# DOCUMENTATION FOR THE FINAL 1999 POINT SOURCE NATIONAL EMISSIONS INVENTORY FOR HAZARDOUS AIR POLLUTANTS (VERSION 3)

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# 1.0 INTRODUCTION

## 1.1 What is the National Emissions Inventory?

The National Emissions Inventory (NEI) is a comprehensive inventory covering all criteria pollutants and hazardous air pollutants (HAPs) for all areas of the United States. The NEI was created by the EPA's Emission Factor and Inventory Group (EFIG) in Research Triangle Park, North Carolina.

This report presents an overview of how the point source component of the 1999 NEI for HAPs was compiled and updated. Version 2 of the 1999 point source NEI for HAPs was released in 2001. This version (Version 3) of the final 1999 NEI for HAPs will be used to support air quality modeling and other activities. To this end, the EPA established a goal to compile comprehensive, facility-specific data in its 1999 base year NEI for HAPs for point sources, in addition to preparing nonpoint area and mobile source 1999 base year inventories.

## 1.2 Why Did the EPA Create the NEI for Hazardous Air Pollutants?

The Clean Air Act (CAA), as amended in 1990, includes many mandates for the EPA related to HAPs. The CAA presents a list of 188 HAPs (see *http://www.epa.gov/ttn/atw/orig189.html* for a list of pollutants and their chemical abstract service [CAS] numbers), for which EPA is to identify their sources, quantify their emissions by source category, develop regulations for each source category, and assess public health and environmental impacts after the regulations are put into effect. The NEI is a tool that EPA can use to meet the CAA mandates.

## 1.3 How is the EPA Going To Use This Version of the NEI?

It is anticipated that the 1999 point source inventory developed from this effort will have multiple end uses. The data have been formatted according to protocols established for the

EPA's NEI submittals. The common data structure on which the NEI platform is based will allow the NEI point source data for HAPs to be transferred to multiple end-users for a variety of purposes.

The NEI is a critical component of the EPA's national Air Toxics Program (as described in EPA's July 19, 1999 Federal Register notice, 64 FR 38706). The initial objective is to make the data available to EPA modelers for use in the National Air Toxics Assessment (NATA). In addition, the emissions data compiled as part of this inventory effort will be used in residual risk assessments conducted by EPA, and to prepare the air toxics portion of the annual EPA publication entitled *National Air Pollutant Emission Trends,* which is referred to as the EPA Trends report (U.S. EPA, 2000).

## 1.4 Report Organization

Following this introduction, Section 2 provides the Information Quality Guidelines Addendum, a summary of the procedures EFIG implements on the NEI, to make the development of the inventory more transparent. Section 3.0 provides information on how the 1999 NEI point source HAP emission estimates were first derived from state, local, and tribal inventories, from data provided by the EPA's Emission Standards Division (ESD), and from the Toxic Release Inventory (TRI) (U.S. EPA, 2001), and how the estimates have been updated overtime. Section 4.0 provides information on how the HAP inventory data were compiled into a common data structure. Section 5 presents references cited in this report.

Appendix A provides details on the state, local, and tribal agency HAP inventory data provided to EPA for use in the first version of the NEI, and notes which agencies provided revisions or additions in 2002 and 2003. Appendix B presents the complete NEI pollutant code dictionary for HAPs. Appendix C lists Maximum Achievable Control Technology (MACT) categories and their MACT codes.

# 2.0 INFORMATION QUALITY GUIDELINES ADDENDUM FOR THE 1999 NEI FOR HAPS

## 2.1 Purpose

The National Emissions Inventory (NEI) is a comprehensive inventory covering all criteria pollutants and hazardous air pollutants (HAPs) for all areas of the United States. The NEI was created by the EPA's Emission Factor and Inventory Group (EFIG) in Research Triangle Park, North Carolina. This version (Version 3) of the 1999 base year NEI for HAPs will be used to support air quality modeling and other activities. To this end, the EPA established a goal to compile comprehensive, facility-specific data in its 1999 base year NEI for HAPs for point sources, in addition to preparing nonpoint area and mobile source 1999 base year inventories.

## 2.2 Explanation of Potential Uses

The Clean Air Act (CAA) includes many mandates for the EPA related to HAPs. The CAA presents a list of 188 HAPs for which EPA is to identify their sources, quantify their emissions by source category, develop regulations for each source category, and assess public health and environmental impacts after the regulations are put into effect. The NEI is a tool that EPA can use to meet the CAA mandates.

It is anticipated that the 1999 point source inventory developed from this effort will have multiple end uses. The NEI is a critical component of the EPA's national Air Toxics Program. The initial objective is to make the data available to EPA modelers for use in the National Air Toxics Assessment (NATA). In addition, the emissions data compiled as part of this inventory effort will be used in residual risk assessments conducted by EPA, and to prepare the air toxics portion of the annual EPA publication entitled *National Air Pollutant Emission Trends,* which is referred to as the EPA Trends report (U.S. EPA, 2000).

## 2.3 Product Content - Inputs, Methodologies, and Outputs

The scope of the inventory effort was to compile 1999 base year HAP emissions data for point source facilities in the United States and its territories. Point sources may be either major or area sources, depending on their annual emissions. Major sources are defined in the CAA as stationary sources that:

- Have the potential to emit 10 tons per year (tpy) or more of one HAP; or
- Have the potential to emit 25 tpy or more of any combination of HAPs.

Smaller point source facilities with annual emissions below these thresholds are defined as area sources.

The goal in developing the point source NEI was to obtain facility-specific data such as facility name, location, stack information, emissions, and process descriptions. It was hoped that the data would be sufficient to support exposure modeling and risk assessment needs. The starting point for obtaining this facility-specific data was, therefore, state and local air pollution control agencies, who are most likely to have this type of detailed HAP inventory data.

State and local agencies and tribes were asked to supply HAP emission inventory data to the EPA. Inventory data were also requested from the EPA's Emission Standards Division (ESD) for Maximum Achievable Control Technology (MACT) source categories. The information requested from ESD was identical to the information requested from state and local agencies.

To develop a complete point source NEI, TRI data were also used. The purpose of appending TRI data to the local-, state-, and ESD-combined databases was to make sure all emissions data for facilities that report to TRI are included in the NEI.

As a last step, state and local agency, ESD, and TRI data for 1999 were supplemented with MACT and state-submitted data from the 1996 NEI for HAPs. State-submitted data from the 1996 base year inventory were only added for states and counties that did not provide a 1999 NEI submittal.

Because the goal of this project was to create a point source inventory that includes facility- specific information needed for exposure modeling, information was needed to supplement the NEI with stack parameters if not provided by state and local agencies or ESD. TRI also does not include stack parameters. Default stack parameters were generated by EFIG, using data from NEI99, version 1, for more than 3,000 SCCs. These data were added to state and local agency and ESD databases that reported emissions at the SCC level, but did not include the necessary stack parameters. Default stack parameters were also generated for over 900 SIC codes. In addition to some state, local, and tribal agency and ESD databases, TRI-reported emissions are reported at the SIC code level. The assumptions that were made in populating the NEI with default stack parameters are discussed below:

- Stack and fugitive parameters provided by state and local agencies and ESD were reviewed to determine if they are physically plausible or if a reporting error has possibly occurred. Values outside of the ranges shown below were either recalculated or replaced with a default value.

  - Stack Height (ft): 0.1 to 1,000
  - Fugitive or release vent height (ft): 0.1 to 100
  - Stack Diameter (ft): 0.1 to 50
  - Stack Temperature (°F): 50 to 1,800
  - Stack Velocity (ft/sec): 0.1 to 560
  - Stack Flow (cu ft/sec): 0.001 to 1,100,000

- For each emission release point, default or calculated stack parameters were added if any of the five fields were blank or out of range, if height was less than diameter, or if the calculated flowrate and the reported flowrate were not within 10% of one another;

- SCC default stack parameters, when available, took priority over SIC code default stack parameters;

- For facilities where no information was available on the type of emission release (i.e., stack vs. fugitive) or if the emission release point was reported as horizontal, goose neck, vertical with rain cap, or downward facing vent, it was assumed that the emission release point is a stack, and, where available, default stack parameters where added. Only emission release points reported as fugitives were treated as fugitives.

- The following national default stack values were developed from NEI99 data, and applied if there was no match on the SCC or SIC code.

  - Height: 10 ft
  - Diameter: 1 ft
  - Temperature: 72°F
  - Velocity: 15 ft/sec
  - Flow: 12 cu ft/sec

- The following national default fugitive emission release point values were applied if the existing height was outside the acceptable range for fugitive emission release points:

  - Height: 10 ft
  - Diameter: 0.003 ft
  - Temperature: 72°F
  - Velocity: 0.0003 ft/sec
  - Flow: 0 cu ft/sec

  If the height was within range, the height was retained and the all other stack parameters were replaced with the national defaults.

- Each default/derived stack parameter is identified by a flag. The flags indicate whether a certain default parameter was SIC code-based, SCC-based, or based on EFIG's national default stack values. The default flags are included in the NEI Emission Release Point record.

Because the NEI is a modeling inventory, the association of a specific latitude/longitude to each emission release point is required. In the absence of actual coordinate data, a process was developed to fill in missing coordinates. If the missing coordinates could not be filled in with the average site location calculated from other coordinates associated with the site, then site address

was used to determine the associated latitude and longitude. If address information was incomplete (including no zip code) and the Facility Registry System (FRS) database did not have valid latitude/longitude data for the site, then the location was defaulted to the county centroid as a last result. The locational default flags are shown in the NEI Emission Release Point record.

Locational data provided by state/local agencies, ESD, and TRI were also verified to determine if the latitude and longitude of each release point is within the county indicated. If the plotted release point is within 10 kilometers of an outside boundary of the county, it is assumed to be valid. Furthermore, all emission release points associated with a site must be within 3.0 km of one another. If one or more emission release points are outliers, they are replaced with the average site latitude/longitude calculated from the acceptable coordinates.

As discussed previously, the NEI will be used in the National Air Toxics Assessment. To this end, EFIG strived to identify point source processes that are, or will be, subject to MACT standards that will result in HAP emission reductions. Processes (in some cases all processes at a facility) are assigned a MACT code if ESD provided the data, or provided a facility list that was used to identify state/local agency and TRI data as subject to a MACT standard. The MACT codes can be found in the inventory files in the Emission Process record. This table also includes field to indicate that either the state or ESD specifically identified the process as subject to the MACT standard.

EFIG then used an SCC/SIC code/MACT dictionary to identify all facilities in the NEI that may be subject to MACT standards. This dictionary was developed by comparing all of the SCCs and SIC codes with information on types of sources that may be subject to each MACT standard. ESD engineers then reviewed the NEI to verify or revise the facilities listed as possibly subject to MACT standards. Their comments were incorporated in the 1999 NEI. Any MACT assignments made using this dictionary also appear on the inventory in the Emission Process record, and there is a field that indicate that the MACT code was assigned based on an SCC or an SIC code default.

Throughout the development of the 1999 NEI, EFIG requested state, local, and tribal agency, industry, and EPA review of draft versions. To the extent possible, EFIG incorporated all revisions and new data provided. In the inventory files, the Emission record indicates the source of the current reported emissions value. The following data source codes indicate if the data were provided or revised by state, local, or tribal agencies, EPA/ESD, industry, TRI, or pulled in from the 1996 NEI:

- I = Industry 2002 revision;
- I2 = Industry 2003 revision;
- L = Local agency submittal June 2001;
- L1 = Local agency submittal February 2002;
- L2 = Local agency submittal June 2002;
- L3 = Local agency submittal March 2003;
- M1 = ESD original submittal;
- M2 = ESD 2002 revision;
- M3 = ESD 2003 revision;
- S = State agency submittal June 2001;
- S1 = State agency submittal February 2002;
- S2 = State agency submittal June 2002;
- S3 = State agency submittal March 2003;
- T = TRI 99 data;
- N = Data from the 1996 NEI;

An in-depth QA/QC program was implemented in conjunction with the inventory development process. The NEI QA/QC process was initiated immediately after each phase when state and local agency and EPA files or revisions were provided to EFIG. An automated QA program was developed and used to check each file for format and data field errors. Format checks were based on the minimum data requirements for file acceptance by EFIG. Data field checks were related to the codes, numeric data ranges, and locational data in the file. The EFIG accepted data with data field errors, as these could be corrected with minimal effort. Duplicate records were then removed, along with records that had null and zero emissions values. Referential integrity violations, invalid codes, and erroneous locational data were then corrected (or added) if possible.

Other QA/QC activities included identifying and correcting erroneous emissions data. For the most part, the errors detected were outliers with very high emissions estimates. The EFIG developed a series of internal QA/QC reports to target outliers and duplicate emissions. The first approach was to evaluate significant changes between the 1996 NEI and 1999 NEI data, and/or extreme variation within the 1999 data. This included comparing 1996 HAP emission estimates to 1999 HAP estimates for each facility, total emissions for each state between 1996 and 1999, and total emissions for each MACT category between 1996 and 1999. These big pictures summaries highlighted source categories, states, and facilities with potential problems. The next set of QA/QC reports specifically highlighted individual facilities, and included identifying the top emitters for each HAP nationwide, ranking each facility based on its emissions of each HAP on a national basis, and listing the top emitters for HAP/MACT combination nationwide.

Outliers are usually difficult to spot - what appears to be a high emissions value may in fact be acceptable for a particular facility or source category. To aid in detecting these errors, the emissions data were compared to the range of values in the NEI and the percent contribution to total emissions. A summary table with the list of facilities that appear multiple times as top emitters for different HAPs also helped identify sites with outliers. These high values may be due to a series of outliers or duplicated emission records. The high emissions may also be correct for that facility and category. Thus, these summary data needed to be closely reviewed before any records were marked for deletion. In some cases, the state/local agency submitting the data was contacted to discuss the quality of the estimates, and if revisions were needed.

NEI output data are released in a number of formats. EPA's file transfer protocol (ftp) site has separate point, nonpoint, onroad, and nonroad mobile source files for each state, including Washington, DC, Puerto Rico, and the Virgin Islands, containing the 1999 NEI HAP files for the state. The specific data structure used for the 1999 NEI for HAPs is based on NEI Input Format (NIF) Version 3.0. The files posted include an inventory documentation file that

describes how the NEI was developed, and a READ ME file describes the different files posted on the site and how to use them.

In addition to the NEI documentation and NIF data files, additional files are provided to facilitate evaluation of the NEI, and to help put the emission estimates presented into perspective by state, county and facility. In each summary file, emissions are presented for each 188 HAP category, as the sum of the 188 HAPs, and as the sum of the 33 urban HAPs used by EPA in many air toxics programs. Each 33 urban HAP is flagged as such. Each county is flagged with the urban/rural designation developed under EPA/s Integrated Urban Air Toxics Strategy. A county is considered “urban” if either:

1) it includes a metropolitan statistical area with a population greater than 250,000; or
2) the U.S. Census Bureau designates more than fifty percent of the population as "urban."

The county emission summary presents HAP emissions by state, and county for major, area/other, onroad, and nonroad sources. Major and area/other sources are also summarized as MACT vs. non-MACT source categories.

The source category summary presents emissions by state, and county for major, area/other, onroad, and nonroad sources. The area/other sources are delineated as point or nonpoint. Each stationary source category is presented by MACT code, SIC code, or just source category name if there is no applicable MACT or SIC code.

The point source facility summary presents emissions by NTI unique facility (often consisting of multiple sites) and individual site for major and area point sources. Included with each facility record is the address, site latitude/longitude, emission type (entire period, average day, maximum allowable, etc.), MACT and/or SIC code. The source of the emission estimate,

whether original data or recently revised, is also noted as state/local/tribal, MACT, TRI, industry, or 1996 NTI.

The point source stack summary presents emissions by NTI unique facility (often consisting of multiple sites) and individual site for major and area point sources. Included with each record is the emission type (actual, allowable, potential, etc.), emission unit ID, process ID, emission release point ID, SCC, MACT and/or SIC code, emission release point type (stack/vent or fugitive), and latitude/longitude of the emission release point. The source of the emission estimate, whether original data or recently revised, is also noted as state/local/tribal, MACT, TRI, industry, or 1996 NTI.

## 2.4 Product Limitations and Caveats

The 1999 NEI was developed initially for use in EPA's National Air Toxics Assessment (NATA). The goal of the national-scale assessment is to identify those air toxics which are of greatest potential concern, in terms of contribution to population risk. The results will be used to set priorities for the collection of additional air toxics data (e.g., emissions data and ambient monitoring data).

The 1999 NEI is a composite of emission estimates generated by state and local regulatory agencies, industry, and EPA. Because the estimates originated from a variety of sources and estimation methods, as well as differing purposes, they will in turn vary in quality, including pollutants, level of detail and geographic coverage. However, this compilation of emissions estimates represents the best available information to date.

Users of the data should consider that pollutants emitted from a particular source may have little impact on the immediate geographic area, and the amount of pollutants emitted does not indicate whether the source is complying with applicable regulations.

In addition, state and local agency-supplied emissions data are given priority in the point source NEI. These submissions are reviewed by the EFIG for data handling and entry errors, and potential double counting. The estimation methods, reliability of data sources and calculations, and other quality assurance issues are the responsibility of the preparing agency. To the extent possible, state and local agency-supplied data that appear as outliers in the data set are flagged for further review, and state/local agency officials are contacted to verify the validity of the data. In some cases, the questionable data are removed.

For some source facilities, emission estimates were not available for 1999. In these cases, data for other base years were used. For some of these source categories, ESD provided emissions data for a year other than 1999 and noted that the data is the best available to represent 1999. When data are reported for a year other than 1999, it is noted in the NEI.

