AREA AND NONROAD 2007 BASE YEAR INVENTORIES

REVISED FINAL REPORT

Contract No. S-2009-06-01

January 2012

Prepared for:

Ronald C. Methier
Southeastern States Air Resource Managers, Inc.
526 Forest Parkway, Suite F
Forest Park, GA 30297-6140

Prepared by:

TranSystems Corporation
3622 Lyckan Parkway, Suite 2005
Durham, NC 27707

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I. INTRODUCTION

TranSystems 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.

In June 2010, TranSystems developed a set of "final" 2007 area and nonroad source base year inventory emission estimates (Pechan, 2010). These estimates are reported by county and source classification code (SCC), and 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 TranSystems, generally developed using the emissions estimation procedures used to prepare EPA's draft 2008 National Emissions Inventory (NEI);[1]
- 2007 industrial and commercial/institutional (ICI) fuel combustion emission estimates developed by TranSystems;
- 2008 commercial marine vessel and aircraft emission estimates from EPA's draft 2008 NEI, modified by TranSystems to reflect 2007 activity levels;
- 2007 switchyard and Class I line-haul locomotive estimates provided by the Eastern Regional Technical Advisory Committee (ERTAC); and
- 2008 ERTAC Class II/III line-haul locomotive emission estimates, modified by TranSystems to reflect 2007 activity levels.

Because EPA had not developed draft 2008 NEI emission estimates for Agricultural Tilling, Mining and Quarrying, and Pesticide Application at the time that the final area/nonroad source inventory was prepared, the final area source inventory also incorporated guidance from S/L agencies as to whether to incorporate emission estimates carried forward or grown[2] from EPA's 2002 area source NEI for these source categories. For ICI fuel combustion and other NEI source categories for which draft emission estimates reflected total emissions activity, it was necessary for TranSystems to perform point source subtractions to develop estimates of the emissions from area sources. These point source subtractions were performed using version 1.3 of the 2007 SEMAP point source inventory.

Since the final area source inventory was prepared in June 2010, SESARM requested that TranSystems incorporate additional S/L agency feedback into a revised final area source inventory. This feedback included direction to use updated agency emissions data, and to revise/remove other emission estimates. In the latter case, feedback included direction to replace S/L agency estimates with TranSystems defaults, and to remove emission estimates for specific fire source categories: Open Burning of Land Clearing Debris; Agricultural Field Burning; Forest Wildfire; and Prescribed Burning (these source categories are covered by a separate fire inventory developed by a different SESARM contractor).[3] For two source categories, Residential Wood Combustion and Stage I Gasoline Service Stations, SESARM directed TranSystems to develop new emission estimates reflecting changes to some of the inputs that had been used to develop the 2008 area source NEI emission estimates. In addition, SESARM directed

[1] 2008 NEI methods rely on Eastern Regional Technical Advisory Committee (ERTAC) methods when available.

[2] 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).

[3] In the case of Open Burning of Land Clearing Debris and Agricultural Field Burning, TranSystems provided the contractor (AMEC) with a file containing the final area source inventory's emission estimates.

TranSystems to re-perform the point source subtractions using an updated version (1.10a) of the SEMAP 2007 point source inventory.[4, 5]

Changes to the final nonroad mobile source inventory were relatively modest, with the only major change relating to the development of updated NONROAD model emission estimates for Virginia using a new set of Reid vapor pressure (RVP) values provided by the State.

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

- How TranSystems identified source categories and/or pollutants that may have been missing from the S/L agency supplied data;
- How TranSystems integrated data from the various emission data sources (i.e., S/L agencies, TranSystems defaults, ERTAC, and 2008 and 2002 NEI); and
- How TranSystems 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 revised final inventory.

[4] As requested, TranSystems performed the point source subtractions for Georgia at the State-level (per Georgia's earlier direction, the final inventory had performed these subtractions at the county-level).

[5] It should be noted that although EPA recently developed emissions estimates for Agricultural Tilling, Mining and Quarrying, and Pesticide Application, and also incorporated revisions to the draft NEI emission estimates for Open Burning of Household Waste (2610030000) and Yard Waste (2610000100 and 2610000400), and Fugitive Dust from Paved Roads (2294000000), SESARM elected not to incorporate these updates into the revised final area source inventory.

II. STATIONARY AREA SOURCE INVENTORY

TranSystems developed the revised final 2007 base year area source inventory for the SEMAP project from a combination of six sources:

1) S/L agency supplied area source emissions data;
2) TranSystems 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) TranSystems 2007 industrial and commercial/institutional fuel combustion area source emission estimates specifically developed for the SESARM states;
4) TranSystems 2007 emission estimates for gasoline service stations/stage I unloading;
5) TranSystems 2007 emission estimates using EPA's residential wood combustion tool with SESARM-identified modifications, and
6) 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. 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

TranSystems commenced area source inventory development work by providing S/L agencies with a Technical Memorandum documenting the emission estimation methods and data TranSystems 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 TranSystems.

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, TranSystems compared the source classification code (SCC) and pollutant coverage of these submittals against the SCCs/pollutants in the 2007 emissions data that TranSystems was developing for this project (hereafter referred to as the "TranSystems default inventory").

To assist in obtaining direction from SESARM agencies on how to merge the data from these sources, TranSystems first identified the SCC/pollutant combinations in the TranSystems default inventory that matched to S/L agency data. Next, TranSystems reviewed remaining S/L agency SCC/pollutant combinations against TranSystems defaults to identify whether it may be possible that these emissions were covered in the TranSystems default inventory under different SCCs. TranSystems 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, TranSystems 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 TranSystems default inventory. A list of SCC/pollutant combinations in the TranSystems 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, TranSystems 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, TranSystems transmitted a Word document identifying questions on how two merge the two data sets (e.g., where S/L agency emissions are reported as zero, should TranSystems replace any of these with emissions from the TranSystems default inventory?). After

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
Agency Contact	Lisa Cole/Tracy Anderson	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
Source of Emissions Data	Combination of Agency data and TranSystems defaults, supplemented with categories from 2002 NEI grown using EGAS	TranSystems defaults, supplemented with categories from 2002 NEI (combination of EGAS and carry forward)	TranSystems defaults, supplemented with categories from 2005 GA Consolidated Emissions Reporting Rule (CERR) submittal grown using EGAS	Combination of Agency data and TranSystems defaults.	TranSystems defaults, supplemented with categories from 2002 NEI grown using EGAS	TranSystems defaults, supplemented with categories from 2002 NEI (combination of EGAS and carry forward)	Combination of Agency data and TranSystems defaults.	TranSystems defaults, supplemented with categories from 2002 NEI grown using EGAS	Combination of Agency data and TranSystems defaults.	Combination of Agency data and TranSystems defaults, supplemented with categories from 2002 NEI (emissions carried forward)	Agency data	Combination of Agency data and TranSystems defaults, supplemented with categories from 2002 NEI (emissions carried forward)	Combination of Agency data and TranSystems defaults, supplemented with categories from 2002 NEI (emissions carried forward)	Combination of Agency data (Mining and Quarrying only) and TranSystems defaults, supplemented with categories from 2002 NEI (emissions carried forward)

reviewing S/L agency responses to these questions, TranSystems transmitted any follow-up questions that were necessary to clarify S/L agency guidance.

B. DEVELOPMENT OF TRANSYSTEMS DEFAULT 2007 AREA SOURCE INVENTORY

TranSystems created a default 2007 area source inventory that included all of the source categories covered by the 2008 nonpoint source NEI as of early 2010. For all these source categories except industrial and commercial/institutional (ICI) fuel combustion, stage I gasoline service stations, and residential wood combustion, TranSystems 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 removed the emissions associated with activity reflected in the point source inventory. As of early 2010, the 2008 nonpoint source NEI had only developed ICI fuel combustion emissions activity estimates, not emission estimates. Because of their potential importance and the availability of methodological improvements, TranSystems utilized an emissions estimation method for ICI fuel combustion that incorporated a few refinements to the NEI method. For stage I gasoline service stations, we developed emission estimates for this project using the NEI methods in combination with inputs reviewed and approved by S/L agencies. For residential wood combustion (RWC), TranSystems updated the emission estimates by running EPA's RWC emissions estimation tool with updates to the tool's wood consumption and wood-burning appliance profile/allocation assumptions. The following section discusses how information from the 2008 nonpoint source NEI was used in this project. The subsequent sections provide details on the methods used to estimate emissions from ICI fuel combustion, stage I gasoline service stations, and residential wood combustion.

