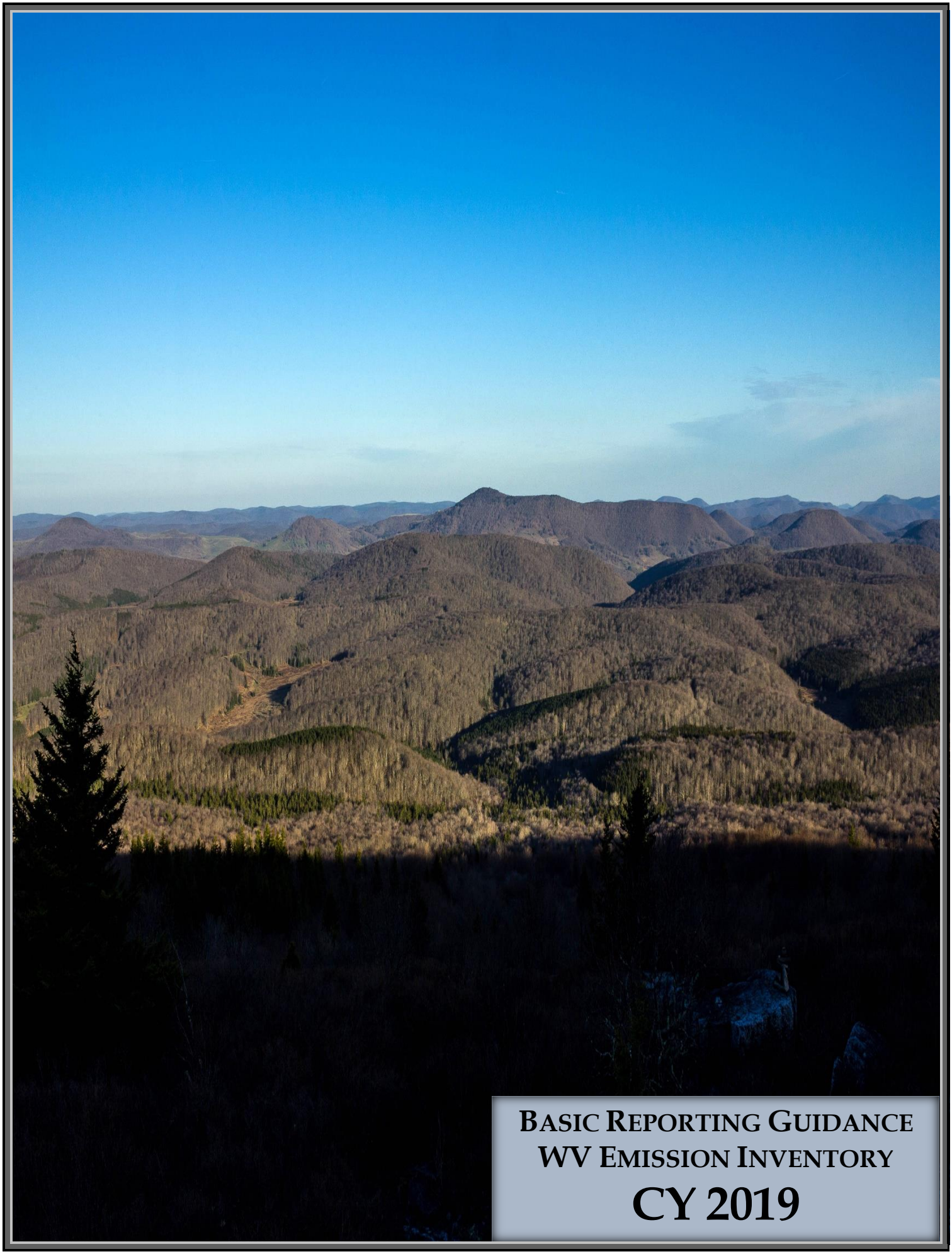


Basic Reporting Guidance
WV Emission Inventory
CY 2019

TABLE OF CONTENTS

Table of Contents i

1 Purpose and Background 1

2 Noteworthy Items 2

3 SLEIS Registration 4

4 SLEIS Information 5

4.1 Software Considerations 5

4.2 Main Screen Buttons 6

4.2.1 Facility 7

4.2.2 Release Points 8

4.2.3 Control Devices 9

4.2.4 Emission Units 10

4.2.5 Unit Processes 12

4.2.6 Process Emissions 14

4.2.7 Report Attachments 16

4.2.8 Download Template 16

4.2.9 Import Data 17

4.2.10 Validate report 17

4.2.11 Initiate Submission 17

4.2.12 Print report 18

4.2.13 Summary Reports 18

4.2.14 Export Reports 19

4.2.15 View Submission History 19

4.2.16 View Agency Report 19

4.2.17 Request Amendments 19
4.3 Title V Deferred Facilities: 20
4.4 Confidential Data 26
4.5 Multiple Facilities 27
4.6 Shutdowns 27
4.7 De Minimis Emissions 29
5 Pollutants 29
5.1 Certified Emission Statement (CES) 30
5.2 Estimating Emissions 31
5.3 Reportable Pollutants 32
5.4 Criteria Pollutants 33
5.4.1 Particulate Matter (PM) 33
5.4.2 Ozone Precursors 37
5.4.3 Lead Compounds 38
5.4.4 Ammonia 39
5.5 Hazardous Air Pollutants (HAPs) 39
5.5.1 VOC or Particulate Matter HAPs 40
5.6 Metal and Other Compound Groups 41
5.6.1 Chromium Compounds 41
5.6.2 Nickel Compounds 42
5.6.3 Cyanide Compounds (Nitriles) 42
5.6.4 Coke Oven Emissions 42
5.6.5 Glycol Ethers 42
5.7 Single or Aggregate Reporting 43

6 Supporting Tables 44

Table A – HAPs Pollutant Codes: 45

Table B – Individual HAPs within HAPs Group: 51

Table C - Control Device Codes 58

Table D - Metal Ion Conversion: 62

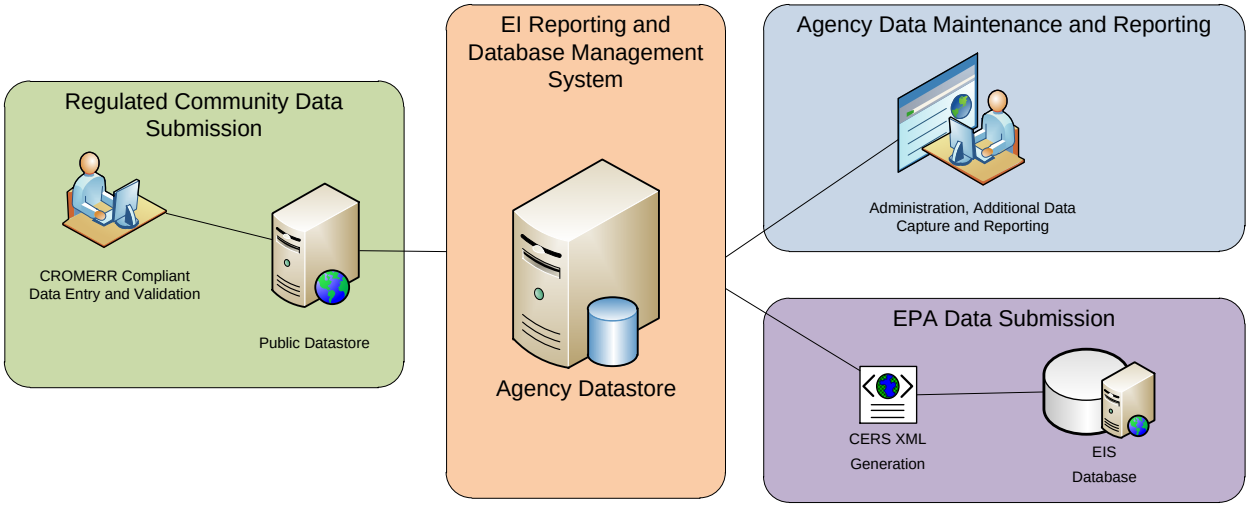
Table E - Webpage and Email Summary List: 68

1 PURPOSE AND BACKGROUND

The purpose of this document is to provide the user with basic SLEIS guidance, to address questions, problems, and changes that have occurred during the previous years of SLEIS use, and to help ensure data provided to the USEPA best represents actual facility operations. The West Virginia Department of Environmental Protection, Division of Air Quality (DAQ) and USEPA uses emission inventory data for modeling environmental impacts and human exposure risks, trends analysis, and for effective regulatory development determinations.

The collection of air emission inventory data has evolved over the decades. Historically, the DAQ required paper submittals of annual emissions which the DAQ compiled into an electronic form and then submitted to the USEPA. DAQ's first computer based emission inventory software product was called *i*-STEPS. For the most part, *i*-STEPS met DAQ's emissions inventory program's point source data management needs and was used from 1993 until 2011. With format changes to the USEPA's National Emissions Inventory (NEI) data system, *i*-STEPS was no longer able to support the USEPA's system upgrades and requirements. Thus, the State and Local Emissions Inventory System (SLEIS) software package was selected and is currently used for emissions inventory data collection, quality assurance, and reporting to the USEPA.

The diagram below illustrates the data flow from an affected facility to the DAQ and then to USEPA. DAQ emissions inventory staff quality-assure and revise your data as necessary to meet changing federal data requirements and to update the inventories as the USEPA deletes or revises pollutant codes, SCC, control device codes, etc. After thorough review, your data is submitted to USEPA's Emissions Inventory System (EIS).



2 NOTEWORTHY ITEMS

Annually, the USEPA routinely makes various revisions to their emission inventory submittal requirements. These revisions often impact the inventory data already submitted by facilities in SLEIS, requiring the DAQ to directly make changes to the facility submittal prior to uploading data to USEPA's Emission Inventory System (EIS). While quality assuring the inventory data, common mistakes and errors are noted by the DAQ and are corrected as necessary. Inventory revisions made by the DAQ are commented in the various SLEIS comment areas as appropriate to alert a facility to changes made. The following is a list of noteworthy items for the current reporting year.

SLEIS Upgrade:

The WVDAQ upgraded SLEIS from version 1.1 to version 1.6 for the 2016 reporting year. This upgrade includes revisions to both the facility and agency sides of the database. Although many revisions are in the software's background, those familiar with SLEIS will notice some changes. Primary revisions on the facility side are screen displays, modifications reducing the white space to display more information on a page, button functionality, report generation, and validation procedures. However, these should not affect how a facility compiles and calculates emission data internally or how data has historically been entered into SLEIS. More details are discussed in the appropriate sections of this guidance document.

To comply with USEPA's emission inventory requirements, facility users with the Submitter Role will need to re-enter their Challenge Questions and Answers. Previously, only the answers were encrypted in the database. With this change, both the question and answer will be encrypted. Changes to the questions and answers are made under the "My Profile" menu found at the top right corner on the SLEIS main page. After being successfully entered, the user cannot change the questions and answers unless first reset by the DAQ SLEIS Administrator. This process is also required when a user's account is locked and needs to be reset. In either of the above cases, the current challenge questions and answers will be purged from SLEIS.

Title V Deferred Facilities:

Title V deferred facilities historically have not been required to enter emission data into SLEIS. Instead, total annual emissions by pollutant have been provided using the Certified Emission Statement (CES) form. To better facilitate the reporting of these annual emissions and the payment of the associated fees, for the 2017 reporting year deferred facilities were required to provide total annual emissions in SLEIS. This requirement still applies to the 2019 reporting year. From these emissions, the DAQ generates a fee invoice that is sent to the facility for payment. As on the CES form, only facility total annual emissions are reported in SLEIS. Process related details required for Major Title V facilities are not required for deferred facilities. More information is discussed in ***Section 4.3 – Title V Deferred Facilities***.

Responsible Official Verification:

A "Responsible Official" name and title is required in SLEIS to meet our regulatory requirements. Since the Official can change each reporting year, the information under the "Facility" button needs to be reviewed annually and corrected as necessary. To ensure this information is reviewed, the emission inventory will not pass the validation process and cannot be submitted until the

Responsible Official information fields have been completed and the "Responsible Official Verified?" field has been changed from blank to verified by using the drop-down menu.

A Responsible Official is defined in 45CSR30 §2.38 to mean one of the following:

> *2.38.a*. For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or (ii) the delegation of authority to such representative is approved in advance by the Secretary;
>
> *2.38.b*. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
>
> *2.38.c*. For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this rule, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. USEPA); or
>
> *2.38.d*. For affected sources:
>
> *2.38.d.1*. The designated representative in so far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act (Acid Deposition Control) or the regulations promulgated thereunder are concerned; and
>
> *2.38.d.2*. The designated representative for any other purposes under this legislative rule.

Pollutant codes:

No pollutant codes have been changed; however, please note that USEPA continues to require metal ions be reported instead of the metal compounds. ***Section 5.6*** discusses this requirement.

Even though the PM Primary fractions (PM-PRI, PM10-PRI, and PM25-PRI) have been retired from SLEIS and are no longer valid, the codes were still showing up in SLEIS, predominately due to facilities importing older process emission templates. Only PM-FIL, PM10-FIL, PM25-FIL, and PM-CON are now available for use.

SCC and NAICS:

USEPA retired SCCs and NAICS in 2017 which required the WVDAQ to revise the SCCs and NAICS facilities provided. Changes made are noted in SLEIS in the Unit Process and General Facility Information comment fields, respectively.

Download Template:

SLEIS provides a means to upload emission and process related data into SLEIS by using a downloadable template. The "Download Template" is especially useful for facilities with many emission sources. However, caution is needed when using the template. Only templates downloaded from the current reporting year must be used. These templates include any revisions made by the DAQ to the facility's previous year inventory to meet USEPA current requirements. Using any other year's template and uploading it to SLEIS will negate these revisions. When this has happened in the past, the DAQ has had to re-enter the correct information, which often represented multiple previous reporting years. This potentially introduces inventory errors that could adversely affect the facility's emissions and negatively affect the risk assessments conducted by the EPA. If this situation occurs, the DAQ will not accept the facility's inventory and will resend it for the facility to correct. ***Section 4.5*** provides additional discussion using this template.

Use the current year's template and not a previous year. Using a previous year will result in data submittal errors, which could require major revisions by the facility and resubmittal of the inventory.

Percent Ash and Sulfur:

If using AP-42 emission factors to estimate particulate matter or sulfur dioxide emissions, then the percent ash and percent sulfur may be required to properly estimate these emissions and must be provided in SLEIS's Process Emissions fields. This is also true if a facility specific emission factor is entered into SLEIS using "Calculation Method – 28 – USEPA EF (pre-control)" under the "Process Emissions" button. Failure to use these percentages can result in SLEIS incorrectly calculating the emission rate.

3 SLEIS REGISTRATION

To utilize the SLEIS web-based application, a user must first be registered in SLEIS and be linked to one or more facilities. Until registered, a user cannot access or enter any SLEIS data. The SLEIS Facility User Registration Form and the form instructions are available by clicking **here**. Complete the registration form and email it to DEP.AEI@wv.gov.

Consultants/contractors must complete and submit the registration form leaving the "Company/Facility Name" and "Facility Id#" fields blank. Registered consultants/contractors are added to the registry, but are not assigned any SLEIS user roles and will not be able to view any facility data in SLEIS until a facility administrator specifically requests via a company email that a consultant/contractor be given access to their facility data as submitter and/or choice of editor or viewer.

Please note a registrant's email address also functions as the SLEIS user ID and will be used to reset passwords. Choose a secure email address that will be maintained and used for future submittals. Once registered, it cannot be changed. If you change your email address, you must re-register with the new address.

There are four possible roles an individual can be assigned; administrator, submitter, editor, and viewer. A user can only be assigned three of these roles; administrator, submitter, and the choice of editor or viewer. However, the user can have different roles at different facilities. An editor can both view and edit the facility's data whereas a viewer can only review a facility's data and is unable to make any data edits. Each facility must have at least one administrator and one submitter; however, only one administrator can be assigned to each facility. If needed, the administrator, submitter, and editor roles may all be assigned to the same user. The table below summarizes each role's function.

User Role	Function
Administrator	Can change roles for users assigned to a facility and can remove a user's access.
Submitter	Submits the emission inventory and Copy of Record.
Editor	Edits/updates emissions and other information.
Viewer	Can view the data, but cannot edit.

An administrator must be an employee of the facility/corporation and supply a company email address on the registration form. A consultant/contractor **cannot** be assigned the role of administrator. To become an administrator, mark a "Y" (yes) on the form. Registered administrators can request that other company employees and consultants/contractors be assigned specific SLEIS roles for their facility(s). Also, within SLEIS the administrator can remove a person assigned to their facility. Once removed, the person cannot access the facility's inventory.

Upon receipt of a completed registration form or assignment request, the DAQ will process the request. The DAQ may contact the registrant or the facility administrator to verify the submitted information. After processing a SLEIS registration, the DAQ will email instructions to the address provided on the registration form. Once the email is received, the registrant only has 24 hours to log in and establish a SLEIS access password before the log in link in the email expires.

4 SLEIS Information

The information provided below describes some of SLEIS's main functions and addresses some common questions concerning these functions.