## 2.5 Contact Information

NEI point source questions should be forwarded to:
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U.S. Environmental Protection Agency
Emission Factor and Inventory Group
Emissions Monitoring and Analysis Division (D205-01)
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711
*pope.anne@epa.gov*
919-541-5373

# 3.0 DEVELOPMENT OF THE POINT SOURCE NEI FOR HAPs

The scope of the inventory effort was to compile and subsequently update 1999 base year HAP emissions data for point source facilities in the United States. Point sources may be either major or area sources, depending on their annual emissions. Major sources are defined in the CAA as stationary sources that:

- Have the potential to emit 10 tons per year (tpy) or more of one HAP; or
- Have the potential to emit 25 tpy or more of any combination of HAPs.

Smaller point source facilities with annual emissions below these thresholds are defined as area sources.

The goal in developing the point source NEI was to obtain facility-specific data such as facility name, location, stack information, emissions, and process descriptions. It was hoped that the data would be sufficient to support exposure modeling and risk assessment needs. The starting point for obtaining this facility-specific data was, therefore, state and local air pollution control agencies, who are most likely to have this type of detailed HAP inventory data.

## 3.1 EFIG Requested State, Local, and Tribal Inventory Data in 2001

State and local agencies and tribes are asked to supply HAP emission inventory data to the EPA. If they are unable to provide HAP emission inventory data to the EPA, then the EPA will prepare default emission inventory data for the 1999 NEI, and use these data to support assessments which will be used in regulatory decision making.

The target inventory area includes every state and territory in the United States and every county within a state. There are no boundary limitations pertaining to traditional criteria pollutant nonattainment areas or to designated urban areas. If a facility was included in a state or

local database, it is included in the NEI regardless of where in the state it was located. The pollutants inventoried included all 188 HAPs identified in Section 112(b) of the CAA. Some state or local agencies collect information on more HAPs, but only the 188 are included in the NEI. In addition to numerous specific chemical species and compounds, the list of 188 HAPs includes several compound groups (e.g., individual metals and their compounds, polycyclic organic matter (POM), and glycol ethers); the NEI includes emission estimates for the individual compounds wherever possible. Many of the uses of the NEI depend upon data for individual compounds within these groups rather than aggregated data on each group as a whole. Appendix B lists all of the specific pollutants and compound groups included in the 1999 NEI along with their Chemical Abstract Services (CAS) numbers (for individual compounds).

Table 3-1 summarizes the data elements that were targeted for the inventory request and needed by modelers for exposure assessments. EFIG requested 1999 facility, unit, process, or stack-specific emissions data. If nonpoint area and mobile source data were available, these were also requested. No limits were set on the type of source categories for which data would be collected. No particular cut-off level of emissions was used. It was expected that each state would have different designations for the sources for which they collect emissions data at the point level (as opposed to treating them as nonpoint area sources); no effort was made to strictly define what would be considered a "major source" in the data collection effort.

The data request portion of the initial data collection effort was essentially completed by June 2001. EFIG needed to establish a date for the receipt of data in order to complete the remaining tasks to develop version 2 of the NEI for HAPs. These tasks included processing the data for upload to the NEI format, requesting and processing data from ESD, identifying duplicate facilities between these two data sources, and supplementing with TRI data if gaps remained.

## Table 3-1

## Data Elements Requested from State, Local, and Tribal Agencies

| Emission Level | Data Elements |
|---|---|
| Site | Facility name |
| | Address, county |
| | Identification codes (local, state, or federal) |
| | Standard Industrial Classification (SIC/NAICS) codes |
| | North American Industry Classification System (NAICS) codes |
| Emission Process | Process description and identification code (e.g., the source classification code [SCC] for the process) |
| | MACT code |
| Emission | Pollutant code |
| | Emissions estimate (e.g., actual emissions in tons per year) |
| | Start date, end date |
| Emission Release Point | Emission release point type (stack vs fugitive) |
| | Stack height, diameter exit gas temperature, exit gas velocity, exit gas flow rate |
| | Location (X and Y coordinates, UTM) |
| Control Equipment | Control efficiency, capture efficiency |
| | Device type |

## 3.2 Initial Data Received from State and Local Agencies

Table 3-2 lists the 46 agencies (in 38 states) for which point source air toxics inventory data were initially obtained in 2001. There were no efforts by EFIG to review the inventory estimates for their accuracy or calculate new emission estimates. The goal at this point was to compile whatever facility-specific state and local data were available. Filling data gaps and evaluating the quality of the data were addressed later in this process.

## 3.3 EFIG Requested ESD Maximum Achievable Control Technology Inventory Data

State, local, and tribal databases represent the core of the point source inventory. Inventory data were also requested from the EPA's ESD for MACT/residual risk source categories. A list of MACT categories and their codes used in the NEI can be found in Appendix C. The information requested from ESD was identical to the information requested from state, local, and tribal agencies. The data elements requested are listed in Table 3-1.

Data specifically to be used in the 1999 NEI were initially provided for 10 MACT source categories (Table 3-3). Data were also available for the many MACT categories included in the 1996 base year NEI. Updated emissions estimates were also calculated for the following MACT combustion source categories using 1999 fuel usage data from the Energy Information Administration (EIA, 2001):

- Stationary internal combustion engines;
- Stationary turbines;
- Industrial boilers; and
- Utilities (non-mercury estimates only).

## Table 3-2

## States and Local Areas that Provided 1999 Air Toxics Inventory Data in 2001

| | |
|---|---|
| Alabama | New York |
| California | Buncombe Co., North Carolina |
| Colorado | Forsyth Co., North Carolina |
| Connecticut[a] | Mecklenberg Co., North Carolina |
| Florida | Ohio[a] |
| Illinois | Dayton, Ohio |
| Indiana | Oklahoma |
| Kansas | Oregon[b] |
| Kentucky | Pennsylvania |
| Louisiana | Allegheny Co, Pennsylvania |
| Maine | Philadelphia, Pennsylvania |
| Maryland | Rhode Island |
| Massachusetts | South Carolina |
| Michigan | Tennessee[a] |
| Minnesota | Chattanooga, Tennessee |
| Mississippi | Utah |
| Missouri[a] | Vermont |
| Montana[b] | Virginia |
| Nebraska | Washington |
| Omaha, Nebraska | Puget Sound, Washington |
| New Hampshire | West Virginia |
| New Jersey | Wisconsin |
| New Mexico | Wyoming |

[a] Data provided for lead only.
[b] Data provided for very few HAPs.

## Table 3-3

## New and Updated MACT Source Categories in Version 2 of the 1999 NEI

| MACT SOURCE CATEGORY |
|---|
| Coke Ovens: Charging, Top Side, and Door Leaks |
| Coke Ovens: Pushing, Quenching, and Battery Stacks |
| Manufacturing of Nutritional Yeast |
| Medical Waste Incineration |
| Municipal Landfills |
| Municipal Waste Combustors |
| Primary Aluminum Production |
| Printing, Coating, and Dyeing of Fabrics |
| Pulp and Paper Production - Non-combustion |
| Utility Boilers - Coal (Hg only) |

### 3.4 Augmenting with TRI and 1996 NEI Data

To assess the completeness of the NEI for source category and facility coverage, TRI data were used. The purpose of this TRI search was to determine if the local-, state-, and ESD-combined databases (referred to hereafter as the NEI) needed to be supplemented with data for facilities that reported to TRI, but were not included in the NEI for some reason. For facilities included in both the NEI and TRI, it was assumed that the NEI data were more accurate and, thus, no revisions were made for those facilities.

The TRI facilities missing from the NEI were identified through a process of elimination. Facilities included in the NEI were matched against TRI-listed facilities using one or more of the following parameters:

- TRI ID;
- County;

- Facility name;
- Facility address; and
- Latitude and longitude coordinates.

As a last step, keeping in mind that the goal of this task is to develop as complete a national inventory as possible for as many HAPs as possible, state and local agency, ESD, and TRI data for 1999 were supplemented with MACT and state-submitted data from the 1996 NEI for HAPs. State-submitted data from the 1996 base year inventory were only added for states and counties that did not provide a 1999 NEI submittal in 2001. In addition, the state submittals footnoted on Table 3-2 as covering only lead or very few HAPs were supplemented. These data can be identified in the NEI by the data source code in the Emission record, and the start and end date (will be 1996). See Section 3.10 for more details on data source types.

## 3.5 Revisions and Additions to Create Draft Version 3 of the Point Source NEI for HAPs

Version 2 of the point source NEI for HAPs was released for public review in 2001. As EFIG conducted internal quality assurance/quality control (QA/QC), state, local, and tribal agencies, EPA, and industry were asked to review the files and provide revisions by February, 2002. In addition, state, local, and tribal agencies were provided the opportunity to provide new data and revisions by June, 2002. These point source revisions and additions were reviewed by EFIG, and incorporated as appropriate along with EFIG revisions to develop draft Version 3 of the NEI for HAPs. EFIG revisions focused on identifying and removing duplicate facilities and HAPs, and correcting for outliers with erroneous emissions data. EFIG's internal QA/QC process is described in the paper "QA/QC–An Integral Step in the Development of the 1999 National Emissions Inventory on HAPs" (Pope et al., 2002).[a] The following sections summarize the February and June revisions and additions provided to EFIG to prepare draft Version 3 of the point source NEI for HAPs.

[a] *www.epa.gov/ttn/chief/conference/ei11/qa1pope.pdf*

### 3.5.1 Revisions and Additions Provided by State, Local, and Tribal Agencies for Draft Version 3

The 43 state and local agencies and one tribe located in 33 states that submitted revisions or additions for the 1999 point source NEI for HAPs are listed in Table 3-4. To the extent possible, all revisions and additions were incorporated in the NEI. EFIG closely reviewed the site and HAP deletion records provided, however, and retained some sites and HAPs if it was determined that the sites were truly operating in 1999, or to retain as complete a list of HAPs emitted as possible.

### 3.5.2 Revisions and Additions Provided by ESD for Draft Version 3

ESD staff performed extensive reviews on the Version 2 NEI files. Revisions and additional inventory data were provided for 63 MACT sources categories (Table 3-5). In some cases, the reviewer provided revisions to the Standard Industrial Classification (SIC) code/Source Classification Code (SCC) MACT default lookup tables, or a facility list to use in assigning MACT codes to existing NEI facilities. The SIC code/SCC MACT default lookup tables are used to flag MACT facilities in state, local, and tribal agency data sets, along with TRI data. Other revisions and new emissions data were facility- and HAP-specific.

Some MACT source categories were subsumed by other categories during the regulatory development process. These source categories are listed in Table 3-6. Emissions from facilities in these source categories are still included in the NEI, just under different MACT categories or without an associated MACT flag.

### 3.5.3 Revisions and Additions Provided by Industry for Draft Version 3

The following industry contacts provided revisions for Version 2 of the NEI for HAPs:

- AES Shady Point
- Alcoa

## Table 3-4

## List of Agencies that Provided Revisions and Additions for Draft Version 3 of the Point Source NEI for HAPs

| |
|---|
| Alabama Department of Environmental Management |
| Alabama– Jefferson County Board of Health |
| Arizona– Maricopa County Environmental Services Department |
| Arizona– Salt River Pima-Maricopa Indian Community* |
| Arkansas Department of Environmental Quality |
| California Air Resources Board |
| Colorado Air Pollution Control Division |
| Connecticut Department of Environmental Protection |
| Delaware Department of Natural Resources* |
| Florida Department of Environmental Protection |
| Idaho Department of Environmental Quality* |
| Indiana Department of Environmental Management |
| Kansas Department of Health and Environment |
| Kentucky Division of Air Quality |
| Kentucky– Air Pollution Control District of Jefferson County |
| Louisiana Department of Environmental Quality* |
| Massachusetts Department of Environmental Protection |
| Michigan Department of Environmental Quality |
| Minnesota Pollution Control Agency |
| Nebraska– City of Omaha Public Works Department |
| Nebraska– Lincoln-Lancaster County Health Department |
| Nevada Division of Environmental Protection |
| New Hampshire Department of Environmental Services* |
| New Jersey Department of Environmental Protection |

## Table 3-4

## List of Agencies that Provided Revisions and Additions for Draft Version 3 of the Point Source NEI for HAPs (Continued)

| |
|---|
| North Carolina Division of Air Quality* |
| North Carolina– Forsyth County Environmental Affairs Department |
| Ohio– Dayton, Ohio Regional Air Pollution Control Agency |
| Pennsylvania– Allegheny County Health Department |
| Rhode Island Department of Environmental Resources |
| South Carolina Department of Health & Environmental Control* |
| Tennessee Division of Air Pollution Control |
| Tennessee– Chattanooga-Hamilton County Air Pollution Control Bureau |
| Tennessee– Memphis and Shelby County Health Department |
| Tennessee– Metro Health Department Pollution Control of Nashville |
| Vermont Department of Environmental Conservation |
| Virginia Department of Environmental Quality |
| Washington Department of Ecology |
| Washington– Puget Sound Clean Air Agency |
| West Virginia Division of Air Quality |
| Wisconsin Department of Natural Resources |

* Provided a new data set. Others provided revisions.

## Table 3-5

## MACT Source Categories Revised for Draft Version 3 of the Point Source NEI for HAPs

| MACT Source Category | MACT Code |
|---|---|
| Acetal Resins Production | 1301 |
| Acrylonitrile-Butadiene-Styrene Production | 1302 |
| Aerospace Industries | 0701 |
| Boat Manufacturing | 1305 |
| Brick and Structural Clay Products Manufacturing | 0414 |
| Butyl Rubber Production | 1307 |
| Carbon Black Production | 1415 |
| Cellulose Products Manufacturing | 1349 |
| Chlorine Production | 1403 |
| Clay Ceramics Manufacturing | 0415 |
| Coke Ovens: Charging Top Side and Door Leaks | 0302 |
| Coke Ovens: Pushing, Quenching, and Battery Stacks | 0303 |
| Commercial Sterilization Facilities | 1609 |
| Cyanide Chemicals Manufacturing | 1405 |
| Decorative Chromium Electroplating | 1610 |
| Dry Cleaning: Perchloroethylene | 1643 |
| Engine Test Cells/Stands Facilities | 0101-1 |
| Ethylene Processes | 1635 |
| Ferroalloys Production | 0304 |
| Flexible Polyurethane Foam Fabrication Operations | 1341 |
| Friction Materials Manufacturing | 1636 |
| Gasoline Distribution (Stage I) | 0601 |

## Table 3-5

## MACT Source Categories Revised for Draft Version 3 of the Point Source NEI for HAPs (Continued)

| MACT Source Category | MACT Code |
|---|---|
| Hard Chromium Electroplating | 1615 |
| Hydrochloric Acid Production | 1407 |
| Iron Foundries | 0308 |
| Large Appliance (Surface Coating) | 0704 |
| Leather Tanning & Finishing Operations | 1634 |
| Lime Manufacturing | 0408 |
| Metal Furniture (Surface Coating) | 0709 |
| Mineral Wool Production | 0409 |
| Miscellaneous Metal Parts & Products (Surface Coating) | 0710 |
| Municipal Landfills | 0802 |
| Municipal Waste Combustors | 1802 |
| Oil & Natural Gas Production | 0501 |
| Organic Liquids Distribution (Non-Gasoline) | 0602 |
| Paint Stripping Operations | 1621 |
| Petroleum Refineries - Catalytic Cracking, Catalytic Reforming & Sulfur Plants | 0502 |
| Petroleum Refineries - Other Sources Not Distinctly Listed | 0503 |
| Plastic Parts & Products (Surface Coating) | 0712 |
| Plywood and Composite Wood Products | 1624 |
| Polycarbonates Production | 1326 |
| Portland Cement Manufacturing | 0410 |
| Primary Aluminum Production | 0201 |

| MACT Source Category | MACT Code |
|---|---|
| Primary Lead Smelting | 0204 |
| Printing, Coating and Dyeing of Fabrics | 0713 |
| Printing/Publishing (Surface Coating) | 0714 |
| Pulp & Paper Production - Non-Combustion | 1626-1 |
| Pulp & Paper Production - Combustion (Kraft, Soda, Sulfite, & Semi-Chemical) | 1626-2 |
| Refractory Products Manufacturing | 0406 |
| Reinforced Plastic Composites Production | 1337 |
| Rocket Engine Test Firing | 0101-2 |
| Rubber Tire Production | 1631 |
| Secondary Lead Smelting | 0205 |
| Semiconductor Manufacturing | 1629 |
| Spandex Production | 1003 |
| Steel Foundries | 0309 |
| Synthetic Organic Chemical Manufacturing (HON) | 1501 |
| Taconite Iron Ore Processing | 0411 |
| Uranium Hexafluoride Production | 1414 |
| Utility Boilers: Coal | 1808-1 |
| Viscose Process Manufacturing | 1348 |
| Wood Building Products (Surface Coating) | 0703 |
| Wool Fiberglass Manufacturing | 0412 |

**Table 3-6**

**Subsumed MACT Source Categories**

| MACT Source Category | MACT Code |
|---|---|
| Clay Minerals Processing | 0416 |
| Clay Products Manufacturing | 0407 |
| Fumed Silica | 1406 |
| Light Weight Aggregate Manufacturing | 0417 |

- Alliance for the Polyurethanes Industry
- BASF (4, 4-methylene diphenyl diisocyante, or MDI)
- Bayer
- BP Chemicals Company
- Cook Composites and Polymers Co.
- Cytec Industries
- Ethylene Oxide/Ethylene Glycols Panel
- ExxonMobil
- General Electric
- Sunoco
- The Acrylonitrile (AN) Group

## 3.6 Revisions and Additions to Create Final Version 3 of the Point Source NEI for HAPs

Draft Version 3 of the point source NEI for HAPs was released for public review in 2002. As EFIG conducted additional QA/QC on draft Version 3, state, local and tribal agencies, EPA, and industry were provided the opportunity to again review the files and provide revisions. The deadline for revisions was March 1, 2003. The point source revisions were reviewed by EFIG, and incorporated along with EFIG revisions to develop the final Version 3 of the NEI for HAPs. EFIG revisions focused again on identifying and removing duplicate facilities and HAPs, refining

the assignment of MACT codes and default stack parameters, and correcting erroneous SIC codes, SCCs, zip codes, and FIPS codes.