1. 2008 Nonpoint Source NEI

TranSystems supported 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, which is 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.
(4) Link to Emission Calculation Documentation – provides links to the detailed documentation of the NEI methods;[6]
(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.

When work commenced on the revised final base year inventory in late 2011, TranSystems notified SESARM of the availability of 2008 NEI emission estimates for the following additional area source categories: Agricultural Tilling, Mining and Quarrying, and Pesticide Application. SESARM directed TranSystems not to incorporate the 2008 NEI emission estimates for these categories. In lieu of such updates, the SEMAP emission estimates for these source categories reflect direction from S/L agencies as to whether to incorporate estimates based on emissions reported in the 2002 NEI. In such cases where these categories were identified for inclusion, agencies also provided direction as to whether the 2002 NEI emissions should be carried forward to represent 2007 emissions, or projected to 2007 using growth factors from the Economic Growth Analysis Systems (EGAS).

[6] 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/. Note that in some cases, this documentation reflects revisions that EPA incorporated after the NEI data were compiled for this project: SESARM opted not to incorporate NEI revisions for Open Burning of Household Waste (2610030000) and Yard Waste (2610000100 and 2610000400), and Fugitive Dust from Paved Roads (2294000000).

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	Agriculture_Production_Livestock_28050nnnnn_Documentation.zip	Agriculture_Production_Livestock_28050nnnnn_Emissions.zip	2007	Yes (selected SCCs)
Asphalt Paving	2461021000	Cutback Asphalt	Asphalt_Paving_Cutback_2461021000_Documentation.zip	Asphalt_Paving_Cutback_2461021000_Emissions.zip	2008	No
	2461022000	Emulsified Asphalt	Asphalt_Paving_Emulsified_2461022000_Documentation.zip	Asphalt_Paving_Emulsified_2461022000_Emissions.zip	2008	No
Aviation Gasoline Distribution: Stage I	2501080050	Aviation Gasoline: Stage I	Aviation_Gasoline_Distribution_Stage_I_2501080050_Documentation.zip	Aviation_Gasoline_Distribution_Stage_I_2501080050_Emissions.zip	2008	No
Aviation Gasoline Distribution: Stage II	2501080100	Aviation Gasoline: Stage II	Aviation_Gasoline_Distribution_Stage_II_2501080100_Documentation.zip	Aviation_Gasoline_Distribution_Stage_II_2501080100_Emissions.zip	2008	No
Commercial Cooking	2302002nnn 2302003nnn	Commercial Cooking	Commercial_Cooking_2302002nnn_Documentation.zip	Commercial_Cooking_2302002nnn_Emissions.zip	2008	No
Construction Dust	2311010000	Residential Construction	Residential_Construction_2311010000_Documentation.zip	Residential_Construction_2311010000_Emissions.zip	2008	Yes
	2311020000	Non-Residential Construction	Non-Residential_Construction_2311020000_Documentation.zip	Non-Residential_Construction_2311020000_Emissions.zip	2008	Yes
	2311030000	Road Construction	Road_Construction_2311030000_Documentation.zip	Road_Construction_2311030000_Emissions.zip	2006	No
Fertilizer Application	28017000nn	Fertilizer Application	Fertilizer_Application_28017000nn_Documentation.zip	Fertilizer_Application_28017000nn_Emissions.zip	2007	No
Gasoline Distribution (SEMAP emissions were developed for Stage I Gasoline Service Station Unloading using NEI methods with S/L agency approved inputs)	25010110nn 25010120nn	Portable Fuel Containers	Portable_Fuel_Containers_25010110nn_25010120nn_Documentation.zip	Portable_Fuel_Containers_25010110nn_25010120nn_Emissions.zip	2008	No
	2501050120	Gasoline Distribution Stage I; Bulk Terminals	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_Bulk_Terminals_2501050120_Emissions.zip	2008	Yes
	2501055120	Gasoline Distribution Stage I; Bulk Plants	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_Bulk_Plants_2501055120_Emissions.zip	2008	Yes
	250106005n	Gasoline Distribution Stage I; Gasoline Service Station Unloading	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_Service_Station_Unloading_250106005n_Emissions.zip	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
	2501060100	Gasoline Distribution Stage II; Gasoline Service Stations	Gasoline_Distribution_Stage_II_Documentation.zip	Gasoline_Distribution_Stage_II_Gasoline_Service_Stations_2501060100_Emissions.zip	2008	Yes
	2501060201	Gasoline Distribution Stage I; Underground storage tank, breathing and emptying	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_UST_Breathing_and_Emptying_2501060201_CAP_Emissions.zip	2008	Yes
	2505030120	Gasoline Distribution Stage I; Tank Trucks in Transit	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_Tank_Trucks_in_Transit_2505030120_Emissions.zip	2008	Yes
	2505040120	Gasoline Distribution Stage I; Pipelines	Gasoline_Distribution_Stage_I_Documentation.zip	Gasoline_Distribution_Stage_I_Pipelines_2505040120_CAP_Emissions.zip	2008	No
Open Burning (NEI emissions for Open Burning of Land Clearing Debris were transmitted to AMEC for incorporation into SEMAP's fire inventory)	2610000100	Open Burning - Yard Waste - Leaves	Open_Burning_Yard_Waste_Leaf_2610000100_and_Brush_2610000400_Documentation.zip	Open_Burning_Yard_Waste_Leaf_2610000100_Emissions.zip	2008	No
	2610000400	Open Burning - Yard Waste - Brush	Open_Burning_Yard_Waste_Leaf_2610000100_and_Brush_2610000400_Documentation.zip	Open_Burning_Yard_Waste_Brush_261000400_Emissions.zip	2008	No
	2610000500	Open Burning - Land Clearing Debris	Open_Burning_Land_Clearing_Debris_2610000500_Documentation.zip	Open_Burning_Land_Clearing_Debris_2610000500_Emissions.zip	Multiple Years	No
	2610030000	Open Burning - Household Waste	Open_Burning_MSW_2610030000_Documentation.zip	Open_Burning_MSW_2610030000_Emissions.zip	2008	No
Paved and Unpaved Roads	2294000000	Paved Road Dust	Paved_Roads_2294000000_Documentation.zip	Paved_Roads_2294000000_Emissions.zip	2007	No
	2296000000	Unpaved Road Dust	Unpaved_Roads_2296000000_Documentation.zip	Unpaved_Roads_2296000000_Emissions.zip	2007	No
Publicly Owned Treatment Works (POTW)	2630020000	Publicly Owned Treatment Works (POTW)	Publicly_Owned_Treatment_Works_2630020000_Documentation.zip	Publicly_Owned_Treatment_Works_630020000_Emissions.zip	2008	Yes
Residential Heating (SEMAP Residential Wood Combustion/Wax Firelog emissions were calculated using NEI's RWC Tool with SESARM-revised inputs)	2104001000	Residential Anthracite Coal	Residential_Coal_2104001000_2104002000_Documentation.zip	Residential_Coal_2104001000_2104002000_Emissions.zip	2006	No
	2104002000	Residential Bituminous Coal	Residential_Coal_2104001000_2104002000_Documentation.zip	Residential_Coal_2104001000_2104002000_Emissions.zip	2006	No
	2104004000	Residential Distillate Oil	Residential_Distillate_Fuel_2104004000_Documentation.zip	Residential_Distillate_Fuel_2104004000_Emissions.zip	2006	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
	2104006000	Residential Natural Gas	Residential_Natural_Gas_2104006000_Documentation.zip	Residential_Natural_Gas_2104006000_Emissions.zip	2006	No
	2104007000	Residential LPG	Residential_LPG_2104007000_Documentation.zip	Residential_LPG_2104007000_Emissions.zip	2006	No
	2104008nnn 2104009000	Residential Wood Combustion and Wax Firelogs	Residential_Wood_Combustion_Documentation.zip	RWC_2008_Toolv4.1_Feb09_2010.zip	Inputs represent various years	No
	2104011000	Residential Kerosene	Residential_Kerosene_2104011000_Documentation.zip	Residential_Kerosene_2104011000_Emissions.zip	2006	No
Solvent Usage - Surface Coatings	2401001000	Architectural Coatings	Solvent_Utilization_Documentation.zip	Surface_Coating_Architectural_Coating_2401001000_Emissions.zip	2008	No
	2401005000	Automobile Refinishing	Solvent_Utilization_Documentation.zip	Surface_Coating_Automobile_Refinishing_2401005000_Emissions.zip	2006	Yes
	2401008000	Traffic Paints	Solvent_Utilization_Documentation.zip	Surface_Coating_Traffic_Painting_2401008000_Emissions.zip	2007	No
	2401015000	Factory Finished Wood	Solvent_Utilization_Documentation.zip	Surface_Coating_Factory_Finished_Wood_2401015000_Emissions.zip	2006	Yes
	2401020000	Wood Furniture and Fixtures	Solvent_Utilization_Documentation.zip	Surface_Coating_Wood_Furniture_and_Fixtures_401020000_Emissions.zip	2006	Yes
	2401025000	Metal Furniture	Solvent_Utilization_Documentation.zip	Surface_Coating_Metal_Furniture_2401025000_Emissions.zip	2006	Yes
	2401030000	Paper, Film and Foil	Solvent_Utilization_Documentation.zip	Surface_Coating_Paper_Film_and_Foil_2401030000_Emissions.zip	2006	Yes
	2401040000	Metal Cans	Solvent_Utilization_Documentation.zip	Surface_Coating_Metal_Can_Coating_2401040000_Emissions.zip	2006	Yes
	2401045000	Metal Sheet, Strip and Coils	Solvent_Utilization_Documentation.zip	Surface_Coating_Metal_Sheet_Strip_Coil_2401045000_Emissions.zip	2006	Yes
	2401055000	Machinery and Equipment	Solvent_Utilization_Documentation.zip	Surface_Coating_Machinery_and_Equipment_2401055000_Emissions.zip	2006	Yes
	2401060000	Appliances	Solvent_Utilization_Documentation.zip	Surface_Coating_Appliances_2401060000_Emissions.zip	2006	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
	2401065000	Electronic and Other Electrical Coatings	Solvent_Utilization_Documentation.zip	Surface_Coating_Electronic_and_Other_Electrical_Coatings_2401065000_Emissions.zip	2006	Yes
	2401070000	Motor Vehicles	Solvent_Utilization_Documentation.zip	Surface_Coating_Motor_Vehicles_2401070000_Emissions.zip	2006	Yes
	2401075000	Aircraft	Solvent_Utilization_Documentation.zip	Surface_Coating_Aircraft_2401075000_Emissions.zip	2006	Yes
	2401080000	Marine coatings	Solvent_Utilization_Documentation.zip	Surface_Coating_Marine_Coatings_2401080000_Emissions.zip	2006	Yes
	2401085000	Railroads	Solvent_Utilization_Documentation.zip	Surface_Coating_Railroad_2401085000_Emissions.zip	2006	No
	2401090000	Misc. Manufacturing	Solvent_Utilization_Documentation.zip	Surface_Coating_Misc_Manufacturing_2401090000_Emissions.zip	2006	Yes
	2401100000	Industrial Maintenance Coatings	Solvent_Utilization_Documentation.zip	Surface_Coating_Industrial_Maintenance_Coating_2401100000_Emissions.zip	2008	No
	2401200000	Other Special Purpose Coatings	Solvent_Utilization_Documentation.zip	Surface_Coating_Other_Special_Purpose_Coating_2401200000_Emissions.zip	2008	No
Solvent Usage - Other	2415000000	Cleaning Products: Industrial and Institutional	Solvent_Utilization_Documentation.zip	Cleaning_Products_Industrial_and_Institutional_2415000000_Emissions.zip	2006	Yes
	2420000000	Dry Cleaning	Solvent_Utilization_Documentation.zip	Dry_Cleaning_2420000000_Emissions.zip	2006	No
	2425000000	Graphic Arts	Solvent_Utilization_Documentation.zip	Graphic_Arts_2425000000_Emissions.zip	2006	Yes
	2460100000	Consumer & Commercial - Personal Care Products (Cosmetics and Toiletries)	Solvent_Utilization_Documentation.zip	Consumer_Solvents-Personal_Care_Products_(Cosmetics_and_Toiletries)_2460100000_Emissions.zip	2008	No
	2460200000	Consumer & Commercial - Household Cleaning Products	Solvent_Utilization_Documentation.zip	Consumer_Solvents-Household_Cleaning_Products_2460200000_Emissions.zip	2008	No
	2460400000	Consumer & Commercial - Automotive Aftermarket	Solvent_Utilization_Documentation.zip	Consumer_SolventsAutomotive_Aftermarket_2460400000_Emissions.zip	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
	2460500000	Consumer & Commercial - Coatings and Related Products	Solvent_Utilization_Documentation.zip	Consumer_SolventsCoatings_and_Related_Products_2460500000_Emissions.zip	2008	No
	2460600000	Consumer & Commercial - Adhesives and Sealants	Solvent_Utilization_Documentation.zip	Consumer_Solvents-Adhesives_and_Sealants_24606000000_Emissions.zip	2008	No
	2460800000	Consumer & Commercial - FIFRA Regulated Products	Solvent_Utilization_Documentation.zip	Consumer_Solvents_FIFRA_Regulated_Products_2460800000_Emissions	2008	No
	2460900000	Consumer & Commercial - Misc. Products	Solvent_Utilization_Documentation.zip	Consumer_Solvents-Misc_Products_2460900000_Emissions.zip	2008	No

