbine: Exhaust	
20201011	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Turbine	
20201012	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Reciprocating Engine	
20201013	Internal Combustion Engines	Industrial	Liquefied Petroleum Gas (LPG)	Turbine: Cogeneration	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
20201014	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Reciprocating Engine: Cogeneration	
27300320	Internal Combustion Engines	Off-highway LPG-fueled Engines	Industrial Equipment	Industrial Fork Lift: Liquified Petroleum Gas (LPG)	
30290005	Industrial Processes	Food and Agriculture	Fuel Fired Equipment	Liquified Petroleum Gas (LPG): Process Heaters	
30490035	Industrial Processes	Secondary Metal Production	Fuel Fired Equipment	Propane: Furnaces	
30500209	Industrial Processes	Mineral Products	Asphalt Concrete	Asphalt Heater: LPG	
30505023	Industrial Processes	Mineral Products	Asphalt Processing (Blowing)	Asphalt Heater: LP Gas	
30590005	Industrial Processes	Mineral Products	Fuel Fired Equipment	Liquified Petroleum Gas (LPG): Process Heaters	
30600107	Industrial Processes	Petroleum Industry	Process Heaters	LPG-fired	
30600905	Industrial Processes	Petroleum Industry	Flares	Liquified Petroleum Gas	
30609905	Industrial Processes	Petroleum Industry	Incinerators	Liquified Petroleum Gas	
30890004	Industrial Processes	Rubber and Miscellaneous Plastics Products	Fuel Fired Equipment	Liquified Petroleum Gas (LPG): Process Heaters	
31000406	Industrial Processes	Oil and Gas Production	Process Heaters	Propane/Butane	
39001089	Industrial Processes	In-process Fuel Use	Liquified Petroleum Gas	General	
39001099	Industrial Processes	In-process Fuel Use	Liquified Petroleum Gas	General	
39901001	Industrial Processes	Miscellaneous Manufacturing Industries	Process Heater/Furnace	LPG	
40201004	Petroleum and Solvent Evaporation	Surface Coating Operations	Coating Oven Heater	Liquified Petroleum Gas (LPG)	
50390010	Waste Disposal	Solid Waste Disposal - Industrial	Auxiliary Fuel/No Emissions	Liquified Petroleum Gas (LPG)	
2102008000 - Stationary Source Fuel Combustion; Industrial; Wood; Total: All Boiler Types					
10200901	External Combustion Boilers	Industrial	Wood/Bark Waste	Bark-fired Boiler	
10200902	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood/Bark-fired Boiler	
10200903	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood-fired Boiler - Wet Wood (>=20% moisture)	
10200904	External Combustion Boilers	Industrial	Wood/Bark Waste	Bark-fired Boiler (< 50,000 Lb Steam) **	
10200905	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood/Bark-fired Boiler (< 50,000 Lb Steam) **	
10200906	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood-fired Boiler (< 50,000 Lb Steam) **	
10200907	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood Cogeneration	
10200908	External Combustion Boilers	Industrial	Wood/Bark Waste	Wood-fired Boiler - Dry Wood (<20% moisture)	
10200910	External Combustion Boilers	Industrial	Wood/Bark Waste	Fuel cell/Dutch oven boilers **	
10200911	External Combustion Boilers	Industrial	Wood/Bark Waste	Stoker boilers **	
10200912	External Combustion Boilers	Industrial	Wood/Bark Waste	Fluidized bed combustion boiler	
39000989	Industrial Processes	In-process Fuel Use	Wood	General	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
39000999	Industrial Processes	In-process Fuel Use	Wood	General: Wood	
2102011000 - Stationary Source Fuel Combustion; Industrial; Kerosene; Total: All Boiler Types					
20200901	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Turbine	
20200902	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Reciprocating	
20200905	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Reciprocating: Crankcase Blowby	
20200906	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20200907	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Reciprocating: Exhaust	
20200908	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20200909	Internal Combustion Engines	Industrial	Kerosene/Naphtha (Jet Fuel)	Turbine: Exhaust	

**Table A-2. Commercial/Institutional Fuel Combustion Crosswalk for Point Source Subtractions**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2103001000 - Stationary Source Fuel Combustion; Commercial/Institutional; Anthracite Coal; Total: All Boiler Types					
10300101	External Combustion Boilers	Commercial/Institutional	Anthracite Coal	Pulverized Coal	
10300102	External Combustion Boilers	Commercial/Institutional	Anthracite Coal	Traveling Grate (Overfeed) Stoker	
10300103	External Combustion Boilers	Commercial/Institutional	Anthracite Coal	Hand-fired	
2103002000 - Stationary Source Fuel Combustion; Commercial/Institutional; Bituminous/Subbituminous Coal; Total: All Boiler Types					
10300203	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Cyclone Furnace (Bituminous Coal)	
10300205	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Wet Bottom (Bituminous Coal)	
10300206	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom (Bituminous Coal)	
10300207	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Overfeed Stoker (Bituminous Coal)	
10300208	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Underfeed Stoker (Bituminous Coal)	
10300209	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Spreader Stoker (Bituminous Coal)	
10300211	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Overfeed Stoker **	
10300214	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Hand-fired (Bituminous Coal)	
10300216	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom (Tangential) (Bituminous Coal)	
10300217	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Atmospheric Fluidized Bed Combustion: Bubbling Bed (Bituminous Coal)	
10300218	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Atmospheric Fluidized Bed Combustion: Circulating Bed (Bitum. Coal)	
10300221	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Wet Bottom (Subbituminous Coal)	
10300222	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom (Subbituminous Coal)	
10300223	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Cyclone Furnace (Subbituminous Coal)	
10300224	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Spreader Stoker (Subbituminous Coal)	
10300225	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Traveling Grate (Overfeed) Stoker (Subbituminous Coal)	
10300226	External Combustion Boilers	Commercial/Institutional	Bituminous/Subbituminous Coal	Pulverized Coal: Dry Bottom Tangential (Subbituminous Coal)	
10500202	External Combustion Boilers	Space Heaters	Commercial/Institutional	Coal **	
50190002	Waste Disposal	Solid Waste Disposal - Government	Auxiliary Fuel/No Emissions	Coal	
50290002	Waste Disposal	Solid Waste Disposal - Commercial/Institutional	Auxiliary Fuel/No Emissions	Coal	
2103004000 - Stationary Source Fuel Combustion; Commercial/Institutional; Distillate Oil; Total: Boilers and IC Engines					
10300501	External Combustion Boilers	Commercial/Institutional	Distillate Oil	Grades 1 and 2 Oil	
10300502	External Combustion Boilers	Commercial/Institutional	Distillate Oil	10-100 Million Btu/hr **	
10300503	External Combustion Boilers	Commercial/Institutional	Distillate Oil	< 10 Million Btu/hr **	
10300504	External Combustion Boilers	Commercial/Institutional	Distillate Oil	Grade 4 Oil	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
10500205	External Combustion Boilers	Space Heaters	Commercial/Institutional	Distillate Oil	
20300101	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Reciprocating	
20300102	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Turbine	
20300105	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Reciprocating: Crankcase Blowby	
20300106	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20300107	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Reciprocating: Exhaust	
20300108	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20300109	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)	Turbine: Exhaust	
50100602	Waste Disposal	Solid Waste Disposal - Government	Fire Fighting	Structure: Distillate Oil	
50190005	Waste Disposal	Solid Waste Disposal - Government	Auxiliary Fuel/No Emissions	Distillate Oil	
50290005	Waste Disposal	Solid Waste Disposal - Commercial/Institutional	Auxiliary Fuel/No Emissions	Distillate Oil	
2103005000 - Stationary Source Fuel Combustion; Commercial/Institutional; Residual Oil; Total: All Boiler Types					
10300401	External Combustion Boilers	Commercial/Institutional	Residual Oil	Grade 6 Oil	
10300402	External Combustion Boilers	Commercial/Institutional	Residual Oil	10-100 Million Btu/hr **	
10300403	External Combustion Boilers	Commercial/Institutional	Residual Oil	< 10 Million Btu/hr **	
10300404	External Combustion Boilers	Commercial/Institutional	Residual Oil	Grade 5 Oil	
2103006000 - Stationary Source Fuel Combustion; Commercial/Institutional; Natural Gas; Total: Boilers and IC Engines					
10300601	External Combustion Boilers	Commercial/Institutional	Natural Gas	> 100 Million Btu/hr	
10300602	External Combustion Boilers	Commercial/Institutional	Natural Gas	10-100 Million Btu/hr	
10300603	External Combustion Boilers	Commercial/Institutional	Natural Gas	< 10 Million Btu/hr	
10500206	External Combustion Boilers	Space Heaters	Commercial/Institutional	Natural Gas	
20300201	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Reciprocating	
20300202	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Turbine	
20300203	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Turbine: Cogeneration	
20300204	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Cogeneration	
20300205	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Reciprocating: Crankcase Blowby	
20300206	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Reciprocating: Evaporative Losses (Fuel Delivery System)	
20300207	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Reciprocating: Exhaust	
20300208	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Turbine: Evaporative Losses (Fuel Delivery System)	
20300209	Internal Combustion Engines	Commercial/Institutional	Natural Gas	Turbine: Exhaust	
50190006	Waste Disposal	Solid Waste Disposal - Government	Auxiliary Fuel/No Emissions	Natural Gas	



Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
50290006	Waste Disposal	Solid Waste Disposal - Commercial/Institutional	Auxiliary Fuel/No Emissions	Natural Gas	
2103007000 - Stationary Source Fuel Combustion; Commercial/Institutional; Liquified Petroleum Gas (LPG); Total: All Combustor Types					
10301001	External Combustion Boilers	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Butane	
10301002	External Combustion Boilers	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Propane	
10301003	External Combustion Boilers	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Butane/Propane Mixture: Specify Percent Butane in	Comments
10500210	External Combustion Boilers	Space Heaters	Commercial/Institutional	Liquified Petroleum Gas (LPG)	
20301001	Internal Combustion Engines	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Propane: Reciprocating	
20301002	Internal Combustion Engines	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Butane: Reciprocating	
20301005	Internal Combustion Engines	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Reciprocating: Crankcase Blowby	
20301006	Internal Combustion Engines	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20301007	Internal Combustion Engines	Commercial/Institutional	Liquified Petroleum Gas (LPG)	Reciprocating: Exhaust	
50190010	Waste Disposal	Solid Waste Disposal - Government	Auxiliary Fuel/No Emissions	Liquified Petroleum Gas (LPG)	
50290010	Waste Disposal	Solid Waste Disposal - Commercial/Institutional	Auxiliary Fuel/No Emissions	Liquified Petroleum Gas (LPG)	
2103008000 - Stationary Source Fuel Combustion; Commercial/Institutional; Wood; Total: All Boiler Types					
10300901	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Bark-fired Boiler	
10300902	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Wood/Bark-fired Boiler	
10300903	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Wood-fired Boiler - Wet Wood (>=20% moisture)	
10300908	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Wood-fired Boiler - Dry Wood (<20% moisture)	
10300910	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Fuel cell/Dutch oven boilers **	
10300911	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Stoker boilers **	
10300912	External Combustion Boilers	Commercial/Institutional	Wood/Bark Waste	Fluidized bed combustion boilers	
10500209	External Combustion Boilers	Space Heaters	Commercial/Institutional	Wood	
2103011000 - Stationary Source Fuel Combustion; Commercial/Institutional; Kerosene; Total: All Combustor Types					
20300901	Internal Combustion Engines	Commercial/Institutional	Kerosene/Naphtha (Jet Fuel)	Turbine: JP-4	
20300908	Internal Combustion Engines	Commercial/Institutional	Kerosene/Naphtha (Jet Fuel)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20300909	Internal Combustion Engines	Commercial/Institutional	Kerosene/Naphtha (Jet Fuel)	Turbine: Exhaust	
50100603	Waste Disposal	Solid Waste Disposal - Government	Fire Fighting	Structure: Kerosene	

**Table A-3. Construction Crosswalk for Point Source Subtractions**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
		2311010000 - Industrial Processes; Construction: SIC 15 – 17; Residential; Total and 2311020000 - Industrial Processes; Construction: SIC 15 – 18; Industrial/Commercial/Institutional; Total			
31100101	Industrial Processes	Building Construction	Construction: Building Contractors	Site Preparation: Topsoil Removal	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100102	Industrial Processes	Building Construction	Construction: Building Contractors	Site Preparation: Earth Moving (Cut and Fill)	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100103	Industrial Processes	Building Construction	Construction: Building Contractors	Site Preparation: Aggregate Hauling (On Dirt)	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100199	Industrial Processes	Building Construction	Construction: Building Contractors	Other Not Classified	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100201	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	Mechanical or Explosive Dismemberment	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100202	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	Mechanical or Explosive Dismemberment	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100205	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	On-site Truck Traffic	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100206	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	On-site Truck Traffic	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions
31100299	Industrial Processes	Building Construction	Demolitions/Special Trade Contracts	Other Not Classified: Construction/Demolition	See Table II-2 for state-level SCC 231101000 versus 2310020000 proportions