Other EFIG revisions/additions were made to meet the requirements of the EPA's recently released Data Standards. In partnership with the Environmental Data Standards Council (EDSC), the EPA developed data standards for environmental information collection and exchange. The use of common data standards among partners will foster consistently defined and formatted data elements and sets of data values, and provide public access to more meaningful data. Specifically, this version of the NEI conforms to the:

- SIC/NAICS Data Standard–North American Industry Classification System codes were populated in the Site record;
- Latitude/Longitude Data Standard–Codes were added to the Emission Release Point record that provide information on how default coordinates were determined; and
- Contact Standard–Changes were made to the information contained in the Transmittal record.
- Facility Identification Standard–Changes were made to the Sites record including the addition of tribal code. The address field now contains only physical locations.
- Chemical Identification Data Standard–The pollutant lookup table now contains the common identifiers used throughout EPA for all chemical substances regulated or monitored by the Agency.

Future NEI releases will conform to additional Data Standards, as well as EPA's Information Quality (IQ) Guidelines. The EPA developed Information Quality Guidelines in response to guidelines issued by the Office of Management and Budget (OMB) under Section 515(a) of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (P.L. 106-554; H.R. 5658). These guidelines apply to "information" that EPA "disseminates" to the public. Such information includes any communication or representation of knowledge such as

facts or data, in any medium or form, including web sites, FTP sites, brochures, data flat files, scientific studies, etc. See *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency* for more details. (http://www.epa.gov/oei/qualityguidelines/). The incorporation of EPA data standards and OMB IQ Guidelines into the NEI is described in "The Challenge of Meeting New EPA Data Standards and Information Quality Guidelines in the Development of the 2002 National Emission Inventory Point Source Data for Hazardous Air Pollutants" (Pope et al., 2003).[b]

### 3.6.1 Revisions Provided by State, Local and Tribal Agencies for Final Version 3

The state, local, and tribal agencies that submitted revisions for the 1999 point source NEI for HAPs are listed in Table 3-7. To the extent possible, all revisions provided were incorporated in the NEI.

### 3.6.2 Revisions and Additions Provided by ESD for Final Version 3

ESD staff provided revisions and/or new data for 11 MACT source categories shown in Table 3-8. As in the past, some revisions pertained to the SIC code/SCC/MACT default lookup tables or facility lists used to assign MACT codes to existing NEI facilities. Other revisions and new data were facility- and HAP-specific.

[b] *www.epa.gov/ttn/chief/conference/ei12/dm/pope.pdf*

## Table 3-7

## List of Agencies that Provided Revisions for Final Version 3 of the Point Source NEI for HAPs

| |
|---|
| Arizona Department of Environmental Quality |
| California Air Resources Board |
| Connecticut Department of Environmental Protection |
| Florida Department of Environmental Protection |
| Florida–Pinellas County Air Quality Division |
| Idaho Department of Environmental Quality |
| Indiana Department of Environmental Management |
| Maine Department of Environmental Protection |
| Massachusetts Department of Environmental Protection |
| Michigan Department of Environmental Quality |
| Minnesota Pollution Control Agency |
| New Jersey Department of Environmental Protection |
| North Carolina–Western North Carolina Regional Air Quality Agency |
| Ohio–Dayton, Ohio Regional Air Pollution Control Agency |
| Oregon Department of Environmental Quality |
| Pennsylvania–Allegheny County Health Department |
| South Carolina Department of Health & Environmental Control |
| Tennessee–Memphis and Shelby County Health Department |
| Texas Commission on Environmental Quality |
| Vermont Department of Environmental Conservation |
| Virginia Department of Environmental Quality |
| West Virginia Division of Air Quality |

## Table 3-8

## MACT Source Categories Revised for Final Version 3 of the Point Source NEI for HAPs

| MACT Source Category | MACT Code |
|---|---|
| Acrylic/Modacrylic Fibers Production | 1001 |
| Auto and Light Duty Truck (Surface Coating) | 0702 |
| Hazardous Waste Incineration | 0801 |
| Marine Vessel Loading Operations | 0603 |
| Medical Waste Incinerators | 1801 |
| Miscellaneous Coating Manufacturing | 1642 |
| Miscellaneous Organic Chemical Manufacturing | 1641 |
| Metal Can (Surface Coating) | 0707 |
| Municipal Waste Combustors | 1802 |
| Pharmaceuticals Production | 1201 |
| Rubber Tire Production | 1631 |

### 3.6.3 Revisions Provided by Industry for Final Version 3

The following industry contacts provided revisions for final Version 3 of the point source NEI for HAPs:

- BASF (for MDI) and
- The Acrylonitrile (AN) Group.

## 3.7 Processing State, Local, and Tribal Agency, MACT, and Industry Data Sets and Revisions

All data sets and revisions provided to EFIG were first formatted to be consistent with each other and the NEI Input Format (NIF). The next step was to identify duplicate facilities and revisions between the multiple data sets, and with the draft inventory. The following steps were used to identify duplicate facilities and revisions:

- **Step 1** Run a query on the facility name;
- **Step 2** If there is a match between two or more data sets or with the draft inventory, verify that other information such as state, county, zip code, TRI ID (or other type of ID), and latitude/longitude coordinates are identical; and
- **Step 3** If there is a match on any of these parameters, it is assumed there is duplication and the HAP-specific records for each facility are compared more closely.

If no duplicates were identified in these steps, it was assumed that the facility could be added to the NEI, or the requested revisions could be processed as appropriate. If there was a match on any of these combined queries, the facility records were compared more closely. If it was determined that a facility was included in one or more data sets, the new data submitted for the facility were added using a prioritization scheme of local-, state-, ESD- and then industry-submitted data. Three exceptions to this approach should be noted: MACT data for municipal waste combustors were given priority, as well as mercury estimates for coal-fired utilities, and industry-supplied MDI estimates.

## 3.8 How Did EFIG Add Stack Parameters If They Were Missing or Inaccurate?

The goal of this project was to create a point source inventory that includes facility-specific data such as facility location, stack information, emissions, and process descriptions. The stack information needed includes stack diameter and height, gas temperature, velocity, and flow rate.

To this end, information was needed to supplement the NEI (including the TRI additions made by EFIG), with stack parameters needed for exposure modeling. The process used to review and supplement NEI stack parameters is explained in the "NEI Quality Assurance and Data Augmentation in Steps for Point Sources," Memorandum posted at *http://www.epa.gov/ttn/chief/emch/invent/*.

Default stack parameters were generated by EFIG, using data from the 1999 NEI Version 1, for over 3,000 SCCs. These are also posted at the website noted above. These data were added to state and local agency and ESD databases that reported emissions at the SCC level, but did not include the necessary stack parameters. Default stack parameters were also generated for over 900 SIC codes. In addition to some state, local, and tribal agency and ESD databases, TRI-reported emissions are reported at the SIC code level. The assumptions that were made in populating the NEI with default stack parameters are discussed below:

- Stack and fugitive parameters provided by state and local agencies and ESD were reviewed to determine if they are physically plausible or if a reporting error has possibly occurred. Values outside of the ranges shown below were either recalculated or replaced with a default value.

  - Stack Height (ft): 0.1 to 1,000
  - Fugitive or release vent height (ft): 0.1 to 100
  - Stack Diameter (ft): 0.1 to 50
  - Stack Temperature (°F): 50 to 1,800
  - Stack Velocity (ft/sec): 0.1 to 560
  - Stack Flow (cu ft/sec): 0.001 to 1,100,000

- For each emission release point, default or calculated stack parameters were added if any of the five fields were blank or out of range, if height was less than diameter, or if the calculated flowrate and the reported flowrate were not within 10% of one another;

- SCC default stack parameters, when available, took priority over SIC code default stack parameters;

- For facilities where no information was available on the type of emission release (i.e., stack vs. fugitive) or if the emission release point was reported as horizontal,

goose neck, vertical with rain cap, or downward facing vent, it was assumed that the emission release point is a stack, and, where available, default stack parameters where added. Only emission release points reported as fugitives were treated as fugitives.

- The following national default stack values were developed from NEI99 data, and applied if there was no match on the SCC or SIC code.

  - Height: 10 ft
  - Diameter: 1 ft
  - Temperature: 72°F
  - Velocity: 15 ft/sec
  - Flow: 12 cu ft/sec

- The following national default fugitive emission release point values were applied if the existing height was outside the acceptable range for fugitive emission release points:

  - Height: 10 ft
  - Diameter: 0.003 ft
  - Temperature: 72°F
  - Velocity: 0.0003 ft/sec
  - Flow: 0 cu ft/sec

  If the height was within range, the height was retained and the all other stack parameters were replaced with the national defaults.

- Each default/derived stack parameter is identified by a flag. The flags indicate whether a certain default parameter was SIC code-based, SCC-based, or based on EFIG's national default stack values. The default flags are included in the NEI Emission Release Point record.

## 3.9 How Did EFIG Add Location Data If They Were Missing or Inaccurate?

Because the NEI is a modeling inventory, the association of a specific latitude/longitude to each emission release point is required. The "NEI Quality Assurance and Data Augmentation Steps for Point Sources" Memorandum provides details on how EFIG assesses, connects, and augments location data in the NEI. The steps include: assessing the distance between emission release points for a given facility, and identifying and replacing emission release points that are

outside the county boundary or missing. In the absence of actual coordinate data, a process was developed to fill in missing coordinates. If the missing coordinates could not be filled in with the average site location calculated from other coordinates associated with the site, then the site address was used to determine the associated latitude and longitude. If address information is incomplete (including no zip code), and the Facility Registry System (FRS) database did not have valid latitude/longitude data for the site, then the location was defaulted to the county centroid as a last result. Table 3-9 presents the locational default flags used in the NEI Emission Release Point record.

## Table 3-9

## Location Default Flags

| Code | Description |
|---|---|
| Exact | Match is to within a unique intersection or within a single side of a single street block. |
| Near | Match is to a single street block but the correct placement within block is unknown. |
| Zipcode+2 | Match to a 5-digit zip code, plus the first two digits of the 4-digit extension. |
| Zipcode5 | Match to a 5-digit zip code. |
| Zipcode3 | Match to multiple 3-digit zip codes based on postal service sectional center facility (SCF). |
| Ambig | Match is to multiple street segments. |
| Cntycent | County centroid. |
| FRS | Coordinates found in FRS database. |
| Site-Avg | Average of accurate coordinates of other emission release points at the same site. |

Locational data provided by state/local agencies, ESD, and TRI were also verified to determine if the latitude and longitude of each release point is within the county indicated. If the plotted release point is within 10 kilometers of an outside boundary of the county, it is assumed to be valid. Furthermore, all emission release points associated with a site must be within 3.0 km

of one another. If one or more emission release points are outliers, they are replaced with the average site latitude/longitude calculated from the acceptable coordinates.

### 3.10 How Can A Reviewer Identify the Source of the Inventory Data?

As described above, the NEI was compiled from data and revisions provided by state, local, and tribal agencies, EPA's ESD, and industry; supplemented with data from TRI that were not included in the primary data sources; and supplemented with data from the 1996 NEI as a last step. Because the development of the NEI covers multiple data sources and revision periods, EFIG felt it was important to delineate the source of the final emissions data reported in the NEI. In the inventory files, the Emission record indicates the source of the current reported emissions value. The following data source codes indicate if the data were provided or revised by state, local, or tribal agencies, EPA/ESD, industry, supplemented from TRI, or pulled in from the 1996 NEI:

- I = Industry 2002 revision;
- I2 = Industry 2003 revision;
- L = Local agency submittal June 2001;
- L1 = Local agency submittal February 2002;
- L2 = Local agency submittal June 2002;
- L3 = Local agency submittal March 2003;
- M1 = ESD original submittal;
- M2 = ESD 2002 revision;
- M3 = ESD 2003 revision;
- S = State agency submittal June 2001;
- S1 = State agency submittal February 2002;
- S2 = State agency submittal June 2002;
- S3 = State agency submittal March 2003;
- T = TRI 99 data;
- N = Data from the 1996 NEI;

## 3.11 How Can A Reviewer Identify the Sources of An Assigned MACT Code?

As discussed previously, the NEI will be used in the National Air Toxics Assessment. To this end, EFIG strived to identify point source processes that are, or will be, subject to MACT standards that will result in HAP emission reductions. Processes (in some cases all processes at a facility) are assigned a MACT code if ESD provided the data, or provided a facility list that was used to identify state/local agency and TRI data as subject to a MACT standard. The MACT codes can be found in the inventory files in the Emission Process records. This table also includes field to indicate that either the state or ESD specifically identified the process as subject to the MACT standard.

EFIG then used an SCC/SIC code/MACT dictionary to identify all facilities in the NEI that may be subject to MACT standards. This dictionary was developed by comparing all of the SCCs and SIC codes with information on types of sources that may be subject to each MACT standard. ESD engineers then reviewed the NEI to verify or revise the facilities listed as possibly subject to MACT standards. Their comments were incorporated in the 1999 NEI. Any MACT assignments made using this dictionary also appear on the inventory in the Emission Process record, and there is a field that indicate that the MACT code was assigned based on an SCC or an SIC code default.

# 4.0 COMPILING THE INVENTORY DATA INTO THE NEI DATABASE

## 4.1 NIF 3.0 and EPA's Data Standards

One of the goals of compiling the NEI was to process all the state, local, and tribal agency, ESD-supplied, and TRI inventory data into a common structure with consistently defined data fields. A common data structure will help end users define standardized approaches to reviewing and using the data. The NEI Input Format (NIF) version 3.0 as designed by EPA allows for a variety of data transfer mechanisms to be used and is flexible enough to be supported by many different database programs. More detailed information about the NIF can be found at *http://www.epa.gov/ttn/chief/nif/index.html*.

The NIF 3.0 format conforms with the EPA's data standards for environmental information collection and exchange. As noted in section 3, the data standards were developed by EDSC- sponsored action teams that include members representing states, tribes, and federal agencies. All but one of these standards have been implemented in the final 1999 NEI version 3 for HAPs, as described below.

### 4.1.1 SIC/NAICS Data Standard

This standard includes ways to classify business activities, including industry classifications, product classifications, and product codes. The Standard Industrial Classification (SIC) System has been used for many years to provide a code system for the identification of business activities. SIC codes are gradually being replaced by the North American Industry Classification System (NAICS) codes that were adopted by Canada, Mexico, and the United States in 1997.

To populate the NAICS code field, a crosswalk of SIC codes to NAICS codes was developed. Several different parties have already developed crosswalks. The maps that have

been built to date were evaluated to come up with a preferred scheme for the NEI. Where there was a one-to-one correspondence between NAICS and SIC codes, the assignment was straightforward. However, in those cases in which one SIC maps to many NAICS codes, the SIC code was mapped to a less specific NAICs code (i.e., a 2, 3 or 4 digit code).

### 4.1.2 Latitude/Longitude Data Standard

The latitude/longitude standard consists of the group of data elements used for recording horizontal and vertical coordinates and associated metadata that define a point on earth. This standard will help users gauge the accuracy and reliability of a given set of coordinates. The primary responsibility for populating these fields lies with the data submitter, as it is difficult if not impossible to discern the origin of a latitude/longitude without being the primary author of the data. EFIG was able to populate these fields whenever latitude/longitudes were obtained from the TeleAtlas Geocoding EZ Locator Service (*http://geocode.com*).

### 4.1.3 Chemical Identification Data Standard

The Chemical Identification Data Standard provides for the use of common identifiers throughout the EPA for all chemical substances regulated or monitored by EPA environmental programs. This standard provides unique, unambiguous, chemically correct common names for all chemicals substances and groupings in EPA's system, and will facilitate automated searches for chemical substances across EPA programs and their databases. The NEI pollutant code lookup table addresses this standard.

### 4.1.4 Facility Identification Data Standard

The facility identification data standard consists of core data elements that properly identify the location, the affiliated organizations, individual business activities, and the environmental interest of a facility site. To implement this standard, EFIG must map the NEI

facilities to the FRS (Federal Registry System) ID maintained by OEI. EFIG is in the process of addressing this standard for the 2002 NEI.

### 4.1.5 Contact Standards

The contact standards provide a consistent method of describing the contact person submitting data to the NEI. These standards include point of contact, address, and communication information. All of these elements are found in the Transmittals table in the NIF structure.

## 4.2 Processing and Screening Steps

Several processing and screening steps were initially performed on each of the state and local and ESD databases as they were received. These steps included:

- Converting the files to NIF 3.0;
- Manually setting primary keys on each table;
- Performing quality control (QC) checks on the files, including running EFIG's NIF QA software on each new file submitted;
- Removing duplicate records;
- Removing records that had null and zero emissions;
- Screening for records that contain pollutants on the list of the 188 CAA HAPs;
- Correcting XY coordinate type;
- Adding state abbreviation based on FIPS code;
- Verifying/correcting control status;
- Correcting referential integrity violations; and

- Checking/correcting miscellaneous data codes such as emission release point type, emission type, and emission unit numerator.