a. Adjustment of NEI Data to Reflect 2007 Activity Levels[7]

When the 2008 nonpoint source NEI reflected 2007 activity data, TranSystems incorporated the 2008 NEI emission estimates as the default SEMAP area source inventory. When a source category's NEI data reflected 2006 or 2008 emissions activity data, TranSystems updated the NEI estimates to reflect 2007 emission activity levels. Table II-3 documents these specific adjustments.

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. These data were not updated because of the level-of-effort that would be involved, and the fact that these data are generally 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 TranSystems default area source inventory. To facilitate the point source subtractions, TranSystems 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;
4. Back-calculate 2007 uncontrolled point source emissions from reported emissions and control efficiency data -- e.g., 40 tpy of controlled NO_x emissions and 80 percent control efficiency = 50 tpy of uncontrolled NO_x 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 <u>total</u> 2007 state-level emissions in the 2007 TranSystems default inventory represented by area sources (using step 5 total <u>point source</u> 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.

TranSystems 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).[8] Although the final inventory reflected Georgia's request to perform Georgia's point source subtractions at the county-level, Georgia's revised final inventory reflects subtractions at the state-level.

[7] In addition, TranSystems incorporated silt content inputs provided by Alabama for updated NEI-based emissions estimation calculations used for the residential and nonresidential construction dust categories (SCCs 2311010000 and 2311020000).
[8] Efforts to perform subtractions at the county-level commonly result in negative 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
	2501060100	Gasoline Distribution Stage II;	2008	Applied county-level VMT ratio:	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
		Gasoline Service Stations		VMT from 2007 NMIM run : VMT from 2008 NMIM run*				
	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	No
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
	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
	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

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
	2104007000	Residential LPG	2006	Recalculated using 2007 LPG consumption	Yes	State	County allocation based on 2000 Census data	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
	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

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
	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

*Note that Stage II gasoline refueling VOC emissions were revised from the emissions reported in the final version of the 2007 SEMAP inventory, using updated 2007/2008 VMT adjustment factor ratios. The updated ratios reflect incorporation of the 2007 VMT data that was used as input to MOVES onroad mobile source emissions modeling runs.

As a final step, TranSystems set post-subtraction PM2.5-PRI emissions equal to PM10-PRI emissions in cases where the initial post-subtraction emissions indicated that PM2.5-PRI emissions were greater than PM10-PRI emissions.

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.

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

Area	SCC	Area Source %
Jefferson County, KY	2102008000	95.66
South Carolina	2102002000	25.35
	2102004000	0.00
	2102005000	0.00
	2102006000	21.33
	2102007000	0.00
	2102008000	43.40
	2103004000	93.14
	2103006000	94.10
	2103007000	99.84
Knox County, TN	2102006000	76.71
	2103006000	99.13
Tennessee - Rest of State	2103008000	49.36
	2401015000	94.40

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

In early 2010, the 2008 NEI data for the ICI fuel combustion categories represented total *emission activity* estimates, rather than area source *emission* estimates. Because emission estimates were not available and because of the relative importance of this category, TranSystems 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 TranSystems 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 used 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 used 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_2 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 TranSystems 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.[9]

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

[9] To conserve project resources, Pechan relied 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, TranSystems 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//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, TranSystems 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, TranSystems 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, TranSystems 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. TranSystems 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, TranSystems 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
		Industrial Sector	
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
Commercial Sector			
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[a]
	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

[a] This value differs from the 0 percent 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 percent 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[a]
	No. 4 Distillate Fuel Oil	100

[a] 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, TranSystems 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, TranSystems 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[1]	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.
[1] All SESARM states are in the South region.

d. Emission Factors

Table II-10 presents the criteria pollutant emission factors that TranSystems 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).[10] Wood combustion emission factors are from *AP-42* (EPA, 2003b). Because there are no NH_3 emission factors for ICI fuel combustion available in the 2008 NEI emission factor database, *AP-42,* or EPA's WebFIRE, TranSystems used emission factors reported in an NH_3 emissions Emission Inventory Improvement Program (EIIP) guidance document (Pechan, 2004).