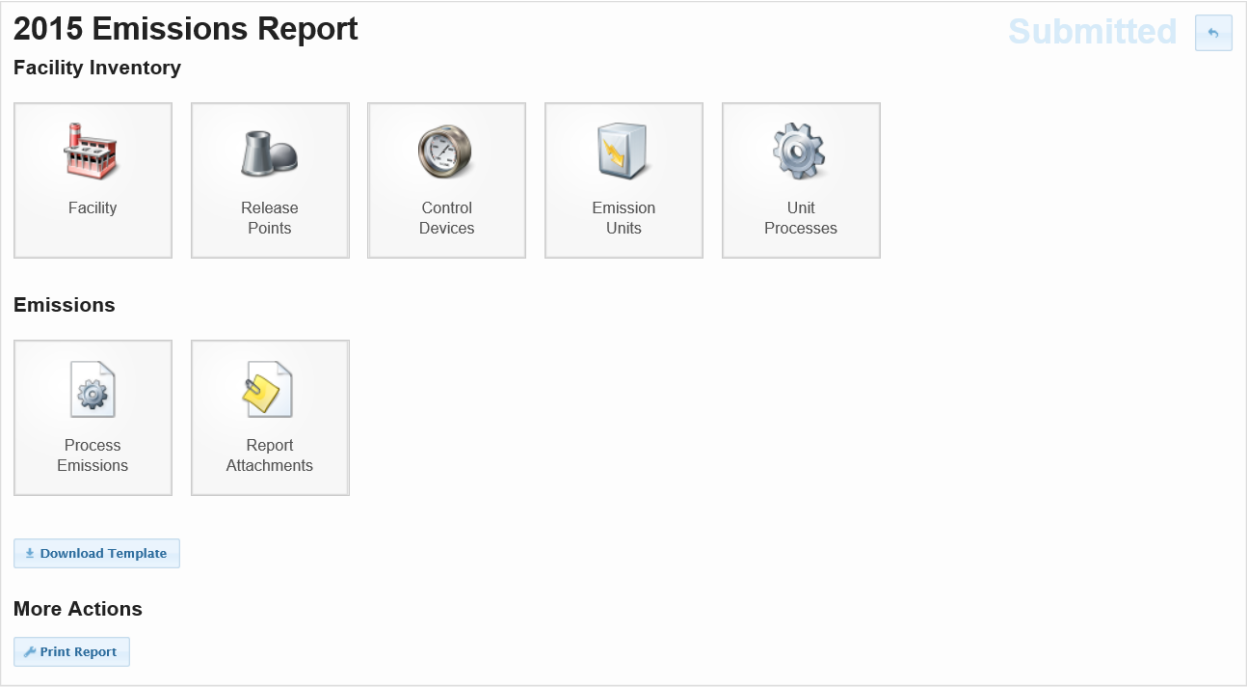
4.1 Software Considerations

SLEIS can be accessed on the DAQ webpage at SLEIS (https://apps.dep.wv.gov/SLEIS). In addition, the SLEIS "Welcome" webpage also contains news items, information, and specific guidance.

For the best performance, the following software requirements and information should be considered:

- A reliable internet connection is needed, but connection speed is not a major SLEIS concern.
- SLEIS works in popular browsers like Internet Explorer 9 or later, Google Chrome, or Mozilla FireFox.
- Screen resolution should be at least 800 by 600 to allow for good readability and ease of editing.
- All data entered into SLEIS is automatically stored on the DAQ server. There is no need to download or install any special software if an appropriate internet browser is used.
- Although facility SLEIS data resides on our server, the DAQ cannot view it until it is formally submitted in SLEIS.
- The SLEIS "Submit Inventory" function is only available to registrants who have been granted the "Submitter" role by the facility administrator.
- SLEIS's "Request Amendment" or "Repudiate" functions can be used to re-open or withdraw a submitted inventory.

4.2 Main Screen Buttons



SLEIS's main screen contains a series of action buttons representing different inventory information. Except for the "Facility" button which opens details about the facility, clicking a button will open a list of emission sources in the identifier column. Each emission source can be viewed or edited by clicking the corresponding action button on the screen's far right, which reveals the source's details and the information being requested.

The SLEIS "in Process" button is located on the main screen in the top right-hand corner. This button will move up one level in SLEIS, not back to the previous page. For example, clicking this button will move from the first page (list of emission sources) under the "Emission Unit" button back to the main screen. The SLEIS back button will appear on other screens within SLEIS and functions in the same manner as described above.

To return to the previous page, use the internet browser's back arrow instead of the SLEIS back button. This is particularly useful when multiple field information is being added or edited to the same screen and avoids unnecessary clicking backwards and forwards through the SLEIS screens.

As a rule, information is added to SLEIS starting at the top and working through the buttons left to right.

Throughout SLEIS, a green question mark appears beside data entry fields. Clicking on the question mark provides help with the type of information/data being requested. Additional help is provided by clicking on "Help" in the upper right menu. This help will provide information about that specific page and will display different help messages for each page.

Some SLEIS fields must be completed while others are optional. However, the facility is welcome to complete as many fields as they like. Fields requiring data will have a red mark on the left side when in the edit mode.

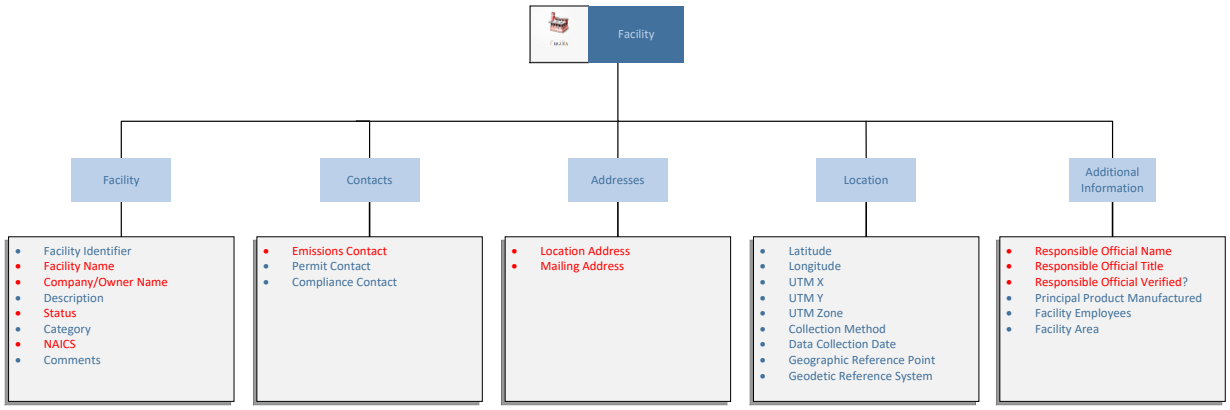
4.2.1 *FACILITY*

Under the "Facility" button, facility related and contact information is provided. In SLEIS, the facility ID is structured by using the West Virginia state code (54), followed by the County code, and then the assigned plant number. This numbering scheme is also used by the DAQ's Rule 13 and Title V permitting sections as well as being required on SLEIS's Certification of Data Accuracy, Declaration of Data Confidentiality, and Title V Cross Reference Table.

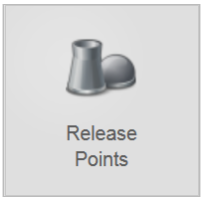
As an example, the John Amos Power Plant was the 6th plant assigned a number in Putnam County (county code 079) West Virginia (state code 54). Therefore, John Amos' facility ID is "54-079-00006".

Below is the Facility button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Facility Flow



4.2.2 *RELEASE POINTS*



A "Release Point" in SLEIS refers to any place where emissions enter the atmosphere; not just "smokestacks" in the traditional sense. Enter each release point and actual venting parameters. It is also recommended that accidental or one-off emissions be given a separate release point ID. If a release point does not have a definable height and diameter, enter the release point type as "fugitive".

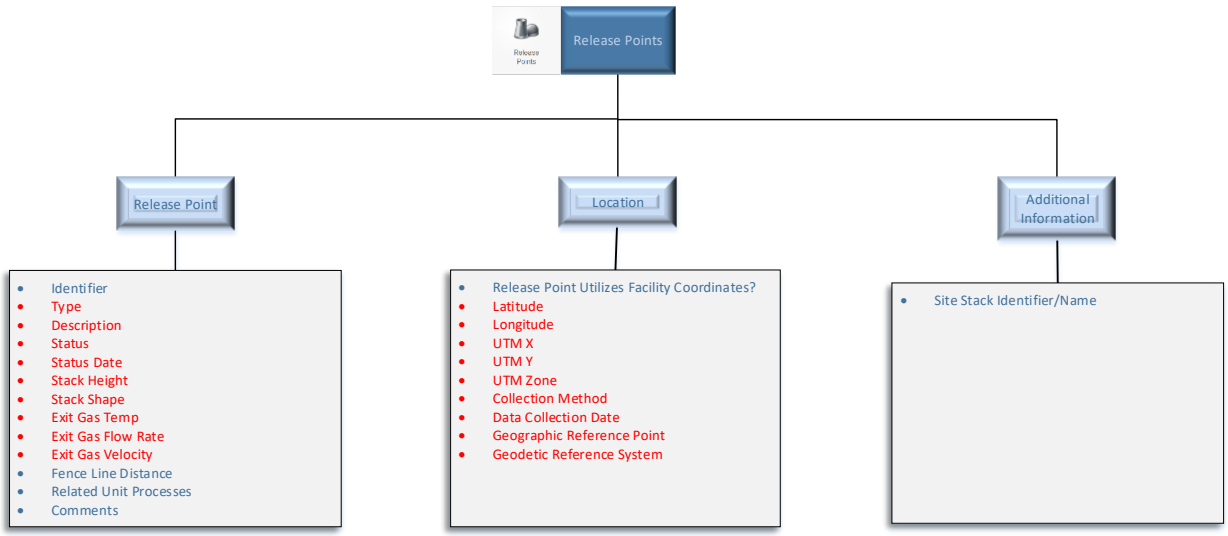
To simplify data input, it is a good idea to first define or update all facility release points in the database before inputting other process or operational information in SLEIS. Also, see ***4.2.5 – Unit Processes*** for apportioning each release point to the associated process equipment.

The USEPA may use the provided release point information in atmospheric modeling. They routinely model selected pollutants to determine potential downwind risk impacts. Therefore, release point parameters such as release point height, stack height, volumetric flow rate, and exit gas temperature can greatly affect the modeling results. For example, modeling a release point with a facility provided one-foot stack height may show nearby high pollutant concentrations suggesting a potential toxicity concern; when the stack height may have been 60 feet and the resulting modeling would show no impact to the surrounding area. Also as a rule, stack diameters are not greater than the stack height.

SLEIS 1.6 has a release point feature that automatically converts rectangular stacks into equivalent circular stacks. Clicking on the rectangular radio button ○ Rectangular will open fields to enter the stack's length and width. SLEIS will calculate and insert into SLEIS an equivalent circular stack diameter.

Below is the Release Points button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Release Points Flow



4.2.3 *CONTROL DEVICES*

In SLEIS, control device information along with all pollutants controlled and pollutant-specific control device efficiencies are consolidated under the "Control Devices" button. Control device information must be entered prior to entering data into "Unit Processes". See Section ***4.2.5 – Unit Processes*** for details on connecting control devices to unit processes.

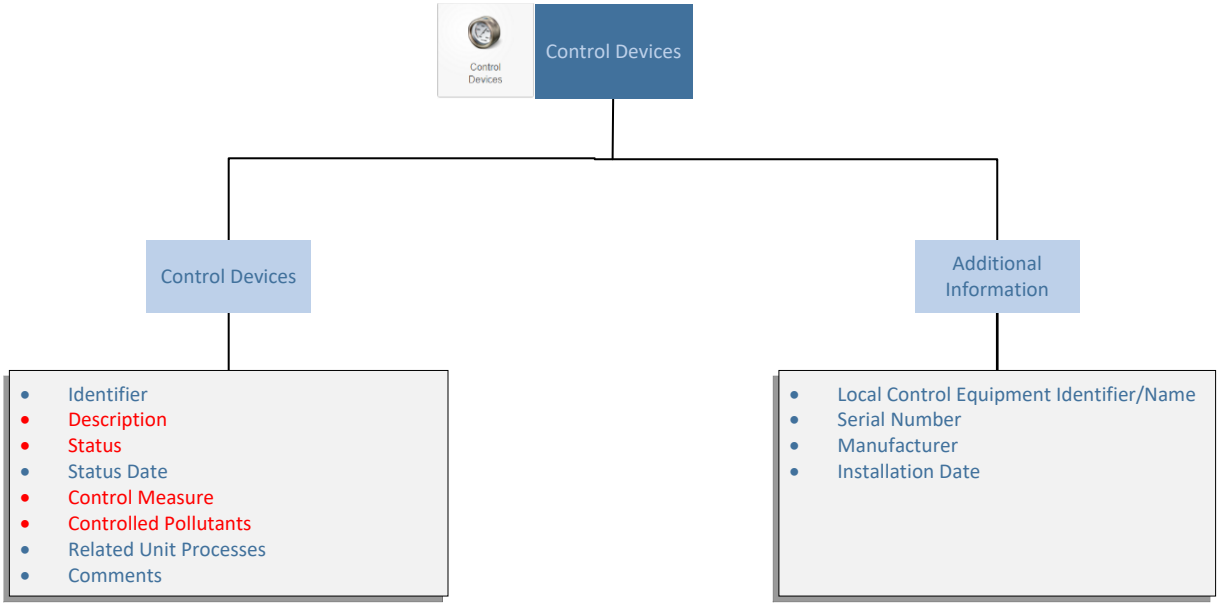
> *Control device information must be entered first prior to entering data into "Unit Processes".*

The USEPA routinely revises their approved list of control device codes. Using an unapproved code causes errors when the inventory is uploaded to the USEPA's Emissions Inventory System (EIS). In addition, codes are sometimes eliminated and combined with a similar control device code. Using a valid code can create two like control devices for the same process emission point. Although this may pass the SLEIS validation process, it will not pass the USEPA's EIS validation process. For example, a venturi scrubber (formerly control device code 53) followed by a caustic scrubber (formerly control device code 130) now both have the same control device code 129 (scrubber). In this situation, one code must be eliminated, and the overall pollutant control efficiency accounted for in the remaining control device or the process emissions split into two separate processes and one control device associated with each process.

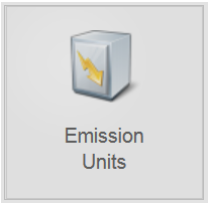
The current approved list of control device codes is provided in ***Table C – Control Device Codes***. When reviewing your emissions data, please verify the appropriate code is being used and if necessary update the device code to the one best describing actual operations.

Below is the Control Devices button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Control Devices Flow



4.2.4 *EMISSION UNITS*



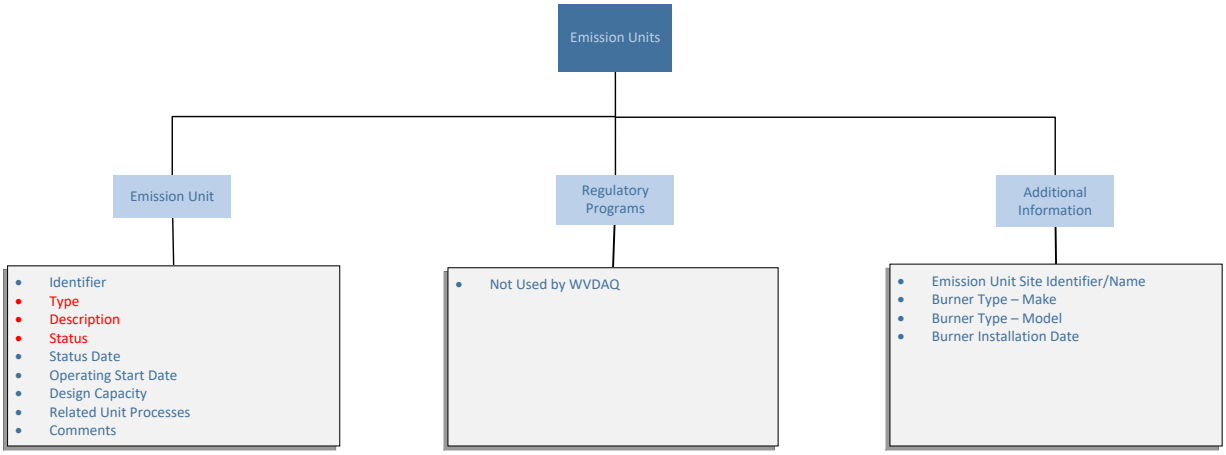
The "Emission Units" button leads to a table containing equipment-specific information such as the equipment type, operating status, and design capacity. As a starting point, it is recommended to use the facility Title V permit to organize emission unit structure in SLEIS. However, depending on the facility equipment operations, it may be preferable not to follow the Title V permit structure and instead aggregate emission units when there are many pieces of equipment with very small quantities of pollutants released.