**Table A-4. Publicly Owned Treatment Works Crosswalk for Point Source Subtractions**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2630020000 - Waste Disposal, Treatment, and Recovery; Wastewater Treatment; Public Owned; Total Processed					
50100701	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Entire Plant	
50100702	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Primary Settling Tank	
50100703	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Secondary Settling Tank	
50100704	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Aeration Tank	
50100707	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Headworks Screening	
50100708	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Comminutor	
50100710	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Collector Sewers	
50100715	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Aerated Grit Chamber	
50100719	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Lift Station	
50100720	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Primary Settling Tank	
50100731	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Diffused Air Act Sludge	
50100732	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Mechanical Mix Air Act Sludge	
50100733	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Pure Oxygen Act Sludge	
50100734	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Trickling Filter	
50100740	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Secondary Clarifier	
50100750	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Tertiary Filters	
50100760	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Chlorine Contact Tank	
50100761	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Dechlorination	
50100765	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Weir	
50100769	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Storage Basin or Open Tank	
50100771	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Gravity Sludge Thickener	
50100772	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: DAF Sludge Thickener	
50100781	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Anaerobic Digester	
50100791	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Belt Filter Press	
50100792	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Sludge Centrifuge	
50100793	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	POTW: Sludge Drying Bed	
50100795	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Sludge Storage Lagoons/Drying Beds	
50100799	Waste Disposal	Solid Waste Disposal - Government	Sewage Treatment	Other Not Classified	

**Table A-5. Solvent Utilization Crosswalk for Point Source Subtractions**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2401005000 - Solvent Utilization; Surface Coating; Auto Refinishing; SIC 7532; Total: All Solvent Types					
40201601	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Application/Electro-deposition/Dip/Spray	Only include if NAICS code = 8111*
40201602	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Cleaning/Pretreatment	Only include if NAICS code = 8111*
40201603	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Coating Mixing	Only include if NAICS code = 8111*
40201604	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Coating Storage	Only include if NAICS code = 8111*
40201605	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Equipment Cleanup	Only include if NAICS code = 8111*
40201606	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat Operation	Only include if NAICS code = 8111*
40201607	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Sealers	Only include if NAICS code = 8111*
40201608	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Deadeners	Only include if NAICS code = 8111*
40201609	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Anti-corrosion Priming	Only include if NAICS code = 8111*
40201619	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Surfacing Operation	Only include if NAICS code = 8111*
40201620	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Repair Topcoat Application Area	Only include if NAICS code = 8111*
40201621	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Solvent-borne - Automobiles	Only include if NAICS code = 8111*
40201622	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Electro-deposition - Automobiles	Only include if NAICS code = 8111*
40201623	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Solvent-borne - Automobiles	Only include if NAICS code = 8111*
40201624	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Water-borne - Automobiles	Only include if NAICS code = 8111*
40201625	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Solvent-borne - Automobiles	Only include if NAICS code = 8111*
40201626	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Water-borne - Automobiles	Only include if NAICS code = 8111*
40201627	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Solvent-borne - Light Trucks	Only include if NAICS code = 8111*
40201628	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Electro-deposition - Light Trucks	Only include if NAICS code = 8111*
40201629	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Solvent-borne - Light Trucks	Only include if NAICS code = 8111*
40201630	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Water-borne - Light Trucks	Only include if NAICS code = 8111*
40201631	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Solvent-borne - Light Trucks	Only include if NAICS code = 8111*

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201632	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Water-borne - Light Trucks	Only include if NAICS code = 8111*
40201699	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Other Not Classified	Only include if NAICS code = 8111*
2401015000 - Solvent Utilization; Surface Coating; Factory Finished Wood: SIC 2426 thru 242; Total: All Solvent Types					
40202101	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Base Coat	
40202103	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Coating Mixing	
40202104	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Coating Storage	
40202105	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Equipment Cleanup	
40202106	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Topcoat	
40202107	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Filler	
40202108	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Sealer	
40202109	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Inks	
40202110	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Grove Coat Application	
40202111	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Stain Application	
40202117	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Filler Sander	
40202118	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Sealer Sander	
40202131	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Water-borne Coating	
40202132	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Solvent-borne Coating	
40202133	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Ultraviolet Coating	
40202140	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Surface Preparation (Includes Tempering, Sanding, Brushing, Grove Cut)	
40202199	Petroleum and Solvent Evaporation	Surface Coating Operations	Flatwood Products	Other Not Classified	
2401020000 - Solvent Utilization; Surface Coating; Wood Furniture: SIC 25; Total: All Solvent Types					
40201901	Petroleum and Solvent Evaporation	Surface Coating Operations	Wood Furniture Surface Coating	Coating Operation	
40201903	Petroleum and Solvent Evaporation	Surface Coating Operations	Wood Furniture Surface Coating	Coating Mixing	
40201904	Petroleum and Solvent Evaporation	Surface Coating Operations	Wood Furniture Surface Coating	Coating Storage	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201999	Petroleum and Solvent Evaporation	Surface Coating Operations	Wood Furniture Surface Coating	Other Not Classified	
2401025000 - Solvent Utilization; Surface Coating; Metal Furniture: SIC 25; Total: All Solvent Types					
40202001	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Coating Operation	
40202002	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Cleaning/Pretreatment	
40202003	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Coating Mixing	
40202004	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Coating Storage	
40202005	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Equipment Cleanup	
40202010	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application	
40202011	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application: Spray, High Solids	
40202012	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application: Spray, Water-borne	
40202013	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application: Dip	
40202014	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application: Flow Coat	
40202015	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Prime Coat Application: Flashoff	
40202020	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application	
40202021	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application: Spray, High Solids	
40202022	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application: Spray, Water-borne	
40202023	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application: Dip	
40202024	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application: Flow Coat	
40202025	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Topcoat Application: Flashoff	
40202031	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Spray Line: General	
40202032	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Spray Dip Line: General ** (Use 4-02-020-37)	
40202033	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Spray High Solids Coating ** (Use 4-02-020-35)	
40202034	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Spray Water-borne Coating ** (Use 4-02-020-36)	
40202035	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Spray, High Solids	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40202036	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Spray, Water-borne	
40202037	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Dip	
40202038	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Flow Coat	
40202039	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Flashoff	
40202099	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Other Not Classified	
2401030000 - Solvent Utilization; Surface Coating; Paper: SIC 26; Total: All Solvent Types					
40201301	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Operation	
40201303	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Mixing	
40201304	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Storage	
40201305	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Equipment Cleanup	
40201310	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Application: Knife Coater	
40201320	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Application: Reverse Roll Coater	
40201330	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Coating Application: Rotogravure Printer	
40201399	Petroleum and Solvent Evaporation	Surface Coating Operations	Paper Coating	Other Not Classified	
2401040000 - Solvent Utilization; Surface Coating; Metal Cans: SIC 341; Total: All Solvent Types					
40201702	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Cleaning/Pretreatment	
40201703	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Coating Mixing	
40201704	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Coating Storage	
40201705	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Equipment Cleanup	
40201706	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Solvent Storage	
40201721	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Two Piece Exterior Base Coating	
40201722	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Interior Spray Coating	
40201723	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Sheet Base Coating (Interior)	
40201724	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Sheet Base Coating (Exterior)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201725	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Side Seam Spray Coating	
40201726	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	End Sealing Compound (Also See 4-02-017-36 & -37)	
40201727	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Lithography	
40201728	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Over Varnish	
40201729	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Exterior End Coating	
40201731	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three-piece Can Sheet Base Coating	
40201732	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three-piece Can Sheet Lithographic Coating Line	
40201733	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three-piece Can-side Seam Spray Coating	
40201734	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three-piece Can Interior Body Spray Coat	
40201735	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Two-piece Can Coating Line	
40201736	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Two-piece Can End Sealing Compound	
40201737	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three Piece Can End Sealing Compound	
40201738	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Two Piece Can Lithographic Coating Line	
40201739	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Three Piece Can Coating Line (All Coating Solvent Emission Points)	
40201799	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Other Not Classified	
2401045000 - Solvent Utilization; Surface Coating; Metal Coils: SIC 3498; Total: All Solvent Types					
40201801	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Prime Coating Application	
40201802	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Cleaning/Pretreatment	
40201803	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Solvent Mixing	
40201804	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Solvent Storage (Use 4-07-004-01 thru 4-07-999-98 if possible)	
40201805	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Equipment Cleanup	
40201806	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Finish Coating	
40201807	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Coating Storage	
40201899	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Other Not Classified	



Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2401055000 - Solvent Utilization; Surface Coating; Machinery and Equipment: SIC 35; Total: All Solvent Types					
40202501	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Coating Operation	
40202502	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Cleaning/Pretreatment	
40202503	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Coating Mixing	
40202504	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Coating Storage	
40202505	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Equipment Cleanup	
40202510	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Prime Coat Application	
40202511	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Prime Coat Application: Spray, High Solids	
40202512	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Prime Coat Application: Spray, Water-borne	
40202515	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Prime Coat Application: Flashoff	
40202520	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application	
40202521	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application: Spray, High Solids	
40202522	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application: Spray, Water-borne	
40202523	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application: Dip	
40202524	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application: Flow Coat	
40202525	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Topcoat Application: Flashoff	
40202531	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Single Flow	
40202532	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Single Dip	
40202533	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Single Spray	
40202534	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Two Coat, Flow and Spray	
40202535	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Two Coat, Dip and Spray	
40202536	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Conveyor Two Coat, Spray	
40202537	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Manual Two Coat, Spray and Air Dry	
40202542	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Spray, High Solids	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40202543	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Spray, Water-borne	
40202544	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Dip	
40202545	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Flow Coat	
40202546	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Flashoff	
40202599	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Other Not Classified	
2401060000 - Solvent Utilization; Surface Coating; Large Appliances: SIC 363; Total: All Solvent Types					
40201401	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Coating Operation	
40201402	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Cleaning/Pretreatment	
40201403	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Coating Mixing	
40201404	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Coating Storage	
40201405	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Equipment Cleanup	
40201406	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Topcoat Spray	
40201410	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Coat Flashoff	
40201411	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Topcoat Flashoff	
40201431	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Coating Line: General	
40201432	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Air Spray	
40201433	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Electrostatic Spray	
40201434	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Flow Coat	
40201435	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Dip Coat	
40201436	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Prime Electro-deposition	
40201437	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Top Air Spray	
40201438	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Top Electrostatic Spray	
40201499	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Appliances	Other Not Classified	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2401065000 - Solvent Utilization; Surface Coating; Electronic and Other Electrical: SIC 36 – 363; Total: All Solvent Types					
40203001	Petroleum and Solvent Evaporation	Surface Coating Operations	Semiconductors	Specify Solvent	
2401070000 - Solvent Utilization; Surface Coating; Motor Vehicles: SIC 371; Total: All Solvent Types					
40201601	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Application/Electro-deposition/Dip/Spray	Include unless NAICS = 8111*
40201602	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Cleaning/Pretreatment	Include unless NAICS = 8111*
40201603	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Coating Mixing	Include unless NAICS = 8111*
40201604	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Coating Storage	Include unless NAICS = 8111*
40201605	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Equipment Cleanup	Include unless NAICS = 8111*
40201606	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat Operation	Include unless NAICS = 8111*
40201607	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Sealers	Include unless NAICS = 8111*
40201608	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Deadeners	Include unless NAICS = 8111*
40201609	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Anti-corrosion Priming	Include unless NAICS = 8111*
40201619	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Surfacing Operation	Include unless NAICS = 8111*
40201620	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Repair Topcoat Application Area	Include unless NAICS = 8111*
40201621	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Solvent-borne - Automobiles	Include unless NAICS = 8111*
40201622	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Electro-deposition - Automobiles	Include unless NAICS = 8111*
40201623	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Solvent-borne - Automobiles	Include unless NAICS = 8111*
40201624	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Water-borne - Automobiles	Include unless NAICS = 8111*
40201625	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Solvent-borne - Automobiles	Include unless NAICS = 8111*
40201626	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Water-borne - Automobiles	Include unless NAICS = 8111*
40201627	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Solvent-borne - Light Trucks	Include unless NAICS = 8111*
40201628	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Prime Coating: Electro-deposition - Light Trucks	Include unless NAICS = 8111*
40201629	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Solvent-borne - Light Trucks	Include unless NAICS = 8111*
40201630	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Guide Coating: Water-borne - Light Trucks	Include unless NAICS = 8111*