Information on additional processing steps for each state and local agency file submitted in June 2001 for NEI version 2 is provided in Appendix A. Appendix A also notes state, local, and tribal agencies that provided revisions in 2002 and 2003.

# 5.0 REFERENCES

Pope, A., S. Finn, and D. Wilson. 2003. The Challenge of Meeting New EPA Data Standards and Information Quality Guidelines in the Development of the 2002 National Emission Inventory Point Source Data for Hazardous Air Pollutants. Presented at the 12th International Emission Inventory Conference, April 29-May 1, San Diego, California. *http://www.epa.gov/ttn/chief/conference/ei12/dm/pope.pdf*.

Pope, A., D. Wilson, S. Finn, and J. Oh. 2002. QA/QC – An Integral Step in the Development of the 1999 National Emission Inventory for HAPs. Presented at the 11th International Emission Inventory Conference, April 15-18, Atlanta, Georgia. *http://www.epa.gov/ttn/chief/conference/ei11/qa/pope.pdf*.

U.S. Department of Energy. 2001 Energy Information Administration. State Energy Data Report 1999. DOE/EIA 0214 (99). Energy Information Administration, Washington, DC.

U.S. Environmental Protection Agency. 2000. National Air Pollutant Emission Trends, 1900-1998. EPA-454/R-00-002. U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

U.S. Environmental Protection Agency. 2001. 1999 Toxics Release Inventory, Public Data Release. U.S. Environmental Protection Agency, Office of Environmental Information, Washington, DC.

# Appendix A

# State Database Summary Sheets for Versions 2 and 3 of the NEI for HAPs

# STATE DATABASE SUMMARY REPORT

**State: Alabama**

**State/Local Agency Name: Alabama Department of Environmental Management**

**Contact Name, Address, Phone Number, Email:**

Cala Obenauf
No address given
(334) 270-5683
cjo@adem.state.al.us

In addition to the initial data submitted (described below), revisions were provided in February 2002 by the state and a local agency, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

59 out of 67 counties included

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

107 HAPs

**ORIGINAL FILE: QA RESULTS**

TableSI

NAICS code not found

TableER

Y-coord of release point outside state latitudinal bounds
Invalid stack height
Invalid exit gas velocity
Invalid X (UTM) coordinate
Invalid Y (UTM) coordinate
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Invalid exit gas temperature

TableEM

Emission numerical value: invalid field length

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Alabama**

**State/Local Agency Name: Jefferson County Board of Health**

**Contact Name, Address, Phone Number, Email:**

James E. Wright
205-930-1399
ewright@jcdh.org

**Revisions Incorporated in Draft Version 3:**

Revisions were submitted in February 2002 for one county, and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Arizona**

**State/Local Agency Name: Maricopa County Environmental Services Department**

**Contact Name, Address, Phone Number, Email:**

Bob Downing
bdowning@mail.maricopa.gov

**Revisions Incorporated in Draft Version 3:**

Revisions were submitted in February 2002 for one county, and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Arizona**

**State/Local Agency Name: Salt River Pima-Maricopa Indian Community**

**Contact Name, Address, Phone Number, Email:**

Sarah Kelly
sarah.kelly@nau.edu

**Revisions Incorporated in Draft Version 3:**

A new data set was provided in June 2002, and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Arkansas**

**State/Local Agency Name: Arkansas Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Kenya Brunson
brunson@adeq.state.ar.us

**Revisions Incorporated in Draft Version 3:**

Revisions were provided in June 2002 and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: California**

**State/Local Agency Name: California Air Resources Board**

**Contact Name, Address, Phone Number, Email:**

Andy Alexis
(916) 323-1085
aalexis@arb.ca.gov

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

52 counties included out of 58

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

HAPs

**# of HAPs in File:**

199

**ORIGINAL FILE: QA RESULTS**

PointEM
- Invalid pollutant code

PointEP
- Duplicate records
- Invalid annual average hours per day
- The sum of all seasonal throughput percentages <98%
- The sum of all seasonal throughput percentages >100%
- Invalid winter throughput percentages
- Invalid spring throughput percentages
- Invalid summer throughput percentages
- Invalid fall throughput percentages
- Invalid source category code

PointER
- Invalid stack diameter
- Invalid exit gas temperature

Invalid exit gas velocity
Invalid X(UTM) coordinate
Invalid Y(UTM) coordinate
UTM zone: invalid field length

PointER_EM
EM record has no match in ER table: orphan
ER record has no match in EM table: widow

PointEU
Duplicate records
Invalid county fips
Emission unit ID: cannot determine if mandatory

PointEU_ER
EU record has no match in ER table: widow

PointPE
Duplicate records
Invalid start date
End date: invalid year
Invalid throughput unit numerator

Point PE_EM
PE record has no match in EM table: widow

PointSI
NAICS code not found
Invalid county fips
Invalid zip code
Invalid street (line 1)
SIC code not found

PointSI_ER
SI record has no match in ER table: widow

PointSI_EU
EU record has no match in SI table: orphan

PointTR_SI
TR record has no match in SI table: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.

- Eliminated duplicate records.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Colorado**

**State/Local Agency Name: Colorado Department of Public Health & Environment**

**Contact Name, Address, Phone Number, Email:**

David Thayer
(303) 692-3187
david.thayer@state.co.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

56 counties out of 63

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

94 HAPs

**ORIGINAL FILE: QA RESULTS**

PointCE
- Invalid pollutant code

PointEU
- Start date - invalid year
- Invalid pollutant code

PointEP
- The sum of all seasonal throughput percentages <98%
- The sum of all seasonal throughput percentages >100%

PointER
- Exit gas flow rate: invalid field length
- No X(LATLON) coordinate: mandatory
- No Y(LATLON) coordinate: mandatory
- Invalid stack diameter
- Invalid stack height
- Y coord of release point outside state latitudinal bounds

PointPE

Start date - invalid year
Actual throughput: invalid field length

PointSI

SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters, missing facility name.

## STATE DATABASE SUMMARY REPORT

**State: Connecticut**

**State/Local Agency Name: Connecticut Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

William Simpson
(860) 424-3027
william.simpson@po.state.ct.us

Hicham Bourjaili
(860) 424-3962
hicham.bourjaili@po.state.ct.us

In addition to the initial data submitted (described below), revisions were provided in June 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

Eight of eight

**Inventory Year:** 1999

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

One HAP - Lead

**General Comments on QA File(s), if Any (summary of all county files):**

CE record has no match in EM table: widow
Invalid emission calculation method code
Invalid rule effectiveness method
Invalid stack diameter
Duplicate records
Invalid source category code (SCC)
No SIC code: mandatory
CE record has no match in EP table: orphan
PE record has no match in EP table: orphan
EP record has no match in PE table: widow
X coord of release point outside state longitudinal bounds
EM record has no match in ER table : orphan
EU record has no match in EP table: widow
EM record has no match in PE table: orphan

PE record has no match in EM table: widow
ER record has no match in EM table: widow
SI record has no match in ER table: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Eliminated duplicate records.
- Corrected coordinate data.
- Remaining error messages: incomplete address information, out of range stack parameters, null SIC code.

## STATE DATABASE SUMMARY REPORT

**State: Delaware**

**State/Local Agency Name: Delaware Department of Natural Resources**

**Contact Name, Address, Phone Number, Email:**

David Fees
david.fees@state.de.us

**Revisions Incorporated in Draft Version 3:**

A new data set was provided in June 2002, and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Florida**

**State/Local Agency Name: Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

Yi Zhu
No address given
(850) 821-9558
yi.zhu@dep.state.fl.us

In addition to the initial data submitted (described below), revisions were provided in February and June 2002 and by the state and a local agency in March 2003 (Pinellas County Air Quality Division), and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

51 counties included out of 67

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

95 HAPs

**ORIGINAL FILE: QA RESULTS**

Invalid emission unit numerator
No emission type: mandatory
Invalid factor unit numerator
Invalid material I/O code
No control status: mandatory
Invalid EM Reliability Indicator
The sum of all seasonal throughput percentages <98%
No XY coordinate type: mandatory
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Exit gas flow rate: Invalid field length
Invalid emission release point type
Stack height-cannot get minimum and maximum heights for QA
Invalid exit gas temperature
Invalid exit gas velocity
No Y (UTM) coordinate: mandatory
No UTM zone: mandatory for XY coordinate type

Y-coord of release point outside state latitudinal bounds
No street (line 1): Mandatory
No zip code: mandatory

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Eliminated duplicate records.
- Corrected coordinate data.
- Corrected emission unit numerator.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Florida**

**State/Local Agency Name: Pinellas County Air Quality Division**

**Contact Name, Address, Phone Number, Email:**

Pwu-Sheng Lui
727-464-4706
pliu@co.pinellas.fl.us

**Revisions Incorporated in Final Version 3:**

Revisions were provided in March 2003. The revisions included 14 site additions and the addition of beryllium data.

## STATE DATABASE SUMMARY REPORT

**State: Idaho**

**State/Local Agency Name: Idaho Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Gary L. Reinbold
208-373-0253
greinbol@deq.state.id.us

**Revisions Incorporated in Draft Version 3:**

A new data set was provided in June 2002, and incorporated as appropriate.

**Revisions Incorporated in Final Version 3:**

Revisions were provided in March 2003, primarily consisting of replacing process IDs and SCCs.

## STATE DATABASE SUMMARY REPORT

**State: Indiana**

**State/Local Agency Name: Indiana Department of Environmental Management**

**Contact Name, Address, Phone Number, Email:**

Jon Bates
No address given
(317) 233-4226

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

86 counties included out of 92

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

HAPs

**# of HAPs in File:**

153 HAPs

**General Comments on QA File(s), if Any:**

Invalid pollutant code
The sum of all seasonal throughput percentages <98%
XY coordinate not UTM
UTM zone not applicable
Invalid XY coordinate type
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Invalid exit gas velocity
Invalid exit gas temperature
Invalid stack height
Invalid stack diameter
Y-coord of release point outside state latitudinal bounds
Invalid X (UTM) coordinate
Invalid Y (UTM) coordinate
SIC code not found
Invalid zip code

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Indiana**

**State/Local Agency Name: Indiana Department of Environmental Management**

**Contact Name, Address, Phone Number, Email:**

Jay Koch
No address given
(317) 233-0581
jkoch@dem.state.in.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

35 counties included out of 92

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

1 HAP–lead

**General Comments on QA File(s), if Any:**

No errors.

**RESOLUTION:**

N/A

## STATE DATABASE SUMMARY REPORT

**State: Illinois**

**State/Local Agency Name: Illinois Environmental Protection Agency**

**Contact Name, Address, Phone Number, Email:**

Buzz Asselmeier
No address given
(217) 782-5811
buzz.asselmeier@epa.state.il.us

**# Counties Included/Number in State:**

102 counties included out of 102

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

125 HAPs

**ORIGINAL FILE:QA RESULTS**
Not available.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Remaining error messages: out of range stack parameters, incomplete address information, null SIC codes.

## STATE DATABASE SUMMARY REPORT

**State: Kansas**

**State/Local Agency Name: Kansas Department of Health and Environment**

**Contact Name, Address, Phone Number, Email:**

Dana Morris
(785) 296-1578
dmorris@kdhe.state.ks.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

57 counties were included out of 105

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

101 HAPs

**ORIGINAL FILE: QA RESULTS**

PointCE
Invalid pollutant code

PointEM
Invalid pollutant code

PointEP
The sum of all seasonal throughput percentages <98%
The sum of all seasonal throughput percentages >100%

PointER
Invalid stack height
Invalid stack diameter
Invalid exit gas velocity
Invalid exit gas temperature
No XY coordinate type: mandatory

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Kentucky**

**State/Local Agency Name: Kentucky Division for Air Quality**

**Contact Name, Address, Phone Number, Email:**

Debra Jennings
No address was given
(502) 573-3382
DEBRA.JENNINGS@MAIL.STATE.KY.US

In addition to the initial data submitted (described below), revisions were provided in February 2002 by the state and a local agency, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

97 out of 120

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

124 HAPs

**General Comments on File, if Any:**
QA program not run.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Remaining error messages: out of range stack parameters, incomplete address information.

## STATE DATABASE SUMMARY REPORT

**State: Kentucky**

**State/Local Agency Name: Air Pollution Control District of Jefferson County**

**Contact Name, Address, Phone Number, Email:**

Jess Goldsmith
jgoldsmith@co.jefferson.ky.us

**Revisions Incorporated in Draft Version 3:**

Revisions were provided in February 2002 and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Louisiana**

**State/Local Agency Name: Louisiana Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Jennifer Walton
(225) 765-0035
jennifer_b@deq.state.la.us

In addition to the initial data submitted (described below), a new data set was provided in June 2002, and processed by EFIG as appropriate.

**# Counties Included/Number in State:**

49 counties included out of 64

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

119 HAPs

**ORIGINAL FILE: QA RESULTS**

PointSI

- Duplicate records
- No zip code: mandatory
- No street (line 1): mandatory
- No city: mandatory
- No state: mandatory
- State postal code does not match state FIPS code
- Invalid street (line 2)
- SIC code not found

PointEP

- Duplicate records
- The sum of all seasonal throughput percentages <98%
- The sum of all seasonal throughput percentages >100%
- Invalid annual average days per week

PointEM

- Duplicate records

**RESOLUTION:**

- Tested referential integrity.
- Deleted duplicate records.
- Corrected state postal code.
- Remaining error messages: incomplete address information, out of range stack parameters, null SIC codes.

## STATE DATABASE SUMMARY REPORT

**State: Maine**

**State/Local Agency Name: Maine Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

Rich Greves
ME DEP
State House, Station No. 17
Augusta, ME 04333
(207) 287-2437
FAX: 207-287-641
rich.greves.@state.me.us

In addition to the initial data submitted (described below), revisions were provided in March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

16 counties included out of 16

**Inventory Year: 1998**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

62 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEM
- Invalid pollutant code
- Start Date - Invalid year
- End Date - Invalid year

PointER
- Invalid emission release point type
- Invalid X(UTM) coordinate
- Invalid Y(UTM) coordinate

PointER_EP
- Cannot determine if widow-null or invalid emission data level

PointEU_PE

Cannot determine if widow-null or invalid emission data level

PointPE

Start Date - Invalid year
End Date - Invalid year

PointSI

State postal code does not match state FIPS code
SIC code not found

PointSI_ER

SI record has no match in ER table: widow

Point SI_PE

Cannot determine if widow-null or invalid emission data level

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Corrected state postal code.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Maryland**

**State/Local Agency Name: Maryland Department of the Environment**

**Contact Name, Address, Phone Number, Email:**

J. Will Haus
2500 Broening Hwy.
Baltimore, MD
(410) 631-3278

**# Counties Included/Number in State:**

24 counties were included out of 24

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

HAPs

**# of HAPs in File:**

128 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEM
Invalid pollutant code

PointER
Invalid stack diameter
Invalid exit gas temperature
Invalid exit gas velocity
Y coord of release point outside state latitudinal bounds
X coord of release point outside state longitudinal bounds

PointSI
NAICS code not found
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Massachusetts**

**State/Local Agency Name: Massachusetts Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

Jen D'Urso
No address given
(617) 348-4015
Jen.D'Urso@state.ma.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

12 counties included out of 14

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**
HAPs

**# of HAPs in File:**

24 HAPs

**General Comments on QA File(s), if Any:**
Invalid pollutant code
Invalid exit gas velocity
Invalid stack height
Invalid stack diameter
Invalid exit gas temperature
Y-coord of release point outside state longitudinal bounds
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Massachusetts**

**State/Local Agency Name: Massachusetts Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

Robert Boisselle
(617) 292-5609
robert.boisselle@state.ma.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

5 counties included out of 14

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

One HAP-lead

**General Comments on QA File(s), if Any:**

PointCE

Invalid pollutant code
Invalid primary percent control efficiency

PointEM

Invalid pollutant code
Invalid emission unit numerator

PointER

Invalid stack height
Invalid stack diameter
Invalid exit gas temperature
Invalid exit gas velocity

**RESOLUTION:**

- Verified pollutant codes.
- Corrected emission unit numerator.