Emission units can consist of a single process (a "Unit Process" as defined below) or a group of processes. Try to keep the structure as simple as reasonably possible. All unit processes operating under the same regulatory requirements or operating schedule could be grouped into a single emission unit. For example:

- All process equipment and storage tanks could be grouped into one single emission unit and represent many unit processes.
- The process equipment and storage tanks could be grouped into two individual emission units.
- A single emission unit is also useful in the case where the individual unit process emissions are relatively small and are better represented when the total emissions are grouped.
- Large emission sources such as boilers, kilns, dryers, etc. are best represented as separate emission units and not grouped together with other unit processes.
- In addition, fugitive and accidental emissions must be provided separately so they are not included in any release point modeling the USEPA might perform. Fugitive and accidental type emissions are modeled differently than release point stack type emissions.

Below is the Emission Units button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Emission Units Flow



4.2.5 *UNIT PROCESSES*

The "Unit Processes" button contains data on the pollutant generating processes or activities at or within an emission unit. To avoid having to re-enter data, enter the "Release Points" stack and vent data before entering any data regarding equipment generating or emitting air pollutants. SLEIS will allow entering the unit process data first; however, the data cannot be saved until it is linked to an existing release point. Without being linked to a release point, any unit process data entered into SLEIS must be "canceled" prior to progressing further with entering data into SLEIS. If this happens, the associated release point must be created, and the lost unit process data re-entered into SLEIS.

> *To avoid having to re-enter data, first enter the "Release Points" stack and vent data before entering any data regarding equipment generating or emitting air pollutants.*

The SCC (Source Classification Code) identifies the type of process or activity. Please ensure the SCC provided accurately reflects the unit process operations. In edit mode, SLEIS provides four drop-downs to describe the unit process. Using these descriptions, SLEIS selects the SCC number. SCC numbers are either eight digits for point sources or ten digits for non-point or area sources. The SCC numbers used for SLEIS purposes are always eight digits. Ten-digit codes have been retired in SLEIS and are no longer available from the pick list. In addition, where ten-digit SCC codes have appeared in previous SLEIS submittals, the DAQ has replaced them with the most appropriate eight-digit code. Use of an inappropriate code can result in an incorrect data interpretation during the DAQ and USEPA review process. A current list of SCC numbers is also located on the SLEIS webpage and the address is provided in ***Table E – Webpage and Email Summary List***.

If creating a new unit process, the eight-digit SCC can now be directly entered into SLEIS instead of specifying the four level SCC description; although the four-level entry is still available. Also, to save space the SCC description on the list of unit processes has been removed. To view the SCC description, hover the mouse pointer over the SCC code and the description will appear.

To connect a control device to a unit process, click the unit processes edit button, go to the "Control Approach" tab, and select the appropriate control device from the pick list or check the "Not Controlled" box. Once a control device is connected to a process, the provided control and capture efficiencies are available for calculating emission rates using the pollutant calculation method selected for the process under the "Process Emissions" button, on the "Emissions" tab.

"Capture Efficiency" refers to the percentage of the total exhaust gas (emissions) vented from the process to the control device. Normally, the capture efficiency is 100 percent for scenarios where process equipment is directly connected to a control device via pipes or ductwork. For situations such as hoods, where only a portion of the exhaust gas is vented to a control device, use a capture efficiency less than 100 percent. If you leave the capture efficiency blank, SLEIS assumes the capture efficiency is 100 percent.

Before officially submitting your inventory data to SLEIS, verify the reported calculated emissions and control efficiencies are what is expected for each process. Small data entry errors, such as entering 0.01 versus 0.001, can result in calculated emissions an order of magnitude too high and could falsely elevate a facility's risk level during the USEPA's national toxics assessment.

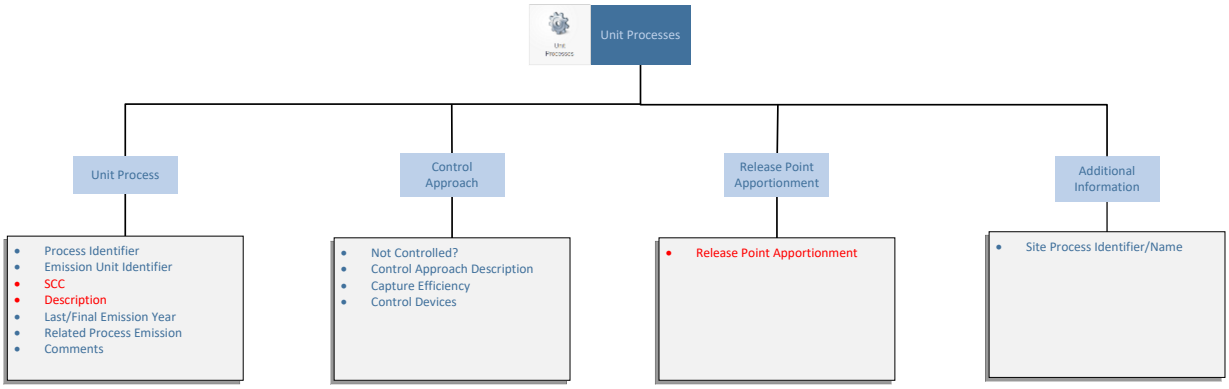
Before officially submitting your inventory data, verify the reported calculated emissions and control efficiencies are what is expected for each process.

In addition, process emissions are apportioned to each release point indicating the average annual percent a process is vented through each release point. The total percentage for all release points associated with the process must equal 100 percent. Apportionment could be one process to one release point, one process to multiple release points, or multiple processes to one release point. For example:

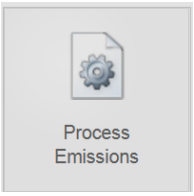
- For a process venting only to a single release point, the apportionment would be 100 percent.
- A process venting to two release points may vent 50 percent of the total emissions to each point for a total of 100 percent.
- Finally, many processes may vent 100 percent of their emissions to the same release point. Since the apportionment is based on the process and not the release point, then each of these processes would show 100 percent apportionment to that same release point.

Below is the Unit Processes button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Unit Processes Flow



4.2.6 *PROCESS EMISSIONS*



The "Process Emissions" button is the heart of the SLEIS inventory. Here the pertinent emission related data for each emission source resides. This data includes emission source identification, actual hours of operation, operating schedule, annual throughputs, and actual emissions from each emission source. The accuracy of this data is critical as it is provided to the USEPA, who will model the information to determine if a source and/or pollutant may have an adverse impact on the surrounding environment or community. Therefore, ensure throughputs and operating hours are updated in SLEIS every year. Also, ensure the throughput units correspond with the data value provided (e.g. SLEIS throughput units are E6FT3, but the actual value reported is in E3FT3).

Update throughputs and operating hours every reporting year. Also ensure SLEIS throughput units correspond to the data value being provided.

For combustion sources intended to generate steam or electricity, provide the annual fuel throughput rates. These rates are commonly required in the USEPA's modeling effort and if not provided, the facility will be contacted by the DAQ. This data is not normally considered confidential. However, if this should be the case, provide the confidential information in accordance with the guidance provided below in Section ***4.6 – Confidential Data*** and not in SLEIS.

Additional guidance concerning emissions and pollutants is detailed further below in this document.

In SLEIS 1.6 pollutant emission data is now represented in an accordion-style list. This list can expand out into a form for editing and then collapse back down to a list for easy scanning. A filter function has been added for quick pollutant search capabilities in the add and edit modes. While adding and editing pollutant records, the scroll position will be saved. Once the "Save" button is clicked, pollutants will collapse down to list view. Also,

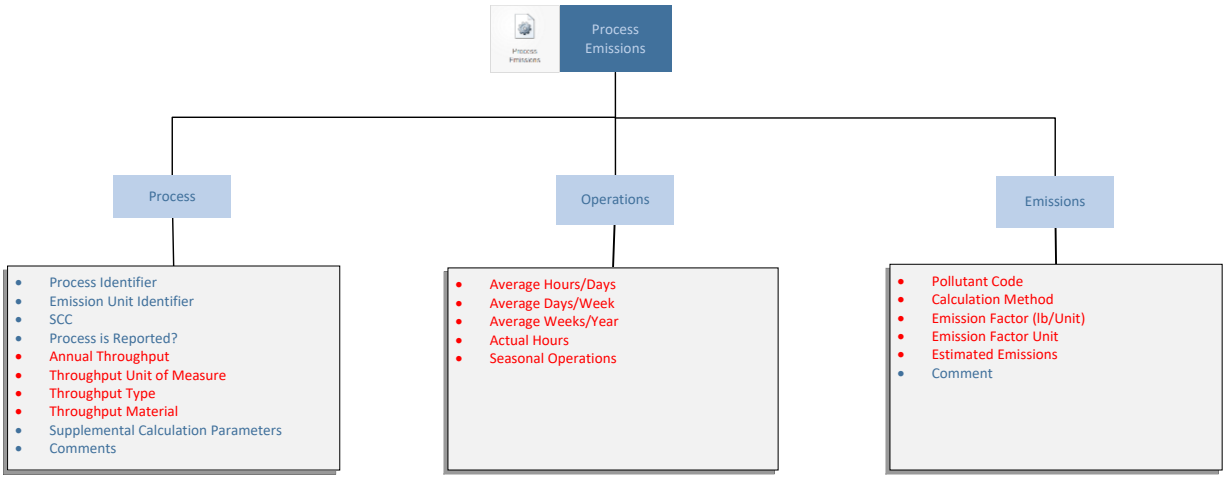
a “Calculate All” button has been added to perform the SLEIS emission calculation (e.g. where an emission factor is provided and SLEIS performs the emission calculation) and allows reviewing of the result prior to saving the record. This allows for a quality assurance review prior to saving the data. Additionally, in the list format, hovering over the pollutant code will show the pollutant description. Finally, if the emission calculation method does not utilize an overall pollutant control efficiency, such as entering stack test data when calculating emissions, the “Overall Control Efficiency” field will be hidden.

A new business rule validator was added to SLEIS with the upgrade to version 1.6. For process emission sources, the validator will enforce the use of current USEPA codes, which the USEPA routinely changes. Codes affected by this validator include:

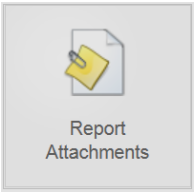
- Throughput UOM (unit of measure),
- Throughput Type,
- Throughput Material,
- Pollutant Code,
- Calculation Method, and
- Emission Factor Unit.

Below is the Unit Processes button flow chart showing each submenu and the information fields under those menus. As a minimum, fields in red type are required; however, you are encouraged to complete all fields.

Process Emissions Flow



4.2.7 *REPORT ATTACHMENTS*



The last button on the main screen is the "Report Attachments" button. This button allows the submitter to provide additional information relevant to supporting or explaining information provided in the SLEIS submittal. Also, the required SLEIS Declaration of Data Confidentiality and Title V Cross Reference Table Excel spreadsheets can be attached to the annual submittal here.

The Certification of Data Accuracy form cannot be submitted using the report attachments button.

However, the Certification of Data Accuracy form required for Major Title V facilities must be signed with blue ink and must be submitted separately to the DAQ by mail or can be scanned and emailed to the DAQ. Facsimile and scanned original blue ink signatures are binding and are also considered original signatures. The Certification of Data Accuracy form is not required for Deferred Title V facilities, as emission data certification is accomplished by signing and returning the Certified Emission Statement form.

The Certification of Data Accuracy form cannot be submitted using the report attachment button because the inventory must be submitted first to generate the confirmation number required on the Certification of Data Accuracy form.

In addition, the attachment button can be used to provide supplemental information or data requested by the DAQ or the USEPA.

4.2.8 *DOWNLOAD TEMPLATE*

Use the current year's template and not a previous year. Using a previous year will result in data submittal errors, which could require major revisions by the facility and resubmittal of the inventory.

Although only used by a small portion of the SLEIS submitters, the "Download Template" button appearing in the left-hand corner on the main SLEIS screen provides a mechanism to download emission inventory data into comma separated value (.csv) files, which look like a spreadsheet if imported into Excel. These files, which include ProcessEmissions.csv and Processes.csv, can be revised and uploaded back into SLEIS in lieu of inputting data directly into the various SLEIS fields. These can be particularly useful where a facility uses a third-party air emissions inventory system to calculate emissions and download the system's emissions directly into the SLEIS csv files. However, please note the column heading names, heading positions, or template structure cannot be changed; doing so will create upload errors and the data will not be successfully uploaded. If using these files to report your emissions inventory and to ensure

proper compatibility, it is recommended that you contact the DAQ first. Finally, always use the current year's download template and not one from a previous year. Using a previous year's will result in data submittal errors, which could require major revisions by the facility and resubmittal of the inventory.

A "ReferenceDataValues.csv" file is also included with in the Download Template. This file contains values/codes and their associated description used to reference data in SLEIS. Reference data includes throughput unit, throughput type, throughput material, calculation method, emission factor unit, and pollutant types.

4.2.9 *IMPORT DATA*

The Import Data button provides a means to import the emission inventory revisions made to the ProcessEmissions.csv and Processes.csv files downloaded using the Download Template function. As previously mentioned, a successful upload cannot be achieved if column heading names, heading positions, or template structure are changed.

4.2.10 *VALIDATE REPORT*

Prior to submitting the emission inventory to the DAQ, the SLEIS validation process must be completed. SLEIS contains criteria to help quality assure the emissions data for common errors and to comply with the USEPA's Emission Inventory System (EIS) submittal requirements. The time needed to validate a report will vary depending on your inventory's size and complexity; larger inventories will take more time to validate. Once the validation process is complete, SLEIS will indicate whether the validation process was successful. If not, a screen will appear indicating such and a csv error report will be generated. Errors must be corrected prior to submitting the inventory.

As an additional note, a validation process is also occurring while entering data into SLEIS. If data entered is incomplete, SLEIS will note the error during the save process, will state that the save was unsuccessful, and will highlight in red where the error was encountered.

4.2.11 *INITIATE SUBMISSION*

Once all inventory data has been entered into SLEIS, the data is quality assured by the facility, and validated by SLEIS then the completed inventory can be submitted to the DAQ.

This is accomplished by clicking the "Initiate Submission" button. SLEIS will send a confirmation number to the Submitter which must be used on the "Certification of Data Accuracy" form submitted by a Responsible Official. After submitting the inventory no further revisions can be made until an amendment request is made.

4.2.12 *PRINT REPORT*

A full "copy of record" report of the inventory is available by clicking the "Print Report" button. The PDF formatted report contains all data provided in the inventory and can be printed by the facility. **Do Not** submit this report or a copy to the DAQ; it is not necessary. The ability to produce a "copy of record" in SLEIS is required by USEPA protocol.

Do Not submit a "copy of record" to DAQ.

The copy of record report has been modified to improve its previous structure and readability. Headers, page breaks and numbers, and formatting changes have been made to make this report more valuable to the end user. Also, the SLEIS confirmation number has been added.

4.2.13 *SUMMARY REPORTS*

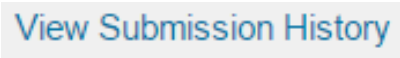
SLEIS provides four predefined summary reports, which summarize emissions by source, emission unit, release point, or process. These reports can be printed at any time before or after submitting an inventory. They are an excellent way to quality assure inventory data entered into SLEIS prior to actual submittal.

In addition to adding a new process emissions summary report, these reports are now in a comma separated value (.csv) format. This format allows users to better and more efficiently review and analyze data. Also, the summary reports will not include emissions inventory records for processes that were shutdown prior to the current reporting year and will not include processes when the "final emission year" value is less than the current reporting year.

4.2.14 *Export Reports*

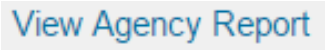
For quality assurance purposes the “Export” button under the “Release Points”, “Control Devices”, “Emission Units”, and “Unit Processes” buttons provide a summary, which is another method of verifying inputted data. Executing these buttons will download associated zip files containing a series of comma separated value (.csv) files. These files provide another effective means to review inventory data and are considered a better overall data report than the copy of record report generated by the Print Report button.

4.2.15 *View Submission History*



After an inventory has been submitted to the DAQ, the “View Submission History” contains a record of the date and who submitted that year’s inventory. Subsequent revisions made to that year’s inventory are also recorded. More importantly, this view also contains the SLEIS generated confirmation number which is needed for the Certification of Data Accuracy form.

4.2.16 *View Agency Report*



The “View Agency Report” function was included with the SLEIS version 1.6 update and appears on the facility SLEIS homepage once the DAQ has completed their review of the inventory. This report represents the facility Copy of Record report as revised by the DAQ. As previously discussed, DAQ revisions typically involve changes needed to allow the facility’s inventory to be uploaded to the USEPA’s Emission Inventory System (EIS) such as pollutant or SCC code changes.

4.2.17 *Request Amendments*

Once a facility has submitted an emissions inventory, the inventory can be amended. Amendments must be requested by clicking the “Request Amendment” link on SLEIS’s main screen, providing a reason for the amendment, and clicking the submit button. The request will be sent to SLEIS where the DAQ can either deny or accept the request. If

accepted, a SLEIS email will be sent back to the requester's email and the inventory will be opened to amend.