[10] 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[1]	VOC	NO_x	CO	SO_2	PM2.5-FIL	PM10-FIL	PM-CON	NH_3
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 [2]	lb/1000 bbl	21.9	398	502	2.39	0.438	0.797	1.275	1.95
2102008000	Industrial Wood [3]	lb/MMBtu	0.017	0.22	0.6	0.025	0.43	0.5	0.017	0.007[4]
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 [3]	lb/MMBtu	0.017	0.22	0.6	0.025	0.43	0.5	0.017	0.005[4]
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: [1] lb = pound; ton = short ton; gal = gallon; MMcf = million cubic feet; MMBtu = million British thermal units; bbl = barrels; S = sulfur content; A = ash content

[2] Emission factors from Commercial/Institutional LPG.

[3] Emission factors from *AP-42*, Section 1.6, Wood Residue Combustion in Boilers (EPA, 2003b).

[4] 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.[11] 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.[12] 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), TranSystems evaluated the reliability of various data sources for coal sulfur content to be used to estimate emissions in that project. TranSystems 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."

TranSystems 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, TranSystems 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, TranSystems 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.

[11] The 2002 NEI documentation provides citations to the *AP-42* source for each emission factor.
[12] 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[1] Sulfur Content (%)	Commercial/ Institutional Coal[2] 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

[1]Reflects the average from coal received in 2007.
[2]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/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,[13] TranSystems 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 though 92 with exception of 814) were used to allocate SEDS energy consumption data to individual counties. TranSystems 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, TranSystems 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, TranSystems utilized energy use per 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.

[13] For natural gas, for example – EIA-176 "Annual Report of Natural and Supplemental Gas Supply and Disposition."

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. TranSystems 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.

3. Estimation of Area Source Emissions from Residential Wood Combustion

Residential wood combustion was calculated using the EPA's Residential Wood Combustion (RWC) Tool. The tool uses the following equation to estimate RWC emissions:

Emissions = (Number of wood-burning appliances) x (Cords of wood burned per appliance) x (Density of wood burned) x (Emission factor)

A review of the spatial distribution of SESARM region $PM_{2.5}$ emissions from the tool indicated much higher emissions in urbanized areas than rural areas. Although there is reason to expect some correlation between the number of occupied housing units and residential wood combustion emissions, this correlation would be expected to be fairly weak because of at least two factors. The first factor is that housing units in urbanized areas generally have greater access to natural gas as a heating fuel, and therefore, would be expected to have a greater penetration of natural gas fireplaces than rural areas. The second factor is that the access to inexpensive wood supplies would be expected to be much greater in rural areas (and related to this, the proportion of housing units with wood-burning appliances that are used as primary heating units – i.e., woodstoves, outdoor hydronic heaters, pellet stoves – would also be expected to be greater in rural areas). Review of several wood consumption surveys, including the latest survey from Minnesota, also showed a clear trend in households in urbanized areas consuming less wood than their counterparts in rural areas.

Based on this review, SESARM, with primary assistance from Tracy Anderson of the Alabama Department of Environmental Management, examined the EPA Tool's default assumptions for the first two variables in the RWC emissions estimation equation. The following describes the specific refinements that SESARM incorporated into a revised RWC Tool for these two variables.

Number of Wood-Burning Appliances

SESARM incorporated updates to the estimated number of the following types of wood-burning appliances:

- Fireplaces;
- Fireplace Insert Uncertified;
- Fireplace Insert EPA Certified Catalytic;
- Fireplace Insert EPA Certified Non-catalytic;
- Woodstove Uncertified;
- Woodstove EPA Certified Catalytic;
- Woodstove EPA Certified Non-catalytic; and
- Fireplaces Burning Wax Logs.

For these equipment types, the EPA's RWC tool estimates the number of wood-burning appliances in each county by multiplying the county's number of occupied housing units by an appropriate wood-burning appliance profile.

Where possible, SESARM first updated the occupied housing unit estimates in the Tool. The Tool estimates the number of occupied housing units by multiplying each county's total number of housing units in 2007, as reported by the U.S. Census Bureau, by the county-level occupancy rate in 2000 (last year of occupancy rate data available from the Census). For select counties (primarily those with large populations), the Census' American Community Survey (ACS) reports estimates of the 2007 year number of occupied housing units. Several states use the ACS data and indicated a preference for its use. Therefore, SESARM updated the EPA tool to use the ACS' housing unit estimates for counties where these data were available.

A second type of update involved revisions to the wood-burning appliance profiles. Appliance profiles represent the fraction of occupied housing units that have each of the wood-burning appliances listed above. The appliance profiles were developed from the number of wood burning appliances and number of occupied housing units data

compiled from the U.S. Census Bureau's "American Housing Survey" (AHS). The RWC Tool applies appliance profiles to one or more geographic locations. The Tool includes a set of Metropolitan Statistical Area (MSA)-specific appliance profiles and regional default appliance profiles (Northeast, Midwest, South, and West). Based on new information gathered from these surveys, SESARM calculated 12 additional appliance profiles to better characterize the wood-burning appliance population. These profiles are as follows:

1) A default urban appliance profile based on national urban values reported by the 2005 National AHS,
2) "Sub-MSA" area profiles for each of the following MSAs:
    a. Birmingham, AL;
    b. Miami-Dade County, FL;
    c. Urban Atlanta, GA;
    d. Kenton County, KY;
    e. De Soto County, MS;
    f. Gaston County, NC;
    g. Mecklenburg County, NC;
    h. York County, SC;
    i. Shelby County, TN;
    j. Fairfax County, VA; and
    k. Urban Norfolk-Virginia Beach-Newport News area, VA.

These sub-MSA appliance profiles were developed using the "sub-area" sections of the original Metropolitan Areas AHS used in the RWC tool. In keeping with EPA's MSA appliance profile assignment approach, SESARM assigned the sub-MSA profiles only to the counties to which they applied.

SESARM developed a default urban appliance profile in an attempt to better characterize wood-burning equipment populations in urbanized areas for which the AHS does not report MSA-specific data. This profile reflects national average wood-burning appliance information from the 2005 National AHS. The next step was to develop a set of criteria for determining what counties should be assigned the applicable regional average appliance profile (South), and which would be assigned the new national urban appliance profile. Figure 1 shows the decision tree that SESEARM developed to assign each of these two appliance profiles.