## STATE DATABASE SUMMARY REPORT

**State: Michigan**

**State/Local Agency Name:** **Michigan Department of Environmental Quality-Air Quality**

**Contact Name, Address, Phone Number, Email:**

Allan Ostrander
No address given
(517) 335-2717
ostrander@state.mi.us

In addition to the initial data submitted (described below), revisions were provided in February and June 2002, and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

75 counties included out of 83

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

121 HAPs

**ORIGINAL FILE: QA RESULTS**

Invalid total capture control efficiency
Invalid total capture efficiency
Invalid pollutant code
The sum of all seasonal throughput percentages <98%
Invalid spring throughput percentage
Invalid summer throughput percentage
The sum of all seasonal throughput percentages >100%
Invalid exit gas velocity
Invalid exit gas temperature
Y-coord of release point outside state latitudinal bounds
X-coord of release point outside state longitudinal bounds
Invalid stack height
Invalid stack diameter
SIC unit level not found
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Minnesota**

**State/Local Agency Name: Minnesota Pollution Control Agency**

**Contact Name, Address, Phone Number, Email:**

Chun Yi Wu
No address given
(651) 282-5855
chun.yi.wu@pca.state.mn.us

In addition to the initial data submitted (described below), revisions were provided in February and June 2002, and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

75 counties out of 87

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both (two files)

**# of HAPs in File:**

158 HAPs

**ORIGINAL FILE: QA RESULTS**

SIC code not found
Actual Throughput: Invalid field length
Design capacity: Invalid field length
ER record has no match in EM table: Widow record
Invalid stack diameter
Invalid exit gas temperature
Y-coordinate of release point outside state latitudinal bounds
The sum of all seasonal throughput percentages <98%
Invalid secondary device type
No emission unit id: mandatory (for HAPs; unit or process level)
No process id: mandatory (for HAPs; unit or process level)
The sum of all seasonal throughput percentages < 98%
PE record has no match in EP table
EP record has no match in PE table
Duplicate records
Invalid material
EM record has no match in PE table

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Eliminated duplicate records.
- Corrected coordinate data.
- Remaining error messages: incorrect secondary device type codes, out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Mississippi**

**State/Local Agency Name: Mississippi Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Susan L. Holden
No address given
(601) 961-5276
Susan_Holden@deq.state.ms.us

**# Counties Included/Number in State:**

73 counties included out of 82 counties

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

127

**ORIGINAL FILE: QA RESULTS**

Invalid exit gas temperature
Invalid exit gas velocity
Invalid stack diameter
X coordinate of release point outside state latitudinal bounds
Y coordinate of release point outside state latitudinal bounds

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Missouri**

**State/Local Agency Name:** **Department of Natural Resources, Air Pollution Control Program**

**Contact Name, Address, Phone Number, Email:**

Nathan J. Holm
(573) 751-4817
nrholmn@mail.dnr.state.mo.us

**# Counties Included/Number in State:**

25 out of 115

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

1 HAP - Lead

**ORIGINAL FILE: QA RESULTS**

PointCE
- Duplicate records
- Total capture control efficiency: invalid field length
- Invalid primary device type
- Primary percent control efficiency: invalid field length

PointEM
- No control status: mandatory

PointEP
- The sum of all seasonal throughput percentages <98%
- Winter throughput percentages: invalid field length
- Spring throughput percentages: invalid field length
- Summer throughput percentages: invalid field length
- Fall throughput percentages: invalid field length
- Sulfur content: invalid field length

PointER
- Invalid stack height
- Invalid stack diameter

Invalid exit gas velocity
Invalid exit gas temperature
X coord of release point outside state longitudinal bounds
No X(UTM) coordinate: mandatory
No Y(UTM) coordinate: mandatory

PointSI

Invalid ORIS facility code
SIC code not found
NAICS code not found

**RESOLUTION:**

- Tested referential integrity.
- Deleted duplicate records.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Montana**

**State/Local Agency Name: Montana Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Charles Homer
(406) 444-4279

**# Counties Included/Number in State:**

10

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

5 HAPs

**General Comments on QA File(s), if Any:**

PointAC
- Invalid material I/O code

PointEM
- Invalid material I/O code
- Emission > range maximum

PointEP
- No airs stack id provided: mandatory
- The sum of all seasonal throughput percentages exceeds 100%

PointER
- Invalid exit gas temperature
- Invalid exit gas velocity
- Invalid stack diameter
- Invalid stack height
- Cannot compute flow rate; check stack data
- Invalid exit gas flow rate

PointER_EM
- EM record has no match in ER table: widow

PointSI
SIC code not found

PointSI_ER
SI record has no match in ER table: widow

PointTR_SI
SI record has not match in TR table: widow

**RESOLUTION:**

- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Nebraska**

**State/Local Agency Name: City of Omaha**

**Contact Name, Address, Phone Number, Email:**

Mary Beckenhauer
No address given
(402) 444-6015
mbeckenhauer@ci.omaha.ne.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

One

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

75 HAPs

**General Comments on QA File(s), if Any:**

Duplicate records
Emission Unit ID: cannot determine if mandatory –Emission Data Level not determined
Process ID: cannot determine if mandatory – Emission Data Level not determined
CE record has no match in EM table: Widow
Invalid start time
Invalid end time
Invalid material
End date: invalid field length
Invalid pollutant code
The sum of all seasonal throughput percentage <98%
CE record has no match in EP table: orphan
PE record has no match in EP table: orphan
EP record has no match in PE table: widow
Invalid stack height
Invalid stack diameter
Invalid exit gas temperature
Invalid exit gas velocity

Invalid X (LATLON) coordinate
XY coordinate type not UTM
UTM zone not applicable
Problem with coordinate value(s) or type: cannot confirm (X,Y) location of release point
EM record has no match in ER table: orphan
ER record has no match in EM table: widow
EU record has no match in EP table: widow
EM record has no match in PE table: orphan
PE record has no match in EM table: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Corrected coordinate data.

## STATE DATABASE SUMMARY REPORT

**State: Nebraska**

**State/Local Agency Name: Lincoln-Lancaster County Health Department**

**Contact Name, Address, Phone Number, Email:**

Charles Riley
criley@ci.lincoln.ne.us

**Revisions Incorporated in Draft Version 3:**

A new data set was provided June 2002 and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Nebraska**

**State/Local Agency Name: Nebraska Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Dave Brown
No address given
(402) 4741-3389
No e-mail address given

In addition to the initial data submitted (described below), revisions were provided in February and June 2002 by two local agencies, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

49 counties were included out of 93

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

107 HAPs

**General Comments on QA File(s), if Any:**

Duplicate records
Incorrect record type
Invalid pollutant code
Invalid county fips
Emission unit ID: cannot determine if mandatory – inventory type not determined
Process ID: cannot determine if mandatory – inventory type not determined
Emission unit ID: cannot determine if mandatory – Emission data level not determined
Process ID: cannot determine if mandatory – Emission data level not determined
CE record has no match in EM table: Widow
Emission release pt ID: cannot determine if mandatory – invalid inventory type
Invalid emission unit numerator
No emission type: Mandatory
Invalid EM Reliability
Invalid Factor Unit Numerator
No Control Status: Mandatory
No Process ID: Mandatory
CE record has no match in EP: orphan

PE record has no match in EP: orphan
EP record has no match in PE: widow
Cannot determine if orphan: null or invalid inventory type
EM record has no match in ER: orphan
ER record has no match in EM: widow
EP record has no match in EU: orphan
EU record has no match in EP: widow
Invalid state FIPS code
Cannot determine validity of county FIPS; state FIPS; state FIPS + county FIPS
Invalid start date
Invalid end date
EM record has no match in PE: orphan
PE record has no match in EM: widow
Invalid street (Line 1)
No Street (Line 1): Mandatory
SI record has no match in ER: widow
EU record has no match in SI: orphan
SI record has no match in EU: widow
SI record has no match in TR: orphan
TR record has no match in SI: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Corrected state FIPS code.
- Corrected emission unit numerator.
- Remaining error messages: incomplete facility address information, null SIC codes.

## STATE DATABASE SUMMARY REPORT

**State: Nevada**

**State/Local Agency Name: Nevada Division of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

Lori Campbell
loric@ndep.state.nv.us

**Revisions Incorporated in Draft Version 3:**

Revisions were submitted in June 2002 and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: New Hampshire**

**State/Local Agency Name: New Hampshire Department of Environmental Services**

**Contact Name, Address, Phone Number, Email:**

Rick Rumba
Newton (Sonny) Strickland
NH DES
64 North Main Street, Caller Box 2033
Concord, NH 03302-2033
(603) 271-1370 FAX: 603-271-1381
sstrickland@des.state.nh.us
r_rumba@des.state.nh.us

In addition to the initial data submitted (described below), a new data set was provided in June 2002, and processed by EFIG as appropriate.

**# Counties Included/Number in State:**

8 counties included out of 10

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

44 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEM
Invalid rule effectiveness method

PointEP
The sum of all seasonal throughput percentages<98%

PointER
Invalid exit gas velocity
Invalid stack height
Invalid exit gas temperature
Invalid stack height

PointER_EM

EM record has no match in ER table: orphan

PointEU

Invalid design capacity numerator
Invalid design capacity denominator
NAICS code not found

PointPE_EM

PE record has no match in EM table: widow

PointSI

NAICS code not found

PointSI_ER

SI record has no match in ER table: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: New Jersey**

**State/Local Agency Name: NJDEP_AQEVAL**

**Contact Name, Address, Phone Number, Email:**

Lisa Jones
(609) 292-0273
ljones@deq.state.nj.us

In addition to the initial data submitted (described below), revisions were provided in February and June 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

21 out of 21

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**
HAPs

**# of HAPs in File:**

138 HAPs

**General Comments on QA File(s), if Any:**

PointCE
- Duplicate records
- Invalid primary device type
- Invalid pollutant code

PointEM
- Duplicate records
- Start date: invalid year
- End date: invalid year
- Invalid start time
- Invalid end time
- Emission unit ID: cannot determine if mandatory

PointEP
- The sum of the seasonal throughput percentages <98%

PointER
- Invalid exit gas temperature
- Invalid exit gas velocity

Invalid stack diameter
Invalid stack height
No XY coordinate type: mandatory
X coord of release point outside state longitudinal bounds

PointPE

Start date: invalid year
End date: invalid year
Invalid start time
Invalid end time
Invalid material

PointSI

Facility name: invalid field length
No address type code: mandatory
Invalid site MACT code
No street (line 1): mandatory
No city: mandatory
No state postal abbreviation: mandatory
No zip code: mandatory
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Deleted duplicate records.
- Corrected coordinate data.
- Corrected state postal code.
- Remaining error messages: out of range stack parameters, incomplete address information.

## STATE DATABASE SUMMARY REPORT

**State: New Mexico**

**State/Local Agency Name: New Mexico Air Quality Board**

**Contact Name, Address, Phone Number, Email:**

Jim Shively
(505) 955-8068
Jim_Shively@nmenv.state.nm.us

**# Counties Included/Number in State:**

15 counties included out of 33

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

93 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEP

- SCC: invalid inventory type
- The sum of all seasonal throughput percentages <98%
- Duplicate records
- Spring throughput percentage: invalid data type

PointER

- Invalid stack height
- Invalid stack diameter
- Invalid exit gas temperature
- Invalid exit gas velocity
- Duplicate records
- Invalid X(UTM) coordinate
- Invalid Y(UTM) coordinate

PointPE

- Duplicate records
- Invalid throughput unit numerator

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Removed duplicate records.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: New York**

**State/Local Agency Name: NYS Dept of Environmental Conservation**

**Contact Name, Address, Phone Number, Email:**


| | | |
|---|---|---|
| Art Robinson | (518) 402-8396 | ajrobins@gov.dec.state.ny.us |
| Mike Sheehan | (518) 402-8396 | mpsheeha@gov.dec.state.ny.us |
| Bob Bielawa | (518) 402-8396 | bxbielaw@gov.dec.state.ny.us |
| Syed Alam | (518) 402-8396 | snalam@gov.dec.state.ny.us |
| Carlos Mancilla | (518) 402-8396 | cxmancil@gov.dec.state.ny.us |


**# Counties Included/Number in State:**

53 counties included out of 62

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

215 HAPs

**ORIGINAL FILE: QA RESULTS**

Not available.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Remaining error messages: incomplete address information, out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: North Carolina**

**State/Local Agency Name: North Carolina Division of Air Quality**

**Contact Name, Address, Phone Number, Email:**

Carol Walker
carol.walker@ncmail.net

**Revisions Incorporated in Draft Version 3:**

A new data set was provided in February 2002, and revisions were provided in June 2002.

## STATE DATABASE SUMMARY REPORT

**State: North Carolina**

**State/Local Agency Name: Western NC Regional Air Quality Agency**

**Contact Name, Address, Phone Number, Email:**

Greg Davis
No address given.
(828) 255-5655
davisgr@co.buncombe.nc.us

In addition to the initial data submitted (described below), revisions were provided in June 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

One

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

95

**General Comments on QA File(s), if Any:**
QA program not run.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.

## STATE DATABASE SUMMARY REPORT

**State: North Carolina**

**State/Local Agency Name: Forsyth Co. Environmental Affairs Dept.**

**Contact Name, Address, Phone Number, Email:**

Steve Lyda
(336) 727-8060
lydask@co.forsyth.nc.us

In addition to the initial data submitted (described below), revisions were provided in June 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

One

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

95 HAPs

**ORIGINAL FILE: QA RESULTS**

Invalid X (LATLON) coordinate
Invalid pollutant code
Emission numeric value: invalid field length

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Corrected coordinate data.

## STATE DATABASE SUMMARY REPORT

**State: North Carolina**

**State/Local Agency Name:** **Mecklenburg County**
**Air Quality Section**
**Department of Environmental Protection**

**Contact Name, Address, Phone Number, Email:**

S. David Ross
Air Quality Section
Department of Environmental Protection
Suite 205
700 North Tryon Street
Charlotte, NC 28202-2236
(704) 336-5500
RossSD@co.mecklenburg.nc.us

**# Counties Included/Number in State:**

One

**Inventory Year: 1998**

**Inventory Type–Criteria, toxics, both:**

HAPs

**# of HAPs in File:**

134

**General Comments on QA File(s), if Any:**
QA program not run.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.

## STATE DATABASE SUMMARY REPORT

**State: Ohio**

**State/Local Agency Name: Ohio Environmental Protection Agency**

**Contact Name, Address, Phone Number, Email:**

Tom Velalis
No address given
(614) 644-4837
tom.velalis@epa.state.oh.us

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003 by a local agency, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

40 counties are included out of 88

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

1 HAP - Lead

**ORIGINAL FILE: QA RESULTS**

The sum of all seasonal throughput percentages < 98%.
Invalid annual average hours per day
Y-coord of release point outside state latitudinal bounds
X-coord of release point outside state longitudinal bounds
Invalid stack diameter
Invalid stack height
Actual throughput: invalid field length
Invalid material
SIC code not found
Invalid street (line 2)

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Ohio**

**State/Local Agency Name: Dayton, Ohio/Regional Air Pollution Control Agency**

**Contact Name, Address, Phone Number, Email:**

Andrew J. Roth
no address given
(937) 225-4118
rothaj@rapca.org

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

Six

**Inventory Year:** 1999

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

15

**General Comments on QA File(s), if Any:**

Invalid start time
Invalid end time
Invalid material
The sum of all seasonal throughput percentages <98%
Invalid exit gas velocity
Invalid exit gas temperature
XY coordinate type not UTM
Zone not applicable
Invalid stack height
Invalid stack diameter
State postal code does not match state FIPS code

**RESOLUTION:**

- Corrected state postal code.
- Corrected coordinate data.

## STATE DATABASE SUMMARY REPORT

**State: Oklahoma**

**State/Local Agency Name: Dept. of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Jeff Davidson
(405) 702-4120
jeff.davidson@deq.state.ok.us

**# Counties Included/Number in State:**

68

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

97 HAPs

**ORIGINAL FILE: QA RESULTS**

Invalid pollutant code
Duplicate records
Invalid annual average hours per year
Invalid stack diameter
Invalid exit gas temperature
State postal code does not match state FIPS code
Invalid zip code

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Deleted duplicate records.
- Corrected state postal code.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Oregon**

**State/Local Agency Name: Oregon Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Steven Aalbers
(503) 229-6798
aalbers.steve@deq.or.us

In addition to the initial data submitted (described below), revisions were provided in March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

16 counties were included out of 36

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

Four

**ORIGINAL FILE: QA RESULTS**

PointEM
Invalid pollutant code

PointEP
The sum of all seasonal throughput percentages <98%

PointER
Invalid X(LATLON) coordinate: Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
X coord of release point outside state longitudinal bounds

PointSI
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.

- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Pennsylvania**

**State/Local Agency Name: Allegheny County**

**Contact Name, Address, Phone Number, Email:**

Gary Fischman
No address given
(412) 578-8141
gfischman@achd.net

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

One

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

120 HAPs

**General Comments on QA File(s), if Any:**

The sum of all seasonal throughput percentages <98%
Invalid stack height
Invalid stack diameter
Invalid exit gas velocity
Invalid exit gas temperature
X-coord of release point outside state longitudinal bounds

**RESOLUTION:**

- Corrected coordinate data.

## STATE DATABASE SUMMARY REPORT

**State: Pennsylvania**

**State/Local Agency Name: City of Philadelphia**

**Contact Name, Address, Phone Number, Email:**

Thomas Weir
(215) 685-9436
thomas.weir@phila.gov

**# Counties Included/Number in State:**

One

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

100 HAPs

**General Comments on QA File(s), if Any:**

PointEM

Start date - invalid year
Invalid rule effectiveness method

PointEP

The sum of all seasonal throughput percentages >100%
The sum of all seasonal throughput percentages <98%

PointER

Invalid stack diameter
Invalid stack height
Invalid exit gas temperature
Invalid exit gas velocity

PointPE

Start date - invalid year

**RESOLUTION:**

N/A

## STATE DATABASE SUMMARY REPORT

**State: Pennsylvania**

**State/Local Agency Name: PADEP BAQ**

**Contact Name, Address, Phone Number, Email:**

Carrie Eastman
(717) 783-5974
eastman.carrie@dep.state.pa.us

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003 by a local agency, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

55 counties included out of 67

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

92 HAPs

**General Comments on QA File(s), if Any:**

PointCE
- Duplicate records
- Invalid pollutant code

PointEM
- Invalid pollutant code

PointEP
- The sum of all seasonal throughput percentages <98%.