When making a request, the request is submitted through SLEIS and not directly to the DAQ. Therefore, DAQ personnel are not immediately alerted to the request. To address your request more expeditiously, it is recommended that a separate email be sent to Dave Porter at david.j.porter@wv.gov.

Once the amendments have been made, the submitter must re-validate the inventory for potential errors. Additionally, the amended inventory must be re-submitted. If not, the DAQ will not receive the amended inventory.

Depending on how far along the DAQ is in reviewing a facility's data and how extensive the revision, instead of granting an amendment request DAQ may request the facility submit the revisions in an e-mail and DAQ staff will make the necessary SLEIS changes. Granting an amendment request during the review process negates any revisions made by the DAQ before our inventory review process is completed and would require a duplication of work to re-enter data.

4.3 Title V Deferred Facilities:

Title V Deferred facilities were first required to submit their total annual emissions using SLEIS in the 2017 reporting year. This section provides instructions for Title V Deferred facilities to submit their annual facility total air emissions to the DAQ. Using SLEIS as a mechanism to report these emissions, replaces the previous practice of reporting annual air emissions using the Certified Emission Statement (CES) form. Title V operating fees will be calculated using the facility emissions provided in SLEIS and an invoice summarizing the facility's emissions and fee will be generated and mailed to each facility. See ***Section 5.1 – Certified Emission Statement*** for more discussion on the CES.

To ease the burden of constructing a facility in SLEIS, the DAQ pre-entered facility information into SLEIS for the 2017 reporting year using 2016 facility submitted CES data. This data included facility related information plus pollutants emitted and annual emission rates. Although the DAQ pre-entered the inventory, it is the deferred facility's responsibility to ensure all data provided in SLEIS accurately reflects the current reporting year. Similarly, the DAQ has pre-entered Title V Deferred facility information for new deferred facilities in the current reporting year. For new facilities, criteria pollutants will be entered into SLEIS and pollutant emission rates will be set to zero. New reporting facilities will have to add and delete pollutants and emissions rates as necessary.

For those already familiar with SLEIS, the structure is no different than for the Title V facilities. Other than some specific deferred facility codes that have been added, SLEIS looks and functions the same as for major Title V facilities. The biggest difference between how the major facilities and the deferred facilities use SLEIS is the level of detail needed in SLEIS. Since the data for the

deferred facilities are currently not required to be submitted to the USEPA, fewer details are needed to meet the DAQ's regulatory needs.

The first step to entering data is to register as a SLEIS user. Refer to ***Section 3 – SLEIS Registration*** for how to register for SLEIS and the description of the various user roles. Once registered, the user can begin to work in SLEIS.

Users should read this entire guidance document prior to working in SLEIS. Doing so will help avoid potential errors that could result in wasted time and effort. Special attention should be given to ***Section 4.2 – Main Screen Buttons*** and ***Section 5 – Pollutants***. This will help the user become familiar with SLEIS's layout, functionality, and requirements.

For the deferred facilities, the two main SLEIS buttons housing the facility data are the "Facility" and "Process Emissions" buttons. The other main screen buttons contain minimum information required to satisfy SLEIS's validation protocols. The facility and process emissions buttons will be discussed below first, followed by insight to the other buttons.

As the name indicates, the "Facility" button contains the facility related addresses, location, description, and contact information. Begin updating SLEIS by verifying the facility information. By clicking the facility button, five submenus will appear and are discussed below.

Facility:

Going left to right, the first submenu ("Facility") contains the facility identifier, facility name, company/owner name, description (optional), status, status date, category ("Deferred"), NAICS, and comment fields. By clicking on the "Edit" button in the bottom right corner, any revisions to this page can be made. The following is a discussion of each facility field:

- *Facility Identifier* cannot be revised in SLEIS. This number is assigned by the DAQ and follows the facility independent of facility name changes or changes in ownership.

- *Facility Name, Company/Owner Name, and the Facility Description* can be revised by simply deleting the existing text and typing the revised information.

- *Status* represents the operating status for the entire facility and not a specific operation. Setting the status to operating is used if any portion of the facility is operating and emissions are being reported. Temporarily or permanently shutdown status is only used if the entire facility meets these conditions. "Operating but Reporting Emissions in the Nonpoint Category" and "Operating but State/Local/Tribe Not Reporting Emissions" statuses are only used by the DAQ and ***never*** to be used by the facility.

- *Status Date* is only used if the entire facility has been either temporarily or permanently shutdown. In these cases, the date the facility last operated is entered.

- *Category* field has been set by the DAQ for deferred facilities to "Deferred – Deferred minor source subject to TitleV/Reg30 – not reported to EIS". It is recognized that a facility category may change due to operational changes or additions. For example, facility modifications may change a facility from a deferred Title V facility to a major Title V facility or facility emissions may be reduced to a point where a facility is no longer subject to the Title V permitting provisions and is only subject to the DAQ's Rule 22 fee requirements. In these or similar cases, the facility must contact the DAQ to ensure the facility category is properly established and emissions are properly reported in accordance with state regulations.

- *NAICS* field was completed based on facility provided information. However, it is recognized that NAICS codes do change or another code may better represent the facility's operations. To change the NAICS code, delete the current code and begin typing the correct code or a keyword in the code description. While typing, a drop-down menu will appear showing possible codes. Continue entering until the appropriate code appears, then click on the code. The correct NAICS should be displayed.

- *Comments* can be added for future reference, such as the reason information was changed. These comments could be for personnel who may be entering facility data in the future or to communicate information to the DAQ's reviewing staff.

Contacts:

The second submenu contains three different facility contacts; emissions contact, permit contact, and compliance contact. Each contact can be edited by clicking the "Edit" button in the bottom right corner. This page allows for the possibility that three-different people may represent the three different contacts; however, it is also possible that a single person could be the contact for all three. As a minimum, only the emissions contact has been included and this is the only contact that is required. Please update the page as necessary.

For each contact, the contact name can be entered by typing in the name field. Name changes are accomplished by deleting the existing name and typing the correct contact person. Multiple contact numbers or email addresses can be entered. At a minimum, the facility contact number must be provided. Under contact, click the type of number being entered. For a facility number, select "phone". Existing contact numbers can be deleted by clicking the trash button . Extra numbers can be added by clicking the plus button . Type in the field to the right the number for each type of contact.

Addresses

Information required in the address submenu should be obvious. To edit an address, click the "Edit" button and type the corrected address in the field. Both the facility and mailing addresses are required. Be sure to click the "Save" button before exiting or the revisions/additions will be lost.

Location

The facility's geographical location is entered here by DAQ and is not editable. This location is usually the facility's geographic center or a major release point such as a boiler stack.

Additional Information

To meet regulatory requirements, a "Responsible Official" name and title are required. Since the current version of SLEIS does not include this information under the contact submenu, DAQ included it here under the additional information submenu. Only the Responsible Official name and title information is required; the other fields are optional. The emission inventory cannot be submitted until the Responsible Official information fields have been completed and the "Responsible Official Verified?" field has been changed from blank to verified by using the drop-down menu.

A Responsible Official is defined in 45CSR30 §2.38 to mean one of the following:

- For a corporation: a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or (ii) the delegation of authority to such representative is approved in advance by the Secretary;

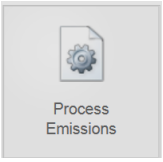
- For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

- For a municipality, State, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this rule, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

- For affected sources:

- The designated representative as far as actions, standards, requirements, or prohibitions under Title IV of the Clean Air Act (Acid Deposition Control) or the regulations promulgated thereunder are concerned; and

- The designated representative for any other purposes under this legislative rule.



The "Process Emissions" button contains three submenus; Process, Operations, and Emissions. Emission and process operational data is contained under this button. Required fields have been pre-entered by the DAQ based on the facility's 2018 CES submittals. New facilities for the current reporting year have been pre-entered by the DAQ with the list of criteria pollutants and zero emissions. These facilities will need to add and delete pollutants and emission rates as necessary. If a facility is not in SLEIS, please contact Dave Porter at david.j.porter@wv.gov.

Process

- *Process Identifier* and *Emission Unit Identifier* has been pre-set by the DAQ to indicate the process represents all the facility's operating units. These identifiers cannot be changed.

- *SCC* represents process level operations and does not apply to facility-wide operations, Therefore, for consistency, the DAQ created a specific SCC to represent the overall operations of a "deferred" facility. The SCC provided cannot be revised.

- *Process is Reported* is a simple method of removing emissions if the facility did not have emissions during the reporting year. The box should only be unchecked if this is the case. Otherwise, this box needs to remain checked. Unchecking and saving will result in a loss of emission and operational data that will require reentry.

- *Annual Throughput, Throughput Unit of Measure, Throughput Type, and Throughput Material have* been pre-set by the DAQ to represent a generic type of operation. Do not change these entries.

- *Supplemental Calculation Parameters* field is not required and should remain blank.

- *Comments* can be added for future reference, such as the reason information was changed. These comments could be for personnel who may be entering facility data in the future or to communicate information to the DAQ's reviewing staff.

Operations

Facility operating schedule, actual annual hours, and seasonal operations fields have also been pre-entered by the DAQ to represent maximum possible operations assuming some facility operation or emission has occurred all year. This information is required by SLEIS

and it is recognized that it may not represent the facility's overall operations. This is particularly true for facilities with seasonal operations or facilities with annual facility wide shutdowns for maintenance turnarounds or holiday closures. These fields can be changed as necessary to best represent the facility's overall operations.

Emissions

The DAQ has pre-entered the facility's total annual emissions for each pollutant using data provided with the facility's 2018 CES. If pollutants emitted do not change yearly, then only the amount of pollutant emitted would change. However, pollutants can be deleted or added as necessary to best represent the facility's emissions.

Pollutants can be deleted from SLEIS by clicking the trash can button to the right of the pollutant. Only one pollutant at a time can be deleted. Adding a pollutant is accomplished by clicking the add button

at the page's bottom left.

- *Pollutant Code* is used to identify the constituent being emitted. These codes are defined by the USEPA and only the codes provided in SLEIS can be used. ***Section 5 – Pollutants*** discusses the various pollutants and the requirements for reporting a pollutant. ***Section 5.3 – Reportable Pollutants***, ***Table A – HAPs Pollutant Codes***, and ***Table B – Individual HAPs within HAPs Group*** list the available pollutant codes.

  If a pollutant is added, after clicking the add button place the cursor in the pollutant code field and start typing the pollutant name or code. While typing, a drop-down menu will appear. Once the pollutant has been located, highlight it, and hit enter or just click on the pollutant to add it.

- *Calculation Method* field contains a code that represents how the pollutants emissions were estimated. A drop-down menu is provided to select the best method code. Since the emissions here are facility total emissions and multiple calculation methods may have been used to estimate emissions from individual sources, the calculation method code 2 – Engineering Judgment has been entered. The only exceptions to this code would be when emissions are from a source where CEMS (method 1) are installed, a material balance (method 3) has been conducted, or a stack test (method 4) has been performed. **Under no circumstances** can an emission factor method be used, as this would require additional data input in other parts of SLEIS and is not necessary.

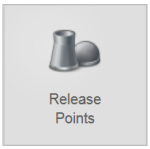
- *Emission Factor (lbs/unit) and Emission Factor Unit* fields should be left blank and never completed for the reasons mentioned above.

- *Estimated Emissions (Tons)* field is where the facility's total annual **post controlled** emissions for the listed pollutant is reported. Although SLEIS has some internal calculation provisions, **a deferred facility must manually input the emission rate**. Be sure to click the save button at the bottom right before exiting this page or data will

be lost and require re-entry. The estimated emissions provided are based on the facility's 2018 submitted CES form.

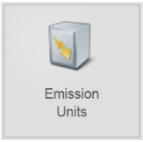
- *Comments* can be added for future reference, such as the reason information was changed. These comments could be for personnel who may be entering facility data in the future or to communicate information to the DAQ's reviewing staff.

Other SLEIS main screen buttons not discussed in this section include the Release Points, Control Devices, Emission Units, and Unit Processes. DAQ has pre-entered data in these areas to meet the minimum SLEIS requirements to pass the validation process. Information in these areas do not need to be changed or any information added.



For "Release Points" a release point identifier named "CES Total" has been established utilizing the facility's coordinates entered under the Facility button.

Although a facility may employ multiple air pollution control devices, no devices have been entered under the "Control Devices" button. No devices should be added, to avoid additional SLEIS data entry. Also, emissions reported should be after any control devices.



Under the "Emission Units" button, a "CES Total Facility Emissions" description has been entered by the DAQ for all reporting Deferred facilities. The description must not be changed. The only field that a facility should change is the "Status" field. This field can be changed if the entire facility has been temporarily or permanently shutdown. The status code can be changed by selecting the appropriate code from the drop-down menu. If changed, then the "Status Date" field needs completed by selecting the January 1st of the year after the facility was temporarily or permanently shutdown. For example, if the facility was shut down on February 14, 2014, select January 1, 2015.

A generic DAQ-defined SCC 99999999 has been provided under the "Unit Processes" button which represents a "Deferred" facility. If another SCC better describes the facility's overall operations, then the SCC could be revised, although you are not required to do so. The SCC is changed by selecting from the drop-down menus each of the four-level SCC descriptions.

Also, if a facility has been permanently shutdown (**not temporarily shutdown**), the "Last/Final Emission Year" field needs to be completed. Provide the last year the facility had emissions. In the 2014 example above, the last/final year would be 2014.

The other main screen reports and requests function the same for deferred facilities as for major facilities. Consult **Section 4.2 – Main Screen Buttons** for further details.

4.4 Confidential Data

USEPA's Consolidated Emissions Reporting Rule and the November 10, 2003 DAQ guidance developed via Interpretive Rule 45CSR31B clearly address the issue of what information is "emission data" and thus non-confidential. Pursuant to 45CSR31 and 45CSR31B, some data claimed confidential in past emissions inventory submissions may no longer be considered confidential data. In addition, our procedure for handling information legitimately claimed as confidential is different with the SLEIS application.

Although we are unaware of any successful unauthorized access into SLEIS, please bear in mind your SLEIS data and attachments, whether before or after you formally submit your inventory, are located on an internet server. Additionally, SLEIS includes some automated tools used for assembling and transferring data to USEPA which may inadvertently include SLEIS data you wanted kept confidential.

Therefore, **never** include any confidential information in SLEIS and transmit confidential information separately in a more secure manner. Any separate claim of confidentiality must be substantiated and documented per the requirements of 45CSR31 and 45CSR31B and all information claimed confidential must be clearly identified on the "Declaration of Data Confidentiality" spreadsheet available on the SLEIS web page. Be specific which fields you wish kept confidential. For example, reference each area where "process data" is considered confidential.

4.5 Multiple Facilities

SLEIS can accommodate anyone who must view, edit, submit, or administer multiple facilities and has been assigned to those facilities. When logging into your SLEIS account, a pick list of all assigned facilities is presented. In addition, SLEIS lists available actions for each facility and the roles assigned. To access a listed facility, click the appropriate action button. Enter the facility's data and make sure to save changes as you go. At any time, you can click the "My Facilities" button to see the facility pick list again. Save changes to the currently opened facility before clicking the My Facilities button; otherwise SLEIS will discard any unsaved changes without warning. Always save changes before opening another facility.

Save changes to the currently opened facility before clicking the My Facilities button otherwise SLEIS will discard any unsaved changes without warning. Always save changes before opening another facility.

4.6 Shutdowns

Under the "Emission Units" button, the emission unit's operating status is provided. Three operating status options are available in the drop-down menu; Operating, Permanently Shutdown, and Temporarily Shutdown. The "operating" option is selected when the emission unit operated and had emissions during the reporting year. However, there may be times when an emission unit is temporarily or permanently shutdown. When these status options are selected additional information/steps are required by SLEIS.

Temporarily shutdown emission units are those that did not operate or have emissions during the reporting year, but may continue to operate in future years. In these cases, the "temporarily shutdown" option in the "Status" field is selected. Permanently shut down emission units are those that will cease to operate and there is no intent to re-start operations in future years. The same general process is followed as with temporarily shutdown units. Under the "Emissions Units" button in the "Status" field, the operating status is selected as "permanently shutdown".

Follow the procedures below for unit/process shutdowns:

Processes Permanently Shut Down; No Emissions for the Current Reporting Year:

- Edit the process from the "Unit Processes" list.
- Enter the last year that the process had emissions in "Last/Final Emissions Year".
- Click "Save" (this will return you to the "Unit Processes" list).
- Edit the process again.
- Click the link under "Related Process Emission" to jump to the emissions for this process.
- Click the "Emissions" tab.
- Delete each pollutant by using the Delete icons on the right side of the screen.
- When done deleting pollutants, click "Save".

Process Temporarily Shut Down; No Emissions for the Current Reporting Year:

- Edit the process from the "Unit Processes" list.
- Leave the "Last/Final Emissions Year" field blank.
- Click the link under "Related Process Emission" to jump to the emissions for this process.
- Uncheck the box under "Process is Reported"
- This will blank out the emissions and process information for the current year only.
- Click "Save".