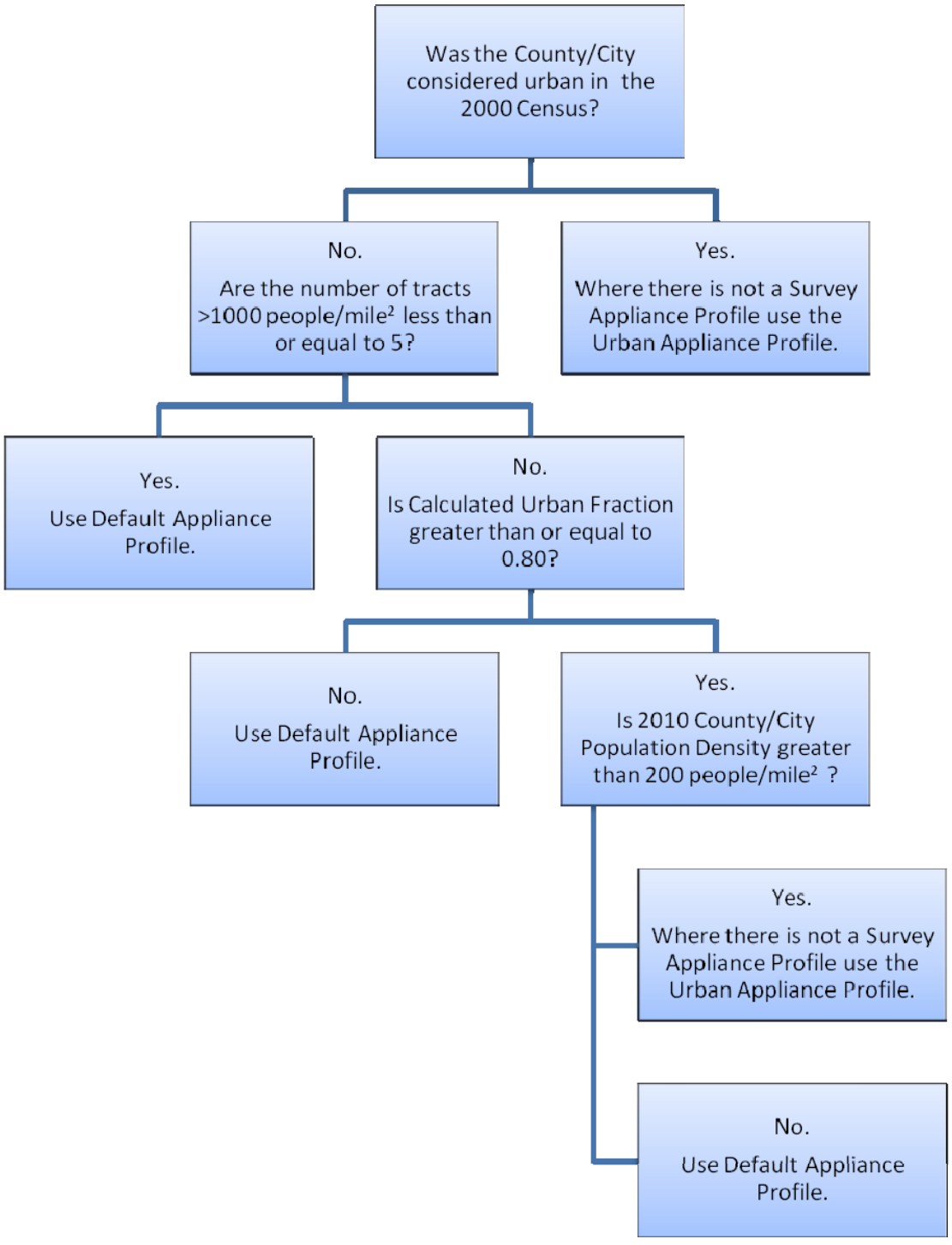

Figure 1. Decision Tree for Assigning Regional Average (Default) or National Urban Appliance Profile

The above does not address the estimated count of the following wood-burning appliance types:

- Pellet stoves;
- Indoor furnaces; and
- Hydronic heaters (also known as outdoor wood boilers).

The estimates for these equipment types are hard-coded into the RWC Tool. After review of the EPA's appliance count estimation methods for these units, SESARM decided that the estimates for these appliances should also be updated.

In the case of pellet stoves and hydronic heaters, the RWC Tool allocates regional (pellet stoves) or state-level (hydronic heater) counts of each appliance type. The RWC Tool utilizes estimates of the number of each type of equipment as calculated from cumulative sales data. The Tool then allocates these regional/state estimates to counties based on the proportion of regional/state number of woodstoves in each county. Because SESARM's revised RWC Tool includes updated county-level woodstove population estimates, consistency with EPA's methodology requires re-allocating the estimated number of regional/state pellet stoves and hydronic heaters to each county using the updated woodstove data incorporated into the revised Tool.

The RWC Tool estimates the number of wood-burning indoor furnaces by multiplying the estimated number of woodstoves in each county by a factor. The EPA calculated this factor (0.53) from data on the number of woodstoves and indoor furnaces used for main heating in climate zones 1-3. To be consistent with the RWC Tool methods for estimating indoor furnaces, SESARM updated the indoor furnace appliance counts by multiplying the revised number of woodstoves in each county by the 0.53 factor.

Cords of Wood Burned per Appliance

SESARM also incorporated new burn rate profiles that characterize the amount of wood burned in each type of appliance. As with the appliance profiles, burn rate profiles can be assigned to one or more geographical areas. The EPA's RWC Tool included burn rate profiles that were developed and refined by EPA using survey data from the U.S. Forest Service's North Central region as the starting point. The EPA adjusted these data based on the ratio of energy consumption in the surveyed climate to energy consumption in other areas of the country. For example, if the energy consumption in climate zone 5 (the warmest climate zone) was half of the energy consumption in climate zone 1 (the surveyed climate zone), burn rates in climate zone 5 were estimated to be 50 percent of the burn rates in climate zone 1. The energy consumption data for these adjustments was obtained from the Energy Information Administration (EIA)'s 2005 Residential Energy Consumption Survey (RECS).

SESARM compiled 2005 RECS data to refine the EPA's burn rates, by computing the average cords of wood burned per household for each of three categories: Rural, Urban (sum of cities, towns, and suburbs), and Total. SESARM then calculated two ratios: Rural to Total wood consumption per household (1.563); and Urban to Total wood consumption per household (0.537). These ratios were then applied to the existing burn rate profiles to create new Rural and Urban burn rate profiles for each of the SESARM region climate zones—2, 3, 4, and 5. After the appropriate calculations were performed the new burn rate profiles were developed by adding either an "r" for Rural or "u" for urban to the original RWC tool default burn rate profile number. They are as follows:

1. Climate zone 2 : Nu and Nr
2. Climate zone 3 : 3Au and 3Ar
3. Climate zone 4 : 4u and 4r
4. Climate zone 5 : 5u and 5r

The next step in refining the burn rate information was to identify the criteria for assigning the Rural, Urban, and overall average burn rates (the original tool burn rate for a given climate zone) to each county within a climate zone. SESEARM developed these criteria, which are represented in Figure 2.

After implementing the appliance profile and burn rate refinements, SESARM developed emission summary comparisons of EPA's default RWC Tool versus the Tool updated by ADEM. These comparisons were submitted for State//Local agency review and comment. The following identify the revisions that were implemented based on comments supplied by S/L agencies:

- West Virginia revised the burn rate profiles in the following counties:
  - Berkeley – from default to urban;
  - Fayette – from rural to default; and
  - Jefferson – from rural to default.

It should also be noted that Shelby County, Tennessee directed SESARM to utilize Local agency RWC emissions in place of the RWC Tool emissions.