PointER
- Invalid stack diameter
- Invalid stack height
- Invalid exit gas temperature
- Invalid exit gas velocity
- Exit gas flow rate: invalid field length
- X coord of release point outside state longitudinal bounds

PointPE

Actual throughput: invalid field length

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Deleted duplicate records.
- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Rhode Island**

**State/Local Agency Name:** **Rhode Island Department of Environmental Management Office of the Air Resource**

**Contact Name, Address, Phone Number, Email:**

Karen Slattery
RI DEM
291 Promenade Street
Providence, RI 02908
(401) 222-2808 FAX: 401-277-2017
kslatter@dem.state.ri.us

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

5 counties included out of 5

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

102 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEM
- Duplicate records
- Invalid pollutant code
- Invalid control status

PointEP
- Duplicate records
- The sum off all seasonal throughput percentages <98%

PointEP_PE
- PE record has no match in EP table: orphan
- EP record has no match in PE table: widow

PointER

Y coord of release point outside state latitudinal bounds
XY coord type not UTM. UTM zone not applicable

PointER_EM
EM record has no match in ER table: orphan

PointEU
SIC unitlevel code not found

PointEU_EP
EP record has no match in EU table: orphan
EU record has no match in EP table: widow

PointPE
Duplicate records

PointPE_EM
EM record has no match in PE table: orphan
PE record has no match in EM table: widow

PointSI
SIC code not found

PointSI_ER
SI record has no match in ER table: widow

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: South Carolina**

**State/Local Agency Name:** Department of Health & Environmental Control

**Contact Name, Address, Phone Number, Email:**

Christopher Cheatham
No Address Given
803-898-3827; 803-898-4292
803-898-4117 Fax

In addition to the initial data submitted (described below), revisions were provided in February 2002, and new data were provided June 2002. Revisions were also provided in March 2003. These files were processed by EFIG as appropriate.

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**# Counties Included/Number in State:**

45 counties out of 46

**Inventory Year:** 1999

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

103 HAPs

**Original File: QA Results**

**PointEM**
No XY Coordinate Type: Mandatory

**PointEP**
The sum of all seasonal throughput percentages < 98%

**PointER**
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Invalid Stack Height: 0
Invalid Stack Diameter: 0
Invalid Exit Gas Velocity: 0
Invalid X (LATLON) Coordinate:
Invalid Y (LATLON) Coordinate:
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Invalid Exit Gas Velocity: 0
Invalid Exit Gas Temperature: 0

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Tennessee**

**State/Local Agency Name: Memphis and Shelby County Health Department**

**Contact Name, Address, Phone Number, Email:**

Christopher Boyd
901-544-7472
cboydengrbmschd@yahoo.com

**Revisions Incorporated in Draft Version 3:**

A new data set was provided June 2002 for one county and incorporated as appropriate.

**Revisions Incorporated in Final Version 3:**

Revisions were provided for one county in March 2003.

## STATE DATABASE SUMMARY REPORT

**State: Tennessee**

**State/Local Agency Name: Metro-Health Department of Pollution Control of Nashville**

**Contact Name, Address, Phone Number, Email:**

Laura Artates
laura.artates@nashville.gov

**Revisions Incorporated in Draft Version 3:**

A new data set was provided June 2002 for one county and incorporated as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Tennessee**

**State/Local Agency Name: TDEC APC**

**Contact Name, Address, Phone Number, Email:**

Ron Redus
(615) 532-0577
rrdeus@mail.state.tn.us

In addition to the initial data submitted (described below), revisions were provided in February and June 2002 by the state agency and three local agencies. Revisions were also provided in March 2003 by a local agency (Memphis and Shelby County Health Department). These files were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

3 out of 95

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

One HAP- lead

**ORIGINAL FILE: QA RESULTS**
Not available.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Tennessee**

**State/Local Agency Name:** **Chattanooga-Hamilton County Air Pollution Control Bureau**

**Contact Name, Address, Phone Number, Email:**

Heather Sandner
No address given
(423) 867-4321
sandner_h@mail.chattanooga.gov

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

One

**Inventory Year:** **1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

41

**ORIGINAL FILE: QA RESULTS**
Not available.

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.

## STATE DATABASE SUMMARY REPORT

**State: Texas**

**State/Local Agency Name: Texas Commission on Environmental Quality**

**Contact Name, Address, Phone Number, Email:**
Russell Nettles
(512) 239-1493
RNETTLES@tceq.state.tx.us

**Revisions Incorporated in Final Version 3:**

A new data set was incorporated March, 2003, as appropriate.

## STATE DATABASE SUMMARY REPORT

**State: Utah**

**State/Local Agency Name: Utah Division of Air Quality**

**Contact Name, Address, Phone Number, Email:**

Scott D. Hanks
(801) 536-4066
shanks@deq.state.ut.us

**# Counties Included/Number in State:**

19 counties included out of 29

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

72 HAPs

**ORIGINAL FILE: QA RESULTS**

PointCE

- Invalid pollutant code
- Invalid total capture control efficiency
- Invalid primary device type
- Total capture control efficiency: invalid field length

PointEM

- Duplicate records
- Emission release point id: cannot determine if mandatory–invalid inventory type
- Emission unit id: cannot determine if mandatory–invalid inventory type
- Process id: cannot determine if mandatory–inventory type not determined
- Invalid pollutant code
- Invalid start time

PointEP

- The sum of all seasonal throughput percentages <98%
- Annual average hours per day: invalid field length
- Invalid annual average hours per year
- Invalid annual average weeks per year
- Sulfur content: invalid field length
- Annual average hours per year: invalid field length
- Annual average days per week: invalid field length

Invalid annual average hours per day

PointER
Invalid stack diameter
Invalid stack height
Invalid exit gas temperature
Invalid exit gas velocity
Invalid X(UTM) coordinate
Invalid Y(UTM) coordinate

PointEU
Duplicate records
SIC unit level not found

PointPE
Invalid county fips
Invalid throughput unit numerator
Invalid material
Invalid period hours per day

PointSI
SIC code not found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Deleted duplicate records.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Vermont**

**State/Local Agency Name: State of Vermont – Department of Environmental Conservation – Air Pollution Control Division**

**Contact Name, Address, Phone Number, Email:**

Jeff Merrell
VT Agency of Natural Resources
103 S. Main St., Bldg 3
S. Waterbury, VT 05671
(802) 241-3859 FAX: 802-241-2590
jeffm@dec.anr.state.vt.us

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

13 counties are included out of 14

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

HAPs

**# of HAPs in File:**

65 HAPs

**ORIGINAL FILE: QA RESULTS**

Duplicate records
Y coordinate of release point outside state latitudinal bounds and X coordinate of release point outside state longitudinal bounds
SIC code not found

**RESOLUTION:**

- Tested referential integrity.
- Deleted duplicate records.
- Corrected coordinate data.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Virginia**

**State/Local Agency Name: Virginia Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Tom Ballou
No address given
(804) 698-4406
trballou@deq.state.va.us

In addition to the initial data submitted (described below), revisions were provided in February 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

89 counties included out of 135

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

84 HAPs

**ORIGINAL FILE: QA RESULTS**

The sum of all seasonal throughput percentages <98%
Duplicate records
Y-coord of release point outside state latitudinal bounds
Invalid exit gas velocity
Invalid site description

**RESOLUTION:**

- Tested referential integrity.
- Deleted duplicate records.
- Confirmed coordinate data were valid.
- Remaining error messages: none.

## STATE DATABASE SUMMARY REPORT

**State: Washington**

**State/Local Agency Name: Washington State Department of Ecology**

**Contact Name, Address, Phone Number, Email:**

Sally Otterson
(360) 407-6806
sott461@ecy.wa.gov

In addition to the initial data submitted (described below), revisions were provided in February 2002 by the state and a local agency, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

16 counties included out of 39

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

81 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEM

Duplicate records

PointEP

The sum of all seasonal throughput percentages <98%
The sum of all seasonal throughput percentages >100%
Annual average days per week: invalid field length

PointER

Invalid stack height
Invalid stack diameter
Exit gas flow rate: invalid field length
Y coord of release point outside state latitudinal bounds

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.

- Eliminated duplicate records.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Washington**

**State/Local Agency Name: Puget Sound Clean Air Agency**

**Contact Name, Address, Phone Number, Email:**

John K. Anderson
No address given
johna@pscleanair.org
206-689-4051
FAX: 206-343-7522

In addition to the initial data submitted (described below), revisions were provided in February 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

4

**Inventory Year:** 1999

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

97 HAPs

**ORIGINAL FILE: QA RESULTS**

**PointCE**
Invalid Pollutant Code

**PointEM**
Invalid Pollutant Code

**PointER**
Invalid Stack Diameter
Invalid Gas Temperature
Invalid Exit Gas Velocity
Invalid Stack Diameter
Invalid Exit Gas Velocity
Invalid Stack Diameter
Invalid Exit Gas Temperature

Invalid X (UTM) Coordinate
Invalid Y (UTM) Coordinate
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point

**PointPE**
Invalid Throughput Unit Numerator
Invalid Start Time
Invalid End Time

**PointSI**
SIC Code Not Found

**RESOLUTION:**

- Verified pollutant codes.
- Removed records for non-HAPs.
- Tested referential integrity.
- Corrected coordinate data.

## STATE DATABASE SUMMARY REPORT

**State: West Virginia**

**State/Local Agency Name: West Virginia Division of Air Quality**

**Contact Name, Address, Phone Number, Email:**

David J. Porter
No address given
(304) 926-3647
dporter@mail.dep.state.wv.us

In addition to the initial data submitted (described below), revisions were provided in June 2002 and March 2003, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

48 counties included out of 55

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

151 HAPs

**ORIGINAL FILE: QA RESULTS**

**TableCE**
Percent capture efficiency: invalid field length
Primary percent control efficiency: invalid field length
Total capture control efficiency: invalid field length

**TableEM**
Emission numeric value: invalid field length

**TableEP**
The sum of all seasonal throughput percentages <98%
The sum of all seasonal throughput percentages >100%

**TableER**
Invalid stack diameter
Invalid exit gas temperature
Invalid exit gas velocity
Y-coord of release point outside state latitudinal bounds

Invalid stack height
X-coord of release point outside state longitudinal bounds

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

## STATE DATABASE SUMMARY REPORT

**State: Wisconsin**

**State/Local Agency Name: Wisconsin Department of Natural Resource**

**Contact Name, Address, Phone Number, Email:**

Ralph Patterson
No address given
patter@dnr.state.wi.us
608-267-7546
608-267-0560

In addition to the initial data submitted (described below), revisions were provided in February and June 2002, and were processed by EFIG as appropriate.

**# Counties Included/Number in State:**

65 of 72

**Inventory Year:** 1999

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

91

**ORIGINAL FILE: QA RESULTS**

**PointCE_EM**
CE record has no match in EM table: Widow

**PointEM**
No Emission Numeric Value: Mandatory
No Process ID: Mandatory (for HAPS; Unit or Process level)

**PointEP**
Invalid Process MACT Code: NR
Winter Throughput Percentage: Invalid Field Length
The sum of all seasonal throughput percentages < 98%
Spring Throughput Percentage: Invalid Field Length
Summer Throughput Percentage: Invalid Field Length
Fall Throughput Percentage: Invalid Field Length
Invalid Annual Average Days Per Week

**PointEP_PE**
EP record has no match in PE table: Widow
PE record has no match in EP table: Orphan

**PointER**
Invalid Stack Diameter
Invalid XY Coordinate Type LAT/LON
Problem with coordinate value(s) or type; cannot confirm (X,Y) location of release point
Invalid Exit Gas Temperature
Invalid Stack Height
Exit Gas Flow Rate: Invalid Field Length

**PointER_EM**
ER record has no match in EM table: Widow
EM record has no match in ER table: Orphan

**PointEU**

NAICS Code Not Found
Invalid Design Capacity Numerator
Invalid Design Capacity Denominator
Emission Unit ID: Cannot determine if mandatory -- Emission Data Level Not Determined
SIC UnitLevel Code Not Found

**PointPE**

Emission Unit ID: Cannot determine if mandatory -- Emission Data Level Not Determined
Process ID: Cannot determine if mandatory
No Process ID: Mandatory (for HAPS; Unit or Process level)

**PointPE_EM**

EM record has no match in PE table: Orphan
PE record has no match in EM table: Widow

**PointSI**

No Zip Code: Mandatory
SIC Code Not Found

**RESOLUTION:**

- Tested referential integrity.
- Created parent records for orphans.
- Deleted widow records.
- Corrected coordinate data.
- Deleted null emission numeric values.
- Deleted/corrected MACT codes.
- Remaining error messages: out of range stack parameters, null SIC codes, incomplete address information.

## STATE DATABASE SUMMARY REPORT

**State: Wyoming**

**State/Local Agency Name: Wyoming Department of Environmental Quality**

**Contact Name, Address, Phone Number, Email:**

Mark Arn
(307) 777-3782
marn@state.wy.us

**# Counties Included/Number in State:**

20 counties out of 23

**Inventory Year: 1999**

**Inventory Type–Criteria, toxics, both:**

Both

**# of HAPs in File:**

53 HAPs

**ORIGINAL FILE: QA RESULTS**

PointEP

The sum of the seasonal throughput percentages <98%
The sum of the seasonal throughput percentages >100%

PointER

Invalid exit gas temperature
Invalid exit gas velocity
Invalid X(UTM) coordinate
Invalid Y(UTM) coordinate
Invalid stack height
Invalid stack diameter
Y coord of release point outside state latitudinal bounds
X coord of release point outside state latitudinal bounds

PointEU

Invalid design capacity numerator
Invalid design capacity denominator
SIC unit level not found

PointSI

SIC code not found

**RESOLUTION:**

- Corrected coordinate data.
- Remaining error messages: out of range stack parameters.