Emission Unit Shut Down:

- Edit the unit from the "Emission Units" list.
- Change the status (either temporary or permanent shutdown) and enter the Status Date
- Enter January 1 of the following year
- Example: if the emission unit was shut down sometime in 2014, enter January 1, 2015 as the status date.
- Click "Save".

- Edit each process associated with the emission unit as noted above (either permanent or temporary shutdown).

4.7 De Minimis Emissions

Not all pollutants are equivalent. Each pollutant exhibits its own physical, chemical, and toxicity characteristics. In addition, some may be more specifically regulated than others. It is these factors that dictate how small the emissions must be reported in SLEIS. For example, at the same emission rate methanol emissions are less toxic than dioxins.

The USEPA routinely models selected pollutant emissions based upon the information provided in SLEIS. If emissions are not provided in SLEIS, the USEPA will use other sources such as the SARA 313 TRI emissions, or use their best professional judgment based on other available information. Thus, emission rates used may be conservatively high and could result in the unwarranted flagging of a facility as a potential threat to impacted areas downwind.

Therefore, specifying a single de minimis value becomes impractical and the DAQ cannot establish such a value. However, it is suggested that consideration be given when entering emission data as it relates to the specific pollutant's toxicity. For example, enter smaller emission rates for pollutants that are known carcinogens, such as one gram of dioxin or on pound for Mercury, as compared to non-carcinogenic pollutants, such as one ton of carbon monoxide. Additionally, if there is a pollutant that is expected to be emitted (dioxins for example) from the same or similar type facility operation and it is not emitted from your facility, then it would be advisable to enter the pollutant with zero emissions as an indicator that the pollutant is not emitted. Placing a statement in the comment field that emissions are zero for a specific pollutant is an additional way to confirm the pollutant is not emitted.

5 Pollutants

For each pollutant, SLEIS contains pre-designated pollutant codes. Many of these codes are the same as the pollutant's Chemical Abstracts Service (CAS) number. These codes do not allow the use of decimal points or hyphens in the code name. For example, the code for 2.5-micron filterable particulate matter is listed as PM25-FIL and not PM2.5-FIL. Likewise, the hyphens used in the CAS number are not included in the pollutant code. Therefore, formaldehyde would be represented as 50000 and not 50-00-0. Each pollutant category is further detailed below.

DAQ conducted a massive cleanup of facility pollutant codes for the 2014 reporting year that appeared in the 2015 rollout.

During the data transfer from *i*-STEPS to SLEIS many of USEPA's retired pollutant codes were retained in the SLEIS database. Since then, the USEPA has continued to retire and revise other pollutant codes. For various technical reasons and to make SLEIS data consistent with the USEPA's, for the 2014 reporting year inventory the DAQ conducted a massive cleanup of facility pollutant codes that appeared in the 2015 reporting year rollout. Many pollutants have been retired in SLEIS and are no longer

available for use. Therefore, pollutant codes in inventories 2015 and after may differ as compared to previous years. Additionally, as the USEPA continues to retire and revise these codes, the DAQ will continue to update inventories accordingly. Comments have been added in SLEIS to note where these revisions occurred.

5.1 Certified Emission Statement (CES)

The annual Certified Emission Statement (CES) is the DAQ's method of collecting annual Title V Operating Permit fees. These fees are based on the facility's emission data provided in SLEIS. Historically, a blank CES form was sent to each facility where the facility reported their total emissions per the CES pollutant categories. Using that reporting year's dollars per ton, the annual fee was calculated and paid. Errors did occur during this process where CES and SLEIS emission rates did not agree. Additionally, this process required the DAQ to manage the incoming fees and work with facilities when errors were noted.

To improve this process, the DAQ implemented several efficiency efforts. For the DAQ's 2018 fiscal year (FY) (July 1, 2017 – June 31, 2018), the DAQ generated and mailed a CES and fee invoice for the Major Title V facilities (non-deferred facilities) using facility emission data provided in SLEIS for calendar year 2016. This procedure ensured emissions reported on the CES were consistent with the emissions provided in SLEIS and the appropriate CES pollutant categories were used. Also, instead of sending payments directly to the DAQ, these payments were sent to the WV Treasurer's Office where the payments are automatically deposited using modern scanning methods like those used in the banking industry. This process for Major Title V facilities will be used forgoing.

Deferred Title V facilities have also historically been sent a blank CES form. The facilities then provided the total annual CES pollutant category emissions, calculated their annual fee, and made payment directly to the DAQ. Like the Major Title V facilities, the deferred facilities made payment through the Treasurer's Office for fiscal year 2018. However, these facilities completed a blank CES form as in previous years.

Beginning with FY 2018 (July 1, 2017 – June 31, 2018), deferred facilities received a completed CES form using facility emission data provided in SLEIS. Therefore, beginning with calendar year 2017 reporting period, deferred facilities provided emission data directly into SLEIS like the Major Title V facilities. However, the level of detail required for the deferred facilities is less than the majors and covered data and information consistent with current facility practices of estimating emissions and completing the CES form. The DAQ built the structure for each deferred facility in the SLEIS database, which includes facility specific data, contact information, etc. and an emission unit created only representing facility total emissions. Pollutants and their emissions were pre-entered in SLEIS by DAQ based on the facility's CES data submitted for the 2016 calendar year reporting period. In SLEIS, facilities verified the facility specific information, added or deleted pollutant codes as appropriate, and inputted the current year's total emission data for each pollutant. This process for Deferred Title V facilities will be used forgoing.

Section 4.3 – Title V Deferred Facilities includes additional directions for deferred facilities to enter data into SLEIS.

To minimize errors and misinterpretations ***Table A – HAPs Pollutant Codes*** and ***Table B – Individual HAPs within HAPs Group*** provides the CES HAP pollutant categories; VOC, Particulate, and Neither. These tables are used by the DAQ to total the HAP emissions for each HAP pollutant category and also should be consulted when facilities are internally totaling HAP emissions into the CES HAP categories. The CES requires the reporting of total VOC emissions (non-HAP VOCs plus HAP VOCs) and the total Filterable PM emissions (non-HAP filterable PM plus PM HAPs).

5.2 Estimating Emissions

Air emissions can be estimated by a variety of methods and the accuracy of these methods can vary. Therefore, when estimating emissions, the highest level of accuracy available should be used. From an accuracy hierarchical view, the preferred estimating methods from highest to lowest are listed below.

- Continuous Emission Monitoring Systems (CEMS)
- Stack/Performance Testing
- Material Balances
- Engineering Calculations/Process Simulations
- Emission Factors (e.g. AP-42)
- Best Guess

If using AP-42 emission factors to estimate particulate matter or sulfur dioxide emissions, then the percent ash and percent sulfur may be required to properly estimate these emissions. This is also true if a facility specific emission factor is entered into SLEIS using “Calculation Method – 28 – USEPA EF (pre-control)” under the “Process Emissions” button. Failure to use these percentages will result in SLEIS incorrectly calculating the emission rate.

If control devices are used, the device’s control efficiency must be determined for each pollutant emitted. The type of control device used, and the pollutant being controlled greatly influence the control efficiency. Therefore, the type of control device used must be effective for the pollutant being emitted. For example, a baghouse is efficient for filterable particulate matter emissions, but is not effective at controlling VOC emissions. In some cases, a series of different control devices may be required. For example, a chlorinated organic gas stream is burned in a process thermal oxidizer to reduce VOC emissions and a scrubber after the oxidizer is used to control the hydrogen chloride emissions generated during the combustion process.

Like estimating emissions, there are many methods used to determine a control device’s efficiency. The methods shown below are also hierarchical from the most accurate to the least.

- Stack/Performance Testing

- Material Balances
- Manufacturer/Vendor Guarantee
- Engineering Calculations/Process Simulations
- Emission Factors with Control Efficiency Included (e.g. AP-42)
- Best Guess

In addition to the traditional point source stack emissions, fugitive (non-point) and accidental emissions are also included in SLEIS. Fugitive emissions are typically calculated using fugitive component counts and appropriate fugitive emission factors. Using actual field measurements such as Leak Detection and Repair Program (LDAR) results in more refined fugitive emission factors. If good process material balance data is available, overall fugitive emission losses can be estimated.

Accidental emissions are normally estimated using known process variables at the time of the event such as pump rates, pressure differences, etc. Other methods could include recovering measured quantities of the released material or, in the rare case, back calculating quantities using ambient air models, odor threshold concentrations and corresponding distances from the event source.

5.3 Reportable Pollutants

The following table shows the major pollutant categories and the acceptable pollutant codes used in the air emissions inventory.

Pollutant	Code(s)
Criteria Pollutants and Precursors	
Particulate Matter	PM-FIL, PM10-FIL, PM25-FIL, and PM-CON
Sulfur Dioxide	SO2
Nitrogen Oxides	NOX
Carbon Monoxide	CO
Volatile Organic Compounds	VOC (reportable as a group)
Lead	7439921
Ammonia	NH3
Other Title V Reportable Pollutants	
Reduced Sulfur Compounds	TRS (reportable as a group)
Class I and II Compounds	CFC (reportable as a group)
Hazardous Air Pollutants	
187 Substances	Reported individually and/or in speciated groups. ***See Tables A and B***.

5.4 Criteria Pollutants

These pollutants bear the name "criteria" because the National Ambient Air Quality Standards (NAAQS) promulgated for these pollutants are based on USEPA's health and welfare "criteria" documents. Each pollutant is further discussed below.

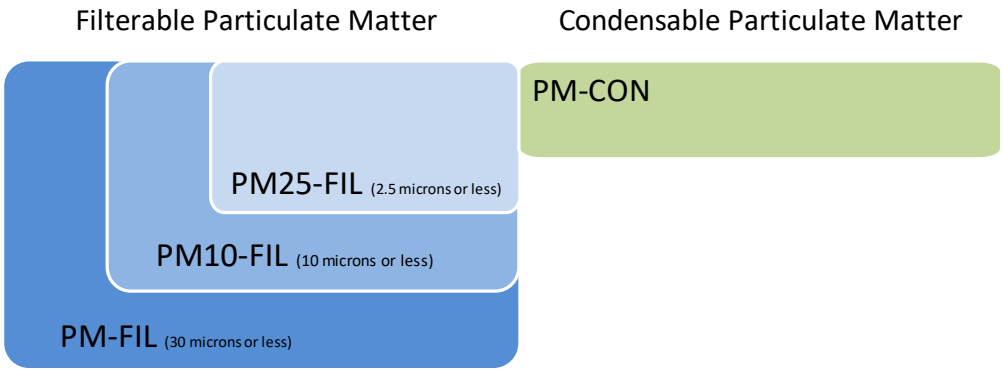
5.4.1 *Particulate Matter (PM)*

Particulate matter (PM) is identified in two different categories; filterable and condensable. The easiest way to visualize these categories is to imagine a stack testing sampling train where exhaust gas first passed through a filter material and then through a condenser. Material captured on the filter is called "filterable particulate matter". Any exhaust gas passing through the filter and captured by the condenser is called "condensable particulate matter".

There are three ***filterable*** PM particle size ranges used in the emission inventory; suspended particulate matter (30 microns or less), respirable particulate matter (10 microns or less), and fine particulate matter (2.5 microns or less). Smaller micron particles are a subset of the larger sized particles. Therefore, if reporting fine particulate matter PM25-FIL emissions, also report respirable particulate matter PM10-FIL and suspended PM-FIL emissions. Also, PM10-FIL and PM-FIL emission rates must be greater than or equal to the PM25-FIL emission rate. Likewise, if reporting PM10-FIL emissions, also report the process's PM-FIL emissions. Again, the PM-FIL emission rate must be greater than or equal to the PM10-FIL emission rate. These particulate fractions are not additive ***(PM25-FIL + PM10-FIL ≠ PM-FIL)***.

Condensable PM (PM-CON) is typically present as a gas in stacks operating at an elevated temperature and condenses into liquid or solid particles smaller than 1 micron in diameter when cooled to near ambient conditions at the stack's exit. PM-CON may be present any time the stack's temperature is greater than the ambient temperature, but most notably in stacks from combustion processes. Except for flue gas desulfurization (FGD), most air pollution control devices designed to control particulates do not control condensable particulate matter emissions. Thus, condensable PM emissions can easily out-weigh or be greater than the filterable particulate matter emissions at the stack's exit. PM-CON emissions must be reported when emitted.

A presentation entitled "Filterable and Condensable PM" located on the DAQ's Emissions Inventory webpage further discusses PM emissions. The diagram below illustrates the various PM types and their relationship with each other.



Only the filterable PM and condensable PM emissions codes shown in the table below are acceptable. Unacceptable PM pollutant codes have been removed from the 2014 reporting year SLEIS inventory submittals and revised to the acceptable codes. These unacceptable codes will not appear in future reporting year rollouts and are not available for selection in the SLEIS database.

Only the filterable PM and condensable PM emissions codes shown in the below table are acceptable. Where not provided by the facility, the DAQ has made condensable PM emission estimates.

Acceptable Particulate Matter Codes:

Code	Represents
PM-FIL	PM_{30} Filterable Emissions (< 30 micron)
PM10-FIL	PM_{10} Filterable Emissions (< 10 micron)
PM25-FIL	$PM_{2.5}$ Filterable Emissions (< 2.5 micron)
PM-CON	Condensable Particulate Emissions (no size distinction)

In the past, the DAQ has seen inconsistent use of emission factors and wide-spread problems with PM reporting. These inconsistencies weaken the data's reliability. Additionally, for PM-CON where data has not been provided by the facility, the USEPA has made their own condensable estimates and used those in their emission evaluations for modeling, risk assessment, and ultimately rule-making. Therefore, the DAQ is requesting continued special attention to PM emissions reporting. This is especially true for facilities having combustion sources, primary metals production processes, or secondary metals production processes where PM-CON emissions are expected to occur.

When reporting PM-CON emissions, the more reliable estimating methods such as stack test data or vendor control device design guarantees are better than using AP-42 emission factors. If PM-CON stack test data has been collected using USEPA Reference Method 202 (revised 12/1/2010), using those measured rates for creating source-specific PM-CON

emission factors is preferred. The USEPA's procedures for converting stack test data to emission factors are located on their webpage at https://www3.epa.gov/ttn/chief/efpac/procedures/procedures81213.pdf.

If not provided by the facility in the 2014 reporting year inventory, the DAQ made PM-CON and PM filterable fraction emission estimates using the USEPA calculation methods for each SCC. It is far better for facility estimates to be provided than it is for the USEPA or the DAQ to make them. ***Table E – Webpage and Email Summary List*** contains a link to the DAQ's PM Calculator Tools (based on USEPA's PM Calculator Tool) and USEPA's AP-42 emission factors which can be used to estimate PM-CON and PM fraction emissions. A combination of various estimation methods, such as AP-42 and the PM Calculator, may be needed to estimate all PM filterable factions and condensable emissions when site-specific stack test data is not available.

Additional PM guidance is available on the DAQ's Emissions Inventory web page. The document entitled "Emissions Factors for Condensable Particulate Matter Emissions from Electric Generating Units" was prepared by the DAQ's regional planning organization, Mid-Atlantic Regional Air Management Association (MARAMA), to provide better PM-CON emission factors. Although it was intended to provide emission factors for PM-CON emitted from electric generating units, these factors correspond to industrial boiler factors in AP-42 and may be used for industrial boiler emission estimates. A copy of the MARAMA EGU emission factors are summarized in the table below.

Summary of Condensable Emissions Factors by SCC (6-digit)		
SCC	**SCC Description**	**Average Emissions Factor (lb/MMBtu)**
1-01-001	Boiler / EGU / Anthracite Coal	0.0084
1-01-002 – all tests	Boiler / EGU /Bituminous/Subbituminous Coal	0.022
1-01-002 (purged only)	Boiler / EGU /Bituminous/Subbituminous Coal	0.013
1-01-003 – all tests	Boiler / EGU / Lignite	0.039
1-01-005 – all tests	Boiler / EGU / Fuel Oil	0.014
1-01-006 – all tests	Boiler / EGU / Natural Gas	0.00249
1-01-008 – all tests	Boiler / EGU / Petroleum Coke	0.05
2-01-001– all tests	Internal Combustion Engine / EGU/Fuel Oil	0.013
2-01-001 (purged only)	Internal Combustion Engine / EGU/Fuel Oil	0.010
2-01-002 – all tests	Internal Combustion Engine / EGU/Natural Gas	0.005
2-01-002 (purged only)	Internal Combustion Engine / EGU/Natural Gas	0.0015

To illustrate the emission calculations for different types of PM, example calculations are provided below using the USEPA AP-42 emission factors.

Example PM Calculation:

Basis:

A large industrial dry bottom wall-fired pulverized coal boiler using an electrostatic precipitator for PM control burns bituminous coal. The boiler burns 30,000 tons of coal containing 2% sulfur and 11% ash. Particulate matter emissions are estimated using AP-42, Tables 1.1-5 and 1.1-6.

PM25-FIL Calculation:

The AP-42 controlled PM25-FIL emission factor using an electrostatic precipitator is:

= 0.024A (lb per ton of coal burned)

- Where A is the coal's ash weight percent as fired.

PM25-FIL emission rate is calculated as follows:

= 0.024(11%) x 30,000 tons/yr ÷ 2,000 lb/ton = **3.96 tons** PM25-FIL emitted

Report this PM25-FIL value in SLEIS.