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201631	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Solvent-borne - Light Trucks	Include unless NAICS = 8111*
40201632	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Topcoat: Water-borne - Light Trucks	Include unless NAICS = 8111*
40201699	Petroleum and Solvent Evaporation	Surface Coating Operations	Automobiles and Light Trucks	Other Not Classified	Include unless NAICS = 8111*
2401075000 - Solvent Utilization; Surface Coating; Aircraft: SIC 372; Total: All Solvent Types					
40202401	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Prime Coating Operation	
40202402	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Cleaning/Pretreatment	
40202403	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Coating Mixing	
40202404	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Coating Storage	
40202405	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Equipment Cleanup	
40202406	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Topcoat Operation	
40202499	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Aircraft	Other Not Classified	
2401080000 - Solvent Utilization; Surface Coating; Marine: SIC 373; Total: All Solvent Types					
40202301	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Prime Coating Operation	
40202302	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Cleaning/Pretreatment	
40202303	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Coating Mixing	
40202304	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Coating Storage	
40202305	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Equipment Cleanup	
40202306	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Topcoat Operation	
40202399	Petroleum and Solvent Evaporation	Surface Coating Operations	Large Ships	Other Not Classified	
2401090000 - Solvent Utilization; Surface Coating; Miscellaneous Manufacturing; Total: All Solvent Types					
40202201	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Coating Operation	
40202202	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Cleaning/Pretreatment	
40202203	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Coating Mixing	
40202204	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Coating Storage	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40202205	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Equipment Cleanup	
40202206	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Baseline Coating Mix	
40202207	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Low Solids Solvent-borne Coating	
40202208	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Medium Solids Solvent-borne Coating	
40202209	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: High Solids Coating (25% Efficiency)	
40202210	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: High Solids Solvent-borne Coating (40% Efficiency)	
40202211	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Water-borne Coating	
40202212	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Low Solids Solvent-borne EMI/RFI Shielding Coating	
40202213	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Higher Solids Solvent-borne EMI/RFI Shielding Coating	
40202214	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Water-borne EMI/RFI Shielding Coating	
40202215	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Business: Zinc Arc Spray	
40202220	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Prime Coat Application	
40202229	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Prime Coat Flashoff	
40202230	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Color Coat Application	
40202239	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Color Coat Flashoff	
40202240	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Topcoat/Texture Coat Application	
40202249	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Topcoat/Texture Coat Flashoff	
40202250	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	EMI/RFI Shielding Coat Application	
40202259	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	EMI/RFI Shielding Coat Flashoff	
40202270	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Sanding/Grit Blasting Prior to EMI/RFI Shielding Coat Application	
40202280	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Maskant Application	
40202299	Petroleum and Solvent Evaporation	Surface Coating Operations	Plastic Parts	Other Not Classified	
2415000000 - Solvent Utilization; Degreasing; All Processes/All Industries; Total: All Solvent Types					
40100201	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Stoddard (Petroleum Solvent): Open-top Vapor Degreasing	
40100202	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	1,1,1-Trichloroethane (Methyl Chloroform): Open-top Vapor Degreasing	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40100203	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Perchloroethylene: Open-top Vapor Degreasing	
40100204	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Methylene Chloride: Open-top Vapor Degreasing	
40100205	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichloroethylene: Open-top Vapor Degreasing	
40100206	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Toluene: Open-top Vapor Degreasing	
40100207	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichlorotrifluoroethane (Freon): Open-top Vapor Degreasing	
40100208	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Chlorosolve: Open-top Vapor Degreasing	
40100209	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Butyl Acetate: Open-top Vapor Degreasing	
40100215	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Entire Unit: Open-top Vapor Degreasing	
40100216	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Degreaser: Entire Unit	
40100217	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Entire Unit	
40100221	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Stoddard (Petroleum Solvent): Conveyorized Vapor Degreasing	
40100222	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	1,1,1-Trichloroethane (Methyl Chloroform): Conveyorized Vapor Degreaser	
40100223	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Perchloroethylene: Conveyorized Vapor Degreasing	
40100224	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Methylene Chloride: Conveyorized Vapor Degreasing	
40100225	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichloroethylene: Conveyorized Vapor Degreasing	
40100235	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Entire Unit: with Vaporized Solvent: Conveyorized Vapor Degreasing	
40100236	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Entire Unit: with Non-boiling Solvent: Conveyorized Vapor Degreasing	
40100251	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Stoddard (Petroleum Solvent): General Degreasing Units	
40100252	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	1,1,1-Trichloroethane (Methyl Chloroform): General Degreasing Units	
40100253	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Perchloroethylene: General Degreasing Units	
40100254	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Methylene Chloride: General Degreasing Units	
40100255	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichloroethylene: General Degreasing Units	
40100256	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Toluene: General Degreasing Units	
40100257	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichlorotrifluoroethane (Freon): General Degreasing Units	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40100258	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichlorofluoromethane: General Degreasing Units	
40100259	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	1,1,1-Trichloroethane (Methyl Chloroform): General Degreasing Units	
40100295	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Other Not Classified: General Degreasing Units	
40100296	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Other Not Classified: General Degreasing Units	
40100297	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Other Not Classified: Open-top Vapor Degreasing	
40100298	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Other Not Classified: Conveyorized Vapor Degreasing	
40100299	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Other Not Classified: Open-top Vapor Degreasing	
40100301	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Methanol	
40100302	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Methylene Chloride	
40100303	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Stoddard (Petroleum Solvent)	
40100304	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Perchloroethylene	
40100305	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	1,1,1-Trichloroethane (Methyl Chloroform)	
40100306	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Trichloroethylene	
40100307	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Isopropyl Alcohol	
40100308	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Methyl Ethyl Ketone	
40100309	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Freon	
40100310	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Acetone	
40100311	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Glycol Ethers	
40100335	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Entire Unit	
40100336	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Degreaser: Entire Unit	
40100398	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Other Not Classified	
40100399	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Cold Solvent Cleaning/Stripping	Other Not Classified	
40100401	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Knit Fabric Scouring with Chlorinated Solvent	Perchloroethylene	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2425000000 - Solvent Utilization; Graphic Arts; All Processes; Total: All Solvent Types					
40500101	Petroleum and Solvent Evaporation	Printing/Publishing	Drying	Dryer	
40500199	Petroleum and Solvent Evaporation	Printing/Publishing	Drying	Dryer	
40500201	Petroleum and Solvent Evaporation	Printing/Publishing	General	Letter Press: 2751	
40500202	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Kerosene)	
40500203	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvents (Mineral Solvents)	
40500211	Petroleum and Solvent Evaporation	Printing/Publishing	General	Letter Press: 2751	
40500212	Petroleum and Solvent Evaporation	Printing/Publishing	General	Printing: Letter Press	
40500215	Petroleum and Solvent Evaporation	Printing/Publishing	General	Letterpress: Cleaning Solution	
40500301	Petroleum and Solvent Evaporation	Printing/Publishing	General	Printing: Flexographic	
40500302	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Carbitol)	
40500303	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Cellosolve)	
40500304	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Ethyl Alcohol)	
40500305	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Isopropyl Alcohol)	
40500306	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (n-Propyl Alcohol)	
40500307	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent (Naphtha)	
40500311	Petroleum and Solvent Evaporation	Printing/Publishing	General	Printing: Flexographic	
40500312	Petroleum and Solvent Evaporation	Printing/Publishing	General	Printing: Flexographic	
40500314	Petroleum and Solvent Evaporation	Printing/Publishing	General	Printing: Flexographic: Propyl Alcohol Cleanup	
40500315	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Steam: Water-based	
40500316	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Steam: Water-based	
40500317	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Steam: Water-based	
40500318	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Steam: Water-based in Ink	
40500319	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Steam: Water-based Ink Storage	



Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40500401	Petroleum and Solvent Evaporation	Printing/Publishing	General	Lithographic: 2752	
40500411	Petroleum and Solvent Evaporation	Printing/Publishing	General	Lithographic: 2752	
40500412	Petroleum and Solvent Evaporation	Printing/Publishing	General	Lithographic: 2752	
40500413	Petroleum and Solvent Evaporation	Printing/Publishing	General	Lithographic: Isopropyl Alcohol Cleanup	
40500414	Petroleum and Solvent Evaporation	Printing/Publishing	General	Flexographic: Propyl Alcohol Cleanup	
40500415	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Dampening Solution with Alcohol Substitute	
40500416	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Dampening Solution with High Solvent Content	
40500417	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Cleaning Solution: Water-based	
40500418	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Dampening Solution with Isopropyl Alcohol	
40500421	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Heatset Ink Mixing	
40500422	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Heatset Solvent Storage	
40500431	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Nonheated Lithographic Inks	
40500432	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Nonheated Lithographic Inks	
40500433	Petroleum and Solvent Evaporation	Printing/Publishing	General	Offset Lithography: Nonheated Lithographic Inks	
40500501	Petroleum and Solvent Evaporation	Printing/Publishing	General	Gravure: 2754	
40500502	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Dimethylformamide	
40500503	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Ethyl Acetate	
40500506	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Methyl Ethyl Ketone	
40500507	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Methyl Isobutyl Ketone	
40500510	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Toluene	
40500511	Petroleum and Solvent Evaporation	Printing/Publishing	General	Gravure: 2754	
40500512	Petroleum and Solvent Evaporation	Printing/Publishing	General	Gravure: 2754	
40500513	Petroleum and Solvent Evaporation	Printing/Publishing	General	Gravure: 2754	
40500514	Petroleum and Solvent Evaporation	Printing/Publishing	General	Gravure: Cleanup Solvent	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40500597	Petroleum and Solvent Evaporation	Printing/Publishing	General	Other Not Classified	
40500598	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Other Not Specified	
40500599	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Thinning Solvent: Other Not Specified	
40500601	Petroleum and Solvent Evaporation	Printing/Publishing	General	Ink Mixing	
40500701	Petroleum and Solvent Evaporation	Printing/Publishing	General	Solvent Storage	
40500801	Petroleum and Solvent Evaporation	Printing/Publishing	General	Screen Printing	
40500802	Petroleum and Solvent Evaporation	Printing/Publishing	General	Fugitive Emissions: Cleaning Rags	
40500811	Petroleum and Solvent Evaporation	Printing/Publishing	General	Screen Printing	
40500812	Petroleum and Solvent Evaporation	Printing/Publishing	General	Screen Printing	
40588801	Petroleum and Solvent Evaporation	Printing/Publishing	Fugitive Emissions	Specify in Comments Field	
40588802	Petroleum and Solvent Evaporation	Printing/Publishing	Fugitive Emissions	Specify in Comments Field	
40588803	Petroleum and Solvent Evaporation	Printing/Publishing	Fugitive Emissions	Specify in Comments Field	
40588804	Petroleum and Solvent Evaporation	Printing/Publishing	Fugitive Emissions	Specify in Comments Field	
40588805	Petroleum and Solvent Evaporation	Printing/Publishing	Fugitive Emissions	Specify in Comments Field	