# Appendix B

# NEI Pollutant Codes for Hazardous Air Pollutants

# NEI Pollutant Codes for Hazardous Air Pollutants

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 111466 | 2,2'-Oxybisethanol | Glycol Ethers |
| 67425 | (Ethylenebis(Oxyethylenenitrilo)) Tetraacetic Acid | Glycol Ethers |
| 79345 | 1,1,2,2-Tetrachloroethane | |
| 79005 | 1,1,2-Trichloroethane | |
| 57147 | 1,1-Dimethyl Hydrazine | |
| 58899 | 1,2,3,4,5,6-Hexachlorocyclyhexane | |
| 67562394 | 1,2,3,4,6,7,8-Heptachlorodibenzofuran | Furans |
| 35822469 | 1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin | Dioxins |
| 55673897 | 1,2,3,4,7,8,9-Heptachlorodibenzofuran | Furans |
| 70648269 | 1,2,3,4,7,8-Hexachlorodibenzofuran | Furans |
| 39227286 | 1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin | Dioxins |
| 57117449 | 1,2,3,6,7,8-Hexachlorodibenzofuran | Furans |
| 57653857 | 1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin | Dioxins |
| 72918219 | 1,2,3,7,8,9-Hexachlorodibenzofuran | Furans |
| 19408743 | 1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin | Dioxins |
| 57117416 | 1,2,3,7,8-Pentachlorodibenzofuran | Furans |
| 40321764 | 1,2,3,7,8-Pentachlorodibenzo-p-Dioxin | Dioxins |
| 120821 | 1,2,4-Trichlorobenzene | |
| 96128 | 1,2-Dibromo-3-Chloropropane | |
| 110714 | 1,2-Dimethoxyethane | Glycol Ethers |
| 122667 | 1,2-Diphenylhydrazine | |
| 106887 | 1,2-Epoxybutane | |
| 75558 | 1,2-Propylenimine | |
| 106990 | 1,3-Butadiene | |
| 542756 | 1,3-Dichloropropene | |
| 1120714 | 1,3-Propanesultone | |
| 106467 | 1,4-Dichlorobenzene | |
| 42397648 | 1,6-Dinitropyrene | Polycyclic Organic Matter |
| 42397659 | 1,8-Dinitropyrene | Polycyclic Organic Matter |
| 40 | 16-PAH | Polycyclic Organic Matter |
| 106898 | 1-Chloro-2,3-Epoxypropane | |
| 23436193 | 1-Isobutoxy-2-Propanol | Glycol Ethers |
| 90120 | 1-Methylnaphthalene | Polycyclic Organic Matter |
| 2381217 | 1-Methylpyrene | Polycyclic Organic Matter |
| 5522430 | 1-Nitropyrene | Polycyclic Organic Matter |
| 27310210 | 2-(2,4-Hexadienyloxy)Ethanol | Glycol Ethers |
| 112254 | 2-(Hexyloxy)Ethanol | Glycol Ethers |
| 540841 | 2,2,4-Trimethylpentane | |
| 60851345 | 2,3,4,6,7,8-Hexachlorodibenzofuran | Furans |
| 57117314 | 2,3,4,7,8-Pentachlorodibenzofuran | Furans |
| 600 | 2,3,7,8-TCDD TEQ | Dioxins/Furans |
| 51207319 | 2,3,7,8-Tetrachlorodibenzofuran | Furans |
| 1746016 | 2,3,7,8-Tetrachlorodibenzo-p-Dioxin | Dioxins |
| 95954 | 2,4,5-Trichlorophenol | |
| 88062 | 2,4,6-Trichlorophenol | |
| 94757 | 2,4-Dichlorophenoxy Acetic Acid | |
| 51285 | 2,4-Dinitrophenol | |
| 121142 | 2,4-Dinitrotoluene | |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 584849 | 2,4-Toluene Diisocyanate | |
| 53963 | 2-Acetylaminofluorene | |
| 112072 | 2-Butoxyethyl Acetate | Glycol Ethers |
| 532274 | 2-Chloroacetophenone | |
| 91587 | 2-Chloronaphthalene | Polycyclic Organic Matter |
| 91576 | 2-Methylnaphthalene | Polycyclic Organic Matter |
| 78820 | 2-Methyl-Propanenitrile | |
| 607578 | 2-Nitrofluorene | Polycyclic Organic Matter |
| 79469 | 2-Nitropropane | |
| 20706256 | 2-Propoxyethyl Acetate | Glycol Ethers |
| 91941 | 3,3'-Dichlorobenzidene | |
| 119904 | 3,3'-Dimethoxybenzidine | |
| 119937 | 3,3'-Dimethylbenzidine | |
| 10215335 | 3-Butoxy-1-Propanol | Glycol Ethers |
| 1589497 | 3-Methoxy-1-Propanol | Glycol Ethers |
| 56495 | 3-Methylcholanthrene | Polycyclic Organic Matter |
| 101144 | 4,4'-Methylenebis(2-Chloraniline) | |
| 101779 | 4,4'-Methylenedianiline | |
| 101688 | 4,4'-Methylenediphenyl Diisocyanate | |
| 534521 | 4,6-Dinitro-o-Cresol | |
| 92671 | 4-Aminobiphenyl | |
| 60117 | 4-Dimethylaminoazobenzene | |
| 92933 | 4-Nitrobiphenyl | |
| 100027 | 4-Nitrophenol | |
| 3697243 | 5-Methylchrysene | Polycyclic Organic Matter |
| 7496028 | 6-Nitrochrysene | Polycyclic Organic Matter |
| 57976 | 7,12-Dimethylbenz[a]Anthracene | Polycyclic Organic Matter |
| 75 | 7-PAH | Polycyclic Organic Matter |
| 83329 | Acenaphthene | Polycyclic Organic Matter |
| 208968 | Acenaphthylene | Polycyclic Organic Matter |
| 75070 | Acetaldehyde | |
| 60355 | Acetamide | |
| 75058 | Acetonitrile | |
| 98862 | Acetophenone | |
| 107028 | Acrolein | |
| 79061 | Acrylamide | |
| 79107 | Acrylic Acid | |
| 107131 | Acrylonitrile | |
| 88 | Alkylated Lead | Lead Compounds |
| 107051 | Allyl Chloride | |
| 7789095 | Ammonium Dichromate | Chromium Compounds |
| 62533 | Aniline | |
| 120127 | Anthracene | Polycyclic Organic Matter |
| 7440360 | Antimony | Antimony Compounds |
| 92 | Antimony & Compounds | Antimony Compounds |
| 1327339 | Antimony Oxide | Antimony Compounds |
| 7783702 | Antimony Pentafluoride | Antimony Compounds |
| 10025919 | Antimony Trichloride | Antimony Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 1309644 | Antimony Trioxide | Antimony Compounds |
| 1345046 | Antimony Trisulfide | Antimony Compounds |
| 7440382 | Arsenic | Arsenic Compounds |
| 93 | Arsenic & Compounds | Arsenic Compounds |
| 1327522 | Arsenic Acid | Arsenic Compounds |
| 1303282 | Arsenic Pentoxide | Arsenic Compounds |
| 1327533 | Arsenic Trioxide | Arsenic Compounds |
| 3141126 | Arsenous Acid | Arsenic Compounds |
| 7784421 | Arsine | Arsenic Compounds |
| 1332214 | Asbestos | |
| 205823 | B[j]Fluoranthen | Polycyclic Organic Matter |
| 10294403 | Barium Chromate | Chromium Compounds |
| 56553 | Benz[a]Anthracene | Polycyclic Organic Matter |
| 71432 | Benzene | |
| 141 | Benzene Soluble Organics (BSO) | Coke Oven Emissions |
| 92875 | Benzidine | |
| 203338 | Benzo(a)fluoranthene | Polycyclic Organic Matter |
| 195197 | Benzo(c)phenanthrene | Polycyclic Organic Matter |
| 203123 | Benzo(g,h,i)Fluoranthene | Polycyclic Organic Matter |
| 50328 | Benzo[a]Pyrene | Polycyclic Organic Matter |
| 205992 | Benzo[b]Fluoranthene | Polycyclic Organic Matter |
| 102 | Benzo[b+k]Fluoranthene | Polycyclic Organic Matter |
| 192972 | Benzo[e]Pyrene | Polycyclic Organic Matter |
| 191242 | Benzo[g,h,i,]Perylene | Polycyclic Organic Matter |
| 207089 | Benzo[k]Fluoranthene | Polycyclic Organic Matter |
| 56832736 | Benzofluoranthenes | Polycyclic Organic Matter |
| 98077 | Benzotrichloride | |
| 100447 | Benzyl Chloride | |
| 140294 | Benzyl Cyanide | Cyanide Compounds |
| 7440417 | Beryllium | Beryllium Compounds |
| 109 | Beryllium & Compounds | Beryllium Compounds |
| 7787497 | Beryllium Fluoride | Beryllium Compounds |
| 1304569 | Beryllium Oxide | Beryllium Compounds |
| 13510491 | Beryllium Sulfate | Beryllium Compounds |
| 57578 | Beta-Propiolactone | |
| 92524 | Biphenyl | |
| 117817 | Bis(2-Ethylhexyl)Phthalate | |
| 542881 | Bis(Chloromethyl)Ether | |
| 75252 | Bromoform | |
| 124174 | Butyl Carbitol Acetate | Glycol Ethers |
| 111762 | Butyl Cellosolve | Glycol Ethers |
| 7440439 | Cadmium | Cadmium Compounds |
| 125 | Cadmium & Compounds | Cadmium Compounds |
| 10108642 | Cadmium Chloride | Cadmium Compounds |
| 7790809 | Cadmium Iodide | Cadmium Compounds |
| 10325947 | Cadmium Nitrate | Cadmium Compounds |
| 1306190 | Cadmium Oxide | Cadmium Compounds |
| 10124364 | Cadmium Sulfate | Cadmium Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 1306236 | Cadmium Sulfide | Cadmium Compounds |
| 13765190 | Calcium Chromate | Chromium Compounds |
| 156627 | Calcium Cyanamide | |
| 133062 | Captan | |
| 63252 | Carbaryl | |
| 112152 | Carbitol Acetate | Glycol Ethers |
| 75150 | Carbon Disulfide | |
| 56235 | Carbon Tetrachloride | |
| 463581 | Carbonyl Sulfide | |
| 120809 | Catechol | |
| 111159 | Cellosolve Acetate | Glycol Ethers |
| 110805 | Cellosolve Solvent | Glycol Ethers |
| 608 | Ceramic Fibers (Man-Made) | |
| 133904 | Chloramben | |
| 57749 | Chlordane | |
| 7782505 | Chlorine | |
| 79118 | Chloroacetic Acid | |
| 108907 | Chlorobenzene | |
| 510156 | Chlorobenzilate | |
| 67663 | Chloroform | |
| 107302 | Chloromethyl Methyl Ether | |
| 126998 | Chloroprene | |
| 11115745 | Chromic Acid | Chromium Compounds |
| 7738945 | Chromic Acid (VI) | Chromium Compounds |
| 1308389 | Chromic Oxide | Chromium Compounds |
| 10101538 | Chromic Sulfate | Chromium Compounds |
| 13530682 | Chromic Sulfuric Acid | Chromium Compounds |
| 7440473 | Chromium | Chromium Compounds |
| 136 | Chromium & Compounds | Chromium Compounds |
| 21679312 | Chromium (III)-AA | Chromium Compounds |
| 18540299 | Chromium (VI) | Chromium Compounds |
| 10060125 | Chromium Chloride | Chromium Compounds |
| 12018018 | Chromium Dioxide | Chromium Compounds |
| 1308141 | Chromium Hydroxide | Chromium Compounds |
| 16065831 | Chromium III | Chromium Compounds |
| 1333820 | Chromium Trioxide | Chromium Compounds |
| 12018198 | Chromium Zinc Oxide | Chromium Compounds |
| 14977618 | Chromyl Chloride | Chromium Compounds |
| 7788967 | Chromyl Fluoride | Chromium Compounds |
| 218019 | Chrysene | Polycyclic Organic Matter |
| 8007452 | Coal Tar | Coke Oven Emissions |
| 7440484 | Cobalt | Cobalt Compounds |
| 139 | Cobalt & Compounds | Cobalt Compounds |
| 136527 | Cobalt 2-ethylhexanoate | Cobalt Compounds |
| 1345160 | Cobalt Aluminate | Cobalt Compounds |
| 16842038 | Cobalt Carbonate | Cobalt Compounds |
| 618 | Cobalt Hydrocarbonyl | Cobalt Compounds |
| 61789513 | Cobalt Naphtha | Cobalt Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 1307966 | Cobalt Oxide | Cobalt Compounds |
| 1308061 | Cobalt Oxide (II,III) | Cobalt Compounds |
| 10124433 | Cobalt Sulfate | Cobalt Compounds |
| 1317426 | Cobalt Sulfide | Cobalt Compounds |
| 140 | Coke Oven Emissions | Coke Oven Emissions |
| 544923 | Copper Cyanide | Cyanide Compounds |
| 1319773 | Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 331 | Cresols/Cresylic Acids | Cresol/Cresylic Acid (Mixed Isomers) |
| 98828 | Cumene | |
| 57125 | Cyanide | Cyanide Compounds |
| 144 | Cyanide & Compounds | Cyanide Compounds |
| 72559 | DDE (1,1-Dichloro-2,2-Bis(p-Chlorophenyl) Ethylene) | |
| 16672392 | Di(Ethylene Glycol Monobutyl Ether) Phthalate | Glycol Ethers |
| 334883 | Diazomethane | |
| 192654 | Dibenzo[a,e]Pyrene | Polycyclic Organic Matter |
| 53703 | Dibenzo[a,h]Anthracene | Polycyclic Organic Matter |
| 189640 | Dibenzo[a,h]Pyrene | Polycyclic Organic Matter |
| 189559 | Dibenzo[a,i]Pyrene | Polycyclic Organic Matter |
| 224420 | Dibenzo[a,j]Acridine | Polycyclic Organic Matter |
| 191300 | Dibenzo[a,l]Pyrene | Polycyclic Organic Matter |
| 132649 | Dibenzofuran | |
| 609 | Dibenzofurans (Chlorinated) {PCDFs} | Furans |
| 262124 | Dibenzo-p-Dioxin | Dioxins |
| 84742 | Dibutyl Phthalate | |
| 111444 | Dichloroethyl Ether | |
| 62737 | Dichlorvos | |
| 111422 | Diethanolamine | |
| 64675 | Diethyl Sulfate | |
| 120558 | Diethylene Glycol Dibenzoate | Glycol Ethers |
| 112367 | Diethylene glycol diethyl ether | Glycol Ethers |
| 4206615 | Diethylene Glycol Diglycidyl Ether | Glycol Ethers |
| 111966 | Diethylene Glycol Dimethyl Ether | Glycol Ethers |
| 693210 | Diethylene Glycol Dinitrate | Glycol Ethers |
| 764998 | Diethylene Glycol Divinyl Ether | Glycol Ethers |
| 1002671 | Diethylene Glycol Ethyl Methyl Ether | Glycol Ethers |
| 10143530 | Diethylene Glycol Ethylvinyl Ether | Glycol Ethers |
| 10143541 | Diethylene Glycol Mono-2-Cyanoethyl Ether | Glycol Ethers |
| 112345 | Diethylene Glycol Monobutyl Ether | Glycol Ethers |
| 111900 | Diethylene Glycol Monoethyl Ether | Glycol Ethers |
| 18912806 | Diethylene Glycol Monoisobutyl Ether | Glycol Ethers |
| 111773 | Diethylene Glycol Monomethyl Ether | Glycol Ethers |
| 929373 | Diethylene Glycol Monovinyl Ether | Glycol Ethers |
| 10143563 | Diethyleneglycol-Mono-2-Methyl-Pentyl Ether | Glycol Ethers |
| 131113 | Dimethyl Phthalate | |
| 77781 | Dimethyl Sulfate | |
| 79447 | Dimethylcarbamoyl Chloride | |
| 155 | Dioxins | Dioxins |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 610 | Dioxins, Total, w/o Individ. Isomers Reported {PCDDs} | Dioxins |
| 200 | Elemental Gaseous Mercury | Mercury Compounds |
| 112505 | Ethoxytriglycol | Glycol Ethers |
| 140885 | Ethyl Acrylate | |
| 100414 | Ethyl Benzene | |
| 51796 | Ethyl Carbamate Chloride | |
| 75003 | Ethyl Chloride | |
| 106934 | Ethylene Dibromide | |
| 107062 | Ethylene Dichloride | |
| 107211 | Ethylene Glycol | |
| 3775857 | Ethylene Glycol Bis(2,3-Epoxy-2-Methylpropyl) Ether | Glycol Ethers |
| 7529273 | Ethylene Glycol Diallyl Ether | Glycol Ethers |
| 629141 | Ethylene Glycol Diethyl Ether | Glycol Ethers |
| 109864 | Ethylene Glycol Methyl Ether | Glycol Ethers |
| 662082 | Ethylene Glycol Monobenzyl Ether | Glycol Ethers |
| 110496 | Ethylene Glycol Monomethyl Ether Acetate | Glycol Ethers |
| 7795917 | Ethylene Glycol Mono-Sec-Butyl Ether | Glycol Ethers |
| 764487 | Ethylene Glycol Monovinyl Ether | Glycol Ethers |
| 75218 | Ethylene Oxide | |
| 96457 | Ethylene Thiourea | |
| 10137969 | Ethyleneglycol Mono-2-Methylpentyl Ether | Glycol Ethers |
| 23495127 | Ethyleneglycol Monophenyl Ether Propionate | Glycol Ethers |
| 10137981 | Ethyleneglycolmono-2,6,8-Trimethyl-4-Nonyl Ether | Glycol Ethers |
| 151564 | Ethyleneimine | |
| 75343 | Ethylidene Dichloride | |
| 284 | Extractable Organic Matter (EOM) | Polycyclic Organic Matter |
| 383 | Fine Mineral Fibers | |
| 206440 | Fluoranthene | Polycyclic Organic Matter |
| 86737 | Fluorene | Polycyclic Organic Matter |
| 50000 | Formaldehyde | |
| 201 | Gaseous Divalent Mercury | Mercury Compounds |
| 613 | Glasswool (Man-Made Fibers) | |
| 171 | Glycol Ethers | Glycol Ethers |
| 13967505 | Gold (I) Potassium Cyanide | Cyanide Compounds |
| 37187647 | Gold Cyanide | Cyanide Compounds |
| 554074 | Gold Potassium Cyanide | Cyanide Compounds |
| 76448 | Heptachlor | |
| 118741 | Hexachlorobenzene | |
| 87683 | Hexachlorobutadiene | |
| 77474 | Hexachlorocyclopentadiene | |
| 34465468 | Hexachlorodibenzo-p-Dioxin | Dioxins |
| 622 | Hexachlorodibenzo-p-Dioxins, Total | Dioxins |
| 67721 | Hexachloroethane | |
| 822060 | Hexamethylene Diisocyanate | |
| 680319 | Hexamethylphosphoramide | |
| 110543 | Hexane | |
| 302012 | Hydrazine | |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 7647010 | Hydrochloric Acid | |
| 74908 | Hydrogen Cyanide | Cyanide Compounds |
| 7664393 | Hydrogen Fluoride | |
| 123319 | Hydroquinone | |
| 193395 | Indeno[1,2,3-c,d]Pyrene | Polycyclic Organic Matter |
| 24267569 | Iodine-131 | |
| 4439241 | Isobutyl Cellosolve | Glycol Ethers |
| 78591 | Isophorone | |
| 7439921 | Lead | Lead Compounds |
| 195 | Lead & Compounds | Lead Compounds |
| 1317368 | Lead (II) Oxide | Lead Compounds |
| 1314416 | Lead (II, IV) Oxide | Lead Compounds |
| 301042 | Lead Acetate | Lead Compounds |
| 7784409 | Lead Arsenate | Lead Compounds |
| 10031137 | Lead Arsenite | Lead Compounds |
| 598630 | Lead Carbonate | Lead Compounds |
| 7758976 | Lead Chromate | Lead Compounds |
| 18454121 | Lead Chromate Oxide | Lead Compounds |
| 602 | Lead Compounds (Inorganic) | Lead Compounds |
| 603 | Lead Compounds (Other Than Inorganic) | Lead Compounds |
| 1309600 | Lead Dioxide | Lead Compounds |
| 620 | Lead Dioxide, Unknown CAS # | Lead Compounds |
| 13814965 | Lead Fluoroborate | Lead Compounds |
| 61790145 | Lead Naphthenate | Lead Compounds |
| 27253287 | Lead Neodecanoate | Lead Compounds |
| 10099748 | Lead Nitrate | Lead Compounds |
| 1335257 | Lead Oxide | Lead Compounds |
| 7446277 | Lead Phosphate | Lead Compounds |
| 7428480 | Lead Stearate | Lead Compounds |
| 1335326 | Lead Subacetate | Lead Compounds |
| 7446142 | Lead Sulfate | Lead Compounds |
| 12060003 | Lead Titanate | Lead Compounds |
| 12626812 | Lead Titanate Zircon | Lead Compounds |
| 14307358 | Lithium Chromate | Chromium Compounds |
| 108316 | Maleic Anhydride | |
| 7439965 | Manganese | Manganese Compounds |
| 198 | Manganese & Compounds | Manganese Compounds |
| 1313139 | Manganese Dioxide | Manganese Compounds |
| 1336932 | Manganese Napthenate | Manganese Compounds |
| 10377669 | Manganese Nitrate | Manganese Compounds |
| 7785877 | Manganese Sulfate | Manganese Compounds |
| 8030704 | Manganese Tallate | Manganese Compounds |
| 1317357 | Manganese Tetroxide | Manganese Compounds |
| 1317346 | Manganese Trioxide | Manganese Compounds |
| 7783166 | Manganesehypophosphi | Manganese Compounds |
| 108394 | m-Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 7487947 | Mercuric Chloride | Mercury Compounds |
| 7439976 | Mercury | Mercury Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 199 | Mercury & Compounds | Mercury Compounds |
| 22967926 | Mercury (Organic) | Mercury Compounds |
| 62384 | Mercury Acetato Phen | Mercury Compounds |
| 67561 | Methanol | |
| 72435 | Methoxychlor | |
| 111104 | Methoxyethyl Oleate | Glycol Ethers |
| 112356 | Methoxytriglycol | Glycol Ethers |
| 74839 | Methyl Bromide | |
| 140056 | Methyl Cellosolve Acetylricinoleate | Glycol Ethers |
| 3121617 | Methyl Cellosolve Acrylate | Glycol Ethers |
| 74873 | Methyl Chloride | |
| 71556 | Methyl Chloroform | |
| 78933 | Methyl Ethyl Ketone | |
| 74884 | Methyl Iodide | |
| 108101 | Methyl Isobutyl Ketone | |
| 624839 | Methyl Isocyanate | |
| 593748 | Methyl Mercury | Mercury Compounds |
| 80626 | Methyl Methacrylate | |
| 1634044 | Methyl Tert-Butyl Ether | |
| 26914181 | Methylanthracene | Polycyclic Organic Matter |
| 247 | Methylbenzopyrenes | Polycyclic Organic Matter |
| 248 | Methylchrysene | Polycyclic Organic Matter |
| 75092 | Methylene Chloride | |
| 142 | Methylene Chloride Soluble Organics (MCSO) | Coke Oven Emissions |
| 60344 | Methylhydrazine | |
| 108383 | m-Xylene | |
| 121697 | N,N-Dimethylaniline | |
| 68122 | N,N-Dimethylformamide | |
| 91203 | Naphthalene | Polycyclic Organic Matter |
| 625 | Naphthenes (Cyclo) | Polycyclic Organic Matter |
| 112594 | N-Hexyl Carbitol | Glycol Ethers |
| 7440020 | Nickel | Nickel Compounds |
| 226 | Nickel & Compounds | Nickel Compounds |
| 10101970 | Nickel (II) Sulfate Hexahydrate | Nickel Compounds |
| NY059280 | Nickel (NI 059) | Nickel Compounds |
| 373024 | Nickel Acetate | Nickel Compounds |
| 13462889 | Nickel Bromide | Nickel Compounds |
| 12710360 | Nickel Carbide | Nickel Compounds |
| 3333393 | Nickel Carbonate | Nickel Compounds |
| 13463393 | Nickel Carbonyl | Nickel Compounds |
| 7718549 | Nickel Chloride | Nickel Compounds |
| 6018899 | Nickel Diacetate TET | Nickel Compounds |
| 12054487 | Nickel Hydroxide | Nickel Compounds |
| 13138459 | Nickel Nitrate | Nickel Compounds |
| 1313991 | Nickel Oxide | Nickel Compounds |
| 1314063 | Nickel Peroxide | Nickel Compounds |
| 604 | Nickel Refinery Dust | Nickel Compounds |
| 12035722 | Nickel Subsulfide | Nickel Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 13770893 | Nickel Sulfamate | Nickel Compounds |
| 7786814 | Nickel Sulfate | Nickel Compounds |
| 1271289 | Nickelocene | Nickel Compounds |
| 98953 | Nitrobenzene | |
| 62759 | N-Nitrosodimethylamine | |
| 59892 | N-Nitrosomorpholine | |
| 684935 | N-Nitroso-N-Methylurea | |
| 90040 | o-Anisidine | |
| 95487 | o-Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 39001020 | Octachlorodibenzofuran | Furans |
| 3268879 | Octachlorodibenzo-p-Dioxin | Dioxins |
| 95534 | o-Toluidine | |
| 95476 | o-Xylene | |
| 234 | PAH, Total | Polycyclic Organic Matter |
| 56382 | Parathion | |
| 202 | Particulate Divalent Mercury | Mercury Compounds |
| 106445 | p-Cresol | Cresol/Cresylic Acid (Mixed Isomers) |
| 123911 | p-Dioxane | |
| 82688 | Pentachloronitrobenzene | |
| 87865 | Pentachlorophenol | |
| 10101505 | Permanganic acid | Manganese Compounds |
| 198550 | Perylene | Polycyclic Organic Matter |
| 85018 | Phenanthrene | Polycyclic Organic Matter |
| 108952 | Phenol | |
| 122996 | Phenyl Cellosolve | Glycol Ethers |
| 75445 | Phosgene | |
| 7803512 | Phosphine | |
| 7664382 | Phosphoric Acid | Phosphorus Compounds |
| 92203026 | Phosphoric Acid,Rx P | Phosphorus Compounds |
| 2921882 | Phosphorothioic Acid | Phosphorus Compounds |
| 10294561 | Phosphorous Acid | Phosphorus Compounds |
| 12136913 | Phosphorous Nitride | Phosphorus Compounds |
| 13011546 | Phosphorous Salt | Phosphorus Compounds |
| 7723140 | Phosphorus | Phosphorus Compounds |
| 398 | Phosphorus & Compounds | Phosphorus Compounds |
| 10025873 | Phosphorus Oxychloride | Phosphorus Compounds |
| 1314803 | Phosphorus Pentasulfide | Phosphorus Compounds |
| 1314563 | Phosphorus Pentoxide | Phosphorus Compounds |
| 7719122 | Phosphorus Trichloride | Phosphorus Compounds |
| 1314245 | Phosphorus Trioxide | Phosphorus Compounds |
| 85449 | Phthalic Anhydride | |
| 1336363 | Polychlorinated Biphenyls | |
| 624 | Polychlorinated Dibenzofurans, Total | Furans |
| 623 | Polychlorinated Dibenzo-p-Dioxins, Total | Dioxins |
| 246 | Polycyclic Organic Matter | Polycyclic Organic Matter |
| 14220178 | Potass Nickel Cyanid | Cyanide Compounds |
| 7789006 | Potassium Chromate | Chromium Compounds |
| 151508 | Potassium Cyanide | Cyanide Compounds |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 7778509 | Potassium Dichromate | Chromium Compounds |
| 13943583 | Potassium Ferrocyani | Cyanide Compounds |
| 7722647 | Potassium permanganate | Manganese Compounds |
| 106503 | p-Phenylenediamine | |
| 123386 | Propionaldehyde | |
| 114261 | Propoxur | |
| 2807309 | Propyl Cellosolve | Glycol Ethers |
| 78875 | Propylene Dichloride | |
| 107982 | Propylene glycol monomethyl ether | Glycol Ethers |
| 75569 | Propylene Oxide | |
| 106423 | p-Xylene | |
| 129000 | Pyrene | Polycyclic Organic Matter |
| 91225 | Quinoline | |
| 106514 | Quinone | |
| 605 | Radionuclides | |
| 400 | Radionuclides (Including Radon) | |
| 606 | Radon And Its Decay Products | |
| 617 | Rockwool (Man-Made Fibers) | |
| 7782492 | Selenium | Selenium Compounds |
| 253 | Selenium & Compounds | Selenium Compounds |
| 7446084 | Selenium Dioxide | Selenium Compounds |
| 7488564 | Selenium Disulfide | Selenium Compounds |
| 7446346 | Selenium Monosulfide | Selenium Compounds |
| 12640890 | Selenium Oxide | Selenium Compounds |
| 7783008 | Selenous Acid | Selenium Compounds |
| 506649 | Silver Cyanide | Cyanide Compounds |
| 616 | Slagwool (Man-Made Fibers) | |
| 7775113 | Sodium Chromate | Chromium Compounds |
| 10034829 | Sodium Chromate(VI) | Chromium Compounds |
| 143339 | Sodium Cyanide | Cyanide Compounds |
| 10588019 | Sodium Dichromate | Chromium Compounds |
| 16925250 | Sodium hexafluoroantimenate | Antimony Compounds |
| 7789062 | Strontium Chromate | Chromium Compounds |
| 100425 | Styrene | |
| 96093 | Styrene Oxide | |
| 127184 | Tetrachloroethylene | |
| 78002 | Tetraethyl Lead | Lead Compounds |
| 7550450 | Titanium Tetrachloride | |
| 108883 | Toluene | |
| 95807 | Toluene-2,4-Diamine | |
| 38998753 | Total Heptachlorodibenzofuran | Furans |
| 37871004 | Total Heptachlorodibenzo-p-Dioxin | Dioxins |
| 55684941 | Total Hexachlorodibenzofuran | Furans |
| 30402154 | Total Pentachlorodibenzofuran | Furans |
| 36088229 | Total Pentachlorodibenzo-p-Dioxin | Dioxins |
| 30402143 | Total Tetrachlorodibenzofuran | Furans |
| 41903575 | Total Tetrachlorodibenzo-p-Dioxin | Dioxins |
| 8001352 | Toxaphene | |