PM10-FIL Calculation:

The AP-42 controlled PM10-FIL emission factor using an electrostatic precipitator is:

= 0.054A (lb per ton of coal burned)

- Where A is the coal's ash weight percent as fired.

PM10-FIL emission rate is calculated as follows:

= 0.054(11%) x 30,000 tons/yr ÷ 2,000 lb/ton = **8.91 tons** PM10-FIL emitted

Report this PM10-FIL value in SLEIS.

PM-FIL Calculation:

The AP-42 controlled PM-FIL emission factor using an electrostatic precipitator is:

= 0.08A (lb per ton of coal burned)

- Where A is the coal's ash weight percent as fired.

PM-FIL emission rate is calculated as follows:

= 0.08(11%) x 30,000 tons/yr ÷ 2,000 lb/ton = **13.2 tons** PM-FIL emitted

Report this PM-FIL value in SLEIS.

PM-CON Calculation:

The AP-42 PM-CON emission factor without FGD controls is:

= 0.1S - 0.03 (lb per MMBtu of coal burned)

- Where S is the coal's sulfur weight percent as fired. Not ash as previously used.
- Per AP-42 note e, to convert lb/ton multiply by 26 MMBtu/ton.
- Outside of SOx control devices, most air pollution control devices have no effect on PM-CON emissions.

PM-CON emission rate is calculated as follows:

= (0.1(2%) - 0.03) x 26 MMBtu/ton x 30,000 tons/yr ÷ 2,000 lb/ton

= **66.3 tons** PM-CON emitted

Report this PM-CON value in SLEIS.

SLEIS 1.6 contains a new business rule validator. This rule enforces PM species checks to ensure PM emissions submitted to the USEPA's EIS will pass USEPA's validation process. For example, PM2.5-FIL emissions cannot be greater than PM10-FIL emissions for a single process emission source. Historically, this type of error would have passed SLEIS's validation process, but would have failed the USEPA's process requiring correction to be made to the facility submitted data.

5.4.2 *Ozone Precursors*

Ozone is a criteria pollutant; however, ozone is not reported in SLEIS as a separate pollutant. Instead, the ozone precursor pollutants CO, NOX, and VOC are reported. VOCs are often considered as any organic compound. Generally, this is true; however, this is not a completely accurate definition. A complete VOC definition is available at 40 CFR 51.100(s), which identifies compounds that are not VOCs. When reporting VOC total emissions, be sure not to include non-VOC compounds. Non-VOC and non-HAP pollutant

codes previously provided in SLEIS have been retired from SLEIS and removed from the 2014 reporting year facility submittals. This change is reflected in the post 2015 inventory rollouts. Additional discussions concerning the reporting of VOC compounds are included in Section ***5.5 – Hazardous Air Pollutants (HAPs).***

5.4.3 *LEAD COMPOUNDS*

Lead has the unique distinction being both a criteria pollutant and a hazardous air pollutant (HAP). Since many HAP metals no longer require speciation, only report the compound's lead ion instead of the entire lead compound. For example, if lead oxide (PbO) is emitted, only report the lead emissions in the compound as lead (pollutant code 7439921). Below is an example calculation to determine the lead only emissions. This calculation method can also be used for other metal compounds.

Example Lead Calculation:

Basis:

A coal-fired boiler emits 500 lb/yr lead monoxide (PbO). Lead monoxide has a molecular weight (MW) of 223 lb/lbmole. Lead's (Pb) MW is 207 lb/lbmole and oxygen's (O) MW is 16 lb/lbmole.

Lead Calculation:

Determine the percent lead in lead monoxide:

Percent lead = (207 lb Pb/lbmole ÷ 223 lb PbO/lbmole) x 100

= 92.8% Pb

Determine lead emissions:

Lead emissions = 500 lb PbO x 92.8% Pb ÷ 100

= 464 lbs. lead

= 464 lbs. lead ÷ 2,000 lbs./ton

= **0.23 tons** lead (pollutant code 7439921)

Report this lead value in SLEIS.

If the lead compound is also classified as VOC or particulate matter, then the entire lead compound's emissions would also be reported in the VOC or particulate matter total emissions. The quality assurance evaluations conducted for lead, VOC, and particulate matter are handled separately; therefore, double counting of emissions does not occur.

5.4.4 *AMMONIA*

Ammonia (NH3) is a fine particulate matter ($PM_{2.5}$) precursor and is used in a variety of industries. Historically, ammonia has been largely underemphasized as a pollutant. This is mainly because it is not defined as a VOC. However, with the USEPA's increased emphasis on $PM_{2.5}$ emissions and designation of $PM_{2.5}$ non-attainment areas, states are requiring ammonia emissions in annual air emissions inventories to better address $PM_{2.5}$ issues and to develop appropriate State Implementation Plans (SIP). Therefore, ammonia must be reported in the SLEIS inventory.

5.5 HAZARDOUS AIR POLLUTANTS (HAPS)

The Clean Air Act contains a specific list of hazardous air pollutants (HAPs) and specifies several HAPs "groups" that often include large numbers (thousands) of individual compounds. Therefore, the DAQ tables in this SLEIS reporting guidance document cannot be all inclusive of each group's compounds. For metal compounds, the HAPs groups also include the unreacted or elemental metal itself (e.g. lead metal).

Currently, the USEPA defines 187 compounds as HAPs under section 112(b) of the 1990 Clean Air Act Amendments. A detailed HAPs list is provided below in ***Tables A – B***. These tables contain the individual and group pollutant codes used in SLEIS**.** Methyl ethyl ketone (MEK) and caprolactam are no longer considered HAPs, but continue to be regulated as VOCs. Therefore, these two compounds would be included in the SLEIS VOC total emissions, but not as separate pollutants.

Facilities are required to submit information on all HAPs emitted. Some HAPs groups require speciation (reporting of individual HAP compounds within the groups). If the facility is unable to provide speciated HAPs data, USEPA will speciate the data themselves using default speciation profiles derived from a wide number of sources and estimating methods.

A HAPs group pollutant code represents the total emissions from all the individual HAP compounds within that group. If a pollutant within a HAPs group does not have a specific pollutant code in SLEIS, the pollutant's emission rate must still be aggregated and reported with all the other pollutants in the HAPs group. For example, emissions of a specific glycol ether pollutant code not provided in SLEIS would be included in the glycol ethers group pollutant code 171.

For most HAPs groups, do not include in SLEIS both the aggregated HAPs group emissions and the speciated compound's emission rate in the same process. More information on specific groups is discussed below in later sections.

5.5.1 *VOC or Particulate Matter HAPs*

Report total VOC and PM emissions, which includes their individual HAP constituents. Individual HAP emissions are also reported in SLEIS.

Many HAP compound emissions are also reportable as VOC (e.g. methanol) or particulate matter (e.g. HCl). Emissions of these compounds must be reported both as an individual HAP and included in the VOC or particulate matter total emissions. Conversely, some HAPs are not defined as either a VOC or particulate matter (e.g. chlorine). Two examples are provided below to explain these concepts.

HAP Example 1:

A process emits 10 tons of benzene (which is both a VOC and a HAP) and 10 tons of ethanol (which is a VOC, but is not a HAP). Emissions reported in SLEIS are 10 tons of benzene (pollutant code 71432) and 20 tons of VOC (pollutant code VOC). Although benzene is reported as an individual HAP, it must also be reported in the VOC total emissions. Ethanol as an individual pollutant is not specifically reported in SLEIS.

Non-HAP VOCs pollutant codes in SLEIS, such as ethanol in the above example, are not reported separately and are only reported as part of the larger VOC category. Pollutants such as these have been removed from SLEIS and the pollutant codes are no longer available. Submittal of these types of pollutants to the USEPA are not required and create validation errors when uploaded to the USEPA.

HAP Example 2:

A process emits 10 tons of methylene chloride (which is a HAP, but not a VOC), 10 tons of cellosolve and 10 tons of methyl cellosolve (which are both HAPs in the “glycol ethers” group and VOCs). Emissions reported in SLEIS are 10 tons of methylene chloride (pollutant code 75092), 20 tons of glycol ethers (pollutant code 171), and 20 tons of VOC (pollutant code VOC).

Since the DAQ is currently not requiring HAPs in the “glycol ethers” group to be speciated, cellosolve and methyl cellosolve are not reported as individual chemicals. For a list of individual “glycol ether” pollutant codes, see ***Table B – Individual HAPs within HAPs Group***.

5.6 METAL AND OTHER COMPOUND GROUPS

With very few exceptions (e.g. chromium and nickel), the USEPA does not want the HAP metal compounds identified; they only want the emissions based on the weight of the HAP metal ion.

For the HAP metals group, the USEPA informed states the data they need is the metal ion emission and not the metal compound total emissions. With very few exceptions (e.g. chromium and nickel), the USEPA does not want the HAP metal compounds identified; they only want the emissions based on the weight of the HAP metal ion in the metal compound. This approach is consistent with USEPA's modeling and risk calculations. Also, the intent is to simplify emission calculations, because in many cases stack test analysis only provides data for the ion instead of the entire compound.

Thus, extraneous HAP metal compound pollutant codes have been removed from SLEIS. Therefore, calculate the metal ion emissions instead of the individual metal compounds emissions for antimony, arsenic, beryllium, cadmium, cobalt, lead, manganese, mercury, and selenium. Exceptions to this rule are chromium and nickel compounds, which are further discussed below.

In the unusual circumstance that a HAP metal is part of an organometallic compound not excluded from the definition of VOC in 40 CFR 51.100(s), calculate the emissions using the compound's entire weight and include these emissions in the process's VOC total emissions. Likewise, if the HAP metal is also particulate matter, these calculated emissions must be included in the process's total particulate matter emissions. Also, calculate the metal ion emission using only the weight of metal ion being reported and report these emissions with the appropriate HAP metal pollutant code. An example calculation is provided in Section ***5.4.3 – Lead Compounds*** above. In addition, a conversion table used to estimate the metal ion fraction of a metal compound can be found in ***Table D – Metal Ion Conversion***.

5.6.1 *CHROMIUM COMPOUNDS*

As shown in ***Table B – Individual HAPs within HAPs Group*** chromium has five possible pollutant codes. Pick the pollutant code(s) best describing the chromium emission being reported. For risk analysis purposes, it is most important to determine if hexavalent chromium is being emitted. The appropriate pollutant codes for hexavalent chromium are chromic acid (7738945), chromium trioxide (1333820), or the chromium VI ion (18540299). Calculate and report as many of these chromium emission codes as necessary. If the chromium being reported is not hexavalent chromium, report it as trivalent chromium III ion (16065831).

In lieu of reporting trivalent and hexavalent chromium ions separately, another option is to combine them and report the total as chromium ion (7440473) with an unspecified valence state. If choosing this option, include all chromium ion emissions in the 7440473 total and do not report any other chromium emission codes from the process.

5.6.2 *NICKEL COMPOUNDS*

For nickel compounds, report emissions using the appropriate pollutant code for nickel oxide (1313991), nickel refinery dust (604), and nickel subsulfide (12035722). If reporting these compounds, report the emissions calculated using the compound's total weight. For any other nickel compounds, only calculate the nickel ion emission and report it as nickel (7440020). Calculate and report as many of these nickel emission codes as necessary for each process.

5.6.3 *CYANIDE COMPOUNDS (NITRILES)*

Although not strictly a metal ion, cyanide compound emissions are calculated similarly. Unless the cyanide compound is hydrogen cyanide, calculate and report only the cyanide ion (57125) emissions. If the emissions are hydrogen cyanide, calculate and report hydrogen cyanide (74908) emissions using the compound's total weight. Cyanide compounds could be either a VOC or particulate matter. As a matter of practice, do not include cyanide compounds in the total VOC or total particulate emissions. For annual CES reporting purposes, these emissions are included in the HAP – Neither category.

5.6.4 *COKE OVEN EMISSIONS*

Under the coke oven group, the USEPA no longer uses pollutant code 141 for benzene soluble organics or pollutant code 142 for methylene chloride soluble organics. Report these pollutants using pollutant code 140 for coke oven emissions. Coal tar pitch volatile emissions are still reported as pollutant code 8007452. More information on coal tar and extractable organic matter is further discussed below regarding emission reporting for POM/PAHs (polycyclic organic matter / polycyclic aromatic hydrocarbons).

5.6.5 *GLYCOL ETHERS*

The glycol ethers compound group (pollutant code 171) is enormous, containing approximately 4,500 different compounds. However, only a few are commonly used in SLEIS. These compounds are not expected to pose the health impacts that are associated with other HAP compound groups; therefore, the DAQ is currently not requiring specific pollutant emissions within the glycol ether compound group to be speciated. However, if a facility wishes to report individual compounds, it may do so assuming an appropriate pollutant code is available in SLEIS. See ***Table B – Individual HAPs within HAPs Groups*** below for a list of available glycol ether pollutant codes.

On November 29, 2004, the USEPA deleted ethylene glycol mono butyl ether (CAS Number 111-76-2) from the list of hazardous air pollutants. Although ethylene glycol mono butyl ether is defined as a glycol ether, do not include this compound's emissions in the

glycol ether group's total emissions. However, like all other glycol ethers, ethylene glycol mono butyl ether is a VOC and must be included in the process's VOC total emissions.

5.7 Single or Aggregate Reporting

Some HAPs can be reported either as an individual compound or as the aggregate HAPs group. When reporting one of the eight HAPs groups listed below, use either the HAPs group's pollutant codes or the individual HAP pollutant code associated with that HAPs group, but not a combination of both for the same process. Compounds in the groups discussed below may also be defined as a VOC or particulate matter. Therefore, if applicable, also report both the HAP and include the compound's emissions in the VOC or particulate matter total emission as appropriate.

When reporting one of the eight HAPs groups listed below, use either the HAPs group's pollutant codes or the individual HAP pollutant code associated with that HAPs group, but not a combination of both for the same process.

Cresols:

The individual pollutants in the cresols mixed isomers group are o-cresol (95487), m-cresol (108394), and p-cresol (106445). Report either the process's individual cresol emissions or report emissions using the cresols mixed isomers group's pollutant code 1319773. The cresol mixed isomers group includes any or all cresol isomers, cresol isomer mixtures, and/or cresylic acid. Since cresols are also VOCs, also include cresol emissions in the VOC total emissions.

Dioxins/Furans:

The acceptable dioxins/furans group pollutant code is 628 (dioxins/furans as 2,3,7,8-TCDD TEQs (WHO2005)). Use the group pollutant code for reporting aggregated dioxins/furans emissions or the dioxins/furans group's individual pollutant codes. These pollutant emissions must also be included in the VOC total emissions.

Fine Mineral Fibers:

For fine mineral fibers having an average diameter less than or equal to one micron, use either the mineral fibers group's pollutant code 383 or report emissions using the specific pollutant codes for man-made ceramic fibers (608), man-made glasswool fibers (613), man-made slagwool fibers (616), and man-made rockwool fibers (617). These pollutants are also defined as particulate matter; therefore, also include these emissions in the appropriate particulate matter total emissions.

Glycol Ethers:

For glycol ethers, use the glycol ethers group pollutant code 171 or one of the listed speciated pollutant codes. See the earlier discussion in Section **5.6.5 – Glycol Ethers** regarding glycol ethers and the November 29, 2004 deletion of ethylene glycol mono butyl ether (CAS Number 111-76-2)

from the list of hazardous air pollutants. These emissions must also be included in the VOC total emissions.

PCBs:

If reporting PCBs, use either the catch-all pollutant code 1336363 for polychlorinated biphenyls or one of the 10 acceptable PCB emission codes. These emissions are also included in the VOC total emissions.

POM/PAHs:

For POM/PAHs (polycyclic organic matter/polycyclic aromatic hydrocarbons), use the appropriate group pollutant code for "PAH, total", "PAH/POM - Unspecified", "coal tar" and "EOM (extractable organic matter)" or use one of the 50 specific PAH pollutant codes. Please note 7-PAH has been retired. These pollutants are also defined as VOC and must be included in the VOC total emissions.

Radionuclides:

For radionuclides, use either the radionuclides (mass - including radon) pollutant code 605A or one of the 10 acceptable radionuclide pollutant codes for any atom that spontaneously undergoes radioactive decay.

Xylenes:

Either report the process's individual pollutants o-xylene (95476), m-xylene (108383) and p-xylene (106423) or report the aggregated xylenes group emissions using pollutant code 1330207. These pollutants are also defined as VOC and must be included in the VOC total emissions.

6 SUPPORTING TABLES

The following tables are provided to assist with the identification of the HAP pollutant codes used in SLEIS in addition to summarizing the webpages and email addresses used in this document.

Table A: includes the USEPA's first 170 listed HAPs and their associated CAS numbers, which is the same as the pollutant code. Also, a "Certified Emissions Statement (CES) HAP Category" has been added showing whether the HAP is listed as a Particulate, VOC, or Neither on the annual Certified Emissions Statement Invoice.