Table A-6. Gasoline Distribution Crosswalk for Point Source Subtractions

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2501050120 - Storage and Transport; Petroleum and Petroleum Product Storage; Bulk Terminals: All Evaporative Losses; Gasoline					
40400101	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	
40400102	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	
40400103	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Breathing Loss (67000 Bbl. Capacity) - Fixed Roof Tank	
40400104	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	
40400105	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	
40400106	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Breathing Loss (250000 Bbl Capacity) - Fixed Roof Tank	
40400107	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Working Loss (Diam. Independent) - Fixed Roof Tank	
40400108	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Working Loss (Diam. Independent) - Fixed Roof Tank	
40400109	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Working Loss (Diam. Independent) - Fixed Roof Tank	
40400110	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss (67000 Bbl Capacity)-Float. Roof Tank	
40400111	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss (67000 Bbl Capacity)-Float. Roof Tank	
40400112	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss (67000 Bbl Capacity)- Floating Roof Tank	
40400113	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	
40400114	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	
40400115	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	
40400116	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13/10/7: Withdrawal Loss (67000 Bbl Cap.) - Float Rf Tnk	
40400117	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13/10/7: Withdrawal Loss (250000 Bbl Cap.) - Float Rf Tnk	
40400118	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400119	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400120	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400131	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Primary Seal	
40400132	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Primary Seal	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40400133	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss - External Floating Roof w/ Primary Seal	
40400141	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400142	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400143	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400148	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13/10/7: Withdrawal Loss - Ext. Float Roof (Pri/Sec Seal)	
40400150	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Miscellaneous Losses/Leaks: Loading Racks	
40400151	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Valves, Flanges, and Pumps	
40400152	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Vapor Collection Losses	
40400153	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Vapor Control Unit Losses	
40400161	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Primary Seal	
40400162	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Primary Seal	
40400163	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss - Internal Floating Roof w/ Primary Seal	
40400171	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400172	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400173	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 7: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400178	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Gasoline RVP 13/10/7: Withdrawal Loss - Int. Float Roof (Pri/Sec Seal)	
2501055120 - Storage and Transport; Petroleum and Petroleum Product Storage; Bulk Plants: All Evaporative Losses; Gasoline					
40400201	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	
40400202	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	
40400203	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Breathing Loss (67000 Bbl. Capacity) - Fixed Roof Tank	
40400204	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	
40400205	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	
40400206	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Working Loss (67000 Bbl. Capacity) - Fixed Roof Tank	
40400207	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Standing Loss (67000 Bbl Cap.) - Floating Roof Tank	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40400208	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Standing Loss (67000 Bbl Cap.) - Floating Roof Tank	
40400209	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Standing Loss (67000 Bbl Cap.) - Floating Roof Tank	
40400210	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13/10/7: Withdrawal Loss (67000 Bbl Cap.) - Float Rf Tnk	
40400211	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400212	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400213	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	
40400231	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Primary Seal	
40400232	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Primary Seal	
40400233	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Standing Loss - External Floating Roof w/ Primary Seal	
40400241	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400242	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400243	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Standing Loss - Ext. Floating Roof w/ Secondary Seal	
40400248	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10/13/7: Withdrawal Loss - Ext. Float Roof (Pri/Sec Seal)	
40400250	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Loading Racks	
40400251	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Valves, Flanges, and Pumps	
40400252	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Miscellaneous Losses/Leaks: Vapor Collection Losses	
40400253	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Miscellaneous Losses/Leaks: Vapor Control Unit Losses	
40400261	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Primary Seal	
40400262	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Primary Seal	
40400263	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Standing Loss - Internal Floating Roof w/ Primary Seal	
40400271	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400272	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400273	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 7: Standing Loss - Int. Floating Roof w/ Secondary Seal	
40400278	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Gasoline RVP 10/13/7: Withdrawal Loss - Int. Float Roof (Pri/Sec Seal)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40400401	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 13: Breathing Loss	
40400402	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 13: Working Loss	
40400403	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 10: Breathing Loss	
40400404	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 10: Working Loss	
40400405	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 7: Breathing Loss	
40400406	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Petrol Prods - Undergrd Tanks	Gasoline RVP 7: Working Loss	
40600101	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Splash Loading **	
40600126	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Submerged Loading **	
40600131	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Submerged Loading (Normal Service)	
40600136	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Splash Loading (Normal Service)	
40600141	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Submerged Loading (Balanced Service)	
40600144	Petroleum and Solvent Evaporation	Transport. & Marketing of Petrol Product	Tank Cars/Trucks	Gasoline: Splash Loading (Balanced Service)	
40600147	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Tank Cars/Trucks	Gasoline: Submerged Loading (Clean Tanks)	
2501060051 - Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 1: Submerged Filling					
40600302	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Submerged Filling w/o Controls	
40600305	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Unloading **	Emissions from SCC 40600305 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600399	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Not Classified **	Emissions from SCC 40600399 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600702	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage I	Submerged Filling w/o Controls	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2501060052 - Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 1: Splash Filling					
40600301	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Splash Filling	
40600305	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Unloading **	Emissions from SCC 40600305 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600399	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Not Classified **	Emissions from SCC 40600399 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600701	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage I	Splash Filling	
2501060053 - Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 1: Balanced Submerged Filling					
40600305	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Unloading **	Emissions from SCC 40600305 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600306	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Balanced Submerged Filling	
40600399	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Not Classified **	Emissions from SCC 40600399 allocated to 2501060051, 2501060052, and 2501060053 based on proportion of total emissions for these SCCs.
40600706	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage I	Balanced Submerged Filling	
2501060100 - Storage and Transport; Petroleum and Petroleum Product Storage; Gasoline Service Stations; Stage 2: Total					
40600401	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Filling Vehicle Gas Tanks - Stage II	Vapor Loss w/o Controls	
40600402	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Filling Vehicle Gas Tanks - Stage II	Liquid Spill Loss w/o Controls	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40600403	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Filling Vehicle Gas Tanks - Stage II	Vapor Loss w/o Controls	
40600499	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Filling Vehicle Gas Tanks - Stage II	Not Classified **	
40600601	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage II	Vapor Loss w/o Controls	
40600602	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage II	Liquid Spill Loss w/o Controls	
40600603	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage II	Vapor Loss w/controls	
2501060201 – Storage and Transport; Petroleum and Petroleum Product Transport; Gasoline Service Stations; Underground Tank: Breathing and Emptying					
40600307	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Gasoline Retail Operations - Stage I	Underground Tank Breathing and Emptying	
40600707	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Consumer (Corporate) Fleet Refueling - Stage I	Underground Tank Breathing and Emptying	
2505030120 - Storage and Transport; Petroleum and Petroleum Product Transport; Truck; Gasoline					
40400154	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals	Tank Truck Vapor Leaks	
40400254	Petroleum and Solvent Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Plants	Tank Truck Vapor Losses	
40600162	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Tank Cars and Trucks	Gasoline: Loaded with Fuel (Transit Losses)	
40600163	Petroleum and Solvent Evaporation	Transportation and Marketing of Petroleum Products	Tank Cars and Trucks	Gasoline: Return with Vapor (Transit Losses)	



Table A-7. Mining and Quarrying Crosswalk for Point Source Subtraction

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2325000000 – Industrial Processes; Mining and Quarrying; SIC 14; All Processes; Total					
30302401	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Primary Crushing: Low Moisture Ore	
30302402	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Secondary Crushing: Low Moisture Ore	
30302403	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Tertiary Crushing: Low Moisture Ore	
30302404	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Material Handling: Low Moisture Ore	
30302405	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Primary Crushing: High Moisture Ore	
30302406	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Secondary Crushing: High Moisture Ore	
30302407	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Tertiary Crushing: High Moisture Ore	
30302408	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Material Handling: High Moisture Ore	
30302409	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Dry Grinding with Air Conveying	
30302410	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Dry Grinding without Air Conveying	
30302411	Industrial Processes	Primary Metal Production	Metal Mining (General Processes)	Ore Drying	
30303101	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Lead Ore w/ 5.1% Lead Content	
30303102	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Zinc Ore w/ 0.2% Lead Content	
30303103	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Copper Ore w/ 0.2% Lead Content	
30303104	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Lead-Zinc Ore w/ 2% Lead Content	
30303105	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Copper-Lead Ore w/ 2% Lead Content	
30303106	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Copper-Zinc Ore w/ 0.2% Lead Content	
30303107	Industrial Processes	Primary Metal Production	Leadbearing Ore Crushing and Grinding	Copper-Lead-Zinc w/ 2% Lead Content	
30501001	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Fluidized Bed	
30501002	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Flash or Suspension	
30501003	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Multilouvered	
30501004	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Rotary	
30501005	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Cascade	
30501006	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Continuous Carrier	
30501007	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Screen	
30501008	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Unloading	
30501009	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Raw Coal Storage	
30501010	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Crushing	
30501011	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Coal Transfer	
30501012	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Screening	
30501013	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Air Tables	

30501014	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Cleaned Coal Storage
30501015	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Loading
30501016	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Loading: Clean Coal
30501017	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Secondary Crushing
30501021	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Overburden Removal
30501022	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Drilling/Blasting
30501023	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Loading
30501024	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Hauling
30501030	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Topsoil Removal
30501031	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Scrapers: Travel Mode
30501032	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Topsoil Unloading
30501033	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Overburden
30501034	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Coal Seam: Drilling
30501035	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Blasting: Coal Overburden
30501036	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Dragline: Overburden Removal
30501037	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Truck Loading: Overburden
30501038	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Truck Loading: Coal
30501039	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Hauling: Haul Trucks
30501040	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Truck Unloading: End Dump - Coal
30501041	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Truck Unloading: Bottom Dump - Coal
30501042	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Truck Unloading: Bottom Dump - Overburden
30501043	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Open Storage Pile: Coal
30501044	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Train Loading: Coal
30501045	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Bulldozing: Overburden
30501046	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Bulldozing: Coal