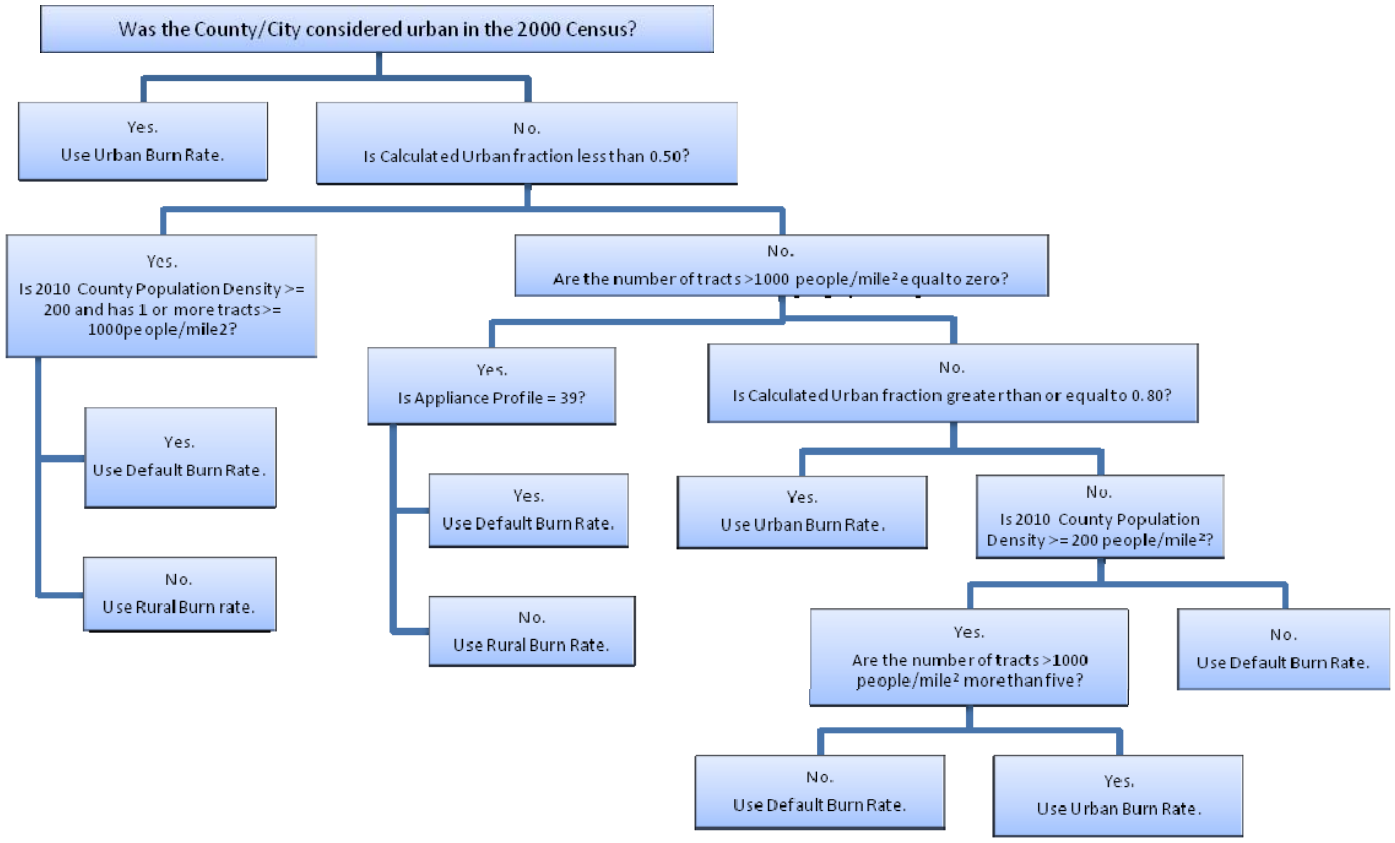

Figure 2. Decision Tree for Assigning Average (Default), Urban, or Rural Burn Profiles

4. Estimation of Area Source Emissions from Gasoline Service Stations/Stage I

TranSystems estimated stage I gasoline service station emissions using the NEI methodology referenced in Table II-2. To improve emission estimates, TranSystems prepared a proposed set of key Stage I gasoline service station emission calculation parameter values for review by S/L agencies: (a) county-level gasoline throughput values; (b) emission control parameter values; and (c) county/month-level Reid vapor pressure (RVP) values. TranSystems specifically requested that agencies provide any updates they have to these values, including updates to the following control information: (a) filling technologies used (splash, submerged, and balanced submerged); (b) the rule effectiveness of S/L requirements for submerged and/or balanced submerged filling; (c) the rule penetration (RP) for submerged and/or balanced submerged filling; and (d) the control efficiency of balanced submerged filling. The RP value represents the proportion of throughput that is filled using submerged/balanced submerged filling, while the remaining proportion is assumed to be splash filling. In keeping with past NEI practice, the default rule effectiveness assumption was 100 percent (rule effectiveness is an adjustment to reflect any assumed non-compliance with the requirements of a regulation). The default control efficiency for balanced submerged filling was 90 percent for all SESARM counties (control efficiency is the percentage of a source category's emissions that is controlled by a control device). There is no control efficiency for submerged filling because the emission reduction effects of submerged filling are accounted for in the emission estimation equation (via a submerged-filling specific saturation factor) rather than a post-emission estimation adjustment.

TranSystems reviewed all updated parameter values supplied by S/L agencies, provided follow-up questions/data requests to ensure the completeness and validity of the data, and incorporated any updated Stage I emission calculation parameter values provided by agencies. TranSystems prepared revised base year stage I gasoline service station VOC emission estimates using the agency-supplied values and provided S/L agencies with spreadsheets comparing the original and revised emission estimates. TranSystems updated the draft revised emission estimates to reflect S/L agency comments, and incorporated the final revised Stage I estimates into the revised final stationary area source inventory.

C. INVENTORY SUPPLEMENTATION/FINAL DATA MERGING

As directed by S/L agencies, TranSystems supplemented 2007 S/L agency supplied emissions data (when supplied) and TranSystems 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, TranSystems 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 TranSystems' 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. TranSystems 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, TranSystems 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 TranSystems 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—TranSystems 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, TranSystems 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.[14] 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 file format.[15]

[14] 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.

[15] 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[1]	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State	Virginia	West Virginia
2275085000	Aircraft/Unpaved Airstrips/Total		EGAS	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	EGAS		Carry				Carry
2302050000	Food & Kindred Products/Bakery Products/Total	EGAS	EGAS	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					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	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	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	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[1]	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State	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							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							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							
2601010000	On-site Incineration/Industrial/Total		EGAS	EGAS						
2601020000	On-site Incineration/Commercial/Institutional/Total		EGAS	EGAS	EGAS			Carry		
2620000000	Landfills/All Categories/Total		EGAS							
2620030000	Landfills/Municipal/Total		Carry	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	EGAS	EGAS	EGAS		Carry		Carry
2660000000	Leaking Underground Storage Tanks/Leaking Underground Storage Tanks/Total: All Storage Types		EGAS	EGAS						Carry
2801000000	Agric - Crops/Total		Carry	EGAS		Carry	EGAS	Carry	Carry	

Source Classification Code	Source Classification Code Description	Alabama	Florida	Georgia[1]	Kentucky-Rest of State	Mississippi	South Carolina	Tennessee-Rest of State	Virginia	West Virginia
2801000003	Agric - Crops/Tilling		Carry	EGAS	EGAS	Carry	EGAS	Carry	Carry	Carry
2805001000	Agric - Livestock/Beef cattle - finishing operations on feedlots (drylots)/Dust Kicked-up by Hooves		EGAS	EGAS			EGAS			Carry
2810030000	Structure Fires/Unspecified		Carry	EGAS	EGAS	Carry	EGAS	Carry		Carry
2810050000	Motor Vehicle Fires/Unspecified		EGAS	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		

[1] TranSystems Default inventory for GA supplemented with EGAS-grown emissions from Georgia's 2005 CERR submission.

Table II-14. Area Source Inventory Data Source Codes

Code	Description
P-07-X-NPT	TranSystems default area source estimate
P-07-X-PT	TranSystems 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 TranSystems default inventory derived ratio of pollutant emission factor to VOC emission factor.

D. QA/QC PROCEDURES

In addition to the quality assurance procedures that TranSystems performed on the revised final 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), TranSystems quality assured all updates provided by S/L 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.

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. TranSystems first distributed the 2007 year NMIM county-level database (NCD) to SESARM agencies for review and comment. TranSystems 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, 2009c). 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, TranSystems 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).

TranSystems 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

Description	SCC
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 (ERG, 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. Finally, military aircraft activity at civilian and commercial airports was obtained by EPA from FAA's TAF, and these emissions (with a few noted exceptions) were largely included in the 2007 SEMAP. Unless provided by a state or local agency (e.g., Georgia, North Carolina, and Virginia), military aircraft activity and emissions occurring at military facility bases are not accounted for in the SEMAP inventory.

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, PM-2.5, SO2	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 and SO_2 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 (ERG, 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_3.

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

Pollutant	Growth Factor
CO	1.009
NH_3	1.045
NO_x	1.016
PM10-PRI	1.045
PM25-PRI	1.045
SO_2	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_3	Removed NEI emissions and added SC supplied emissions for Charleston County, SC.	NH_3 estimated using PM-10 multiplier of 0.00477 (ERG, 2009b)
	2280002200	Category 1&2 Residual Underway	All but NH_3		NH_3 estimated using the ratio of 2008 NEI NH_3/PM-10 emissions for the particular County/SCC.
	2280003100	Category 3 Diesel Port	All but NH_3		NH_3 estimated using PM-10 multiplier of 0.00477 (ERG, 2009b)
	2280003200	Category 3 Diesel Underway	All but NH_3		NH_3 estimated using the ratio of 2008 NEI NH_3/PM-10 emissions for the particular County/SCC.
Davidson County, TN	2280000000	All Commercial Marine	All but PM-10, PM-25 and NH_3	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_3 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_3		Relied on EPA NEI NH_3 emissions
Virginia	2280003100	Category 3 Diesel Port	All but VOC, PM-25, and NH_3	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_3 estimated using ratio of 2008 NEI NH_3/PM-10 emissions for the particular County/SCC.
	2280003200	Category 3 Diesel Underway	All but VOC, PM-25, and NH_3		VOC estimated using HC multiplier of 1.053 (EPA, 2008a). PM-25 estimated using PM-10 multiplier of 0.92 (EPA, 2008a). NH_3 estimated using ratio of 2008 NEI NH_3/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, TranSystems 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 limitation 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, a 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. In general, switcher emissions were estimated using total switcher fuel consumption available from each Class I R-1 report allocated to railyards based on average density code data reported by the Federal Railroad Administration. Documentation describing the specific methodology and data sources used will be forthcoming from ERTAC.