Table B: includes individual pollutant codes for the HAPs groups. The pollutant codes are consistent with the USEPA's National Emissions Inventory (NEI) database. Also, a "Certified Emissions Statement (CES) HAP Category" has been added showing whether the HAP is listed as a Particulate, VOC, or Neither on the annual Certified Emissions Statement Invoice.

Table C: is the current USEPA approved control device code list.

Table D: provides for common metal compound pollutants the metal ion fraction used in calculating the metal ion emissions.

Table E: is a summary list of the webpages and email addresses used in this guidance document.

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
75070	Acetaldehyde	VOC
60355	Acetamide	VOC
75058	Acetonitrile	VOC
98862	Acetophenone	VOC
53963	2-Acetylaminofluorene	VOC
107028	Acrolein	VOC
79061	Acrylamide	VOC
79107	Acrylic Acid	VOC
107131	Acrylonitrile	VOC
107051	Allyl Chloride	VOC
92671	4-Aminobiphenyl	VOC
62533	Aniline	VOC
90040	2-Anisidine (o-Anisidine)	VOC
1332214	Asbestos	Particulate
71432	Benzene (including benzene from gasoline)	VOC
92875	Benzidine	VOC
98077	Benzotrichloride	VOC
100447	Benzyl Chloride	VOC
92524	Biphenyl	VOC
117817	bis(2-Ethylhexyl) Phthalate (DEHP)	VOC
542881	bis(Chloromethyl) Ether	VOC
75252	Bromoform	VOC
106990	1,3-Butadiene	VOC
156627	Calcium Cyanamide	VOC
133062	Captan	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
63252	Carbaryl	VOC
75150	Carbon Disulfide	VOC
56235	Carbon Tetrachloride	VOC
463581	Carbonyl Sulfide	VOC
120809	Catechol	VOC
133904	3-Amino-2,5-Dichlorobenzoic Acid (Chloramben)	VOC
57749	Chlordane	VOC
7782505	Chlorine	Neither
79118	Chloroacetic Acid	VOC
532274	2-Chloroacetophenone	VOC
108907	Chlorobenzene	VOC
510156	Chlorobenzilate	VOC
67663	Chloroform	VOC
107302	Chloromethyl Methyl Ether	VOC
126998	Chloroprene	VOC
1319773	Cresols (mixed isomers)	VOC
95487	o-Cresol	VOC
108394	m-Cresol	VOC
106445	p-Cresol	VOC
98828	Cumene	VOC
94757	2,4-D (2,4-Dichlorophenoxyacetic Acid)(including salts and esters)	VOC
72559	DDE (1,1-Dichloro-2,2-bis(p-Chlorophenyl) Ethylene)	VOC
334883	Diazomethane	VOC
132649	Dibenzofuran	VOC
96128	1,2-Dibromo -3-Chloropropane	VOC
84742	Dibutyl Phthalate	VOC
106467	1,4-Dichlorobenzene	VOC
91941	3,3'-Dichlorobenzidine	VOC
111444	Dichloroethyl Ether (bis[2-Chloroethyl]Ether)	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
542756	1,3-Dichloropropene	VOC
62737	Dichlorvos	VOC
111422	Diethanolamine	VOC
121697	N,N-Dimethylaniline	VOC
64675	Diethyl Sulfate	VOC
119904	3,3'-Dimethoxybenzidine	VOC
60117	4-Dimethylaminoazobenzene	VOC
119937	3,3'-Dimethylbenzidine	VOC
79447	Dimethylcarbamoyl Chloride	VOC
68122	N,N-Dimethylformamide	VOC
57147	1,1-Dimethylhydrazine	VOC
131113	Dimethyl Phthalate	VOC
77781	Dimethyl Sulfate	VOC
534521	4,6-Dinitro-o-Cresol (including salts)	VOC
51285	2,4-Dinitrophenol	VOC
121142	2,4-Dinitrotoluene	VOC
123911	1,4-Dioxane	VOC
122667	1,2-Diphenylhydrazine	VOC
106898	Epichlorohydrin (1-Chloro-2,3-Epoxypropane)	VOC
106887	1,2-Epoxybutane	VOC
140885	Ethyl Acrylate	VOC
100414	Ethylbenzene	VOC
51796	Ethyl Carbamate (Urethane)	VOC
75003	Ethyl Chloride	VOC
106934	Ethylene Dibromide (Dibromoethane)	VOC
107062	Ethylene Dichloride (1,2-Dichloroethane)	VOC
107211	Ethylene Glycol	VOC
151564	Ethyleneimine (Aziridine)	VOC
75218	Ethylene Oxide	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
96457	Ethylene Thiourea	VOC
75343	Ethylidene Dichloride (1,1-Dichloroethane)	VOC
50000	Formaldehyde	VOC
76448	Heptachlor	VOC
118741	Hexachlorobenzene	VOC
87683	Hexachloro-1,3-Butadiene	VOC
77474	Hexachlorocyclopentadiene	VOC
67721	Hexachloroethane	VOC
822060	Hexamethylene-1,6-Diisocyanate	VOC
680319	Hexamethylphosphoramide	VOC
110543	Hexane	VOC
302012	Hydrazine	Neither
7647010	Hydrochloric Acid (Hydrogen Chloride)	Neither
7664393	Hydrogen Fluoride (Hydrofluoric Acid)	Neither
123319	Hydroquinone	VOC
78591	Isophorone	VOC
58899	1,2,3,4,5,6-Hexachlorocyclohexane (all stereo isomers, including Lindane)	VOC
108316	Maleic Anhydride	VOC
67561	Methanol	VOC
72435	Methoxychlor	VOC
74839	Methyl Bromide (Bromomethane)	VOC
74873	Methyl Chloride (Chloromethane)	VOC
71556	Methyl Chloroform (1,1,1-Trichloroethane)	Neither
60344	Methylhydrazine	VOC
74884	Methyl Iodide (Iodomethane)	VOC
108101	Methyl Isobutyl Ketone (Hexone)	VOC
624839	Methyl Isocyanate	VOC
80626	Methyl Methacrylate	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
1634044	Methyl tert-Butyl Ether	VOC
101144	4,4'-Methylenebis(2-Chloroaniline)	VOC
75092	Methylene Chloride (Dichloromethane)	Neither
101688	4,4'-Methylenediphenyl Diisocyanate (MDI)	VOC
101779	4,4'-Methylenedianiline	VOC
91203	Naphthalene	VOC
98953	Nitrobenzene	VOC
92933	4-Nitrobiphenyl	VOC
100027	4-Nitrophenol	VOC
79469	2-Nitropropane	VOC
684935	N-Nitroso-N-Methylurea	VOC
62759	N-Nitrosodimethylamine	VOC
59892	N-Nitrosomorpholine	VOC
56382	Parathion	VOC
82688	Pentachloronitrobenzene (Quintobenzene)	VOC
87865	Pentachlorophenol	VOC
108952	Phenol	VOC
106503	p-Phenylenediamine	VOC
75445	Phosgene	VOC
7803512	Phosphine	Neither
7723140	Phosphorus (yellow or white)	Particulate
85449	Phthalic Anhydride	VOC
1336363	Polychlorinated Biphenyls (Aroclors)	VOC
1120714	1,3-Propane Sultone	VOC
57578	beta-Propiolactone	VOC
123386	Propionaldehyde	VOC
114261	Propoxur (Baygon)	VOC
78875	Propylene Dichloride (1,2-Dichloropropane)	VOC
75569	Propylene Oxide	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
75558	1,2-Propylenimine (2-Methylaziridine)	VOC
91225	Quinoline	VOC
106514	Quinone (p-Benzoquinone)	VOC
100425	Styrene	VOC
96093	Styrene Oxide	VOC
1746016	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	VOC
79345	1,1,2,2-Tetrachloroethane	VOC
127184	Tetrachloroethylene (Perchloroethylene)	Neither
7550450	Titanium Tetrachloride	Particulate
108883	Toluene	VOC
95807	2,4-Toluenediamine	VOC
584849	2,4-Toluene Diisocyanate	VOC
95534	o-Toluidine	VOC
8001352	Toxaphene (Chlorinated Camphene)	VOC
120821	1,2,4-Trichlorobenzene	VOC
79005	1,1,2-Trichloroethane	VOC
79016	Trichloroethylene	VOC
95954	2,4,5-Trichlorophenol	VOC
88062	2,4,6-Trichlorophenol	VOC
121448	Triethylamine	VOC
1582098	Trifluralin	VOC
540841	2,2,4-Trimethylpentane	VOC
108054	Vinyl Acetate	VOC
593602	Vinyl Bromide	VOC
75014	Vinyl Chloride	VOC
75354	Vinylidene Chloride (1,1-Dichloroethylene)	VOC
1330207	Xylene (mixed isomers)	VOC
95476	o-Xylene	VOC
108383	m-Xylene	VOC

Table A – HAPs Pollutant Codes:

CAS/Pollutant Code	Pollutant	CES HAP Category
106423	p-Xylene	VOC

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
Antimony Compounds		
7440360	Antimony	Particulate
Arsenic Compounds (inorganic including arsine)		
7440382	Arsenic	Particulate
Beryllium Compounds		
7440417	Beryllium	Particulate
Cadmium Compounds		
7440439	Cadmium	Particulate
Chromium Compounds		
Trivalent and other		
7440473	Chromium	Particulate
16065831	Chromium III	Particulate
Hexavalent		
7738945	Chromic Acid	Particulate
1333820	Chromium Trioxide	Particulate
18540299	Chromium (VI)	Particulate
Cobalt Compounds		
7440484	Cobalt	Particulate
Coke Oven Emissions		
140	Coke Oven Emissions	VOC
Cyanide Compounds		
57125	Cyanide	Neither
74908	Hydrogen Cyanide	Neither

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
Glycol Ethers		
171	Glycol Ethers	VOC
110714	1,2-Dimethoxyethane	VOC
23436193	1-Isobutoxy-2-Propanol	VOC
120558	2,2'-Oxybisdibenzoate Ethanol	VOC
112254	2-(Hexyloxy) Ethanol	VOC
112072	2-Butoxyethyl Acetate	VOC
20706256	2-Propoxyethyl Acetate	VOC
112367	Bis(2-Ethoxyethyl) Ether	VOC
124174	Butyl Carbitol Acetate	VOC
112152	Carbitol Acetate	VOC
111159	Cellosolve Acetate	VOC
110805	Cellosolve Solvent	VOC
16672392	Di(Ethylene Glycol Monobutyl Ether) Phthalate	VOC
4206615	Diethylene Glycol Diglycidyl Ether	VOC
111966	Diethylene Glycol Dimethyl Ether	VOC
693210	Diethylene Glycol Dinitrate	VOC
764998	Diethylene Glycol Divinyl Ether	VOC
10143530	Diethylene Glycol Ethylvinyl Ether	VOC
1002671	Diethylene Glycol Ethyl Methyl Ether	VOC
10143541	Diethylene Glycol Mono-2-Cyanoethyl Ether	VOC
10143563	Diethylene Glycol-Mono-2-Methyl-Pentyl Ether	VOC
112345	Diethylene Glycol Monobutyl Ether	VOC
111900	Diethylene Glycol Monoethyl Ether	VOC
18912806	Diethylene Glycol Monoisobutyl Ether	VOC
111773	Diethylene Glycol Monomethyl Ether	VOC
929373	Diethylene Glycol Monovinyl Ether	VOC
3775857	Ethylene Glycol Bis(2,3-Epoxy-2-Methylpropyl)	VOC
7529273	Ethylene Glycol Diallyl Ether	VOC

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
629141	Ethylene Glycol Diethyl Ether	VOC
109864	Ethylene Glycol Methyl Ether	VOC
10137981	Ethylene Glycol Mono-2,6,8-Trimethyl-4-Nonyl Ether	VOC
10137969	Ethylene Glycol Mono-2-Methylpentyl Ether	VOC
662082	Ethylene Glycol Monobenzyl Ether	VOC
110496	Ethylene Glycol Monomethyl Ether Acetate	VOC
23495127	Ethylene Glycol Monophenyl Ether Propionate	VOC
764487	Ethylene Glycol Monovinyl Ether	VOC
7795917	Ethylene Glycol Mono-sec-Butyl Ether	VOC
67425	Ethylenebis(Oxyethylenenitrilo) Tetraacetic Acid	VOC
27310210	2-(2,4-Hexadienyloxy)ethanol	VOC
4439241	Isobutyl Cellosolve	VOC
111104	Methoxyethyl Oleate	VOC
112356	Methoxytriglycol	VOC
140056	Methyl Cellosolve Acetylricinoleate	VOC
3121617	Methyl Cellosolve Acrylate	VOC
112594	N-Hexyl Carbitol	VOC
122996	Phenyl Cellosolve	VOC
2807309	Propyl Cellosolve	VOC
10215335	Propylene Glycol Monobutyl Ether	VOC
1589497	Propylene Glycol Methyl Ether Acetate	VOC
112276	Triethylene Glycol	VOC
112492	Triethylene Glycol Dimethyl Ether	VOC
112505	Triethylene glycol monoethyl ether	VOC
143226	Triglycol Monobutyl Ether	VOC
Lead Compounds		
7439921	Lead	Particulate
Manganese Compounds		
7439965	Manganese	Particulate

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
Mercury Compounds		
7439976	Mercury	Particulate
Fine Mineral Fibers		
383	Fine Mineral Fibers	Particulate
608	Ceramic Fibers (man-made)	Particulate
613	Glasswool (man-made fibers)	Particulate
617	Rockwool (man-made fibers)	Particulate
616	Slagwool (man-made fibers)	Particulate
Nickel Compounds		
7440020	Nickel	Particulate
1313991	Nickel Oxide	Particulate
604	Nickel Refinery Dust	Particulate
12035722	Nickel Subsulfide	Particulate
Polycyclic Organic Matter		
15-PAH		
250	PAH/POM unspecified	VOC
83329	Acenaphthene	VOC
208968	Acenaphthylene	VOC
120127	Anthracene	VOC
191242	Benzo[g,h,i]Perylene	VOC
206440	Fluoranthene	VOC
86737	Fluorene	VOC
85018	Phenanthrene	VOC
129000	Pyrene	VOC
8007452	Coal Tar	VOC
194592	3,4,5,6-Dibenzcarbazol	VOC
226368	1,2,5,6-Dibenzacridine	VOC
57835924	4-Nitropyrene	VOC
602879	5-Nitroacenaphthene	VOC

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
86748	Carbazole	VOC
7-PAH		
56553	Benz[a]Anthracene	VOC
50328	Benzo[a]Pyrene	VOC
205992	Benzo[b]Fluoranthene	VOC
207089	Benzo[k]Fluoranthene	VOC
218019	Chrysene	VOC
53703	Dibenzo[a,h]Anthracene	VOC
193395	Indeno[1,2,3-c,d]Pyrene	VOC
56832736	Benzofluoranthenes	VOC
130498292	PAH, Total	VOC
Non-15 PAH		
779022	9-Methylanthracene	VOC
26914181	Methyl Anthracene	VOC
2422799	12-Methylbenz(a)Anthracene	VOC
57976	7,12-Dimethylbenz[a]Anthracene	VOC
56495	3-Methylcholanthrene	VOC
203338	Benzo(a)Fluoranthrene	VOC
195197	Benzo(a)Phenanthrene	VOC
192972	Benzo[e]Pyrene	VOC
203123	Benzo(g,h,i)Fluoranthene	VOC
205823	B[j]Fluoranthen	VOC
189559	Dibenzo[a,i]Pyrene	VOC
65357699	Methylbenzopyrene	VOC
3697243	5-Methylchrysene	VOC
7496028	6-Nitrochrysene	VOC
41637905	Methylchrysene	VOC
224420	Dibenzo[a,j]Acridine	VOC
192654	Dibenzo[a,e]Pyrene	VOC

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
189640	Dibenzo[a,h]Pyrene	VOC
191300	Dibenzo[a,l]Pyrene	VOC
607578	2-Nitrofluorene	VOC
90120	1-Methylnaphthalene	VOC
91587	2-Chloronaphthalene	VOC
91576	2-Methylnaphthalene	VOC
198550	Perylene	VOC
832699	1-Methyl-Phenanthrene	VOC
42397648	1,6-Dinitropyrene	VOC
42397659	1,8-Dinitropyrene	VOC
2381217	1-Methylpyrene	VOC
5522430	1-Nitropyrene	VOC
Radionuclides		
605A	Radionuclides (Mass - including Radon)	Neither
10043660	Iodine-131	Neither
7440611	Uranium	Neither
Selenium Compounds		
7782492	Selenium	Particulate
Dioxins/Furans as 2,3,7,8-TCDD TEQs - WHO2005		
628	Dioxins/Furans as 2,3,7,8-TCDD TEQs - WHO2005	VOC
35822469	1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	VOC
39227286	1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	VOC
57653857	1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	VOC
40321764	1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	VOC
1746016	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	VOC
67562394	1,2,3,4,6,7,8-Heptachlorodibenzofuran	VOC
55673897	1,2,3,4,7,8,9-Heptachlorodibenzofuran	VOC
70648269	1,2,3,4,7,8-Hexachlorodibenzofuran	VOC
57117449	1,2,3,6,7,8-Hexachlorodibenzofuran	VOC