30501047	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Grading
30501048	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Overburden Replacement
30501049	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Wind Erosion: Exposed Areas
30501050	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Vehicle Traffic: Light/Medium Vehicles
30501051	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Surface Mining Operations: Open Storage Pile: Spoils
30501060	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Surface Mining Operations: Primary Crusher
30501061	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Surface Mining Operations: Secondary Crusher
30501062	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Surface Mining Operations: Screens
30501090	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Haul Roads: General
30501099	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305310)	Other Not Classified
30501640	Industrial Processes	Mineral Products	Lime Manufacture	Vehicle Traffic
30501650	Industrial Processes	Mineral Products	Lime Manufacture	Quarrying Raw Limestone
30502009	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305320)	Blasting: General
30502010	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305320)	Drilling
30502018	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305320)	Drilling with Liquid Injection
30502020	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305320)	Drilling
30502513	Industrial Processes	Mineral Products	Construction Sand and Gravel	Excavating
30502514	Industrial Processes	Mineral Products	Construction Sand and Gravel	Drilling and Blasting
30503101	Industrial Processes	Mineral Products	Asbestos Mining	Surface Blasting
30503102	Industrial Processes	Mineral Products	Asbestos Mining	Surface Drilling
30503103	Industrial Processes	Mineral Products	Asbestos Mining	Cobbing
30503108	Industrial Processes	Mineral Products	Asbestos Mining	Overburden Stripping
30503109	Industrial Processes	Mineral Products	Asbestos Mining	Ventilation of Process Operations
30503199	Industrial Processes	Mineral Products	Asbestos Mining	Other Not Classified
30504001	Industrial Processes	Mineral Products	Mining and Quarrying of Nonmetallic Minerals	Open Pit Blasting
30504002	Industrial Processes	Mineral Products	Mining and Quarrying of Nonmetallic Minerals	Open Pit Drilling
30504003	Industrial Processes	Mineral Products	Mining and Quarrying of Nonmetallic Minerals	Open Pit Cobbing
30504010	Industrial Processes	Mineral Products	Mining and Quarrying of Nonmetallic Minerals	Underground Ventilation
30504024	Industrial Processes	Mineral Products	Mining and Quarrying of Nonmetallic Minerals	Overburden Stripping
30504101	Industrial Processes	Mineral Products	Clay processing: Kaolin	Mining
30504201	Industrial Processes	Mineral Products	Clay processing: Ball clay	Mining
30504301	Industrial Processes	Mineral Products	Clay processing: Fire clay	Mining
30504401	Industrial Processes	Mineral Products	Clay processing: Bentonite	Mining
30504501	Industrial Processes	Mineral Products	Clay processing: Fullers earth	Mining
30504601	Industrial Processes	Mineral Products	Clay processing: Common clay and shale, NEC	Mining
30531001	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Fluidized Bed
30531002	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Flash or Suspension

30531003	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Multilouvered
30531004	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Rotary
30531005	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Cascade
30531006	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Continuous Carrier
30531007	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Screen
30531008	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Unloading
30531009	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Raw Coal Storage
30531010	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Crushing
30531011	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Coal Transfer
30531012	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Screening
30531013	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Air Tables
30531014	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Cleaned Coal Storage
30531015	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Loading
30531016	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Loading: Clean Coal
30531017	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Secondary Crushing
30531090	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Haul Roads: General
30531099	Industrial Processes	Mineral Products	Coal Mining, Cleaning, and Material Handling (See 305010)	Other Not Classified
30532009	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305020 for diff. units)	Blasting: General
30532010	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305020 for diff. units)	Drilling
30532011	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305020 for diff. units)	Hauling
30532020	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305020 for diff. units)	Drilling
30532090	Industrial Processes	Mineral Products	Stone Quarrying - Processing (See also 305020 for diff. units)	Haul Roads - General

**Table A-8. Agriculture Production Crosswalk for Livestock**

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2805001100 - Miscellaneous Area Sources; Agriculture Production – Livestock; Beef cattle - finishing operations on feedlots (drylots); Confinement					
30202001	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
30202002	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
2805001200 - Miscellaneous Area Sources; Agriculture Production – Livestock; Beef cattle - finishing operations on feedlots (drylots); Manure handling and storage					
30202001	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
30202002	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
2805001300 - Miscellaneous Area Sources; Agriculture Production – Livestock; Beef cattle - finishing operations on feedlots (drylots); Land application of manure					
30202001	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
30202002	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
2805003100 - Miscellaneous Area Sources; Agriculture Production – Livestock; Beef cattle - finishing operations on pasture/range; Confinement					
30202001	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
30202002	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Feedlots: General	Apportion between nonpoint SCCs based on CMU Model output
2805007100 - Miscellaneous Area Sources; Agriculture Production – Livestock; Poultry production - layers with dry manure management systems; Confinement					
30202101	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Dry	Apportion between nonpoint SCCs based on CMU Model output
30202102	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Dry	Apportion between nonpoint SCCs based on CMU Model output
2805007300 - Miscellaneous Area Sources; Agriculture Production – Livestock; Poultry production - layers with dry manure management systems; Land application of manure					
30202101	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Dry	Apportion between nonpoint SCCs based on CMU Model output
30202102	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Dry	Apportion between nonpoint SCCs based on CMU Model output
2805008100 - Miscellaneous Area Sources; Agriculture Production – Livestock; Poultry production - layers with wet manure management systems; Confinement					
30202105	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
30202106	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
2805008200 - Miscellaneous Area Sources; Agriculture Production – Livestock; Poultry production - layers with wet manure management systems; Manure handling and storage					
30202105	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
30202106	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
2805008300 - Miscellaneous Area Sources; Agriculture Production – Livestock; Poultry production - layers with wet manure management systems; Land application of manure					
30202105	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
30202106	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
2805039100 - Miscellaneous Area Sources; Agriculture Production – Livestock; Swine production - operations with lagoons (unspecified animal age); Confinement					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output
2805039200 - Miscellaneous Area Sources; Agriculture Production – Livestock; Swine production - operations with lagoons (unspecified animal age); Manure handling and storage					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output
2805039300 - Miscellaneous Area Sources; Agriculture Production – Livestock; Swine production – deep-pit house operations (unspecified animal age); Land application of manure					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output
2805047100 – Miscellaneous Area Sources; Agriculture Production – Livestock; Swine Production – deep-pit operations (unspecified animal age); Confinement					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output
2805047300 – Miscellaneous Area Sources; Agriculture Production – Livestock; Swine Production – deep-pit operations (unspecified animal age); Land application of manure					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output
2805053100 – Miscellaneous Area Sources; Agriculture Production – Livestock; Swine Production – outdoor operations (unspecified animal age); Confinement					
30202000	Industrial Processes	Food and Agriculture	Beef Cattle Feedlots	Swine Feedlots	Apportion between nonpoint SCCs based on CMU Model output