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

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

For the NONROAD/NMIM categories, TranSystems 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 S/L agency. Cross-checks were performed to confirm that state-supplied revisions were correctly incorporated into the NCD. TranSystems 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_3	Replaced NEI passenger emissions with NC supplied emissions	NH_3 estimated using the ratio of 2008 NEI NH_3/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_3	Replaced ERTAC rail emissions with Davidson County supplied emissions	PM-25 estimated using PM-10 multiplier of 0.97 (EPA, 2008a). NH_3 estimated using ratio of 2008 NEI NH_3/PM-25 emissions for the particular County/SCC.
Shelby County, TN	2285002006	Line Haul Locomotives: Class I Operations	All but PM-25 and NH_3	Replaced ERTAC rail emissions with Shelby County supplied emissions	Relied on ERTAC emissions for missing pollutants
	2285002008	Line Haul Locomotives: Passenger Trains (Amtrak)	All but NH_3		Relied on SEMAP default emissions for NH3
	2285002010	Yard Locomotives	All		

TranSystems 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. TranSystems 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. TranSystems 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 Revised Final 2007 Nonroad Mobile Emission Estimates

Code	Description
P-07-X	TranSystems default
N-02-G	2002 NEI grown
S-07-X	State supplied
S-07-X-PS	State supplied added to TranSystems 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 revised final 2007 stationary area and nonroad mobile emissions inventory for the SEMAP project. In addition to the summaries provided in this section, TranSystems 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

	Pollutant Emissions, TPY						
Category	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Combustion	81,876	105,283	28,444	95,946	69,362	273,557	7,901
Solvents			712,961	24	4	0.1	
Fugitive Dust				2,311,660	242,976		
All Other	2,905	11,807	433,868	299,768	109,872	157,631	576,975
All Nonpoint	84,782	117,090	1,175,273	2,707,398	422,214	431,188	584,876

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

State	Pollutant Emissions, TPY						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	431	3,940	79,030	349,981	41,587	15,152	62,426
Florida	11,203	13,014	296,131	340,693	55,515	43,381	33,940
Georgia	4,858	25,552	143,469	652,757	95,801	83,246	86,544
Kentucky	15,590	12,693	75,100	226,829	40,341	55,450	52,332
Mississippi	344	6,091	74,755	326,350	42,758	22,377	58,774
North Carolina	8,365	12,715	152,825	51,678	16,829	47,379	169,440
South Carolina	6,048	9,353	76,838	266,749	39,538	32,208	30,248
Tennessee	14,415	12,418	111,100	215,667	33,948	44,668	35,277
Virginia	17,022	17,740	133,935	176,265	39,034	63,838	43,038
West Virginia	6,504	3,574	32,089	100,429	16,862	23,490	12,858
Total SESARM	84,782	117,090	1,175,273	2,707,398	422,214	431,188	584,876

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	0.5	3.4	6.7	12.9	9.8	3.5	10.7
Florida	13.2	11.1	25.2	12.6	13.1	10.1	5.8
Georgia	5.7	21.8	12.2	24.1	22.7	19.3	14.8
Kentucky	18.4	10.8	6.4	8.4	9.6	12.9	8.9
Mississippi	0.4	5.2	6.4	12.1	10.1	5.2	10.0
North Carolina	9.9	10.9	13.0	1.9	4.0	11.0	29.0
South Carolina	7.1	8.0	6.5	9.9	9.4	7.5	5.2
Tennessee	17.0	10.6	9.5	8.0	8.0	10.4	6.0
Virginia	20.1	15.2	11.4	6.5	9.2	14.8	7.4
West Virginia	7.7	3.1	2.7	3.7	4.0	5.4	2.2
Total SESARM	100	100	100	100	100	100	100

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

State	Pollutant Emissions, TPY						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	376	3,490	1,903	1,400	1,391	11,257	449
Florida	11,032	12,163	2,421	27,419	19,713	29,097	585
Georgia	4,528	23,648	2,751	14,118	14,092	59,474	1,851
Kentucky	15,250	11,287	3,892	13,006	8,573	31,102	670
Mississippi	206	5,274	1,238	1,074	1,043	9,933	307
North Carolina	8,090	11,534	4,313	4,795	4,394	29,963	910
South Carolina	5,900	8,480	1,743	10,510	7,926	18,699	427
Tennessee	14,058	10,853	2,929	12,756	2,521	25,816	833
Virginia	16,061	15,569	5,270	8,142	7,358	43,205	1,443
West Virginia	6,376	2,985	1,984	2,728	2,354	15,012	424
Total SESARM	81,876	105,283	28,444	95,946	69,362	273,557	7,901

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	0.5	3.3	6.7	1.5	2.0	4.1	5.7
Florida	13.5	11.6	8.5	28.6	28.4	10.6	7.4
Georgia	5.5	22.5	9.7	14.7	20.3	21.7	23.4
Kentucky	18.6	10.7	13.7	13.6	12.4	11.4	8.5
Mississippi	0.3	5.0	4.4	1.1	1.5	3.6	3.9
North Carolina	9.9	11.0	15.2	5.0	6.3	11.0	11.5
South Carolina	7.2	8.1	6.1	11.0	11.4	6.8	5.4
Tennessee	17.2	10.3	10.3	13.3	3.6	9.4	10.5
Virginia	19.6	14.8	18.5	8.5	10.6	15.8	18.3
West Virginia	7.8	2.8	7.0	2.8	3.4	5.5	5.4
Total SESARM	100	100	100	100	100	100	100

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

State	Pollutant Emissions, TPY						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama			54,760				
Florida			164,244				
Georgia			86,349				
Kentucky			45,697	1	1		
Mississippi			42,797				
North Carolina			113,623			0.1	
South Carolina			38,952				
Tennessee			63,279	22	4		
Virginia			89,798				
West Virginia			13,463				
Total SESARM			712,961	24	4	0.1	

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama			7.7	0.0	0.0	0.0	
Florida			23.0	0.0	0.0	0.0	
Georgia			12.1	0.0	0.0	0.0	
Kentucky			6.4	5.0	16.5	0.0	
Mississippi			6.0	0.0	0.0	0.0	
North Carolina			15.9	0.0	0.0	100.0	
South Carolina			5.5	0.0	0.0	0.0	
Tennessee			8.9	95.0	83.5	0.0	
Virginia			12.6	0.0	0.0	0.0	
West Virginia			1.9	0.0	0.0	0.0	
Total SESARM			100	100	100	100	

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

	Pollutant Emissions, TPY						
State	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama				318,858	33,717		
Florida				270,262	22,325		
Georgia				580,492	62,104		
Kentucky				184,551	19,979		
Mississippi				301,642	32,897		
North Carolina				37,467	3,722		
South Carolina				235,508	23,304		
Tennessee				176,850	19,521		
Virginia				134,014	18,730		
West Virginia				72,018	6,676		
Total SESARM				2,311,660	242,976		

	Percentage of Regional Total						
State	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama				13.8	13.9		
Florida				11.7	9.2		
Georgia				25.1	25.6		
Kentucky				8.0	8.2		
Mississippi				13.0	13.5		
North Carolina				1.6	1.5		
South Carolina				10.2	9.6		
Tennessee				7.7	8.0		
Virginia				5.8	7.7		
West Virginia				3.1	2.7		
Total SESARM				100	100		

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

State	Pollutant Emissions, TPY						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	56	450	22,368	29,724	6,480	3,895	61,977
Florida	171	851	129,465	43,012	13,477	14,285	33,355
Georgia	331	1,903	54,369	58,148	19,605	23,771	84,693
Kentucky	340	1,406	25,512	29,271	11,789	24,347	51,662
Mississippi	138	817	30,720	23,634	8,819	12,445	58,467
North Carolina	276	1,181	34,888	9,417	8,713	17,416	168,530
South Carolina	147	873	36,143	20,732	8,308	13,508	29,820
Tennessee	357	1,565	44,892	26,039	11,903	18,852	34,444
Virginia	961	2,172	38,867	34,109	12,946	20,633	41,594
West Virginia	128	589	16,643	25,683	7,833	8,478	12,433
Total SESARM	2,905	11,807	433,868	299,768	109,872	157,631	576,975

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM2.5-PRI	CO	NH_3
Alabama	1.9	3.8	5.2	9.9	5.9	2.5	10.7
Florida	5.9	7.2	29.8	14.3	12.3	9.1	5.8
Georgia	11.4	16.1	12.5	19.4	17.8	15.1	14.7
Kentucky	11.7	11.9	5.9	9.8	10.7	15.4	9.0
Mississippi	4.8	6.9	7.1	7.9	8.0	7.9	10.1
North Carolina	9.5	10.0	8.0	3.1	7.9	11.0	29.2
South Carolina	5.1	7.4	8.3	6.9	7.6	8.6	5.2
Tennessee	12.3	13.3	10.3	8.7	10.8	12.0	6.0
Virginia	33.1	18.4	9.0	11.4	11.8	13.1	7.2
West Virginia	4.4	5.0	3.8	8.6	7.1	5.4	2.2
Total SESARM	100	100	100	100	100	100	100