Table B – Individual HAPs within HAPs Group:

Pollutant Code	Pollutant	CES HAP Category
72918219	1,2,3,7,8,9-Hexachlorodibenzofuran	VOC
57117416	1,2,3,7,8-Pentachlorodibenzofuran	VOC
60851345	2,3,4,6,7,8-Hexachlorodibenzofuran	VOC
57117314	2,3,4,7,8-Pentachlorodibenzofuran	VOC
51207319	2,3,7,8-Tetrachlorodibenzofuran	VOC
39001020	Octachlorodibenzofuran	VOC
3268879	Octachlorodibenzo-p-Dioxin	VOC
19408743	1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	VOC

Table C - Control Device Codes

Control Measure Code	Description
101	High-Efficiency Particulate Air Filter (HEPA)
102	Low Solvent Coatings
103	Powder Coatings
104	Waterborne Coatings
109	Catalytic Oxidizer
110	Vapor Recovery Unit
112	Afterburner
113	Rotoclone
119	Dry Scrubber
121	Cyclones (Multiple)
127	Fabric Filter / Baghouse
128	Electrostatic Precipitator - Dry (DESP)
132	Condenser
133	Incinerator
139	Selective Catalytic Reduction (SCR)
140	Selective Non-Catalytic Reduction (SNCR)
141	Wet Scrubber
146	Electrostatic Precipitator - Wet (WESP)
147	Increased Air/Fuel Ratio with Intercooling
149	Pre-Combustion Chamber
154	Screened Drums or Cages
157	Screen
19	Catalytic Afterburner
20	Catalytic Afterburner with Heat Exchanger
201	Knock Out Box
202	Spray Dryer Adsorber (SDA)
203	Catalytic Converter
204	Overfire Air
205	Low NOx Burner (LNB)

Table C - Control Device Codes

Control Measure Code	Description
206	Dry Sorbent Injection (DSI, other than ACI)
207	Activated Carbon Injection (ACI)
208	Freeboard Refrigeration Device
209	Gravity Collector
21	Direct Flame Afterburner
211	Mist Eliminator
212	Steam Injection
213	Water Injection
214	Low Nitrogen Content Fuel
215	Flue Gas Desulfurization (FGD)
217	Dust Suppression
218	Electrostatic Spraying
22	Direct Flame Afterburner with Heat Exchanger
23	Flaring
25	Staged combustion
26	Flue Gas Recirculation
29	Low Excess Air Firing
300	Devices Repeated in Series
301	Fuel reburning
302	Biofilter
303	Catalytic Additives
304	Enclosed Combustor
305	Diesel Particulate Filters (DPF)
306	Duct Sorbent Injection
307	Furnace Sorbent Injection
308	Wet Sorbent Injection
309	Leak Detection and Repair (LDAR) Program
31	Air Injection
310	Non-Selective Catalytic Reduction (NSCR)

Table C - Control Device Codes

Control Measure Code	Description
311	Other Pollution Prevention Technique
312	Oxidation Catalyst
313	Spray booth and Filter
314	Spray booth and Overspray Arrestor
315	Spray guns - High Volume, Low Pressure (HVLP)
316	Ultra-Low NOx Burners (ULNB)
317	Recuperative Thermal Oxidizer
318	Product Substitution
319	Regenerative Thermal Oxidizer
35	Magnesium Oxide Scrubbing
36	Dual Alkali Scrubbing
38	Ammonia Scrubbing
41	Dry Limestone Injection
42	Wet Limestone Injection
45	Sulfur Plant
46	Process Change
48	Adsorption - Activated Carbon or other
49	Liquid Filtration System
50	Packed-Gas Absorption Column
51	Tray-Type Gas Absorption Column
52	Spray Tower
54	Process Enclosed
56	Dynamic Separator (Dry)
57	Dynamic Separator (wet)
58	Mat or Panel Filter
59	Metal Fabric Filter Screen (Cotton Gins)
60	Process Gas Recovery
63	Gravel Bed Filter
64	Annular Ring Filter

Table C - Control Device Codes

Control Measure Code	Description
65	Catalytic Reduction
66	Molecular Sieve
67	Wet Lime Slurry Scrubbing
68	Alkaline Fly Ash Scrubbing
69	Sodium Carbonate Scrubbing
70	Sodium-Alkali Scrubbing
75	Cyclone / Centrifugal Collector
79	Dry Electrostatic Granular Filter (DEGF)
82	Ozonation
85	Wet Cyclonic Separator
86	Water Curtain
87	Nitrogen Blanket
88	Conservation Vent
89	Bottom Filling
93	Submerged Filling
95	White Paint
96	Vapor Lock Balance Recovery System
97	Secondary Seal on Floating Roof Tank
99	Other Control Device

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
78820	2-Methyl-Propanenitrile	0.377	57125	Cyanide
88	Alkylated Lead	1.000	7439921	Lead
7788989	Ammonium Chromate	0.342	18540299	Chromium (VI)
7789095	Ammonium Dichromate	0.413	18540299	Chromium (VI)
92	Antimony & Compounds	1.000	7440360	Antimony
1327339	Antimony Oxide	0.835	7440360	Antimony
7783702	Antimony Pentafluoride	0.562	7440360	Antimony
10025919	Antimony Trichloride	0.534	7440360	Antimony
1309644	Antimony Trioxide	0.835	7440360	Antimony
1345046	Antimony Trisulfide	0.717	7440360	Antimony
93	Arsenic & Compounds (Inorganic Including Arsine)	1.000	7440382	Arsenic
7778394	Arsenic Acid	0.528	7440382	Arsenic
1303282	Arsenic Pentoxide	0.652	7440382	Arsenic
1327533	Arsenic Trioxide	0.757	7440382	Arsenic
3141126	Arsenous Acid	0.357	7440382	Arsenic
7784421	Arsine	0.961	7440382	Arsenic
10294403	Barium Chromate	0.204	18540299	Chromium (VI)
140294	Benzyl Cyanide	0.222	57125	Cyanide
109	Beryllium & Compounds	1.000	7440417	Beryllium
7787475	Beryllium Chloride	0.113	7440417	Beryllium
7787497	Beryllium Fluoride	0.192	7440417	Beryllium
13597994	Beryllium Nitrate	0.067	7440417	Beryllium
1304569	Beryllium Oxide	0.360	7440417	Beryllium
13510491	Beryllium Sulfate	0.084	7440417	Beryllium
125	Cadmium & Compounds	1.000	7440439	Cadmium
543908	Cadmium acetate	0.483	7440439	Cadmium
7789426	Cadmium Bromide	0.413	7440439	Cadmium
10108642	Cadmium Chloride	0.613	7440439	Cadmium

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
7790809	Cadmium Iodide	0.307	7440439	Cadmium
10325947	Cadmium Nitrate	0.471	7440439	Cadmium
1306190	Cadmium Oxide	0.875	7440439	Cadmium
2223930	Cadmium Stearate	0.165	7440439	Cadmium
10124364	Cadmium Sulfate	0.534	7440439	Cadmium
1306236	Cadmium Sulfide	0.778	7440439	Cadmium
13765190	Calcium Chromate	0.329	18540299	Chromium (VI)
14307336	Chromic Acid (H2Cr2O7), Calcium Salt (1:1)	0.403	18540299	Chromium (VI)
7789120	Chromic Acid (H2Cr2O7), Disodium Salt, Dyhydrate	0.347	18540299	Chromium (VI)
14018952	Chromic Acid (H2Cr2O7), Zinc Salt (1:1)	0.367	18540299	Chromium (VI)
1308389	Chromic Oxide	0.684	16065831	Chromium III
10101538	Chromic Sulfate	0.261	16065831	Chromium III
13530682	Chromic Sulfuric Acid	0.477	18540299	Chromium (VI)
136	Chromium & Compounds	1.000	7440473	Chromium
10049055	Chromium (II) Chloride	0.423	16065831	Chromium III
10025737	Chromium (III) Chloride	0.328	16065831	Chromium III
10060125	Chromium Chloride, Hexahydrate	0.195	16065831	Chromium III
12018018	Chromium Dioxide	0.619	16065831	Chromium III
1308141	Chromium Hydroxide	0.505	16065831	Chromium III
12018198	Chromium Zinc Oxide	0.390	16065831	Chromium III
21679312	Chromium(III) Acetylacetonate	0.149	16065831	Chromium III
14977618	Chromyl Chloride	0.336	18540299	Chromium (VI)
7788967	Chromyl Fluoride	0.426	18540299	Chromium (VI)
139	Cobalt & Compounds	1.000	7440484	Cobalt
1345160	Cobalt Aluminate	0.333	7440484	Cobalt
7542098	Cobalt Carbonate	0.487	7440484	Cobalt
16842038	Cobalt Hydrocarbonyl	0.343	7440484	Cobalt
61789513	Cobalt Naphtha	0.188	7440484	Cobalt

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
1307966	Cobalt Oxide	0.787	7440484	Cobalt
1308061	Cobalt Oxide (II,III)	0.734	7440484	Cobalt
10124433	Cobalt Sulfate	0.375	7440484	Cobalt
1317426	Cobalt Sulfide	0.648	7440484	Cobalt
544923	Copper Cyanide	0.291	57125	Cyanide
144	Cyanide & Compounds	1.000	57125	Cyanide
200	Elemental Mercury	1.000	7439976	Mercury
201	Gaseous Divalent Mercury	1.000	7439976	Mercury
13967505	Gold (I) Potassium Cyanide	0.090	57125	Cyanide
37187647	Gold Cyanide	0.117	57125	Cyanide
13586828	Hexanoic Acid, 2-Ethyl-, Cobalt salt	0.171	7440484	Cobalt
136527	Hexanoic Acid, 2-Ethyl-, Cobalt(2+) Salt	0.171	7440484	Cobalt
7783075	Hydrogen Selenide	0.975	7782492	Selenium
195	Lead & Compounds	1.000	7439921	Lead
1317368	Lead (II) Oxide	0.928	7439921	Lead
1314416	Lead (II, IV) Oxide	0.907	7439921	Lead
301042	Lead Acetate	0.633	7439921	Lead
7784409	Lead Arsenate	0.593	7439921	Lead
7784409	Lead Arsenate	0.215	7440382	Arsenic
10031137	Lead Arsenite	0.490	7439921	Lead
10031137	Lead Arsenite	0.354	7440382	Arsenic
598630	Lead Carbonate	0.770	7439921	Lead
7758976	Lead Chromate	0.160	18540299	Chromium (VI)
7758976	Lead Chromate	0.637	7439921	Lead
18454121	Lead Chromate Oxide	0.095	18540299	Chromium (VI)
18454121	Lead Chromate Oxide	0.758	7439921	Lead
602	Lead Compounds (Inorganic)	1.000	7439921	Lead
603	Lead Compounds (Other Than Inorganic)	1.000	7439921	Lead

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
1309600	Lead Dioxide	0.866	7439921	Lead
13814965	Lead Fluoroborate	0.544	7439921	Lead
61790145	Lead Naphthenate	0.377	7439921	Lead
27253287	Lead Neodecanoate	0.377	7439921	Lead
10099748	Lead Nitrate	0.622	7439921	Lead
1335257	Lead Oxide	0.928	7439921	Lead
7446277	Lead Phosphate	0.507	7439921	Lead
7428480	Lead Stearate	0.422	7439921	Lead
1335326	Lead Subacetate	0.770	7439921	Lead
7446142	Lead Sulfate	0.679	7439921	Lead
12060003	Lead Titanate	0.764	7439921	Lead
12626812	Lead Titanate Zircon	0.572	7439921	Lead
14307358	Lithium Chromate	0.394	18540299	Chromium (VI)
198	Manganese & Compounds	1.000	7439965	Manganese
1313139	Manganese Dioxide	0.632	7439965	Manganese
1336932	Manganese Napthenate	0.138	7439965	Manganese
10377669	Manganese Nitrate	0.304	7439965	Manganese
7785877	Manganese Sulfate	0.359	7439965	Manganese
8030704	Manganese Tallate	0.104	7439965	Manganese
1317357	Manganese Tetroxide	0.720	7439965	Manganese
1317346	Manganese Trioxide	0.696	7439965	Manganese
12079651	Manganese, tricarbonyl (.eta.5-2,4-Cyclopentadien-1-yl)-	0.269	7439965	Manganese
7783166	Manganesehypophosphide	0.276	7439965	Manganese
7487947	Mercuric Chloride	0.739	7439976	Mercury
199	Mercury & Compounds	1.000	7439976	Mercury
22967926	Mercury (Organic)	0.930	7439976	Mercury
62384	Mercury Acetato Phen	0.596	7439976	Mercury
226	Nickel & Compounds	1.000	7440020	Nickel

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
10101970	Nickel (II) Sulfate Hexahydrate	0.222	7440020	Nickel
14336700	Nickel 59	1.000	7440020	Nickel
373024	Nickel Acetate	0.328	7440020	Nickel
13462889	Nickel Bromide	0.269	7440020	Nickel
12710360	Nickel Carbide	0.936	7440020	Nickel
3333673	Nickel Carbonate	0.486	7440020	Nickel
13463393	Nickel Carbonyl	0.344	7440020	Nickel
7718549	Nickel Chloride	0.453	7440020	Nickel
6018899	Nickel Diacetate TET	0.236	7440020	Nickel
12054487	Nickel Hydroxide	0.633	7440020	Nickel
13138459	Nickel Nitrate	0.318	7440020	Nickel
1314063	Nickel Peroxide	0.710	7440020	Nickel
13770893	Nickel Sulfamate	0.234	7440020	Nickel
7786814	Nickel Sulfate	0.374	7440020	Nickel
1271289	Nickelocene	0.311	7440020	Nickel
202	Particulate Mercury	1.000	7439976	Mercury
10101505	Permanganic Acid	0.384	7439965	Manganese
7789006	Potassium Chromate	0.265	18540299	Chromium (VI)
151508	Potassium Cyanide	0.400	57125	Cyanide
7778509	Potassium Dichromate	0.351	18540299	Chromium (VI)
13943583	Potassium Ferrocyanide	0.424	57125	Cyanide
14220178	Potassium Nickel Cyanide	0.244	7440020	Nickel
14220178	Potassium Nickel Cyanide	0.432	57125	Cyanide
7722647	Potassium permanganate	0.345	7439965	Manganese
253	Selenium & Compounds	1.000	7782492	Selenium
7446084	Selenium Dioxide	0.712	7782492	Selenium
7488564	Selenium Disulfide	0.552	7782492	Selenium
7783791	Selenium Hexafluoride	0.409	7782492	Selenium

Table D - Metal Ion Conversion:

Compound CAS	Metal Compound Name	Metal Ion Fraction	Metal Ion Pollutant Code	Metal Ion Pollutant Name
7446346	Selenium Monosulfide	0.711	7782492	Selenium
12640890	Selenium Oxide	0.832	7782492	Selenium
7783008	Selenous Acid	0.612	7782492	Selenium
506649	Silver Cyanide	0.194	57125	Cyanide
7775113	Sodium Chromate	0.317	18540299	Chromium (VI)
10034829	Sodium Chromate(VI)	0.220	18540299	Chromium (VI)
143339	Sodium Cyanide	0.531	57125	Cyanide
10588019	Sodium Dichromate	0.394	18540299	Chromium (VI)
16925250	Sodium hexafluoroantimenate	0.471	7440360	Antimony
7789062	Strontium Chromate	0.253	18540299	Chromium (VI)
78002	Tetraethyl Lead	0.641	7439921	Lead
13530659	Zinc Chromate	0.284	18540299	Chromium (VI)
50922297	Zinc Chromite	0.390	16065831	Chromium III
557211	Zinc Cyanide	0.443	57125	Cyanide
11103869	Zinc Potassium Chromate	0.219	18540299	Chromium (VI)

Table E - Webpage and Email Summary List:

Source	Link
Webpages	
SLEIS	https://apps.dep.wv.gov/SLEIS
SLEIS Registration Form	https://apps.dep.wv.gov/SLEIS
SCC List	http://www.dep.wv.gov/daq/planning/inventory/pages/default.aspx
Filterable and Condensable PM Presentation	http://www.dep.wv.gov/daq/planning/inventory/Documents/Filterable%20and%20Condensable%20PM.pdf
Emissions Factors for Condensable Particulate Matter Emissions from Electric Generating Units	http://www.dep.wv.gov/daq/planning/inventory/Documents/Emissions%20Factors%20for%20Condensable%20Particulate%20Matter%20Emissions%20from%20Electric%20Generating%20Units.pdf
Stack Test to Emission Factor	https://www3.epa.gov/ttn/chief/efpac/procedures/procedures81213.pdf
DAQ PM Calculator	http://www.dep.wv.gov/daq/planning/inventory/Pages/default.aspx
USEPA's CHIEF Emission Inventories	https://www.epa.gov/chief
AP-42	https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors
45CSR31 and 45CSR31B	http://www.dep.wv.gov/daq/rulessummary/Pages/default.aspx
Email Addresses	
Registration Form Address	mailto:DEP.AEI@wv.gov
David Porter Address	mailto:david.j.porter@wv.gov