# NEI Pollutant Codes for Hazardous Air Pollutants (Continued)

| Pollutant Code | Pollutant Name | HAP Group |
|---|---|---|
| 79016 | Trichloroethylene | |
| 121448 | Triethylamine | |
| 112276 | Triethylene glycol | Glycol Ethers |
| 112492 | Triethylene Glycol Dimethyl Ether | Glycol Ethers |
| 1582098 | Trifluralin | |
| 143226 | Triglycol Monobutyl Ether | Glycol Ethers |
| 78308 | Triorthocresyl Phosphate | |
| 115866 | Triphenyl Phosphate | |
| 101020 | Triphenyl Phosphite | |
| 108054 | Vinyl Acetate | |
| 593602 | Vinyl Bromide | |
| 75014 | Vinyl Chloride | |
| 75354 | Vinylidene Chloride | |
| 1330207 | Xylenes (Mixture of o, m, and p Isomers) | |
| 13530659 | Zinc Chromate | Chromium Compounds |
| 1308130 | Zinc Chromate | Chromium Compounds |
| 50922297 | Zinc Chromite | Chromium Compounds |
| 557211 | Zinc Cyanide | Cyanide Compounds |
| 7779900 | Zinc Phosphate | Phosphorus Compounds |
| 11103869 | Zinc Potassium Chromate | Chromium Compounds |

# Appendix C

# MACT Codes

# MACT Codes

| MACT Source Category | Code |
|---|---|
| Engine Test Facilities | 0101-1 |
| Rocket Engine Test Firing | 0101-2 |
| Stationary Reciprocal Internal Combustion Engines | 0105 |
| Industrial/Commercial/ Institutional Boilers & Process Heaters | 0107 |
| Stationary Combustion Turbines | 0108 |
| Primary Aluminum Production | 0201 |
| Secondary Aluminum Production | 0202 |
| Primary Copper Smelting | 0203 |
| Primary Lead Smelting | 0204 |
| Secondary Lead Smelting | 0205 |
| Primary Magnesium Refining | 0207 |
| Coke Ovens: Charging, Top Side, and Door Leaks | 0302 |
| Coke Ovens: Pushing, Quenching, & Battery Stacks | 0303 |
| Ferroalloys Production | 0304 |
| Integrated Iron & Steel Manufacturing | 0305 |
| Iron Foundries | 0308 |
| Steel Foundries | 0309 |
| Steel Pickling - HCL Process | 0310 |
| Asphalt/Coal Tar Application - Metal Pipes | 0402 |
| Refractory Products Manufacturing | 0406 |
| Lime Manufacturing | 0408 |
| Mineral Wool Production | 0409 |
| Portland Cement Manufacturing | 0410 |
| Taconite Iron Ore Processing | 0411 |
| Wool Fiberglass Manufacturing | 0412 |
| Wet-Formed Fiberglass Mat Production | 0413 |
| Brick and Structural Clay Products Manufacturing | 0414 |
| Clay Ceramics Manufacturing | 0415 |
| Asphalt Roofing and Processing | 0418 |
| Oil & Natural Gas Production | 0501 |
| Petroleum Refineries - Catalytic Cracking, Catalytic Reforming, & Sulfur Plant Units | 0502 |
| Petroleum Refineries - Other Sources Not Distinctly Listed | 0503 |
| Natural Gas Transmission & Storage | 0504 |
| Gasoline Distribution (Stage I) | 0601 |
| Organic Liquids Distribution (Non-Gasoline) | 0602 |
| Marine Vessel Loading Operations | 0603 |
| Aerospace Industries | 0701 |
| Auto & Light Duty Truck (Surface Coating) | 0702 |
| Wood Building Products (Surface Coating) | 0703 |
| Large Appliance (Surface Coating) | 0704 |

# MACT Codes (Continued)

| MACT Source Category | Code |
|---|---|
| Magnetic Tapes (Surface Coating) | 0705 |
| Metal Can (Surface Coating) | 0707 |
| Metal Coil (Surface Coating) | 0708 |
| Metal Furniture (Surface Coating) | 0709 |
| Miscellaneous Metal Parts & Products (Surface Coating) | 0710 |
| Paper & Other Webs (Surface Coating) | 0711 |
| Plastic Parts & Products (Surface Coating) | 0712 |
| Printing, Coating & Dyeing Of Fabrics | 0713 |
| Printing/Publishing (Surface Coating) | 0714 |
| Shipbuilding & Ship Repair (Surface Coating) | 0715 |
| Wood Furniture (Surface Coating) | 0716 |
| Hazardous Waste Incineration | 0801 |
| Commercial Hazardous Waste Incinerators | 0801-1 |
| On-Site Hazardous Waste Incinerators | 0801-2 |
| Cement Kilns | 0801-3 |
| Lightweight Aggregate Kilns | 0801-4 |
| Municipal Landfills | 0802 |
| Publicly Owned Treatment Works (POTW) Emissions | 0803 |
| Site Remediation | 0805 |
| Off-Site Waste and Recovery Operations | 0806 |
| Pesticide Active Ingredient Production | 0911 |
| Acrylic/Modacrylic Fibers Production | 1001 |
| Spandex Production | 1003 |
| Manufacture of Nutritional Yeast | 1101 |
| Solvent Extraction for Vegetable Oil Production | 1103 |
| Pharmaceuticals Production | 1201 |
| Acetal Resins Production | 1301 |
| Acrylonitrile-Butadiene-Styrene Production | 1302 |
| Boat Manufacturing | 1305 |
| Butyl Rubber Production | 1307 |
| Epichlorohydrin Elastomers Production | 1311 |
| Epoxy Resins Production | 1312 |
| Ethylene-Propylene Rubber Production | 1313 |
| Flexible Polyurethane Foam Production | 1314 |
| Hypalon (TM) Production | 1315 |
| Methyl Methacrylate-Acrylonitrile-Butadiene-Styrene Production | 1317 |
| Methyl Methacrylate-Butadiene-Styrene Terpolymers Production | 1318 |
| Neoprene Production | 1320 |
| Nitrile Butadiene Rubber Production | 1321 |
| Non-Nylon Polyamides Production | 1322 |
| Polybutadiene Rubber Production | 1325 |

# MACT Codes (Continued)

| MACT Source Category | Code |
|---|---|
| Polycarbonates Production | 1326 |
| Polyethylene Terephthalate Production | 1328 |
| Polystyrene Production | 1331 |
| Polysulfide Rubber Production | 1332 |
| Polyvinyl Chloride & Copolymers Production | 1336 |
| Reinforced Plastic Composites Production | 1337 |
| Styrene Acrylonitrile Production | 1338 |
| Styrene-Butadiene Rubber & Latex Production | 1339 |
| Flexible Polyurethane Foam Fabrication Operations | 1341 |
| Nitrile Resins Production | 1342 |
| Amino/Phenolic Resins Production | 1347 |
| Viscose Process Manufacturing | 1348 |
| Cellulose Products Manufacturing | 1349 |
| Ammonium Sulfate - Caprolactam By-Product Plants | 1401 |
| Chlorine Production | 1403 |
| Cyanide Chemicals Manufacturing | 1405 |
| Hydrochloric Acid Production | 1407 |
| Hydrogen Fluoride Production | 1409 |
| Phosphate Fertilizers Production | 1410 |
| Phosphoric Acid Manufacturng | 1411 |
| Uranium Hexafluoride Production | 1414 |
| Carbon Black Production | 1415 |
| Synthetic Organic Chemical Manufacturing (HON) | 1501 |
| Carbonyl Sulfide (COS) Production | 1604 |
| Chromic Acid Anodizing | 1607 |
| Commercial Sterilization Facilities | 1609 |
| Decorative Chromium Electroplating | 1610 |
| Halogenated Solvent Cleaners | 1614 |
| Hard Chromium Electroplating | 1615 |
| Industrial Cooling Towers | 1619 |
| Paint Stripping Operations | 1621 |
| Plywood and Composite Wood Products | 1624 |
| Polyether Polyols Production | 1625 |
| Pulp and Paper Production - Not Otherwise Subclassified | 1626 |
| Pulp & Paper Production - Pulping and Bleaching Systems at Kraft, Soda, Sulfite, and Semichemical Pulping Mills (Subpart S) | 1626-1 |
| Pulp & Paper Production - Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-alone Semichemical Pulping Mills (Subpart MM) | 1626-2 |
| Pulp and Paper Production - NonMACT Facilities | 1626-3 |
| Semiconductor Manufacturing | 1629 |
| Rubber Tire Production | 1631 |

# MACT Codes (Continued)

| MACT Source Category | Code |
|---|---|
| Leather Tanning & Finishing Operations | 1634 |
| Ethylene Processes | 1635 |
| Friction Materials Manufacturing | 1636 |
| Miscellaneous Organic Chemical Manufacturing | 1641 |
| Miscellaneous Coatings Manufacturing | 1642 |
| Dry Cleaning: Perchloroethylene | 1643 |
| Hospital Sterilizers | 1644 |
| Medical Waste Incinerators | 1801 |
| Municipal Waste Combustors | 1802 |
| Commercial, Industrial, Solid Waste Incineration | 1807-1 |
| Other Solid Waste Incineration - Crematories | 1807-2 |
| Utility Boilers: Coal | 1808-1 |
| Utility Boilers: Natural Gas | 1808-2 |
| Utility Boilers: Oil | 1808-3 |