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_2 emissions. Nonroad model categories account for the large majority of emissions for NO_x, 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_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
NONROAD Model	23,308	404,580	629,693	41,489	39,517	4,642,050	447
Aircraft	3,105	32,153	18,444	4,066	3,037	196,823	NA
Commercial Marine	33,715	162,801	4,516	7,869	7,462	28,726	86
Locomotive	2,178	155,025	8,285	5,085	4,693	21,633	67
All Nonroad	62,307	754,560	660,938	58,508	54,709	4,889,232	601

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

State	Pollutant Emissions, tons per year						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
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	41,658	55,164	4,132	3,937	416,303	45
West Virginia	410	7,529	17,333	957	905	106,610	9
Total SESARM	23,308	404,091	630,621	41,489	39,517	4,674,012	447

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
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	30.8	29.9
Georgia	13.2	12.7	11.1	12.8	12.8	13.6	12.6
Kentucky	7.0	7.1	5.8	6.9	7.0	5.2	6.2
Mississippi	4.9	5.0	5.4	5.1	5.1	4.0	4.7
North Carolina	13.3	13.8	12.2	13.1	13.1	12.9	13.0
South Carolina	6.5	6.6	6.7	6.4	6.4	7.1	6.6
Tennessee	8.1	9.1	8.6	8.8	8.8	8.4	8.4
Virginia	10.0	10.3	8.8	10.0	10.0	9.0	10.0
West Virginia	1.8	1.9	2.8	2.3	2.3	2.3	2.0
Total SESARM	100	100	100	100	100	100	100

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

State	Pollutant Emissions, tons per year					
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO
Alabama	51	440	891	294	205	14,778
Florida	992	10,746	5,060	1,028	772	57,332
Georgia	608	4,909	2,771	433	346	28,082
Kentucky	219	2,257	918	204	154	11,555
Mississippi	26	219	665	168	117	8,520
North Carolina	370	3,499	2,487	521	423	22,482
South Carolina	68	586	930	210	149	11,117
Tennessee	354	4,054	1,623	292	227	16,318
Virginia	410	5,385	2,842	844	594	23,032
West Virginia	7	59	257	72	50	3,607
Total SESARM	3,105	32,153	18,444	4,066	3,037	196,823

State	Percentage of Regional Total					
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO
Alabama	1.6	1.4	4.8	7.2	6.8	7.5
Florida	32.0	33.4	27.4	25.3	25.4	29.1
Georgia	19.6	15.3	15.0	10.7	11.4	14.3
Kentucky	7.1	7.0	5.0	5.0	5.1	5.9
Mississippi	0.8	0.7	3.6	4.1	3.9	4.3
North Carolina	11.9	10.9	13.5	12.8	13.9	11.4
South Carolina	2.2	1.8	5.0	5.2	4.9	5.6
Tennessee	11.4	12.6	8.8	7.2	7.5	8.3
Virginia	13.2	16.7	15.4	20.8	19.6	11.7
West Virginia	0.2	0.2	1.4	1.8	1.6	1.8
Total SESARM	100	100	100	100	100	100

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

State	Pollutant Emissions, tons per year						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
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	731	7,565	765	502	469	2,082	4
Virginia	4,094	21,918	524	966	922	3,755	10
West Virginia	1,026	15,888	341	582	564	3,040	8
Total SESARM	33,715	162,801	4,516	7,869	7,462	28,726	86

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
Alabama	5.2	11.4	9.1	9.2	9.4	13.0	9.4
Florida	53.8	29.7	27.9	37.8	37.2	24.4	33.3
Georgia	6.1	6.5	5.7	6.1	6.1	6.4	5.3
Kentucky	3.0	9.7	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	2.2	4.6	16.9	6.4	6.3	7.2	4.6
Virginia	12.1	13.5	11.6	12.3	12.4	13.1	11.5
West Virginia	3.0	9.8	7.6	7.4	7.6	10.6	8.8
Total SESARM	100	100	100	100	100	100	100

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

State	Pollutant Emissions, tons per year						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
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	367	19,461	1,083	650	591	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
Total SESARM	2,178	155,025	8,285	5,085	4,693	21,633	67

State	Percentage of Regional Total						
	SO_2	NO_x	VOC	PM10-PRI	PM25-PRI	CO	NH_3
Alabama	9.0	11.5	11.7	11.8	11.8	11.8	11.8
Florida	8.0	7.5	7.1	7.0	7.1	7.0	6.9
Georgia	11.6	15.5	15.7	15.7	15.7	15.7	15.8
Kentucky	8.0	10.8	10.7	10.8	10.8	10.9	10.9
Mississippi	6.0	6.4	5.9	6.0	6.0	6.0	6.0
North Carolina	6.0	7.5	7.5	7.4	7.5	7.4	7.5
South Carolina	4.6	5.8	5.8	5.8	5.8	5.8	5.8
Tennessee	16.8	12.6	13.1	12.8	12.6	12.9	12.5
Virginia	20.4	14.0	14.2	14.3	14.4	14.2	14.0
West Virginia	9.8	8.4	8.2	8.3	8.3	8.3	8.7
Total SESARM	100	100	100	100	100	100	100

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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, TranSystems 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.

TranSystems 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, 2009). 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, 2009.

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 S/L 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, TranSystems allocated the emissions from these point SCCs to each filling technology based on the proportion of emissions from TranSystems 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)	
39000288	Industrial Processes	In-process Fuel Use	Bituminous Coal	General (Subbituminous)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
30400406	Industrial Processes	Secondary Metal Production	Lead	Pot Furnace Heater: Distillate Oil	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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	
30600902	Industrial Processes	Petroleum Industry	Flares	Residual Oil	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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; Liquified Petroleum Gas (LPG); Total: All Boiler Types					
10201001	External Combustion Boilers	Industrial	Liquified Petroleum Gas (LPG)	Butane	
10201002	External Combustion Boilers	Industrial	Liquified Petroleum Gas (LPG)	Propane	
10201003	External Combustion Boilers	Industrial	Liquified Petroleum Gas (LPG)	Butane/Propane Mixture: Specify Percent Butane in Comments	
10500110	External Combustion Boilers	Space Heaters	Industrial	Liquified Petroleum Gas (LPG)	
20201001	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Propane: Reciprocating	
20201002	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Butane: Reciprocating	
20201005	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Reciprocating: Crankcase Blowby	
20201006	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Reciprocating: Evaporative Losses (Fuel Storage and Delivery System)	
20201007	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Reciprocating: Exhaust	
20201008	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Turbine: Evaporative Losses (Fuel Storage and Delivery System)	
20201009	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Turbine: Exhaust	
20201011	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Turbine	
20201012	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Reciprocating Engine	
20201013	Internal Combustion Engines	Industrial	Liquified Petroleum Gas (LPG)	Turbine: Cogeneration	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	
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/Electo-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*

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	Only include if NAICS code = 8111*
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201904	Petroleum and Solvent Evaporation	Surface Coating Operations	Wood Furniture Surface Coating	Coating Storage	
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)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40202035	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Furniture Operations	Single Coat Application: Spray, High Solids	
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)	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201724	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Can Coating	Sheet Base Coating (Exterior)	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40201899	Petroleum and Solvent Evaporation	Surface Coating Operations	Metal Coil Coating	Other Not Classified	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40202542	Petroleum and Solvent Evaporation	Surface Coating Operations	Miscellaneous Metal Parts	Single Coat Application: Spray, High Solids	
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/Electo-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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40100202	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	1,1,1-Trichloroethane (Methyl Chloroform): Open-top Vapor Degreasing	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
40100257	Petroleum and Solvent Evaporation	Organic Solvent Evaporation	Degreasing	Trichlorotrifluoroethane (Freon): General Degreasing Units	
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	
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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	

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
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

Point SCC	SCC1 DESC	SCC3 DESC	SCC6 DESC	SCC8 DESC	Comments
30202106	Industrial Processes	Food and Agriculture	Eggs and Poultry Production	Manure Handling: Wet	Apportion between nonpoint SCCs based on CMU Model output
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

Note: no emissions were identified in the above SCCs within version 1.10a of the SEMAP point source inventory.